



Delft Energy Initiative 2.0

**Kick-off meeting & New Year drinks
29-01-2020**



Welcome speech

Prof. Dr. Ir. Paulien Herder

New Chair DEI

Prof Dr. Kornelis Blok







Delft Energy Initiative 2.0

TU Delft's portal to energy research, education and innovation.

Catalyst for collaboration between scientists, students, industry and governments

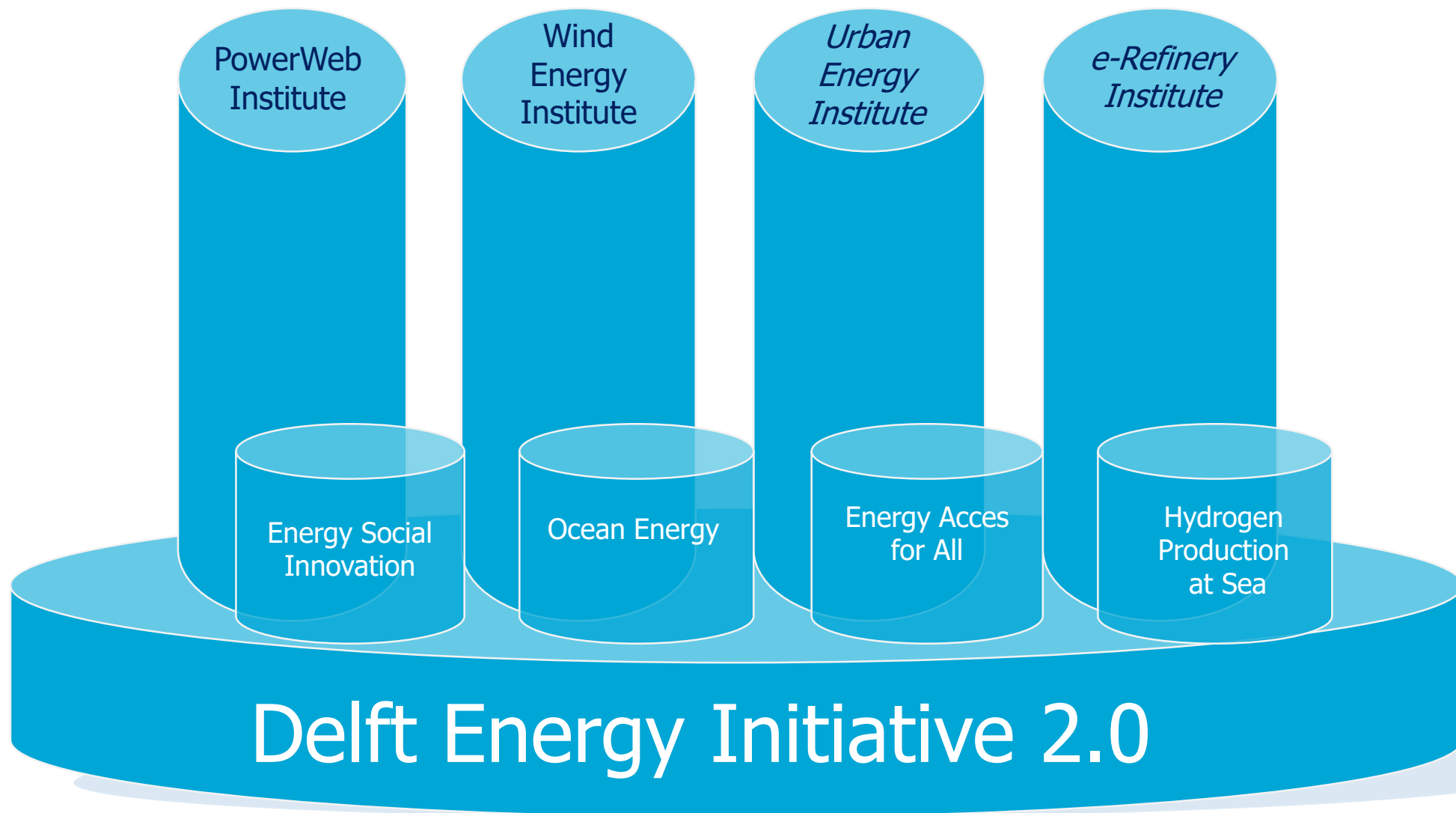
PowerWeb
Institute

Wind
Energy
Institute

Urban
Energy

e-Refinery

Delft Energy Initiative



Delft Energy Initiative 2.0 – the Base



**Meet the
Energy
Leaders**



**Energy
Start-up
vouchers**



**Vision
Papers**



The DEI Team

Kornelis Blok - Chair
Yvonne Schavemaker - Manager
Eveline Zeegers - Office & Communications
Lily Li - Project Manager
Sharita Balgobind - Press contact



The Energy Club

Delft Energy Initiative 2.0 – the Pillars



PowerWeb

Prof. Dr. Peter
Palensky

Arjen
van der Meer



Wind Energy

Prof. Dr.
Simon Watson

Linda
Gaffel



Urban Energy

Prof. Dr.
Kornelis Blok

Mirjam
Harmelink



e-Refinery

Prof. Dr. ir.
Paulien Herder

Yvonne
Schavemaker

Grande opening
PowerWeb Institute

Industry visits (RWE, Alliander)

