UCP 2024 minutes of meeting of the Energy market segment panel

Meeting Date	08.10.2024	**Time**	09:15-13:00
Meeting Called By	EUSPA	**Location**	Webex (remote event)
Minutes Taken By	TBD	**Next Meeting Date**	N/A
Speakers	**Eduard Escalona Zorita, EUSPA, Session moderator/Panel coordinator** **Michal BABACEK, EUSPA, Session moderator/Panel coordinator** **Dragos BRATASANU, EY** **Tim Heijmann, Evenflow** **Nube Gonzalez Reviriego, ECMFW** **Joanna Przystawska, EEA** **Declan Kelleher, Gruner Stucky** **Paolo Mazzoli, Gecosistema** **Tim van Benthem, DNV** **Lídia Quental, LNEG** **Pedro Branco, Xilbi Sistemas** **Branimir Radun, Oikon** **Dalibor Hatic, Oikon** **Lina Dubina, Solar Power Europe** **Anthony Credoz, TotalEnergies** **Dr. Ernest Koffi, ECMWF** **Daria Stepanova, Airmo** **User Community Representatives (UCRs)** Complete list of attendees is in Annex 1.		
Distribution (in addition to attendees)	UCP Plenary, EUSPA, Public		

Agenda Items	**Presenter**
Energy	
1. Welcome and introduction	EUSPA
Updates and status of Copernicus Services	
2. Updates summary	Eduard Escalona Zorita, EUSPA
3. Copernicus Thematic Hub on Energy	Tim Heijmann, Evenflow
4. C3S Energy Service	Nube Gonzalez Reviriego, ECMFW
5. CLMS: Energy use case with HR snow data	Joanna Przystawska, EEA
Roundtable: Renewables, site selection, planning, and monitoring	

6. Copernicus for Hydropower	Declan Kelleher, Gruner Stucky
7. EO Solutions for Hydropower	Paolo Mazzoli, Gecosistema
8. Earth Observation (EO) in Solar PV	Tim van Benthem, DNV
9. RESPONDENT Horizon Europe project	Effie Makri, Future Intelligence Ltd; Dimitris Asimakopoulos, Kiefer
10. Panel discussion with Declan Kelleher (Gruner Stucky), Paolo Mazzoli (Gecosistema), Tim van Benthem (DNV), Effie Makri (Future Intelligence Ltd), Dimitris Asimakopoulos (Kiefer)	
Roundtable: Environmental impact assessment for renewable energy plants	
11. Renewable Energy and Environmental Impact	Branimir Radun, Oikon
12. Green Energy Copernicus demonstrator	Lidia Quental, LNEG; Pedro Branco, Xilbi Sistemas
13. Panel discussion with Dalibor Hatić (Oikon), Lidia Quental (LNEG); Pedro Branco (Xilbi Sistemas); Lina Dubina (Solar Power Europe)	
Roundtable: Methane emissions monitoring for oil&gas	
14. Panel discussion with Anthony Credoz (TotalEnergies), Daria Stepanova (Airmo), Ernest Koffi (ECMWF)	
Questions, conclusions and closing remarks	

Summary

The Energy session of the User Consultation Platform (UCP) 2024 took place on the morning of October 8, 2024, as a fully remote event. The panel included around 60 participants from the energy industry, research sector, and European institutions, covering the entire spectrum of the market segment.

The panelists delivered presentations on how they use Earth observation (EO) satellite technologies and outlined their specific requirements. This broad coverage generated interest among participants and facilitated engaging interactions, resulting in questions and comments from attendees.

Applications highlighted as important during the UCP include:

- Renewable site selection, planning, and monitoring
- Environmental impact assessments for renewable energy plants
- Methane emissions monitoring for the oil and gas industry

1.

The most discussed topics were the following:

Relevance of the Energy Sector in the Economy: Predictions indicate that power demand in Europe will increase in the coming years. The revised Renewable Energy Directive has raised the renewable energy target for 2030, expecting at least 42.5% of supplied power to come from renewable sources. The three main renewable energy sources deployed in Europe—hydropower, wind, and solar—benefit from the application of space data. For solar energy, EO provides solar irradiance measurements and geospatial datasets related to the sites of interest. For wind power, EO offers data for site selection, monitoring, and environmental impact assessments (EIA) for both onshore and offshore wind farms. For hydropower, EO facilitates water resource assessments, site selection, hazard monitoring of assets, and EIAs.

