



EWEA

THE EUROPEAN WIND ENERGY ASSOCIATION

**EWEA response to the ENTSO-E
consultation on the first draft of the
Community-wide Ten-year Electricity
Network Development Plan**

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1. General remarks

The swift achievement of deliverables outlined in the 3rd Package is of utmost importance as network developments must be carried out in good time in order to integrate large amounts of wind power, and other renewable energy technologies. When envisaging penetration levels of 34% renewable electricity by 2020, an early release of this “Pilot” 10 Year Network Development Plan (TYNDP), followed promptly by an updated TYNDP incorporating the National Renewable Energy Action Plans, is crucial to reach this target.

By 2020, most of the EU’s renewable electricity will be produced by onshore wind farms. Europe must, however, also use the coming decade to prepare for the large-scale exploitation of its largest indigenous resource, offshore wind power. Europe's 2020 targets would not be achievable in an economical way were mayor transmission projects not built, or were significantly delayed. In this context, EWEA has separated its response in two parts:

1. Urgent elements which should be incorporated in the final version of the TYNDP to be published in June 2010;
2. Points to be reviewed and shortcomings in this draft with concrete actions to be taken for improvement of this draft TYNDP.

EWEA welcomes the stakeholder consultation process conducted by ENTSO-E prior to the publication of the first draft of the pilot TYNDP.

In order to make this TYNDP the basis for future network development on a European level, it is vital that ENTSO-E includes the following elements in its revision, due in June 2010:

- **Align the RES assumption of 25.5% in the TYNDP with achieving the EU 2020 20% RES target:** to achieve 20% RES by 2020 the Commission has stated that 34% of electricity will be renewable by 2020.
- As soon as they are published, **National Renewable Energy Action Plans (NREAP) must be incorporated into the current pilot TYNDP.** The EU 2020 targets must not be undermined by inadequate grid enhancements projected in the TYNDP. An updated TYNDP should be published no later than end 2010.
- **Outline a clear set of priority projects together with a traceable timetable for implementation and monitoring** in order to convert this TYNDP from a mere forecast document into a concise implementation plan for transmission projects.

- **Enhance the TYNDP from being a sheer compilation of National Plans and provide a Pan-European planning vision for grid infrastructure.** To this end more extensive project proposals should be pursued based on more detailed studies, together with a view to long-term EU policy targets.
- **Ensure the EU objective of the creation of an internal electricity market is achievable by developing a truly European grid network** by placing all outlined transmission projects in the broader context of the development of an internal electricity market and, as a first step, ensuring the electricity grid network allows cross-border exchange capacities for each Member State at a minimum of 10% of their installed capacity to be achieved, as agreed by the Heads of States at the Barcelona Council in 2002.
- **Underpin wind power scenario development with an analysis of current market growth and industry expectations in the 2020 timeframe.** EWEA's baseline scenario of 230 GW of installed wind power capacity in 2020 (265 GW "high" scenario) represents expected growth within the wind power sector more accurately than ENTSOs expected 198 GW of installed wind power capacity by 2020. BTM Consult's World Market Update 2009¹ forecasts an installed wind power capacity in the EU of 286 GW in 2020.
- **More attention should be given to the development of transmission technologies and its implications for future grid planning:** A particular effort must be made for a swift large-scale demonstration of multi-terminal DC grid configurations to ensure the development of a future meshed offshore grid. EWEA urges ENTSO-E to take into account all ongoing R&D work in this regard in the first official TYNDP.

In light of long authorisation periods, particularly for cross-border transmission projects, the TYNDP should provide a joint European planning approach towards new transmission lines in order to overcome present planning and administrative barriers for this infrastructure. A first draft of this TYNDP at the given moment is therefore welcome to achieve network developments in due time to integrate large amounts of RES, but – as outlined above – some key elements must be urgently revised.

The revised TEN-E Instrument in the form of a new "EU Energy Security and Infrastructure Instrument", the National Renewable Energy Action Plans, The North Seas Countries' Offshore Grid Initiative, and the Commission's forthcoming Blueprint for a North Sea Offshore Grid – and other priority infrastructure actions – should form the vision for planning and building new electricity infrastructure in a coordinated manner, and the TYNDP should implement that vision.

¹ World Market Update 2009. BTM Consult ApS. March 2010

2. Points to be reviewed in this first draft TYNDP

a) Assumption of the bottom up approach and consistency with the 2020 targets

With the adoption of the RES Directive (2009/28/EC) in 2009, a penetration level of 34% renewable electricity is expected by 2020 and as the cheapest of the renewable electricity, onshore wind, will be the largest contributor to meet this target².

