

OPINION No 06/2020
OF THE EUROPEAN UNION AGENCY
FOR THE COOPERATION OF ENERGY REGULATORS

of 5 November 2020

on ENTSO-E and ENTSOG draft TYNDP 2020 Scenario Report

THE EUROPEAN UNION AGENCY FOR THE COOPERATION OF ENERGY REGULATORS,

Having regard to Regulation (EU) 2019/942 of the European Parliament and of the Council of 5 June 2019 establishing a European Union Agency for the Cooperation of Energy Regulators¹ (“ACER”) and, in particular, Articles 4(3)(b) and 4(5) thereof,

Having regard to the outcome of the consultation with ACER’s Electricity and Gas Working Groups,

Having regard to the favourable opinion of the Board of Regulators of 13 October 2020, delivered pursuant to Article 24(2) of Regulation (EU) 2019/942,

Whereas:

1. INTRODUCTION

- (1) On 29 June 2020, the European Network of Transmission System Operators for Electricity (“ENTSO-E”) and the European Network of Transmission System Operators for gas (“ENTSOG”) published their joint TYNDP 2020 Scenario Report² (“draft Scenario Report”). The draft Scenario Report documentation encompasses a main report, building guidelines, and main highlights. It is possible to download and visualise the main data sets used for scenarios and the elaboration of the draft Scenario Report.
- (2) Article 30(1)(b) of Regulation (EU) 2019/943 and Article 8(3)(b) of Regulation (EC) No 715/2009 require ENTSO-E and ENTSOG, respectively, to adopt and publish a non-binding Union-wide ten-year network development plan (“TYNDP”) biennially.

¹ OJ L158, 14.6.2019, p. 22.

² ENTSO-E news: <https://www.entsoe.eu/news/2020/06/29/entso-e-and-entsog-publish-their-final-joint-scenarios-for-tyndp-2020-and-open-registration-for-public-webinar/> and ENTSOG Press Release: https://www.entsog.eu/sites/default/files/2020-06/PR0211_200629_Press%20Release_ENTSOE%20and%20ENTSOG%20publish%20their%20final%20Joint%20Scenarios%20for%20TYNDP%202020%20and%20open%20registration%20for%20public%20webinar.pdf

Pursuant to Article 48(1) of Regulation (EU) 2019/943 and Article 8(10) of Regulation (EC) No 715/2009, the electricity and gas TYNDPs shall include, among other features, scenario development.

- (3) As scenario development is carried out and published as a separate activity during the preparation of the TYNDPs 2020, ACER has assessed the draft Scenario Report separately from the forthcoming draft TYNDPs.
- (4) The Agency's assessment takes primarily into account the TYNDP requirements defined by Regulation (EU) 2019/942, Regulation (EU) 2019/943 and Regulation (EC) 715/2009, i.e. the contribution of the TYNDPs (and specifically of their scenario development) to non-discrimination, effective competition, the efficient and secure functioning of the electricity and gas markets and a sufficient level of cross-border interconnection open to third-party access.

2. ASSESSMENT OF THE DRAFT SCENARIO REPORT

2.1. The process of preparing the draft Scenario Report

- (5) During the first half of 2018, the ENTSOs developed the 2020 scenario storylines. The proposed storylines were the following: 1) National Trends; 2) Global Ambition; 3) European Focus; 4) Distributed Energy; and 5) Delayed Transition. These storylines retained some consistency from the TYNDP 2018 scenario storylines, while having similar names.
- (6) In May 2018, the ENTSOs held a public workshop on the storylines³. The participants were asked to share their first impressions on the storylines presented, while the ENTSOs shared the main assumptions and the rationale for their development.
- (7) From 2 July until 14 September 2018, the five published draft storylines⁴ were publicly consulted⁵. Stakeholders had the chance to comment on the proposed storylines, and vote on their relevance. Thirty-five stakeholders participated in the consultation of the storylines.
- (8) From November 2018 to May 2019, the storylines were finalised. First, a Public Webinar on "Scenario Development Process Update" took place and in April 2019, the ENTSOs

³ 29 May 2018: ENTSOs joint Scenario Storyline workshop: <https://www.entsog.eu/entsos-gas-and-electricity-tyndp-2020-scenario-development-workshop#welcome> (Presentations available on ENTSOG website).

