CEER Short paper on the ownership of Storage Facilities in the Electrical Distribution System

Market test for the derogation to allow DSOs to own, develop, manage or operate energy storage facilities

Distribution Systems Working Group

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INFORMATION PAGE

Abstract

This document seeks to outline a stepwise guide on the tendering procedure and the derogation granting process pursuant to paragraph (2) of article 36 of the (EU) 2019/944 Electricity Directive wherein it is provided under which circumstances are DSOs – otherwise prohibited of doing so – allowed to own, develop, operate or manage electricity storage facilities. For this purpose, the drafting team also gathered information on the national implementation of this article.

Target audience

European Commission, national regulatory authorities, distribution system operators, electricity industry, Member States and other interested parties.

Keywords

Storage, electricity storage facilities, procedures, market test, derogation, unbundling, storage ownership, development, management or operation, distribution system operators, DSOs, tendering, tendering criteria.

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Related documents

CEER Documents

- ACER's Framework Guideline on Demand Response, 20 December 2022
- CEER report "Dynamic NRAs to Boost Innovation, 31 May 2022, Ref. C22-RBM-37-04
- CEER Paper on Regulatory Sandboxes in Incentive Regulation, 25 May 2022, Ref. C21-DS-74-04
- CEER Conclusion Paper on Flexibility Use at Distribution Level, 17 July 2018, Ref. C18-DS-42-04

External Documents

- European Commission Recommendation (14 March 2023) on Energy Storage – Underpinning a decarbonised and secure EU energy system (2023/C 103/01)
- Commission Staff Working Document for Energy Storage – Underpinning a decarbonised and secure EU energy system SWD(2023) 57 final
- IEA (2022), Grid-Scale Storage, IEA, Paris, License: CC BY 4.0
- Prettico, G., Marinopoulos, A., Vitiello, S., Distribution System Operator Observatory 2020: An in-depth look on distribution grids in Europe, EUR 30561 EN, Publications Office of the European Union, Luxembourg, 2021
- Ofgem decision of 13 May 2021 on the Prohibition on Generating Guidance

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1 INTRODUCTION, SCOPE AND STRUCTURE

1.1 Introduction

The use of energy storage is predicted to be an integral part of the energy transition[1]. At the distribution level[2], the benefits include the ability of storing excess power from intermittent and renewable generation to handling consumption peaks or voltage variations at different time scales. Hence, storage facilities could provide a range of increasingly important services on the distribution network, ranging from short-term flexibility services such as congestion management and ancillary services for grid stability and reliability and deferment of investment in new distribution lines, to long-term energy storage[3].

Although, most of these services are and can be provided by various market players, the procurement of these services is done mainly by distribution system operators. For economic efficiency, conflict of interest and unbundling considerations, it is to be avoided that such services are performed, and thus, storage facilities are owned, developed, managed or operated by DSOs.

In this spirit, the Electricity Directive introduced an EU-wide framework addressing the potential ownership of energy storage facilities by DSOs. As a general rule, DSOs shall not own, develop, manage or operate energy storage facilities[4], but by way of derogation, there are exceptions to this base case. The individual steps of such a derogation, like the NRA assessment of the tendering procedure, DSOs' needs of such facilities to fulfil their obligations with respect to an efficient, reliable and secure operation, and/or situations where energy storage facilities are fully integrated network components[5] are essential evaluation points for Member States (MS) to consider. In response to the NRAs' obligation and the foreseen importance of energy storage services, CEER attempts to provide guidance on this yet unexplored topic.

In essence, storage facilities can have many benefits across the entire value chain of the energy system. However, while still at the early stages of development, a holistic viewpoint and approach is difficult to consider. The question of DSO ownership and operation of storage facilities has thereby created extensive debate. As a consequence of the strategical nature of such discussions, the ownership and management components have been highlighted, rather than focusing on the actual development and understanding of the operational aspects necessary to be in place to deem for what type of circumstances the installation of storage facilities and corresponding procurement of relevant services can be appropriate solutions in the long run.

