

Developing transmission electricity grids, protecting our seas

25 and 27 September 2017, Palma, Spain
Workshop summary

1. Welcome and introductory session

Antonella Battaglini from RGI welcomed everyone, stressed the importance of stakeholder dialogue and emphasised that no contradictions exist to building new grid infrastructures and protecting the environment.

The stage passed to **Eva Pegan from REE**, who explained why workshops such as this one are crucial for the future where 40% of grid development will be submarine. She stressed the importance of making environmental protection the priority, along with the importance of environmental compensation and restoration activities, especially near shore. Posidonia was considered especially important as it is:

- essential for completion of lifecycles
- important for coastal protection
- absorbs particulate matter – improves water quality
- one of the largest carbon sinks



After that **Neus Troyols from City Hall of Palma** welcomed everyone to Palma and appreciated the effort of sharing good practices on Posidonia protection. **Vicenç Vidal, Minister of the Environment, Agriculture and Fisheries of the Balearic Islands** stressed the importance of research on environmental protection and its dissemination. In his opinion, citizens need to understand the importance of the value of seagrass protection. He also discussed the need for legislative changes and drafting of a decree to regulate impact challenges that has to be well aligned with EU legislation.

Christina Pantazi from the European Commission's Directorate-General for Environment followed with her presentation on the importance of the seas, oceans and coasts protection. She presented the Natura 2000 legislation and explained what challenges the programme faces, in particular pointing out that the marine Natura 2000 network is incomplete to this point. The European Commission published a set of guidance documents for the management of Natura 2000 sites that are available

online¹. Christina ended her presentation with an outlook of where Natura 2000 could open new opportunities for new actors, including citizens who are currently not aware of the programme. The “[Action plan for nature, people and the economy](#)” which was the result of a consultation done by the European Commission on Natura 2000 last year, includes a list of 114 actions that will be completed by 2019 that focus on better outreach to citizens, among others.

2. European grid development and future challenges

Joan Groizard, Director General for Energy and Climate Change from the Balearic Government presented the zero emissions by 2050 goal of the Balearic Islands and spoke about the efforts to increase the proportion of renewables on the system (currently the lowest region in Spain with only 2% renewables in the electricity mix) by deployments of solar on public buildings, public green energy procurement and overcoming land zoning and spatial planning challenges on the Islands and how to better align legislation with this goal. He also stressed the need of a more democratic and inclusive energy system, more protected ecosystems and a more resilient economy.



A presentation by **Jean-Baptiste Paquel, System Development Senior Advisor from ENTSO-E** followed. He explained why we need high-voltage electricity grids and how to develop them in a sustainable, environmentally friendly manner. ENTSO-E's means to identify future grid needs is its bi-annual TYNDP (ten-year network development plan). Current estimates show

that grid investments of around 150 billion Euros will be needed by 2030. Main drivers of these needs are the integration of the European electricity market and the roll-out and integration of renewables into the grid. A very big share of new lines is expected to be subsea.

Patricia Labra from REE explained the importance of grid connections focusing on a special case of a poorly connected Spanish grid. She spoke about the needs for grid flexibility and gave an overview of REE's planned subsea projects, among them the HVDC cables to Majorca, Cuete, the Biscay gulf project (for which 2HVDC of 1000MW looking to be commissioned 2025) and multiple lines going into connecting Spanish islands with each other.

Angelo Ferrante Secretary General of Med-TSO introduced its organisation – the association of Mediterranean TSOS - and gave more background information on its cooperation with MEDREG (Mediterranean Energy Regulators), UfM (Union for the Mediterranean) and ENTSO-E. He explained that its regional coverage spans across

¹ General guidance on site management:

http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm; guidance on

Posidonia beds:

http://ec.europa.eu/environment/nature/natura2000/management/habitats/pdf/1120_Posidonia_beds.pdf

the European countries, as well as North Africa and Turkey and Med-TSO focuses mainly on knowledge sharing, network studies and identifying future projects. He further discussed the technical, financial and political issues which are often magnified in countries where institutional frameworks are less strong, poor data and its no one size fits all, gradual approach.

3. Protecting our seas: seagrass ecosystems

Eva Alessi, Head of the Sustainability Programme of WWF Italy, stressed the importance of awareness and education campaigns on the value of natural beaches. She spoke about the crucial role of Posidonia in coastal ecosystem dynamics of the underwater ecosystems – among many others it provides a food source and breeding ground for more than 400 species of marine plants and 1000 species of marine animals. She later moved on to explaining the ecological role of Banquettes - wedge structures formed from dried seagrass leaves and finished up her presentation with different innovative ways of reusing Posidonia, including the insulation of buildings and to support compost production.

After that she passed the floor to **Sonia Castañeda, Director of the Biodiversity Foundation**, who shared her insights on protecting our seas and seagrass ecosystems. She started off by providing an overview of the growth and development of Posidonia Oceanica's population in Spain. She then listed threats and direct impacts, such as:

- Toxic effects of inorganic and organic pollutants
- Habitat destruction or fragmentation because of coastal infrastructures
- Mechanical damages (illegal trawling, anchorages, etc.)
- Invasive alien species (red and green seaweed, etc.)
- Climate change
- Nutrient and organic matter inputs from land and sea: eutrophication

She presented conservation measures and applicable legislation and stressed the importance of different protection initiatives. Fundación Biodiversidad coordinates a projected funded by the European Commission's LIFE programme called LIFE-IP INTEMARES. Thanks to its predecessor project, the marine protected surface of Spain has increased from 1% to 8%.

