U N I V E R S I T E T E T I B E R G E N

Geophysical Institute, Faculty of Mathematics and
Natural Sciences

Energi-utdanning i Europa, inntrykk fra UNI-SET, muligheter for Bergen

16. mars 2016

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UNIVERSITY OF BERGEN
Geophysical Institute

1st UNI-SET Energy Clustering Event

Human resources and new knowledge to build the future energy system

The 1st UNI-SET Energy Clustering Event will explore how European universities can cooperate more with each other and work together to address the challenge of educating people for the future energy society.

UNIVERSITIES IN THE SET-PLAN

Hosted by the Norwegian University of Science and Technology (NTNU), Trondheim, Norway

24 - 26 February 2016

UiO, UiS og UiB (Øyvind Frette, PMH) i tillegg til NTNU deltok fra Norge.

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SET-Plan = Strategic Energy Technology Plan (EU)

EUA = European University Association
EPUE = European Platform of Universities Engaged in Energy Research (EPUE)

UNIVERSITIES IN THE SET-PLAN

MOBILISING THE RESEARCH, INNOVATION AND EDUCATIONAL CAPACITIES OF EUROPE'S UNIVERSITIES IN THE SET-PLAN

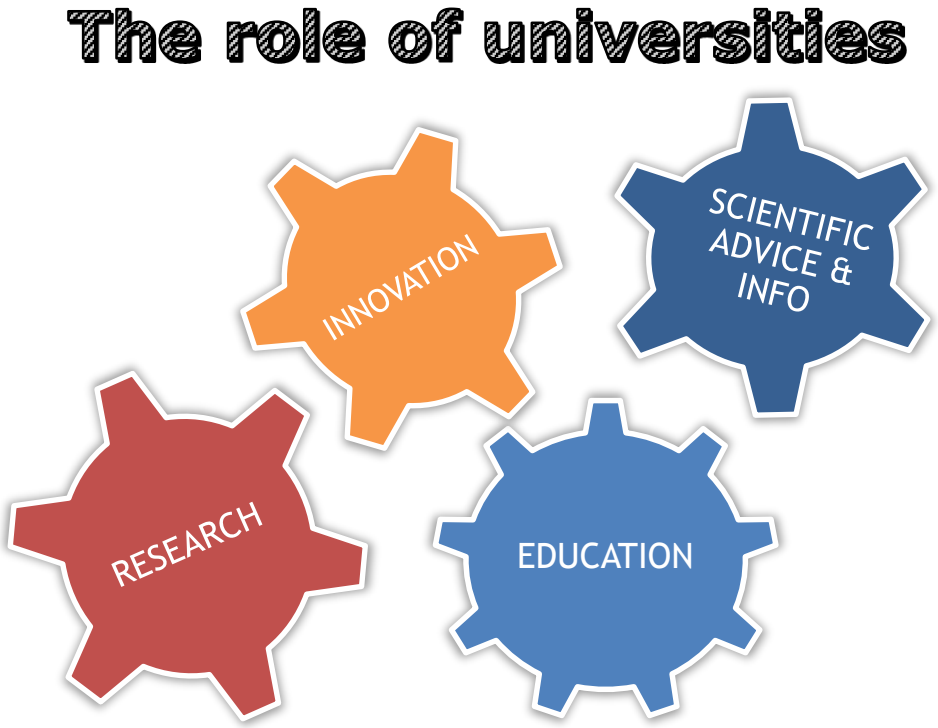
The European Platform of Universities in Energy Research & Education and the SET-Plan

Professor Torbjørn Digernes, Chair of the EUA-EPUE and the UNI-SET Steering Committee; NTNU Former Rector

Trondheim, 25 February 2016

THIS PROJECT HAS RECEIVED FUNDING FROM THE EUROPEAN UNION'S SEVENTH FRAMEWORK PROGRAMME FOR RESEARCH, TECHNOLOGICAL DEVELOPMENT AND DEMONSTRATION UNDER GRANT AGREEMENT No 609838.