From the DSO viewpoint, continuing a situation with unclear signals could lead to uncertainties and thereby a standstill, which in turn, will slow the pace of market development and the energy transition. As the use of energy storage facilities is still uncharted territory from a

[1] See the Commission Recommendation (14 March 2023) on Energy Storage – Underpinning a decarbonised and secure EU energy system and its respective staff working document
[2] It is to be noted that this paper deals solely with distribution level issues.
[3] IEA (2022), Grid-Scale Storage, IEA, Paris https://www.iea.org/reports/grid-scale-storage, License: CC BY 4.0
[4] Prettico, G., Marinopoulos, A., Vitiello, S., Distribution System Operator Observatory 2020: An in-depth look on distribution grids in Europe, EUR 30561 EN, Publications Office of the European Union, Luxembourg, 2021
[5] For the European definition of 'fully integrated network components' see paragraph (51) of art. 2 of the Electricity Directive: ''fully integrated network components' means network components that are integrated in the transmission or distribution system, including storage facilities, and that are used for the sole purpose of ensuring a secure and reliable operation of the transmission or distribution system, and not for balancing or congestion management'.

system operator, regulatory and market party perspective, the related aspects are challenging to assess both individually and combined.

The objective of this paper is to provide regulators' views on the content of and processes to assess DSO ownership, development, management and operation, thereby easing the interaction between relevant parties and enabling a more structured debate on the topic. As an overall goal, CEER aims to collect the available regulatory insight on the development and integration of energy storage facilities at the distribution level to identify different use cases where they could provide social net benefit solutions. In this regard, NRAs should encourage both small- and large-scale exploration/demonstrations/testing, thereby being able to pinpoint pragmatic approaches to further contribute to systemic developments. Especially in the early stages of a non-mature market, it is important to enable the involved parties to take the first important step with simple use-cases by providing regulatory guidance and potential incentives, to thereby gain experience and build competence on new emerging technologies.

1.2 Scope

This short paper aims to provide guidance for NRAs and DSOs on the market test, that is, an open, transparent and non-discriminatory tendering procedure for the derogation to allow DSOs to own, develop, manage or operate energy storage facilities pursuant to Article 36 of the Directive (EU) 2019/944 on common rules for the internal market for electricity (hereinafter the 'Electricity Directive') based on Member States' national practices.

This short paper will not cover double charging network tariffs or the price signals necessary for market-based storage. Also, it does not deal with the similar rules of the Electricity Directive on the ownership, development, management and operation of recharging points for electric vehicles.

1.3 Structure

The paper is structured as follows:

- Chapter 2 gives an overview of the European legislative background for the general prohibition to own, develop, manage or operate energy storage facilities and the possible exceptions therefrom and after that the national implementation of these provisions;
- Chapter 3 introduces a stepwise guide on the individual steps of a potential market test suitable to guide NRAs and DSOs through the basics of the tendering procedure and a possible derogation resulting thereof;
- Chapter 4 identifies areas for further research; and
- Chapter 5 includes CEER's Conclusions.

2 LEGISLATIVE BACKGROUND

2.1 European legal basis: Article 36 of the Electricity Directive

Article 36 of the Electricity Directive sets new prohibitions on DSOs owning, developing, managing or operating energy storage facilities, with some specific derogations. The following table provides an overview and summarise the content of the article.

Rules around DSO storage facilities in a nutshell
The Prohibition: DSOs shall not own, develop, manage or operate energy storage facilities
Derogation 1 (FINC) (i) If they are **fully integrated network components** and (ii) the NRA has granted approval; or
Derogation 2 (Tendering/Market test) Where **all** the following conditions are met: (i) Other parties, after an **approved tendering process**, cannot provide the facilities at a reasonable cost and timely manner; (ii) If they are necessary for the DSO to fulfil their obligations and not used to buy or sell electricity in electricity markets; and (iii) The NRA has assessed the necessity of a derogation and the tendering procedure (including the conditions) and granted approval. **Such tendering process** must be open, transparent and non-discriminatory. NRAs may draw up guidelines or procurement clauses to help DSOs ensure a fair tendering procedure. **NRA obligation: Public consultation and eventual phase out:** • Regularly, or at least every 5 years, the NRA will hold a **public consultation** on the existing DSO storage facility* to access the potential interest of third parties to invest in such facilities; and • If third parties can own, develop, operate or manage cost effectively, the DSO activities must be **phased out within 18 months**. NRAs may allow DSOs to receive reasonable compensation to recover the residual value of their investment. * The NRA obligation does not apply where the facility is a fully integrated network component, or for the usual depreciation period of new battery storage facilities with a final investment decision until 4 July 2019, provided certain conditions are met.

