Climate Change

Unlocking Climate Data for Energy – Case Studies on Seasonal Forecasts and Climate Projections

20 November 2024

¨Introduction¨

Nube Gonzalez-Reviriego (C3S, ECMWF)

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C3S Energy series of webinars

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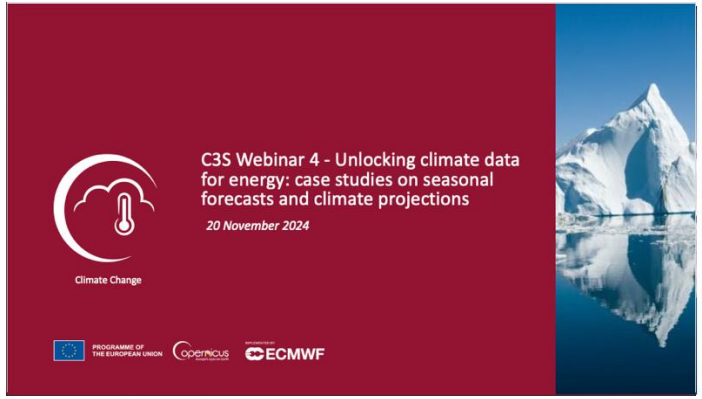
https://climate.copernicus.eu/webinars

Webinar 1 - Global Climate Indicators

Webinar 2 - Global Wind and Solar Power Indicators

Webinar 3 - Global Hydro Power and Electricity Demand Indicators

Webinar 4 - Case studies on seasonal forecasts and climate projections



Today's webinar

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Copernicus Services

WHAT's COPERNICUS?
Copernicus is the Earth Observation component of the European Union's Space Programme

COPERNICUS' AIM FOR
developing European services based on satellite Earth Observation and in situ (non space) data

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Copernicus Climate Change Service (C3S)

Climate Change

Climate Change Service

The Copernicus Climate Change Service (C3S) supports society by providing authoritative information about the past, present and future climate in Europe and the rest of the World.

OPEN DATA
Provide reliable and open, free of charge, access to climate datasets

TRACEABILITY
Provide documentation, workflows and code that allow a full traceability of the information

SECTORAL IMPACTS
Showcase how different sectors use C3S data for real applications

QUALITY ASSURANCE
Offer quality information of the datasets by independent experts

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C3S Energy Service: European datasets

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https://climate.copernicus.eu/opeational-service-energy-sector

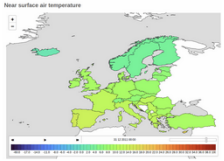
European energy datasets:

Climate and energy indicators for Europe from 1979 to present derived from reanalysis

Dataset | Energy | Reanalysis | Europe

The Copernicus climate change service (C3S) operational energy dataset provides climate and energy indicators for the European energy sector. The climate-relevant indicators for the energy sector considered are: air temperature, precipitation, incoming solar radiation, wind speed at 10 m and 100 m, and mean sea level air pressure. The energy indicators are electricity demand and power generation f...

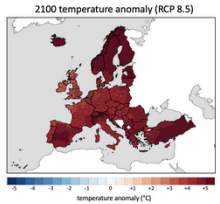
Updated 2024-04-16



Climate and energy indicators for Europe from 2005 to 2100 derived from climate projections

Dataset | Energy | Europe | Atmosphere (surface) | Climate projections

This dataset provides climate and energy indicators for the Europe as part of the Copernicus climate change service (C3S) Energy operational service. The climate-relevant indicators for the energy sector considered are: air temperature, precipitation, incoming solar radiation, wind speed at 10 m and 100 m, and mean sea level air pressure. The energy indicators are electricity demand and power gene...



