

Tariff

Workshop 9. november 2023

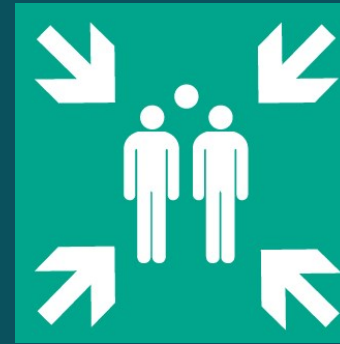




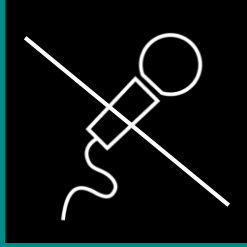
EMERGENCY EXIT



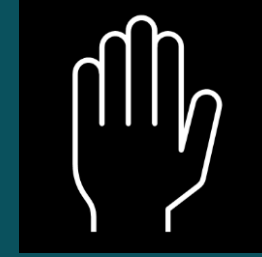
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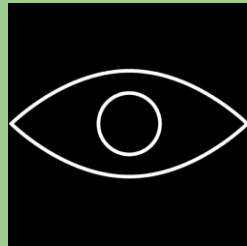
GATHERING SPOT



PLEASE KEEP YOUR
MICROPHONE MUTED



USE THE HAND MARKER OR THE
CHAT FOR QUESTIONS AND
COMMENTS



THE WEBINAR IS NOT BEING
RECORDED



THE PRESENTATION WILL BE
SENT OUT AFTERWARDS

TODAY'S PROGRAMME

10:00 -10:10 Welcome
10:10 -10:45 Subject introduction

- Legislative framework
- The current Gas tariff model

10:45 - 11:30 Group session 1:
Usability of the current gas model

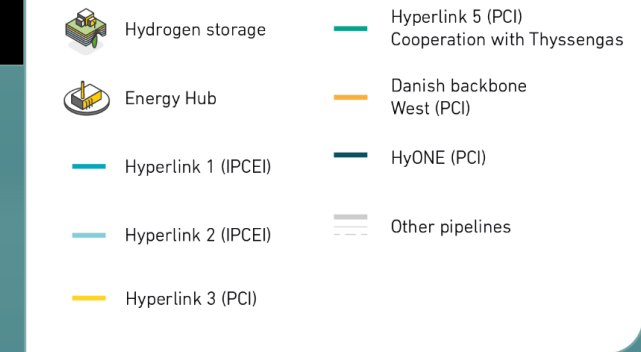
11:30 - 12:00 Presentation in plenum

12:00 - 12.45 **Lunch**

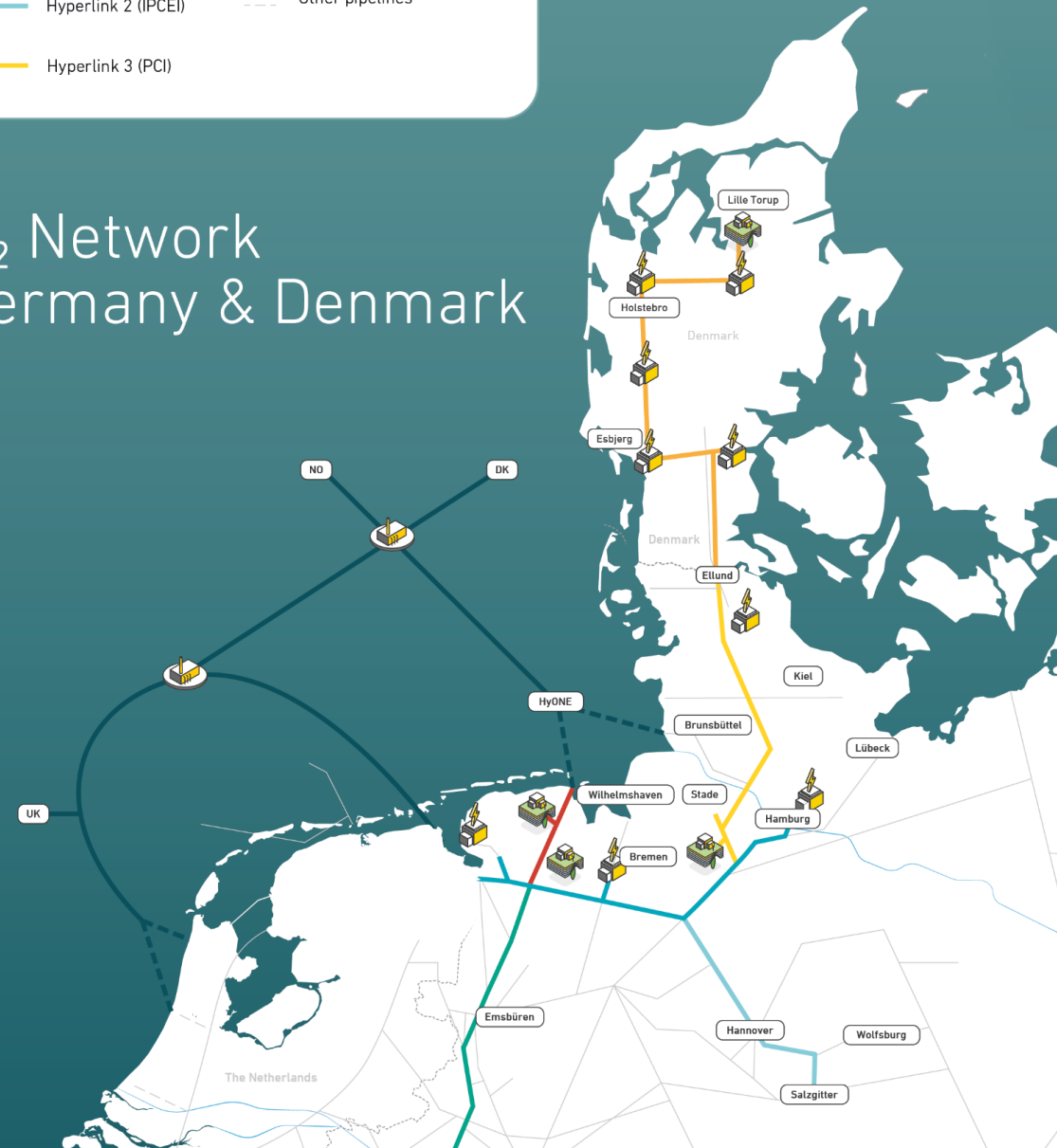
12:45 - 13:30 Group session 2:
Tariff curtailment

13:30 - 14:00 Presentation in plenum

14:00 - 14:30 Wrap-up and next steps



H₂ Network Germany & Denmark





SUBJECT INTRODUCTION

Legislative framework & basic tariff principles

LEGISLATIVE FRAMEWORK

National legislation

- The Danish Gas Supply Act has been changed to also include hydrogen as a gas equivalent to methane.
- The Minister is authorized to make exemptions to parts of the act in relation to hydrogen.

EU legislation:

- The new gas market regulation and directive are not finalized. The current drafts are available online.
- The current NC TAR on methane gas is used as a guideline for long term rules.

Political agreement:

- Energinet has been given the role of Danish system responsible entity, cross-border and "backbone" operator etc.
- Evida has been given the role to connect domestic users to the interconnected system etc.



EU TARIFF PRINCIPLES

1. *Transparency*
2. *Upholding/improving system integrity*
3. ***Cost real***
4. *Non-discrimination*
5. *Facilitate gas/hydrogen trade and competition*
6. *Avoid cross subsidizing between system users.*
7. *Incentives further investment in the hydrogen system and linkage between systems.*



ENERGINET

- Systemansvar A/S is the system operator (regulated monopoly)
- Gastransmission A/S owns and supports the physical (regulated monopoly).
- GSD A/S owns and manage the storage facilities (marked based regulation).

