Plan of work to improve active participation and performance of DSUs in the market and remove barriers

EirGrid publication to meet Action 2.3 (“Increase flexibility provided by Demand Side Units”) of the CRU’s National Energy Demand Strategy

04/07/2025

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Background and Context

- **July 2024.** National Energy Demand Strategy (NEDS) is published and requires actions being implemented by EirGrid.
- **December 2024.** EirGrid and SONI published the TSO Demand Side White Paper, intended to provide an overview of the drivers, characteristics, opportunities, requirements, issues, and potential initiatives to further develop demand side response to meet TSO power system needs.

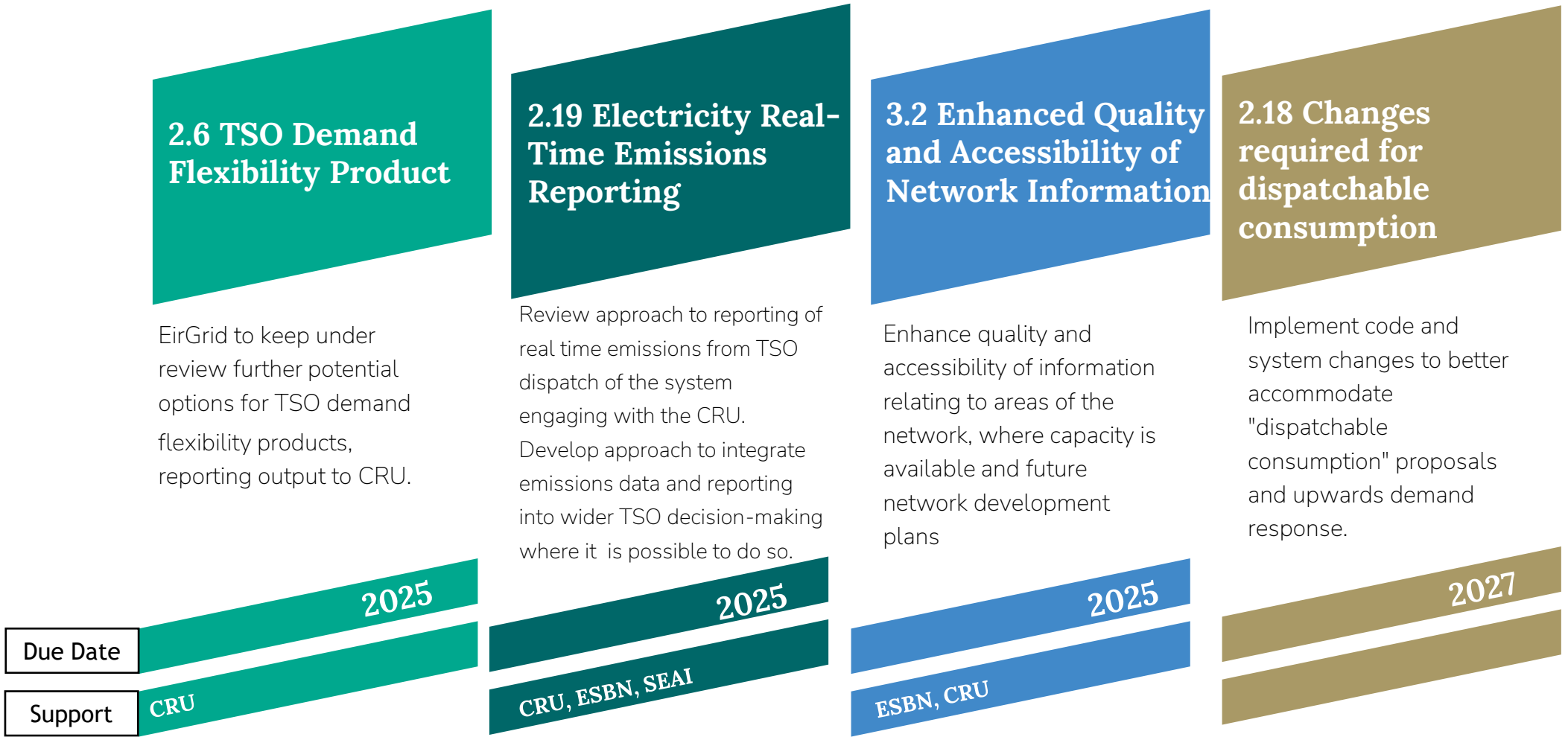
Objective

- EirGrid and SONI are currently developing a TSO Demand Side Implementation Plan, with specific prioritised actions, that will support the objectives of Demand Side White Paper, and the NEDS.
- This document is to meet the requirements of NEDS Action 2.3 “Increase Flexibility Provided by Demand Side Units”, by relating the activities being developed through the TSO Demand Side Implementation Plan with the objectives of this NEDS action.

