EuroGEOSS

Launch event

Thierry RANCHIN with the help of

EO, RE and SDG

REthinking Energy 2017

Affordable and clean energy supports all of the Sustainable Development Goals

http://www.irena.org

GEO Work Programme contribution for EuroGEOSS in Renewable Energies (RE)

GEO Participating organization:

- **EUREC**
- **EARSC**

GEO Flagship with RE links:

- **Global Forest Observation Initiative (GFOI)**

GEO Initiative for RE:

- **GEO VENER**

GEO initiative with RE links:

- **AfriGEOSS**
- **AO GEOSS**
- **GEO Global Water Sustainability (GEOGLOWS)**
- **Oceans and Society: Blue Planet**

GEO Community Activities with RE links:

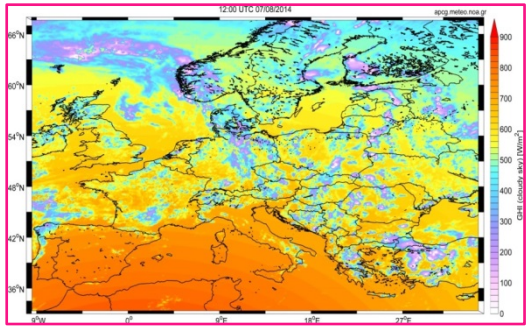
- **EO for Water-Energy-Food Nexus**
- **EO for managing mineral resources**
- **Copernicus Atmospheric Monitoring Service**
- **GEO Cradle**
- **Access to climate data in GEOSS**
- **African Geochemical baselines**
- **GFCS - GEO COLLABORATION**

GEO-Cradle: Solar Energy (SENSE) pilot for local authorities in Egypt

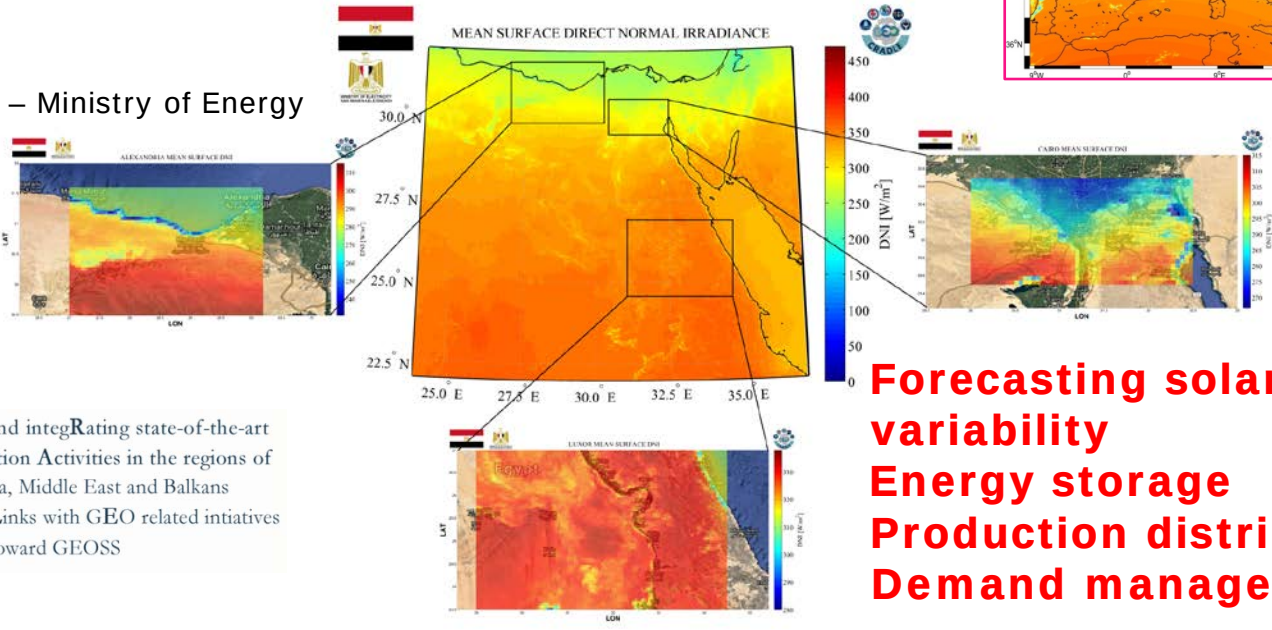
Use of EO and CAMS data and models for :

