

TUe

Technische Universiteit
Eindhoven
University of Technology

**Master
Sustainable Energy
Technology**

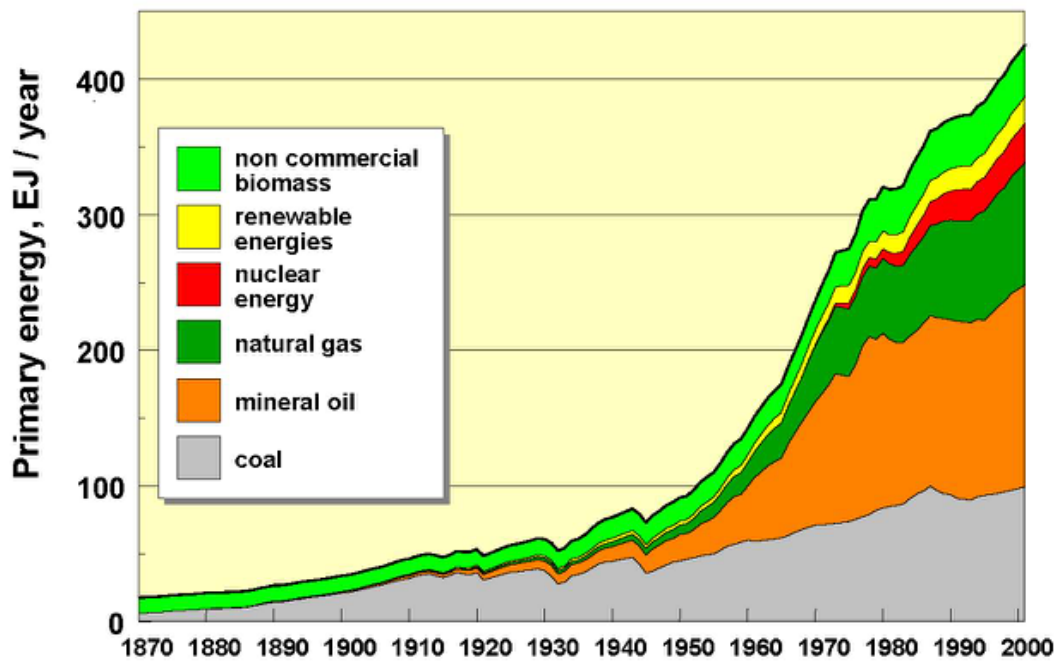
May 3, 2017



Where innovation starts

The biggest problem of the 21st century: how to fuel our economy?

