



Climate Change

Explainer

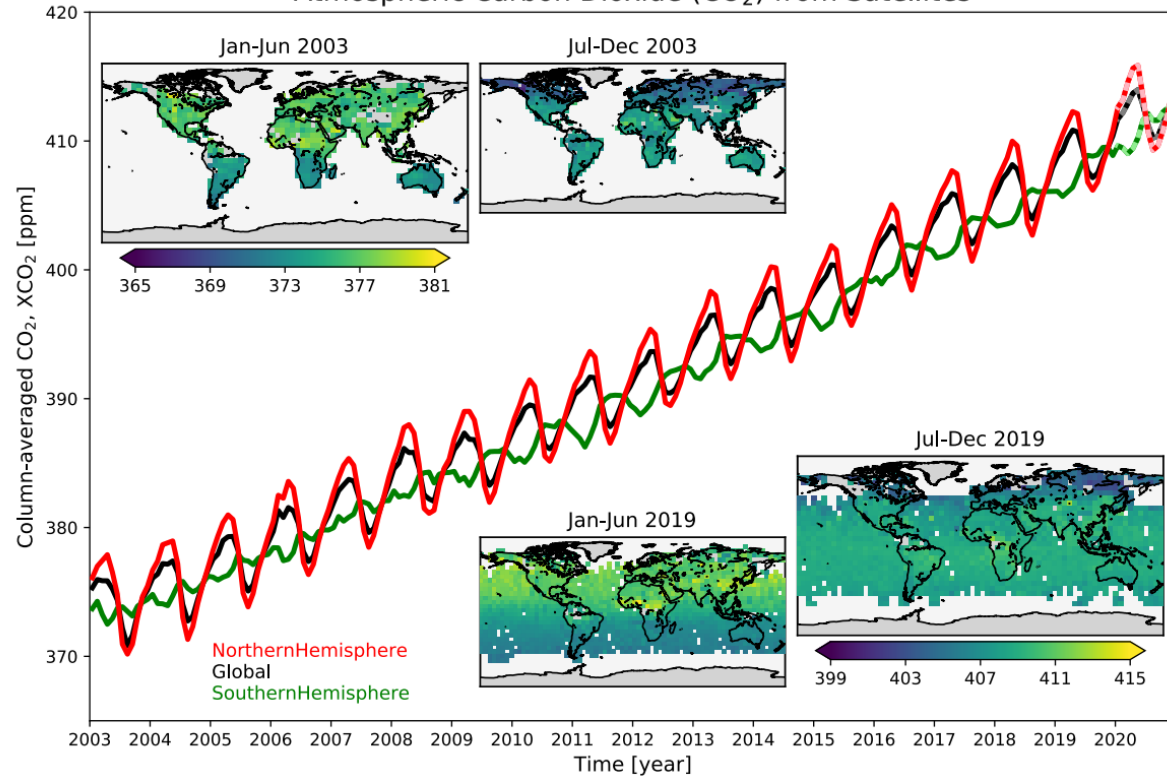
CRYOSPHERE

COP1

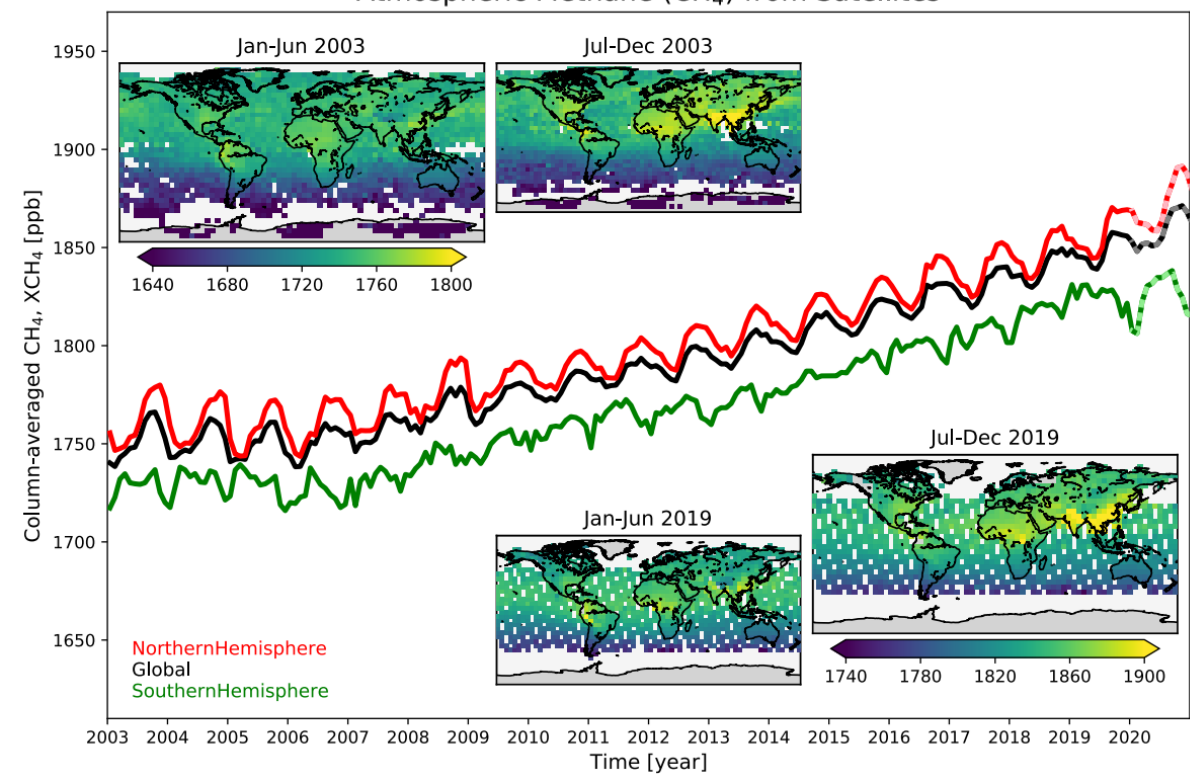
COP2 AMBITION

