

# Elektrische groei DOW Chemical Terneuzen

Multigeneration plan  
Op weg naar CO2 neutraal



**cigre**  
Nederland

12 april 2023

**More control in protection?  
Or more protection in control!**

Michel Mattheijssen



# Sustainability targets

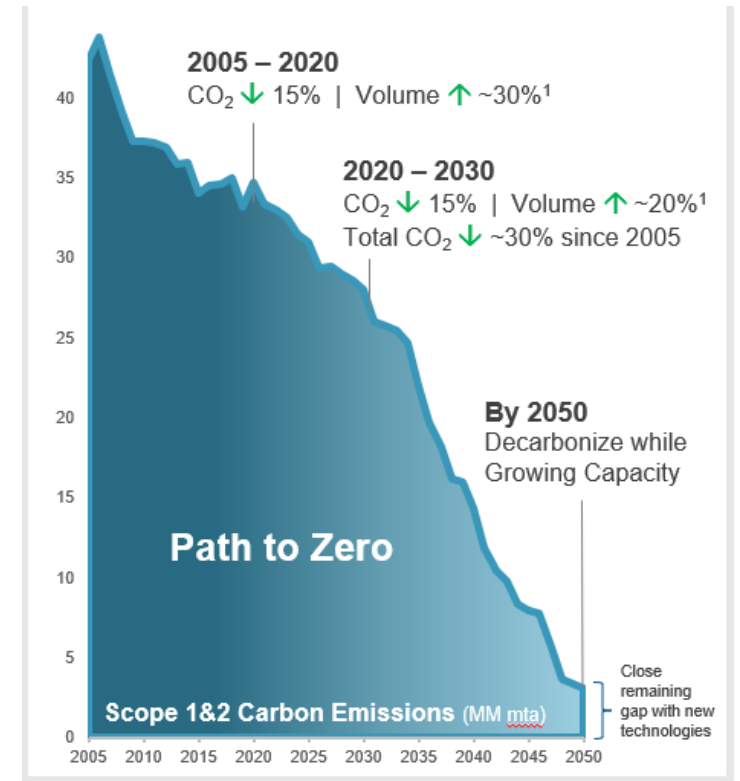


## **Protect the climate**

As part of our action plan to put us on a path to carbon neutrality by 2050, we are committed to implementing and advancing technologies to manufacture our products using less resources.

### **Our target**

By 2030, Dow will reduce its net annual carbon emissions by 5 million metric tons versus its 2020 baseline (15% reduction). By 2050, Dow intends to be carbon neutral (Scopes 1+2+3 plus product benefits).



