Sharing Climate Services Experiences between the EU SECLI-FIRM project and in the USA

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Sharing Climate Services Experiences

AGENDA

Introduction
Lesley Penny (UEA)
5 min

Promoting the integration of seasonal climate forecasts in the water sector to help mitigate stress events in the supply - demand balance
Katie Chowiencyzk (Met Office)
12 min

Complementing the U.S. Public Sector's Climate Services: The role of Machine Learning and Cloud Computing
Carlos F. Gaitan, (Benchmark Labs)
12 min

S2S Forecasts for Energy Markets
Jan Dutton (Prescient Weather)
12 min

Q&A + Poll – 15 min
SECLI-FIRM is an EU H2020 project titled
The Added Value of Seasonal Climate
Forecasting for Integrated Risk
Assessment

SECLI-FIRM is promoting the integration
of seasonal climate forecasts into energy
and water applications
Nine case studies where we assess the value of using a seasonal forecast

<table>
<thead>
<tr>
<th>Case Study</th>
<th>Climate events</th>
<th>Geography</th>
<th>Sectoral impact</th>
<th>Co-designers</th>
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<tr>
<td>CS1</td>
<td>Heat Wave 2015, and other similar extremes</td>
<td>Southern Europe</td>
<td>Energy – Thermal electricity plant cooling, demand model uncertainty</td>
<td>ENEL, ENEA, EURAC, KNMI</td>
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<td>CS2</td>
<td>Dry Winter 2015-16 and other similar extremes</td>
<td>Northern Italy</td>
<td>Energy – Hydroelectric power production</td>
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<td>CS3</td>
<td>Strong Winds March 2016 and other similar extreme</td>
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<td>CS4</td>
<td>Extreme Winds 2014-15 and other similar extremes</td>
<td>Spain</td>
<td>Energy – Wind power production and balancing</td>
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<td>CS6</td>
<td>Low Winds</td>
<td>North Sea</td>
<td>Energy – Offshore operations and maintenance planning</td>
<td>TenneT, KNMI</td>
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<td>CS7</td>
<td>Severe climate events in ‘shoulder’ months</td>
<td>North Sea</td>
<td>Energy – Offshore operations and maintenance planning</td>
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<td>CS8</td>
<td>Anomalous winter conditions</td>
<td>UK</td>
<td>Energy – Winter electricity demand</td>
<td>National Grid, MO</td>
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<td>CS9</td>
<td>Dry Spring and Summers</td>
<td>UK</td>
<td>Water – Water use restrictions</td>
<td>Thames Water, MO</td>
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</table>
A value assessment is performed for each case study showing how the decision differs.

Group A “control”
- Climatological information
- Decision A (margin, risk-reward ratio, …)
- Assessment of seasonal climate forecast value-add

Group B “test”
- Climatological information PLUS tailored climate model forecasts
- Decision B (margin, risk-reward ratio, …)

A control case only utilises climatological conditions based on historical averages, while a test case also considers individually optimised and tailored state-of-the-art probabilistic seasonal forecasts.
The SECLI-FIRM project has received funding from European Union’s Horizon 2020 Research and Innovation Program under Grant Agreement 776868.

The Added Value of Seasonal Climate Forecasting for Integrated Risk Management

Grant Agreement n. 776868

Close interaction with users to build decision trees

Work with end users to develop a decision tree for each case study

Understanding the decision tree process helps to assess the value
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Wind and wave height prediction for offshore operations & management

Decision tree for an offshore case study with the decision mapped to the seasonal climate information

Decision making

- This climate service supports the decisions defined in a typical offshore industry decision tree
- The visualisation is kept simple to allow flexibility in adapting the service and its delivery
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The Added Value of Seasonal Climate Forecasting for Integrated Risk Management

SECLI-FIRM is developing different ways to deliver climate services, from simple data delivery to online visualisation tools.

Map and graph view

Mobile version
- Identical to desktop tool but with adapted functionalities
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The Added Value of Seasonal Climate Forecasting for Integrated Risk Management

Case Study 1: Wind energy in northern Europe and energy generation

Case Study 2: Wind energy in southern Europe and energy generation

Case Study 3: Wind energy in Italy and energy generation

Case Study 4: High wave events in wind and energy generation

Case Study 5: Severe rainfall and energy crisis

Case Study 6: Strong storms and extreme hydrological events

Case Study 7: Energy regulation and wind energy

Case Study 8: Water quality and energy system management

Case Study 9: The role of renewable energy in Gold Standard

Events, reports, contact details

http://www.secli-firm.eu/case-studies/
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