S2S4E
Climate Services for Clean Energy

OUTLOOK

18 October, 2019

with

Sub-seasonal forecasts

for the weeks of
21 – 27 October, 28 October – 3 November,
4 – 10 November, 11 – 17 November

&

Seasonal forecasts

for the months of
November, December and January

The beta version of S2S4E Decision Support Tool (DST) is an operational climate service that integrates, for the first time, sub-seasonal to seasonal climate predictions with renewable energy production and electricity demand.

Find examples of how the DST forecasts can inform the energy sector in the

Case Studies Factsheets

available at:

www.S2S4E.eu

This outlook presents forecasts available on the DST on the 18th of October for the coming four weeks and next three months. These S2S4E forecasts were made by postprocessing the climate prediction systems: NCEP CFSv2 (sub-seasonal) and ECMWF SEAS5 (seasonal), following the methodology described in the **advanced help** of the DST.

OUTLOOK USER GUIDE

PREDICTED TERCILE

- Above
- Normal
- Below

The forecast information provided is probabilistic. Instead of one single model realisation, several realisations are considered (ensemble members), providing a set of several possible outcomes (48 for NCEP CFSv2 and 51 for ECMWF SEAS5). This information is summarised and transmitted in the form of probabilities. Three equiprobable categories (terciles) have been used: below normal, normal and above normal. Each one of these tercile categories contains one third (33.3%) of the events over the reference period. The forecasted probability corresponds to the percentage of ensemble members predicting below normal, normal or above normal conditions, based on the past climatology.

PROBABILITY RANGE

- 50% to 100%
- 34% to 49%

As seen in the DST, regions where the predicted probability of the most likely tercile equals or is higher than 50% are represented with a bigger symbol, to highlight areas of larger probability. Users can customise the exact percentage of predicted probability (from 0 to 100%) in the DST.

EXTREMES

- Max (p90)
- Min (p10)

To provide information about the probability of having very high or very low climate conditions, the DST displays the percentage of members under the 10th percentile and the percentage of members exceeding the 90th percentile. These 10th and 90th percentiles have been computed from the climatological period. Extreme events show with the triangle symbol when the probability of an extreme event occurring is over 25%

SKILL SCORES

In the maps presented in this outlook, only regions with positive skill are shown. Skill scores below 0 are defined as unskilful, those equal to 0 are equal to the climatology forecast, and anything above 0 is an improvement upon climatology, up to 1, which indicates a ‘‘perfect’’ forecast. In the DST these values have been expressed as percentages, where a skill of 1 would equal to 100% skill. FairRPSS for terciles and Brier Skill Scores for extremes are used.

If you have queries or feedback you can contact us at:

s2s4e@bsc.es

The DST outlooks are released once per month and available at:

s2s4e.eu/climate-services/outlooks

Subscribe to the outlooks and register to the DST at:

www.s2s4e.eu/dst

This project has received funding from the Horizon 2020 programme under grant agreement n°776787. The content of this report reflects only the author's view. The European Commission is not responsible for any use that may be made of the information it contains.

S2S4E Climate Services for Clean Energy

Probability terms

Enhanced : 34% - 49%
High: 50% - 70%:
Very High: Greater than 70%

Temperature forecasts

Legend

Predicted tercile
- Above
- Normal
- Below

Probability range
- 50% to 100%
- 34% to 49%

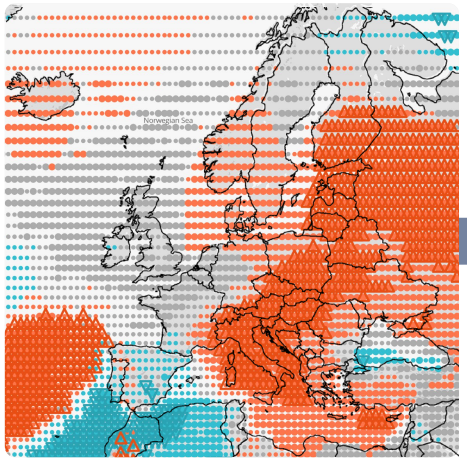
Extremes
- Max (p90)
- Min (p10)

