



# EUA Energy Clustering Event

## Partnering to deliver: Interdisciplinary Education, Training and Research programmes

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## The European University Association (EUA) in Energy Research and Education

- EUA is an independent stakeholder for European universities, a non-governmental membership organisation.
- EUA membership represents 34 European Rectors' Conferences and over 850 individual research based higher education institutions across 46 countries.
- EUA convened a first meeting with representatives designated by the EUA National Rectors Conferences – March **2009: The European Platform of Universities in Energy Research & Education (EUA-EPUE)** was created.
- 2010: Inviting universities to enrol through a survey – 170 responded – 1400 groups with 20000 persons involved reported, 900 energy related master programs
- 2012: EPUE Inaugural Meeting in Delft, the Netherlands.
- **2014-2017: UNI-SET project**
- **2018-onwards:** EPUE continues its activities as **Energy and Environment Platform (EUA-EPUE)**



## Policy context

- **2030 Energy Strategy**
- **SET-Plan:** European Strategic Energy Technology Plan
- **“Clean Energy for All Europeans”:** EC Winter Package (November 2016)
- **Energy Union**
- **United Nations:** Climate Change Conferences (**COP**) and Sustainable Development Goals (**SDGs**)
- **Mission Innovation**



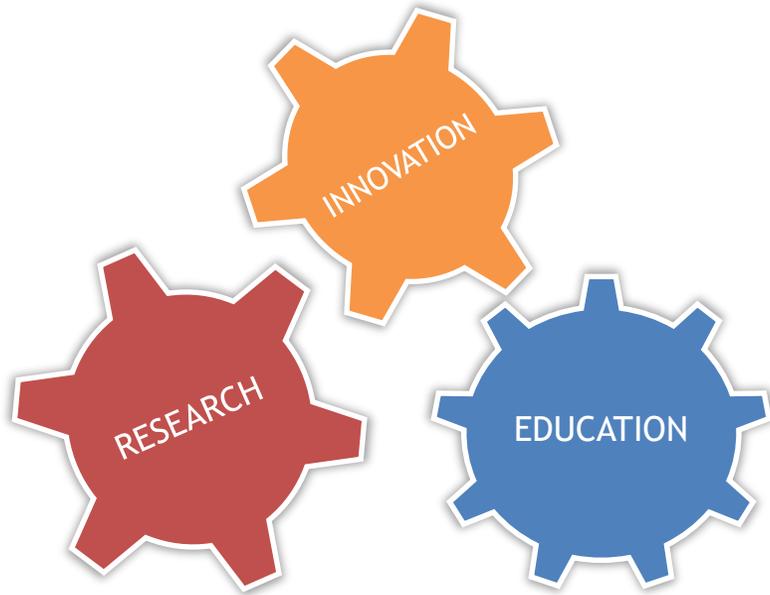
# The Energy Union – Research & Innovation

- 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

# The motivation for EUA Energy and Environment Platform

## The role of universities



- ❖ 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

## How the platform contributes to the European objectives

- ❖ Providing a platform: promoting the perspective of the universities' role in the society
- ❖ Coordination of universities' voice in policy development
- ❖ Network building and knowledge sharing in the field of energy
- ❖ Discuss the strategic role of universities and facilitate cooperation



## The UNI-SET project



# The UNI-SET project

❖ **Duration:** Sept. 2014 - Dec. 2017

❖ **Consortium:**

European University Association, coordinator

KU Leuven, project partner and third party coordinator



❖ **Funding:** FP7 Coordination and Support Action



This project has received funding from the European Union under the Seventh Framework Programme for research, technological development and demonstration under grant agreement no. 609838.



