

ENTSO-E public consultation on
A “Study Roadmap towards Modular Development Plan on pan-European Electricity
Highways System 2050 (MoDPEHS)”

T&D Europe Comments
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The transmission system operators (TSO) as members of ENTSO-E are responsible for maintaining a sustainable, reliable and cost-efficient electrical network. Today the transmission system in Europe faces various significant challenges, for example a large share of renewable energy sources, interconnection of electrical networks within Europe and growing needs for transmission capacities. Thus the pan-European network has to be developed in such a way that the main political targets can be reached with maximum benefit for the customers:

- Integration of renewable energy sources and
- Ensuring a functioning energy market with minimum technical restrictions
- While maintaining a high security of supply

Until today, there is no cohesive planning framework existing for the European transmission network. Therefore ENTSO-E has coordinated the development of a Study Roadmap towards Modular Development Plan on pan-European Electricity Highways Systems (MoDPEHS), a study project with the view on future network developments and extensions for Europe.

The study focuses on a concept for a strategic network development plan or master plan until the year 2050. The plan should propose modular development steps for the network, which can be realized step wise. For each identified step development technical/technological, economical/financial and political/socio-political issues must be considered.

It is planned that the study project will have duration of three years and broad involvement and direct participation of external stakeholder is emphasized.

The study is subdivided into the following main work packages:

- **WP1: Boundary Conditions** - Investigation into the Idea of an Electricity Highways System and Associated Boundary Conditions
- **WP2: Plausible Future Power System Scenarios** for the European Energy Sector
- **WP3: Technology Assessment** - What Supply chain or Technology Breakthroughs will Influence the Electricity Highways Vision
- **WP4: Implementation and Operation:** Planning & operational codes, permission, environmental impact, acceptance

- **WP5: Electricity Highways System Governance:** Legal, regulatory, financing, market and ownership issues
- **WP6: Socio-Economic Profitability** of an Electricity Highways System
- **(WP7: Stakeholder Involvement** and Communications)
- **(WP8: Modular Development Plan** on Electricity Highways System - **Compilation Phase and Final Concept Report**)
- **(WP9: Dissemination)**

After the publication of the ENTSO-E TYNDP the need of a consistent network development plan for the pan-European electricity network became obvious. This gap will now be closed by the MoDPEHS study project.

The structure, approach and targets of the study are well described by ENTSO-E in the Study Roadmap document. All main topics are taken into account and the main deliverables are important to result in a consistent development plan for the decades to come. For each proposed work package main questions are stated, a sketch of objectives and scope is shown and the deliverables are clearly specified.

In the development of the MoDPEHS it is essential not only to consider standard transmission technology solutions to strengthen and extend the network, but also to take new developments and innovative technologies into account.

Thus the planned involvement of various stakeholders and especially manufacturers in nearly all work packages is of key importance; for it is the manufacturers who have the detailed knowledge of transmission technologies and automation solutions, their state of maturity and future developments.

T&D Europe and its member companies clearly express the interest to participate in the development of the MoDPEHS and to support the different work packages. In this way the best solution for network development can be identified and optimal, efficient and well proven technological solutions can be selected.