SUB-SEASONAL

Prediction system used: NCEP CFSv2

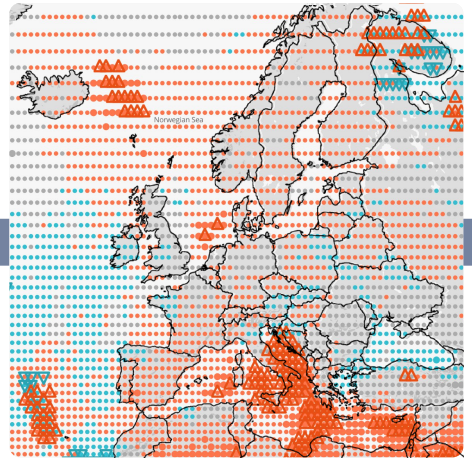
Maps show areas where skill (fRPSS) > 0

21 – 27 October



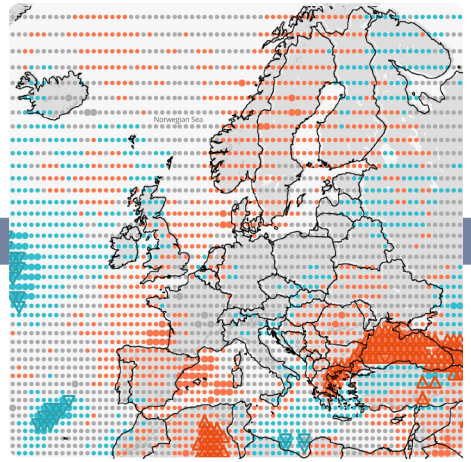
Very high probability of above normal temperatures in Eastern Europe (skill above 30%), with risk of extremes.

28 October – 3 November



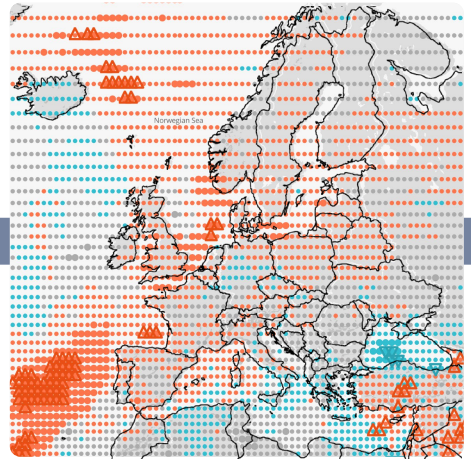
Enhanced probability of above normal temperatures in the Mediterranean, as well as Scandinavia and North Sea region (skill above 20%).

4 – 10 November



Enhanced to high probability of above normal temperatures to persist in the Mediterranean and North Seas (skill above 20%).

11 – 17 November



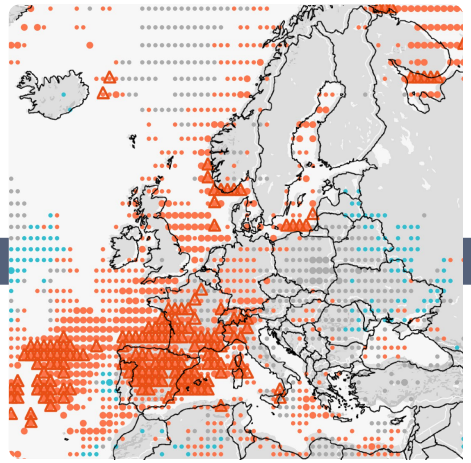
Very high probability of above normal temperatures in the North Sea region. **Enhanced** probability of above normal temperatures in many parts of western Europe (skill above 20%).