EO supports optimal site selection by gathering relevant information about the energy potential of the sites and their environmental impacts, aiding governmental agencies and energy companies in identifying suitable locations for renewable energy projects. Practical guidelines and demonstrators can accelerate adoption.

Main Needs: In terms of EIAs, EO data is a source of information that needs to be "officialized." The data must be certifiable to ensure that EO is valid for EIAs in official permits for renewables. EIAs are complex, and while EO has some limitations, practical guidelines and demonstrations can help accelerate adoption. Additionally, developing better-tailored solutions that can be easily integrated into end-use operational workflows is important.

Note: The slides from this session can be found on the UCP website.

1. MINUTES OF MEETING

Agenda Item 1 & 2 - Welcome and introduction of the Energy User Consultation Platform Segment. EUSPA

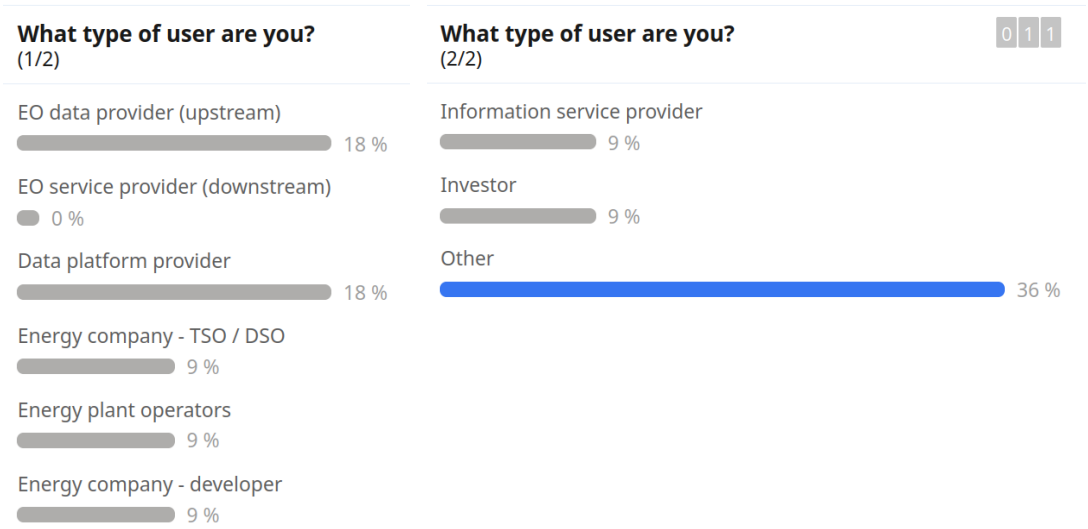
All participants were welcomed to the User Consultation Platform (UCP) Energy session. An overview of the day's objectives was provided, along with the aim of the UCP, which is to facilitate communication between EUSPA and the user communities. The objectives of the session were as follows:

- Collect user needs and requirements from the energy sector to inform the Copernicus programme.
- Discover the perspectives of end-users and service providers on the use of space for energy.
- Understand gaps, barriers, and challenges to wider adoption of EO
- Gather suggestions and potential solutions for adopting EO in renewable energy.
- Establish priorities for future research directions.

An overview of renewable electricity generation in Europe was given, highlighting that renewable energy generation is dominated by hydropower followed by wind and solar. The benefits of Space for Energy were featured: Space for Solar, Space for Hydro, Space for Wind and Space for Ocean.

A summary of the relevant Copernicus services for the energy segment, and their updates, was discussed, including the Copernicus Energy Thematic Hub, C3S Energy service, and CLMS snow products.

The audience was engaged in a poll with the question: What type of user are you?
The results are found in the figure below:



Agenda Item 3 – Copernicus Products and Services for Energy- Copernicus Energy Hub. Tim Heijmann / EVENFLOW.

The presentation began with a brief overview of the Copernicus Programme and the Energy Hub. It was noted that the Energy Hub serves as a powerful platform that fosters collaboration, innovation, and alignment among resources, strategies, techniques, and key players within the energy sector, all aimed at advancing the energy transition. Its community-focused approach and leadership in innovation are central to this effort, and by engaging with real partners and stakeholders, the Energy Hub facilitates the exchange of best practices both across the sector and within specific sub-sectors. A key objective of the Hub is to maximize the operationalization of Copernicus services and data, further advancing progress in the energy field.