Actions assigned to EirGrid as responsible body

	2.5 Long Duration Energy Storage Procurement	1.10 Communication system for system alerts	2.3 Increase Flexibility Provided by DSUs	1.11 Microgeneration Operational Issues	2.4 Market Changes to Enable Increased Flexibility
	Develop detailed procurement options informed by Call for Evidence responses and report to the CRU. Consultation paper to follow (Q4 2024).	Review communication system that notifies relevant system users (such as suppliers and LEUs) in advance of a system alert and a low system non-synchronous penetration (SNSP) event.	Develop and publish a plan of work to improve active participation and performance of DSUs in the market and remove barriers. Plan to clarify expectations on DSUs to increase the flexibility, consider industry suggested code changes and describe technical updates to be implemented for TSO and MO systems.	Review impact of operational challenges for System Operators associated with high levels of microgeneration given the potential growth of installations and report to the CRU.	Assess and report on status and potential solutions to enable energy market participants to offer increased flexibility through the energy market, supporting more flexible trading of demand, engaging suppliers more actively, and ensuring technology neutrality in market and dispatch systems.
Due Date	Q3 2024	Q4 2024	Q1 2025	Q2 2025	Q2 2025
Support	CRU, DECC		DSUs, Suppliers, ESBN, CRU	ESBN, CRU	

Actions assigned to EirGrid as responsible body



TSO Demand Side White Paper

- In December 2024, EirGrid and SONI published their TSO Demand Side White Paper. This White Paper is intended to provide an overview of the drivers, characteristics, opportunities, requirements, issues, and potential initiatives to further develop demand side response to meet TSO power system needs;
- It identifies, from the TSOs' perspective, the primary high level power system needs and services which demand side response could have a role in meeting and providing and gives an indication of the TSOs' current view of the potential capability of various models of demand side response to contribute to meeting those needs and providing services.
- It also summarises and highlights issues and potential initiatives to be considered to help improve and develop demand side response, including those raised by the demand side response industry and by EirGrid and SONI, and sets out how these will be considered in future TSO planning work. These are considered across a number of categories, including:
    - Market trading and settlement across energy, capacity, and system services;
    - Demand Side Unit model structure and sources;
    - Performance of Demand Side Units;
    - Implicit demand side response;
    - New models for explicit demand side response;
    - Technical and code requirements in systems and operations.

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TSO Demand Side Implementation Plan and NEDS Action 2.3

- Following and building on this, the TSOs have been developing a TSO Demand Side Implementation Plan. This plan is intended to identify, prioritise, and plan timelines for the specific initiatives to be implemented;
- At this stage of the work on the plan, EirGrid and SONI have developed the high-level groups of activities and indicative timelines associated with them. Further work is intended on engagement, identification and prioritization of initiatives;
- The CRU's National Energy Demand Strategy Action 2.3 requires the TSO to develop and publish a plan to increase flexibility provided by DSUs, which intends to meet a number of objectives:
    1. Improve active participation and performance of DSUs in the market and remove barriers;
    2. Clarify expectations on DSUs to increase the flexibility;
    3. Consider industry suggested code changes;
    4. Describe technical updates to be implemented for TSO and MO systems.
- While the work the TSOs are currently carrying out on developing the TSO Demand Side Implementation Plan is more broad in scope than what is required to meet this action (e.g. considering all-island approach, not just considering Demand Side Units), this work meets the requirement and all of the objectives for Action 2.3;
- This document contains a high-level indicative plan and timelines from this TSO Demand Side Implementation Plan work which meets the requirements of Action 2.3, and an explanation of where the objectives intended to be met for Action 2.3 will be included in the plan;
- It is important to note that the successful implementation of the initiatives which will be considered in this plan will be reliant on regulatory decisions and funding.

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TSO Demand Side Plan Implementation Plan

ENGAGEMENT — Q2-2025



- Internal and external stakeholder engagement
- Understand regulatory context
- Gather initial information
- Define objectives
- Coordinate identifying and prioritizing of initiatives

TECH. STUDIES — Q3-2026



- Continue internal and external stakeholder engagement
- Clarify DSU behaviour and performance
- Investigate implicit DSR
- Analysis including technical, economic, assessment of risks and system impact
- Analysis and definition of preferred approaches for initiatives

MODELS — Q1-2027



- Investigate and develop changes to DSU models and new models for explicit DSR, for increased participation and flexibility
- Develop approaches for regulatory framework adaptation, market integration, and system requirements

RECOMMENDATIONS REPORT — Q2-2027



- Report on recommendations for further implementation
- For consideration by the relevant authorities for decisions, funding, etc.

