

INFORMATION SESSION

NATIONAL HYDROGEN NETWORK AND HYDROGEN CONTRACTUAL FRAMEWORK

April 22nd, 2022

Word of welcome

- Warm welcome
- Introduction Hynetwork Services B.V.
- Last webinar was in October 2021: HyWay 27 & results market questionnaire
- Aim:
 - Participants are well informed to participate in consultation
 - Increasing hydrogen interest from the market and other stakeholders, specific request for final conditions.



Audience

Who do we have in the “virtual” room?

- Participants along the value chain.
- Cross-border oriented companies.

Chat functionality for questions:

- Please enter questions in the chatbox.
- The moderator will address them either in the session or afterwards via the website.
- Language: preferably in Dutch or in English.
- Webinar will be recorded and will be made available with English subtitles afterwards.



Agenda

Opening

René Schutte, Gasunie, Host

Part 1: Update national hydrogen network (Hynetwork Services B.V.)

National hydrogen network

Eddie Lycklama à Nijeholt, Gasunie, Project Director Hydrogen Transport

Part 2: Policy framework conditions hydrogen transport

Developments of the national hydrogen network

*Gijs Kreeft, Ministerie van Economische Zaken en Klimaat,
Senior regulatory policy officer hydrogen*

Part 3: Transportation and Connection Agreements

- Projects along the value chain
- The consultation process
- Main services
- Contractual framework

Anouk van den Berg, Gasunie, Commercial Business Developer Hydrogen

Closing

René Schutte, Gasunie, Host

Update national hydrogen network

Eddie Lycklama à Nijeholt, Project Director Hydrogen Transport



Objectives

- Achieving the CO2 reduction.
- Developing a national hydrogen network.
- Taking a leading role in the energy transition.
- Development of the hydrogen network, requires uniform conditions on a non-discriminatory basis of third-party access.

Hydrogen network Gasunie

The hydrogen infrastructure which Gasunie is developing in North West Europe



Update national hydrogen network

Main developments since October 2021:

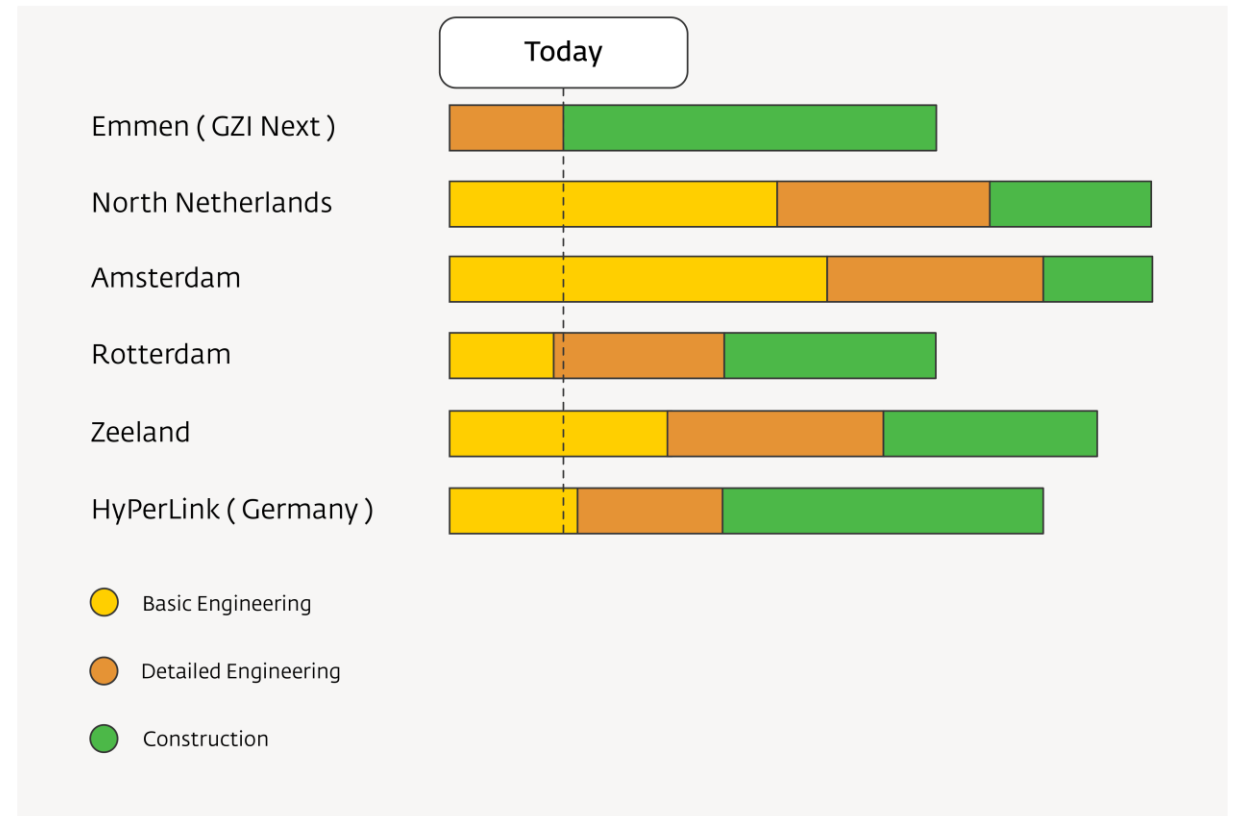
- Developments of the national hydrogen network are still on schedule.
 - first part operational end 2024/beginning 2025.
- Pipeline materials for Rotterdam have been ordered.
- Construction has started in Emmen in North-Netherlands.
- Progress has been made along different disciplines.
 - Technical and organizational set-up.
- Focus on the connection with neighboring network operators.
- Attention to storage and balancing scheme.
- Increasing hydrogen interest from the market and other stakeholders, specific request for final conditions.
- Government coordination scheme (RCR) applies to the national hydrogen network.