# UNI-SET main achievements

## UNI-SET Universities Survey: 200+ universities participating

- **Gather data** on Master, Doctorate and Research programmes
- **Develop online maps** of university research and education in the energy field

## UNI-SET Employers Survey: 120+ companies responding

- **Identify skills and professional profiles:**

## Six 'Energy Clustering Events' in five countries with 700+ participants

- Provide a basis for discussing new collaborative and multidisciplinary programmes across Europe

## Seventeen Input Papers to the SET-Plan and participation in six follow-up working groups (50+ experts)

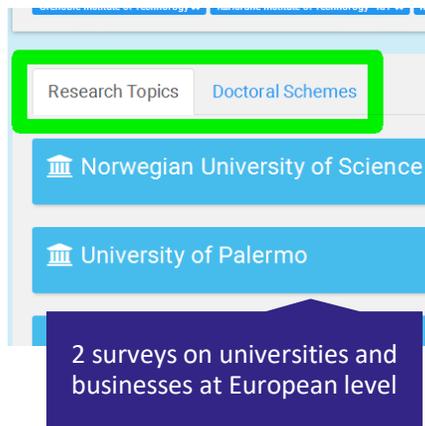
- **Contribute to policy development at European level** (SET-Plan, H2020, EC Consultations, FP9)

## 1 Roadmap and 1 Action Agenda for European Universities

- **Encourages adoption of innovative approaches to learning, teaching and research**



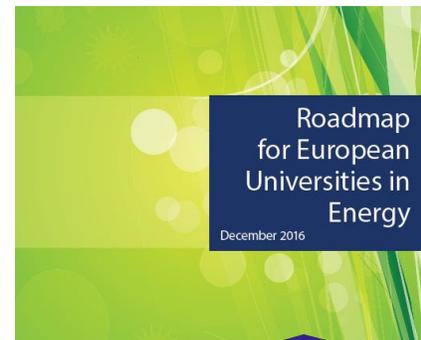
# UNI-SET main achievements



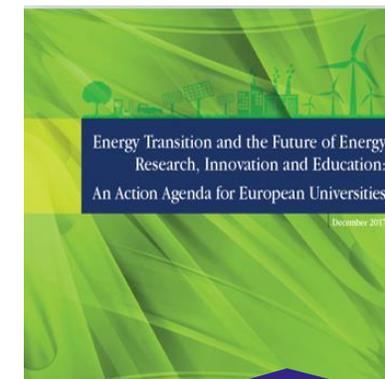
2 surveys on universities and businesses at European level