There is full separation between the transmission and storage economy and the storage facility is not included in the transmission tariff.

SHIPPERS

- They are responsible for the transportation of gas through the system (buying capacity and storage).
- They are responsible for ensuring balance between injected and extracted gas.

Producers and consumers can either choose to hold the role as shipper themselves or use a specialized marked actor.

ENTRY/EXIT MODEL

Uniform tariffs:

- No price differentiations on length
- Entry and exit can be bought for different days
- 100% discount on entry/exit points to storage facilities

Ex-post revenue allocation:

- No predetermined revenue split between entry and exit capacities



GAS MODEL

Capacity

- Primary component
- Use it or lose it
- Price differentiation on contract lengths (multiplier effects)

Commodity (volume)

- No commodity component

Balancing

- Marked based balancing model
- No tariff effect

Emergency

- Price differentiation on customer status (protected/non-protected)

HYDROGEN MODEL

Capacity

- Primary component
- Use it or lose it
- Price differentiation on contract lengths (multiplier effects)

Commodity (volume)

- No volume component

Balancing

- A separate balance tariff that covers collective cost on balancing in an immature market

Emergency

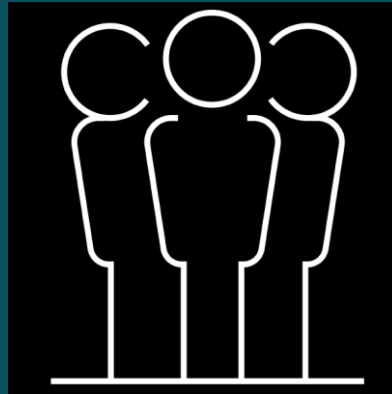
- No emergency tariffs
- No protected users

CAPACITY MULTIPLIERS

Current multipliers in the Gas tariff model:

Yearly capacity:	1,00
Quarterly capacity:	1,10
Monthly capacity:	1,25
Daily capacity:	1,40
Within day	1,40





GROUP SESSION 1

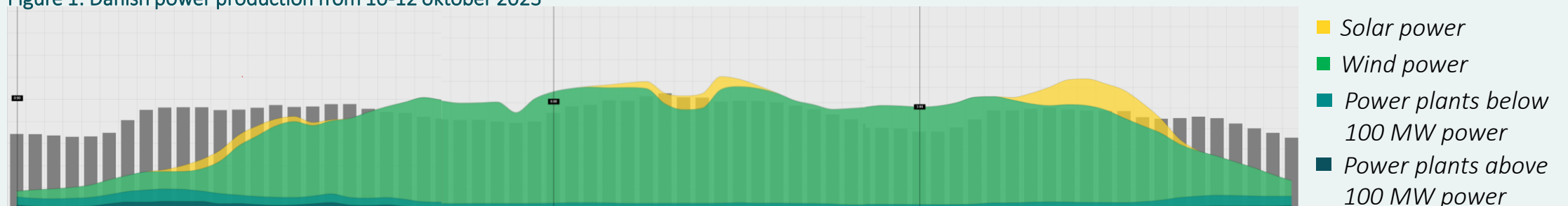
Usability of the current Gas model

CAPACITY LENGTHS

Which capacity is needed by the market?