In this context, it remains unclear why ENTSO-E has chosen in this first draft TYNDP a bottom-up scenario assuming only about 25,5% of the electricity demand to be supplied by RES, thereby missing the 2020 RES target, in terms of the contribution from the power sector. The National Renewable Energy Action Plans (NREAPs) will be published in June 2010 outlining how each Member States plans to achieve its respective 2020 RES targets and therefore the TYNDP should comprise as a minimum the compliance with the 2020 targets in its bottom-up scenario.

In the context of wind energy targets, 230 GW installed generation capacity in 2020, including 40 GW offshore as a “baseline” scenario, should be used, and 265 GW in 2020, including 55 GW offshore as a high scenario³. EWEA’s forecast can be considered conservative if compared to the forecast from independent consultancy BTM Consult’s World Market Update 2009⁴, which forecasts an installed wind power capacity in the EU of 286 GW in 2020.

Due to technological development, increased efficiency and increased wind turbine capacity, the average capacity factor of wind generators would be higher than stated in the draft TYNDP: For onshore wind generators, the full load hours are estimated to be between 2100-2300h/year and for offshore wind generators between 3600-3700h/year by 2020⁵.

EWEA urges ENTSO-E to therefore change the bottom-up scenario in the TYNDP accordingly and ensure consistency with the 2020 RES target. Any European generation adequacy outlook and resulting network projects in Europe should factor in this EU objective as the achievement of the 2020 RES target must not be undermined by inadequate grid enhancements as proposed in the TYNDP.

The revised bottom-up assumptions should then form the basis of an ambitious top-down view projecting the development of the offshore grid in the North Sea, the Mediterranean Ring, the “Supergrid” and the expansion of the European electricity network.

² Pure Power: Wind energy targets for 2020 and 2030. EWEA. 2009

http://www.ewea.org/fileadmin/ewea_documents/documents/publications/reports/Pure_Power_Full_Report.pdf

³ Ibid.

⁴ World Market Update 2009. BTM Consult ApS. March 2010

⁵ Pure Power: Wind energy targets for 2020 and 2030. EWEA. 2009, page 74.

http://www.ewea.org/fileadmin/ewea_documents/documents/publications/reports/Pure_Power_Full_Report.pdf

b) Timing of the first draft TYNDP with regards to the publication of the first National Renewable Energy Action Plans (NREAP)

ENTSO-E states that this first draft TYNDP is important input for power generation investment and policy decision-making in terms of starting a feedback loop between ENTSO-E, generation investors and policymakers to make sure that decisions about new conventional or renewable generation take into account network development, and, by the same token, network plans of TSOs build on realistic generation scenarios.

However, as this first draft TYNDP focuses on bottom-up scenarios which are developed by TSOs, highlighting mainly a mid-term timeframe, it seems inappropriate that it serves now as a starting point for European and national policy makers when deliberating on their National Renewable Energy Action Plans (NREAP) due in June 2010. On the contrary, the development of the NREAPs should be left uncompromised by the network development outlined in this TYNDP based only on bottom-up scenarios. The first NREAPs should rather serve as ambitious top-down elements for future TYNDPs in order to meet the 2020 targets as outlined in the RES Directive. The TYNDP should therefore be revised immediately after the NREAPs are published, and no later than end 2010.

c) Accrual of certain projects strictly to RES generation or to any of the pillars of EU energy policy

ENTSO-E illustrates in this draft TYNDP three main drivers for investment in new or refurbished power lines, in accordance with the three pillars of EU energy policy (RES integration, security of supply and the creation of an Internal Energy Market). The TYNDP rightly states that in most cases there are overlaps between these drivers as all investments cover to some extent aspects of security of supply and market integration. However, the methodology is not entirely clear with regard to how ENTSO-E accrues certain projects strictly to RES generation, or to any of the other two pillars of EU energy policy in graphical representations in the draft TYNDP.

EWEA calls for ENTSO-E to clearly state in the TYNDP that the benefits of developing a truly European grid network would lie not only in overcoming the present congestions on some of the main transmission lines, but would also enable a functioning internal market and provide for security of supply. A European approach towards an optimised European electricity system should be promoted in the TYNDP. Such an approach should not be based on the profitability of the lines only, but as with any strategic investment, reflect European priorities. All new transmission lines outlined in the TYNDP should be placed in the broader context of the development of an internal electricity market, thereby not relating the benefits of grid development solely to wind power, and other renewables. Further to this point, it is unclear how ENTSO-E can integrate a further 100 GW of conventional generating capacity without network reinforcement, upgrading or construction.

Furthermore, there is a lack of clarity as to which technical and economical criteria have been used, and how trading capacities on interconnectors may change in the future. The future TYNDP edition should outline the principles of the technical and socio-economic assessment of the various projects and indicate how trading capacities will develop through a more extensive market modelling.

d) Selected projects in the TYNDP

EWEA welcomes the extensive number of projects outlined in the TYNDP and, after first review, consistency with most existing national network development plans.