⁴ 2 July 2018: Publication of TYNDP 2020 draft storylines: https://www.entsog.eu/sites/default/files/entsog-migration/publications/TYNDP/2018/180702_WGSB_Scenario%20Building%202020_Consultation_Document.pdf

⁵ From 2 July to 14 September 2018, ENTSOs opened a web-based public consultation: <https://consultations.entsoe.eu/tyndp/2020-scenario-storylines/>

- held a Scenario Building webinar for stakeholders⁶. The ENTSOs reduced the initial five storylines to the following three: 1) National Trends (NT); 2) Distributed Energy (DE); 3) Global Ambition (GA). The webinar presented the three retained final storylines and provided an overview of the stakeholder input and how it was considered.
- (9) On 29 May 2019, ENTSOs published the final storylines for the Scenario Report⁷, including a summary of the feedback received on the draft storylines and ENTSOs' considerations.
- (10) From May until November 2019, the data collection and scenario building process took place. During this period, ENTSG held a workshop on Gas Supply Potentials and Market Related Assumptions for the TYNDP 2020⁸.
- (11) In November 2019, a draft version of the Scenario Report⁹ was published and, two weeks later, open for public consultation¹⁰ from 25 November 2019 until 22 January 2020. The ENTSOs published some data in a zip file called "TYNDP 2020 Scenario Data", containing worksheets on electricity data, gas data, electricity demand and power-to-gas.
- (12) In December 2019, the ENTSOs held a joint scenario workshop¹¹ to present the Scenario Report development process and its main results.
- (13) On 29 June 2020, the (updated) draft Scenario Report was published. On 3 July 2020, ENTSOs organised a closing webinar to present the Scenarios for the TYNDP 2020 and to kick-off the scenario development process for the TYNDPs 2022¹².
- (14) ACER welcomes the second iteration of the joint ENTSOs' process for building scenarios for the TYNDP 2020 as initiated within the TYNDP 2018 process. ACER acknowledges the sustained efforts of the ENTSOs to interact with stakeholders throughout the development of the scenarios via public webinars, workshops and consultations. ACER appreciates the transparency on stakeholder responses to the first consultation in the final storylines report, notably the number of received responses, the summarised feedback, and ENTSOs' response to the feedback.

⁶ 18 April 2019: ENTSOs Scenario Building Stakeholder Webinar:

<https://www.entsoe.eu/events/2019/04/18/entsos-scenario-building-stakeholder-webinar/>.

⁷ [https://www.entsog.eu/sites/default/files/2019-](https://www.entsog.eu/sites/default/files/2019-06/190408_WGSB_Scenario%20Building%202020_Final%20Storyline%20Report.pdf)

[06/190408_WGSB_Scenario%20Building%202020_Final%20Storyline%20Report.pdf](https://www.entsog.eu/sites/default/files/2019-06/190408_WGSB_Scenario%20Building%202020_Final%20Storyline%20Report.pdf)

⁸ 10 July 2019: ENTSG workshop on the Gas Supply Potentials and Market Related Assumptions for TYNDP 2020: <https://www.entsog.eu/entsog-workshop-supply-potentials-and-market-related-assumptions-tyndp-2020> (Presentations available on ENTSG website).

⁹ The publication consists of Scenario Highlights, the main report, the scenario methodology report and the scenarios website <https://www.entsos-tyndp2020-scenarios.eu/>

¹⁰ <https://consultations.entsoe.eu/tyndp/entsos-2020-tyndp-scenarios/>

¹¹ 5 December 2019: ENTSOs joint Public Workshop on the draft TYNDP 2020 Scenarios:

<https://entsog.eu/gas-and-electricity-entsos-workshop-joint-tyndp-2020-scenarios-brussels-5-december> (Presentations available on ENTSG website).

