



# ROADMAP 2030 – 2050 REINVENT AS A CLUSTER

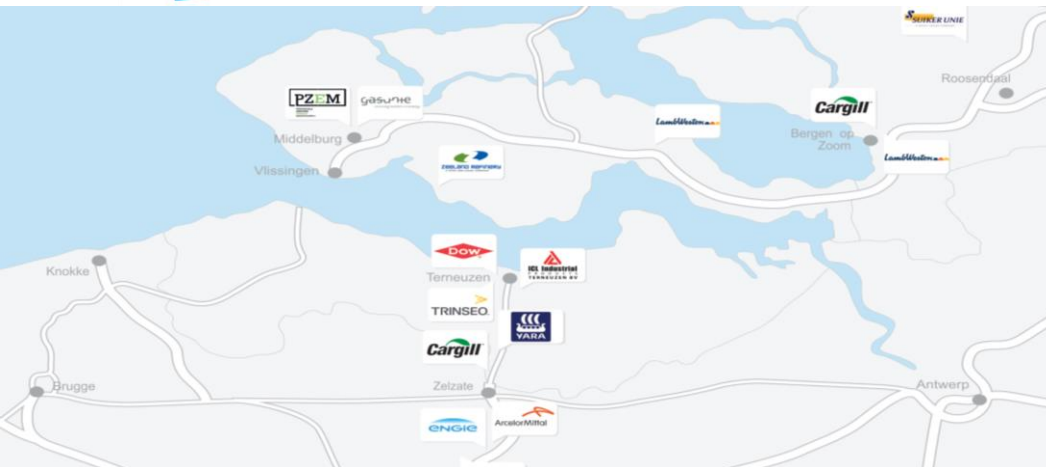
*03<sup>rd</sup> September*

# AGENDA

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- SDR
- Dow
- The roadmap & opportunities
- Barriers & Ask
- Q & A

# SDR, SMART DELTA RESOURCES: - GRENSVEREGEND & OVERSCHRIJDEND

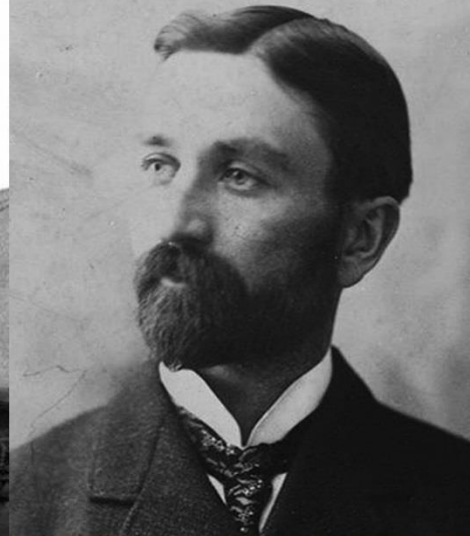
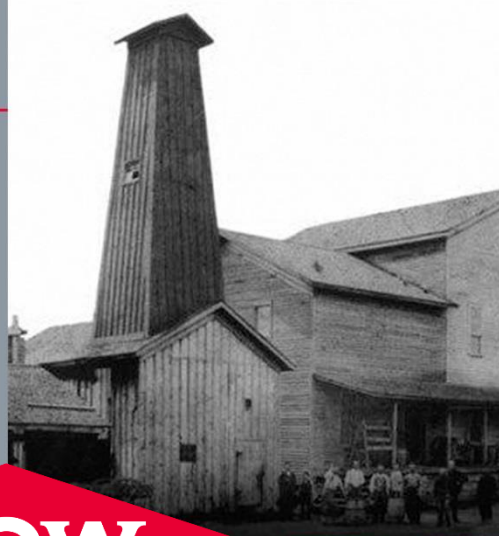


- 2 grootste haven zone na Rotterdam BE – NL
- Unique eco system & wereld spelers in **Staal, (Petro), Chemie en Agro**
- Unique gepositioneerd voor energy transitie – hergebruik grondstoffen -
- Grootste waterstof cluster in Benelux – 450 kt
- Potentieel voor wind energy
- Banen creaties, samenwerking universiteiten
- 20 mm CO per jaar emissies
- Maak hetzelfde beter maar zonder CO2  
(windmoles, Isolatie, solar panels, handgel )