The motivation for UNI-SET and the European Platform of Universities in Energy Research & Education (EUA-EPUE)

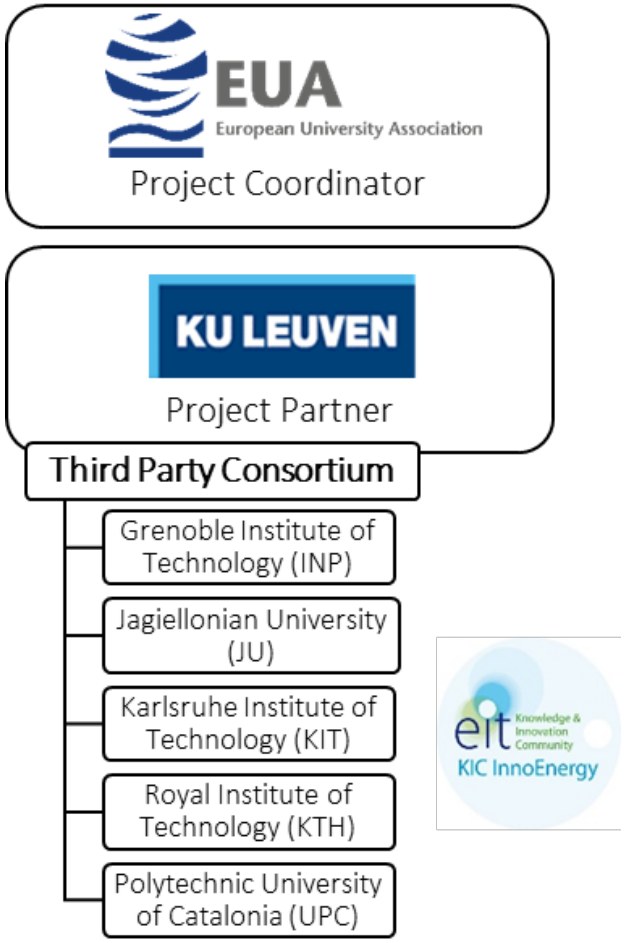


- Unique combination of roles of universities in the transition to a sustainable energy system
- Skilled people will be key to enable the transition
- Education in a vibrant research environment including:
  - ✓ innovative applied research
  - ✓ industry involvement
  - ✓ used-inspired basic research
- Only universities can offer this combination

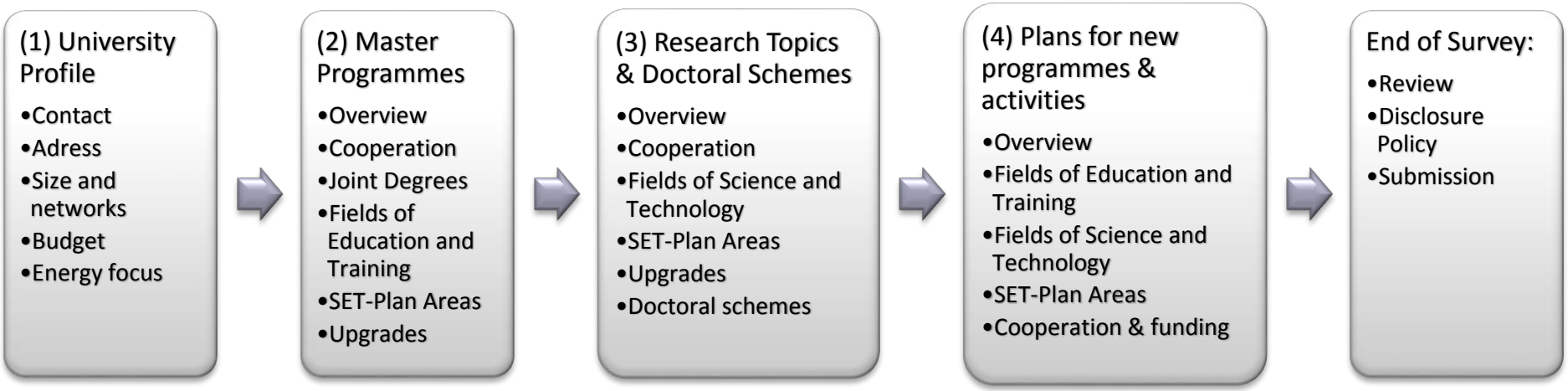
The UNI-SET project (2/2)