¹² <https://www.entsoe.eu/events/2020/07/03/webinar-on-final-tyndp2020-scenarios/>

- (15) However, ACER regrets that the processes of storylines definition and of scenario development showed some deficiencies leading to a suboptimal trustworthiness of the final scenarios, namely:
- a. The consultation process, even though involving stakeholders of different interest groups, did not substantially involve stakeholders in the actual storyline development process, beyond an opportunity to provide comments and feedback on a preselected set of storylines. The choice of the final storylines used for the scenarios from the five proposed was actually to a significant extent left to the ENTSOs' discretion, especially after taking into account the fact that similarities between European Focus and National Trends¹³ in essence conclude that only four storylines were proposed and amongst those four, Delayed Transition was eliminated rather quickly due to strong opposition of some stakeholders.
 - b. Storylines and subsequent scenarios used to assess the future requirements of the energy system(s) regarding new infrastructure, market configuration and electricity adequacy aspects are impacted by a wide range of variables. The draft Scenario Report 2020 does not provide sufficient information on the way in which expert knowledge about the range of such variables was used, and if used, then from which sources and in which manner. Consequently, despite the repeated ACER recommendation to invite contributions or reviews from selected experts¹⁴, it remains somewhat obscure how such knowledge was involved in the storyline/scenario development, and to what extent.
 - c. The availability of data was limited at the time of the consultation on scenarios (November 2019), e.g. making available only the electricity annual and peak demand, while not sharing information on RES profiles. It was also poorly presented, with different information (e.g. electricity generating capacity, generation, emissions, balance) for different scenarios and for different study years in a single spreadsheet, making important pieces of information poorly accessible to readers.
 - d. The transparency of scenario development is further compromised by the apparent lack of published full responses to the December 2019 consultation by the ENTSOs on the web. Furthermore, links provided by the ENTSOs on their websites to stakeholder engagement documents lead to a press release announcing the consultation, but not to the list of respondents, to their full responses, and to the evaluation of the responses by the ENTSOs, apart from very limited information provided in Section 10.2 of the draft Scenario Report.
 - e. Consequently, it is not possible to understand how, in the absence of meaningful data, the respondents could truly evaluate the scenarios proposed for consultation and how the 42 responses to the public consultation on scenarios actually affected the scenario development;

¹³ The overlapping of these storylines is acknowledged in the draft Scenario Report p.52: "*the ENTSOs Working Group Scenario Building (...) had noticed the similarity between National Trends and European Focus*".

¹⁴ ACER Opinion No 21/2014, 12/2016 and 10/2018.

- f. Last, the ENTSOs qualify their scenario report as “Final Report, June 2020” instead of identifying it as a version for ACER’s Opinion. This approach may confuse the readers regarding ACER’s role as defined by Regulation (EU) 2019/942.
- (16) ACER observes the existence of significant delays in the scenario process. In January 2019, ENTSO-E envisaged in its final work programme¹⁵ for 2019 the finalisation of the Scenario Report by September 2019. ENTSG indicated in its final work programme for 2019 “*the release of the draft information in Q3 before the Final TYNDP 2020 Scenario Report is released in Q4 2019*”¹⁶. In April 2019, the ENTSOs indicated during a webinar that the “Public Release of Scenario Outcomes” would be in Q3 2019 and the “Final Workshop for Release of Scenario Report” (post-consultation) in Q4 2019. The reality is that the Scenario Report was delayed by 9 months compared to the initial planning (July 2020 vs. September 2019).
- (17) ACER is of the view that a timely scenario development process is crucial to facilitate a consistent development of scenarios at European level and at national level (for national network development plans and other analyses). ACER recalls the recommendation provided in its Opinion No 21/2014, namely that the scenario development should be completed, including an ACER Opinion on scenarios, in the year before the preparation of the TYNDPs¹⁷.
- (18) These significant delays endanger the potential participation of stakeholders, time-press subsequent TYNDP processes, possibly endangering the quality of the identification of system needs and of cost-benefit analyses, which have to be performed after the scenario development.
- (19) The consistency between national network development plans (NDPs) and the European TYNDPs, and more generally the consistency of the framework for assessing investments, is also potentially significantly endangered because of the delays in scenario development, especially in countries where the NDP was prepared in the second half of 2019 or in the first half of 2020. More robust scenarios at national level might be necessary in the upcoming NDPs.
- (20) For the reasons above, ACER considers that the scenario development of TYNDPs 2020, in terms of its timing and data release, did not sufficiently contribute to efficient and secure functioning of the internal markets for electricity and natural gas.

