



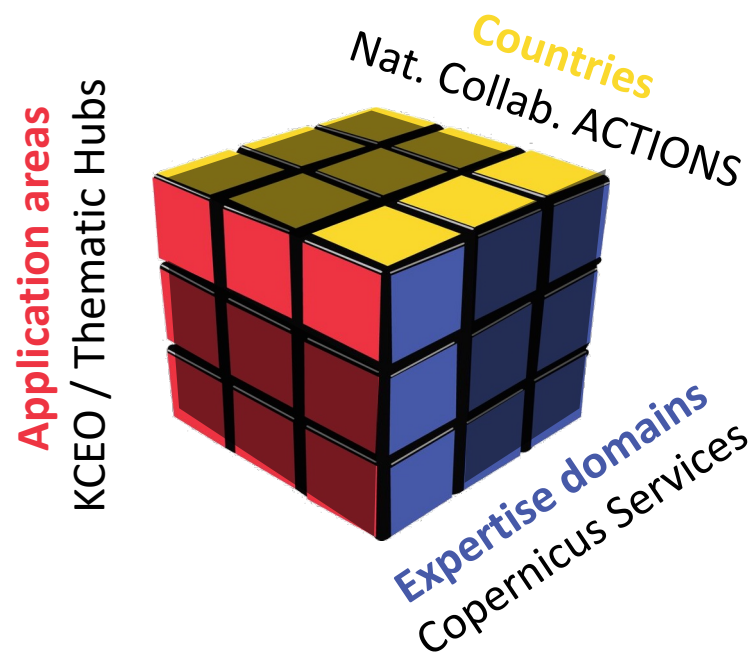
## Progress on the Copernicus Energy Hub

Fabio Venuti, Cristina Ananasso,  
Nube Gonzales





## A new approach to the users: Copernicus Thematic Hubs



- *Copernicus **single entry point** for specific sectors*
- *traceable back to **specific EU policy needs***
- ***simplified access** (simple, user friendly, subject oriented, documented) to key existing Copernicus products*

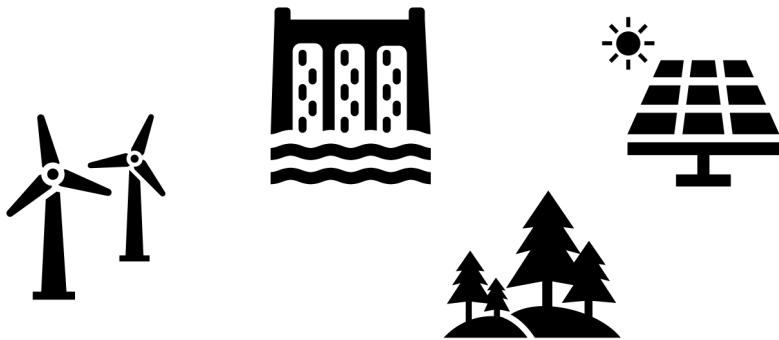
Additional goals are:

- ✓ Provide **knowledge and expertise on data/products**
- ✓ Showcase how the data can be **integrated** with other data/information (**user's stories**)
- ✓ **inspire** studies, projects, applications based on Copernicus data
- ✓ Improve the coordination and information flow between different related projects and initiatives
- ✓ **Leverage the collaboration/interactions** with other organizations and MSs, outside the Copernicus context
- ✓ Provide **guidance and capacity building**

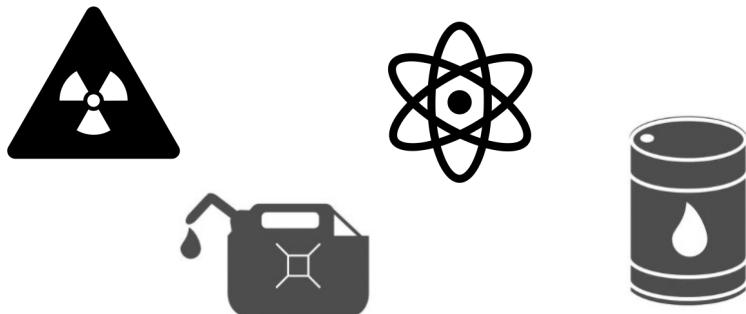


## Serving needs on energy in all its facets

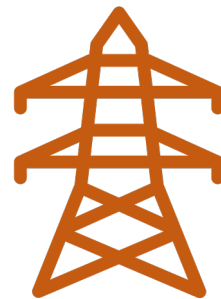
Renewable energy, including biofuels



Non-renewable energy



Transmission, distribution and storage (including transport and infrastructures)



