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ACER opinion on the European Ten Year Network Development Plan 2011-2020 published by ENTSOG

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This Document contains the reasoned opinion as well as recommendations on ENTSOG's Ten Year Network Development Plan 2011-2020 that the Agency for the Cooperation of Energy Regulators (ACER) has developed pursuant to Article 6(3) of Regulation (EC) No 713/2009 and Article 9(2) in conjunction with Article 8(11) of Regulation (EC) No 715/2009.

Related Documents

- Final ERGEG Recommendations on 10-year network development plan, 13 July 2010. Ref. E10-GIF-01-03, 13 July 2010
- ERGEG evaluation of ENTSOG first 10 YNDP, Ref: E10-GIF-01-04, 11 November 2010
- Model-based Analysis of Infrastructure Projects and Market Integration in Europe with Special Focus on Security of Supply Scenarios, EWI, Final Report, 9 August 2010
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1 Introduction


According to Article 8 of Regulation (EC) No 715/2009, ACER has to verify that the Community-wide TYNDP is consistent with national network development plans and shall recommend amending national ten-year network development plans or the ENTSOG TYNDP as appropriate. ACER also has to provide a “duly reasoned opinion as well as recommendations to ENTSOG and to the Commission where it considers that the (...) draft TYNDP submitted by ENTSOG does not contribute to non-discrimination, effective competition, the efficient functioning of the market or a sufficient level of cross-border interconnection open to third-party access”, pursuant to Article 9. ENTSOG submitted the 2011 TYNDP report to ACER for its formal opinion on 18 July 2011. As transposition of the Third Package directive into national legislation is not yet finalised in most Member States, the development of national as well as regional development plans is still lacking in most Member States and regions. Therefore, an assessment of the consistency between national, regional and Community-wide TYNDPs cannot be carried out by ACER yet.

In addition to the Third Package, the recent regulatory developments related to gas market integration and security of supply give all a key role to the TYNDP: Council Regulation (EU, EURATOM) No 617/2010 concerning the notification to the Commission of investment projects in energy infrastructure, Regulation (EU) No 994/2010 concerning measures to safeguard security of gas supply. More recently, the policy discussions around the development of an Energy Infrastructure Package seem to place the TYNDP as a “reference input” for the identification of potential projects of common European interest. Stakeholders’ expectations for the Community-wide TYNDP are very high as expressed in previous discussions and in a public consultation launched by the European Regulators Group for Electricity and Gas (ERGEG). The conclusion of this process was that the TYNDP shall better contribute to transparency, market integration and security of supply, and provide a shared vision of the EU gas dynamics and gas system functioning, as well as their evolution, which is not yet the case.

In this perspective, it is even more crucial that the TYNDP is accurately developed in order to adequately identify infrastructure gaps and concrete investment projects across Europe.

ACER welcomes ENTSOG’s efforts to produce the first TYNDP (2011 TYNDP)\(^3\), twelve months after the publication of the pilot edition (2010 TYNDP)\(^4\) prepared before the Third Package came into force, taking into account stakeholders and regulators feedback. Many of the comments provided by ERGEG in its evaluation of the pilot 2010 TYNDP have been incorporated in the current report, such as the combination of a top down and a bottom up approach. In the view of ACER, the drafting process of the Community-wide TYNDP is a learning-by-doing process and has to be adapted according to the experiences gained over time. In light of the development of the Energy Infrastructure Package and the discussions of the role of the TYNDP in this process, further improvements to the TYNDP (in particular the inclusion of cost-benefit analyses of projects) seem to be necessary to cater for the identification of Projects of Common Interest (PCIs) in the future.

2 Main findings from the 2011 TYNDP

The main conclusions derived by ENTSOG through its current network modelling analysis under the reference, security of supply and market integration scenarios are:

a. The overall situation improves within the next decade with the implementation of the Final Investment Decision (FID) projects.

b. Full supply-demand balance will not be possible under high daily demand conditions in three regions:
   - Denmark-Sweden (under reference case);
   - Balkans (under Ukraine disruption); and
   - Poland-Lithuania (under Belarus disruption).

c. On the annual supply/demand balance, ENTSOG concludes that there is significant supply flexibility to meet the highest identified European annual demand.

