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1. What is Acuamed

- Acuamed is a public company that belongs to the Spanish Government.
- We are an operator of infrastructures destined to meet water needs in the Spanish Mediterranean basin.
- ACUAMED approaches public private partnership by obtaining funding both from the public sector (domestic and from the European Union) and private sector.
- We make the full infrastructure development cycle: design, construction and operation, and we sign agreements with users.
1. What is Acuamed. The Spanish framework

- In Spain water is of **public domain** and river basins are the basic unit of management.
- Basin Agencies (Confederaciones Hidrográficas) are in charge of:
  - Hydrological planning
  - Public domain surveillance both in quantity and quality
  - Granting permits to use water
  - Design build and operate infrastructures entrusted by the Spanish Ministry of Agriculture
- Current hydrological plans are design under the European water framework directive.
- Our **infrastructures** are considered as **key actions to fulfil the plan objectives**. All have been declared of **general interest** by Law, and entrusted to Acuamed by a contract with the Ministry of Agriculture

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Management Agreement (CGD)

This agreement regulates the relation between ACUAMED and Public Administration, as stablished by the Spanish water law.

<table>
<thead>
<tr>
<th>States the need to comply with EU water Framework Directive</th>
<th>Stablishes minimum clauses required to be included in contracts with users</th>
<th>Stablishes the Equity contribution from Public Administration</th>
<th>Describes the Investment and financing program</th>
<th>Sets the Cost recovery scheme for each project</th>
</tr>
</thead>
</table>

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4
ACUAMED operational activity consists on:

| Obtain financial resources to develop the Project | Sign agreements with users. These “contracts” are the basis for the operation and capital costs recovery | Establish agreements with the administration that allow ACUAMED to take on direct management of the projects | Develop the infrastructure, including permitting, design and building | Operate the infrastructure |
### 1. What is Acuamed. Investment program.

<table>
<thead>
<tr>
<th>INVESTMENT PROGRAM</th>
<th>Nº projects</th>
<th>Investment (Mill. €)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation of new resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desalination</td>
<td>12</td>
<td>1.797,1</td>
</tr>
<tr>
<td>Water reuse</td>
<td>6</td>
<td>172,0</td>
</tr>
<tr>
<td>Water management improvement and environment restoration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water management improvement and water transfers</td>
<td>20</td>
<td>945,9</td>
</tr>
<tr>
<td>Irrigation improvement</td>
<td>3</td>
<td>51,0</td>
</tr>
<tr>
<td>Water quality improvement, flood protection and environment restoration</td>
<td>13</td>
<td>718,4</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>3.685</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Project according to cost recovery scheme</th>
<th>Nº projects</th>
<th>Investment (Mill. €)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects with cost recovery</td>
<td>35</td>
<td>2.966,4</td>
</tr>
<tr>
<td>Projects with no cost recovery</td>
<td>19</td>
<td>718,4</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>3.685</td>
</tr>
</tbody>
</table>
1. What is Acuamed. Financing.

- To finance its Investment Program ACUAMED has three sources of funds: equity, debt and European funds.

Equity is own by the Spanish Government and accounts for 55% of total funds.

European funds come from FEDER and COHESION programs with an overall amount of 1080 Million €, 29% of total funds.


☑️ This funding is not re-payable, so this financing does not have an impact on the depreciation costs that end users have to pay to ACUAMED.
1. What is Acuamed. Financing.

Debt financing comes mainly from the loan signed with the European Investment Bank (EIB) with an amount of 500 Million €. ACUAMED previously signed with Spanish commercial banks loans worth 100 Million €.

- The EIB finances only a part of the Investment program worth 1,155.7 million €.
- Repayment period is 25 years.
- During the first five years there is no payment of the principal.
- Current annual interest rate is fixed and equal to 2.13%.
- At the end of 2017, a rate review is scheduled. This new rate will apply until the expiration of the contract.