- Now-casting and short term forecasting of solar energy
- Support to national grid operators (e.g. Greece)
- Support to national ministries of Energy (e.g. Egypt)
- CSP and PV locations for potential investors
- UV, health, agriculture and materials (spectral products)

Real time solar Energy (Europe)



Solar Atlas of Egypt – Ministry of Energy



Coordinating and integRating state-of-the-art Earth Observation Activities in the regions of North Africa, Middle East and Balkans and Developing Links with GEO related intiatives toward GEOSS

Forecasting solar variability
Energy storage
Production distribution
Demand management

GEO Essential (WFE Nexus)

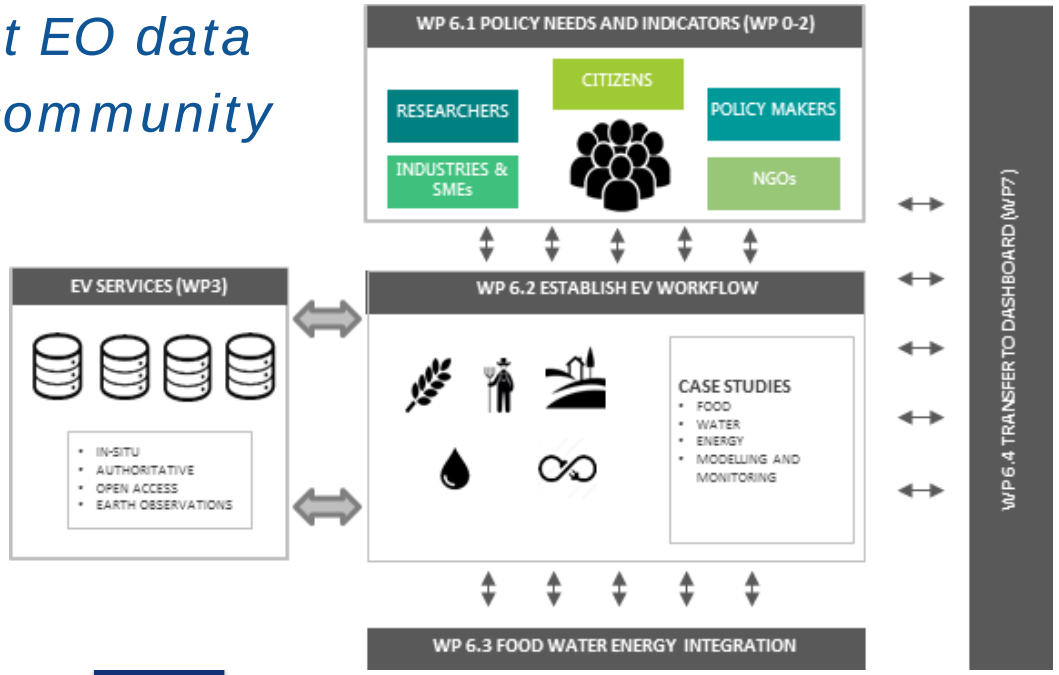
*Focus on relationships between **agriculture, water and bioenergy***