The current project focuses on an integrated, innovative and participatory management of the Natura 2000 network in the Spanish marine environment and lasts until 2024.

4. VISIT IMEDEA: Instituto Mediterraneo de Estudios Avanzados

In the afternoon, everyone hopped on a bus to pay a visit at the Instituto Mediterráneo de Estudios Avanzados, where its Director Jorge Terrados provided a brief overview of Posidonia Oceanica's main characteristics. He stressed that it's one of the slowest growing species of seagrasses, which



is another reason why its protection is so crucial for the entire ecosystem. He also highlighted its limited capacity to recover from disturbance, which is why, in his opinion, the best conservation strategy is avoiding the damage and not affecting the environmental conditions required for persistence. He introduced a joint IMEDEA-REE project implemented at the interconnection between Majorca and Ibiza, where they transplanted seedlings and rhizome fragments of *Posidonia*. The success of rhizome fragments after one year was very high, with a survivorship of 61-80%, while the seedling survivorship was minimal (2.6-0 %)².

5. Protecting *Posidonia oceanica* – good practice examples

5.1 *Posidonia Oceanica* Legislation

Miquel Mir from the Balearic Government from the General Direction of Natural Spaces and Biodiversity at the Government of Balearic Islands opened the day with its introduction to the Government's decree on *Posidonia*. The decree was introduced to guarantee the conservation of *Posidonia* around the Balearic islands. It does so by analysing the threats, regulating different sea users, such as boats (anchoring on *Posidonia* is prohibited), regulating the use of dead *Posidonia* and zoning *Posidonia* according to the state of its conservation. The Government established both a fund and an expert committee that help the implementation of the legislation. He and workshop participants agreed on the importance of well communicating the value of *Posidonia* to citizens and stakeholders.

5.2 Terna's approach to minimise environmental impact for cables – technical solutions for Elba Island – Mainland

Adel Motawi, Director for Authorizations at Terna, presented ongoing submarine projects from Terna with a focus on the Elba interconnector. He then passed the stage to **Tommaso Granata, Environmental Engineer at CESI** who went into the case study, presenting different cable laying technologies that are beneficial for both cable and environmental protection, such as:

- high directional drilling
- jetting / ploughing / trenching
- mattresses / geobag / rock dumping
- plastic or cast iron shells

Moreover, he presented a case of *Posidonia* recolonization at the submarine cable between Capir and Torre Annunziata that was laid in 2014.

At the subsequent discussion, the audience agreed that guidelines on different types of cable laying techniques would be beneficial and that RGI could be a suitable platform for such a development process.

² Youtube video about the plantation: <https://www.youtube.com/watch?v=IVMGjxsJR2o>

5.3 REE subsea forest: recovery of *Posidonia oceanica* seagrass meadows – an innovative technique

Borja Alvarez, Environmental Technician at REE, described the innovative technique used by REE to recover *Posidonia Oceanica* seagrass meadows affected by the subsea transmission lines developments.

REE conducted research on the use of *Posidonia Oceanica* seedlings and developed an open seagrass meadow recovery method. The method involves the collection and cultivation of *Posidonia Oceanica* fragments and seeds grown under laboratory-controlled conditions or obtained directly from natural seagrass meadows. Subsequently, the seedlings can be transplanted into degraded meadow areas, for example into trenches opened on the seafloor due to works associated to the laying of submarine electricity cables.



Borja reassured the audience that the results and techniques used by REE are open and available for anyone interested in similar projects and research and recommended looking closer into the practice's guidelines.

At the end of the session Pierre Descamp, marine biologist from Andromède Oceanologie volunteered to give his presentation on **experimental transplantation of *Posidonia* in Monaco**. He described the technique using coconut coir fabric porous and quickly biodegradable baskets³.

6. Group discussions

During the last session, everyone split into groups where participants discussed the following questions:

- What challenges do you see for the implementation of these practices in your country/ environment?
- Which lessons can be drawn for other seagrasses?
- Are approaches applicable to your situation? Why, why not?
- What are next steps for further best practice exchange on this topic?

The main takeaways from the group discussions were:

- The knowledge and data about the seagrass protection is to a large extent already existent but it is still dispersed, not publically available or shared in a non-transparent manner. A need for an open database or a knowledge sharing tool which would include all the data available has been identified. While creating

³ More information about the project is available on Youtube (video in French): <https://www.youtube.com/watch?v=piNmZUv4KXg&t=6s>

such a database, academia, industry, civil society and marine protection bodies should be involved.

- Such a database should include results of Environmental Impact Assessments of previous subsea cable project. General guidelines on how to collect data during the planning and monitoring would moreover be beneficial to share and compare insights across Europe.
- The importance of systematic monitoring of cable impacts has been identified as crucial.
- Participants agreed that more pilot projects that could build upon REE's practice research would be needed.
- Different solutions are suitable for different regions; therefore, we should avoid limiting the discussion to solely one practice.
- A better communication approach is needed to reach out to the "non-expert" audience. It's crucial that the general public gains a good understanding of the value of seagrass protection.

7. Key learnings

- Public awareness of importance and role of **Posidonia** is vital
- Dialogue and cooperation between different stakeholders is crucial
- Other practices, like boat anchoring, are also detrimental to seagrass ecosystems and need to be addressed
- We are still in the experimental phase regarding Posidonia transplantation and reforestation. The failure rate is gradually improving but there is still a lot to learn.
- There is a need for an exchange of research results. For this, guidelines to standardise results as well as a database where research and data could be accessible to everyone were recommended by participants.