



# Climate Change Service



**The Copernicus Climate Change Service is part of the Copernicus Programme, which is an EU Programme managed by the European Commission (EC) and implemented in partnership with the Member States, the European Space Agency (ESA), the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), the European Centre for Medium-Range Weather Forecasts (ECMWF), EU Agencies and Mercator Océan. The Programme is aimed at developing a set of European information services based on satellite Earth Observation and in-situ (non-space) data.**

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. C3S is one of six thematic information services provided by the Copernicus Earth Observation Programme of the European Union. C3S relies on climate research carried out within the World Climate Research Programme (WCRP) and responds to user requirements defined by the Global Climate Observing System (GCOS). C3S provides an important resource to the Global Framework for Climate Services (GFCS). C3S is implemented by the European Centre for Medium-Range Weather Forecasts (ECMWF) on behalf of the European Commission. ECMWF is an independent intergovernmental organisation serving its Member and Co-

operating States and the broader community. The majority of C3S service elements are implemented by about 250 companies and organisations across Europe.

### What is the C3S mission?

The C3S mission is to support adaptation and mitigation policies of the European Union by providing consistent and authoritative information about climate change. C3S offers free and open access to climate data and tools based on the best available science. We listen to our users and endeavour to help them meet their goals in dealing with the impacts of climate change. C3S users include scientists, consultants, planners and policy makers, the media and the public.

### What does the Climate Change Service do?

The Copernicus Climate Change Service provides access to state-of-the-art and quality assured climate information, such as Essential Climate Variables, climate reanalyses,

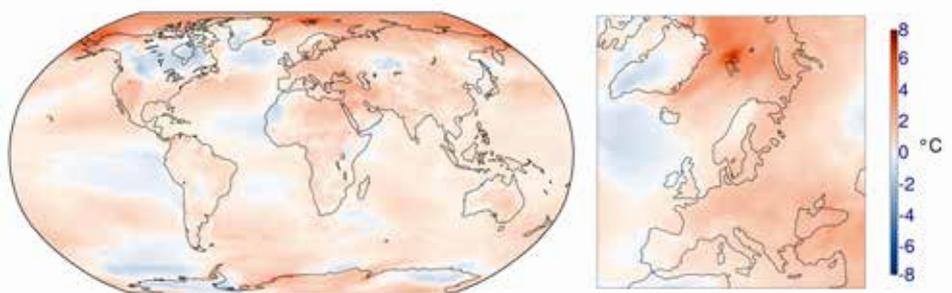
multi-model seasonal forecasts and climate projections at global and European scales, relevant to European Union sectoral policies. It delivers climate data records to monitor major climate drivers (e.g. greenhouse gases) and document climate fingerprints (e.g. surface air temperature).

C3S publishes monthly climate bulletins with up-to-date information about recent climate events, the annual European State of the Climate and key indicators of climate change.

C3S also provides relevant information to EU sectors including agriculture, forestry, health, energy, water management, tourism and biodiversity.

During its development phase, proof-of-concepts of climate services have been initiated to put in place the full value chain from a climate data record to actionable information, with several end-to-end sectoral demonstrators

Surface air temperature anomaly for November 2017 to October 2018 relative to 1981-2010



(Credit: Copernicus Climate Change Service/ECMWF)

Implemented by:



Space



As an operational Service, C3S has become an enabler of downstream climate services, by providing or brokering high quality and sector relevant climate data and indicators, good practices, tools and by supporting compelling use cases.

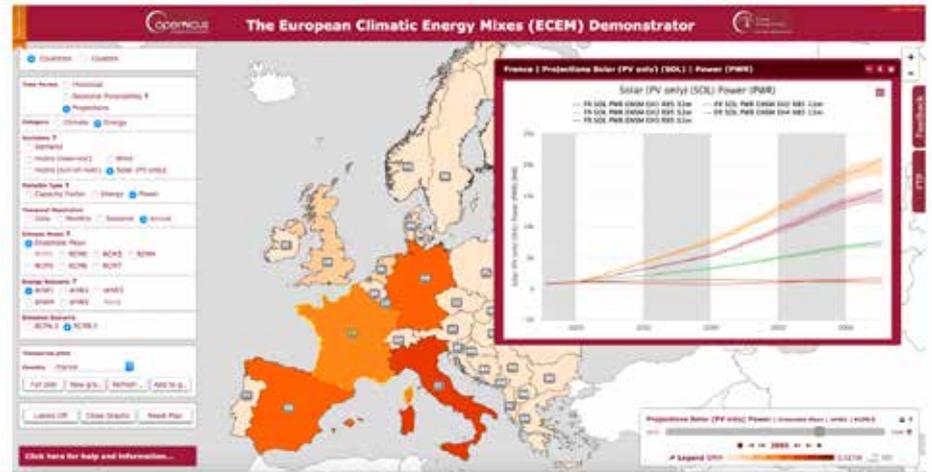
Last but not least, C3S also offers technical support as well as training to users, combining online learning with face-to-face events in most countries across Europe and worldwide.

### What is the C3S Climate Data Store?

The C3S Climate Data Store (CDS) is a one-stop shop for information about the climate: past, present and future. It provides easy access to a wide range of climate datasets via a searchable catalogue. An online toolbox is available that allows users to build workflows and applications suited to their needs. The CDS contains observations, global and regional climate reanalyses, global and regional climate projections and seasonal forecasts. It also contains generic and sectoral climate indicators. The CDS is designed as a distributed system, providing improved access to existing datasets through a unified web interface.

### What is the added value of the Copernicus Climate Change Service?

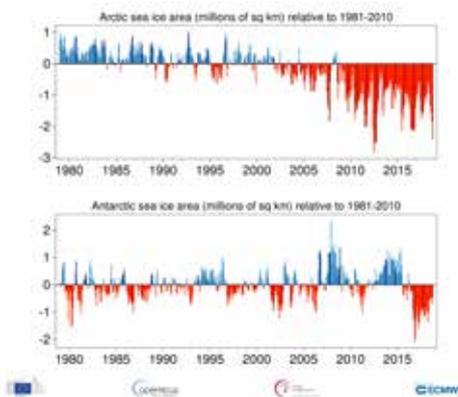
The Copernicus Climate Change service will provide the EU and its member states with access to high quality information in order to support the legislation in response to adaptation and mitigation measures.



An example of how solar power scenarios for the next decades are represented within the C3S Energy pre-operational Demonstrator. (Credit: UEA/Copernicus Climate Change Service)

For the first time, Europe has set up a unique system to address Climate Change issues and ensure the provision of relevant information to EU citizens. Its uniqueness relates to the Service being operational, quality assured and a resource as an enabler to downstream and national climate service providers, from the public and private sector.

**The Copernicus data policy promotes the access, use and sharing of Copernicus information and data on a full, free and open basis**



Area of the Arctic (upper) and Antarctic (lower) covered by sea ice, for the period January 1979 to October 2018, shown as monthly anomalies relative to 1981-2010. The darker coloured bars denote the October values. Source: ERA-Interim. (Credit: Copernicus Climate Change Service / ECMWF)

#### More information

Users can find out more about the Copernicus Climate Change Service on the Copernicus website: [climate.copernicus.eu](http://climate.copernicus.eu)