S2S4E
Climate Services for Clean Energy

OUTLOOK

16 July 2020

with

Sub-seasonal forecasts

for the weeks of
13 - 19 July, 20 - 26 July,
27 July - 2 August, and 3 - 9 August 2020

&

Seasonal forecasts

for the months of
August, September and October 2020

The S2S4E Decision Support Tool (DST) v1.4.0 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 16th of July 2020 for the coming four weeks and next three months. These S2S4E forecasts were made by postprocessing the climate prediction systems ECMWF-Ext-ENS (sub-seasonal) and ECMWF SEAS5 (seasonal), following the methodology described in the **advanced help** of the DST.

SUMMARY

Temperature extremes in Europe in July

High temperatures are expected until the end of July in western Europe, particularly in France and the Iberian Peninsula. By contrast, unusually low temperatures for the time of year are predicted in northern and eastern Europe for the rest of July.

Hot, dry and sunny July for France

Forecasts show that high temperature and solar radiation, combined with low precipitation, are expected throughout France until the end of July, with a risk of extremes.

Sunny and hot summer in the Mediterranean

Very sunny conditions are expected in central Mediterranean throughout the month of August, particularly in Italy, Greece and surrounding regions. Exceptionally high temperatures are likely to persist in eastern Mediterranean regions and the Black Sea in August and September, with a risk of extremes.

Windy and wet September in the North Sea

Windy and wet conditions are likely to develop in the North Sea region in September, moving towards the Baltic area in October.

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

s2s4e@bsc.es

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

s2s4e.eu/climate-services/outlooks

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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

Temperature 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%

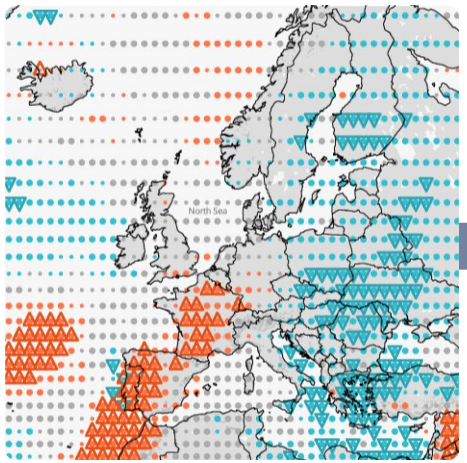
Extremes
- Max (p90)
- Min (p10)

SUB-SEASONAL

Prediction system used: ECMWF-Ext-ENS

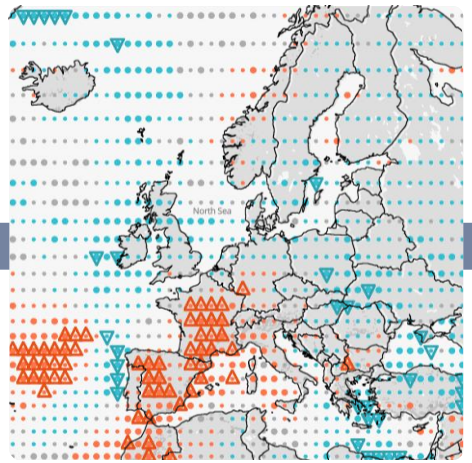
Maps show areas where skill (fRPSS) > 0

13 - 19 July



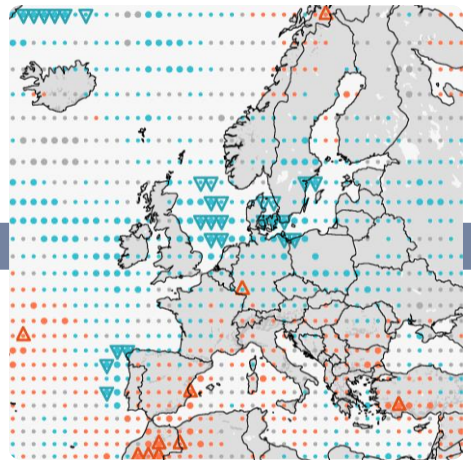
High probability of above normal temperatures in France and Spain, with risk of heat extremes in the south of France and Iberian Peninsula. **Very high** probability of below normal temperatures in eastern Europe (40-50% skill).