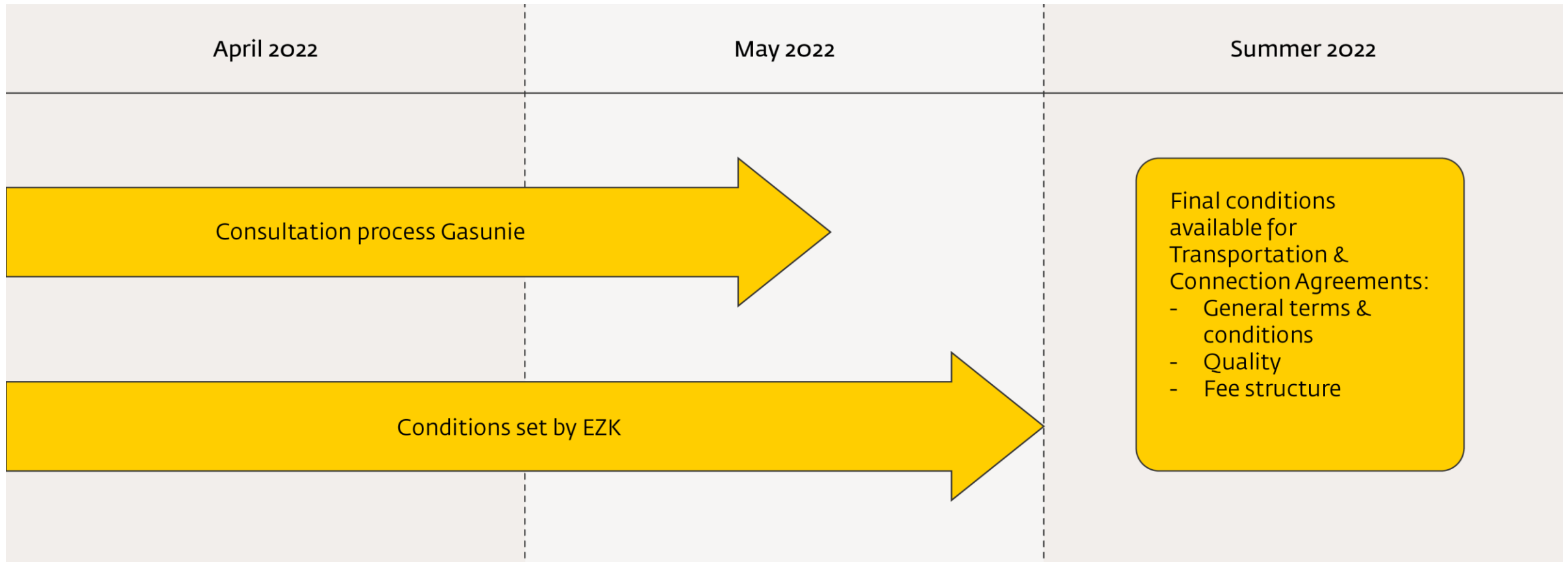
Update national hydrogen network

- Milestones Q2 – Q4 2022:
 - Final investment decision expected for region Rotterdam & North Netherlands.
 - Conditional investment decision expected for region Amsterdam.
 - Start government coordination scheme (RCR)
 - Contract set available for Transportation- & Connection Agreements.

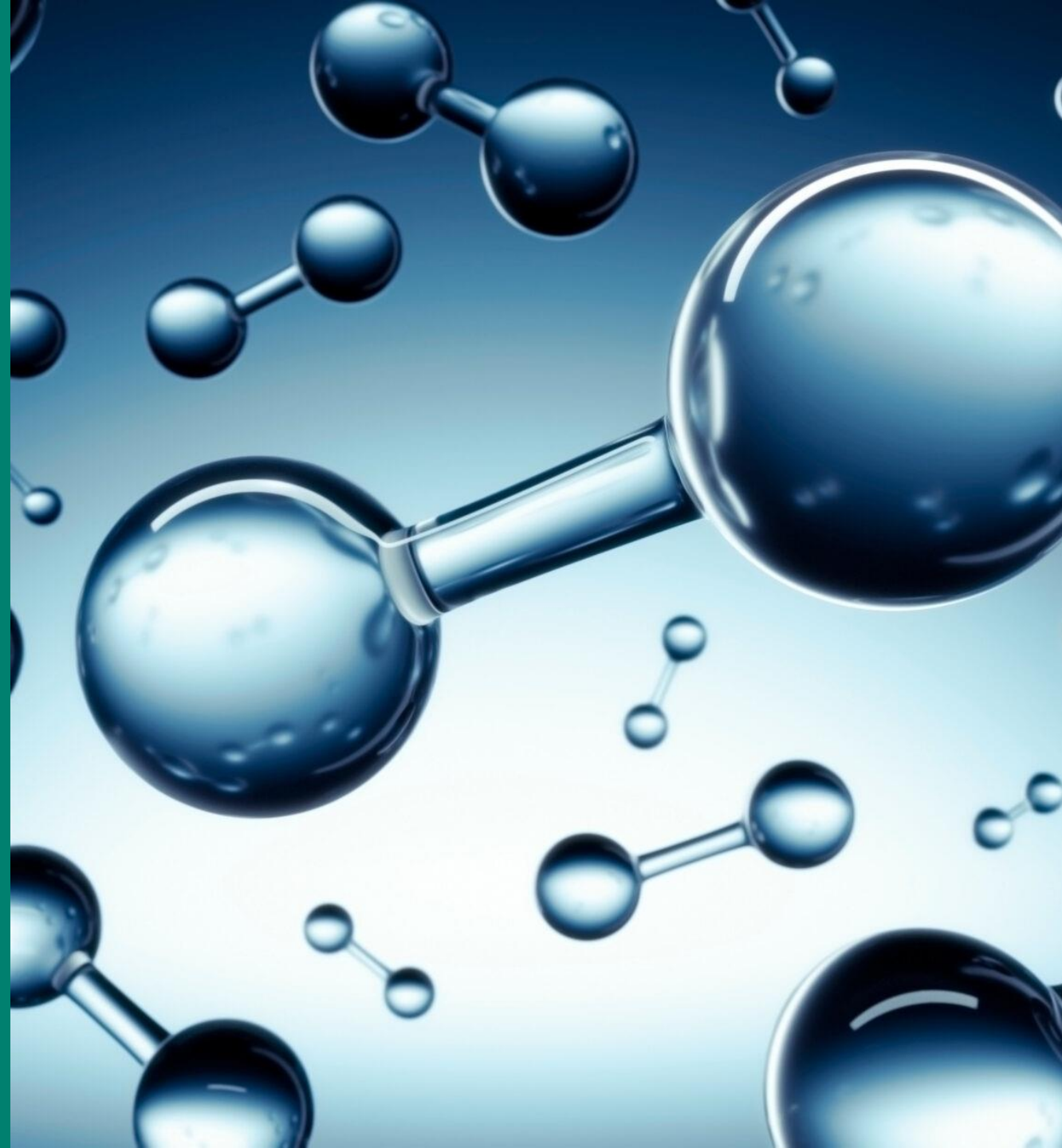
- Situation Ukraine:
 - Increased urgency to speed-up energy transition.