The presentation also highlighted the links between the Energy Hub and various national and international programs, including the JRC/DEFIS Knowledge Centre of Earth Observation (KCEO), EUSPA downstream market developments (including Cassini activities), the Copernicus Atmosphere Monitoring Service (CAMS), the Copernicus Climate Change Service (C3S) National Collaboration Programmes, Horizon Europe research and innovation actions, and GEO and EuroGEO.

Examples of datasets available through the Energy Hub were provided, including CAMS solar radiation time series, which offers historical data on global solar irradiation for planning, monitoring, and optimizing solar energy systems and energy supply grids. Additionally, another example was ERA5, which provides hourly data on atmospheric, sea surface, and land surface conditions since 1940.

The use case of Mon Toit Solaire for photovoltaic rooftops was presented. Mon Toil Solaire is a web-based decision support system for developing rooftop solar power generation. It was highlighted that the sourced EO data for the system includes CAMS solar radiation data and 3D urban topographical data.

Agenda Item 4 – C3S Energy Service. Nube Gonzalez-Reviriego / ECMFW.
2.

The speaker provided an overview of the Copernicus Climate Change Service (C3S) and its applications in the energy sector. The presentation covered aspects such as open data access, traceability, sectoral impacts, and quality assurance of the service, as well as its climate monitoring capabilities. It was noted that as the share of renewable energy generation increases, climate variability and climate change pose significant threats to this sector. A detailed look at the data provided by the C3S Energy Service was given, including key climate variables such as temperature, solar radiation, precipitation, wind speed, and sea surface pressure.

Examples of solutions that can be obtained from the C3S Energy Service were also presented, including:

- Identifying optimal sites for renewable energy plants
- Estimating the duration required to complete a proposed foundation installation campaign
- Analyzing the potential distribution of expected energy prices in the near future.

Agenda Item 5 – CLMS: Energy use case with HR snow data. Joanna Przystawska / EAA.
The speaker provided an overview of the Copernicus Land Monitoring Service (CLMS) portfolio and its various product categories. Monitoring the bio-geophysical parameters was discussed, and the High Resolution Snow and Ice (HR-S&I) products were introduced. Types of data from the HR-S&I portfolio include: Fractional Snow Cover (FSC), Gap-filled Snow Cover (GFSC), Persistent Snow Area (PSA), SAR Wet Snow (SWS), Wet/Dry Snow (WDS), River and Lake Ice Extent (RLIE), and Aggregated River and Lake Ice Extent (ARLIE).

An example focused on hydropower management, optimizing hydroelectric dam operations using FSC, was showcased. The speaker explained the types of data available and how to access them for this use case: snow cover extent, snow state, and snow water equivalent data can be accessed through the CLMS portal, while daily cumulative Gap-filled snow cover can be obtained via the WEkEO portal. Other high-resolution snow and ice monitoring data products can be accessed from the Copernicus Land Monitoring Service portal. Tutorials for downloading the data were shared, and links to these resources are included in the slides from the session.

Agenda Item 6 – Copernicus for Hydropower. Declan Kelleher / Gruner Stucky.
Before the speaker began his presentation, an overview of the applications of renewable site selection, planning, and monitoring was provided, along with an introduction to the speakers covering the topic.

Kelleher introduced the Gruner Group and shared their background, highlighting their expertise in developing hydropower dams. He explained that when designing these dams, it is essential to consider natural disasters

and their impact on downstream basins and spillways. He then detailed the process of constructing spillways to prevent dam failures. The company's modeling processes were briefly presented, emphasizing that EO is valuable for designing dams in remote areas where other data may not be available. Interferometric Synthetic Aperture Radar (InSAR) is another data resource they use during the design phase of hydropower projects, as it helps identify geological risks. He also mentioned that the company utilizes hydrological, geological, and topographical data to create models for estimating extreme flood events. Some data sources used include:

- NOAA meteorological data
- ERA5 or CHIRPS for historical analysis

Agenda Item 7 – EO Solutions for Hydro power. Paolo Mazzoli / GEOSISTEMA

The speaker provided an overview of GECOSISTEMA's energy activities, noting that their clients include both public and private sectors. He introduced the company's EO-based flood mapping solution for hydropower, which involves mapping downstream flood propagation and assessing flood impacts on the surrounding areas. The attenuation effects of the dam are also taken into account in their solution. Copernicus data is utilized to estimate river discharge during extreme weather events, with high-resolution local data added when available. The speaker mentioned that they use the Copernicus Digital Elevation Model (DEM) at a resolution of 30 meters, acknowledging its limited accuracy for this service, along with other daily impact indicators from Copernicus to address extreme weather events and significant climate variations caused by climate change.

Mazzoli then presented their "SaferPLACES" cloud-based digital twin solution for flood risk assessment. This solution simulates urban and industrial environments to facilitate detailed flood risk and hazard assessments. Its user-friendly interface enables users to run simulations, visualize results, and test mitigation measures. The solution utilizes Copernicus data, high-resolution digital elevation models (DEMs), and meteorological data, enhanced by AI-based algorithms.

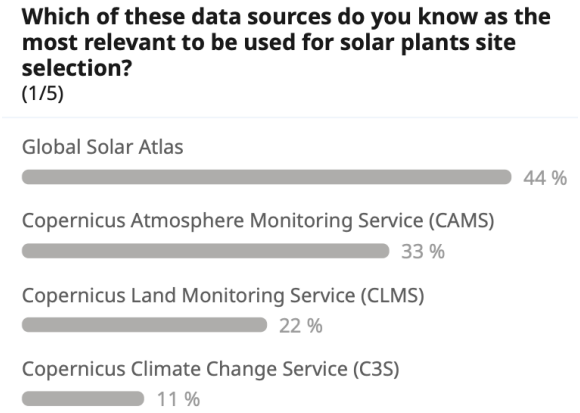
The speaker proceeded to showcase some EO solutions aimed at mitigating the effects of climate change in hydropower. He explained how climate change can affect electricity production and described how GECOSISTEMA models these impacts over a 10- to 20-year horizon, focusing on identifying and managing climate risks. These projections include stress tests based on Copernicus data.

Additionally, the speaker demonstrated how EO can be utilized to forecast incoming resources by modeling precipitation, temperature, and discharge through ensemble modeling. Their company creates seasonal models (spanning 6 months) and monthly models (covering 720 hours). To enhance the accuracy of forecasting, data is downscaled locally, leveraging AI and machine learning methods. The speaker concluded by noting their use of Copernicus datasets, including both daily and sub-daily data, as well as river discharge and forecasted information from the Global Flood Awareness System and API data for operational services.

Agenda Item 8 – EO in Solar PV. Tim van Benthem / DNV

The speaker provided an overview of DNV, noting that 45% of its workforce is engaged in the energy sector. DNV serves a diverse clientele, including governments, investors, developers, and private institutions. Their activities focus on advising clients at various stages of the energy farm development process, including identifying suitable geographic areas for establishing solar farms.

Van Benthem then gave an overview of how EO data can be utilized for energy assets, particularly in the modeling aspect of DNV's services and for development areas. DNV's energy assessments service is where EO is most frequently applied. This service employs a predictive model to estimate how much energy a solar farm can generate over its lifespan of 20 to 30 years. The model, developed and maintained in-house by DNV, functions as a digital twin and incorporates climate data alongside a mix of EO and ground-based information.

