

The sustainable offshore grid

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A moment for safety

Together we provide a safe working environment. We learn from mistakes and sharing ideas, concerns and asking questions are a matter of course.

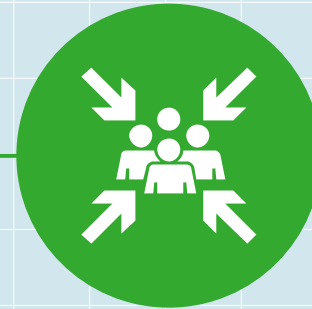
We also draw attention to the following safety measures in case of evacuation of the premises



Follow the escape route as indicated



Use the stairs instead of the lift



Go to the assembly point



Follow the instructions of the in-company emergency responder

Agenda

CSR strategy

Implementation

For discussion

- TenneT Offshore introduction
- Corporate CSR strategy
- Drivers

- Current projects
- 2GW program
- Incentives

- Q&A

TenneT offshore at a glance

Current offshore transmission capacity
(Germany and the Netherlands)

9,932 MW

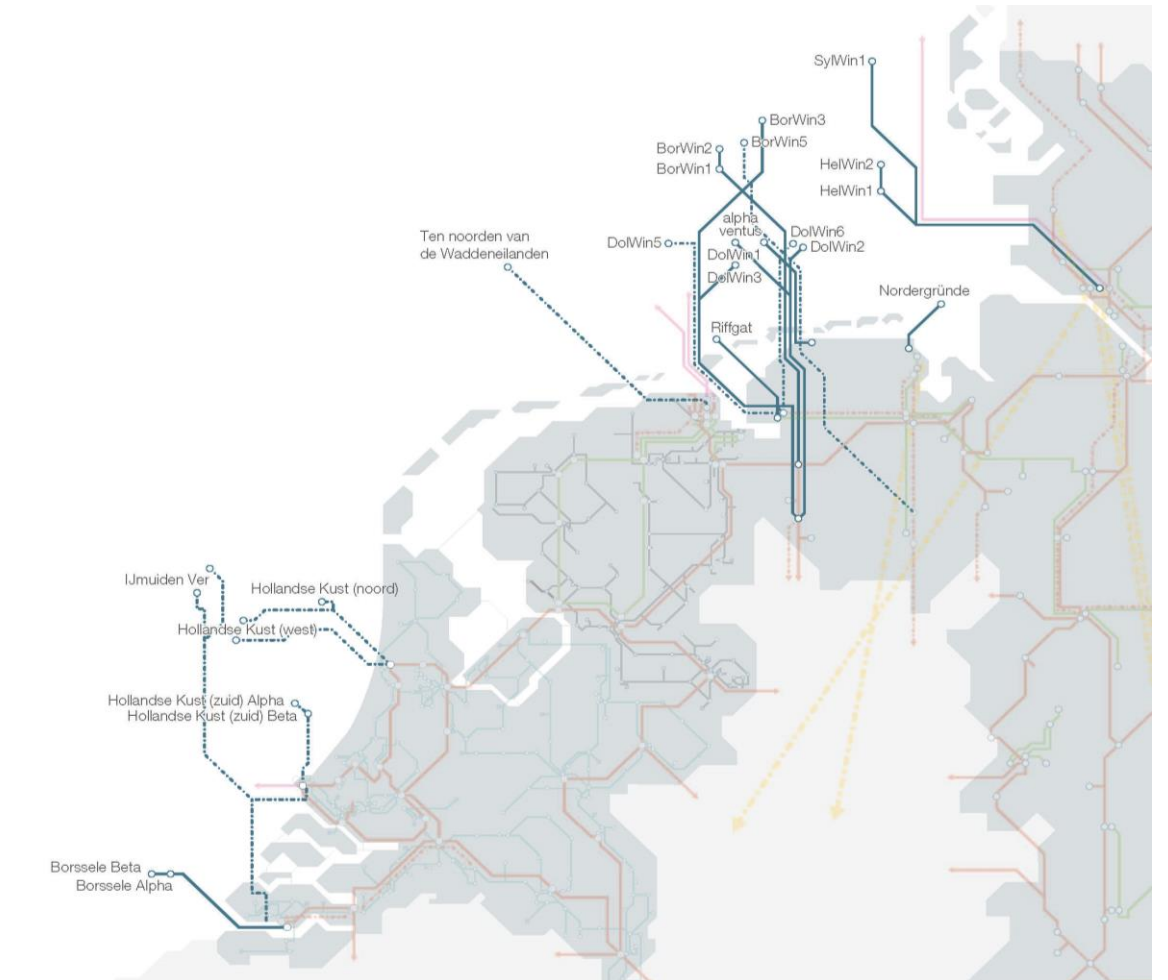
4
interconnectors

16 offshore
grid connections

29 TWh
transmission of
offshore wind energy

total cable length
~ **3,700 km**

Length up to
250 km
per connection



TenneT projects in Germany and The Netherlands



alpha ventus – 62 MW – AC
Riffgat – 113 MW – AC
Nordergründe – 111 MW – AC



SylWin1 – 864 MW – DC
HelWin1 – 576 MW – DC
HelWin2 – 690 MW – DC



DolWin1 – 800 MW – DC
DolWin2 – 916 MW – DC
DolWin3 – 900 MW – DC
DolWin5 – 900 MW – DC
DolWin6 – 900 MW – DC