Contract development process



Questions & Answers



Political framework

Gijs Kreeft, Ministerie van Economische Zaken en Klimaat





Ministerie van Economische Zaken
en Klimaat

Policy framework conditions hydrogen transport

Gijs Kreeft

Senior regulatory policy officer hydrogen

22 april 2022



Content of presentation

1. Goals of the policy framework
2. European framework under development
3. Three-stage approach towards full regulatory framework
4. Towards specific conditions
 - a. Governance network development
 - b. Tariff- and access conditions
 - c. Hydrogen quality



1. Goals of the policy framework

- › Ensure the timely development of a **national hydrogen backbone** with cross-border connections
- › Guarantee non-discriminatory **third-party access**
- › Ensure reasonable **cost-reflective tariffs** based on transparent parameters
- › **Prevent over-recovery** through cost-reflective tariffs and reasonable parameters
- › **Prevent under-recovery** through public support and reasonable parameters for HyNetwork Service
- › Provide a transparent **roadmap** towards a **full regulatory framework**



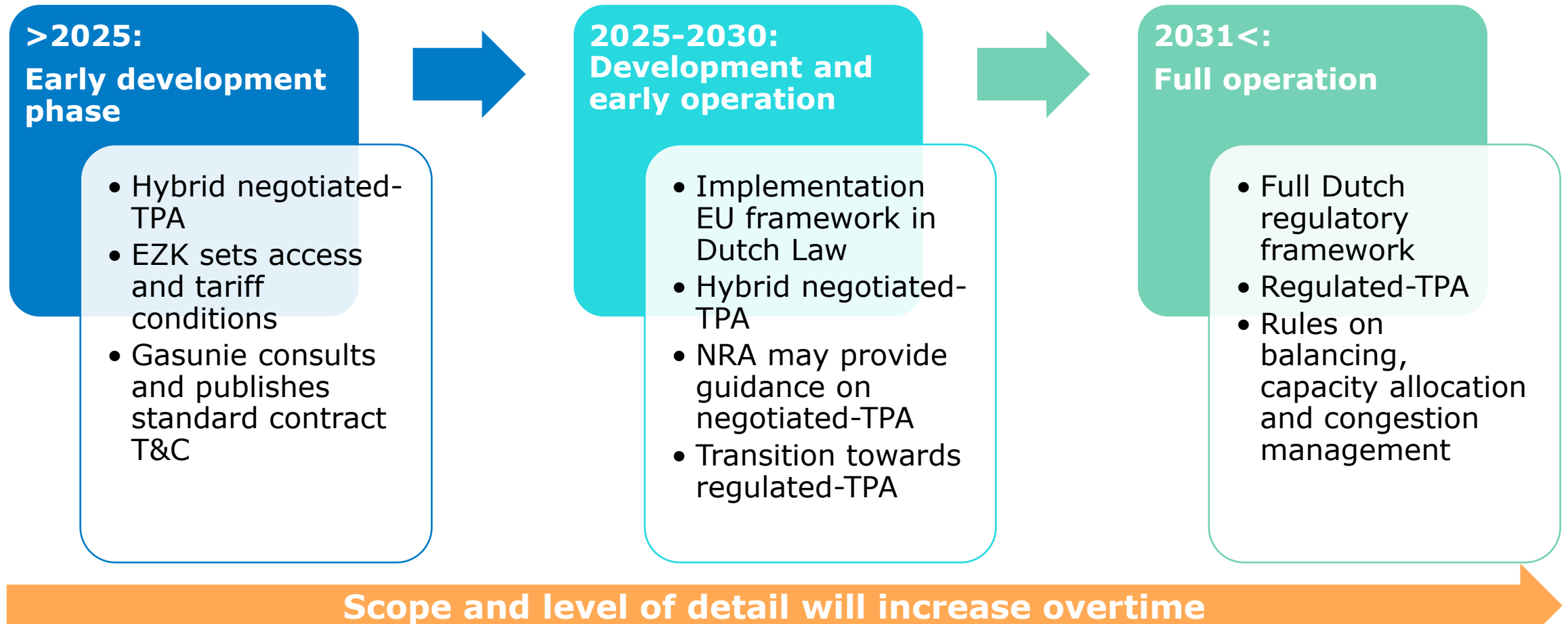
2. European framework under development

IMPORTANT: information on this slide based on proposals by European Commission in EU [Decarbonisation Package](#). Final framework depends on outcome negotiations.

- > Operator needs to offer services based on **non-discriminatory conditions**
- > Operator needs to **publish contractual terms and conditions and tariffs** on their website
- > Maximum **contractual term** is 15 years
- > **Until 2031** Member States may **opt for negotiated TPA** instead of regulated TPA
 - Operator and user must negotiate in good faith
 - NRA may issue guidance on negotiation framework
- > **From 2031 onward** Member States must apply **regulated TPA**
 - NRA sets or approves network tariffs
 - NRA provides guidance on how negotiated tariffs are affected
 - Operator must offer both firm and interruptible capacity and short- and long term capacity
 - For balancing, capacity-allocation and congestion management same rules as for natural gas apply

