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**OPINION OF THE AGENCY FOR THE COOPERATION OF ENERGY
REGULATORS No 06/2015**

of 20 July 2015

**ON THE ENTSO-E IMPLEMENTATION PLAN 2016-2018 OF THE
RESEARCH AND DEVELOPMENT ROADMAP 2013-2022**

THE AGENCY FOR THE COOPERATION OF ENERGY REGULATORS,

HAVING REGARD to Regulation (EC) No 713/2009 of the European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators, and, in particular, Articles 6(3)(b) and 17(3) thereof,

HAVING REGARD to Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003, and, in particular, Article 9(2) thereof,

HAVING REGARD to the favourable opinion of the Board of Regulators of 16 July 2015, delivered pursuant to Article 15(1) of Regulation (EC) No 713/2009,

WHEREAS:

- (1) On 26 March 2015 the European Network of Transmission System Operators for Electricity ('ENTSO-E') published its Research and Development Implementation Plan 2016-2018 ('R&D Implementation Plan 2016-18')¹. On 9 April 2015, ENTSO-E submitted the R&D Implementation Plan 2016-18 to the Agency for its opinion.
- (2) The R&D Implementation Plan 2016-18 is a research plan and, as such, refers to point (a) of Article 8(3) of Regulation (EC) No 714/2009, for which the Agency has to provide an opinion to ENTSO-E pursuant to Article 6(3)(b) of Regulation (EC) No 713/2009 and the first subparagraph of Article 9(2) of Regulation (EC) No 714/2009.
- (3) The R&D Implementation Plan 2016-18 is based on ENTSO-E's R&D Roadmap 2013-2022², which was published in December 2012 and on which the Agency issued its Opinion No. 11/2014 on 28 May 2013.

¹https://www.entsoe.eu/Documents/Publications/RDC%20publications/150330_RD_Implementation_Plan_2016-2018.pdf

²<https://www.entsoe.eu/publications/research-and-development-reports/rd-roadmap/Pages/default.aspx>

- (4) On 31 January 2014, ENTSO-E released its Monitoring Report 2013 of the R&D Roadmap 2013-2022 ('R&D Monitoring Report 2013'), and in March 2015 ENTSO-E released its R&D Application Report 2014³. ENTSO-E has not yet published a R&D monitoring report for 2014. While the R&D Monitoring Report 2013 provides insight into the ongoing projects, the R&D Application Report 2014 touches upon the already concluded R&D projects and their impact. In preparing the present Opinion, the Agency has taken due account of these Reports,

HAS ADOPTED THIS OPINION:

1. General remarks

Research and Development (R&D) is a constantly evolving process to cover the needs and requirements of the system. It is steered by (expected) changes of the behavioural patterns of consumers and producers, influenced by politics, new technologies and market developments. To achieve the desired goals, R&D has to be put in motion well ahead of the foreseen needs stemming from these developments, which is a challenging task that carries significant uncertainty.

ENTSO-E, in the framework of its R&D roadmap, issues on a yearly basis an R&D implementation plan in order to specify the research priorities for the following three years. The R&D Implementation Plan 2016-18 describes the R&D concepts, topics and projects for the period 2016-2018. It also addresses concerns and challenges faced by transmission system operators ('TSOs') in this area.

The Agency deems that the R&D Implementation Plan 2016-18 meets the objectives of non-discrimination, effective competition and the efficient and secure functioning of the internal market in electricity. More specifically, the non-discrimination objective is addressed adequately by the fact that the R&D Implementation Plan 2016-18 was publicly consulted before its finalisation, by the assignment of a significant part of R&D activity to the research community through open calls for R&D project proposals and, finally, by the publicity and dissemination of results of R&D projects. The objectives of effective competition and efficient and secure functioning of the internal market are covered through the inclusion of research areas (clusters) for electricity markets design, as well as for power technologies, network operation and network planning in the R&D Roadmap 2013-2022 which is the basis of the R&D Implementation Plan 2016-18.

The Agency welcomes ENTSO-E's commitment, in the framework of the annual monitoring reports, to assess the development of individual projects through Key Performance Indicators (KPIs), which shall contribute to raising public awareness regarding the status and impact of projects.

³<https://www.entsoe.eu/publications/research-and-development-reports/rd-application-report/Pages/default.aspx>

The Agency believes that the monitoring process should not stop with the publication of the results of each R&D project. It should also provide insight into the rate of deployment of the newly developed technologies and how the latter influence the TSOs' activity as well as the reaching of the EU targets. The Agency thus encourages ENTSO-E to implement a monitoring mechanism which goes beyond the framework of the R&D implementation plan and thus covers all aspects, from the identification of an R&D need and the start of an R&D activity to its concretisation and impact on real-life TSOs' activities. An important piece of this ENTSO-E monitoring mechanism would be the tracking and impact mapping of smart grid projects of common interest. Such activity is, to a certain extent, already covered by the R&D monitoring report and specifically the R&D application report, however these deliverables do not reveal how many R&D efforts are in reality implemented in daily TSO activities, what the success rate of implementation is and how much time is needed from the identification of a problem to the application of a solution.

