RGI expert workshop
"Offshore grid infrastructure: understanding cumulative impacts & exploring multi-functionality and environmental monitoring"
9 December 2015, Brussels

Overview:

On 9 December 2015, 35 participants joined the RGI expert workshop "Offshore grid infrastructure: understanding cumulative impacts & exploring multi-functionality and environmental monitoring" in Brussels, including grid operators, environmental NGOs, cable manufacturers and decision-makers. Presentations were held on the current status quo of grid infrastructure deployment, on the forthcoming guidance document of the European Commission on energy infrastructure and Natura2000, and on environmental impacts of offshore grids. Moreover, three case studies on the COBRAcable, NORD.Link and the Sicily-Malta interconnector were introduced by TenneT and Terna.
During discussions, participants agreed that there are knowledge gaps regarding the environmental impacts of grids, including the effects of electro-magnetic fields and heat dissipation on species and the seabed. Moreover, it was acknowledged that concise information about different cable laying techniques and the availability of data would be useful.
The presentations of the workshop are available on our website.

The present document does not attempt to give an exhaustive overview of the multiple presentations and discussions held but rather focus on a few highlights emphasised during the workshop.

Further information:

RGI commissioned the company NIRAS Consulting to undertake a review on key environmental issues associated with subsea cable deployment through a literature overview and expert testimonials via an online questionnaire and telephone interviews with key representatives from the industry, relevant stakeholders and marine environment specialists. The report can be downloaded here.

Highlight 1: new EU Guidance

DG Environment, in collaboration with DG Energy, has prepared the „Guidance on electricity, gas and oil transmission infrastructure and Natura 2000". The document, which will include a chapter on the marine aspect, should be published early 2016. It aims at safeguarding hotspots of biodiversity (Natura 2000) while facilitating the deployment of energy infrastructure. It encourages a case-by-case approach as well as the assessment of potential impacts (changes to benthic habitats, communities and species; damages to intertidal habitats and species; disturbance and displacement of highly mobile species) and cumulative effects since uncertainties in marine areas seem to be greater than on land: less than 10% of marine species and habitats show favourable conservation status and there are significant knowledge gaps in most regions. The document has drawn on existing guidelines (e.g. from OSPAR) and refers to further more technical documents to which it is complementary. In order to unfold its potential, the guidance now needs to be efficiently disseminated among competent authorities, practitioners, environmental experts and NGOs.

Highlight 2: Sicily-Malta interconnector and mitigation measures for *Posidonia oceanica*

In the case of the Sicily-Malta interconnector, the Italian TSO Terna was commissioned as contractor for the Italian part of the project and undertook environmental impact assessment studies (ex: analysis of interactions with Natura 2000 protected areas). Routing optimisation and mitigation measures were implemented e.g. to preserve the protected seagrass meadow *Posidonia oceanica*. This included the transplant of over 3,000 Posidonia rhizomes (ca. 45-50 m^2) to a different area of the Sicilian coast, using a revolutionary technique. A three-year environmental monitoring is planned for the new site.

Highlight 3: Stakeholder survey on subsea cable interactions with the marine environment

A survey was commissioned by RGI and developed by NIRAS Consulting to gather an insight into a wide constituency of stakeholder views about the environmental effects of subsea cables.
It included an online survey with four multiple choice questions: i) opinion on the top three marine environmental impacts affecting the development of subsea cables; ii) opinion on the top three marine environmental receptors most sensitive to impacts; iii) opinion on the key knowledge gaps in subsea cable environmental effects; iv) opinion on the top three environmental receptors where further understanding of the impact of subsea cables is needed. As a second means of information and opinion collection, telephone interviews were carried out with selected stakeholders ranging from transmission system operators, regulators, consultancies, developers and operators, academics, NGOs and cable installation and manufacturing companies.