¹⁵ https://eepublicdownloads.azureedge.net/clean-documents/Publications/ENTSO-E%20general%20publications/AWP_2019.pdf

¹⁶ https://www.entsog.eu/sites/default/files/2018-12/Annual%20Work%20Programme%20%28AWP%29%202019_%20Final.pdf

¹⁷

https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Opinions/Opinions/ACER%20Opinion%2021-2014.pdf

2.2. Consistency and robustness of scenario development

- (21) Based on the “best-estimate” scenario for 2025, three additional scenarios have been jointly developed by the ENTSOs for the 2030 and 2040 timeframes at country level, and two (Distributed Energy and Global Ambition) at an EU level for 2050. In addition, a current-trend scenario is stated to be developed by ENTSO-E (see Section 2.4 below).
- (22) ACER notes positively the integration of the Paris Agreement and of EU and national energy and climate policy targets in the scenarios, along with the development of carbon budgets, used for distributed energy and global ambition scenarios¹⁸.
- (23) ACER acknowledges the improvement in the consistency and timespan of the scenarios compared to the previous edition of the TYNDP, as in the TYNDP 2018 only two scenarios were consistently developed for the 2030 and 2040 timeframes (Sustainable Transition and Distributed Generation), with two additional scenarios developed only for one of the timeframes, respectively 2030 for EUCO and 2040 for Global Ambition.
- (24) ACER observes progress in the draft Scenario Report, as significant efforts have been made to provide more details on the elaboration process of the scenarios at the different timeframes.
- (25) However, ACER is of the view that certain elements are subject to improvement, namely:
- a. In contrast to the previous editions of the Scenario Reports, the underlying assumptions regarding the economic conditions per scenario are not described in the draft scenario report;
 - b. The use of more contrasted scenarios is lacking. This could have been avoided through the joint development of a “current trends” scenario, thus integrating a slower economic and technological development among the range of potential future events. ACER also finds that several variables, such as gas demand¹⁹ and demand-side response, are considered within too narrow value ranges across the various scenarios;
 - c. The consistency of gas demand with the carbon budgets (for scenarios DE and GA) and the carbon-related assumptions in the NECPs (for the NT scenario) remains unclear;
 - d. While scenario development took into account carbon budgets in 2 out of 3 scenarios (top-down), it is not elucidated in the context of scenario development how the carbon-related dimension is considered in the national trends scenario, taking into account the National Energy and Climate Plans (NECPs); as this scenario is constructed with a “bottom-up” approach, at least transparency on key assumptions used for its developing is needed;

¹⁸ Draft Scenario Report, p.14

¹⁹ In year 2030, the EU-28 gas demand is 4254 TWh/year in the NT scenario; 4612 TWh/year in the DE scenario e 4859 TWh/year in the GA scenario.

- e. The draft Scenario Report (p. 13 and p. 48) indicates that a “*sensitivity analysis regarding the merit order of coal and gas in the power sector is included for 2025*”. This “Gas Before Coal” at year 2025 was developed by setting its CO2 price at 56 euro/t. The proposed value is more than twice the “Best Estimate 2025” CO2 price (23 euro/t) and higher or significantly higher than the ENTSOs CO2 price assumptions at year 2030, rendering the sensitivity analysis unrealistic and internally inconsistent.
- f. The features of the different storylines are not sufficiently precise. The storyline central matrix uses a “grade” notation based on loosely described ranges (‘+’ ‘++’), which is too imprecise to allow analysis by stakeholders. This is acknowledged in the draft Scenario Report, which states (p. 16) that “*growth and reduction rates across the different categories are not directly comparable*”. In particular, the scenarios do not elaborate on how key variables, such as the electrification rate or the level of gas demand, have been set up in each storyline, whether the electricity and gas interlinkage has been considered, and, in case it has been considered, how that has been done;
- g. Technologies that are either immature or associated with important uncertainties, such as Carbon Capture, Utilisation and Storage (CCUS) and Land use, land-use change, and forestry (LULUCF), are assumed to be widely applied in all scenarios, without due justification; a more differentiated spectrum of assumptions regarding uncertain technology developments should be considered;
- h. For two scenarios (GA and DE) a co-optimisation of generation capacity and grid was executed, including a “*trajectory data collection for various core supply and demand elements based on up to three national scenarios (with low, medium and high development trajectories)*”²⁰. According to the Scenario Building Guidelines (p.30), the installed capacities and the generation of the electricity sector are quantified in more detail with the help of a power market investment model (step 2 in top-down scenario building)²¹. The constraints taken into account in the power market investment modelling, as well as in the following step 3 in which security of supply is assessed, are not specified in the scenario development documents²², although their impacts on generation capacities represent a key feature for top-down scenario development.

