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Using the flexibility in the electricity demand of large desalination plants as a tool for lower energy costs

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The challenge

The cost-effective integration
of variable renewable
electricity into the European
power systems

The rising cost of electricity
and its effects on the
competitiveness of the
European Industry

the **IndustRE** project sees the **industrial electricity demand flexibility** as an opportunity to deal with both challenges at the same time





Project objectives

The project will bring together the large industry with renewable energy community in order find common ground and create win-win situations.

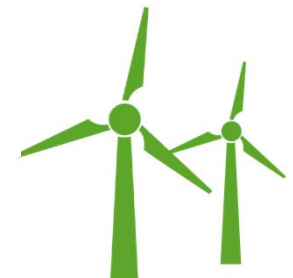
Two aims within two timeframes

 **2020**

Practical tools for
immediate impact

 **2030**

Quantify potential leading
to policy improvements



Project Focus

The project will be relevant to all industries in Europe, but the key focus is:



Chemicals



Non-ferrous metals



Steel

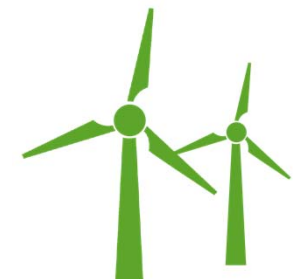


Cold storage



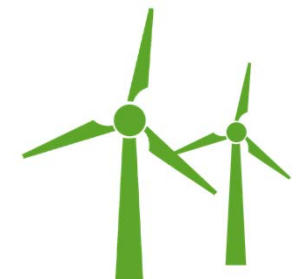
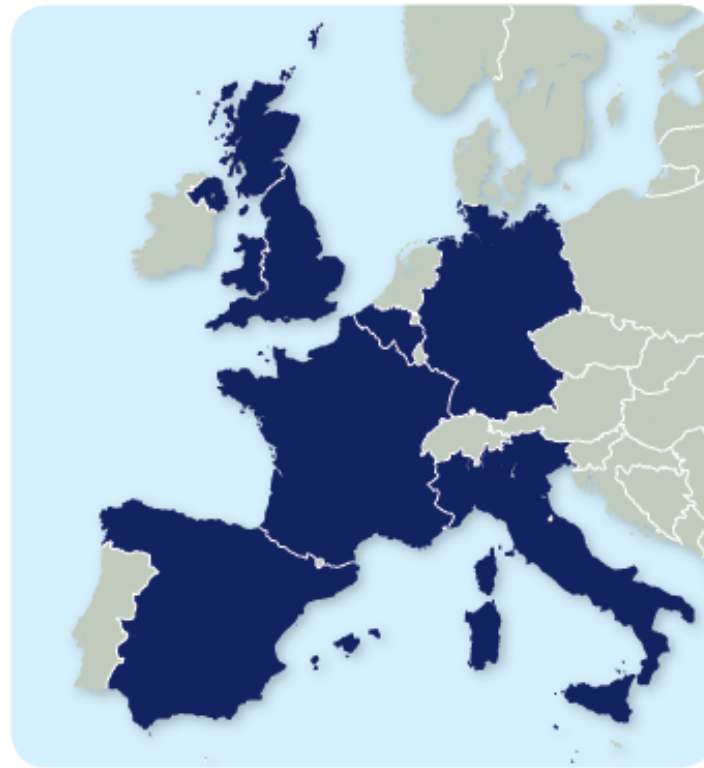
Water treatment

These five sectors - with 302 TWh/year - represent around **10%** of Europe's total electricity consumption.



Geographical Coverage

The project will apply to all European countries, with particular focus in Belgium, France, Germany, Italy, Spain and the UK. These six countries represent more than **65%** of the EU population and almost **80%** of Europe's installed wind and PV capacity.





