Consultation on
a possible scheme for incentive regulation to promote efficiency and innovation in addressing electricity system needs

Consultation closes at 23:59 p.m. CET on 1 December 2023

Stakeholder webinar: 24 November 2023, 11 a.m. – 1 p.m. CET
(please register by 22 November 2023)

This consultation is run by the Florence School of Regulation (FSR) at the European University Institute on behalf of the EU Agency for the Cooperation of Energy Regulators (ACER).

1. Background

In April 2023, ACER commissioned the FSR to outline a benefit-based incentive scheme for (electricity) transmission infrastructure and to present its main features at the 9th Energy Infrastructure Forum in Copenhagen in June 2023. The presentation delivered by the FSR at the Forum is available at: https://circabc.europa.eu/ui/group/88886b79-cdea-4633-a933-8b191efb335b/library/f584257a-e4be-4a55-8c1d-dbbfdada8ca7/details.

Point 8 of the Forum's conclusions indicates that "*The Forum requests ACER and CEER to analyse key barriers and develop recommendations for national incentive schemes to promote innovation, anticipatory investment and efficient electricity networks for the system integration of renewables*".

Therefore, after the Forum, ACER launched a new procurement procedure for a more extensive study on the topic. As the result of this procedure, in September 2023 ACER retained the FSR to continue to work on the topic, including by consulting stakeholders on a scheme '*to promote innovation, anticipatory investment and efficient electricity networks',* as developed in the previous study and presented in the FSR Report available at: https://www.acer.europa.eu/en/Electricity/Infrastructure_and_network%20development/Infrastructure/Documents/Benefit_based_regulation_2023.pdf.

Other relevant publications include:

- European Commission, Directorate General for Energy, *Do current regulatory frameworks in the EU support innovation and security of supply in electricity and gas infrastructure?*, March 2019, available at: https://op.europa.eu/en/publication-detail/-/publication/6700ba89-713f-11e9-9f05-01aa75ed71a1/language-en/format-PDF/source-96288082.
- CEER, *Status Review Report on Regulatory Frameworks for Innovation in Electricity Transmission Infrastructure*, October 2020, available at: https://www.ceer.eu/documents/104400/-/-/8c2aace7-5601-8723-4d45-337073af38d5.
- ACER (2021), *Position on incentivising smart investments to improve the efficient use of electricity transmission assets*, November 2021, available at: https://acer.europa.eu/Official_documents/Position_Papers/Position%20papers/Position%20Paper%20on%20infrastructure%20efficiency.pdf.
- CEER, Report on Regulatory Frameworks for European Energy Networks 2022, January 2023, available at: https://www.ceer.eu/documents/104400/-/-/2a8f3739-f371-b84f-639e-697903e54acb.

- Improving regulatory incentives for electricity grid reinforcement, a Study for Autoriteit Consument en Markt (ACM) by Constructor University Bremen, June 2023, available at: Improving regulatory incentives for electricity grid reinforcement (acm.nl).
- ACER, Report on Investment Evaluation, Risk Assessment and Regulatory Incentives for Energy Network Projects, June 2023, available at: ACER_Report_Risks_Incentives.pdf (europa.eu).

2. The current challenges

The scheme proposed by the FSR, and which is the subject of this consultation, aims at addressing the two aspects of the current regulatory setting in need of improvements, as identified by ACER in its Position Paper of November 2021, referred to in the previous section:

- the capital expenditure (CAPEX) bias, which is the result of differences in the regulatory treatment of operational expenditure (OPEX) and CAPEX, creating a favourable environment to invest in CAPEX-heavy solutions; and
- the lack of incentives for TSOs to opt for more efficient solutions, including those at minimal (total) cost.