- **Duration:** Sept. 2014 - Aug. 2017
- **Consortium**:
  - ✓ **European University Association**, main beneficiary/coordinator (80 % share)
  - ✓ **KU Leuven** (project partner) representing the universities in KIC InnoEnergy (20 % share)

- **Funding:** European Union, as an **FP7** Coordination and Support Action



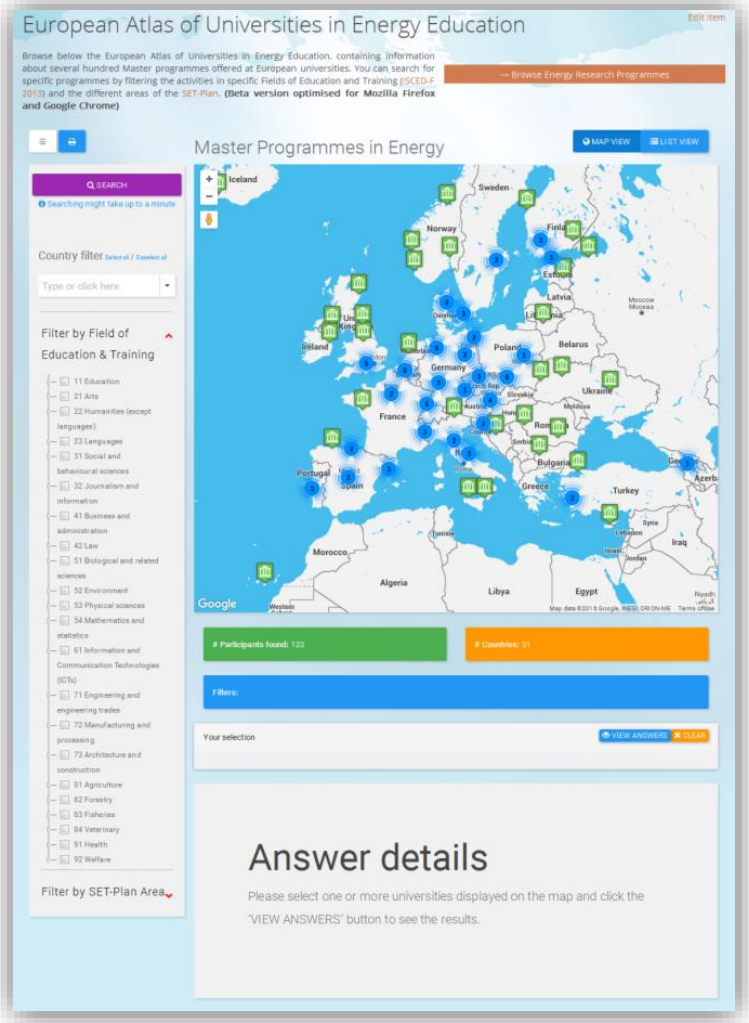
UNI-SET Universities Survey



- URL: http://universities.uni-set.eu
- Covering the entire spectrum of disciplines: from Mathematics, Engineering and Technology to Economy, Social Sciences and Humanities and Arts
- First findings from two data collection phases between April and December 2015
- Currently open for third phase (until 30 April 2016)