Business models context

2015

Here we outline all possible ways that the **electricity demand flexibility of desalination plants** can benefit the power system

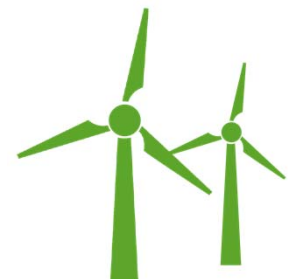
2016

Then, these “business models” will be further detailed and adapted to the target countries

Tools will be developed to advise desalination plants on concrete actions

2017

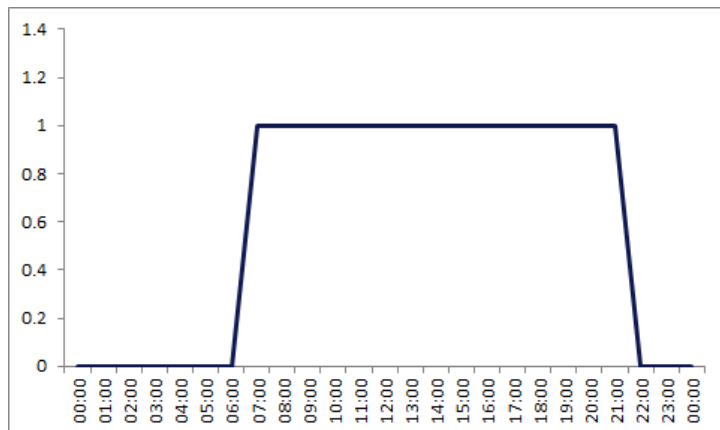
Case studies will be implemented and policy recommendations formulated



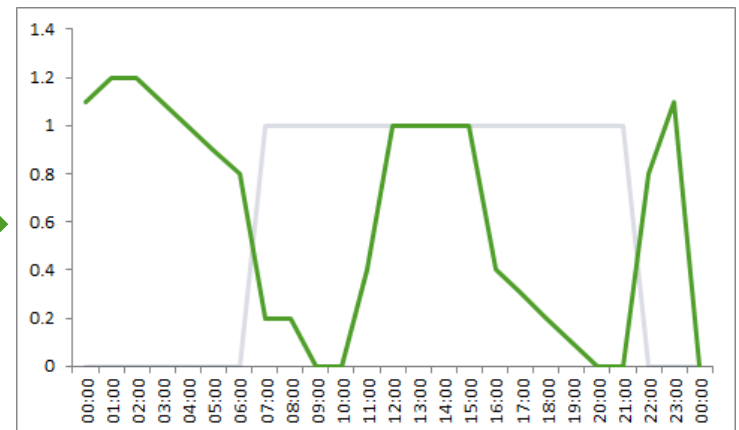
Shift demand to low-cost periods

Reduce the energy bill by shifting consumption to time-periods with lower costs

- exploitation of fixed tariffs
- tailored agreements with the electricity (VRE) supplier
- procure electricity directly from the spot market



