

ENTSO-E WG Ten Year Network Development Plan

2nd ENTSO-E Workshop with Stakeholders on "202020 Scenario"

10 January 2011

09:30h – 16.00h

SOFITEL BRUSSELS LE LOUISE, Avenue de la Toison d'Or, 40 - 1050 Brussels

MINUTES

Welcome and outline of workshop

(slides available) **Jean Verseille** - *Chairman of ENTSO-E System Development Committee* - welcomed all participants to the Workshop. ENTSO-E organized this open workshop with stakeholders in preparation for the next release of the Ten-Year Network Development Plan (TYNDP) in 2012 focusing on the roadmap towards the TYNDP 2012 and the scenarios that will be the basis for the 2012 TYNDP's market and network analyses.

This workshop constitutes an important element of the open and transparent elaboration process of the Ten Year Network Development Plan. All participants are invited to share concerns about the TYNDP's elaboration process and assumptions. The underlying scenarios of the TYNDP 2012 package will be summed up by 10 February 2011 in ENTSO-E's Scenario Outlook and Adequacy Forecast Report (SOAF).

The EU's New Energy Infrastructure Policy

(slides available) **Jean-Arnold Vinois** - *Head of Unit - Energy policy, security of supply and networks European Commission* – illustrated the main policy milestones over the last years and the motivation for a new legislative initiative end of 2011 (Energy Infrastructure Package, EIP). The EIP is to consider electricity, gas, oil, and CO2 emissions as they are all interlinked in view of the challenges ahead. There is a need to move from a national to a European approach in considering infrastructure based on the identified priorities: Baltic energy market interconnection plan, Interconnections in South West Europe, Interconnections in Central-South East Europe, and Offshore grid in the Northern Seas.

There are many obstacles to energy infrastructure development, including:

- ✓ Huge uncertainties: future technologies, demand, generation and sources
- ✓ Tariff regulation and financing:
 - ✓ Projects with higher regional than national benefit: difficult cost allocation;
 - ✓ Projects using innovative technologies - higher risks;
 - ✓ Infrastructure for security of supply: often not justified by market demand;
 - ✓ Financial crisis: difficult access to capitals
- ✓ Permitting and social acceptance
- ✓ Infrastructures external to the EU: political risks such as unattractive or non-transparent investment framework

Strong political support is a prerequisite for overcoming these challenges.

With regards to priorities for Electricity, there are 300 projects in the TEN-E list, but now focus should be on "clusters", more meaningful than individual; we must inject European sense and ENTSSOE should provide the best expression of the change of dimension. There are still uncertainties, including regulatory uncertainty with the present national approach, therefore there is an urgent concern to address this issue. Security of supply is not sufficiently considered and the access to capital for energy infrastructure is difficult. Permitting has been previously a taboo, now it is a priority for the EC. The EU Council is expected to be clear on permitting. The goal is to enable to be more transparent, and predictable.

With regards to the way forward, the implementation phase is starting now with a set of Regional initiatives/cooperation, e.g.: BEMIP in the Baltic Sea region, NSCOGI in the Northern Seas area, High Level Group on North South connections in Central Eastern Europe on gas, electricity and oil. In the course of 2012 it is expected to be delivered a List of projects of European interest, on the basis of criteria agreed at EU level, a set of Proposals for solutions to regulatory issues, the Best practice in permit granting, all these in cooperation with ACER, ERGEG, ENTSSOs, Florence and Madrid Fora.

Roadmap toward TYNDP 2012

(slides available) **Sébastien Lepy** - *Convenor ENTSO-E WG Ten-Year Network Development Plan* – presented the ENTSO-E Ten Year Network Development Plan & Regional Investment Plans Roadmap to 2012. The Pilot TYNDP in 2010 was acknowledged as a major contribution to the EU policy debates, but ENTSO-E is set to address expectations for the 2012 issue regarding *the introduction of top-down scenarios related to the 2020 targets, the assessment of project benefits and congestion, and a more synthetic illustration of investment needs*. The 2012 is to be based on

market and network studies performed in a regional level, *sharing common assumptions and methodologies*, and presented in detail in the 6 ENTSO-E Regional Investment Plans in a comprehensive package, that also includes ENTSO-E's Scenario Outlook and Adequacy Forecast. ENTSO-E intends to release this package for public consultation in March 2012.

Discussion

ENTSO-E tests and develops project evaluation criteria (technical and economical) during this year within its Regional Groups, aiming at a pan-European harmonisation with due regard to local concerns. For example, increase in grid transfer capability will be a metric for that purpose. Projects will be assessed consistently with the priorities set by the EC. However, the TYNDP will not "rank" the projects based on an arbitrary weighting of the criteria.

2020 is currently the most focused target and therefore the main studied point in the TYNDP; projects to be commissioned by 2022 will be presented, while the ENTSO-E scenarios cover 2025 for scenario B, and 2020 for scenario EU2020. Should the EU2020 targets change following recent political developments (Cancun summit) ENTSO-E must anticipate official plans (new NREAPs) in order to adapt its scenarios for following releases of the TYNDP as the impact per country will vary. In the context of the North Seas Countries Offshore Grid Initiative, visions for 2030 are being developed. ENTSO-E has created a working group focused on delivering a Roadmap for the 2050 horizon and the intermediate milestones when necessary which will serve as a guide for future TYNDPs and ensure its long-term consistency. A study package that will be proposed by ENTSO-E in June 2011 will define the way to build this Roadmap. The EC in its 2050 Energy Roadmap expected later this year shall also propose a synthetic vision based on studies that are available.