1<sup>st</sup> European Atlas of Universities in Energy Research & Education



1<sup>st</sup> Roadmap for Universities in Energy



1st Action Agenda for European Universities



4 conferences addressing Research & Education for SET-Plan Priorities



2 conferences on universities engaged for a clean energy future



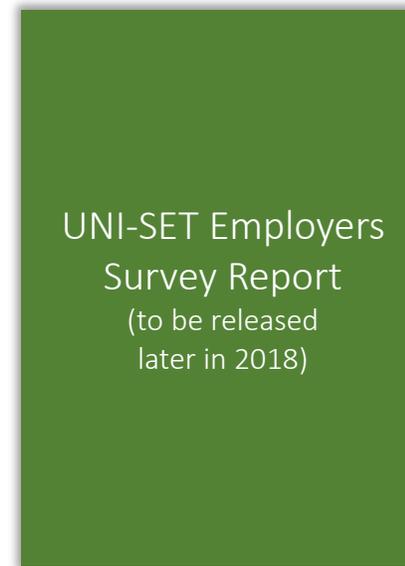
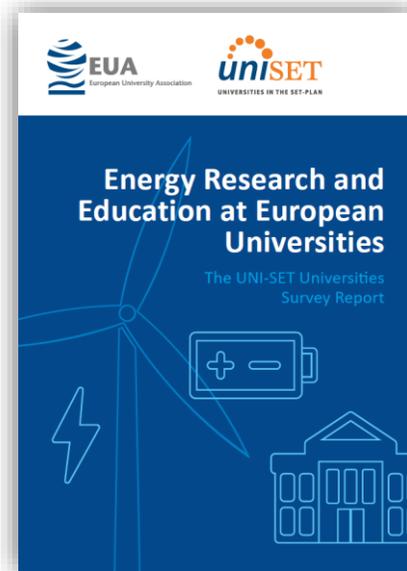
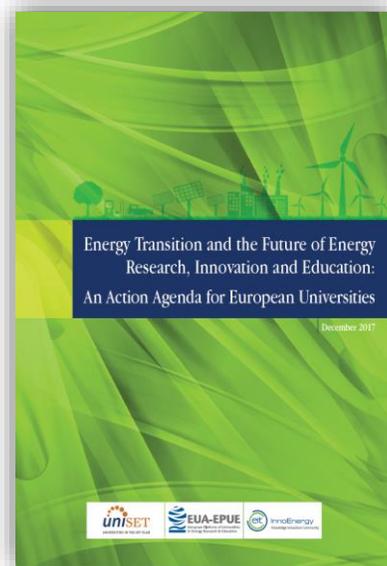
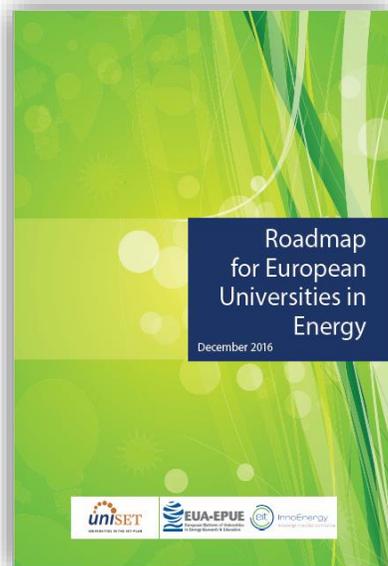
7 Professional Profile Identification Workshops



