EUA
European University Association

STRONG UNIVERSITIES FOR EUROPE

The European Platform of Universities engaged in Energy Research (EPUE) an EUA Initiative

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Introductory Remarks (1)

- The European Commission is developing policies to achieve sustainable, secure and competitive energy technologies, based on efficient and low carbon energy technologies as a motor for prosperity[1,2,3].

- Changes and adjustments in life style to adapt to new energy environments and constraints are ahead of us. A well educated population is needed to take these forward.

[1] EC Communication on the SET-PLAN; COM(2007) 723 final; Brussels, 22.11.2007
[2] EC Communication on Investing in low carbon technologies; COM(2009) 519 final; Brussels, 7.10.2009
[3] EC Communication on Energy 2020; COM (2010) 639 final, Brussels 10.11.2010

Introductory Remarks (2)

- Universities are main stakeholders in basic research and in higher education and training, as well as in innovation oriented research. They should be an integral part of the European organisations and expert groups in charge of designing roadmaps for progress in this field.

- The presence of universities and the European University Association in the policy dialogue has been acknowledged officially by the EC but universities still have a long way to go to achieve full recognition as an equal partner amongst the other stakeholders involved.

Sharp rise in institutional research and industrial R&D to realise the SET-Plan objectives

- SET-Plan objectives
  - ✓ By 2020: Greenhouse gas (GHG) emission down 20%, 20% renewable energy, 20% reduction of energy use
  - ✓ By 2050: Reduction of GHG emissions by 60-80%
- A paradigm shift using new and yet to be developed technologies in innovative ways is required to achieve these objectives
- There is a massive need for new talent, and upgrade of the existing competencies in society for this development
- The best way to educate young people for such an endeavour is to do it deeply embedded in the knowledge triangle - education/research/innovation – in an environment of frontier research and innovation
- Then they can become the change agents that society needs

Challenges

- Recruiting the best young talent for careers in the energy sector – a global market and global competition
- Building increased E&T capacity fast enough
- Making state-of-the-art education programmes with the latest knowledge available widely in Europe
- Achieving the integration of education, cutting edge research, and a rich innovation environment at sufficiently many locations

Developing a roadmap for energy education and training in Europe

- The European Commission sees these challenges, and wants to develop a roadmap for education and training as an integral part of the SET-Plan
- For the implementation of such a roadmap to be successful, the capacity of the universities of Europe must be mobilised widely
- The European University Association has taken an initiative to contribute to this mobilisation by creating a European platform of universities engaged in energy research and education - EPUE

Universities in the EU SET-Plan policy context (1)

- **2007: "European Strategic Energy Technology Plan (SET-Plan): Towards a low carbon future"**

  The Commission proposed to create a **European Energy Research Alliance (EERA)** based on potential joint programmes that would "include basic *energy science*, enabling and breakthrough technologies and advanced energy efficiency."

  The EC acknowledged the "excellent research teams" in universities as well as their role in education and training in the field. The EC engaged in a dialogue with EUA to become part of the EERA.

Universities in the EU SET-Plan policy context (2)

- **EUA joined the European Energy Research Alliance** (**EERA**) in an observer capacity in October 2008 after a decision of the **EUA Council** in Rotterdam, following the invitation of the European Commission.

  Main Objective:

  To promote European university energy research and education, and voice the interest and role of European universities in EU energy related research, and their policy related development within the European Strategic Energy Technology Plan (SET-PLAN).

- **EUA launched Questionnaire**

  to European universities to identify university research and training capacity in the field of energy with the objective to build a European Platform of Universities Engaged in Energy Research (EPUE).

Universities in the EU SET-Plan policy context (3)

- **2009: University involvement recognised in the EC Communication on "Investing in the Development of Low Carbon Technologies (SET-Plan)"**

  "The involvement of universities in the Alliance through the platform created by the European University Association will help ensure that the best brains can be mobilised."

- **2010: Official launch of the European Platform of Universities engaged in Energy research (EPUE)**

  SET-Plan Conference, Brussels, 15 November 2010

  Presentation on "Mobilising European universities' capacities in education, research and innovation to contribute to the EU SET-Plan"; by Prof. Torbjørn Digernes.

