

ENVIRONMENTAL IMPACT ASSESSMENT

Updated Final Environmental Impact Assessment Report for the
Proposed Construction, Operation and Decommissioning of a
Seawater Reverse Osmosis Plant and Associated
Infrastructure in Tongaat, Kwazulu-Natal

UPDATED
FINAL
EIA
REPORT

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APPENDIX E: PUBLIC PARTICIPATION PART I

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APPENDIX E.1: **I&AP DATABASE**

ORGANS OF STATE	
National Department of Environmental Affairs	Ms Matlhodi Mogorosi
National Department of Environmental Affairs	Mr H Alberts
Department of Environmental Affairs: Oceans and Coasts	Mrs Nitasha Baijnath-Pillay
Department of Environmental Affairs: Oceans and Coasts	Mr Mulalo Tshikotshi
Department of Energy	Sandile Ntanzu
Department of Mineral Resources KZN	Ms N Khanyile
Department of Public Works – KwaZulu-Natal	Mr Nkosi Vilakazi
Department of Transport	Mrs J Reddy
Department of Water Affairs and Sanitation	Attention: Central Point
Department of Agriculture, Forestry and Fisheries: Land Use and Soil Management	Ms Anneliza Collet
Department of Agriculture, Forestry and Fisheries	Ms Mashudu Marubini
Department of Land Affairs	Ms Thembisile Mabaso
KZN Department of Economic Development, Tourism and Environmental Affairs	Ms Yugesni Govender
KZN Department of Economic Development, Tourism and Environmental Affairs	Ms. Natasha Brijlal
KZN Department of Agriculture & Rural Development	Dr. Sipiwe F. Mkhize Head of Department
Sub-directorate: Coastal and Biodiversity Management KZN Department of Economic Development, Tourism and Environmental Affairs	Mr Omar Parak
KZN Department of Economic Development, Tourism and Environmental Affairs	Ms Liesel Beires
KwaZulu-Natal Department of Water Affairs	Ms Angela Masefield
Department of Agriculture, Forestry and Fisheries	Ms Mashudu Marubini
Department of Agriculture, Forestry and Fisheries: Forestry Regulations and Support KZN	Ms Karen Moodley
Department of Agriculture, Forestry and Fisheries: Forestry Regulations and Support KZN	Ms N Sontangane
Department of Agriculture, Forestry and Fisheries: Forestry Regulations and Support	Mr Jeffrey Maivha
KwaZulu-Natal Department of Agriculture, Forestry and Fisheries	Ms Thembile Dlungwana
Department of Transport KZN	Ms Michele Schmid
KwaZulu-Natal Department of Co-operative Governance and Traditional Affairs: Development Planning	Mrs Mandisa Zungu
eThekweni Municipality: eThekweni Transport Authority	Mr Logan Moodley
eThekweni Municipality: Municipal Manager	Mr Sibusiso Sithole
eThekweni Municipality: Ward Councillor (Ward 58)	ClIr Mxolisi Kenneth Ndzimbomvu
eThekweni Municipality: Ward Councillor	ClIr Jean Lindsay
eThekweni Municipality: Ward Councillor	ClIr Geoff Pullan
eThekweni Municipality: Environmental Planning & Climate Protection	Dr Debra Roberts
eThekweni Municipality: Engineering Department	Mr Adrian Peters
eThekweni Municipality: Water & Sanitation	Mr Ednick Msweli
eThekweni Municipality	Mr Kuben Samie
eThekweni Municipality: EIA Hub	Ms Diane Van Rensburg
OTHER KEY STAKEHOLDERS	
KZN Conservation Association	Mr Rob Crankshaw
South African Heritage Resources Agency	Tara Van Niekerk
Amafa aKwaZulu-Natali	Ms Weziwe Tsalala

Amafa aKwaZulu-Natali	Ms Bernadet Pawandiwa
BirdLife South Africa	Mr Simon Gear
South African National Roads Agency Ltd: Eastern Region	Mr Casper Landman
Ezemvelo KwaZulu-Natal Wildlife	Ms Nerissa Pillay
Ezemvelo KwaZulu-Natal Wildlife	Ms Dinesree Thambu
Ingonyama Trust	Mr Pravesh Manipersadh
Eskom	Mr John Geeringh
Eskom	Ms Michelle Nicol
Eskom: Land Development Manager	Mr Neil Purdon
Tongaat Hulett Properties	Ms Tina Hattingh
Tongaat Hulett Properties	Mr Greg Veerasamy
Tongaat Hulett Properties	Mr Paul Russell
Tongaat Hulett Properties	Mr Mohsin Shaik
Tongaat Hulett Properties	Mr Beki Hlatshwayo
Transnet	Ms Xoliswa Nhlozi
SA Cane Growers Association	Mr Aubrey Gabriel
WESSA	Ms Bianca McKelvey
WESSA	Ms Jenny Duvenage
SA Navy	Mr Edwin Dwyer
Endangered Wildlife Trust	Ms Yolán Friedmann
Biota Southern Africa	Ms Gerda Kriel
South African National Parks	Lize McCourt- Chief Operating Officer
Transnet National Ports Authority	Ms Simphiwe Mazibuko
South Durban Community Environment Alliance (SDCEA)	Mr Desmond D'Sa
Independent Newspapers – The Mercury	Mr Tony Carnie
Independent Newspapers	Ms Nokuthula Ntuli
Private - GeaSphere and the KZN Water Caucus	Mr Bryan Ashe
Durban Chamber of Commerce and Industry	Mr Anthony Botha
Tongaat Ratepayers/East Civic Association	Mr Siva Narainsamy
Dube Tradeport Corporation	Mr Zama Dlamini
Dube Tradeport Corporation	Mr Daniel Smith
Dube Tradeport Corporation	Ms Mpume Myeni
Dube Tradeport Corporation	Mr Owen Mungwe
Dube Tradeport Corporation	Mr Anthony Gould
ACSA	Ms Nokuthula Mcinga
Private	Ms Nora Choveaux
Private	Mr Allan Childs

Tekeweni Civics CC	Mr Nick Singh
Leads 2 Business	Ms Bianca Torre
Compressed Air Driers & Filters cc	Mr Prenol Girdharie
Private	Mr Murray Jackson
Vision Data Services cc	Mr George Oliver
Transnet National Ports Authority	Mr Neal Naidoo
Private	Ms Sharmla Ramharry
Wakefields Property Management	Michael Jamieson
Private	Ms Lynndene Martin
Private	Shaylin Shunmugam
Private	Mr Davashkar Virasamy
Coastwatch KZN	Ms Carolyn Schwegman
Coastwatch KZN	Ms Di Jones
Independent Journalist	Mr Brendon Bosworth
National Roads Agency (NRA)	Ms Judy Marx/Ms Stacey Canham
Tongaat Civic Association	Mr Jeeva Pillay
La Mercy Residents Action Group	Ms Betty Rawheath
La Mercy Residents Action Group	Mr Solly Dodabhay
La Mercy Residents Action Group	Mr Kam Singh
La Mercy Residents Action Group	Ms Sharon Shunmugan
La Mercy Residents Action Group/ Coastwatch	Mr Wade Holland
La Mercy Residents Action Group	Mr Roy Rawheath
Private	Mr Les March
Private	Ms Tashya Giyapersad
Private	Mr Keagan Allan
SRACA	Mr Devan Singh
Divine Life Society	Mr Harendra Jogi
TCA	Mr Dennis Kullen
Ottawa Environmental Forum	Ms Andisha Maharaj

CCS-UKZN	Mr Vilasen Govender
Seatides Ratepayers and Civic Association	Mr P Singh
Westbrook Development	Mr B Naidoo
Private	Mr Damir Percaic
Private	Mr Riyashan Owen Pather
Private	Mr Lee Govender
Private	Mr Amal Ramharry
Private	Mr Seelan Govender
Private	Mr Shaylin Shunmugam
Private	Ms Dolly Shunmugam
Private	Ms Marlene Naidoo
Private	Ms Alice Thomson
Community Policing Forum (Coastal Sector)	Mr Nazir Sadack
Wakefields Ballito	Mrs. Cindy Bogan
Private Parish of Umhlali Diocese of Natal (Anglican)	Revd Peter Houston
Departments of housing settlements KZN	Mr Ravi Pillay
Seatides Rate payers association	Mr Devan Singh
Private – Activist	Mr Allimuthu Perumal
Lasec SA	Renata Narain
KSE	Mr Ashon Naidoo
Private	Mrs Claire Lilford
PRASA	Mr Paul Motsoaledi
Local Farmer	Mrs Krish Naidu
Private	Mr Mike Wilson
Private	Mrs Veena Rajyah
East Coast Mail	Mrs Keshni Ramsamy
Tonver (NPO)	Mr S. Sunthkenar
Private	Mr and Mrs Lucille and Justin Wendler

Private	Mrs Ilona Gounder
CPF South	Mr Paul Gounder
Private	Naren Mahara
SDCEA	Mr Patrick Laplace
Archilever	Mr Ken & Frances Lever
Student Biotech	Mr Rivaaj Rai Bhunprakash
ANC Ward Cllr 61	Dr Michael Abraham
Tonga Civic	Mrs Rebecca Abraham
CMA	Mr Benjamin Coston
eThekwini	Mr Niren Appalsamy
North Coast Courier	Mrs Jacqueline Herbst
Private	Mr P. Govender
Private	Mr Alven Pillay
Activist	Mr Roy Singh
Private	Mr D D Jeeawon
Private	Mr Ashon Naidoo
DxxP	Mr C Govender
Hatch	Mr Vignesh Naidoo
MOSA	Mr Mervin Pillay
Divine Life Society of SA	Mrs Jogie Naidoo
DPG Property	Mrs Kogila Cooper
Belveden Civic Association	Mr Ruban Govender
AFFECTED LANDOWNERS	
Rem of La Mercy Reservoir NO. 15692	Umgeni Water
Portion 2456, 2558, 2464, 2465 of Cotton Lands No 1575 Portion 4 of Lot 77 No 1523	South African National Roads Agency LTD (SANRAL)
Rem of Erf 662 Portion 3, 47 (39), 48(40), 49, 50 of Erf 662	RSA (Dept of Public Works)
Portion 6 of Erf 922	RSA (Dept of Public Works)
Portion 23 of Lot 42 No 1114	eThekwini Roads and Storm water
Portion 34 of Lot 42 No 1114 - Mdloti substation	eThekwini Municipality – Electricity
Portion 17 of Erf 662	eThekwini Municipality – Coastal Management & Environmental planning

Portion 6 of Erf 662	Mr Naidoo Bala Kantha
Portion 14 of Erf 662	Mr P Govender
Portion 15 of Erf 662	Dhavagee Family Trust Trustees: Seelan Govender and Colin Govender
Portion 18 and 19 of Erf 662	Mr V Govender
Portion 34 of Erf 662	Mr Govender, Marimuthu
Portion 41 of Erf 662	Vadivalu Moodley Family Trust – Trustees
Portion 42 of Erf 662	Mr Moodley, Pragalathan
Portion 11 of Erf 662	Meadow Brook Properties 8 CC Mrs Riaz Meer
Portion 12 of Erf 662	Ikhwaan Trust Trustee
Rem of Portion 13 of Erf 662 (Portion 13 of Erf 662)	Mr G Nadasen
Rem of Lot 77 No 1523 Portion 3 of Lot 77 No 1523	Tongaath Hulett/IFA Resort Dev. Joint Venture Partner
Portion 10 of Lot 77 No. 1523	Unregistered – falls under parent property- Rem of Farm No. 1523 Tongaath-Hulett- Zimbali Resorts Pty Ltd
Rem of Portion 7, 13, 30 of Lot 42 No 1114 Portion 1, 6 of Lot 42 No 1114 Portion 1 of Lot 77 No 1523 Rem of Portion 2 of Lot 77 No 1523 Portion 20, 23, 236 of Lot 44 No 1570 Rem of Portion 67, 68, 69, 70, 71, 72, 167, 178, 189, 192, 196, 199, 200, 204, 212, 245,262, 1779, 436 of Cotton Lands No 1575 Portion 67, 244, 263 of Cotton Lands No 1575.	Tongaath-Hulett Group LTD
Rem of Portion 1 of Lot 44 No. 1570 Rem of Cotton Lands No. 157	Tongaath-Hulett Group LTD
Portion 2457 of Cotton Lands No. 1575	Tongaath-Hulett Group LTD
Portion 175 of Cotton Lands No. 1575	Tongaath-Hulett Group LTD
Portion 2466, 2461 of Cotton Lands No. 1575	Tongaath-Hulett Group LTD
Portion 2533 of Cotton Lands No. 1575	Tongaath-Hulett Group LTD
Portion 174 of Cotton Lands No. 1575	Tongaath-Hulett Group LTD
Rem of Portion 211 of Cotton Lands No. 1575	Murray Jackson & Sapuma Eggs CC & Mike Jackson Will Trust
Rem of Portion 1193 of Cotton Lands No. 1575	Kanniammal, Muthusami, Ponammah, Thanjiammal, MoonsaMy B-E
Rem of Portion 209 of Cotton Lands No. 1575	Murray Jackson & Sapuma Eggs CC & Mike Jackson Will Trust
179 of Cotton Lands No. 1575	Divine Life Society of South Africa- Trustees
Rem of Portion 452, 180 of Cotton Lands No. 1575	Elliah Prop CC
SURROUNDING LANDOWNERS	
Portion 32 of Erf 662	Mr Naidoo, Bala Kantha

Portion 33 of Erf 662	Mr R Naidoo
Portion 35 of Erf 662	Mr Govender, Anju Kumaran Govender
Portion 36 of Erf 662	RSA (Department of Public Works)
Portion 45 of Erf 662	Mrs Agandren Govender
Portion 24 of Erf 662	Mrs Kanniamma Govender (Seabelle Restaurant)
Portion 25 of Erf 662	Mr Govender, Seenavasan (Seabelle Restaurant)
Portion 21 of Erf 662	Blue Sands Trading 35 CC Selvan
Portion 8 of Erf 662	Mr Naidoo, Premla Dhavi
Portion 7 of Erf 662	Ten Dunes Inv. CC
Portion 43 of Erf 662	Sakhikusasa Construction & Projects
Portion 44 of Erf 662	57 Hyde Close Estate CC
Portion 9 of Erf 662	Sonam Property Inv. CC
Portion 10 of Erf 662	Swami Sudershanacharya Memorial Trust-Trustees
Portion 2, 4 of Erf 662	RSA (Department of Public Works)
Portion 45 of Erf 662	Unknown
Rem of Erf 663	Mr Govender, Marimuthu
Portion 2 of Erf 663	Mrs F Meer
Erf 664 Erf 665	RSA (Department of Public Works)
Portion 1 of Erf 666 / Rem of Erf 666	Mr Aniroodh Dukhanty Jeeawon
Portion 1 of Erf 667	Mr Singh, Coomasim B-E
Rem 776	Mr Abdul Haq
	Mr Ahamad Maguid
Portion 34 of Erf 776	Mr Asmal Ameena, B.E
Portion 35 of Erf 776	Mr Abdulla, Zulaika Bee Bee
Portion 36 of Erf 776	Notefull 1257 CC (Mr Shrivaar Singh)
Portion 37 of Erf 776	Mr Dreyer, Jason Alain
Portion 38 of Erf 776	Unknown
Portion 39 of Erf 776	Unknown
Portion 40 of Erf 776	Mr Naidoo, Jugathumba
Portion 41 of Erf 776	Hamzath property Trust
Portion 42 of Erf 776	Unknown
Portion 43 of Erf 776	Mr Ramruthan, Shalendra
Portion 48 of Erf 776	Mr B Naidoo
1937, 1939 of Cotton Lands No. 1575	South African National Roads Agency LTD
Portion 1206 of Cotton Lands No 1575	Mr L Govender
Portion 1207 of Cotton Lands No 1575	Mr B Govender
Portion 1208 of Cotton Lands No 1575	Genazzano Holdings Pty LTD
Portion 463 of Cotton Lands No. 1575	Unregistered- parent property owned by Byrne Joseph Charles B-E

Portion 2566, 2557, 1940, 2462, 2463, 1938 of Cotton Lands No 1575	South African National Roads Agency LTD (SANRAL)
Portion 9, 14, 17 of Lot 77 No. 1523	Unregistered – falls under parent property- Rem of Farm No. 1523 Tongaat-Hulett- Zimbali Resorts Pty Ltd
Rem of Lot 42 No 1114 Rem of Portion 168 of Cotton Lands No 1575 Portion 391 of Cotton Lands No 1575. Erf 2, 6, 7, 8, 12, 17, 18, Portion 1 of Erf 3, Portion 1 of Erf 4, Rem of Erf 4, Rem of Erf 20 of Mount Moreland No. 0218)	Tongaat-Hulett Group LTD
Erf 1000 Mount Moreland	DUBE TRADEPORT CORPORATION
Erf 5 (Canelands) Erf 15 and Erf 16 Canelands Ext 1 (No 0182)	Cedar Point Trading 20 PTY LTD
80 South Dune Road, Desainagar 4405	Mrs Mariam Abdulla
46 South Dune Drive, Desainagar 4405	Mr Haroshen Govender

APPENDIX E.2.

CORRESPONDENCE TO I&APs RELATING TO FSR

Letter 4 to I&APs



CSIR Consulting and Analytical Services:
Environmental Management Services

PO Box 320 Stellenbosch 7599 South Africa
Tel: +27 21 888 2661
Fax: +27 21 888 2693
Email: awalsdorff@csir.co.za

18 May 2015

Dear Stakeholder,

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION, OPERATION AND DECOMMISSIONING
OF A 150 ML/DAY SEA WATER REVERSE OSMOSIS (SWRO) PLANT AND ASSOCIATED INFRASTRUCTURE PROPOSED BY
UMGENI WATER AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST
DEA REFERENCE NUMBER: 14/12/16/3/3/2/652

RELEASE OF FINAL SCOPING REPORT AND NOTICE OF COMMENT PERIOD

As a registered interested and affected party on the database for the above project you are hereby notified of the submission of the Final Scoping Report for the proposed construction, operation and decommissioning of a Sea Water Reverse Osmosis Plant and associated infrastructure proposed at Tongaat on the KwaZulu-Natal North Coast, to the National Department of Environmental Affairs for their decision-making.

In terms of Regulation 56(6) of GN R543 of the NEMA EIA Regulations 2010, registered interested and affected parties must submit written comments on final reports to the competent authority (refer to contact details of the DEA case officer below) and provide a copy of such comments to the Environmental Assessment Practitioner (contact details above). Comments on the Final Scoping Report should be submitted within **21 days** of the date of this notification, by the **8 June 2015**.

Mrs Mmatlala Rabothata
National Department of Environmental Affairs
Private Bag X 447, Pretoria, 0001; or
Fedsure Building, 315 Pretorius Street, Pretoria
Fax: 012 – 322 2682
Email: mrabothata@environment.gov.za

PLEASE NOTE: The DEA reference number assigned to this project is **14/12/16/3/3/2/652** which must be quoted on all correspondence related to the application.

Hard copies of the Final Scoping Report are available for public viewing at the **Tongaat Beach Public Library** and can also be downloaded from the CSIR's EIA project website at: www.csir.co.za/eia/TongaatDesalination/

Yours sincerely

Annick Walsdorff

EIA Project Manager
CSIR Environmental Management Services

Prof FW Petersen, N Behrens, Prof DR Hall, M Silinga, M Sibanda,
Prof MJ Wingfield, K Tsoke, A Knott-Craig, P Benade and Dr SP Sibisi

www.csir.co.za

**ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST**
DEA Reference No: 14/12/16/3/3/2/652



REGISTRATION AND COMMENTS FORM

May 2015



Name:	Telephone:
Organisation:	Fax:
Designation:	Email:
Physical address:	Postal address:

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process

YES

NO

Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

Please describe any issues or concerns you think should be considered during the EIA process



Please provide details of any other individuals or organisations that should be involved:

Please submit this **Registration & Comments Form** to:

Annick Walsdorff
CSIR
P O Box 320,
Stellenbosch, 7599
Tel: 021 888 2589
Fax: 021 888 2473
E-mail: awalsdorff@csir.co.za
Website: www.csir.co.za/eia/TongaDesalination/

**i-ENVIRONMENTAL IMPACT ASSESSMENT (EIA) YOKWAKHIWA NOKUSEBENZISA
KWEMBONI YE-SEA WATER REVERSE OSMOSIS (DESALINATION) E-TONGATI,
OLU SENYAKATHI LAKWAZULU-NATAL**
DEA Reference No: 14/12/16/3/3/2/652



IFOMU LOKUREJISTA NOKUBEKA UMBONO

May 2015



Isama:	Inombolo yocingo:
Inhlango:	Fax:
Isikhundla:	Email:
Ikheli lendawo:	Ikheli leposi:

Bonakalisa uma ufuna ukurejista njengeqembu labathintekile. Ukurejista kuvadingakala umufuna ukuthola ulwazi olubanzi mayela nalenqubo ye-EIA.

YEBO

CHA

Bonakalisa uma udinga ukwazi (mavelana be-biznisi, okwezemali, okuphathelelana nawe, noma okunye) ngocele le-environmental authorisation:

Chaza udaba nokukhathazeka ocabanga ukuthi kumele kunakwe kulenqubo ye-EIA

Cela usinike imininingwane yomuntu noma yenhlango ocabanga ukuthi idinga ukuthintwa mavelana naye-EIA:

Thumela leli-fomu lapha:

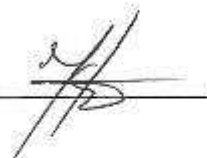
<p>Annick Walsdorff CSIR P O Box 320, Stellenbosch, 7599 Tel: 021 888 2589 Fax: 021 888 2473 E-mail: awalsdorff@csir.co.za Website: www.csir.co.za/eia/TongaatDesalination/</p>

Name & Signature of person responsible for post:

10 items – REGISTERED POST [Tongaat – 18 May 2015]

EMS0062 / RUN / D4100 / OKG10

<p>Mrs J Reddy Department of Transport Private Bag X9043 Pietermaritzburg 3200</p> <p>Personal letter CD</p>		
<p>Ms Mavis Padayachee Dept of Agriculture, Environmental Affairs & Rural Development: Environmental Impact Management (South Region) Private Bag X6005 Hilton 3245</p> <p>Personal letter CD</p>	<p>Mr Mulalo Tshikotshi, Department of Environmental Affairs: Oceans and Coasts P.O. Box 52126 Cape Town 8002</p> <p>PERSONAL LETTER CD</p>	<p>Ms Angela Masefield KwaZulu Natal Dept of Water Affairs PO Box 1018 Durban 4000</p> <p>Personal letter CD</p>
<p>Mr H. Alberts National Department of Environmental Affairs Environment House 473 Steve Biko Road Pretoria 0001</p> <p>Personal letter CD</p>	<p>Mrs Natasha Bajnath-Pillay Department of Environmental Affairs: Oceans and Coasts P.O. Box 52126 Cape Town 8002</p> <p>PERSONAL LETTER CD</p>	<p>Ms Nerissa Pillay Ezemvelo KwaZulu-Natal Wildlife 1 Peter Brown Drive Cascades 3202</p> <p>Personal letter CD</p>
<p>Ms Carolyn Schwegman Coastwatch KZN PO Box 343 Pennington 4184</p> <p>Personal letter CD</p>	<p>Ms Michele Schmid Department of Transport KZN 224 Prince Alfred Street Pietermaritzburg 3201</p> <p>Personal letter CD</p>	<p>Jeffrey Mahivha Department of Agriculture, Forestry and Fisheries: Forestry Regulations and Support Private Bag X9029 Pietermaritzburg 3200</p> <p>Personal letter CD</p>

Name & Signature of person responsible for post: F. Hendrogh 

44 items – REGULAR post (Tongaats – Sent on 18 May 2015)

EMS0062 / RUN / 04100 / OKG10

Ten Dunes Inv. CC Portion 7 of Erf 662 50 South Beach Road Desainager 4405	Sonam Property Inv. CC Portion 9 of Erf 662 72 South Beach Road Desainager 4405	Louville Properties CC Portion 10 of Erf 662 76 South Beach Road Desainager 4405
Meadow Brook Properties 8 CC Portion 11 of Erf 662 60 South Dune Road Desainager 4405	Ikhwaan Trust – Trustees Portion 12 of Erf 662 54 South Dune Road Desainager 4405	Mr Nadasen Portion 13 of Erf 662 46 South Beach Road Desainager 4405
P Govender Portion 14 of Erf 662 42 South Dune Road Desainager 4405	PM Govender Portion 15 of Erf 662 38 South Dune Road Desainager 4405	Northern Transitional Metropolitan Substructure Council – eThekweni Municipality Portion 17 of Erf 662 51 South Beach Road Desainager; 4405
R Naidoo Suite 1 Ashanti Centre 19 Arbee Drive Tongaats 4405	F Meer Portion 2 of Erf 663 64 South Beach Road Desainager 4405	AD Jeeawan PO Box 335 Tongaats 4400
Notefull 1257 CC Portion 36 of Erf 776 103 Stamford Hill Road Durban 4001	Bala Kantha Naidoo Portion 32 of Erf 662 46A South Beach Road Desainager Tongaats 4400	Marimuthu Govender Portion 34 of Erf 662 44 South Beach Road Desainager Tongaats; 4400

Kumaran Govender Portion 35 of Erf 662 42 South Beach Road Desainager Tongaat; 4400	Vadivalu Moodley Family Trust - Trustees Portion 41 of Erf 662 40A South Beach Road Desainager Tongaat; 4400	Pragalathan Moodley Portion 42 of Erf 662 40 South Beach Road Desainager Tongaat; 4400
Sakhikusasa Construction & Projects Portion 43 of Erf 662 38 South Beach Road Desainager Tongaat; 4400	57 Hyde Close Estate CC Portion 44 of Erf 662 36 South Dune Road Desainager Tongaat; 4400	Cassim Zora Bee Bee Portion 42 of Erf 776 15 Valley Road Desainager Tongaat; 4400
Shalendra Ramrathan Portion 43 of Erf 776 11 Valley Road Desainager Tongaat; 4400	B. E. Ismail Portion 41 of Erf 776 17 Valley Road Desainager Tongaat; 4400	Jugathumba Naidoo Portion 40 of Erf 776 19 Valley Road Desainager Tongaat; 4400
Jason Alain Dreyer Portion 37 of Erf 776 25 Valley Road Desainager Tongaat; 4400	B. E. Asmal Ameena Portion 34 of Erf 776 24 Valley Road Desainager Tongaat; 4400	P Marimuthu Govender Portion 45 of Erf 662 36 South Dune Road Desainager Tongaat; 4400
Kanniamma Portion 24 of Erf 662 60 South Beach Road Desainager Tongaat; 4400	Seenavasan Govender Portion 25 of Erf 662 58 South Beach Road Desainager Tongaat; 4400	Blue Sands Trading 35 CC Portion 21 of Erf 662 54 South Beach Road Desainager Tongaat; 4400
Premia Dhavi Naidoo Portion 8 of Erf 662 68 South Beach Road Desainager Tongaat; 4400	Aniroodh Dukhanty Jeeawon Rem of Erf 666 66 South Dune Road Desainager Tongaat; 4400	Coomasim Singh Portion 1 of Erf 667 68 South Dune Road Desainager Tongaat; 4400

Mr Omar Parak KZN Dept of Agriculture and Environmental Affairs - Coastal and Biodiversity Management Private Bag X9059 Pietermaritzburg; 3200	Ms Anneliza Collet Dept of Agriculture, Forestry and Fisheries: Land Use and Soil Management Private Bag X250 Pretoria; 0001	Cllr Mxolisi Kenneth Ndzimbomvu eThekweni Municipality; Ward Councillor (Ward 58) PO Box 1014 Durban 4000
Mr Paul Russell Tongaath Hulett Properties 305 Umhlanga Rocks Drive La Lucia 4051	RSA (Dept of Public Works) c/o Aliwal & West Street Durban 4000	M Govender Portion 6 of Erf 662 Carinthia Road Desalnager 4405
V Govender Portion 18 & 19 of Erf 662 52 South Dune Road Desalnager 4405	B Naidoo Portion 48 of Erf 776 PO Box 1057 Tongaath 4400	Tongaath-Hulett Group LTD PO Box 3 Tongaath 4400
L Govender Portion 1206 of Cotton Lands No 1575 4 Glenaire Avenue Verula 4339	B Govender Portion 1207 of Cotton Lands No 1575 PO Box 3020 Westbrook 4406	

The following table a list of people whose registered mail was returned undelivered.

Organisation	Title	Initials	Surname
National DEA	Mr	H	Albert
KZN Department of Agriculture and rural development	Mrs	M	Padayachee
KZN Department of Transport	Mrs	M	Schmid
Organisation	Erf No.	Initials	Surname
Landowner	14/662	P	Govender
Landowner	34/662	M	Govender
Landowner (VACANT)	17/662		Northern Transitional Metropolitan – eThekweni Municipality
Landowner (VACANT)	11/662		Meadow Brook Properties
Landowner (VACANT)	13/662	Mr.	Nadasen
Landowner (VACANT)	12/662		Ikhwaan Trustees
Surrounding	21/662		Blue Sands Trading CC
Surrounding	24/662		Kanniama
Surrounding	25/662	S	Govender
Surrounding	7/662		Ten Dunes Inv CC
Surrounding	32/662	B.	Naidoo
Surrounding	8/662	p	Naidoo
Surrounding	45/662	A	Govender
Surrounding	43/776	S	Ramruthan
Surrounding	41/776	B.E.	Ismail
Surrounding	40/776	J	Naidoo
Surrounding	37/776	J.A.	Dreyer
Surrounding	34/776	A.B.E.	Asmal
Surrounding (VACANT)	10/662		Louville Properties CC
Surrounding (VACANT)	9/662		Sonam Property Inv. CC
Surrounding (VACANT)	2/663	F	Meer
Surrounding (VACANT)	43/662		Sakhikusasa Construction and Projects
Surrounding (VACANT)	44/662		57 Hyde Close Estate CC
Surrounding (VACANT)	1/667	C	Singh
Surrounding (VACANT)	42/776	C. Z.	Bee Bee





B. E. Asmal-Amegha
Portion 34 of Erf 776
24 Valley Road
Desainager
Tongaat; 4400

UNDELIVERED Post Office
18.05.15
NO SUCH NUMBER
NO SUCH STREET
ADDRESS INEFFICIENT
ADDRESS ILLEGIBLE
NO STREET DELIVERY
COMPLETED BY
NAME
RETURN CHARGE PAYABLE
R
NA 24/06/15

Shalendra Ramruthan
Portion 43 of Erf 776
11 Valley Road
Desainager
Tongaat: 4400

RTS

CSIR TELEBOSCH
P.O. Box 320 Stellenbosch 7595
18.05.15
00330
SAND-AFRIKA
RECEIVED
UNDELIVERED
UNCLAIMED
REMOTE SETTING
AS-4805
NOX CLOSED
GONE AWAY - NO
ADDRESS LEFT
ADDRESS UNRECOGNIZED
ADDRESS UNRECOGNIZED
NO STREET DELIVERY
COMPLETED BY
NAME
RETURN CHARGE PAYABLE
R
NAME 24/06/15

Jugathumba Naidoo
Portion 40 of Erf 776
19 Valley Road
Desainager
Tongaat: 4400

RTS

CSIR TELEBOSCH
P.O. Box 320 Stellenbosch 7595
18.05.15
00330
SAND-AFRIKA
RECEIVED
UNDELIVERED
UNCLAIMED
REMOTE SETTING
AS-4805
NOX CLOSED
GONE AWAY - NO
ADDRESS LEFT
ADDRESS UNRECOGNIZED
ADDRESS UNRECOGNIZED
NO STREET DELIVERY
COMPLETED BY
NAME
RETURN CHARGE PAYABLE
R
NAME 24/06/15

Cassim Zood Bee Bee
Portion 42 of Erf 776
15 Valley Road
Desainager
Tongaat: 4400

RTS

CSIR TELEBOSCH
P.O. Box 320 Stellenbosch 7595
18.05.15
00330
SAND-AFRIKA
RECEIVED
UNDELIVERED
UNCLAIMED
REMOTE SETTING
AS-4805
NOX CLOSED
GONE AWAY - NO
ADDRESS LEFT
ADDRESS UNRECOGNIZED
ADDRESS UNRECOGNIZED
NO STREET DELIVERY
COMPLETED BY
NAME
RETURN CHARGE PAYABLE
R
NAME 24/06/15

Jason Alain Dreyer
Portion 37 of Erf 776
25 Valley Road
Desainager
Tongaat: 4400

CSIR **LENBO** **SOUTH AFRICA**
DELIVERED PORT 18.05.15
NO SUCH NUMBER
REMOTE SETTING
COMPLETED BY
NAME
RETURN CHARGE PAYABLE
R
NAME 24/06/15

B. E. Ismail
Portion 41 of Erf 776
17 Valley Road
Desainager
Tongaat: 4400

CSIR **LENBO** **SOUTH AFRICA**
DELIVERED PORT 18.05.15
NO SUCH NUMBER
REMOTE SETTING
COMPLETED BY
NAME
RETURN CHARGE PAYABLE
R
NAME 24/06/15

Marimuthu Govender
Portion 34 of Erf 662
44 South Beach Road
Desainager
Tongaat
4400

CSIR **LENBO** **SOUTH AFRICA**
DELIVERED PORT 18.05.15
NO SUCH NUMBER
REMOTE SETTING
COMPLETED BY
NAME
RETURN CHARGE PAYABLE
R
NAME 25/05/15

Blue Sands Trading 35 CC
Portion 21 of Erf 662
64 South Beach Road
Desainager
Tongaat: 4400

CSIR
South African Bureau of Standards

STELLENBOSCH
18.05.15
UNDELIVERED

POSTAGE PAID
SOUTH AFRICA
SUD-AFRICA
00330

REMOTE SETTING
AS-4805

☒ NO SUCH NUMBER
☐ NO SUCH STREET
☐ ADDRESS INSUFFICIENT
☐ ADDRESS ILLEGIBLE
☐ NO STREET NUMBER
☐ NO STREET NAME
☐ ADDRESS LEFT

COMPLETED BY
NAME
RETURN

R
NAME 28/05/15

Seenavasan Govender
Portion 25 of Erf 662
58 South Beach Road
Desainager
Tongaat: 4400

CSIR
South African Bureau of Standards

STELLENBOSCH
18.05.15
UNDELIVERED

POSTAGE PAID
SOUTH AFRICA
SUD-AFRICA
00330

REMOTE SETTING
AS-4805

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☐ ADDRESS INSUFFICIENT
☐ ADDRESS ILLEGIBLE
☐ NO STREET NUMBER
☐ NO STREET NAME
☐ ADDRESS LEFT

COMPLETED BY
NAME
RETURN

R
NAME 28/05/15

Kanniamma
Portion 24 of Erf 662
60 South Beach Road
Desainager
Tongaat: 4400

CSIR
South African Bureau of Standards

STELLENBOSCH
18.05.15
UNDELIVERED

POSTAGE PAID
SOUTH AFRICA
SUD-AFRICA
00330

REMOTE SETTING
AS-4805

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☐ NO SUCH STREET
☐ ADDRESS INSUFFICIENT
☐ ADDRESS ILLEGIBLE
☐ NO STREET NUMBER
☐ NO STREET NAME
☐ ADDRESS LEFT

COMPLETED BY
NAME
RETURN

R
NAME 28/05/15

Bala Kantha Naidoo
Portion 32 of Erf 662
46A South Beach Road
Desainager
Tongaat
4400

CSIR **UNDELIVERED** **18.05.15** **00330**
POSTAGE PAID
SOUTH AFRICA
UNDELIVERED
P.O. Box 329
Desainager 4400
7599

☒ NO SUCH NUMBER
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☐ ADDRESS INSUFFICIENT
☐ ADDRESS ILLEGIBLE
☐ NO STREET DELIVERY

☐ REMOTE SETTING
☐ AS-4805
☐ BOX CLOSED
☐ GO AWAY - NO ADDRESS LEFT

COMPLETED BY
NAME
RETURN OFFICER'S SIGNATURE
NAME 18/05/15

F Meer
Portion 2 of Erf 663
64 South Beach Road
Desainager
4405

CSIR **UNDELIVERED** **18.05.15** **00330**
POSTAGE PAID
SOUTH AFRICA
UNDELIVERED
P.O. Box 329
Stellenbosch
7599

☒ NO SUCH NUMBER
☐ NO SUCH STREET
☐ ADDRESS INSUFFICIENT
☐ ADDRESS ILLEGIBLE
☐ NO STREET DELIVERY

☐ REMOTE SETTING
☐ AS-4805
☐ BOX CLOSED
☐ GO AWAY - NO ADDRESS LEFT

COMPLETED BY
NAME
RETURN OFFICER'S SIGNATURE
NAME 18/05/15

Premia Dhavi Naidoo
Portion 8 of Erf 662
68 South Beach Road
Desainager
Tongaat; 4400

CSIR **UNDELIVERED** **18.05.15** **00330**
POSTAGE PAID
SOUTH AFRICA
UNDELIVERED
P.O. Box 329
Stellenbosch
7599

☒ NO SUCH NUMBER
☐ NO SUCH STREET
☐ ADDRESS INSUFFICIENT
☐ ADDRESS ILLEGIBLE
☐ NO STREET DELIVERY

☐ REMOTE SETTING
☐ AS-4805
☐ BOX CLOSED
☐ GO AWAY - NO ADDRESS LEFT

COMPLETED BY
NAME
RETURN OFFICER'S SIGNATURE
NAME 18/05/15

Sakhikuisa Construction & Projects
Portion 45 of Erf 662
38 South Beach Road
Desainager
Tongaat: 4400

CSIR **STELLENBOSCH** **18.05.15** **00330** **POSTAGE PAID** **POSTAL ORDER** **POSTAGE PAID** **POSTAL ORDER**

UNDELIVERED **POST OFFICE**

UNKNOWN **NO SUCH NUMBER** **NO SUCH STREET** **ADDRESS INSUFFICIENT** **ADDRESS ILLEGIBLE** **NO STREET DELIVERY** **COMPLETED BY** **NAME** **RETURN CHARGE PAYABLE** **R** **NAME**

REMOTE SETTING **AS-4805** **NO SUCH NUMBER** **NO SUCH STREET** **ADDRESS INSUFFICIENT** **ADDRESS ILLEGIBLE** **NO STREET DELIVERY** **COMPLETED BY** **NAME** **RETURN CHARGE PAYABLE** **R** **NAME**

Mr Nadasen
Portion 13 of Erf 662
46 South Beach Road
Desainager
4405

CSIR **STELLENBOSCH** **18.05.15** **00330** **POSTAGE PAID** **POSTAL ORDER** **POSTAGE PAID** **POSTAL ORDER**

UNDELIVERED **POST OFFICE**

UNKNOWN **NO SUCH NUMBER** **NO SUCH STREET** **ADDRESS INSUFFICIENT** **ADDRESS ILLEGIBLE** **NO STREET DELIVERY** **COMPLETED BY** **NAME** **RETURN CHARGE PAYABLE** **R** **NAME**

REMOTE SETTING **AS-4805** **NO SUCH NUMBER** **NO SUCH STREET** **ADDRESS INSUFFICIENT** **ADDRESS ILLEGIBLE** **NO STREET DELIVERY** **COMPLETED BY** **NAME** **RETURN CHARGE PAYABLE** **R** **NAME**

57 Hyde Close Estate CC
Portion 44 of Erf 662
36 South Dune Road
Desainager
Tongaat: 4400

CSIR **STELLENBOSCH** **18.05.15** **00330** **POSTAGE PAID** **POSTAL ORDER** **POSTAGE PAID** **POSTAL ORDER**

UNDELIVERED **POST OFFICE**

UNKNOWN **NO SUCH NUMBER** **NO SUCH STREET** **ADDRESS INSUFFICIENT** **ADDRESS ILLEGIBLE** **NO STREET DELIVERY** **COMPLETED BY** **NAME** **RETURN CHARGE PAYABLE** **R** **NAME**

REMOTE SETTING **AS-4805** **NO SUCH NUMBER** **NO SUCH STREET** **ADDRESS INSUFFICIENT** **ADDRESS ILLEGIBLE** **NO STREET DELIVERY** **COMPLETED BY** **NAME** **RETURN CHARGE PAYABLE** **R** **NAME**

Northern Transitional Metropolitan
Substructure Council
eThekweni Municipality
Portion 17 of Erf 662
51 South Beach Road
Desainager
4405

CSIR
our future through you

STELLENBOSCH
18.05.15

UNDELIVERED

POSTAGE PAID 00330

RECEIVED

NO SUCH NUMBER

NO SUCH STREET

ADDRESS INSUFFICIENT

ADDRESS ILLEGIBLE

NO STREET DELIVERY

COMPLETED BY

NAME

RETURN CHARGE PAYABLE

NAME

P Marimuthu Govender
Portion 45 of Erf 662
36 South Dune Road
Desainager
Tongaat: 4400

CSIR
our future through you

STELLENBOSCH
18.05.15

UNDELIVERED

POSTAGE PAID 00330

RECEIVED

NO SUCH NUMBER

NO SUCH STREET

ADDRESS INSUFFICIENT

ADDRESS ILLEGIBLE

NO STREET DELIVERY

COMPLETED BY

NAME

RETURN CHARGE PAYABLE

NAME

Coomasim Singh
Portion 1 of Erf 667
68 South Dune Road
Desainager
Tongaat: 4400

CSIR
our future through you

STELLENBOSCH
18.05.15

UNDELIVERED

POSTAGE PAID 00330

RECEIVED

NO SUCH NUMBER

NO SUCH STREET

ADDRESS INSUFFICIENT

ADDRESS ILLEGIBLE

NO STREET DELIVERY

COMPLETED BY

NAME

RETURN CHARGE PAYABLE

NAME

Ikhwaan Trust - Trustees
Portion 12 of Erf 662
54 South Dune Road
Desainager
4405

CSIR
use letter through address

PO Box 320
Stellenbosch 7599

UNDELIVERED
POST OFFICE
SOUTH AFRICA
4405-4805

POSTAGE PAID
00330
REFUSED
BOX CLOSED

NO SUCH NUMBER
18.05.15
NO SUCH STREET
ADDRESS INSUFFICIENT
ADDRESS ILLEGIBLE
NO STREET DELIVERY

COMPLETED BY
NAME
RETURN CHARGE PAYABLE
R
NAME

P Govender
Portion 14 of Erf 662
42 South Dune Road
Desainager
4405

CSIR
use letter through address

P.O. Box 320
Stellenbosch 7599

UNDELIVERED
POST OFFICE
SOUTH AFRICA
4405-4805

POSTAGE PAID
00330
REFUSED
BOX CLOSED

NO SUCH NUMBER
18.05.15
NO SUCH STREET
ADDRESS INSUFFICIENT
ADDRESS ILLEGIBLE
NO STREET DELIVERY

COMPLETED BY
NAME
RETURN CHARGE PAYABLE
R
NAME

Louville Properties CC
Portion 10 of Erf 662
76 South Beach Road
Desainager
4405

CSIR
use letter through address

P.O. Box 320
Stellenbosch 7599

UNDELIVERED
POST OFFICE
SOUTH AFRICA
4405-4805

POSTAGE PAID
00330
REFUSED
BOX CLOSED

NO SUCH NUMBER
18.05.15
NO SUCH STREET
ADDRESS INSUFFICIENT
ADDRESS ILLEGIBLE
NO STREET DELIVERY

COMPLETED BY
NAME
RETURN CHARGE PAYABLE
R
NAME

Meadow Brook Properties 8 CC
Portion 11 of Erf 662
60 South Dune Road
Desainager
4405

CSIR
as far as through water

P.O. box 320
Stellenbosch
7594

UNKNOWN
18.05.15
NO SUCH NUMBER

NO SUCH STREET
ADDRESS INSUFFICIENT
ADDRESS ILLEGIBLE
NO STREET DELIVERY

POSTAGE PAID
00330
SOUTH AFRICA
REMOTE SETTING
AS 4805
ADDRESSES LEFT

COMPLETED BY
NAME
RETURN CHARGE PAYABLE
NAME

Ten Dunes Inv. CC
Portion 7 of Erf 662
50 South Beach Road
Desainager
4405

CSIR
as far as through water

P.O. box 320
Stellenbosch
7594

UNKNOWN
18.05.15
NO SUCH NUMBER

NO SUCH STREET
ADDRESS INSUFFICIENT
ADDRESS ILLEGIBLE
NO STREET DELIVERY

POSTAGE PAID
00330
SOUTH AFRICA
REMOTE SETTING
AS 4805
ADDRESSES LEFT

COMPLETED BY
NAME
RETURN CHARGE PAYABLE
NAME

Sonam Property Inv. CC
Portion 9 of Erf 662
72 South Beach Road
Desainager
4405

CSIR
as far as through water

P.O. box 320
Stellenbosch
7594

UNKNOWN
18.05.15
NO SUCH NUMBER


NO SUCH STREET
ADDRESS INSUFFICIENT
ADDRESS ILLEGIBLE
NO STREET DELIVERY

POSTAGE PAID
00330
SOUTH AFRICA
REMOTE SETTING
AS 4805
ADDRESSES LEFT

COMPLETED BY
NAME
RETURN CHARGE PAYABLE
NAME

Proof of Correspondence with I&APs - Courier Waybills

Appendix E, Public Participation, Page E-28

 Head Office: Johannesburg 0861 388 888 Branches: East London, Port Elizabeth, Cape Town, Durban, Pietermaritzburg, Richards Bay www.globeflight.com Reg. No. 1945/0905/027 VAT NO. 4520175376				2713275376																									
18-5-15 P01521 Emisadzi Kwa 04100 JAG 10		1																											
SHIPPER (YOUR NAME) Annick Walsdorf COMPANY NAME CSIR - STELLENBOSCH STREET ADDRESS JAN CILLIERS STR STELLENBOSCH CITY CPT COUNTRY RSA POST-ZIP CODE 7599		TO (RECIPIENT'S NAME) Ms Diane van Rensburg COMPANY NAME eThekweni Municipality STREET ADDRESS EIA Hub 106 KE Masinga Road CITY Durban COUNTRY S.A. POST-ZIP CODE 4001		<table border="1"> <tr><td>1</td><td>X</td><td>X</td></tr> <tr><td></td><td>X</td><td>X</td></tr> <tr><td></td><td>X</td><td>X</td></tr> <tr><td></td><td>X</td><td>X</td></tr> <tr><td></td><td>X</td><td>X</td></tr> <tr><td></td><td>X</td><td>X</td></tr> <tr><td></td><td>X</td><td>X</td></tr> <tr><td></td><td>X</td><td>X</td></tr> </table>		1	X	X		X	X		X	X		X	X		X	X		X	X		X	X		X	X
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TELEPHONE NUMBER & E-MAIL 021 888 2400		TELEPHONE NUMBER & E-MAIL 031-311 7136		IMPORT & EXPORT CODE																									
GLOBAL DOCUMENT EXPRESS GLOBAL PARCEL EXPRESS GLOBAL MAIL AIRFREIGHT CROSS BORDER ROAD FREIGHT CUSTOMS VALUE		OVERNIGHT EXPRESS IN-CITY DELIVERY BUDGET CARGO 24-48 HRS ROAD FREIGHT 48-84 HRS		SAME DAY DAWN DELIVERY 20-06HRS SATURDAY DELIVERY AFTER-HOURS																									
HAZARDOUS CARGO? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> INSURANCE YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> AMOUNT		SIGNATURE A TAYLOR Chayler 18-5-15		SIGNATURE Documents																									
TOP COPY - R.O.D.; 2ND COPY - CONSIGNEE; 3RD COPY - ACCOUNTS; BOTTOM COPY - SENDER COPY																													

 Head Office: Johannesburg 0861 388 888 Branches: East London, Port Elizabeth, Cape Town, Durban, Pietermaritzburg, Richards Bay www.globeflight.com Reg. No. 1945/0905/027 VAT NO. 4520175376				2713275377																									
18-5-15 P01521 Emisadzi Kwa 04100 JAG 10		1																											
SHIPPER (YOUR NAME) Annick Walsdorf COMPANY NAME CSIR - STELLENBOSCH STREET ADDRESS JAN CILLIERS STR STELLENBOSCH CITY CPT COUNTRY RSA POST-ZIP CODE 7599		TO (RECIPIENT'S NAME) Ms Mmatlata Rabothata COMPANY NAME Nat Dept of Environmental Affairs STREET ADDRESS Environment House 4-73 Steve Biko Road CITY Pretoria COUNTRY S.A. POST-ZIP CODE 0001		<table border="1"> <tr><td>1</td><td>X</td><td>X</td></tr> <tr><td></td><td>X</td><td>X</td></tr> <tr><td></td><td>X</td><td>X</td></tr> <tr><td></td><td>X</td><td>X</td></tr> <tr><td></td><td>X</td><td>X</td></tr> <tr><td></td><td>X</td><td>X</td></tr> <tr><td></td><td>X</td><td>X</td></tr> <tr><td></td><td>X</td><td>X</td></tr> </table>		1	X	X		X	X		X	X		X	X		X	X		X	X		X	X		X	X
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GLOBAL DOCUMENT EXPRESS GLOBAL PARCEL EXPRESS GLOBAL MAIL AIRFREIGHT CROSS BORDER ROAD FREIGHT CUSTOMS VALUE		OVERNIGHT EXPRESS IN-CITY DELIVERY BUDGET CARGO 24-48 HRS ROAD FREIGHT 48-84 HRS		SAME DAY DAWN DELIVERY 20-06HRS SATURDAY DELIVERY AFTER-HOURS																									
HAZARDOUS CARGO? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> INSURANCE YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> AMOUNT		SIGNATURE A TAYLOR Chayler 18-5-15		SIGNATURE Documents																									
TOP COPY - R.O.D.; 2ND COPY - CONSIGNEE; 3RD COPY - ACCOUNTS; BOTTOM COPY - SENDER COPY																													

Email to I&APs (Release of FSR)

From: Kelly Stroebe
Date: 18/05/2015 10:35
Subject: Notice of public comment period for the Final Scoping Report: DEA REFERENCE NUMBER:
14/12/16/3/3/2/652
Attachments: Notice letter_FSR_Tongaats_18May.docx; Response Form_Tongaats_Eng&Zulu-may2015.docx

Dear Stakeholder

**ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION, OPERATION AND
DECOMMISSIONING OF A 150 ML/DAY SEA WATER REVERSE OSMOSIS (SWRO) PLANT AND ASSOCIATED
INFRASTRUCTURE PROPOSED BY UMGENI WATER AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST**

DEA REFERENCE NUMBER: 14/12/16/3/3/2/652

Please see attached letter serving as notice of the **public comment period** on the **Final Scoping Report** for the above-mentioned project.

All comments are to be submitted via the attached comment form to the CSIR Project Manager by no later than **8 June 2015**.