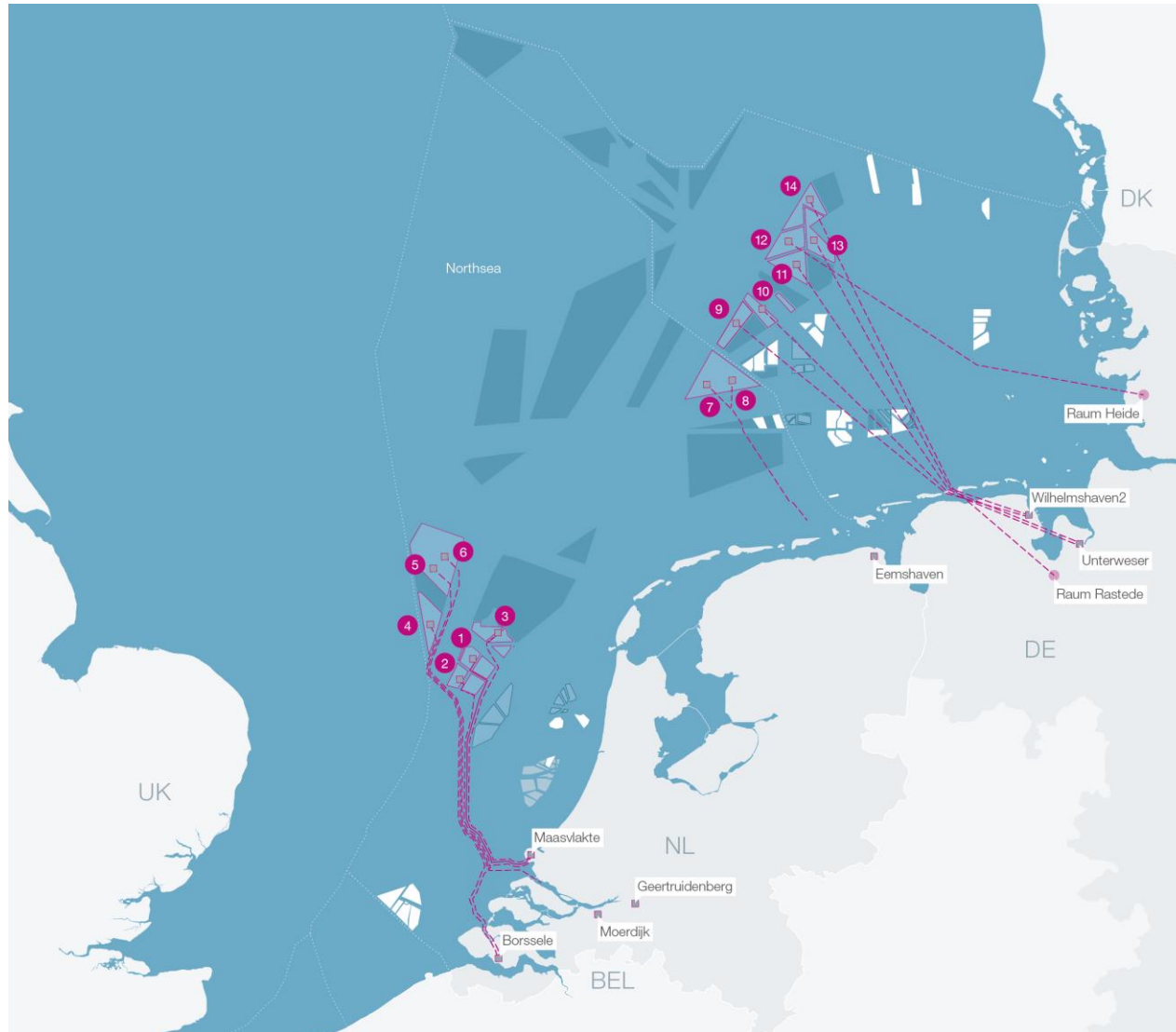
BorWin1 – 400 MW – DC
BorWin2 – 800 MW – DC
BorWin3 – 900 MW – DC
BorWin5 – 900 MW – DC



BorWin Beta – 700 MW – AC
Borssele Alpha – 700 MW – AC
Borssele Beta – 700 MW – AC
Hollandse Kust (zuid) Alpha – 700 MW – AC
Hollandse Kust (zuid) Beta – 700 MW – AC
Hollandse Kust (noord) – 700 MW – AC
Hollandse Kust (west) Alpha – 700 MW – AC
Hollandse Kust (west) Beta – 700 MW – AC
Hollandse Kust (wet) Gamma – 700 MW – AC
Ten noorden v.d.Wadden – 700 MW – AC