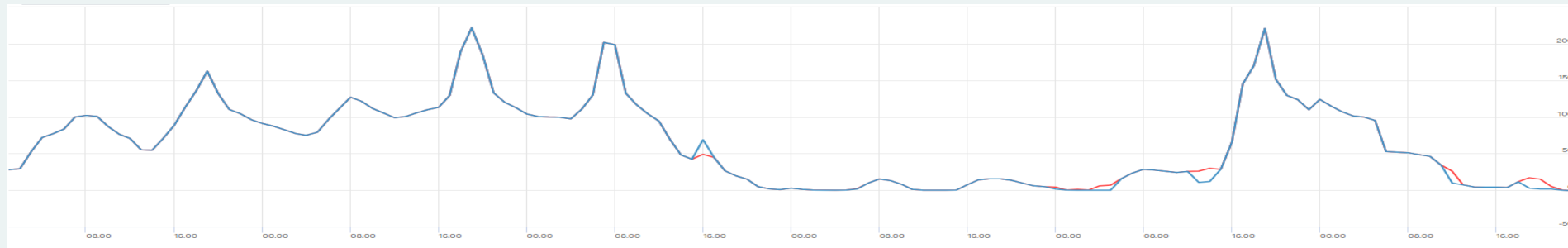
Driver	Flow expectation	Capacity needs
Baseload	High cost related to full start/stop of the PtX production	Yearly
Wind power	Wind often effects power prices across a couple of days	Week (months?)
Solar power	Solar power only effects the prices during the day (and season related)	Day based
Power grid balance	PtX plants can be activated by power grid owners to decrease the frequency	Hour based

Figure 1: Danish power production from 10-12 oktober 2023



MULTIPLIER DILEMMA

The demand for capacity should be highly variable and in correlation with the fluctuating prices on electricity. However, the supply is fixed both on the terms of volume and price. The classic supply demand relation will not be present.



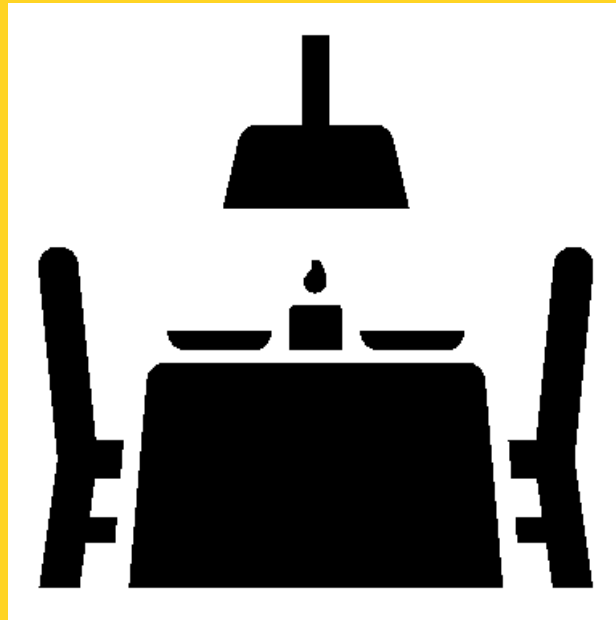
Tariff multipliers can to some degree reassemble the supply/demand effects, but:

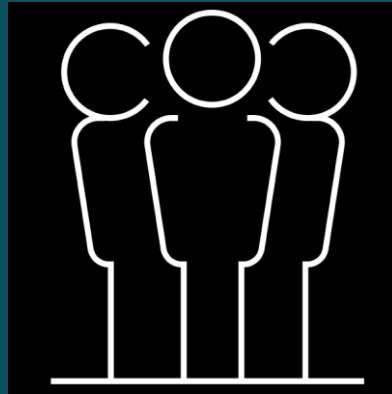
- *High multipliers will incline market actors to buy longer products.*
- *High multipliers will to some degree create deadweight loss (the prices are not low enough to compensate for the multiplier on a short-term product).*
- *Low or no multiplier will incline market actors to avoid long term products, increasing the overall reservation price and make baseload capacity more expensive.*
- *Low or no multiplier will decrease incentive for buying long contracts and thereby increase the capital risk for the asset owner.*

INTRODUCTION TO GROUP SESSION 1

- Each group now have 45 min. to discuss the following:
 - *To what extent is the current tariff scheme from methane gas useable in a hydrogen system?*
 - *What capacity products should be available?*
 - *How big a spread is preferable on multipliers?*
- The 45 minutes includes bio break/getting coffee.
- There is a representative from Energinet at each group, who will participate and listen in on the discussion.
- After 45 minutes we will meet in plenum, and a representative for each group then have 5 minutes to present the results from your discussion.

