

Desalination powered Renewable Energies: Opportunities for Algeria



Virtual Event

Desalination Using Renewable Energy

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Outlines

Water challenges in Algeria

Desalination in Algeria

- Implemented projects

- Carbon Foot Print Assesement of Desalination

Industry in Algeria.

RE in Algeria

- Implemented projects

- Case studies

- Feasibility study of grid-connected photovoltaic system for seawater desalination plant in Algeria (case of Maqtaa)

- Pilot scale reverse osmosis desalination at the village of Hassi-khebi

Water challenges in Algeria

Growing demand driven by population growth and rural-to-urban migration.

Little rainfall; affecting the water reservoirs.

Uneven spatial distribution of water resources

The effects of climate change on precipitation patterns which led continuous droughts.

up to 30 per cent of water is lost in transit.

Relying on seawater Desalination and wastewater reuse became a necessity.

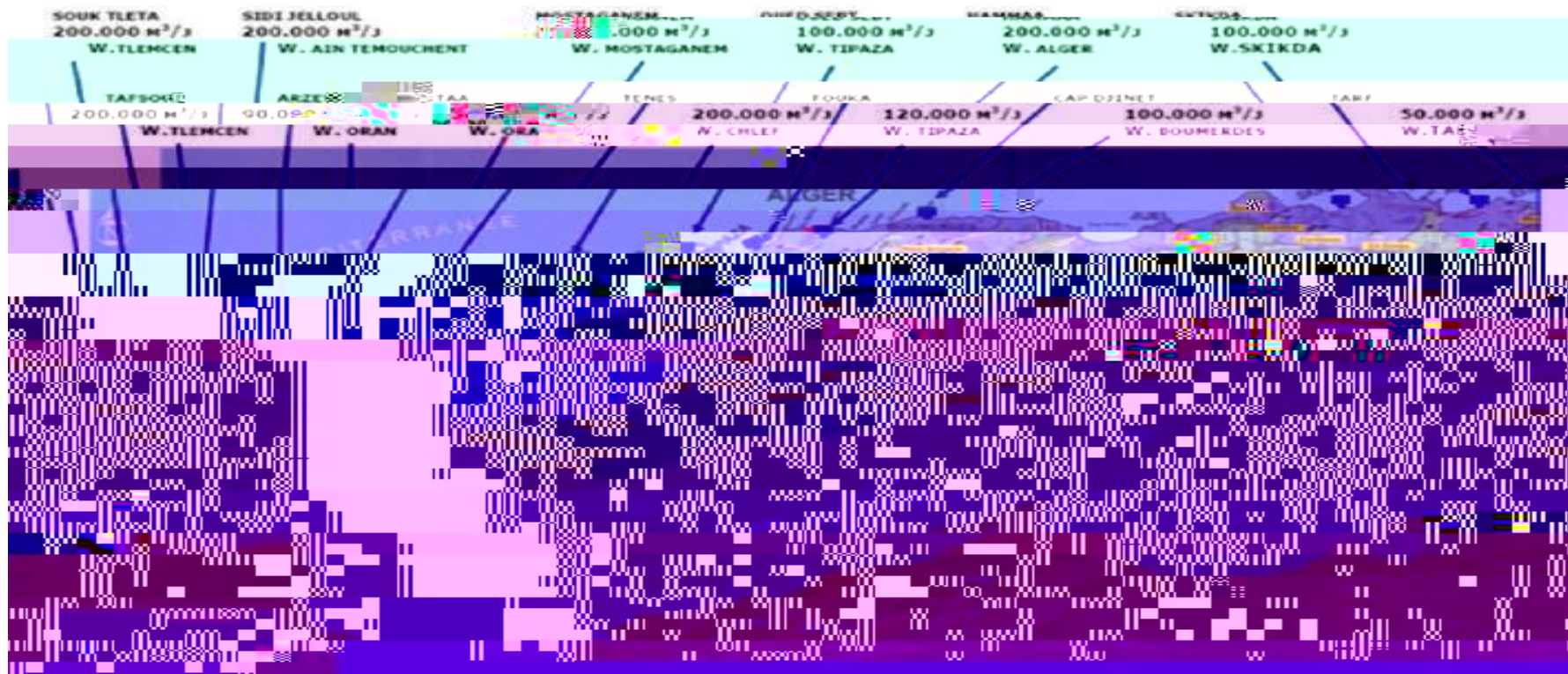


Figure 1. Water desalination plants location

**Algerian Desalination capacity : around 2.2 millions m³/day
(aec.dz)**

Large scale desalination plants

Kahrma	86.680	Since 2006	J. Burrow Ltd : 05%
Hamma	200.000	Since 2008	GE Ionics * USA* : 70%
Skikda	100.000	Since 2009	Geida (Befesa/Sadyt) * Spain* : 51%
Beni Saf	200.000	Since 2010	Cobra/Spain* : 51%
Souk Tlata	200.000	Since 2011	TDIC (Hyflux/Malakoff) * Singapore* : 51%
Fouka	120.000	Since 2011	AWI (Snc Lavalin/Acciona) : 51%
Mostaganem	200.000	Since 2011	

