EASE Reply to ENTSO-E's Public Consultation on the 10-Year Network Development Plan (TYNDP)

March 2025

INTRODUCTION

The ENTSO-E 10-Year Network Development Plan (TYNDP) is the pan-European electricity infrastructure development plan. It examines the future power system as a whole and explores how interconnections and energy storage can support the energy transition in a cost-effective and secure manner. EASE has responded to the consultation questions, rearranging the order of the questions according to its priorities. Please find here the TYNDP 2024 report.

1. Is the TYNDP consistent with the relevance of the power system in achieving the EU Green Deal and the ambitions for competitiveness described in the Draghi report, in identifying the value of infrastructure projects and the way forward? Any suggestion for improvement?

The European Scientific Advisory Board on Climate Change assessed the TYNDP draft scenario report and underlying data in 2024, and found several methodological issues, highlighting that,

1) "Greenhouse gas emissions are underestimated, while the mitigation potential of carbon capture and storage (CCS) is overestimated... this represents more than 10% of the net GHG cumulative emissions over the period 2030–2050."
2) "There is a risk that the cost optimisation in the scenarios modelling overlooks more energy- and cost-efficient solutions, such as direct electrification." Furthermore, "Several input assumptions of the draft scenarios seem implausible. This is particularly the case for the costs of hydrogen production and CCS deployment, which are not fully captured by the investment model underpinning the scenarios."

Direct electrification paired with thermal energy storage is disregarded as an option to decarbonise industry because it is not included in the input assumptions and does not receive the same political support as hydrogen.

Also, in other branches of the economy, the simpler, more efficient solutions of direct electrification (including with all the different types of storage technologies whenever needed) are in risk being overlooked, and compensated by the hypothesis of a significant penetration of hydrogen in the final demand. There are many uncertainties concerning the development of hydrogen and it is important not to rely to excessively on its deployment. Especially since electrification is recognised as the most cost-effective and energy efficient way to decarbonise large majorities of the economy and final energy demand, a scenario with a higher electrification rate for final demand should have been considered (compared to DE and GA, where electrification only reaches 51% and 42% respectively of final demand).

2. For what purpose do you use the TYNDP?

☐ To learn about possible future of the European energy system (scenarios)

☐ For information on transmission projects

☐ For information on storage projects

☐ For information on future system needs in 2030/2040

☐ I use TYNDP data in my own research/work

☐ For personal knowledge

☒ Other:

(1) CBA methodology is required for energy storage projects seeking European backing PCI status

(2) Energy storage technologies are deployed to deal with flexibility needs which does not seem to be the purpose of the TYNDP (which uses 3 8 hour-periods per day time granularity, D-1 market settlement with perfect foresight, and no LDES technologies) and is addressed only in a minor way by the CBA (balancing, redispatch, etc.)

6. Which TYNDP product(s) did you find most useful?

You can find these documents here: https://consultations.entsoe.eu/system-development/tyndp-2024/

	I have not read this document	I've had a look. It's not useful to me	Somewhat useful	Very useful
Infrastructure Gaps Report	x			
Interactive data visualization on system needs	x			
Online project sheets, including CBA results	x			
Scenarios	x			
Offshore Network Development Plans	x			
CBA Implementation Guidelines			x	
System Needs study Implementation Guidelines	x			

3. Is system integration adequately reflected in the TYNDP? Any suggestion for improvement?

A better explanation of the underlying assumptions is warranted particularly concerning the Energy Transition Model where end-use demand is assigned to technologies (electrification versus hydrogen or molecules).

Once again, some technologies are relevant in the energy transition, like thermal energy storage, but are not part of the input assumptions. Furthermore, a robust, explicit definition of "system integration" should be elaborated by ENTSO-E.

4. Any other recommendations for future TYNDPs?

Put energy storage technologies (Thermal Energy Storage, other long duration energy storage technologies, and multi-day storage) which have not received the same level of political support as hydrogen-based technologies on a level playing field, and consider the actual economic strengths and weaknesses of each solution in a technology-neutral way. Consider the implications of overlooking (or overestimating) flexibility needs when interpreting and summarising the results. An aggregated overall analysis would be appreciated to describe the overall cost and investments breakdown of the proposed scenarios for the entire energy system. This would help to better understand the cost-efficiency and economic implication of the proposed scenarios.

5. Open comments

Final installed capacities trajectories of the different assets (vRES, thermal plants…) should be available not only in terms of production (TWh), but also in terms of capacity (GW), in order to facilitate understanding and comparative modelling.

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About EASE

The European Association for Storage of Energy (EASE) is the voice of the energy storage community, actively promoting the use of energy storage in Europe and worldwide. It supports the deployment of energy storage as an indispensable instrument within the framework of the European energy and climate policy to deliver services to, and improve the flexibility of, the European energy system. EASE seeks to build a European platform for sharing and disseminating energy storage-related information and supports the transition towards a sustainable, flexible and stable energy system in Europe.

For more information please visit www.ease-storage.eu

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Disclaimer

This response was elaborated by EASE and reflects a consolidated view of its members from an energy storage point of view. Individual EASE members may adopt different positions on certain topics from their corporate standpoint.

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