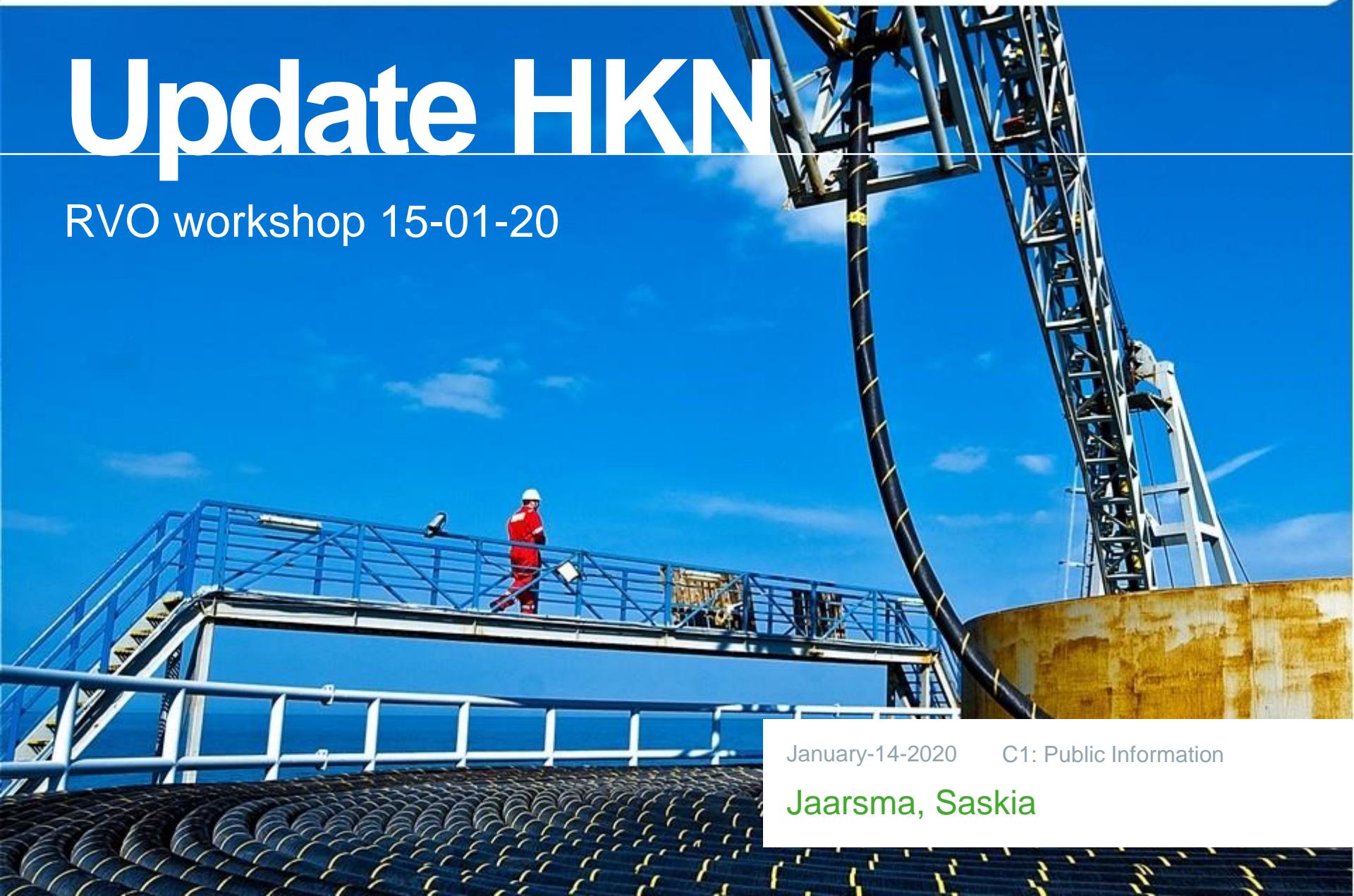


# Update HKN

RVO workshop 15-01-20



January-14-2020

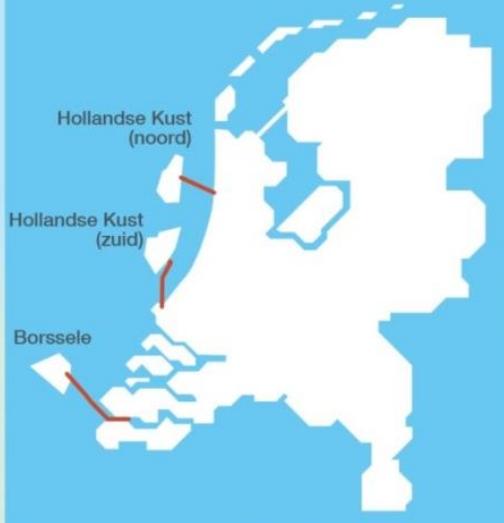
C1: Public Information

Jaarsma, Saskia

# Offshore grid step by step



## Programme 2023



- Energy Agreement 2013
- 5 x 700 MW = 3,5 GW
- Standardised concept
- AC connections

2019 700 MW Borssele Alpha

2020 700 MW Borssele Beta

2021 700 MW Hollandse Kust (zuid) Alpha

2022 700 MW Hollandse Kust (zuid) Beta

2023 700 MW Hollandse Kust (noord)

## Programme 2030



- Offshore wind energy roadmap 2030
- Additional 6,9 GW
- 700 MW AC standard
- New 2000 MW HVDC for IJmuiden Ver
- Windconnector UK: study options

2024/25 1,4 GW Hollandse Kust (west) Alpha and (west) Beta

2026 0,7 GW Ten noorden van de Waddeneilanden

2027/29 4,0 GW IJmuiden Ver Alpha and Beta

## Long term vision until 2050



- Paris Climate Agreement
- Internationally coordinated
- Large scale windfarms
- Location: depth and wind
- Hub & Spoke

# Offshore development until 2030

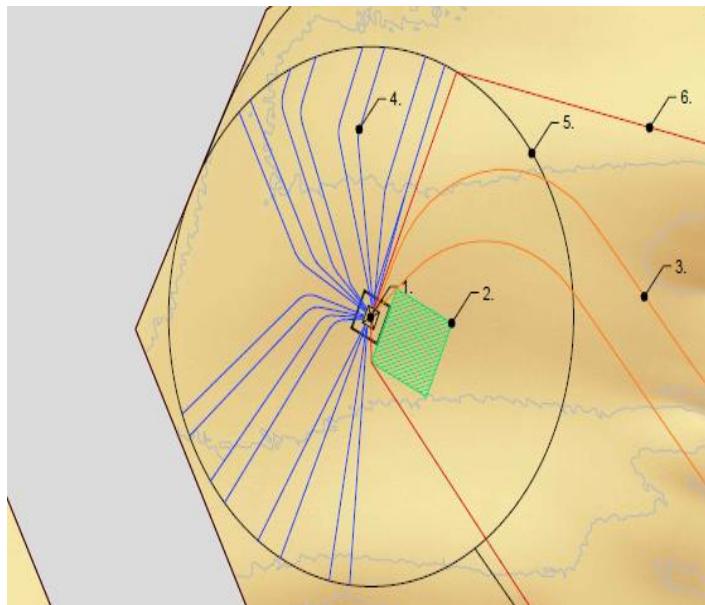
| Year        | Capacity | Area                              |
|-------------|----------|-----------------------------------|