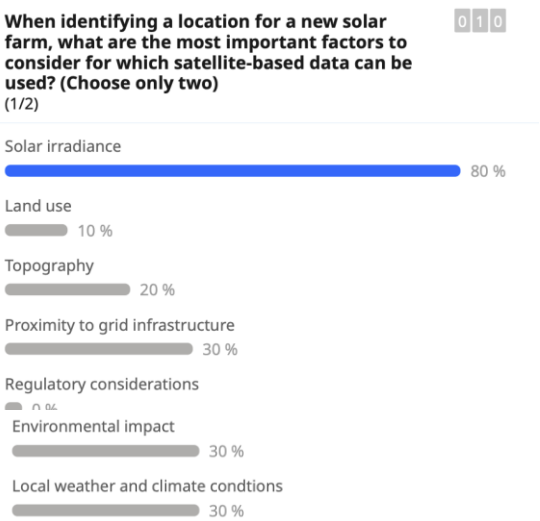


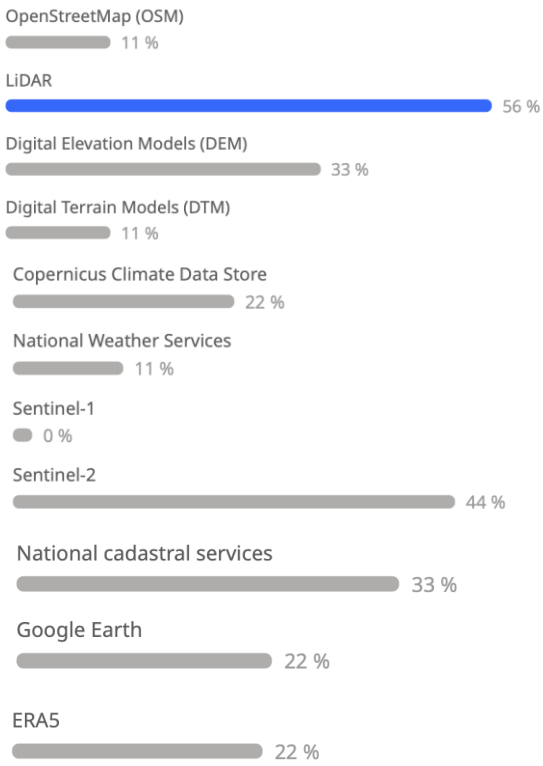
Tim showcased the performance metrics of a solar farm and the various parameters affecting energy production, which include solar irradiation (global, diffuse, beam, and reflected), ambient temperature, wind velocity and direction, precipitation, relative humidity, snowfall, and snow depth.

Data for these services are sourced from both public and commercial providers, which are combined to minimize uncertainty. The data from service providers and EO data providers are typically pre-filtered or processed for their specific applications. DNV does not rely on a single dataset; instead, they utilize multiple datasets that often have high spatial resolution (e.g., 1 km) and high temporal resolution (e.g., 15 minutes), along with sufficient historical data to capture inter-annual variations (greater than 20 years). The integration of EO and ground-based data helps further reduce uncertainty.

Current challenges include a lack of access to data in northern latitudes, which limits their ability to provide insights for developers and banks interested in solar farms in those regions. Multiple datasets for high latitudes would be essential. Although DNV has models predicting increases in global horizontal radiation, they do not possess all the necessary data to verify these predictions. Van Benthem also mentioned that data is useful for identifying potential sites for solar farms and assessing their risk for natural hazards, such as flooding.

Polls from the audience:





Agenda Item 9 – Respondent Project. Effie Marki and Dimitris Asimakopoulos / Future Intelligence Ltd + Kiefer

Effie Makri introduced the Horizon Europe RESPONDENT project and outlined the issues it aims to tackle. She explained that the project's scope includes generating accurate forecasts for renewable energy power generation and power demand by leveraging Copernicus and Galileo timing and synchronization (T&S) data, in conjunction with specific onsite weather station and IoT data. The objective of RESPONDENT is to enhance the adoption of renewable energy sources.

Dimitris Asimakopoulos introduced Kiefer and their role as energy planners, highlighting their provision of power generation data using specialized algorithms. Kiefer's stakeholders and clients include manufacturers of Phasor Measurement Units, renewable energy system aggregators, transmission system operators (TSOs) and distribution system operators (DSOs), national and EU energy/grid regulators, the scientific and research community, and society at large. Kiefer's primary focus is to achieve power generation forecasting by leveraging local weather and environmental conditions through the Copernicus program and in-situ weather stations. They also aim to forecast power demand and consumption, as well as effectively monitor power grids using the Galileo timing and synchronization service.

First session panel discussion:

After the presentations, a panel discussion with the audience was held. EUSPA initiated the conversation by asking the representative from Gruner Stucky, the Swiss company specializing in hydropower dam design, about their use of satellite data and their current adoption of EO. The Gruner Stucky representative explained that they began using satellite data to gather information in remote areas where their projects are located, or

in regions where field data is limited or unavailable. This approach is more cost-effective than conducting exploratory missions or collecting data manually on-site. A follow-up question was raised regarding additional data that could enhance their work beyond what was mentioned in their presentation. The representative noted that InSAR data is particularly valuable for evaluating resilience against extreme seismic events by analyzing historical movements and the geological features surrounding the dam site. InSAR can help identify salt and gypsum deposits and monitor ground deformation associated with these formations. He also pointed out that while InSAR is useful for monitoring operational dams, tracking vertical structures can be challenging with EO data alone.