Additionally, the 2011 TYNDP shows that the EU gas network is moving from a “historical import-based” design towards a more integrated grid design. New import routes towards the heart of Europe, a better integration of former “transit countries”, and the adaptation of the Central European gas network should facilitate those trends.

Overall, the findings from the ENTSOG 2011 TYNDP are comparable with the results of previous studies (such as the EWI 2010 analysis)\(^5\). The current status of the European gas network, combined with the expected development of capacities, reveals that the potential demand-supply gaps will – regarding the needed capacities – be filled with respective projects on time, assuming that sufficient gas will be available from the supply side.

\(^{3}\) Choose 2011 on the following web page: http://www.entsog.eu/publications/index_g_investment.html

\(^{4}\) Choose 2009 on the following web page: http://www.entsog.eu/publications/index_g_investment.html

Nevertheless, the TYNDP identifies areas with investment gaps (for certain scenarios, as described above) as a result of the applied modelling. The sensitivity analysis suggests that limited flexibility is available in certain areas or is expected to become limited within the next decade.

If the non-FID projects are considered implemented, the concrete need for additional investments seems to be low. The first results on market integration scenarios (number of accessible supply sources and supply shares) show a heterogeneous picture at local level, but overall an improvement across Europe. However, in different disruption scenarios, the situation can lead to security of supply problems in a number of countries.

In order to have an accurate estimation of investment needs, further detailed work on concrete regional and national congestions (one-by-one identification of bottlenecks) is necessary. Obviously, these tasks need to be performed at regional and national levels within the regional and the national TYNDPs.

ACER believes that effective capacity allocation mechanisms (CAM) and congestion management procedures (CMP) will improve the overall situation and that, in certain cases, it will be possible to resolve congestions without additional investment.

Still, ACER appreciates the extensive and well-arranged data compiled by ENTSOG on TSO and non-TSO infrastructure projects. The inclusion of FID and non-FID projects and the first-time figures on investment costs is considered particularly useful, albeit more varied criteria for classifying projects’ implementation states, as also proposed by some stakeholders, would be helpful and could be introduced in future TYNDPs. The characteristics of each project are clearly depicted, which in ACER’s view serves as a reliable source of information for stakeholders (even though data quality is not always consistent and needs further improvements). The graphical presentation (mapping) of the modelling results has significantly improved, and should enable stakeholders – together with the tables provided – to better access and interpret the results.

The European Commission strives to speed up investments through policy measures to be proposed in the Energy Infrastructure Package. In the new regulatory environment, project prioritisation shall be done via a selection and labelling process of the PCIs among the non-FID projects included or proposed (for example even by ENTSOG), in particular if the market fails to detect “gaps” and to deliver remedial project proposals for the TYNDP. These PCIs shall be clearly identified in the TYNDP using at least a cost-benefit analysis and have them tested against the eligibility criteria, with the involvement of ACER, NRAs and the European Commission. The aim of this new tool should be to promote investments into these priority projects having positive externalities or regional benefit.

3 Analysis of the 2011 TYNDP

According to Article 9 (2) of Regulation (EC) No 715/2009, ACER shall provide a duly reasoned opinion as well as recommendations to ENTSOG and the Commission where ACER considers that the TYNDP does not contribute to non-discrimination, effective competition, the efficient functioning of the market or a sufficient level of cross-border interconnection open to third party access.
In line with the above criteria, ACER, taking into account ERGEG’s experience and recommendations, has analysed the 2011 TYNDP focussing on the drafting methodology adopted by ENTSOG, the quality of inputs from and the role of stakeholders in the process and whether and how consistency between national, regional and Community-wide TYNDP shall be established.

3.1 Comments on methodology

3.1.1 Data collection

To have a solid basis for analyses, data collection on existing and planned infrastructure and demand forecasts is essential. ENTSOG used standardised questionnaires to TSOs and potential project sponsors to gather the data. A satisfactory reply rate was achieved, even though this issue still leaves some room for improvement in the future.