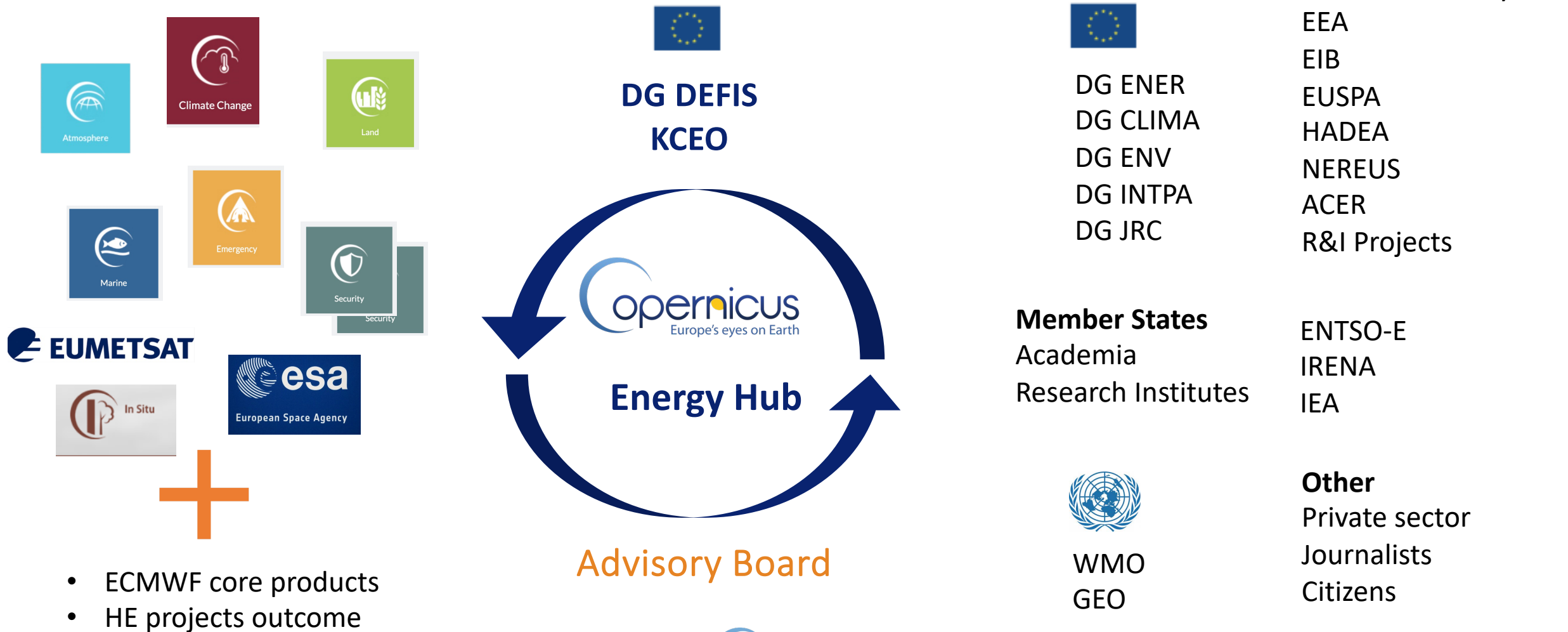
Energy efficiency, consumption and emission, incl. waste



Energy security (including energy mix, resources, supply chains protection)



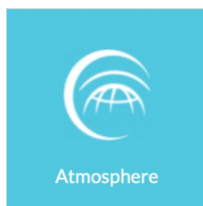
## Copernicus Energy Hub: Offer / demand MAPPING



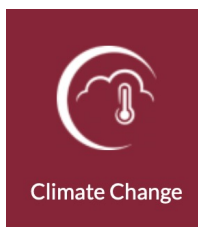


## Copernicus offer

- Use cases and user stories to inspire users
- Services products portfolio to grant direct access to services catalogues