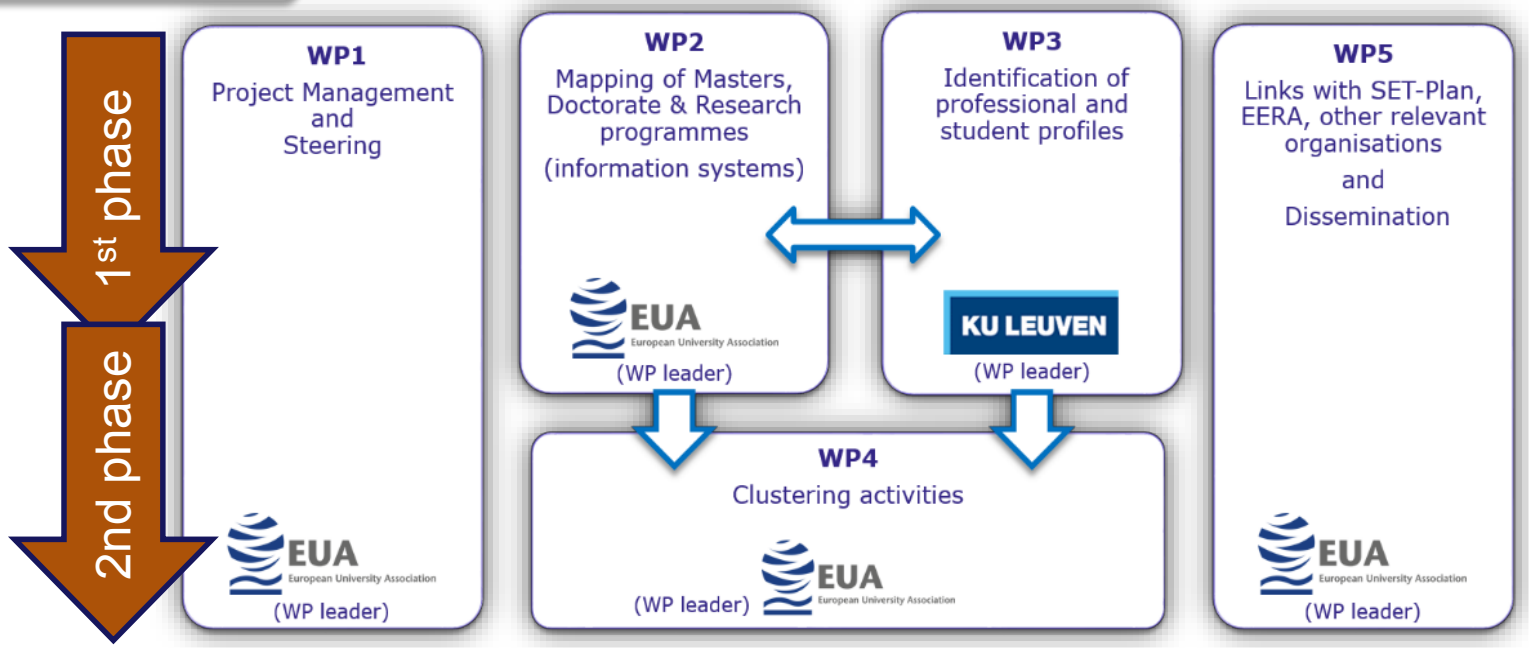
EUROPEAN **ATLAS** OF UNIVERSITIES IN **ENERGY** RESEARCH & EDUCATION

- 123 Universities share information online
- ➢ http://atlas.uni-set.eu
- Participation through the UNI-SET Universities Survey
- ➢ http://universities.uni-set.eu/
- **Current round open until 30 April 2016**



