



# Eindhoven Region

# Industrial Heart: Brainport

- High tech systems and materials
- Innovation & design
- High Tech Campus:
- One of the 17% largest science parks worldwide
- Main seat of companies like:
- Philips, ASML,
- NXP Semiconductors
- Océ, DAF Trucks, DSM



The image shows a large, modern glass-walled building at night, illuminated from within. The TU/e logo is visible on the top of the building. The sky is a deep blue, and the building's lights create a warm glow. A white diagonal line runs across the image from the top left towards the bottom right.

TU/e

Where  
innovation  
starts

TU/e

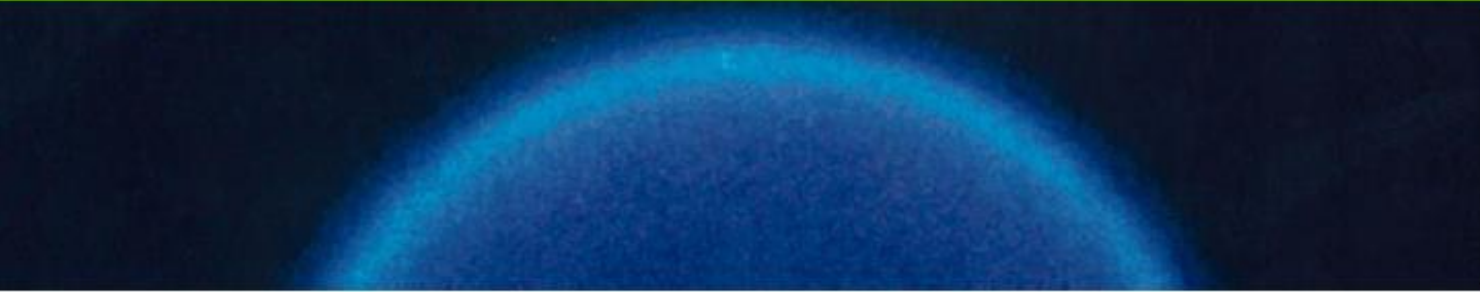
Technische Universiteit  
Eindhoven  
University of Technology

# Strategic Areas

- Focus on 3 key societal issues: *Energy, Health, Smart Mobility*
- Working together with universities, knowledge institutions and industry
- Strengthening our international research position



# University of Technology Eindhoven, Research Area Energy



**Future Fuels**



**Built  
Environment**



**Fusion**



**Energy  
Conversion**

# Innovation in Energy Systems

- SELECT students at TU/e will receive the MSc degree 'Sustainable Energy Technology' ([SET](#))

Course program:

- IPoY 7 ECTS
- Courses for specialization 8-10 ECTS
- Graduation project 45 ECTS

**Focus on  
graduation project**

# SET Promo (with SET students)

- <https://www.youtube.com/watch?v=iwUhHNXsRWQ>

# Innovation in Energy Systems

Study the transition of energy systems

- Dynamics of complex systems like electricity supply
- System & component performance
- Study the (technical and social) factors that influence the breakthrough of a sustainable technology

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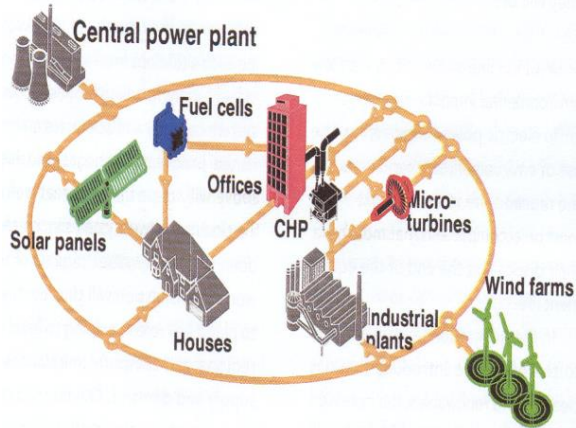
# Departments involved

- Mechanical Engineering
- Electrical Engineering
- Applied Physics
- Built Environment
- Industrial Engineering and Innovation Sciences

# Innovation in Energy Systems

## Electrical power systems

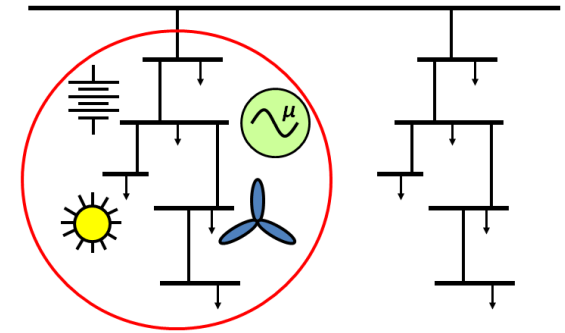
### Transition towards New Electrical Infrastructures



