

EWEA public consultation response to ENTSO-E 2030 visions data

September 2013

EWEA welcomes the ambition of ENTSO-E to aim for a 2030 planning horizon in the upcoming 10-year network development plan (TYNDP) in 2014, as a bridge between the European energy objectives for 2020 and 2050. In this context, we acknowledge ENTSO-E's intention to move away from a bottom up methodology in order to adopt a truly European approach for grid planning and also wider and more transparent stakeholder involvement through dedicated feedback groups. Consequently, EWEA is involved as an active member in the on-going ENTSO-E work on the upcoming TYNDP and corresponding 2030 visions through the newly established ENTSO-E stakeholder group.

However, important concerns remain and were already expressed in December 2012 through a joint stakeholder letter, in particular with regards to the plausibility of the top-down visions and lack of an EU-wide approach on RES integration¹. Despite the on-going stakeholder liaison and repeated iteration of concerns, we are surprised that the ENTSO-E 2030 visions document and data still falls short of meeting EU renewable energy and climate objectives and respective plausible scenario development. Since the proposed ENTSO-E web-tool for public consultation only allows for comments on the introductory ENTSO-E 2030 document, EWEA wishes to submit this public response, outlining its main concerns and suggestions for improvements.

- **Align the maximum contribution of renewable energy sources in the “Green” ENTSO-E visions with the EC’s decarbonisation scenarios**

EWEA welcomes ENTSO-E's overall projection of installed wind energy capacity of 400 GW by 2030 in the “Green revolution” vision, which is in line with wind industry expectations. However, the maximum contribution of renewable electricity sources in all four ENTSO-E visions does not exceed 50% by 2030. This value is not in line with any of the EC's 2050 Energy Roadmap decarbonisation scenarios, which foresee a RES-E share between 52% and 58% in that timeframe. The overall RES share in the electricity mix must, therefore, be revised to provide coherence with the carbon emission reduction objectives and trajectories identified in the 2050 Energy Roadmap. Furthermore, to fully assess ENTSO-E's market and network modelling results, EWEA calls on ENTSO-E to provide figures on electricity generated per technology including the capacity factors assumed for RES and the assumed running hours for conventional generation.

- **Differentiate levels of fossil and nuclear power generation rather than assuming unchanged amounts of conventional power capacity throughout all four visions**

It is inconceivable that fossil and nuclear power generation capacities are maintained roughly at the same level throughout all four ENTSO-E visions. There is only a 25 GW difference between vision 1 and 4 in installed thermal capacity. Even more worrying is the assumption of roughly the same levels of nuclear energy. Between the visions there is a difference of just 5 GW in installed nuclear capacity.

¹ EWEA-EPIA-Climate Action Network-Birdlife-Greenpeace-E3G and Friends of the Supergrid joint position paper on ENTSO-E's 2030 visions, December 2012: http://www.climnet.org/resources/publications/position-papers/doc_download/2163-joint-response-to-entso-e-on-visions-2030-14-12-2012



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In contrast, electricity demand projections soar in the ENTSO-E's "Green" visions 3 and 4. By 2030 a power consumption of 4,200 TWh is assumed, which is considerably higher than comparable 2030 demand projections by the EC and the IEA (between 3,000 TWh and 3,250 TWh in the EC roadmap decarbonisation scenarios and between 3,613 TWh and 3,960 TWh according to the IEA). It seems that these high demand projections stem from unduly underestimating the energy efficiency potential in the EU, which should be an inherent part of a truly "Green revolution" scenario. The high efficiency scenario in the EC roadmap outlining a demand of about 3,000 TWh for 2030 should be used as a minimum. It indeed corresponds to a 29% efficiency achievement compared to 2007 projections (which is how the 20% efficiency target is calculated for 2020) and a 21% reduction in energy use below 2005, which has already been criticised for its lack of ambition².