20 - 26 July



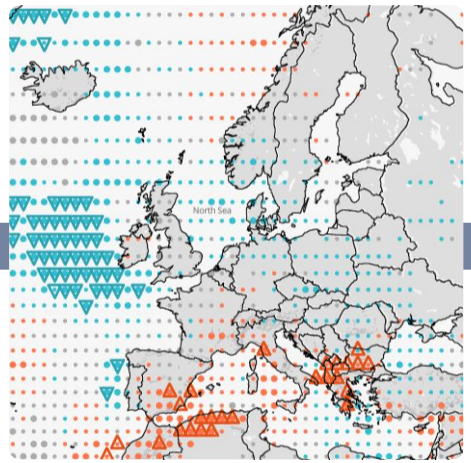
High probability of above normal temperatures in western Mediterranean (30% skill), with a risk of heat extremes persisting in France and Spain.

27 July - 2 August



Enhanced probability of above normal temperatures in the Mediterranean region (10% skill).

3 - 9 August



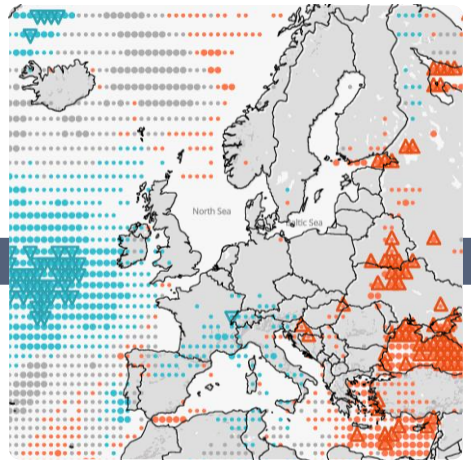
Enhanced to **high** probability of above normal temperatures in the Mediterranean region (5-10% skill).

SEASONAL

Prediction system used: ECMWF SEAS5

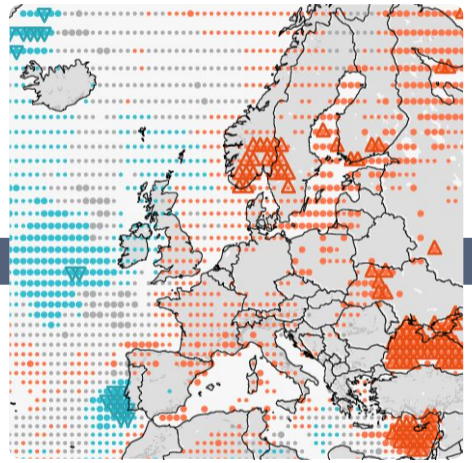
Maps show areas where skill (fRPSS) > 0

August 2020



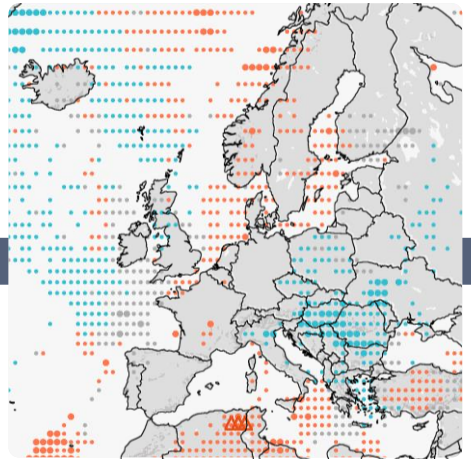
High probability of below normal temperatures in western Europe. **Very high** probability of above normal temperatures in eastern Mediterranean and the Black Sea (~20% skill).

September 2020



High probability of above normal temperatures across mainland Europe.

October 2020



High probability of below normal temperatures in the Balkans.

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%

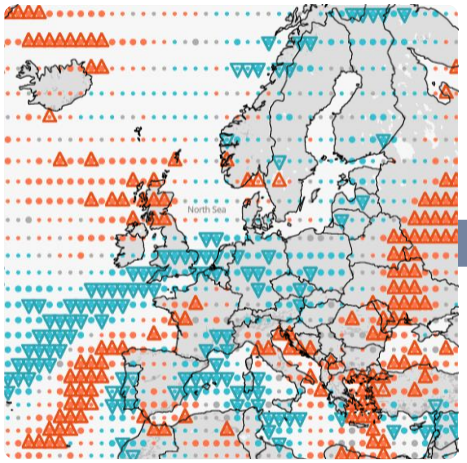
Extremes
- Max (p90)
- Min (p10)