### Handling Power Quality Issues



### Control and Protection of Distribution Networks

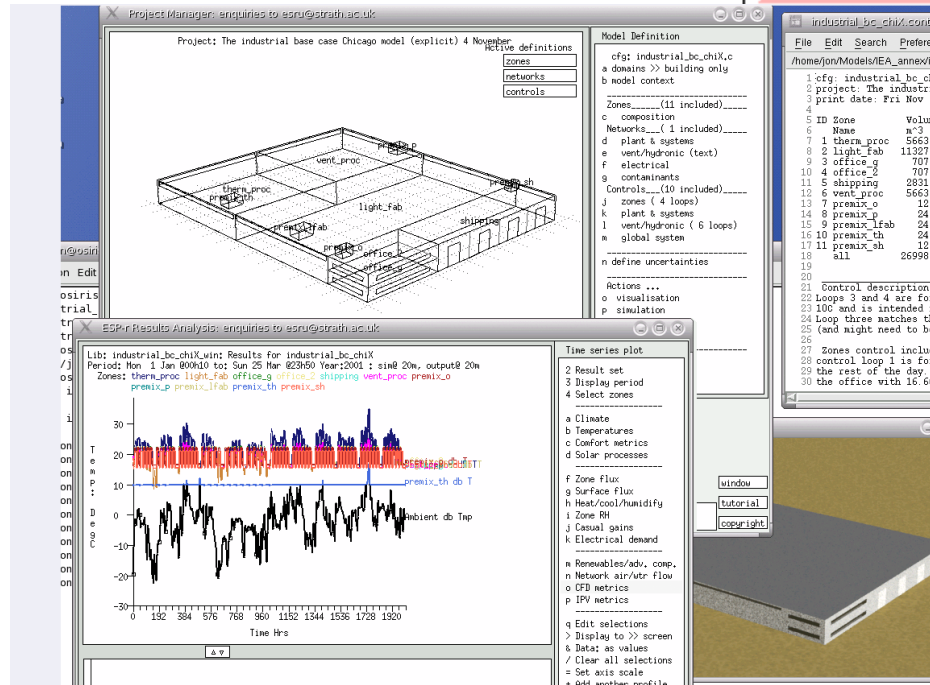
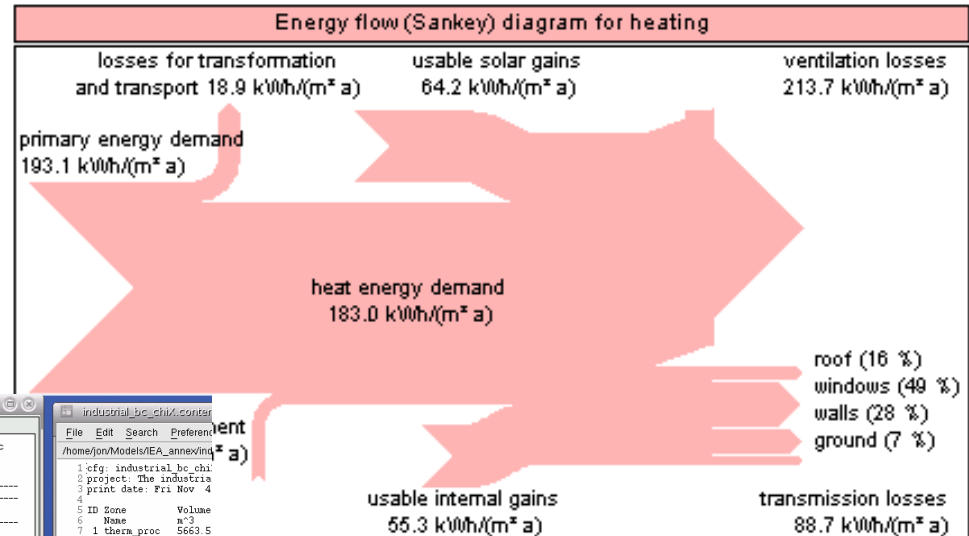


Projects in national SG programs, international FP6/7 programs and collaboration with industry