17 Input Papers to SET-Plan Consultation Process & Implementation Plans

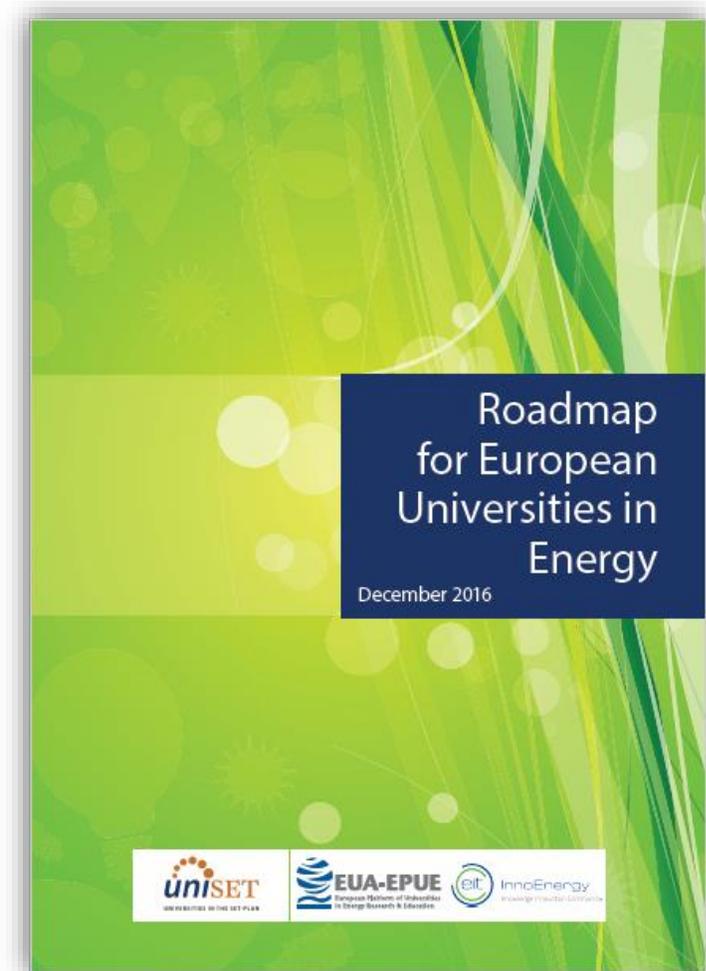


## UNI-SET main achievements



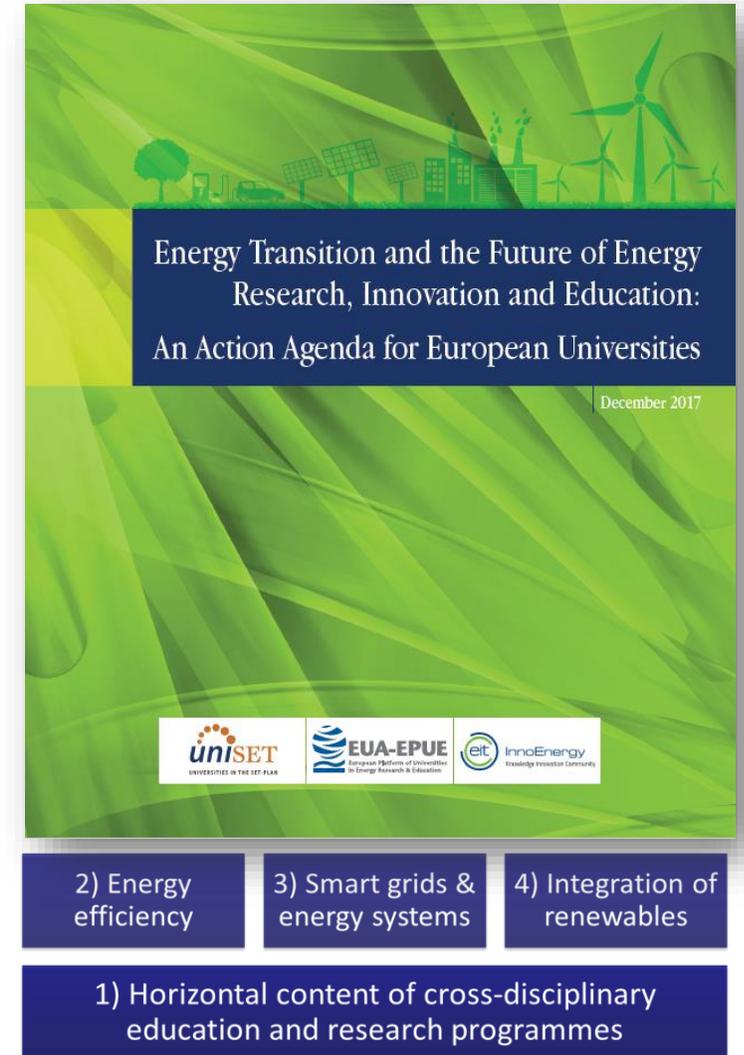
# Roadmap for European Universities in Energy (December 2016)

- **Vision:** “European universities envisage an energy research, innovation and education system that is integrated, mutually reinforcing and embedded in a political framework that facilitates the uptake of innovative solutions for the energy challenge”
- **Main proposed actions:**
  - 1) **Research and Education** (mapping; repository of teaching and learning; platform for high-level dialogue; guidelines on multidisciplinary approaches; statements on major trends etc.)
  - 2) **Collaboration** (university networks; university-business cooperation; platforms of dialogue between sectors; international agenda etc.)
  - 3) **Outreach to society** (prosumers; local, regional and national communities etc.)



# An Action Agenda for European Universities

- Edited by 50+ experts and reviewed by 200+ experts in different energy-related fields
- Seeks to narrow skills gap in higher education and business sector
- Recommends novel framework and approach for designing interdisciplinary, energy-related programmes and courses
- Emphasises the need for better integration of social sciences and humanities with science, technology and engineering disciplines
- Develop new cross disciplinary competence profiles for professional specialisations that are under development
- Encourages adoption of innovative approaches to learning, teaching and research