SURFACE ATMOSPHERE

Atmospheric Carbon Dioxide (CO₂) from Satellites



Atmospheric Methane (CH₄) from Satellites



OCEAN BIOGEOCHEMISTRY

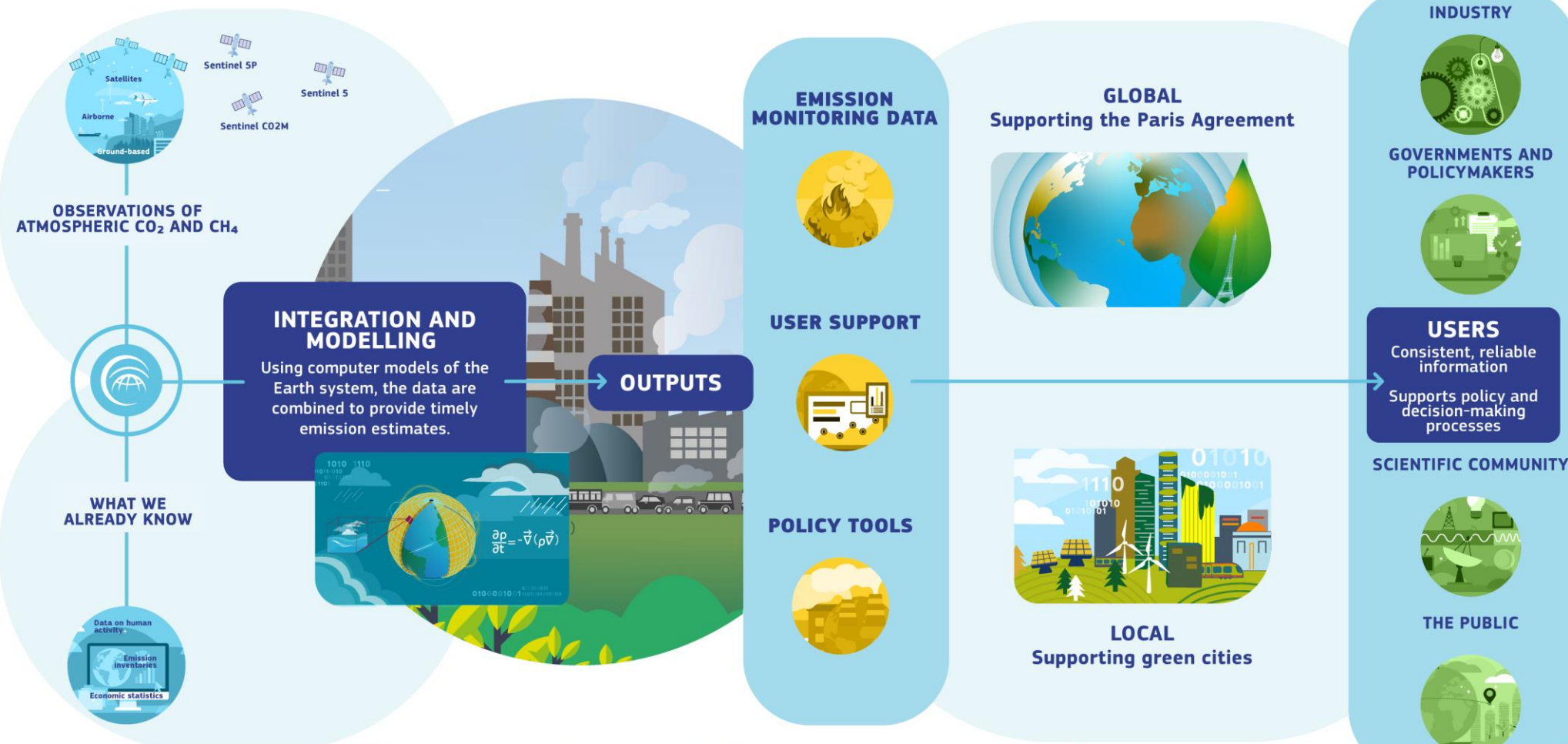




Atmosphere
Monitoring

Recommendation

Greenhouse gas emissions monitoring capacity