(26) ACER notes that the COVID-19 crisis and its impact have not been taken into account in the draft Scenario Report, despite its significant impact on energy demand and on the need of relevant infrastructure investments. ACER acknowledges that the unexpected COVID event materialised only during the finalisation phase of scenario development, and that a complete reassessment of the modelling and the scenarios would have been difficult to manage by the ENTSOs.

²⁰ Draft scenario report, page 57.

²¹ The Scenario Building Guidelines indicate that the increase of cross-border capacities in the investment model is not used in the following TYNDP processes and intends to ensure rational generation placement and not network needs identification.

²² Except for the trajectories of maximum capacities of solar PV, wind onshore and wind offshore at years 2030 and 2040, which are presented in Annex 3 to the Scenario Building Guidelines.

(27) However, ACER is of the view that the ENTSOs should explore in the TYNDPs 2020 the implications of the COVID-19 pandemic on the future energy demand, including prospects for investment in energy in general and in infrastructure in particular.

2.3. Transparency of scenarios

(28) ACER notes positively that some scenario data are available on the 2020 TYNDP scenario website for downloading without restrictions, and that a visualisation platform was implemented to present the data.

(29) ACER also acknowledges significant advances in the elucidation of the sector-related hypotheses in the scenario methodology report, in comparison to the previous TYNDP edition.

(30) Still, there are several areas where scenario transparency could be further improved:

- a. The visualisation platform is not easily usable and does not always provide measurement units and meaningful data, e.g. the energy flows between countries are hardly visible (for electricity) in the “electricity flows” map, and apparently missing for gas;
- b. The definitions for the different generation capacities and demand-side response leverages are not provided. In particular, only one category is displayed for gas, lignite and coal, while in the previous TYNDP for each of these fuels there were different categories accounting for the efficiency of the power plant;
- c. The level of information on the forecasted cost of the different technologies²³ considered in the scenarios is limited to few technologies (open cycle gas turbine, combined cycle gas turbine, solar, wind and batteries) and does not allow for an analysis as the data sources are lacking;
- d. There is a lack of transparency of the hypotheses assumed for several parameters, in particular for efficiencies of electricity generation technologies, for (forced/scheduled) unavailability of electricity generation technologies and of interconnection capacities, for RES injection profiles, for gas price and gas flows by source²⁴. Key parameters such as the expected cost of gas, location and availabilities of resources, as well as the impact of future demand for gas transportation services, are not explained and modelled. The conditions for the development of biomethane, power-to-gas, or gas coupled with carbon capture or pyrolysis are not specified;

²³ Annex 2 to the draft scenario report, regarding “Cost Assumptions for the investment modelling”.

²⁴ The final storyline description states that: “Natural gas supplies via pipeline and LNG are still dominant sources of supply. Power-to-Gas sees limited development and is used more for energy storage than a key supply of gas. Biomethane growth is reliant on national policy support. <...> The storyline takes into account imports of green gases using the existing gas infrastructure leading to a decarbonisation of the gas mix in the long run.” The central matrix of factors relevant for the construct of scenarios indicates the level of relevance of various factors by using symbols (+, +, etc.). Cf. Scenario Report, pp. 6 and 11-12, and pt. 25(f) of this Opinion.

- e. The hypotheses for heating, such as electrification rate and heat pumps, are not clearly stated;
- f. Despite the possibility to access certain data, stakeholders have no access to information on the features of the investment and security supply models as well as to other critical results, such as the expected electric and gas flow. These limitations significantly restrain the ability of stakeholders to assess the scenarios.