The speaker from Gecosistema was asked whether their EO-based products are fully operational and how well satellite data is being utilized in their modeling. He explained that EO technology is primarily applied in civil protection for flood management and occasionally in the hydropower sector. He also noted that when modeling the impacts of climate change on hydropower, EO is fully adopted. However, the company has not yet utilized any Copernicus services for water flow prediction. A follow-up question was posed regarding how Copernicus could be improved to better serve Gecosistema's customers. The speaker responded that enhancing the resolution of the available DEMs by using airborne LiDAR would be beneficial. Additionally, improving operational availability and making access to current and historical climate data easier would greatly enhance their services.

A representative from Ocean Energy Europe (OEE) contributed to the discussion by highlighting their collaboration with Mercator and the Copernicus Marine Service to promote the increased use of EO data in the ocean energy sector. OEE primarily focuses on wave and tidal energy, noting that, like other renewable sources, ocean power requires power production forecasts, environmental impact assessments, and optimization of installations. The participant mentioned that while users appreciate the availability of free data, there is a strong demand for higher resolution and improved data, particularly for coastal areas, especially concerning tidal information.

A question was posed to DNV regarding their decision not to incorporate climate change data into their projections. The DNV representative explained that they avoid using long-term trends due to a lack of available knowledge and because they rely on service providers for their data. If providers do not supply climate data, it simply isn't accessible to them. He then clarified that the datasets they utilize undergo validation processes, making it challenging to verify climate data projections. Additionally, their clients are often reluctant to accept risks, and long-term climate models carry inherent uncertainties.

A follow-up question was posed around whether there might be opportunities to apply climate projections in pilot projects. It was answered that it might be possible to work retrospectively, modeling past climate events using historical data and current knowledge to gain insights into those events.

The ECMWF representative intervened and highlighted the complexity of modeling and predicting climate change scenarios. Current climate models primarily indicate an increase in the frequency and intensity of weather events, but accurately predicting specific events has proven challenging and largely unsuccessful. The speaker noted that while climate change projections can be refined using historical data, predicting specific events remains very difficult. The DNV speaker concurred with this observation and explained that while climate projection data is applied to assess risks, it is not as widely utilized in energy modeling.

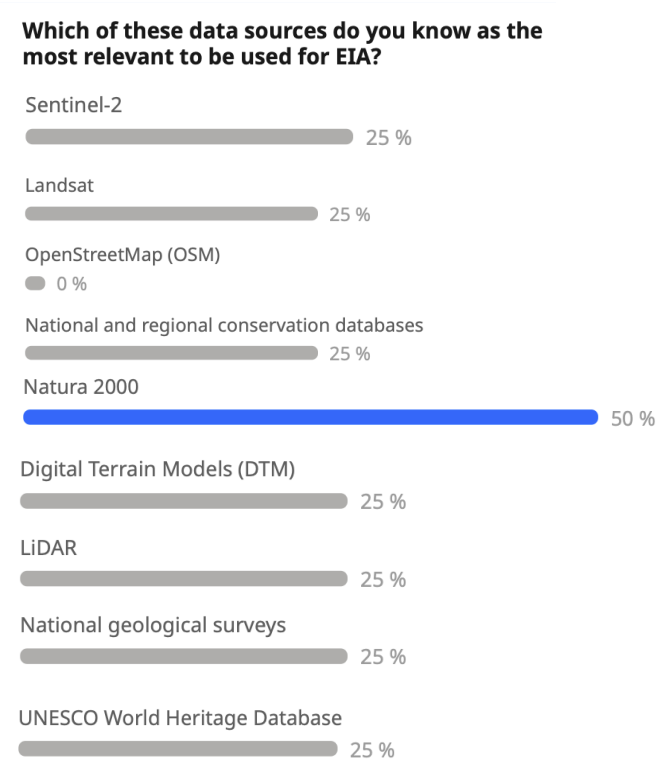
A question was then directed to the RESPONDENT project regarding the importance of high-resolution data for energy forecasting related to production and consumption. Makri explained that energy plant owners rely on accurate forecasts to inform their investments and to create more precise business plans, particularly in light of the anticipated increase in energy demand.