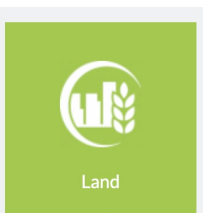
**Total/clear-sky solar radiation**  
**CH4 anomalies detection**  
**Aerosol optical depth (e.g. dust)**



### Reanalysis & climate projections

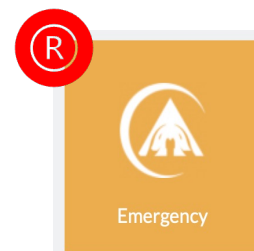
- Meteorological variables (wind speed, precipitation, solar radiation, air temperature, sea level pressure)
- Energy derived variables (electricity demand, hydro, solar and wind power generation)

Next: Information at seasonal forecast timescale

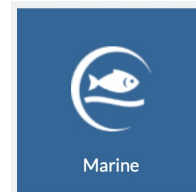


### Urban atlas

**High resolution Vegetation Phenology and Productivity**  
**Corine Land Cover (CLC) and CLC+,**  
**European Ground Motion Service (EGMS), HR VPP**  
**Surface Albedo, Land Surface Temperature**



**Reanalysis and forecasts of river discharge**  
**Drought impacts on energy production**  
**Information on population, buildings and settlements**



**Global ocean waves Analysis Reanalysis, and Forecast**  
**Global ocean physics Reanalysis**  
**Sea Biogeochemistry Analysis and Forecast**  
**Global Ocean Sea Surface Heights**



**Geospatial Analysis**  
**Mapping for Situational Awareness**  
**Support to Planning**



**EUROPEAN UNION**  
**SATELLITE CENTRE**

*Analysis for decision making*

 restricted access to authorized users



## CEH Advisory Board



DG ENERGY

Andreas Zucker

Brendan Devlin



IRENA

Asami Miketa



ENTSO-E

David Radu



RTE-FRANCE

Laurent Dubus

### High level Goals:

1. how we can stimulate further the uptake of Copernicus information products by users and experts in the ENERGY domain (**promotion**)
2. how we can make the “offer” evolving to meet the pressing needs (**user needs collection**)
3. how the Energy Hub can have a direct capacity to shape Copernicus future developments for Energy (**evolution**)

### Main tasks:

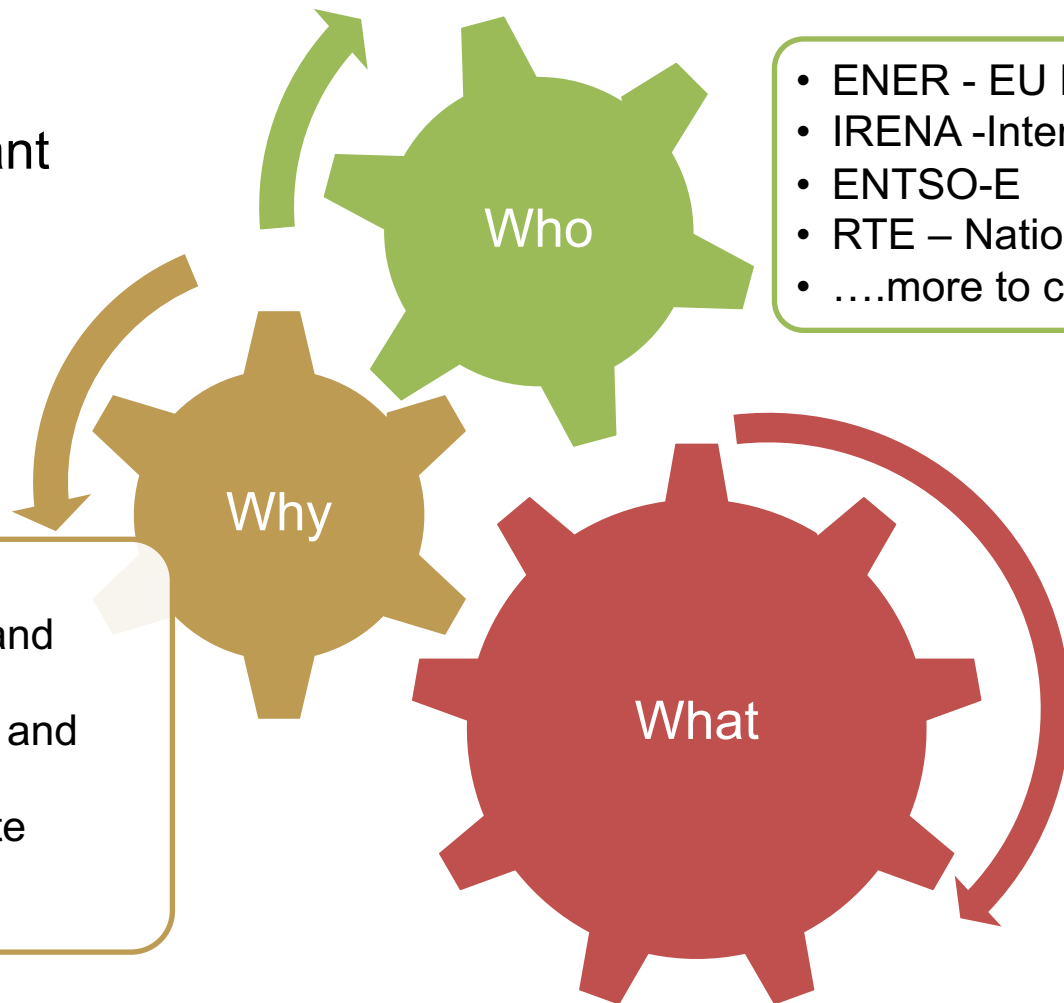
- i. to review and provide feedback on the activities
- ii. to advise on short-term implementation plans
- iii. to advise on longer-term vision regarding future developments and collaborations in the European and international landscape