However, the TYNDP should be more than a mere compilation of national and regional development plans, rather it should perceivably aim at a Pan-European planning vision for grid infrastructure. Furthermore, the TYNDP should give a clear overview not only of investments planned by TSOs, but also take due account of future infrastructure investments planned by private consortia (e.g. the merchant transmission line between Norway and Germany, NorGer, due to be operational by 2015).

In order to achieve this added value, a set of European priority projects should be outlined in the TYNDP, together with a time axis to serve not only as a forecast document but also as an implementation plan of the projects. Future TYNDPs should implement political decisions taken by the TEN-E Instrument in the form of a new “EU Energy Security and Infrastructure Instrument”, the National Renewable Energy Action Plans, The North Seas Countries' Offshore Grid Initiative, and the Commission's forthcoming Blueprint for a North Sea Offshore Grid – and other priority infrastructure actions.

Furthermore, results of relevant power system studies besides EWIS should be taken into account in the project list, both on a regional (e.g. Dena grid study I⁶) and European level (Trade Wind Study).

Within the scope of the Trade Wind study several already planned and new priority projects for transmission networks were identified. The timeframe for these grid upgrade projects covers the years 2008-2030 in three steps, referred to as Stages 1, 2 and 3. Already planned scenarios for new lines and HVDC cables were included in the Stage 1 upgrades. These scenarios were based on, amongst others, grid development information from UCTE, the UK National Grid and Nordel. For the Stage 2 upgrades a more formal methodology is used. The grid reinforcements are selected by upgrading priority interconnections with the highest sensitivity. Finally a Stage 3 grid upgrade is outlined for a long term scenario up to 2030⁷.

However, even more extensive project proposals should be pursued in the future TYNDP based on more detailed studies and also taking into account planned energy generation portfolios in the respective countries as some outlined interconnector capacities (e.g. France-Spain: 4 GW) will not be sufficient in the light of long term RES policy such as the Mediterranean Ring, the North Sea Offshore Grid and a European supergrid.

e) Possible benefits and shortcomings from the EU Council proposal of a new Regulation concerning new investment projects in energy infrastructure

ENTSO-E rightly states that the availability of data in order to better forecast future generation developments and investment needs is critical for future releases of the TYNDP. ENTSO-E should therefore carefully select and analyse all available data from stakeholders concerning generation investment sizes and locations, particularly for RES, as this data will

⁶ See : <http://www.dena.de/en/topics/energy-systems/projects/projekt/grid-study-i/>

⁷ For a detailed overview on these priority projects, please see: http://www.trade-wind.eu/fileadmin/documents/publications/Final_Report.pdf

be essential for both network modelling and market analysis. The involvement and consultation with external stakeholders will be indispensable in this process and EWEA aims to actively support ENTSO-E in its work.

The proposal of the EU Council for a new Regulation concerning the notification to the Commission of investment projects in energy infrastructure within the European Community, repealing Regulation (EC) 736/96, could provide a useful tool for network planning as it will give an overview on ongoing investments in all sources of power generation. However, in the light of the agreement reached at the March Energy Council, EWEA has serious doubts if it will fulfil its purposes as the proposed thresholds for wind farms on- and offshore are kept at 20 MW, contrary to the opinion of the European Parliament, which endorsed a lower threshold of 5MW for onshore wind power plants.

Whereas the threshold of 20 MW for offshore wind farms is certainly sufficient due to the relative large size of offshore wind farms, the proposed onshore threshold would definitely be too high to obtain an adequate picture of the major development of wind energy in the EU in the last years (39% of all new electricity generating capacity built in the European Union in 2009 was wind power, exceeding all other technologies).

Even within Member States, and most certainly between Member States, there are differences in the average size of individual projects. A substantial number, perhaps as high 40%, of turbines are to be found in wind farms under 10 MW size in some Member States.

ENTSO-E should therefore take into account that it may be reliant on additional stakeholder input and data provision in order to be able to account for all energy projects, big and small, in order to reflect the reality of today's power installations. Bilateral discussions with stakeholders, as carried out prior to the release of this first draft TYNDP, will certainly remain a valuable means to exchange views in detail and to provide data, e.g. generation outlooks in order to mitigate uncertainties in predicting the future location and size of RES generation.

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The European Wind Energy Association (EWEA) is the voice of the wind industry, actively promoting the utilisation of wind power in Europe and worldwide. It now has over 600 members from 60 countries, including manufacturers with a 90% share of the world wind power market, plus component suppliers, research institutes, national wind and renewables associations, developers, electricity providers, finance and insurance companies and consultants. This combined strength makes EWEA the world's largest and most powerful wind energy network.