The C3S Operational service for the energy sector provide free and quality assured data that help in:

- **Identifying optimal sites**
- **Planning grid extension**
- **Assessing potential yield**
- **Adapting to adverse conditions**
- **Among others...**

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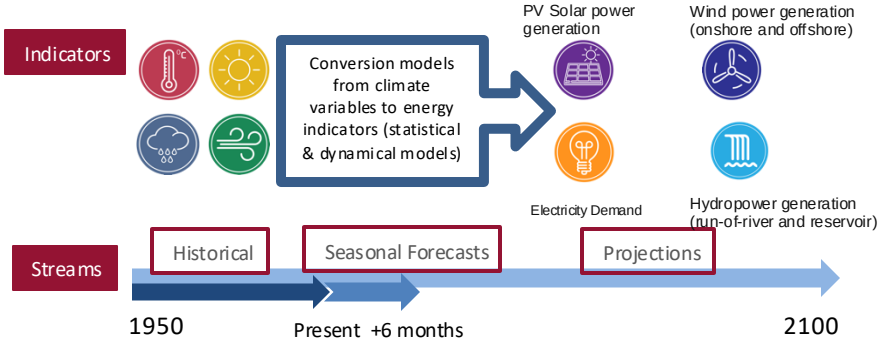
C3S Energy Service: Global datasets

https://climate.copernicus.eu/opeational-service-energy-sector

Expansion of the C3S Energy Service:

- **Global energy datasets**
- **Enhanced energy models**
- **Additional operational component based on seasonal forecasts**

The new global climate and energy indicators will be available during 2025.



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C3S Energy Service: Training and outreach

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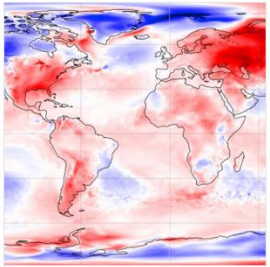
https://climate.copernicus.eu/opeational-service-energy-sector

Expansion of the C3S Energy Service

In addition to the datasets, the enhanced C3S energy service will include the following:

- **Comprehensive documentation of the energy datasets**
- **Training materials: Jupiter Notebooks, e-learning module**
- **Web application for visualizing energy datasets**
- **Case studies**



Jupyter notebooks

Discover how to access and process climate data with these Jupyter notebook tutorials.

E-learning modules

Learn more about climate data types, who uses them, and how they contribute to societal benefit with these e-learning modules.

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C3S Energy Service: Case studies

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Expansion of the C3S Energy Service: case studies

- ENEL – Using seasonal forecasts to develop a gas demand model

- EVEROZE - Using climate projections as a key element in developing solar projects and finance

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C3S Data in action

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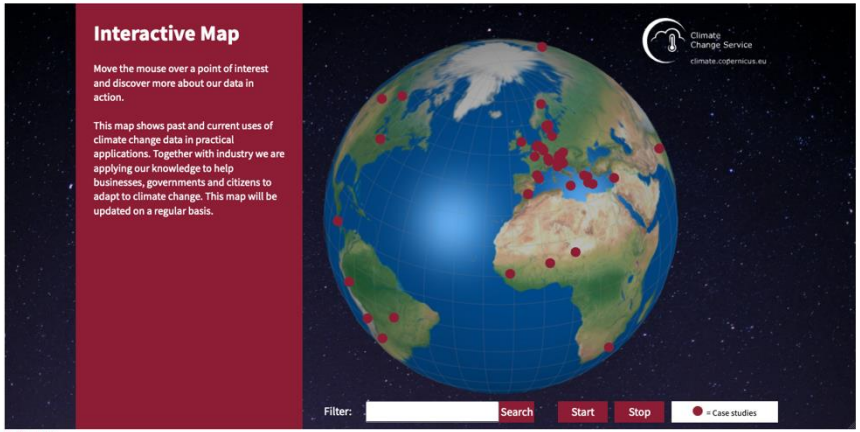
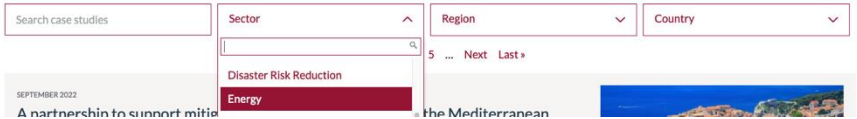
Data in action

Our case studies, demo cases and use cases demonstrate how our data tools are being actively used to benefit industry.



Full screen

Current case studies



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THANK YOU!

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