| 2019        | 700 MW   | Borssele Alpha                    |
| 2020        | 700 MW   | Borssele Beta                     |
| 2021        | 700 MW   | Hollandse Kust (zuid) Alpha       |
| 2022        | 700 MW   | Hollandse Kust (zuid) Beta        |
| 2023        | 700 MW   | Hollandse Kust (noord)            |
| 2024 / 2025 | 1,400 MW | Hollandse Kust (west)             |
| 2026        | 700 MW   | Ten noorden van de Waddeneilanden |
| 2027 / 2030 | 4,000 MW | IJmuiden Ver                      |



# Hollandse Kust (noord)



- HKN & HKWa combined projects
- Cable crossings OWF & TenneT
- Possibility of a first project for an offshore connection for offshore electricity consumption (electrification of an offshore gas platform)
- Beach landing 220 kV cables:  
Plan to leave wreck in-situ.





# Wreck Investigation



Afbeelding 17. Foto van een dekluik

Afbeelding 18. De verzamelde resten in de afvoercontainer



# Safety Moment

## UXO landstation HKN/HKWa

### Introduction

On Friday afternoon the 19<sup>th</sup> of July 2019 a UXO (Unexploded Ordnance) was discovered during tree root cuttings on the future landstation area HKN/HKWa near Wijk aan Zee.