SEASONAL

Prediction system used: ECMWF SEAS5

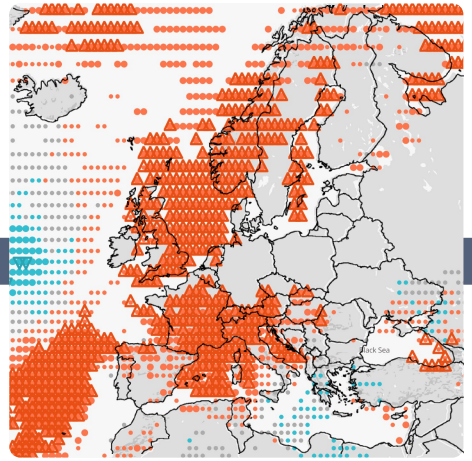
Maps show areas where skill (fRPSS) > 0

November 2019



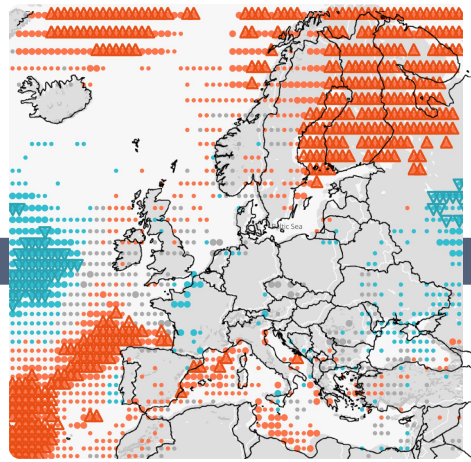
High probability of above normal temperatures with risk of extremes in southwestern Europe (skill levels above 5%).

December 2019



Very high probability of above normal temperatures with risk of extremes in Europe (skill above 5% in many regions).

January 2020



High probability of above normal temperatures with risk of extremes in Finland and parts of Sweden (skill above 5%).

Browse the global forecasts in the DST:

www.S2S4E.eu/dst

S2S4E Climate Services for Clean Energy

Probability terms

Enhanced : 34% - 49%
High: 50% - 70%:
Very High: Greater than 70%

Wind speed forecasts

Legend

Predicted tercile
- Above
- Normal
- Below

Probability range
- 50% to 100%
- 34% to 49%

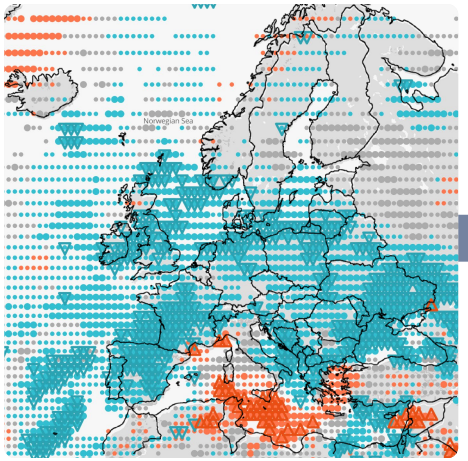
Extremes
- Max (p90)
- Min (p10)

SUB-SEASONAL

Prediction system used: NCEP CFSv2

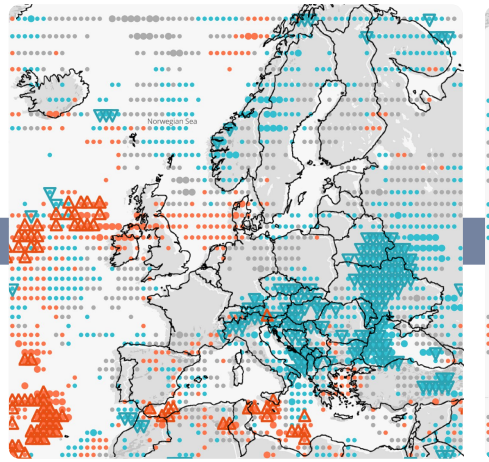
Maps show areas where skill (fRPSS) > 0

21 – 27 October



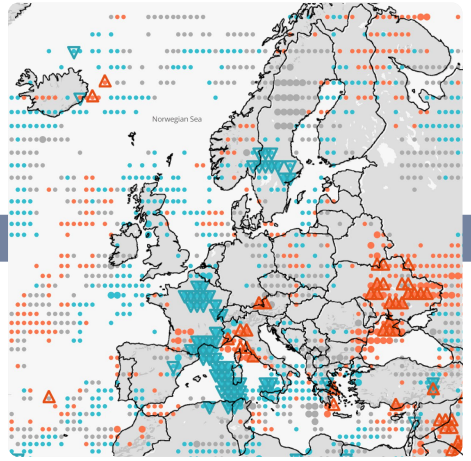
High probability of below normal winds over Europe (skill above 10%), with risk of extremes in many areas.