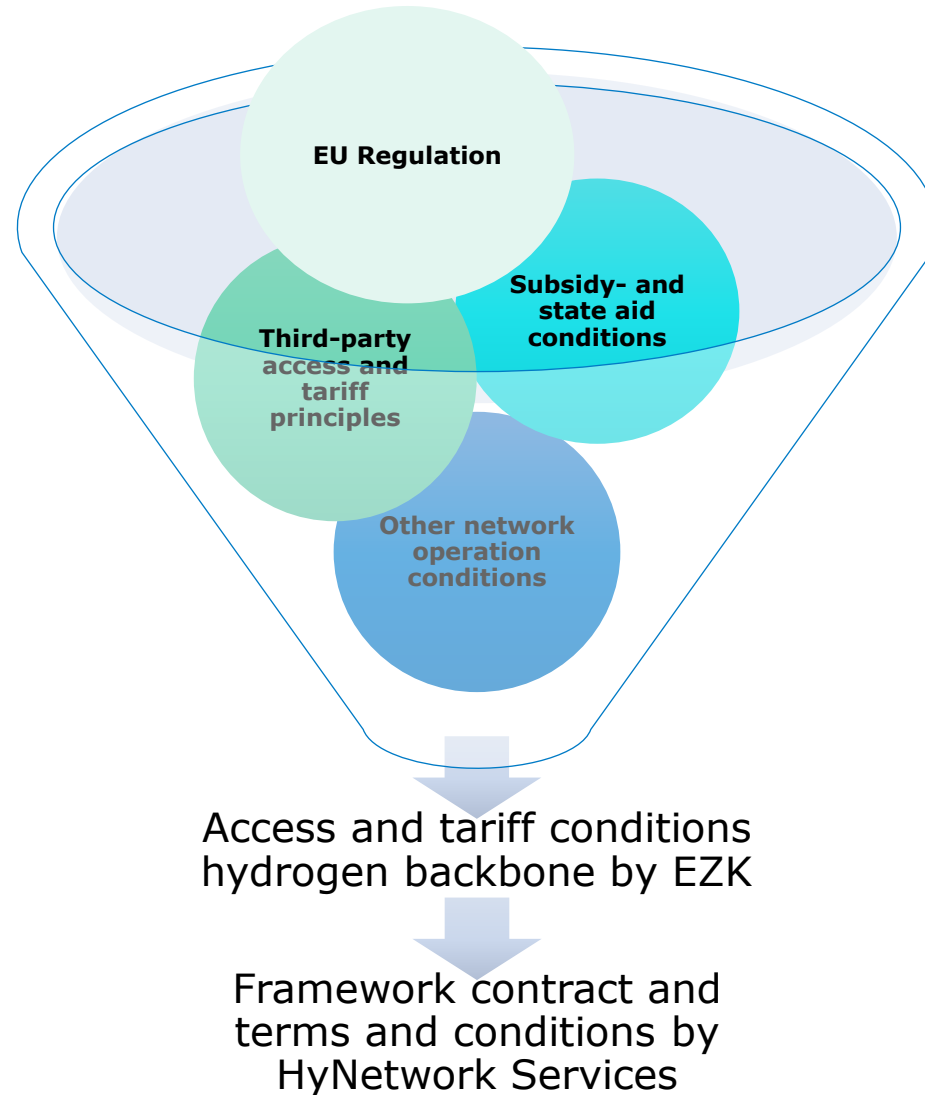


3. Three-stage approach towards a full regulatory framework





4. Towards specific conditions





4. Towards specific conditions

Consultation question: what conditions should be set by government and/or NRA?

- › Non-discriminatory access
- › Obligation to negotiate by the network operator
- › Tariff transparency and cost basis (including WACC)
- › Rules on valuation and depreciation of existing gas pipelines in the event of transfer to hydrogen domain
- › Ensuring that the transmission system operator can earn back its investments with a reasonable return
- › Preventing excess profits/overcompensation
- › Publication of framework contracts
- › Consultation conditions and framework contract
- › Rules about the loading risk (rewarding first movers)
- › Choice and setup of entry-exit/postage stamp system
- › Contract duration
- › Hydrogen quality requirements and who is responsible for any quality conversions and liability if incorrect quality is supplied
- › Quality and reliability of service (continuity, availability, announcement of maintenance);
- › Balance responsible
- › resale of transport capacity
- › cancellation conditions
- › dispute resolution
- › Role of the supervisor



4a. Governance for network development

- **Until 2025:** EZK draws up the first roll-out plan and presents it in a letter to Parliament in May 2022. After that, an annual review and update based on proposal by HNS and public-consultation. EZK may make amendments.
- **2025 to 2030:** HNS draws up periodic network development report after consultation. NRA issues advice based on review. EZK may make amendments.
- **2031<:** Similar to new requirements for integrated network planning (see article 51 Recast Gas Directive). ACM assesses content and monitors compliance. Network plan sets the framework for determining investment efficiency and determining regulated rates.



4b. Tariff- and access conditions

- › Until 2031 'hybrid negotiated-TPA'
- › Tariffs must be cost-reflective, allowing for reasonable rate of return
- › Public support during 'loading-period' → target is 3,5 GW in 2030
- › Validation ongoing of business case, WACC and depreciation method/period
- › NRA sets guidelines on valuation of transferred gas pipelines for repurposing
- › From 2031 onward regulated tariffs approved by NRA
- › More details on financing, business case and tariff conditions in letter to Parliament of May 2022



4c. Hydrogen quality

- › External advice on development of hydrogen quality-standard for backbone in May 2022.
- › Dilemma's:
 - How does demand for hydrogen purity change over time?
 - Should quality at feed-in or withdrawal be deciding factor?
 - What are the techno-economic possibilities for purification, who should pay?
 - Who should set the standard? (EZK, NRA or operator)
- › Proposal European Commission:
 - Network operator may be responsible for hydrogen quality management after approval NRA
 - Establishment of mandate for development common European standard
- › Process of coming to Dutch quality standard
 - EZK will provide framework for hydrogen quality
 - Regional flexibility where possible
 - Consultation for hydrogen quality standard will be launched after publication external advice