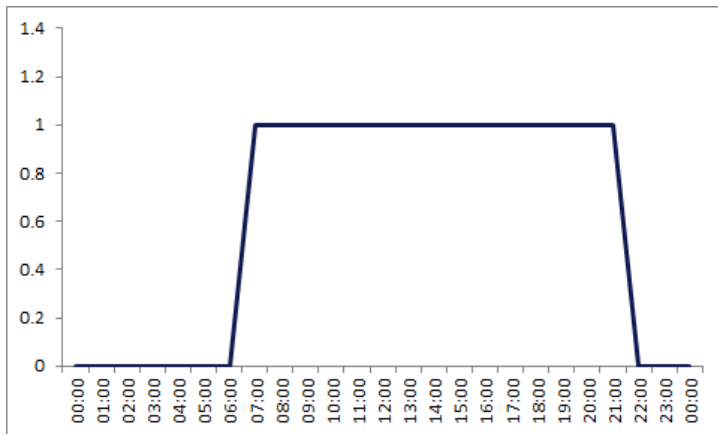
Market signals
or supplier
requests



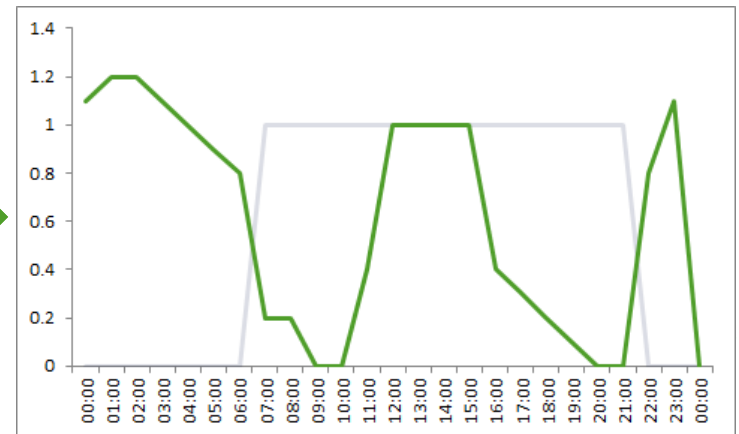
Offering services to the power system

Offer reserve capacity for frequency control

Capacity can be offered directly or through an aggregator.



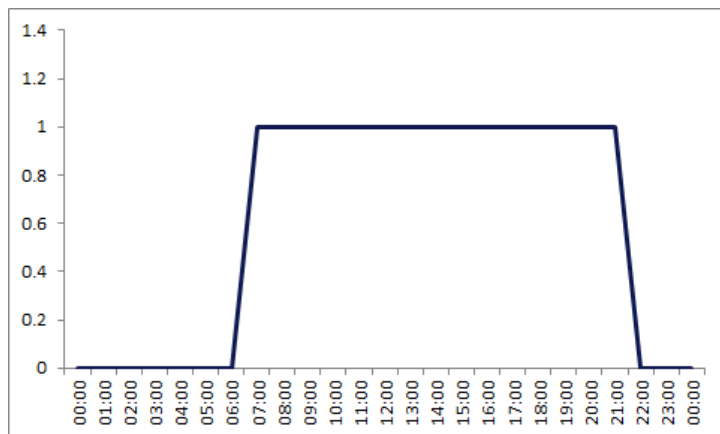
System/Network operator request or direct control



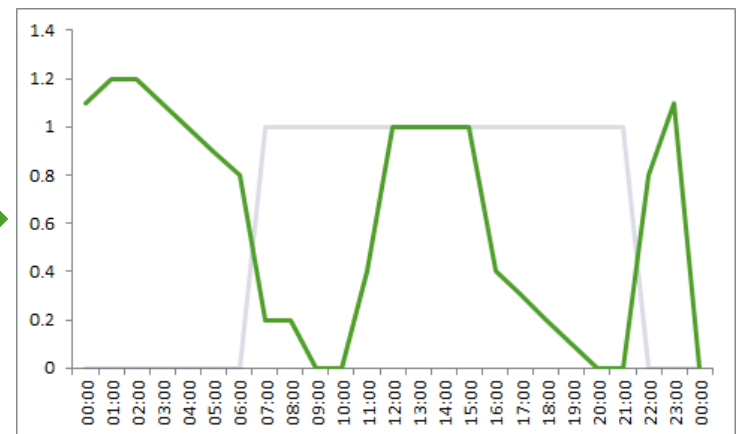
On-site variable renewable energy

The VRE can supply the desalination plant without using the public grid; “behind” the meter.

VRE owned by the industry or by a 3rd party



VRE plant
generation
profile





We need your input!

Get involved

- Large industrial electricity users and variable renewable energy plant operators:

Get involved in the creation of innovative business models.

Be among the first to benefit from:

Tools for assessing the flexibility of your industrial units and their market value

Model contracts that facilitate bilateral agreements for the application of innovative business models