More to come: 2GW Grid connection systems



TenneT's 2 GW connections (as at November 2022)

offshore projects

- route
- - - route to be determined
- search area onshore converter

In The Netherlands Year of commissioning

- | | | |
|--|--------------------|------|
| 1 | Ijmuiden Ver Beta | 2028 |
| 2 | Ijmuiden Ver Alpha | 2029 |
| 3 | Ijmuiden Ver Gamma | 2029 |
| 4 | Nederwiek 1 | 2030 |
| 5 | Nederwiek 2 | 2030 |
| 6 | Nederwiek 3 | 2031 |
| 7 | Doordewind 1 | 2031 |
| 8 | Doordewind 2 | 2031 |

In Germany

- | | | |
|---|--------------------|------|
| 9 | NOR-9-2 (BalWin3) | 2029 |
| 10 | NOR-9-3 (BalWin4) | 2029 |
| 11 | NOR-12-1 (LanWin1) | 2030 |
| 12 | NOR-12-2 (LanWin2) | 2030 |
| 13 | NOR-11-2 (LanWin4) | 2031 |
| 14 | NOR-13-1 (LanWin5) | 2031 |

offshore wind farms (OWF)

- in operation
- under construction
- planned
- potential OWF areas

converter station

exclusive economic area

federal state border

Our CSR/Sustainability Strategy

We strive to enhance the energy transition in a sustainable manner, leading the way in maximizing our societal contribution and minimizing our impact as a transmission system operator (“TSO”)

1

We contribute to society, creating maximum impact for **people** working for us and impacted by us



2

We commit to the environment, avoiding, minimizing and compensating our impact on the **planet**



3

We strive for a profit which provides an adequate **return** on capital and an affordable cost of electricity supply for society






Our promise to people, planet and profit




Ambition area	Description	Target
Society	We address our stakeholders' concerns by living up to our values, i.e. being responsible, engaged and connected	To be developed 
Diversity	We recognize diversity as a key contributor to our success as a high-performing organisation	In 2021 Female inflow 30% Non Dutch and non German inflow 10% 
Safety	Safety is our number one priority in every activity that we undertake	In 2023 TRIR < 3.74 



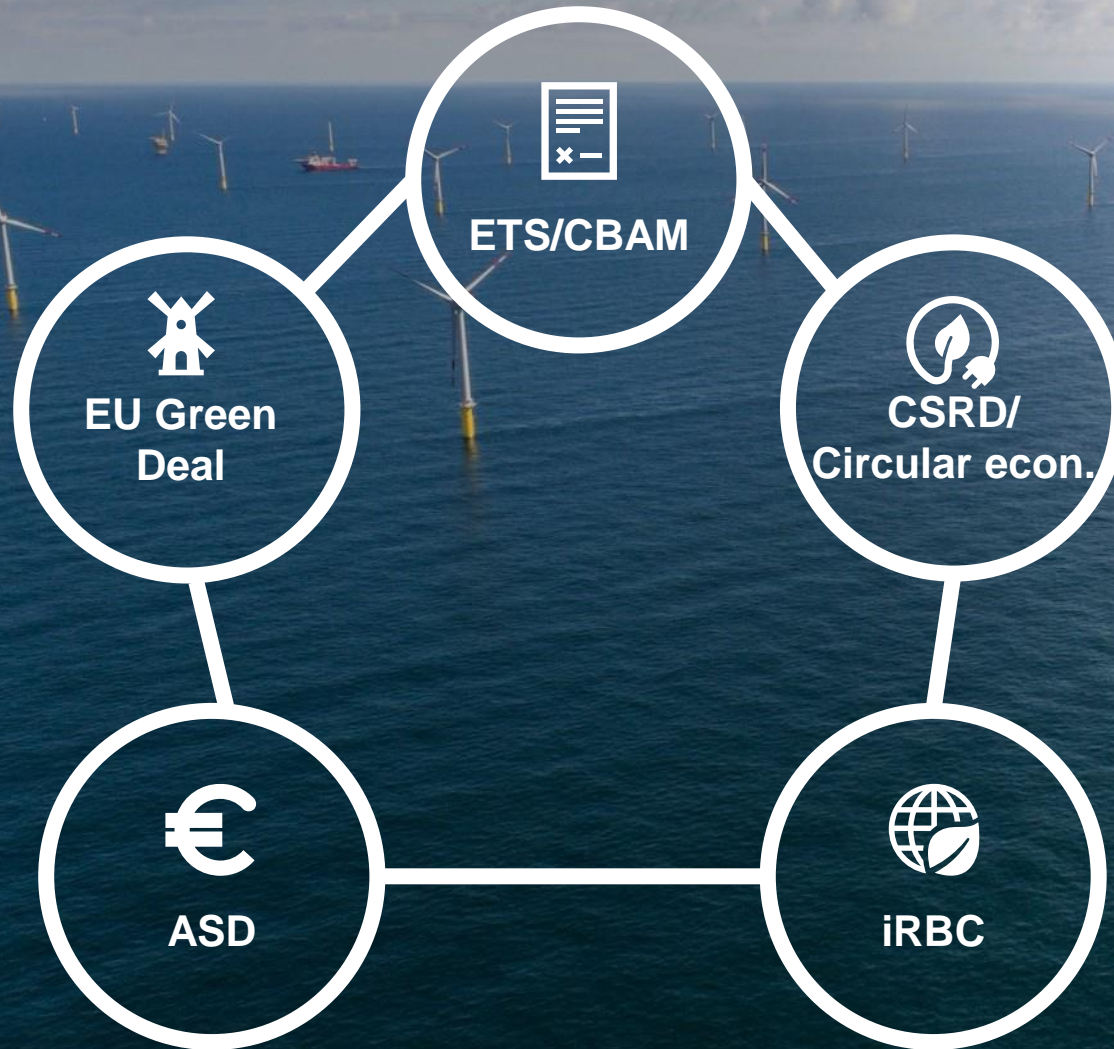
Ambition area	Description	Target
Circular	Circularity is minimizing use of scarce materials, reusing materials and reducing waste in our operations	In 2025 25% less impact on virgin copper use and non-recyclable waste 
Climate	Climate impact of our operations is our responsibility and we strive to reduce our impact	In 2025 climate neutral 
Nature	Our commitment to nature is to take our responsibility to minimise our impact and protect and improve local nature	In 2025 zero impact (net) on nature  