Lunch





GROUP SESSION 2

Tariff curtailment

NECESSITY OF TARIFF CURTAILMENT

The start-up dilemma:

- The cost related to new assets is high in the start-up period due to the capital cost
- In an emerging market the volumes will be low in the start-up period

The curtailment model will be focused on postponing the tariff revenue, not permanent discounts.

Figure 1: Classic tariff base from new assets

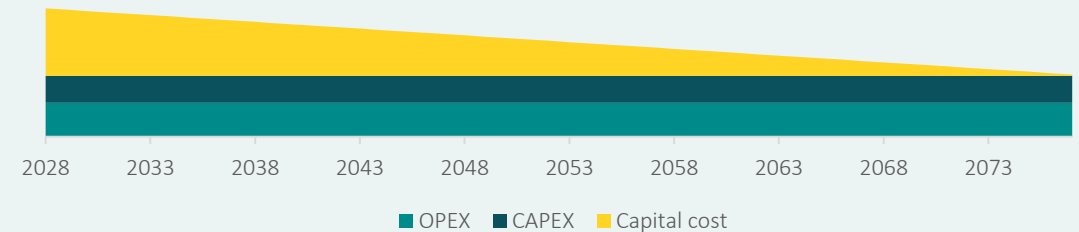


Figure 2: Volume expectations from an emerging market

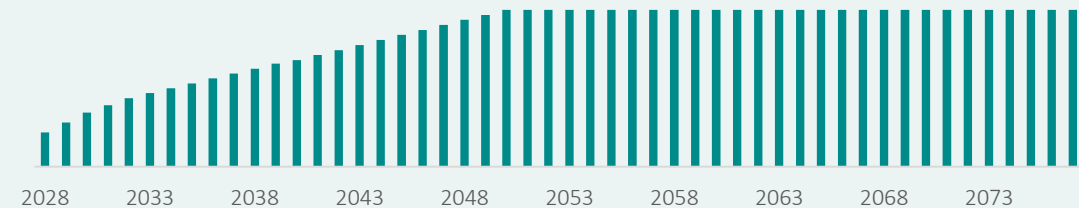
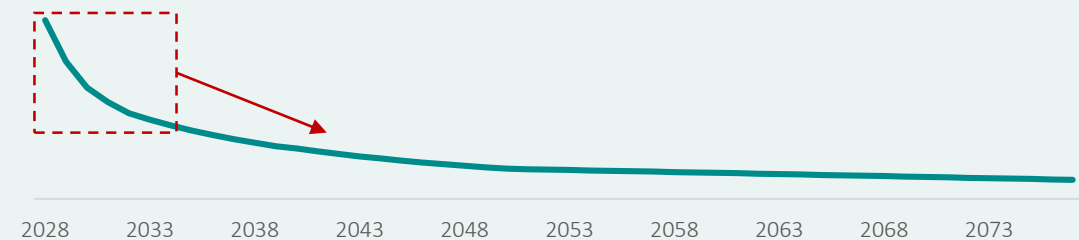


Figure 3: Tariffs without curtailment



METHODS OF COST CURTAILMENT

PRICE LEVEL CURTAILMENT

There is a ceiling on the absolute price each year (in a given periode).

Prices changes are index regulated.

Energinet holds the full market risk:

- Larger risk premium
- No upside-/downside from volume changes.

PRICE CHANGE CURTAILMENT

Tariffs can't change more than +/- a fixed percentage each year.

Price changes are not predetermined.

The market risk is shared:

- Medium risk premium
- Shared upside-/downside from volume changes.

COST BASE CURTAILMENT

There is a ceiling on the cost base, which is calculated into the tariffs each year.

