# **ABENGOA**

Freshwater Conference

UBS Conference Center London Thursday, 12 October 2006

Your Partner in Resources and Technical Solutions



# **ABENGOA**

Abengoa is a technology company that applies innovative solutions for sustainable development in infrastructures, environment and energy sectors.

- •Sales and EBITDA in 2005 equaling 2.023,5 y 216,4 millions euros, respectively.
- •Operations in more than 70 countries.
- Innovation drive as a springboard for sustained growth.

Your Partner in Resources and Technical Solutions



# **BEFESA**



Befesa Construcción y Tecnología Ambiental:

Design, construction, operation & maintenance of infrastructure related to the integral cycle of water and solid wastes



Your Partner in Environmental Services

Leader in Desalination



### Construcción y Tecnología Ambiental

Befesa CTA is an Abengoa branch full dedicated to develop water solutions in the International and Domestic market.

Our strategic is to cover the market by geographies and technologies and supported by a strong financial tools.

#### 1. Geographies:

Magreb (Algeria, Morocco, Tunisia and Libya)

Latin America (Strong presence of Abengoa)

India

China

USA (CA, TX, FI)

#### 2. Technologies

Conventional projects (Pumping stations, Hydraulic Power stations, Irrigation, drinking and waste water plants)

Desalination

Water Reuse

Industrial water

#### 3. Financing

#### Abengoa develops:

- Complex financial solutions in a wide range of sectors of activity:
  - Energy
  - Water
  - Urban and Industrial Waste
  - Environment and Urban Services
  - Transports
  - Telecommunications
- Different structures and international bidding procedures:
  - BLT (Build, Lease & Transfer)
  - BOOT (Build, Own, Operate & Transfer)
  - BOO (Build, Own & Operate)
  - Build and finance up to job completion.
- •With:
- National and International Financial Institutions
- Multilateral Agencies
- Export Credit Agencies
- Institutional Investors

### References in Project Finance

Total of Projects with financial close and on due-dilligence						
_	Number		Investment (M EUR)			
TIPO	Total	Fin Close	Total	Fin Close		
1) Cogeneration	14	14	246,79	114,51		
2) Biomass & Renewable Energy	4	4	66,71	44,83		
3) Solar Power	2	2	44,00			
4) Wind Farm	6	6	185,96	68,20		
5) Waste Management	4	4	104,85	17,28		
6) Bioethanol	4	4	349,30	94,96		
7) Transmission Lines & SSEE	15	13	1.150,00	450,00		
8) Urban Services	2	2	180,17	10,81		
Total	51	49	2327,78	800,59		

Altogether, Abengoa has successfully completed more than 50 Project Finance:

- With debt of more then 800 M EUR
- With total investment of more than 2250 M EUR
- More than thirty banks have been involved.

Currently, Abengoa is developing new projects:

- With debt of almost 400 M EUR
- With total investment of 600 M EUR



We are trying to expand the water Spanish experience to the areas with similar problems.

- Dry country
- With very limited water resources, being pioneers to implement water solutions in the main areas of consumption:

Irrigation (85% of our consumption)

Industrial development (10%)

Human consumption (5%)



Desalination has been the recent solution from the 90's

We are a global water company covering the following main activities:

- 1.-Seawater and brackish water desalination
- 2.- Hydraulics works: Hydroelectric power stations, pumping stations & piping.
- 3.- Irrigation
- 4.-Water treatment. Drinking water, waste water and industrial water.
- 5.-Automatic Information Systems





# Seawater and brackish water desalination



**Projects** 

#### Seawater and brackish water desalination



Seawater: Almería, Cartagena, Carboneras, Skikda, Tlemcen, Honaine, Chennai

Brackish Water: Atabal

Total Capacity: 1.000.000 m3/day

This additional hydraulic resources equivalent 327,6 Hm3/year, enough to:

- Supply more than 6.000.000 persons,
  or,
- •Irrigate more than 250.000 Ha, with a capacity of 4.000 m3/year/Ha.



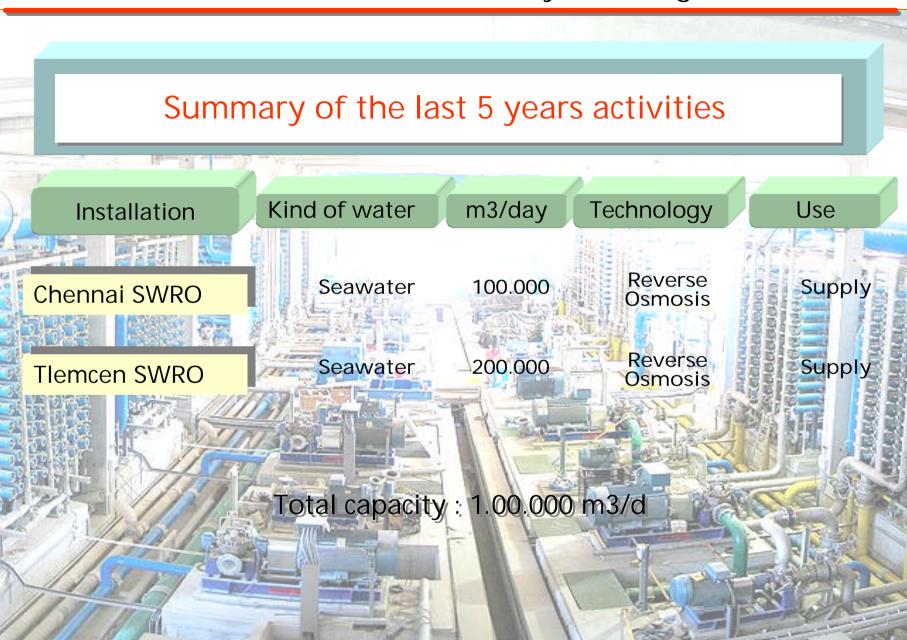
## Construcción y Tecnología Ambiental

# Summary of the last 5 years activities

	17 18 m			
Installation	Kind of water	m3/day	Technology	Use
Almería SWRO	Seawater	50.000	Reverse Osmosis	Supply
Cartagena SWRO	Seawater	65.000	Reverse Osmosis	Supply
Carboneras SWRO	Seawater	120,000	Reverse Osmosis	Supply/Irrigation
Atabal BWRO	Brackish water	165.000	Reverse Osmosis	Supply
Skikda SWRO	Seawater	100.000	Reverse Osmosis	Supply
Beni Saf SWRO	Seawater	200.000	Reverse Osmosis	Supply