## Contribution to European policy development

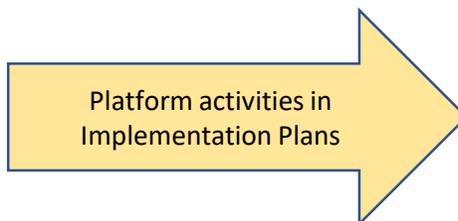


# EUA Energy and Environment Platform in European policy development

- **2013:** Contribution to **SET-Plan Education and Training Roadmap**
- **2014:** Contribution to **SET-Plan Integrated Roadmap**
- **2015-2016:** 17 EUA-EPUE Input Papers submitted to EC for **SET-Plan Consultations on 10 Key Actions**
- **2016-2018:** Role of EUA-EPUE in 6 **SET-Plan Temporary Working Groups (TWGs) and ETIP SNET**
- **June 2017:** EUA-EPUE in **EUSEW 2017**
- **December 2017:** EUA-EPUE in **2017 SET-Plan conference** (10 year anniversary of SET-Plan)
- **June 2018:** SET-Plan Workshop on cooperation “Energy efficiency in Industry”



## Energy and Environment Platform in SET-Plan consultations (2015-2018)



| Key Action | Topic  | Input Paper                     |
|------------|--|---------------------------------|
| 1 & 2      | Photovoltaics  | November 2015                   |
| 1 & 2      | Solar Thermal Electricity                                | November 2015                   |
| 1 & 2      | Offshore Wind  | November 2015                   |
| 1 & 2      | Deep Geothermal Energy                                   | June 2016                       |
| 1 & 2      | Ocean Energy   | June 2016                       |
| 3 & 4      | Energy systems   | August 2016                     |
| 3 & 4      | Smart Cities and Communities                             | August 2016                     |
| 3 & 4      | Smart Solutions for Energy Consumers                     | August 2016                     |
| 5          | Energy Efficiency in Buildings                           | February 2016                   |
| 5          | Heating and Cooling for Buildings (including Heat Pumps) | November 2016<br>September 2016 |
| 6          | Energy Efficiency in Industry                            | February 2016                   |
| 7          | Batteries/e-mobility                                     | May 2016                        |
| 8          | Renewable fuels<br>Bioenergy and renewable fuels         | May 2016<br>November 2016       |
| 9          | Carbon Capture Storage and Use                           | April 2016                      |
| 10         | Nuclear safety   | April 2016                      |



# The future of the EUA Energy and Environment Platform



# Objectives

## Strengthen research and education

- To **renew the education and research programs with the required cross disciplinary competencies** to fathom the **societal change** needed
- To **compile learning material** to be made available through a repository
- To conduct the education in the **knowledge triangle (education –research –innovation)** with close **cooperation with industry**

## Support policy and advocacy at EU level

- To serve as the **voice of universities in the European debate on energy and environment** research, education and innovation.

## Foster outreach and societal engagement

- Continuing effort is needed to ensure **development of the human resources** required to implement the energy transition
- To **further update the existing workforce** in a flexible way, adapted to regional and local needs

## Facilitate networking and clustering

- The **renewal and update of programmes need to be implemented by universities all over Europe (the Roadmap and the pan-European Agendas provide guidelines)**
- The **platform created through UNI-SET** can be built on to reach these objectives



# Addressing environment and climate change issues

- Energy policy and research and innovation is inherently linked to climate change and environmental issues
- Interdisciplinarity is the norm in both all those areas
- High potential for mutual learning
- All are global 'grand challenges' and require research, innovation and education



