2020 EUA ANNUAL CONFERENCE WEBINAR

Making a difference through partnerships

24 April 2020

#EUA2020online

European University Association

Speakers

- Douglas Halliday, Chair of EUA Energy and Environment Platform, Durham University, United Kingdom

- Koen Verlaeckt, Secretary General, Flemish Interuniversity Council, Belgium

- Chaired by Amanda Crowfoot, Secretary General, EUA

Designing university programmes to support the European Green Deal and the Sustainable Development Goals

Douglas Halliday, Durham University, UK and EUA Energy and Environment Platform

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@DEI_Durham   #EnergyScienceandSociety

EUA Webinar "Making a difference through partnerships"
24 April 2020

Motivation – Universities and Global Challenges

"…requires new cross-disciplinary approaches, integrating different energy technologies, energy systems, energy economies and markets, and importantly, embracing new regulatory frameworks, and understanding consumer behaviour and societal and cultural dimensions."   (Action Agenda)

Effective solutions must address:
- the **whole energy system**
- the **interface** with an **informed society, citizens, policy**
- and **use of resources**.

  ➤ **Interdisciplinary** working – reflecting complexity

  ➤ **Challenge-based** approaches

  ➤ **Collaborative Cross sector** working

  ➤ **Sustainable** solutions

The UNI-SET Project

- **Collaboration**: mobilising universities to address the skills gap: Building a community of experts through the UNI-SET FP7 project **2014-2017**   https://www.energy.eua.eu/

4 conferences addressing Research & Education for SET-Plan Priorities

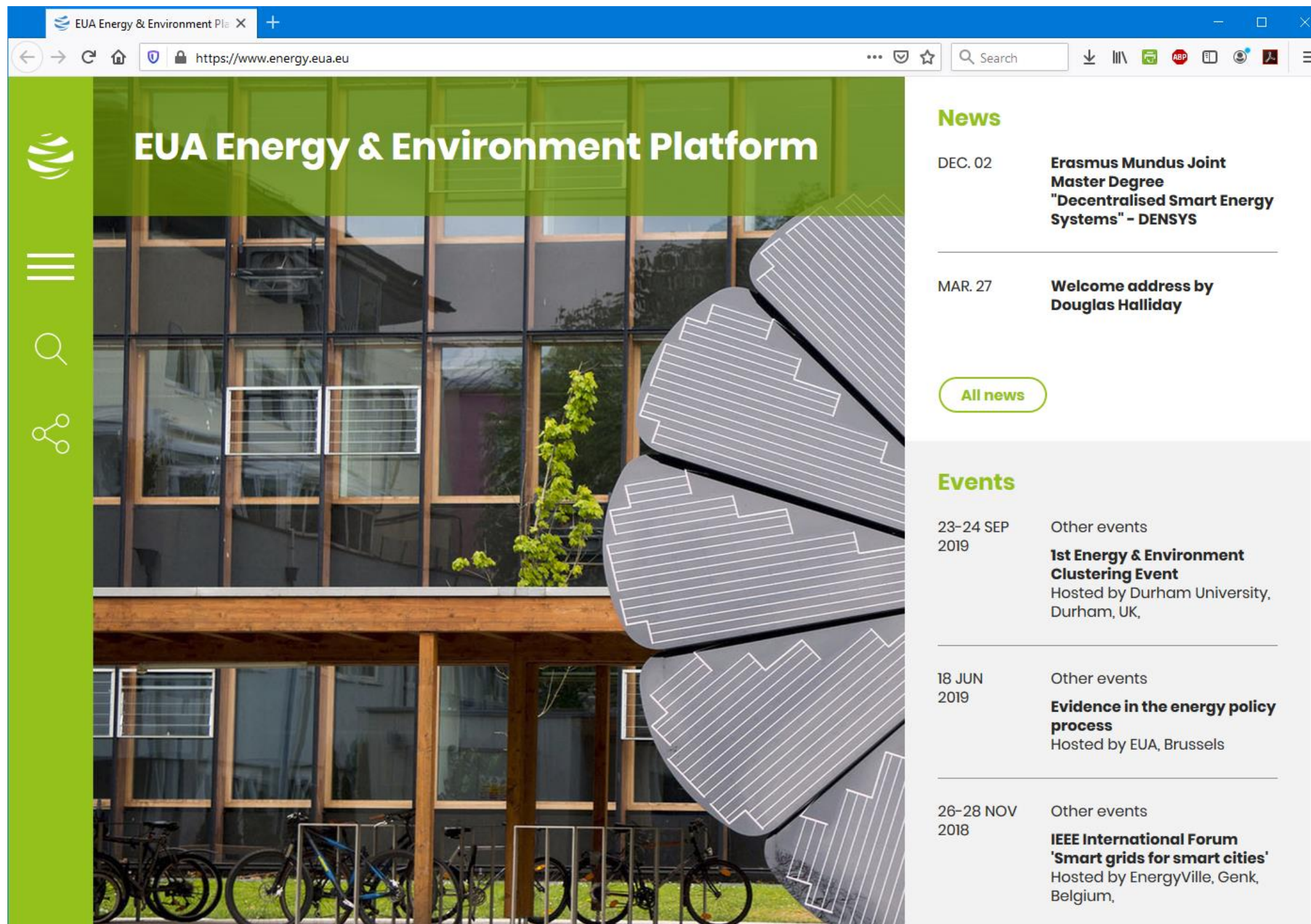2 conferences on universities engaged for a clean energy future