Many thanks for your attention

Questions & Answers



Transportation and Connection Agreements

Anouk van den Berg, Commercial Business Developer Hydrogen

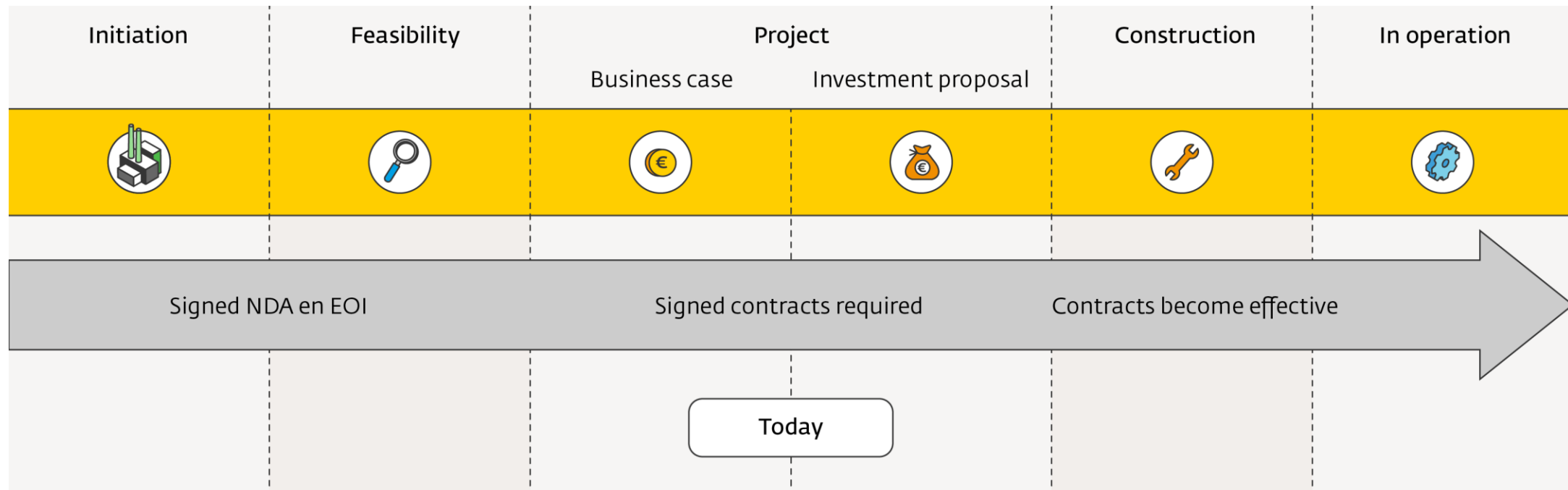


Transportation and Connection Agreements

- Business development process
- Consultation process
- The main services
- The different contracts: framework and main assumptions
- Key differences with natural gas
- Liability framework

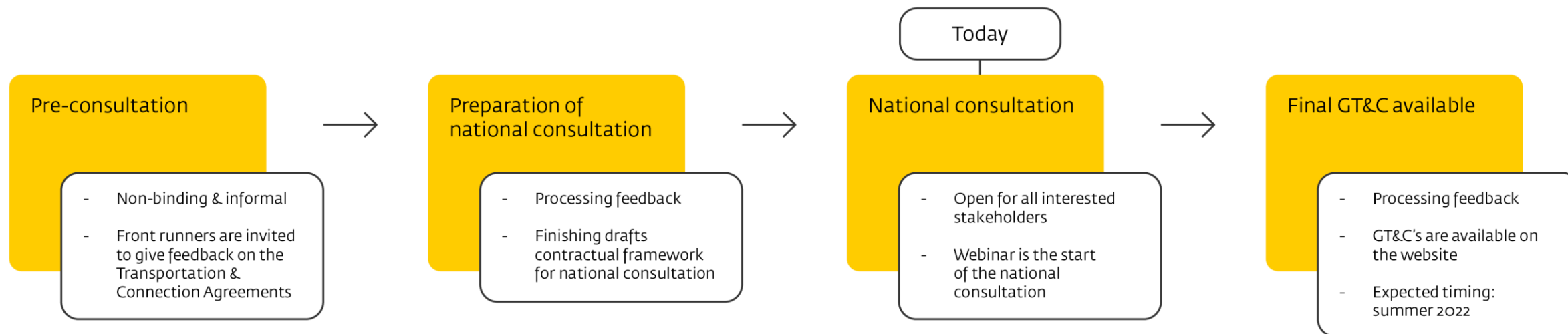
Business development process

- Projects along the value chain are preparing for conditional and/or final invest decisions.
- Final conditions for hydrogen transport are therefore requested by several parties.
- Uniform conditions based on open-access and non-discriminatory basis.

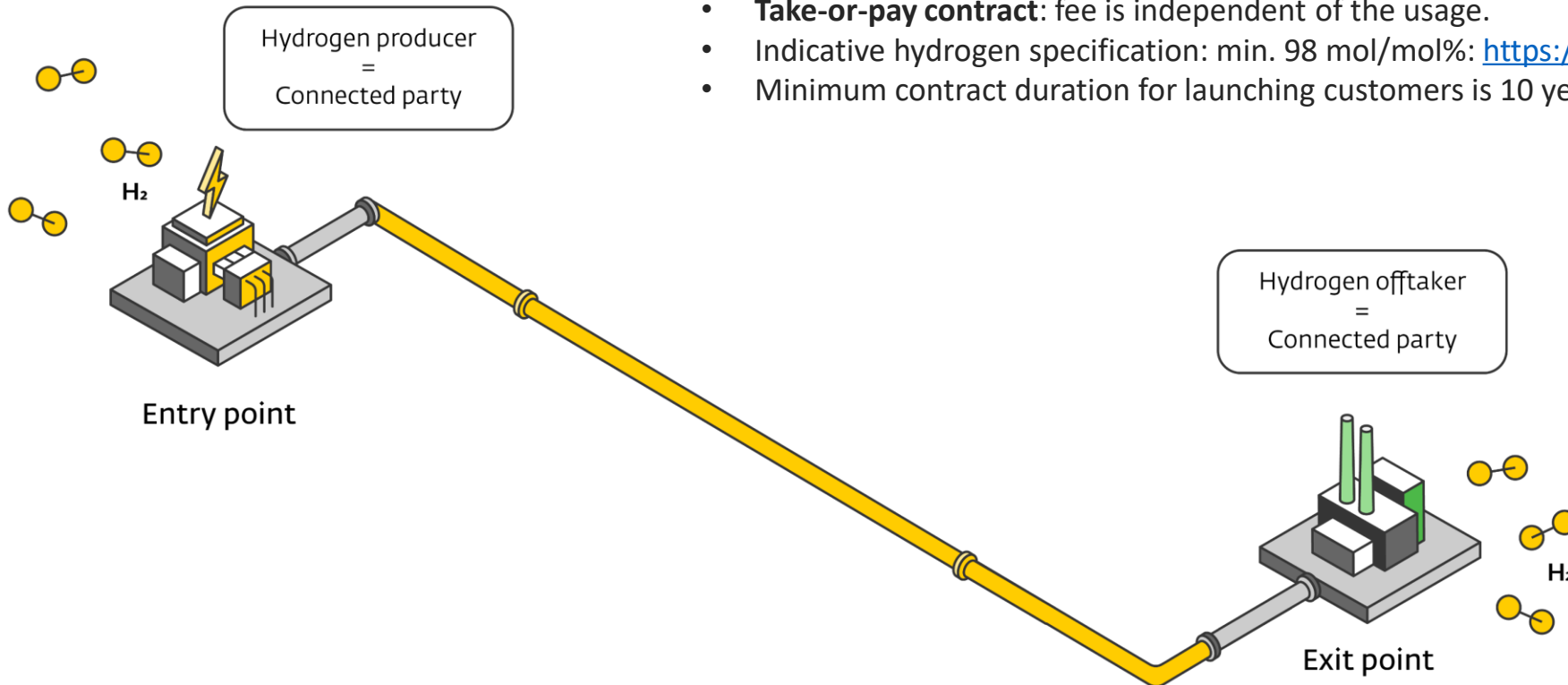


Consultation process

- This webinar is the start of the national consultation.
- A pre-consultation has taken place prior to the national consultation.
- VEMW and EZK are involved in the consultation process.
- Next step: national consultation, your participation is important in developing high quality contracts.