The Illuminator
Energy system dev kit



ESP Laboratory



2020: hosting Europe's largest
Smart Grids conference





The Netherlands' Long-Term Offshore Wind R&D Agenda

9 October 2019

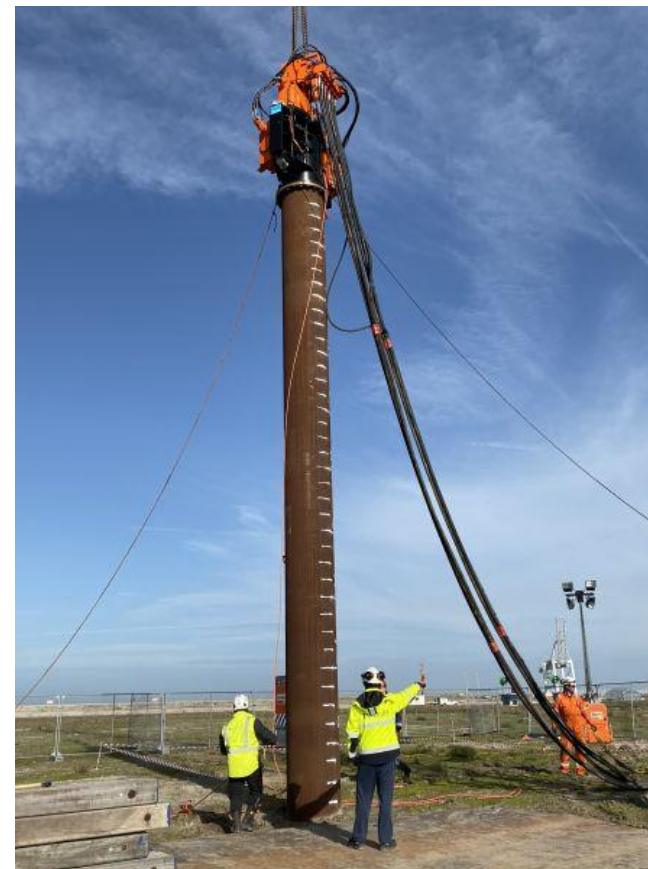
Developing future Dutch Long Term R&D Plan for Offshore Wind



Preparing for the biggest academic wind conference



Promoting visibility in wind energy education and research



GROW: Gentle Driving of Piles – Research and innovation in piling for offshore wind farms

Urban Energy Platform



Awarded pilot MMIP 3 (IEBB) and 4 (Warming up). Total budget 3 mln euro for TU Delft






Increased visibility of TU Delft on this topic through lunch lectures, seminars, experts meeting (~ 800 attendees ~50% external & ~50% internal)



Funding for the Energy Transition Atelier @AMS @Gemeente Amsterdam



Established our Research Goals

Indirect route	Direct route	
 <p>Electro/thermo-chemical</p> <p>Develop a 100 kW thermal bench scale set-up of a Sabatier reactor integrated with a Circulating Fluidized Bed for continuous methane production from CO₂ and H₂</p>	 <p>Electro-chemical</p> <p>Design and construction of a 100 kW electro-chemical testing device for the selective conversion of CO₂ into ethylene, including upstream and downstream processing of the reagents and products</p>	 <p>Bio-electro-chemical</p> <p>To develop a full operational 100 kW hexanoic acid production system with all input and units simulated at TRL5 corresponding to ca. 100 kg day⁻¹</p>

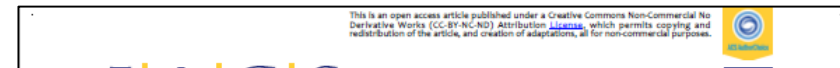
New Research projects granted:

- TOeLS – towards large scale electrochemical systems
- RELEASE – Reversible large scale energy storage

Formation of e-Refinery Institute with support from AE as new faculty, besides EEMCS, TPM, 3ME and AS.



Important new Publications:



J|A|C|S
JOURNAL OF THE AMERICAN CHEMICAL SOCIETY

In Situ Infrared Spectroscopy Reveals Electrode Surfaces during CO₂ Electroreduction
Kailun Yang,[†] Recep Kas,[†] and Wilson A. Smith^{*†}

Energy & Environmental Science

PERSPECTIVE

Joule

CellPress

Perspective
Pathways to Industrial-Scale Fuel Out of Thin Air from CO₂ Electrolysis

Wilson A. Smith,^{1,*} Thomas Burdyny,¹ David A. Vermaas,^{1,2} and Hans Geerlings^{1,3}

reduction on gas-d
catalytic performan
mercially-relevant c

Burdyny[†] and Wilson A. Smith[†]

ytic CO₂ reduction has the dual-prom
ing a long-term pathway to create
acid has advanced immensely in rece
Catalyst innovations have played a
tlysts providing gains in CO₂ con
s. Comparatively few of these cataly
-200 mA cm⁻²) due to transport li
cus on fundamental catalyst kinetic

Delft Energy Initiative 2.0 – the New Themes



Energy Social Innovation

Gerdien de Vries

Thomas Hoppe



Ocean Energy

Henk Polinder

Antonio Jarquin Laguna

Friso Lippmann



Energy Access for All

Roel Kamerling

Nishant Narayan



Hydrogen Production at Sea

Chris Hellinga

Stay in touch!

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Delft Energy Initiative



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