2. Specific remarks

2.1 On the methodology for the development of the R&D Implementation Plan 2016-18

The Agency notes that the R&D Implementation Plan 2016-18 is based on the last available version of the R&D Monitoring Report, which was made for the year 2013 and supplemented by the R&D Application Report 2014. As the R&D Application Report 2014 covers only already completed projects⁴, it does not sufficiently fulfil the objective of the missing R&D Monitoring Report 2014 in terms of providing input to the R&D Implementation Plan 2016-18. It is therefore hard to distinguish R&D developments of 2014 from the ones of 2013. As a result of the missing R&D Monitoring Report 2014, the chapter of the R&D Implementation Plan 2016-18 describing the latest developments do not provide relevant information compared to the R&D Implementation Plan 2015-17.

The Agency emphasises the need of the annual monitoring of R&D projects' development at least on a cluster level, in order to facilitate annual adjustments of the related implementation plan.

The R&D Implementation Plan 2016-18 states that since 24 October 2014 new EU targets on the reduction of greenhouse emissions, the share of renewables and energy efficiency influence the framework and context of the R&D Implementation plan. However, the R&D Implementation Plan 2016-18 does not explain how this influence has impacted its priorities and how the latter could contribute to reaching the new EU targets. The Agency suggests that ENTSO-E provides a clear and understandable explanation on all R&D topics regarding how they pertain to EU targets.

⁴ In comparison with the R&D Monitoring Report, which reports on all ongoing R&D projects.

The methodology for defining and updating the R&D priorities is heavily influenced by the decisions of stakeholders. In its Opinion No 11/2014⁵, the Agency asked ENTSO-E to provide concrete information on which suggestions were provided by stakeholders through formal and informal discussions and how they were taken into account by ENTSO-E. As this issue is still not covered by the R&D Implementation Plan 2016-18, which was subject to a public consultation from 4 to 24 February 2015, the Agency again invites ENTSO-E to include this information in future implementation plans.

As noted in the R&D Implementation Plan 2016-18, some differences between the European Commission Integrated Roadmap and the ENTSO-E R&D Roadmap still exist, mostly due to different scope and emphasis of both parties. In order to align these documents as much as possible, the Agency invites ENTSO-E to identify and explain the main gaps and propose solutions to overcome them.

The priorities and suggested R&D topics in the R&D Implementation Plan 2016-18 have been determined through a mix of top-down and bottom-up approaches, meeting the requirements of both the ENTSO-E R&D Roadmap 2013-2022 and individual TSO interests. Such an approach is noteworthy and should produce a coherent framework for the TSO requirements both from a national and a pan-European perspective.

Priorities involving distribution system operators ('DSOs') are included in cluster 6, but no further details are given on how DSOs provided their input. Since the challenge of increasing demand response is stated as one of the main focuses of the R&D Implementation Plan 2016-18, the Agency invites ENTSO-E to focus on increased coordination and cooperation between all relevant parties on issues that require wider cooperation, to obtain a transparent, comprehensive European-wide overview of R&D projects and their impacts.

2.2 On R&D resources, budget & financing strategies for the R&D Implementation Plan 2016-18

As in the previous R&D implementation plans, ENTSO-E expressed its concerns regarding coverage of TSO R&D expenses. According to ENTSO-E, only a few EU countries (Denmark, Belgium, Germany, UK and France) currently treat R&D expenses explicitly through tariff structures and, when there is no explicit national regulation for R&D expenses, these financial efforts are mostly considered as operational expenses⁶. In many cases, these costs are subject to efficiency mechanisms, which results, according to ENTSO-E, in a non-supporting environment for R&D initiatives within TSOs, making it difficult to realise all the challenges laid out in the R&D roadmap and implementation plans.

⁵http://www.acer.europa.eu/official_documents/acts_of_the_agency/opinions/opinions/acer%20opinion%2011-2014.pdf

⁶ R&D Implementation Plan 2016-18, p. 17.

The Agency takes note of this concern and will investigate it further in close cooperation with National Regulatory Authorities and ENTSO-E. At the same time, the Agency invites again⁷ ENTSO-E to avoid general statements which are not applicable to all regulatory frameworks and to identify specific difficulties.

2.3 On specific topics of the R&D Implementation Plan 2016-18

In its Opinion No 11/2014 on the R&D Implementation Plan 2015-17, the Agency asked for more information on priority R&D topics, i.e.:

- To indicate the part of a functional objective (as described in the R&D Roadmap) which is covered by a suggested R&D topic, and
- To describe briefly the “state of the art” for each R&D topic, thus indicating potential “thresholds” that R&D proposals should target to overcome.

The Agency regrets that the R&D Implementation Plan 2016-18 did not provide this additional information, as well as information on how the budget estimates were made and why both main and supported functional objectives of some topics have changed from the previous implementation plan. The Agency again urges ENTSO-E to provide more transparency on this issue in the future.

The ENTSO-E R&D Implementation Plan 2016-18 focuses on four topics for 2016:

- Fast storage technologies;
- Tools to provide advanced methods of improving system security in real time;
- Tools for monitoring the life status of individual components; and
- Load control mechanisms and ancillary services at TSO and DSO level to allow demand side management.

The Agency believes that the abovementioned R&D topics are already investigated at national and/or regional levels. It would thus be beneficial that the R&D implementation plan provides information on how these activities complement or overlap with each other. The Agency recommends a closer cooperation between ENTSO-E and individual TSOs and/or regional initiatives to avoid or at least minimise redundant work effort and costs.

Done at Ljubljana on 20 July 2015.

For the Agency:


Alberto Pototschnig
Director

⁷ Agency’s Opinion No 11/2014, p. 6.



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