Ambition area	Description	Target
Profitability	Profitability and return on capital (how effective is <u>TenneT</u> in turning capital into profit) are important to remain attractive for capital providers in order to finance our business and anticipated growth	Return on capital \geq regulatory determined return on capital (KPIs: return on invested capital (ROIC) and return on equity) 

Drivers for CSR

National and international



- The **EU Green deal** is a package of policy initiatives, which aims to set the EU on the path to a green transition, with the ultimate goal of reaching climate neutrality by 2050.
- **ETS/CBAM**: price on the carbon emitted. ETS gives an EU internal pricing. CBAM puts a carbon levy on carbon intensive goods that are entering the EU, to encourage cleaner industrial production in non-EU countries.
- **Circular economy action plan / CSRD**: The action plan announces initiatives along the entire life cycle of products. Its aim is to ensure that waste is prevented and the resources used are kept in the EU economy for as long as possible. The CSRD defines sustainability due diligence as the process by which undertakings identify, prevent, mitigate, and account for how they address the actual and potential negative impacts on the environment and people connected with their business. (German Supply Chain Due Diligence Act (LkSG))
- **International Responsible Business Conduct**: Guidelines for enterprises to reduce negative consequences of their actions have been laid down internationally in the OECD Guidelines for Multinational Enterprises and the United Nations' Guiding Principles on Business and Human Rights (UNGPs). According to these guidelines, enterprises are expected to identify, prevent, and address the actual and potential adverse impact of their activities and to account for how they deal with the risks they have identified
- **Aandeelhoudersbeleid Staatsdeelnemingen** by Ministry of Finance. Revised policy with explicit focus on CSR: The State expects its State-owned enterprises (SOEs) to comply *generously* with Dutch policies, laws and regulations. This applies in particular to policies and laws and regulations on the themes of climate and environment, safe working environment (including broad diversity), human rights and financial transparency & anti-corruption. For example, the state expects all participations to *ambitiously* commit to the Paris Agreement. The state asks participations to pay attention to these themes and show ambition, insofar as they are relevant and touch upon their business activities.

Development framework for offshore wind energy by MinEAC

Mandate from Dutch Government – ministry of economic affairs

As much as reasonably possible taking into account:

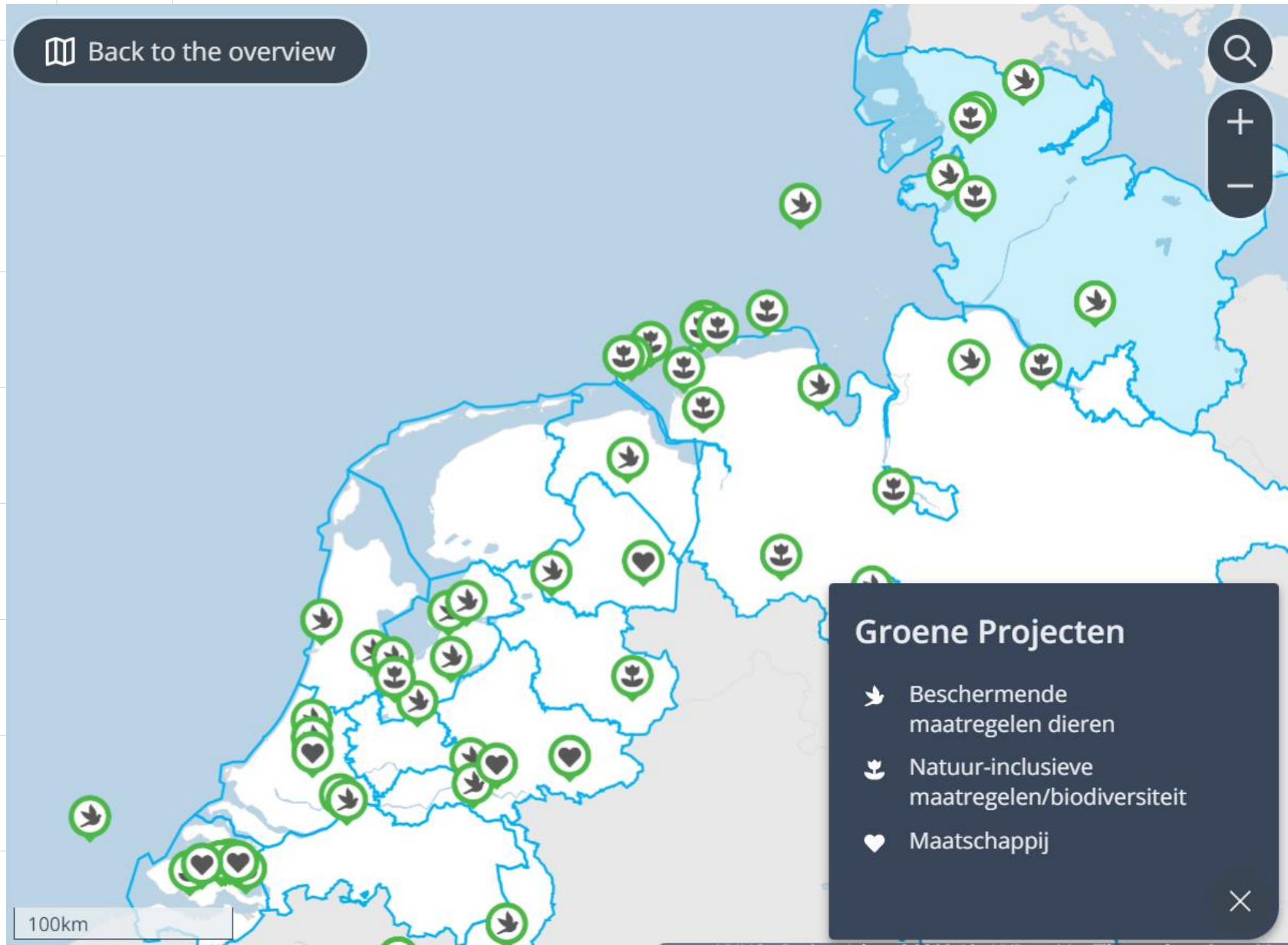
- Technical feasibility
- Risk
- Costs (comparable to park developers)
- Project specific circumstances

Om invulling te geven aan de afspraak in het Klimaatakkoord voor het nemen van aanvullende bredere maatregelen om de staat van instandhouding van kwetsbare soorten, rekening houdend met hun biotopen, te verbeteren en negatieve effecten op de natuur (zoals de biodiversiteit) te verminderen, **ontwerpt en legt TenneT het net op zee voor zover dat redelijkerwijs mogelijk is natuur-inclusief aan.**

Deze maatregelen dienen in verhouding te staan tot de inspanningen die de vergunninghouders van de windparken treffen op grond van een inspanningsverplichting dan wel voorschrift in het betreffende kavelbesluit om het windpark zodanig te ontwerpen en te realiseren dat het windpark actief bijdraagt aan versterking van een gezonde zee en versterking van behoud en duurzaam gebruik van soorten en habitatten die van nature in Nederland voorkomen. **De toepassing van maatregelen wordt per project afgewogen op technische haalbaarheid, risico, kosten en project-specifieke omstandigheden (projectfase en locatie).**

[par. 3.11, versie najaar 2019]

What have we achieved so far in offshore projects?