The National Renewable Action Plans (NREAPs) were the main source of information for elaborating ENTSO-E's EU2020 top-down scenario. However, since they cover only the annual level of energy of renewable energy sources they had to be complemented with regard to non-CO₂-neutral and nuclear generation forecasts, non-EU countries data, as well as estimations on the generation outputs at specific points in time. ENTSO-E looked for the maximum consistency between the introduced data and the NREAPs given that, in addition to the above, the generation location or the details per year until 2020 are missing.

ENTSO-E Scenario development

(slides available) **Cristina Pascucci** - *Convenor ENTSO-E WG System Adequacy & Market Modelling* - presented the ENTSO-E development of the Scenario Outlook and Adequacy Forecast (SO&AF) for year 2011 in the process towards the next TYNDP 2012 and Regional Investment Plans. The SO&AF replaces ENTSO-E's System Adequacy Forecast Report since this year, as it becomes an integral part of the TYNDP presenting the scenarios and generation outlook to be used in the TYNDP. The highlight of the SO&AF is the construction of an additional (to the previous TYNDP) top-down EU2020 Scenario reflecting the EU Energy policy objectives. In addition the main methodological improvements have been introduced and among them the comparison of the scenarios in terms of adequacy and the attainment of the EU 2020 targets. It finally improves in terms of adequacy generation assessment being carried out with a power and energy approach.

Role for Scenarios in planning

(slides available) **David Alvira** - *Convenor ENTSO-E RG Continental South West* - highlighted the goals of planning scenarios: representing alternative future environments, taking care of uncertainties and interaction between uncertainties. Planning scenarios are defined to represent technical and economic conditions taking several inputs into account such as demand forecast, generation mix and set of exchange patterns with systems outside the studied region. Each scenario can be represented by several planning cases. The group planning cases that represent a planning scenario should include extreme and probable cases. Scenario and case are defined in §4.1 of the TYNDP 2010 report.

Discussion

As a result of the market studies on simplified network models, each planning case is assigned a probability and is assessed based on this as well as the severity of the resulted impact (e.g. level of exchanges between countries). Building on this assessment, some of the planning cases are further studied using a detailed network model. The simplified network for market studies can be as simple as a copper-plate or NTC-constrained, or as elaborate as a ptdf model; the latter being a very complex task when performed at a regional level. The sequence of market and network studies in that sense is an iterative loop which is severely constrained by the time available.

The assessment of Security of Supply risks is done at a regional level, unlike in the gas industry when it is a more European concern.

Scenarios for TYNDP 2012

(slides available) **Viviane Illegems** - *ENTSO-E WG System Adequacy & Market Modelling* – presented ENTSO-E's scenarios EU2020 (top-down based on the NREAPs), and scenario B (TSO best estimate) that are to be used in the 2012 TYNDP. These scenarios, based on indicators proposed by ENTSO-E, are evaluated in terms of the attainment of the EU2020 targets. The EU2020 scenario is indeed enabling the attainment of these targets as the renewable energy sources penetration to the generation mix is estimated at 36%, the CO₂ reduction compared to 2009 from 26% to 57% (based on rough approximations, the upper limit is to be considered as a theoretical maximum), and 10% reduction in electricity consumption compared to the NREAPs reference scenario for EU countries.

Discussion

NREAPs must be complemented to make them usable planning scenario for network studies, based on TSOs' expertise and it is a difficult exercise. The top-down approach of the 2020 scenario is completed with a bottom-up approach, accounting for market players' mid-term signals resulting in the scenario B, although all the more difficult to implement when the horizon is far. For instance decommissioning is also taken into account but formally often there is only one year "warning" and complementary assumptions must be added.

When using energy models the necessary back-up capacity is under-estimated in the "Energy based" scenarios to which the ENTSO-E scenarios can be compared to. No model to assess back-up capacity has been used; the assessment is performed by every TSO. This is further influenced by preliminary results showing low-running hours for some conventional technologies questioning their economic viability.

Scenarios are elaborated in order to identify the best transmission investments under many plausible circumstances and there is no basis for limiting them solely on the grounds of whether the EU2020 targets are reached or not. In addition, these targets are for the whole energy sector and how the electricity could enable them is subject to more than one answers. Regional groups are also free to use more scenarios than the ENTSO-E ones in order to make more robust assessments.

In the adequacy analysis, each TSO provides the basic assumptions that are often dictated by political considerations (e.g. acceptability of adequacy relying on imports). The possibility to rely on neighbors depends on the relative size of the countries (e.g. FR vs BE) so that the same methodology cannot be imposed for each country. A simplified methodology per country to assess the SOAF could be used if no probabilistic analysis is available, but on top of a national assessment also a regional assessment is advisable. These refined analyses of the particular situations with adequacy at risk at regional level and at ENTSO-E level will be performed at ENTSO-E.

Conclusions

Jean Verseille - *Chairman of System Development Committee* - thanked all speakers and all participants for their contribution to the Workshop. He informed the audience that all Presentations will be uploaded on the ENTSO-E website/Extranet, and the minutes of the whole event will be uploaded in February.

The SO&AF will be released on ENTSO-E website beginning of February. A consultation only on the scenarios included in the SO&AF will subsequently be launched in view of the 2012 TYNDP. Also, ENTSO-E will propose another open workshop in June 2011 to present market studies methodologies and project assessment criteria.