Price changes occur from volume changes and the predetermined cost base changes.

The market risk is mostly placed among market actors:

- Smaller risk premium
- Full upside-/downside from volume changes.

INTRODUCTION TO GROUP SESSION 2

- Each group now have 45 min. to discuss the following:
 - *How do you prefer the tariff to be curtailed?*
 - *How long should the curtailment last (including both dept build-up and payback period)?*
- The 45 minutes includes bio break/getting coffee.
- There is a representative from Energinet at each group, who will participate and listen in on the discussion.
- After 45 minutes we will meet in plenum, and a representative for each group then have 5 minutes to present the results from your discussion.

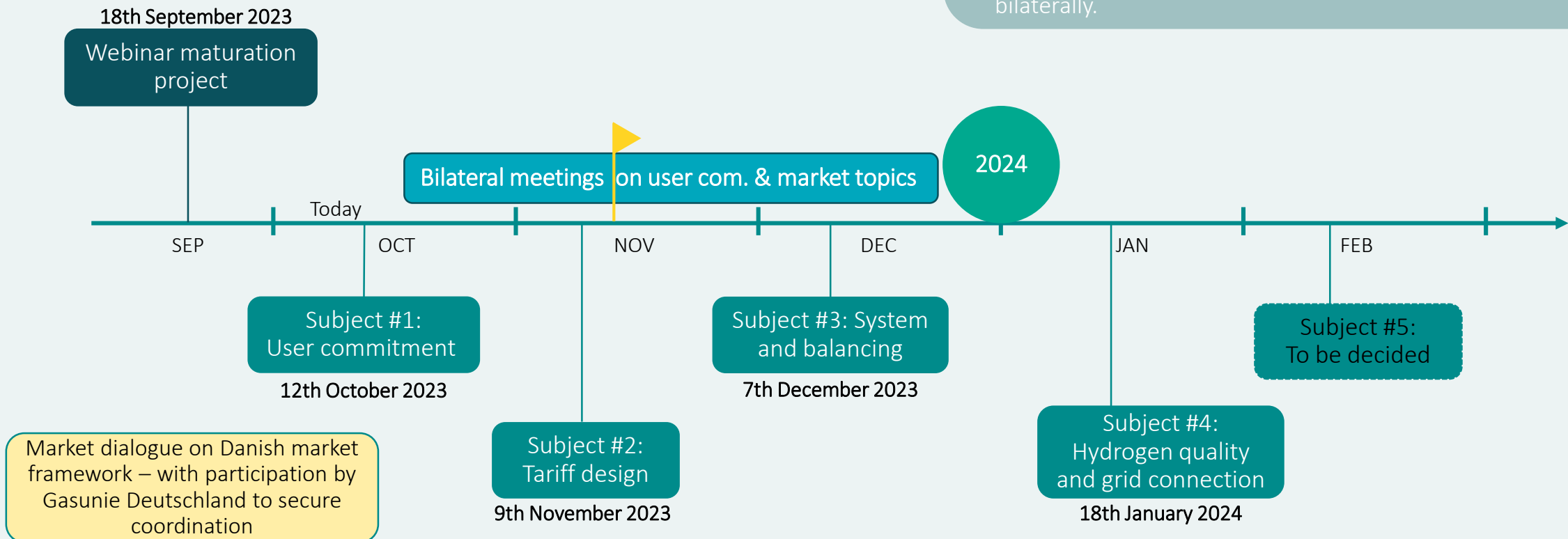


WRAP-UP AND NEXT STEPS

COMING EVENTS

Workshops & bilateral meetings

- The coming events will be published via our homepage: Frontpage\More>About us\Events\name of event. At the page for events, you can sign up to receive events directly by mail.
- Energinet will also invite for bilateral discussions during the fall, to discuss user commitments and relevant market topics.
- Please write to cru@energinet.dk if you want to meet with us bilaterally.





THANK YOU!

Contact: RSB@energinet.dk