Hard copies of the Final Scoping Report are also available for public viewing at the Tongaat Beach Public Library, and can also be downloaded from the CSIR's EIA project website at:
www.csir.co.za/eia/TongaatsDesalination/

Kind Regards,

Kelly Stroebe

Environmental Assessment Practitioner (EAP) Intern, Cand.Sci.Nat.
CSIR Environmental Management Services (EMS) Stellenbosch

kstroebel@csir.co.za

Tel. : 021 888 2432

Recipients: 123 Acknowledged: 1, Response Pending: 113, Undelivered: 9

108shalendra@gmail.com	Transferred
Transferred	18/05/2015 10:35
Transferred	18/05/2015 10:35
Delivered	18/05/2015 10:38
BC: 108shalendra@gmail.com	
advocacy@birdlife.org.za	Transferred
Transferred	18/05/2015 10:35
Delivered	18/05/2015 10:36
BC: advocacy@birdlife.org.za	
afromatz@telkomsa.net	Transferred
Transferred	18/05/2015 10:35
Delivered	18/05/2015 10:36
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agabriel@canegrowers.co.za	Transferred
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alfred.matsheke@kzndae.gov.za	Transferred
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BC: amafa.pmb2@mweb.co.za	
amalramharry@me.com	Transferred
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andisha.maharaj@yahoo.com	Transferred
Transferred	18/05/2015 10:35
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BC: andisha.maharaj@yahoo.com	
anju.govender@defy.co.za	Transferred
Transferred	18/05/2015 10:35
Delivered	18/05/2015 11:54
BC: anju.govender@defy.co.za	
Anneliza@nda.agric.za	Transferred
Transferred	18/05/2015 10:35
Delivered	18/05/2015 11:34
BC: Anneliza@nda.agric.za	

Annick Walsdorff	Forwarded
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Read	18/05/2015 10:49
Downloaded	18/05/2015 11:47
	19/05/2015 18:07
Forwarded	01/06/2015 08:37
BC: AWalsdorff@csir.co.za	
Anthony.Gould@dubetradeport.co.za	Transferred
Transferred	18/05/2015 10:35
Delivered	18/05/2015 10:54
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atcon@3i.co.za	Transferred
Transferred	18/05/2015 10:35
Delivered	18/05/2015 10:38
BC: atcon@3i.co.za	
bala.co@iafrica.com	Transferred
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BC: bala.co@iafrica.com	
Beiresl@kznded.gov.za	Transferred
Transferred	18/05/2015 10:35
Delivered	18/05/2015 10:37
BC: Beiresl@kznded.gov.za	
Beki.Hlatshwayo@tonga.com	Transferred
Transferred	18/05/2015 10:35
Delivered	18/05/2015 10:37
BC: Beki.Hlatshwayo@tonga.com	
bernadetp@amafapmb.co.za	Transferred
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BiancaT@L2B.co.za	Transferred
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brawheath@gmail.com	Transferred
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brendon.bosworth@gmail.com	Transferred
Transferred	18/05/2015 10:35
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Delivered	18/05/2015 10:38
BC: brendon.bosworth@gmail.com	
bryan@earthlife.org.za	Undeliverable
Transferred	18/05/2015 10:35
Undeliverable	18/05/2015 10:38
BC: bryan@earthlife.org.za	

conservation@wessakzn.org.za Transferred
Transferred 18/05/2015 10:36
Delivered 18/05/2015 10:38
BC: conservation@wessakzn.org.za

Dan_afr@yahoo.com Transferred
Transferred 18/05/2015 10:35
Delivered 18/05/2015 10:37
BC: Dan_afr@yahoo.com

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Dear Stakeholder

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION, OPERATION AND DECOMMISSIONING OF A 150 ML/DAY SEA WATER REVERSE OSMOSIS (SWRO) PLANT AND ASSOCIATED INFRASTRUCTURE PROPOSED BY UMGENI WATER AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST

DEA REFERENCE NUMBER: 14/12/16/3/3/2/652

Please see attached letter serving as notice of the public comment period on the Final Scoping Report for the above-mentioned project.

All comments are to be submitted via the attached comment form to the CSIR Project Manager by no later than 8 June 2015.

Hard copies of the Final Scoping Report are also available for public viewing at the Tongaat Beach Public Library, and can also be downloaded from the CSIR's EIA project website at:

www.csir.co.za/eia/TongaatsDesalination/

Kind Regards,

Kelly Stroebe

Environmental Assessment Practitioner (EAP) Intern, Cand.Sci.Nat.

CSIR Environmental Management Services (EMS) Stellenbosch

kstroebel@csir.co.za

Tel. : 021 888 2432

APPENDIX E.3: CORRESPONDENCE FROM I&APS PRIOR TO RELEASE OF DRAFT EIA REPORT (AFTER RELEASE OF FSR)

**ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE KWAZULU-NATAL SOUTH COAST**
DEA Reference No: 14/12/16/3/3/2/652



REGISTRATION AND COMMENTS FORM

February 2015



Name: MR M. GOVENDER (VICTOR)	Telephone: 032-9415676/0716790571
Organisation: SOUTH DUNE FARM PRODUCE	Fax: 032-9415676
Designation: PARTNER	Email: VICJAY58@GMAIL.COM
Physical address: 64 SOUTH DUNE DRIVE LA MERCY	Postal address: P.O. BOX 58 DESAINAGAR 4405

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process.

YES

ALREADY REGISTERED ☒

NO

Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

Please describe any issues or concerns you think should be considered during the EIA process.

I HAVE A HOME NEXT TO THE PROPERTY THAT IS GOING TO BE USED
FOR THIS PROJECT. WHAT WOULD HAPPEN TO THE VALUE OF THIS
PROPERTY? HOW WOULD WE BE EFFECTED?

Please provide details of any other individuals or organisations that should be involved:

Please submit this **Registration & Comments Form** to:

Mrs. Annick Walsdorf

CSIR
P.O. Box 320
Stellenbosch, 7599
Tel: (021) 886 2661
Fax: (021) 886 2473
Email: awalsdorf@csir.co.za

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST
DEA Reference No: 14/12/16/3/3/2/652



REGISTRATION AND COMMENTS FORM

May 2015



Names: MARLENE NAIDOO	Telephone: 032 9143 1073
Organisation: SHALIMAR GARDENS	Fax:
Designation: CHAIRPERSON	Email: Marlene.Naidoo@gb.co.za
Physical address: SHALIMAR GARDENS PARK AVENUE DESAINAGAR 4405	Postal address: P.O. BOX 175 DESAINAGAR 4405

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process

YES

NO

Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

PERSONAL & BUSINESS

Please describe any issues or concerns you think should be considered during the EIA process

- 1) DESALINATION PLANT REQUIRES VAST ENERGY POWER, WITH ENERGY CRISIS AT THE MOMENT, IT IS NOT ENERGY EFFICIENT TO HAVE A DESALINATION PLANT.
 - 2) CHEMICALS NEED TO STORED AT THE PLANT. HAZARDOUS TO US LIVING IN THE AREA. POLLUTION EMITTED BY THE PLANT.
 - 3) NEGATIVE IMPACT ON OUR PROPERTY VALUES. NO PERSON WANTS TO LIVE NEAR AN INDUSTRIAL PLANT
- Please provide details of any other individuals or organisations that should be involved:
- 1) DESAINAGAR RATE PAYERS ASSOCIATION
 - 2) SEATIDES RATE PAYERS ASSOCIATION

Please submit this Registration & Comments Form to:

<p>Annick Walsdorff CSIR P O Box 320, Stellenbosch, 7599 Tel: 021 888 2589 Fax: 021 888 2473 E-mail: awalsdorff@csir.co.za Website: www.csir.co.za/eia/TongaatDesalination/</p>
--

Annick Walsdorff - FW: Desalination Project Tongaat

From: "Cindy Bogan" <cindybogan@wakefields.co.za>
To: <kmoodley1@csir.co.za>
Date: 29/05/2015 15:21
Subject: FW: Desalination Project Tongaat
Attachments: image001.jpg; image002.jpg; image003.jpg; image004.jpg; image005.jpg; image006.jpg; image007.jpg



Good day Sir,

We had the pleasure of having Dr Hugo van Zyl in our office yesterday discussing this proposal. It was very informative, & also very entertaining as a number of my brokers live that side of Ballito. Would you be kind enough to include me in your database of interested parties when you send out information or updates? We sell quite regularly in that area & surrounds, so it's good for us to have the proper info when dealing with clients, especially if it goes ahead. People are only scared of what they don't know, so it would help us tremendously to be as knowledgeable as possible should prospective clients enquire.

Kind regards



Cindy Bogan
Branch Manager - Wakefields Ballito
Tel (032) 946 0030 / Fax (032) 946 0031
083 661 2782 / cindybogan@wakefields.co.za



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file:///C:/Users/awalsdorff/AppData/Local/Temp/XPgrpwisw/55688611STELLBOSPOB... 08/06/2015

Annick Walsdorff - Re: Desainagar - Desalination EIA - 24 May 2015

From: Geoff D A Pullan <geoffpullan@iafrica.com>
To: Annick Walsdorff <AWalsdorff@csir.co.za>
Date: 26/05/2015 17:58
Subject: Re: Desainagar - Desalination EIA - 24 May 2015
CC: Kelly Stroebel <KStroebel@csir.co.za>, Peter Rose <roscp@iafrica.com>

Hi Annick,

The words are complete, below. Just very close to the edge of the page.

Kind regards
Geoff D A Pullan
083 6959190
Support Blue Flag Beaches

On 25 May 2015, at 11:18 AM, Annick Walsdorff <AWalsdorff@csir.co.za> wrote:

Many thanks Geoff.

Can I please ask you to resend the email or scan your comment form and attach to the email as I cannot read the entire comment forms.... the beginning of each line is hidden

Many thanks
Regards
Annick

>>> "Geoff D A Pullan" <geoffpullan@iafrica.com> 24/05/2015 16:10 >>>
Hi Annick,

Herewith my comments.

**ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND OPERATION A SEA WATER
REVERSE OSMOSIS (DESALINATION) PLANT AND ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE
KWAZULU-NATAL NORTH COAST
DEA Reference No: 14/12/16/3/3/2/652**

REGISTRATION AND COMMENTS FORM

May 2015

Name: Geoff D A Pullan	Telephone: 083 6959190
Organisation: eThekwinl	Fax:
Designation: dlr	Email: geoffpullan@iafrica.com
Physical address: 82 North Beach Rd Westbrook Beach	Postal address: -
Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process	
YES X	NO

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Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:
None
Please describe any issues or concerns you think should be considered during the EIA process:
Cost of electricity to run the plant
Availability of electricity
Alternative of a dam on Illovo River
Please provide details of any other individuals or organisations that should be involved:

Please submit this *Registration & Comments Form* to:

Annick Walsdorff
CSIR
P O Box 320,
Stellenbosch, 7599
Tel: 021 888 2589
Fax: 021 888 2473
E mail: awalsdorff@csir.co.za
Website: www.csir.co.za/eia/TongaatDesalination/

Kind regards
Geoff D A Pullan
083 6959190
Support Blue Flag Beaches

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The full disclaimer details can be found at <http://www.csir.co.za/disclaimer.html>.

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**Annick Walsdorff - Coastwatch Comment: Final Scoping Report: DEA REFERENCE
NUMBER: 14/12/16/3/3/2/652**

From: "Carolyn" <afromatz@telkomsa.net>
To: mrabothata@environment.gov.za
Date: 08/06/2015 14:06
Subject: Coastwatch Comment: Final Scoping Report: DEA REFERENCE NUMBER:
14/12/16/3/3/2/652
Cc: galefra@mweb.co.za; swavv@mweb.co.za; hemsonc@gmail.com;
margaret@burger...
Attachments: image001.jpg; image003.jpg

Mrs M Rabothata

Department of Environmental Affairs

EIA Ref: 14/12/16/3/3/2/652 Proposed Tongaat Sea Water Reverse Osmosis Plant


Comment on the Final Scoping Report:

At this point of the environmental assessment for the operation of the proposed desalination plant Coastwatch is concerned about the effects of brine disposal, for which a Coastal Waters Discharge Permit will be required should environmental authorisation be granted. For the purpose of this Permit marine dispersal studies will be required and it does not seem that the Marine Ecology specialist study (section 6.5.3) will address this aspect.

Coastwatch believes that all studies relevant to the construction and operation of the plant need to be considered as part of a single assessment and Terms of Reference for all relevant studies provided.

Within the eThekweni precinct Coastwatch works in collaboration with WESSA, Durban Branch, and Birdlife Port Natal and the organisations are included in this correspondence.

Carolyn Schwegman

 **Coastwatch KZN 135-408 NPO**
afromatz@telkomsa.net
P O Box 343 Pennington 4184
Tel: +27 (0) 33 9252147
Cell: +27 (0) 83 981 4814
Fax/Email: +27 (0) 86 725 1884

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agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

F 033 342 8782

DAFF

Ms N. Sonrangane

T 033 392 7738

Forestry Regulations & Support

08 June 2015

e: Nandipha.Sanda@aff.gov.za

P/Bag X9029

Pietermaritzburg

3200

CSIR Environmental Management Services

PO, Box 320

Stellenbosch

7599

Attention: Annicks Walsdorff

**COMMENTS FOR THE FINAL SCOPING REPORT (FSR) FOR THE PROPOSED
CONSTRUCTION, OPERATION AND DECOMMISSIONING OF A 150ML/DAY
SEA WATER REVERSE OSMOSIS (SWRO) PLANT AND ASSOCIATED
INFRASTRUCTURE AT TONGAAT KWAZULU NATAL. DEA REFERENCE NO:
14/12/16/3/3/2/652**

The Department of Agriculture, Forestry and Fisheries (DAFF) appreciates the opportunity given to review and comment on the DSR received in the 29th of May 2015 for the above mentioned development.

The department acknowledges that the concerns and requirements outlined in the comments previously issued, dated 19/05/2014 and 29/10/2014 have been incorporated and addressed in the FSR. The response to these comments indicate that "the presence of species of conservation significance and the potential impacts of the proposed development on nearby natural coastal and/or dune forest(s) will be assessed further as part of the terrestrial ecological study (TES)". The summary of the TES provided in the FSR indicates that affected environments within the project area include Coastal dune and beach environment. Furthermore, in some area secondary vegetated areas show successional return to a forest

structure. These factors will be further investigated in the Draft Environmental Impact Assessment Report (DEIAR). Therefore, the Department will further comment upon receipt and review of the DEIAR.

This letter does not exempt you from considering other environmental legislations.

Should any further information be required, please do not hesitate to contact this office.

Yours faithfully

N. Sontengane



Forestry Regulations & Support – KZN

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST
DEA Reference No: 14/12/16/3/3/2/652



REGISTRATION AND COMMENTS FORM

May 2015



Name: R Rawheath	Telephone: 0824578011
Organisation: La Mercy Resident's Action Group	Fax: 0865625553
Designation: General Coordinator	Email: lamercyactiongroup@gmail.com
Physical address: 27 Ahmedys Street La Mercy	Postal address: P O box 1176 La Mercy 4405

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process

No	Already Registered	yes
----	--------------------	-----

Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

Yes the La Mercy Community is affected and I as a ratepayer am an affected party

Please describe any issues or concerns you think should be considered during the EIA process

La Mercy Residents Action Group has opposed this development from the beginning and will continue to do so as long as it takes. We have put out a series of documents that explain our objections. Some of these are contained in the Scoping Report.

A summary is contained in this attachment which is a Power Point Presentation Paper delivered at an Environmental conference last year.

The main points we want to highlight here are the following.

- The CSIR is a Public Funded Company. It will not be perceived as objective in this matter because it was appointed by Umgeni Water which is also a Public funded body. We have reason to believe that the two previous project managers Mr. Moodley and Mr. Bando both withdrew for this reason. The opposers of the development do not feel confident that only the most independent investigators will be appointed to investigate the feasibility of the development as CSIR may be constrained to favour the Proposer which will be paying for the EIA and EIR. Umgeni Water was not open and transparent when the process was started to enable the affected communities to participate when the process was in its planning stages.
- Recent reports (North Coast Courier 5 June 2015) that Umgeni Water failed to deliver on its promise of 8 to 12 million litres of water per day to Hazelmere Dam by means of an emergency pipeline costing R38million, confirms our fears that it will not be capable of undertaking a R20Billion desalination project in the near, or midterm. In the current depressed state of our economy, a substantial budget allocation to fund a project that is currently unlikely to be beneficial to the affected communities is much too risky for the taxpaying community.
- In an editorial page report by a councillor and eThekweni executive member, Z Mncwango (Sunday Tribune 31 May 2015) it is noted that the municipality is due to spend R4.1billion on bulk water purchases. Of this 38 percent is lost due to bad planning of the maintenance budget and massive under spending on sanitation and solid waste.
- According to "Corruption Watch" a feature column in the Sunday Times dated 31 May 2015, "Among other important obligations the board of directors of a public entity, a parastatal such as Eskom, SABC, Telkom etc." and **Umgeni Water** (our emphasis) must take effective and appropriate steps to prevent fruitless and wasteful expenditure – defined in the Public Finance Management Act as "expenditure which was made in vain and would have been avoided had

<p>reasonable care been exercised".</p> <ul style="list-style-type: none"> Section 195 of the Constitution requires public enterprises to promote the efficient and economic use of resources. La Mercy Action group objects to the construction of a desalination facility in our residential space because this will be wasteful expenditure. Local government, Umgeni Water and consumer communities must work together to find cost effective and environmentally considerate alternative ways to meet the demand for fresh water instead of rushing headlong into proposals, investigations, assessments and reports that will long before approval stage cost the taxpayer a huge sum of money and resources. We are of the view that this EIA process must be halted immediately to avoid running up further costs. An urgent priority for the province should be the proper housing of the large number of people living in informal settlements around the area of the proposed development. Finding residential space for housing developments in a residential zone makes more economic sense than trying to convert a residential area into an industrial zone to put up a desalination facility that has no economic value for this community and still leaves people without shelter and sanitation.

<p>Please provide details of any other individuals or organisations that should be involved:</p> <p>Ethekwini Municipality Engineering services, Environment, Energy, Planning, Housing Economy and Tourism</p> <p>KwaZulu Natal Human Settlements.</p>

Please submit this *Registration & Comments Form* to:

<p>I-ENVIRONMENT, KWEMBONI YE</p>	<p>Annick Walsdorff CSIR P O Box 320, Stellenbosch, 7599 Tel: 021 888 2589 Fax: 021 888 2473 E-mail: awalsdorff@csir.co.za Website: www.csir.co.za/eia/TongaDesalination/</p>	<p>ISEBENZISA TONGATI,</p>
 <p>our future through science</p>	<p>IFOMU LOKUREJISTA NOKUBEKA UMBONO</p> <p>May 2015</p>	 <p>WATER · AMANZI</p>

Igama:	Inombolo yocingo:
Inhlango:	Fax:
Isikhundla:	Email:
Ikheli lendawo:	Ikheli leposi:

**ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST**
DEA Reference No: 14/12/16/3/3/2/652



REGISTRATION AND COMMENTS FORM

May 2015



Name: B Rawheath	Telephone: 0823754735
Organisation: La Mercy Resident's Action Group	Fax: 0865625553
Designation: Adviser	Email: lamercyactiongroup@gmail.com
Physical address: 27 Ahmedys Street La Mercy	Postal address: P O box 1176 La Mercy 4405

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process

YES	Already Registered	NO
------------	--------------------	-----------

Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

Yes the La Mercy Community is affected and I as a ratepayer am an affected party

Please describe any issues or concerns you think should be considered during the EIA process

LaMRAG is and has been since the outset opposed to Umgeni Water's proposal to install and operate a Desalination plant in Tongaat at La Mercy Beach. Our comprehensive objections are on record but if the process advances to the next phase we will be obliged to appoint our own independent consultants to investigate the various points of objections and submit reports accordingly.

However, our thinking is and we have maintained that the whole EIA process is an unnecessary expense at this stage and should be halted now rather than later. All the directly involved entities, CSIR, Umgeni Water, eThekweni and Ilembe are funded by the public and should be processing EIAs responsibly and without spending tax monies wastefully. The Scoping report clearly indicates at least latterly that Desalination is only an alternative option proposal to various other water supply projects that are already being undertaken: one or two are likely to be supplying fresh water within the next year or two. It seems too that for the short term the Hazelmere Dam Raising project is being resumed.

In recent meetings Umgeni Water is on record having said that Desalination is only an option and a long term one if at all it is approved. Under the circumstances it is not cost effective to fully investigate and explore the ramifications of the feasibility of the proposal at every level at this time. This is a highly complex, intensive and extensive investigation without similar precedent anywhere else in the world.

It is unrealistic to hope that the region's economy which is in the throes of recession to cope with funding projects that will cost taxpayers Billions. The last census shows clearly that most people living here are impoverished. They will not benefit from this facility.

Why should the EIA project proceed any further and seek certification and approval from so many entities at great cost when the likelihood of it being approved is minimal for implementation in the short or medium term? If approval is given now and implementation does not take place soon, the process will have to begin afresh at further cost than as the EIR would have expired. We are of the view that if the process is halted now until all other water supply projects have been completed then reassessment and re-evaluation of the proposal may be appropriate.

If the EIA is finally approved by the authorities our communities will appeal against the decision. (The trail of objections in the Scoping Report refers) The matter will be tied up in court or arbitration for some time.

In order to save costs all round LaMRAG recommends that the process be halted at this stage after comment on the Scoping Report

Please provide details of any other individuals or organisations that should be involved:
Ethekewini Municipality

Please submit this *Registration & Comments Form* to:

i-ENVIRONMENT,
KWEMBONI YE



Annick Walsdorff
CSIR
P O Box 320,
Stellenbosch, 7599
Tel: 021 888 2589
Fax: 021 888 2473
E-mail: awalsdorff@csir.co.za
Website: www.csir.co.za/ela/TongaatsDesalination/

IFOMU LOKUREJISTA NOKUBEKA UMBONO

May 2015

SEBENZISA
TONGATI,



Igama:	Inombolo yocingo:
Inhlangano:	Fax:
Isikhundla:	Email:
Ikheli lendawo:	Ikheli leposi:

Bonakalisa uma ufuna ukurejistwa njengeqembu labathintekile. Ukurejista kuyadingakala umufuna ukuthola ulwazi olubanzi mayela nalenqubo ye-EIA.

YEBO	CHA
Bonakalisa uma udinga ukwazi (mayelana be-biznisi, okwezemali, okuphathelelane nawe, noma okunye) ngocelo le-environmental authorisation:	



SUSTAINABLE DEVELOPMENT & CITY ENTERPRISES
Development Planning, Environment & Management Unit

166 R F Masingo Road, Durban, 4001
P O Box 680, Durban, 4000
Tel: 031 311 1111, Fax: 031 311 7776
www.durban.gov.za

Our Ref.: (21/11) DPM/EIA 6483(N)
DEA Ref: 14/12/16/3/3/2/652
Enquiries: Mrs D. van Rensburg
Telephone: 031 - 3117136

CSIR
P.O. Box 17001
Durban
4013

2015-07-13

2015-07-13



Attention: Kelly Stroebel

Dear Sir/Madam,

**RE: FINAL SCOPING REPORT FOR THE PROPOSED CONSTRUCTION,
OPERATION AND DECOMMISSIONING OF A SEA WATER REVERSE OSMOSIS
PLANT AND INFRASTRUCTURE PROPOSED AT TONGAAT.**

With reference to the abovementioned Final Scoping Report please be advised that various Municipal Departments have had sight of the proposal and the following comments are submitted for your attention:-

2015-07-13

1. eThekweni Electricity Department.

The Electricity Department has no objection to the plant however the construction of the pipelines would have to be sent to this Department as there are planned lines, cables and substations in this area.

Further, please note:

- 1.1. The applicant must consult eThekweni Electricity's mains records (held in the drawing office at eThekweni Electricity Headquarters, 1 Jelf Taylor Crescent, for the presence of underground electrical services. In addition should any overhead line and/or servitude be affected, the specific permission of the Head of Electricity must be sought regarding the proposed development.
- 1.2. The relocation of MV/LV electrical services, if required in order to accommodate the proposed development, will be carried out at the expense of the applicant.

2. Environmental Planning and Climate Protection Department.

No further comment received.

3. Parks Department.

No further comment received.

4. Land Use Management Branch.

No further comment received.

5. Framework Planning Branch.

The Framework Planning Branch has assessed the proposal and raises no objections as the proposed Tongaat desalination facility would resolve the bulk water capacity limitations or shortages in the Northern area of the Municipality.

6. Economic Development Unit.

No further comment received.

7. Environmental Health Department.

The Health Comments made in response to the Background Information Document and the Draft Scoping Report have been included in the present report. The following additional comments are submitted:

7.1. Water Quality

Please include the SANS Guidelines 241- 1 and 2 – 2011 under the National and International Guidelines heading in Chapter 4 page 4-13.

7.2. Noise Pollution

Please indicate whether the noise study will include recommendations on noise attenuation measures and architectural design parameters to abate potential noise during the construction and operational phases of the plant.

It is not certain whether back-up generators will be installed at the plant. Should this be the case, then noise impacts from these must also be included in the study.

8. eThekweni Transport Authority.

No further comment received.

9. **Geotechnical Engineering Branch.**

No further comment received.

10. **Coastal, Stormwater and Catchment Management.**

This Department has no objection.

11. **eThekweni Water and Sanitation Department.**

This Department can only provide a comment once the sewer disposal plant details have been provided.

12. **Durban Solid Waste.**

This Department has no requirements for this proposal.

13. **Disaster Management.**

No objection from Disaster Management.

14. **Fire Safety.**

This Department has no objections to the above proposal provided that building plans are submitted for approval.

Should you seek clarification on any of the above issues, please contact the writer on telephone: 031 - 3117136 or via e-mail: diane.vanrensborg@durban.gov.za. In addition, the Department requests that a copy of the Environmental Authorisation be emailed to the same address.

Yours faithfully



**ACTING HEAD: DEVELOPMENT PLANNING, ENVIRONMENT AND
MANAGEMENT**

Copy To:

Department of Environmental Affairs
Private Bag X447
Pretoria
0001

3



**Development Planning, Environment & Management Unit
Environmental Planning & Climate Protection Department**

166 K, E. Masinga Road, Durban, 4001
PO Box 680, Durban, 4008
Tel: 031 311 7875
Fax: 031 311 7184
Deputy Head: Dr D. Roberts

Enquiries: Greg Mullins
Greg.Mullins@durban.gov.za
031 322 4560

Reference: EIA/821

Final Scoping Report

To: Diane Van Rensburg
Tel:
Email: diane.vanrensburg@durban.gov.za

DPM/EIA 646 (N) – Final Scoping Report – Proposed Desalination Plant and associated infrastructure - Tongaat.

The Final Scoping Report prepared for proposed desalination plant project has been assessed and the following comments have relevance:

- This Department has reviewed the responses provided in the report to the concerns raised during the draft scoping report circulation. For the most part, this Department acknowledges the responses to the issues raised and the method of incorporation into the Environmental Impact Assessment (EIA).
- The following issue has still not been addressed to the satisfaction of this Department:
 - As previously detailed, the pipe reticulation network will cross or be in close proximity to a variety of wetland habitats in order to connect to existing infrastructure. Specifically, the La Mercy to Waterloo pipeline will cross the Mloti Estuary (adjacent to the N2 freeway) and as such this Department is still of the opinion that an assessment of the potential impact on that system must be included in the EIA. An assessment or suitably considered statement as to the potential impacts must be conducted as part of the EIA.

This Department will continue to engage as part of the Environmental Impact Assessment submission.

Yours Sincerely

CHUMISA THENGWA
Manager: Biodiversity Impact Assessment
Grade 1 Environmental Management Inspector
Environmental Planning and Climate Protection Department
Date: 25/06/2015

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST
DEA Reference No: 14/12/16/3/3/2/652



REGISTRATION AND COMMENTS FORM

May 2015



Name: Allan Childs	Telephone: 0317652675
Organisation: Envirowest	Fax: 0317652675
Designation: Member	Email: atcon@3i.co.za
Physical address: 14A Chapel Road, Botha's Hill.	Postal address: 14A Chapel Road, Botha's Hill, 3610

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process

YES

Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

No

Please describe any issues or concerns you think should be considered during the EIA process

The proposed reverse osmosis process is very expensive to install and operate. Whereas it works technically in that it purifies water it produces very little compared with the volume processed, the majority being discharged as effluent.

A much better process in that of electrodialysis. Recent developments of this relatively new process claim that it is much cheaper to install and operate and produces a much higher percentage of pure water and much less effluent.

Please provide details of any other individuals or organisations that should be involved:

Please submit this *Registration & Comments Form* to:

Annick Walsdorff - Re: Re: DPM/EIA 646A(N): FW: Desalination Plant Proposal by Umgeni Water / La Mercy Residents Action Group Objections

From: La Mercy Residents Action Group <lamercyactiongroup@gmail.com>
To: Annick Walsdorff <AWalsdorff@csir.co.za>
Date: 11/05/2015 11:32
Subject: Re: Re: DPM/EIA 646A(N): FW: Desalination Plant Proposal by Umgeni Water / La Mercy Residents Action Group Objections
CC: Paul Lochner <PLochner@csir.co.za>, KAMTHA SINGH <singhkamtha@gmail.com>...

Good Morning Annick,

Thanks for the reply.

Our position must be made clear for the record whether or not CSIR engages with our concerns. It is particularly important that the authority to whom the final EIR is submitted for consideration is made aware of the challenges we as an under - resourced civic body encountered in dealing with the power of a Mega City such as eThekweni and a major para - statal body that is Umgeni Water. Hence the lack of balance of power is a pertinent issue when people challenge bad development proposed by the state or corporations. We need to document these here and now lest at some stage later it is argued by any party that these were not raised in good time. As an environmental legal adviser I have to ensure that our organisation works not only with narrow environmental regulations but broadly under constitutional legal principles. It will be appreciated if this conversation is embodied in the appropriate documentation.

That said it will be appreciated if the Scoping Report that is about to be released be emailed to us at your earliest convenience.

LaMRAG Greetings
Betty Rawheath
Adviser

On Mon, May 11, 2015 at 10:22 AM, Annick Walsdorff <AWalsdorff@csir.co.za> wrote:

Dear Betty,

In responses to your further email of 04 May 2015, I have discussed your request for further telephone consultation with our EIA project leader.

In terms of the comments period for the draft scoping report, as you know, the draft scoping report for the proposed desalination plant at Tongaat was released on 10 September 2014 for public comment. Thereafter, in February 2015, we released a letter that conveyed that a second public commenting period on the draft scoping report was provided, to allow for further engagement with the I&APs. This second commenting period was closed on 24 March 2015. Note that the draft scoping report had not changed from the first to the second comments period. The time provided for the public to comment on the draft scoping report was therefore well in excess of the requirements specified in the EIA Regulations.

From a public participation perspective (and in accordance with the requirements as set out in the 2010 NEMA EIA Regulations and its amendments), all the legal requirements in terms of public announcement and review of the draft scoping report have been met and we are now moving into the completion of the final scoping report phase. Please kindly refer to Appendix C of the Final Scoping Report (which will be released next week) for proof of all the public participation steps undertaken to date, which are in compliance with the principles of a transparent public participation process, as outlined in the 2010 NEMA EIA Regulations and its associated amendments.

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We are therefore not in a position to be able to proceed with further telephone discussions on the draft scoping report.

We wish to confirm that your concerns (such as those raised in your email of 04 May 2015), when within the scope of work of this EIA, will be incorporated and responded to during the public review period on the draft EIA report. The next public commenting period for this project will be upon the release of the draft EIA report, at which stage we plan to hold an additional public meeting.

Our commitment as the EAP is to conduct a credible and legitimate process in terms of the EIA Regulations. If there are issues of "distrust" between LaMRAG and the applicant or municipality which are beyond the scope of this EIA process, these are outside the responsibilities of the EAP and the EIA process.

We look forward to further engagement with LaMRAG at the designated public participation periods in the future and commit to addressing all project related concerns to the best of our ability in line with our duties and responsibilities.

Kind Regards

Annick

Principal Environmental Assessment Practitioner

EMS - CSIR

Consulting and Analytical Services

Tel: +27 21 888 25 89/2561

Fax: +27 21 888 26 93

>>> lamercyactiongroup <lamercyactiongroup@gmail.com> 04/05/2015 11:36 >>>

Dear Annick,

Thank you for the reply. It is much appreciated.

However, I would rather discuss some of these directly with you. Please schedule an appointment by telephone for a suitable time at your earliest convenience. I believe that the residents of the affected areas have some justification for distrusting the Proposers of the Desalination facility. This issue has not been dealt with at any of the meetings nor is it properly addressed in the draft scope.

Besides, there are a few other issues relating to the specialist investigation on the marine impact that we need some clarity on.

We look forward to holding this telephonic discussion some time soon.

Kind Regards

Betty Rawheath

LaMRAG Adviser

Sent from Samsung tablet

----- Original message -----

From: Annick Walsdorff <AWalsdorff@csir.co.za>

Date: 04/05/2015 10:05 (GMT + 02:00)

To: La Mercy Residents Action Group <lamercyactiongroup@gmail.com>

Cc: Kelly Stroebe <K5troebel@csir.co.za>

file:///C:/Users/awalsdorff/AppData/Local/Temp/XPgrpwise/5550936ASTELLBOSPOB... 08/06/2015

Subject: Re: Re: DPM/EIA 646A(N): FW: Desalination Plant Proposal by Umgeni Water / La Mercy Residents
Action Group Objections

Dear Betty,
Many thanks for your email.
Please find below our responses.
Kind Regards
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: +27 21 888 26 93

>>> La Mercy Residents Action Group <lamercyactiongroup@gmail.com> 29/04/2015 00:01 >>>
Dear Annick,

We trust you are well.

You are probably aware that LaMRAG has been invited by Acer Africa Environmental Consultancy to a Focus Group Meeting with regards to a SIA that is being undertaken.
We are a little uncertain at this time where this SIA fits in the EIA process that we know is still in the Draft Scoping Phase. Duncan Keal from Acer informs us that the SIA is being done for the EIA and not for the Draft Scoping Report. So please clarify this issue.
The SIA is being undertaken as part of the EIA process which includes a scoping phase and an impact assessment phase. All specialist studies are currently being carried out as part of this overall process. Potential impacts in the various field of studies will be assessed as part of the specialist studies. We do not undertake specialist studies as part of the draft or final scoping report. Note that we are in the process of releasing the Final Scoping Report, following public review of the Draft Scoping Report (first commenting period in September/October 2014 and second commenting period in February/March 2015).
We also need to know further about your Marine Environmental Specialist. Who he or she is and what phase is this specialist involved with. Is there a focus group meeting with the marine and coastal environmental specialist? Will this be an independent EAP?
The marine specialist is Dr Andrea Pulfrich from Pisces Environmental Services (please refer to the Draft Scoping report, Chapter 1, Section 1.6 EIA Team for specialists details). Yes, Dr Pulfrich is an independent specialist. All specialists are signing declarations of independence, which will be included in the draft EIA report.
The specialist study is being undertaken and all issues raised during the public meetings and during the commenting periods on the draft scoping report have been forwarded to the specialist for inclusion in their studies. The results of those studies will be included in the draft EIA report. There are no focus group meetings planned with the specialists. Issues are to be raised during the commenting periods on the various reports and during public meetings. Only the Social specialist will generally arrange for meetings with key I&APs.
We are also of the view that an economics specialist's input will be required at some stage since I believe that a CBA is critical. The costing done for the previous draft scope was bare and superficial to say the least. We understand that this was a preliminary report. However, the economics are such an important matter that more attention ought to have been given to it at the earliest possible time, at least the same level of attention given to the technical report and the environmental reports.
A socio-economic study has been planned as part of this EIA as mentioned in the Draft Scoping report.

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Chapter 1, Section 1.6 EIA Team. Also Refer to Chapter 6 of the DSR, Section 6.5.9 for the Terms of References of the socio-economic study.

We are still concerned about the independence and transparency issues. CSIR and Umgeni water are both state funded institutions. We do not question your integrity however in a court of law, not only must an entity be independent in all its actions but also seen to be so. How do you propose to ensure the credibility and integrity of your investigations and assessments?

The CSIR was appointed as the **independent** environmental assessment practitioner (EAP) to conduct the EIA following a competitive tender process as was released by Umgeni Water (Tender No. 2012/206). It should also be noted that in terms of Regulation 17 of the EIA Regulations, the EAP has no business, financial or other interest in the proposed activity other than fair remuneration for work performed, and that there are no circumstances that compromise the objectivity of the EAP. As previously mentioned, the EAP is an individual, not an organisation. Therefore, whilst there exists an employer/employee relationship between the CSIR and the EAP, the EAP was appointed as such due to his being independently certified and duly registered EAP, and not the CSIR. In addition, the EAP has signed a declaration of independence as an EAP and his signing of such a declaration is supported by the fact that he is certified and registered with EAPASA as a qualified EAP in his personal capacity.

We notice that the previous Project Managers were dismissed rather abruptly. CSIR has not yet revealed the reasons for this. Hence I believe we are justified in questioning CSIR's transparency.

Ismail and Kavandren have not been dismissed. They requested a transfer from our group and have moved to another department within the CSIR. This was announced at the last public meeting.

We have been communicating with you for a while now. We are still not confident that our concerns and objections are being heeded. Before we move this process forward please find a way to address these matters that are important to us. We also believe that the authorities from whom the proponents seek approval will regard them as important also.

As previously mentioned, your concerns are duly noted and have been incorporated in the issues and responses trail (Chapter 5 of the Draft Scoping and Final Scoping Report). You will note that some of your concerns (e.g. alternative sources of water and concerns related to strategic planning and municipality infrastructure) are unfortunately out of the scope of this EIA which only covers the proposed desalination plant). We recommend that you take up those concerns directly with the relevant authorities. We would recommend LaMRAG to present them alternative ways of ensuring adequate water supply for residents. All issues falling within the scope of this EIA have been (as part of the Scoping Report) or will be (as part of the EIA report) responded to. Please keep in mind that the proposed desalination plant is only ONE option that Umgeni is considering for bulk water supply. The preferred option remains the uMkhomazi Project.

We look forward to an open and frank discussion with CSIR on the above concerns and several more. When can we do this?

As mentioned in my email dated 5 March 2015, the next focus group meeting with LaMRAG would have to take place during the public commenting period of the draft EIA report, which we are anticipating would be around July/August 2015. We hope that at that stage, most of your concerns falling within the scope of work of this EIA would have been addressed as part of the various specialist studies in the draft EIA report.

LaMRAG Greetings
Betty Rawheath
Adviser

On Fri, Mar 6, 2015 at 11:29 AM, Annick Walsdorff <AWalsdorff@csir.co.za> wrote:

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Annick Walsdorff - Fwd: Re: EIA for proposed SWRO plant and associated infrastructure in Tongaat, KZN - Ref: 14/12/16/3/3/2/652

From: Annick Walsdorff
To: vanessa.maclou@kzndard.gov.za; yugosini.govender@kzndac.gov.za
Date: 09/11/2015 22:13
Subject: Fwd: Re: EIA for proposed SWRO plant and associated infrastructure in Tongaat, KZN - Ref: 14/12/16/3/3/2/652
Cc: natasha.brijlal@kzndard.gov.za

Good morning Natasha/Vanessa,

Any progress on query below?

Many thanks
Regards
Annick

>>> "VANESSA MACLOU" <VANESSA.MACLOU@kzndard.gov.za> 07/10/2015 15:42 >>>
Hi

Natasha is on leave and will return to office next Mon.

Kind regards,

Vanessa Maclou

District Manager and Environmental Management Inspector

Environmental Services
EDTEA
eThekweni District office
Tel : 031- 3022000/979
Cell: 082 461 7668

>>> "Annick Walsdorff" <AWalsdorff@csir.co.za> 2015/10/07 11:31 AM >>>
Dear Natasha,

Please refer to below - we have the same queries for the second EIA we do - Proposed desalination plant at **Tongaat**.

I have also attached letter to I&APs with link to the FSR.

Many thanks for your assistance
Kind Regards
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR

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Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: +27 21 888 26 93

>>> Annick Walsdorff 24/08/2015 15:10 >>>
Good day,

In the absence of Ms Govender, can you please kindly assist in the matter below?

Many thanks
Kind Regards
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: +27 21 888 26 93

>>> Annick Walsdorff 24/08/2015 13:22 >>>
Good day Mrs Govender,

As a key I&AP on our database for the above mentioned project, CSIR has sent you the final scoping report for the proposed development (**Tongaati**) for comment in May 2015. As per attached FSR approval letter from National DEA (item e)), we have been requested to confirm the applicability of the following activities as part of the proposed development:

GNR456: Activities 2, 4, 10, 12, 13, 14, 16, 19 and 24 (refer to Chapter 1 of the Final Scoping Report)

<p>GN R,546 Item 2 (a) (iii) [(aa) (gg)]: The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres in the KwaZulu-Natal province, outside urban areas, in:</p> <p>(aa) National Protected Area Expansion Strategy Focus areas;</p> <p>(gg) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.</p>	<p>Two 37 500 m³ holding reservoirs located at the plant site and other product water reservoirs located offsite may be required for the proposed project. If required, the offsite holding reservoirs would be constructed outside of urban areas in an area which is seaward of the development setback line and within 1 km of the high water mark of the sea. Construction would also occur within an area which has been identified as Critical Northern Coastal Grasslands and Interior North Coast Grasslands in terms of the NPAES Threatened Ecosystems (Original extent).</p>
<p>GN R,546 Item 4 (a) (ii) [(bb) (hh)]: The construction of a road wider than 4 metres with a reserve less than 13,5 metres in the KwaZulu-Natal province, outside urban areas in:</p> <p>(bb) National Protected Area Expansion Strategy Focus areas;</p>	<p>New roads required for the proposed project may be constructed outside urban areas situated seaward of the development setback line and within 1 km of the high water mark of the sea. Construction would also occur within an area which has been identified as Critical Northern</p>

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(hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.	Coastal Grasslands and Interior North Coast Grasslands in terms of the NPAES Threatened Ecosystems (Original extent).
<p>GN R.546 Item 10 (a) (ii) [(bb) (hh)]: The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres in the KwaZulu-Natal province, outside urban areas in:</p> <p>(bb) National Protected Area Expansion Strategy Focus areas;</p> <p>(hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.</p>	<p>Chemicals such as biocides will be stored on-site for the cleaning of reverse osmosis membrane filters. At this stage it is uncertain what additional types and quantities of dangerous goods will be used during operation of the desalination plant (for water treatment). Construction of such storage facilities may occur outside urban areas situated seaward of the development setback line and within 1 km of the high water mark of the sea, and in areas which has been identified as Critical Northern Coastal Grasslands in terms of the NPAES Threatened Ecosystems (Original extent).</p>
<p>GN R.546 Item 12 (c): The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, within the littoral active zone or 100 metres inland from high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line or even in urban areas.</p>	<p>The proposed desalination plant and supporting infrastructure would require an area greater than 300 m² to be cleared of vegetation. Given the fact that the desalination plant and associated infrastructure is to be primarily situated on land which is utilised for agricultural practices it is not certain as to whether 75% of the vegetation to be cleared would constitute indigenous vegetation. Should 75% of the cleared vegetation constitute indigenous vegetation this may occur within the littoral active zone or 100 m inland from high water mark of the sea within the development setback line.</p>
<p>GN R.546 Item 13 (c) (ii) [(bb) (gg)]: The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, in the KwaZulu-Natal province, outside urban areas in:</p> <p>(bb) National Protected Area Expansion Strategy Focus areas;</p> <p>(gg) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.</p>	<p>The proposed desalination plant and supporting infrastructure would require an area greater than 1 Ha to be cleared of vegetation. Given the fact that the desalination plant and associated infrastructure is to be primarily situated on land which is utilised for agricultural practices it is not certain as to whether 75% of the vegetation to be cleared would constitute indigenous vegetation. Should 75% of the cleared vegetation constitute indigenous vegetation this may occur within an area which has been identified as Critical Northern Coastal Grasslands and Interior North Coast Grasslands in terms of the NPAES Threatened Ecosystems (Original extent), areas seaward of the development setback line or within 1 km of the high water mark of the sea.</p>

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<p>GN R,546 Item 14 (a) (i): The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation in all areas outside urban areas in the KwaZulu Natal province.</p>	<p>The proposed desalination plant and supporting infrastructure may require an area of land greater than 5 Ha in total to be cleared of vegetation. Given the fact that the desalination plant and associated infrastructure is to be primarily situated on land which is utilised for agricultural practices it is not certain as to whether 75% of the vegetation to be cleared would constitute indigenous vegetation. Should 75% of the cleared vegetation constitute indigenous vegetation this would occur outside urban areas.</p>
<p>GN R,546 Item 16 (i) (iii) (iv), [(a) (ii) (bb) (ii)]: The construction of:</p> <ul style="list-style-type: none"> (i) jetties exceeding 10 square metres in size; (iii) buildings with a footprint exceeding 10 square metres in size; or (iv) Infrastructure covering 10 square metres or more, where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line, in the KwaZulu-Natal province, outside urban areas, in: <p>(bb) National Protected Area Expansion Strategy Focus areas;</p> <p>(ii) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.</p>	<p>Pipeline infrastructure carrying potable (product) water from the desalination project into the existing water supply system may traverse watercourses in the region. The construction of new supporting infrastructure exceeding 10 m² may be required within 32 m of a watercourse to accommodate such crossings. Such construction may occur outside urban areas in areas which have been identified as Critical Northern Coastal Grasslands and Interior North Coast Grasslands in terms of the NPAES Threatened Ecosystems (Original extent), in areas seawards of the development setback line or within 1 km from the high water mark of the sea.</p>
<p>GN R,546 Item 19 (a) (ii) [(bb) (hh) (ii)]: The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre, in the KwaZulu-Natal province, outside urban areas, in:</p> <p>(bb) National Protected Area Expansion Strategy Focus areas;</p> <p>(hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined;</p> <p>(ii) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined.</p>	<p>The proposed project may require existing roads to be widened by more than 4 m and/or lengthened by more than 1 km. This would occur outside urban areas in areas which have been identified as Critical Northern Coastal Grasslands and Interior North Coast Grasslands in terms of the NPAES Threatened Ecosystems (Original extent), in areas seawards of the development setback line or within 1 km from the high water mark of the sea, or areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse.</p>

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<p>GN R-546 Item 24 (i) (iii) (iv), [(a) (ii) (bb) (hh)]: The expansion of:</p> <ul style="list-style-type: none"> (i) jetties where the jetty will be expanded by 10 square metres in size or more; (iii) buildings where the buildings will be expanded by 10 square metres or more in size; or (iv) infrastructure where the infrastructure will be expanded by 10 square metres or more, where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line, in KwaZulu-Natal, outside urban areas, in: <ul style="list-style-type: none"> (bb) National Protected Area Expansion Strategy Focus areas; (hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined. 	<p>The establishment of pipelines and associated infrastructure proposed as part of the desalination project may require the expansion of existing jetties, infrastructure and buildings by more than 10 square metres and may be required within 32 m of a watercourse. Further investigation into these aspects of the proposed development will form part of the EIA and detailed engineering design phase. Such expansion would occur outside urban areas in areas which have been identified as Critical Northern Coastal Grasslands and Interior North Coast Grasslands in terms of the NPAES Threatened Ecosystems (Original extent), and in areas seawards of the development setback line or within 1 km from the high water mark of the sea.</p>
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Your assistance will be greatly appreciated. Looking forward receiving your inputs.

Many thanks.

Kind Regards,
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: +27 21 888 26 93

>>> "Lydia Kutu" <LKutu@environment.gov.za> 17/06/2015 12:42 >>>
Good day.

Please find herein the attached signed letter for the above mentioned.

I hope you find all in order.

Thank you.

Kind Regards,
Lydia Kutu

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Annick Walsdorff - FW: EIA for proposed SWRO plant and associated infrastructure in Lovu, KZN - Ref: 14/12/16/3/3/2/636

From: Natasha Brijlal <Natasha.Brijlal@kmdhea.gov.za>
To: Annick Walsdorff <AWalsdorff@csir.co.za>
Date: 10/11/2015 09:36
Subject: FW: EIA for proposed SWRO plant and associated infrastructure in Lovu, KZN - Ref: 14/12/16/3/3/2/636
Cc: "vanessa.maclou@gmail.com" <vanessa.maclou@gmail.com>, "vanessa.maclou@k..."

Hi Annick

I have requested this information from Ezemvelo KZN Wildlife – please see e-mail below on 16 October 2015. To date we have not received any feedback. I will try to make contact again.

You are welcome to contact Mr Dominic Wieners (e-mail below) regarding an update.

Regards,

Natasha Brijlal

00724 - 47466010 District

044 Compromised

Tel: 091 224 4525 / 091 224 4521 (sms) 1 (on) 010 101 101



Please consider the environment before printing this email. Thank you.

From: Vanessa MacLau <vanessa.maclau@gmail.com>
Sent: 10 November 2015 08:44 AM
To: Annick Walsdorff
Cc: Natasha Brijlal; vanessa.maclau@kmdhe.gov.za; yugeshni.gowanda@kmdhe.gov.za
Subject: Re: Re: EIA for proposed SWRO plant and associated infrastructure in Lovu, KZN - Ref: 14/12/16/3/3/2/636

Hi

Natasha will provide a response as this matter is not for my attention.

Warm regards,

Vanessa MacLau
District Manager
eThakwini District
082 461 7568

On 9 November 2015 at 22:14, Annick Walsdorff <AWalsdorff@csir.co.za> wrote:
Good morning Natasha/Vanessa,

Any progress on query below?

Many thanks

Regards

Annick

From: Natasha Brijlal
Sent: 16 October 2015 11:00 AM
To: 'Dominic Wieners'
Subject: Re: EIA for proposed SWRO plant and associated infrastructure in Lovu, KZN - Ref: 14/12/16/3/3/2/636

Hi Dominic

Trust you are well.

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I do understand the immense pressure you are under at the moment, but I require your assistance please. Due to the lack of GIS information at the district level, please can we get confirmation of LMS activities for the above-mentioned application.

It is a National application & they require LMS activities confirmed by province – kindly see e-mails below.

Your assistance in this regard is greatly appreciated.

Kind regards,

Natasha Briljal

DDTA - KwaZulu-Natal

DA Component

Tel: 031 328 9240 / 031 328 9401 (ext. 100000000)



Please consider the environment before printing this email. Thank you

From: Annick Walsdorff [AWalsdorff@csir.co.za]

Sent: 07 October 2015 11:25 AM

To: Natasha Briljal

Cc: vanessa.maclou@gmail.com; vanessa.maclou@kzndard.gov.za

Subject: RE: Re: EIA for proposed SWRO plant and associated infrastructure in Lova, KZN - Ref: 14/12/16/3/3/2/636

Dear Natasha,

Please find attached letter sent to all DAPs with link to the FSR report as well as the Final Scoping Report acceptance letter from DEA.

Many thanks

Kind Regards

Annick

Principal Environmental Assessment Practitioner

BMS - CSIR

Consulting and Analytical Services

Tel: +27 21 888 25 89/2661

Fax: +27 21 888 25 93

>>> Natasha Briljal <Brilja.N@kzndard.gov.za> 06/10/2015 14:08 >>>

Hi

Noted.

However, in the absence of a GIS system, we will have to liaise with Ezemvelo KZN Wildlife regarding confirmation of activities.

Kindly can you send the attachment on your earlier e-mail (as none was attached to the e-mail I received) and the link to your website for the FSR.

Regards,

Natasha Briljal

DDTA - KwaZulu-Natal

DA Component

Tel: 031 328 9240 / 031 328 9401 (ext. 100000000)



Please consider the environment before printing this email. Thank you

From: Annick Walsdorff [AWalsdorff@csir.co.za]

Sent: 06 October 2015 09:15 AM

To: Natasha Briljal

Cc: vanessa.maclou@gmail.com; vanessa.maclou@kzndard.gov.za

Subject: RE: Re: EIA for proposed SWRO plant and associated infrastructure in Lova, KZN - Ref: 14/12/16/3/3/2/636

Many thanks for your email Natasha. In the FSR approval letter from DEA, they noted the following ...

- e) The EAP must engage the relevant provincial environmental authority with regards to development in geographic areas triggering GNR 546. Activities 2, 4, 10, 12, 13, 14, 16, 19 and 24, to confirm applicability of these activities.

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This is why we contacted you. Please confirm?

Many thanks
Kind Regards
Annick

>>> Natasha Brifal <natasha.brifal@kzndard.gov.za> 05/10/2015 08:15 >>>
Dear Annick

Thank you for your e-mail.

Your application is lodged with National DEA, hence, you would need to confirm the listed activities with them as they are assessing the application and subsequently responsible for issuing the authorisation.

Regards,

Natasha Brifal
REDEA - e-bekoni District
EIA Compliance
Tel: 031 958 1000/0958 1491 (m) 076 010 0004



Please consider the environment before printing this email. Thank you.

From: Vanessa Macleou [vanessa.macleou@gmail.com]
Sent: 06 October 2015 04:25 AM
To: Natasha Brifal; Natasha Brifal
Subject: Fwd: Re: EIA for proposed SWRO plant and associated infrastructure in Lomu, KZN - Ref: 14/12/16/3/3/2/636

Hi

Re enquiry

Kind Regards

Vanessa Macleou

----- Forwarded message -----

From: "VANESSA MACLEOU" <VANESSA.MACLEOU@kzndard.gov.za>
Date: 6 Oct 2015 00:09
Subject: Fwd: Re: EIA for proposed SWRO plant and associated infrastructure in Lomu, KZN - Ref: 14/12/16/3/3/2/636
To: <vanessa.macleou@gmail.com>
Cc:

----- Forwarded message -----

From: Annick Walsdorf <AWalsdorf@csir.co.za>
To: <yugeshni.govender@kzndar.gov.za>, <natasha.brifal@kzndard.gov.za>, <vanessa.macleou@kzndard.gov.za>
Cc: Lydia Kubi <lkubi@enviroment.gov.za>, <narabothusa@environment.gov.za>
Date: Mon, 05 Oct 2015 09:18:33 +0200
Subject: Re: EIA for proposed SWRO plant and associated infrastructure in Lomu, KZN - Ref: 14/12/16/3/3/2/636
Good day Mrs Brifal,

We would like to follow up on email below.

