## Welcome!

Chair of the day: David Smeulders

Scientific Director 4TU.Energy Full Professor Energy Technology @TU/e

## 4TU.Energy

Community Day 2025

Theme:

Energy & Materials Transition - one and the same problem?

Date: 3 April 2025 Location:

2025 Eenhoorn Meeting Center Amersfoort







# Program

Time	Session	Room
10:00	Name badges   Poster (AO, template in Downloads) hang up on the wall (tape provided)   Coffee&Tea	1st floor <b>1.5</b>
10:45	Welcome speech incl.new funding opportunities	1st floor <b>1.2-1.4</b>
	Prof.dr. David Smeulders · TU/e   Scientific Director 4TU. Energy & Full Prof. Energy Technology	
11:00	Presentation	1st floor <b>1.2-1.4</b>
	Prof.dr. Moniek Tromp · RUG   Director Zernike Institute for Advanced Materials & Full Prof. Materials Chemistry	
L1:30	Presentation	1st floor <b>1.2-1.4</b>
	Dr. Carlos Felipe Blanco · TNO   Senior Scientist - Circularity & Sustainability Impact & Assis. Prof. Industrial Ecology Leid	len University
L2:00	Group photo	between parking&ground floor
	Lunch	1st floor <b>lounge</b>
	Poster visit	1st floor 1.5
L3:00	Pitch presentation of projects funded by 4TU.Energy	1st floor <b>1.2-1.4</b>
	Shuyi Peng · WUR   Community Building   Horticulture in Energy Transition	
	Dr. Keerthivasan Rajamani · UTwente   Rapid Research   Magnetic-Ionocaloric Heat Pump System	
	Dr. Tingting Zhu · Utwente   Community Building   Energy Information Interaction Club	
	Dr. Thomas Weinhart · Utwente   Rapid Research   Thermo-Chemically Active Granular Materials	
4:00	Presentation	1st floor <b>1.2-1.4</b>
	Dr. Benjamin Sprecher · TUDelft   Assist. Prof. Sustainable Design, Environmental Impacts & Circular Economy	
4:30	Pitch YOUR research (Template in Downloads; 2min/pitch)	1st floor <b>1.2-1.4</b>
	vote for a best pitch by the end of this session	
5:30	Poster Market (Q&A)   Break	1st floor 1.5
	vote for a best poster by the end of this session	
L6:00	Matching sessions	
	1-Technical challenges and solutions for Energy Materials   Chair: Dr. Akbar Asadi Tashvigh · WUR	1st floor 1.2-1.4
	2&3-Manufacturing challenges – circularity, design-to-recycle, LCA   Chair: Prof.dr. Harry Bitter · WUR	ground floor P.1-P.4
	2&3-Geopolitical dependencies & transition scenarios   Chair: Dr.Mark Boneschanscher · EIRES	ground noor F.1-F.4
L7:00	Announcement of Pitch and Poster winner   Networking drinks	1st floor lounge
8:00	Return keycord and scan Evaluation OR code on your name hadge	1st floor 1.5



**Group photo** 12:00

#### Pitch YOUR research:

- 14:30
- Name order
- 2min/pitch
- Vote a winner by 15:30

#### Poster presentation:

- Visit during lunch break
- Q&A 15:30-16:00
- Vote a winner by 16:00

QR codes on your name badge!

# People





















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## Our mission



4TU.Energy strives to accelerate the society's transition to a carbon-neutral future by connecting and leveraging its energy **community**; and by providing centralized support to its energy **research** and **education**.