# Dow:

## If you can't do it better, why do it?

H.H. DOW



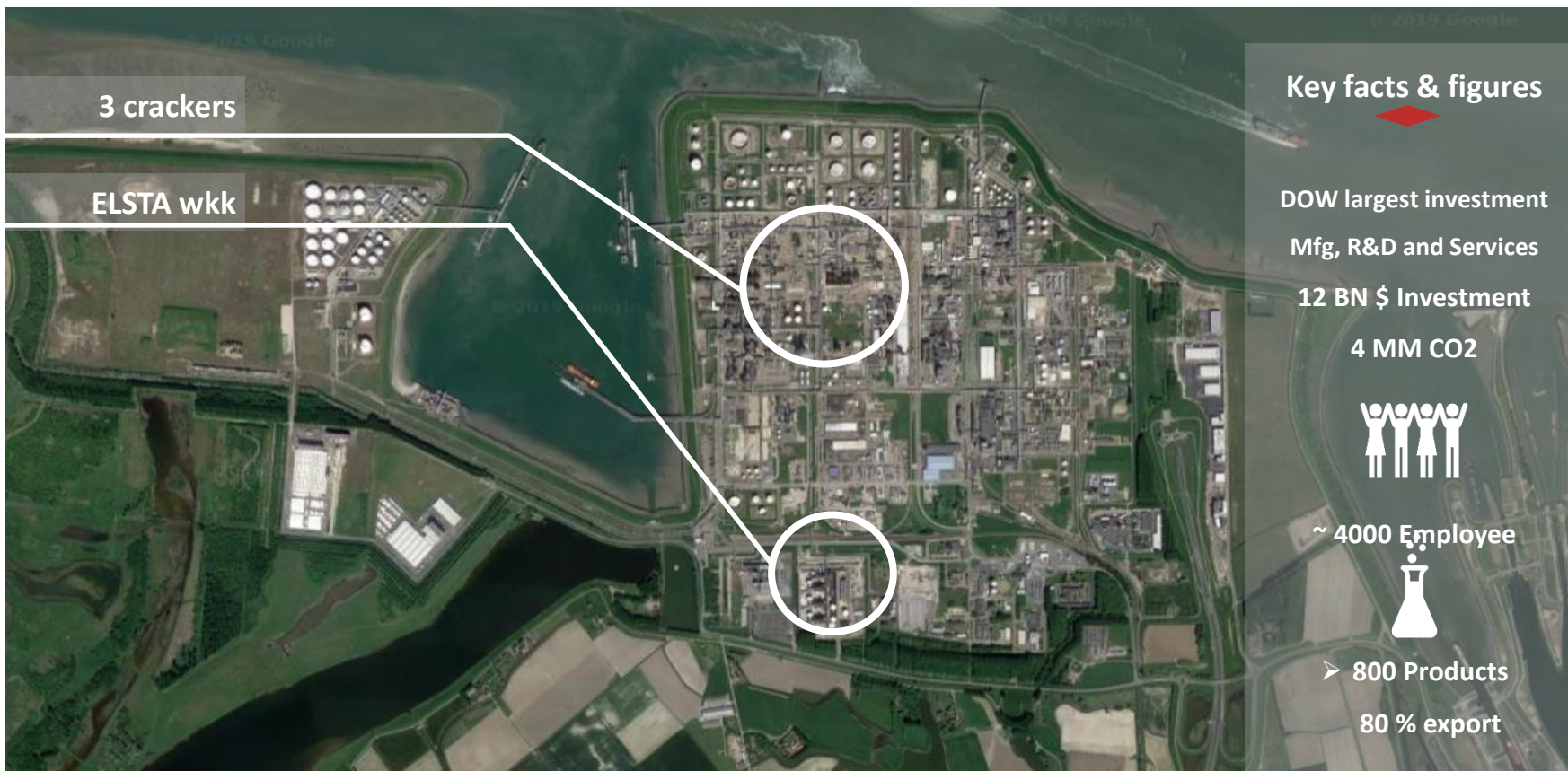
# DOW

## The Dow Chemical Company

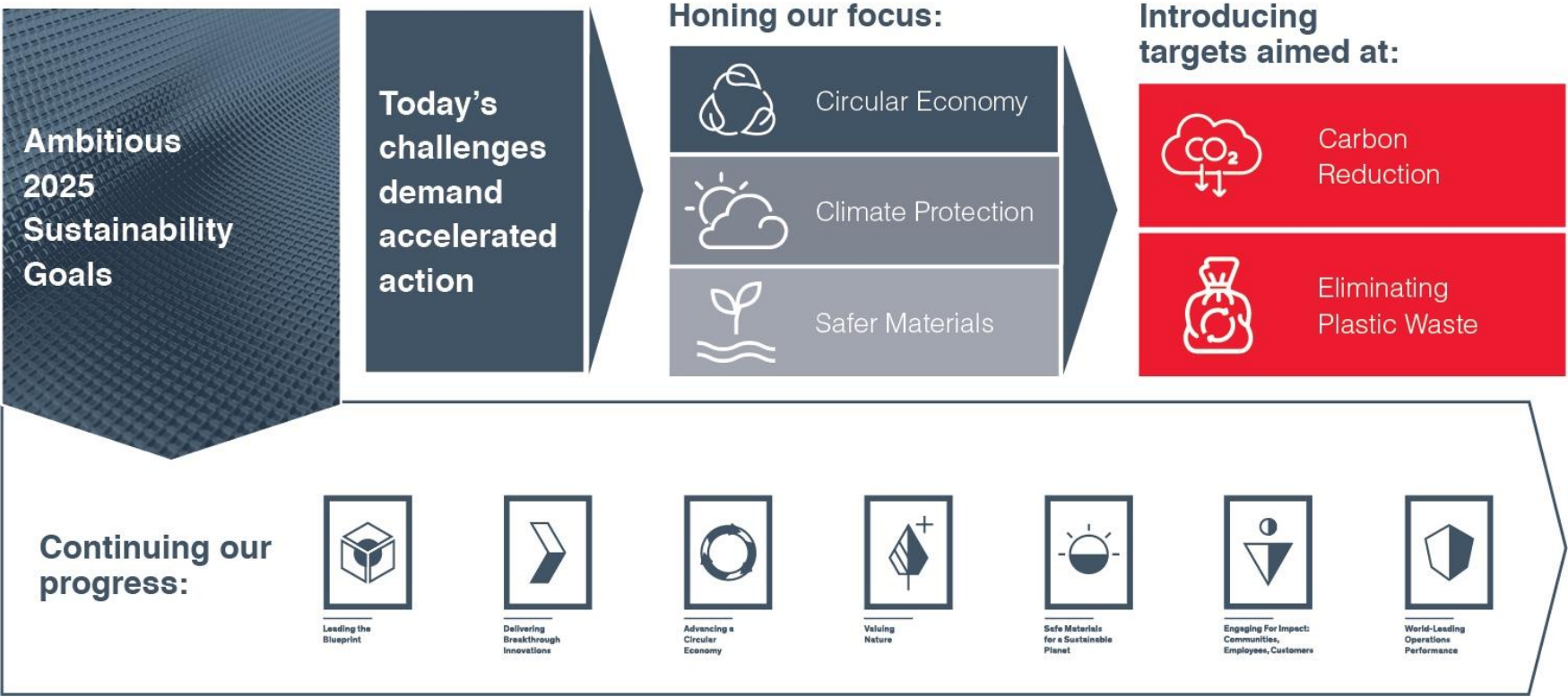
- Founded in 1897
- One of the largest material science companies in the world



# DOW TERNEUZEN SITE:



# ACCELERATING OUR SUSTAINABILITY ACTIONS TO TACKLE CRITICAL CHALLENGES



# CAPABILITIES IN THE REGION- SUSTAINABILITY, KEY TO OUR FUTURE

Our Focus Areas



Energy



Dow and Shell are teaming up to collaborate on low-carbon technology for a sustainable future, the companies have announced. The two have entered into a joint development agreement to develop technology to electrolyze ethylene steam crackers.