SESSION BREAK

Agenda Item 10 – Renewable Energy and environmental impact Role of EO. Branimir Radun, OIKON

The speaker introduced OIKON and its origins as an environmental impact assessment company. He provided an overview of the organization's current activities, highlighting the use of EO data and the rationale behind it. For environmental impact assessments of renewable projects, EO data is utilized in conjunction with ground sensors and drones. The speaker emphasized that EO enables large-scale monitoring, reduces costs, and can serve as a quick alternative to traditional fieldwork. The various phases where EO is applied were discussed, particularly during site assessment and selection. Key data sources mentioned include the Copernicus Programme, Corine Land Cover (CLC), CLC+, and the National Land Parcel Identification System (LPIS). However, Radun noted limitations in the resolution of EO data, with, for example, subtle changes in soil quality and erosion processes in complex terrains often going undetected by EO, underscoring the need for local ground-based validation. He expressed hope for improvements in spatial resolution. The integration of AI was discussed as a promising future development for processing large volumes of data, potentially reducing reliance on ground-based data collections. The fusion of high-resolution UAV imagery with satellite data was suggested to enhance EO data, providing a more comprehensive environmental perspective. In conclusion, Radun affirmed that EO is a valuable tool for broad-scale data coverage in renewable energy environmental impact assessments. However, current limitations necessitate the continued use of traditional methods for thorough evaluations. The impact of EU space programs, such as Copernicus and Galileo, was noted as a transformative force on a global scale. From the perspective of biodiversity and protected areas research, he stated that their company is developing on-site tracking for biodiversity monitoring. In this context, EO is not particularly useful, instead, temporal and in-situ data are essential for effective biodiversity assessments. If EO is used, it should serve only as a complementary tool.

EIA-related poll from the audience:



Agenda Item 11: Green Energy Copernicus demonstrator. Lidia Quental / LNEG & Pedro Branco / Xibi Sistemas

Lidia Quental discussed Renewable Acceleration Areas (RAAs), emphasizing that in order to meet the EU's renewable energy targets for 2030 and beyond, these areas should prioritize the advancement of wind and

solar technologies. She noted that hydro and biomass energy sources should be excluded from this focus due to concerns regarding their sustainability impacts.

Pedro Branco gave a demonstration of energy potential analysis using the Green Energy Copernicus. Branco was asked if the tool offers insights into the availability of grid infrastructure, including connection and transport capacity, as one of the biggest challenges for renewable deployment in many countries is grid congestion. The answer was the currently, it only provides a high-level overview of the grid infrastructure.

Second session panel discussion:

A question was posed to another representative from Oikon, Dalibor Hatic, regarding any barriers to the adoption of EO data in renewable energy projects. He responded from the perspective of an EO practitioner, noting that the primary barrier is a general lack of sufficient technical knowledge among EO users. He suggested that Copernicus should develop guidelines and methodologies to encourage greater uptake, as well as to provide training on how to effectively use the available data and services, along with examples of best practices. A follow-up question inquired whether current Copernicus products are effective in addressing these barriers or if further support is required. The answer was that few Copernicus products are currently used in the renewable energy sector. Oikon's representative proposed reviewing existing offerings to uncover additional tools that could be advantageous. He also highlighted that they frequently depend on raw images, conducting their own processing and extensive data fusion in their operations.

Lina Dubina shared that their organization has developed a guidance document demonstrating that solar installations can be implemented swiftly. They emphasized the role of spatial planning in facilitating solar deployment by involving local authorities during the development stage. Their goal is to provide clarity for developers to aid in the rollout of renewable energy and to support member states and institutions in achieving their sustainable energy targets. They also stressed the importance of standardizing deployment practices for renewables across regions and member states to eliminate barriers to implementation.

A question was raised about whether Copernicus data is recommended as a valuable resource for their users. The speaker clarified that they do not specifically outline the available tools, but she mentioned that developers have indicated it is useful. Currently, developers rely on both public and private data sources, and emphasized the importance of having up-to-date information.