Select a set of standard models

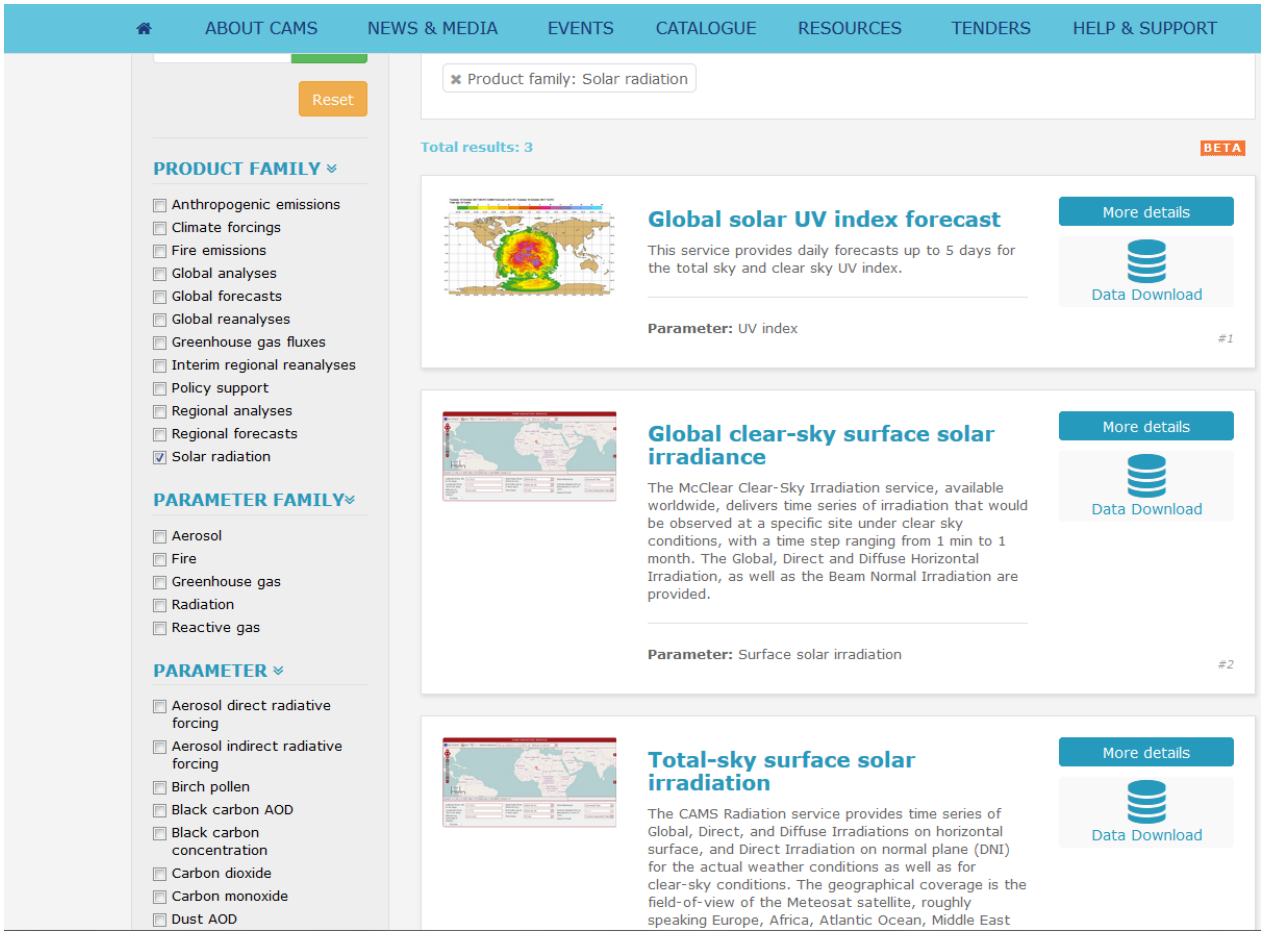
Determine potential EO needs of models

Pilot within Europe to ingest EO data

Produce guidelines for EO community to provide such data



Copernicus Atmosphere Monitoring Service

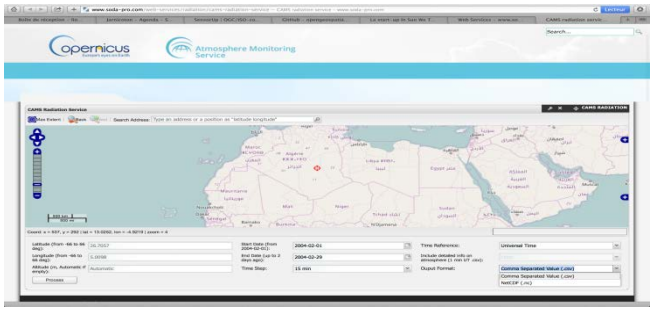


NextGEOSS Market Pilots on Energy

Scope of the pilots

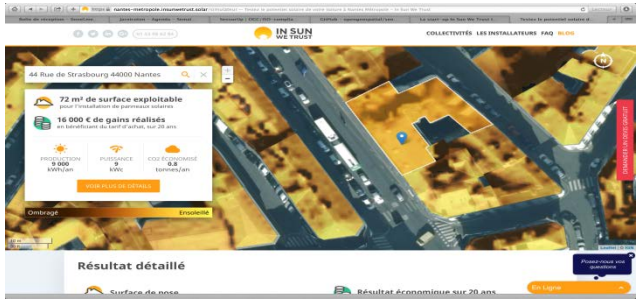
#1: Constructing gridded data for grid operators

- Target user: EDF R&D (National grid operator)
- Process Copernicus Atmosphere Monitoring Service (CAMS) services to provide **time series of gridded data**



#2: High resolution solar mapping at urban scale

- Target user: InSunWeTrust SME
- #1 plus 10 cm resolution Digital Surface Model and 30 m Digital Terrain Model to provide **real time rendering** of **geo-localized patches of time series of global tilted irradiation including local horizon**