2.4. ACER's remarks on ENTSO-E's Current Trends scenario

- (31) In its Opinion No 10/2018, ACER requested the ENTSOs to introduce a “low economic growth / slow-progress” scenario in all study years which are treated under a multi-scenario approach, in order to have a proper understanding of the risks associated with each scenario for each infrastructure project under analysis, as well as to have a balanced set of scenarios, and not only optimistic ones.
- (32) The draft Scenario Report (page 59) states that “*electricity transmission and storage projects (...) will also be assessed in a ‘Current Trends’ scenario, an ENTSO-E scenario not included in this report which describes a future where the energy transition is slower than planned*”. In other words, ENTSO-E chose to create an additional, fourth scenario, called Current Trends (CT).
- (33) ACER understands that the Current Trends scenario was constructed bottom-up, by collecting information about the most conservative national development trajectories from all TSOs.
- (34) ACER recalls that information on the use of “slow progress” scenarios is available in ACER's Opinion No 13/2019 on national network development plans, according to which “*more than one third of the NDPs appear to also use a scenario which considers lower economic growth or demand*” (11 EU Member States). Therefore, a “slow progress” trajectory could have been available in less than half of the countries. However, it remains unclear whether these trajectories were actually used and which assumptions were used for the other countries.
- (35) For the reasons above, ACER cannot evaluate whether the Current Trends scenario constructed by ENTSO-E is consistent with the request set out in ACER Opinion No 10/2018 recalled here above.
- (36) ACER regrets to note that the Current Trends scenario is not available in the draft Scenario Report, was not made available in any format for public consultation, and that its dataset was not published or made available for public consultation. In addition to publishing this information, ENTSO-E should clarify which national scenarios were used (where applicable) and which assumptions were adopted in other countries where a “slow progress” or conservative scenario was not readily available.

- (37) ACER also notes that, according to the draft Scenario Report, no indications exist that a slow economic progress scenario will be used by ENTSOG, rendering the base of the gas TYNDP 2020 to an unbalanced set of scenarios.

3. ACER'S RECOMMENDATIONS

Short-term, for the TYNDP 2020

- (38) Considering the deficiencies of the draft Scenario Report as indicated above, as well as the process of its development, stakeholder interaction and transparency, ACER recommends ENTSO-E and ENTSOG to take the following actions at their earliest convenience:
- a) Improve documentation pertinent to stakeholder involvement. Even if the draft Scenario Report mentions the involvement of a wide variety of stakeholders, there is little information about organisations/companies actually involved and to what extent they have been involved. Details could be briefly presented with pie graphs, so as to provide a quick insight into how the consultation process has actually worked. Besides, it must be indicated which were the most widely discussed and debated issues among the different stakeholders. The ENTSOs should provide a sufficiently detailed evaluation of stakeholder responses to the public consultation of the draft Scenario Report and how they were taken into account.
 - b) Provide information in the TYNDPs 2020 on the way in which network “needs” depend on important aspects of scenarios, i.e. on the extent and on the way in which key scenario parameters affect the needs in electricity and in gas transmission, in each sectoral TYNDP (TYNDP system needs report).
 - c) Introduce a scenario featuring low economic growth / slow progress in the electricity and gas TYNDPs 2020 for all years where a multi-scenario approach is adopted (i.e. calculate the CBA results also for this scenario).
 - d) Provide all data regarding the “Current Trends” scenario and run a public consultation on it, within the frame of the TYNDP public consultations.
 - e) Explain the interactions, if any, between carbon budgets used in two scenarios and CO₂ ETS prices assumed for them. Provide more transparently the definitions for carbon budget. For the National Trends scenario, indicate which carbon-related assumptions were considered in the NECPs, underpinning the data submitted by TSOs under a bottom-up approach.
 - f) Clarify that the “Coal before Gas” and “Gas before Coal” 2025 scenarios are two scenarios rather than a sensitivity analysis of a single scenario, as currently claimed. This clarification should be made in the forthcoming gas TYNDP 2020, unless the

Gas before Coal scenario is simply removed as envisaged for the electricity TYNDP, in particular in view of its unrealistic assumptions about CO2 prices.