SUB-SEASONAL

Prediction system used: ECMWF-Ext-ENS

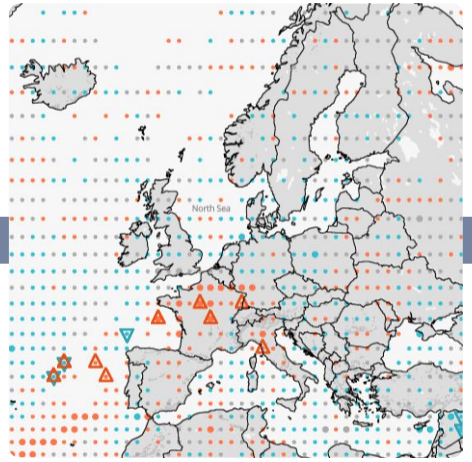
Maps show areas where skill (fRPSS) > 0

13 - 19 July



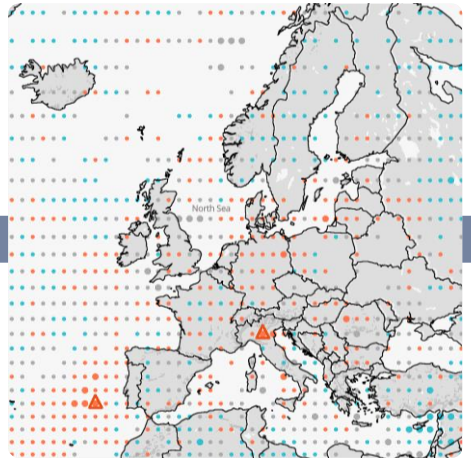
Very high probability of below normal wind speeds in Germany and neighbouring countries. **High** probability of above normal wind speeds in Romania and Ukraine (20-30% skill).

20 - 26 July



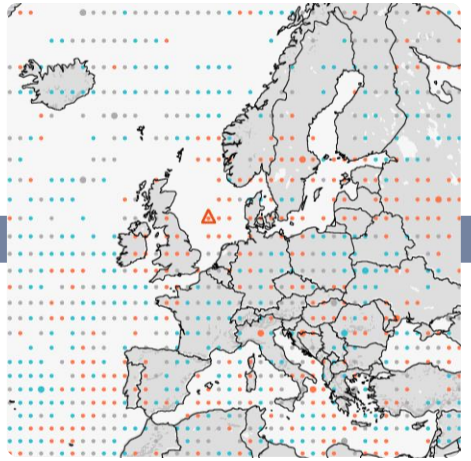
High probability of above normal wind speeds in the north of France (<10% skill).

27 July - 2 August



Enhanced probability of above normal wind speeds in parts of Germany and Denmark (<5% skill).

3 - 9 August



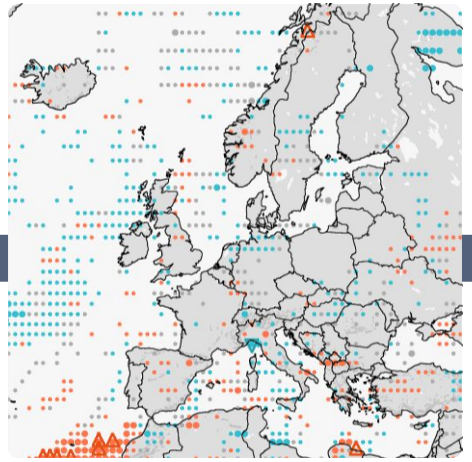
Enhanced probability of above normal wind speeds in parts of the North Sea (<5% skill).

SEASONAL

Prediction system used: ECMWF SEAS5

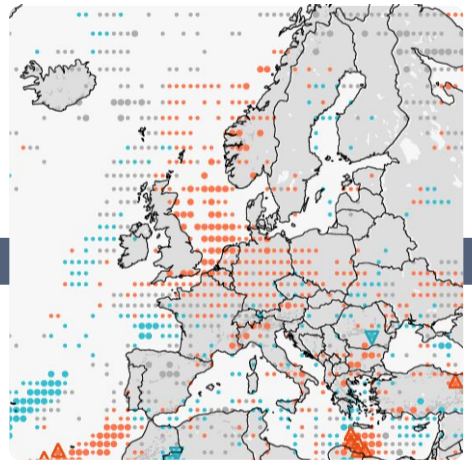
Maps show areas where skill (fRPSS) > 0

August 2020



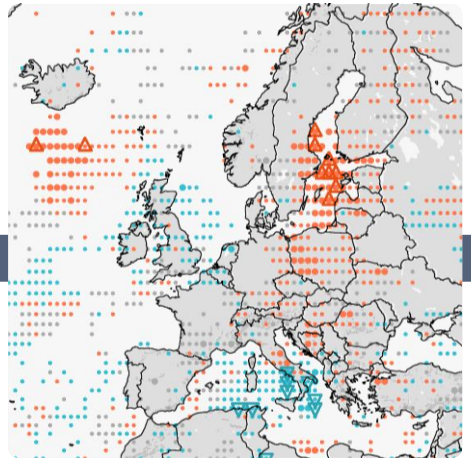
Enhanced probability of below normal winds across the UK and the North Sea.