# Innovation in energy systems

## Building performance

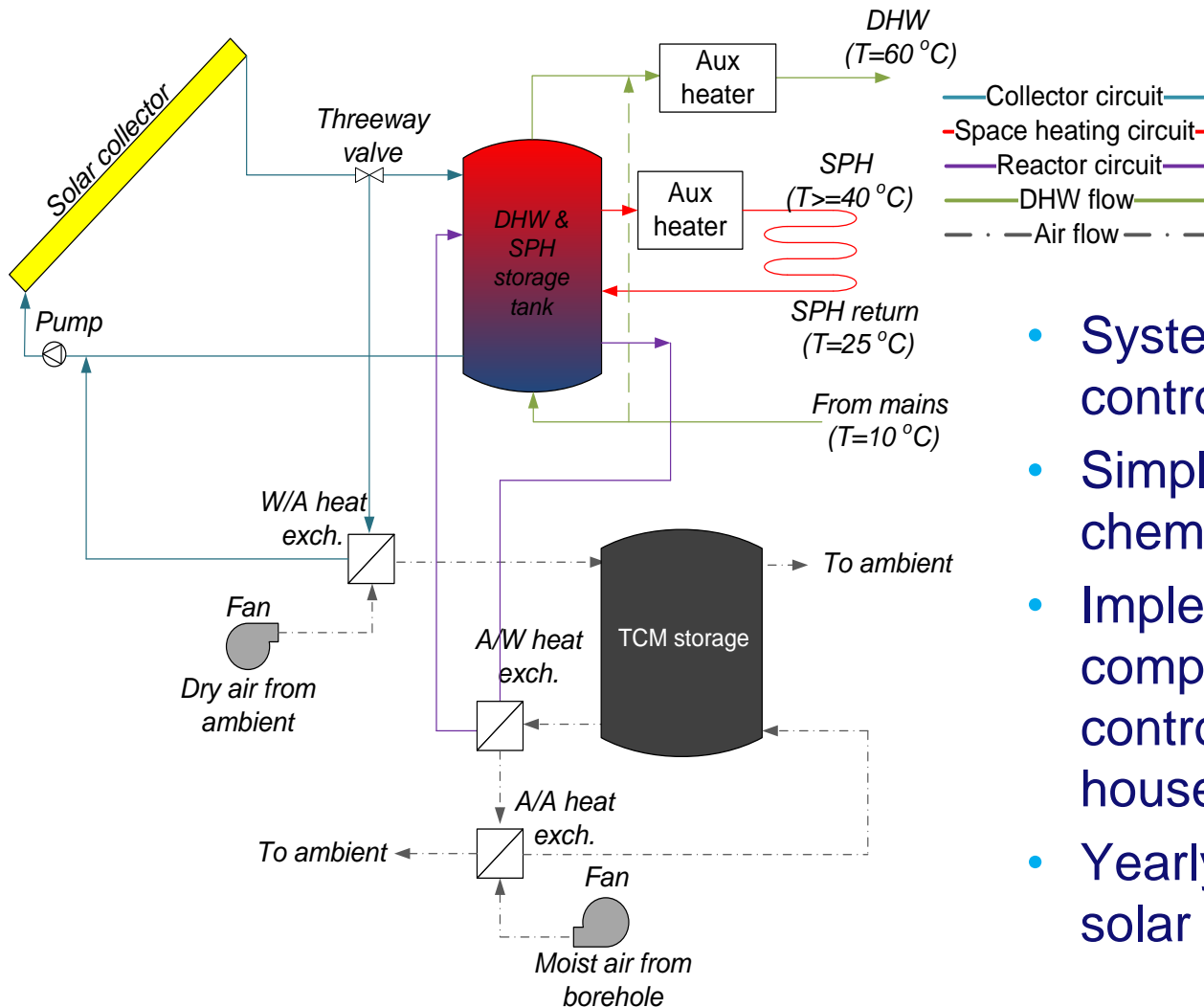
### Optimization of energy flows



## Sustainable energy in the built environment

# Innovation in energy systems

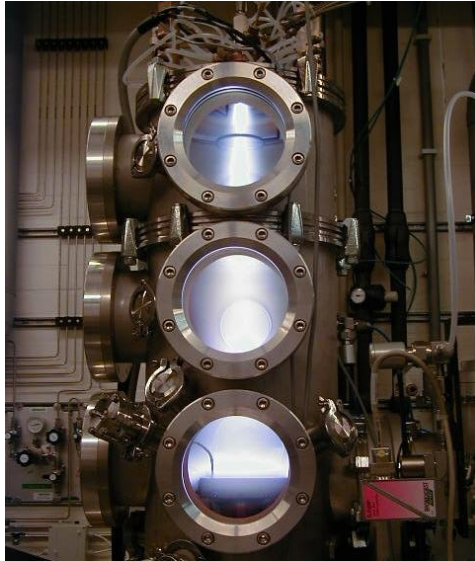
## Storage of heat



- System design including control strategy
- Simplified model for the chemical heat storage
- Implementation of the component models and control strategy into an in-house code
- Yearly yield calculations for solar fractions