# Terneuzen site

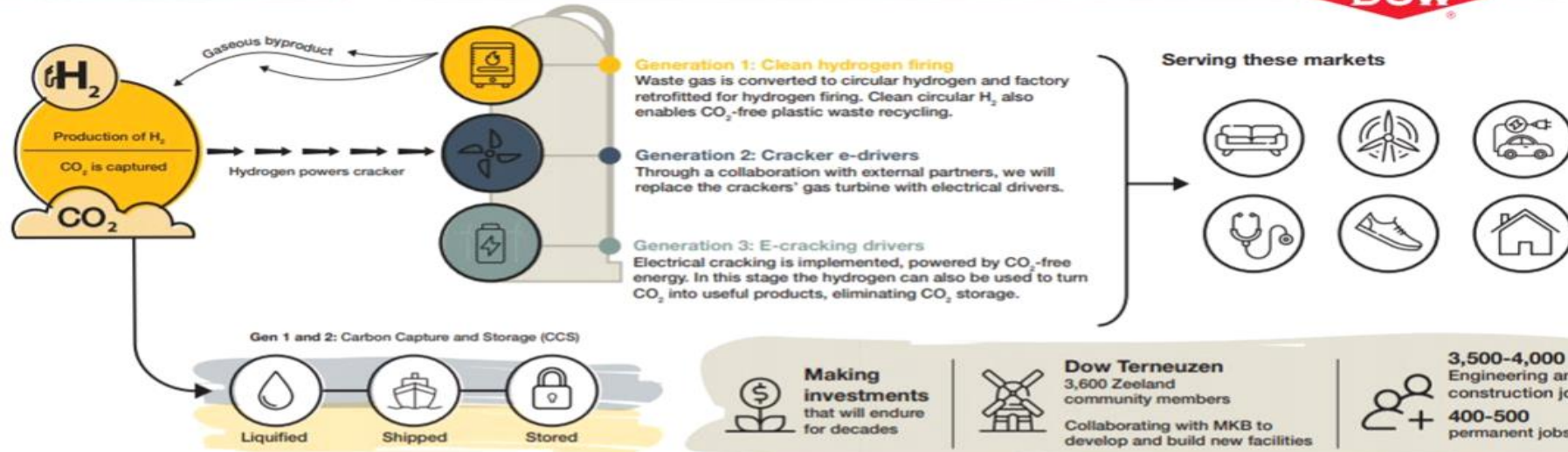


# Roadmap DOW ( [www.dowcircles.com](http://www.dowcircles.com) )



## Painting a Bright Future for the Netherlands

Roadmap to Zero



**35%** CO<sub>2</sub> reduction by 2028

### Gen 1: 2028

Reduced CO<sub>2</sub> by **1.4 million tons**  
the equivalent of 300,000 cars

**7%** of the Netherlands' industry 2030 target

Steam cracking with clean circular H<sub>2</sub>

**42.5%** CO<sub>2</sub> reduction by 2030

### Gen 2: 2030

Gas turbines replaced by **Electrical drivers**

**0.3 million tons** Additional CO<sub>2</sub> reduction from cracker turbines and ethylene oxide (EO)

**95%** CO<sub>2</sub> reduction by 2050

### Gen 3: 2030-2050

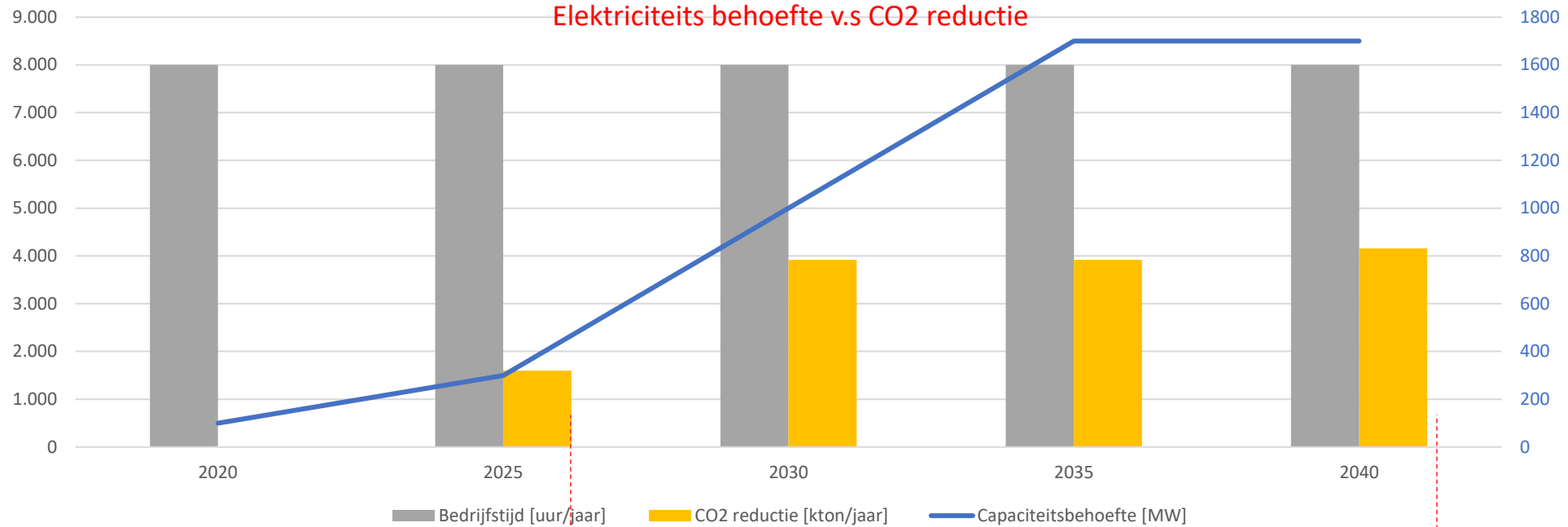
**E-cracking** powered by circular clean hydrogen and renewables