Table 1: Summary of Article 36 of the Electricity Directive (2019/944)

As shown above, the first derogation to the prohibition applies to fully integrated network components (FINC). These are defined in the Electricity Directive as network components integrated in the transmission or distribution system (including storage facilities), the sole purpose of which is to ensure the secure and reliable operation of the network, but not for balancing or congestion management. Hence, storage facilities can be FINCs depending on their use. Also, the NRA's assessment of what constitutes a FINC may vary according to their unique circumstances. Some examples might include:

- Devices used at substations to ensure that critical equipment remains energised in the event of a system outage, thereby allowing the DSO to safely manage its systems;
- Devices with generation capability connected to the DSO's network by the DSO for the sole purpose of ensuring continuity of supply in specific outage situations, until normal activity can resume (e.g. flywheel);
- Batteries for solving voltage problems;
- Capacitors or flywheels that serve the safety and reliability of the grid or can help to enable the synchronisation of different parts of the system; and
- Uses for the reduction of reactive power fluctuation.

In all cases, the FINCs can only be used for the sole purpose of ensuring a secure and reliable operation of the gird, and not be used for other purposes, and specifically not for balancing or congestion management. It should be highlighted that, according to the Electricity Directive, these applications need the express approval of the NRA [but are not subject to the NRA's public consultation and possible phase out obligations pursuant to article 36 (3)].

The second type of derogation (that is, as will be obvious from the next subchapter B, much more rarely used by MS), is designed for non-FINC types of facilities, that is, for a range of versatile facilities that are or could be normally operated in a market-based manner. An important prerequisite of this derogation is that the facilities are not used to buy or sell electricity in the electricity markets, that is, pursuant article 2 (9) of the Electricity Directive, 'markets for electricity, including over-the-counter markets and electricity exchanges, markets for the trading of energy, capacity, balancing and ancillary services in all timeframes, including forward, day-ahead and intraday markets', in order that DSO owned storage do not distort any of these markets. This type of derogation is also subject to the NRA's approval, however, it is much stricter than the first type (applicable to FINCs), since these services could or should (in theory) be procured on a competitive (flexibility) market, and it should only be allowed for the DSO to perform these services for themselves if a tender procedure to procure these services in the market has been unsuccessful and has proven that the services cannot be provided by the market(e.g. where there is no market). To underline the exceptional and provisory nature, the NRA is obliged to monitor the market, that is, to regularly hold a public consultation on the existing energy storage facilities in order to assess the potential availability and interest in investing in such facilities (this is not applicable to FINCs or for certain battery storage facilities with investment decisions prior to 4 July 2019). If after such public consultation, the NRA finds that third parties are able to own, develop, operate or manage storage facilities, then it has to ensure that the DSO's storage activities are phased out within 18 months (possibly in return of a reasonable compensation).[6]

This paper will focus on the second derogation, when the storage is not a FINC, and on the tasks of the NRAs in the derogation process.

2.2 National implementation

The CEER Distribution Systems Working Group gathered information from its members on the implementation of the market test, that is, the tendering procedure pursuant to the second phrase of article 36 (2) of the Electricity Directive. The aim was to understand the existing

[6] It is to be noted, that article 36 of the Electricity Directive relating to DSO ownership of storage facilities has a mirror provision in article 54 relating to the TSO ownership of storage facilities. The exceptional nature of Derogation 2 is further underlined by the fact that in case of TSOs, the Commission and ACER as well shall be notified of such a derogation decision shall be notified.

application in practice of the market test for storage facilities that are not FINCs, and below we present three case studies from Croatia, Germany and the UK.