- The current total debt to net equity ratio is 23%

Low interest rate + low leverage

Low capital cost for desalination projects
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2. Cost recovery from users

- ACUAMED signs before the beginning of the construction an Agreement with users (Contracts).
  - This agreement regulates the funding scheme for the project
  - This agreement specifies how the financial resources will be recovered: rate and recovery period for each type of fund.
  - In desalination Plants, specifies the production capacity assigned to each user.
- ACUAMED keeps the ownership of the infrastructure during the life of the agreement.
2. Cost recovery from users

The funding scheme for these projects has a low rate of debt, specially for those destined to irrigation purposes.

Recovery period is 25 years in the plants for urban water supply and 50 years for irrigation, excluding mechanical parts.

Contracts with users distinguish four types of tariffs:

- Fixed rate related to investment recovery.
- Fixed rate related to fixed operating costs.
- Variable rate related to variable operating costs.
- A unique rate related to water consumption

Contracts to supply water destined to urban consumers are usually drawn with a combination of the fist three types of tariffs to achieve full recovery costs.

Contracts to supply water destined to agriculture are usually drawn with only the fourth tariff.

Acuamed’s strategic plan, which is currently under study, suggest the need to make changes to this cost recovery policy.
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We work in the Spanish Mediterranean basins, one of the most complex systems in terms of water management.

### A region with regular and dry water cycle

**Structural gap** between water resources and demands.

**Water Restrictions** to irrigation and urban use.

**Permanent drought** situations.

**Overexploitation of groundwater.**

Environmental and economic impact of **flooding.**

A **constantly decreasing availability of** natural water resources.

Lack of water resources needed to the **conservation of natural areas.**

### A region with very significant economic activity and high demand of water resources

**Industrial sector:** 22% of Spain total industrial activity.

**Agriculture:** The most fertile and productive farming areas of Europe. In Murcia and Almería agriculture represents an important part of GDP and employment.

**Tourism:** The region is the most visited destination for tourists in Spain. A country that is third in the world in terms of tourism (after TWO). Tourism accounts for 10% of Spanish GDP.
### 3. ACUAMED desalination plants – Investment and production capacity

- ACUAMED Desalination Program includes the execution and operation of **12 desalination plants** with their distribution networks. These plants have a maximum production capacity of **409 hm\(^3/\)year**, suitable for both irrigation and drinking water supply.

<table>
<thead>
<tr>
<th>Plant name</th>
<th>Province</th>
<th>Capacity (hm(^3/)year)</th>
<th>Investement (Mill. de €)</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marbella</td>
<td>Málaga</td>
<td>20</td>
<td>46,3</td>
<td>Operation</td>
</tr>
<tr>
<td>Atabal</td>
<td>Málaga</td>
<td>60</td>
<td>59,5</td>
<td>Operation</td>
</tr>
<tr>
<td>Campo de Dalías</td>
<td>Almería</td>
<td>30</td>
<td>191,3</td>
<td>Operation</td>
</tr>
<tr>
<td>Carboneras</td>
<td>Almería</td>
<td>42</td>
<td>346,0</td>
<td>Operation</td>
</tr>
<tr>
<td>Bajo Almanzora</td>
<td>Almería</td>
<td>15</td>
<td>69,6</td>
<td>Under construction</td>
</tr>
<tr>
<td>Águilas</td>
<td>Murcia</td>
<td>60</td>
<td>274,8</td>
<td>Operation</td>
</tr>
<tr>
<td>Valdelentisco</td>
<td>Murcia</td>
<td>48</td>
<td>251,5</td>
<td>Operation</td>
</tr>
<tr>
<td>Torrevieja</td>
<td>Alicante</td>
<td>80</td>
<td>292,9</td>
<td>Operation</td>
</tr>
<tr>
<td>Mutxamel</td>
<td>Alicante</td>
<td>18</td>
<td>90,4</td>
<td>Operation</td>
</tr>
<tr>
<td>Sagunto</td>
<td>Valencia</td>
<td>8</td>
<td>48,8</td>
<td>Final testing</td>
</tr>
<tr>
<td>Moncófar</td>
<td>Castellón</td>
<td>10</td>
<td>57,3</td>
<td>Final testing</td>
</tr>
<tr>
<td>Oropesa</td>
<td>Castellón</td>
<td>18</td>
<td>68,7</td>
<td>Final testing</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>409</strong></td>
<td><strong>1.797,1</strong></td>
<td></td>
</tr>
</tbody>
</table>