Advancements in Gen 1 and Gen 2 deliver ...

Carbon neutral | Circular products | A biodiverse world | H<sub>2</sub> Feedstock | CO<sub>2</sub> Synthetic feedstock



# De elektrische impact van CO2 reductie



**Gen 1: 2028**

35% CO<sub>2</sub> reductie  
by 2028

Reduced CO<sub>2</sub> by 1.4 million tons  
the equivalent of 300,000 cars

7% of the Netherlands' industry 2030 target

Steam cracking with clean circular H<sub>2</sub>

**Gen 2: 2030**

42.5% CO<sub>2</sub> reductie  
by 2030

Gas turbines replaced by **Electrical drivers**

0.3 million tons Additional CO<sub>2</sub> reduction from cracker turbines and ethylene oxide (EO)

**Gen 3: 2030-2050**

95% CO<sub>2</sub> reductie  
by 2050

**E-cracking**  
powered by circular clean hydrogen and renewables

Advancements in Gen 1 and Gen 2 deliver ...

- Carbon neutral
- Circular products
- A bio-based world
- H<sub>2</sub> Feedback
- CO<sub>2</sub> Synthetic feedback

De extra behoefte aan [groene] elektrische energie

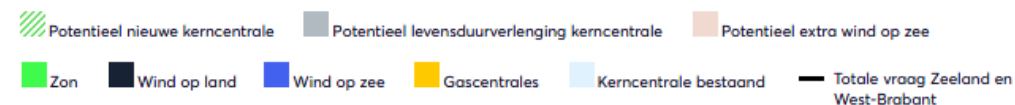
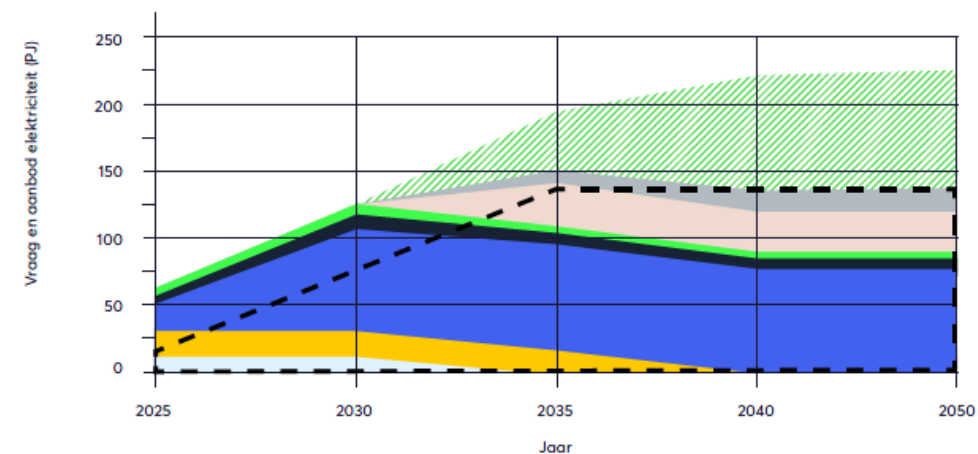
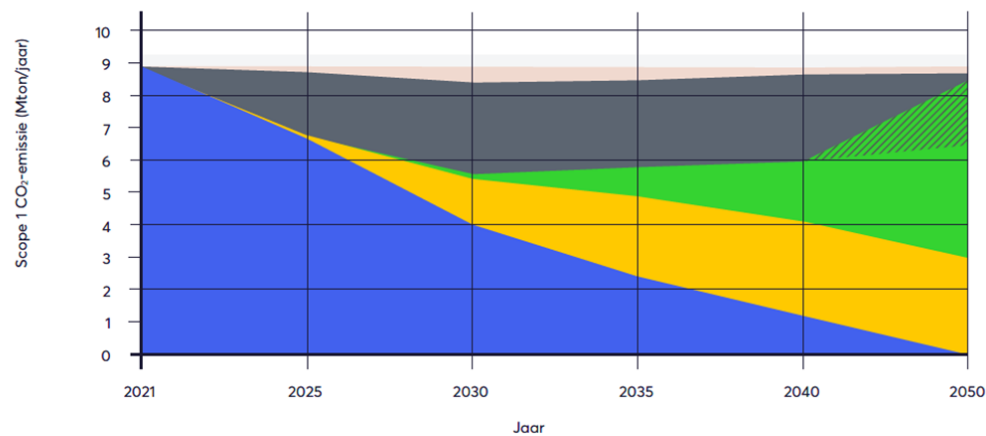