7 Professional Profile Identification Workshops

- **500+ Participants**
- **130+ Universities**
- **100+ Organisations, NGOs, etc.**
- **40+   Companies**
- **40+   Countries**

➢ **Solid foundation for success**

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More details available...

Main Outputs
1. **Roadmap**
2. **Action Agenda**
3. **Atlas of Energy Education**

4. **Employers' Survey**
5. **14 inputs to SET-Plan consultations**

https://energy.eua.eu/   @EUA_Energy

Universities ⟷ Global Challenges

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Anthropology
Archaeology
Biosciences
Business School
Chemistry
Classics and Ancient History
Combined Honours in Social Sciences
Computer Science
Earth Sciences
Education
Engineering
English Language Centre
English Studies
Foundation Programme
Geography
Government & International Affairs
History
Law School
Liberal Arts
Mathematical Sciences
Modern Languages & Cultures, School of
Music
Natural Sciences
Philosophy
Physics
Psychology
Sociology
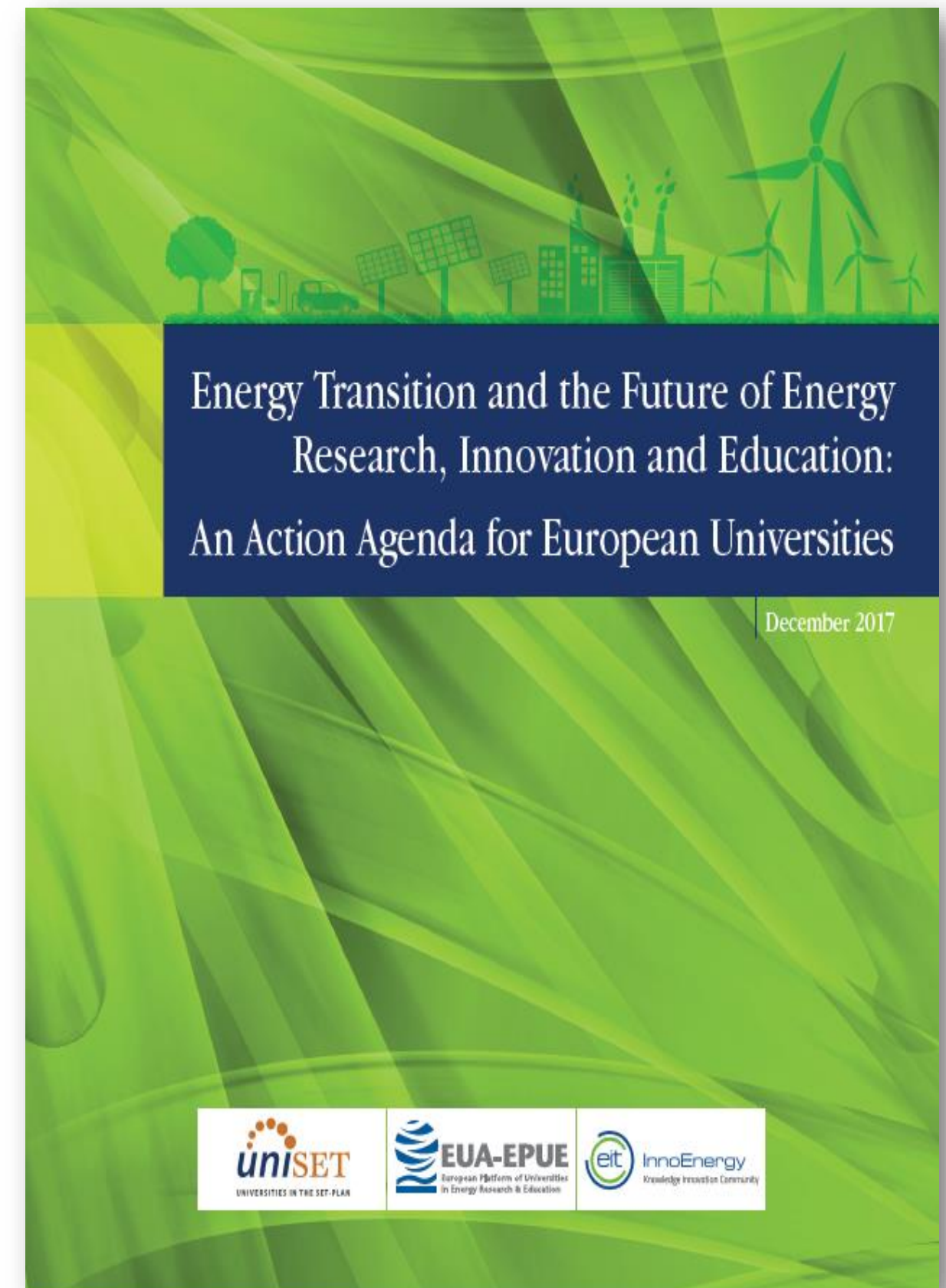**Sport and Exercise Sciences**
Theology & Religion

- Role of universities, place in society
  - Source of new knowledge, understanding
  - Place of education and training
  - Advocates for societal development

- Aligning aims with global challenges
  - New Structures
  - New Approaches
  - Working across boundaries

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An "Action Agenda" for European Universities

- Action Agenda for European Universities

- Input from 100+ energy experts

- Enable the development of the actions set out in the **Roadmap for European Universities in Energy**

- Adoption of **new innovative approaches to learning, teaching and research**: Novel framework and approach for structuring new energy-related programmes

- Bridging **skills gap** in higher education and business sector

- **Greater interaction** between universities and other energy stakeholders including European and national policy makers, industry and citizens

- **Specific examples** in key areas of energy technology: Energy Efficiency; Smart Grids and Systems, Integration of Renewables

Energy Transition and the Future of Energy Research, Innovation and Education:
An Action Agenda for European Universities

December 2017

uniSET
UNIVERSITIES IN THE SET-PLAN

EUA-EPUE
European Platform of Universities in Energy Research & Education

eit InnoEnergy
Knowledge Innovation Community

`http://bit.ly/action_agenda`

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What does this mean for Universities?

- How do providers of Doctoral and Masters education respond to this challenge?

