

ENERGINET

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MEMO

USER COMMITMENT STEP 2 - CONCEPT PAPER

1. Introduction

With this concept paper, Energinet wants to initiate the market dialogue on key topics regarding the terms and conditions for Step 2 of the user commitment process. Whereas Step 1, conducted in April and May 2024, was non-binding for the market players, Step 2 forms the binding part of the user commitment process.

The overall concept for Step 2 is well known from the methane business - known as "Open Season" - where several European infrastructure projects over the recent years have been decided based on binding long-term commitments from market players. Here the binding commitments serve as a strong market signal towards which infrastructure projects derived from centralised planning are truly needed and economic feasible when considering the feedback and commitments from future market players.

The main purposes of the user commitment Step 2 are:

- To support Energinet's business case for the Danish Hydrogen Backbone (DHB), via binding long-term bookings that secures a certain cash-flow for a long period of time (10-15 years).
- To fulfill the booking requirement from the second Danish political agreement related to financing of hydrogen infrastructure, from April 2024, including which project scope is economic feasible.

Energinet's investment decision will both be based on a positive socio-economic business case during the course of the asset lifetime and an ability to demonstrate a robust financial business case for the hydrogen company established within the Energinet group. Here the binding element is key. The long-term capacity contract(s) must be binding under almost any circumstances, as possibility for cancellations will undermine the booking requirement and thereby jeopardise the financial basis of the project.

However, Energinet is also aware of the risks associated for coming system user with long-term bookings, taking into account that a hydrogen market is under development. Energinet's aim

with this concept paper is to work towards a balanced risk sharing between the market and Energinet, that secures a sufficient level of long-term bookings, and at the same time supports the financial and political requirements.

2. Status on preconditions

2.1 Preconditions from the political agreement

The political agreement from April 2024 set up 5 preconditions that must be met, for Energinet to achieve financing of the DHB from the Danish state:

Precondition	Description	Status
Booking requirement	The political agreement states that Energinet must achieve a certain level of long-term bookings of capacity (for 10-15 years), which in practice will be conducted via the user commitment Step 2 process.	The specific booking requirement will be part of the market signal expected before 1 October 2024.
Agreement with Gasunie Deutschland	Energinet and Gasunie must sign an agreement prior to the business case approval, that mutually obligates both parties to establish the infrastructure	Energinet and Gasunie is in process to reach such an agreement.
New hydrogen company within the Energinet group	Energinet must set up a new subsidiary, to prevent cross-subsidisation from power and methane players	Energinet is in process with establishing such an entity.
Economic feasible investment	The investment decision must be economically viable, and without costs for the Danish state	Will be investigated in 2 steps, via 1) Energinets conditional investment decision in Q1 2025 and 2) updated investment decision (after Step 2) in Q1 2026
Inter-temporal cost allocation methodology	The possibility to charge lower tariffs in the start-up system (allowed under-recovery of costs), which will be charged later, when larger volumes are expected	The Danish Utility Regulator is developing the regulatory framework for the inter-temporal cost mechanism. An outline of this framework is part of Information package 2.

2.2 Method approvals by the Danish Utility Regulator

Besides the preconditions from the political agreement, it is given that parts of the terms and conditions for Step 2, and several market design topics are subject for method approval by the Danish Utility Regulator (DUR).

Some of the topics will need approval prior to the user commitment Step 2, as Energinet is bound to have approval for the relevant methods according to both national and EU legislation. These topics will be subject to market consultation, prior to the method application.

The following table shows a list of which topics Energinet currently consider subject to approval by DUR and if the approval is needed prior to the user commitment Step 2, or later:

Topic	Description	Subject to DUR approval yes/no	Timing
Capacity allocation methodology for user commitment Step 2	How long-term capacity is offered in Step 2	Yes	Public consultation in Q4 2024, method application will be forwarded to DUR by end-2024. See point 3.1 below for further description
General terms and conditions for user commitment Step 2	General terms and conditions (other than the capacity allocation methodology)	No, but DUR supervises that terms and conditions are transparent and non-discriminatory.	Public consultation in first half of 2025
Capacity product definition	Definition of the overall product(s) that Energinet will offer	Yes	Public consultation in Q4 2024, method application will be forwarded to DUR by end-2024. Will be described in Information Package 2
Capacity reservation for short-term capacity	It must be defined before Step 2 how much capacity Energinet is allowed to offer up-front, and how much must be reserved for short-term products	Yes	Public consultation in Q4 2024, method application will be forwarded to DUR by end-2024. Will be described in Information Package 2
Incentive to bid for long-term capacity	Lower tariff for multi-annual capacity products than for annual or short-term capacity products	Yes (if applicable)	To be discussed with DUR
Connection conditions	Conditions for connections to Energinet's infrastructure (based on legal framework)	No, but DUR supervises that terms and conditions are transparent and non-discriminatory.	Process expected to start up in 2026