- The investment necessary to develop these plants and their networks accounts for **1.797,1 million €**
Desalinated water production has more than doubled in four years.

The desalinated water production for 2016 is expected to be 182 hm³, which is 45% of the maximum production capacity, although some plants are operating at rates as high as 80%.

Acuamed’s production accounts for 45% of total Spanish production of desalinated water.
3. ACUAMED desalination plants – Increase in production

- 120 hm³ (66%) of this year production is destined to irrigation. Plant capacity destined to agriculture is being used at 74%.
- 62 hm³ (34%) will be destined to urban water supply. Plant capacity destined to urban needs is being used at a rate of 25%
3. ACUAMED desalination plants and agriculture

- 5 out of 12 Acuamed’s desalination plants are destined to agriculture: Torrevieja; Águilas-Guadalentín; Bajo Almanzora; Carboneras y Campo de Dalías.

- The agricultural area connected to the plants is 134,910 has, while the agricultural surface that can benefit from desalinated resources can reach 277,974 ha which use water resources from multiple sources.

<table>
<thead>
<tr>
<th>Plant</th>
<th>Directly</th>
<th>Nearby area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campo de Dalías</td>
<td>22,000</td>
<td>22,000</td>
</tr>
<tr>
<td>Carboneras – Bajo Almanzora</td>
<td>18,500</td>
<td>32,500</td>
</tr>
<tr>
<td>Águilas</td>
<td>30,751</td>
<td>30,751</td>
</tr>
<tr>
<td>Valdelentisco</td>
<td>21,340</td>
<td>60,000 (*)</td>
</tr>
<tr>
<td>Torrevieja</td>
<td>42,319</td>
<td>132,723 (**)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>134,910</strong></td>
<td><strong>277,974</strong></td>
</tr>
</tbody>
</table>

* Needing upgrading of the plant.
** Including users of the Tajo-Segura transfer (SCRATS).
3. ACUAMED desalination plants – Costs

- Main costs of are **operating costs** including energy costs, net depreciation and financial costs. Electric costs can be as high as 60% of total costs.
- The average cost of operation for all desalination plants was **0.46 € / m3** in 2015 ranging from 0.42 €/m3 to 0.51 €/m3, and with 0.36 €/m3 related to energy consumption.
- In 2016 this cost has been **0.42 € / m3** - a 10% decrease due to energy efficiency improvement and decreasing energy prices -.
- The size of the Company allows us to obtain good energy prices, and to design optimized plant operation procedures aimed to reduce costs.
- Net depreciation varies from **0.06 to 0.10 €/m3** depending on plant use level. The financial expenses vary from **0.02 to 0.04 €/m3**.
- Capital costs are lower than those of similar projects due to our **low leverage**.
Learned Lessons

- Desalination can help to solve water scarcity problems while meeting both European Union and Spanish regulations on social, economic and environmental issues.

- Municipal water supply systems can afford the cost of desalinated water as it increases both quality and reliability.

- Desalinated water is used in agriculture when has a reasonable price and is applied to high value crops, like those grown in the Spanish Mediterranean area.

- The public corporation model fits very well the Spanish framework where water resources are public domain, and is able to reduce total cost due to an optimization of both operational and capital costs. Savings in operation costs come from the size of the company.

- There is still room to improve efficiency and operational processes to reduce energy consumption. This not only will keep desalination costs down but it will also help to protect the environment.
THANK YOU

Fermín López Unzu
Chief Operations Officer
December, 2016