In Croatia's case, first, the DSO performs an analysis to specify the need for reliability and security of supply (SoS). Thereafter, the DSO submits to the NRA the proposal of the conditions of the tendering procedure which comprises at least the description of the product, technical rules, valuation of services etc. Then the NRA reviews the applicability of tendering procedure and in case of a favourable opinion, grants approval. After that, the DSO conducts a tendering procedure and if there are no other parties which could develop and control storage facilities at reasonable costs, the DSO performs a cost benefit analysis (CBA) to assess whether energy storage facilities ('ESF') are a better solution than grid reinforcements. Provided that is the case, the DSO submits the request to the NRA to approve the development and operation of the energy storage facility. Lastly, the NRA reviews the request and either rejects or approves it.

In Germany, the NRA shall grant its approval if the DSO[7] has demonstrated that the ESF is necessary to enable it to meet its legal obligations as a DSO[8], in an efficient manner. The ESF shall only be used for its intended purpose, and not to buy or sell power nor operate wholly or partially on the electricity markets, and the DSO has carried out an open, transparent and non-discriminatory tender procedure, the terms of which have been reviewed by the NRA with regard to the technical deployment concept of the ESF, and a) the DSO was unable to award the contract based on the procedure for the construction, management or operation of the ESF to a third party, or b) after the award of the contract to a third party it turns out that the third party is unable to provide the service offered with the ESF or is unable to do so in a timely manner. The provisions on the tendering procedure state that:

- The DSO may not award a contract to a third party in a tendering procedure, if the service offered is not available at reasonable costs, where the costs are deemed reasonable if they do not exceed the costs for the construction, management and operation of a comparable energy storage system owned by a network operator;
- If a third party won the tender, but the (storage) system is temporarily or permanently not required to fulfil the agreement concluded as a result of the tender, the service and work to this extent may be sold by the third party on the electricity markets; and
- The NRA is authorized to make specifications for the detailed design of the tendering procedure.

In the United Kingdom, in 2018 (whilst still an EU Member State), they introduced a condition (31D and 43B) in the electricity distribution license to ensure that DSOs cannot operate generation stations, including storage, and published a document called 'Prohibition on Generating Guidance' (POGG) alongside the new condition to clarify their application and the exceptions to them. In December 2020 these clauses were modified to implement article 36 (2) of the Electricity Directive, and thus, the POGG needed to be updated accordingly. Pursuant to Section 2.6 of POGG, 'a licensee may own or operate generation assets[9] where these are covered by automatic exceptions (Category A: Island-based networks and Category B: Generation for specific authorised activities) or a direction has been issued by the Authority (as per Category C: Generation pursuant to a direction by the Authority)'. Our case is mostly

[7] It is to be noted that the abovementioned rules apply to both types of system operators, that is, to TSOs as well.
[8] Pursuant to the German Energy Industry Act: 'Operators of energy supply networks are obliged to operate, maintain and optimise, strengthen and expand a safe, reliable and efficient energy supply network without discrimination, insofar as it is economically reasonable'.
[9] Wherein storage is included as well, pursuant to Section 1.10 of POGG.

covered by category C, that is, generation pursuant to a direction by Ofgem. In the POGG, Ofgem presents its three criteria for the assessment of such an exception:

- The DSO has taken reasonable steps to obtain a market-based solution;
- It is justified that a licensee-operated asset provides the most economic and efficient solution; and
- Arrangements are put in place that minimise the risk of discrimination or distortion of current and future markets.

Based on the aforementioned considerations and national implementation examples, we formulated a proposal to serve as a starting point for the development of the detailed rules of the second derogation for non-FINC storage facilities.