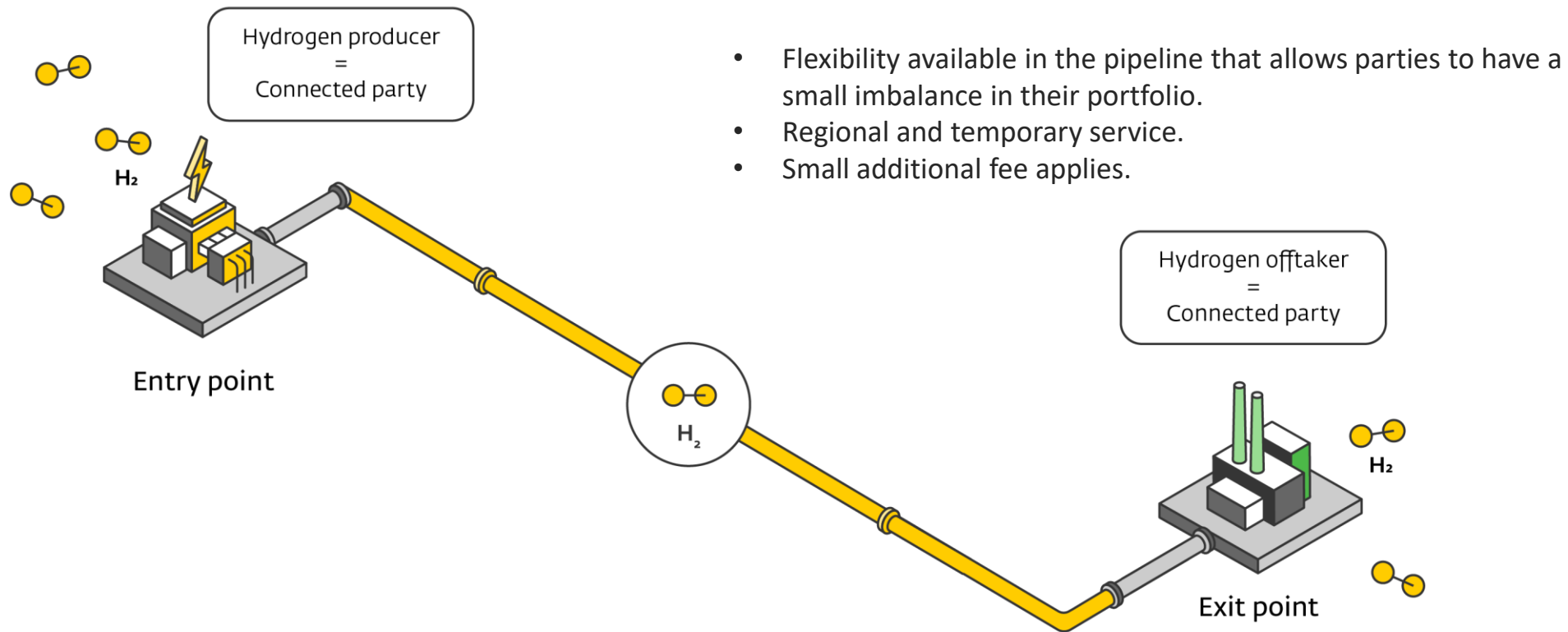


Transportation service

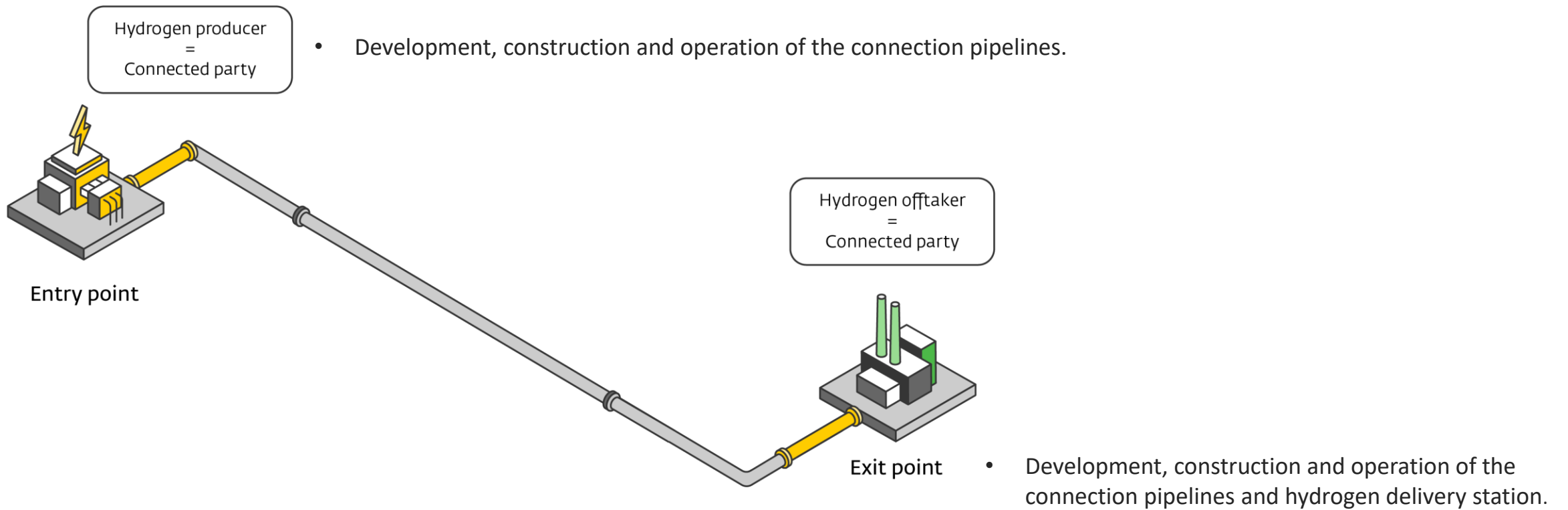


- A shipper contracts entry and exit capacity.
- Hourly balanced.
- **Capacity fee:** a fee is paid for the max. contracted capacity.
- A **postage stamp fee** applies: one uniform fee independent of the transportation distance.
- **Take-or-pay contract:** fee is independent of the usage.
- Indicative hydrogen specification: min. 98 mol/mol%: <https://www.hynetwork.nl/downloads>
- Minimum contract duration for launching customers is 10 years.