In addressing these aspects, the FSR formulated the following considerations:

- While ACER refers to the opportunity of introducing benefit-based incentive regulation, the aspects referred to above concern costs and the way in which they are allowed and rewarded under the current regulatory framework.
- A comparison between costs and benefits is the regular and traditional regulatory test for any investment or process in a regulated environment. The regulator should be satisfied that any investment or process proposed or undertaken by the regulated entities, and which is paid through the allowed revenues recognised to such entities, delivers positive net benefits, i.e. benefits higher than costs, to network users and, ultimately, to consumers, present and future.
- It is however often true that benefits are more difficult to identify and uncertain, as they depend on the future state of the world and of the system, and therefore are more difficult to estimate and monetise[1]. Costs are typically easier to define. However, in approving new investments or processes, and the related allowed revenues, regulators can limit themselves to assess whether benefits exceed costs; they do not need to come to a precise assessment of the level of net benefits (unless financial constraints require some sort of ranking of investments and processes based on their net benefits).
- At some stage, the regulator(s) should 'take a view' as to the beneficial nature of the proposed investment or process and approve it. At that point, the costs of the proposed investment or process are included in the allowed revenues, as depreciation and return on capital, in the case of investments, and/or as allowed revenues to cover OPEX, in the case of processes. In

[1] One type of benefits which could be, at least in part, easily monetised are those related to increases in the interconnaction capacity between neighbouring market zones in the Intranl Electricity Market. However, please note that:

- the congestion income only represents part of the total benefits delivered by the increased interconnection capacity, as it does not include the changes in the (welfare) surplus enjoed by market participants;
- the congestion income crucually depends on the difference in market prices between the market zones connected by the interconnector and, therefore, might experience significant variations over time.

this way, the TSO(s) would have a cost-recovery guarantee and the risk of the world turning in a way of making the investment or process no longer beneficial is transferred from the TSO(s) to the system. Leaving such a risk with the TSO(s) would increase the cost of capital[2]. The system is better placed to absorb such a risk.

- It seems to be too strict a regulatory approach to focus only on those system needs where benefits are easily quantifiable and monetisable. There might be other system needs which, if addressed, would be greatly beneficial for grid users and consumers, even though the benefits might not be easily quantifiable, let alone monetisable. However, these difficulties do not seem a good reason to neglect them.
- Since, as indicated above, benefits are difficult to estimate, translating them into a metric to define monetary incentives for the TSO(s) might be generally challenging. Moreover, ACER seems to suggest that the relevant benefits would be the one accruing *ex-post*. This would leave the above-mentioned risk – the risk of an investment becoming no longer 'used and useful' – with the TSO(s).
- Finally, there is an asymmetry of information between TSOs and regulator(s) and the latter would have heavily to rely on the former for the assessment of the benefits to be delivered by the different possible investments and processes. There might therefore be a propensity for TSO(s) to over-estimate the benefits if such an assessment were to be used for determining the level of monetary incentives awarded to them.

Moreover, while the focus is usually on promoting innovative and more efficient investments, system needs might also be addressed by solutions mostly based on changes in operational procedures, rather than on investments, and therefore the aim should be, more generally, to promote innovative and more efficient solutions to address system needs, rather than just innovative and more efficient investments.

3. A possible incentive-based scheme to promote innovative and efficient solutions to system needs

On the basis of the considerations outlined above, the following scheme to promote innovative and more efficient solutions to system needs was presented at the Copenhagen Forum and further detailed in the above-mentioned FSR Report:

1) The regulator identifies the system needs to be addressed. This should be a general rule, as new investments or processes should always aim at addressing an identified need[3]. The TSO may bring system needs to the attention of the regulator, but it is ultimately the latter that should confirm it.
2) The regulator defines a standard efficient way of addressing each identified system need or set of needs. The consideration of sets of needs recognises the fact that some of such needs could be interlinked, and addressing them as a set could be done at lower costs than aiming at the same needs separately.

---

2 It is true, though, that low-cost investments typically involve a limited risk and processes might have a low share of sunk costs.

3 In the output-based or performance-based regulation, system needs are typically framed in terms of measurable output or performance. In the proposed scheme we prefer the more general reference to system needs.

3) The regulator then comes up with the costs related to the standard efficient way of addressing the need or set of needs and the period over which the corresponding allowed revenues would be awarded[4]. These costs would include OPEX and CAPEX.
4) The regulator also requires the TSO(s) to come up with a more efficient way of addressing the need(s), together with an estimate of the associated costs, which are presented to the regulator for endorsement.
5) Allowed revenues are then set to:
    - cover the costs of the TSO's proposed, more efficient solution, as defined by the TSO in advance and endorsed by the regulator;
    - include an incentive, represented by a share (α) of any positive difference, in net present value terms (NPV), between the cost associated with the standard efficient way of addressing the need(s) identified by the regulator and the cost of the preferred way identified by the TSO(s), where this difference is assessed over a time horizon equal to the economic life of the longest-living asset in the standard efficient way of addressing the system need(s).

