DESLALINATION TRENDS AROUND THE WORLD

EUROPE & NORTH AFRICA

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EUROPE & NORTH AFRICA

✓ It’s **18%** of Global Desalination Market
✓ On line & Construction: **14 850 000 m³/day**
✓ Over **3 500** Desalination Plants

✓ Market Leaders: France, Spain,…
✓ Origin of some Thermal Desalination processes
✓ Several UF suppliers
✓ No Main RO membranes manufacturing
✓ Many equipment manufacturers: Pumps, valves, pipes, Filters, PV’s, membranes, etc.
✓ Research Centers
EUROPE: MARKET

9 615 000 m³/day
2460 Desalination Plants
> 70% in South Europe

N & C Europe
- Municipal: 38%
- Industry: 62%

Europe
- Municipal: 24%
- Industry: 76%

South Europe
- Municipal: 87%
- Industry: 13%
EUROPE: MARKET

9,615,000 m³/day
2,460 Desalination Plants
>70% in South Europe
NORTH AFRICA: MARKET

5 230 000 m³/day
1078 Desalination Plants

North Africa

- Algeria
- Egypt
- Libya
- Tunisia
- Morocco
- Others NA

Membranes: 80%
Thermal: 20%
Municipal: 82%
Industry: 18%
FUTURE DESALINATION MARKET

70% Industry
Only Membranes

80-90% SWRO

EUROPE & NORTH AFRICA

<table>
<thead>
<tr>
<th></th>
<th>Total m3/d</th>
<th>SW m3/d</th>
<th>SWRO m3/d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online</td>
<td>13,682,009</td>
<td>8,766,366</td>
<td>7,258,927</td>
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<tr>
<td>Construction</td>
<td>1,163,572</td>
<td>1,049,647</td>
<td>1,001,049</td>
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<tr>
<td>Planned</td>
<td>3,802,000</td>
<td>3,212,000</td>
<td>3,212,000</td>
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</tbody>
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Europe: Driven by Industry
South Europe: some SW, Municipal, Reuse
North Africa: Mainly Seawater, potential of Libya, …and Reuse (?)

Planned Projects EU NA
FUTURE DESALINATION TRENDS

- Moderate growth
- Thermal Desalination going to “0”
- Future trend: Reuse ... using membranes
- In SW, more DAF and Membrane pretreatments
- Minimize energy consumption and water costs
- Some cases of ZLD
- Use of Renewable Energies
- C&S Africa: Industry and mining cases and some Municipal SWRO & Reuse