3 PROPOSAL FOR A STEPWISE GUIDE ON THE PROCEDURE

As stated in Section 2.1, in the case of the second derogation, an approved tendering procedure must show whether other parties than the DSO can provide storage facilities at a reasonable cost and in a timely manner. If other parties can provide this, there is no reason for the DSO to own storage. However, if the result of the tendering procedure shows that other parties are unable to provide this, the NRA may grant approval to the DSO to own storage whenever it is duly justified. The tendering procedure is subject to approval by the NRA which can draw up guidelines to ensure a fair tendering procedure. Many MS have not yet drawn up guidelines for the tendering procedure. As a start for such guidelines, in this paper we make suggestions for steps to be followed in the tendering procedure and give a brief description of each step. This is not yet a complete description that covers every aspect of the tendering procedure, but rather, it fosters further discussions on the implementation of the derogation and serves as a possible basis for further work by NRAs to draw up guidelines. The tendering procedure is a key instrument to evaluate market interest and market conditions for providing energy storage services and, if market interest exists, allocate the right to provide storage services to the right market party. It would be advisable for the DSO to signal the need for storage services well in advance and as broad as possible. This can also be done in the context of the network development plan and through incentives for DSOs to consider flexibility options[10]. Here we will focus on the specific procedure for tendering storage facility services and NRA approval for ownership. The following steps of the procedure will be described in further detail below:

1. Tender design;
2. Ex-ante review by the NRA;
3. Outcome of the tendering procedure;
4. Request for approval of ownership by the DSO;
5. Ex-post assessment by the NRA; and
6. Regular public consultation.

In this document we focus on the comparison of storage owned by third parties and storage owned by the DSO. The prohibition in article 36 however comprises not only ownership by DSOs, but also development, managing or operating energy storage systems. In theory, the derogation could therefore also be applied to one of these other activities related to storage. In practice, however, it is unclear if the need for this could arise. Moreover, it could result in a rather complex division of tasks if there is one party that owns the storage system, and the DSO carries out a tender for a third party to operate the storage system. In any case, if such a case would arise the same steps for the tendering procedure could be followed.

3.1 Tender design

The tender for providing energy storage services should be designed by the DSO. As a legal requirement laid down in article 36, the tendering procedure should be open, transparent and non-discriminatory. When defining the products, the DSOs should foster competition and efficiency. Demand response that can deliver the services needed by the DSOs should be able to participate, in addition to storage facilities. It is important to design the tender procedure in a way that stimulates a competitive tender outcome. Restricting the tender more than necessary would lead to a situation where there could be an incorrect conclusion that there is no interest from market actors.

[10] As is stated in article 32 (1) of the Electricity Directive.

We refer to the CEER paper on *DSO Procedures of Procurement of Flexibility* for recommendations on efficient tender design. Steps one to three of the procurement procedure give recommendations on signalling the need, the tender request and the product requirements respectively. Key takeaways are transparency on minimum requirements and the weighing of criteria, avoiding unnecessary restrictions and defining the requirements (e.g., locational, technical, timing and potential providers) as broad as possible within the defined needs, a clear and reasonable timeline and considering standardisation to a certain degree while allowing variants to stimulate innovation.

Ofgem's POGG stresses the importance of sufficient flexibility of the tender design. This includes the option for participants to propose multiple solutions in their bid or multiple bids with different scope and a degree of flexibility which allows potential providers to set out alternative means in which they may meet the requirements specified by the DSO. An additional important aspect of the tender for energy storage services is the definition of reasonable cost. It is not desirable for the DSO to contract storage facility services at any price. At unreasonably high costs, it would be better to not contract storage services or for the DSO to procure its own storage. For the definition of reasonable costs in a specific procedure, reference can be made to 1) the outcomes of other procedures; 2) alternative options; and 3) costs of ownership by the DSO. Alternative options could be grid reinforcement or the costs of other flexibility options. It could be argued that selection criteria should be technology-neutral and select the best techno-economic option for each particular case, maximizing social welfare[11]. For the cost of ownership by the DSO, an estimation would have to be made. Given the uncertainty that comes with an estimation and the starting principle that DSOs do not own storage, a certain error margin would need to be applied and costs for storage services should only be deemed 'unreasonable' if significantly higher than the estimation. The cost comparison between different alternatives should exclude network tariffs, considering that tariffs would have to be paid by a storage owned by a third party and not by a DSO-owned storage. Excluding network tariffs prevents that DSO storage facilities are placed at an undue advantage over flexibility services provided by third parties.