   Therefore, allowed revenues would be capped at the cost of the standard efficient way of addressing the need(s) identified by the regulator.
6) If the regulator also wants to incentivise the timely deployment of the new investments or processes, the scheme could be calibrated so that the incentive is reduced in case of delays in commissioning the new investments or in implementing the new processes.

With respect to the proposed scheme, it is worth noting that:

a) The incentivising properties of the scheme crucially depend on:
    - the regulator defining in advance the standard efficient way of addressing the identified need(s) and the related costs and not adjusting them in response to the choices of the TSO;
    - the degree of benefit sharing determined by the regulator[5].

   In particular, the higher the costs defined by the regulator for the standard efficient way of addressing the identified need(s) and the higher the share of the cost saving awarded to the TSO(s) as an incentive, the stronger the inducement for the latter to seek lower-cost, more efficient solutions.
b) There are several similarities between the implementation features and challenges of the proposed scheme and those of other incentive-based regulatory approaches, including the most traditional RPI-X approach. For example:
    - Identifying the standard efficient way of addressing each need or set of needs and the corresponding costs might be difficult, but it is somewhat analogous to setting the allowed revenues at the beginning of a regulatory period in the more traditional RPI-X regulation.
    - The trade-off that the regulator faces in defining the cost-saving sharing factor α is similar, for example, to the trade-off – between stronger incentives for the regulated entities to improve their efficiency and the delay with which consumers benefit from the resulting efficiency gains – the regulator faces in many 'profit-sharing' regulatory

[4] This could be according to the standard regulatory practices, for example of allowed revenues to cover CAPEX to be awarded for the length of the economic life of the assets.

[5] i.e., the share of the cost saving that the TSO(s) will be allowed to retain as incentives. The remaining part will be transferred to network users, and, ultimately, to consumers, through a reduction in network charges.

approaches or in determining the length of the regulatory period in the more traditional RPI-X regulation.

- Awarding the TSO higher allowed revenues than the actual *ex-post* cost of addressing the need(s) could attract criticism ('why should TSOs be incentivised to do their job?'), but it is analogous to leaving any cost saving beyond the X factor to the TSO until the end of the regulatory period in the traditional RPI-X approach.

c) As with other incentive-based approaches, such as RPI-X regulation, the proposed scheme could also be used to prompt TSOs to reveal the most efficient way of addressing the identified needs. Eventually, this may become the standard efficient way of addressing the needs used as a reference by the regulators in subsequent regulatory periods.

4. The purpose of consultation

This public consultation aims at collecting comments on the scheme outlined above.

Beyond any general comment, any participating stakeholder is invited to address the following questions:

A. Do you consider that the current regulatory approach to network investments in your country might result in the TSO(s) opting for capital-intensive solutions to system needs (the 'CAPEX bias') and, more generally, does not promote the adoption of innovative and more efficient solutions to system needs by TSO(s)?
B. Do you agree that the sharing of congestion income could be used to incentivise TSOs efficiently to expand the interconnection capacity? If not, why?
C. Do you consider that the benefits of solutions addressing system needs, apart from the congestion income reflecting part of the benefits resulting from the expansion of the interconnection capacity, could be quantified in a sufficiently accurate way in order to use them as a reference for regulatory incentives?
D. Do you agree that the sharing of cost savings of innovative and more efficient solutions to system needs with respect to more traditional solutions, as outlined in the text above and in the above-mentioned FSR Report, could be effective in promoting these innovative and more efficient solutions to system needs?
E. Do you see any difficulties in implementing the proposed scheme? If so, which are they?
F. Do you believe that the proposed scheme would present a higher degree of implementation complexity than the regulatory approaches currently in use? If so, why would it be the case?
G. Do you see, beyond implementation difficulties, other challenges with the proposed scheme? If so, which are they? Do you have any idea on how these challenges could be dealt with?

The consultation closes at 23:59 p.m. on 1 December 2023

Stakeholder webinar: 24 November 2023, 11 a.m. – 1 p.m. CET