**T**o Accelerate **T**he Energy Transition

## Our specific 4C goals

#### **Connect**

research capacity | smart brain | energy net

#### Coordinate

project | program | investment

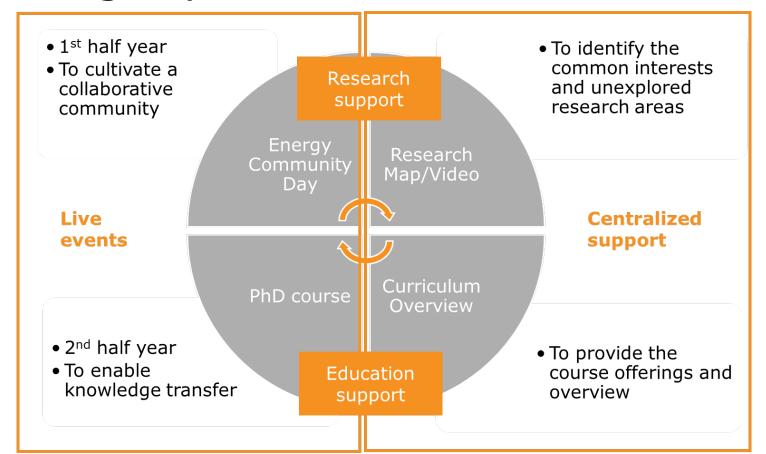
#### Collaborate

• between 4TU| between institute| between industry

#### Create

• opportunity | atmosphere | new ideas

## Our flagship activities



# 4TU. Energy Community Day 2024 | 16-04 | Amersfoort

#### Theme: "Energy Landscape and Funding Opportunities"

Attendees: >50; TUD~20%, TU/e~25%, UT~25%, WUG~25%, (RUG+industry)~5%



# 4TU. Energy PhD course 2024 | 20&21-11 | Utrecht

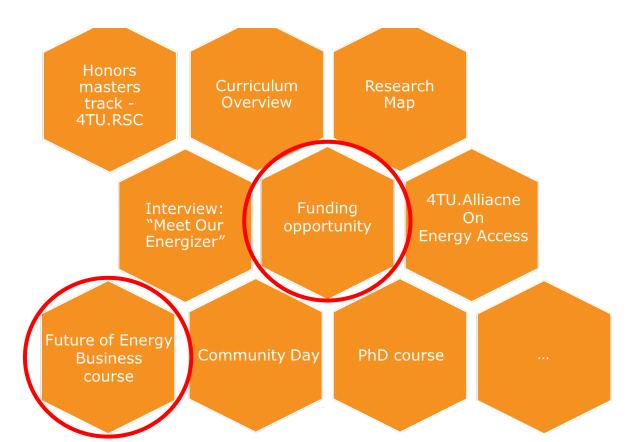
## Theme: "Sustainability, Systems and Societal aspects in **Energy Transition**"

Attendees: ~50 from 4TUs; 1 Tilburg Univ.; 1 Saxion Univ.; 1 AMS; 1 DIFFER; 1 RUG





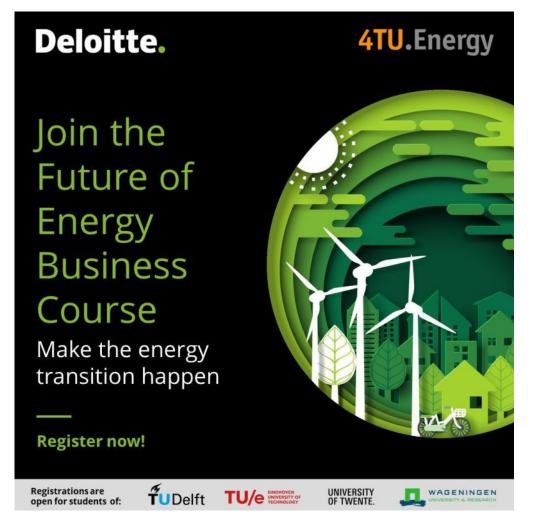
## Our work overview



### Future of Energy Business Course

- 3rd-year bachelor and master, PhD students
- Topics:
  - Decarbonizing hard-toabate sectors
  - Scenario development
  - Business perspective around solutions such as hydrogen, power and CCS
  - The future of work in a net-zero-context
- Co-mentor:

4TU – academic + Deloitte - industry



## **Funding opportunities**



- Research staff:
  - Rapid research
  - Community building
- NEW PhD students & Postdocs:
  - Your own research idea
    - A collaboration between young researchers
- Coming soon Joint funding opportunity with 4TU.NIRICT:
  - Perspectives of two communities
  - Interdisciplinary collaborations within 4TU