- Several examples of nature restoration onshore (G+NL)
- Increase of lobster population to compensate for the projects Butendiek, SylWin1, and Dol-Win1.
- Eco-friendly cable crossings pilot HKZ.
- Fish hotels and artificial reefs in HKN.
- ECI / CO2 calculation models in NL+G offshore tenders

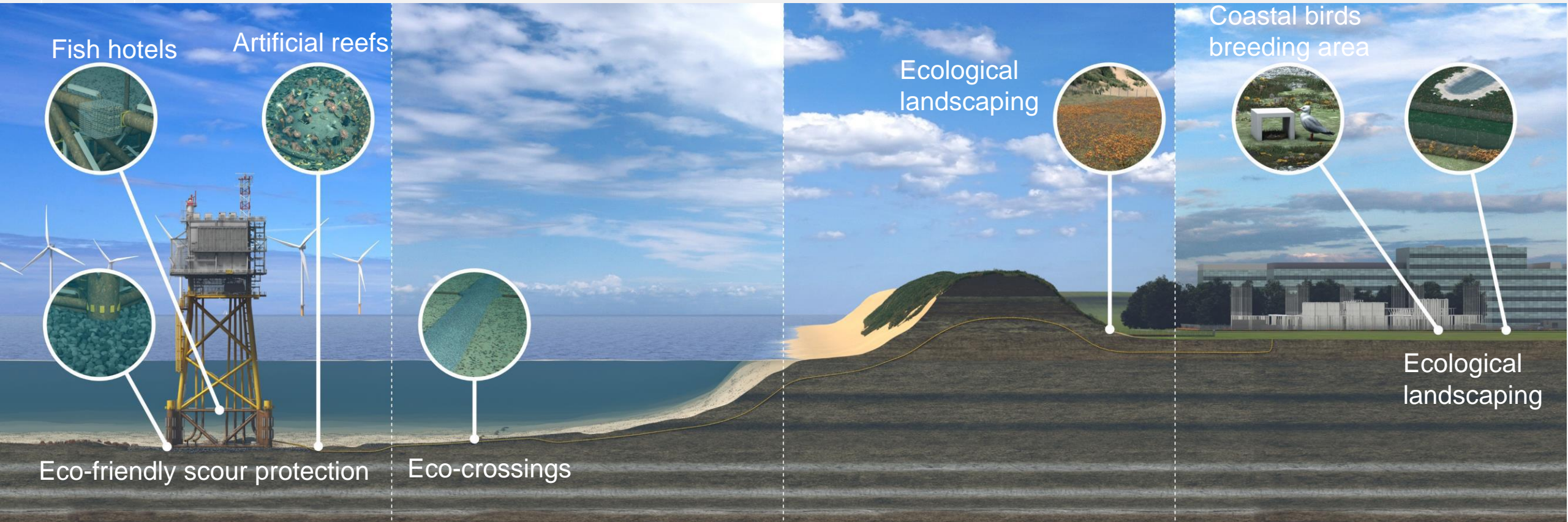
Link: [Project Atlas | Groene Projecten](#)

Tendering process Changing over time



- **MEAT criteria:** gaining innovative ideas from the market
- **Basic design:** including our NID in the design, as part of the base case
- **2GW Portfolio & Partnership Agreements** – 14 platforms, contracts for almost 20 year, offering opportunity for longer term improvements

