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CURRENT
Enabling Network Technology throughout Europe

General Feedback

Overall, currENT commends ENTSO-E on the good metrics that have been developed for the TYNDP CBA Guidelines 4.0, while acknowledging the complexities of developing a methodology that takes all factors into account. However, there are still two main areas in which this methodology does not meet the needs of currENT members.

First of all, the benefits of solutions that can be delivered in the next 1-2 years. Using a scenario 5 years in the future as a basis for a CBA is not adequate for fast-acting solutions. This is because it does not take into consideration the benefits that can be delivered before the given year of the scenario. In all likelihood congestion will be higher in earlier years, while awaiting traditional solutions to be developed, and the value provided in these earlier years much greater. At the same time, given past experience (e.g. ACERs appraisal report on PCI progress and development) the scenarios are likely to be overly optimistic about the completion of projects by the given year, and do not sufficiently factor in the likelihood of delays. Given this uncertainty, the methodology needs to find a way to compensate for the inherent lack of information when dealing with future scenarios. For example, if there is no information on the early years 0-5, this will negatively distort the NPV overall.

Secondly, the methodology does not fully take into consideration the challenges of a fully decarbonised European economy in 2050, and therefore does not give enough weight to innovative grid technologies that can address these challenges. At the end of January 2023, Member States have submitted their offshore development plans for each sea basin. From these plans, it logically follows that continuing with only existing technologies would result in an excessive amount of landing points by 2040, and new technologies will be needed. At the same time, it will be a challenge to access all the raw materials for this kind of grid expansion. This scarcity of raw materials needs to be factored into the CBA methodology and their impact on lead-time for development[s]. For example, meeting the capacity needs with existing cable/line solutions will require a multiplicity of circuits and materials that is likely to be unsustainable, socially acceptable or that be timely delivered.

currENT recommends that the CBA should have overall more flexibility to deal with new technologies, so they can be fairly assessed against conventional technologies.

Social Economic Welfare

currENT believes the global socio-economic welfare (SEW) is a step in the right direction. However, many of the impacts are missing from the methodology as it is currently proposed. For example, it only looks at CO2 emissions, and does not include a robust approach for valuing the impact of other emissions such as NOx, SOx, etc.

Additionally, when considering CO2, it only looks at the market price of CO2, and not all other environmental impacts of transporting fossil fuels. Not needing to build another pipeline, for example, would not be counted toward the SEW as it stands now.

Assessment of Hybrid Projects

While the methodology is logical for the two situations proposed, the CBA needs to measure the benefits of projects in larger, high-capacity, meshed grids.

If we are to move around the power that is targeted in the European Sea Basins (North Seas Energy Cooperation nations target at least 260GW by 2050), we need to rethink our approach to grid planning. Any radial point-to-point interconnectors will be required to transfer huge amounts of power, 5-10GW. It is too great a risk for this level of power to be point-to-point with no alternate routes to supply.

A meshed grid will have built in redundancy with multiple routes to market, while also having fewer landing sites and require less infrastructure.

It is essential that we do not assume a 'fixed-technology' world. There are many novel grid technologies that are being developed that will enable and optimise a meshed grid approach, such as the capability to carry up to 10GW of power in a single cable. For example, Strathclyde University released a study in 2022 showing the greater benefits and cost savings, approximately €55 billion, offered by a meshed offshore DC grid using superconducting transmission cables compared to conventional cables.

Commissioning Years

While currENT believes that there is a sound logic behind the current formula, which combines various parameters, and multiplies them by a number of factors. However, planning, permitting, and construction can differ strongly for different technologies. There should therefore not just be one standard mean time for each parameter that makes up the commissioning formula, but this needs to be based on the type of technology and the scale of the project. In addition, certain factors have not been taken into account, such as whether it is a brown field or virgin territory.

Also, to allow for transparency, the commissioning times calculated for each technological type (e.g. AC, DC - overhead lines, underground cables, GIS or AIS substations, various FACTs, Dynamic Line Rating, superconducting system, etc.) should be consulted upon and published. Ideally these will be compared to recent practical deployment experience of these technologies.

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Contribution to Union Energy Targets

These methodologies are useful; however, they need to be in line with the latest targets. For example, the efficiency target of 32.5 is based on old targets from 2018, which is not in line with the Fit for 55 Package.

Other indicators that would be of interest is the smartness of the grid, as well as the raw materials intensity.

For the smartness of the grid, indicators are currently being developed around asset observability, controllability etc., as laid out in the Commission's Digitalisation of the Energy Sector Action Plan. It would be useful to include this indicator in the CBA methodology.

With regards to the raw materials, the efficient use of materials is an integral part of the Energy Efficiency First Principle. By all accounts, there will be a shortage of materials in order to carry out all the ambitions of Net Zero. Going forward, this is going to become an increasingly important indicator. Are the materials available to feasibly build this project?