September 2020



High probability of above normal winds in the North Sea region, particularly in Benelux, northern France and Germany.

October 2020



High probability of above normal winds in the Baltic Sea area, down to the Balkans (~10% skill).

Browse the global forecasts in the DST:

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Probability terms

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

Precipitation forecasts

Legend

Predicted tercile
- Above
- Normal
- Below

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

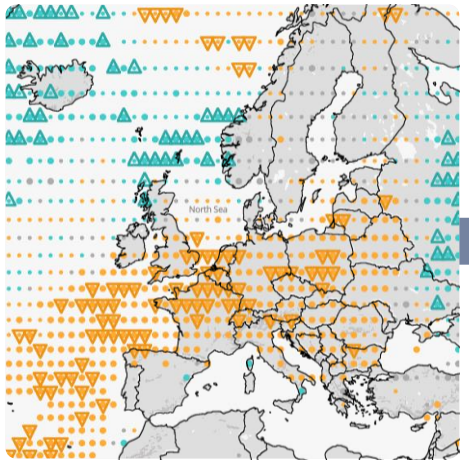
Extremes
- Max (p90)
- Min (p10)

SUB-SEASONAL

Prediction system used: ECMWF-Ext-ENS

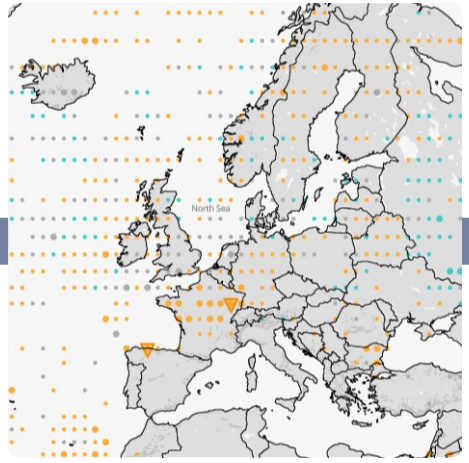
Maps show areas where skill (fRPSS) > 0

13 - 19 July



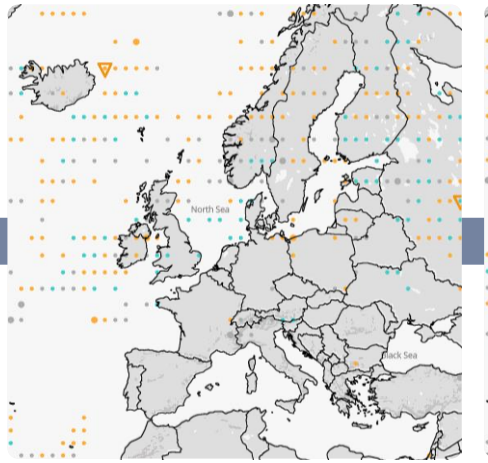
High or **very high** probability of below normal precipitation across most of Europe, with a risk of low extremes in France (10-20% skill).

20 - 26 July



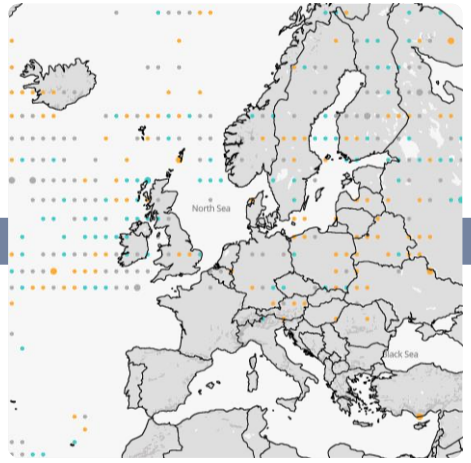
High probability of below normal precipitation in France (<5% skill).

27 July - 2 August



Forecasts show no clear signals; probabilities similar to climatology.