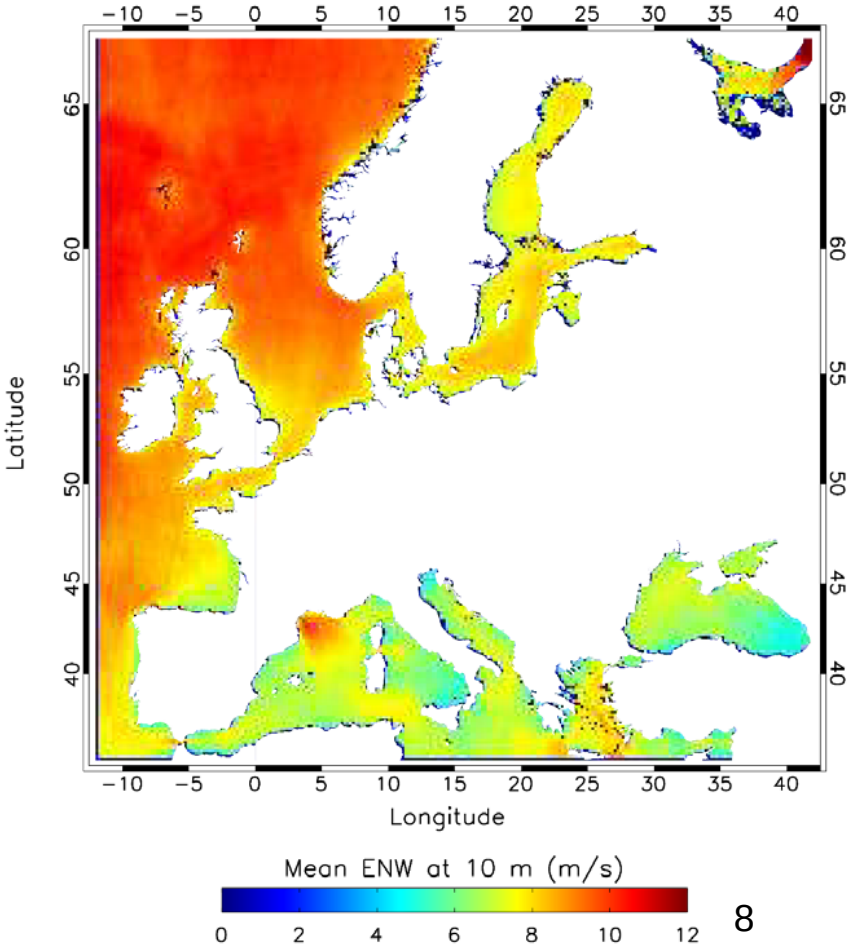


New European Wind Atlas

Envisat ASAR and Sentinel-1A/B combined offshore