The DSO could define the reasonable costs ex ante and include it in the tender requirements as a maximum price, or make a comparison afterwards between the received bids and possible alternatives. Including it in the tender design is transparent and avoids efforts for bids that exceed the maximum price. In an undeveloped market, it could give participants a sense of direction on the price necessary for the bid to have a chance of being successful. On the other hand, it might induce strategic behaviour of offering prices close to the maximum price. Defining reasonable cost afterwards does not have the risk of strategic behaviour, but could lead to a lot of discussion and unreasonably high offers. The pros and cons of both options should be weighed carefully when choosing between the two. Even in case of setting the definition ex post, information should be given on how this will be dealt with. In a more developed, competitive market, the difference between the two options will be of less concern, since competition will result in competitive offers in both cases.

3.2 Ex-ante review by the NRA

The tendering procedure should be subject to review and approval by the NRA, which is especially a good practice in the starting phase when not much experience on the procedure has been accumulated. This would prevent that the tendering procedure needs to be repeated when the NRA finds shortcomings in the procedure afterwards and does not grant its approval.

[11] However, this can be only ensured if the legislation incorporates requirements that aim to maximize social welfare, since it is in the responsibility of the NRA, and not the DSO to consider society-wide benefits.

The NRA shall evaluate if the tender is open, transparent and non-discriminatory to all tenderers. The NRA shall also review that the guidelines for a successful tender with respect to transparency, requirements, timeline and standardisation are followed. If there is a definition of reasonable cost included in the tender design, a crucial aspect of the ex-ante review by the NRA is this definition. Setting a too restrictive maximum price by the DSO could reduce market interest and avoid bids being made.

The NRA can withhold its approval if the tender is non-compliant or incomplete. In that case the DSO would have to update the tender procedure and request approval again.

3.3 Outcome of the tendering procedure

The tendering procedure might have two possible outcomes:

- Bids are received at a price at or below the (ex-ante or ex-post) defined reasonable cost, and the technical requirements are met. The tendering procedure is successful, and a party is awarded the right to provide energy storage services; and
- No bids are received, or bids are received but at a price above the defined reasonable cost and/or without meeting all requirements. The tender is then unsuccessful.

In any case, the results of the tender should be made public and the reasons for the selection or refusal of the bids should be transparent. If bids are received, and the tendering procedure is successful, then the flexibility need is answered in a market-based way, there is no need to go on with the derogation procedure.

3.4 Request for approval of ownership by the DSO

In case the tender is unsuccessful, but the DSO justifies that the energy storage is necessary for the DSO to fulfil its obligations, the DSO could request approval to the NRA to own, develop, manage or operate an energy storage facility. In that case, the DSO should provide information to the NRA on the tendering procedure and the bids that the DSO has received (if any). The DSO should provide all the information that is necessary to assess whether the requirements on non-discrimination and transparency have been met. The DSO should also substantiate why energy storage is necessary to fulfil its obligations.

3.5 Ex-post assessment by the NRA

If the NRA already performed an ex-ante review of the tender design, the NRA will evaluate if the tendering procedure has been carried out accordingly and if the use of energy storage is necessary for the DSO to operate the distribution system.

If the tender design met all requirements, the tender procedure has been carried out accordingly and the definition of reasonable cost was fair, but no bids have been made that match all criteria of the tender, then the conclusion can be drawn that no market interest exists for this particular energy storage service or that a market solution is not the most efficient one. In that case, the NRA can authorize the DSO to own, develop, manage or operate an energy storage facility.

3.6 Regular public consultation

The Electricity Directive (Article 36 (3)) provides that "*The regulatory authorities shall perform, at regular intervals or at least every five years, a public consultation on the existing energy storage facilities in order to assess the potential availability and interest in investing in such facilities. Where the public consultation, as assessed by the regulatory authority, indicates that third parties are able to own, develop, operate or manage such facilities in a cost-effective*

manner, the regulatory authority shall ensure that the distribution system operators' activities in this regard are phased out within 18 months".

Indeed, the approval of storage ownership (pursuant to the second type of derogation, not including FINCs) by the DSO is temporary. The NRA must hold a regular public consultation (at least every five years) to verify if market interest arises for offering storage services. Such public consultation should follow the same principles as those mentioned previously for the tender.