Many thanks
Kind Regards
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel +27 21 888 75 85/2661
Fax +27 21 888 26 93

>>> Annick Walsdorf 24/08/2015 16:51 >>>

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Good day,

In the absence of Ms Govender, can you please kindly assist in the matter below?

Many thanks
Kind Regards
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: +27 21 888 26 93

>>> Annick Walsdorf 24/08/2015 13:20 >>>
Good day Mrs Govender,

As a key IBAP on our database for the above mentioned project, CSIR has sent you the final scoping report for the proposed development in February 2015. As per attached FSR approval letter from National DEA, we have been requested to confirm the applicability of the following activities as part of the proposed development:

GNR456: Activities 2, 4, 10, 12, 13, 14, 16, 18 and 24 (prior to Chapter 1 of the Final Scoping Report).

GN R.546 Item 7 (a) (i) (ii) (iii) (iv) (v): The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres in the KwaZulu-Natal province in an estuary or outside urban areas in:
(aa) National Protected Area Expansion Strategy Focus areas;
(bb) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.

A 75 000 m³ holding reservoir located at the plant site (estuarine site) and other product water reservoirs located offsite may be required for the proposed project. If required, the offsite holding reservoirs would be constructed outside of urban areas in an area which is seaward of the development setback line and within 1 km of the high water mark of the sea. Construction would also occur within an area which has been identified as Critical Southern Coastal Grasslands in terms of the NPAS Threatened Ecosystems (Original extent).

GN R.546 Item 4 (a) (i) (ii) (iii) (iv) (v): The construction of a road wider than 4 metres with a reserve less than 13,5 metres in the KwaZulu-Natal province in an estuary or outside urban areas in:
(aa) National Protected Area Expansion Strategy Focus areas;
(bb) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.
New roads required for the proposed project may be constructed in an estuarine functional zone, or outside urban areas situated seaward of the development setback line and within 1 km of the high water mark of the sea. Construction would also occur within an area which has been identified as Critical Southern Coastal Grasslands in terms of the NPAS Threatened Ecosystems (Original extent).

GN R.546 Item 10 (a) (i) (ii) (iii) (iv) (v): The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres in the KwaZulu-Natal province, in an estuary or outside urban areas in:
(aa) National Protected Area Expansion Strategy Focus areas;
(bb) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.
Chemicals such as biocides will be stored on-site for the cleaning of reverse osmosis membrane filters. At this stage it is uncertain what additional types and quantities of dangerous goods will be used during operation of the desalination plant (for water treatment). Construction of such storage facilities may occur within an estuarine zone outside urban areas situated seaward of the development setback line and within 1 km of the high water mark of the sea, and in areas which has been identified as Critical Southern Coastal Grasslands in terms of the NPAS Threatened Ecosystems (Original extent).

GN R.546 Item 12 (c): The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, within the littoral active zone or 100 metres inland from high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line or even in urban areas.
The proposed desalination plant and supporting infrastructure would require an area greater than 300 m² to be cleared of vegetation. Given the fact that the desalination plant and associated infrastructure is to be primarily situated on land which is utilised for agricultural practices it is not certain as to whether 75% of the vegetation to be cleared would constitute indigenous vegetation. Should 75% of the cleared vegetation constitute indigenous vegetation this may occur within the littoral active zone or 100 m inland from high water mark of the sea within the development setback line.

GN R.546 Item 13 (c) (i) (ii) (iii) (iv) (v): The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover

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constitutes indigenous vegetation, in the KwaZulu-Natal province, in an estuary and outside urban areas in:

(bb) National Protected Area Expansion Strategy Focus areas;

(cc) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.

The proposed desalination plant and supporting infrastructure would require an area greater than 1 Ha to be cleared of vegetation. Given the fact that the desalination plant and associated infrastructure is to be primarily situated on land which is utilised for agricultural practices it is not certain as to whether 75% of the vegetation to be cleared would constitute indigenous vegetation. Should 75% of the cleared vegetation constitute indigenous vegetation this may occur within an estuarine functional zone or outside an urban area in an area which has been identified as Critical Southern Coastal Grasslands in terms of the NPAES Threatened Ecosystems (Original extent), areas seaward of the development setback line or within 1 km of the high water mark of the sea.

GN R.546 Item 14 (a) (i): The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation in all areas outside urban areas in the KwaZulu-Natal province.

The proposed desalination plant and supporting infrastructure may require an area of land greater than 5 Ha in total to be cleared of vegetation. Given the fact that the desalination plant and associated infrastructure is to be primarily situated on land which is utilised for agricultural practices it is not certain as to whether 75% of the vegetation to be cleared would constitute indigenous vegetation. Should 75% of the cleared vegetation constitute indigenous vegetation this would occur outside urban areas.

GN R.546 Item 16 (i) (f) (iv), (a) (i) (f) (iv) (f): The construction of:

(i) jetties exceeding 10 square metres in size;

(ii) buildings with a footprint exceeding 10 square metres in size; or

(iv) infrastructure covering 10 square metres or more, where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line, in the KwaZulu-Natal province, in an estuary or outside urban areas, in:

(bb) National Protected Area Expansion Strategy Focus areas;

(ii) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.

Pipeline infrastructure proposed as part of the desalination project may traverse watercourses in the region. The construction of new supporting infrastructure exceeding 10 m² may be required within 32 m of a watercourse to accommodate such crossings. Such construction may occur in an estuary and outside urban areas in areas which have been identified as Critical Southern Coastal Grasslands in terms of the NPAES Threatened Ecosystems (Original extent), in areas seawards of the development setback line or within 1 km from the high water mark of the sea.

GN R.546 Item 19 (a) (i) (bb) (ii) (ii): The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre, in the KwaZulu-Natal province, in an estuary or outside urban areas, in:

(bb) National Protected Area Expansion Strategy Focus areas;

(ii) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined;

(i) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined.

The proposed project may require existing roads to be widened by more than 4 m and/or lengthened by more than 1 km. This would occur in an estuarine functional zone or outside urban areas in areas which have been identified as Critical Southern Coastal Grasslands in terms of the NPAES Threatened Ecosystems (Original extent), in areas seawards of the development setback line or within 1 km from the high water mark of the sea, or areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse.

GN R.546 Item 24 (i) (iv), (a) (i) (iv) (bb) (ii): The expansion of:

(i) jetties where the jetty will be expanded by 10 square metres in size or more;

(ii) buildings where the buildings will be expanded by 10 square metres or more in size; or

(v) infrastructure where the infrastructure will be expanded by 10 square metres or more, where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line, in KwaZulu-Natal, in an estuary or outside urban areas, in:

(bb) National Protected Area Expansion Strategy Focus areas;

(ii) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.

The establishment of pipelines and associated infrastructure proposed as part of the desalination project may require the expansion of existing jetties, infrastructure and buildings by more than 10 square metres and may be required within 32 m of a watercourse. Further investigation into these aspects of the proposed development will form part of the EIA and detailed engineering design phase. Such expansion would occur in an estuarine functional zone or outside urban areas in areas which have been identified as Southern Coastal Grasslands in terms of the NPAES Threatened Ecosystems (Original extent), and in areas seawards of the development setback line or within 1 km from the high water mark of the sea.

Your assistance will be greatly appreciated. Looking forward receiving your inputs.

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Many thanks.

Kind Regards,
Anrick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2651
Fax: +27 21 888 26 93

>>> "Lydia Kuku" <lkuku@environment.gov.za> 06/05/2015 09:17 >>>
Good day.

Please find herein the attached signed letter for the above mentioned.

I hope you find all in order.

Thank you.

Kind Regards,
Lydia Kuku

This message and any attachments transmitted with it are intended solely for the addressee(s) and may be legally privileged and/or confidential. If you have received this message in error please destroy it and notify the sender. Any unauthorized usage, disclosure, alteration or dissemination is prohibited. The Department of Environmental Affairs accepts no responsibility for any loss whether it be direct, indirect or consequential, arising from information made available and actions resulting therefrom. The views and opinions expressed in this e-mail message may not necessarily be those of Management.

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ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE KWAZULU-NATAL SOUTH COAST
DEA Reference No: 14/12/16/3/3/2/652



REGISTRATION AND COMMENTS FORM

February 2015



Name: <u>K. GANASIT</u>	Telephone:
Organisation: <u>PVT.</u>	Fax:
Designation: <u>MR</u>	Email: <u>KgBickhoo@absamail.co.za</u>
Physical address: <u>NR 60 KING SHAKA EST</u> <u>50 VALLEY ROAD</u> <u>LA MARY, TONGAAT</u>	Postal address: <u>P.O. Box 557</u> <u>IMANDO 1600</u> <u>Gauteng</u>

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process

YES ☒

ALREADY REGISTERED

NO

Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

RESIDENT AT KING SHAKA ESTATE

Please describe any issues or concerns you think should be considered during the EIA process

CONCERNS WERE RELAYED TO MARCINE STRAUSS
OF ACEA AERIAL CONSULTANTS AT MEETING
ON DEC. 29 APRIL.
MAIN CONCERN: NOT ENOUGH ALTERNATIVES CONSIDERED &
NR (1) NO DAM ON TUGELA RIVER

Please provide details of any other individuals or organisations that should be involved:

Please submit this Registration & Comments Form to:

<p>Mrs. Annick Walsdorff</p> <p>CSIR</p> <p>P.O. Box 320</p> <p>Stellenbosch, 7599</p> <p>Tel: (021) 888 2981</p> <p>Fax: (021) 888 2473</p> <p>Email: awalsdorff@csir.co.za</p>
--

APPENDIX E.4.

CORRESPONDENCE TO I&APs – RELEASE OF DRAFT EIA REPORT

Letter 5 to I&APs



CSIR Environmental Management Services

PO Box 320 Stellenbosch 7599 South Africa
Tel: +27 21 888 2661
Fax: +27 21 888 2693
Email: awalsdorff@csir.co.za

17 March 2016

Dear Stakeholder

RE: NOTICE OF RELEASE OF DRAFT EIA REPORT FOR COMMENT AND INVITATION TO PUBLIC MEETING: Proposed Construction, Operation and Decommissioning of a Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Tongaat on the KwaZulu-Natal North Coast (DEA EIA Reference Number: 14/12/16/33/2/652)

Umgeni Water is proposing to construct and operate a desalination plant at Tongaat on the KwaZulu-Natal (KZN) North Coast using Sea Water Reverse Osmosis (SWRO) technology. The proposed plant will produce 150 Ml/day of freshwater when at final capacity, and will have an average inflow rate of 389 Ml/day. As you are aware, the Council for Scientific and Industrial Research (CSIR) has been appointed by Umgeni Water Amanzi (hereinafter referred to as Umgeni Water) (i.e. the Project Applicant), to undertake the Environmental Assessment Process required for the abovementioned proposed project. The proposed project is being assessed in terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations, published in Government Notice (GN) R543, R544, R545 and R546 on 18 June 2010 (as amended).

The proposed project triggers listed activities in GN R544, R545 and R546 which requires a full Scoping and EIA Process. An Application for Environmental Authorisation was lodged with the National Department of Environmental Affairs (DEA) (i.e. the Competent Authority) in December 2013, in terms of the 2010 NEMA EIA Regulations (prior to the promulgation of the 2014 EIA Regulations), and the abovementioned reference number has been allocated to the application. Since the release of the Final Scoping Report, further feasibility studies have been undertaken by the Project Applicant, which have provided additional details regarding the proposed project. Linked to this, certain listed activities are no longer applicable to the proposed project, and as such an Amended Application for Environmental Authorisation is currently being submitted to the National DEA.

The operation of the proposed desalination plant requires a Coastal Waters Discharge Permit in terms of the National Environmental Management: Integrated Coastal Management Act (Act 24 of 2008) in order to enable the disposal and discharge of effluent to sea. The permit has been submitted to the DEA Branch: Oceans and Coasts (Directorate: Coastal Pollution Management). In addition, the proposed project requires a Water Use Licence in terms of the National Water Act (Act 36 of 1998). Additional information regarding the need for a Water Use Licence is provided in the Draft EIA Report. The Water Use Licence Application is planned to be submitted to the KZN Department of Water and Sanitation after the release of the Final EIA Report.

RELEASE OF DRAFT EIA REPORT AND AVAILABILITY

In line with the above, as a registered Interested and Affected Party (I&AP) on the project database, you are hereby notified of the release of the Draft EIA Report to all I&APs for a 40-day review period, which will extend from **21 March 2016 to 09 May 2016**. Please find enclosed, an Executive Summary of the Draft EIA Report (including a Comment and Registration Form), which provides an overview of the proposed project, as well as the findings of the specialist studies and impact assessment undertaken as part of the EIA Process. Kindly complete the enclosed Comment and Registration Form in order to submit any comments you may have. Please submit the completed form to the CSIR Project Manager at the contact details provided above by **09 May 2016**.

Hard copies of the Draft EIA Report are available for public viewing at the Tongaat Beach Public Library (51 Dolphin Ave., Seafides, 4399). The Draft EIA Report can also be downloaded from the following project website: <http://www.csir.co.za/eia/TongaatDesalination/>

INVITATION TO PUBLIC MEETING

All I&APs are invited to attend a Public Meeting (details provided below), where an overview of the proposed project and the findings of the Draft EIA Report will be provided. I&APs will also be provided with the opportunity to raise queries or comments during the Public Meeting. Representatives from the CSIR and Umgeni Water will be present to engage with I&APs.

DATE	TIME	VENUE
13 April 2016	18H00	Tongaat Town Hall

All comments received from I&APs during the 40-day review of the Draft EIA Report will be included in the Final EIA Report which will be submitted to the National DEA and the Water Use Licence Application will be submitted to the KZN Department of Water and Sanitation for decision making. Should you have any queries or require additional information please do not hesitate to contact the undersigned using the contact details provided above.

Sincerely,

Annick Walsdorff
CSIR EIA Project Manager/CSIR Environmental Management Services

Board members: Prof T. Majoor (Chairperson), Adv G. Badeia, Ms P. Baleni, Dr P. Goyns, Dr A. Liobell,
Dr R. Masango, Ms M. Maseko, Mr J. Ntshintzhe, Ms A. Noah, Prof M. Phakeng, Dr S. Sibisi (CEO)

www.csir.co.za

Sibingelela Ababambe iqhaza

RE: ISAZISO NGOKUKHULULWA KOMBIKO WOKUQALA WOCWANINGO LOKUNGENZEKA KWIMVELO (ENVIRONMENTAL IMPACT ASSESSMENT - EIA) UKUZE KUBEKWE IMIBONO KANYE NESIMEMO SOMHLANGANO WOMPHEKATHI: Ukwakhiwa, Ukusebenzisa nokuvalwa kwe-Mboni eCwenga Amanzi oLwandle (Sea Water Reverse Osmosis Plant), kanye nezindlu ezizohambisana ne-Mboni, ehlongozwe ukwenziwa eTongathi, eNyakatho noGu la-KwaZulu-Natal (Inombolo yeReferensi ye-DEA EIA: 14/12/16/33/2/652)

Umgeni Water uhlangoza ukwakha nokusebenzisa iMboni yokukhipha usawoti emanzini kwindawo yase Tongathi, eNyakatho noGu la-KwaZulu-Natal, ngokusebenzisa ubuchwepheshe obubizwa nge Sea Water Reverse Osmosis (SWRO). Le-Mboni ehlongozwe izokhiqiza amanzi ahlanzekile angango 150 wamalitha uma isisebenza ngokuphelele, ilinganiselwe ukuba izongenisa amanzi angamalitha awu 389 ngosuku. Njengoba besenazisiwe, iCouncil for Scientific and Industrial Research (CSIR) ikhethe UMgeni Water Amanzi (emva kwalokhu ezobizwa ngokuthi UMgeni Water) (i.e. Umfakisicelo), ukuthi iphathe uqhubo lokuHlolwa ngokweMvelo ngale Projekthi engenihla ehlongozwayo. LeProjekthi ehlongozwayo iwaningwa ngokuhambiselana neMithethonqubo-Environmental Impact Assessment enyathelise kwisaziso sikaHulumeni Government Notice (GN) R543, R544, R545 kanye no R546 ngo 18 June 2010 ngaphansi komthetho i-National Environmental Management Act (Act 107 of 1998, njengoba uchitshiyelwe).

LeProjekthi ehlongozwe ithinta lemisebenzi ebaliwe kwi GN R544, R545 kanye ne R546 edinga uQhubo lwe Scoping kanye ne EIA egcwele. Isicelo sokugunyazwa ngokweMvelo sifakiwe kuMnyango wezeMvelo kaZwelonke (National Department of Environmental Affairs (DEA)) (i.e. Abanegunya) ngo December 2013, mayelana neMithethonqubo ka 2010 ye NEMA (ngaphambi kokuba kunyathelise iMithethonqubo ye EIA ka 2014), inombolo yereferensi ebhaliwe ngaphezulu iyona eyabawo lesi-sicelo. Kusukela ukukhululwa koMbiiko we Scoping wamaphethelo, ezinye izifundo ngokungenzeka zenziwe uMfakisicelo, lezizifundo ziveze imininingwane engezwe mayelana neprojekthi ehlongozwe. Okuxhumene nalokhu, eminye imisebenzi ekade ibaliwe ayisagqondene nale-projekthi ehlongozwe, kanjalo Isicelo sokugunyaza ngokweMvelo esichitshiyelwe siyafakwa njengamanje ku DEA kaZwelonke.

NgokoMthetho we National Environmental Management: i-Integrated Coastal Management Act (Act 24 of 2008), ekuwumthetho omayelana nezokuphathwa koGu, ukusebenza kwaleMboni ehlongozwe kudinga imvume ebizwa nge Coastal Discharge Permit evumela ukuchitha nokulahla amanzi ayimfucuzo olwandle. Le-Mvume isithunyelwe kwiGatsha lika DEA elibizwa ngo Oceans and Coasts (Leziphathimandla: Eziphatheleni nokungcoliswa koGu, phecelezi abakwa Coastal Pollution Management). Ngaphezu kwalokho, NgokoMthetho iNational Water Act (Act 36 of 1998) leprojekthi ehlongozwe idinga ilayisensi yokusebenzisa amanzi. Ulwazi olungeziwe mayelana nesidingo se layisensi yokusebenzisa amanzi luyatholakala kuMbiiko wokuqala we EIA (Draft EIA Report). Isicelo se Layisensi yokuSebenzisa Amanzi silhoswe ukuba sithunyelwe kuMnyango wase KZN we-Water and Sanitation ngesikhathi ekuzobe kukhishwa ngaso uMbiiko wokugcina we-EIA.

UKUKHISHWA KOMBIKO WE-DRAFT EIA NOKUTHOLAKALA KWABATHINTEKAYO

Njengomuntu owabhalisa ngokuthinteka nokubaneqhaza (Interested and Affected Party (I&AP)) mayelana nemininingwane ye projekthi, siyakwazisa ngokukhishwa koMbiiko we-Draft EIA ukuba bonke abanesifiso bangenise imibono yabo phakathi kwezinsuku ezingu-40, kusukela 21 March 2016 ukuya 09 May 2016. Okuhambisana nalenowadi isifinyezo Esiphezulu (kanye ne fomu lokubhalisa nokubeka umbono), enikeza uhlojikelele lwe projekthi ehlongozwe, kanye nemiphumela yezifundo zongoti nozwano lwe-mithelela eyenziwe kuqhubo lwe-EIA. Uyacelwa ukuba ugcalise leifomu ukuze uthumele imibono ongabanayo. Uyacelwa ukuba uthumele ifomu eligcalisiwe kuMphakathi we Projekthi e CSIR kulemininingwane enikeziwe kungakaduli umhlaka 09 May 2016.

Amakhophi ombiko we-Draft EIA ayatholakala ukuba abukwe umphakathi kuMtapo wolwazi oGwini lwaso Tongathi (51 Dolphin Ave, Seaside, 4399). Umbiko we-Draft EIA uyatholakala futhi nakule-website: <http://www.csir.co.za/eia/TongaatDesalination/>

ISIMEMO SOMHLANGANO WOMPHEKATHI

Bonke abathintekayo nabaneqhaza bayamanywa ukuba babekhona kumhlango wompheka (imininingwane ingezansi), lapho uhlojikelele lwe-projekthi ehlongozwe kanye nokutholakele ngoMbiiko we-Draft EIA kuzonikezwa. Abathintekayo nabaneqhaza bazonikezwa ithuba lokuba babuze imibuzo noma babeke imibono emhlanganweni. Abamele iCSIR kanye nabamele Umgeni Water bazobe bekhona ukuba baxoxisane nabathintekayo noma abaneqhaza.

USUKU	ISIKHATHI	INDAWO
13 April 2016	18H00	Ihholo lasedolobheni eTongathi

Imibono etholwe kwabathintekayo naba-neqhaza kulesikhathi sezinsuku ezingu 40 zokuhlola Umbiko we-Draft EIA izofakwa kumbiko wokugcina we EIA. Uma sewuphuthuliwe Umbiko wokugcina we-EIA uzothunyelwa kuMnyango wezeMvelo kaZwelonke, iSicelo seLayisensi yokuSebenzisa Amanzi sizofakwa kuMnyango wamanzi wase KZN i-Water and Sanitation, ukuze lemnyango ithathe isinqumo. Uma udinga ukwazi kabanzi noma unemibuzo ngeprojekthi ungathinta umphathi we projekthi, imininingwane yakhe ibaliwe ngaphezulu.

Ozithobayo,

Annick Walsdorf

CSIR Umphathi weProjekthi ye-EIA/CSIR Environmental Management Services

Board members: Prof T. Majazi (Chairperson), Adv G. Badela, Ms P. Baleni, Dr P. Goyns, Dr A. Liobeli,
Dr R. Masango, Ms M. Maseko, Mr J. Nelsthenzhe, Ms A. Noah, Prof M. Phakeng, Dr S. Sibisi (CEO)

www.csir.co.za

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST

DEA Reference No: 14/12/16/3/3/2/652



REGISTRATION AND COMMENTS FORM

Draft EIA Report - April 2016



Name:	Telephone:
Organisation:	Fax:
Designation:	Email:
Physical address:	Postal address:

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process

YES	ALREADY REGISTERED	NO
Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:		

Please describe any issues or concerns you think should be considered during the EIA process

Please provide details of any other individuals or organisations that should be involved:

Please submit this *Registration & Comments Form* to:

<p>Annick Walsdorff CSIR P O Box 320, Stellenbosch, 7599 Tel: 021 888 2661 Fax: 021 888 2473 E-mail: awalsdorff@csir.co.za Website: www.csir.co.za/eia/TongaDesalination/</p>

**i-ENVIRONMENTAL IMPACT ASSESSMENT (EIA) YOKWAKHIWA NOKUSEBENZISA
KWEMBONI YE-SEA WATER REVERSE OSMOSIS (DESALINATION) E-TONGATI,
OLUSENYAKATHI LAKWAZULU-NATAL**
DEA Reference No: 14/12/16/3/3/2/652



IFOMU LOKUREJISTA NOKUBEKA UMBONO

Draft EIA Report - April 2016



Igama:	Inombolo yocingo:
Inhlangano:	Fax:
Isikhundla:	Email:
Ikheli lendawo:	Ikheli leposi:

Bonakalisa uma ufuna ukurejista njengeqembu labathintekile. Ukurejista kuyadingakala umufuna ukuthola ulwazi olubanzi mayela nalenqubo ye-EIA		
YEBO	ALREADY REGISTERED	CHA
Bonakalisa uma udinga ukwazi (mayelana be-biznisi, okwezemali, okuphatelane nawe, noma okunye) ngocelo le-environmental authorisation:		

Chaza udaba nokukhathazeka ocabanga ukuthi kumele kunakwe kulenqubo ye-EIA

Cela usinike imininingwane yomuntu noma yenhlangano ocabanga ukuthi idinga ukuthintwa mayelana nale-EIA:

Thumela leli-fomu lapha:

<p>Annick Walsdorff CSIR P O Box 320, Stellenbosch, 7599 Tel: 021 888 2661 Fax: 021 888 2473 E-mail: awalsdorff@csir.co.za Website: www.csir.co.za/eia/TongaatDesalination/</p>

Proof of Correspondence with I&APs - Registered Mail Receipts



Project: Environmental Impact Assessment (EIA) for the Proposed Construction, Operation and Decommissioning of a Seawater Reverse Osmosis Plant and Associated Infrastructure at Tongaat, KwaZulu-Natal North Coast

Reference: DEA EIA Reference Number: 14/12/15/3/3/2/652

Proof of Hand Delivery:

Delivery of:

Package including:
• 1 x Hard Copy of the Draft EIA Report

Delivery to:

Librarian
Tongaat Beach Library
51 Dolphin Ave, Sea Tides, Tongaat, 4400
Phone: 032 943 1722

Name of Recipient/Signed for by:	RASHIDA SHAIK
Organisation:	TONGAAT BEACH LIBRARY
Designation:	LIBRARY ASSISTANT
Date:	17/3/15
Signature of Recipient:	

Delivered by:

Delivered by (on behalf of CSIR):	VICKESH BASLAI
Organisation:	CSIR
Designation:	PROJECT MANAGER
Date:	17/03/2016
Signature:	

F. H. H. 2/11

17/03/2016

EM50062 / RUN / 04100 / 0KG10

Mr Andre Ragar Department of Mineral Resources Private Bag X59 Arcadia, Pretoria 0007	Ms Thembisile Mabaso Department of Land Affairs Commercial Building 4th Floor 40 Doctor AB Xuma St Durban 4001	Khunjulwa Minentle Baleni Dept of Agriculture, Forestry & Fisheries Forestry Regulations and Support KZN Private Bag X9029 Pietermaritzburg 3200
Sandile Ntanzl Department of Energy Private Bag X95 Pretoria 0001	Mr Jeffrey Maivha Dept of Agriculture, Forestry & Fisheries Forestry Regulations and Support Private Bag X9029 Pietermaritzburg 3200	Ms Anneliza Collet Dept of Agriculture, Forestry and Fisheries: Land Use and Soil Management Private Bag X250 Pretoria 0001
Ms Betty Rawheath La Mercy Residents Action Group PO Box 1176 La Mercy 4405	Ms Michele Schmid Department of Transport KZN 224 Prince Alfred Street Pietermaritzburg 3200	Mrs Mandisa Zungu KZN Dept of Co-operative Governance And Traditional Affairs: Development Planning Private Bag X9078 Pietermaritzburg 3200
Ms Nerissa Pillay Ezemvelo KwaZulu-Natal Wildlife 1 Peter Brown Drive Cascades 3202	Mr Logan Moodley eThekweni Municipality: eThekweni Transport Authority PO Box 680 Durban 4000	Ms Dinesree Thambu Ezemvelo KwaZulu-Natal Wildlife 1 Peter Brown Drive Cascades 3202
Ms Carolyn Schwegman Coastwatch KZN PO Box 343 Pennington 4184	Mr Jeeva Pillay Tongaat Civic Association PO Box 1060 La Mercy 4405	Mr Paul Daphne South African National Parks PO Box 787 Pretoria 0001
Mr Desmond D'Sa South Durban Community Environment Alliance (SDCEA) 224 Austerville Drive Austerville 4052		

Name & Signature of person responsible for post: F. Heitoff 

5 items – REGISTERED post (Tonga – Sent on __ Mar 2016)

17/03/2016

EMS0062 / RUN / 04100 / OKG10

Attention: Central Point Dept of Water Affairs 135 Francis Baard Pretoria 0001	Ms Yugashnie Govender KZN Dept of Agriculture & Environmental Affairs eThekweni Region (Provincial Authority) 357 Dr. Pixley Kasame Street (Old West Street) 16th Floor, Murchies Passage Eagle Building Durban 4001	Ms Liesel Beires KZN Dept of Economic Development & Tourism Private Bag X9152 Pietermaritzburg 3200
Mrs J Reddy Department of Transport Private Bag X9043 Pietermaritzburg 3200	Mr Ednick Msweli eThekweni Municipality: Water & Sanitation PO Box 1038 Durban 4000	

REGISTERED MAIL: R28,55 x 1

Name & Signature of person responsible for post: Joan 

1 item – REGISTERED POST (Tonga – Sent on 20 April 2016)

29.04.16

NMS0062 / RUN / 02100 / 021 SE

Govender, Seenavasan/ Kanniamma
(Seabelle Restaurant)
62 South Beach Road
Desalnager
Tonga 4400

REGISTERED LETTER
GEREGISTREERDE BRIEF
(with an insurance option/met 'n voorskeringsopsie)

Post Office STELLENBOSCH 7599

DATE Stamp of delivery
Datumstempel van aflewering

Addressed to/Gestuur aan
CSIR
1/one

Signature of recipient
Handtekening van ontvanger
FOLIO

Postcode
7599

Truck and Trace reference No
Wag-en-spoorverwysingsnommer

Post Office, counter No
Postkantoor, toonbankno

Official proof of identification essential
Amptelike bewys van identiteit noodsaaklik

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TAX INVOICE

South African Post Office Limited
Stellenbosch

25-APR-2016 11:35:59
Session Id: 710-34137-4-480016-2
Tax No: 11923
Seller Id: PEARL LUN1930
TAX INVOICE VAT #4650101142
ALL PRICES VAT INCLUSIVE
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Receipt For SA Post Office
Products Or Services

PRODUCT	QTY	UNIT	VAT	R AMOUNT
			PRICE	
Track and Trace	1 x		R0.00	R0.00
(T&T #:PH424543245281)				
Lct. Let. Med. Rep.	1 x		R28.55 14%	R28.55
(Weight: 0.010 kg)				
(Destination: South Africa)				
VAT TOTAL 9148				R3.51
Sub Total				R28.55
VAT TOTAL 9148				R3.51
Total				R28.55
Cash				R28.00
Change				-R0.45

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Customer Care Number 0800 111 502
Crime Buster Hotline 0800 019 554
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NOTICE OF RELEASE OF DRAFT EIA REPORT FOR COMMENT AND INVITATION TO PUBLIC MEETING: Proposed Construction, Operation and Decommissioning of a Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Tongaat on the KwaZulu-Natal North Coast

(DEA EIA Ref No: 14/12/16/3/3/2/652).

Please see attached letter indicating the notification of **public comment period** for the **Draft EIA Report** and invitation to public meeting for the above-mentioned project. You are hereby invited to provide comments on the Draft EIA Report.

Please note - comments on the Draft EIA Report should be submitted to the CSIR Project Manager at the contact details provided in the letter by **09 May 2016**.

Yours sincerely,
Annick Walsdorff

Principal Environmental Assessment Practitioner

EMS - CSIR

Consulting and Analytical Services

Tel: +27 21 888 25 89/2661

Fax: +27 21 888 26 93

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Message Id: 56E4B7B3.8D4 - 63 : 45080
Subject: Notice of Release of Draft EIA Report for comment and invitation to Public Meeting
Created By: AWalsdorf@csir.co.za
Scheduled Date:
Creation Date: 17/03/2016 15:56
From: Annick Walsdorf

Recipients:

Recipient	Action	Date & Time	Comment
 3.co.za	Transferred	17/03/2016 15:57	
BC: Alan Chidej@3.co.za	Delivered	17/03/2016 15:58	
 airports.co.za	Transferred	17/03/2016 15:57	
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Files

File	Size	Date & Time
DEIAR_Letter_English & Zulu.pdf	135 KB (135485 Bytes)	18/03/2016 16:55
DEIAR_UV_Summary_Tongaat_140316.pdf	898 KB (908074 Bytes)	18/03/2016 16:46
MESSAGE	1 KB (1025 Bytes)	17/03/2016 15:58
Response Form_Tongaat_Eng&Zulu.pdf	284 KB (291125 Bytes)	18/03/2016 15:40

Annick Walsdorff - Fwd: Notice of release of Draft EIA Report_SWRO plant, Lovu

From: Annick Walsdorff
To: Annick Walsdorff
Date: 17/03/2016 09:44
Subject: Fwd: Notice of release of Draft EIA Report_SWRO plant, Lovu
Re: parako@kznded.gov.za; john.geeringh@eskom.co.za; masefielda@dwaf.gov.z...
Attachments: DEIAR_Letter_English & Zulu.pdf

Good morning,

On 3 November 2015, you have been notified of the release of the Draft EIA Report for the proposed construction, operation and decommissioning of a sea water reverse Osmosis plant and associated infrastructure proposed at Lovu, on the KwaZulu Natal South Coast and invited to submit comments on the report.

The public commenting period closed on 14 December 2015 and had further been extended until 31 January as per our communication dated 03 December 2015.

To date, we have not received any comments from your organisation/department. We are in the process of releasing the Final EIA report and would appreciate if you could please confirm that you do not have further comments on this report.

Many thanks.

Kind Regards,
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: +27 21 888 26 93

>>> Annick Walsdorff 03/11/2015 14:47 >>>
Dear Stakeholder,

NOTICE OF RELEASE OF DRAFT EIA REPORT FOR COMMENT AND INVITATION TO PUBLIC MEETING: Proposed Construction, Operation and Decommissioning of a Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Lovu on the KwaZulu-Natal South Coast

(DEA EIA Ref No: 14/12/16/3/2/836).

Please see attached letter indicating the notification of **public comment period** for the **Draft EIA Report** and invitation to public meeting for the above-mentioned project. You are hereby invited to provide comments on the Draft EIA Report.

Please note - comments on the Draft EIA Report should be submitted to the CSIR Project Manager at the contact details provided in the letter by **14 December 2015**.

Message Id: 56FA6062.49B : 63 : 45050
Subject: Final Notice of release of Draft EIA Report_SWRO plant, Lova
Created By: AMWaleedoff@csir.co.za
Scheduled Date:
Creation Date: 17/03/2016 09:44
From: Annick Waleedoff

Recipients:

Recipient	Action	Date & Time	Comment
 drh@gov.za	Transferred	17/03/2016 09:44	
CC: Thandiso Maseko@drh@gov.za(Thandiso Maseko@drh@gov.za)	Delivered	17/03/2016 09:45	
 swaf@gov.za	Transferred	17/03/2016 09:44	
CC: maseko@swaf@gov.za(maseko@swaf@gov.za)	Delivered	17/03/2016 09:45	
 eskom.co.za	Transferred	17/03/2016 09:44	
CC: john.goring@eskom.co.za(john.goring@eskom.co.za)	Delivered	17/03/2016 09:45	
 kznded.gov.za	Transferred	17/03/2016 09:44	
CC: natasha.bhaji@kznded.gov.za(natasha.bhaji@kznded.gov.za)	Delivered	17/03/2016 09:45	
CC: vanessa.madiba@kznded.gov.za(vanessa.madiba@kznded.gov.za)	Delivered	17/03/2016 09:45	
 kznded.gov.za	Transferred	17/03/2016 09:44	
CC: thabeka@kznded.gov.za(thabeka@kznded.gov.za)	Delivered	17/03/2016 09:45	
CC: Matshoko@kznded.gov.za(Matshoko@kznded.gov.za)	Delivered	17/03/2016 09:45	
CC: senaka@kznded.gov.za(senaka@kznded.gov.za)	Delivered	17/03/2016 09:45	
 kznttransport.gov.za	Transferred	17/03/2016 09:44	
CC: Nicholas.schmidt@kznttransport.gov.za(Nicholas.schmidt@kznttransport.gov.za)	Delivered	17/03/2016 09:45	
 nra.co.za	Transferred	17/03/2016 09:44	
CC: Mawu@nra.co.za(Mawu@nra.co.za)	Delivered	17/03/2016 09:45	
 PCBOX1.STELLBOS	Delivered	17/03/2016 09:44	
To: Annick Waleedoff@nra.co.za		17/03/2016 09:45	
	Read	17/03/2016 09:45	
	Downloaded	16/03/2016 12:04	
	Imported	06/04/2016 09:30	
 Transnet.net	Transferred	17/03/2016 09:44	
CC: Rodney.Murray2@Transnet.net(Rodney.Murray2@Transnet.net)	Delivered	17/03/2016 09:45	
CC: Simphiwe.Madibela@transnet.net(Simphiwe.Madibela@Transnet.net)	Delivered	17/03/2016 09:45	

Post Offices

Post Office	Delivered	Route
drh@gov.za		drh@gov.za
swaf@gov.za		swaf@gov.za
eskom.co.za		eskom.co.za
kznded.gov.za		kznded.gov.za
kznttransport.gov.za		kznttransport.gov.za
nra.co.za		nra.co.za
PCBOX1.STELLBOS	17/03/2016 09:44	swaf@gov.za
Transnet.net		Transnet.net

Files

File	Size	Date & Time
CEJAR_Letter_English_A_Zip.pdf	135 KB (139346 Bytes)	03/11/2015 14:23
MESSAGE	3 KB (3457 Bytes)	17/03/2016 09:44
TEXT.htm	6 KB (6154 Bytes)	17/03/2016 09:44

Message Id: 56EA613C.A96 : 63 : 45080
Subject: Fwd: Notice of release of Draft EIA Report_SWRC plant, Loui
Created By: AWalsdorf@csir.co.za
Scheduled Date:
Creation Date: 17/03/2016 09:48
From: Annick Walsdorf

Recipients:

Recipient	Action	Date & Time	Comment
environment.gov.za BC: Nkasha Bafoloh-Filay@environment.gov.za	Transferred	17/03/2016 09:48	
environment.gov.za	Delivered	17/03/2016 09:48	
environment.gov.za BC: yugeshni.govender@kwaZulu-Natal.gov.za; yugeshni.govender@kwaZulu-Natal.gov.za	Transferred	17/03/2016 09:48	
environment.gov.za	Delivered	17/03/2016 09:48	
POBOX1,STELLBOS To: Annick Walsdorf(AWalsdorf@csir.co.za)	Delivered	17/03/2016 09:48	
	Read	17/03/2016 09:48	
	Downloaded	18/03/2016 12:04	

Post Offices

Post Office	Delivered	Route
environment.gov.za		environment.gov.za
kwaZulu-Natal.gov.za		kwaZulu-Natal.gov.za
POBOX1,STELLBOS	17/03/2016 09:48	csir.co.za

Files

File	Size	Date & Time
DEAR_Letter_English & Zulu.pdf	135 KB (138348 Bytes)	03/11/2015 14:23
MESSAGE	5 KB (5120 Bytes)	17/03/2016 09:48
TEXT.htm	6 KB (7046 Bytes)	17/03/2016 09:48

Message Id: 55EC85AC.B49 : 63 : 45080
Subject: Notice of Release of Draft EIA Report for comment and invitation to Public Meeting
Created By: AWalsdorf@csir.co.za
Scheduled Date:
Creation Date: 19/03/2016 00:48
From: Annick Walsdorf

Recipients:

Recipient	Action	Date & Time	Comment
dmr.gov.za BC: Nkasho, Khanyile@dmr.gov.za; Nkasho, Khanyile@dmr.gov.za	Transferred	19/03/2016 00:48	
dmr.gov.za	Delivered	19/03/2016 00:48	
durban.gov.za BC: NdziwibomvuMK@durban.gov.za; NdziwibomvuMK@durban.gov.za	Transferred	19/03/2016 00:48	
durban.gov.za	Undeliverable	19/03/2016 00:48	
gmail.com BC: annick.walsdorf@gmail.com; annick.walsdorf@gmail.com	Transferred	19/03/2016 00:48	
gmail.com	Delivered	19/03/2016 00:48	
northcoastcourier.co.za BC: Jod@northcoastcourier.co.za; jod@northcoastcourier.co.za	Transferred	19/03/2016 00:48	
northcoastcourier.co.za	Undeliverable	19/03/2016 00:48	
POBOX1,STELLBOS To: Annick Walsdorf(AWalsdorf@csir.co.za)	Delivered	19/03/2016 00:48	
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	Read	19/03/2016 00:03	
	Forwarded	19/03/2016 00:54	
	Downloaded	19/03/2016 00:55	
	Forwarded	05/04/2016 00:35	
sahra.org.za BC: tviktori@sahra.org.za; tviktori@sahra.org.za	Transferred	19/03/2016 00:48	
sahra.org.za	Delivered	19/03/2016 00:48	
transnet.net BC: simphwe.mazibuko2@transnet.co.za; simphwe.mazibuko2@transnet.co.za	Transferred	19/03/2016 00:48	
transnet.net	Delivered	19/03/2016 00:57	

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durban.gov.za		durban.gov.za
gmail.com		gmail.com
northcoastcourier.co.za		northcoastcourier.co.za
POBOX1,STELLBOS	19/03/2016 00:48	csir.co.za
sahra.org.za		sahra.org.za
transnet.net		transnet.net

Files

File	Size	Date & Time
DEAR_Letter_English & Zulu.pdf	135 KB (138488 Bytes)	19/03/2016 15:39
DEAR_UW_Summary_Tongaat_140316.pdf	886 KB (908774 Bytes)	19/03/2016 10:06
MESSAGE	1 KB (2029 Bytes)	19/03/2016 00:48
Response Form_Tongaat_Fing8Zulu.pdf	224 KB (231126 Bytes)	19/03/2016 15:40
TEXT.htm	4 KB (5050 Bytes)	19/03/2016 00:48

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What is severe illness cover?

BY JUGGIE GOVENDER
East Coast Financial Services - Licensed Financial Services Provider (FSP 44760)

INITIALLY, such policies covered you only against cancer, stroke, coronary artery bypass and heart disease, but now they offer financial protection for those diseases, as well as other life-altering events, such as the onset of Alzheimer's or Parkinson's disease, paraplegia, major burns and brain damage.

Since 1983, medical advances and a focus on healthy living have extended our lives, and with increased longevity comes increased risk of con-

tracting a severe illness than older age. Dr Eric Starke, the senior medical adviser at Sanlam, says that although reliable South African statistics are difficult to obtain, international statistics place the lifetime likelihood of suffering from cardiovascular disease at one in two, strokes at one in six, and cancer at between one in two and one in three.

He says there are indications that the South African experience is not far removed from these trends.

Although it's good news that the odds of surviving those diseases are improving, Starke says, ill health can place a significant strain on a household's finances, which is where dread of disease cover comes in.

The need to claim for such diseases is beginning to show in Sanlam's claim statistics, he says.

Nicholas van der Nest, the division-

al director of risk-product development at Liberty, says Liberty's claim statistics show that the amount paid in critical illness claims is increasing year on year.

The increase from 2012 to 2013 was just over 12 percent, he says, adding that, although some of this was driven by a greater proportion of Liberty's clients buying critical illness benefits, Liberty believes there has also been an increase in the incidence of severe illnesses, particularly cancer in the Western world.

Van der Nest attributes the increase to greater awareness and more active screening programmes. Diagnosis of severe illnesses is happening at an earlier stage and a larger proportion of people are surviving compared with 20 years ago.

Liberty's recent claims statistics show the likelihood of severe illness is

highest in the 35 to 54 age group, he says.

Stephen van Niekerk, the head of Momentum Myriad, agrees that claims for critical illness are increasing, and he too refers to cancer, which affects 100 000 people a year in South Africa. Momentum's critical illness claims statistics show that the average 30-year-old has a 25-percent chance of contracting a critical illness before turning 65, he says.

Garth Friedlander, the head of research and development for Discovery Life, says Cansa statistics show that the lifetime risk of a man suffering from prostate cancer – the most common cancer for men – is one in 24, and the risk of a woman contracting breast cancer is one in 33.

According to Friedlander, increased longevity means that people are living with life-changing illnesses

for longer and are more susceptible to multiple claims. In other words, with a long lifespan and a better chance of surviving a severe illness, you could experience a recurrence of your illness, or you might contract other illnesses.

This article is an excerpt from Business/Personal Finance by Laura Du Preez in the December 2014 edition.

Disclaimer
The information is only intended to be of a general nature and should not be relied upon by any party without obtaining full details from a licensed financial services provider.

You could also contact me on 083 399 3906, my office on 032 944 3051 or e-mail me on juggie@eastcoast.co.za for an appointment to discuss the above or any other financial planning.

NOSIPHO MKHIZE
nosipho.mkhize@eastcoast.co.za

The demon that is drugs

NOSIPHO MKHIZE

I GREW up in a small township where we played in the street and where hide and seek was the best thing that ever happened to us.

We never had imaginary friends, the only friends we had were neighbours and siblings with broken legs and arms. It was sweet. It was fun, it was beautiful.

I remember special days like Christmas where we used to dress up for the big day – it was the only day we could put on our new clothes.

It was special because our parents bought us clothes six months before Christmas. We

grew up without birthday gifts, but if your parents bought you a cake for your birthday your friends would treat you like a prince in a castle.

It suddenly seems so far away now. Everything – many of the same innocent and carefree friends we had then are now in jail because of the deadly drug, whoonga. Most people know about the drug and most of you have seen a dealer, but it is so painful when you see a friend drowning in it.

Many of my "too-late" friends are using it – some say it's hard to get out of it. They say once you take that pull there's no turning back. It's heart-breaking to see a child who had a bright future being consumed by

the drug. They steal, lie, torture and go as far as killing just to get their next fix. Families have been torn apart by it. It has the power of turning a person into a monster. It has the power to control society.

Children no longer play in the street because they are too scared they might get raped. It has the power to control a mind of a human by taking him or her to kill their own blood.

Sometimes I think the drug was made by demons because once they get the young society is in big trouble. You hear stories from people being mugged by "prisoners" of whoonga. I salute those who are able to fight the demon because I know it is not an easy battle.

We live in a society where we say we are

"free", but I find that hard to believe because some people are trapped in the darkness of whoonga and crime where their mind plays toys to get their next fix.

How did it come to this? Is it a lack of education? Is it poverty? Are we a society being punished? Is the government turning a blind eye to crucial issues? Is it a lack of family values? Will it ever end, and what about the next generation or will there ever be one?

These are the questions that run through my head as I stand and think about the deadly drug. It is killing society slowly, but surely.

All I can say is we need the power of the Almighty to descend and fix this before it's too late.

Send your views to 073 514 4107 or email nosipho.mkhize@gmail.com

If I were Finance minister

THE Guptaes should convert South Africa Inc into a subsidiary of Gupta Inc and make me the Finance minister.

I will do better than Pravin Gordhan, who is hobbled by ANC communist logic and socialist economics.

I will ensure growth of eight percent per annum over the next 20 years by privatising all state-owned enterprises, liberalising labour laws, firing all incompetent, permanently sick and ghostly cadres in government, jacking up infrastructure, allowing foreigners to own land, signalling to investors that their investments will be safe, stopping the land redistribution programme and destruction of our agricultural industry, stopping the weaker build programme and implementing a solar programme, stopping the Na-

tional Health Insurance scheme and rather ensuring that existing hospitals and clinics are better equipped, ensuring criminals are caught and serve long sentences, scrapping the quota system and ensuring that we have responsible affirmative action and a professional public service, and increasing penalties for corruption.

I will replace the culture of patronage, entitlement, corruption, bribes, quotas, strikes, burning and extortion with that of merit, hard work, training, skills, co-operation, patience, enterprise, distribution, competition, savings and investment.

This will reduce unemployment, increase real wages and enable true tertiary education.

I think appeal to the Guptaes over the heads of the ANC, isn't it better for them that they have a slice of an expanding pie rather than a slice of an ever-shrinking pie?

NAUSHAD OMAR

Calling for water justice in South Africa

TODAY is World Water Day, highlighting the importance of water and water management for sustainable development. The theme for 2016 is "Better water, better jobs". This is critical for South Africa, where the gap between those with and without access to water is even higher than the income gap.

Research by the International Water Management Institute has shown that 10% of large water users use 70% to 90% of our country's water.

Just over one percent of rural users are large-scale commercial farmers who use 95% of all agricultural water.

Instead of regulating the large users, the government requires that small food producers have water licences and charges them high rates.

The target of 60% of water licences to black users by 2024, as stipulated in the National Water Act, remains a dream. Since 1998, only two percent of the water licences that were issued were to black users. Recent Oxfam research shows that half of the R10 billion identified for drought relief is being used to fix neglected water infrastructure.

Isithetha Amakhaya, a civil society alliance, have embarked on a Water Justice Campaign. We will take these cases to the Water Tribunal, a government-regulated kind of water court.

MONIQUE SALOMON

NOTICE OF RELEASE OF DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR COMMENT AND INVITATION TO PUBLIC MEETING

THE PROPOSED CONSTRUCTION, OPERATION AND DECOMMISSIONING OF A SEA WATER REVERSE OSMOSIS PLANT AND ASSOCIATED INFRASTRUCTURE PROPOSED AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST

DEA REFERENCE NUMBER: W/2/6/2013/2482

The proposed project is being assessed in terms of the National Environmental Management Act (Act 107 of 1998), as amended (EIA Regulations, published in Government Notice (GN) R543, R544, R545 and R546 on 18 June 2010 (as amended). An Application for Environmental Authorisation was lodged with the National Department of Environmental Affairs in December 2013, prior to the promulgation of the 2014 EIA Regulations. Certain listed activities are no longer applicable to the proposed project based on the additional project details provided in the feasibility studies undertaken by the Project Applicant subsequent to the Scoping Phase. As such an Amended Application for Environmental Authorisation is currently being submitted to the National DEA.

The operation of the proposed desalination plant requires a Coastal Waters Discharge Permit in terms of the National Environmental Management: Integrated Coastal Management Act (Act 24 of 2008) to allow the disposal and discharge of effluent to sea. The permit has been submitted to the DEA Branch: Oceans and Coasts Directorate, Coastal Pollution Management. In addition, the proposed project requires a Water Use Licence in terms of the National Water Act (Act 36 of 1998) which is planned to be submitted to the KZN Department of Water and Sanitation during the Final EIA Report stage.

Interested and Affected Parties (I&APs) are hereby notified of the release of the Draft EIA Report for the proposed project for a 40-day review period, which will extend from 21 March 2016 to 09 May 2016. Hard copies of the Draft EIA Report are available for public viewing at the Tongaat Beach Public Library (1 Dolphin Ave, Seaside, 4309). The Draft EIA Report can also be downloaded from the following website: <http://www.wusa.co.za/na/TongaatDesalination/>. I&APs are invited to attend a Public Meeting (details provided below).

DATE	TIME	VENUE
13 April 2016	18H00	Tongaat Town Hall

You are kindly requested to submit any comments you may have on the Draft EIA Report to the CSIR (at the details indicated below) by no later than 09 May 2016. For more information, please contact: Mrs. Annick Waldorff, CSIR, PO Box 320, Stellenbosch, 7599; Phone: 021 888 2661; Fax: 021 888 2693; Email: AWaldorff@csir.co.za

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Email: juggie@eastcoast.co.za

ISOLEZWE March 22, 2016

Appendix E, Public Participation, Page E-94

Legals & Tenders

Public Notices
Public Notices
Tenders
Tenders
Tenders

NOTICE TO DISPLAY INTENTION TO APPLY FOR LICENCE IN TERMS OF SECTION 40(1)(a) OF ACT 103 OF 1998 (ACT 103 OF 1998)

Category of license applied for: **General**

Address of the premises for which license is applied for: 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18 The North Coast Courier, April 1, 2016

OPINION



TwoBits

Brian Stephenson
Editor

One of the hidden gems of this part of the world is Maphelane, the southernmost nature reserve within the iMangaliso Wetland Park. Time spent with family is never wasted, and Rose wanted to revisit the little resort that holds many good memories for her.

That it is almost only accessible safely by 4x4 ensures that the camp is never too crowded, especially the last 50km of rough dirt road. If you don't know it, Maphelane is on the south bank of the Umfolozi River where it enters the sea. You can just spot the church spire of St Lucia village through the trees to the north.



be able to get away from the mess that society is in at the moment, to forget about problems and fears about the economy and politics and so much irrelevant interference. Just spending time concentrating on building stronger bonds with those we love. And spend a little time with ourselves, which is sometimes hard to do. We are fortunate to be living in a place that is rich in natural beauty and has many spots we can easily get away to.

Doctor Juggie Naidoo from Stanger was famous on the North Coast for always catching large fish and for winning fishing trophies.

One day while he was on one of his frequent fishing trips to Zinkwazi, he got a call that a farmer's wife near Durban was giving birth. He hurried to her aid and delivered a healthy baby boy.

The farmer had nothing to weigh the baby with so Doctor Naidoo used his fishing scales. The baby weighed 20.5 kilograms.

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bank was because thousands, tens of thousands, of the bright green bee-eaters were perched on the branches.

Just imagine those tiny little birds flying all the way across Africa back to North Africa and the Middle East, right up to the Caspian Sea, where they breed. The journey is mind-boggling.

