Response to consultation on ENTSO-E's RDI Roadmap 2020-2030

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ENTSO-E's RDI Roadmap 2020-2030

smartEn welcomes the proposed roadmap for Research & Development & Innovation for the 2020-2030 decade presented by the EU TSOs. The flagships proposed in the roadmap provide a comprehensive vision of the changes in innovation necessary for the electricity grid to adapt to a new configuration with more decentralised resources, new demand patterns and the participation of active customers. While recognising the relevance of all three RDI clusters, we particularly underline the focus on sector integration and deep electrification in cluster 1 as central driving forces for RDI.

Complementing the aspects proposed in the roadmap we would highlight the following relevant aspects that should be included as additional flagships and/or within the proposed flagship projects.

Focus on the need for increased flexibility in an integrated and decarbonising energy system

The participation of new an innovative flexibility solutions and market participants should be consistently taken into consideration in all aspects of the RDI programme. This should include demand response (incl. e-mobility), distributed generation, energy storage, prosumer solutions, new market entrants and business models including aggregation.

When assessing and further developing measures and market frameworks, all technical requirements, as well as administrative, permitting and grid connection procedures should be scrutinised for an adequate inclusion of these solutions. At the same time, market barriers should be tackled, including barriers preventing effective price signals.

Move towards a service-based approach rather than an asset-class approach

To be able to achieve the goals presented in the different flagships, while integrating the change in demand and generation patterns in the most efficient way, a change in paradigm is necessary. The current approach based on asset classes limits the possibilities of current and upcoming technologies. Storage for example does not fit into any of the traditional asset classes. Storage can either be a generation or consumption asset or both at the same time. Classifying storage incorrectly in one asset class will limit the services it can provide, hindering its development and business case. Ultimately the alternative to asset classes is to define the services required by the grid and to allow different technologies to provide them. The challenging task of approaching the system from this perspective would suppose an investment in research and development for which this project seems very well suited. We miss this innovative perspective in the proposed research projects, risking that some or all of the flagships might be obsolete before too long with the inevitable appearance of technological innovations.

Provide a firm plan to solve and avoid "Long-lasting Deviations"

As we saw with the significant frequency deviation events in 2019, and as stated in ENTSO-E's own "Continental Europe significant frequency deviations – January 2019" report, technical and system failures that cause "long-lasting frequency deviations" need to be addressed as soon as possible. Some of these depend on technical restrictions that might require a rethinking of certain parts of the grid. We would expect this topic to take an important role in projects related to the flagships 2, 3, 5 and 6. Failing to address these structural technical problems will put certain assets, especially those with limited energy reservoirs (LER), under unnecessary pressure, thus challenging their resilience, decreasing their lifetime and overall competitiveness.

Response to consultation questions

6. What do you think about ENTSO-E approach based on a selection of high-level use cases (flagships)?

	Disagree	Agree
It reflects system needs	○	◉
It provides a clear prioritisation	◉	○
It is easy to understand	○	◉
It is well suited to collaborative innovation	○	◉

See above for disagreements on reflection of system needs and prioritisation. Regarding prioritisation, we do think that the roadmap clearly prioritises the important topics, but the timeline should be more ambitious and detailed. While we do agree that the structure and topics allow for collaborative innovation with a wide range of stakeholders, it will be very important for the successful implementation of the roadmap, that stakeholders are involved and its views reflected at every level, including in the strategic decisions and direction taken by each flagship.

7 Do you think ENTSO-E Roadmap is ambitious enough to address future power system challenges?

The level of ambition is

Please select only one item

- ◯ Insufficient (most issues will remain unsolved)
- (X) Partly sufficient (only some issues will be solved)
- ◯ Sufficient (most issues will be solved)
- ◯ Unrealistic (it cannot be implemented)

8. Please rank the importance of each flagship for the realisation of the European Green Deal?

Flagship 1: Optimise cross sector integration	Indispensable
Flagship 2: Develop an ecosystem for deep electrification	Indispensable
Flagship 3: Enhance grid use and development for a pan-EU market	Indispensable
Flagship 4: Enable large scale offshore wind energy into the grid	Important
Flagship 5: Enable secure operation of widespread hybrid AC-DC grid	Important
Flagship 6: Enhance control centres operation and interoperability	Important

9 Which flagship(s) should ENTSO-E and TSOs focus their efforts on?

Please select all that apply

- [X] Flagship 1: Optimise cross sector integration
- [X] Flagship 2: Develop an ecosystem for deep electrification
- [X] Flagship 3: Enhance grid use and development for a pan-EU market
- [ ] Flagship 4: Enable large scale offshore wind energy into the grid
- [X] Flagship 5: Enable secure operation of widespread hybrid AC-DC grid
- [ ] Flagship 6: Enhance control centres operation and interoperability

10 Please indicate for each flagship your level of interest to work with ENTSO-E and TSOs

	No interest	Some interest	Strong interest
Flagship 1: Optimise cross sector integration *Please select only one item*	○	○	⊗
Flagship 2: Develop an ecosystem for deep electrification *Please select only one item*	○	○	⊗
Flagship 3: Enhance grid use and development for a pan-EU market *Please select only one item*	○	○	⊗
Flagship 4: Enable large scale offshore wind energy into the grid *Please select only one item*	⊗	○	○
Flagship 5: Enable secure operation of widespread hybrid AC-DC grid	○	⊗	○