## Construcción y Tecnología Ambiental





Sea Water Desalination plant of 65.000 m3/day in Cartagena for drinking water and irrigation





Sea Water Desalination plant of 120.000 m3/day in Carboneras for drinking water





Desalination plant of 165.000 m3/day El Atabal inside of the city of Málaga to supply drinking water

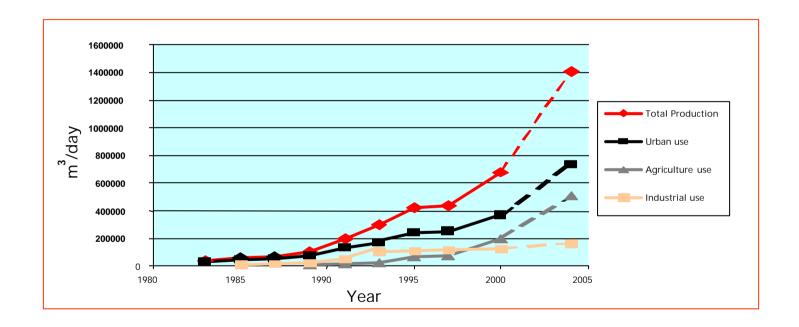


# Why the desalination is having the current grow up?

- 1.- Tested technology with more than 15 years of experience, running world wide Spain, Morocco, Algeria, Singapore, China, USA, India, Caribbean...
- 2.- High reduction in the investment
- 3.- Huge reduction in operation
- 4.- Cost of production in the same level as the municipal tariff
- 5.- Non any other alternatives in some areas



### **Evolution and Final Destination**



1990: Production of 0,1 hm<sup>3</sup>/day

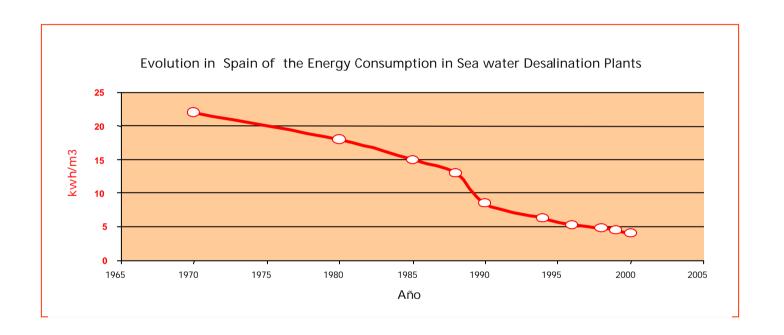
2000: Production of 0,7 hm<sup>3</sup>/day 2004: Production de 1,4 hm<sup>3</sup>/day

Duplicated in 4 years.

Forecast is: to increase 1,1 hm<sup>3</sup>/day in the next 5 years (Plus the reused which is starting).



# **Energy Consumption**



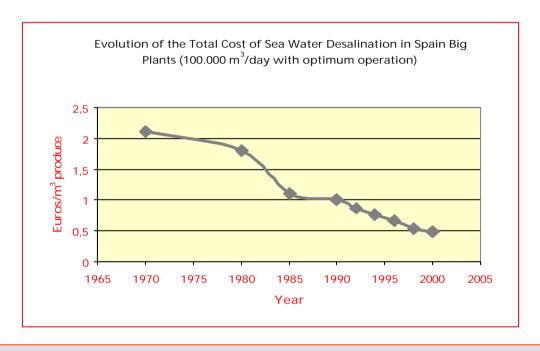
#### Sea Water:

1990: Energy Consumption. 8 kWh/m3 2000: Energy Consumption. 4 kWh/m3 2005: Trends to reach 3 kWh/m3 For Brackish water 1 to 1,5 kWh/m3



## Construcción y Tecnología Ambiental

#### **Desalted Water Cost**



Sea water for big installations:

1990: 1 euro/m3 2000: 0,5 euros/m3

For Brackish water 0,25 to 0,35 euros/m3

## 005: Trends in the future is to keep the cost

Remark: good quality of desalted water



#### **Desalted Water Cost**

#### International references:

1.50 US\$/m3

1996: Bahamas 1,25 US\$/m3

1997: Dehekelia 1,20 US\$/m3

1999: Larnaca 0,87 US\$/m3

2000: Trinidad 0,73 Us\$/m3

2001: Ashkelon 0,55 US\$/m3

2003: Skikda, Benisaf... 0,71 US\$/m3

### What we could expect in the very near future?

- 1.- Desalination will continue growing up in the next 10 years (10% yearly) but reducing the margin in the coming 5 years
- 2.- Reuse will take part of the market

Between 20 to 50% cheaper

Easy source to be treated.

- 3.- Industrial water (process and waste)
  - More extended at higher prices
  - Water will be a key factor to secure the normal activity
  - Outsourcing.
- 4.- Rational use of the water.

Reuse for agricultural, gardening, industrial...

Desalt for drinking