ENTSO-E Roadmap for a multi-sectorial Planning Support

2020

EXECUTIVE SUMMARY

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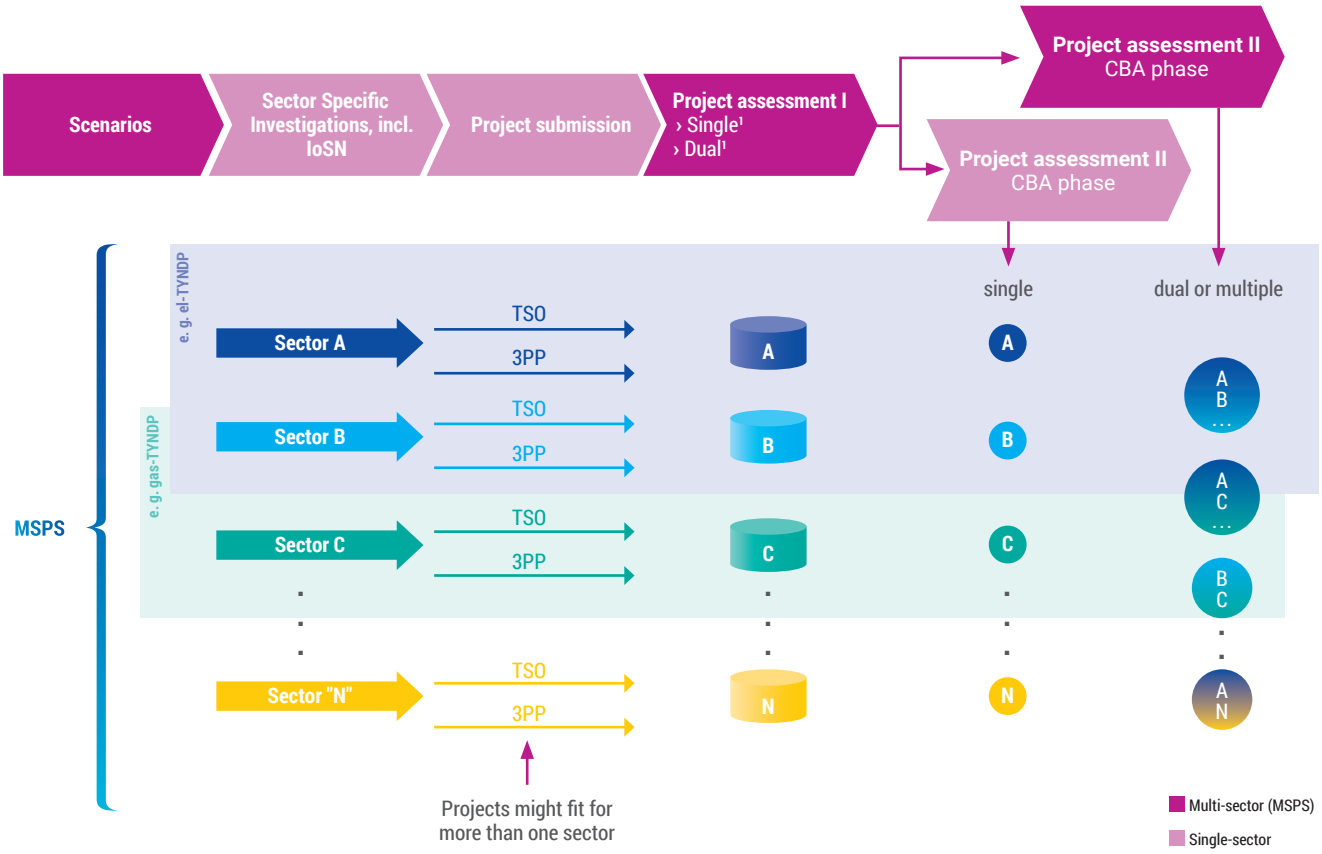
Smart Sector Integration has become an important topic on the European energy policy agenda. As a key enabler of a climate-neutral energy system, Smart Sector Integration helps find cost-efficient solutions for system needs, supports a high level of system security and resilience, and facilitates the decarbonisation of other sectors through innovative, cross-sectorial solutions and synergies.