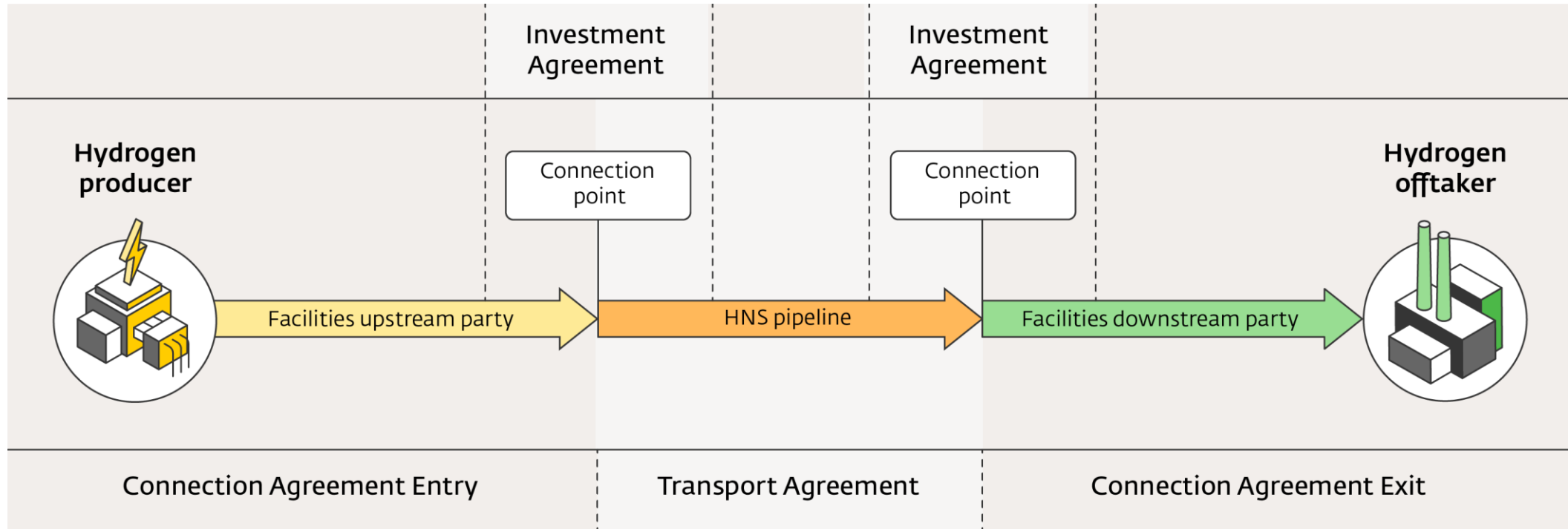
Pipeline Flexibility Service (PFS)



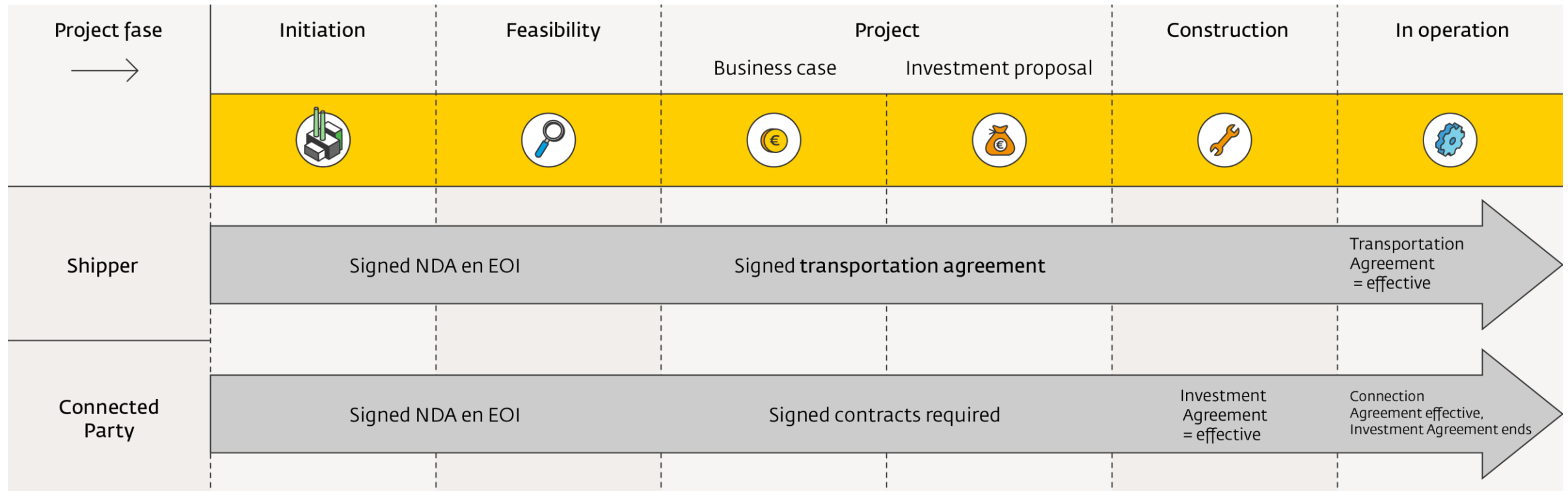
Connection Service



Contractual Framework



Business development process



Main assumptions of the contractual framework

- The hydrogen market is planned to be developed in phases. Contracts are being developed for the first phases.
- Contracts are pre-regulation.
- All contracts are in English
- The contracts are based on a model where the shipper books and uses the transport capacity.
- The Transportation & Connection Agreements are set up in a recognizable framework and based on natural gas contracts; taking into account significant difference between the fully developed natural gas system and a hydrogen system which is fully in development.



Key differences with natural gas

The natural gas contractual model was used as a point of reference, but there are substantial differences that also impact the contracts.