28 October – 3 November



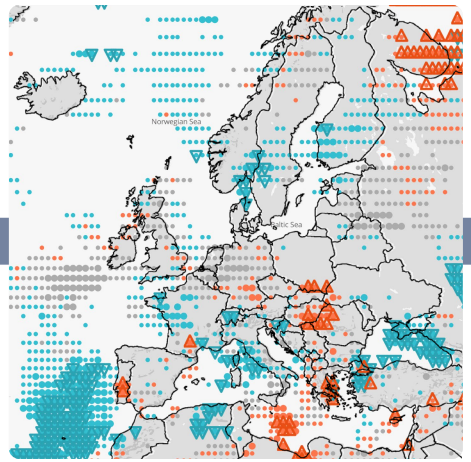
High probability of above normal winds in UK and North Sea. Below normal wind speeds to persist in eastern Europe (skill above 5%), with risk of extremes.

4 – 10 November



High probability of below normal winds in some parts of France and southern Sweden. Risk of extremes in both regions.

11 – 17 November



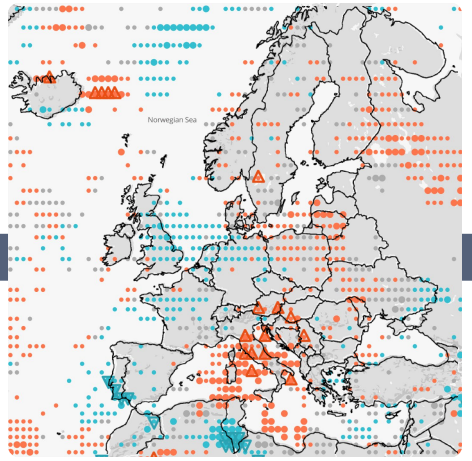
High to very high probability of below normal winds in some parts of western Italy (skill above 5%). Risk of extremes are also noted.

SEASONAL

Prediction system used: ECMWF SEAS5

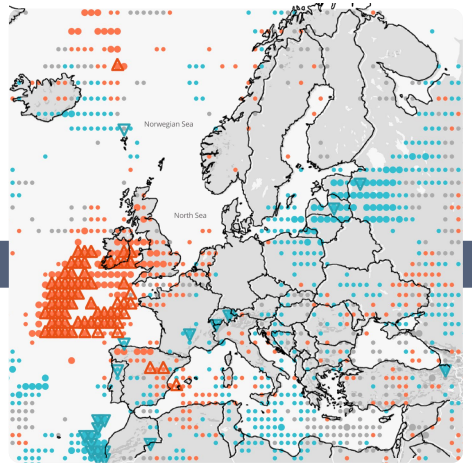
Maps show areas where skill (fRPSS) > 0

November 2019



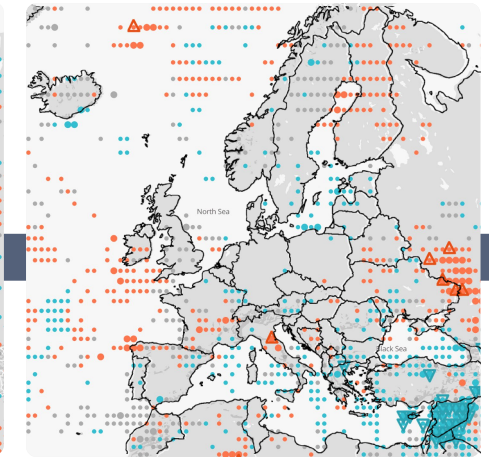
High probability of above normal winds in Italy and enhanced probability of below normal winds in the UK and northern Germany (skill above 10%).

December 2019



High probability of above normal winds in the British Isles (skill above 5%).

January 2020



Forecasts show no clear signals; probabilities similar to climatology.