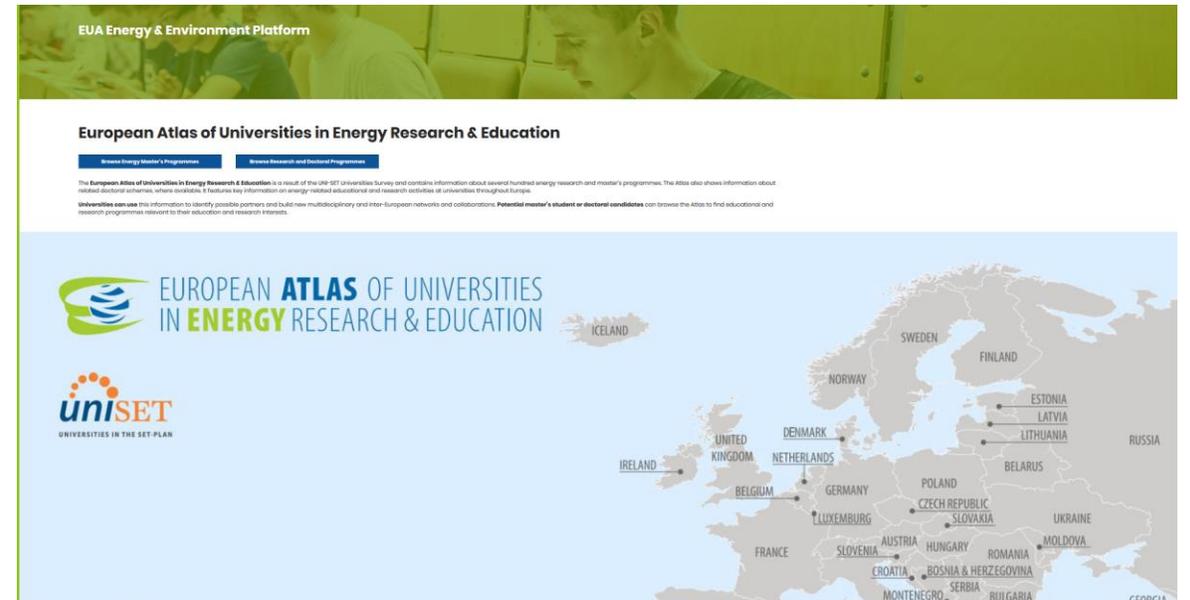
# Upcoming: New launch of European Atlas



134 universities share  
information online

<http://energy.eua.eu/europe-an-atlas.html>

New wave of participation  
will be launched in 2018



# H2020 Call “Research, innovation and educational capacities for energy transition”

- Application to H2020 Call “Research, innovation and educational capacities for energy transition”, LC-SC3-CC-5-2018, together with InnoEnergy
  - Developing innovative programmes, short courses and modules for energy-related subjects
  - Building a university-industry network
  - Supporting universities in Europe to take up new approaches
  - Call closing on 6 September 2018

The screenshot shows the European Commission Research & Innovation Participant Portal. The main heading is "RESEARCH & INNOVATION Participant Portal". The breadcrumb trail is "European Commission > Research & Innovation > Participant Portal > Opportunities". The navigation menu includes "HOME", "FUNDING OPPORTUNITIES", "HOW TO PARTICIPATE", "PROJECTS & RESULTS", "EXPERTS", and "SUPPORT". There are "LOGIN" and "REGISTER" buttons. The main content area displays the following information:

**EU Programmes 2014-2020**

Search Topics

Updates

Cells

H2020

3rd Health Programme

Asylum, Migration and Integration Fund

Consumer Programme

COSME

European Statistics Programme

**TOPIC : Research, innovation and educational capacities for energy transition**

**Topic identifier:** LC-SC3-CC-5-2018

**Publication date:** 27 October 2017

**Focus area:** Building a low-carbon, climate resilient future (LC)

**Types of action:** CSA Coordination and support action

**DeadlineModel:** single-stage

**Planned opening date:** 15 May 2018

**Deadline:** 06 September 2018 17:00:00

Time Zone : (Brussels time)

Horizon 2020  
Pillar: Societal Challenges  
Work Programme Year: H2020-2018-2020  
Work Programme Part: Secure, clean and efficient energy  
Call : H2020-LC-SC3-2018-2019-2020

[H2020 website](#)

[Call budget overview](#)

## Objectives for engaging the platform

- **Keep up an arena for exchange** of experience, inspiration and creation of cooperation between institutions
- **Build network between universities and businesses**
- **Create a repository of education and research learning material**, including cases from businesses and public sector, to be used to build courses and study programs
- **Support for developing courses and study programs** based on innovative learning methods for delivery over the web
- **Address different target groups**; normal degree programs, «stackable» masters, mini-masters, life-long learning, tailor made programs for skills enhancement in businesses and organisations