Upgrade & innovate own programmes	Collaborate with society and industry	Update learning & teaching
Break down disciplinary barriers	**More flexibility**	**New interdisciplinary working – new insights**

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Main recommendations

- **Skills and knowledge** development need to go hand in hand

- Focus on **new learning approaches**

- **Rethink the role of the educator**

- **Institutional support** for interdisciplinary education and research

- **Combine breadth and depth** in "T-shaped" educational programmes

- Pay attention to **Lifelong Learning**

- Leverage **digital opportunities**

Strategies to enable change

- **High level support** – institutional commitment to interdisciplinary working
- **European level Coordination and Support** – common approaches to research and education, shared repositories
- **Culture Change** in universities – possibly reflected in evolving institutional structures
- **Support and development opportunities** for staff – need to create a community of practice towards interdisciplinary working
- **Role of different disciplines** – agreed and clearly articulated: must "add value"
- **Overall design** should be a coherent programme not a complex programme

Strategies to enable change 2

- **Variety of learning approaches** in addition to core of learning by research, include professional skills, role of digital and blended learning
- **Case Studies** and **Challenge based** problem solving
- **Cross sector collaboration** – essential. Doctoral candidates must experience: policy, industry, citizens…
- **Life long learning**, needs to be seen as a lifelong challenge, build in culture of continuous CPD
- **Context Matters** – programmes must be designed for local requirements
- **Communication** – clear open communication amongst all parties

http://bit.ly/action_agenda **(pages 9-10)**

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Example from Action Agenda

7. Energy Efficiency

Topics (for courses)	Understanding, Background Knowledge, Comprehension, General Appreciation of …	Design and Implementation / Deeper (Master level) Appreciation of …	Employment Skills
Technical	The factors that influence systemic energy efficiency, incl. integrating energy along life cycles and within the spatial/ geographic context	The relationship between life cycle and energy efficiency	Propose energy efficiency measures at process level, potentially driven by data gathering
	Collected data analysis and appreciation of the power of such data, accepting its limitations	Simulation results and data gathered from measured consumption to improve energy efficiency	Propose energy cascades and efficiency improvements in whole life cycles
Social	The deployment barriers for efficiency improvements	Social barriers as part of a holistic analysis to improve implementation/integration	Consider social barriers
	The roles of actors in and impact on efficiency improvements	The impact of (new) technical processes in their spatial and social context	Interact with actors along the value chain/in the spatial context to improve systemic energy efficiency
Economical	Life cycle costs analysis of energy use with regards to generation efficiency	Calculate ROI for existing combined with new installations	Propose profitable and sustainable (costing) solutions
	The impact of pricing scheme trends (e.g. pricing based on kW instead of kWh) on management and new installations		Propose innovative business models for increased energy efficiency (uptake)
Political	Environmental regulations on efficiency and requirements	Adequate incentives for citizens and companies to move towards better energy efficiency	Operate in/create a legal framework
	Potential impact of economic incentives for energy efficiency improvements		

Appendix B - Case Studies

Energy Efficiency

Example 1 - Energy Efficient Regional Resource Use

Optimal use of existing, preferably local, resources is the ultimate improved efficiency goal. This requires students to generate holistic resource systems that make optimal use of restricted resources with state-of-the-art planning methods (e.g. Pinch, Exergy Analysis or Process Network Synthesis). When a group of (ideally engineering and urban/spatial planning) students is familiar with these technologies, they can be asked to optimise the resource use of a given region/urban settlement. Whenever possible, representatives from the region should be involved. The students will need to see data about the potential energy sources (bio, wind, hydro, solar) in the region, about demand (energy, subsistence, buildings), demographic development, existing businesses and existing infrastructure.

Each group of 4-5 students plans a method to overcome the existing problem. They propose an optimal resource-technology-demand system, integrating existing sites and infrastructure, and identify the most beneficial investments available. They present their results to the whole group, including tutors and regional representatives, followed by a discussion to analyse the strengths and weaknesses of the different approaches.