General products and capacity allocation (normal operation)	Long and short-term capacity products and how these are allocated	Yes	Process expected to start up in 2026
General tariff methodology	The overall tariff methodology, based on the general economic regulation (including the inter-temporal cost allocation methodology)	Yes	Process expected to start up in 2026
Balancing methodology	The balancing model methodology, based on current concept paper	Yes	Process expected to start up in 2026
Other relevant methodologies to be included in the general terms and conditions for hydrogen transport	Other relevant methodologies, to be defined	Yes	Process expected to start up in 2027
Terms and conditions for hydrogen transport	The full terms and conditions	No (however large parts of the terms and conditions are subject to separate approvals as they are based on approved methodologies)	Process expected to start up in 2027

3. Descriptions of concepts for Step 2

In the following section Energinet will present its initial thoughts on the main concepts for the user commitment terms and conditions.

3.1 Credit limit concept for binding commitments

When Energinet and the network users enter into binding long-term capacity bookings¹, the contracts will be signed as part of the binding commitment process. The payments for the capacity will be executed via monthly capacity invoices throughout the contract duration, based on the applicable tariffs at the time of invoicing. This also means that there is expected no up-front payment for the capacity contract, before the contract enters into force.

As part of the binding commitment process, Energinet will require that network users have a satisfactory creditworthiness to cover the expected tariff costs based on the booked capacity throughout the contract duration, and/or security via external credit means. This requirement must be fulfilled from the time when entering into the long-term capacity contract following the binding commitment process (expected second half of 2025), and until the capacity contract runs out.

¹ A long-term capacity booking is defined as an annual capacity contract or a multiple of annual capacity contracts, up to 15 consecutive calendar years.

When the capacity contract commences, Energinet will start invoicing the capacity, thereby gradually reducing the remaining total value of the contract. Based on this, Energinet will gradually reduce the credit limit requirement on an annual basis, reflecting the gradual reduction of outstanding payments.

3.1.1 Main admission requirements criteria

There are 2 main criteria, when considering the creditworthiness, based on the respective companies' latest annual report:

- A. An equity capital level of minimum 25 per cent of the total value of the long-term capacity contract
- B. A solvency ratio of minimum 15 per cent.

3.1.2 Main credit limit criteria

When a network user meets the main criteria for admission requirements, Energinet will implement a step-by-step approach to cover the credit limit requirements:

1. Gather information about a recommended credit line for the network user from external credit rating agencies (e.g., Dun & Bradstreet). Credit limits should be granted according to the recommendation from the relevant external credit rating agency.
2. If the first step does not cover the requirement, the network user must provide external credit via either a parent company or bank guarantee upon request from a guarantor with a minimum rating of BBB-.
3. If the second step does not cover the requirement, Energinet will conduct an individual assessment of the guarantor.

If a network user does not meet the main criteria for admission requirements, Energinet will consider how large a part of the total contract value must be covered via external credit, based on an evaluation of the general risk profile, contracts length, Energinet's possibility to resell capacity, etc.

3.1.3 Changes over time

The circumstances for a network user may change over time, due to e.g.:

- Changes in equity capital and/or solvency level over time
- Changes in tariff levels, and thereby contract value over time.

Energinet will regularly check the overall credit status of each network user, and will change the requirement for external credit, if needed (either reducing or increasing the need, based on most recent figures).

3.2 Delay scenarios – concept for terms and conditions

As a general introduction to the delay scenarios, it should be noted that Energinet's hydrogen subsidiary is expected to be established with a limited level of equity and to be financially separated from other subsidiaries within the Energinet group and is thus limited in its ability to mitigate especially financial risks in the hydrogen value chain as a consequence of delays. This precondition should be considered, when investigating and suggesting possible ways of mitigating commercial risks via the terms of the binding commitments.

In the following sections, three different delay scenarios are described, and how Energinet plans to integrate these scenarios into the terms and conditions for user commitments.