Implementation

- Initiatives already planned and funded, and priority initiatives which require less detailed analysis or have less impactful implementation requirements (e.g. on central market system changes) will begin or continue relevant implementation steps during the timeline shown
- For other initiatives which are not yet funded, have more impactful implementation requirements, or are lower priority, the analysis carried out will allow for recommendations to be made on their implementation continuing to trial / test / market changes / IT upgrades, etc. after the timeline shown, where the relevant authorities will have the information required to make these decisions

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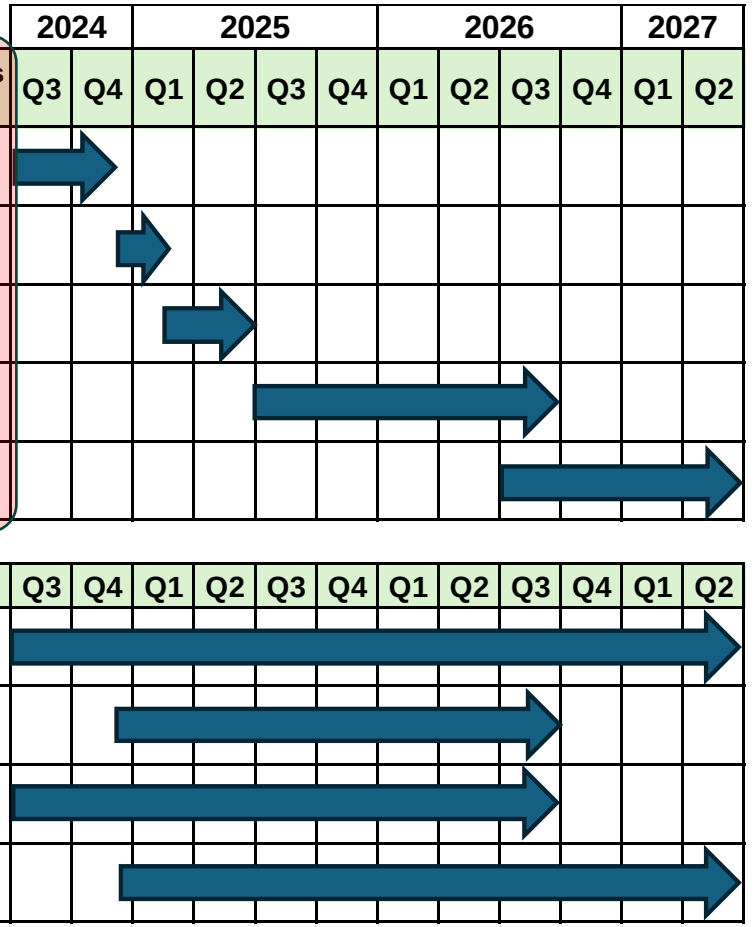
How TSO Demand Side Implementation Plan aligns to objectives of NEDS Action 2.3

Plan	Group of activities	Objectives to be met
TSO Demand Side Implementation Plan	Preliminary Planning	1,3
	Initial information and preliminary analysis	1,2,3,4
	Stakeholder Engagement	1,2,3
	Technical and Economic Feasibility Studies	1,2,3,4
	Development of Demand Side Response Models	1,4

NEDS Action	Objectives
2.3 Increase Flexibility Provided by DSUs	Objective no. 1. Improve participation and performance of DSUs and remove barriers
	Objective no. 2. Clarify expectations on DSUs to increase the flexibility
	Objective no. 3. Consider industry suggested code changes
	Objective no. 4. Describe technical updates to be implemented for TSO and MO systems



- The figure shows each stage (group of activities) of the TSO Demand Side Implementation Plan, and shows the relationship between them and the objectives contained in NEDS Action 2.3, thereby clarifying how this plan specifically meets the requirements of Action 2.3.
- Some objectives of Action 2.3 require analysis and evaluation to maximize positive outcomes for the transmission system, and therefore will be included across a number of different stages. For example, “Improve participation and performance of DSUs and remove barriers” will require analysis work across Stakeholder Engagement, Technical and Economic Feasibility Studies, and Development of Demand Side Response Models.
- For other objectives of Action 2.3, while they may be considered across many stages of the TSO Demand Side Implementation Plan, may be more focused in certain stages. For example, “Describe technical updates to be implemented for TSO and MO systems” may be considered at a high level in earlier stages of the plan, but will be considered in more detail in later stages such as during Development of Demand Side Response Models.

