



Climate Change Service



© ECMWF, CSS

Get Involved



- Climate change will have an impact on all aspects of society
- Climate related data can help the work of policy-makers, businesses, industry and academics
- Innovative tools equip society to understand and adapt to the challenges

Discover



- Monthly temperature maps
- Data for past and present climate observations
- Global and regional reanalyses covering atmosphere, land, air and carbon
- Use and test prototype online tools developed for societal sectors

Register



- To download data
- To benefit from a manned helpdesk
- To share your requirements with us

Download and Compute



- Select and download the data you need
- One-off download or by scripts

Compute



- Use data as you wish for calculation, estimation, rating, producing indicators...
- Integrate data in other models
- Merge data with your own

Join Up



- Subscribe to the newsletter for latest updates



Implemented by:



Space



What data?

- **What is C3S?**

The Copernicus Climate Change Service (C3S) provides high quality data and graphics to assist business, science and policy sectors to mitigate and adapt to the effects of climate change. C3S will be a major contribution from the European Union to the World Meteorological Organisation Global Framework for Climate Services (GFCS) and its Climate Monitoring Architecture.

- **Who is responsible for C3S?**

C3S is operated by the European Centre For Medium-Range Weather Forecasts (ECMWF), in Reading, United Kingdom, as part of the delegation agreement with the European Union.

What for?

The Copernicus Climate Change Service (C3S) aims at providing contributions to these challenging questions:

How is the climate changing?

How will climate change in the future?

How will it impact society?

C3S is in a pre-operational phase of development and will implement a robust monitoring and analysis service of the Earth's climate by 2018. C3S will deliver seasonal forecasts and climate predictions by holding records on temperatures, rainfall and drought, sea levels and ice sheets. The portfolio of C3S products will offer consistent estimates of multiple Essential Climate Variables, global and regional reanalyses, products based on observations alone such as homogenised station series, Climate Data Records, a near-real-time climate monitoring facility and multi-model seasonal forecasts.

Through the development of Sectoral Information Systems (SIS), the C3S Service will also be highly valuable to Europe since it will:

- **Inform** development policy-makers to better protect citizens from climate-related hazards such as high-impact weather events;
- **Improve** the planning of mitigation and adaptation practices regarding key human and societal activities;
- **Promote** the development of new services for the benefit of society.

This wealth of climate information, will be used to generate a wide variety of climate indicators. The latter will support adaptation and mitigation policies in Europe in a number of sectors, including for example:

- Consultancy and insurance companies could use C3S data to create new products or enhance their existing services to their clients.
- Water supply and renewable energy industries, agriculture and tourism sectors can benefit from forecasts of upcoming droughts or flooding that might affect supply management, their production and outdoor activities.
- Researchers and scientists can improve their own models with comprehensive and quality-assured data.

How to download C3S data and products?

Simply visit the C3S website and select the data of interest. C3S data are currently held on the ECMWF website. You can access them via C3S or directly through apps.ecmwf.int/datasets/data/interim-full-daily/ You will have to accept the license agreement.

- **Can I automate downloads of C3S data?**

Yes, via FTP or WebAPI.

- **How to write and run the script to download C3S data through subset or direct download mechanisms?**

Instructions and examples of scripts are available from ECMWF: software.ecmwf.int/wiki/display/WEBAPI/Access+ECMWF+Public+Datasets

- **Is a download limited in terms of volume?**

There is no download limit in terms of volume. However, the WebAPI requests are currently limited to 20 Gb per request in order to satisfy a larger number of users.

- **How to download a large amount of data using subset or direct download mechanisms?**

Instructions and examples of scripts are available from ECMWF: software.ecmwf.int/wiki/display/WEBAPI/Access+ECMWF+Public+Datasets

- **Do I need to ask for access codes every time I want to download a new product?**

No, but registration through the web interface is requested. Through WebAPI, a one-off key is needed.

- **How to quickly visualize a product?**

The following tools can be used to manipulate the CAMS netCDF files: CDO, NCO, Panoply netCDF, Metview, HDF and GRIB Data Viewer. Metview, Panoply netCDF, HDF and GRIB Data Viewer can be used to quickly visualise a product.

Other information

Sectoral Information Systems projects: climate.copernicus.eu/sectoral-information-systems

Evaluation and quality control: climate.copernicus.eu/evaluation-and-quality-control-eqc

Global and regional temperature analysis: climate.copernicus.eu/resources/data-analysis/average-surface-air-temperature-analysis

About the climate data store: climate.copernicus.eu/climatedata-Store

C3S in Numbers

**1979
to present**

Updated monthly -
Hindcast database

55 Tb

Total data volume
available

**20,000
Registered
users**

cited in 4,000
scientific Papers