It's basically a fishing camp, with the emphasis on basic. Ten cabins sleeping four or so each, buried in the tropical forest and bush. It's a fisherman's paradise, from beach or boat, and a smorgasbord of muskies, oysters and crayfish in the rocky intertidal pools.

There are lovely walks on sandy tracks through the forest and a bird's delight, with nearly 200 species in the area. We have enjoyed lovely sightings of the blue-cheeked bee-eater here.

When we visited mid-March, we were fortunate to see the bee-eaters gathering for their long journey back to North Africa. I was perched on the dune overlooking the estuary, trying the take pictures of them, when I realised that the green colour of the trees on the opposite

side was because thousands, tens of thousands, of the bright green bee-eaters were perched on the branches. Just imagine those tiny little birds flying all the way across Africa back to North Africa and the Middle East, right up to the Caspian Sea, where they breed. The journey is mind-boggling.

Hippo and crocodile are in the estuary and even shark, if the warning signs are to be believed, and in the forest are small buck, monkey, mongoose and red squirrel (though I never saw a squirrel).

Little Red Forest Duiker peek out of the bush and tiptoe across clearings, diving back into the tangle as soon as they spot you. The Red Forest Duiker is a rich reddish-brown, although the underparts are typically paler. The hairs on the chin, throat, and insides of the ears are whitish. A tuft of reddish-brown and black hairs grows between the horns, and the tail has a white tip.

Though smaller than the Common Duiker, it is about double the size of its shy cousin, the Blue Duiker. A characteristic of the Red Duiker's appearance is its hunched back, with front legs shorter than the hind legs. These longer hind legs are in a crouched position, which serves as an advantage when the duiker senses danger and needs to leap quickly into nearby bush - thereby its name from Afrikaans for 'diver'.

The large clearing of the campsite, which was empty when we were there, proved an ideal place to watch the duiker and a large colony of mongoose foraging busily through the leaves.

Fishing was off that weekend - not even the locals were lucky - but Pieter (my non-in-law) did manage to grab half a dozen crayfish for Rose's birthday dinner. Nothing better than crabs fresh from the sea!

It's great to



NOTICE OF RELEASE OF DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR COMMENT AND INVITATION TO PUBLIC MEETING

THE PROPOSED CONSTRUCTION, OPERATION AND DECOMMISSIONING OF A SEA WATER REVERSE OSMOSIS PLANT AND ASSOCIATED INFRASTRUCTURE PROPOSED AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST

DEA EIA REFERENCE NUMBER: 14/12/16/32/052

The proposed project is being assessed in terms of the National Environmental Management Act (Act 107 of 1998, as amended) EIA Regulations, published in Government Notice (GN) 4543, 4544, 4545 and 4546 on 18 June 2010 (as amended). An Application for Environmental Authorisation was lodged with the National Department of Environmental Affairs in December 2013, prior to the promulgation of the 2014 EIA Regulations. Certain stated activities are no longer applicable to the proposed project based on the additional project details provided in the feasibility studies undertaken by the Project Applicant subsequent to the Scoping Phase. As such an Amended Application for Environmental Authorisation is currently being submitted to the National DEA.

The operation of the proposed desalination plant requires a Coastal Waters Discharge Permit in terms of the National Environmental Management: Integrated Coastal Management Act (Act 24 of 2008) to allow the disposal and discharge of effluent to sea. The permit has been submitted to the DEA Branch: Oceans and Coasts (Directorate: Coastal Pollution Management). In addition, the proposed project requires a Water Use Licence in terms of the National Water Act (Act 36 of 1998) which is planned to be submitted to the KZN Department of Water and Sanitation during the Final EIA Report stage.

Interested and Affected Parties (I&APs) are hereby notified of the release of the Draft EIA Report for the proposed project for a 40-day review period, which will extend from 21 March 2016 to 09 May 2016. Hard copies of the Draft EIA Report are available for public viewing at the Tongaat Beach Public Library (51 Dolphin Ave, Seaside, 4300). The Draft EIA Report can also be downloaded from the following website: <http://www.ecsa.co.za/site/TongaatDesalination/>. I&APs are invited to attend a Public Meeting (details provided below).

DATE	TIME	VENUE
13 April 2016	18H00	Tongaat Town Hall

You are kindly requested to submit any comments you may have on the Draft EIA Report to the CSIR (at the details indicated below) by no later than 09 May 2016. For more information, please contact Mrs. Anneli Wabnitz: CSIR, PO Box 320, Swellendam, 7595; Phone: 021 888 2661; Fax: 021 888 2693; Email: AWabnitz@csir.co.za

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Response to the story: The blood sisters scrub up death

Kajal Brijal: It's great to know some people are passionate about what they do.

Response to the story: R1.4 billion project brings drought relief to Ballito/Madaden areas

Muzi Phile Xulu: It will be OK if every single penny goes to the project and not into pockets of some corrupt oxygen thieves who refer to each other as comrades.

Inus Van Schalkwyk: This project was done by Group Five and that is why it will be controversial whether it is planned. This water will not flow to the KwaZulu-Natal Dam but the gravity feed pipe will stop at the KwaZulu dam in Ballito.

ZuluXhema Richards Bay: ...so little, so late!! You cannot run a country 'running' around putting out fires!!

Response to the story: SPCA under attack for euthanising unwanted animals

Marlene Ratel: I really do feel for the SPCA. Very hard job. All the people who degraded them should come forward and donate funds to apologise for their insensitivity.

Jinty Torr Ford: I agree Marlene Ratel, if pet owners were more responsible and neutered their pets, we wouldn't be sitting with unwanted overpopulated fun-babies.

With the government would help subsidise these establishments. Feel for the animals but also empathise with these organisations.

Response to story: Taxi protest on N2 and R102

Suran Naidoo: Should the Taxi Association not be informing their idiotic members to rather protest to Department of Transport, instead of disrupting and endangering the lives of innocent people on the roads.

Ig Aucamp: Damaging roads by making fees on it is a criminal offense... Arrest the idiots and let the rest of the country that pays to maintain roads, pay taxes and actually do something positive to our country's economic situation, carry on with work!

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APPENDIX E.5: CORRESPONDENCE FROM I&APS AFTER RELEASE OF DRAFT EIA REPORT



SUSTAINABLE DEVELOPMENT & CITY ENTERPRISES **Development Planning, Environment & Management Unit**

166 K E Mesingo Road, Durban, 4001
P O Box 680, Durban, 4000
Tel: 031 311 1111, Fax: 031 311 7776
www.durban.gov.za

Our Ref.: (21/11) DPM/EIA 646C(N)
DEA Ref: 14/12/16/3/3/2/652
Enquiries: Mrs D. van Rensburg
Telephone: 031 – 3117136

9 May 2016

CSIR
P.O. Box 17001
Durban
4013

Attention: Annick Walsdorff

Dear Sir/Madam,

**RE: DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE
PROPOSED CONSTRUCTION, OPERATION AND DECOMMISSIONING OF A
SEA WATER REVERSE OSMOSIS PLANT AND INFRASTRUCTURE PROPOSED
AT TONGAAT.**

With reference to the abovementioned Draft Environmental Impact Assessment
please be advised that various Municipal Departments have had sight of the proposal
and the following comments are submitted for your attention:-

1. eThekweni Electricity Department.

The Electricity Department has no objection to the plant however please note:

- 1.1. This Department has strategic future 132kV Overhead Transmission Lines that will be constructed in the vicinity.
- 1.2. A new 132/11kV substation and overhead line is proposed in the vicinity of the Treatment Plant. This is shown in the EIA report and was provided by this Department. This is subject to change and will be dependent on the high voltage network in the area at the time of construction.
- 1.3. It is advised that the 132kV overhead line and substation be included in the EIA to avoid delays should an EIA be required in the future.
- 1.4. The applicant must consult eThekweni Electricity's mains records (held in the drawing office at eThekweni Electricity Headquarters, 1 Jelf Taylor Crescent, for the presence of underground electrical services. In addition should any overhead line and/or servitude be affected, the specific permission of the Head: Electricity must be sought regarding the proposed development.

2. Environmental Planning and Climate Protection Department.

This Department has reviewed the Draft Environmental Impact Report (DEIR) prepared for proposed desalination plant project and the following comments have relevance:

- Following review of the assessments and specialist studies presented, this Department is not in a position to support this application in its current form. The report, as presented, fails to adequately recognise and address notable impacts highlighted in the specialist assessments – specifically the Aquatic Assessment and the Terrestrial Assessments.
- Until such time as this Department is satisfied that impacts identified have been fully considered and addressed, the Environmental Planning and Climate Protection Department does not support authorisation of this project.

Wetlands

- Wetland habitat within the eThekweni Municipality is under significant threat. Wetland mapping carried out by this Department has ascertained that up to 90% of wetland habitat has already been lost within the eThekweni Municipal Area. Of the remaining habitat only 1% is considered good or intermediate in condition. As such, this Department does not support the loss of any further wetland habitat.
- The terrestrial and Aquatic Assessments both highlight the value of the wetlands proposed for destruction. The degraded status of these systems is noted, however, as detailed in the Aquatic Assessment, the functional value of these habitats and importantly, their rehabilitation potential remain good. Considering the landscape level value of these systems and the need to improve systems that currently operate below their sustainability threshold, further loss of any habitat cannot be supported.
- The impact of the proposed plant on the hydrology of the site and the down slope systems has not been fully assessed. Both the Aquatic Assessment and Terrestrial Assessment highlight the critical value of the water moving through the primary dune systems to the east of the site in maintaining these habitats. However, insufficient detail has been presented to show these systems can be maintained and enhanced post impact.
- The proposed 'offset' also lacks detail in its current form and requires much more information before any consideration can be given to this proposed method of impact resolution. The extent of habitat restoration and protection must be shown to be achievable before any idea of offsetting can be entertained.
- This Department acknowledges and in principle supports the recommendation of the Aquatic Specialist to have the water line between the Desalination Plant and the La Mercy Reservoir re aligned to avoid the local watercourse.

Pipeline and Powerline Routing

- This Department does not support the current alignment of the La Mercy to Waterloo potable water pipeline. This pipeline will impact

directly on wetland habitat directly linked to the Mdloti Estuary and currently included in the planned Northern Wetland Offset Framework (NWOFF). Habitat forming part of this Framework cannot be compromised or impacted upon. The NWOFF must form part of all planned infrastructure layouts. Detail of the extent of these offset receiving areas can be provided to allow realignment of routes.

- Similarly, the current alignment of the 132kv power line and the proposed realignment (as suggested by the Aquatic Specialist) are also in conflict with those areas set aside for the NWOFF and must be realigned to avoid these areas.
- Furthermore, the alignment is also in conflict with the King Shaka Conservation Area. This area has recently been formally delineated and approved by the Department of Environmental Affairs as part of the offset process for the King Shaka International Airport and Dube Trade Port Company. In terms of the conditions of establishment for this Conservation Area, no infrastructure may be placed within the delineated boundaries. Re-alignment will be required to avoid these areas.

The application in its current form fails to fully address and mitigate the impacts to wetland and riparian habitat. The specialist Aquatic and Terrestrial studies both highlight the importance of the onsite wetland habitats and yet limited or superficial detail is provided as to how the direct loss of these wetland habitats can truly be mitigated. Similarly, the associated infrastructural requirements for the desalination plant both conflict with on-going conservation projects with the City and directly impact on proclaimed and formally recognised land parcels set aside for offset.

Until such time as significantly more detail is provided to allay the concerns and issues detailed above, this Department cannot support this application.

3. Parks, Leisure and Cemeteries Department.

Comments/Site Observations:

Particular note is taken of the following

- 3.1. The Potable water pipeline route to La mercy reservoir through forest and wetlands
- 3.2. The positioning of the plant and infrastructure (page 11 and 14 of the main report) within a wetland and critical biodiversity area as identified in the specialist reports.
- 3.3. The weighting of the proposed power-line route in favour of reduction of the visual impact to local residents at the cost of further environmental degradation to the wetland
- 3.4. The disposal of 20 – 100 kg/month nutrient rich screening material at landfill site as opposed to use in composting or food security projects

Conclusion / Recommendations:

The selection of the site for the construction of the proposed desalination plant appears to have been heavily influenced by considerations of convenience and cost savings in terms of the construction of the intake and

discharge pipelines and reduction of the gradients from the source to the desalination plant which would necessitate pumping seawater against gravity.

This has resulted in the selection of a site which is identified as a critical biodiversity area (wetland) with no possibility of offset.

The applicant has attempted to justify this against the rising consumption of the available water resources which has resulted from the rezoning and transformation of agricultural land to residential and commercial properties.

It is acknowledged that the provision of potable water is an obligation of the state but not at the expense of the natural environment in general and critically endangered habitats in particular the protection of which is a constitutional obligation.

Department's Decision:

The Parks, Leisure and Cemeteries Department objects to the construction of the proposed desalination plant at the current proposed site.

Any Water Use Licence application for the current site will not be supported.

An alternative site must be identified which does not entail the loss of irreplaceable critical endangered habitats.

4. Land Use Management Branch.

No further comment received.

5. Strategic Spatial Planning Branch.

This Branch has assessed the proposal and raises no objections as the proposed Tongaat desalination facility would resolve the bulk water capacity limitations or shortages in the Northern area of the Municipality.

6. Economic Development Unit.

No further comment received.

7. Environmental Health Department.

The concerns raised by this Department have been addressed, no further comment.

8. eThekwin Transport Authority.

No objection.

9. Geotechnical Engineering Branch.

No further comment.

10. **Coastal, Stormwater and Catchment Management.**

No development seawards of the Bruins 1000 line will be permitted.

11. **eThekweni Water and Sanitation Department.**

No comment.

12. **Durban Solid Waste.**

This Department has no further requirements.

13. **Disaster Management.**

No concerns from Disaster Management.

14. **Fire Safety.**

This Department has no objections to the above proposal provided that building plans are submitted for approval.


Should you seek clarification on any of the above issues, please contact the writer on telephone: 031 - 3117136 or via e-mail: diane.vanrensborg@durban.gov.za. In addition, the Department requests that a copy of the Environmental Authorisation be emailed to the same address.

Yours faithfully



11/05/2016

MANAGER: LAND USE MANAGEMENT
(Claire Norton: Professional Planner A/746/1993)



12/05/2016

**ACTING HEAD: DEVELOPMENT PLANNING, ENVIRONMENT AND
MANAGEMENT**

Copy To:
Department of Economic Development, Tourism and Environmental Affairs
Private Bag X 54321
Durban
4000

AND

Department of Environmental Affairs
Private Bag X447
Pretoria
0001

Annick Walsdorff - Fwd: DEIAR for the proposed construction, Operation and Decommissioning of a seawater Reverse Osmosis plant in Tongaat

From: Louisa Van der Merwe
To: Walsdorff, Annick
Date: 18/04/2016 12:18
Subject: Fwd: DEIAR for the proposed construction, Operation and Decommissioning of a seawater Reverse Osmosis plant in Tongaat

Hi Annique
I think this email is meant for you.
Kind regards
Louisa

>>> Thobekile Mashele <ThobekileMAS@daff.gov.za> 18/04/2016 10:45 >>>

Good Morning

With Regards to the Draft Environmental Impact Assessment Report for the proposed Construction, Operation and Decommissioning of a Seawater Reverse Osmosis Plant and Associated infrastructure in Tongaat, KwaZulu-Natal, The Department of Agriculture, Forestry and Fisheries would like to request an extension of two weeks to issue comments due to high volume of work. Please kindly reply.

Regards,

Thobekile Mashele

Intern
Directorate: Forestry Regulations
Department of Agriculture, Forestry and Fisheries
Tel: 033 392 7733
Fax: 033 342 8783
Web: www.daff.gov.za
E-mail: ThobekileMas@daff.gov.za



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Department
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Department:
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REPUBLIC OF SOUTH AFRICA

F 033 342 8783

DAFF

Ms. N. Sontangane

T 033 392 7733

Forestry Regulations & Support

11 May 2016

* NandiphaS@nda.agric.za

P/Bag X9029

Pietermaritzburg

3200

CSIR our future through science

P.O. Box 320

Stellenbosch, 7599

Attention: Mrs. Annick Walsdorff

**DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT (DEIAR):
COMMENTS FOR THE PROPOSED CONSTRUCTION, OPERATION AND
DECOMMISSIONING OF A SEAWATER REVERSE OSMOSIS PLANT AND
ASSOCIATED INFRASTRUCTURE IN TONGAAT KWAZULU-NATAL DEA
REFERENCE NO: 14/12/16/3/3/2/652**

The Department of Agriculture, Forestry and Fisheries (DAFF) appreciates the opportunity given to review and comment on the DEIAR received on the 31st of March 2016 for the above mentioned development. DAFF through the sub-directorate Forestry Regulations and Support is the authority mandated to implement the National Forests Act NFA, 1998 (Act No. 84 of 1998) by regulating the use of natural forests and protected tree species in terms of the said Act.

With regards to the DEIAR and the site inspection conducted on the 09th of May 2016, the proposed development site comprises of areas mostly disturbed by agricultural activities (such as sugarcane lands and gardens) and infrastructure (roads and buildings), however there is a Coastal Forest situated adjacent to the development footprint. Coastal/Dune forests are protected in terms of the NFA provisions and they are categorized as endangered/ threatened

Page 1 of 2

ecosystems in terms of National Environmental Management Biodiversity Act No. 10 of 2004. The coastal forest situated adjacent to the proposed plant site must be demarcated during construction. Should the area with the coastal forest be purchased by the developer, the forest ought to be a conservation area and no developments are permitted within the forest. The intake and outtake shaft/pipelines will be tunneled 10m underground; therefore, the Dune/Coastal Forest will not be impacted upon although it still forms part of the servitude. Therefore, the Department has no objections towards the proposed development provided that there are no natural forests and/or protected trees species in terms of the NFA that will be negatively impacted upon by the development.

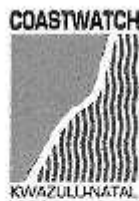
This letter does not exempt you from considering other environmental legislations
Should any further information be required, please do not hesitate to contact this office.

Yours faithfully

N. Sontangane



Forestry Regulations & Support - KZN



COASTWATCH KZN

135-408 NPO

P O Box 343
Pennington
4184

afromatz@telkomsa.net

6 May 2016

CSIR

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Stellenbosch

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awalsdorff@csir.co.za

Coastwatch, WESSA Durban Branch and Birdlife Port Natal, non-governmental organisations formed by volunteers and operating with support of people interested and/or affected by issues relating to the area share interest in development and change of land use applications in the eThekweni area. The organisations serve to ensure that development in the eThekweni area is appropriate, sustainable and legally compliant. The following comments are submitted on behalf of these organisations.

14/12/16/3/3/2/652

**PROPOSED CONSTRUCTION AND OPERATION OF A SEA WATER REVERSE OSMOSIS PLANT
AND ASSOCIATED INFRASTRUCTURE AT TONGAAT**

PROJECT DESCRIPTION

Umgeni Water Amanzi (Umgeni Water/UW) is proposing large scale desalination as an alternative water supply to the north coast of KwaZulu-Natal. This is considered as a short-medium term solution to alleviating serious water shortages in the area. UW is proposing to construct and operate a seawater desalination plant in the Tongaat area using seawater reverse osmosis (SWRO) technology. The proposed site is located approximately 30 km north of Durban between uMhlanga and Ballito.

WATER SUPPLY ALTERNATIVES

The consequences of South Africa's water limitations are currently very evident. While society needs to appreciate the need to change how we use our resources and actively participate in making the necessary changes Government must pursue a blend of solutions to the country's serious water shortages. This includes, *inter alia*, infrastructure maintenance, repair and replacement programmes; rebuilding ecological infrastructure; ongoing citizen awareness; grey water and effluent re-use; as well as closed systems



c/o 100 Brand Road, Durban 4001
Coastwatch operates as a Friend of WESSA, committed to the well-being of the KwaZulu-Natal Coast
Reg. No. 09/04658/08 (Incorporated Association not for profit) FNN 01 1000 78 000 3

becoming standard in industry. Augmentation schemes which are detrimental to our ecosystems, such as in-stream impoundment and inter-basin transfers, are not supported as a default option without consideration of all other options.

While SWRO is a respected technology it is not without challenges. Regarding energy efficiency estimates put the cost of desalinated water at about three times that of surface water as the process requires large amounts of energy with 45 – 60% of total operating costs being attributed to energy use. It is said that existing desalination plants in South Africa use RO technology due to its substantially lower energy use, thus RO is expected to have a much lower lifecycle cost than thermal distillation and contributes much less to greenhouse gases. However, logic is defied where in South Africa electricity generation is water intensive (water cooled power stations) and this electricity is then used to power another process to produce water for human and economic consumption! Alternatives must be looked at and options could include supplementary electricity from, for example, closed system opportunities associated with a waste water treatment works (requiring re-siting the SWRO plant), and investigation into newer technologies such as wave energy which is in use internationally.

COMMENT ON THE DRAFT ENVIRONMENTAL IMPACT REPORT

Coastwatch accepts that the desalination of sea water could contribute to assurance of a water supply for areas of KZN.

We find that the draft Environmental Impact Report (EIR) is comprehensive and we have considered the proposed construction and operation of the SWRO plant from the perspective of impacts on the natural environment and processes. We do, however, take cognisance of additional local impacts such as visual impacts, potential noise impacts and negative socio-economic impacts where a vulnerable group in the community will be affected by the loss of income from the market gardens, for example.

The environments which will be affected by the construction and operation of a SWRO plant and associated infrastructure are summarised as:

- Marine environment;
- Coastal dune and beach environment;
- Mesic or dry lands; and
- Wetlands and a portion of the uMdloti estuary.

IMPACTS OF CONCERN

In this section we raise issues which, while identified in the report, are found to need additional consideration or explanation.

- **Marine Impacts**

- **Raw water intake**

It is said that *"Ideally, a small-scale pilot plant should be developed to facilitate detailed assessments of expected impacts and validate the predictions of the brine dispersion studies. An entrainment study should form part of this approach"*.

Issue:

No information is given on the small-scale pilot plant as recommended. Where will it be positioned, when will it be constructed and for how long will it be required to operate to achieve the desired information necessary to inform the detailed planning of the SWRO system?

- **Construction of pipelines**

Blasting in the marine environment is always a major concern and it should be kept as a last resort and be undertaken only out of the migratory seasons for all cetaceans.

Issue:

Should blasting be required it must be discussed in more detail and a blasting protocol supplied.

- **Supported** – As the beach-dune continuum is the most sensitive ecological component and it is an ecosystem most at risk of transformation we support the proposed tunnelling of the seawater intake and brine discharge pipelines under the frontal dune. This is anticipated to reduce the residual impact on the coastal environment to low significance.

- **Brine Disposal/Co-disposal of brine and other chemicals**

The EIR informs readers that the ecological assessment is limited to a desktop approach and relies on existing information only. Based on results from the initial dilution modelling and far-field brine dispersion modelling studies undertaken by

WSP Africa Coastal Engineers (Pty) Ltd) there are some important conclusions and associated impact assessments, with recommendations being given in the report. The predictions of these models, whilst considered to be robust in terms of the major discharge constituent, need to be validated by field observations and subsequent monitoring. To this end it has been strongly recommended that a well-designed monitoring plan is developed and implemented to ensure that the required level of dilution (as predicted by the numerical modelling) is in fact achieved and that typical brine and thermal footprints are confirmed, both to assess the performance of the discharge system and to validate the numerical model predictions.

Issue:

1. It is recommended that the SWRO Plant environmental requirements include establishing a baseline of shallow sub-tidal invertebrate macrofaunal communities before any construction commences. More information is required on this aspect such as when such a study would commence and its duration. That is, timelines for the conclusion of the study need to align with construction should environmental authorisation be granted and the project implemented.
2. *"If field observations and monitoring fail to mirror predicted results, the forecasted impacts will need to be re-assessed."* This statement needs to be discussed in further detail, in particular what interventions will be considered, or in fact can practically be considered once design and construction is complete, should monitoring fail to mirror predicted results?

• **Surface and Subsurface Hydrology**

It is critical that surface and subsurface hydrological function be retained, at least in part, to ensure the delivery of freshwater to the frontal dune environment which is situated immediately east of the SWRO plant. Alteration of surface and subsurface hydrology due to the construction of the stormwater and drainage systems in and around the SWRO plant is a high significance impact likely to affect the state of the frontal dune unless appropriately managed (i.e. suitable planning and management as recommended).

Issue:

Loss of wetland function due to the construction of the SWRO is a factor which must be considered in addition to stormwater runoff and how it is managed to ensure minimal

alteration to flows to the frontal dune system. Specific information on the loss of wetland area and function due to the construction of the plant is not given.

- **Aquatic and Wetland Environment**

It is said that, in summary, most impacts can be mitigated through judicious design and planning, as well as management interventions during and post the construction and operational phases of the project. We find that certain aspects need particular consideration.

Issue:

Wetland Loss. The wetland area which will be lost due to the construction of the SWRO plant must be quantified in terms of ecosystem services, including habitat and space in the landscape. To inform the decision making process suitable candidate offset area needs to be identified, together with rehabilitation/restoration plans, and approved by relevant commenting authorities. It has been recommended that additional offsite wetland rehabilitation should actively improve the condition of similar or more threatened wetland habitat to a condition that is better than Category D. Possible targets for offset mitigation are mentioned but it seems that no investigation into whether offset requirements will be met has been undertaken.

- **Uncertainties and Further Impacts from Associated Infrastructure**

- **Electricity Supply/Powerline Alignment**

1. Figure 14-1 shows the final infrastructure layout which takes into consideration the findings of the specialist studies. In particular, during the assessment it was determined that the initial alignment of the 132 kV transmission line constituted a fatal flaw as it crossed the Mount Moreland wetland.

Issue:

Has the alternative alignment been approved by the service provider – eThekweni Municipality? Should this not have been resolved the alignment as proposed by the proponent would remain a fatal flaw as offset mitigation would not compensate for its authorization.

2. It seems uncertain whether the power supply to the proposed development will coincide with eThekweni's future development plan in the area which would provide a 132kV point of supply would be available within 1km from the

proposed SWRO plant site. Should the proposed desalination plant precede the eThekweni electrical infrastructure expansion, UW would need to construct a single-circuit 132 kV transmission line from the nearest 132 kV point of supply (i.e. which is the supply from the La Mercy Major Substation located approximately 5 km from the proposed site, on the western side of King Shaka international airport) to the proposed desalination plant site. While, where possible, UW intends to follow the route proposed by eThekweni as part of their electrical infrastructure expansion, an alternative route has also been proposed to mitigate visual intrusion on La Mercy residents. Both options are considered environmentally acceptable, i.e. the eThekweni future plans and the alternative and are recommended for Environmental Authorisation.

Issue:

The visual intrusion on La Mercy residents will remain high should eThekweni's current route plan be used. The EIA has only considered the route from an environmental perspective. How/when will the impact on the residents ie social impacts of this aspect of the project be addressed?

3. Water Body Crossings. Although a recommended alternative route avoids the Mount Moreland wetlands there remain significant water bodies to cross. Have all alternatives which would further minimise impacts on water bodies been evaluated such as: -Looking at Fig. 14-1 is there an option of the powerline running adjacent to the potable water line and turning inland further to the south to avoid a major crossing immediately above the upper reaches of the estuary?

Could the powerline turn inland north of the Mdloti river? This would involve crossing only a minor tributary.

4. Avian Mortality

It has been advised that bird flight diverters are provided on all powerlines, positioned strategically along the line route. It is also recommended that behavioural changes and avian mortalities are monitored along powerlines.

Issue:

Is comprehensive baseline information on avian populations and their behaviour in the region available to give effect to the outcomes of the monitoring programme? If not, how will this be addressed?

5. Clearance of Natural Forest

It is said that if "forest" (as defined) is to be disturbed then a permit is required prior to such disturbance. In this regard, a permit is likely to be required for construction within/in the vicinity of the desalination plant site and along the proposed pipeline routes. The EIR provides that *"Upon final survey and confirmation of the line, consideration is given to the presence of forest as per the NFA, and a suitable permit application made."*

Issue:

The Department of Agriculture, Forestry and Fisheries (Indigenous Forest Regulation and Oversight) is a commenting authority in the EIA and would be required to approve the layout prior to environmental authorisation being granted. The Department, in terms of its mandate, is able to refuse to issue a permit once environmental authorisation is given.

- **Construction in the coastal environment**

In discussing this aspect it is said that pedestrian traffic through the dune environment for all activities will be managed (ie cordoning off the area).

Issue:

Strict control of all vehicles permitted in the coastal zone, too, must be ensured.

- **Management actions proposed by UW**

The EIR, Section 14.2, sets out management actions proposed by UW to minimise impacts. Under Marine Ecology – Construction – *"Comply with Umgeni Water Construction Specification for Environmental Management."*

Issue:

As a bulk water provider we would not anticipate that the proponent has been involved in extensive work in the marine environment. Please either provide a list of projects within the marine environment or the provisions of the environmental management specifications which pertain specifically to activities in this environment. Should the construction of the SWRO plant and associated infrastructure not be addressed in UW Construction Specification for Environmental Management this needs to be addressed in depth in the EMP.

- **Additional Authorisations**

Water Use Licence. It is explained that the application for a Water Use Licence will be submitted after release of final EIR. We trust that should this application have

information additional to that set out in the EIR it will be provided to stakeholders and I&APs.

Coastal Waters Discharge Permit. In response to our request for information pertaining to the CWDP for the proposed UW Lovu SWRO project we were informed that public review of the document is not a requirement. We fail to understand the reasons for the reluctance to make the information available and again request that it is provided.

Thank you for the information and opportunity to comment on the proposed Tongaat desalination plant.

Yours faithfully



C SCHWEGMAN

Annick Walsdorff - Desalination La Mercy; Public Comment

From: La Mercy Residents Action Group <lamercyactiongroup@gmail.com>
To: Annick Walsdorff <AWalsdorff@csir.co.za>, Paul Lochner
<P.Lochner@csir.co.za>
Date: 04/05/2016 18:27
Subject: Desalination La Mercy; Public Comment
Cc: "Kevin Meier (Kevin.Meier@umgeni.co.za)" <Kevin.Meier@umgeni.co.za>, KAM...
Attachments: desal-energy-ghg-full-report.pdf

Dear Annick and Paul

Please include and highlight the issue about Energy Consumption and Greenhouse Gas Emissions. The attachment is a study on this issue and will be part of the several others that we will be drawing attention to in our objections. Please include this study with your experts comments together with any opposing views for consideration by DEA.
Please copy us the comments each time.

Regards
Betty
Adviser
R Rawheath
General Coordinator
LaMRAG

154 075 NPO

La Mercy Residents' Action Group

P.O. Box 1176 La Mercy 4405

E-mail: lamercyactiongroup@gmail.com

Telephone 0229425128; Mobile 0824578011

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Annick Walsdorff - RE: Notice of Release of Draft EIA Report for comment and invitation to Public Meeting

From: Andre Eagar <Andre.Eagar@dmr.gov.za>
To: Annick Walsdorff <AWalsdorff@csir.co.za>
Date: 22/03/2016 09:41
Subject: RE: Notice of Release of Draft EIA Report for comment and invitation to Public Meeting

Dear Annick

Thank you for your enquiry.

Please forward this to our Durban Regional Office?

Kind Regards

Andre Eagar
Communications Directorate
Department of Mineral Resources
Tel: (012) 444 3231
Fax: 0866245509



mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA



From: Annick Walsdorff [AWalsdorff@csir.co.za]
Sent: Saturday, March 19, 2016 12:55 AM
To: Enquiries; Samke Cele
Subject: Fwd: Notice of Release of Draft EIA Report for comment and invitation to Public Meeting

Dear Stakeholder,

Annick Walsdorff - Re: Commenting period on Proposed Construction, Operation and Decommissioning of a Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Tongaat on the KwaZulu-Natal North Coast (DEA EIA Ref No: 14/12/16/3/3/2/652).

From: Annick Walsdorff
To: 'brawheath'
Date: 26/04/2016 13:56
Subject: Re: Commenting period on Proposed Construction, Operation and Decommissioning of a Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Tongaat on the KwaZulu-Natal North Coast (DEA EIA Ref No: 14/12/16/3/3/2/652).

Dear Betty,

Thank you for your email. Please refer to my earlier emails dated 18 April and 20 April. Should you wish to make use of external specialists to verify information and provide comments after the commenting period has lapsed (i.e. within the requested 3 weeks extension), those comments need to please be sent to the National DEA case officer directly for consideration and a copy of those comments sent to the CSIR.

Kind Regards
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: +27 21 888 26 93

>>> Betty Rawheath <brawheath@gmail.com> 20/04/2016 16:56 >>>

Dear Annick,

Thank you for pointing out that CSIR has complied with the formalities for this EIA public participation process. However, as LaMRAG has been repeatedly saying, formal compliance is not equal to substantive compliance which the constitution demands. What we all would like to know is the real reason for suddenly hurrying this process along. We get the distinct impression that you want this process finalised as quickly as possible. Civil society is the primary stakeholder which cannot be denied its legitimate space and time to protect itself from unscrupulous developers.

We suggest that you communicate our sentiments to your client and DEA, after all you claim to be independent. We will of course make our own representations to DEA about all the reasons why Desalination in La Mercy or anywhere in the Greater eThekweni area is not acceptable to the people who live and work here.

We look forward to some indication in your actions and responses that CSIR is as independent as it claims to be. Your experts too cannot claim to be truly independent as we have not had the opportunity to test this claim. Besides, we find it difficult to accept that all the experts have in the final analysis favoured Umgeni Water's proposal in the face of devastating harm on many significant aspects.

Please advise how we can find common ground about the further progress of this process.

Annick Walsdorff - Re: Commenting period on Proposed Construction, Operation and Decommissioning of a Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Tongaat on the KwaZulu-Natal North Coast (DEA EIA Ref No: 14/12/16/3/3/2/652).

From: Betty Rawheath <brawheath@gmail.com>
To: Annick Walsdorff <AWalsdorff@csir.co.za>
Date: 22/04/2016 00:13
Subject: Re: Commenting period on Proposed Construction, Operation and Decommissioning of a Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Tongaat on the KwaZulu-Natal North Coast (DEA EIA Ref No: 14/12/16/3/3/2/652).
Cc: "Desmond D'Sa" <desmond@sdceango.co.za>, Paul Lochner <PLochner@csir.co.za>

Dear Annick,

Thank you for pointing out that CSIR has complied with the formalities for this EIA public participation process. However, as LaMRAG has been repeatedly saying, formal compliance is not equal to substantive compliance which the constitution demands. What we all would like to know is the real reason for suddenly hurrying this process along. We get the distinct impression that you want this process finalised as quickly as possible. Civil society is the primary stakeholder which cannot be denied its legitimate space and time to protect itself from unscrupulous developers.

We suggest that you communicate our sentiments to your client and DEA, after all you claim to be independent. We will of course make our own representations to DEA about all the reasons why Desalination in La Mercy or anywhere in the Greater eThekweni area is not acceptable to the people who live and work here.

We look forward to some indication in your actions and responses that CSIR is as independent as it claims to be. Your experts too cannot claim to be truly independent as we have not had the opportunity to test this claim. Besides, we find it difficult to accept that all the experts have in the final analysis favoured Umgeni Water's proposal in the face of devastating harm on many significant aspects.

Please advise how we can find common ground about the further progress of this process.

Kind Regards
LaMRAG Adviser
Betty

On Wed, Apr 20, 2016 at 12:21 PM, Annick Walsdorff <AWalsdorff@csir.co.za> wrote:
Dear Desmond,

Letters of notification of the public commenting period on the Draft EIA report for the proposed desalination plant at Tongaat have been sent out to I&APs on 19 March 2016 and Adverts have been published in newspapers between 22 and 25 March 2016. Taking the last advert dated 25 March 2016, this gives I&APs 45 calendar days for reviewing the report. This complies with the 2010 EIA REGULATIONS and the INTEGRATED ENVIRONMENTAL MANAGEMENT GUIDELINE SERIES 7 - PUBLIC PARTICIPATION IN THE EIA PROCESS (2010) published by National DEA.

As mentioned on numerous occasions, CSIR has acted as an **independent** party throughout the project, and the specialist studies have also been undertaken by **independent** specialists not employed by the CSIR. However, should you wish to make use of external specialists to verify information and provide comments after the commenting period has lapsed, those comments need to please be sent to the National DEA case officer directly for consideration and a copy of those comments sent to the CSIR.

DEA Case office:

Ms Nyiko Nkosi
National Department of Environmental Affairs
Private Bag X 447, Pretoria, 0001; or
Environment House, 473 Steve Biko Road, Pretoria; 0001
Fax: 012 - 320 7539
Email: nkosi@environment.gov.za

Looking forward receiving your comments by 9 May 2016.

Many thanks.
Kind Regards,
Annick Walsdorff

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2561
Fax: +27 21 888 26 93

>>> "Desmond" <desmond@sdceango.co.za> 18/04/2016 10:07 >>>

Hi Annick

I think you are missing the point we as the SDCEA need to find experts to comment to a completely new development in a very short space of time who can give freely of their time to community organisations. I want to point out that since Wednesday the 13th April 2016 where we attended the meeting to the 9th May 2016 is only 26 days and this includes holidays and weekends for us to comment.

Please can you explain how you have got 40x days hence you cannot extend the commenting period. As the facilitator you have to act independently without bias unless you are favouring the development and are wanting this project to go ahead without any comments that will delay the process. This then goes to what the Umgeni Water speaker stated that this project is only a backup in case the UMKOMAAS dam is held back. In the event that you proceed we will not hesitate to seek a legal opinion on public participation given that the process so is already flawed with a number of the population not involved nor invited.

Please can you respond to me.

Thank You
Desmond D Sa
SDCEA Coordinator

From: Annick Walsdorff [<mailto:AWalsdorff@csir.co.za>]

Sent: 18 April 2016 09:34 AM

To: desmond@sdceango.co.za

Subject: RE: Commenting period on Proposed Construction, Operation and Decommissioning of a Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Tongaat on the KwaZulu-Natal North Coast (DEA EIA Ref No: 14/12/16/3/3/2/652).

Dear Desmond,

Many thanks for your letter.

There has already been numerous extensions and delays on this project and National DEA is now striving for more efficient and timeous EIA processes. Given the above and the fact that we believe there is sufficient time for I&APs to send us comments (in fact more than 40 days), we unfortunately cannot extend the commenting period of this draft EIA report.

Looking forward receiving your comments by 9 May 2016.

Kind Regards

Annick

Principal Environmental Assessment Practitioner

EMS - CSIR

Consulting and Analytical Services

Tel: +27 21 888 25 89/2661

Fax: +27 21 888 26 93

>>> "Desmond" <desmond@sdcea.co.za> 15/04/2016 10:08 >>>

Hi Good day

Please see attached, a letter from SDCEA

A response at your earliest will be most appreciated.

Thank You

Desmond Mathew D'Sa

SDCEA Coordinator

2014 Goldman Prize Recipient, Africa

EMAIL: desmond@sdcea.co.za

CELL: 083 982 6939

TEL: 031 461 1991

FAX: 031 458 1257

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Annick Walsdorff - Re: Draft EIA La Mercy Desalination Proposal

From: La Mercy Residents Action Group <lamercyactiongroup@gmail.com>
To: Annick Walsdorff <AWalsdorff@csir.co.za>
Date: 07/04/2016 12:07
Subject: Re: Draft EIA La Mercy Desalination Proposal
Cc: Paul Lochner <PLochner@csir.co.za>, KAMTHA SINGH
<singhkamtha@gmail.com>...

Dear Annick

Thanks for the rather terse reply.

It clearly confirms our thinking that CSIR is concerned only with its client's interest. We believe we will be able to argue successfully that CSIR independence is questionable at best because the processes did not adequately include bona fide engagement with us (the main objectors) to give us sufficient time to get our own counsel to scrutinise the facts, evaluations and recommendations in the draft EIA.

We will argue that the process is flawed. We have reason to think that Umgeni Water and CSIR would rather rush through this process for political expedience rather than accommodate the reasonable requests of the mostly negatively affected communities. This we gather from comments in the media about the desire of Umgeni Water to put up a Desalination facility in La Mercy to satisfy the needs of Ballito which will not tolerate a Desalination facility in its own area. La Mercy and Tongaat are not the main consumers of the water from Hazelmere. This belief is not irrational, considering that a spokesperson from Dolphin Coast Conservancy stated that Desalination is in demand for the growth of Ballito. The same person in the same breath said something which in our view is quite preposterous: that Desalination would be an **answer to Climate Change Concerns**. Is this the sector for which this haven of peace and serenity and healthy marine habitat is being sacrificed? This is not just immoral and unethical but utterly irresponsible and we may add demonstrates **shocking levels of ignorance about climate change factors**.

After your refusal to grant a reasonable request about further preparation time, we do not believe there is anything to discuss with your team if not every expert who has submitted a report is not present to answer the numerous questions that arise on just a cursory reading of the report. We are a registered NPO and do represent the Greater La Mercy Coastal Zone (the only formalised organisation representing the entire zone (GLaMCZ) and would like to obtain written comments on the issues we intend to raise. We call for all the experts to be present to consider our points and respond in person followed by written responses that we can take to our own experts for evaluation and advice. We take it that you will ensure that they are all present on the 13th April 2016.

LaMRAG Greetings
B Rawheath
Adviser

PS If LaMRAG is not already included as an I&AP for this EIA process, kindly register it now as such.

The Name is La Mercy Resident's Action Group (LaMRAG)
The email address is lamercyactiongroup@gmail.com

Our NPO Number is 154 -075
Physical Address 27 Ahmedys Street La Mercy
P O Box 1176 La Mercy 4405
Telephone 032 9415128

R Rawheath
General Coordinator
LaMRAG

154-075 NPO

La Mercy Residents' Action Group

P O Box 1176 La Mercy 4405

E mail: lamercyactiongroup@gmail.com

Telephone 0329415128; Mobile 0824578011

On Thu, Apr 7, 2016 at 8:05 AM, Annick Walsdorff <AWalsdorff@csir.co.za> wrote:

Dear Betty,

Many thanks for your email. Your concerns are noted and we will respond to them in due course, providing these fall within the scope of work of this EIA for which CSIR was appointed as an independent environmental practitioner. The draft EIA report was released on 19 March 2016, which allows I&APs almost a month to review the report before the public meeting. CSIR believes that this timeframe is very reasonable and concurs with timeframes applied for many other EIA projects.

We would suggest you LAMRAG attends the public meeting on 13 April at the Tongaat Town Hall during which the findings of the draft EIA report will be presented. We can then also discuss and clarify remaining issues.

Kind Regards
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: +27 21 888 26 93

>>> La Mercy Residents Action Group <lamercyactiongroup@gmail.com> 28/03/2016 16:08 >>>
Dear Annick,

We note with concern the revival of the above matter. Please advise as soon as possible why this process is being resumed at this stage. We are of the view your client is not taking our community into its confidence by arbitrarily allowing another important meeting to be held without working with us to decide on a date for the next phase of the EIA.

This date 13th April 2016 is much too short notice for us to resume and expand our objections especially as several public holidays are included in the notice period. The draft EIA is not a small or

simple document by any means, hence it is incredible that CSIR could have thought this would be sufficient notice to enable reasonable preparation opportunity. If you decide to go ahead with this process and there is a poor turnout and/or inability to engage because of preparation time constraints, we will argue that substantive due process was not complied with.

The draft document involves several technical issues that we are entitled to obtain counsel on before we can meaningfully participate on equal terms. The conclusions in the draft report are not consistent with the factual findings in the most significant chapters viz. environmental damage, socio-economic impact, replacement of an agricultural area with an industrial one within a residential area and the costs, especially costs of energy and massive implication for South Africa's and KwaZulu Natal's climate change international obligations.

The lack of engagement with municipalities who are clients of Umgeni Water is a matter that should not have been glossed over. eThekweni engineering services, we have been given to understand, is planning alternatives to deal with short and long term water shortages for this region. Umgeni Water also has delivered on a water supply source for north coast communities that will be in operation this week. These should not be left out of the equation especially as Desalination is only a last resort for us in South Africa where we ought to prioritise the upliftment of the thousands who would be unable to benefit from this expensive and destructive water factory.

We would have thought that CSIR should be distancing itself from this process especially as the draft report that the specialists have compiled leave no doubt that this project will be confronted with a number of significant challenges even if it were to get approval from the authorities eventually.

We seek a further focus group meeting before any further public participation as per EIA procedures meetings takes place. We suggest that the nature of the meeting to be held on the 13th April be changed from public participation meeting to a focus group meeting. LaMRAG represents the Greater La Mercy Coastal Zone. (The area between the Mdloti and Tongaat catchments)

LaMRAG Greetings

B Rawheath

Adviser

R Rawheath

General Coordinator

LaMRAG

1564075 NPO

La Mercy Residents' Action Group

P.O. Box 1175 La Mercy 4405

E-mail: la mercy@mpw.co.za

Telephone 0329415128; Mobile 0824578211

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www.sdcea.co.za

South Durban
Community
Environmental
Alliance



9 May 2016

CSIR Project Manager/EAP:
Annick Walsdorff
PO Box 320 Stellenbosch - 7599 South Africa
Fax: +27 21 888 2693
Email: awalsdorff@csir.co.za

RE: Comment on Proposed Construction, Operation and Decommissioning of a Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Tongaat on the KwaZulu-Natal North Coast (DEA EIA Ref No: 14/12/16/3/3/2/652).

Public Participation

A very problematic process hosted in Tongaat. Public meetings hosted were very limited, and consultants were in a haste to tick boxes and little time was allocated to consulting and questions. This meeting was not meaningful, noting that it was not held in residential areas that will be affected by this development. We find it strange that the meeting was held in Tongaat and not in La Mercy where the development of the desalination plant is said to take place. The meeting was held at night and limited to probably a little more than two hours. Miss Annick Walsdorff of CSIR was questioned as to why the meeting was late and limited to two hours, she responded and said she had a long day traveling far distances to spend long hours to address communities; which we objected to this limited times spent discussing a two billion project. The community requested further meetings at a venue suitable at La Mercy on a weekend where the proposed desalination plant is said to be, furthermore this was not responded to. Very few people were informed and most found out by word of mouth. A vast majority of ISIZULU speaking people were not invited nor were they informed. Yet they are the ones that stand to be relocated either by pipeline or road infrastructure development of the desalination plant. There were few Zulu speaking people either from Umgeni Water, CSIR or local government but there was no translation so they could understand clearly; this meeting was hosted in Tongaat. Governments war on leaks project which was created to prevent water loss as a result was not even discussed or in the information presented yet we are suffering from a severe drought. With reference to the governments war on leaks project we can question why the CSIR and UMGENI Water have not come up with a solution to deal with this problem that can save thousands of liters of water. Why is the CSIR and UMGENI Water not investigated why silt has filled up most of the dams and no plan put in place to remove this from dams. CSIR and Umgeni Water need to provide evidence why dams are not properly maintained.

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SDCEA Members
Faithlife Africa Durban
GroundWork
Centre for Civil Society-UKZN
Isipingo Environmental Committee
Umhlabi Unemployed Peoples Movement

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KwaZulu-Natal, South Africa
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SDCEA Members
Isipingo Residents Association
Mankank Civic Committee
Shawgo Civic Association
Wentworth Development Forum
Tresure Beach Endowment Forum
Christ the King Church

When investigating and looking at alternatives to solving the problem of the drought we need to ensure that proper and cost saving investigations are done to provide water for everyone. Why is there no investigation on how recycling water plants are developed and used for industry use and move industries away from the use of clean running water? Why is there recycling waste and other water in South Durban and yet this option does not seem to be the case for investigation for the industries north of Durban. There has not been argument put forward by UMGENI Water and CSIR. We know that there is enough water for residents to use? We note from reading documents that these studies must be done in order to assess the development impacts on humans and ecology of the area.

Consultation and Information

It is clear that consultants want very limited consultation and are effectively ensuring that there are no obstacles and development goes ahead without obstruction and limited objections. We believe that the consultants, CSIR have done lots of work for the Umgeni Water Local Municipality as well as the National Water Affair and or privy to programmes of this department and Umgeni Water and government and therefore acted in a bias manner. The whole programme of CSIR and Umgeni Water was to argument that the desalination plant was the best option: without providing independent, unbiased, scientific evidence with cost analysis of every project that they were presenting on, as well as not looking in to water leak from stand pipes and taps in residential areas.

Scientific Reports

No proper assessment of comparing international best practices and how they impact on people in other parts of the world. In regard to the huge amounts of energy going to be used and how expensive the cost and only 50% of water will be drinkable, 50% concentrated brine containing 5.7% salt. The large red plume of high iron content of concentration in the sea and how this has impacted upon destroying marine life. Highlighting, that CSIR monitors our rivers and oceans and therefore should be in a better position to understand the state of our water quality. The seabed is critical for a healthy diversity of marine species and upsetting this will lead to whatever pollution lifted from the bottom. Documentation and presentations presented to us were skimmed over. Around the world there are stringent regulations that govern how chemicals must be reduced. In South Africa despite the Air Quality Act, there are no standards control or sanctions applied for these. These scientists should be scrutinized thoroughly and peer reviewed by communities and independent researchers payed for by Umgeni Water. While major accidents could occur and glossed over and our concern is the uses of the beach and the sea, residents that live by the beach that walk and swim daily on the beach will consider this hazardous desalination plant. The noise emissions will increase and yet we require this to be properly researched and precautions to be taken to safe guard people. The type of equipment that is developed and used we request all information to be provided for community to peruse to assess the impacts of this development on quality of life and health. Scientists appointed by CSIR and Umgeni Water describe it as a "very low negative", that this is not the truth and when one reads up on international literature on desalination.

Health and Hazards

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KwaZulu-Natal, South Africa
KwaZulu-Natal, South Africa
KwaZulu-Natal, South Africa

The use of chemicals is not properly studied and should be done in a proper EIA report. Antifoaming agents to reduce foaming in distillation plants, antifoaming agents like polyglycols are added to the feed water, which are poorly biodegradable. In Reverse Osmosis plants, alkaline cleaning solutions (pH 11-12) are used for removal of silt deposits and biofilms, whereas acidified solutions (pH 2-3) remove metal oxides and scales. The affordability to ensure standards of high quality not properly done and should be comprehensively studied. We place on record our concerns that the pipeline desalination plant itself will provide numerous hazards to children surrounding community as well as beach goers. These risks include information of pipeline rupture consequently negatively impact on crops, animals, ecosystems and a desalination plant working 24 hour high levels of noise above required decibel impact on ear drums and quality of life. We requested a thorough independent investigation done by the experts of the community choice so we can have facts and evidence to make informed decisions; so we do not allow risk and hazards of desalination plants of this nature development in our residential areas. Health studies done around the world have shown these desalination plants have serious impacts on people. We know there has been a lack of transparency, information, presentations and openness in these processes which EIR demands.

Impact on Marine life and resources

As distinguished in a 2005 California Energy Commission analysis, "seawater...is not just water. It is habitat and contains an entire ecosystem of phytoplankton, fishes, and invertebrates" (York and Foster 2005). Given the extinction of marine life due to industries polluting along our coast the cumulative effects previously studied. The development should not be done in isolation of all other impacts. As CSIR have already done studies on rivers and oceans e.coli, heavy metals entered through sewage plants should be included in this study and should be used to assess the oceans carrying capacity of pollution and at what rate can it increase. Any decision made must consider food, plant resource which will be destroyed if the desalination plant is granted. All information should be studied and placed before the decision maker; so decisions are made encompassing all information which this project requires before any go ahead is given. Over 20 000 recreational fisher folk eke out a livelihood on the entire Indian Ocean with permits and licenses registered with Ezemvelo Wildlife and yet no mention or engagement has taken place that we see captured in the information provided or presented by the CSIR and how they will be affected. These affected parties have not been invited to public participation meetings, nor have they been informed about this proposed desalination plant. There are many cases of marine life such as whales and fish species that are washed up dead on shores of beaches around the world that are victims of desalination plants. The seaweed that provides food for marine life will be sucked up by pipes which will destroy the primary food source for marine life. Entrainment occurs when organisms small enough to pass through the intake screens, such as plankton, fish eggs, and larvae, are killed during processing of salt water, in this draft EIA the study of the loss of livelihoods have not been conducted. Quantifying species that will be affected and those that will migrate. A major pollutant of distillation processes is chlorine, which is added to the desalination plant feed water to biofouling on heat exchanger surfaces. The use of chlorine also leads to the formation of oxidant by-products such as halogenated organics. These compounds with effect to humans can be explained as cancer causing chemicals; with reference to the marine environment these compounds are usually rather persistent and that some of them are carcinogenic to animals.