# Wat betekent dit in het algemeen



- Intern nieuwe infrastructuur om dit vermogen te kunnen transporteren [gen 1/2]
- TSO/DSO infrastructuur benodigheden voor [gen3]
- De balans in energie vraag versus beschikbaarheid [gen3]

## Schelde-Deltaregio Scope 1 Emissiereductie



# Infrastructuur generatie 1-2

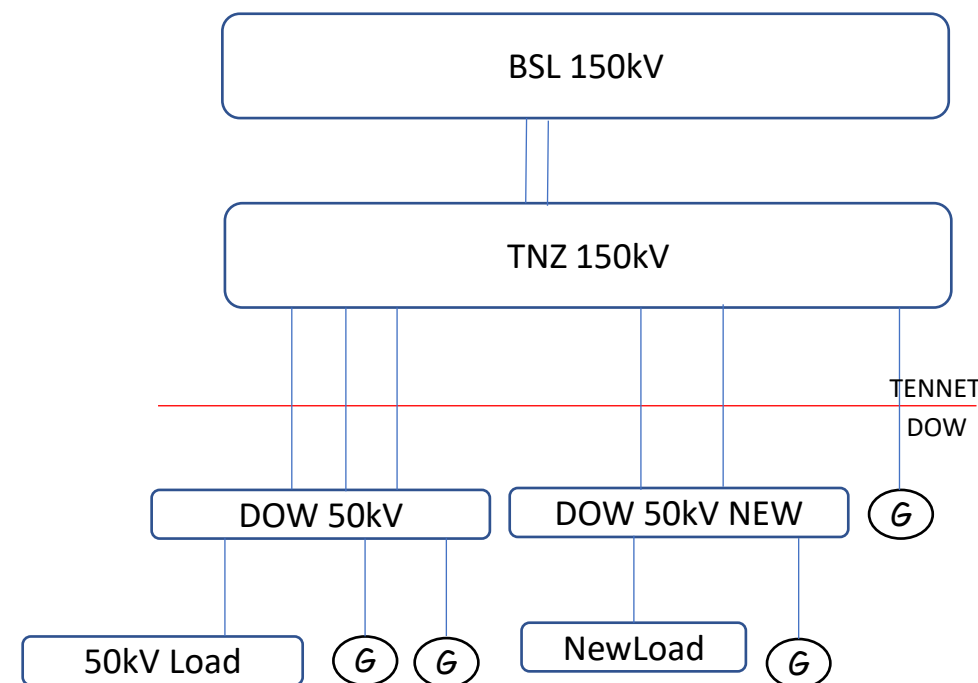


Verhoogde elektrische vraag productie waterstof en CCS:

- 150MW extra vermogen
  - Nieuwe 150KV aansluitingen
  - Nieuw 50kV substation
  - Generatie op nieuw substation

Uitdaging:

- Tijdslijn opleverdatums 2026-2028
- Beschikbaarheid resources
- Lange levertijden grote transformatoren, kabel en schakelinstallaties



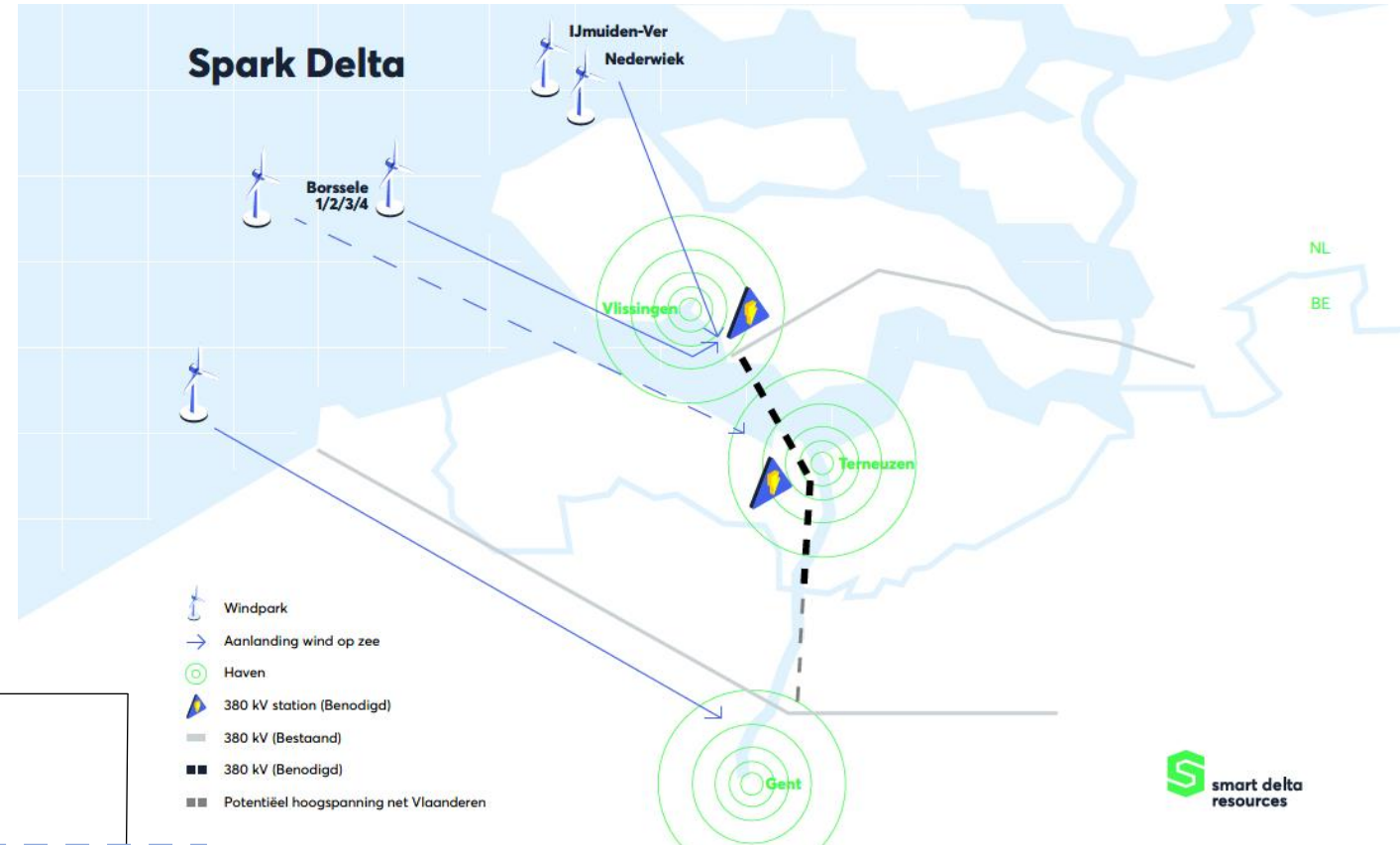
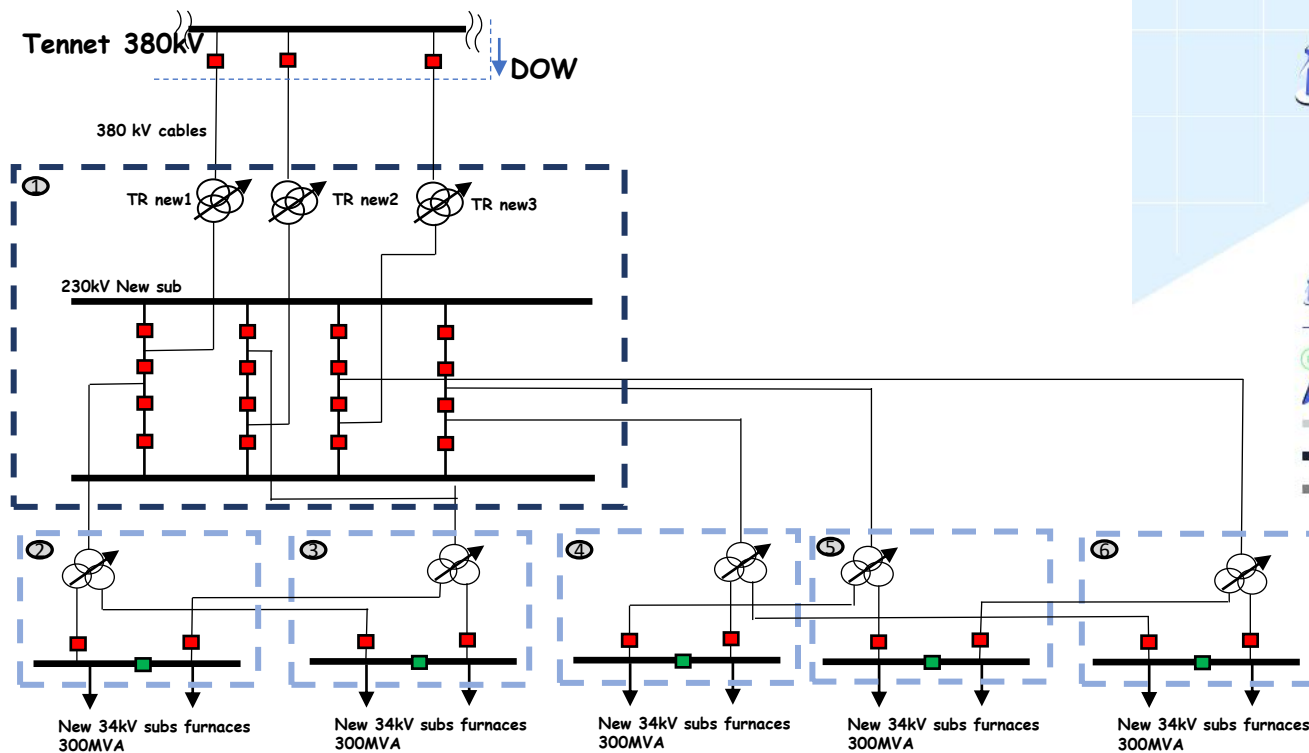
# Infrastructuur Generatie 3



