EnTranCe: Centre of Expertise Energy

“If we want things to stay as they are, things will have to change.”

Dr. Ir. Jan-jaap Aué
Dean Centre of Expertise Energy
Professor Energy Transition

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Who?

- https://twitter.com/janjaapaue
- https://www.linkedin.com/pub/jan-jaap-au%C3%A9/0/43b/102
- Applied Physics
- PhD Materials Sciences
- KPN Research, New (internet) services
- TNO ICT
- Hanze University of Applied Sciences
  - Life Sciences, Engineering, Centre of Expertise Energy
Hanze University of Applied Sciences

- Established in **1798**
- Professionally oriented higher education
  - 28,500 students
  - 3300 employees
- **55+** bachelor programs, **18** master programs
  - 22 studies with an energy route
  - 3 energy master programs (*one under development*)
  - 8 professorships with topic energy
  - Energy testing ground EnTranCe

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EAE: a public private partnership:

Rationale for EAE initiative: an overall 10 year business plan to build a leading knowledge infrastructure to support “the energy transition” at large; intermingling scientific and applied research across the board, energy education from vocational to post-academic and business development & entrepreneurship
The EAE "initiative"

EAE > WHO ARE WE?

- **Center of excellence** in energy education / research / innovation
  - Focus on transition to sustainable, reliable and affordable energy
    - Renewables (wind, biobased, solar etc.)
    - Energy efficiency (industry, built environment)
    - Gas in transition (including biogas, green gas, hydrogen)
    - Biobased Economy
    - CO₂ reduction (including CCS)
    - Built env/Smart grids/households
    - Governance, policy, law, energy markets, human behavior...

- **Open** to all interested students, organisations and businesses

- **Public / Private initiative** of: University of Groningen (UoG), Hanze University of Applied Sciences (HUoAS), Gasterra, Gasunie, Energy Valley, EBN (+NAM/Shell, regional govt. and counting...).
  Research partner TNO & ECN + PBL and counting...
Bron:
http://www.deltawerken.com/Voor-de-ramp-van-1953/24.html
INNOVATION HUBS
TRANSITION CENTRE NORTH

Why?
Versterken regionale economie en werkgelegenheid en onderwijs. Veilig en gezond.

How?
laagdrempelig
dynamisch
open
multidisciplinair
micro - macro = meso
kracht van digitalisering
verbonden met de samenleving
een broedplaats waar veel kan en mag

What?
duurzame energiehuishouding
vitale economie
vital leven
veilig wonen
voedsel veiligheid
duurzame mobiliteit
Alumni Hanzehogeschool richten meeste bedrijven op

Studenten zijn ondernemend, blijkt uit jaarlijkse ranglijst van het hoger onderwijs. Maar het onderzoek op universiteiten levert nog relatief weinig bedrijven op

GRONINGEN De Campus Groningen is de snelst groeiende campus van Nederland. Sinds 2014 nam het aantal bedrijven dat er is gevestigd toe van 114 naar 198. Het aantal banen groeide van ruim 2000 naar ruim 3200.
Speeding up Innovation

At the Centre of Expertise Energy, we speed up innovations needed for the transition towards a sustainable energy society. We contribute by applied research and education.

HOW?

• An interdisciplinary and multilevel approach
• The establishment of co-ownership from Society
• Involving young people
• Showing options and their impact
• In dialogue with stakeholders

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How?

Educational programmes
• Energy Routes in schools leading to EAE certification
• Learning Community
• Master (MSc) portfolio
  • European Master Renewable Energy
  • Master Sustainable Energy System management
  • Master Energy 4 society (under dev)

Applied Research
• Hybrid energy system design & Management
• Alternative gasses and hybrid-fuels
• Energy interventions and behaviour, public support and communication
• New economic realities, labour market, governance and legal aspects in the energy sector
• Sustainable communities and local initiatives

Facilities
• Energy Value Chain
• Energy Barn
• EnTranCe

Partners
• Business partners
• Governmental partners
• Societal partners
• Stakeholders
Roadmap 2022

• Blueprints for at least 5 sustainable & regional villages
• Researching and testing of hybrid energy systems
• 1500 energy students
• 25 energy startups per year
• Research capacity: € 10 million per year
• € 25 million regional investments
• 20.000 visitors to EnTranCe
At the Centre of Expertise Energy we focus on **FIVE** main topics

1. Hybrid energy system design & management
2. Alternative gasses & hybrid fuels
3. Energy interventions & behaviour, public support & communication
4. New economic realities, labour market, governance & legal aspects in the energy sector
5. Sustainable communities & local initiatives
Educational programs

• Energy Routes in 22 schools leading to EAE certification

• Learning Community  *(Energy Transition Community EnTranCe)*

• Master (MSc) portfolio
  – European Master Renewable Energy
  – Master Sustainable Energy System Management
  – Master Energy 4 Society
  – Master International Communication (specialisation Energy)
MONITOR YOUR ENERGY

To gain insight into your energy, the first step is becoming aware of what is happening from your grid. Do you wish to know how much energy you are using today? And what collective impact our behavior has?

The platform lets you monitor your own energy production, consumption, and storage in real-time, so you can make more informed energy decisions. Some of the features the platform offers are:

- Monitor your energy usage
- Control your energy system
- Share your energy with others

CONTROL YOUR ENERGY SYSTEM

Dig deeper in your energy system and balance your own energy production, consumption, and storage. Envitron is currently developing technology to let several of your appliances 'talk' to each other. This way, you can use all of your energy as efficiently as possible.

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For you

Extensive network
Access to knowledge and experience
Support local communities
Experimental facilities
Office- and workspace

Collective Intelligence
Energy related events
Access to launching costumers
Awareness creation
Students

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