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Groundwork
Centre for Civil Society, KZN
Durban Environmental Committee
Dmaza Unemployed peoples
movement

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SDCEA Members
Isipingo Ratepayers Association
Meyburgh Clinic Committee
Silverden Civic Association
Wentworth Development Forum
Trosain: Esich Environmental Forum
Christ's King Church

Climate change

We see no reference to climate change. Nowhere in the document do we see emphasis on climate change and its impacts. We vehemently disagree with this approach and call that climate change is the biggest challenge facing the earth which has and will impact on North Durban. The current development with the use of huge energy and emissions of carbon dioxide and this has not been quantified in the documents. We need an investigation into what the power consumption will be of the new development and also what power saving technologies will be incorporated into this new development and what lighting design will be used to ensure it operates at maximum efficiency. Will this development utilize renewable sources of energy such as solar, wind, hydro? We need to have the information on the design technologies in order for the public to understand this process. How will this development aim to reduce our international commitments on greenhouse emissions? The cost of climate change must be looked at so that programs can be put in place immediately to reduce the drought and remove those systems such as industrial forests, eucalyptus trees from the ground. Why has this not been addressed? The main causes of our droughts are these trees and plantations are yet these are not dealt with to ensure that underground water boreholes, rivers and dams are not drying up because of these plantations.

Perpetration of apartheid planning processes

It's clear that the department with this development is placing dirty and hazardous industrial facilities next to residential land. The CSIR is not proposing alternatives that place dirty industries in industrial zones; rather nutrient soil is being destroyed to cater for these industries. The biased evaluation of the alternative lands ensures that this practice continues and those real viable alternatives are not meaningfully investigated. This sort of investigation gives rise to conflict between communities, industries and authorities. The continued industrialization of residential and farming land is atoning to continuous discrimination that is unconstitutional and considered they by means of grabbing land for business and profit while the majority of people have no access to homes.

Endangered and rare species, both flora and fauna have not been properly identified nor considered and once this development starts including the pipelines, their habitat will be removed and will be lost forever, to current and more importantly to future generations. We do not see proper studies done to inform us how the development of pipelines, roads and desalination plants is going to avoid and not in danger these species and how they will not be destroyed.

The land in question is simply too large and strategic as well as enhancing our tourism industry which creates thousands of jobs, yet the developer Umgeni water and the EAP, CSIR want to determine its fate without doing the proper and meaningful research with the affected residents of La Mercy. The potential of tourism is not even explored in this development. There are questions around this contentious development and inevitable further disruption to the communities of the La Mercy and Tongaat area. In light of massive change in land use, from recreational to industrial, we believe that this will destroy, not only the green area but also the needs of the communities of La Mercy, that enjoy peace and tranquility which this development will be destroyed once this desalination plant starts up. Should this desalination plant proceed, information provided by the developer shows only a few jobs and most of it will be expert and skills based jobs which we do not have in South Africa and therefore Umgeni Water will have to import the labor force?

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SDCEA Members
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Centre for Civil Society UZN
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Umkhonto Development Forum
Umkhonto Environmental Forum

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SDCEA Members
Isipho Rikwaye-Komane
Matsikulu Civil Committee
Shesheke Civil Association
Umkhonto Development Forum
Umkhonto Environmental Forum
Graham's Bay Church

Why are we not preserving the available land for the urgent need of housing and ecological but instead choosing to move in the direction of perpetrated apartheid planning means?

Communities in this area have had to endure decades of abuse including insults to liberty and freedoms in terms of the groups areas act. There has been no proper spatial planning that considers how this massive erosion of living space will impact with inevitable intrusions into the social and environmental fabric of these beleaguered communities of La Mercy and Tongaat. It is clear that the development imperatives of Umgeni Water and the interests and biasness of the CSIR is to allow our open spaces to be developed for purely economic and profit driven purposes.

Absence and involvement of Government officials

Government officials have been conspicuous by the absence at meetings and we are not aware what positions they are presenting to Umgeni water and the consultants. The IDP in its draft status, talks about meaningful community engagement and yet we see Government officials are extremely reluctant to participate in this process where water is a key component of life and in the IDP. We need access to all comments from all stakeholders including the Government departments in order for us to engage and provide meaningful comments for sound decisions to be made.

Social enhancement studies

We need independent research done on the impacts of this project in regard to people's livelihoods, quality of life and a cost base analysis done on the health the residents will endure from the chemicals emanating from the development.

- ✦ Must include the loss of crops, food security, employment, and local businesses and how this will impact on them-agriculture- markets

Proper costing of the development of the desalination plant

We need detailed information on the cost of the desalination plant from the purchasing of land, to the development of the plant including the hiring of boats and rigs as well as any equipment, pipelines made in the sea and on land. The infrastructure changes such as roads will also impact on the community and environment (trucking a huge concern) will also need to be discussed. This information must be based on evidence from independent research studies and international best practice methods. We would also like to ensure that the cost does not escalate like we see in many other governments based projects like the Eskom Medupi and Kusile power stations as well as the Transnet pipeline and of course our white elephants such as the Moses Mabhida Stadium.

Maintenance and costing of water leaks, dams, rivers and estuaries

Before embarking on the desalination project a maintenance and costing analysis of water leaks should and must be done. This report must be done by independent consultants who have no links to any parastatal or Government departments. This report should also investigate what lead to the current water crisis and what must be done to fix the problem such as water leaks from pipes and taps as well as illegal water use. This study should also look at what are the costs of these losses. The study should also look at the maintenance of our dams with huge amount of silt and no removal of this. Further we should look at the skills shortage in regard to Umgeni Water as well as the Water department both locally and nationally and this costing should then be compared to the building of desalination plants and whether or not there is desperate need to have one. There is

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Mankani Civic Committee
Silverden Civic Association
Waltworth Development Forum
Treasure Beach Environmental Forum
Ethnic KwaZulu

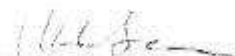
very limited information that provides us with a true reflection of why our rivers and estuaries are not maintained or and we need to have an integrated study that tells us how the rivers will be remediated so that water flows freely and the dams are able to fill up.

International best practice

We believe that the assessment documents presented did not thoroughly discuss the international methods and practices of the desalination plants and deliberately chose to mention just a few that does not address the concerns in detail.

Electricity costs

These costs have not been properly considered, yet Eskom continues to ask for increases of approximately 25% per annum. This will increase the costs of water and electricity. This study must be done in order for it to include all costs so that it reflects what people will have to pay on an annual basis for the life of the plant.



Desmond Mathew D'Sa
Goldman Prize Recipient 2014 (Africa)
SDCEA Co-ordinator

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Mashava Club, Comrades
Siroyan River Association
Wandlitz Development Forum
Tasman Bay Environmental Forum
Chris De Klerk Group

Annick Walsdorff - RE: Draft EIA La Mercy Desalination Proposal

From: "Tashya Giyapersad INC" <tashya@tgiyapersad.co.za>
To: "La Mercy Residents Action Group" <lameracyactiongroup@gmail.com>, "An...
Date: 28/03/2016 17:30
Subject: RE: Draft EIA La Mercy Desalination Proposal

Good day Annick

I confirm that my firm is instructed by and act for several concerned residents and homeowners in respect of the proposed desalination plant.

We are requested to place on record the following:

1. It is rather opportunistic as to the timing that this Desalination issue has yet again reared its ugly head.
2. We are in the throes of a water shortage, which we might add, was predicted a decade ago or so.
3. We must place on record that NOTHING was done towards gearing up for the predicted drought by our present Government save to perpetuate the raping of state coffers.
4. Whilst we do not wish to get caught up in political rhetoric, we must state so as the above is a nuance which has set this destructive monstrous plan into motion.
5. We are given to understand that the EIA processes and public participation is merely ensuring that the legal processes have been deemed to be followed BUT regardless of the community input, the desalination plant will GO ON and parties have already been earmarked for this project.
6. This information was received from a source in YOUR OFFICES.
7. Whilst this may be scandalous, there is no surprise here given the manner in which this process has run from commencement.
8. We are curious to know just how many projects CSIR have investigated and found against favor of its client Umgeni Water and the Municipality.
9. We are curious to know the statistical evidence herein.
10. Also, how much monies has CSIR made of the Scoping of this project and what is the anticipated future costs of monies to be made by your offices.
11. What has happened to the questions raised by the Community especially the alternative solutions offered as opposed to Desalination.
12. Please enlighten us on the two failed Desalination plants in Cape Town, Mossel Bay in particular reference to the first plant that has never operated to the expense of tax payers monies and the second one which "over-salinates" the water thus making it undrinkable.
13. Further to this also explain why your client is widening the berth of the Umgeni river bank (along the Durban North area) and Estuary in anticipation of flooding whilst a mere 20km away we are being prepared for water shortages and drought. The last time we checked the North coastal area is not indistinguishable from the Umgeni Estuary area.

These are questions that we raised in the previous meeting which still remains to be answered some six (6) months later.

We anticipate your response soonest.

Thank you.

Yours faithfully,

TASHYA GIYAPERSAD
BA(UND) LLB(UKZN) LLM(UKZN) NQF BUS RESC (UNISA) AA Arb
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From: La Mercy Residents Action Group [lamercyactiongroup@gmail.com]
Sent: Monday, March 28, 2016 4:09 PM
To: Annick Walsdorff
Cc: Kevin Meier (Kevin.Meier@umgeni.co.za); KAMTHA SINGH; mishka singh; Andisha Maharaj; Tashya Giyapersad INC; Sharmila R; Thrivin Naidoo; Wade Holland; Solly Dadabhay; Flint Ravjee; Bonnie Transport
Subject: Draft EIA La Mercy Desalination Proposal

Dear Annick,

We note with concern the revival of the above matter. Please advise as soon as possible why this process is being resumed at this stage. We are of the view your client is not taking our community into its confidence by arbitrarily allowing another important meeting to be held without working with us to decide on a date for the next phase of the EIA.

This date 13th April 2016 is much too short notice for us to resume and expand our objections especially as several public holidays are included in the notice period. The draft EIA is not a small or simple document by any means, hence it is incredible that CSIR could have thought this would be sufficient notice to enable reasonable preparation opportunity. If you decide to go ahead with this process and there is a poor turnout and or inability to engage because of preparation time constraints, we will argue that substantive due process was not complied with.

The draft document involves several technical issues that we are entitled to obtain counsel on before we can meaningfully participate on equal terms. The conclusions in the draft report are not consistent with the factual findings in the most significant chapters viz. environmental damage, socio - economic impact, replacement of an agricultural area with an industrial one within a residential area and the costs, especially costs of energy and massive implication for South Africa's and KwaZulu Natal's climate change international obligations. The lack of engagement with municipalities who are clients of Umgeni Water is a matter that should not have been glossed over. eThekweni engineering services, we have been given to understand, is planning alternatives to deal with short and long term water shortages for this region. Umgeni Water also has delivered on a water supply source for north coast communities that will be in operation this week. These should not be left out of the equation especially as Desalination is only a last resort for us in South Africa where we ought to prioritise the upliftment of the thousands who would be unable to benefit from this expensive and destructive water factory.

We would have thought that CSIR should be distancing itself from this process especially as the draft report that the specialists have compiled leave no doubt that this project will be confronted with a number of significant challenges even if it were to get approval from the authorities eventually.

We seek a further focus group meeting before any further public participation as per EIA procedures meetings takes place. We suggest that the nature of the meeting to be held on the 13th April be changed from public participation meeting to a focus group meeting. LaMRAG represents the Greater La Mercy Coastal Zone. (The area between the Mdloti and Tongaat catchments)

LaMRAG Greetings
B Rawheath
Adviser

R Rawheath
General Coordinator
LaMRAG

154 075 840

La Mercy Residents' Action Group

P.O. Box 1176 La Mercy 4405

E-mail: lamragactiongroup@gmail.com

Telephone 0829415125; Mobile 0824578011

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Annick Walsdorff - Draft EIA UW Desalination Proposal La Mercy

From: La Mercy Residents Action Group <lamercyactiongroup@gmail.com>
To: Annick Walsdorff <AWalsdorff@csir.co.za>, Paul Lochner <PLochner@csir.co.za>
Date: 09/05/2016 17:43
Subject: Draft EIA UW Desalination Proposal La Mercy
Cc: KAMTHA SINGH <singhkamtha@gmail.com>, mishka singh <mishka.singh25@gmail.com>

Dear Annick and Paul

LaMRAG notes that today is the deadline set by yourselves for comment by I & APs. We have tried to meet the deadline however as we anticipated, did not have sufficient time to respond in a satisfactorily substantial manner to the rather voluminous document. Further as we will point out in due course there are several gaps and omissions in the Draft Report that should not be allowed to slip by without analysis and comment. As indicated in our earlier correspondence we will submit our detailed response directly to the Department of Environmental Affairs and copy you. Please acknowledge receipt of this email and it will be appreciated if you refer us to the exact same office and officer that will be attending to this particular application.

LaMRAG Greetings
R Rawheath
General Coordinator
LaMRAG

154-075 NPO

La Mercy Residents' Action Group

P.O. Box 1176 La Mercy 4403

E-mail: lamercyactiongroup@gmail.com

Telephone 0329415128; Mobile 0824578551

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ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION,
OPERATION AND DECOMMISSIONING OF A SEA WATER REVERSE OSMOSIS
(DESALINATION) PLANT AND ASSOCIATED INFRASTRUCTURE PROPOSED AT LOVU ON
THE KWAZULU-NATAL SOUTH COAST



DEA EIA Reference Number: 14/12/16/3/3/2/636

REGISTRATION AND COMMENT FORM



April 2016

Name: <u>PAUL MOTSALALI</u>	Telephone: <u>011-773-1776</u>
Organisation: <u>PRASA</u>	Fax: <u>-</u>
Designation: <u>MANAGER: TECHNICAL SERVICES</u>	Email: <u>pmotsalali@prasa.co.za</u>
Physical address: <u>70 Wolmarans Street, Umjantshi House, Braamfontein, 2007</u>	Postal address: <u>PRIVATE BAG X22 MARSHALLTOWN, 2107</u>

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA Process.

YES	ALREADY REGISTERED	NO
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Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

Please describe any issues or concerns you think should be considered during the EIA Process:

Please provide details of any other individuals or organisations that should be involved:

Please submit this **Registration & Comment Form** to:

Mrs. Annick Walsdorff
CSIR
P.O. Box 320
Stellenbosch, 7599
Tel: (021) 888 2661
Fax: (021) 888 2473
Email: awalsdorff@csir.co.za

Annick Walsdorff - RE: Commenting period on Proposed Construction, Operation and Decommissioning of a Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Tongaat on the KwaZulu-Natal North Coast (DEA EIA Ref No: 14/12/16/3/3/2/652).

From: "Desmond" <desmond@sdceango.co.za>
To: "Annick Walsdorff" <AWalsdorff@csir.co.za>
Date: 18/04/2016 12:02
Subject: RE: Commenting period on Proposed Construction, Operation and Decommissioning of a Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Tongaat on the KwaZulu-Natal North Coast (DEA EIA Ref No: 14/12/16/3/3/2/652).
Cc: "Betty Rawheath" <brawheath@gmail.com>, "Vee Govender" <bricsfrombel...

Hi Annick

I think you are missing the point we as the SDCEA need to find experts to comment to a completely new development in a very short space of time who can give freely of their time to community organisations. I want to point out that since Wednesday the 13th April 2016 where we attended the meeting to the 9th May 2016 is only 26 days and this includes holidays and weekends for us to comment.

Please can you explain how you have got 40x days hence you cannot extend the commenting period. As the facilitator you have to act independently without bias unless you are favouring the development and are wanting this project to go ahead without any comments that will delay the process. This then goes to what the Umgeni Water speaker stated that this project is only a backup in case the UMKOMAAS dam is held back. In the event that you proceed we will not hesitate to seek a legal opinion on public participation given that the process so is already flawed with a number of the population not involved nor invited.

Please can you respond to me.

Thank You

Desmond D'Sa

SDCEA Coordinator

From: Annick Walsdorff [AWalsdorff@csir.co.za]
Sent: 18 April 2016 09:34 AM
To: desmond@sdceango.co.za
Subject: RE: Commenting period on Proposed Construction, Operation and Decommissioning of a Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Tongaat on the KwaZulu-Natal North Coast (DEA EIA Ref No: 14/12/16/3/3/2/652).

Dear Desmond,

Many thanks for your letter.

There has already been numerous extensions and delays on this project and National DEA is now striving for more efficient and timeous EIA processes. Given the above and the fact that we believe there is sufficient time for I&APs to send us comments (in fact more than 40 days), we unfortunately cannot extend the commenting period of this draft EIA report.

Looking forward receiving your comments by 9 May 2016.

Kind Regards
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: +27 21 888 26 93

>>> "Desmond" <desmond@sdceango.co.za> 15/04/2016 10:08 >>>
Hi Good day

Please see attached, a letter from SDCEA

A response at your earliest will be most appreciated.

Thank You

Desmond Mathew D'sa

SDCEA Coordinator
2014 Goldman Prize Recipient, Africa
EMAIL: desmond@sdceango.co.za
CELL: 083 982 6939
TEL: 031 461 1991
FAX: 031 468 1257

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ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST
DEA Reference No: 14/12/16/3/3/2/652



REGISTRATION AND COMMENTS FORM

Draft EIA Report - April 2016



Name: Angie Wilken	Telephone: 031 5681 557
Organisation: Mount Moreland Conservancy	Fax:
Designation: Chairperson	Email: angie@barnswallow.co.za
Physical address: 49 Agnes Street Mount Moreland	Postal address: P O Box 141 Umdloti Beach 4350

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process

<input checked="" type="checkbox"/> YES	<input type="checkbox"/> ALREADY REGISTERED	<input type="checkbox"/> NO
Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:		
No		

Please describe any issues or concerns you think should be considered during the EIA process

The proposed power supply is situated next to the largest Barn Swallow roost in South Africa where 3 to 5 million Barn Swallows roost, this is both a local and international tourist attraction, the alternate route 2 should be the only option, there can be no compromise on this matter. As you state in you summary, you are well aware of the high ecological sensitivity of the Mount Moreland area and it is extremely disappointing that the proposed power supply was considered along this route. Mount Moreland is the only IBA (Important Birding Area) in eThekweni and must be acknowledged, preserved and protected.

Please provide details of any other individuals or organisations that should be involved:

Please submit this **Registration & Comments Form** to:

<p>Annick Walsdorff CSIR P O Box 320, Stellenbosch, 7599 Tel: 021 888 2661 Fax: 021 888 2473 E-mail: awalsdorff@csir.co.za Website: www.csir.co.za/eia/TongaDesalination/</p>

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST
DEA Reference No: 14/12/16/3/3/2/652



REGISTRATION AND COMMENTS FORM

Draft EIA Report - April 2016



Name: MR. DAMIR PERCAIC	Telephone: 082 456 0738
Organisation: NATURAL PERSON	Fax: N/A
Designation: MR.	Email: DAN_AFR@TAMOO.COM
Physical address: UNIT 2 KING SHAKA ESTATE 50 VALLEY ROAD DESAINAGAR	Postal address: UNIT 2 KING SHAKA ESTATE 50 VALLEY ROAD DESAINAGAR

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process.

<input checked="" type="radio"/> YES	<input type="radio"/> ALREADY REGISTERED	<input type="radio"/> NO
--------------------------------------	--	--------------------------

Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

FINANCIAL INTEREST: INVESTMENT IN PROPERTY ADJACENT TO PROPOSED SITE

Please describe any issues or concerns you think should be considered during the EIA process.

ISSUES AND CONCERNS AS PER ATTACHED
DOCUMENT: "APPENDIX 1"

Please provide details of any other individuals or organisations that should be involved.

Please submit this **Registration & Comments Form** to:

<p>Annick Walsdorff CSIR P O Box 320, Stellenbosch, 7599 Tel: 021 888 2661 Fax: 021 888 2473 E-mail: awalsdorff@csir.co.za Website: www.csir.co.za/eia/TongaatDesalination/</p>

"Appendix 1"

Mr. Damir Percaic response to document:

"ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND OPERATION A
SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND ASSOCIATED INFRASTRUCTURE AT
TONGAAT ON THE KWAZULU-NATAL NORTH COAST"

DEA Reference No: 14/12/16/3/3/2/652

1. Notwithstanding previous meetings between Umgeni Water (UW) and Interested and Affected Parties (IAP) when objections to proposed desalination plant were voiced, UW continue with their plans without delay
UW are assuring the affected parties / concerned individuals that this desalination plant will not be built. By now, it became obvious they we are being patronized in order to proceed with their agenda.

Disappointingly, according to draft EIA, probability of Desalination plant being commissioned is extremely high.

This is in contrary to our last public meeting with LaMercy Residents Action group on 29/4/2015 when IAP's were assured that Desalination plant is the last resort and only 2nd or 3rd option.

UW stated that Desalination plant location on South coast was to precede location at Tongaat, Desalnagar.

2. Ultimately, Desalination plant is utterly unsustainable solution from environmental and technological aspect and from electricity demand, in South African realm, it is should be a criminal undertaking!
3. It is very obvious that current 1-in-50 year drought is being used to motivate commissioning of such plant.

4. EIA report states;

"positive benefit that the proposed project (desal plant) would bring to alleviating serious water shortages in the study area and surrounding regions, in particular given increased variability in rainfall as a result of climate change."

- 4.1. By calling upon climate change being one of the motives for such plant, this statement is ambiguous.

I believe climate change was used in context of El Niño (dry period in RSA) related to global climate change which S Africa is experiencing presently (2015 / 2016).

Reason I use word ambiguous next to above statement is due to facts that there is incredible amount of fresh water required in environmentally harmful processes used during:

- a) mining of coal from ground
- b) production of power in coal fired power plants

Coal is used to produce approx. 80% of electricity in S. Africa and UW will use coal powered electricity source for proposed desal. plant

4.2. Further attributes to climate change in power generation in S Africa are:

- a) Coal production and use of it creates waste containing arsenic, cadmium, chromium and lead
- b.) Additionally, abandoned coal mines are flooded with sulphite salts, heavy metals, benzene and toluene. All of which are very poisonous substrates and had been proven to be deadly to environment after that effluent spills in to ground waters

4.3. Coal power plant's addition of huge amounts of greenhouse gasses in to atmosphere

All above attributes are causing same climate change CSIR refers to when talking about need for more potable water in North Coast and need for desalination plant to be built.

Perhaps CSIR did not think this through carefully and on larger scale.

After one considers all stages of operating a desal plant holistically, that statement is indeed ambiguous.

5. However, all of this talk about coal power plant impact when building a desalination plant was not of Umgeni Water (UW) Mr. Kevin Meier's concern as, during meeting with LaMercy Residents Action group on 29/4/2015 he stated: "UW are not in business of power generation".

Such statement is so blatantly ignorant, short sighted and irresponsible.

This goes to show how institutions such UW together with CSIR vested with power to build sustainable future solutions for S Africa can shoot their own (and their fellow citizen's) foot.

6. Environment impact

Environment impact / eco system degradation.

Be it direct by desalination plant or indirect in coal mining and coal power generation stage, UW will have to accept both direct and indirect environment impacts if they are to choose sustainable solutions.

Fact is that proposed desalination plant cannot function without 40 MW power supply. After all there, is only one Earth. If our leaders plan their actions with blinkers around their eyes and destroy this land, no amount of feeling sorry for their today's actions will fix the future generations suffering.

7. Location

There were sites proposed for desalination plant: Virginia Airport; Tongati; Umhlanga by Sibaya Casino, Mdloti and Tongaat near Desainagar.

Virginia Airport and Umhlanga by Sibaya Casino were disqualified based on social and technical criteria.

Tongaat near Desainagar proposed site is situated in the area between LaMercy and Westbrook which is one of the last undeveloped pristine ecosystems in greater Durban area.

To re-zone it from farmland or residential in to industrial zone will open doors for further industry to creep in.

8. Impact

Due to proposed desalination plant approx. 7 hectares in size and possible electrical pylons being constructed, there will be considerable negative visual impact to adjacent residential property.

- 8.1. During meeting with LaMercy Residents Action group on 29/4/2015, Mr. Kevin Meier suggested that negative visual effect can be mitigated by building the entire plant underground and building a park over it.

Is this a patronizing tactic?

I challenge Umgeni Water and CSIR to prove feasibility and practicability of this undertaking.

Perhaps this mitigation method could deal with visual and noise impacts to minimum level.

- 8.2. Introduction of high tension electrical lines, propagation of electromagnetic fields will also negatively impact residents in close proximity.
- 8.3. Noise pollution emanated by the plant cannot be absorbed or taken away by existing noise. Total noise level will be increased by noise emanated by the plant.
- 8.4. Night lighting will also negatively affect surrounding area.
- 8.5. In case of an incident, storage of toxic and volatile chemicals on plant site increases hazard risk to adjacent residents.
- 8.6. Negative effect to traffic flow and possible increased wear and tear to private vehicles due to roadworks / construction during projected 5 year construction will have a major negative effect.

8.7. Increased traffic volume during construction and operation will also be a major detriment to adjacent residents.

8.8. EIA report refers to "emotional impact due to permanent loss of land".

Various factors determine the price of residential area. One of those is desirability. Potential buyer will prefer a natural view over view of 7 ha desalination plant with electricity pylons spilling night lighting and a constant hum in the background.

As owner invested in a property at King Shaka Estate, 50 Valley Road, Desalnagar, located approx. 300 m airline from proposed desalination plant, whom will compensate me for the loss of profit (decrease of property value) shall I decide to sell my property any time onward from when the plant is going in to construction stage?

I don't believe this qualifies as "emotional impact" but rather a financial impact to adjacent residents.

9. In the EIA report, CSIR identifies the following as motivation for desalination plant:

"The proposed Umgeni Water desalination plant will aim to ensure the promotion of sustainable economic development by serving the interests of a growing population as well as other commercial interests in the region."

Likewise, I also consider potable water as essential amenity for, but I have a different vision to a sustainable solution; see : "conclusion" section at bottom

Inevitably, population density will reach a point where potable water supply capacity using any particular or combination of methods will not be able to meet the demand.

What I am proposing is a SUSTAINABLE SOLUTION.

Change the demand part of the potable water system and not the supply!

UW and CSIR are making a classic judgment error which countries and governments had been doing to their own (and their ecosystem's) detriment from time of industrialization revolution.

Take China's polluted air for example; They became the World's industrial leader (world's engine), but they paid the price for going past the point of sustainable engineering products production capacity by building too much heavy industry.

Now the Chinese people, their flora and fauna breathe polluted air and suffer various medical problems in consequence.

If leaders, planners and policy makers do not act now to find a SUSTAINABLE SOLUTION, this will happen to KZN North Coast (and S Africa) sooner rather than later.

This is a logical conclusion and if nothing is done, the system is on a path of a "Titanic" doomed to fail.

10. Further, CSIR's objectives for this project are:

- 10.1. "develop a long term, sustainable alternative water source for the east coast region that is rainfall/climate-independent and ensures long-term security of supply"

Instead of continuously increasing potable water supply in order to be ahead of ever-growing potable water demand, Umgeni Water, Municipalities and CSIR should educate, change and promulgate use of alternative water sources (non potable) to end-user. After all, only a fraction (less than 3 %) of potable water is consumed as drinking water in an average household).

- 10.2. "establish a world-class and cost-effective desalination plant, whilst minimising the harmful environmental impacts of the desalination plant through comprehensive scientific investigation and consistent stakeholder engagement"

There is no such thing as cost-effective desalination plant. Considering South African cost of electricity generated by coal fired power station required for the power-hungry desalination plant. These plants are green gasses intensive.

Proposed power hungry plant will have total energy requirement between 4.0 and 4.5 kWh/m³. How does that compare to water catchment treatment plant or waste water in to potable water treatment plant?

11. EIA report states:

"Rainfall in South Africa is highly variable in spatial distribution and unpredictable, both within and between years. Much of the country is arid or semi-arid"

Umgeni Water is proposing to build a desalination plant in KZN North coast, Tongaat which has more than 1000 mm rainfall annually. Why is the "country " in its entirety being discussed? This is misleading.

12. EIA report states:

- 12.1. "The capital cost for the proposed Smithfield Dam and associated infrastructure would be about R17 billion"

Capital cost for Desalination plant is projected at about R 4.44 billion.

"Desalination plant will have a payback period of 20-25"

What will be the payback period for catchment water treatment plant with same daily potable water capacity? Desalination plant payback time will surely be longer.

12.2. According to document "Umgenti Water Need and Desirability - Tongaat April 2016" operating cost of desalination plant in proportion to its highest operating variable (electricity) could be "as high as R 13.45 R/kl of potable water and will amount to approx.. R 400 million/year.

What is the operating cost for catchment water treatment plant with same daily potable water capacity? Surely less than the desalination plant.

Desalination plant will have cost KZN North Coast residents ridiculously high amount in electricity charges for every day of that plant being in operation.

13. EIA report states:

"Umgenti Water is considering the proposed desalination plant as a possible short-medium term alternative to assist with the water shortages."

The key to solution is swift change in rate of use of potable water demand / change in consumer behavior. There are various ways to execute that amicably.

14. EIA report states:

"Desalination plant may be constructed in two phases over a period of five years"

Mvoti Dam and uMkomazi project / Smithfield Dam could be completed within similar time frame thereby eliminating the need for desalination plant project which will take 5 years (estimated projection).

CSIR goes on to state that Smithfield Dam construction would take many years to complete and compared it to Desalination plant's "fairly quick" completion thereby making a desalination plant a better choice in their conclusion.

We all know that projects of such scale more often than not end up being completed later than projected. Therefore, efforts should be invested in a more SUSTAINABLE options, which are catchment water treatment plants and change in consumer behavior.

15. Conclusion

With all the different projects UW has in place to balance potable water production capacity against ever increasing demand, the desalination plant is by far the least sustainable solution and should be taken out of consideration.

UW's important agenda and motive for proposed desal plant is that they need to provide the resource (potable water) required to stimulate development in their jurisdiction.

Development can still be sustained, but UW and stakeholders have to sell the idea of changing the irresponsible water consumption habits to sustainable habits to their customers.

That might be a challenge in beginning, but more and more people are embracing new practices of modern times as those are sustainable by nature.

Similar goes with solid waste recycling. It was taboo a decade ago but now is normal.

We must all preserve the existing fresh water resources.

This can be enforced by regulating that:

All new construction sites to be self-sustainable on water requirements.

All water consumed for other than for human consumption (domestic and industrial irrigation, filling up swimming pools, industrial and agricultural use etc.) must not be potable water.

All new built sites to have potable water and alternative water source (rain harvested water, atmospheric moisture precipitator or borehole installations).

Only water points for human consumption would have potable water supply (sinks) and all others (geyser, bath, laundry washing machine, dish washing machine, shower, toilet, garden tap) would have alternative water supply.

Such radical changes in regulations will decrease production capacity requirement for municipal potable water thereby decreasing the need for such massive increases in production capacity.

It will decrease the load on maintenance and requirement to increase capacity of reticulation networks.

And it will most likely bring forward-thinking consumers in to their jurisdiction and set a precedent for future generations.

Reduce water loss!

According to the auditor-general's report for the 2013/2014 financial year, these losses amount to R602.6 million because eThekwin loses 237 Ml/day from its water reticulation system. That is almost double the proposed desal plant capacity (150 Ml/day).

What a waste!

**ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST**

DEA Reference No: 14/12/16/3/3/2/652



REGISTRATION AND COMMENTS FORM

Draft EIA Report - April 2016



Name: Justin Taylor	Telephone: 0733334359
Organisation: Mount Moreland Conservancy	Fax:
Designation: Committee Member	Email: justin-taylor@webmail.co.za
Physical address: 42 Bond Street Mount Moreland	Postal address: P O Box 562 Umhlanga Rocks 4320

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process

YES ☒ **ALREADY REGISTERED** **NO**

Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

No

Please describe any issues or concerns you think should be considered during the EIA process

The main concern relates to the proposed powerline route adjacent to Lake Victoria.

Not only would the powerline result in serious visual impact on the barn swallow viewing site in Mount Moreland, the area is an Important Bird Area (IBA) and the powerline has the potential to impact on the barn swallows who roost in lake Victoria. the proposed route also falls within a bird flight corridor where many larger bird species such as herons, pelicans and raptors follow the water course from the estuary to the Hazelmere dam. The powerline would have serious impact on the flight corridor. The shorter alternative route should be used.

Please provide details of any other individuals or organisations that should be involved:

Please submit this *Registration & Comments Form* to:

<p>Annick Walsdorff CSIR P O Box 320, Stellenbosch, 7599 Tel: 021 888 2661 Fax: 021 888 2473 E-mail: awalsdorff@csir.co.za Website: www.csir.co.za/eia/TongaDesalination/</p>

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South Durban
Community
Environmental
Alliance




15 April 2016

Annick Walsdorff
Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: +27 21 888 26 93
Email: awalsdorff@csir.co.za

**RE: Commenting period on Proposed Construction, Operation and Decommissioning of a
Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Tongaat on the
KwaZulu-Natal North Coast (DEA EIA Ref No: 14/12/16/3/3/2/652).**

We the South Durban Community Environmental Alliance (SDCEA) would like to request an extension on the commenting period of the draft EIA Report. We would like to include expert specialists to engage in the process, so we are able to contribute substantial comments of quality. We feel the commenting period should be extended to the 29th May 2016, and you will receive comments by 4:30pm.

Thanks


Desmond D'Sa
SDCEA Co-Ordinator
Tel: 031-4611991
Fax: 031-4681257
Cell: 0839826939

The Right to Know | The Duty to Inquire | The Obligation to Act

SDCEA Members
Aukhaya-Ekuk Committee
Choral Rock Community
Clarendon Rejuvenation Association
Egoliwe Afrika
Groundwater
Isipingo Environmental Committee

P.O. Box 211150
Buff: 4036
KwaZulu-Natal, South Africa
shanusha@sdcea.co.za
028 364 NPO

SDCEA Members
Isipingo Rejuvenation Association
Meyerton Clinic Committee
Shenglen Clinic Association
Tressure Beach Environmental Forum
Wentworth Development Forum



CSIR Environmental Management Services
P.O. Box 320
Stellenbosch
7599

By email: awalsdorff@csir.co.za

ATTENTION: ANNICK WALSDORFF

Dear Annick

ENVIRONMENTAL IMPACT ASSESSMENT – TONGAAT REVERSE OSMOSIS PLANT

Thank you for the opportunity to comment on the final environmental impact report for the proposed reverse osmosis plant located at Desainagar near Tongaat. Tongaat Hulett is a landowner within the broader region, and has a large portion of land within the broader La Mercy area (753 hectares) which is currently undergoing an EIA to convert the land from agriculture to an integrated human settlement, incorporating residential, industrial and commercial land uses. As such, this proposal has an impact on our planning processes.

The need to expand bulk infrastructure to ensure adequate water provision into the future is critical. The broader northern area is acknowledged in the eThekweni Municipality Integrated Development Plan to be a major area of future growth, and as such ensuring reliable services is critical if this area is develop as envisioned by government. While the need to secure adequate bulk water for the future is acknowledged and supported, we have a number of comments on the proposals as they currently stand, as outlined below:

1. Proposed servitudes

The proposal contains several alternative alignments for electrical and water pipeline infrastructure to support the facility. We would welcome further interaction regarding the proposed alignments so that we can adequately assess how these impact on our development proposals. Specifically, a copy of the shapefiles would be useful. It is submitted that the developer consider placing the cables underground, so as to minimize their visual impact.

Please note that the proposed servitudes will need to be acquired from Tongaat Hulett.

2. Visual impact

The visual impact study contained in EIA suggests that every effort will be made to adequately screen the facility, however it is not totally clear what the end impact will be, as a design / architectural renders of the plant are not available as of yet. It is submitted that the developer consider further screening elements and

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Directors: PH Staudt (Chairman), AE Delytun (Managing Director), Rj Furber, BR Gumede, MC Dwaile,
JP Hunter, DT Jollands, AE Mkhosana, MN Munro, SJ Sanyal, RD Paterson
Tongaat Hulett Developments (Pty) Limited, Registration Number 1312/003251/47

“green building techniques”, such as the example of the Victorian Desalination Project put forward in the public meeting.

Regarding the proposed electrical servitudes, we would welcome further interaction with the developer when it comes to determining the final alignment of the pylons. As stated above, Tongaat Hulett intends developing some of the area which is affected by the powerline, thus integration with future planning for the area is crucial. According to the EIR, topography should be utilized to screen these powerlines from La Mercy residents, however future residents also need to be considered.

3. Noise

According to the EIR, during the operational phase a noise survey is to be conducted to determine if the noise emissions on the site of the boundary are within the noise ratings limits, and to identify if further mitigation is required. It is suggested that these potential mitigation measures are detailed further. A key concern relates to the potential future sterilization of land for noise sensitive uses within close proximity of the plant.

4. Power supply

Given the existing constraints on power within South Africa, it is submitted that the developer consider alternative, renewable energy sources for the ongoing running of the plant.

It is unclear whether or not this facility will be fitted with generators. If generators are to be used, the impact on this should be investigated from a noise perspective.

5. Decommissioning

The report states that decommissioning is highly unlikely, however this has been assessed. According to the report, in the scenario where the plant is decommissioned, the buildings would either be demolished or converted to agricultural or industrial buildings. Further engagement is required on the potential use of the facility in the case of decommissioning, as given that the surrounding area is largely residential in nature it is unlikely that an industrial land use would be appropriate.

In principle, Tongaat Hulett is supportive of the expansion of bulk water infrastructure in the broader region. The above indicates some of our comments relating to this proposal.

Please do not hesitate to contact the writer hereof for any further queries in this regard.

Yours Faithfully

TONGAAT HULETT DEVELOPMENTS (PTY) LTD



KATE RALFE
SENIOR TOWN PLANNER

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST

DEA Reference No: 14/12/16/3/3/2/652



REGISTRATION AND COMMENTS FORM

Draft EIA Report - April 2016



Name: RENATA NARAM	Telephone: 082 373 1061
Organisation:	Fax:
Designation:	Email: renata.naram@gmail.com
Physical address: 3 VILLAGE PARK, 166 CRESCENT, TONGAAT	Postal address: 13 OLD CRESCENT, TONGAAT, 4399

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process

☒ YES

☐ ALREADY REGISTERED

☐ NO

Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

INTEREST AS A RESIDENT OF TONGAAT +
INTEREST IN WATER TREATMENT, (WORK IN THE FIELD)

Please describe any issues or concerns you think should be considered during the EIA process

Please provide details of any other individuals or organisations that should be involved:

Please submit this Registration & Comments Form to:

Annick Walsdorff CSIR P O Box 320, Stellenbosch, 7599 Tel: 021 888 2661 Fax: 021 888 2473 E-mail: awalsdorff@csir.co.za Website: www.csir.co.za/eia/TongaDesalination/
--

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE ON THE KWAZULU-NATAL EAST COAST



REGISTRATION AND COMMENTS FORM



Name: CLAIRE LILFORD	Telephone: 084 512 7527
Organisation: PERSONAL	Fax:
Designation:	Email: claire.lilford@gmail.com
Physical address: 3 KING SHAKA ESTATE 50 VALLEY RD, DESAINAGAR	Postal address: AS BEFORE 4399

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process

<input checked="" type="radio"/> YES	<input type="radio"/> ALREADY REGISTERED	<input type="radio"/> NO
--------------------------------------	--	--------------------------

Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

I AM A HOMEOWNER IN THE AREA - PERSONAL

Please describe any issues or concerns you think should be considered during the EIA process

REHABILITATION - HOW MANY YEARS WILL THIS TAKE? IF EVER
VISUAL IMPACT ON HOMEOWNERS ON THE HILLSIDE ESTATE
PROPERTY VALUE!!

Please provide details of any other individuals or organisations that should be involved:

Please submit this *Registration & Comments Form* to:

<p>Mrs. Annick Walsdorff</p> <p>CSIR P.O. Box 320 Stellenbosch, 7599 Tel: (021) 888 2861 Fax: (021) 888 2473 Email: awalsdorff@csir.co.za</p>
--

**I-ENVIRONMENTAL IMPACT ASSESSMENT (EIA) YOKWAKHIWA NOKUSEBENZISA
KWEMBONI YE-SEA WATER REVERSE OSMOSIS (DESALINATION), OGWINI
YAKWAZULU-NATAL**



IFOMU LOKUREJISTA NOKUBEKA UMBONO



Igama: ALLIMUTHU PRUTHU	I-ombolo yocingo:
Inhlangothi: Environmental Activist	Fax: 088 032 944 3959
Isikhundla:	Email: IKHONA
Ikheli lendawo: 8 TOWER ROAD WATSONIA TONGAAT 4400	Ikheli leposi: P.O. Box 44 TONGAAT 4400

Bonakalisa uma ufuna ukurejiswa njengeqembu labathintekile. Ukurejista kuyadingakala umufuna ukuthola ulwazi olubanzi mayela nalenqubo ye-EIA

YEBO	ALREADY REGISTERED <input checked="" type="checkbox"/>	CHA
Bonakalisa uma udinga ukwazi (mayelana be-biznisi, okwezemali, okuphathelelane nawe, noma okunye) ngocelo le-environmental authorisation:		

Chaza udaba nokukhathazeka ocabanga ukuthi kumele kunakwe kulenqubo ye-EIA

It's important that all in charge of supply of water don't operate in SLCOS & we are noticing that there is large scale development of Pate Road Port, Ngomongo, Zumbati & Tintengwe and Umhlololi - Iqagala. Ethekweni is not really pushing for harnessing of grey water - as well as for building of storage.

Cela usinike imininingwane yomuntu noma yenhlangothi ocabanga ukuthi idinga ukuthintwa mayelana nale-EIA:

Also they are not really enforcing water use reduction as required by the MEC of COASTAL - also it must be noted that municipalities are not

pushing for harnessing of RAIN WATER and the introduction of water saving devices in all new projects

Dr. Linnich Walsdorf
P.O. Box 920
Stellenbosch, 7599
Tel: (021) 888 2861
Fax: (021) 888 2473
Email: lwalsdorf@csir.co.za

I-ENVIRONMENTAL IMPACT ASSESSMENT (EIA) YOKWAKHIWA NOKUSEBENZISA
KWEMBONI YE-SEA WATER REVERSE OSMOSIS (DESALINATION), OGWINI
YAKWAZULU-NATAL



IFOMU LOKUREJISTA NOKUBEKA UMBONO



Igama: ALLIMUTHU PERUMAL	Ibombolelo/indlela: PERUMAL
Inhlalango: PERUMAL	Fax: 088 032 944 3959
Isikhundla: TONKAAT	Email: None
Ikheli lendawo: 8 TOWER ROAD	Ikheli leposi: P.O. Box 44 TONKAAT

Bonakalisa uma ufuna ukurejista njengeqembu labathintekile. Ukurejista kuyadingakala umufuna ukuthola ulwazi olubanzi mayela nalenqubo ye-EIA.

YEBO	ALREADY REGISTERED <input checked="" type="checkbox"/>	CHA
Bonakalisa uma udinga ukwazi (mayelana be-biznisi, okwezemali, okuphathelane nawe, noma okunye) ngocelo le-environmental authorisation:		

Chaza udaba nokukhathazeka ocabanga ukuthi kumele kunakwe kulenqubo ye-EIA

Why is Umgeni water not promoting reticulation of sewer water for condensation after additional purification - as we won't need desalination to take place if this is done.

Cela usinike imininingwane yomuntu noma yenhlangano ocabanga ukuthi idinga ukuthintwa mayelana nale-EIA:

Thumela leli-fomu lapha:

Mrs. Annick Walsdorff

CSIR
P.O. Box 320
Stellenbosch, 7599
Tel: (021) 888 2661
Fax: (021) 888 2473
Email: awalsdorff@csir.co.za

I-ENVIRONMENTAL IMPACT ASSESSMENT (EIA) YOKWAKHIWA NOKUSEBENZISA
KWEMBONI YE-SEA WATER REVERSE OSMOSIS (DESALINATION), OGWINI
YAKWAZULU-NATAL



IFOMU LOKUREJISTA NOKUBEKA UMBONO



Igama: ALL MUTHU	Inombolo ye-IPAL: 159944
Inhlango: 032 9443959	Fax: 0886329443959
Isikhundla:	Email: None
Ikheli lendawo: P.O. Box 44 TONSART 4400	Ikheli leposi:

Bonakalisa uma ufuna ukurejista njengeqembu labathintekile. Ukurejista kuyadingakala umufuna ukuthola ulwazi olubanzi mayela nalenqubo ye-EIA

YEBO <input checked="" type="checkbox"/>	ALREADY REGISTERED	CHA
Bonakalisa uma udinga ukwazi (mayelana be-biznisi, okwezemali, okuphathelelane nawe, noma okunye) ngocelo le-environmental authorisation:		

Chaza udaba nokukhathazeka ocabanga ukuthi kumele kunakwo kulenqubo ye-EIA

The issue of Water loss cannot be addressed in SILOS - CSIR must ensure that Umgeni Water as the supply authority must ensure that all water distribution must be accountable for reduction of water loss and if this is done there is no need to build constant infrastructure or upgrade supply infrastructure.

Cela usinike imininingwane yomuntu noma yenhlangotho ocabanga ukuthi idinga ukuthintwa mayelana nale-EIA:

Thumela leli-fomu lapha:

Mrs. Annick Walsdorff

CSIR
P.O. Box 320
Stellenbosch, 7509
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ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE ON THE KWAZULU-NATAL EAST COAST



REGISTRATION AND COMMENTS FORM



Name: <u>ASHON NADOO</u>	Telephone: <u>072 234 2493</u>
Organisation: <u>KSE</u>	Fax:
Designation:	Email: <u>ashonn@hotmail.com</u>
Physical address: <u>UN-78 King SHAKA BSWAYS</u>	Postal address: <u>P.O. Box 262 DESAIGUER, 4405.</u>

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process

☒ YES

☐ ALREADY REGISTERED

☐ NO

Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

Please describe any issues or concerns you think should be considered during the EIA process

WHAT IS THE PERCENTAGE VALUE THAT THE PROPERTIES
WILL DECREASE BY THIS PLANT.

Please provide details of any other individuals or organisations that should be involved:

Please submit this Registration & Comments Form to:

Mrs. Annick Walsdorff

CSIR
P.O. Box 320
Stellenbosch, 7599
Tel: (021) 888 2661
Fax: (021) 888 2473
Email: awalsdorff@csir.co.za

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST
DEA Reference No: 14/12/16/3/3/2/652



REGISTRATION AND COMMENTS FORM

Draft EIA Report - April 2016



Name: <u>GEOFF D.A. PULLAN</u>	Telephone: <u>083 6959190</u>
Organisation: <u>eThekweni Municipality</u>	Fax:
Designation: <u>CLL</u>	Email: <u>geoffpullan@iathrida.com</u>
Physical address: <u>81 NORTH BEACH RD</u> <u>WESTBROOK BEACH</u>	Postal address:

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process

YES ALREADY REGISTERED NO

Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

No financial, but I am a ratepayer

Please describe any issues or concerns you think should be considered during the EIA process

The costs of putting in a desalination plant
the electricity running costs
Enough rainfall in the area, but we let most of it flow into sea.
Reclaiming of water is a cheaper option.
Umkhomozi water supply may be a better option, since it will provide 4 times more water.

Please provide details of any other individuals or organisations that should be involved:

Please submit this Registration & Comments Form to:

<p>Annick Walsdorff CSIR P O Box 320, Stellenbosch, 7599 Tel: 021 888 2661 Fax: 021 888 2473 E-mail: awalsdorff@csir.co.za Website: www.csir.co.za/eia/TongaatDesalination/</p>

Annick Walsdorff - Re: comments EIA RO plant La Mercy

From: Annick Walsdorff
To: Murray
Date: 03/05/2016 10:19
Subject: Re: comments EIA RO plant La Mercy
Cc: Kevin Meier <Kevin.Meier@umgeni.co.za>(Kevin.Meier@umgeni.co.za); Phumi...
Attachments: CLEARANCE CHART.pdf; Tongaat bulkwater_Ethekwini dgn.pdf; Tongaat_ERF Zoom.pdf

Dear Murray,

Please find below responses from the engineers to your queries:

1. The power line has been proposed to tie into the existing 132kV line between Ottawa Major and La Mercy Major, near the vicinity of Mount Moreland (South West of the Airport) - refer to attached map
2. The proposed routes supplied by Ethekwini Municipality have several future Major substations planned en-route. It would appear they have selected the proposed route to tie into these substations which in some cases fall on the south of the N2 forming a ring-feed back to La Mercy Major Sub. There is also a major valley further west and the off-ramp to the airport. This probably was considered when selecting a route (clearances). The attached map from Ethekwini shows the proposed Major Subs (white squares with pink surrounds) on the proposed yellow 132kV lines.
3. Please refer to the EIA report (Chapter 2 - Figure 2.19) showing the recommended alternative route for the powerline to avoid Victoria wetlands.
4. The construction type for the power line would be steel lattice for 132kV, usually around 16 to 20m in height. With regards to clearances, please see attached clearance chart, it shows the servitude to be 36m with building restrictions of 18m from the centre line.
5. For the potable water pipeline - We have investigated both options, crossing to the North and South of the Umdloti River from an engineering perspective. From an engineering point of view both options would be feasible. We have recommend the current route (south of the river) as part of our preliminary study and this is the route that was assessed as part of the EIA.
6. Concerning the pipelines. We allow for a typical 25 m construction working width during the construction stage. This can be narrowed down to 10 m depending on the sensitivity of the area the pipeline is crossing. The contractor is not allowed to work outside of this demarcated working area i.e. the trench, soil stockpile and pipe material is all contained within the working area, irrespective of the pipe depth.
7. The potable pipelines ranges from 450 mm diameter to DN 1400 mm diameter. We dictate that a minimum soil cover over the pipe must be 1.2 m, therefore the depth of the pipe invert would be the pipe cover plus the pipe diameter. In some areas the pipe cover depths might reach up to 4 m. The servitude for the pipelines would be a minimum of 5 m either side of the pipeline. No building activity is allowed within the servitude.

I have attached a better map of the proposed corridors for the pipeline and powerline in the vicinity of your property. You will see that, according to the information we have, Sub 210/1575 is not affected (located to the south east of 211/1575).

The attached figure from eThekweni municipality has also been included in the EIA - please also refer to Chapter 2 of the EIA report for further information.

I trust the above clarify your concerns

Kind Regards
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: [+27 21 888 26 93](tel:+27218882693)

>>> "Murray" <murray@sapuma.co.za> 14/04/2016 05:55 >>>

Dear Annick

I cannot for some reason edit the "Registration & Comments" form you sent me. I attended the meeting at the Tongaat Town Hall held at 18h00 on 13/04/2016. Herewith my comments

Name: MG Jackson
Business: Sapuma Eggs CC & Kalweni CC
Tel: 032 941 5080
Email: murray@sapuma.co.za
Physical address: Jackson Farm, D144, La Mercy
Postal address: P.O. Box 67, Verulam, 4340

I am registered as an IAP
I have personal and business interests in the matter as I live and farm in La Mercy.

MY comments revolve around the power and water lines. The public participation meeting went on for 3 ½ hours, covered a vast amount of material but did not address my concerns. It was too late ask questions in this public forum and the maps were not detailed enough. Herewith my questions

1. Where is the source of this power? Is it from the power sub-station on the old Umdloti/Verulam road?
2. Could you explain why the power and water line cross the N2 South of the Umdloti River rather than staying on the Western side. Are there engineering reasons why this was done and if so could I have sight of them please. There is concern about the lines bisecting the Victoria wetlands. If the lines went due North towards the airport into a planned industrial area, this could be averted.
3. It was stated that Metro had pencilled in the route for the powerline. This is at odds with their published macro plan of having industry West of the N2 and housing East of the N2. Could I see the correspondence please.
4. Could you please give me more detail on the structure and size of both water and power lines, servitude widths, height, depth, how close one can build to them etc.
5. These proposed lines cross my property on Sub 209 of Cottonlands No. 1575. Please be aware that there is a graveyard on this sub and I would imagine these lines would go straight through it.