wind atlas at 10m height

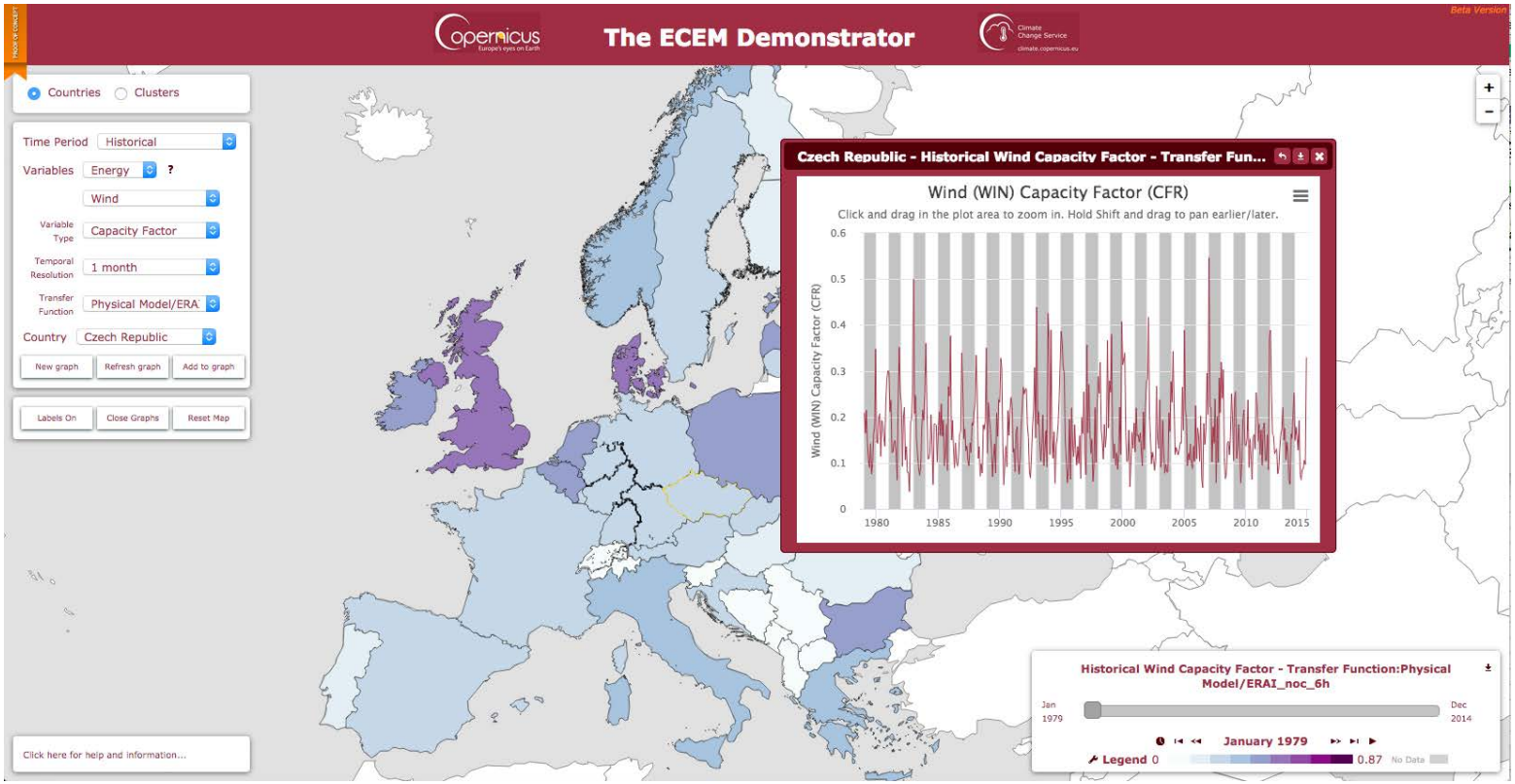
NORSEWInD
NORTHERN SEAS WIND INDEX DATABASE