### Immediate actions

Work was stopped immediately and the area was cleared of personnel by the contractor. The contractor notified the TenneT project team and adjacent stakeholders

TenneT project UXO experts identified the object as an anti-tank mine, likely from World War II.

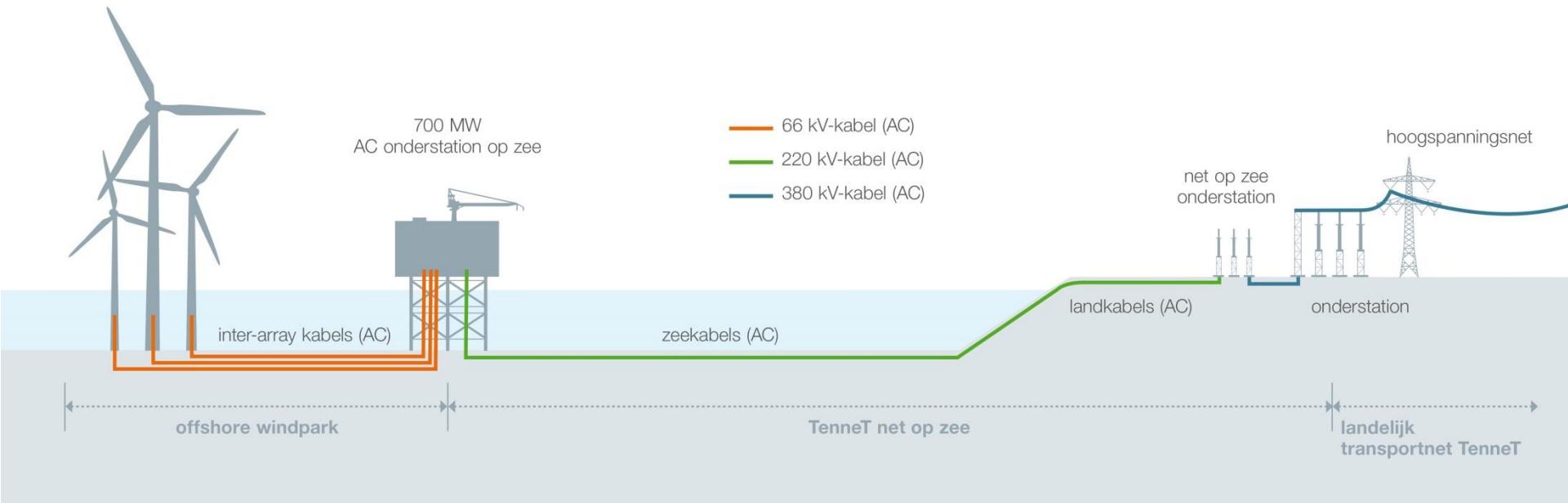
Emergency services were called to the scene and in the late afternoon the explosive was detonated in site by the experts of the EOD (explosieve opruimingsdienst)

### Evaluation

During project preparation, site investigation was done, the area in which the UXO was discovered was identified as not suspected for UXO's. This was based on studies and field research by our explosives detection contractor.