If market interest arises, meaning that third parties can and are willing to provide the services that the DSO needs from the storage facility, be it by taking over the DSO-owned storage or by other means such as demand response or other relevant resources, then a CBA must be carried out by the DSO and approved by the NRA. The phase out of the DSO-owned storage can only happen if the CBA shows that it is preferable to phase out the DSO-owned storage and purchase the necessary services from third parties instead of continuing the DSO's storage activity, meaning that it increases total welfare.

The network codes which will be published or amended following the 'Framework guidelines on Demand Response'[12] ('DRFG') will have to provide further clarifications on the scope in time and in topics of the CBA, taking into account the potential loss of developing markets for system operation services. The DRFG also states that the public consultation shall include an updated evaluation of costs compared to the estimated costs of T/DSO-ownership in the tender that led to the derogation.

12 https://acer.europa.eu/sites/default/files/documents/Official_documents/Acts_of_the_Agency/Framework_Guidelines/Framework%20Guidelines/FG_DemandResponse.pdf

4 FURTHER CONSIDERATIONS

4.1 Current regulatory work in progress: Framework Guidelines on Demand Response

The previously mentioned Framework Guidelines on Demand Response is, at the moment of writing this document, non-binding; ACER has submitted it to the Commission for approval. However, in its present state, it contains several paragraphs that are relevant to DSO-owned storage[13]. These paragraphs also include rules on the tendering procedure, although their primary focus is to enable the participation of (small scale) demand response. An innovative instrument of the DRFG is the shared ownership of storage facilities: according to the new rules, the tender should include the possibility of shared ownership and operation of a storage facility between the DSO and a third party, as a "second best" solution to the DSO procuring the total needed service from a third party. In such case, the DSO's part of the storage should follow the same rules as a fully DSO-owned storage. As for the rest of the storage, it can be run freely by the third party. However, the NRA has to approve the shared ownership and the contractual relation between the DSO and the third party. The DRFG would also prescribe the obligation for the tender to be submitted to a public consultation.

4.2 Regulatory sandboxes

In case a market test is performed in the form of a tendering procedure and it turns out unsuccessful, NRAs might want to consider the use of regulatory sandboxes for market players to be able to experiment the marketability of their products or viability of their business model or to explore any other undue regulatory/code level/technical barriers.[14]

[13] See paragraphs (38)-(41) of the DRFG under the previous link, although the DRFG generally refers to SO owned storage, including TSOs and DSOs under the same umbrella term.
[14] On regulatory sandboxes and dynamic regulation, see the 'CEER Paper on Regulatory Sandboxes in Incentive Regulation' and CEER report on 'Dynamic NRAs to Boost Innovation'

5 CONCLUSION

Storage facilities could provide a range of increasingly important services on the distribution network. The preferred option is that these services are offered by storage systems owned by market parties, as is reflected in article 36 of the Electricity Directive which prohibits DSOs to own, develop, manage or operate storage systems. If services needed by DSOs to fulfil their legal obligations are not offered by privately owned storage systems by the market, an alternative could be DSO owned energy storage.

- We found that most legislators, just as the Electricity Directive, make clear distinction between fully integrated network components and other storage, however, in many cases, they are not precisely defined by the legislation. We also found that in the overwhelming majority of the countries, there is no DSO-owned storage, no public consultations have been conducted and no derogations have been granted pursuant to article 36 of the Electricity Directive.
- To determine whether the services needed by the DSO are offered in the market, the DSO has to perform an approved tendering procedure. Since the DSO may only be allowed (that is, a derogation may only be granted by the NRA) to own (develop, operate or manage) storage facilities, if such a tender is unsuccessful, the most critical point of this process is the tender design. Based on the provisions of the Electricity Directive, the tender has to be open, transparent and non-discriminatory, and possibly pre-approved by NRAs, there are several other details to take into consideration.
- Also relating to the tender design, we deem that DSOs should also consider other flexibility options that could offer the same services. Hence, it would follow that if there are well-developed (local) flexibility markets, the need for DSO owned storage will not arise.
- In this paper we make a suggestion for steps to be followed in the tendering procedure and give a brief description of each step. This can serve as a starting point for further discussions on the implementation of the derogation and a basis for further work by NRAs to draw up guidelines.