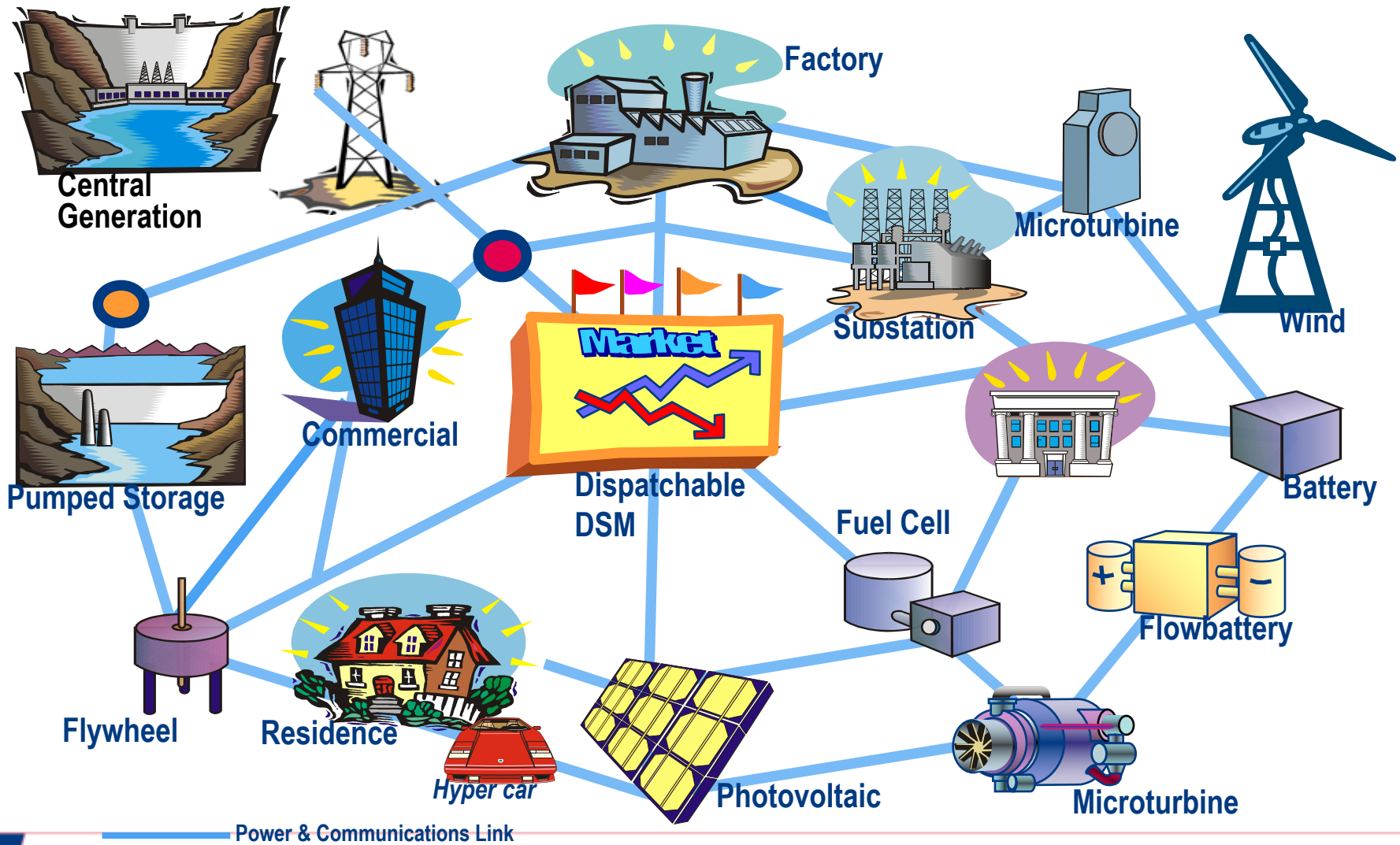
Global Primary Energy Consumption



≈90 million oil barrels
each day (159 l)

In 2050 10 billion people will use ~ 850 EJ/year

Future power system?



Programs

SET: Sustainable Energy Technology

SELECT: Environomical Pathways for Sustainable Energy Systems

- Study two years in two different countries
- Energy Technology with strong focus on innovation & entrepreneurship
- KIC InnoEnergy Masterschool
- Information: <http://www.kic-innoenergy.com/education/master-school/>

Specialists from many fields involved

6 departments:

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

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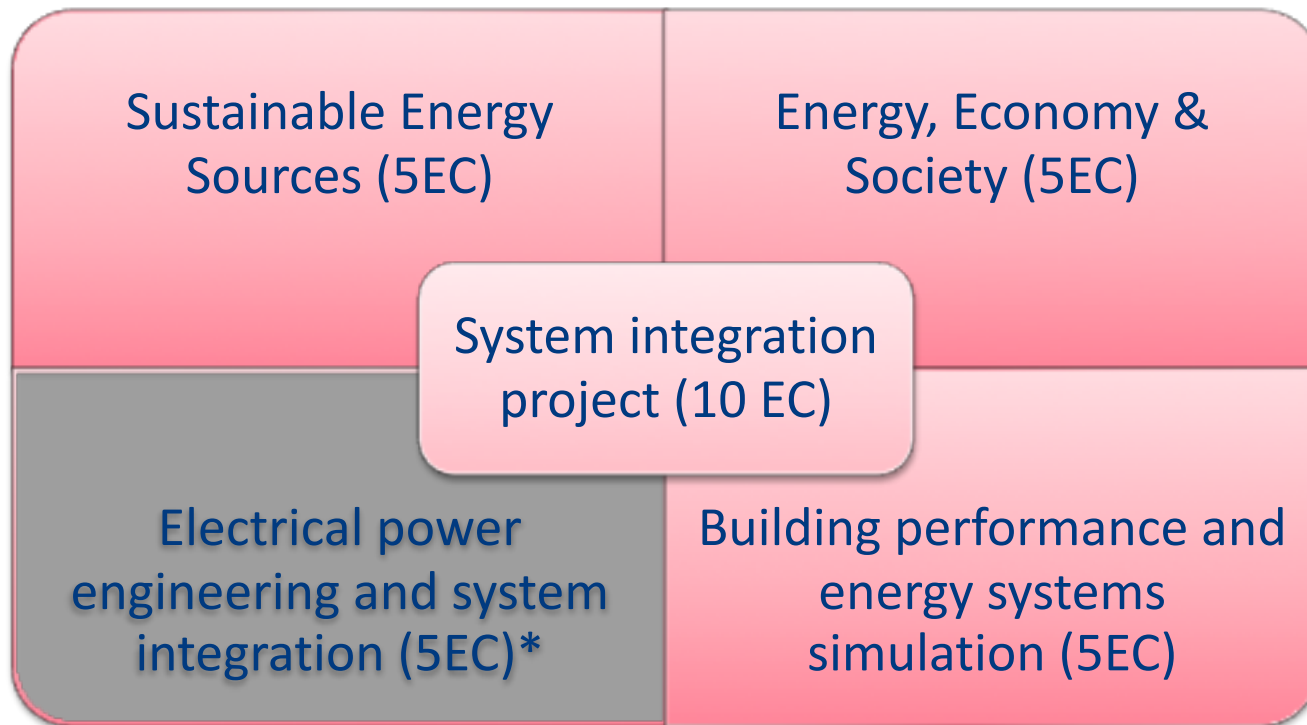
Master Sustainable Energy Technology