To forward these objectives, the European Network of Transmission System Operators for Electricity (ENTSO-E) has developed **a new, multi sectorial planning support (MSPS) concept and a roadmap for the evolution of the Ten-Year Network Development Plan (TYNDP)** as a tool to progressively deliver infrastructure planning using a holistic approach and multi-sectorial framework. This results in a smarter, more integrated and optimized **'one energy system' view** which strengthens links across sectors and supports coordinated decarbonisation efforts on all fronts through, among other things, the centrally-integrated role of the electricity grid.

The MSPS concept and the implementing roadmap create a framework to enable greater coordination of infrastructure planning across different sectors by taking **a long-term, holistic view of system planning**. This creates an opportunity to optimally integrate and coordinate various coupling solutions involving different network elements between various infrastructures. As a result, **additional multi-sectorial elements are incorporated into scenario-building and project-assessment phases**, while sector-specific assessment phases remain confined within a single sector, e.g. identification of system needs (IoSN) studies are still sector-specific. The MSPS concept is presented in the figure below:



Multi-sectorial planning support – various sectors under the MSPS umbrella

1 Artelys, 2019, **Investigation on the interlinkage between gas and electricity scenarios and infrastructure projects assessment**

As shown in the figure, the **MSPS concept** introduces **common scenarios across an expanse of sectors beyond electricity and gas**. At the same time, it introduces **a multi-sectorial view in the project assessment phase**. The first phase of project assessment will consist of identifying different projects that interact mainly with one sector or with multiple sectors thorugh the use of a dedicated 'screening methodology'; this methodology will identify the potential need for dual or multi-sector project assessments based upon the identified interactions. For the second phase, a cost-benefit analysis will be performed to assess and evaluate costs and benefits from a system perspective looking at project interactions within a single sector or across multiple sectors, as warranted. Using this approach to prioritize cross-sectorial investments will result in more thorough and comprehensive cost-benefit analyses that reflect societal benefits and costs across sectors to facilitate more efficient systemic solutions. In addition, the economic assessment of different long-term scenarios within this new multi-sectorial planning approach will take into account all costs and will be complemented by further analysis to identify and compare the economic benefits of the different pathways in a robust manner.

Interlinking the various energy sectors through this new, multi-sectorial planning approach will help find efficient solutions for meeting certain system needs while supporting a high level of system security and resilience. The MSPS roadmap foresees the inclusion of a variety of sectors with different energy end-uses, including but not limited to heating and cooling, transport, industry, and water. The inclusion of more sectors and stakeholders through the MSPS approach will increase the complexity of scenario-building and the TYNDP development processes, but stakeholder collaboration, commitment, and advisory contributions are essential for the optimal implementation of the MSPS concept; these contributions ensure the quality of the information and data used to make decisions at various stages. In order to maintain a pan-European system view, consistency and alignment across different levels, transparency and neutrality in designs, and the availability of performance indices, the governance of the MSPS should remain in the hands of the Transmission System Operators' associations, and any project that interlinks sectors should be assessed by relevant bodies from those sectors.

The MSPS concept offers a flexible extension and enhancement to the TYNDP, providing new perspectives capable of evolving to meet new policy goals and stakeholder expectations, and the need for decarbonisation of all sectors. An open-access platform approach will be helpful to integrate input coming from the different sectors and ensure data quality, sound results, and sufficient transparency at all stages of the process.

ENTSO-E is firmly convinced that through the implementation of the MSPS concept and the roadmap, it will gain a more accurate and comprehensive view of the entirety of the energy system landscape. As a result, ENTSO-E will be able to consistently provide holistic approaches across multiple sectors to realize a **long term, coordinated, integrated multi-sectorial vision** for system planning as a key tool for decision makers striving to achieve EU climate neutrality objectives.

European Network of
Transmission System Operators
for Electricity