Failing to recognise the potential of energy efficiency together with a continuously high share of fossil and inflexible nuclear capacity undervalues the cost saving potential of large-scale RES deployment. Under these assumptions the "Green revolution" vision will, misleadingly, render system operation and grid investment related costs overly expensive. Rather than modelling a system with a high share of nuclear alongside high shares of RES, ENTSO-E should capture in the green scenarios the real economic potential of large-scale RES deployment. Consequently, a disproportionate dependence on the amount of inflexible generation should be discarded and assumptions of large shares of RES should be combined with high levels of energy efficiency and a more flexible power system assets in general.

- **Base all visions on plausible assumptions on CO₂ prices, demand and technology roll-outs**

The four different ENTSO-E visions select and combine different assumptions on technology-roll outs for CCS, storage and also new nuclear plants in a seemingly arbitrary manner. For example:

- Large shares of RES are grouped with a high public acceptance of nuclear power and full commercial roll-out of CCS.
- It is unclear why heat pumps are singled out as a technology next to other demand-side management solutions.
- The substantial increase in electricity demand in ENTSO-E's vision 4 is not in line with comparable EC decarbonisation and energy efficiency scenarios.

To provide coherent boundary visions for the 2030 grid development timeframe in terms of potential socio-economic value, it is therefore necessary to include truly optimised RES development scenarios, at least in vision 4 "Green revolution".

With regards to assumed CO₂ price levels, ENTSO-E refers to the IEA 450 scenario in their WEO 2011 (projected CO₂ price of 95\$ per tonne by 2030). However, despite the recent adoption of the back-loading proposal by the European Parliament - the temporary removal of permits to pollute under the Emissions Trading System - leading carbon price analysts cannot see CO₂ price development reaching even remotely the assumed IEA price by 2030³. In view of the recent development of CO₂ prices and according price development projections it is therefore unlikely that CO₂ prices will have any significant impact on investments in the EU power sector before 2030. This obvious discrepancy of the IEA 450 scenario CO₂ price

² In a study for the German Environment Ministry, Fraunhofer ISI, estimates that by 2030 energy consumption could be reduced by 50% below current levels (Fraunhofer ISI (2012), 'Concrete Paths of the European Union to the 2° Scenario')

³ Barclay's, Thomson Reuters Point Carbon, ICIS and Bloomberg New Energy Finance project a CO₂ price level between 12 and 23 € per Tonne with 900 Mt backloading by 2020 with only little price increase to 2030.

assumptions and current carbon market analyses should be urgently revised in the ENTSO-E visions and replaced by up-to-date CO₂ price projections.

- **Develop a truly optimised RES development scenario in vision 4 “Green revolution”**

To obtain meaningful results in the top-down scenarios, choices of key parameters that evidently undervalue the socio-economic potential of high shares of RES deployment must be ruled out, particularly combining inflexible generation, large shares of RES and no or little levels of energy efficiency.

Instead, a top-down scenario where generation and demand is optimised to ensure a cost-effective energy system must be developed in vision 4 “Green revolution” reflecting the real economic potential of significant RES deployment. This would be also in line with ENTSO-E’s own stated goal of the 2030 visions, namely to estimate the *“extreme values, between which the evolution of parameters is foreseen to occur leading ultimately to grid development with a “no regrets” option in mind”*.

As already called for in the joint stakeholder position paper in December⁴, ENTSO-E’s vision 4 must, therefore, show the full benefits of an optimised European electricity system combining high shares of renewable power generation, energy efficiency and flexible generation. If this scenario - which would eventually depict the vast cost and resource saving potential of RES integration - is not considered even as one of the boundary conditions, ENTSO-E’s 2030 visions will be incomplete and lack a truly European vision on RES integration and decarbonisation.

In fact, not developing such an optimised RES vision would considerably constrain the full picture at what cost-saving potential decarbonisation can be achieved in Europe.

For further questions, please contact Paul Wilczek: pwi@ewea.org

⁴ See footnote 1