Example 2 - Multi Criteria System Optimization

A big chemistry plant produces a given number of tons of waste hydrogen and a given quantity of waste heat at 250°C per year. Students are given the annual electricity and primary energy resource consumption of the plant. CO_2 emissions for chemical and own energy production are also provided. An onsite captive fleet is attached to the plant. Energy networks (electricity, gas and potentially heat) are part of the boundary conditions. The plant is located in a mid-rural territory that produces agricultural waste (wood, straw and manure are available). The region is rather windy, so a field of wind-turbines is currently being explored, while the yearly wind profile and installed power capacity are also provided.

Students are asked to:
1) Exploit waste as a resource
2) Create synergies within, and where possible across, plant boundaries
3) Increase the use of decarbonized resources.
Their main goal is to achieve multi-criteria system optimisation.

Groups of 4-5 students research the problem from a variety of perspectives, e.g: CO_2 budget, deep decarbonization potential, economic impact/potential, energy efficiency, etc. An initial brainstorming is held to define potential technologies and synergies beyond the plant boundaries. Each group performs part of the modelling and simulation of the various potential technologies and synergies across plant boundaries. Results are discussed in a consensus meeting and presented to a broader panel of experts including people with non-technological backgrounds (geography, psychology, social, regulation, governance).

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Towards a successful energy transition in Europe?

- Emergence of new **career trajectories** in sustainable and renewable energy and energy systems
- Need to develop a **dynamic** and **skilled** work force
- Need new approaches to protect Earth's valuable **resources**

   "A Clean Planet for All"

- Knowledge and skills gaps
  - ✓ Need for a European-level silo-breaking activity in higher education
  - ✓ Need for new educational pathways
- Universities are **key stakeholders** in the energy transition
- They provide **knowledge, education, research** and **skills development** → **talent pipeline**

   European Green Deal

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Concluding remarks

- Universities responsible for evolving education and training programmes
- Role of university programmes in solving global challenges – A public good?
- Training adds value to education process
- Interdisciplinary approaches can add insights and additional context
- Training develops individuals
- Intersectoral and industry collaboration add value and perspective
- Creating a new generation of problem solvers
- Not just disciplinary experts, able to solve complex energy challenges
- Increasing policy and advocacy role – need for "experts"
- Voice of universities must be heard, respected and acted on in Energy and Climate Debate and all Global Challenges
- Get involved

The place of universities in society?

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Thank you for your attention

Questions

Comments

Discussions

Important need for universities to get involved

- Universities have vast resource of knowledge, skills and expertise
- Important role in understanding complex problems from multiple perspectives
- Producing clear evidence to inform policy decisions at European level
- Opportunity to get involved?
- Join the debate to make a difference – call for papers currently open

University collaboration: relevant industrial and societal actors?

- Collaborative approach: cross-sector university activity with industrial and societal stakeholders
- Inclusion of external stakeholders in the overall **strategic development** of education, training and research programmes

- External stakeholders include **companies**, **NGOs**, **municipalities**, **regulatory bodies**, **European Associations**, **public authorities** and **other stakeholders** in the energy transition?

Implications for university programmes

- Preserving integrity of core doctoral or masters element
- Original research, advanced scholarship, advanced skills: analytical, communication, professional and transferable skills
- The important role of effective structure
- A global context:
  - Ethics, Globalisation, Digitalisation, Sustainability
- Adding context enriches research and enhances effectiveness of learners to understand the wider context of their research
- Opportunities to learn from other sectors