Browse the global forecasts in the DST:

www.S2S4E.eu/dst

S2S4E Climate Services for Clean Energy

Precipitation forecasts

Probability terms

Enhanced : 34% - 49%
High: 50% - 70%:
Very High: Greater than 70%

Legend

Predicted tercile
- Above
- Normal
- Below

Probability range
- 50% to 100%
- 34% to 49%

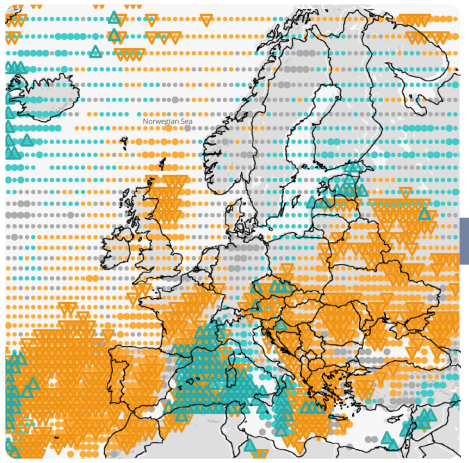
Extremes
- Max (p90)
- Min (p10)

SUB-SEASONAL

Prediction system used: NCEP CFSv2

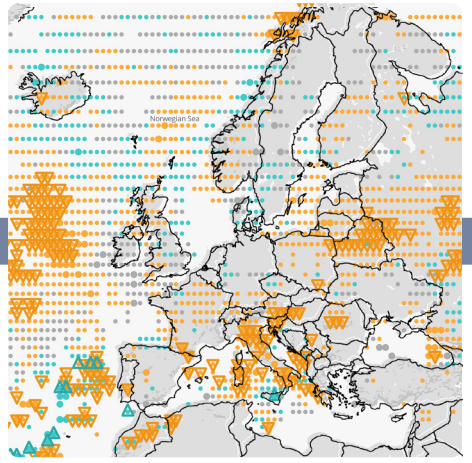
Maps show areas where skill (fRPSS) > 0

21 – 27 October



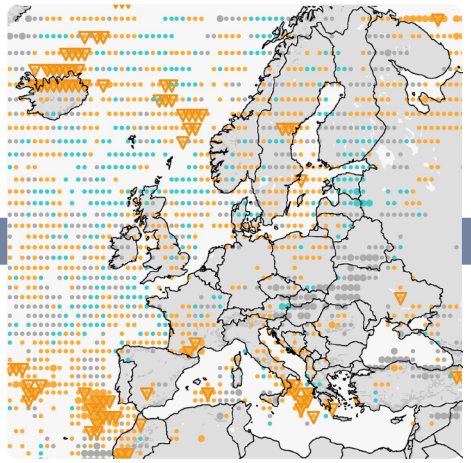
High probability of below normal precipitation in eastern Europe and **high** probability of above normal precipitation is observed in the western Mediterranean (skill above 10%). Risk of extremes noted in both cases.

28 October – 3 November



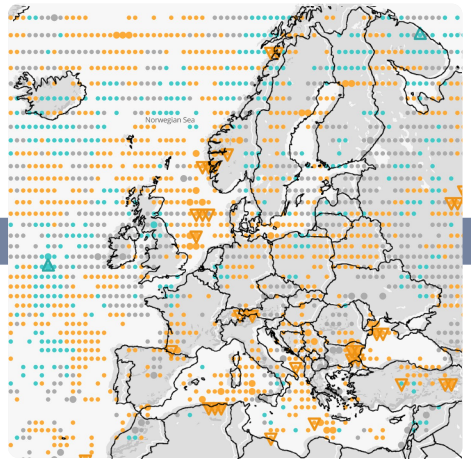
Continued **enhanced** probability of above normal precipitation in Norway and below normal precipitation in France (low skill).

4 – 10 November



Forecasts (with very low skill) show no clear signals; probabilities similar to climatology.

11 – 17 November



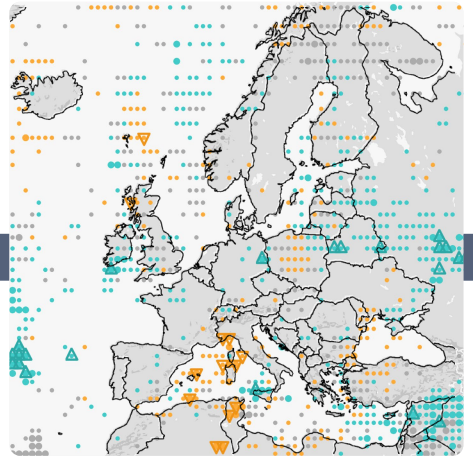
Enhanced to high probability of below normal precipitation over spotted areas in eastern Mediterranean, North Sea and Baltic Sea regions.