Carbon Foot Print Assesement of Desalination

Desalination plants CO₂ emissions:

Around 500.000 tons CO₂/year (

Comparison with Australia: 1,193 kt CO₂e (Heihselet al., 2019)

Algeria is committed to reduce its GHG by 7%

Status of renewable energy projects implemented in Algeria



Source: SKTM

Total installed capacity of renewable energy in Algeria

3- Réseau RIN		
Nom de l'installation	Capacité (MW)	Statut
Qued El kabriti (Souk Ahras)	15	28.960
Ain Skhoune (Gaida)	30	14.213
Ain El Bel (Mila)	30	98.494
Telagh (Oued El Akhra)	10	7.447
Labradh Sidi Boudi (El Beayth)	30	19.160
El Hdjira (Ouargla)	30	9.738
Ain El Madh (Mila)	30	10.470
Total SKTM (EnR)	354.3	470.318

Source: <https://www.sktm.dz/?page=article&id=56>

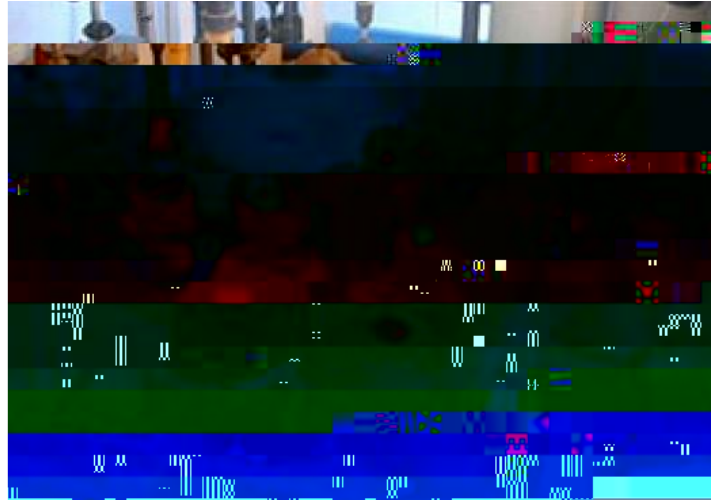
Feasibility study of grid-connected photovoltaic system for seawater desalination plant in Algeria (case of Maqtaa)

Data sheet of Tahlyiat Miyah Maqtaa Desalination Plant

	Tahlyiat Miyah Magtaa stock company
	Hyflux (singapore)
	Hyflux OMA
	Reverse osmosis with energy exchanger
	500,000 m ³ /d
	3.2 kWh/m ³
	492 M\$
	25 modules of 21,000 m ³ /d unit production, 24 modules in production
	42.4SR: Part II:6PeO stt Illy2.48 325.2 318.84 387.6 42.

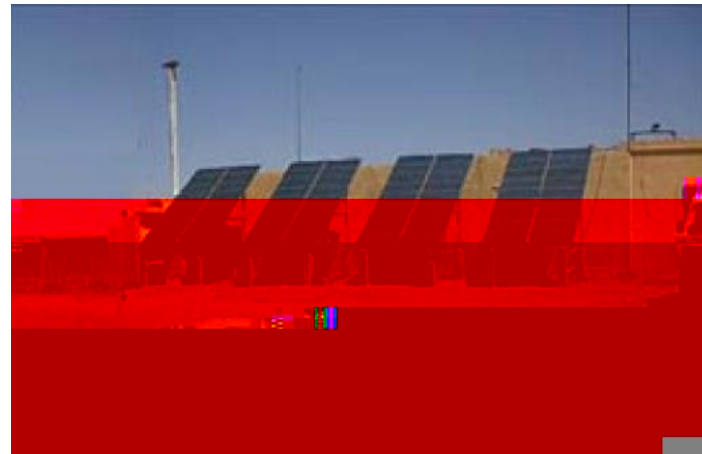


Pilot scale reverse osmosis desalination at the village of Hassi-khebi



RO unit

This installation produces nearly 1000 I/h of fresh water from underground brackish water.



Photovoltaic generator