- Duration: 2 year (120 credit points)
- Time of entry international students: September
- Time of entry TU/e students: every month
- Language: English
- Degree: Master of Science (MSc)

Program Overview

Year 1	Core program (30 EC)	Specialization (15 EC)	Homologation / Electives (15 EC)
Year 2	Internship (15 EC)	Graduation Project (45 EC)	

Core program



*not for Electrical Engineers

System integration project

“Inspiration for Sustainable Zutphen – researching the possibilities for sustainable infrastructure and energy supply for the old city



“We now know it’s no use generating energy in the IJssel”

“Students provided the city officials with a cost analysis, returns, and feasibility of the projects.”

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Homologation and free electives

Homologation

- Strongly advised for BSc E: Homologation heat and flow, thermodynamics (2,5 EC; 4SE010)

Free electives

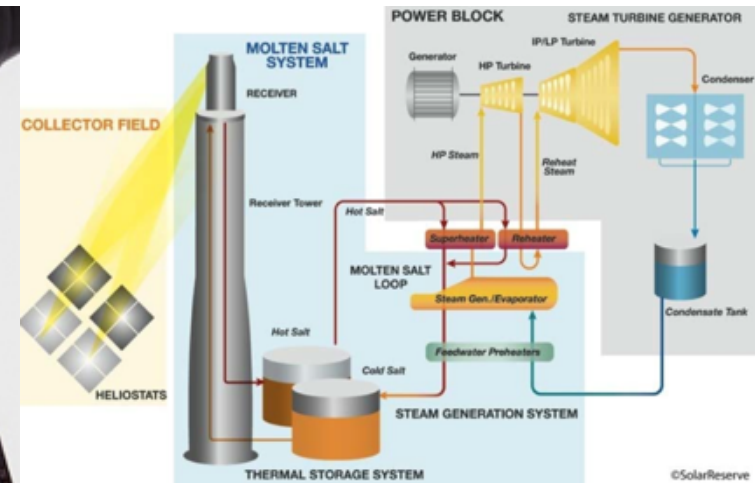
- TU/e-wide MSc level
- 5 EC extended internship

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Specialization themes

- Electrical power systems
- Application in built environment
- Energy & society
- Sources, fuels & storage