SEASONAL

Prediction system used: ECMWF SEAS5

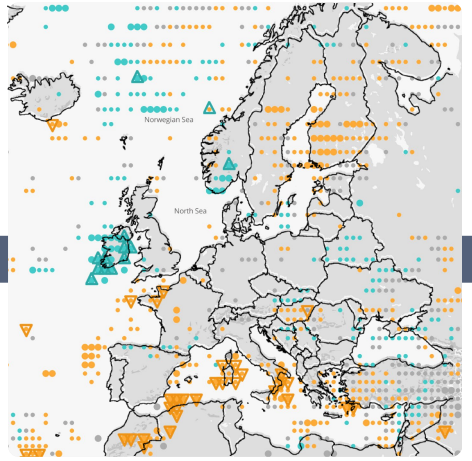
Maps show areas where skill (fRPSS) > 0

November 2019



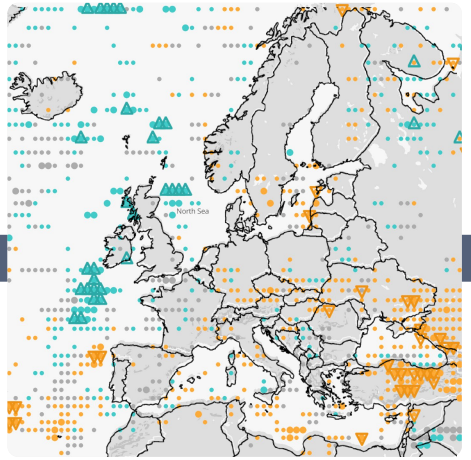
Forecasts show no clear signals; probabilities similar to climatology.

December 2019



High probability of below normal precipitation in southern Finland (skills up to 20% in some spots).

January 2020



High probability of below normal precipitation in eastern Turkey (skill above 5%).

Browse the global forecasts in the DST:

www.S2S4E.eu/dst

S2S4E Climate Services for Clean Energy

Probability terms

Enhanced : 34% - 49%
High: 50% - 70%:
Very High: Greater than 70%

Solar radiation forecasts

Legend

Predicted tercile
- Above
- Normal
- Below

Probability range
- 50% to 100%
- 34% to 49%

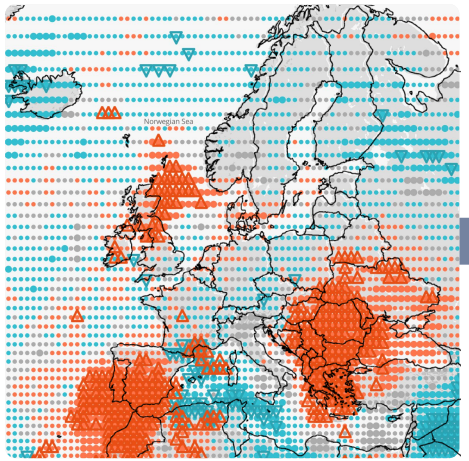
Extremes
- Max (p90)
- Min (p10)

SUB-SEASONAL

Prediction system used: NCEP CFSv2

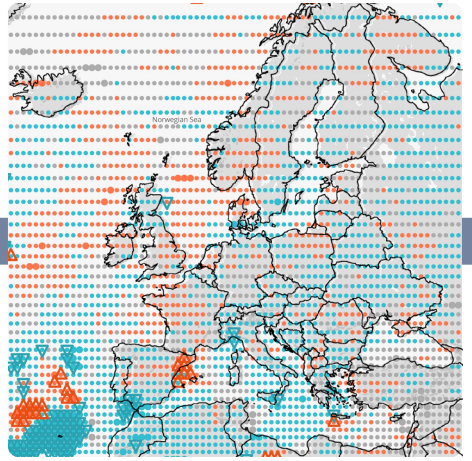
Maps show areas where skill (fRPSS) > 0

21 – 27 October



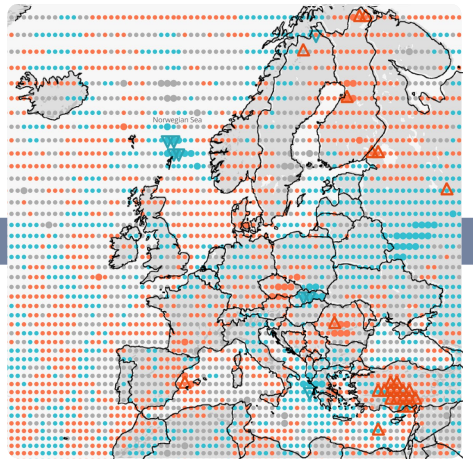
High to very high probability (skill above 30%) of above normal radiation in south-eastern Europe, and North Sea region, including the UK, with risk of extremes.