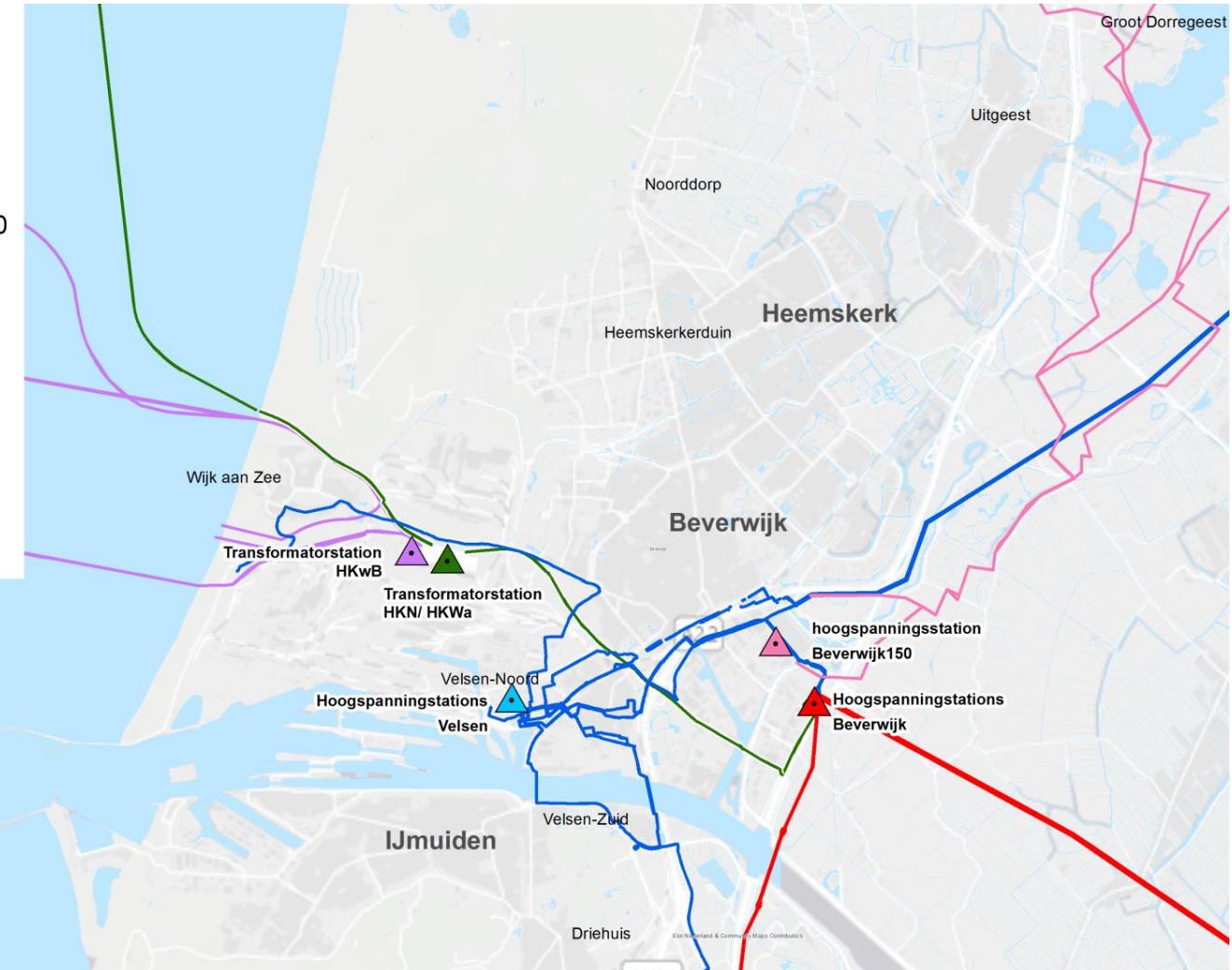
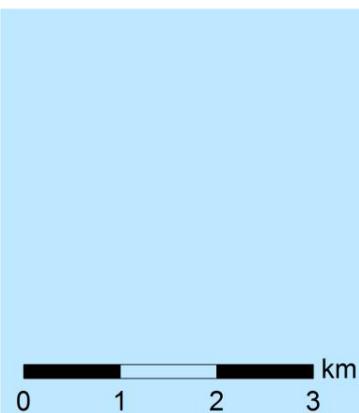


# 700 MW AC Offshore grid system



# Waar werkt TenneT aan in regio IJmond?

- ▲ Hoogspanningstations Beverwijk
  - ▲ Hoogspanningstations Velsen
  - ▲ Transformatorstation HKN/ HKWa
  - ▲ Transformatorstation HKwB
  - ▲ hoogspanningsstation Beverwijk150
  - In onderzoek Beverwijk Oterleek
  - In onderzoek HKwB
  - Vergund HKN/HKwA
- Bestaande Hoogspanning
- middenspanning
- 150 kV
- 380 kV