- g) Explain better what the notations of the technologies growth (+, ++, +++) actually mean and which assumptions were made to arrive at designating the technologies with these notations.
- h) Explain why new energy demand drivers, such as the Paris Agreement requirements and NECPs, appear to have limited impact on gas demand in all scenarios.
- i) Provide transparent information on the constraints taken into account in the power market investment modelling for the top-down GA and DE scenarios, as well as the impacts of these constraints, in particular regarding the definition of the assumed capacities for each electricity generation technology.
- j) Explain the interaction with the national energy and climate plans of Member States, especially when the final targets of NECP diverge from the values retained in the National Trend scenario.
- k) Adopt, as much as possible, academic standards for the presentation of the scenarios assumptions and results, such as including clear definitions of the metrics and their basics, formally describing the models and the calculation (simulation) processes; provide references for each input value used in the Scenario Report.
- l) Publish all parameters and assumptions which are currently not available to interested parties, as indicated in point (30) of this Opinion.
- m) Enhance transparency on the adjustments done during the modelling.
- n) Explore the impact of the COVID-19 pandemic and of the subsequent recovery measures in the current (and upcoming) scenarios of energy demand and related investments.

Mid and long-term, for TYNDP 2022 scenarios

- (39) ACER recommends that ENTSO-E and ENTSOG take the following actions for the preparation of TYNDP 2022 scenarios:
- a) Deliver the TYNDP 2022 scenarios for ACER's opinion by September 2021, in order to allow sufficient time for the finalisation of the scenarios after ACER's Opinion by the end of 2021²⁵. In this way, it will help to avoid risks of delays negatively affecting the scenarios' analyses at national level and the national

²⁵ ACER notes that during the webinar of 3 July 2020, the ENTSOs presented a timeline in which a full dataset seems to be available by February 2021, a draft scenario report is to be released by June 2021, a public consultation on scenarios is to be carried out in July and August 2021 and an updated scenario report is planned by December 2021.

network development plans, as well reduce the risks of compressing the needs identification process and the cost-benefit analyses of the TYNDPs, which have to be carried out mostly after the completion of the scenario development.

- b) Define and publicly share a realistic plan of the scenario-related activities, in line with the timing above.
- c) Carry out a single public consultation on scenarios for the TYNDPs 2022, i.e. on the draft scenario report and its full dataset, in line with the requirement in Annex V.2 of Regulation (EU) No 347/2013.
- d) Reinforce the participation of stakeholders during the scenario development process. Stakeholders (in particular project promoters, NRAs, researchers, Non-Governmental Organisations) may face difficulties in actively engaging in the scenario building process, because they do not have access to the same data as TSOs, and because the time to respond to the public consultation is insufficient. More informed stakeholder involvement could also be facilitated through introductory TYNDP webinars.
- e) Label the updated version of the Scenario Report after public consultation in 2021 as “version for ACER Opinion”.
- f) Improve long-term consistency and continuity of storylines over the different editions of the TYNDP, explaining what the new drivers are and why the ENTSOs abandon (if that is the case) or replace old storylines, while accounting to an appropriate extent the long-term implications of the COVID-19 crisis and the EU Recovery Fund on energy sector development.
- g) Jointly develop contrasted scenarios. This contrast should encompass slow versus fast economic progress and different assumptions on intake of currently immature or highly uncertain technologies,

HAS ADOPTED THIS OPINION:

The TYNDP 2020 draft Scenario Report provides improvements in comparison to the previous versions of scenario reports, as noted in Chapter 2 of this Opinion.

In consideration of the deficiencies of quality, process, and transparency aspects of the draft Scenario Report as explained above, ACER provides recommendations in Chapter 3 of this Opinion on how the ENTSOs could mitigate the drawbacks of the draft Scenario Report for its use in the TYNDPs 2020. ACER invites ENTSO-E and ENTSG to implement them in a most diligent manner. ACER provides recommendations for the TYNDP 2022 scenario development, and in particular its timeline, involvement of stakeholders, robustness and consistency.

This Opinion is addressed to ENTSO-E and ENTSOG.

Done at Ljubljana, on 5 November 2020.

- SIGNED -

*For the Agency
The Director*

C. ZINGLERSEN