Additional members could eventually join the AB



## User intelligence (demand side)

- Who are the users
- What the users want
- Why they need it



- ENER - EU Policy DG
- IRENA -International Agency
- ENTSO-E
- RTE – National Operator
- ....more to come

- to support policy needs
- to take informed decisions and develop strategies
- To support decision makers and develop strategies
- To plan, develop and operate power systems for energy transition

- Information / inspiration
- Tools and applications
- Quality controlled and long-time series environmental info/dataset



## Use case: IRENA's Global Atlas for Renewable Energy

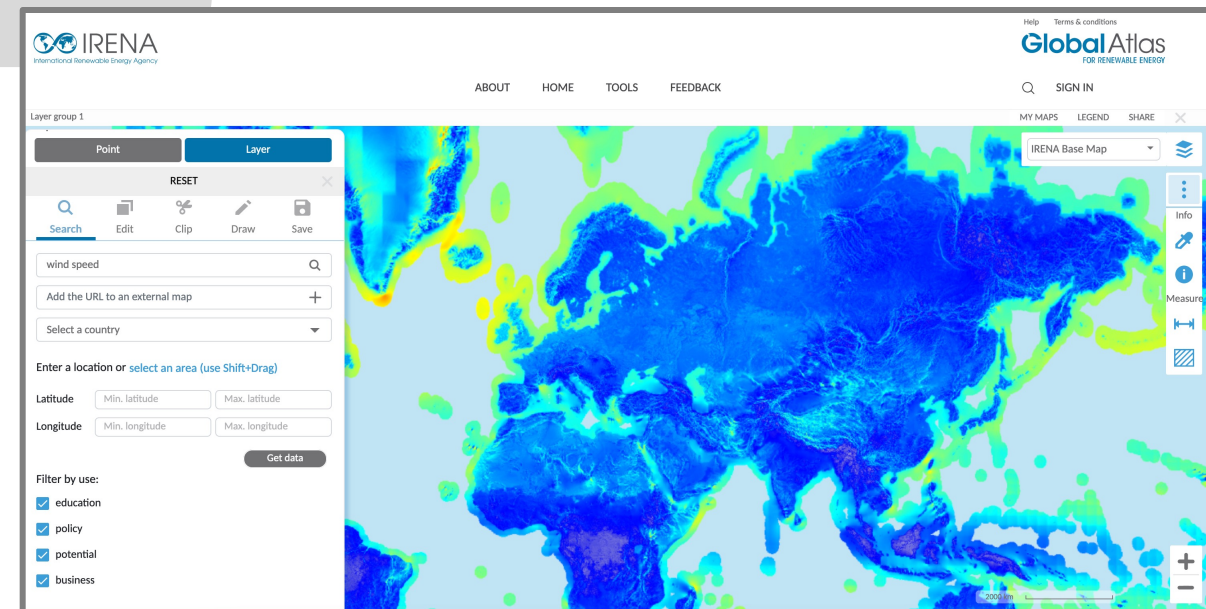
**“ERA5 reanalysis data and its downscaled products have been instrumental in supporting IRENA member states in project planning and development.”**