3.2.1 Energinet project delay

Energinet is fully aware of the significance that timing has for the competitiveness of Danish hydrogen in a European and global context and must at the same time provide a timeline that is realistic and robust. If the DHB's commencement is delayed compared to the signed capacity contracts, it may be possible for market players to source hydrogen from somewhere else to fulfill their offtake agreements, but this is uncertain in an immature market. Therefore, Energinet proposes postponing the start date of the capacity contracts in case of project delay, to follow the delay in DHB's commencement.

Energinet will incorporate specific timelines for communicating delays, and the reasoning behind, depending on how long a delay is foreseen. For example, a delay of less than 1 year should e.g. be announced at least 6 months in advance, a delay between 1-2 years should e.g. be announced at least 1 year in advance, etc.

Energinet expects that some offtakers may wish to require penalties (compensation) if deliveries of hydrogen are delayed, which DHB's users would understandably want covered by Energinet. It is important to note that Energinet would have to recover any penalties via its tariffs (subject to approval by the Danish Utility Regulator), which would be charged towards the users of the system, thus the same users that experiences a delay would fully or partly pay for such compensation. True compensation for a delay would therefore require state financing, subject to a national political agreement.

3.2.2 Gasunie project delay

In this situation, the interconnection project towards Denmark (Hyperlink 3) would be delayed while DHB was commenced on time or both projects would be delayed, but Hyperlink 3 more so than DHB. Energinet should allow for postponing the start date of the capacity contract to follow the delay in Hyperlink 3's commencement, based on request by the market player(s).

3.2.3 Market player delay

Energinet expects that most future users of the DHB will have ties to (if not ownership of) electrolysis plants and thereby dependencies further back into the value chain. Construction of these electrolysis plants is not expected to be finalized by the time the first capacity contracts are signed, which means that there is a risk that the electrolysis plants experience unforeseen delays and cannot flow hydrogen from the start date of their capacity contract. If this risk is not mitigated, the market player would be obligated to start paying for the capacity contract without receiving any income on the other side of it. It may be possible for the market player to sell the unused capacity to another market player, but this is uncertain in an immature market.

Energinet proposes allowing market players to postpone the start date of their capacity contracts (maintaining the same duration) up to, e.g., 1 year, if this does not have significant economic consequences for the hydrogen infrastructure company and does not entail discrimination. Rather than requiring payment for such postponement, Energinet proposes that there will be a pre-determined lead time for the market player to forward such a request, including an explanation of the reason behind the delay, e.g., 6 months before. The explanation is needed to ensure that the necessity for postponement is project related and is not based on commercial optimisation. When considering the economic consequence, Energinet will consider all requests for postponement at the same time, to avoid a case-by-case approach, with potentially different

outcomes for each market player. Energinet will also consider if a postponement creates a scarcity of capacity in one or more years. Energinet is also open to consider allowing longer postponements with longer lead times (e.g., 1-year lead time and 2-year postponement) - again as long as it does not have significant economic consequences for the hydrogen infrastructure company. Energinet's concern is that if there is a general tendency that several market players are delayed, the hydrogen infrastructure company could experience cash-flow issues related to interest rates and discounting in which case it may be most prudent to delay the DHB's commencement date in coordination with Gasunie.

For Ellund specifically, it should be noted that if capacity is offered in a joint process (see point 3.5 below), the terms of market player delay must be aligned between Energinet and Gasunie specifically.

3.3 Termination scenarios – concept for terms and conditions

As indicated in the introduction, the long-term capacity bookings need to be truly binding, to use them as a signal for investment, both in terms of the business case and the financing of the project (by living up to the booking requirement). This precondition is reflected in the scenarios described below.

In the following sections, three different overall termination scenarios are described, and how Energinet plans to integrate these scenarios into the terms and conditions for user commitments.

3.3.1 Energinet termination of capacity contract

DHB relies on external permit and decisions, but if the Danish Ministry of Climate, Energy and Utilities approves the updated business case that Energinet will submit after Energinet's own updated investment decision in Q1 2026 following Step 2, then the risk of termination is low. Market players may have a claim against Energinet if termination happens due to serious fault on the part of Energinet (gross negligence or intentional). However, Energinet acknowledges that the capacity contract is only a fraction of the total consequences for the market player especially if a late termination is announced, compared to the stranded assets for the electrolysis plants.