3 - 9 August



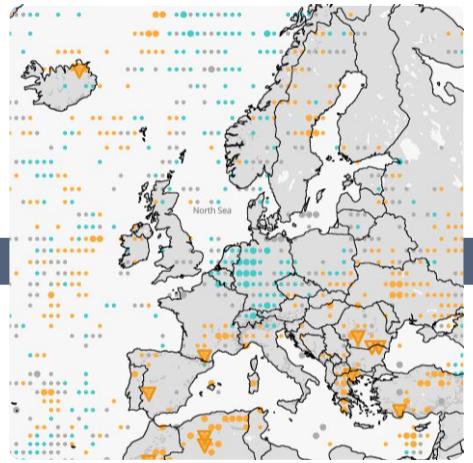
Forecasts show no clear signals; probabilities similar to climatology.

SEASONAL

Prediction system used: ECMWF SEAS5

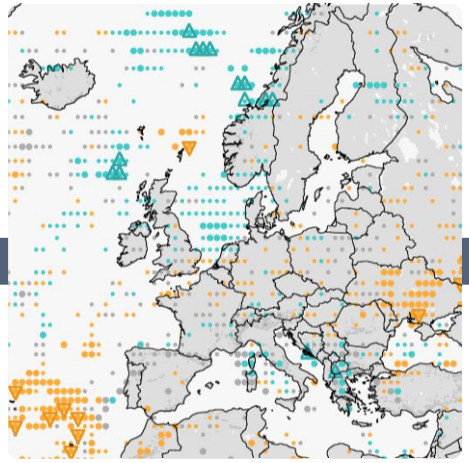
Maps show areas where skill (fRPSS) > 0

August 2020



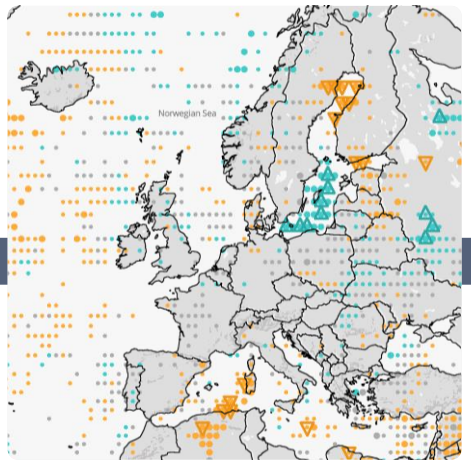
Enhanced probability of above normal precipitation in Germany and Benelux (~10% skill).

September 2020



Enhanced probability of above normal precipitation in the North Sea.

October 2020



Enhanced to **high** probability of above normal precipitation in the Baltic Sea region. **Enhanced** to **high** probability of below normal precipitation across the Mediterranean Sea.

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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%

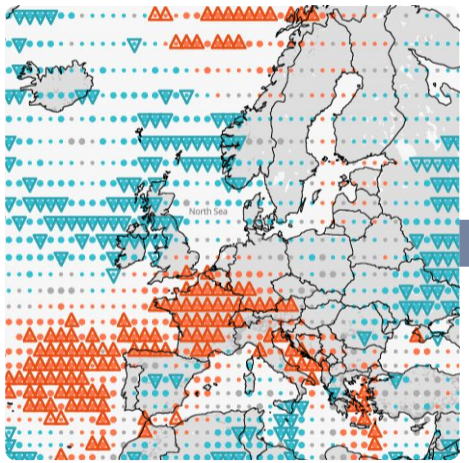
Extremes
- Max (p90)
- Min (p10)

SUB-SEASONAL

Prediction system used: ECMWF-Ext-ENS

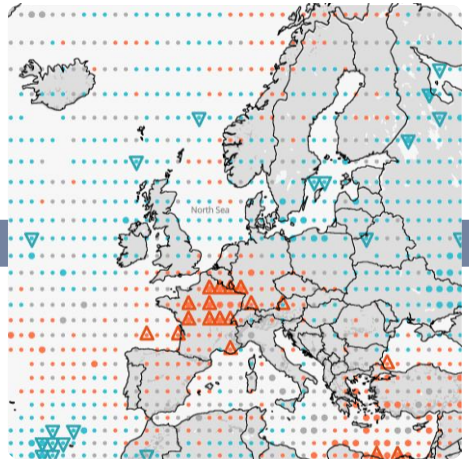
Maps show areas where skill (fRPSS) > 0

13 - 19 July



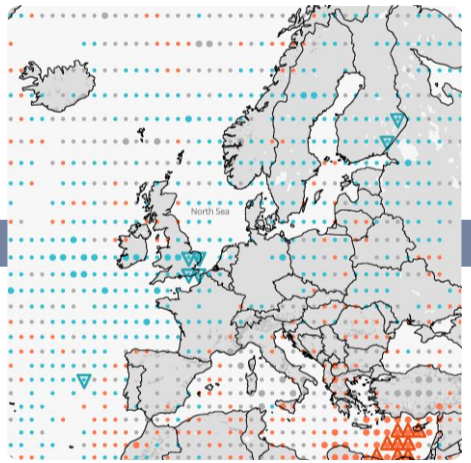
High probability of above normal solar radiation in central Europe, and **very high** probability in France, with a risk of high extremes (30% skill).