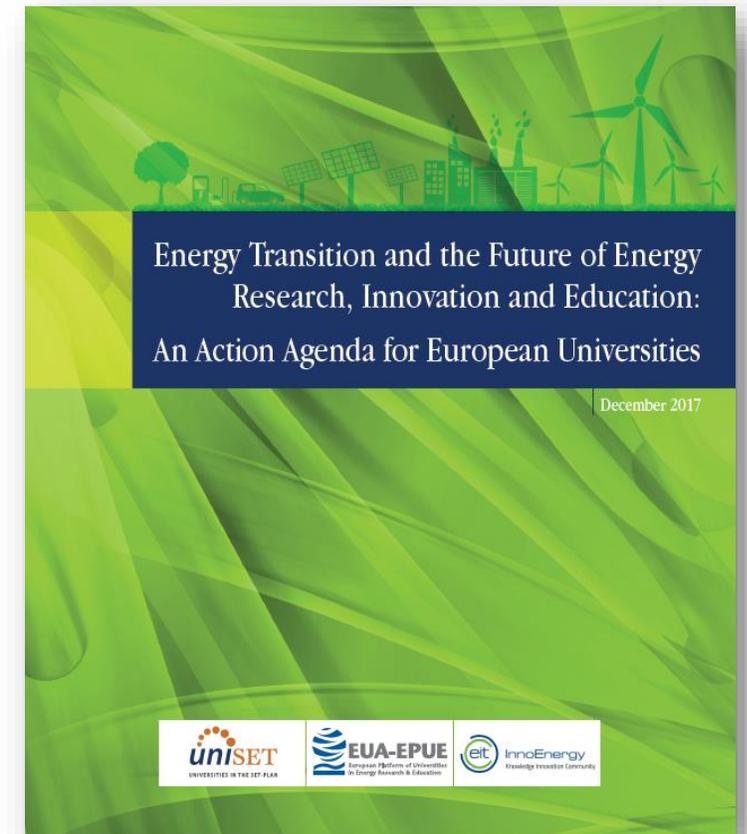
# Conference programme: 21 March (1/2)

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**14.45-15.30 Partnering to deliver: Interdisciplinary Education, Training and Research programmes (Part II)**

**Insights from the “Action Agenda” report**

- Dr Douglas Halliday, Durham Energy Institute, Durham University
  - Prof. Fabrice Lemoine, Energies for the future, Lorraine Université d'Excellence Programme
  - Prof. Mihaela Albu, Politehnica University of Bucharest
  - Dr Wim Melis, Greenwich University
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# Conference programme 21 March

## 15.30-17.30 Parallel Sessions: Partnerships and key challenges of emerging European clusters to take forward the "Action Agenda"

*In these parallel sessions, university and industry leaders will be given the floor to share good practices and future opportunities to reform research and education programmes. The main objective is to facilitate mutual learning and exchange through presentations on projects and activities with an innovative approach to education, training and research. Preference will be given to activities with an interdisciplinary and/or collaborative approach.*

*Moderators of sessions will invite the speakers and the audience to reflect on the implementation of the actions proposed in the "Action Agenda". Some of the questions addressed will be: How cooperation with third parties and research on new topics can feed education programmes? How this can translate into a quick and flexible production and delivery of these programmes to respond to new and urgent market demands?*

*Participants will also be invited to reflect on the ambition to link research, innovation and education policy at EU level, namely in H2020 and FP9.*



**Dinner at 19:30**

*Grand Hotel de la Reine*

*2 Place Stanislas, 54000 Nancy, France*

## 1) Energy Efficiency

**Room: Salle du Conseil (level -1)**

- Dr Jay Sterling Gregg, Technical University of Denmark; EERA JP "Economic, environmental and social impacts"
- Dr Sjoerd de Vries, University of Twente
- Prof. Vincent Chevrier, Computer Science Lab, University of Lorraine