Standardised set of NID Measures



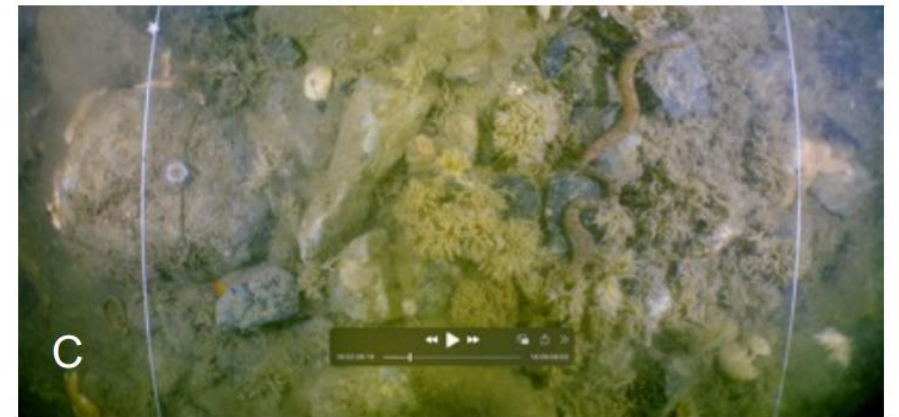
Nature inclusive options so far

Eco-crossings

Eco crossings

Installed summer 2021

Monitored summer 2022



Nature inclusive
options so far

Fish hotels

Fish hotels

Jacket Installed November 2021

Topside October 2022



Nature inclusive options so far

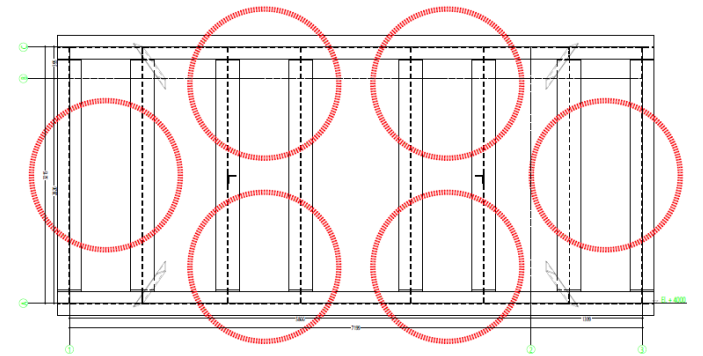
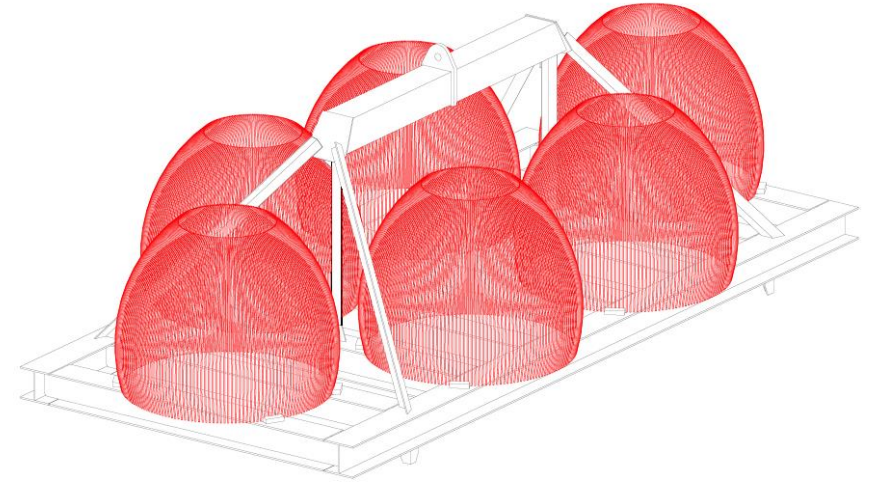
Artificial reefs

