

ICOS in a nutshell

The Integrated Carbon Observation System (ICOS) produces harmonised European-wide measurements of the carbon cycle, greenhouse gas emissions and atmospheric concentrations of greenhouse gases.

The ICOS network integrates atmosphere, ecosystem and ocean observation stations across Europe and beyond.

ICOS Central Facilities carry out data processing, quality control, calibration, instrument development and training.

The ICOS Carbon Portal facilitates unrestricted data access to various audiences, such as researchers, students, journalists, decision-makers, or citizens.



Standardised greenhouse gas measurements throughout Europe



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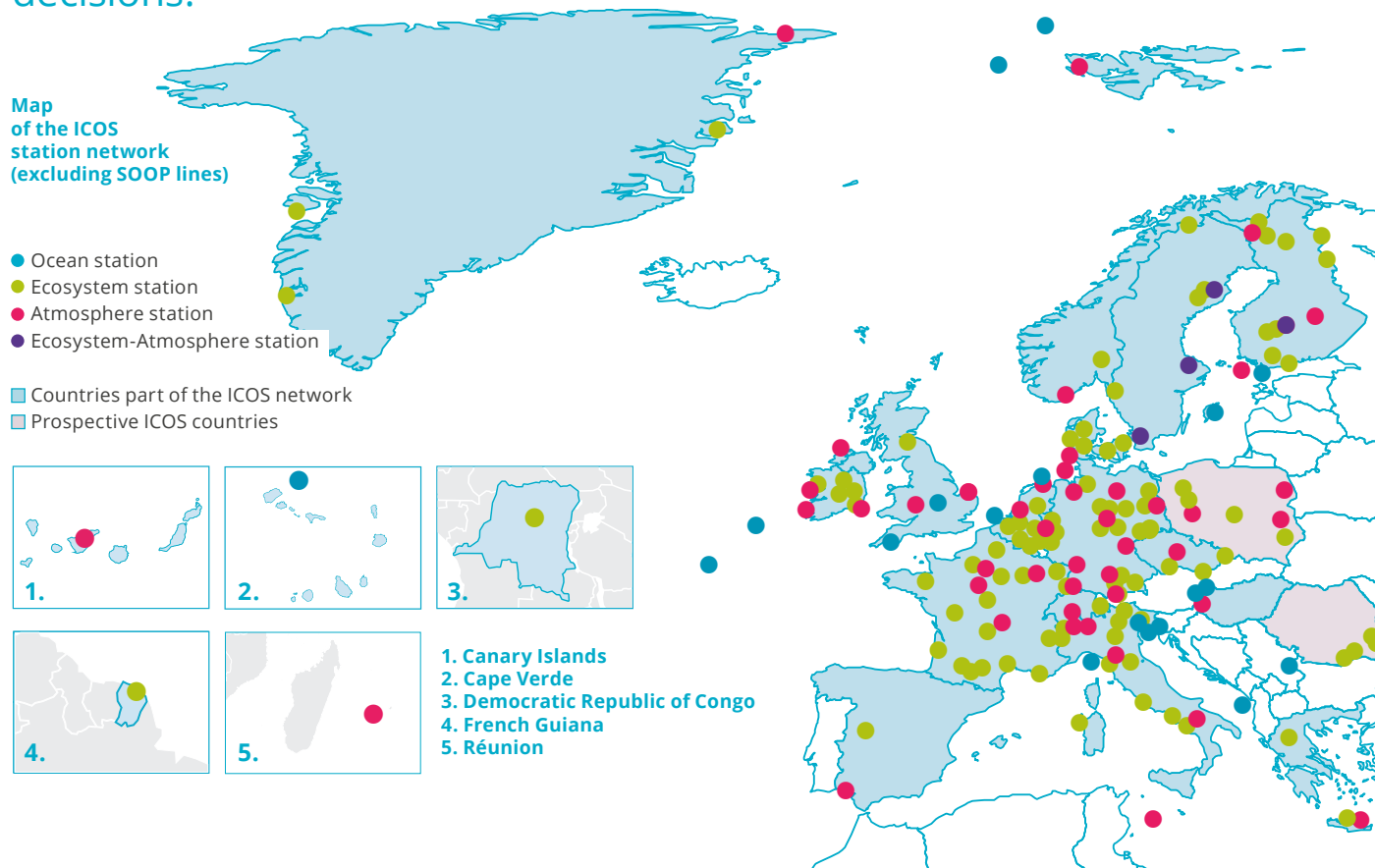
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Understanding and monitoring greenhouse gases

The Integrated Carbon Observation System (ICOS) produces high-quality greenhouse gas data based on the observations made by over 170 measurement stations across Europe. This greenhouse gas data is needed to understand and mitigate climate change. ICOS data contributes to quantifying and better understanding the greenhouse gas emissions and the whole carbon cycle, in Europe and the neighbouring regions.

Through data and scientific knowledge, ICOS contributes to support climate change mitigation decisions.



A network of ICOS-certified stations provides long-term, integrated observations on the concentration of greenhouse gases in the atmosphere and observations of the gas exchange between atmosphere, land and ocean surfaces.

Reliable greenhouse gas data for science-based decisions

Most economic activities produce emissions that increase greenhouse gas concentrations in the atmosphere, accelerating climate change and disrupting natural processes. A better scientific knowledge of sources and sinks of carbon is vital to make informed and sustainable decisions for a better future. With its data, ICOS supports climate change mitigation actions based on science.

Producing reliable, long-term data

Following a rigorous protocol, ICOS integrates atmosphere, ecosystem and ocean greenhouse gas observational networks to provide near-real-time, standardised datasets and products. In the past, measurements of greenhouse gases in Europe have suffered from varying methods, discontinuity and lack of sustainability. To tackle these issues, ICOS has established state-of-the-art standardised methods to continuously gather, treat and distribute observations through the ICOS Carbon Portal.

The ICOS data production process at a glance.