PROGRAMME OF
THE EUROPEAN UNION

Europe's eyes on Earth

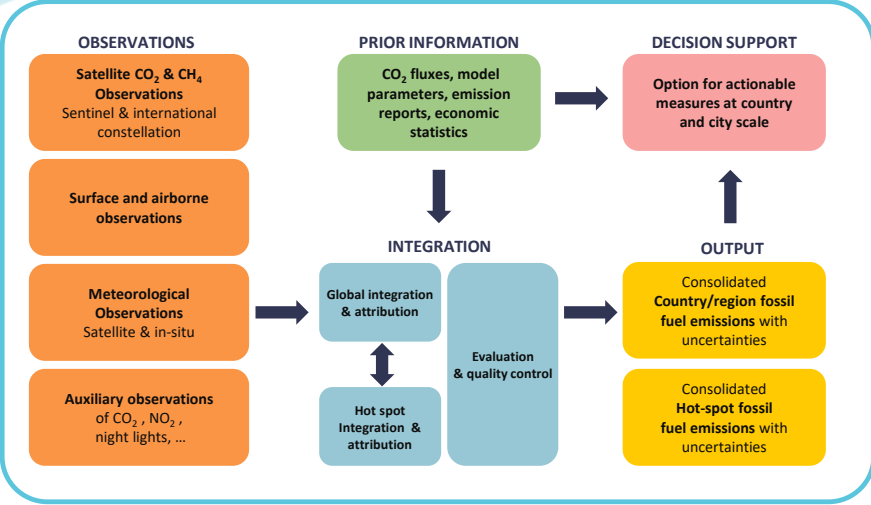
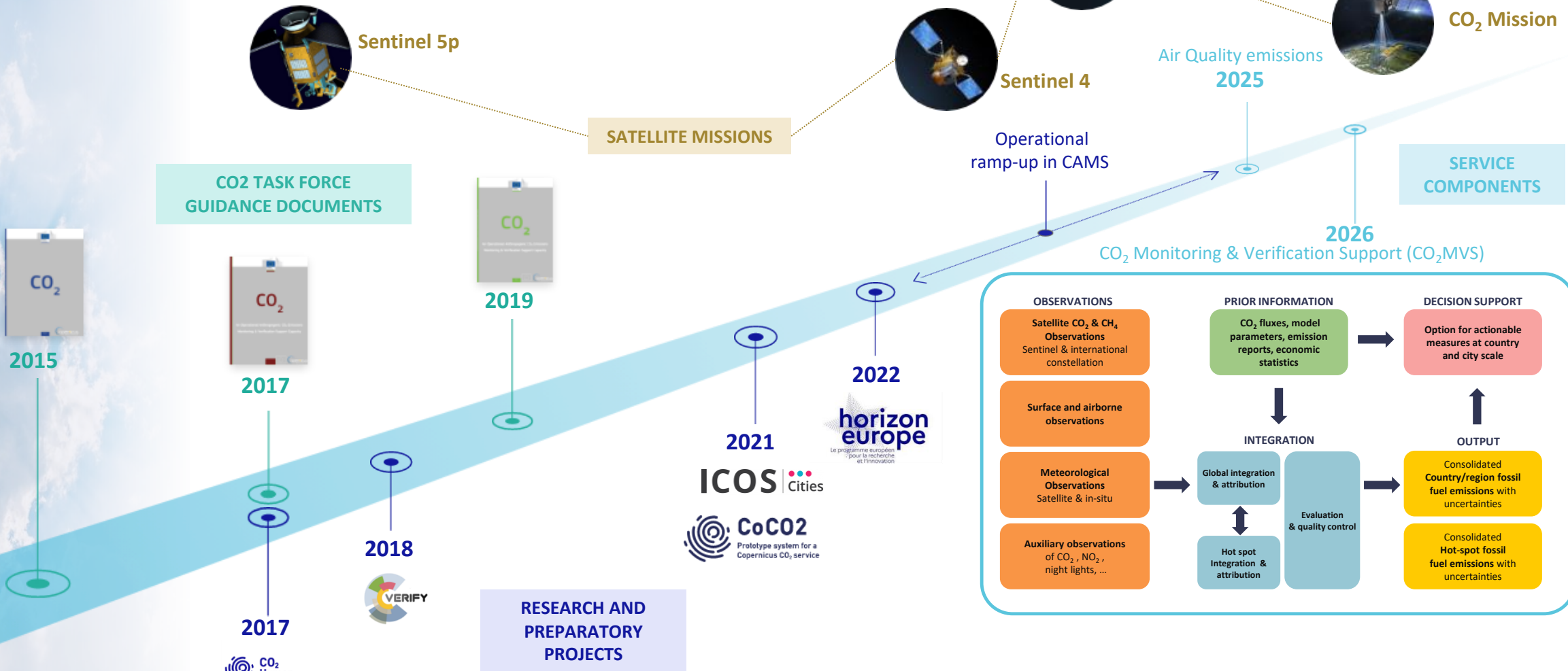