Artificial reefs

Placed Q1 2023

Designed on frame to allow easy placement

Using jack-up barge down time



Monitoring programme

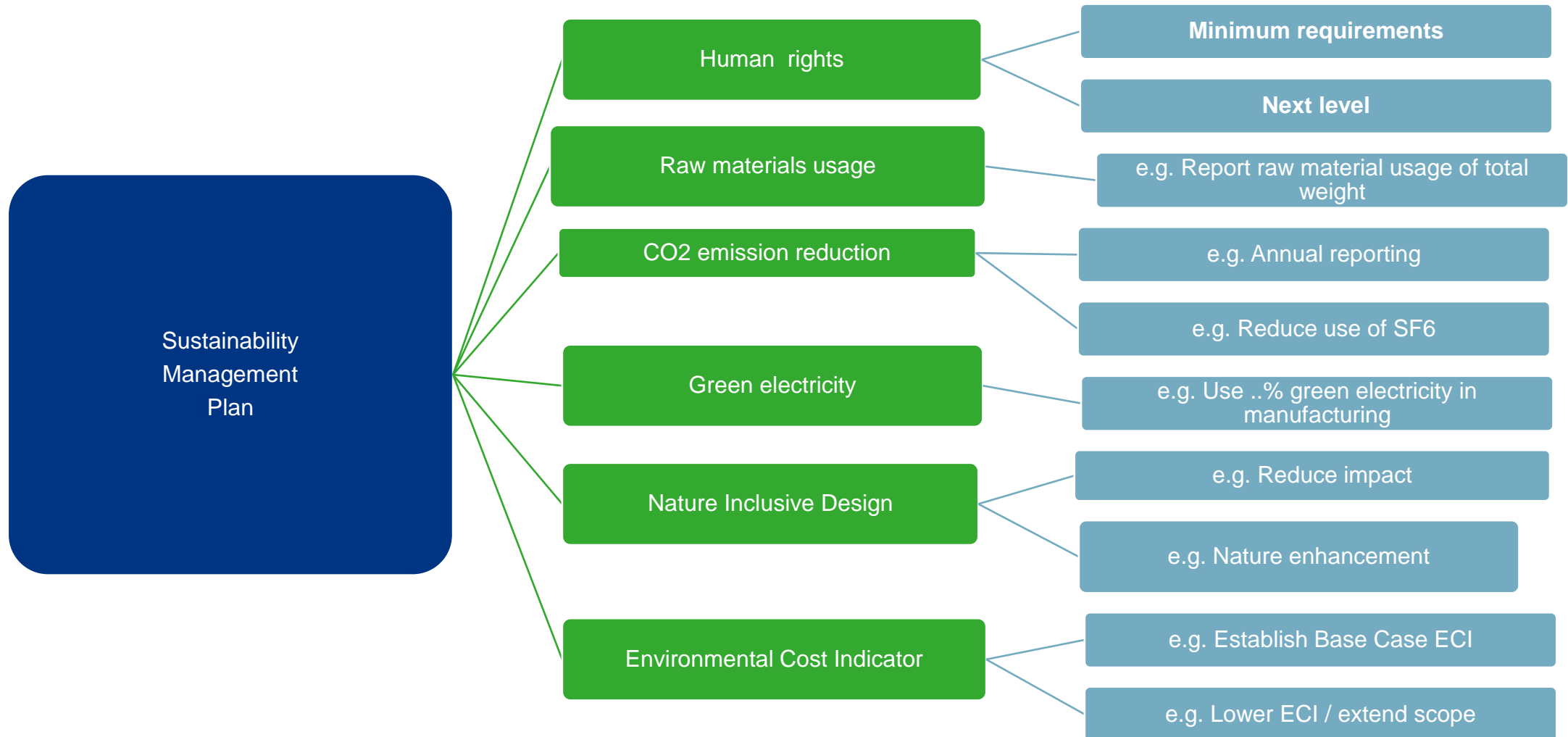
From single campaigns to a programme



- Cost reducing and quality enhancing
- Comparing data between NID's and others
- Link-up with scientific research
- When are we successful?

What we expect from our suppliers in 2GW program

Focus broadened from Nature to:



CSR baseline and incentives for improvement on longer term

Minimum requirements (baseline) on:

- Human Rights
- Circularity
- Climate
- Nature

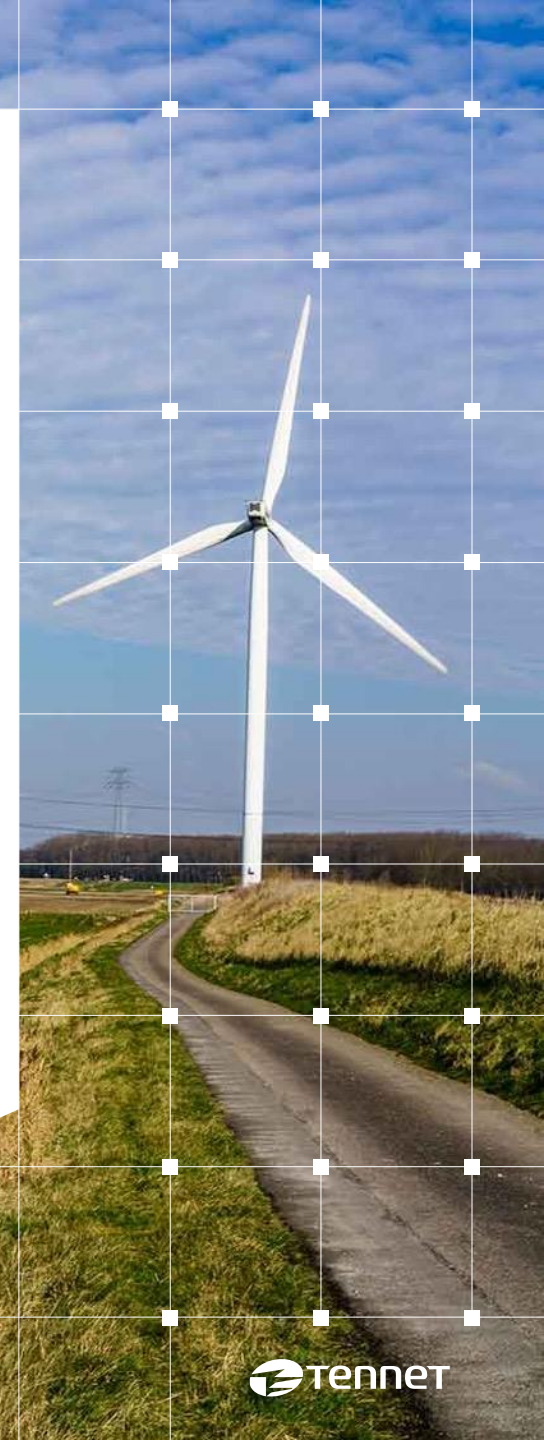
Incentivise sustainable action above minimum requirement level, e.g. :

- Human Rights: measures that significantly improve working conditions
- Circularity: use of recycled material above market standard
- Climate: significant improvements over time using the Environmental Cost Indicator
- Nature: site specific combined with standard requirements
- Gradual improvement in future call offs



TenneT is a leading European grid operator. We are committed to providing a secure and reliable supply of electricity 24 hours a day, 365 days a year, while helping to drive the energy transition in our pursuit of a brighter energy future – more sustainable, reliable and affordable than ever before. In our role as the first cross-border Transmission System Operator (TSO) we design, build, maintain and operate 23,900 km of high-voltage electricity grid in the Netherlands and large parts of Germany, and facilitate the European energy market through our 16 interconnectors to neighbouring countries. We are one of the largest investors in national and international onshore and offshore electricity grids, with a turnover of EUR 4.5 billion and a total asset value of EUR 27 billion. Every day our 5,700 employees take ownership, show courage and make and maintain connections to ensure that the supply and demand of electricity is balanced for over 42 million people.

Lighting the way ahead together.



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