Energinet should be able to terminate the capacity contract if the specific permits are not completed within certain dates. Also, Energinet should be able to terminate if Gasunie is significantly delayed (e.g. 5 years). Energinet will also include Conditions Precedent on e.g. ministry approval, but these will be placed shortly after the business case decision, whereas the termination clauses relate to later activities. E.g. the terms should include a possibility to terminate, if Gasunie terminates their project (see next point).

3.3.2 Gasunie termination of the Hyperlink 3 project

If Gasunie terminates the interconnection project towards Denmark (Hyperlink 3, or relevant subsections hereof), Energinet must also be able to terminate capacity contracts in the DHB. There could be large consequences for market players, in terms of stranded assets, however no claims towards Energinet can be made in this case.

3.3.3 Market player termination of capacity contract

Capacity contracts in the DHB must be binding for the market players to support both the DHB's business case and the booking requirement in the national political agreement about financing. If Energinet allows for the possibility to terminate, this could jeopardise both. On the other hand, completely ignoring the market risk may also jeopardise the DHB if the economic risk is considered too high by the market players.

Initially, Energinet therefore suggests that market players will only be able to terminate the capacity contract, if Energinet is significantly delayed (e.g. more than 5 years). Energinet may also consider including a clause on termination, where the market player has the possibility to terminate up to a certain date (e.g. 3-4 years before), but at a significant penalty, that restores the economic balance for Energinet to a satisfactory level.

Energinet will also consider including a Conditions Precedent for market players, that allows for terminating the capacity contract shortly after the contracts has been signed (e.g. 1-2 months), to ensure that market players can conclude necessary back-to-back agreements in the value chain.

Any possibility to terminate the capacity contract may be subject to approval by the Danish Utility Regulator.

3.4 Capacity allocation mechanism for Step 2

Energinet expects to offer a capacity level of some 2.7 GWh/h/year² in the user commitment Step 2, for the time period from the commercial start date of the DHB and 15 years ahead. Capacity will be offered as single annual capacity contracts, meaning that Energinet will offer capacity in 15 separate years. This gives market players the possibility to freely book the needed capacity per year, e.g. ramping up capacity over time in line with expected production.

Energinet's initial suggestion for a capacity allocation model is based on both trying to keep the model as simple as possible, but also being prepared for different scenarios. In that sense, Energinet suggests a 2-phase model, where an auction is only held (phase 2), if over-demand occurs.

Phase 1: market players forward their capacity bookings to Energinet.

In this first phase, Energinet specifies:

- the formal requirements for participating (terms and conditions for user commitments),
- a specific deadline for receiving capacity bookings, and
- the means to how and where the binding capacity bookings should be forwarded to Energinet.

If there is no over-demand in any calendar year, and all preconditions are met (e.g. that the relevant booking requirement are met) all market players are granted capacity equal to their capacity bookings, and the user commitment Step 2 is completed. If, however, there is an over-demand in one or more calendar years, Energinet will add a second phase before allocating the capacity:

² The total capacity in the start grid is expected to be 3 GWh/h. Energinet expects to offer 90 per cent of the total capacity, as (at least) 10 per cent must be reserved for short-term contracts (subject to DUR approval).

Phase 2: allocation based on auction (if relevant).

Energinet will open an auction to ensure the most efficient allocation of capacity. Energinet suggests using an “ascending clock” auction, which has been used for many years in the methane sector, when allocating long-term capacity at border points. In this auction type, the price gradually increases with a predefined factor, each round where there is over-demand, until the total demand is lower than the offer, and all remaining bidders pay the same price.

For more information on how this mechanism works, please see the Network Code on Capacity Allocation Mechanisms, binding for methane only, (NC CAM, Clause 17: [Regulation - 2017/459 - EN - EUR-Lex \(europa.eu\)](#)).

3.5 Capacity allocation process in relation to Germany

The Danish and German process for hydrogen infrastructure is different from each other, in terms of timings and basis for the decision. In Denmark, the decision is highly market driven, through the booking requirement, whereas in Germany the decision is mainly driven by coordinated planning, through the core grid and network planning processes, with all these processes involving the public (including market participants) and the regulator. However, booking requirements also play a central part in Gasunie's investment decision.

Energinet and Gasunie are in close dialogue on how to offer capacity at the border point between Denmark and Germany, considering the differences in timings and processes in each country. At this stage Energinet and Gasunie sees 2 possible options:

1. A coordinated but separate capacity offer, where Energinet offers the capacity first on the Danish side, and Gasunie offers the capacity later on the German side of the border.
2. A joint capacity offer, where the capacity is offered and sold as a bundled capacity product, where the market player books the capacity instantly on both sides of the border in the same direction (with separate capacity contracts with each entity).