*Imen Gherboudj, Programme Officer on Renewable Energy Resource Assessment, IRENA*

The ERA5 reanalysis dataset played a key role in the development of IRENA's [Global Atlas for Renewable Energy](#)

Global Atlas allows users:

- Overlay climate data with other ancillary data (transmission networks, population density, and protected areas)
- Encompasses all renewable technologies: solar, wind, bioenergy, geothermal, hydropower, and marine energy.





# EUROGEO WORKSHOP 2023



## Web site and catalogue (beta version)

#EUSpace News Training and Events Get in contact Search



About Products and Data Use Cases

This is a BETA website. Further development of the Energy Hub will follow.



**ENERGY HUB**  
Copernicus Energy Hub: the link between Earth Observation, Environmental Information and Energy systems

<https://energy.hub.copernicus.eu>



Energy Hub Catalogue

Info 1 Sep 2023 The Energy hub is under development

### HIGHLIGHTS



Meeting all facets of energy needs

Meeting user needs



Inspiring stories of how Copernicus data has been used by and for the energy sector

Inspiring Stories



ESOTC 2022 includes a section dedicated to assessment of wind and solar resources

In Focus



Dive into the collection of resources that Copernicus Services offer for the Energy sector

Search

### QUICK LINKS

Products & Data

Relevant and freely available energy products, data and information from the EU's Copernicus services

Training & Events

The information you need to harness our service through workshops, trainings and online resources

Use cases

A range of examples and showcases from and relevant to the energy sector and those who work in it

Get in contact

We want to hear

**BOLZANO 2-4 OCTOBER 2023**





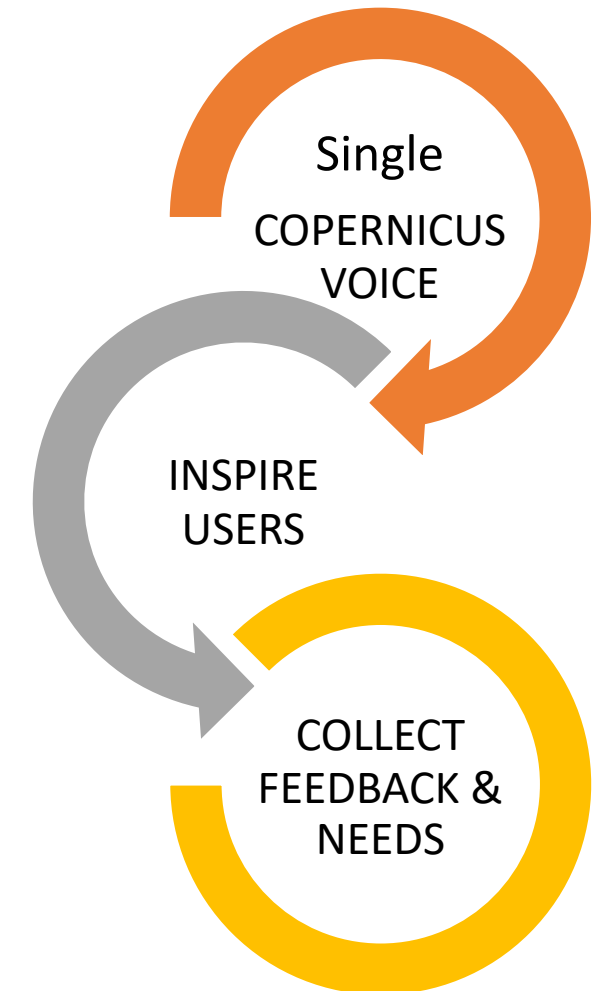
## Final remarks

The presentation of the Copernicus Energy Hub and the first draft of the web page is only a starting point

More user engagement to come, more key users to be involved

More products and user stories will be uploaded on the web site and catalogue

**JOINT LAUNCH OF ALL THE COPERNICUS HUBS DURING THE EU SPACE WEEK (NOV 2023)**





## Progress on the Copernicus Energy Hub

**Thank you**