**Solar Park at Value Park**  
Feasibility of Solar Park closer in Value Park – Build, Operate , Marge by 3P with flexibility



**Wind Mill at Seneffe**  
~ 30-40% total power requirement at Seneffe Site



Alternative Feedstock

**JDA partners**

**scale-up partners**

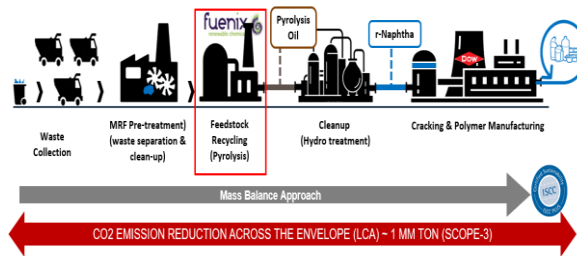
**co-funding**

**Main challenges: Technical validation with steel gas and value chain assessment**

Lab scale	2019-2017	Catalyst discovery in THZ HotCell lab, pre-development, reaction kinetics, TR12-3
Bench scale	2015-2019	Catalyst scale-up, process optimization, external liquids validation, TR14
Pilot scale (2 units)	2018-2022	CO <sub>2</sub> separation & gas clean-up, process scale-up, TR16
Demo scale @ AMS or Tata	2025+	100+ Mio first of its kind demopilot, TR18
Replication phase	2030+	10+ Mio synthetic naphtha 2 <sup>nd</sup> Mio CO <sub>2</sub> reduction

**project partners**

Steel2Chemicals



Bio-Naphtha



Water



Knowledge & Industrial Symbiosis

**ISPT**  
Institute for Sustainable Process Technology

Industrial Symbiosis



# STEEL TO CHEMICAL

**JDA partners**



ArcelorMittal

**scale-up partners**



**CLARIANT**

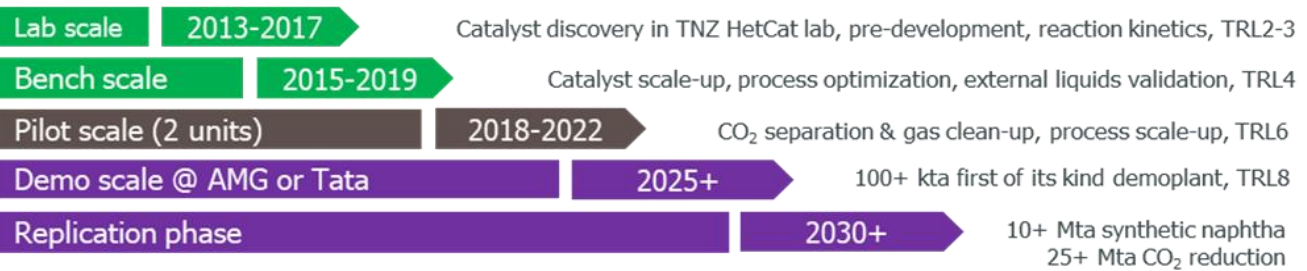
**co-funding**



Holland Chemistry  
Ministerie van Economische Zaken en Klimaat  
**Interreg**  
2 Seas Mers Zeeën



**Main challenges: Technical validation with steel gas and value chain assessment**



**project partners**





# ROADMAP & OPPORTUNITIES: TECTONIC PROJECTS

- Electrification of Crackers
- Steel to Chemical - CCU
- Waterstof – brown, yellow, blue , green
- Circulair Feedstock recycling plastic waste



gehele cluster

## Opportunity- < CO2 + Circulair



## BARRIERS & ASK:

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- Challenge to big – samenwerking cluster, overheid en wetenschap !
- Netwerk voor scale – infrastructuur voor CCS, waterstof, Groene Elektra
- CCS hub is vital om 2030 doestelling te halen, schip of pipe
- Regelgeving & besluitvorming sneller
- Subsidie voor grote pilots nodig – link aan investering in regio
- Business case moet er zijn, dus onrendable top opex, capex



Seek

Together™