Key differences include:

- No control measures.
- Operations has more unknowns.
- Impact of incidents can be much higher.

These differences have impact on the liability framework and operation guidelines to ensure a well-functioning system.

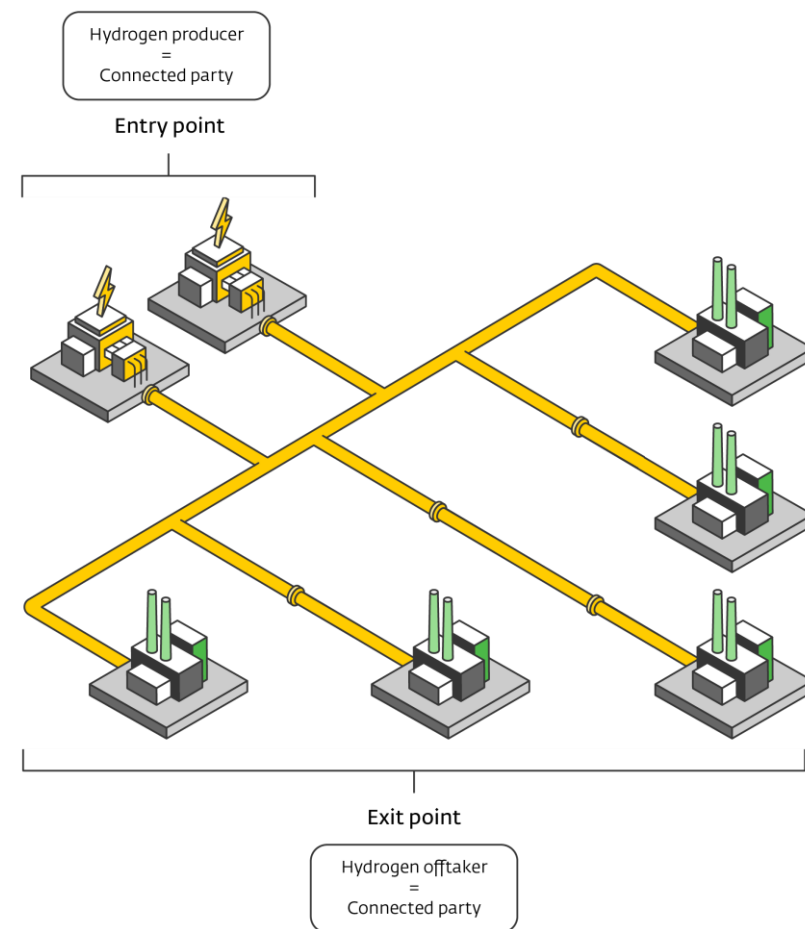
Example case – feed in off spec hydrogen

What could happen?

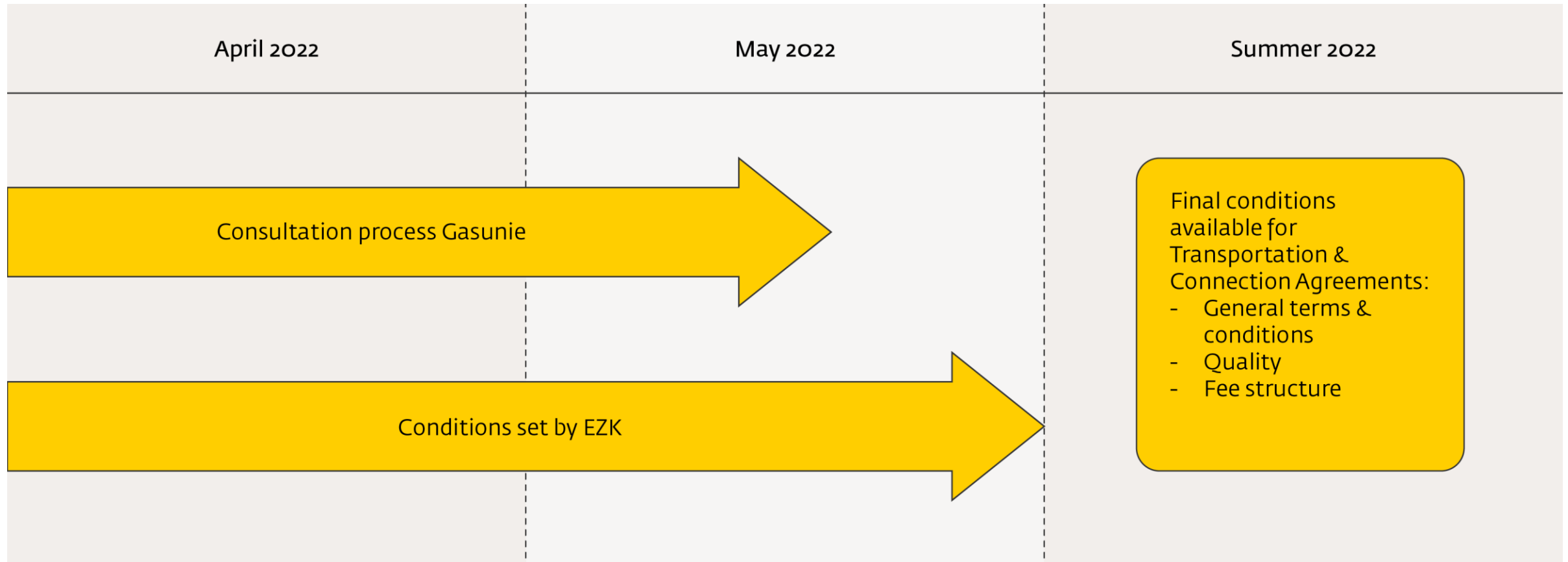
- The transportation system is unavailable.
- Cushion gas and Customer gas has to be blown off and repurchased.
- Off spec. gas could have damaged the facilities of the off-takers.

What may be the consequences?

- The measures for unplanned maintenance are applicable to shippers.
- Only direct damages can be claimed.
- Indirect damages cannot be claimed.
- Amounts are capped.
- Hynetwork Services claims direct damages.



Next steps



Questions & Answers



Closing

- Aim:
 - Participants are well informed to participate in consultation.
 - Increasing hydrogen interest from the market and other stakeholders, specific request for final conditions.
- Various development concerning the national hydrogen network.
- Call for action, please participate in consultation.
- Publication of a letter of the Ministry of Economics Affairs and Climate expected in May.
- Documents online available as per next week.
- Next webinar to be expected after the summer period.

Confidentiality

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