

Supporting Report for Chapter 8 “Evaluation of Proposed Management Plans”

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Sea/Brakish Water Desalination

Economic Analysis (M JD at 2000 Prices)

Item	Percent	Amount	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Costs													
Local Costs	0%	1.1	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.1
Foreign Costs	100%	12.1	1.0	6.8	6.8	6.8	6.8	1.0	0.0	0.0	0.0	0.0	1.1
Duty & Taxes	0%	1.1	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.1
Total Capital Costs		12.1	1.0	6.8	6.8	6.8	6.8	1.0	0.0	0.0	0.0	0.0	1.1
Cumulative Costs			1.0	6.8	13.7	20.5	27.4	27.4	27.4	27.4	27.4	27.4	27.4
O & M Costs			1.0	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	1.5
Total Costs			1.0	6.8	6.8	6.8	6.8	1.5	1.5	1.5	1.5	1.5	1.5
Benefits													
Municipal Usage Qty (M m ³)			1.0	0.0	0.0	0.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0
Unit Benefits of Municipal Water (JD/m ³)			0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735
Municipal Benefits (M JD)			1.0	0.0	0.0	0.0	0.0	3.7	3.7	3.7	3.7	3.7	3.7
Industrial Usage Qty (M m ³)			1.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
Unit Benefits of Industrial Water (JD/m ³)			2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740
Industrial Benefits (M JD)			1.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
Irrigation Usage Qty (M m ³)			1.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
Unit Benefits of Irrigation Water (JD/m ³)			0.283	1.213	1.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283
Irrigation Benefits (M JD)			1.0	0.0	0.0	0.0	0.0	1.6	0.6	0.6	0.6	0.6	1.6
Total Benefits (M JD)			1.0	0.0	0.0	0.0	0.0	4.2	4.2	4.2	4.2	4.2	4.2
Net Cash Flow (M JD)			1.0	-6.8	-6.8	-6.8	-6.8	2.7	2.7	2.7	2.7	2.7	2.7
Discounting (DR=14%)			0.90909	0.62045	0.75131	1.01111	0.62032	0.56647	0.51316	0.46651	1.42410	0.38554	0.35049
Total Qty Delevered (M m ³)			1.0	0.0	0.0	0.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0
EBI													
NPV (M JD)	10%		0.4	-5.7	-5.1	-4.7	-4.2	1.5	1.4	1.3	1.1	1.0	-3.5
PV of Total Costs (M JD)			0.0	5.7	5.1	4.7	4.2	0.9	0.8	0.7	0.7	0.6	4.9
PV of Total Qty Delivered (M m ³)			41.1	0.0	0.0	1.1	1.0	2.8	2.6	2.1	2.1	1.9	1.8
Unit Water Price (Fiber ²)			1.158										

Economic Analysis (M JD at 2000 Prices)																							
Item	Percent	Amount	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Costs																							
Local Costs	10%	5.0	0.0	0.0	1.9	1.9	1.9	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.1	0.0	0.0
Foreign Costs	90%	50.5	0.0	0.0	14.8	16.6	16.8	11.1	0.0	0.0	0.0	0.0	11.1	0.0	0.0	0.0	0.0	11.0	0.0	0.0	0.1	0.0	0.0
Duty & Taxes	0%	0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.1	0.0	0.0
Total Capital Costs		50.2	0.0	0.0	15.7	18.7	18.7	11.1	0.0	0.0	0.0	0.0	11.1	0.0	0.0	0.0	0.0	11.0	0.0	0.0	0.1	0.0	0.0
Operative Costs			0.0	0.0	11.7	17.4	16.2	14.1	16.2	16.2	16.2	16.2	14.1	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
O & M Costs			0.0	0.0	1.0	0.0	0.0	1.1	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Costs			0.0	0.0	11.7	18.7	18.7	11.1	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Benefits																							
Municipal Usage Qty (M m ³)			0.0	0.0	1.0	0.0	0.0	14.1	14.3	14.6	14.9	15.2	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
Unit Benefit of Municipal Water (JD/m ³)			0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735
Municipal Benefits (M JD)			0.0	0.0	1.0	0.0	0.0	17.4	17.9	18.1	18.3	18.5	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7
Industrial Usage Qty (M m ³)			0.0	0.0	1.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0	1	0	0	0	0
Unit Benefit of Industrial Water (JD/m ³)			2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740
Industrial Benefits (M JD)			0.0	0.0	1.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.1	0.0	0.0
Irrigation Usage Qty (M m ³)			0.0	0.0	1.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.1	0.0	0.0
Unit Benefit of Irrigation Water (JD/m ³)			0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283
Irrigation Benefits (M JD)			0.0	0.0	1.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.1	0.0	0.0
Total Benefits (M JD)			0.0	0.0	1.0	0.0	0.0	17.4	17.9	18.1	18.3	18.5	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7
Net Cash Flow (M JD)			0.0	0.0	-11.7	-18.7	-18.7	12.4	12.8	13.0	13.3	13.5	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
Discounting (DR=10%)			0.90919	1.12645	0.75131	0.63101	0.62092	0.56447	0.51316	0.46651	0.42410	0.38554	0.35049	0.31863	0.28966	0.26333	0.23959	0.21763	0.19784	0.17986	0.16351	0.14864	0.13513
Total Qty Delivered (M m ³)			0.0	0.0	1.0	0.0	0.0	14.1	14.3	14.6	14.9	15.2	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	
EIRR																							
EIRR (MJD)	19%		0.0	0.0	-14.1	-12.8	-11.6	7.1	6.6	6.1	5.6	5.2	4.8	4.4	4.0	3.6	3.3	3.0	2.7	2.5	2.1	2.0	1.9
PV of Total Costs (M JD)	65.1		0.0	0.1	14.1	12.8	11.6	2.8	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.3	1.2	1.1	1.0	0.9	0.8	0.7	0.7
PV of Total Qty Delivered (M m ³)	132.5		0.0	0.1	0.0	0.0	0.0	13.5	12.5	11.5	10.6	9.7	8.9	8.1	7.4	6.7	6.1	5.5	5.0	4.6	4.2	3.8	3.4
Use Water Price (E\$/m ³)	491																						