Regards

Murray Jackson
083 265 9410

From: Annick Walsdorff [AWalsdorff@csir.co.za]
Sent: 17 March 2016 15:56
To: Annick Walsdorff
Subject: Notice of Release of Draft EIA Report for comment and invitation to Public Meeting

Dear Stakeholder,

**NOTICE OF RELEASE OF DRAFT EIA REPORT FOR COMMENT AND INVITATION TO PUBLIC
MEETING: Proposed Construction, Operation and Decommissioning of a Sea Water Reverse
Osmosis Plant and Associated Infrastructure proposed at Tongaat on the KwaZulu-Natal North
Coast**

(DEA EIA Ref No: 14/12/16/3/3/2/652).

Please see attached letter indicating the notification of **public comment period** for the **Draft EIA Report** and invitation to public meeting for the above-mentioned project. You are hereby invited to provide comments on the Draft EIA Report.

Please note - comments on the Draft EIA Report should be submitted to the CSIR Project Manager at the contact details provided in the letter by **09 May 2016**.

Yours sincerely,
Annick Walsdorff

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: [+27 21 888 26 93](tel:+27218882693)



**eThembeni
Cultural
Heritage**

01 June 2018

Sapuma Eggs CC & Kalweni CC
Tel: 032 941 5080
Email: murray@sapuma.co.za
Physical address: Jackson Farm, D144, La Mercy
Postal address: P.O. Box 67, Verulam, 4340

Attention **Mr MG Jackson**

Proposed Electricity and Water Pipeline Servitude over Sub 209 of Cottonlands No. 1575

Dear Mr Jackson

Your enquiry regarding the graveyard on your property, Sub 209 of Cottonlands No. 575, and the proposed electrical and water pipeline servitude has reference.

It is best practice in heritage management to, wherever possible, leave graves *in situ* and move infrastructure rather than interfere with the graves' sanctity. Further, it is standard practice that once an electrical or water servitude has been surveyed, a heritage practitioner will be required to do a walk-down to identify any visible heritage resources and propose suitable mitigation. Monitoring will also be required during construction phase. These recommendations are contained in my heritage report for the proposed Tongaat desalination plant and will be incorporated into the Environmental Management Plan Report (EMPR) for the project and its ancillary activities.

In the case of the grave yard on your property, tower positions can be shifted to ensure no direct impact on any graves and at worst case would have overhead transmission lines spanning the grave precinct. On approval of the servitude an appointed heritage practitioner will demarcate the graveyard and flag it as a no-go area during construction, with monitoring of any activities within 20m of the graves.

With regards to the 50m wide water pipeline servitude there is sufficient latitude to ensure a minimum of a 20m buffer between the grave yard and construction activities.

I trust this answers your enquiry.

Sincerely

Len van Schalkwyk

Principal Investigator.

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION AND
OPERATION A SEA WATER REVERSE OSMOSIS (DESALINATION) PLANT AND
ASSOCIATED INFRASTRUCTURE AT TONGAAT ON THE KWAZULU-NATAL NORTH COAST
DEA Reference No: 14/12/16/3/3/2/652



REGISTRATION AND COMMENTS FORM

Draft EIA Report - April 2016



Name: KEN LEVER	Telephone: 082 657 0094 / 072 79 66 345
Organisation: archilever & Rotary	Cell: 032 586 1108
Designation: Reg. Prof. Architect	Email: archilever@gmail.com
Physical address: NO 5 STELLA RD. BALLITO	Postal address: P.O. Box 1126, BALLITO, 4420

Please indicate if you want to register as an Interested and Affected Party. Registration is required in order to receive further correspondence during the EIA process

YES ☒ ALREADY REGISTERED NO ☐

Please indicate if you have any interest (business, financial, personal or other) in the application for environmental authorisation:

BUSINESS / PROFESSIONAL & SOCIAL - THRU ROTARY

Please describe any issues or concerns you think should be considered during the EIA process

- **MORE SPECIFIC INFO. ON SITING / SIZE / PROFILE-SECTION - Graphics of the plant ... in stages if necessary - and not just aerial views - ground level as well - berms / banks / trees etc.**
 - **Clarification on Electric Power requirements - The report suggest 40 MW but the presentation (Kevin) suggested 25-30 MW - How & from where is this power to be supplied? (we have power supply problems on the North Coast ... as elsewhere.) No power station? Solar / Wind / Sea Power supplies??**
- SAIA-KZN - Graphics are clearly important at this stage.**
- INST. OF ENGINEERS. - Independent verification of technology**

Please submit this Registration & Comments Form to:

	Annick Walsdorff
	CSIR
	P O Box 320,
	Stellenbosch, 7599
	Tel: 021 888 2661
	Fax: 021 888 2473
	E-mail: awalsdorff@csir.co.za
	Website: www.csir.co.za/eia/TongaatDesalination/

THE ENVIRONMENTAL IMPACT AREA OF STUDY - AND EXTENT OF POTENTIAL "POLLUTION" - DOES NOT SEEM TO HAVE BEEN VERY CLEARLY DEFINED - HOW far North, South, East will be affected? ... Ballito??

Annick Walsdorff - Desalination Project

From: "Brian Gibson" <gibson@icon.co.za>
To: <awalsdorff@csir.co.za>
Date: 31/03/2016 17:40
Subject: Desalination Project

Hi Annick:

I picked up your details from an advertisement while cycling near Mount Moreland. I am a resident of Umdloti. Could you please register me as an IAP for the EIA into the desalination plant. In particular:

- Is this a private sector project?
- Which communities will benefit from the new supply of potable water, and at what price?

Regards,

Brian

Brian Gibson Issue Management
P O Box 664, Umdloti 4350, KwaZulu Natal, South Africa
Phone: +27 83 2535988
Fax to e-mail: 0866210745

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Please consider the environment before printing this email.

Annick Walsdorff - Fwd: Notice of Release of Draft EIA Report for comment and invitation to Public Meeting

From: Annick Walsdorff
To: gibson@icon.co.za
Date: 05/04/2016 12:07
Subject: Fwd: Notice of Release of Draft EIA Report for comment and invitation to Public Meeting
Attachments: DEIAR_Letter_English & Zulu.pdf; DEIAR_UW_Summary_Tongaat_140316.pdf; Response Form_Tongaat_Eng&Zulu.pdf

Dear Brian,

Please find below email sent to registered I&APs.

Regards
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: +27 21 888 26 93

>>> Annick Walsdorff 19/03/2016 00:48 >>>

Dear Stakeholder,

NOTICE OF RELEASE OF DRAFT EIA REPORT FOR COMMENT AND INVITATION TO PUBLIC MEETING: Proposed Construction, Operation and Decommissioning of a Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Tongaat on the KwaZulu-Natal North Coast

(DEA EIA Ref No: 14/12/16/3/3/2/652).

Please see attached letter indicating the notification of **public comment period** for the **Draft EIA Report** and invitation to public meeting for the above-mentioned project. You are hereby invited to provide comments on the Draft EIA Report.

Please note - comments on the Draft EIA Report should be submitted to the CSIR Project Manager at the contact details provided in the letter by **09 May 2016**.

Yours sincerely,
Annick Walsdorff

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: +27 21 888 26 93

Annick Walsdorff - OSMOSIS PROJECT KZN NORTH COAST

From: "Sandra Freegard- Vibrant Direct" <admin@vibrantdirect.co.za>
To: <awalsdorff@csir.co.za>
Date: 12/04/2016 15:24
Subject: OSMOSIS PROJECT KZN NORTH COAST

*Please send maps of proposed area with more info.
Many thanks*

Kind Regards

Sandra Freegard

Annick Walsdorff - Fwd: Notice of Release of Draft EIA Report for comment and invitation to Public Meeting

From: Annick Walsdorff
To: admin@vibrantdirect.co.za
Date: 13/04/2016 08:18
Subject: Fwd: Notice of Release of Draft EIA Report for comment and invitation to Public Meeting
Attachments: DEIAR_Letter_English & Zulu.pdf; DEIAR_UW_Summary_Tongaat_140316.pdf; Response Form_Tongaat_Eng&Zulu.pdf

Dear Sandram

Thank you for your email. Please find below notice of release of the draft EIA report. The report, where you will find all available information and maps, can be downloaded from the website - refer to attached letter.

Kind Regards
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: +27 21 888 26 93

>>> Annick Walsdorff 17/03/2016 15:56 >>>

Dear Stakeholder,

NOTICE OF RELEASE OF DRAFT EIA REPORT FOR COMMENT AND INVITATION TO PUBLIC MEETING: Proposed Construction, Operation and Decommissioning of a Sea Water Reverse Osmosis Plant and Associated Infrastructure proposed at Tongaat on the KwaZulu-Natal North Coast

(DEA EIA Ref No: 14/12/16/3/2/652).

Please see attached letter indicating the notification of **public comment period** for the **Draft EIA Report** and invitation to public meeting for the above-mentioned project. You are hereby invited to provide comments on the Draft EIA Report.

Please note - comments on the Draft EIA Report should be submitted to the CSIR Project Manager at the contact details provided in the letter by **09 May 2016**.

Yours sincerely,
Annick Walsdorff

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: +27 21 888 26 93

Annick Walsdorff - RE: Re: EIA for proposed SWRO plant and associated infrastructure in Tongaat, KZN - Ref: 14/12/16/3/3/2/652

From: Yugeshni Govender <Yugeshni.Govender@kznedtea.gov.za>
To: Annick Walsdorff <AWalsdorff@csir.co.za>
Date: 09/06/2016 09:30
Subject: RE: Re: EIA for proposed SWRO plant and associated infrastructure in Tongaat, KZN - Ref: 14/12/16/3/3/2/652

Hi

The Listing Notice 3 maps have not been finalised as yet.

EKZNW is working on it

Regards

Yugeshni Govender

From: Annick Walsdorff [AWalsdorff@csir.co.za]
Sent: 08 June 2016 09:29 AM
To: Yugeshni Govender
Subject: RE: Re: EIA for proposed SWRO plant and associated infrastructure in Tongaat, KZN - Ref: 14/12/16/3/3/2/652

Good morning,

Any feedback on query below? We are about to release the final EIA report.

Many thanks
Regards
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: [+27 21 888 26 93](tel:+27218882693)

>>> Yugeshni Govender <Yugeshni.Govender@kznedtea.gov.za> 30/05/2016 12:36 >>>
Hi. I will follow up on this matter

Regards

Yugeshni

From: Annick Walsdorff [AWalsdorff@csir.co.za]
Sent: 30 May 2016 10:57 AM
To: Yugeshni Govender
Subject: RE: Re: EIA for proposed SWRO plant and associated infrastructure in Tongaat, KZN - Ref: 14/12/16/3/3/2/652

Good morning,

Thank you for your email. No we have not received any response.

Kind Regards
Annick

Principal Environmental Assessment Practitioner
EMS - CSIR
Consulting and Analytical Services
Tel: +27 21 888 25 89/2661
Fax: [+27 21 888 26 93](tel:+27218882693)

>>> Yugeshni Govender <Yugeshni.Govender@kznedtea.gov.za> 30/05/2016 08:59 >>>
HI

I am just following up to see if you received any response?

Regards
Yugeshni Govender

From: Annick Walsdorff [AWalsdorff@csir.co.za]
Sent: 15 March 2016 08:31 AM
To: natasha.brijlal@kzndard.gov.za
Cc: vanessa.maclou@kzndard.gov.za
Subject: Fwd: Re: EIA for proposed SWRO plant and associated infrastructure in Tongaat, KZN - Ref: 14/12/16/3/3/2/652

Dear Natasha,

I trust you're well. Have you had any confirmation regarding LN3 activities that may be triggered by the proposed SWRO plant at **Tongaat**? We have not received any feedback to date for this project either.

Kind Regards
Annick

Environmental Impact Assessment (EIA) for Proposed Sea Water Reverse Osmosis Plant and Associated Infrastructure at Tongaat - Draft EIA Report

PUBLIC MEETING

13 April 2016
Tongaat Town Hall
Meeting Notes

List of attendees

Paul Lochner (CSIR) - PL
Annick Walsdorff (CSIR) - AW
Rohaida Abed (CSIR) - RA
Kevin Meier (Umgeni) - KM
Phumi Ndlovu (Umgeni) - PN
Andrea Pulfrich (Pisces) - AP
Duncan Kael (Acer Africa) - DK

PART I: Welcome and Introductions

Welcome and attendee introductions



Meeting: Tongaat EIA Public Meeting

Project: East Coast Desalination

Date: 13 April 2016

Venue: Tongaat Town Hall

Time: 18:00

KINDLY PRINT YOUR NAME IN FULL AND WRITE CLEARLY

NAME AND SURNAME	ORGANISATION	FULL POSTAL ADDRESS	PHONE	FAX	EMAIL	SIGNATURE
Annick Walsdorff	CSIR	Swan Cellar St Stellenbosch	021 888 2661		awalsdorff@csir.co.za	
Kevin Meier	UMGENI WATER	310 Buitenkamp St Pretoria 0001	011 334 1124		meier.k@umgeni.co.za	
Paul Lochner	CSIR	Jan Collies Str. Stellenbosch	021 888 2436		plochner@csir.co.za	
Andrea Pulfrich	PISCES	COOK REUBEN CH GLASCOW	021 787 9373		apulfrich@pisc.co.za	
Rohaida Abed	CSIR	859 King George Ave, Stellenbosch	021 242 2318		rabed@csir.co.za	
Ismail Dadoo	CSIR	259 King George Ave, Stellenbosch	021 242 2318		idadoo@csir.co.za	
ALIMUTHU BIKHAL	ACTIVIST	P.O. Box 44 TONGAAT	032 944 3755			
Sijunthana (TIS)	TONGAAT (WAO)	31-33-35-37-39 ORANGE TONGAAT	032 944 3755		liset@tongaat.co.za	



Meeting: Tongaat EIA Public Meeting

Project: East Coast Desalination

Date: 13 April 2015

Venue: Tongaat Town Hall

Time: 16h00

KINDLY PRINT YOUR NAME IN FULL AND WRITE CLEARLY

NAME AND SURNAME	ORGANISATION	FULL POSTAL ADDRESS	PHONE	FAX	EMAIL	SIGNATURE
RENATA NABERIN	LASEC SA	15 YOUNG RD PINETOWN	087 373 061		renatadabarin@gmail.com	
KRISH NATHAN	hocol former	666 South Drive Rd. La. Mary	0828746884	-	krishnathnathan@gmail.com	
MIKE WILSON	PRIVATE	26, 100 R5 ROAD RUTHENBURG	0829725156	-	mikeywilson@gmail.com	
MURRAY JACKSON	"	31 KINGS FARM DUB, 11 miles	083 265 7412		MURRAY@SIPRAID.CO.ZA	
Betty Rawheath	LAMRAG	Box 1176 LA MERCEY 4015	0329415288		lamragactiongroup@gmail.com	
Vaena Rogayah	independent	25 Eagle Drive Flamingo Heights Tongaat 4013	031728473	-	vaenarogayah@gmail.com	
Keshini Ramasingh	East Coast Mail	3 Pong Place	03197679409	-	keshiniramasingh@gmail.com	
LES MARCH	KING SHAKA ESTATE TRUSTEES	PO Box 20809 DURBAN 4016	082 492 5192		LESLEAMARCH@gmail.com	



Meeting: Tongaat EIA Public Meeting

Project: East Coast Desalination

Date: 13 April 2018

Venue: Tongaat Town Hall

Time: 18h00

KINDLY PRINT YOUR NAME IN FULL AND WRITE CLEARLY

NAME AND SURNAME	ORGANISATION	FULL POSTAL ADDRESS	PHONE	FAX	EMAIL	SIGNATURE
Lucille Worrall	PUT	4 King Shaka Estate, Despatch	083 747 3674	-	Lucilleworrall@gmail.com	
Justin Worrall	PUT	Same as above	076 478 9172	-	justinworrall12@gmail.com	
Irena Gauder	-	60 Edmundson St.	04 31 31651	-	-	
KARLEN MATHIAS	PU	202 SOUTH RD RD. LA MERCEY	031 590 2489		KARLEN@ROYALTYE.COM	
Deborah	SDLEA	224 C. O. M. P. 4017	031 466 1411	031 466 8157	deborah@sdlea.co.za	
Patrick Lupton	"	"	031 466 8853	-	-	
Wendie Holland	coastwatch	-	-	-	sealodge@africa.com	
Anna Ramaseet	PU	1 Sulman Gauteng	08 455 8027		anna.ramaseet@iceland.com	



Meeting: Tongaat EIA Public Meeting

Project: East Coast Desalination

Date: 13 April 2018

Venue: Tongaat Town Hall

Time: 18h00

KINDLY PRINT YOUR NAME IN FULL AND WRITE CLEARLY

NAME AND SURNAME	ORGANISATION	FULL POSTAL ADDRESS	PHONE	FAX	EMAIL	SIGNATURE
KEN & FRANCES LEVER	archilever	P.O. Box 1126 Ballito 4420	0826570094 0727966345		archilever@gmail.com	
NIREN APPALAMY	Env S					
Geoff D.A. PULLAN	CLCA		0836359190	—	geoffpullan@lateza.com	
Ravi Raj Ramanprakash	Student: B. Tech	3 Coral Sands 118 South Beach RD, La Mercy	0732901372		ravi.raj@btech.ac.za	
Dr. Michael Abraham	ANC Ward C	P.O. Box 76 Tongaat	0726394388		michael.abraham@durban.gov.za	
RESERVA ABBRETT	T. CIVIL	P.O. Box 76 Tongaat	032-9444332	—	same as above R. ABBRETT	
COSTAN Benjamin	CMA	K/19 Bete Bide La Mercy	0726263957		benjamin.costan@gmail.com	
NIREN APPALAMY	Env S				niren.appalamy@durban.gov.za	



Meeting: Tongaat EIA Public Meeting

Project: East Coast Desalination

Date: 13 April 2018

Venue: Tongaat Town Hall

Time: 18h00

KINDLY PRINT YOUR NAME IN FULL AND WRITE CLEARLY

NAME AND SURNAME	ORGANISATION	FULL POSTAL ADDRESS	PHONE	FAX	EMAIL	SIGNATURE
CLAIRE LILFORD	PRIVATE	3 KWC SHAKA ESTATE 50 VALLEY RD DURBAN	0845127527	—	claire.lilford@gmail.com	
Kate Rolfe	Tongaat Hotels		031 560 1900		kate.rolfe@tongaat.co.za	
DENNIS KULLEN	T.C.A.	P.O. Box 18 DECAIN REAK 4405	0836777430 031-5062402 031-9483000	—	denniskullen@bbsn.co.za	
Jacqueline Horby	to NC/Coast	Unhinged g 62 Forest Drive 21 King Street ESTATE	0828494737		jacquie@northcoast coast.co.za jacquiehorby@gmail.com	
Punya Govender	Private		0843206906		punyagovender@gmail.com	
V. Govender	Env Network	15 Simons Oak Durban 4001	0787551513		v.govender@env network.co.za	
Ashraf Bhatt	Non	BALGATE	0846156685		brahmic.pillay@gmail.com	
SHAMELIA RAMHARRY	PRIVATE	1 SHALIMAR GRADUATE	0844663050		shameliaramharry@gmail.com	



Meeting: Tongaat EIA Public Meeting

Project: East Coast Desalination

Date: 13 April 2018

Venue: Tongaat Town Hall

Time: 18h00

KINDLY PRINT YOUR NAME IN FULL AND WRITE CLEARLY

NAME AND SURNAME	ORGANISATION	FULL POSTAL ADDRESS	PHONE	FAX	EMAIL	SIGNATURE
JEEVA PILLAY	TCA	P.O. Box 1060 LAURIE	0837948596		JEEVA@TELEKOMSAFARI.NET	
Roy Singh	Indian	Box 1025 Tongaat	0713711932		Singhroy11@gmail.com	
A.D. JEEAWON	P.T.	Box 335 TONGAAT	082-264350	032-744392	geedone@medi.co.za	
J.D. JEEAWON	"	"	082-487468	"	"	
Ashon Naidoo	P.T.	P.O. Box 262, DORNINGTON	0722362992		ashon@shatril.com	
Chanda Govender	DEP.	Flat 191 Walrus	083 299 508	031575220	ganderch@gmail.com	
VINESH NAIDOO	HATCH	138 COASTVIEW RD, MOUNTAINDALE TONGAAT	082 885 4515	031 536 950	Vinay.Naidoo@hatchafrica.com	



Meeting: Tongaat EIA Public Meeting

Project: East Coast Desalination

Date: 13 April 2018

Venue: Tongaat Town Hall

Time: 18h00

KINDLY PRINT YOUR NAME IN FULL AND WRITE CLEARLY

NAME AND SURNAME	ORGANISATION	FULL POSTAL ADDRESS	PHONE	FAX	EMAIL	SIGNATURE
Paul Gounder	CPF South	Flat 57, D23 Planning Office	083 896 0594			
Mervin Pillay	MOSA	310 Main Rd Tongaat	0834004797			
Joan Maseko	Divine Life Society of S.A.	P.O. Box 204 VERBODEN	0834143247		joan.maseko@divinelife.org.za	
Kocela Cooper	DPA PROPERTY		081 4775352		Kocela.b3@gmail.com	



Meeting: Tongaat EIA Public Meeting

Project: East Coast Desalination

Date: 13 April 2018

Venue: Tongaat Town Hall

Time: 10h00

KINDLY PRINT YOUR NAME IN FULL AND WRITE CLEARLY

NAME AND SURNAME	ORGANISATION	FULL POSTAL ADDRESS	PHONE	FAX	EMAIL	SIGNATURE
Ruban Govender	Belvedere Civic A.	177 Sauer's Civich	0134434437		friendlycollabor@gmail.com	
George Pillay	BCA	Flat 52 Dore 25				

PART II: Presentations

Project introduction and Welcome & Introductions by Paul Lochner (CSIR)

Presentation titled "Umgeni Water – Need and Desirability" by Kevin Meier (Umgeni Water)

Presentation titled "Project Description" by Kevin Meier (Umgeni Water)

Presentation titled "EIA for the proposed sea water RO plant and associated infrastructure at Tongaat – Public Meeting" by Annick Walsdorff (CSIR)

PART III: Questions and issues

BR: Betty Rawheath
DD: Desmond D'sa
VG: Vee Govender
JW: Justin Wendler
JP: Jeeva Pillay
MW: Mike Wilson
AP: Alimuthu Perumal
PG: Priya Govender
MA: Michael Abrahams
WH: Wade Holland
RS: Roy Singh
VN: Vignesh Naidu
LM: Les March
NA: Niren Appalsamy
GP: Geoff Pullan
LW: Lucille Wendler
SR: Sharmla Ramharry
KL: Ken Leaver

Project introduction and Welcome & Introductions by Paul Lochner (CSIR)

Professor Michael Abrahams (MA) – Good evening to all of you. Welcome to this special meeting here tonight. I am Professor Michael Abrahams, ANC Ward Councillor for this ward. I am glad to have my colleague councillor Geoff Pullan also here. And we have Paul Lochner from the CSIR who is going to tell us about the EIA Environmental Impact Assessment Process for the desalination plant that has been proposed in the La Mercy area. Paul over to you and your team, let us start.

PL – Thank you very much for joining us this evening, I am just going to introduce our team quickly. I am Paul Lochner, and I am Environmental Scientist at the CSIR. CSIR is a science council and parastatal. Our team which have worked on the project is Annick Walsdorff (Project Manager), who is supported by Rohaida Abed. We have one of our key specialists, Dr. Andrea Pulfrich who is a Marine Ecologist on our team is here as well and the Social Specialist will join us later. We have done the Environmental Impact Assessment (EIA); our role is to be the independent Environmental Assessment Practitioner (EAP). We conducted the environmental assessment on behalf of Umgeni Water, and let me introduce you to Kevin Meier, from the technical engineering team from Umgeni Water and Phumi Ndlovu from the environmental section of Umgeni Water. We value your time, do not want to delay and want to get started, anticipate we will need two hours, and try to keep moving. We have two main parts of our meeting, first of all KM talking about the desalination project, why has it been proposed, what is it going to achieve and that is more from a planning and need and water supply perspective. Then AW will present the EIA which looks at the positive and negative environmental impacts of the project on the environment, and we look at environment in the broad sense, not just the natural environment, but also the socio-economic environment. Rules of the meeting: the first rule of the meeting is to switch off your cell phones.

BR – Paul may I say something? I just want to know we have been through meetings before; we had meetings on the Scoping Report and before the Scoping Report and we had several meetings, and all that has happened is that Umgeni Water and CSIR just sold us a desalination project. If people had known about this already and we have been working through the whole process, I just want to know why do we have to attend this all over again? Isn't this the time now for us to decide what the people want? I think you released your report and the report, I know, has been disseminated, and I know everybody who is here probably has the report, so where is the need to actually go into the whole issue of what Umgeni Water wants? I think now this is about us.

PL – Ok Betty, so the purpose of the meeting I will discuss shortly. The rules of the meeting, firstly we are not here to all agree on everything. We have different roles to play, different perspectives, different opinions, and that is great that is part of why we are here. So we need to agree to disagree and to respect each other's opinions, please just switch off cell phones and as facilitator I will facilitate and chair the meeting, please express your opinions as clearly as possible rather than demonstrating them, and when we have discussions, please clearly state your name and who you represent because we are taking notes and recording the meeting as well so that we can capture the comments. So the objective of the meeting, and this comes to what Betty was saying, the first objective of this meeting, it is a meeting that is taking place as part of a regulated environmental assessment process, there is legal context for this meeting to take place and the purpose of the meeting to is provide background about the project and the need of the project, why is there a need for a project like this. We will not speak much about Scoping and the previous phase of the project as that has already been covered at previous meetings. The main purpose of the meeting is that we will present a summary of the Draft EIA Report which was released about 3 to 4 weeks ago. Then there will be an opportunity to hear any comments and discuss issues regarding the positive and negative impacts that have been identified around the project. Those are the objectives of the meeting. We have discussed our team, Umgeni Water is the project proponent. CSIR's role is the EAPs and Umgeni Water has also been provided engineering support from Aurecon from engineering side. The purpose of the environmental assessment process is to provide information to the national Department of Environmental Affairs (DEA) who will then make a decision whether or not they authorise the project. In the decision-making process, they want to know what are the concerns of the people, what studies have been done, what issues have been raised and that is part of the purpose of this meeting here, to identify what are your concerns and issues and have they been captured and been understood.

Question: Unknown: Is there a representative from the national department here at the meeting?

PL: No not from the National department. They usually do not attend. There are meetings like this happening all over country all the time, so they do not really participate in these meetings directly.

DD: The national department, what is the name?

PL: National Department of Environmental Affairs.

PL: KM will give an overview and we will have discussions on the project itself and the water supply.

DD: Just before you move on, I have a few questions.

PL: Linked to?

DD: Linked to what you just presented. Please put up the slide on the rules of the meeting. Because you did not close it, you just said that you want us to ask questions as we want. Am I right?

PL: The idea is that we give feedback on the project.

DD: But the process, yes I have comments on the rules of the meeting.

PL: Ok what are your comments on the rules of the meeting?

DD: Number one is that you spoke about the summary; you will give a summary of the EIA report and process?

PL: Yes

DD: Is the full report available and will we get copies?

PL: Yes, we have summaries and the reports are available in the libraries and on the website.

DD: I will suggest that we get the reports; we need the reports for us to make any comments. We can't get to the libraries. People need the reference material that will be affected on this side.

DD: The second point on the process is that you spoke about the DEA being the decision-maker. We need clarity on the decision-maker. The CSIR, I want you to give us a briefing on the CSIR, I see that you have been appointed as consultants, what is your role as the CSIR because you play different roles, you are sampling water, checking everything, so can you please just explain the CSIR's involvement and what you do in this project so that we can maybe determine whether you are independent or put question mark. We need to be able to understand what role you play with regards to this whole process and whether you are facilitating independently or not. Are you also from the CSIR?

PL: Yes.

DD: So you are lead consultant as well?

PL: We are the environmental assessment practitioners. Ok fair question.

DD: Explain that to me please because I think it is important to one of us sitting here to understand what role you are playing because you are playing dual roles, all different roles and I would think that being part of the CSIR, how close you are to that?

BR: I think Paul, Des did not introduce himself.

DD: I am Desmond D'Sa, South Durban Basin

BR: So he is involved in the South Durban Basin so he is asking these questions to see where we fall in terms of environmental issues.

DD: I think it is crucial that whatever decision is made and how the process unfolds that we see that it is credible and whatever decision is made does not fall on one side and comes into advisement. So I am raising these issues because I want to see that this process is fair.

BR: But I must say I have the same concerns especially about CSIR's perceived bias towards the proposal. Legally there will be a perception that you are client and patron and you can't possibly be completely unbiased. Regardless of who the people are who compiled the reports, from a legal perspective I happen to be an environmental lawyer, from a legal perspective you will not be able to convince ordinary panel or some sort of jury that you are completely independent because the way you have actually started this process and when I look all the reports, and I did read the reports, and I found that many of the recommendations appear to be completely biased, they appear to be and we need to discuss it.

PL: So the question is what is the role of the CSIR in the EIA and then capture the other question about the allegation from BW that the recommendations are biased.

BR: I won't say it is an allegation, I would say it is a concern.

PL: Ok we will note it as a concern. So let us respond to your question that you have put forward.

DD: You have heard the question, but I don't think the key point is coming across?

PL: So the summary is what is the role of the CSIR? That is a key question that you have asked. Let me respond to that because that is a good starting point.

DD: And your work in this province, what you do in this province as the CSIR?

PL: That is a different question so one thing at a time. Look at this slide which shows the roles of the different players. Umgeni Water has a water supply role and Kevin is going to talk about that now. CSIR is a science council; we are involved in doing research and using science to support livelihoods of people in South Africa. For example, in Durban we are involved in water quality monitoring along the coast and part of our role is to make sure that science is used and applied to improve the quality of lives of people and so we get involved in new areas of science like desalination is a new technology that has not been used widely in South Africa on a large scale, there are a couple of small projects. But CSIR has been involved in desalination for larger projects in Namibia, Walvis Bay and Swakopmund and on the West Coast of South Africa. We have been involved in these projects because they are new; they involve quite a lot of science and the work required. Our role is to provide a balanced objective scientific assessment of what are the risks or the costs or the positive and negative aspects or the costs and benefits of a desalination plant and how do you change the design of the plant to minimise the impacts and maximise the benefits. Our role is not to make a decision whether it goes ahead or not, that is what the national DEA does under the Minister of Environmental Affairs, she makes that decision. So that is our role. Our role is to provide a balanced view which can stand up to scrutiny and criticism. You can take it and criticize it and can get us evidence and try and contradict it and that is something we will then have to take into account and look at the evidence and what you are presenting.

BR: Sorry, I have to stop you; you say you have experience in Namibia, Swakopmund and Walvis Bay. What is the common thing about that? It is on the west coast in a desert area. You have had no experience with desalination in a sub-tropical area? Am I right?

PL: Who has had experience with desalination in a sub-tropical area? If you want to raise concerns about our credibility then please note them down.

BR: Yes we do have concerns.

DD: I want to raise a follow up question to the one I raised earlier. I now understand that you are the lead scientist in this whole thing, and because you have experience in some desalination process, you have now been appointed to develop this desalination plant?

PL: No we have not been appointed to develop the plant, we have been appointed to do the environmental assessment.

DD: Ok you are appointed to do the environmental assessment, but you are also the facilitator as well?

PL: No we are holding the meeting in our role as EAP.

DD: But how does that work because if you have been appointed, you understand you are the scientist, number 2 you are appointed as the EAP for the project and then you are also facilitating, isn't that biased? Doesn't it show that you are not objective? I know the EIA regulations are very clear and require independent facilitators, appoint independent scientists (like yourself) who give you the critical scientific information and thirdly the developer itself. But in your case you are playing three roles from what you are just saying.

Jeeva Pillay (JP): I have heard everything that everyone has said and in light of what I have been hearing I feel like I also have a duty to make a comment. In terms of the allegations to the CSIR, not that I am defending them, but I would refer you to the King Shaka International Dube Tradeport EIA Process, the company that was employed (to do the EIA) was Institute of Natural Resources, including Jenny Mitchell Mander, who was part of UKZN, which is part of government. I can tell you that I was part of the three years EIA Process and today all of the benefits that you see at the airport is as a result of us being present continuously in the entire EIA Process. This is a legal process, required by law and has to take place and from a public perspective since we represent the bulk of Tongaat and the Tongaat Civic Association has been in operation for 46 years. I am saying that if you follow an EIA Process, the concerns raised by DD must be captured and I think we need to let the process run and if there is no understanding of the process, then clarity can be given. The report was released and was a process that needed to be followed. I have looked at the newspapers and the public perception due to certain newspaper reports are very incorrect in referring to this as a done deal. This is not a done deal because the first final (scoping) report was submitted to the minister and looking at the ministers report, which I went through the summary that was made available to us all and on the website, the minister took into account all the concerns such as noise, visual impacts because they appointed suitable candidates and I am glad that they appointed PL. I looked at your CV and seen your capabilities and it is good for us to know that the choice that was made was a good one, I have looked at PL, AW and Andrea's CV. You will see that all the concerns that were raised on the scoping report, the minister took into account because the particular disciplines were included in the DEIAR process to address the concerns. Based on the King Shaka EIA Process which ran for three years, and everything that was raised in all fairness was attended to. Knowing the background of the CSIR, on a separate issue, couple years back working

on a sewer plant on the Umdloti River, we, as an association, appointed two CSIR scientists to back us against the EThekweni Municipality and got it done.

BR: Jeeva, sorry that is totally irrelevant.

JP: No Betty, I do not want to have a challenge.

BR: No it is not a challenge but it is irrelevant. What happened at King Shaka is irrelevant.

MA: Let Jeeva speak.

JP: I did not object when you were speaking. I am putting things in perspective because you (BR) are saying that they are biased and I am saying that based on the fact that another government department did the EIA for the King Shaka Airport then there is good reason to believe that this process may not be biased. Let us get on with the EIA Process and carry on with the meeting instead of debating.

MA: Let us agree to disagree and continue with the meeting that all the role-players have attended. Let us hear the role-players. I respect everyone's concern but they have been recorded and will be addressed at a specific time. Let us carry on with the meeting.

PL: Thank you, we want to respect your time and invited you to a meeting to hear about the project and will respect that. Let us move on to Kevin's presentation.

Presentation titled "Umgeni Water – Need and Desirability" by Kevin Meier (Umgeni Water)

AP: On the R617 route through Himeville, there is an entire population that does not have water, people are struggling for water and then you say you have bulk infrastructure in the area?

MA: Sorry Paul, should we take questions during the presentations or later.

AP: He can answer later.

PL: In the interests of everyone's time and managing everyone's time effectively, please could we have questions at the end of the presentations, we will note the questions down.

KM: That is a very useful question and the reason why I am presenting this is I want to give you an idea of what Umgeni Water's role is. We are supplying water to a very very large area and it is to make sure we have the plans in place to make sure the water is provided even if one plan falls away.

Priya Govender (PG): Besides the salts going back to the ocean, are there any other chemicals that will be discharged to sea?

KM: Very good question, I will be able to respond later on at the end of the presentation.

BR: What is the date of that cost?

KM: Feasibility study was completed in July last year. That cost is a July cost; we have updated that because desalination plants are very linked to a lot of the equipment that we buy, especially the membranes which we have to buy overseas. So when the rand-dollar goes pear shaped, so does the cost of your desalination plant. We have updated it recently. I don't have the updated figure because we have not confirmed it yet. But we have done it for the South Coast and not the North Coast. The South Coast, as I have mentioned, there is probably a 50:50 chance between the dam option or the desalination plant and we need to make a decision on that. So we are doing a financial feasibility on it and because of that we have taken those costs and updated that for the South Coast and we got new costs for the dam option. But if we are looking at 4.4 billion last year, you are probably looking at about 4.7/4.8 billion this year. But we haven't updated these so I can't give you the updated cost, that is last year's cost.

Justin Wendler (JW): What you are showing us there and what you have told us is that the brine will spray out.

KM: Yes

JW: So in actual fact, right around that pipe, there should not be any salinity sitting there? So it's going straight out. So you are showing us a pretty picture of what is growing on the pipe and so on and so forth but what is actually around it?

KM: We are going to discuss the impacts just now; this is the last video to show you of the model of the dispersion.

PL: Thank you Kevin, now we are going to take questions. Let's take 10 minutes of questions on the technical aspects of the project. Let us respect people's time, take these five questions and move on to the next presentation on the actual environmental impacts.

DD: I want to ask about the rules because I think as the chair you need to protect the people who are asking questions. We need to ensure that you manage that process because we are going to ask a lot of questions and we want people to respect us. Can you manage that please?

PL: I will manage that process. We will hear the question and we would like to hear a range of questions so that everybody has a chance to ask questions.

DD: Sure.

Roy Singh (RS): I used to live in 1 Park Avenue in Desainager, we were the first people to live there, I just have one simple question to ask. You were talking about the intake and you spoke about a level whereby the intake rubbish which was seaweed blocks the intake system, which would be at an optimum of 100 micro filter size. That is the intake only. The whole energy equation you gave us was based on that pressure based on a filter of 100 micro. For consumption, we need to be below 2 micro to eliminate all other bacteria. So we are saying that amount of energy used to desalinate that water is basically to get grey water and then clean it up and send it out again after 2 micro. Is that correct?

KM: Do I respond to that now or once all questions are asked?

PL: I think respond to that one now, as we still have five more questions.

KM: Very briefly, the first level of filtration is the intake which is 10 cm apart on those bars, then it goes through a screen, then it goes through two stages of filtration, which is a gravity filter and we need to decide on the other one, that is why we are doing the pilot plant. After that it goes through an RO membrane, now an RO membrane the pores are so small that the salt can't even go through.

RS: Ok, I agree, at this point in time I don't want to even discuss the pilot plant. So we don't know the actual figures?

KM: We know the quality of the water that is coming out will have zero turbidity, nothing. We actually have to put minerals back into the water because it takes too much out. So I can guarantee you the quality of the water is going to be better than anything you are going to get out of any dam here.

DD: Please come back to me as I have a number of questions to ask. I hope I get the opportunity to discuss these.

Wade Holland (WH): Just like to confirm in terms of the relationship between the lower Tugela weir that you are building at the moment, in comparison, why do you think this is still a viable alternative for the EIA as opposed to continuation of the Lower Tugela which is supplying water anyway and is already in the process of construction? Are there economic differences as to why you are still considering this as an alternative?

KM: This is not an alternative to the Lower Tugela. The Lower Tugela will supply 110 MI/day of water to the North Coast. That is our first choice. Then we can supply 75 MI/day from Hazelmere with its wall raised, which is also happening at the moment. Then we got 75 MI/day plus and 110 MI/day that is 185 MI/day but in this area and the growth around the airport is expected to even exceed that in the next 10 to 20 years. So our next option is to bring that water in from the Umkomaas Water project. If we cannot bring it in from the Umkomaas Water project, then this (desalination project) becomes the next option. So this is a comparison to Umkomaas, Umkomaas is our preferred option, and I will state that in any public forum. And it is not just me, you can go to the Water Reconciliation Studies, they will state that as well.

WH: Phase 2 of the Lower Tugela would increase that capacity and have satisfied the full requirements?

KM: No the first phase is 55 MI /day and the second phase is another 55 MI /day and that takes it to a total of 110 MI /day. So on the North Coast, the first thing that is going to be done is we built the Lower Tugela 55 MI /day, the next project which is going ahead is the raising of the Hazelmere Dam, the next project after that would be the upgrade of the Lower Tugela Bulk Water Supply Scheme. After that we will bring in water from the Umkomaas Water Project or desalination if Umkomaas cannot go ahead.

PL: Can I also add that we are noting all the questions and are going to give more proper responses from the team. So we try to give a synopsis response now, quick response but we will come back and give full responses. This is because there are a lot of questions.

DD: Come back in what way? Public meeting?

PL: Provide written responses.

DD: How will we respond you?

PL: If we got your email address, we can email it to you.

Vignesh Naidu (VN): My question is focused around the concerns of the impact that this project will have on the coastal ecosystem. I know you did mention a bit of it but I am not entirely convinced. You did say that you had a buoy with yearly data. You will admit that even the 1 in 50 return period that you mentioned earlier at the beginning of your presentation is based on historical data. You can't simply take one years' worth of data and put together this model and base your feasibility study on this?

KM: What I am saying that we did collect data as part of our feasibility study. We want to collect all the data we can to make sure we can account for every scenario that exists. The EIA will decide whether there will be an impact or not. I'm not a marine expert. Luckily there is one over there. She can decide, I don't want to comment on it because I don't have the expertise, I am an Engineer. But you will hear about that just now. We have taken the currents per year, now current data, yes you can say varies, but it's not like rainfall data, say a 1 in 50 year drought is not the same as currents you measure off the coast?

VN: But what I am saying is that the theory is based on historical data, it's the same application.

Ken Leaver (KL) Registered Architect from Ballito and also president of the Rotary Club: My questions really are taking a step back. I know everybody here is very concerned about what happens just down the road but what in your calculations of the water requirements, the water supply needs for the area, what consideration have you taken in for wastage and the possibility of recycling. And also what consideration have you taken for siltation? Tugela River is silting up very quickly, how is that going to affect your 55 MI/day plus 55 MI /day say in the next 15 years.

KL: Second question is there any way in which, I mean you say you are very keen on the Umkomaas project and that it's your first priority and that you will tell that to anybody, how does that compare in terms of the water supply, this 150 MI/day? What is Umkomaas going to provide per day?

KM: 600 MI /day

KL: 600 MI /day, so it is 4 times the size.

KL: What allowance and have you got any kind of documentation or scientific fact to factor in climate change in this area over the next 50 years? How is it going to affect inland collection? Is that factored in at all anywhere?

PL: Thank you, very good questions, each of them are theses in their own right. Firstly siltation.

KM: the amount of water we can take from the Tugela is based on the amount of water in the river and the dam is right at the top, not at the bottom, so the siltation does not affect us there. The silt actually goes out into a submerged estuary, which is actually what we want, so it is not affected. Siltation at Hazelmere Dam is a point, it has gone down from 22 % to 17 %, 5 million cubic metres.

So we do take that into account in our planning. We take growth into account in our planning. What we can't take into account, we know that there is water loss in the municipalities and we know that within the municipalities there is unaccounted for water. Those are two different things, so you need to understand that too. Unaccounted for water is not just water loss, it is also illegal connections, which is water being used but not legally, and it can also be meter inaccuracies as well. So that unaccounted for water, we have no control over as Umgeni Water. As Umgeni Water, our mandate is to make sure there is enough water in the system within our control to give to people so that they do not run out. I will use Sencorp Siza Water as an example because they have low water loss - but if Sencorp Siza Water went pear shaped and the water loss was 70 %, we will still be required to supply water to them. We might not do it willingly or we might put pressure on them from other means to save water, but we are still required to supply water to them as that is our mandate.

PL: Thank you, we will also respond in detail.

JP: I remember you saying that initially the cost of the project was 5 billion Rands in September 2014. Then I remember in May 2015 at the church, they asked the question again and you said at that time, I think I heard correctly, 15 billion Rands. Because I asked that if today, the Minister of Environmental Affairs provides the authorisation to build the project, how long will it take to construct and you said five years and I asked what will be the cost and you said R15 billion. So if I heard wrong and gave wrong information to anyone, then I apologise. But the concern here is that the cost you have given at the presentation is the cost as if you are going to build it today in a three month period. So that has not been in all purposes factored in the five year expansion cost. So from a community perspective, we need to know the factored cost, because if you take the King Shaka Airport as an example, the proposed

cost was 2.7 billion and the completed cost was 8.7 billion and it impacted the rate payers, so that is the concern that we have.

KM: The cost given last year was approximately 4.4 billion.

JP: The second question that I have to ask you is that it is clear from what you have said at every public meeting that you do not believe that the Desainer plant would be a choice plant as such? So I am asking this question again so that it is recorded and again for a point of clarity, from what you are saying is the preferred option the Umkomaas and Smithfield project and would the booster project to carry us to 2024 be the Tugela Bulk Water System Phase 1 and Phase 2? Do we still stand on this?

KM: That is correct.

JP: We from the civic side are quite happy with that. So then I take it that this particular process that we are following now is only as a failsafe just in case, as you said, there is a fatal flaw in one of the other processes, which is when you will consider this project.

KM: You are correct.

JP: Then the other question is did you consider for a short term project because we are in the drought now and there is a water shortage now, should you not or should Umgeni Water not consider or the CSIR who are quite good with these things, coming up with some sort of a portable mini-purification plant to put on the banks of the Mdloti river or other areas as coastal areas such as Desainer, La Mercy. Desainer only consume about I think between 2.5 to 3 million litres a day? So technically, right now currently they supply that water. So the option that we are putting to you now, is have you considered it?

BR: May I just on the cost issue, the costs shown in the presentation does not take into account the myriad of mitigating costs that are going to be involved here. There are going to be many measures needed to mitigate the environmental impacts. So I want to know how much that is going to cost on top of the total cost for the actual structure.

KM: Thanks for these questions. Jeeva, the R15 billion was the original price for the Umkomaas Water Project and that has now gone up to R 19 billion, and every single year that this project is not implemented, the capital is going to get escalated. We hope it will escalate to CPI, but it will probably escalate it more especially if the rand dollar rate changes. If the rand improves, it will come down. What we do when we budget in Umgeni Water is that we have a CAPEX where we implement all of our projects and within that CAPEX, we put in today's cost but we budget for escalation because of the cash flow cost we budget for escalation and we budget for how that cost actually changes even during construction. We do account for that. If you want to know if we constructed this plant in five years' time, it will probably cost about R8 billion but we cannot look at that, we have to look at it in today's cost and that is a common procedure in all engineering when you look at costs you have to look at it at today's cost.

KM: The second question I think is outside of this process, I am happy to talk to you about it after this meeting, I don't really want to waste time because we have lots of things that we are doing about the drought.

DD: I hope you are not in a hurry because we might not have another meeting, please bear with us. I am from the South Durban Community Environmental Alliance, and I have been working on environmental issues for a number of years and I would be worried with what was presented because there are huge gaps and we would be worried because of escalation of the water costs. I think the other big thing is presenting the facts and we need to be concerned and be wary of allowing a false sense of security because ultimately projects can be put on the table but us in Merebank, Isipingo and the Clairwood community, how these projects come back after years and people are losing their land/homes, be wary of that fact. The second thing that I think has not been placed here is that there has not been a comparative costs of the different units, for example the desalination costs, what does it cost exactly, how much has been spent on the process already, and to say that it might not go ahead. I'm sure it has costed really a lot of money to appoint these people such as CSIR, how much have you spent already, that is the question you need to ask. So suddenly you say you spent so much of money and now it's not going to happen, I don't believe that. So be wary of that fact. I think what is critical about this whole process and you haven't spoken about in your presentation is the whole issue of the social enhancement studies that should have been done. Nothing that has been presented there speaks to how many people are going to be affected, how many people will benefit. All those sort of things should have been presented. You know I am going to Craigieburn on Monday, and I will be there and I am not

sure if you are aware of this project, but I know that Sappi Saiccor owns the water. I don't know about the community and how they are going to feel now that the water has been dammed, they are already fighting Sappi for the farms, all the farm are all drying up and the farm lands are being destroyed despite the fact that they have the river there and the water should be free. I don't know, but what I want to ask is the whole issue of the study that you speak about, you presented as if there is going to be no harm to fisherman, you did not say how many fisherman are going to be affected, and if they will be affected, you only said that the fish are not going to be affected but you need your studies to show if the fishermen are going to be affected.

PL: We are going to come to that now, have you got a technical question?

DD: I have a technical question; you spoke about the seaweed, the rubbish that has been thrown out and all that stuff. You know that the fish at sea live off the seaweed and we have fisherman in this city and you made it look like seaweed is not an important food for fish, like it's just rubbish. I don't know how you came to that my understanding is that seaweed is important.

PL: We are going to talk about the environmental impacts now.

DD: but take those questions, they are technical questions, I am going through his presentation

PL: Mr. D'Sa we also have to respect other people's time and I am asking you if you have any technical questions.

DD: I have questions on his presentation, is there something wrong with that?

KL: Give the specialists a chance to speak.

JP: Sorry, I have to make a point, I think there has been a misunderstanding, Kevin only did the engineering and technical side of the project in terms of needs etc. and I understand now that you are going to present the environmental impacts, so all the questions that Desmond asked will be discussed in the following presentation, so maybe we should go ahead?

DD: Yes sure, let me just ask this technical question, the international best practice that you have shown us in Australia, Perth and Melbourne, what you did not state or discuss was the benefits, and effects and concerns of the people above all and what studies was done and that would help us to determine whether this desalination plant is good or not. That has not been captured and presented by you.

PL: Ok thanks Mr. D'Sa we will note that, now last question, gentleman at the back.

Les March (LM): Trustee of the King Shaka Estate. Can you tell me, what will be the height of the tallest building in the plant and the freshwater pipeline will it be underground or aboveground?

KM: The freshwater pipeline will be underground, all of our pipelines will be underground unless they go over an area where we can't put them underground, but there is one project that I know of where we might have a small section, but it will definitely be underground. The buildings will be 10 m high but it might be higher if you are constricted by the amount of land that we have available but that is the amount that we are working on.

BR: But you say that it is underground, but that means a lot of digging has got to take place on the soil.

KM: Whenever you see a pipeline being constructed by Umgeni Water pipeline, wherever you go along the freeway and you look and you see a pipeline being constructed, you will see big excavators digging holes and putting the pipelines in, that is essentially what we are going to be doing.

PL: Thanks for the question.

Question: Unknown: Kevin's presentation showed a single diffuser, what about a double diffuser?

KM: So the diffuser design would happen during design, it could be single or it could be double, it will more than likely be single like that, you would have seen that on the pipes they stagger them so that one is coming out this side and the other is coming out the other side. The reason to do that is to try and disperse the brine over a big enough area so we don't disperse the brine all in one spot otherwise you get concentration, so we disperse it over 60 m of pipe, so over 60 m you will have diffusers going up all along and it will diffuse like that.

Question: Unknown: But it will still disperse in one area, what I am saying is what about double pipelines?

KM: You mean two pipelines, yes we can do that. What we have looked at here is that we said what is over 50 m, we don't want to be more than 1 part per thousand greater than ambient, the normal salt level. 50 m outside of that we don't want to be more than 1 part per thousand higher. So we work out our diffuser structure based on that calculation. As it turns out, because the currents are so strong, over that year of simulation, outside of 30 m we already satisfy that, so we don't have to worry that and we don't have to worry about having big diffuser pipelines because it disperses.

PL: We need to move onto the next presentation because now the queries are being made on the impacts of the project, which is the next presentation.

Vee Govender (VG): On behalf of a network of environmental groups across the coastline, I have a quick question for you as Umgeni Water, eThekweni loses a lot of water to waste, do you know what that volume is in comparison to what volume they put out there?

KM: Waste, as in water loss?

Geoff Pullan (GP): 40 %

VG: Yes, water loss.

KM: EThekweni's unaccounted for water can be answered by that gentleman over there.

PL: Point taken and we will answer that question.

KM: Niren can provide input.

NA: It's around 40.8% for 12 months.

KM: 40.8% is unaccounted for water, not water lost. So the water loss component of that is probably around about 50 % of that.

VG: So my question to you is if you know you have a hole in the system, what are you doing to hold that system accountable so that you don't have to continually provide water to this hole when EThekweni is doing nothing about solving that problem? How many desalination plants are you going to have to build?

KM: I will go back to my answer I gave previously; Umgeni Water is not in control of anything outside of its mandate.

VG: I totally understand that, that was the response.

KM: So that question needs to be posed to the municipality, because if the municipality will save that water, we won't need to construct this additional infrastructure.

VG: And that is my point.

KM: So what I am saying is that you should speak to the municipality about it because it is not part of this study; this study is to look at desalination as an option for creating water, it is not looking at unaccounted for water.

BR: Kevin, I can't believe that you are saying that because everything works together, it does not work in isolation Kevin, it does not work that way.

PL: We have got to move on to the next presentation on the actual environmental impacts; we have got to respect people's time.

JP: Can I make one quick comment as a way forward. The point that the gentleman asked it was asked and answered at the last meeting, where eThekweni provided an official who said that they are looking at reducing the water loss and also looking at 550 million litres of treated grey water, looking at returning it to the system. This is something that you can follow up with the municipality.

KM: If I can just make one clarification point, I didn't say in my presentation that the brine wouldn't affect fishes and etc. I am saying that at Perth, that is what the videos and monitoring has shown. This lady over here and other experts in the system are there to actually make those calls. It wasn't me that made those calls.

DD: Sorry is somebody transcribing this? Is there a take back from the presentation?