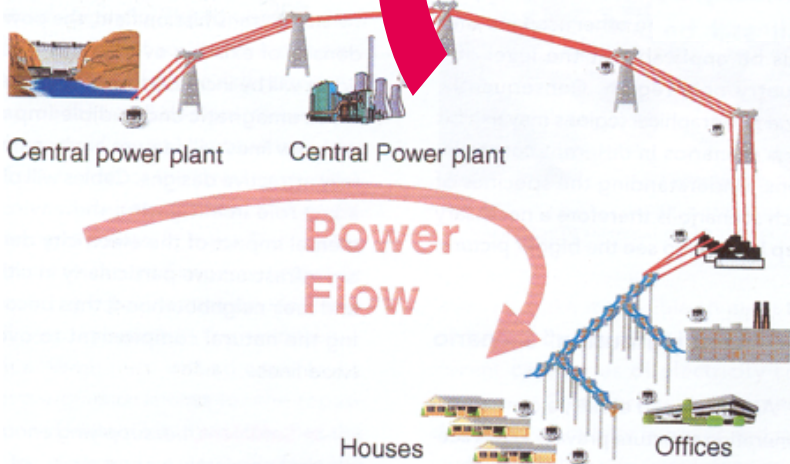
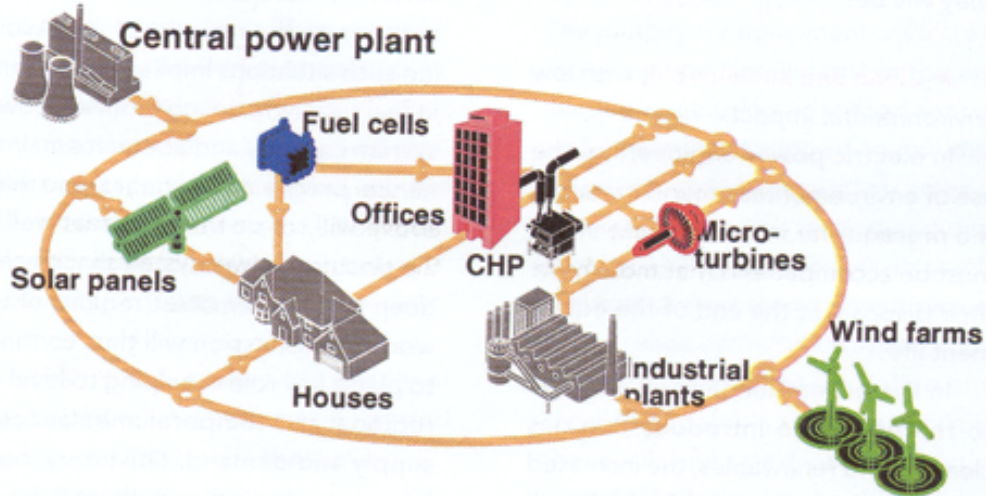


Research groups Electrical Engineering

- Electrical Energy Systems (EES) – Pemen / Gibescu
- Electromechanics and Power Electronics (EPE) - Lomonova

Electrical power systems

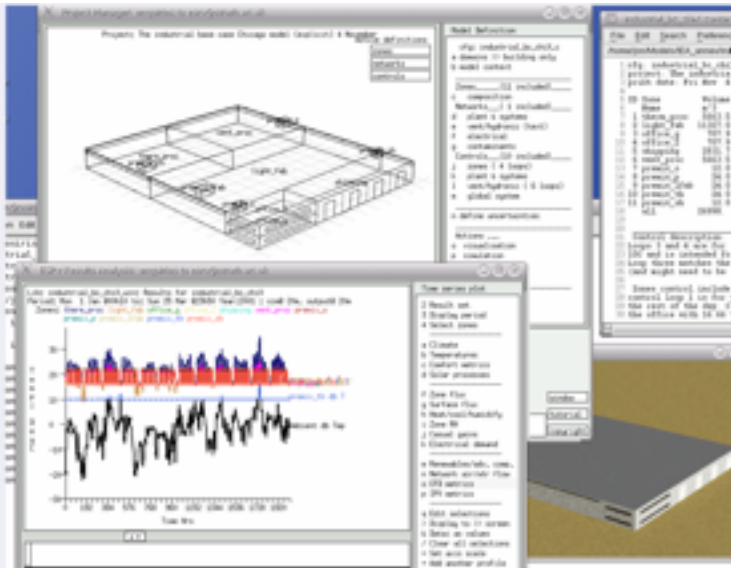
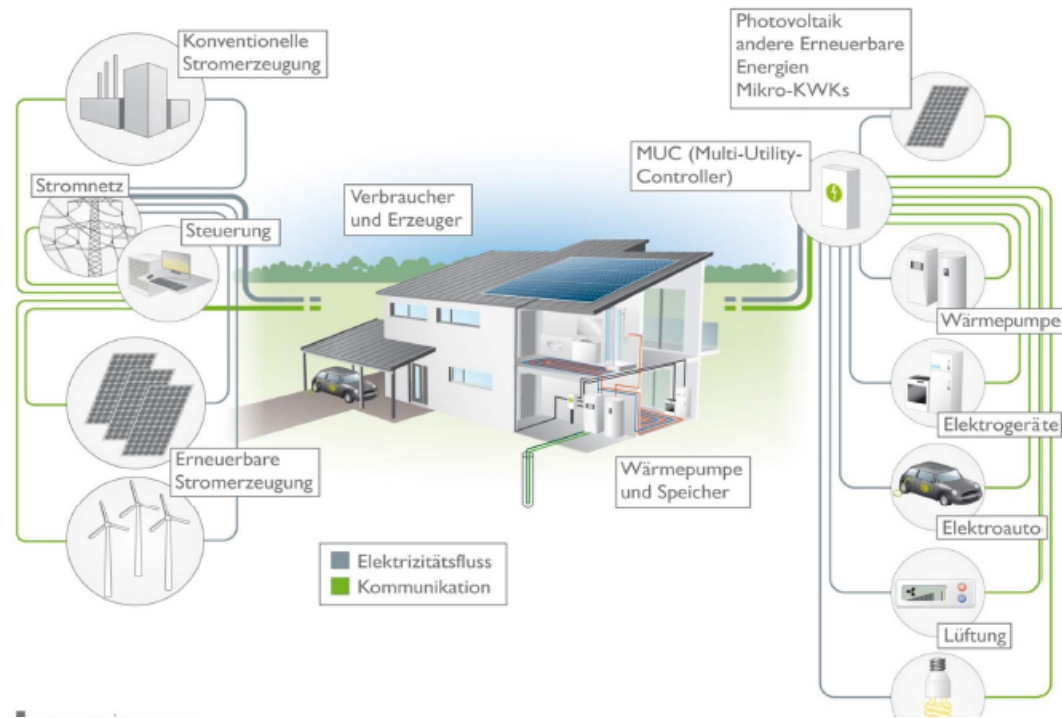
Bi-directional horizontal power flow