Atmosphere Monitoring

Timeline of CAMS Emission Services

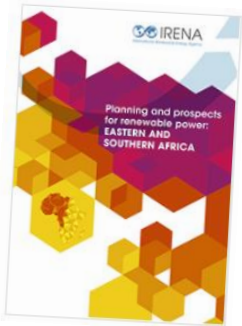
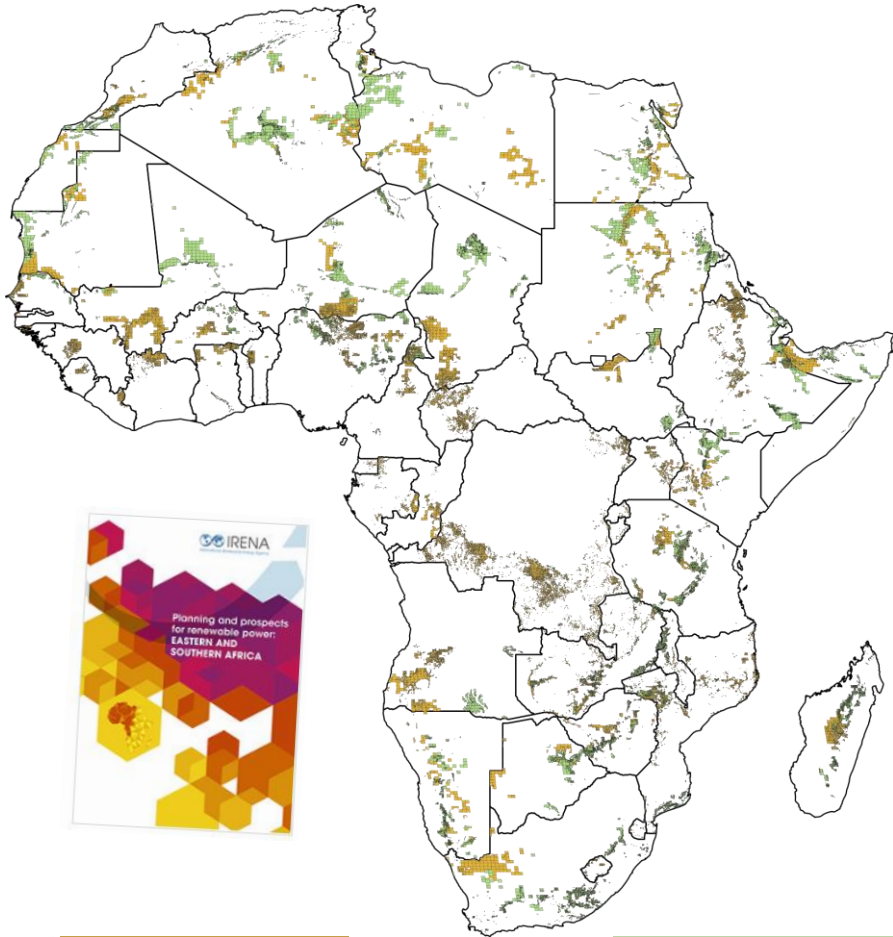
From expert groups through dedicated research funding, to operational services





Climate Change

Outcome



Solar PV

Wind (onshore)

EUROPEAN STATE OF THE CLIMATE

Renewable Energy: Wind

In 2021, parts of northwestern and central Europe experienced unusually **low annual average wind speeds**. Some countries saw their lowest annual average wind speeds since at least **1979**.

Lower wind speeds led to reduced **wind power generation** in parts of Europe.

Wind speeds in Europe can vary significantly.

Understanding this variability is crucial when planning **renewable energy infrastructure**.

Copernicus Climate Change Service data support a deeper understanding of **wind variability**...

... contributing to Europe's energy transition and its plans to become the **world's first climate-neutral continent**.

PROGRAMME OF THE EUROPEAN UNION | Copernicus | IMPLEMENTED BY ECMWF | Climate Change

Climate observations are now crucial for managing the transition towards a low carbon economy with an energy mix characterised by a large fraction of renewable.



Climate
Change

C o n c l u s i o n s

- Observations are key to understand the climate system and its variations; an operational deliveries of climate variables to society is now essential.
- But it is no longer simply a matter of climate monitoring, high quality climate data is now a key requirement for supporting the decarbonization of our energy mix.
- A great leap forward in our ability to monitor global carbon emissions is about to happen thanks to the combinations of models and observations.



Climate Change



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Thank you for your attention