It is Energinet's and Gasunie's working assumption that the market would prefer option 2, even though it may lead to a later capacity offer on the Danish side. However, Energinet and Gasunie anticipates that a joint capacity offer would be possible in late 2025, so still within the original timeframe for Step 2 on the Danish side.

3.6 Other relevant topics

With this concept paper, Energinet focuses on what is considered the most relevant topics to discuss up-front, both based on previous experience and on recent market input, but also based on which topics potentially includes the largest dilemmas and tradeoffs. However, the terms and conditions for the binding commitments will include several further topics, that are not discussed in this paper, that will be subject to public consultation later.

Energinet expects that the terms and conditions for the binding commitments will include (but are not limited to) the following topics (besides what is described in this paper):

- Formal requirements for the participant, e.g.:
 - Documentation
 - Timings
 - Signatures
- Registration procedure
- Bidding process

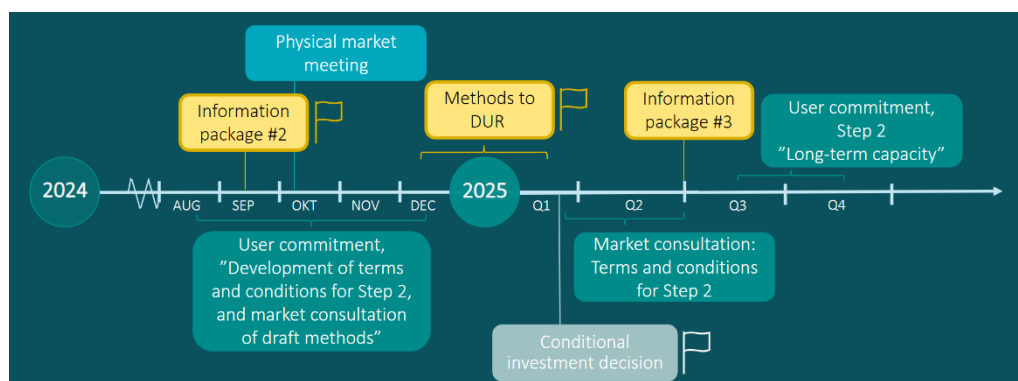
- Submission of capacity bookings
- Verification of bookings
- Amendments
- Communication
- Liabilities
- Conditions precedent
- Legal venue and choice of law

Further topics may be added later, based on internal needs and/or market indications. Market participants are welcome to add suggestions for further potential topics in the coming market dialogue.

4. Expected timeline and activities

Energinet assumes the following timeline and activities for the user commitment process and related activities:

- **April/May 2024:** The user commitment Step 1 was conducted.
- **19 June 2024:** The information package 1 was released: [Hydrogen market dialogue \(energinet.dk\)](https://energinet.dk)
- **16 September 2024 (now):** The concept paper for user commitments Step 2 (this paper) is released as part of information package 2, with deadline for written comments on 31 October 2024.
- **September-October 2024:** Energinet encourages market players to book bilateral or trilateral (including Gasunie) meetings, to discuss the concept paper for Step 2.
- **Q3 2024:** the market signal on hydrogen infrastructure is expected to be released.
- **8 October 2024:** Energinet hosts a market meeting on relevant topics, where also Gasunie will participate.
- **Q4 2024:** Energinet will perform a public consultation on the required method applications in relation to Step 2.
- **Q1 2025:** Energinet will forward the method applications for Step 2 towards the Danish Utility Regulator (DUR).
- **Q1 2025:** Conditional investment decision by Energinet.
- **Q1/Q2 2025:** Energinet will perform a market consultation of the general terms and conditions for the binding commitments, together with Gasunie.
- **Q2 2025:** Information Package 3 (concrete topics will follow) and final terms and conditions for the binding commitments are released, prior to Step 2.
- **Q3/Q4 2025:** User commitment Step 2 is conducted.
- **Q1 2026:** Updated investment decision by Energinet.



5. Market feedback

Energinet invites market participants to request for bilateral meetings during the coming period, and to submit written feedback to this concept paper by **31 October 2024**. Please submit your request and written feedback to Christian Rutherford (cru@energinet.dk) and Sofie Marie Skov (sem@energinet.dk).