UNI-SET: Work programme

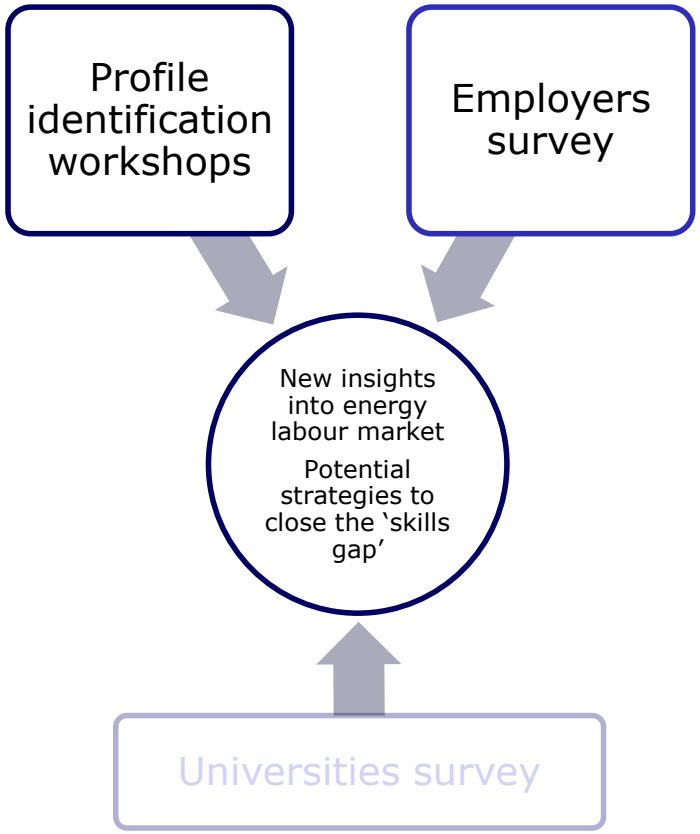
Total of 36 months
09/2014 - 08/2017



KIC InnoEnergy in UNI-SET

KIC InnoEnergy in UNI-SET

- Strong in university-business links and collaboration
- Contribution: identify skills and professional profiles in the energy field in six different thematic fields
- Taken together with the university mapping, UNI-SET will provide unique insights into current labour market requirements and education offered at universities



The challenges to realise the EU energy objectives

- Research breakthroughs that can
  I. improve the competitiveness of existing technologies
  II. become the basis for innovations that offer new solutions
  III. enable the required societal change
- Upgrade competencies in the existing work force to adopt new technologies for the overall benefit of society
- Develop new human talent that can strengthen the innovation processes
- Create scientific evidence-based policy-making
- Inform and engage civil society

The Energy Union – Research & Innovation

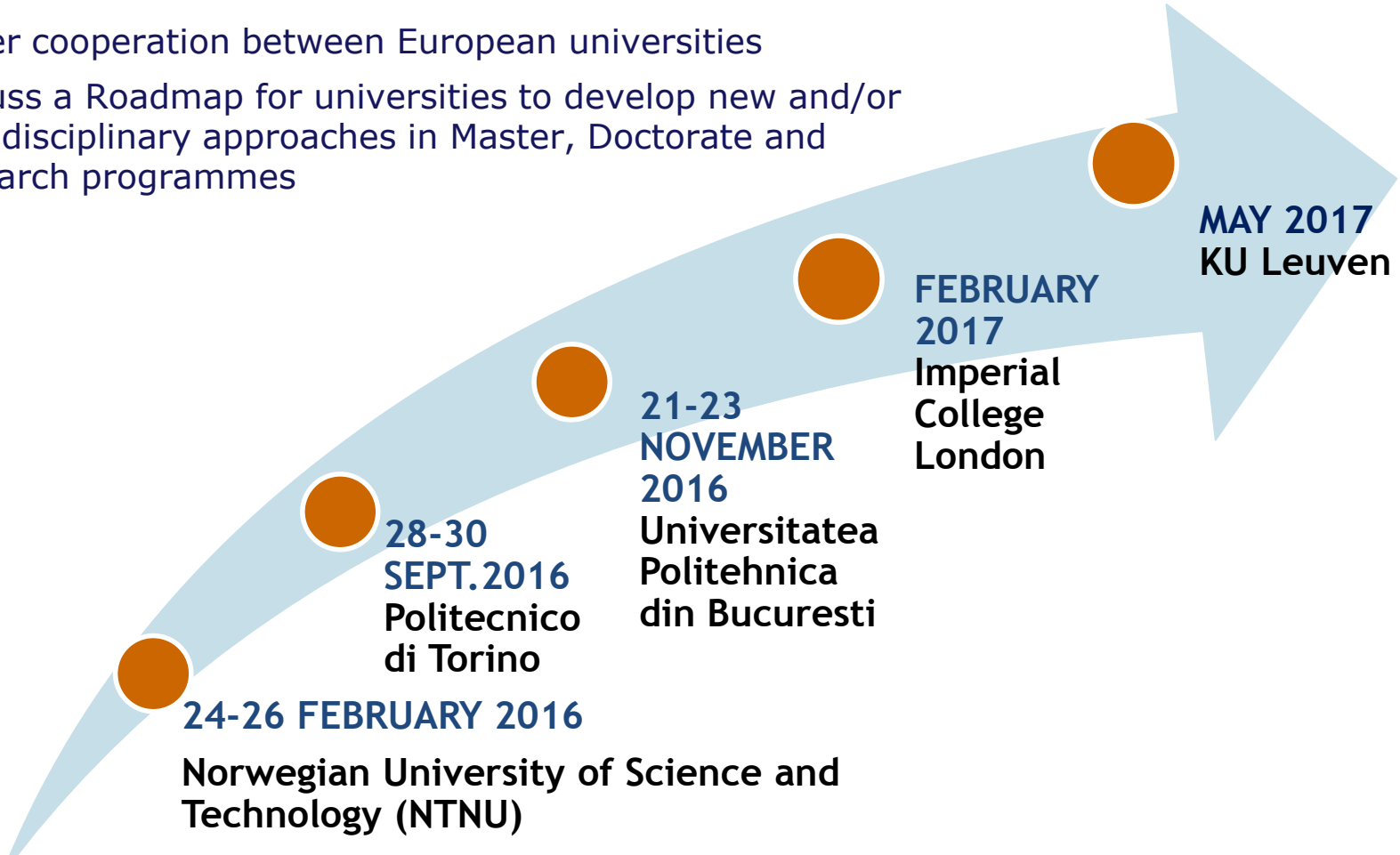
1. **Energy security**, solidarity and trust
2. A fully integrated European **energy market**
3. **Energy efficiency** contributing to moderation of demand
4. **Decarbonising** the economy and reducing greenhouse gas emissions
5. **Research, Innovation** and Competitiveness