vertical power flow

Application in built environment

Towards a sustainable energy-positive built environment with indoor environment quality optimized for health, comfort and/or productivity.



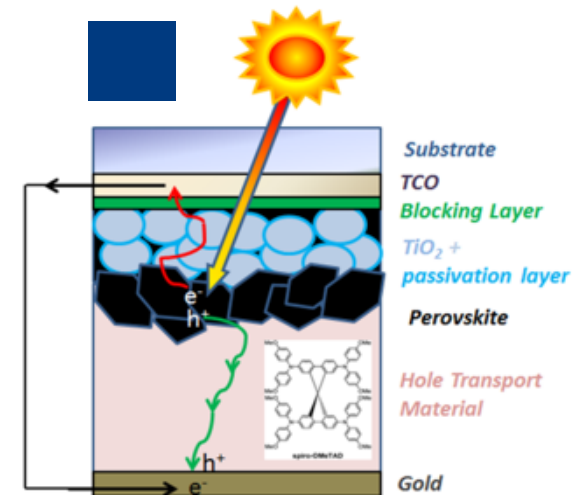
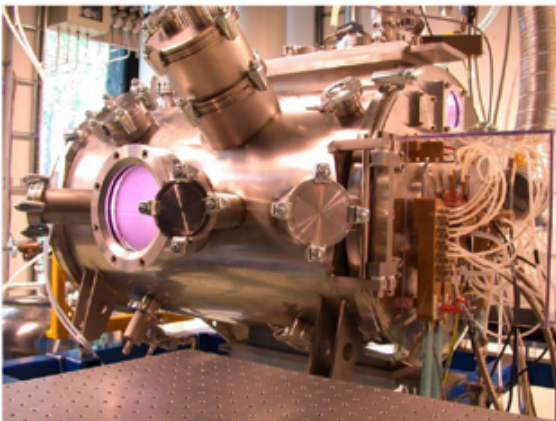
Energy and society

Examples of MSc.- projects

- Strategy for introducing LNG as transportation fuel
- Bio-energy in Estonia
- Design of a large scale thin film PV power plant
- Perspectives for PV in Turkey
- Dealing with smallholders in certification sustainable biomass

Sources, fuels & storage

- Thin film solar cells (plasma deposition of thin films)
- Polymer solar cells
- Heat storage
- Future fuels



Wish to specialize within a **Mechanical Engineering** research group?
As of **September 1st** through renewed selection process!

- Popular groups; necessary to guarantee quality supervision
- Selection by groups – CV and motivation letter
- Expectation: enough capacity to place all students within group of first choice
- Opportunity to participate in current allocation system; **deadline 15 May** (≥ 160 EC of bachelor program)

*More information:
Check Education Guide SET, leave your email
address or contact set@tue.nl*

After graduating

- Two year PDEng program Smart Energy Buildings and Cities
- PhD program of four years
- Job in consultancy, government, research or industry

- A recent survey showed:
 - 95% had a job
 - 56% within 1 month

Information

- **E-mail:** set@tue.nl
- **Study advisor:** Mw. Creusen - Erica
- **Website:** www.tue.nl/set
- **Studyguide SET**
- **Facebook:** **TU Eindhoven Sustainable Energy Technology**