Sterk toenemende vraag elektrisch Zeeuws-Vlaanderen:

- Industriële electrificatie
- Electrolizers voor waterstof

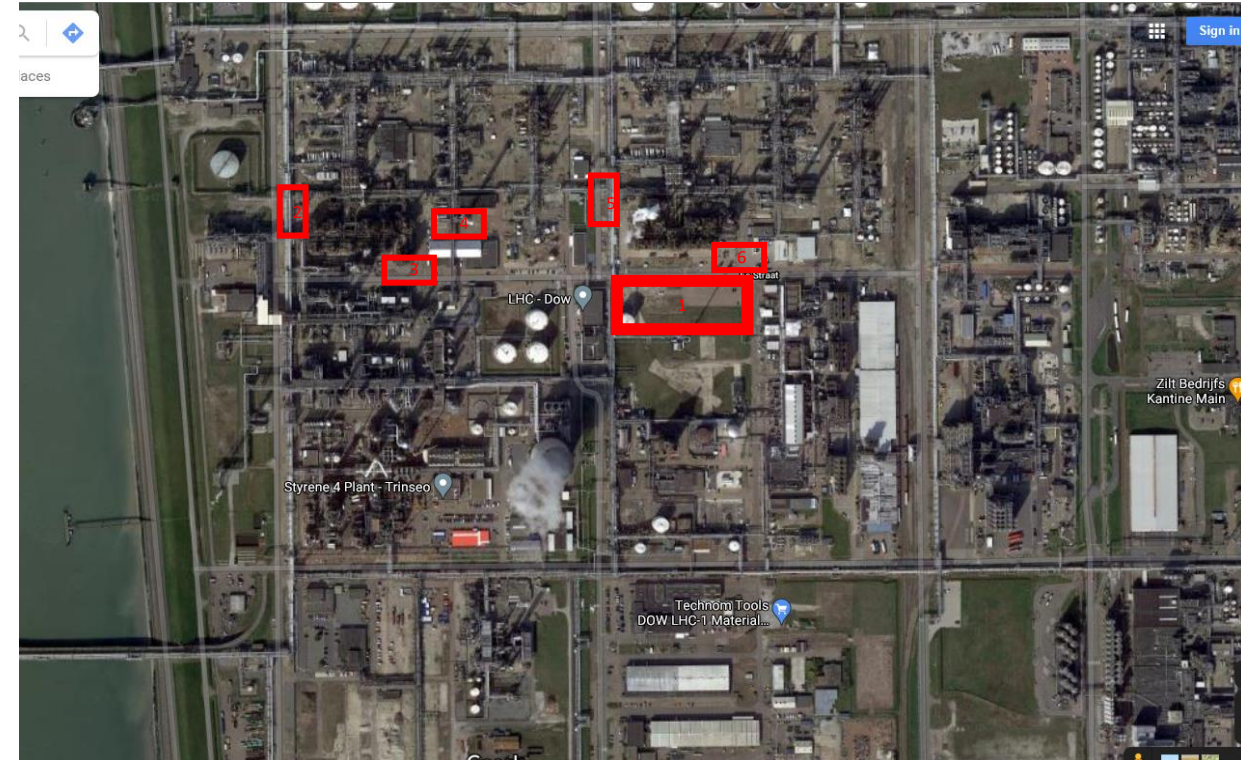
380kV TSO substation benodigd omdat de bestaande 150kV infrastructuur dan niet meer toereikend is.







- Nieuwe technology
- Beschikbaarheid van vereist vermogen
  - 24h/365 dagen
  - Doorlooptijd nieuw TSO substation
  - Vraag/aanbod elektriciteitsnet
- Nieuwe infrastructuur op een bestaand fabrieksterrein
  - Inpassing nieuwe subs mbt beschikbare ruimte
  - Kabel connecties tussen substations



**BEDANKT  
VOOR UW  
AANDACHT**