Universities have the competences to address all of these priorities & are willing to contribute

UNI-SET Energy Clustering Events

OBJECTIVES:

- Foster cooperation between European universities
- Discuss a Roadmap for universities to develop new and/or multidisciplinary approaches in Master, Doctorate and Research programmes



UNIVERSITIES IN THE SET-PLAN

MOBILISING THE RESEARCH, INNOVATION AND EDUCATIONAL CAPACITIES OF EUROPE'S UNIVERSITIES IN THE SET-PLAN

Parallel Session a) Education

Chair:

Prof Johan Driesen, ESAT, KU Leuven, Kic InnoEnergy, Belgium

Rapporteur: Ms Mar Martinez Diaz, KU Leuven, Kic InnoEnergy, Belgium

Trondheim, 26 February 2016, 9.10-10.30

EUA European University Association

KU LEUVEN

eit Knowledge & Innovation Community KIC InnoEnergy

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Points for discussion

- Scope
  - ✓ breadth (energy system thinking) vs. depth (technology focus)
  - ✓ regional vs. global view
  - ✓ is there a "truncus communes"? Should we define this?
- Implementation
  - ✓ do we embed new programmes (re-use courses) or go for new ones?
  - ✓ Need for "service courses" or programmes
  - ✓ pre-existing knowledge for multidisciplinary programmes: how bridge the gap?
  - ✓ how to use new teaching methodologies
    - MOOCs, blended forms, challenge-based learning, …
- Would an energy-quality label help?
- Soft skills, only raising questions: which, how, …?
- How to increase interaction with society/business/...?
- Profile of the PhD: specific for energy

Relevant for vårt 2-årige masterprogram i energi

Vår toårige master idag har to studieretninger:

- Energiteknologi (Termiske maskiner, Elkraftteknikk, totalt 6 tema)
- Fornybar energi (totalt 9 forskjellige tema)

De som kommer inn med ingeniørbachelor kan få siv.ing tittel i tillegg til master

Nytt integrert 5-årig løp (siv.ing.) i Bergen?

UiB har opprettet 5-årig siv.ing. i akvakultur og sjømat fra 2016.
Vi er bedt om å utrede mulighet for slik også for energi fra 2017.
Isåfall: Profil og innretning ut fra kompetanse, behov og konkurranse?
Hvordan spille på ressurser i regionen?
Utnytte digitale læringsressurser fra andre? Systemperspektiv?

(Se også på andre europeiske tilbud inkludert gjennom EUREC)

UNIVERSITETET I BERGEN