20 - 26 July



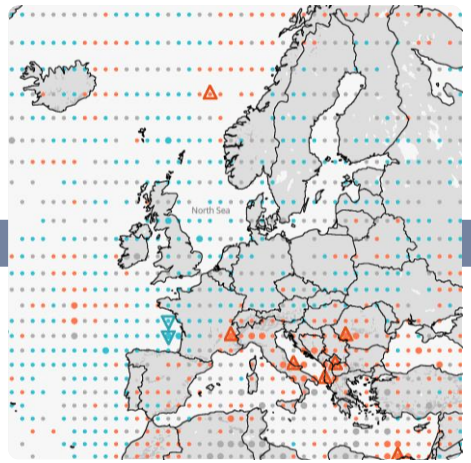
High probability of above normal solar radiation persists in central Europe, particularly in France (10% skill).

27 July - 2 August



High probability of above normal solar radiation in eastern Mediterranean (10% skill).

3 - 9 August



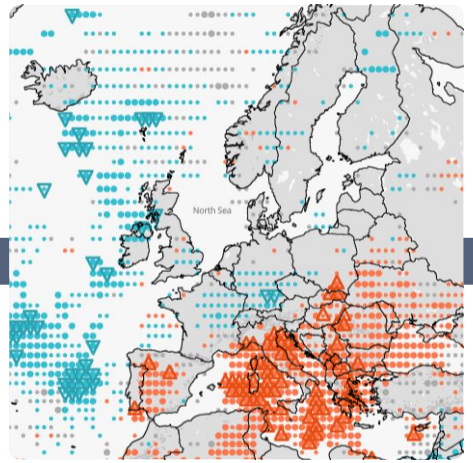
High probability of above normal solar radiation around the Adriatic Sea (10% skill). **Enhanced** probability of normal or below normal radiation in the northern half of Europe (<10% skill).

SEASONAL

Prediction system used: ECMWF SEAS5

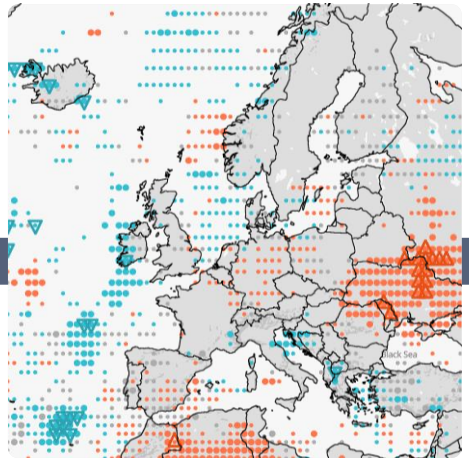
Maps show areas where skill (fRPSS) > 0

August 2020



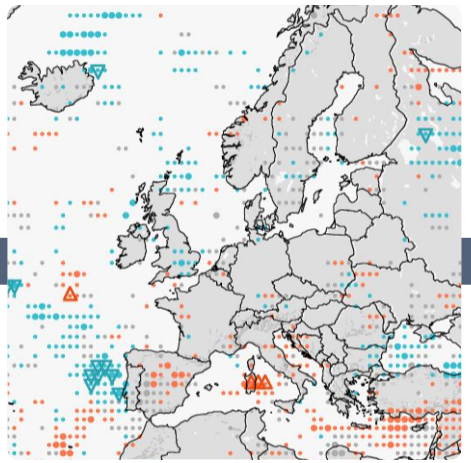
High to **very high** probability (with risk of extremes) of above normal solar radiation across the Mediterranean, moving through the Black Sea region (~15% skill).

September 2020



High probability of below normal solar radiation in the British Isles and the North Sea.

October 2020



High probability of above normal solar radiation in some parts of the Mediterranean, such as the Iberian and Italian peninsulas.

Browse the global forecasts in the DST:

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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 (51 for both ECMWF-Ext-ENS and 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 are shown with a triangle symbol when the probability of an extreme event occurring is over 25%.

SKILL SCORES

Fair	>0% to <15%
Good	15-30%
Very good	>30%

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.

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