Third session panel discussion:

Monitoring methane emissions. Ernst Koffi / DG-ENER – ECMWF, Anthony Credoz / TotalEnergies and Daria Stepanova / Airmo.

A question was raised about how the new regulations impact the monitoring of methane emissions. The speaker from TotalEnergies responded that they rely on EO data to track methane emissions. They use Copernicus, but also require private data from GHGSAT and Airmo for improved spectral and temporal resolution. A follow-up question inquired about what the company monitors at global scale. The speaker clarified that they measure methane, along with methane flaring and CO2 emissions. He noted that monitoring CO2 is becoming increasingly difficult due to the rising background levels of atmospheric CO2, making it harder to track emissions accurately. In contrast, monitoring methane is more straightforward.

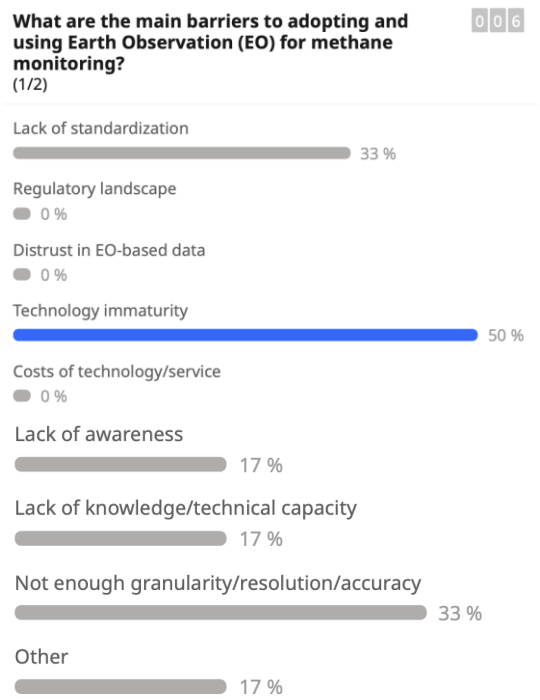
The discussion then shifted to the availability of public data from Copernicus and its utility in training methane emissions monitoring models, as well as the limitations of the current Copernicus sensors. Ernst Koffi replied that models for monitoring oil and gas emissions have been developed over the past 15 years, initially using data from methane emissions in wetlands as a baseline. This data helped create a forecasting model to estimate total leak concentrations from anthropogenic sources. Copernicus satellite data was subsequently used to validate this model, ensuring the best possible alignment between model predictions and actual measurements. Currently, these emissions forecasting models can be refined using satellite data, following the development of methane concentration forecasts. Koffi also mentioned they are working on a CO2 emissions monitoring model, expected to be deployed by 2026, which currently focuses on detecting emissions hotspots.

Another question was asked to Airmo regarding the added value of their services and whether the value would increase with the upcoming launch of their own Airmo satellite constellation. Daria Stepanova indicated that they anticipate improved measurements, highlighting that an estimated 70% of emissions currently go unrecorded. Airmo aims to address this gap with their new data, particularly in large oil and gas infrastructures, and advocate for regulations requiring continuous monitoring.

A follow-up question addressed regulatory compliance and inquired whether satellite data is certified or if further standardization is needed. Carles Debart from GHGSAT explained that compliance varies by jurisdiction. In the U.S., the EPA has strict guidelines for satellite technology and certification schemes, whereas European regulations are less specific about the technologies used, focusing instead on which assets to monitor, emission thresholds, and monitoring frequency. Currently, the regulations do not clarify the level of detail required for satellite monitoring. EUSPA asked how they differentiate the sources of emissions. The speaker replied that they analyze atmospheric concentration levels and model natural emissions, though this process can be quite complex.

Another question was directed to the TotalEnergies representative regarding their response once emissions are identified. The speaker replied that their approach varies depending on the situation. For significant leaks, they repair the issue directly. For chronic emissions from certain assets, which can be difficult to pinpoint using EO, they employ onsite technologies, such as drones, for measurement and remediation.

Poll from the audience



Conclusions and closing remarks.

The audience was thanked for their attendance and participation. The plenary of the UCP IAC will be held 14 October 2024.

A survey has been published to receive further inputs:
https://ec.europa.eu/eusurvey/runner/EUSPA_UCP2024_EO

End of Document