4TU. Energy Curriculum Overview 4TU.Energy Research Map 4TU 4TU .Energy MSc Inorganic materials science .Energy (5 ECTS) Catalytic processes Nuclear power Hydrogen sensors chemicals (5 FCTS) MSc Hydrogen (5 ECTS) technology (5 ECTS) Thorium MSc Catalytic processes 8 (Bio)electrochemistry molten ydrogen storage materials (5 ECTS) MSc Electrochemistry Fundamentals & Chemical recycling Energy efficiency in techniques (5 ECTS) BSc Energy Clean fossils Hydrogen and fuel cells MSc Electrochemical Sc Capita selecta economic Nuclear waste (2.5 ECTS) matters for climate chemical industry systems (5 ECTS) interaction assessment (3 ECTS) MSc Energy Sustainable (Bio)electrocatalysis society (5 ECTS) low batterie management (4 ECTS) energy systems BSc Energy storage (5 ECTS) Politics of Energy Sc Decentral power gene energy systems (5 ECTS) Power electronics & System analysis hotocatalytic synthesis electromagnetic compatibility MSc 4TU Responsible sustainability Salt batteries Sc Critical sustainable futures (2 ECTS) BSc Energy transiti Systems challenges (15 ECTS) Organic battery materials ntegration MSc Sustainable engineering Localization (5 ECTS) BSc Dynamics of enen Engineering systems (5 ECTS) BSc Energy transition & Electrical charging ustainability (9 ECTS) energy Socio-Technical Innovation MSc Circular sustainable and Climate Change business development (5 ECTS) Solar fuels MSc Energy conversion technology Biomass Science technology & policy studies (5 ECTS) uclear fusion (15 ECTS dynamics MSc Physical aspects of analysis (3 ECTS) Solar / Photovoltaio innovations energy and sustainable BSc Physics of energy: sources development(5 ECTS) transport and storage (5 ECTS) **Process intensification** MSc Energy BSc Energy storage and transpo Input via Energy from biomass Transition in (5 ECTS) Economy Agriculture BSc Energy (5 ECTS) www.4tu.nl/energy/research/ Sustainable process technolog MSc Business model for BSc Sustainable energy sources (5 ECTS) MSc Water management (4 ECTS) www.4tu.nl/energy/education/ MSc Solar energy storage CO<sub>2</sub> capture MSc Sustainability and law (3 ECTS) MSc Psychology of sustainability MSc Environmental management (4 ECTS) simulation of RSc Penewahle Fnerry MSc Sustainability politics an CO2 as BSc Energy transition Technology (3 ECTS) MSc Digital twin earth for policies (5 ECTS) water, energy, and food security (5 ECTS) MSc Policy and sustainability (3 ECTS Computer 4Sc The sustainability game (2 ECTS embedded systems BSc Mineral resource Earth system analysis BSc Sustainable civ Mathematics of perations research (0 ECTS) Remote sensing MSc Distributed energy Smart grid grids (5 ECTS) Genthermal MSc Energy storage (5 ECTS) energy systems Digital Twin MSc Digitalization & sustainability (2 ECTS Dynamic based Heat storage maintenance MSc Transport Construction management & Heating engineering MSc Building integrated photovoltaics (5 ECTS) Smart cities Sc Circularity and energ Systems for BSc Introduction building performance in the buil MSc Advanced thermal sustainable heat performance (5 ECTS) **Building performance** Building physics & environment (5 ECTS) (5 ECTS) WAGENINGEN WAGENINGEN TUDelft University of Technology UNIVERSITY OF TWENTE. TUDelft University of Technology UNIVERSITY OF TWENTE. \*Courses written in numble are co-organized courses in 4TH context: "Text in purple are newly added topics; more info incl.topic introduction and researcher names will be available on digital version on our website "More course info in hyperlinks or attachments is available on digital version online "Digital version and feedback channel will be open soon on our website. \*Feedback channel is also open online on our website

## Thank you for your attention



## Join the community

Connect with us and explore new opportunities in energy research & education!