28 October – 3 November



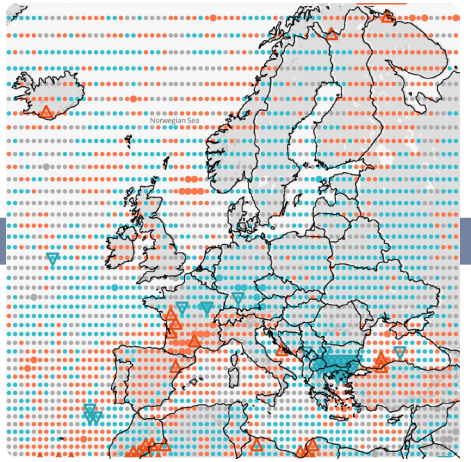
Mixed patterns of **enhanced** probability above and below normal radiation are observed in western Europe, including the UK and France (skill above 30%).

4 – 10 November



Forecasts generally have skill above 30% and show no clear signals; probabilities similar to climatology).

11 – 17 November



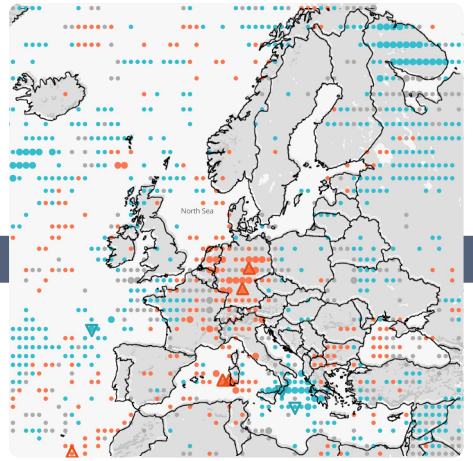
Enhanced probability of below normal radiation in central Europe and Scandinavia (skill above 30%).

SEASONAL

Prediction system used: ECMWF SEAS5

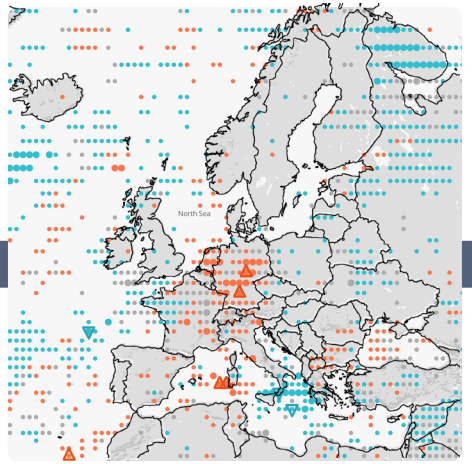
Maps show areas where skill (fRPSS) > 0

November 2019



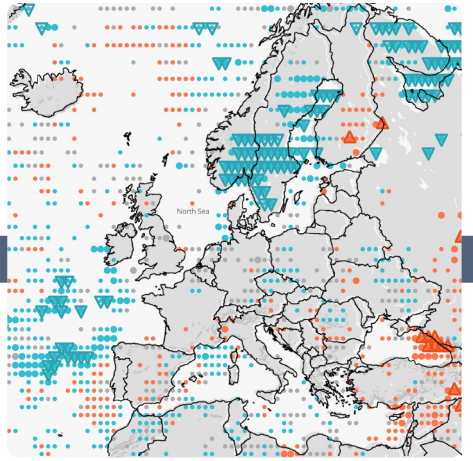
High probability of above normal radiation in parts of Germany and the Netherlands, with local risk of extremes (skill above 10%).

December 2019



Very high probability of below normal radiation in southern Norway (skill above 5%).

January 2020



High probability of below normal radiation in parts of Norway and Sweden (skill above 10%).

Browse the global forecasts in the DST:

www.S2S4E.eu/dst