Details of how TSO Demand Side Implementation Plan intends to meet requirements of NEDS Action 2.3 “Increase flexibility provided by DSUs”

1. Improve active participation and performance of DSUs in the market and remove barriers

- This is a long-term objective of the overall implementation plan, and therefore it is expected that this will be a key driver at all stages of work under the implementation plan;
- In particular, when determining which issues and initiatives to prioritise, the positive impact it can have through improving participation, performance, or integration in the market will be a key area of focus as one of the selection criteria.

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Details of how TSO Demand Side Implementation Plan intends to meet requirements of NEDS Action 2.3 “Increase flexibility provided by DSUs”

2. Clarify expectations on DSUs to increase the flexibility

- In the operation of DSUs, concerns have been raised about the performance of DSUs, in particular the level of availability (forecasted and real-time) DSUs have provided, where it is lower than the TSOs expected compared with their capacity market positions and obligations;
- Some discussions have been held already between the TSOs and demand side response industry representative groups on such expectations, which have highlighted different views and interpretations of the market rules and incentives in terms of what constitutes sufficient / intended performance;
- These concerns may be better addressed by clarifying and better defining the expected performance of DSUs, and redefining the metrics to input into that process in a way which better reflects the characteristics of DSUs;
- Given the focus on this in the NEDS action, investigation into activities related to this are expected to be prioritised. It is expected that work on this will be a main area of focus in the initial stages of the implementation plan, in particular with initial planning and prioritization, and assessments including technical and economic feasibility studies.

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Details of how TSO Demand Side Implementation Plan intends to meet requirements of NEDS Action 2.3 “Increase flexibility provided by DSUs”

2. Clarify expectations on DSUs to increase the flexibility

- While more activities may be identified in the initial stages of this plan, from the TSO Demand Side White Paper this is expected to at least include the following:
  - Operational Certificate capacity testing better reflecting the portfolio nature of a DSU’s operational availability across its sites (for instance, being based off of the actual expected maximum response at a point in time from the DSU rather than the sum of the maximum responses from each individual demand site);
  - Reflecting the Operational Certificate capacity metric in the market participation and capacity availability performance expectation, while also investigating changes in de-rating methodology related to DSUs to account for the new reference point;
  - Considering feedback from demand side response industry representative groups that changes to incentives which reward availability or provision of demand side response in each period it is provided and delivered would result in increased availability and performance, including changes in settlement rules (in particular those related to energy settlement);
  - More effective measurement of the demand response delivered when called upon by the TSOs, including appropriate metering / submetering, baselining, and inclusion in market settlement, enhancing market participant balance responsibility requirements.

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Details of how TSO Demand Side Implementation Plan intends to meet requirements of NEDS Action 2.3 “Increase flexibility provided by DSUs”

3. Consider industry suggested code changes

- Suggestions from external stakeholders have been gathered during the development of the White Paper, and further stakeholder engagement work in the early stages of this implementation plan will aim to gain further suggestions;
- These suggestions will be considered in the relevant stages of the implementation plan. In particular, the prioritisation exercise will aim to consider these industry code change suggestions alongside other suggested activities. For those suggestions prioritised, they will then be further considered in assessments including technical and economic feasibility studies, before being selected and further developed into actual proposed changes to the relevant codes.

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Details of how TSO Demand Side Implementation Plan intends to meet requirements of NEDS Action 2.3 “Increase flexibility provided by DSUs”

4. Describe technical updates to be implemented for TSO and MO systems

- Descriptions of technical updates required to systems can be at different levels of detail for different purposes and in different timescales. For example, during preliminary planning and stakeholder engagement, a high-level description suitable for determining the relative priority of the activity will suffice. Of those selected to be continued further, during technical and economic feasibility studies, further details at a high-level design level would be required to enable a sufficient assessment but without the need of full technical details. For those selected after this point, the full detailed design level technical details will need to be developed to enable changes to market framework and system upgrades.

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Conclusions

- In this document, a high-level implementation plan and timeline has been developed and published, with details provided for how it meets the requirements and objectives of National Energy Demand Strategy Action 2.3: “Increase flexibility provided by DSUs”;
- The TSOs intend to continue with development of the TSO Demand Side Implementation Plan with further engagement and continuing work to improve and develop demand side response.