# Innovation in energy systems

## PV projects



- Development of cost effective high efficient production of thin layer solar cells
- in cooperation with: OTB Roth & Rau, TNO Science, ECN
- experimental work can be included (deposition of thin layers by plasma enhanced deposition)

# Innovation in energy systems

## Social context:actors

GRAND  
ENERGY

Home

Projecten

Actueel

Wat is energietransitie?

Hulp bij project

Over ons



*Wat is energietransitie?*

### Energy and Society

No predictions, future is inherently uncertain

- Multiple scenario's, descriptions of possible and consistent futures, 'myths from the future'
- Hype-disappointment →  
cycles: waves of interest and support

TRA

THE RIS

SUSTAINAB

E

| sustainabilitytransitions.

sustan  
tran  
.com

book series & blog

Watch trailer below

expected: 01-10-2011



Transitiontheory

Food

Energy

Health

Automobility

John Grim, Jan Roumans  
and Johan Schot

In collaboration with Frank Geels  
and Derk Loorbach

ROUTLEDGE

# Master Sustainable Energy Technology SELECT

- **Jonathan Rodriguez Polit**
- **Exploration of the User-Value of Rural Electrification through Solar Home Systems in Southwestern Uganda: A Case Study**



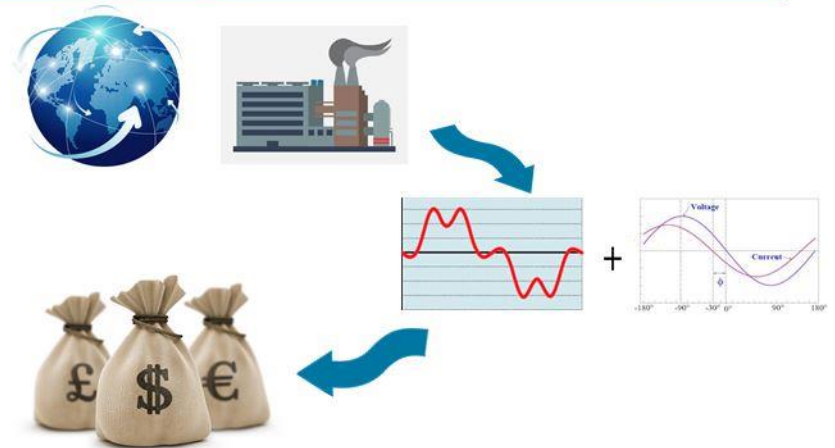
Supervisor: dr. H.A. Romijn

Department: Industrial Engineering & Innovation Sciences

# Master Sustainable Energy Technology SELECT

- Maruf Ahmed
- Estimation of monetary loss in the electricity-intensive industries due to reduced power quality

Estimation of Monetary Loss in Electricity-intensive Industries due to Reduced Power Quality



Supervisor: prof.dr.ir. J.F.G. Cobben  
Department: Electrical Engineering



# Master Sustainable Energy Technology SELECT

- **Tom Huizer**
- **The heat battery concept**



Supervisor: dr.ir. C.C.M. Rindt  
Department: Mechanical Engineering

# Courses at TU/e (selection)

- Sustainability transitions and responsible innovation
- International development and sustainability
  
- Thermal energy storage
- Building performance and energy system simulation
  
- Planning and operation of power systems
- Power system analysis and optimization
- Decentral power generation and active networks
  
- Solar cells
- Plasma processing science and technology

# Course guide & Information

- To find detailed course info track the course (by name) in the [course guide](#)
- [www.tue.nl/en](http://www.tue.nl/en)

# TU/e – facilities for international students

- All courses on MSc level in English
- Support by international office for requirement of VISA, housing etc.
- TU/e-wide introduction program in August
- Classes start at August 20th 2016

# Students at TU/e: Team Energy

- Centralize knowledge
- Increase engagement
- Energize the energy debate



# Information and SELECT contact TU/e

- [www.tue.nl](http://www.tue.nl)
- Dione van Noort, SELECT program coordinator
- [d.a.a.v.noort@tue.nl](mailto:d.a.a.v.noort@tue.nl)

Feel free to contact me about....

- ✓ Examples of research projects
- ✓ Courses
- ✓ Professors involved
- ✓ Does TU/e fit your ambitions?