ACER considers it essential to have a consistent and standardised approach in order to provide for valid analysis. This particularly means that, for example regarding the development of demand scenarios, the underlying assumptions need to be harmonised. Indeed, ENTSOG derives the demand on a daily basis from TSOs’ annual demand outlooks, without explicitly clarifying the underlying assumptions, that may differ from TSO to TSO, and may in turn lead to distorted demand figures.

The ENTSOG annual demand projection is the highest in terms of absolute figures. ACER is concerned that the plan may contain significant distortions, as the compiled ENTSOG demand outlook is an outlier compared to other known demand projections. Because of that – but also in general – such an annual demand scenario should not serve as the sole basis for developing a plan and deriving recommendations e.g. for new projects from it, as for example peak (daily) demand requirements on the infrastructure are even more important.

ACER therefore considers that ENTSOG should improve its demand projection process with regards to transparency and stakeholder involvement, striving for a harmonised approach to reduce distortions caused by potential inconsistencies based on differing TSO assumptions / projections.

Furthermore, ACER noted inconsistencies between TSOs projects and third-party projects communicated by non-ENTSOG members. For instance, while the LNG terminal project in France (Dunkerque project) is not mentioned among non-FID projects, the connection of this terminal to GRTgaz network (the French TSO) is included in the transmission projects. This inconsistency results from the rule adopted by ENTSOG to include only third-party projects communicated by the sponsors. For the future editions of the TYNDP, ENTSOG should find a sound solution to handle project information accurately.

Additionally, to achieve greater comparability of projects and their states, ACER suggests the level of detail provided per project (depending on its classification) to be harmonised.

In general, strong stakeholder engagement and cooperation is vital for the data collection process as a whole.

3.1.2 Scenario development and analysis of system’s behaviour

ENTSOG applied a combination of a bottom-up and top-down approach when drafting the 2011 TYNDP as it had been requested by ERGEG and stakeholders.

ENTSOG thereby has widened and deepened the top-down perspective via a comprehensive scenario development on the demand side, as well as via first attempts to analyse market integration (accessible sources, supply shares) and a variety of security of supply scenarios (supply disruptions).

ACER appreciates these developments and the new approaches on market integration scenarios to increase the quality of the TYNDP regarding its contribution “(...) to effective competition, the efficient functioning of the market and a sufficient level of cross-border interconnection open to third party access”⁷. The approach on assessing accessible supply sources for each country may be considered as a first step to provide better information for a more detailed evaluation of “effective competition / sufficient TPA” contribution of single projects. Making such information available also contributes to the goals mentioned above. On the other hand, the current analysis on accessible supply sources mainly reflects national security of supply aspects. The same applies to the method to calculate “remaining flexibilities"⁸: the approach is welcomed and may also serve as indicator for assessing the contribution (of projects) to “efficient functioning of the market”, but the setting of “limits” (e.g. <1%) seems rather arbitrary. Further policy discussion may be necessary to establish a common understanding or definition of “sufficient flexibility”.

ACER is of the opinion that the treatment of the EU-wide gas dynamics (top-down approach) could be improved in future editions, especially with respect to demand scenario development: ACER invites ENTSOG to reflect the EU political/environmental goals, i.e. the integration of renewable energy sources (RES) and the 20/20/20 targets. Other aspects, such as trends in population, economies and policy should also be considered in the demand scenarios.

In this respect, ACER also promotes to achieve better consistency between the TYNDP for gas and for electricity. As electricity generation predominantly drives gas demand in the EU and considering the potential impact of the Japanese nuclear power plant accident on the gas demand in the coming years, a close cooperation between ENTSOG and ENTSO-E in elaborating demand scenarios and the underlying assumptions will be essential. ACER understands that scenarios considered in TYNDPs for gas and electricity may be different, but these will benefit from being based on common assumptions.