KM: Yes

PL: Ok, we are going to move onto the next part which is the assessment of what are the impacts of a project like this. Describing the positive and negative impacts and how can those be managed. As part of making the decision if this is the kind of project that should or should not go ahead, what are the benefits of the project and what are the costs?

BR: There are no benefits.

PL: Everyone is entitled to their own opinions. Annick is going to present the findings of the specialist studies. We will run through the presentation and discuss at the end.

DD: Is she going to present all the specialist studies?

PL: Yes

DD: Question, who are the specialists, are they in house or external?

AW: I will discuss this in the presentation.

Presentation titled "EIA for the proposed sea water RO plant and associated infrastructure at Tongaat – Public Meeting" by Annick Walsdorff (CSIR)

Presentation titled "EIA for the proposed sea water RO plant and associated infrastructure at Tongaat – Public Meeting – Marine Ecology" by Andrea Pulfrich (AP) (Pisces)

Presentation titled "EIA for the proposed sea water RO plant and associated infrastructure at Tongaat – Public Meeting" by Annick Walsdorff (CSIR)

DD: Sorry are you going to take questions after this? Because you haven't said if those are going to be affected or not.

AP: I have been through it already.

DD: You speak about the sardines, but you don't say whether they will be affected.

DD: I am just trying to understand how many hours you have allocated for this process.

PL: We have until 8 pm.

DD: Should this not have been done in the day, because we can come through and engage with you, I think it is unfair to expect that you do a presentation of this nature and you are just skipping through it and you can't ask some critical questions, and at the end of the day it looks like you are just looking for a record of decision and that you are just ticking the boxes to say the process has been followed.

PL: I can talk about that afterwards with you. Let's move on now, thanks.

DD: Are the specialists available to answer questions?

AW: the specialist will be available, if you email me the question, the specialist can answer and we can respond to you.

DD: Not here?

AW: No not here.

DD: Can you go back to the other slide. Proposed (compromise) conservation of wetlands off-site in exchange for wholesale loss of wetlands on the site, I think that is important.

AW: This was just mentioned - loss of transformed wetlands on the desalination plant site. And because it is a medium to high significance residual impact, the specialist has recommended to undertake offsite rehabilitation of wetlands which are currently transformed and degraded.

DD: So It is an offset?

AW: Yes, and it is in the report as well.

BR: That is the most important issues here when it comes to that, and you are going through it so fast that people can't even absorb what you are saying. You said a critically important thing about the wetlands, it can't be rehabilitated, you need to stress that and make sure that people understand it.

DD: Exactly, it is important for us to put the emphasis on the matter.

PL: Ok, we want to respect people's time so that they can hear the presentation and then we are going to take all the questions and concerns, even if it takes a lot longer.

VN: I have a technical question on the previous slide. What is that green boundary on the map, is that the proposed project?

AW: That is the secondary vegetated area.

VN: Secondary vegetation that will not be rehabilitated?

AW: Well it will not be crossed, that is why we say there will be a slight shift in the pipeline.

DD: There is a red line going through that area though?

AW: The red line is the pipeline.

DD: But it is going through the area.

AW: No, this is the original route.

VN: If you are going through it please explain in detail.

DD: Yes, we are writing down notes here and we want to make sure we have captured it and make sure we understand.

PG: But she is trying to explain and you keep interrupting her.

DD: But she is rushing through it.

PG: She is not rushing through it, she is trying to explain and you keep interjecting.

VN: You should have had a legend on your plans so that all of us can understand.

JP: Can I ask people to move closer so that you can hear better and so that we can hear you.

PL: Let us move on.

Question: Unknown: Can you show us where is Valley Road on the map?

Lucille Wendler (LW): How will you screen the impact if you view it from on top of a hill?

JW: Another thing is that all these drawings that you have been showing us of the buildings have all been single storey, but you are proposing a two storey building. So how are you going to do any of this, this is all a theory. In practice, realistically, what is actually going to be there? All that you are showing is theoretical, what is actually going to be the impact? What are they residents going to see? What is the noise that we are actually going to hear? You are painting this beautiful picture but in reality you are living in a country that can't even function, and how are you expecting this to come out looking beautiful and green like that? I don't think that as a community, this is anything that we should be even considering. Forget the water shortages.

Mike Wilson (MW): You need to know that there is a lot of sensitivity in this area. People have taken millions of rands and taken their lives investment and built houses, and now you are taking prime real estate and making it into an industrial area, it doesn't matter how you build the plant and paint the picture, it does not go down well with everybody. There is no denying that there is a water shortage but everybody knows that that piece of property is prime residential property and the area is growing like you cannot believe and you are now taking the area and making it into an industrial area. This is a very upsetting thing for a lot of people that are buying property there.

BR: In fact it is upsetting for all of us.

AW: Maybe let us carry on and continue with the presentation until the socio-economic aspects.

PL: Yes, valid points let us carry on.

LW: Will you answer my question afterwards?

AW: Yes.

BR: Ok, interpretation of heritage has also not been taken into account. What does heritage actually mean, and I will come back to that about how important this space is to these communities that live here because we were affected by the Group Areas Act and that impacts directly on this space. So heritage also includes that - I noticed that it wasn't included so it is going to be an important point.

BR: In other words people will be dispossessed of their land.

DD: Have you got a slide on that?

AW: No unfortunately, we can't put all the information on the slides, we have to make it readable.

DD: Yes, but that information is very critical.

AW: Ok, so I can present it again to you if you like?

DD: What you are talking about will we be given that information?

AW: Yes, everything is in the report on the website, everything is in the economic study, Chapter 12.

DD: Is it as you are saying it?

AW: Yes, what I am saying is exactly the specialist study, Chapter 12.

KL: How does that 18000 compare with the existing?

DD: Why is there no mitigation for the impact on commercial and recreational fishing and tourism and recreation and property value? There is nothing that you talk about there that addresses the impacts. Monitoring forum is not going to help, that's for the project. I'm talking about mitigation that specifically addresses these.

AW: It is a low to medium impact.

JW: So you are just going to tell me that my investments are going to decrease and I must just be happy with it?

AW: If you would like a more detailed response, please note your comment on a comment form, and I will get the specialist to respond to you on that specific question.

DD: but the point that we are making is that your mitigation does not consider your negative impacts. Establishing a committee means absolutely nothing, it does not take into consideration what you are going to do about it and how you are going to go about it, nothing.

AW: the implementation of all the recommended measures which are recommended for the visual impact study, noise impact study, and for marine ecology impact study are all recommendations which are going to assist in minimising those negative impacts.

VG: That should be good, it really sounds good, no I want you to really hear me out. It sounds really great, but what does it do for the property value for my house that I have invested in? can you tell me that? Because the specialist probably didn't even look at it. I want to know how many of you guys actually live in La Mercy? Which of you live in La Mercy?

BR: Exactly you are all not from here. All of you don't live in La Mercy, that is the problem, you can only see this from your point of view.

KL: We live on the North Coast, this is a North Coast issue, not just a La Mercy issue.

BR: You are all outsiders. That is the truth of the matter, you are all outsiders. You don't feel for this piece of land like we do. So you can never understand what we are talking about.

VG: He presented that the residents just grow vegetables on this land. This has been a historic farm area for Indians for the last 100 years.

AW: Ok, we have our Social Specialist here, Duncan Keal who will present the last presentation and you will get responses on your queries from him.

BR: I don't think he is going to be able to respond because I saw the report and all you say is this is going to be the problem and this is how we are going to attend to it. It does not answer our questions.

PL: Ok, we will give Duncan some space to present.

Presentation titled "EIA for the proposed sea water RO plant and associated infrastructure at Tongaat – Public Meeting – Socio-economic aspects" by Duncan Kael (DK) (Acer)

BR: How many jobs?

DK: In the order of 200 temporary jobs during the construction phase.

BR – How many jobs will be lost when people lose their farm land?

DK: I can't really remember of the top of my head, but it was considered.

BR: It doesn't actually justify the project.

DK: The number of jobs that will be lost was considered in the assessment.

BR: How many jobs will be created during construction? And those are all temporary jobs right?

DK: Yes, temporary for the construction phase.

DD: What is the total number?

DK: The order of 200 temporary jobs during the construction phase and that is including pipelines as well.

DD – How many permanent jobs will be created during the operational phase?

DK: No permanent jobs during the construction phase, operational phase will be discussed in the next slide.

Question: Unknown - Did you quantify the economic property loss?

BR: Value of property loss? This loss in property value cannot be quantified because of the emotional aspect. Even if you put a figure on it, it will not be reflecting what that land means to the people.

DD – Why did you not include health and safety in terms of powerlines and associated cancer? Why did you also not consider safety because I also did not see safety in your social presentation?

DK: Safety in what sense? During construction?

DD: Safety during construction such as road safety, trucking during construction?

DK – Potential road safety has been included and covered. Powerlines have servitudes in which people are not allowed to live in. Eskom has proven that those are not a health and safety issue.

JP – what the public does not know is the discussion regarding the ownership of the property of the desalination plant. You know because you and I were involved in the landowners meeting. The landowners actually wanted to sell the land and tried to get Umgeni Water to buy the land even before this desalination plant becomes a reality. I am including this point because of the point that you raised (BR) about the heritage value of the land and the value the people attach to the land. The very owners of this property are willing to sell the land. They are very happy to sell.

BR: It does not matter that the landowners are willing to sell.

VG: Did he explain why you need the community support.

BR: It's not about that. I don't think you (JP) understand the issue here.

PL: Ok, you have made your point. Let us move on with the presentation.

BR: For which community will 50 % go to the Ethekwini and Illembe Municipalities? That is the problem isn't it. The whole of the La Mercy zone uses a tiny fraction of the water. You are going to ruin our whole space in order to get this water to someone else somewhere else to water their golf courses.

KL: If you got no water in La Mercy, then you are in problems.

DK: 20 to 30 permanent positions during the operational phase.

BR – The main plant and all skills is going to come from somewhere else and some other country. So our people here are not going to be used at all.

DK: That is why we talk about and propose these migration and enhancement actions.

LW: What are we going to see? What will it look like for residents at King Shaka estate?

AW: There has not been any 3D modelling done to show you what the plant would look like. The visual study took into consideration anticipated visibility, visual exposure, sensitivity etc. to assess the potential visual impacts associated with the proposed project and came to the conclusion that residual impacts during the operational phase would be of medium to low significance providing that the recommended mitigation measures are implemented and is not considered a show stopper. The specialist does not deny that there will be an impact.

LW: But you guys have not spoken to anyone in the area, you have not spoken to us.

JW: When have you come and spoken to us and the people living behind us and say that you are proposing a project of this nature. You have not spoken to any of us. So many people are not aware – this is why you have such a limited crowd. Many people don't actually know what is going on. So this really needs to be dealt with from my point of view, you need to inform the greater community. Newspaper doesn't really mean anything. Did somebody actually knock at the doors and say we are planning to put up this mega structure here and it is going to affect certain areas.

AW – I believe that Hugo van Zyl and Duncan Kael (Social specialist) have had focus group meeting with surrounding community members.

MW: I live on South Beach Road and I have never seen anyone coming around for meetings. The first time I heard about it was in the North Courier - that was the first time I read about and I have been living around here for the past 3 years. So I have been around since this project started and this is the first time I am hearing about it.

AW: I have to say that I am very surprised because Les March, who is gone now, has been at every single meeting and he also lives in the estate.

JW: That's why we are here.

AW: So the word has been going around.

VG: But I mean I don't think you are getting it, that is a resident, they are both telling you what they experienced. Can you actually acknowledge that?

MW: Can I just ask one question? You are talking about drilling and boring and building tunnels and all sorts of things and that's quite a substantial work load that you are doing, now I ask myself the following question.

AP: It was on social media and in three newspapers and the radio. You must be on it to be aware. With the new generation, you have to be on the page. People are still aware of it, take for example Wade Holland who lives in Mdloti, he drives all the way here for meetings and he is aware of it. Take Jackson for example, he lives in Jackson Estate and he is aware of it yet he does not get a newspaper delivered to his house. Lots of people are aware of it. Whatever media you have, please read it, this is where the info is. It is three newspapers published in the Tongaat area, as well as the North Coast courier.

BR: But that is not the point, they don't know about it.

VN: Whether we were informed before or now, it is not going to change how we feel.

AP: We need to protect our interest, the water crisis. This is what we are here for.

MW: I understand that there is a water shortage and everyone agrees that there needs to be something done about it. All I was trying to say is the following, I understand that there is a water shortage, I would be the first one to jump in and say if there is a water shortage. I agree with the principle that something needs to be done about it and they are certainly doing things about it. The biggest question that comes in here is the selection of the site. That is what the situation is about here because the people that are directly involved in that area, not living in Tongaat, not living in Ballito, not living within Mdloti, but the people that are living within that basin, are the people that would be directly affected and impacted on and that is why the people are getting so heated up about this. In the bigger picture, we are probably not going to be concerned too much because we are a couple of people to suffer in the bigger picture. We give a damn about the bigger picture because like I was trying to say to you just now was that we have a km behind us, behind that dune is the airport that was constructed out of any area. Behind us, behind that dune there are no buildings there, there are no houses there, next to and across from the N2. And I say to myself, if this is a bigger picture scenario, right now you are looking at 150MI, what happens when you want to expand that and now you need more land and there is no land around? So shouldn't we be thinking and looking further than where we are looking now and take it through and it

will cost a little bit more in the short term but put it behind there and we can supply more water in future. Why not build it further in land and build a bigger plant to supply water to the whole area.

JP – In terms of visual impacts, the height of buildings is supposed to be maximum 10 m. Did the specialists consider lowering the land and therefore the height of the buildings to decrease the visual impacts? It's better to sacrifice costs than visual impacts.

KM – Lets record that as a comment. I said at the very first meeting that **IF** the visual impact is the reason why there is so much resistance here and I have heard lots of other comments but, architects can look at this and do amazing things to minimize visual impacts. If you knew what is under the Bluff, you would be surprised. And there is no reason why they couldn't do it here. If it warrants it and if there is a concern and if there is an impact, we can develop an architectural arrangement that will suit people but we need to understand that, that is the impact. If the issues are clouded by other things, then we can't do that. If it is an impact, then it has to be assessed in the EIA and will be sent through as part of the EIA report. If it is a mitigation measure that it will need to be taken into account.

BR – Kevin, I have to respond to that. You say this is maybe a visual impact thing, you are sorely mistaken. I totally disagree that this is the main issue.

KM – We did not say that it is just a visual issue. I said IF visual impacts are the issue.

RS – I think you based your projection on the costing and how much you will generate etc. I tell you the 0.15 m/s and 200 microns, you will not get what you want. I also think that you don't even have a drawing of what it is actually going to be at Tongaat? What will it look like?

DD – Has the Draft EIA report been sent to us? How can we oppose the project and join forces.

BR – I have sent the report to everyone.

DD – Tongaat people must bear in mind that a few years ago the Tongaat gas pipeline project was implemented and Tongaat has very unstable ground so putting more pipes in unstable ground will lead to problems. So don't say it is fine now if you are not happy. It can affect you and it can affect them that are living in La Mercy. I think the disappointing thing for me is that the social impact study has not covered everything, and it seems like it was a tick-box approach, and from what I'm hearing is that there are huge gaps left out of the study. I think we really have to look at it. The final question is given your commenting period and that you as UW are not sure, and that probably you might not go ahead with this, depending on what occurs at Umkomaas. Is it not feasible to extend the timeframe to give us a bit more time so that we can make more meaningful contributions to the process and engage with the studies? Strategically, you had a meeting at Tongaat and not at La Mercy so you could leave out the affected people. It would have been crucial to have their inputs. How do you engage the broader community of La Mercy where the plant is proposed to be put? I think it is a travesty of justice when you move the meeting to an area where lesser people will be affected.

JP – Just a point to make. I am President of the Tongaat Civic Associations – we have the 21 civics in Tongaat under. Also served on La Mercy Rate civic Association (Rate payers association). Also STRACA (Seatides) chairman was made aware of the project and of our position. We neither oppose or support it, we are following a legal process. They all know what is going on. We are just following the legal process. Raise your comments, concerns, let them get officially recorded and you have the opportunity until the 9 May to raise your comments. I am a resident in La Mercy and even have a flat across the proposed site and so I have a vested interest in La Mercy.

BR – But you are contradicting yourself. When you say something different from before, you are contradicting yourself, and these people don't know that. I know what you have said before.

JP – Not at all. Certain people should not create wrong impression and if you remember that your action group said last year that they "successfully" stopped the plant. Bad publicity. I have been part of the associations and EIA process and follow the process.

BR – We did not say that, we said that we caused it to be suspended. It doesn't matter what the newspaper says and this is not about that.

JP: I know what is going on and we are following the process. If anyone has any comments, submit them as part of the EIA Process and let the Minister consider it.

JW: Are you saying you are talking to the wrong people?

JP: No I am saying you should write your comments and submit them.

JW: I had a look at the map you put up at the beginning of the presentation where you selected various areas for the proposed plant. There is an area near Sibaya that is flat. Why was the Sibaya area not chosen for the proposed desalination plant as opposed to Tongaat? There are not any houses on the area, may down the hill I am not too sure what is on the other side in the Mdloti area. It looks like it will have limited impacts in Sibaya area. Secondly, who will actually be managing the construction process? You may have one of the big contractors coming here, besides the environmental impacts of the actual project during the operational phase such as saline water being put out to sea, marine impacts etc. What about the litter that comes from the construction site? What will happen when the wind blows the waste and litter onto beach into the ocean? Who is going to control that waste, where is that waste going to go? How is that waste going to impact on the environment because I don't think that was touched on once during the presentation.

PL: Valid point, waste point we can respond to and it's a question of who will run the facility?

KM – There are a number of institutional arrangement on how a project like this would go forward. Because it is a technology that is not commonly used in SA and not on a large scale, we would **probably** use an overseas company, with Umgeni Water to design, build and operate the plant for about 7 years.

JW: Then how accurate is your presentation that you just gave to us?

KM: We cannot do an EIA on a design – a design would take 10% of the total cost and it would cost about 7 million. You do an EIA on a conceptual design and then you design it after that. Feasibility study done on what we believe it will look like and the engineers (Aurecon) have been involved in doing that.

JW: No you are talking about aesthetics. I am talking about that management of that process of the limited impact to the environment in the area.

KM: From our point of view, we would be a partner for a number of years and we would oversee everything.

DD: What about the question about the extension of time?

VN – I also have quite a few questions so just bear with me. I am also an engineering professional. You have not given us traffic impacts, dust impacts, pollution mitigation. You have done a basic assessment, this doesn't hold any ground in terms of a true impact and full impact on that area. Who owns this property that you have earmarked? What is your selection criteria in choosing this site? Could you not have approached bigger companies to acquire land from them such as THD because they have a lot of land? Where are you getting access from - are you taking this off the main road, the M4? Who is this EIA being submitted to for approval? Departments have their laws such as DMOSS, how has that been considered for a project of this nature? Those are my questions. Why Tongaat land? Can you give a reason?

KM – From an engineering point of view, as I showed earlier on there is very limited land that is suitable for desalination. There is a lot of land around where you can build a factory but that is not suitable for desalination. There are specific criteria that you have to take into account when constructing a desalination plant. We looked at a site at Sibaya (in the vicinity of Sibaya), we had a site there I can show you the report, it is not suitable, although it might seem suitable when you look at.

VN: At Sibaya?

KM: No not at Sibaya, down below Sibaya (in the vicinity of Sibaya).

VN: You know why it is not suitable because it is part of Tongaat Hulett's Land. I know because I am involved in a project there.

KM: **No that is not the reason**, take the report and read it I have it here on the computer, don't put words in my mouth. That is not the reason why it is not suitable.

JW: Can you give us a reason?

KM: I can give you a reason, it is because of the geotech, the topography, and there is not 7 ha of land available there that is suitable for putting a desalination plant close to the ocean. So that is the point, I can show you. What I am saying is that there is engineering considerations that were taken into account, we didn't just choose this (Desainager) site, why would we choose that site, it's got water on it, it's got agriculture on it, why would we just use that site.

BR: But you did not talk to the people before you started choosing sites.

KM: So from an engineering point of view, that is why we did that. The other questions from an environmental point of view, they were addressed.

DD: Please do not say that they were addressed; there are a number of questions that you said you will answer after the meeting, now I listened to you, I have noted them all down. So don't say they were addressed, if you want me to go to my document here I can go back.

Sharmila Ramharry (SR): Just to clarify, all the assessments and studies done by your experts, the end results, would be low impact or medium impact or high impact ideally as you have shown. When do these recommendations become a reality? Who will check it will be actually be done?

AW – EMPr (Part B of the report) would be taken into consideration by DEA and would be a condition of an ROD – UW/operation and construction company would be legally bound to those recommendations and will need to be implemented. This EMP details actions to be implemented its waste management, alignments, general construction good practices etc.

SR - Does this apply to all dams under operation by UW?

AW – Yes

SR - My concern is that UW did not follow those on a dam.

KM – Where is this information coming from?

SR – Watch 50/50 tomorrow, which will be specifically on water and the management thereof.

WH – Transmission line ploughing through wetlands – fatal flaw on whole design. Those wetlands are very special. They have all sorts of nutrients. The whole process is a fatal flaw. Recycling should have been considered first, way before desalination should have been considered. Alternatives are inadequate. In the northern area, there is about 240 Million litres of grey water down to sewer – wastage. If we can address the water we lose every day, this would be way ahead of desalination and associated Carbon footprint, wetlands impacts and all impacts on that area. Why is UW not pushing for recycling?

KM – Wastewater reuse is another option for supply to end users. You can take water from a sewerage plant – treat it directly and distribute to consumers or you can send it to Hazelmere dam first and then treat it in a water works and deliver to end users. They are all options, but it doesn't mean that desalination is not an option. We did not compare treatment versus desalination in the EIA just as like we don't compare desalination to water demand management. Alternatives are based on infrastructure that we are planning to develop as part of this project and not between projects.

DD – But you must investigate it.

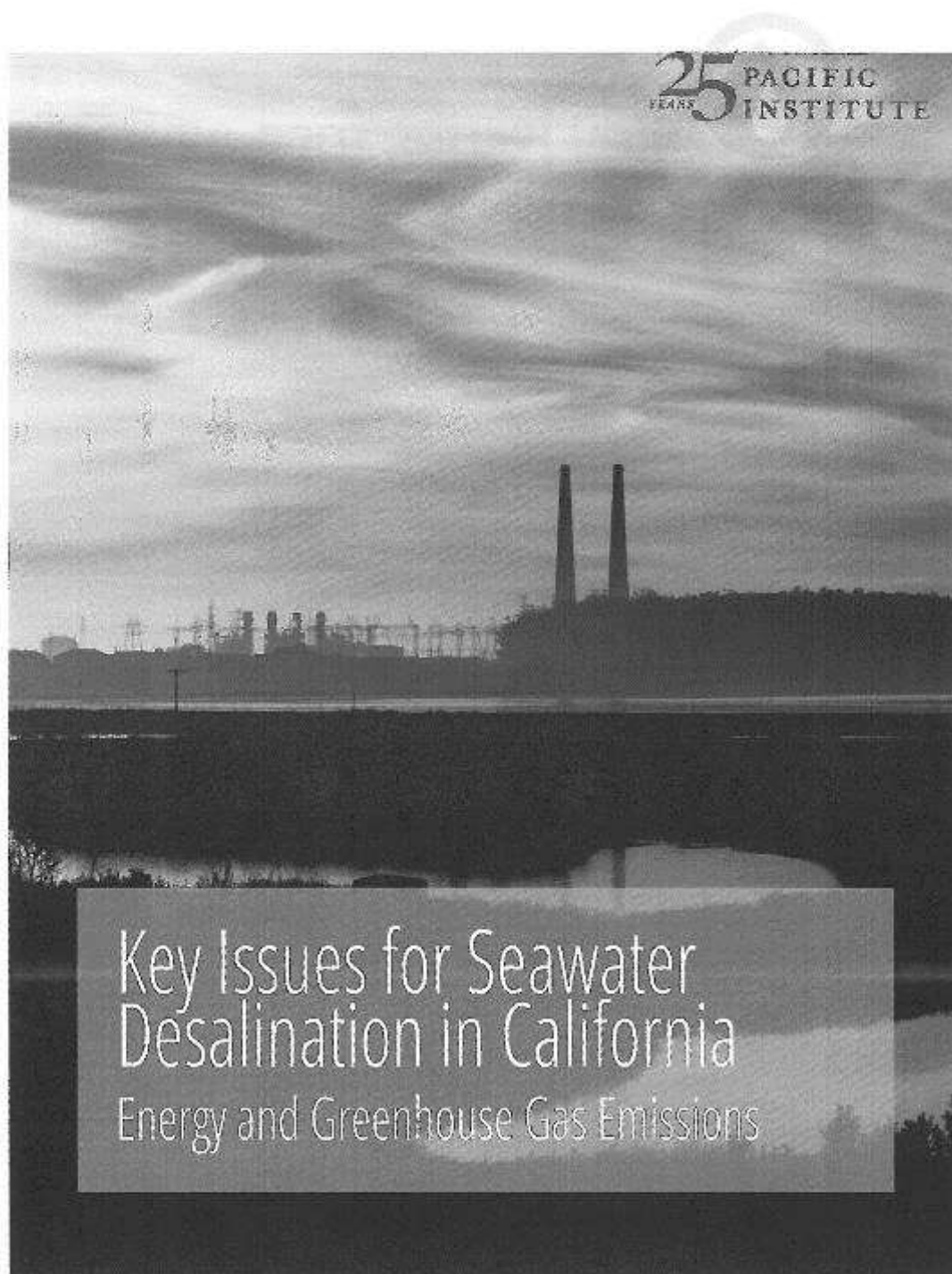
KM – We have investigating it just as we have investigate water re-use as an option. EThekweni pursued a long investigation on re-use of water but it was turned down by the public. Public objected re-use of waste water. What we are talking about now is the EIA for this desalination project. If there are pipelines going through wetlands that you think have not been taken into consideration then please let us know about it. Wetland concerns have been taken into account– there was a wetland specialist on board to ensure that impacts on wetlands would be avoided or minimised and that mitigation actions would be recommended. Noise, odour and dust have been taken into account. If they have not been presented here then it is in the report.

BR – People, we are talking about hundreds of effects, hundreds. The cumulative impacts are going to be so devastating to this stretch of land that you will never be able to rehabilitate it. Is it worth it? That is what I am asking because you are going to produce some water for a certain group of people. This desalination project is not going to help people miles away from us. It is going to have to be just for this community and we have no growth as such to require this plant to be put in anytime soon. Going to cause all of us a lot of misery for a number of years once we deal with this structure – safety, pollution, devastation to our environment and climate change, which we haven't touched on yet. You have been putting this into nice boxes, been ticked off. Not looking at the cumulative effects. All of those effects will be so massive in the end that the cost of this project will be many times bigger.

PL – Cumulative effects have been assessed as part of this EIA.

Meeting closed.

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Key Issues for Seawater Desalination in California

Energy and Greenhouse Gas Emissions

May 2013

Authors: Heather Cooley and Matthew Heberger

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The Pacific Institute is one of the world's leading nonprofit research and policy organizations working to create a healthier planet and sustainable communities. Based in Oakland, California, we conduct interdisciplinary research and partner with stakeholders to produce solutions that advance environmental protection, economic development, and social equity – in California, nationally, and internationally. We work to change policy and find real-world solutions to problems like water shortages, habitat destruction, climate change, and environmental injustice. Since our founding in 1987, the Pacific Institute has become a locus for independent, innovative thinking that cuts across traditional areas of study, helping us make connections and bring opposing groups together. The result is effective, actionable solutions addressing issues in the fields of freshwater resources, climate change, environmental justice, and globalization. More information about the Institute and our staff, directors, funders, and programs can be found at www.pacinst.org.

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Executive Summary

In June 2006, the Pacific Institute released *Desalination, With a Grain of Salt*, an assessment of the advantages and disadvantages of seawater desalination for California. At that time, there were 21 active seawater desalination proposals along the California coast. Since then, only one project, a small plant in San Diego, has been permitted and built. A second project, in Carlsbad, recently secured financing and is now under construction. Interest in seawater desalination, however, remains high in California, and many agencies are conducting technical and environmental studies and pilot projects to determine whether to develop full-scale facilities.

Beginning in 2011, the Pacific Institute initiated a new research project on seawater desalination. As part of that effort, we conducted some 25 one-on-one interviews with industry experts, water agencies, community groups, and regulatory agencies to identify some of the key outstanding issues for seawater desalination projects in California. Throughout 2012 and 2013, we are producing a series of research reports that address these issues. The first report, released in July 2012, provided an update of the proposed seawater desalination projects along the coast of California. The second report, released in November 2012, discusses the costs, financing, and risks related to desalination projects.

In this report, the third in the series, we describe the energy requirements of seawater desalination and the associated greenhouse gas emissions. We also evaluate the impact of short-term and long-term energy price variability on the cost of desalinated water. Finally, we describe the current regulations on greenhouse gas emissions in California and identify approaches for mitigating

emissions, including strategies used by those who have recently proposed or built new plants in California and Australia. Future reports will evaluate the impacts of seawater desalination on marine life and coastal ecosystems and discuss the permitting process and regulations associated with building new plants in California.

Energy Requirements for Seawater Desalination

Removing the salt from seawater is an energy-intensive process and consumes more energy per gallon than most other water supply and treatment options. On average, desalination plants use about 15,000 kWh per million gallons of water produced (kWh/MG), or 4.0 kWh per cubic meter (kWh/m³). We note that these estimates refer to the rated energy use, i.e., the energy required under a standard, fixed set of conditions. The actual energy use may be higher, as actual operating conditions are often not ideal.

The overall energy implications of a seawater desalination project will depend on whether the water produced replaces an existing water supply or provides a new source of water for growth and development. If water from a desalination plant replaces an existing supply, then the additional energy requirements are simply the difference between the energy use of the seawater desalination plant and those of the existing supply. Producing a new source of water, however, increases the total amount of water that must be delivered, used, and disposed of. Thus, the overall energy implications of the desalination project include the energy requirements for the

desalination plant plus the energy required to deliver, use, and dispose of the water that is produced. We note that conservation and efficiency, by contrast, can help meet the anticipated needs associated with growth by reducing total water demand while simultaneously maintaining or even reducing total energy use.

Energy requirements for desalination have declined dramatically over the past 40 years due to a variety of technological advances, and desalination designers and researchers are continuously seeking ways to further reduce energy consumption. Despite the potential for future energy use reductions, however, there is a theoretical minimum energy requirement beyond which there are no opportunities for further reductions. Desalination plants are currently operating at 3-4 times the theoretical minimum energy requirements, and despite hope and efforts to reduce the energy cost of desalination, there do not appear to be significant reductions in energy use on the near-term horizon.

Energy Use and Cost

The high energy requirements of seawater desalination raise several concerns, including sensitivity to energy price variability. Energy is the largest single variable cost for a desalination plant, varying from one-third to more than one-half the cost of produced water (Chaudhry 2003). As result, desalination creates or increases the water supplier's exposure to energy price variability. In California, and in other regions dependent on hydropower, electricity prices tend to rise during droughts, when runoff, and thus power production, is constrained and electricity demands are high. Additionally, electricity prices in California are projected to rise by nearly 27% between 2008 and 2020 (in inflation-adjusted dollars) to maintain and replace aging transmission and distribution infrastructure, install advanced metering infrastructure, comply with once-through cooling regulations, meet new demand growth, and increase renewable energy production (CPUC

2009). Rising energy prices will affect the price of all water sources, although they will have a greater impact on those that are the most energy intensive.

Energy Use and Greenhouse Gas Emissions

The high energy requirements of seawater desalination also raise concerns about greenhouse gas emissions. In 2006, California lawmakers passed the *Global Warming Solutions Act*, or Assembly Bill 32 (AB 32), which requires the state to reduce greenhouse gas emissions to 1990 levels by 2020. Thus, the state has committed itself to a program of steadily reducing its greenhouse gas emissions in both the short- and long-term, which includes cutting current emissions and preventing future emissions associated with growth. Action and awareness has, until recently, been uneven and slow to spread to the local level. While the state has directed local and regional water managers to begin considering emissions reductions when selecting water projects, they were not subject to mandatory cuts during the state's first round of emissions reductions. As the state moves forward with its plans to cut carbon emissions further, however, every sector of the economy is likely to come under increased scrutiny by regulators. Desalination - through increased energy use - can cause an increase in greenhouse gas emissions, further contributing to the root cause of climate change and thus running counter to the state's greenhouse gas reduction goals.

While there is "no clear-cut regulatory standard related to energy use and greenhouse gas emissions," (Pankratz 2012) there are a variety of state programs, policies, and agencies that must be considered when developing a desalination project. These include environmental review requirements under the California Environmental Quality Act, the issuance of permits by the Coastal Commission, the Integrated Regional Water Management Planning process, and policies of other state agencies, such

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as the State Lands Commission and the State Water Resources Control Board. These agencies have increasingly emphasized the importance of planning for climate change and reducing greenhouse gas emissions. While none of these preclude the construction of new desalination plants, the State's mandate to reduce emissions creates an additional planning element that must be addressed.

There is growing interest in reducing or eliminating greenhouse gas emissions by powering desalination with renewables, directly or indirectly, or purchasing carbon offsets. In California, we are unlikely to see desalination plants that are directly powered by renewables in the near future. A more likely scenario is that project developers will pay to develop renewables in other parts of the state that partially or fully offset the energy requirements of the desalination plant. Offsets can also reduce emissions, although caution is required when purchasing offsets, particularly on the voluntary market, to ensure that they are effective, meaningful, and do no harm. A commitment to go "carbon neutral" is laudable; however, project developers should commit to purchasing high-quality offsets from certified sources, and independent parties should verify these claims.

Powering desalination with renewables can reduce or eliminate the greenhouse gas emissions associated with a particular project. This may assuage some concerns about the massive energy requirements of these systems and may help to gain local, and even regulatory, support. But it is important to look at the larger context. Even renewables have a social, economic, and environmental cost, albeit much less than conventional fossil fuels. Furthermore, these renewables could be used to reduce existing emissions, rather than offset new emissions and maintain current greenhouse gas levels. Communities should consider whether there are less energy-intensive options available to meet water demand, such as through conservation and efficiency, water reuse, brackish water desalination, stormwater capture, and rainwater harvesting. We note that energy use is not the only factor that should be used to guide decision making. However, given the increased understanding of the risks of climate change for our water resources, the importance of evaluating and mitigating energy use and greenhouse gas emissions are likely to grow.

1

Introduction

In June 2006, the Pacific Institute released *Desalination, With a Grain of Salt*, an assessment of the advantages and disadvantages of seawater desalination for California. At that time, there were 21 active seawater desalination proposals along the California coast. Since then, only one project, a small plant in San Diego, has been permitted and built. A second project, in Carlsbad, has recently secured financing and is now under construction. Interest in seawater desalination, however, remains high in California, and many agencies are conducting technical and environmental studies and pilot projects to determine whether to develop full-scale facilities.

In 2011, the Pacific Institute began new research on seawater desalination. As part of that effort, we conducted some 25 one-on-one interviews with industry experts, environmental and community groups, and staff of water agencies and regulatory agencies to identify some of the key outstanding issues for seawater desalination projects in California. This is the third in a series of research reports that address these issues. The first report, released in July 2012, describes the 19 proposed projects along the California coast. The second report, released in November 2012, discusses the costs, financing, and risks related to desalination projects.

In this report, we describe the energy requirements of seawater desalination and the associated greenhouse gas emissions. We also evaluate the impact of short-term and long-term energy price variability on the cost of desalinated water.

Finally, we describe current regulations on greenhouse gas emissions in California and identify approaches for mitigating emissions, including strategies used by those who have recently proposed or built new plants in California and Australia. Future reports will evaluate the impacts of seawater desalination on marine life and coastal ecosystems, and discuss the permitting process and regulations associated with building new plants in California.

Energy Requirements of Seawater Desalination

Removing the salt from seawater is an energy-intensive process and consumes more energy per gallon than most other water supply and treatment options. The energy requirements for desalination are determined by several factors related to the site and design of the plant. Design considerations include the desalination technology employed, whether energy recovery devices are used, and the rate of recovery, e.g., the volume of freshwater produced per volume of seawater taken into the plant. Site-specific factors include source-water salinity and temperature and the desired quality of the product water.

Table 1 summarizes energy use at 15 large reverse osmosis (RO) seawater desalination plants that have been constructed since 2005. On average, these plants use about 15,000 kWh per million gallons of water produced (kWh/MG), or 4.0 kWh

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per cubic meter (kWh/m^3).¹ We note that these estimates refer to the rated energy use, i.e., the energy required under a standard, fixed set of conditions. The actual energy use may be higher, as actual operating conditions are often not ideal. Membrane fouling, for example, can increase the amount of energy required to desalinate water.

As shown in Figure 1, the reverse osmosis process accounts for nearly 70% of the total energy use, while pre- and post-treatment and pumping each account for 13%. Another 7% of energy is used to pump water from the ocean to the plant.

Table 1. Energy Requirements (kWh/MG) for Seawater Desalination Plants Using Reverse Osmosis

Plant	Energy Requirements (kWh/MG)	Energy Requirements (kWh/m^3)	Facility Capacity (m^3/day)	Date Contracted
Kwinana, Perth, Australia	14,000	3.60	140,000	2005
China	16,000	4.10	35,000	2005
Egypt	15,000	4.00	1,000	2005
Raleigh IWSPP, Saudi Arabia	18,000	4.80	230,000	2005
Rambla Morales, Spain	12,000	3.30	60,000	2005
Valdientisco, Spain	17,000	4.40	140,000	2005
Khor Fakhan Power Plant, UAE	15,000	4.00	23,000	2005
Aruba	15,000	4.00	8,000	2006
Gold Coast, Australia	14,000	3.60	130,000	2006
Israel (Hadera)	17,000	4.50	273,000	2006
Bonaire, Dutch Antilles	15,000	4.00	8,000	2006
Alicante II, Spain	14,000	3.70	65,000	2006
Fujairah 1, UAE	18,000	4.80	170,000	2006
Caofeldian, China	15,000	4.00	50,000	2009
Ashkelon Expansion, Israel	14,000	3.80	41,000	2009

Note: All numbers rounded to two significant figures.
Source: GWI 2010

¹ In this report, we use the units of kWh to refer to units of electrical energy. This is also sometimes referred to as kWh_e . By contrast, kWh_t represent a unit of heat and does not account for efficiency losses in the conversion of heat to electricity; e.g., for a typical power plant operating at 33% efficiency, there are 3 kWh_t per kWh_e .

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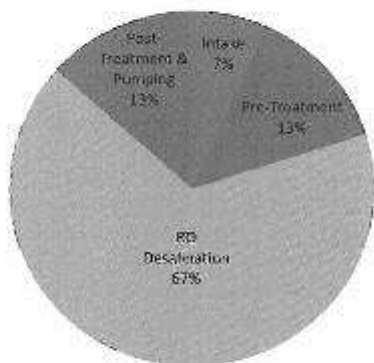


Figure 1. Energy Use for Various Elements of the Desalination Process

Source: Kennedy/Jenks Consultants 2011

Over the lifetime of a desalination plant, different forms of energy - electricity, gasoline, and other fuels - are required to construct, operate, maintain, and eventually decommission the plant. A full lifecycle analysis of desalination energy use would also include energy for the production, transport, and disposal of chemicals, membranes, and other materials that are consumed over the plant's operational life. Accounting for all of these energy uses is beyond the scope of this paper. However, life-cycle analyses have been conducted for seawater desalination plants, and these suggest that operations dominate the life-cycle energy use, accounting for about 95% of total energy use (Stokes and Horvath 2006, Stokes and Horvath 2008).

Energy Use Comparisons

The water sector in California is a large user of electricity and natural gas. The California Energy Commission (CEC) (2005) estimates that capturing, transporting, and treating water and wastewater uses approximately 5% of the electrical energy and 1% of the natural gas consumed in the state (Table 1). Water-related energy use in homes, businesses, and institutions accounts for an additional 13% of

the state's electricity and 31% of the state's natural gas usage. In total, approximately 19% and 32% of the state's electricity and natural gas usage, respectively, is water related. Nearly three-quarters of the electricity and almost all of the natural gas use occurs inside homes and businesses, mostly for heating. We note that recent studies suggest that the CEC estimates may be low. An analysis by GEI Consultants and Navigant Consulting (2010), for example, estimates that the energy requirements for water and wastewater systems are 8%, higher than the 5% estimate by the CEC. Additional effort is needed to refine these estimates.

Table 2. Estimated Water-related Electricity and Natural Gas Consumption in 2001

	Electricity (GWh)	Natural Gas (million therms)
Water Supply and Treatment	10,742 (4%)	19 (<1%)
End Uses	35,259 (13%)	4,238 (31%)
Wastewater Treatment	2,012 (<1%)	27 (<1%)
Total Water-Related Energy Use	48,012 (19%)	4,284 (32%)
Total California Energy Use	250,494	13,571

Source: CEC 2005

Note: Numbers may not add up due to rounding.

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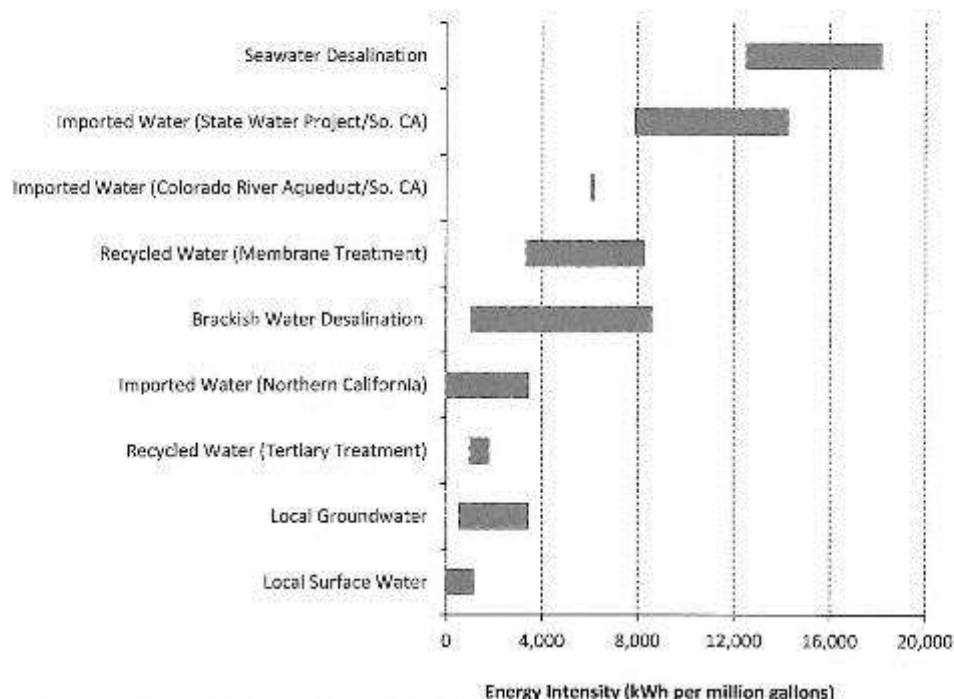


Figure 2. Comparison of the Energy Intensity of California Water Supplies

Notes: Estimates for local and imported water sources shown here do not include treatment, while those for desalination and recycled water include treatment. Typical treatment requires less than 500 kWh per million gallons. The upper range of imported water for Northern California is based on the energy requirements of the State Water Project along the South Bay Aqueduct. Energy requirements for recycled water refer to the energy required to bring the wastewater that would have been discharged to recycled water standards. Estimates for brackish water desalination are based on a salinity range of 600 - 7,000 mg/L.

Sources: Veerapant et al. 2011; GWI 2010; Cooley et al. 2012; GEI Consultants/Navigant Consulting, Inc. 2010

Seawater desalination is considerably more energy-intensive than most other water supply options. Figure 2 shows the energy intensity, in kilowatt-hours (kWh) per million gallons, of various water supply options. Local sources of groundwater and surface water are among the least energy-intensive options available. The energy requirements for recycled water vary, depending on the level of treatment required to meet the water quality of a desired end use.² Wastewater that will be reused

for irrigation and other non-potable uses typically undergoes tertiary treatment and has an energy intensity of 1,000 - 1,800 kWh per million gallons (0.26 - 0.48 kWh/m³). Wastewater that will be used to recharge aquifers may undergo membrane treatment, with an energy requirement of 3,300 - 8,300 kWh per million gallons (0.87 - 2.2 kWh/m³).

Imported water can be especially energy intensive, depending on the distance the water is moved and the change in elevation. Some imported water

² Energy requirements for recycled water refer to the energy required to bring the wastewater that would have been discharged to recycled water standards. If wastewater is treated to primary or secondary standards before discharge,

then additional treatment is required to bring it to reuse standards, and the energy required for that additional treatment is attributed to the recycled water.

systems use little energy and may even generate it. Examples in California include the Los Angeles Aqueduct, San Francisco's Hetch Hetchy Aqueduct and East Bay Municipal Utility District's Mokelumne Aqueduct. Most water systems that convey water to Southern California, however, use large amounts of energy. Water imported through the Colorado River Aqueduct, for example, requires about 6,100 kWh per million gallons (1.6 kWh/m³). Energy requirements for the State Water Project, which pumps water from the Sacramento-San Joaquin Delta to Southern California, are even higher, ranging from 7,900 - 14,000 kWh per million gallons (2.1 - 3.7 kWh/m³).

In comparison, energy requirements for seawater desalination range from 12,000 - 18,000 kWh per million gallons (3.2 - 4.8 kWh/m³) (Table 1). Seawater desalination is thus considerably more energy intensive than almost every other water supply option available. While there are some inland areas, such as in parts of Riverside County, where the energy intensity of imported water is comparable to that of seawater desalination, these are in relatively limited areas with a small population.

The overall energy implications of a seawater desalination project will depend on whether the water produced replaces an existing water supply or provides a new source of water for growth and development. If water from a desalination plant replaces an existing supply, then the additional energy requirements are simply the difference between the energy use of the seawater desalination plant and those of the existing supply. Producing a new source of water, however, increases the total amount of water that must be delivered, used, and disposed of. Thus, the overall energy implications of the desalination project include the energy requirements for the desalination plant plus the energy required to deliver, use, and dispose of the water that is produced. We note that conservation and efficiency, by contrast, can help meet the anticipated needs associated with growth and

development by reducing total water demand while simultaneously maintaining or even reducing total energy use (Cooley et al. 2010).

Energy Reduction Strategies

Energy requirements for desalination have declined substantially over the past 40 years due to a variety of technological advances. Membranes, for example, have advanced considerably over the past two decades, and most new plants use membrane-based technology (e.g., reverse osmosis) that are less energy-intensive than thermal-based technology (e.g., multi-stage flash distillation). Additionally, energy recovery devices are now standard in newer plants and can capture 76% to 96% of the energy contained within the brine concentrate (NRC 2008), further reducing energy requirements (Box 1). Other advances that have reduced energy requirements include higher-permeability membranes and more efficient pumps (Fritzmenn et al. 2007). In looking to further reductions, the National Research Council notes that some of the most promising research is focused on alternative desalination technologies, such as forward osmosis (Box 2) and membrane distillation; hybrid membrane-thermal desalination; improved energy recovery devices; and utilization of waste or low-grade heat (NRC 2008).

Desalination designers and researchers are continuously seeking ways to further reduce energy consumption. This research has been supported by state and federal funding as well as by the private sector. In a recent industry-led initiative, the International Desalination Association created an Energy Task Force in order to develop a framework for reducing energy consumption by 20% for all major seawater desalination processes. The Task Force, which includes engineers, consultants, and researchers from governments, corporations, and academia, is working to establish a benchmark of energy use at existing plants and a preliminary methodology for reporting energy consumption. The Task Force is also developing guidelines for

reducing energy use and exploring the further development and use of alternative energy sources and hybrid processes that combine thermal and membrane desalination technologies (Stedman 2012). The Task Force held its first meeting in January 2013 and will complete work in 2015.

Despite the potential for future energy use reductions, however, there is a theoretical minimum energy requirement beyond which there are no opportunities for further reductions. The theoretical minimum amount of energy required to remove salt from seawater using reverse osmosis at 25°C is around 3,400 kWh per million gallons (0.90 kWh/m³) for 40% recovery (NRC 2008).³ Note that this estimate is for the removal of salts from seawater and does not include the energy required to pump water to the facility, pre- and post-treatment, and deliver water to the distribution system. Desalination plants are currently operating at 3-4 times the theoretical minimum energy requirements. The Affordable Desalination Collaboration, a California-based group, has constructed a bench-scale plant that has demonstrated energy intensities ranging from 6,800 to 8,200 kWh per million gallons (1.8 - 2.2 kWh/m³) for the reverse-osmosis process alone using commercially available energy recovery devices, efficient pumps, and low-energy membranes; the total energy use, including water intake, pre-filtration, and permeate treatment, for a 50 MGD plant would be about 50% higher (WaterReuse Association 2011). These results, while promising, are for a demonstration plant and have not yet been achieved at a full-scale commercial plant.

³ The recovery rate is the volume of freshwater produced per volume of seawater taken into the plant. Typical recovery rates for a seawater desalination plant are 40-50%. The minimum energy requirements increase at higher recovery rates.

Box 1: What are Energy Recovery Devices and How Do They Work?

In reverse-osmosis desalination systems, seawater is pressurized using high-pressure pumps. The pressurized water is forced through the membrane, producing low-pressure freshwater and high-pressure brine. Energy-recovery devices have been developed to re-capture some of the hydraulic energy of the high-pressure brine.

Energy-recovery devices have been employed in seawater reverse-osmosis plants since the 1980s. Early devices – Pelton and Francis turbines and hydraulic turbochargers – were centrifugal devices that used hydraulic energy in the brine to power a turbine. The turbine would then spin a shaft that would power the high-pressure pumps used to move seawater into the desalination plant. The overall efficiency of the systems is determined by the combined efficiency of the turbine and the high-pressure pump. In general, centrifugal devices have a maximum energy recovery rate of 80% (Stover 2007).

Today, these mechanical turbines are increasingly being replaced by more efficient devices called isobaric energy-recovery devices. Isobaric energy-recovery devices directly transfer pressure from the brine to the incoming seawater and can recover up to 98% of the energy in the waste stream (Grondhuis n.d.). While centrifugal devices are usually optimized for a relatively narrow range of flow- and pressure-operating conditions, isobaric energy-recovery devices operate at high efficiency over a much broader range of conditions. While some mixing of brine and feed water occurs, these shortcomings are offset by reductions in energy use (Grondhuis n.d.).

Box 2: Forward Osmosis

Under ambient conditions, water will naturally diffuse through a semi-permeable membrane from a solution of lower concentration to a solution with a higher concentration. That is, if freshwater and saline water are separated by a membrane, then the freshwater will naturally move across the membrane to dilute the saline water so that the salt concentrations of the two solutions are equal. This process is referred to as *osmosis*. The pressure required to stop the flow of water across the membrane is referred to as *osmotic pressure*. Reverse osmosis plants apply pressure to the saline water in excess of the osmotic pressure, thereby forcing freshwater to flow against its natural tendency, e.g., from a solution of high concentration to low concentration.

Forward osmosis is a process that also uses a semipermeable membrane to separate water from dissolved solutes. Forward osmosis uses a "draw solution" with a relatively high solute concentration (compared to the feedwater) that allows the natural movement of water across the membrane (Figure B2-1). Once equilibrium has been achieved, the constituents of the draw solution can be separated to produce pure water, and the draw solution can be reused. Drinking water forward osmosis systems are not yet commercially viable (Qin et al. 2012).

In general, commercial forward osmosis systems are expected to have lower operational and maintenance costs than reverse osmosis systems. With forward osmosis, energy use and fouling are greatly reduced as the water is drawn, rather than forced, through the membrane (Cath et al. 2006). Moreover, membrane fouling reduces treatment efficiency in a typical reverse osmosis system, something that is avoided in an unpressurized forward osmosis system. Additionally, unpressurized systems are less expensive to build and maintain.

Achieving commercial-scale production of forward osmosis desalination has been limited by the ability to identify a suitable membrane and draw solution. The draw solution must have two key characteristics: a higher osmotic potential than the feedwater and characteristics that permit the freshwater to be separated from the draw solute with low energy input (Li et al. 2011a). Draw solutes that have been studied include carbon dioxide and ammonia, sugar, and ethanol (Li et al. 2011b). The membranes must be chemically stable and have a high flow rate and solute rejection capacity (D&WR 2010). The only membrane suitable for forward osmosis that is currently commercially available, however, cannot tolerate a wide pH range of the draw solution (Qin et al. 2012).