Ludiek protest tegen gebrom van gepland transformatorstation in Wijk aan Zee

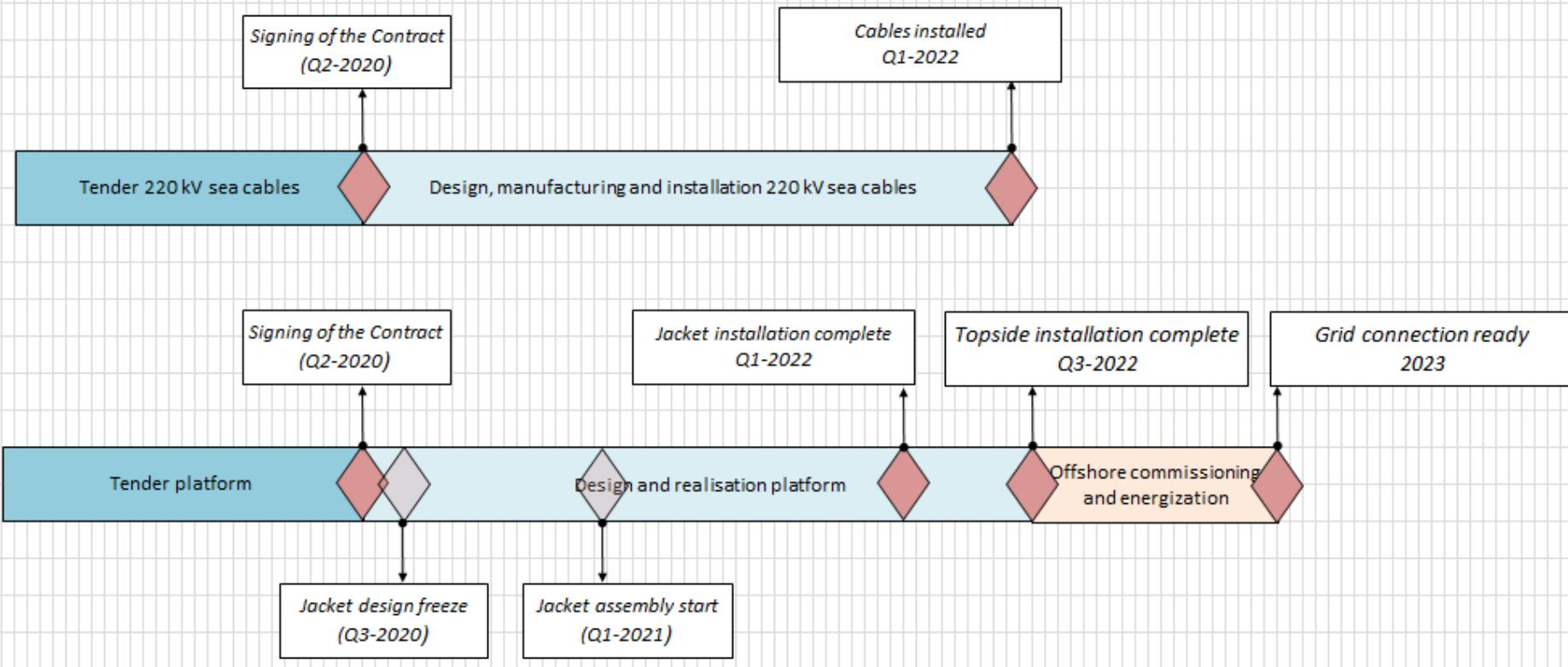
DORP HEEFT VREES VOOR BROMTOON  
Wijk aan Zee



# Omgevingscontext project HKN/HKW

- Beverwijk e.o is een regio van harde werkers en nuchtere Noord Hollanders
- Generaties bewoners werkten bij de grote industriële werkgevers van de regio (Tata Steel, Schiphol, Zeehaven).
- Traditionele symbiose tussen omgeving en industrie is laatste tijd veranderd. Van betrouwbare werkgevers in ongezonde, overlast gevende buren.
- Regio en bedrijven zien kansen om één van de koplopers te worden in de energietransitie.
- Bewoners zien nog meer overlast en hinder op zich af komen: toenemend vliegverkeer, grafietregens, verbreden zeesluizen en versterking zeewering.
- Ook de maatschappij als geheel is gewijzigd, want al is controversie bij grote (infra)projecten van alle tijden, een aantal trends versterkt elkaar in het vergroten van tegenstellingen.
- Landelijke onderwerpen als CO<sub>2</sub>/ NO<sub>x</sub>, laag frequent geluid, straling door magneetvelden en natuurcompensatie spelen ook hier een rol.

# HKN TenneT tender planning



A very tight planning concerning design interfaces between OWF and TenneT / HKN platform contractor.



# Overview model agreements

- New website : <https://offshore-documents.tennet.eu/nl/>
- Revision of Dutch Codes leads to changed referencing to article numbers in Grid Code
- Introduction of a separate contact list
  - instead of contact details in the Agreement and Annexes
- Agreements in the Dutch language and for information in the English language
- Annexes in the English language



**Questions?**  
[netopzee@tennet.eu](mailto:netopzee@tennet.eu)

# Disclaimer

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