ANNEX 1 – LIST OF ABBREVIATIONS

Term	Definition
CBA	Cost Benefit Analysis
CEER	Council of European Energy Regulators
DRFG	Framework guidelines on Demand Response
DSO	Distribution System Operator
ESF	Energy Storage Facility
EU	European Union
FINC	Fully Integrated Network Component
MS	Member States
NRAs	National Regulatory Authorities

ANNEX 2 – ELECTRICITY DIRECTIVE 2019/944 – ARTICLE 36 – OWNERSHIP OF ENERGY STORAGE FACILITIES BY DISTRIBUTION SYSTEM OPERATORS

1. Distribution system operators shall not own, develop, manage or operate energy storage facilities.

2. By way of derogation from paragraph 1, Member States may allow distribution system operators to own, develop, manage or operate energy storage facilities, where they are fully integrated network components and the regulatory authority has granted its approval, or where all of the following conditions are fulfilled:

(a) other parties, following an open, transparent and non-discriminatory tendering procedure that is subject to review and approval by the regulatory authority, have not been awarded a right to own, develop, manage or operate such facilities, or could not deliver those services at a reasonable cost and in a timely manner;

(b) such facilities are necessary for the distribution system operators to fulfil their obligations under this Directive for the efficient, reliable and secure operation of the distribution system and the facilities are not used to buy or sell electricity in the electricity markets; and

(c) the regulatory authority has assessed the necessity of such a derogation and has carried out an assessment of the tendering procedure, including the conditions of the tendering procedure, and has granted its approval. The regulatory authority may draw up guidelines or procurement clauses to help distribution system operators ensure a fair tendering procedure.

3. The regulatory authorities shall perform, at regular intervals or at least every five years, a public consultation on the existing energy storage facilities in order to assess the potential availability and interest in investing in such facilities. Where the public consultation, as assessed by the regulatory authority, indicates that third parties are able to own, develop, operate or manage such facilities in a cost-effective manner, the regulatory authority shall ensure that the distribution system operators' activities in this regard are phased out within 18 months. As part of the conditions of that procedure, regulatory authorities may allow the distribution system operators to receive reasonable compensation, in particular to recover the residual value of their investment in the energy storage facilities.

4. Paragraph 3 shall not apply to fully integrated network components or for the usual depreciation period of new battery storage facilities with a final investment decision until 4 July 2019, provided that such battery storage facilities are:

(a) connected to the grid at the latest two years thereafter;

(b) integrated into the distribution system;

(c) used only for the reactive instantaneous restoration of network security in the case of network contingencies where such restoration measure starts immediately and ends when regular re-dispatch can solve the issue; and

(d) not used to buy or sell electricity in the electricity markets, including balancing.

ANNEX 3 – ABOUT CEER

The Council of European Energy Regulators (CEER) is the voice of Europe's national energy regulators. CEER's members and observers comprise 39 national energy regulatory authorities (NRAs) from across Europe.

CEER is legally established as a not-for-profit association under Belgian law, with a small Secretariat based in Brussels to assist the organisation.

CEER supports its NRA members/observers in their responsibilities, sharing experience and developing regulatory capacity and best practices. It does so by facilitating expert working group meetings, hosting workshops and events, supporting the development and publication of regulatory papers, and through an in-house Training Academy. Through CEER, European NRAs cooperate and develop common position papers, advice and forward-thinking recommendations to improve the electricity and gas markets for the benefit of consumers and businesses.

In terms of policy, CEER actively promotes an investment friendly, harmonised regulatory environment and the consistent application of existing EU legislation. A key objective of CEER is to facilitate the creation of a single, competitive, efficient and sustainable Internal Energy Market in Europe that works in the consumer interest.

Specifically, CEER deals with a range of energy regulatory issues including wholesale and retail markets; consumer issues; distribution networks; smart grids; flexibility; sustainability; and international cooperation.

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More information is available at www.ceer.eu.