Forward osmosis is being researched and implemented in laboratories and small, pilot-scale facilities. For example, Modern Water built the world's first near-commercial forward osmosis desalination plants in Gibraltar and Oman, producing 18 and 100 cubic meters per day, respectively (D&WR 2012a; Thompson and Nicoll 2011; desalination.com n.d.). Independent research on the cost, effectiveness, and flexibility of these systems has not yet been conducted.

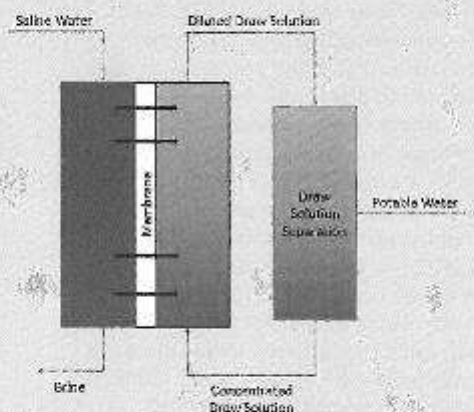


Figure B2-1. Forward Osmosis Schematic

2

Energy Use and Cost

Desalinated seawater is an energy-intensive water source and relying on it increases the water supplier's exposure to near- and long-term variability in energy prices. Energy is the largest single variable cost for a desalination plant, varying from one-third to more than one-half of the cost of produced water (Chaudhry 2003). The National Research Council (2008) reports that energy accounts for 36% of the typical water costs of a reverse osmosis plant, with the remainder from other operation and maintenance expenses and fixed charges.⁴ Energy requirements for thermal plants are even higher, accounting for nearly 60% of the typical cost of produced water for large thermal seawater desalination plant (Wangnick 2002). At these percentages, a 25% increase in energy cost would increase the cost of produced water by 9% and 15% for reverse osmosis and thermal plants, respectively. Unless there is a way to greatly reduce the actual amount of energy used in desalination processes, the share of desalination costs attributable to energy will rise as energy prices increase.

Energy prices exhibit both near-term and long-term variability. Many factors can affect near-term energy prices, including energy demand and fuel prices. To determine whether dry conditions affect electricity prices, we analyzed historical electricity prices and precipitation in California. Our analysis found that there is a negative correlation between precipitation and electricity prices for four out of

six of California's major utilities (Table 3). At each of these, lower-than-average precipitation in the previous two years is associated with higher electricity prices. Thus, electricity costs more in drier years. This makes sense given that relatively inexpensive hydropower is an important source of electricity in California and that less precipitation means that less water is available to generate hydroelectricity. In response, utilities must purchase more electricity on the market or generate it from more expensive coal and natural gas power plants.

The relationship between precipitation and electricity price varies among the utilities and is stronger for those utilities more dependent on hydroelectricity. For PG&E, for example, 69% of the variance in energy prices can be explained by precipitation, as indicated by a correlation coefficient of -0.69 (Table 3). PG&E's retail electricity prices closely track California's total two-year precipitation, as shown in Figure 3. Indeed, 22% of PG&E's generation portfolio comes from hydroelectricity (PG&E 2012). By contrast, only about 0.1% of SDG&E's generation portfolio comes from hydropower (SDG&E 2013), and thus no statistically significant relationship was found between precipitation and electricity prices.

⁴ This estimate is based on an energy cost of \$0.07 per kilowatt-hour, a 5-year membrane life, a 5% nominal interest rate, and a 25-year depreciation period.

Table 3. Correlation between Precipitation and Retail Energy Price for Six Major California Utilities

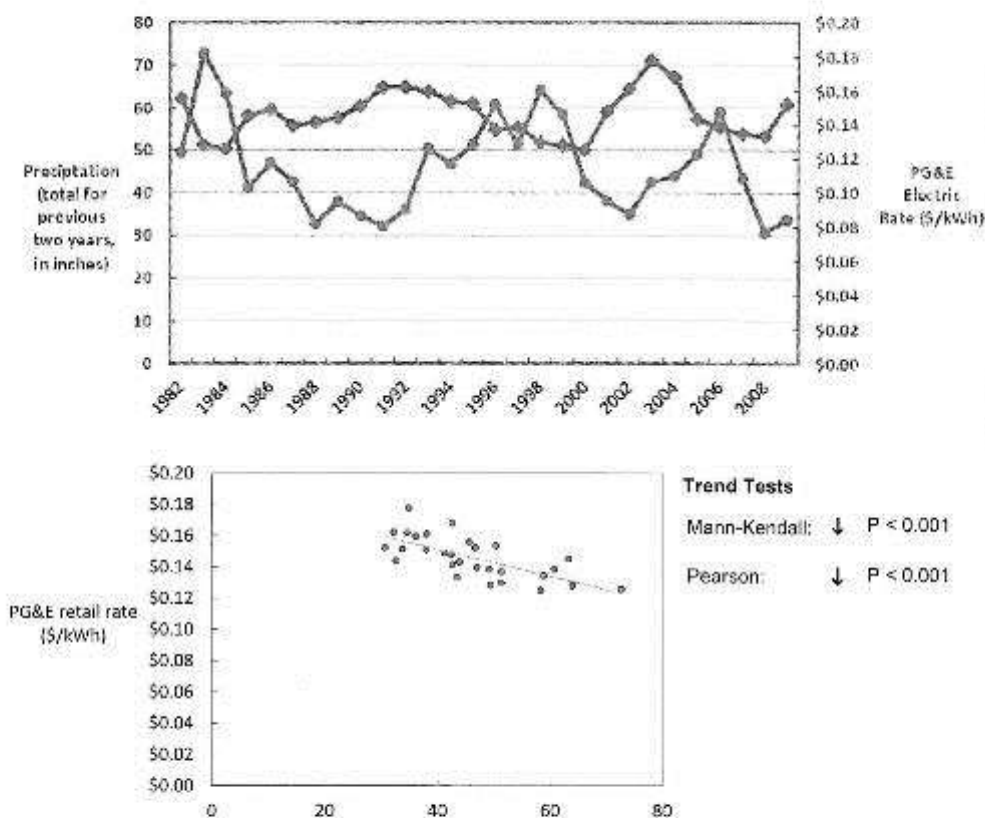
	Direction of Correlation	Correlation Coefficient	Pearson's R P-value	Mann-Kendall P-value
Pacific Gas and Electric (PG&E)	↓	-0.69	<0.001	<0.001
Southern California Edison (SCE)	↓	-0.49	0.005	0.003
San Diego Gas and Electric (SDG&E)	---	+0.31	0.05	0.32
Los Angeles Department of Water and Power (LADWP)	↓	-0.38	0.02	0.03*
Sacramento Municipal Utility District (SMUD)	↓	-0.59	<0.001	<0.001
Burbank-Glendale-Pasadena (BGP)	---	-0.25	0.15	0.10

Note: Two different statistical methods were used to test the significance of the relationship between precipitation and electricity price: Pearson's correlation coefficient test and the non-parametric Mann-Kendall test. We used a two-tailed hypothesis test at the 95% confidence level. The null hypothesis is that there is no relationship between precipitation and energy price. When the test gives a probability (or P-value) of less than 0.025, we reject the null hypothesis and conclude that there is evidence that precipitation and energy prices are correlated. Alternatively, when the P-value is greater than 0.025, we fail to reject the null hypothesis and find that there is not enough evidence for a relationship between precipitation and energy price. In the table, "---" means that the relationship is not significant at the 95% confidence level.

These results suggest that desalination plants served by energy utilities dependent on hydropower may be more vulnerable to short-term energy price increases associated with dry conditions in California. If the desalination plant is operated more in dry years than in wet years, the average cost per unit of water produced will be higher than the estimated cost based on the average electricity price. This is because more units of electricity will be purchased at prices higher than average (during drought) than at prices lower than average (during wet years). This can be especially challenging during a drought, when revenues may be down due to reduced water sales. Since desalination plants will likely be operated at peak output during drought, unexpectedly high costs could amplify revenue instability already experienced by water suppliers.

It is important to note that water from a desalination plant may be worth more in a drought year because other sources of water will be limited, thereby justifying the higher cost. Thus, building a desalination plant may reduce a water utility's exposure to water reliability risks at the added expense of an increase in exposure to energy price risk. Project developers may pay an energy or project developer to hedge against this uncertainty, e.g., through a long-term energy purchase contract or through on-site energy production from sources with less variability, such as solar electric. The hedging options, however, may increase the overall cost. In any case, energy price uncertainty creates costs that should be incorporated into any estimate of project cost.

Key Issues for Seawater Desalination in California: Energy and Greenhouse Gas Emissions | 13



In addition to near-term variability, energy prices exhibit long-term variability. Future electricity prices in California remain uncertain but are likely to rise for several reasons. For example, the San Onofre Nuclear Generating Plant has been shut down for more than a year, and there is some uncertainty about whether it will be repaired or retired and replaced, and at what cost. Electricity infrastructure must be maintained, and new infrastructure may be needed. Additionally, California, like many states, has established a Renewables Portfolio Standard that requires investor-owned utilities, electric service providers, and community choice aggregators to source 33% of their power from eligible renewable energy resources by 2020.⁵

The future cost of these renewables, and even fossil fuels, is uncertain. The California Public Utilities Commission estimates that electricity prices will rise by nearly 27% in inflation-adjusted dollars from 2008 to 2020, driven by the need to maintain and replace aging transmission and distribution infrastructure, install advanced metering infrastructure, comply with once-through cooling regulations and the Renewable Portfolio Standard, and meet new demand growth (CPUC 2009). We note, however, that the price of renewables and natural gas has declined considerably since the CPUC developed these estimates and that the actual cost increase may be less than originally anticipated. Project developers should periodically examine long-term energy price projections to appropriately capture impacts on desalination costs.

⁵ Eligible renewable energy sources include biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current.

3

Energy Use and Greenhouse Gas Emissions

Seawater desalination, through its energy use and other processes, contributes to the emissions of air pollutants and greenhouse gases. The high energy requirements of seawater desalination raise concerns about the associated greenhouse gas emissions. In this section, we discuss how regulators are handling the challenge of greenhouse gas (GHG) emissions from desalination plants and examine the role these emissions play in obtaining permits and approvals from state and federal regulators. We look at the laws, policies, and programs related to GHG emissions, and what effect these may have on proposed desalination plants. Finally, we discuss how proponents of existing and proposed desalination plants are handling the issue, including efforts to reduce their GHG emissions.

Background on Carbon Emissions in California

In 2006, California lawmakers passed the *Global Warming Solutions Act*, or Assembly Bill 32 (AB 32). AB 32 requires the state, the 14th largest emitter of greenhouse gases in the world (ARB 2008), to reduce greenhouse gas emissions to 1990 levels by 2020. Thus, the state has committed itself to a program of steadily reducing its greenhouse gas emissions in both the short- and long-term, which includes cutting current emissions and preventing

future emissions associated with growth. According to the California Air Resources Board (ARB), which has been tasked with implementing the GHG reduction law, "reducing greenhouse gas emissions to 1990 levels means cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 15 percent from today's levels" (ARB 2008). ARB plans to achieve these reductions through a combination of energy efficiency, clean energy, clean transportation, and market-based programs.

Under AB 32, the state must reduce emissions to 1990 levels, i.e., 427 million metric tonnes of carbon dioxide equivalent (MMTCO₂e), by 2020 (ARB 2008, 5). The roadmap for achieving these reductions was laid out by ARB in 2008 in its *Climate Change Scoping Plan*. ARB originally estimated the reductions needed based on emissions data for 2002-2004. Emissions during that period were 469 MMTCO₂e. The authors envisioned a continually growing population and strong economic growth, and the challenge for the state was to encourage "clean development" to avoid the huge emissions increases that would occur under a "business-as-usual" scenario. To accommodate this future growth while still meeting the targets set forth in AB 32, the Scoping Plan called for a reduction of 169 MMTCO₂e from several required measures and an additional 44 MMTCO₂e from "other recommended measures."

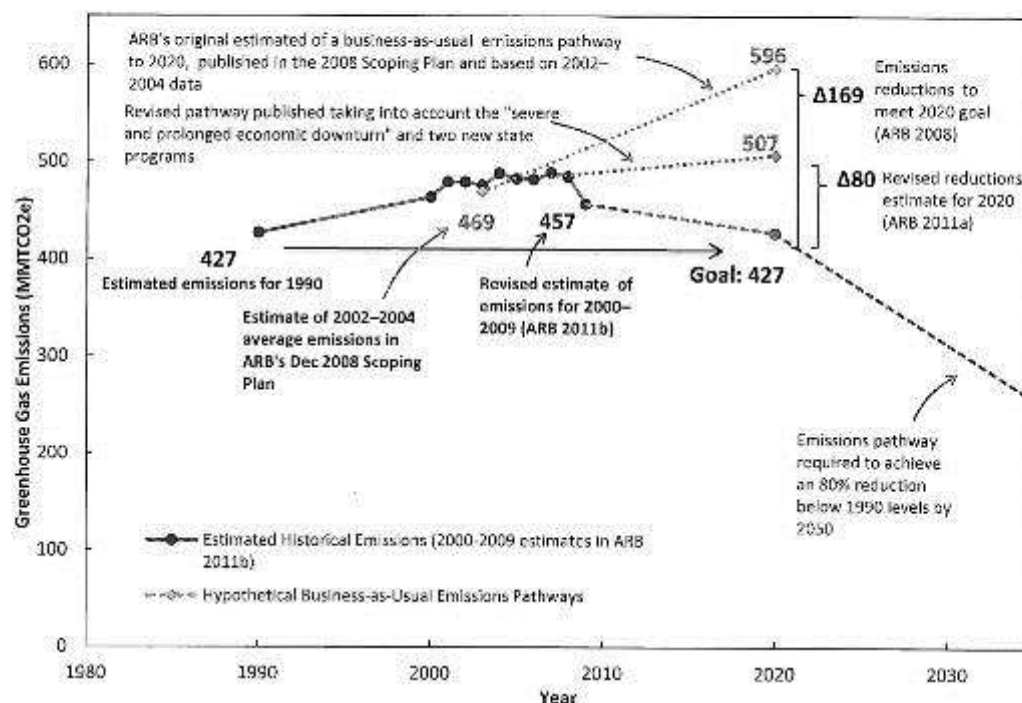


Figure 4. California's Projected Greenhouse Gas Emissions in 2020 and Planned Reductions
Sources: ARB 2008; ARB 2011a; ARB 2011b.

By 2009, however, growth and emissions had stalled due to a severe and prolonged economic downturn. Furthermore, the state adopted two new policies that would limit future emissions growth: the Pavley Clean Car Standards (AB 1493, 2009) and the Renewables Portfolio Standard (expanded by SB 2 in 2011). In 2011, ARB published revisions to the 2020 GHG emissions reduction targets based on emissions estimates for 2006-2008, which had declined to 457 MMTCO₂e (ARB 2008). Thus, the state's emissions reduction targets were smaller than those deemed necessary just three years earlier (80 MMTCO₂e compared to 169 MMTCO₂e). The planned emissions reductions pathways are summarized in Figure 4. Nearly every sector of the economy has come under scrutiny, with a particular emphasis on those sectors that

are the most polluting, such as transportation and oil refineries.

While there are no mandated emissions reductions for the water sector, an estimated reduction of 4.8 MMTCO₂e from the sector is included under "other recommended measures" from ARB (Table 4). These estimates were developed by the Water-Energy Team of the Climate Action Team (WET-CAT), which is made up of staff from various state agencies, including the Department of Water Resources (DWR), State Water Resources Control Board, California Energy Commission, and California Public Utilities Commission. ARB noted that these reductions are mostly in electric use and may be counted elsewhere in the scoping plan, but that "a portion of these reductions will be additional to identified reductions in the Electricity sector" and that ARB is working closely with

appropriate agencies to refine these estimates (ARB 2008, 66).

The water sector is a large energy user in California. As described previously, about 19% of the state's electricity use and 33% of the state's non-electricity natural gas consumption is water related. Water managers are increasingly aware of the risks associated with climate change, and there appears to be a strong desire in the sector (at least at the state level and among some large municipal utilities, such as the East Bay Municipal Utilities District, Sonoma County Water Agency, and Inland Empire Utilities Agency) to increase efficiency and reduce emissions. DWR, which operates the State Water Project, a large system of dams, canals, pipelines, and pumps that delivers water to cities and farms in the Central Valley and Southern California, is the single largest user of energy in the state. DWR plans to reduce its emissions, which peaked at 4.1 MMTCO₂e in 2003, to 1.65 MMTCO₂e by 2020 through a variety of actions, including phasing out coal power (Schwarz 2012).

Table 4. Planned Greenhouse Gas Emissions Reductions by California's Water Sector, from ARB's 2008 Scoping Plan

Measure	Reduction (MMTCO ₂ e)
Water Use Efficiency	1.4
Water Recycling	0.3
Water System Energy Efficiency	2.0
Reuse Urban Runoff	0.2
Increase Renewable Energy Production	0.9
Public Goods Charge	TBD
Total	4.8

Source: ARB 2008

Potential Emissions from Desalination

As noted earlier, desalination is among the most energy-intensive source of water in California. Producing a million gallons of desalinated seawater requires an average of 15,000 kWh (4.0 kWh/m³), considerably more than other water supply and treatment options available in California. We have estimated the theoretical potential emissions that could occur if all of the currently proposed desalination plants are eventually built. Overall, we estimate that expanding the state's seawater desalination capacity by 514 million gallons per day (MGD) would increase energy use by about 2,800 GWh per year.⁶ To put this in perspective, the total electricity use in California in 2011 was 270,000 GWh (CEC 2012). Thus, desalination build-out would represent about a 1% increase above current electricity use.

If we assume that all of the desalination plants are powered by the electricity grid, we estimate that the build-out of the currently proposed desalination plants would lead to emissions of about 1.0 MMTCO₂e annually (Table 4), a 0.2% increase in the state's current emissions.⁷ The potential emissions increase from build out of the desalination plants alone is equivalent to about one-fifth of the planned reductions in the water sector identified in the 2008 AB 32 Scoping Plan (4.8 MMTCO₂e). Additionally, introducing a new source of water increases the amount of water that must be delivered to customers, used in homes and businesses, collected, treated again as wastewater, and discharged - all of which use energy and result in GHG emissions. This increase in emissions is antithetical to the state's directive to reduce GHG emissions.

⁶ Based on an energy requirement of 15,000 kWh/MG.

⁷ Potential desalination-related emissions are calculated based on 2009 emissions factors.

Table 5. Theoretical Emissions Associated with Proposed Desalination Plants in California

Project Partners	Location	Capacity (MGD)	Energy Use (MWh per day)	Emissions (MMT CO ₂ e per yr)
East Bay Municipal Utilities District, San Francisco Public Utilities Commission, Contra Costa Water District, Santa Clara Valley Water District, Zone 7 Water Agency	Pittsburg	19.8	300	0.03
City of Santa Cruz, Soquel Creek Water District	Santa Cruz	5	75	0.007
DeepWater, LLC	Moss Landing	2.5	38	0.003
The People's Moss Landing Water Desal Project	Moss Landing	25	380	0.03
California American Water	North Marina	10	150	0.01
California Water Service Company	Not known	9	140	0.01
Ocean View Plaza	Monterey	0.25	3.8	0.003
Monterey Peninsula Water Management District	Del Monte Beach, Monterey	2	30	0.0003
Seawater Desalination Vessel	Monterey Bay	20	300	0.06
Cambria Community Services District/U.S. Army Corps of Engineers	Cambria	0.6	9.0	0.0008
Arroyo Grande, Grover Beach, Oceano Community Services District	Oceano	2	30	0.003
West Basin Municipal Water District	El Segundo	18	270	0.03
Poseidon Resources	Huntington Beach	50	750	0.08
Municipal Water District of Orange County, Laguna Beach County Water District, Moulton Niguel Water District, City of San Clemente, City of San Juan Capistrano, South Coast Water District	Dana Point	15	230	0.03
City of Oceanside	City of Oceanside	10	150	0.02
Poseidon Resources, San Diego County Water Authority	Carlsbad	50	750	0.09
San Diego County Water Authority	Camp Pendleton	150	2,300	0.3
NSC Agua	Rosarito, Mexico	100	1,500	0.08
San Diego County Water Authority	Rosarito, Mexico	25	380	0.3
TOTAL		514	7,700	1.0

Note: Based on an energy intensity of desalination equal to 15,000 kWh per million gallons (4.0 kWh/m³). Emissions factors for regional utilities from the California Climate Registry (ARB 2010). Numbers may not add up due to rounding.

We note that the proposed desalination facilities may replace, to some extent, existing water supply and treatment facilities. In other words, they may not all be “additional” to existing water supply systems, and some of the GHG emissions included in the estimate above may already be occurring. Additionally, as renewables are added to California’s grid, emissions may decrease over time. Thus, while we can analyze the potential effects of desalination build out, the precise amount of future electricity use and emissions depends on a number of factors that are difficult to quantify.

Regulatory Framework

The California Environmental Quality Act

The California Environmental Quality Act, or CEQA, is the State’s premiere environmental law, requiring that “state and local agencies disclose and evaluate the significant environmental impacts of proposed projects and adopt all feasible mitigation measures to reduce or eliminate those impacts” (California Department of Justice 2012). The law, as enacted in 1972, contained no provisions specifically related to climate change or carbon emissions. In 2007, however, state lawmakers passed SB 97, directing the Natural Resources Agency to adopt amendments to the CEQA guidelines to address greenhouse gases. These are now codified in state law, as part of California’s Code of Regulations, Title 14: Natural Resources Law (Natural Resources Agency 2009). Agencies have always been required under CEQA to identify significant environmental impacts and adopt all feasible measures to mitigate (or lessen) those impacts.⁸ Henceforth, project applicants are expressly required to analyze GHG emissions during the CEQA process.

⁸ The word *mitigation* can cause some confusion, as it has different meanings in the climate change community and in CEQA practice. When discussing CEQA, mitigation refers to measures to avoid or substantially reduce a project’s significant environmental impacts.

The issue of cumulative impacts of pollutants, including GHG emissions, has been argued in the courts for years. When faced with a global environmental problem, project applicants could reasonably state that their emissions were so small that they represent a *de minimis* source of pollution and therefore should not be regulated. However, while individual polluters may cause little harm on their own, their cumulative impacts can be significant. State and national environmental laws are designed to protect natural resources from the cumulative effects of pollutants. The courts have begun to recognize this, and recent rulings have eroded the *de minimis* argument. For example, a federal court ruled in 2008 that “the impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that the National Environmental Protection Act requires agencies to conduct” (cited in Baldwin 2008, 792).

The State CEQA Guidelines (2012, Section 2109) require “lead agencies” to evaluate the GHG emissions of a proposed project.⁹ Additional guidance is provided by the Governor’s Office of Research and Planning (OPR): “Lead agencies should make a good-faith effort, based on available information, to calculate, model, or estimate the amount of CO₂ and other GHG emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage, and construction activities.” Lead agencies must also reach a conclusion regarding the significance of a project’s emissions (OPR 2012) and describe how they will mitigate significant emissions.

State regulators realized that including GHG emissions in CEQA could hold up or derail nearly

⁹ The lead agency is the government agency which has the discretion to approve or deny a project and is responsible for producing the CEQA analysis. A project applicant is often not the same entity as the lead agency. The applicant is the entity that wants to develop a project.

any project. To avoid this, the State CEQA Guidelines, as revised in 2010, allow lead agencies to create *programmatic* greenhouse gas reduction plans that cover all resources within the agency's jurisdiction, rather than dealing with the emissions from projects individually (Schwarz 2012, 17). In other words, the agency could analyze the total emissions that will result from or be influenced by all of its future activities in aggregate. If an individual project is consistent with the regional plan, then its GHG emissions will not be flagged as a significant impact.

Appendix G of the State CEQA Guidelines includes sample questions for evaluating project impacts. The two questions applicable to a project's climate-change-related impacts are:

- Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Kerr (2012) reports that there are three basic types of thresholds that lead agencies may select for determining significance:

- mass emission thresholds;
- efficiency-based thresholds; or
- consistency with an adopted plan.

One mass emission threshold that some lead agencies have used is 10,000 metric tonnes of CO₂e per year, which is the level at which individual stationary sources are required to quantify and report their GHG emissions to the California Air Resources Board ARB. Other lead agencies have used a mass emission threshold of 25,000 metric tonnes of CO₂e per year, the level at which most stationary sources are required to participate in the State's Cap and Trade Program. Examples of efficiency-based metrics include the GHG intensity

of the water produced by a desalination facility expressed in units of metric tonnes of CO₂e per million gallons or metric tonnes of CO₂e per customer served. Under a "consistency approach," the lead agency determines whether the project is consistent with a local Climate Action Plan, for example, by demonstrating whether a proposed project would interfere with planned region-wide emissions reductions.

Some regional agencies have recommended or adopted numeric significance thresholds for evaluating GHGs. For example, the South Coast Air Quality Management District issued rules in December 2008, creating a two-step method for determining whether a project's emissions are deemed "significant" under CEQA. First, if a project's emissions exceed the GHG budgets in an approved regional plan, then the lead agency must look at numerical thresholds created by the Air District. The project's emissions are deemed significant if emissions exceed (after mitigation) the following screening levels:

- 10,000 metric tonnes of CO₂e per year for industrial projects; or
- 3,000 metric tonnes of CO₂e per year for commercial or residential projects.

The threshold for commercial and residential projects is equivalent to the emissions from about 230 average American homes (Jones and Kammen 2011).

Here is how this might work in practice. Suppose a Southern California community has created an emissions reduction plan and its goal is to reduce GHG emissions to 1990 levels by 2020. This plan allows for 1,000 new housing units and includes emissions reduction measures through land use and transportation planning, energy efficiency programs, and purchasing renewable energy. In this community, a proposal for a new 500-unit subdivision, if it is otherwise compatible with the plan, could be approved more quickly and its CO₂ emissions would not be flagged as "significant"

during CEQA review. In a community without an approved emissions reduction plan, the lead agency would need to determine whether GHG emissions associated with the proposed subdivision are significant and support its conclusion with substantial evidence. If the lead agency determined that GHG emissions associated with the proposed subdivision would be significant, then all feasible mitigation measures must be implemented to reduce the impact to a less-than-significant level.

California Coastal Commission

The California Coastal Commission is charged with protecting the ocean environment off of California's shores, and obtaining a Coastal Development Permit from the Commission is one of the key regulatory approvals for a new desalination plant. The Coastal Commission looks at many factors when considering issuing this permit, including greenhouse gas emissions. Staff of the Coastal Commission has noted that "desalination is a relatively energy-intensive water source, and depending on a facility's source of electricity, it may result in relatively high indirect greenhouse gas emissions, which further exacerbate the ocean acidification process" (Luster 2011).

GHG emissions have not yet been a major issue with the Coastal Commission. For Poseidon's 50 MGD plant in Carlsbad, the largest desalination plant that has been permitted in California, the applicant voluntarily developed an energy minimization and greenhouse gas emissions reduction plan, which is discussed further below. The Coastal Commission, however, did not require GHG reduction or mitigation from the newest desalination plant in California, the 0.6 MGD plant built in Sand City in 2010. Nonetheless, the plant's designers have taken steps to maximize its energy efficiency, but managers have not chosen to purchase renewable energy or carbon offsets (Sabolsice 2013). This is an emerging issue, however, that may factor into the debate over future coastal permits.

Integrated Regional Water Management Planning Guidelines

In 2002, the California legislature passed the Integrated Regional Water Management Act (SB 1672) "to encourage local agencies to work cooperatively to manage local and imported water supplies to improve the quality, quantity, and reliability" (DWR 2012a). The IRWM program is administered largely by DWR, with support from the State Water Resources Control Board. Under this program, local governments, utilities, watershed groups, and other interested parties develop an Integrated Regional Water Management Plan (IRWMP). Subsequent legislation made funding available to regional bodies to support planning activities, including \$380 million from Proposition 50 in 2002 and \$1 billion from Propositions 84 and 1E in 2006. Further legislation in 2008 (SB1, the IRWM Planning Act) provided a general definition of an IRWM plan and guidance on what IRWM program guidelines must contain. Today, there are 48 IRWM regions in the state, bringing together a variety of stakeholder groups to develop IRWM plans.

In 2010, the state created new requirements for IRWM regions to assess climate change vulnerability and consider greenhouse gas emissions as a part of the planning process. DWR released revised IRWM Guidelines in 2010 and again in 2012, which include climate change as one of 16 "standards" that must be included in IRWM plans in order to receive planning and implementation funds from state grant programs. According to these guidelines, IRWM plans must include both *mitigation* and *adaptation* strategies.¹⁰ In practice, this means that planners should include a greenhouse gas emissions inventory for all aspects of the region's existing and planned water system, including as much detailed and quantitative data as is feasible given time, expertise, and financial resources. In addition, IRWM plans must include "a process that

¹⁰ In the climate change literature, *mitigation* refers to efforts to reduce greenhouse gas emissions, while *adaptation* refers to strategies to deal with climate change impacts.

considers GHG emissions when choosing between project alternatives" (DWR 2012b, 23). While GHG emissions must be considered, the guidelines do not state that lower-emission alternatives must be chosen, or even given preference.

In an effort to promote compliance with the new guidelines, DWR, the Environmental Protection Agency, and the US Bureau of Reclamation developed the *Climate Change Handbook for Regional Water Planning* (Schwarz et al. 2011). According to these guidelines, planners must consider GHG emissions reduction in the project-review process, but as a "secondary criterion" (p 72). To be eligible for state funding, all projects must have an analysis of GHG emissions which must be quantitative, and the guidelines suggest several analytical tools for performing the analysis. Regions must also join the California Climate Action Registry, an organization that catalogs and tracks GHG emissions for businesses and governments in the state.

A recent review of the program studied how climate change is being addressed during the planning process (Conrad 2012). Conrad found that only about a third of the plans created before the new 2010 guidelines included a discussion about climate change. In more recent plans, the level of detail varies, as does the approach; however, all regions stated that they would consider GHG emissions in project selection. Thus, state water management agencies have expressed their preference for reduced emissions among all water projects in the state and directed local decision makers to consider making reductions, although they have not yet established a specific mandate or targets for local or regional water projects.

Greenhouse Gas Emissions Reduction Strategies

There are several ways to reduce the greenhouse gas emissions associated with desalination plants. These include (1) reducing the total energy requirements of the plant; (2) powering the desalination plant with renewable energy; and (3) purchasing carbon offsets. Energy reduction strategies are described on page 8 of this report. Here, we describe strategies for powering desalination plants with renewables and purchasing carbon offsets as a means of reducing GHG emissions.

Renewable Energy Sources

Some desalination proponents have pointed to the possibility of running desalination plants with alternative energy systems, from solar to nuclear, as a way of reducing dependence on fossil fuels and reducing greenhouse gas emissions and their contribution to climate change. Indeed, solar energy has been used for over a century to distill brackish water and seawater. The simplest example of this process is the greenhouse solar still, in which saline water is heated and evaporated by incoming solar radiation in a basin on the floor, and the water vapor condenses on a sloping glass roof that covers the basin. One of the first successful solar systems was built in 1872 in Las Salinas, Chile, an area with very limited freshwater. This still covered 4,500 square meters, operated for 40 years, and produced over 5,000 gallons of freshwater per day (Delyannis and Delyannis 1984). Variations of this type of solar still have been tested in an effort to increase efficiency, but they all share some major difficulties, including large land area requirements, high capital costs, and vulnerability to weather-related damage.

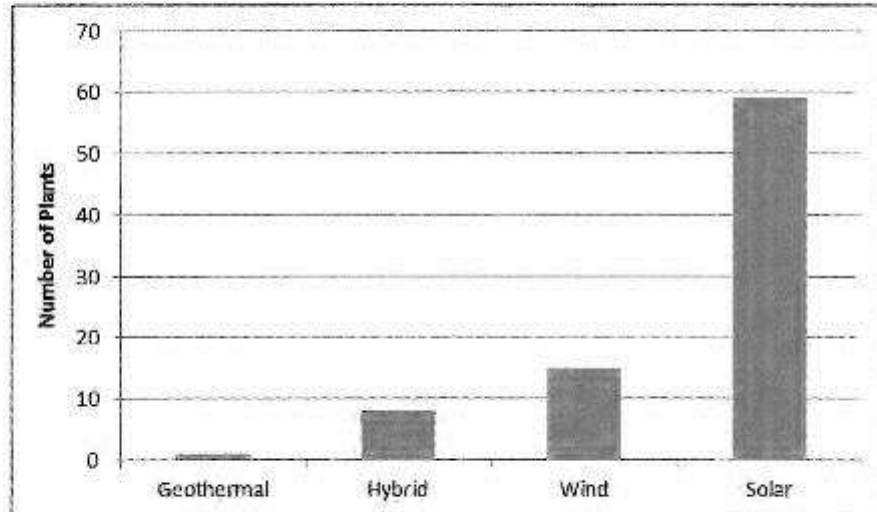


Figure 5. Global Renewable Energy Seawater Desalination Plants by Energy Source, 2010
Source: ProDes 2010

In addition to solar stills, there are several other ways to couple desalination plants with renewable energy, either directly or indirectly.¹¹ Plants directly powered by renewables have a dedicated renewable energy source whereas those indirectly powered by renewables draw power from an electricity grid that includes renewables. Interest in directly powering desalination plants with renewables is growing, although most plants built to date are small demonstration plants. Since 1974, an estimated 132 renewable-energy desalination plants, with a combined capacity of less than 1 MGD (3,600 m³/d), have been installed worldwide (ProDes 2010). Energy sources for these systems

include geothermal energy, wind, solar thermal, and solar photovoltaic. Seawater desalination represented 63% of the total number of plants powered by renewables and 86% of the total renewable energy desalination capacity. As shown

In Figure 5, the overwhelming majority of these seawater desalination plants use solar power, in part because it is a more reliable energy source than wind in most areas (World Bank 2012). The largest of the renewable desalination plants, however, are powered by wind, which tends to be less expensive than solar photovoltaic.

Powering desalination plants directly by renewables faces several challenges, one of the biggest of which is the availability of sufficient energy where and when it is needed. Desalination plants, especially those using membrane technologies, require a continuous source of energy. Solar and wind energy, however, are subject to daily and seasonal fluctuations. Geothermal energy is more consistent; however, it is only available in certain areas. While there are means for storing renewable energy, such as pumping water into hilltop reservoirs and recovering the energy with hydroelectric generators or storing excess heat in associated thermal storage systems that can later be converted to electricity, these storage systems have not yet been employed on a large scale.

¹¹ Although there is interest in powering desalination plants with nuclear energy in some parts of the world, we do not discuss that here given strong opposition to nuclear and bans on the development of new nuclear reactors in California.

Desalination plants can also be indirectly powered by renewables by increasing the amount of renewable energy supply to the grid, relative to the needs of the desalination facility. With this approach, the plant developer would construct or fund the construction of renewable energy plants (on- or off-site) to feed energy into the same electricity grid to which the desalination plant is connected. Supporters say that this approach is generally simpler and more flexible than building dedicated renewables, as it taps into existing markets for renewable energy and the infrastructure is already in place to deliver the electricity where it is needed. Furthermore, grid electricity is always on, as opposed to more intermittent sources like wind and solar.

This approach has been widely used in Australia through the purchase of Renewable Energy Certificates (RECs). In Australia, an REC, which represents 1 megawatt-hour of electricity generated from a renewable energy source, can be sold and traded or bartered. The funds received from the sale of RECs are intended to allow renewable energy companies to cover the higher cost of generating renewables. Several large-scale desalination facilities in Australia have purchased RECs from new offsite renewable energy projects (Box 3). In order for these plants to be completely carbon neutral, however, the purchase of RECs must offset all of the energy required by the facility and must result in new sources of renewable energy. RECs for existing or planned facilities would not serve to offset the emissions from the desalination facility since the renewable energy would have been generated with or without the desalination plant. Although energy users purchase RECs from specific renewable energy projects, it is often difficult to confirm whether new renewable energy projects were built because the desalination plants purchased their certificates or whether the projects would have been built anyway.

Carbon Offsets

In addition to reducing GHG emissions through energy efficiency measures or investing in renewables, project developers may also purchase *carbon offsets* to mitigate GHG emissions. The idea behind offsets is to pay someone else to reduce their emissions to “cancel out” your own emissions. Today, there is an international market in carbon offsets, with thousands of buyers and sellers. There is also a wide variety in the price and type of offsets. Some offset providers invest in renewable energy, such as wind, solar, hydroelectric, or biofuels; the concept is that these new energy sources will reduce consumption of fossil fuels. Other offset sellers engage in projects that are meant to reduce greenhouse gas emissions. For example, an offset project may help a hog farmer to install a system to capture methane from animal waste. Or it may help a factory in a developing country to install emissions controls to prevent the release of potent greenhouse gases, such as hydrofluorocarbons and perfluorocarbons. Yet another class of offsets is designed to prevent deforestation or land degradation, which includes schemes called REDD (Reducing emissions from deforestation and forest degradation).

With the exception of DWR, California water suppliers are not currently regulated under AB 32, and thus desalination proponents that pursue this option would be purchasing *voluntary* offsets. Under California's emissions reduction scheme, regulated entities are allowed to purchase offsets to fulfill up to 8% of their required emissions reductions. For companies to obtain credit toward their required reductions, the offsets they purchase must be certified by ARB. At present, ARB has stated that it will certify only certain types of domestic offsets, while considering expanding the program in the future. Voluntary offsets, on the other hand, can be purchased from any number of private companies, or from clearinghouses that are part of emissions trading programs, such as Europe's Clean Development Mechanism (CDM).

Outside of the regulated offset market, the price of private offsets varies greatly, with prices in 2012 ranging from \$0.50 to \$30 per metric tonne of CO₂. The quality of offsets also appears to vary greatly. Under the CDM -- Europe's experiment with carbon offsets -- there have been many poorly designed projects and some cases of outright fraud (McCully 2008). In response, scholars and regulators have developed a number of concepts to verify the quality of offsets. California regulators, for example, have drawn on international experience and scholarship and created rules stating that regulated offset allowances must "represent a GHG emission reduction or GHG removal enhancement that is *real, additional, quantifiable, permanent, verifiable, and enforceable*" (ARB 2012). These criteria capture how difficult it can be to ensure that promised emissions reductions are tangible and would not have otherwise occurred without the influence of the offset project.

For example, an offset may pay a subsidy to a company for solar energy to make it more attractive to the buyer, compared to conventional fossil fuel sources. However, would the company have purchased solar anyway, without the subsidy? The burden is on the offset provider to prove that its investment resulted in "additional" emissions reductions that would not have happened without are uncontrolled or uncounted? For example, will protecting a plot of rainforest from agricultural development simply result in another piece of land being clear-cut and converted to farming? And will that forest be protected in perpetuity? Given all of these questions, it can be difficult to prove that offsets will produce meaningful long-term emissions reductions.

Offsets have been criticized on other grounds as well. English environmentalist and writer George Monbiot has likened offsets to indulgences granted by churches in the Middle Ages, as they allow polluters to continue with business as usual by simply making payments. He argues that the system of offsets "persuades us we can carry on

polluting" and delays the changes necessary to slow climate change (Monbiot 2006).

Further, because of the proliferation of companies selling offsets and the lack of regulation in the voluntary market, there is evidence that "many offset reduction claims are exaggerated or misleading" and even cases of outright fraud (Carbon Offset 2013). Forestry projects under REDD have been particularly controversial, and several cases of human rights abuses have been documented. In Uganda, Oxfam International described a case where 20,000 farmers were evicted from their land, without notification or adequate compensation, to make room for a tree plantation offset project by the London-based New Forests Company (Grainger and Geary 2011). In Brazil, indigenous leaders opposing projects that would force their communities off of ancestral land have been harassed by authorities and received death threats (Goldtooth and Conant 2012).

Carbon offsets have been welcomed by politicians and regulators in California, who expect them to play a part of the state's emissions reductions goals. However, caution is required when purchasing offsets, particularly on the voluntary market, to ensure that they are effective, meaningful, and do no harm. A commitment to go "carbon neutral" is laudable. Companies, however, should commit to purchasing high-quality offsets from certified sources, and independent parties should verify these claims.

Box 3. Seawater Desalination Plants Powered by Renewables in Australia

In 2001, the Australian federal government implemented the Mandatory Renewable Energy Target, which now requires that renewable energy make up 20% of Australia's electricity mix by 2020. Victoria and New South Wales have also created state-level renewable energy targets. In Australia, desalination plants can offset their energy needs by purchasing Renewable Energy Certificates (RECs) equivalent to the amount of electricity consumed. Below are details on several large-scale desalination facilities that have purchased RECs from new offsite renewable energy projects.

Kwinana Seawater Desalination Plant (Western Australia)

The Kwinana Seawater Desalination Plant is located near Perth in Western Australia and was completed in late 2006. The 38 MGD (130 megaliters per day) plant produces water for the Perth metropolitan area. Plant operators purchase electricity generated by the Emu Downs Wind Farm, which is located 120 miles north of Perth. The wind farm consists of 48 wind turbines and contributes more than 272 GWh per year into the grid, fully offsetting the estimated 180 GWh per year required by the desalination plant (Sanz and Stover 2007).

Tugun Desalination Plant (Southeast Queensland)

The Tugun Desalination Facility is located along the Gold Coast in Southeast Queensland. The 33 MGD (125 megaliters per day) plant was completed in February 2009. At full production, the plant consumes about 150 GWh per year (WaterSecure n.d.). The plant's energy use is offset by the purchase of RECs, with solar hot water systems providing the main source of energy, followed by solar photovoltaic, hydropower, and a small amount of wind (WaterSecure 2009). The desalination plant was put on standby in December 2010 due to high operating cost and operational issues (Marschke 2012).

Kurnell Desalination Plant (New South Wales)

The Kurnell Desalination Plant is located near Sydney in New South Wales. The 66 MGD (250 megaliters per day) plant was completed in early 2010. The plant operators purchased RECs from the 140 MW Capital Wind Farm near Bungendore. The wind farm was built specifically to supply power to the desalination plant but provides additional energy to the grid (Inflgen Energy n.d.). The desalination plant was put in stand-by mode in July 2012 due to the availability of less expensive water supply alternatives (AAP News 2012).

(continued on next page)

Box 3. Seawater Desalination Plants Powered by Renewables in Australia (continued)

Southern Seawater Desalination Plant (Western Australia)

The Southern Seawater Desalination Plant is located in Western Australia and was completed in August 2011. Expansion of the facility, which is expected to be completed in 2013, will double the capacity of the plant to 72 MGD (270 megaliters per day) (Water Corporation n.d.a). The plant operators will purchase the entire output of two new renewable energy projects: the 55MW Mumbida Wind Farm and the 10MW Greenough River Solar Farm (Water Corporation n.d.b). The electricity produced by these projects will be fed into Western Power's grid, which then provides the electricity required for the desalination plant, and will offset all of the energy required by the desalination plant.

Wonthaggi Desalination Plant (Victoria)

The Wonthaggi Desalination Plant, located in Victoria, was fully operational in late 2012. All the power required to operate the 109 MGD (410 megaliters per day) desalination plant and distribution pipeline will be fully offset by RECs, which support the development of the Oaklands Hill wind farm (63 MW); the Macarthur wind farm (420 MW); and several other renewable energy projects. Upon completion, the desalination plant was quickly put on standby due to lack of demand (Hosking 2012).

Port Stanvac Desalination Plant (Southern Australia)

The Port Stanvac Desalination Plant, located near Adelaide in Southern Australia, is under construction. The 72 MGD (270 megaliters per day) plant will be powered by renewables through the purchase of RECs. The plant is expected to be completed in 2013 but in an October 2012 statement, SA Water Chief Executive John Ringham announced that "to keep costs down for our customers, SA Water is planning to use our lower-cost water sources first, which will mean placing the desalination plant in stand-by mode when these cheaper sources are available" (Kemp 2012). The desalination plant, which cost nearly \$1.9 billion, is slated to go on stand-by mode in 2015. Plant operators will be required to pay a minimum amount each year while the project is in standby, although they will not reveal how much due to commercial confidentiality arrangements (Kemp 2012).

Going Carbon Neutral in California?

In the absence of state or local mandates, desalination proponents in California may voluntarily commit to carbon neutrality, which requires balancing the amount of carbon released with an equivalent amount sequestered or offset. That approach, however, can be controversial. An interesting example is provided by the 50 MGD desalination plant proposed in Carlsbad by Poseidon Resources. Poseidon claims carbon reductions through a range of activities (Voutchkov 2008). The largest of these is carbon emission reduction tied to reduced water imports from the State Water Project, responsible for about 70% of the carbon budget. They argue that San Diego has in recent years imported 90% of its water supply from outside the region, which takes energy to pump and treat and results in GHG emissions. And while the desalinated water will take even more energy, and cause more emissions, Poseidon argues it is only responsible for offsetting the *difference* between these two, or the additional energy caused by desalination compared to imported water. Poseidon proposes to mitigate the remaining 30% of the emissions from the desalination plant through a variety of means, including energy recovery devices, solar panels on the roof, green building design, fuel-efficiency standards, and by purchasing carbon offsets.

Some groups have criticized Poseidon's approach, including the San Diego Coastkeeper and the Planning and Conservation League (San Diego Coastkeeper 2010, Minton 2010). The first issue is whether Poseidon should be responsible for offsetting all of its emissions, or only its "net" emissions that take into account reduced water imports. Some have argued that "the Carlsbad plant will produce new water, and that taking emission credit for reduced water imports should not be permitted in a greenhouse gas reduction plan" (Heede 2008). While San Diego County Water Authority staff has publicly stated that water from the desalination plant would reduce the amount of imported water purchased from the Metropolitan

Water District (Weinberg 2013), there is no binding legal agreement to ensure that this occurs. But even if imports are reduced, the project proponents state that this would reduce the amount of water imported from the *State Water Project*, the most energy intensive imported water source in the region. In reality, reductions of imported water would likely be a combination of water from the State Water Project and the less energy- and carbon-intensive Colorado River Aqueduct.

In an analysis commissioned by the San Diego Coastkeeper, the consultancy Climate Mitigation Services (CMS) found that Poseidon overestimated their potential GHG reductions and underestimated the amount of offsets it would need to purchase to achieve net zero emissions (Heede 2008). CMS raised several concerns about Poseidon's analysis, including assumptions about displaced imports (described on previous page), electricity emissions factors, and motor efficiency ratings. But even accepting the displaced imported water argument, CMS estimated that the number of offsets needed would equal 53,000 MMTCO₂e per year, significantly higher than Poseidon's estimate of 16,000 MMTCO₂e per year. Assuming an average offset cost of \$8 per MMTCO₂e, Poseidon may have underestimated the annual cost of purchasing offsets by around \$300,000.¹²

¹² In 2012, each offset could be purchased for between \$4 (for wind farms in China) to \$120 (for "gold standard" domestic projects) (Peters-Stanley 2013).

4

Conclusions

Removing the salt from seawater is an energy-intensive process and consumes more energy per gallon than most other water supply and treatment options. On average, desalination plants use about 15,000 kWh per million gallons of water produced (kWh/MG), or 4.0 kWh per cubic meter (kWh/m³). We note, however, that these estimates refer to the rated energy use, i.e., the energy required under a standard, fixed set of conditions. The actual energy use may be higher, as actual operating conditions are often not ideal.

The overall energy implications of a seawater desalination project will depend on whether the water produced replaces an existing water supply or provides a new source of water for growth. If water from a desalination plant replaces an existing supply, then the additional energy requirements are simply the difference between the energy use of the seawater desalination plant and those of the existing supply. Producing a new source of water, however, increases the total amount of water that must be delivered, used, and disposed of. Thus, the overall energy implications of the desalination project include the energy requirements for the desalination plant plus the energy required to deliver, use, and dispose of the water that is produced. We note that conservation and efficiency, by contrast, can help meet the anticipated needs associated with growth by reducing total water demand while simultaneously maintaining or even reducing total energy use.

Energy requirements for desalination have declined dramatically over the past 40 years due to a variety of technological advances, and desalination

designers and researchers are continuously seeking ways to further reduce energy consumption. Despite the potential for future energy use reductions, however, there is a theoretical minimum energy requirement beyond which there are no opportunities for further reductions. Desalination plants are currently operating at 3-4 times the theoretical minimum energy requirements, and despite hope and efforts to reduce the energy cost of desalination, there do not appear to be significant reductions in energy use on the near-term horizon.

The high energy requirements of seawater desalination raise several concerns, including sensitivity to energy price variability. Energy is the largest single variable cost for a desalination plant, varying from one-third to more than one-half the cost of produced water (Chaudhry 2003). As result, desalination creates or increases the water supplier's exposure to energy price variability. In California, and in other regions dependent on hydropower, electricity prices tend to rise during droughts, when runoff, and thus power production, is constrained and electricity demands are high. Additionally, electricity prices in California are projected to rise by nearly 27% between 2008 and 2020 (in inflation-adjusted dollars) to maintain and replace aging transmission and distribution infrastructure, install advanced metering infrastructure, comply with once-through cooling regulations, meet new demand growth, and increase renewable energy production (CPUC 2009). Rising energy prices will affect the price of all water sources, although they will have a greater impact on those that the most energy intensive.

It is important to note that water from a desalination plant may be worth more in a drought year because other sources of water will be limited. Thus, building a desalination plant may reduce a water utility's exposure to water reliability risks at the added expense of an increase in exposure to energy price risk. Project developers may pay an energy or project developer to hedge against this uncertainty, e.g., through a long-term energy purchase contract or through on-site energy production from sources with less variability, such as solar electric. The hedging options, however, may increase the overall cost. In any case, energy price uncertainty creates costs that should be incorporated into any estimate of project cost.

The high energy requirements of seawater desalination also raise concerns about greenhouse gas emissions. In 2006, California lawmakers passed the *Global Warming Solutions Act*, or Assembly Bill 32 (AB 32), which requires the state to reduce greenhouse gas emissions to 1990 levels by 2020. Thus, the state has committed itself to a program of steadily reducing its greenhouse gas emissions in both the short- and long-term, which includes cutting current emissions and preventing future emissions associated with growth. Action and awareness has, until recently, been uneven and slow to spread to the local level. While the state has directed local and regional water managers to begin considering emissions reductions when selecting water projects, they were not subject to mandatory cuts during the state's first round of emissions reductions. As the state moves forward with its plans to cut carbon emissions further, however, every sector of the economy is likely to come under increased scrutiny by regulators. Desalination - through increased energy use - can cause an increase in greenhouse gas emissions, further contributing to the root cause of climate change and thus running counter to the state's greenhouse gas reduction goals.

While there is "no clear-cut regulatory standard related to energy use and greenhouse gas emissions," (Pankratz 2012) there are a variety of state programs, policies, and agencies that must be

considered when developing a desalination project. These include environmental review requirements under the California Environmental Quality Act, the issuance of permits by the Coastal Commission, the Integrated Regional Water Management Planning process, and policies of other state agencies, such as the State Lands Commission and the State Water Resources Control Board. These agencies have increasingly emphasized the importance of planning for climate change and reducing greenhouse gas emissions. While none of these preclude the construction of new desalination plants, the state's mandate to reduce emissions creates an additional planning element that must be addressed.

There is growing interest in reducing or eliminating greenhouse gas emissions by powering desalination with renewables, directly or indirectly, or purchasing carbon offsets. In California, we are unlikely to see desalination plants that are directly powered by renewables in the near future. A more likely scenario is that project developers will pay to develop renewables in other parts of the state that partially or fully offset the energy requirements of the desalination plant. Offsets can also reduce emissions, although caution is required when purchasing offsets, particularly on the voluntary market, to ensure that they are effective, meaningful, and do no harm.

Powering desalination with renewables can reduce or eliminate the greenhouse gas emissions associated with a particular project. This may assuage some concerns about the massive energy requirements of these systems and may help to gain local, and even regulatory, support. But it is important to look at the larger context. Even renewables have a social, economic, and environmental cost, albeit much less than conventional fossil fuels. Furthermore, these renewables could be used to reduce existing emissions, rather than offset new emissions and maintain current greenhouse gas levels. Communities should consider whether there are less energy-intensive options available to meet water demand, such as through conservation and

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efficiency, water reuse, brackish water desalination, stormwater capture, and rainwater harvesting. We note that energy use is not the only factor that should be used to guide decision making. However, given the increased understanding of the risks of climate change for our water resources, the importance of evaluating and mitigating energy use and greenhouse gas emissions are likely to grow.

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