Short History of EUA-EPUE

- 2008 EUA Invited as observer on EERA Executive Committee – newly created SET PLAN
- 2009 Established "European Platform of Universities engaged in Energy/Energy Technology Research" EPUE – supported by Steering Group
- 2010 EUA Launched Survey of university activities in Energy (171 responses)
- Torbjørn Digernes (NTNU) appointed as Chair by EUA Council
- 2011 EPUE Submission on "Energy Roadmap 2050"
- 2012 Inaugural Meeting of Platform at TU Delft (180 Participants)
- SET Plan Roadmap on Education and Training
- 2015 Formal Memorandum with EERA
- 2014-2017 UNI-SET Project
- 2018 EUA Energy and Environment Platform approved by EUA Council
- 2018 Meeting University of Lorraine, "European Universities for a Clean Future"

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A practical example "Energy Efficiency"

- Professionals in all energy relevant disciplines must have a fundamental understanding of:
  - ➢ Energy efficiency technologies in industry, buildings and transport
  - ➢ Energy efficiency planning methods in industry, buildings, transport and spatial planning
  - ➢ Simulation tools for the definition of heating/cooling energy demand
  - ➢ Actor interaction to achieve systemic energy efficiency
  - ➢ Behavioural aspects of energy efficiency
  - ➢ The role of individuals
  - ➢ How technology interfaces with society at different levels

EUA Energy and Environment – The Future

A. Mission and objectives of the EUA Energy and Environment Platform
1. Support policy and advocacy at EU level
2. Foster outreach and societal engagement
3. Facilitate networking and clustering
4. Strengthen research and education

B. Governance: Steering Committee and Chair – EUA Council

C. Membership – open to all EUA Members

D. Policy Development
1. European Commission
2. Role in SET-Plan Process (Roadmap, Policy Input Papers, WGs)
3. ETIP SNET (Membership of Governing Board)
4. Other Stakeholders (EERA, InnoEnergy, ESEIA, EUREC)

Overview

1. Context
2. Presenting the HRA toolbox
3. The way forward

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1.Context

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1.1.Human rights in a nutshell

- Fundamental rights to which every human being is entitled
- Three major types:
  - Civil and political rights (e.g. the right to life, the right to freedom of expression, …)
  - Economic, social and cultural rights (e.g. the right to education, the right to equal pay for equal work, …)
  - Solidarity rights (generally collective in nature, e.g. right to development, the right to a healthy environment, …)
- Human rights are protected at three different levels:
  - National (state and components)
  - Regional (inter-state cooperation, like Europe)
  - Global (cooperation between states, like United Nations)

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1.2.The breeding ground of the HRA toolbox

- Academic freedom is one of the guiding principles for universities
- VLIR has a long tradition of speaking out publicly on grave human rights violations, both inside and outside of Europe
- The emphasis in our work lies on harmonizing, aligning and refining existing relevant practices at individual university level, provided our members agree

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1.3.The process

- University rectors tasked an ad hoc working group of human rights experts to develop recommendations for a human rights assessment toolbox that can be used as a practical instrument of self-regulation.

- The wording of the final document required a delicate balancing act between human rights principles and the reality of strategic priorities that govern a university's policies on research, higher education, international relations and corporate administration.

- The report was approved in October 2019. An English translation is available at https://vlir.be/beleidsdomeinen/internationalisering/#tab_3

2.Presenting the HRA toolbox

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2.1.Scope of the HRA

- Only partnerships concluded with a document signed by the university as an institution
- All new partnerships and the renewal of ongoing partnerships (in all domains of the academic remit) with external partners (both academic and non-academic)
- Partnerships at national and international level
- **No application** at the level of country or a regime

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2.2.What aspects of cooperation are subject to HRA?

- Partner(s) in the cooperation: it is assessed whether the partner(s) has/have been guilty of serious and/or systematic human rights violations in the past
  - E.g. university partners who systematically discriminate against certain persons on the basis of their gender, ethnicity, political opinion, nationality, religion, etc., for example by denying them access to university

- Activities of the cooperation: the extent to which the activities of the cooperation agreement could give rise to human rights violations is assessed
  - E.g. activities for which child, forced or slave labour is used by the partner(s)

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2.3.Who carries out the HRA and when ?