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⁷ Cf. Article 9 (2) Regulation (EC) No 715/2009
⁸ For the definition utilised by ENTSOG, please refer to p. 50 of the 2011 TYNDP.
3.1.3 Modelling approach

In comparison to the 2010 TYNDP, ACER acknowledges that the 2011 edition has been improved in particular in terms of modelling application, model description and presentation of the results. ACER also welcomes the fact that a wide range of scenarios (reference, security of supply, market integration) have been analysed. Nevertheless, questions remain about the adequacy of the selected modelling approach and the applied model to calculate for example the so-called “remaining flexibility”\(^9\). This factor is supposed to indicate the remaining flexibility both for interconnections and at a country level. When simulating the resilience of the EU gas system, it is not made clear whether the country or the individual interconnection perspective is being used. Employing only country indicators would result in an abstract approach without allowing the identification of potential bottlenecks on interconnections.

The flows used to set the firm technical capacity are derived from the model itself and are not validated against real flows (e.g. with historical flows). These flows rather result from a more abstract “balancing” approach per country (“bubble model” focussing on cross-border issues and EU wide supply-demand balance). This approach can “only” lead to abstract overall results, prohibiting the exact identification of the location of bottlenecks and the concrete proposal of remedies.

ENTSOG employed the 2009 supply mix for each country and adjusted the volumes received from each source proportionally to the evolution of demand, keeping the 2009 supply mix proportions. Furthermore, for modelling purposes a “supply initialisation”, consisting of an equal split of the pre-defined flows between competing projects was used for new projects to avoid a prioritisation, selection or optimisation of projects, even though it is not likely that all competing projects will be realised in the same period of time.

Any changes to volumes of capacity being released to the market can lead to changes in the flows throughout the system. Larger volumes of additional capacity, including new projects coming on stream, might also lead to changes in the supply mix structure. Account needs to be taken of the impact of competition and the changed market dynamic which will exist as a result of this, particularly if ENTSOG is basing its approach to system planning on these purely “technical” parameters. ACER believes that a complementary economic-based analysis would better take into account the impacts of the changing market conditions.

More generally, ACER considers that the assessment of the level of market integration in the future TYNDP should be more robust. The market integration scenarios identify several regional congestions that need to be more deeply analysed.

Furthermore, the role of LNG should be analysed without simply considering LNG as a single supply source. When analysing security of supply, a supply disruption of all LNG sources is unlikely. The relation between LNG and pipeline interconnections should be better addressed through comparative analysis to properly emphasise the need to develop pipelines in order to fully integrate LNG sources into the EU market.

\(^9\) Readers are referred to the ENTSOG 2011 TYNDP for an explanation of this concept.
Concerning the supply scenarios, ACER agrees with the disruption scenarios chosen by ENTSOG. However, in order to be able to deliver a comprehensive picture on the potential impact of a supply disruption, a modelling with a higher resolution of the gas infrastructure seems necessary for the next TYNDP.

If the TYNDP shall deliver concrete proposals, as currently under discussion in the Energy Infrastructure Package development process, a more infrastructure-based approach - where the description of gas flows within the system should be clearly emphasised - should be followed. For the needs of current transparency requirements and the use of the TYNDP as an informative “support tool” with general results (mirroring the non-binding character of the plan), the applied model might be sufficient with a few improvements on assumptions and interpretation of the results.

3.2 Role of the stakeholders

3.2.1 TYNDP process and included projects

In summer 2010, ENTSOG launched an information request to collect the infrastructure projects of non-ENTSOG members via a standardised questionnaire. The quality of the data was depending on the goodwill and the involvement of relevant stakeholders. ENTSOG requested technical information on the project, commissioning date, financing structure and cost estimation. In order to preserve confidentiality, ENTSOG decided to publish an aggregation of cost estimates per infrastructure split between FID and non-FID projects.

ENTSOG also decided to include only projects where sufficient information was provided by the sponsors. As a result, several third party projects were not taken into account in the TYNDP, or were excluded from the global estimation of investment volumes.

