Renewables Grid Initiative

Offshore power grids

The need

Power transmission via subsea cables aims to interconnect terrestrial grids, to supply power to offshore facilities or to feed power supplied from offshore renewable sources, such as wind, wave and tidal energy into terrestrial grids. Marine interconnectors enable furthermore the trading of power between different countries, provide a means to share the use of renewable energy and storage options, and increase the security of electricity supply.

Current status

Presently, there are operational interconnectors with a transmission capacity of more than 15 GW in the European seas. According to the ENTSO-E's Ten-Year Network Development Plan 2014, by 2030, some 20.000 km of new subsea cables are needed, for an estimated investment cost of €50 billion. Among these projects, the European Commission (EC) has identified numerous projects of common interest (PCIs) that, as such, may benefit from accelerated licensing procedures, improved regulatory conditions, and access to financial support. This represents an overall additional transmission capacity of more than 20 GW for the next 10 years. The challenges of undertaking so many projects in just over a decade are massive: technically, logistically and financially.

Spatial planning

The EC's Directorate-General for Maritime Affairs and Fisheries proposed a directive for maritime spatial planning and integrated coastal management. Maritime spatial planning aims at reducing conflicts between different users of the sea (fisheries, shipping industry, military, tourism industry, fossil and renewable energy sectors, pipelines and cables) while protecting marine ecosystems. It foresees Member States to draw up maritime spatial plans that identify the most effective future spatial development. Moreover, they should develop integrated coastal management strategies and establish appropriate cross-border cooperation. Offshore grids will be part of these plans.

Guidance

Under the EU legislation for energy infrastructure (Guidelines for trans-European energy infrastructure) that came into force in 2013, the EC developed a document for streamlining environmental assessment procedures for energy infrastructure PCIs. This streamlining approach intends to improve and better co-ordinate environmental assessment procedures by reducing unnecessary administrative burdens and creating synergies, while ensuring a high level of environmental protection.

Moreover, the EC has finalised a guidance document on *electricity, gas and oil infrastructures and Natura 2000*, that identifies the potential impacts from energy infrastructures on species and habitats protected under EU nature legislation and suggests mitigation measures and best practices to address them. It is a non-legally binding document meant to assist parties involved in

the development and approval process of energy infrastructure developments (authorities, investors, TSOs, consultants, NGOs, etc.)

Other challenges

The challenges to assess and understand the effects of subsea cables on the marine environment as well as the possible cumulative effects are real for permitting bodies, and thus for developers and investors. There are uncertainties due to knowledge gaps that can be filled e.g. by collecting relevant environmental data and making them available to authorities and practitioners across borders.

Work of RGI

RGI intends to better understand the impacts of subsea cables on the marine environment, identify key environmental information and possible knowledge gaps, but also review expert recommendations and design possible actions. A study has been commissioned in 2015 to this end. Results will be published soon. Furthermore, RGI is willing to explore the possibilities of using the grid infrastructure to gather environmental data that may contribute to closing knowledge gaps and supporting permitting procedures and environmental protection.

More information

Projects of common interest "Electricity and smart grids' map"
ENTSO-E "Ten-Year Network Development Plan 2014"

European Union's Guidance Document "Streamlining environmental assessment procedures for energy infrastructure; Projects of Common Interest"

European Commission Environment "Natura 2000 Guidance"
European Commission: Proposal for directive that establishes a "framework for maritime spatial planning and integrated coastal management"

OSPAR Commission "Assessment of the environmental impacts of cables"

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