The online survey demonstrated that seabed disturbance was the impact that most affected the development of subsea cables. The knowledge gap of highest concern is the effect of electromagnetic fields (EMF); seabed disturbance was the second highest concern. While there appears to be a lack of knowledge or awareness around EMF, it was widely considered that it was not affecting the development of projects. Overall, there was a common perception that knowledge gaps in relation to potential environmental impacts of subsea cables are associated with uncertainties around how EMF and, to a lesser extent, heat emissions produced by subsea cables affect marine receptors' behaviour. There were contrasting opinions on whether these emissions were a realistic issue. Uncertainty around the quantitative impact of cable installation and decommissioning phases, in relation to seabed disturbance and sediment suspension, was also highlighted by both the interviewees and current literature, indicating a need to better understand these impacts to inform future use of specific installation / decommissioning techniques.

Discussions and recommendations

- The most effective way to minimise impacts of an offshore interconnector is to undertake an early and detailed planning of the project. Contractors and mitigation solutions should be included in the early stages of the planning process. This should benefit the project at later development stages.

- Participants agreed that all stakeholders should aim at a better exchange of experience as well as an easy access to data that have already been collected at a European level. This would also help bolster our understanding of environmental impacts and potentially enable the focusing of subsea cable environmental assessments. Good practice guidelines could be updated with a stronger consultation and input from all stakeholders, including the industry.

- A review of the differing requirements for environmental assessments across European maritime jurisdictions would be useful and would help identify opportunities for streamlining. Furthermore, a standardised approach to environmental surveying and assessment would provide a level of consistency to the procedures surrounding subsea cable development. For instance, even though EIAs are not mandatory for subsea cable projects across Europe, it is a well-understood procedure that could constitute the backbone for a cross-boarder understanding for scoping and documentation between all European stakeholders engaged in offshore interconnector projects.

- The use of a singular database collecting which environmental data are available could be very useful for all stakeholders. The database should also associate to which organisation each specific data set belongs, so that the data can retrieved/purchased.

- Stakeholders could also develop factsheets estimating the level of disturbance for each tool involved in the installation of subsea power cables. The factsheets would outline which installation tools would be suitable for which habitat types. This could also be applied for decommissioning techniques.

- There are contrasting opinions on the importance of cumulative effects: some participants did not think that the cumulative impacts of subsea cables are of particular concern, especially when compared to the activities of other industries such as commercial fishing. Nonetheless, since the number of subsea cables will increase in the next years along with intensifying activities in the field of energy (renewables, gas, oil), shipping traffic and telecommunication, participants agreed that a guidance specifying how to assess cumulative impacts and considering the realistic effects of subsea cables is currently needed.

- The scale of subsea cable development impacts is believed to be very localised; resulting in a potentially concentrated impact on sensitive species, with a reduced effect across a greater area. Screening out certain impacts could be considered, allowing more time to be spent on the key issues such as EMF and thermal emissions and managing the installation process more efficiently.

- The benefit of utilizing subsea cables to collect general environmental data was discussed during the workshop. Participants had diverging opinions on the question, especially when considering the purpose of such approach. Indeed, it may be difficult to collect any data from buried cables. Also, the replication of data should be avoided. Nevertheless additional monitoring data would help to further the understanding of the environmental effects of subsea cables. The focus should be on standardised studies that draw conclusions, which can be referred to within policy and development projects. Some participants suggested that there is the potential for environmental monitoring to be combined with post construction monitoring.

- The authorities should have a good understanding of the effects and impacts of all sea users and projects; developers cannot take into account all the different uses. There is a clear need for all sea user including grid and RES developers to be provided with maps taking into account all sea uses at the European level. DG ENV and DG MARE could meet this need. There are already many data available for mapping, yet they need to be compiled according to a multi-layered approach. This is in line with the European Commission's endeavour to foster better data gathering and availability to enable the implementation of the Maritime Spatial Planning Directive.

If you have questions, comments or relevant information, please contact us:
Julien Sialelli, julien@renewables-grid.eu