ACER considers that a more sophisticated approach shall avoid excluding important projects from the TYNDP. As the TYNDP is supposed to have a key role in the Energy Infrastructure Package, it is crucial to produce a reliable report providing all the necessary information in order to properly identify infrastructure needs and encourage necessary investments. While the elaboration of the Community-wide TYNDP is an ENTSOG task, ACER considers that it shall include a collective dimension involving a significant number of actors. ACER invites all relevant natural gas undertakings, including TSOs, LNG system operators, storage system operators, distribution system operators, supply undertakings, traders and especially producers to make available to ENTSOG the data it requests. ENTSOG has to guarantee the confidentiality of sensitive information. In any case, ACER considers that the commitment of all parties involved is a precondition for a good quality of the TYNDP.

3.2.2 Stakeholders consultation on the 2011 TYNDP

ENTSOG presented the methodology adopted to elaborate supply and demand scenarios as well as the network modelling in a workshop organised on 7 October 2010. The final report was presented to stakeholders in a workshop on 17 March 2011. ENTSOG consulted on the 2011 TYNDP between March and July 2011. Whilst there were no changes to this version of the plan as a result of the comments received, ACER understands that the feedback will be taken into account in future revisions and improvements to the TYNDP as well as the Gas Regional Investment Plans (GRIPs).
ACER appreciates ENTSOG’s efforts to publish the 2011 TYNDP only 12 months after the publication of the 2010 edition. The lack of time however, did not allow ENTSOG to share intermediate results with stakeholders, in particular concerning supply and demand scenarios. ACER advocates for greater stakeholder involvement during the elaboration of the next TYNDP. A process similar to the one adopted for the 2010 TYNDP – a three-step process, where regular updates and possibilities for discussion had been provided to the stakeholders on capacity development, demand and supply scenarios as well as the modelling and assessment of the resilience of the system – is in ACER’s view beneficial. Improved online communications could contribute to decrease travel burdens for stakeholders.

Such regular updates to the market will facilitate the building of a shared vision of the European gas market dynamics among all stakeholders and will allow for developing scenarios that are agreed by the market. These updates could also encourage project sponsors from non-TSO members to provide up to date information on projects and thus facilitate the collection of the necessary data.

3.3 Coherence between national, regional and EU-wide investment plans

According to ENTSOG, six GRIPs are currently being developed by TSOs. For the 2011 TYNDP, ENTSOG has only identified several regional and national congestions without providing details on the investment needs and the associated investment costs.

ACER promotes a more coherent approach and advocates for a close collaboration between ENTSOG, TSOs and National Regulatory Authorities in the regions and through ACER in order to produce consistent and comparable investment plans at the European and regional levels. In ACER’s view, regional investment plans should contribute to higher consistency between national and Community-wide TYNDPs, to identify infrastructure and investment gaps at regional level and to address the relation between infrastructure and market integration better. This is the only way to diagnose accurately investment needs and remedy cross-border congestions as well as ensure a consistent design for cross-border projects.

The involvement of stakeholders at regional level is also crucial to develop investment plans according to market needs. ACER invites TSOs to use the existing Gas Regional Initiative (GRI) structures in order to present regular updates to stakeholders and promote dialogue.

3.4 Monitoring report

ACER understands that deviations from the previous plan, delays or cancellations (and reasons for that) are difficult to identify in the 2011 TYNDP, because of the pilot character of the 2010 TYNDP. However, ACER would have appreciated a comparative analysis on a broad level of the congestions identified in the two reports.

In any case, ACER expects the next TYNDP to feature a follow-up on the projects included in the plan, with a particular focus on the projects that are supposed to be developed within the next three years.

Furthermore, the next TYNDP should be more explicit on the divergences or inconsistencies between the investment plans developed at national and regional level. Such inconsistencies should be limited in number, whereby the plan provides a clear explanation on why the deviation exists.
4 Conclusions and further recommendations

Being aware of the high expectations from stakeholders, ACER acknowledges the great step forward and the efforts taken by ENTSOG to improve the 2011 TYNDP in relation to the previous pilot plan. The early work presented (with the selected priorities and first attempts to analyse market integration scenarios) is welcomed. The 2011 TYNDP is a valuable and informative basis for all stakeholders with regard to strategic planning, prognoses and regulation purposes. The 2011 TYNDP therefore (though still in a quite limited way) contributes to non-discrimination, efficient functioning of the market and (indirectly) to a sufficient level of interconnection capacity open to third parties as it is required in the 3rd Package.