- As soon as possible during the preparatory process of new partnerships
- A shared responsibility between individual staff, research and education units, and central university units
- It is strongly recommended to set up a central human rights contact point in each university

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2.4.Three HRA stages

- Stage 1: screening
  - Carried out at decentralized level by individual staff or research/education unit
  - If necessary turning to the Human Rights Contact Point for advice or more information

- Stage 2: scoping
  - Activated only when screening raises one or more red flag(s)
  - Carried out by the Human Rights Contact Point

- Stage 3: consequences
  - Activated only when red flag(s) remain(s) after scoping
  - Carried out by the Human Rights Contact Point in consultation with individual staff or research/education unit

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2.4.1.First stage: screening

- Staff are invited to apply the HRA:
  - by examining the mission, vision and activities of the partner or by obtaining more detailed information about the partner
  - by consulting a number of relevant websites, such as www.business-humanrights.org or www.scholarsatrisk.org
  - by answering a number of questions, which have been arranged in the form of an indicator diagram

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Indicator diagram ©VLIR

Certain types of partners, activities and contexts may call for heightened vigilance:

1. Partners
1.1. One of the partners in the project is not an academic institution, but an actor who, by its nature, may have possible involvement in human rights violations. Examples in this regard may include:
- (elements of) the police, army or other (public and private) security services, and other public services whose operations may give rise to human rights violations;
- companies in sectors where large-scale violations of workers' or residents' rights occur on a regular basis (mining sector, clothing industry, large-scale plantations, infrastructure and utilities (e.g. a dam)).
Yes ☀ | No O

1.2. One of the partners is a government agency (other than a public university) in a country with a poor reputation for human rights violations. E.g. a country marked as 'not free' in the 'Freedom in the world' index (Freedom House, https://freedomhouse.org/report-types/freedom-world).
Yes ☀ | No O

1.3. One of the partners in the project is an academic institution very closely associated with an actor mentioned in 1.1. or 1.2.
Yes ☀ | No O

2. Activities
2.1. Due to the nature of the activities and the context, there is a risk that messages are disseminated within the project (e.g. in training or education) which may give rise to human rights violations (this may also include problematic requirements of donors, e.g. a formal requirement not to speak about family planning in medical programmes).
Yes ☀ | No O

2.2. There is a risk that knowledge, equipment or results acquired in the course of the cooperation may be used/misused to violate human rights.
Yes ☀ | No O

2.3. There is a risk of human rights being violated in the margins of the project ('collateral damage') or prior to the project (e.g. in order to create a testbed, people may be expelled from their country).
Yes ☀ | No O

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2.4.2.Second stage: scoping

- If stage 1 raised a red flag, the Human Rights Contact Point will carry out a more thorough analysis of the partner and/or the activities.

- Scoping is mainly done by getting in touch with:
  - The Ministry of Foreign Affairs, Embassies abroad, European Union, United Nations, specialised human rights organisations, etc.
  - Researchers or staff members who have had previous experience with the same partner or activity

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2.4.3.Third stage: consequences

- If scoping brings to light issues of concern, the Human Rights Contact Point will discuss the potential consequences with the individual staff/unit.

- Possible consequences:
  - Engage in dialogue, obtain more information
  - Ask to adapt activities of the partner or change the planned activities of cooperation
  - Completely remove activities and/or exclude the partner from cooperation
  - University can withdraw as partner, or can decide not to start the new partnership
  - If cooperation has more positive than negative characteristics, it might be advisable to continue the collaboration

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3.The way forward

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3.1.What's next ?

- All universities have been asked to implement the HRA recommendations and the accompanying HRA toolbox by the end of 2020
- VLIR will evaluate the level of implementation
- VLIR wishes to share the toolbox with all interested universities
- VLIR invites EUA to think about ways it could share strategic intelligence on human rights issues with its members.

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3.2.Contact

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