*Moderator: Prof. Fabrice Lemoine, Energies for the future, Lorraine Université d'Excellence  
Rapporteur: Dr Wim Melis, Greenwich University*

## 2) Renewable Integration and Energy Storage

**Room: Amphithéâtre de la Présidence Léopold (level 0)**

- Dr Kristin Gulbrandsen Frøysa, University of Bergen
- Prof. Carlos Del Cañizo, University Politecnica of Madrid
- Prof. Michel Deshaies, Geography Lab, University of Lorraine

*Moderator: Dr Douglas Halliday, Durham University  
Rapporteur: Ms Kamila Kozirog, EUA*

## 3) Smart and Flexible Energy Systems

**Room: Pavillon 1 (level 1)**

- Prof. Annukka Jokipii, University of Vaasa
- Prof. Kjetil Uhlen, NTNU
- Prof. Frank Eliassen, University of Oslo
- Prof. Jérôme Dinet, Psychology Lab, University of Lorraine

*Moderator: Prof. Mihaela Albu, Politehnica University of Bucharest  
Rapporteur: Ms Borana Taraj, EUA*

## 4) Carbon Capture, Utilisation and Storage

**Room: Pavillon 2 (level 2)**

- Prof. Hanna Knuutila, NTNU
- Mr David Nevicato, Total
- Dr Pawel Gladysz, Silesian University of Technology
- Prof. Eric Favre, Process Engineering Lab, University of Lorraine

*Moderator: Prof. Xavier Gimenez, University of Barcelona  
Rapporteur: Dr Andrzej Adamski, Jagiellonian University*

# Conference programme: 22 March (1/2)

## THURSDAY, 22 MARCH 2018

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8.30-9.00 Registration

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9.00-9.30 Plenary Session: Reporting of the parallel sessions on Day 1

- Session moderators/rapporteurs
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09.30-10.30 Plenary Session: Developing multidisciplinary master and doctoral programmes

*The main objective of this plenary session is to test the innovative ideas discussed in the "Action Agenda" report. Experienced plenary speakers from universities and industry will present concrete institutional examples. The plenary session frames the discussions in the subsequent World Café session on "Delivering new and innovative research and education programmes".*

- Prof. João Serra, University of Lisbon
- Dr Isabelle Schuster, PhD School programme director; InnoEnergy
- Mr. Gérard Griffay, Energy Program & Free Innovation Program Leader, Arcelor-Mittal

*Moderator: Prof. Fabrice Lemoine, Energies for the future, Lorraine Université d'Excellence*

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# Conference programme: 22 March (2/2)

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**11.00-13.00** World Café Method: Delivering new and innovative research and education programmes

*The main objective of this session is to test the ideas for the main topics addressed in Day 1. The session will take the form of workshop discussions. Participants will split into 5 to 6 small and informal working groups. The session is structured in two parts of 30 minutes each. Each group will have one moderator and one rapporteur. The moderators will invite the participants to brainstorm on selected questions. Subsequently, the moderators and the rapporteurs will summarise the main ideas emerged during the discussions and present them in a concluding plenary session.*

**11.00-11.15**

Introduction about the World Café Method by the host

**11:15-12:15**

World Café Session

**Part 1) Frameworks and barriers for the development of education and research programmes**

*The session will address the institutional dimension as well as opportunities and challenges at European, national or local level (e.g. barriers within and outside university boundaries; building positive partnerships; accreditation etc.).*

**Part 2) Tools and mechanisms to deliver innovative education and research programmes**

*The session will test ideas for concrete tools in delivering the programmes (e.g. stackable/micro masters; lifelong learning etc.).*

**12.15-13.00**

Summary of sessions – Key messages from session moderators and/or rapporteurs

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**13.00-13.15** Closing Remarks

**13.15-14.00** Light Lunch

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# EUA Energy Clustering Event

Thank you for your attention!

#EUAenergy

EPUE.platform@eua.eu

<http://energy.eua.eu>