Nevertheless, ACER considers that the applied model itself, as well as the modelling methodology, should be enhanced towards including an economic dimension (e.g. involving market price dynamics) as well as a physical dimension with a better resemblance of the real network and its gas flows.

ACER encourages ENTSOG to focus on the further improvement of the modelling and the development of sound demand projections (especially harmonising the underlying assumptions for the ENTSOG demand scenario), the incorporation of EU political goals (RES and 20/20/20 targets) and the expected effects of the nuclear phase out in Germany (and possibly other countries) on the European gas infrastructure, i.e. via inclusion of respective scenarios in the next TYNDP. Even where differences are apparent, interaction, cooperation and coordination with ENTSO-E on the development of scenarios is essential for future plans.

Given the central role the TYNDP may play, the selected scenarios need to reflect Europe’s energy and environmental goals. It is essential to ensure full transparency and open consultation on the process of scenario development and approval. Stakeholder involvement should therefore be improved through standardised transparent consultation processes (including workshops, bilateral meetings) building upon the positive experiences already gathered during the pilot 2010 TYNDP process.

Given the importance of the GRIPs in completing the assessment of EU investment needs, ENTSOG should have a significant role in their elaboration. This includes providing the necessary framework, giving guidance to TSOs and - most importantly - ensuring consistency of GRIPs and national plans with the EU TYNDP. Due to non-existence of GRIPs and very limited availability of national TYNDPs, analysis and evaluation of consistency between those plans is not yet possible.

The development of the Energy Infrastructure Package will probably translate into even higher expectations from the TYNDP. It is currently envisaged that the TYNDP shall indeed help selecting PCIs. Interaction between the TYNDP and Energy Infrastructure Package processes will need to be determined in the light of the future legal framework once it is adopted. To live up to the expectations set in the PCI process, an analysis of competitive projects with their costs and (also wider) benefits on competition, non-discrimination, market integration and effective functioning of the internal market will have to be ultimately carried out by ENTSOG.

In ACER’s view, the TYNDP needs to remain at the core of the process towards an integrated European network. It should serve as a basis for identification of infrastructure
gaps and for a subsequent decision making on project selection and prioritisation. In practice, the TYNDP has to – in the first place – include a comprehensive list of all projects capable of filling potential supply-demand gaps. This advocates for deepening the project based dimensions, building upon TSOs knowledge of the abilities and constraints of their networks to develop cost benefit analyses when selecting projects of common interest. It is not advisable to allow for additional projects being selected or proposed by the Member States or by the Commission at a later stage and outside of the TYNDP process, as this would put the viability of the whole TYNDP and investment assessment process at risk. Rather, the project selection and labelling as PCI should be incorporated in the TYNDP process and based on concrete, objective and transparent qualification criteria (as currently being set out by the European Commission).

If no projects have been proposed by other stakeholders, sufficient exchange of information between the connected operators and a strong cooperation at EU level is required to enable ENTSOG to eventually propose possible projects to remedy identifies gaps. This will ultimately also necessitate improved European modelling and more detailed technical flow simulations at regional level.

The TYNDP process will gain further maturity if it is able to incorporate a comprehensive cost-benefit analysis which would assess the efficiency of these projects and how they contribute to the wider EU energy-related goals.

ENTSOG will not be working alone in this. A joint effort is required by all the relevant stakeholders (NRAs, ACER, European Commission, Member States, ENTSOG, TSOs, and other Stakeholder groups).

To conclude, ACER believes that the current 2011 TYNDP represents real progress, but further work is required to deliver the necessary guidance or basis for project prioritisation (eventual PCI selection).
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