NEW EUROPEAN WIND ATLAS
newa



European Commission

Copernicus Climate Change Service



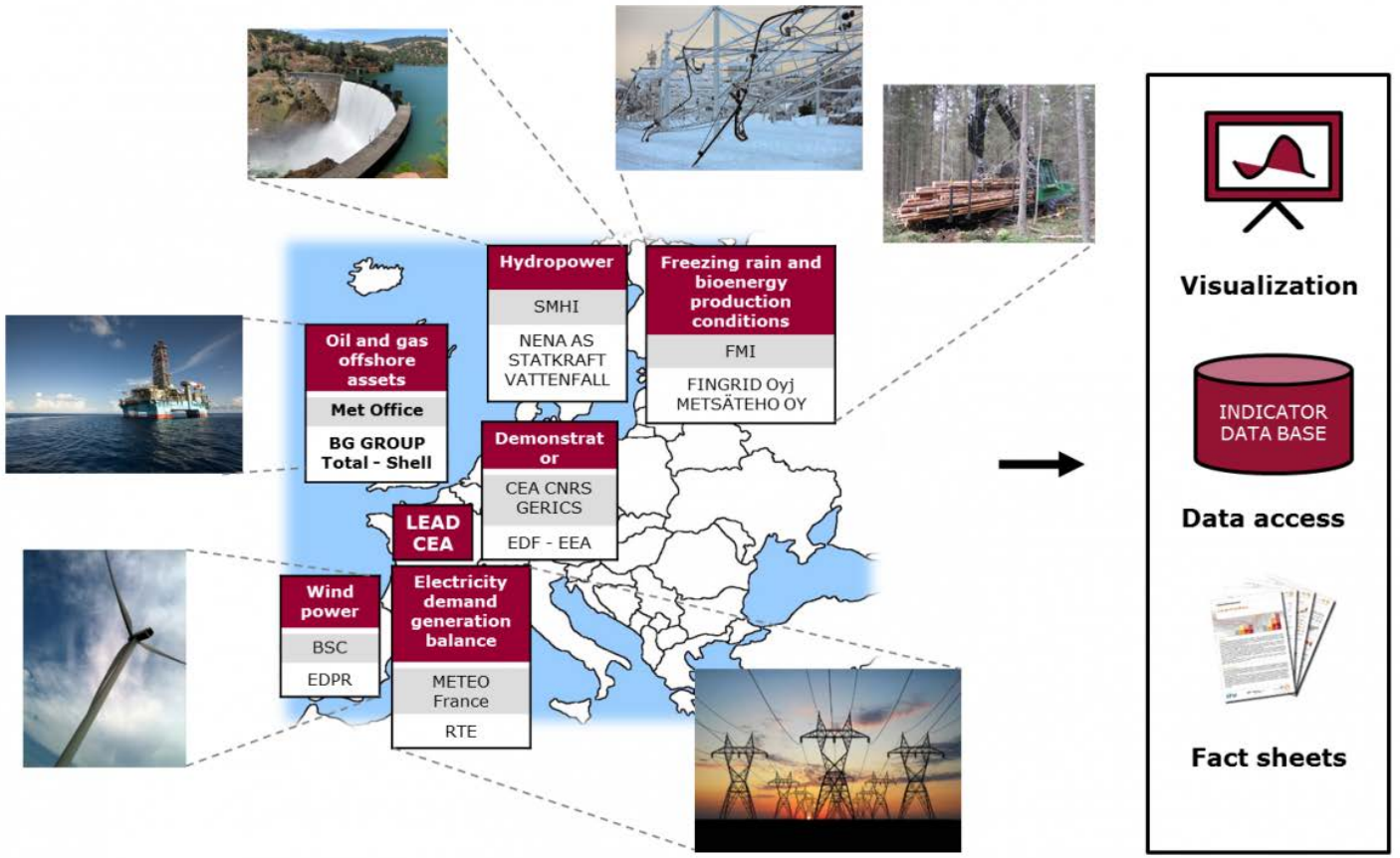
European Climatic Energy Mixes

Climate Change Service

Copernicus Climate Change Service

CLIM4ENERGY

A co-designed approach to develop a portfolio of products for the energy sector



Users and needs

How we capture users needs:

litterature reviews, links with representative bodies, survey, individual interviews, co-development, training, user meetings, help desk, …

Policy makers:

- **Improving RE part in the energy mix**
- **Integration of RE into grids**
- **Fulfil international agreements (SDGs, Paris Agreement)**
- **Standardisation**

Grid operators:

- **Balance between production and demand**
- **Development of grids**

Industrials:

- **Develop business activities**
- **Convince investors**

Bankers:

- **Develop Economy**
- **Secure investments**

Researchers:

- **Improve knowledge**
- **Answer to stakeholders needs**

Citizens:

- **Participation to reduction of environmental impacts of Energy**
- **Citizen science**

EuroGEOSS Pilot Activities: Framework for developing applications of EO for RE

Key Framework comp.	WFE Nexus
EO data	GEOSS, Copernicus and others
User needs	Decision Makers, citizens, researchers
GEO Common Infrastructure	Fulfil needs
Data Management Principles	Very relevant and highly needed
In-situ and citizen observatories	Cheap sensors and citizen obs. needed
Uptake activities	To be developed
Training	To be developed
Dissemination	Start of work
Help desk	To construct

EuroGEOSS Pilot Activities: Framework for developing applications of EO for RE

Key Framework comp.	Energy in Smart cities	Climate and Energy
EO data	GEOSS, Copernicus and others	GEOSS, Copernicus and others
User needs	Services for all stakeholders	Services for all stakeholders
GEO Common Infrastructure	Need for high perf. infrastructure	Need for high perf. infrastructure
Data Management Principles	Very relevant and highly needed	Very relevant and highly needed
In-situ and citizen observatories	To be developed	First attempts in integration
Uptake activities	Undergoing, 1st commercial act.	To be developed
Training	To be developed	Webinars, user meetings, …
Dissemination	Start of work	Start of work
Help desk	To construct	To construct

GEO Vener: Vision for Energy

A GEO initiative on renewable energies

GEO-VENER plans:

- **to build up the pathway to link RE, services, data and metadata to GEOSS,**
- **to serve a large variety of users (from citizens to decision makers, including the private sector),**
- **to use EO data to enhance our knowledge and information about RE in order to increase substantially the share of RE in the global energy mix by 2030 as proposed within the SDG7 Target.**
- **to enroll the private sectors within the initiative activities and make their needs fulfill by GEO in the best possible way**

Side Event Tuesday Oct. 24

Room Continental B

8:30 -12:00

Thank you

thierry.ranchin@mines-paristech.fr