EUA-EPUE Platform: Main Objectives

- To facilitate competitive European university groupings to participate in the realization of the SET-Plan, through cooperation with the European Energy Research Alliance (EERA) and the Joint Programming activities, the European Industrial Initiatives (EIIs) and other initiatives.

- To ensure that university capabilities in long term fundamental research and training are utilized in the upcoming EU energy activities, and that a good balance between top-down and bottom-up research strategies is applied.

- To mobilize cross disciplinary research and education, encompassing from natural sciences and engineering to social sciences, arts and humanities to best enable development of innovative energy technologies, and their implementation in society.

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Status on the EUA-EPUE membership as of September 2011

	Country	Number of institutions per country
EU 27 and Associated Countries	Austria	4
	Belgium	7
	Bosnia and Herzegovina	1
	Czech Republic	4
	Denmark	4
	Estonia	1
	Finland	6
	France	6
	Germany	17
	Greece	1
	Hungary	2
	Ireland	3
	Italy	20
	Lithuania	1
	Netherlands	4
	Norway	5
	Poland	18
	Portugal	3
	Slovakia	3
	Slovenia	2
	Spain	14
	Sweden	3
	Turkey	3
	UK	17
Others	Azerbaijan	1
	Georgia	1
	Iceland	1
	Russia	1
	Ukraine	1
		154

EPUE Questionnaire – Summary of Outcomes (1)

- **EPUE:** 154 members, 29 countries

- **University Research Areas in the Energy Field**
  - **Specific topic areas, Total Number** — **1.473 topics**
  - **Research staff(*), Total Number** — **19.681 persons**
  - **Average group size (FTE) per specific topic** — **13 persons**

  (*)Professors, faculty, doctoral holders, doctoral candidates, other researchers, technical assistants

- ***Total approximated university research budgets:*** ***7 Billion €***

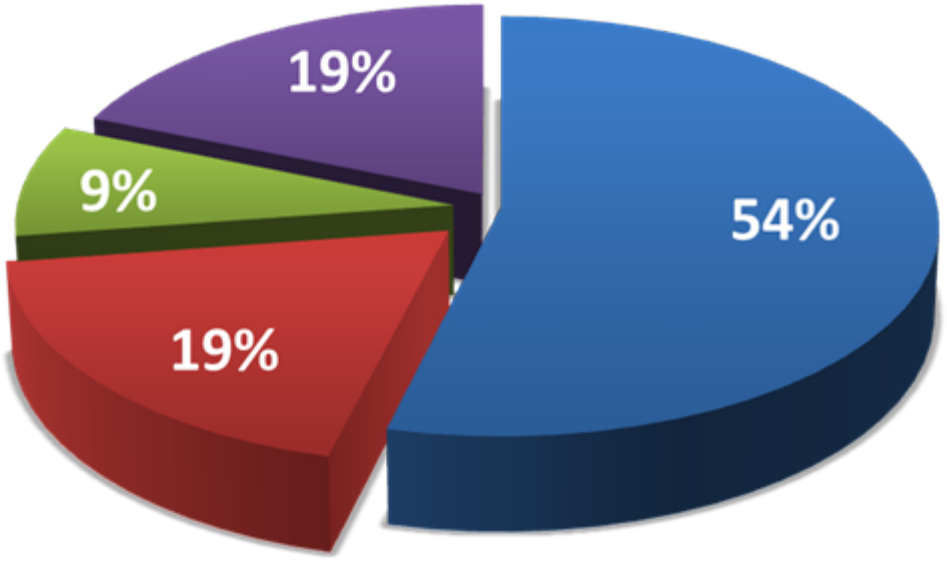
- ***Energy-related estimated research budgets:*** ***986 Million €***

- **Doctoral Programmes in the Energy Field** **556**

- **Master Programmes in the Energy Field** **853**

EPUE Questionnaire – Summary of Outcomes (2)

EPUE - Financial Attributions to Energy-related Research

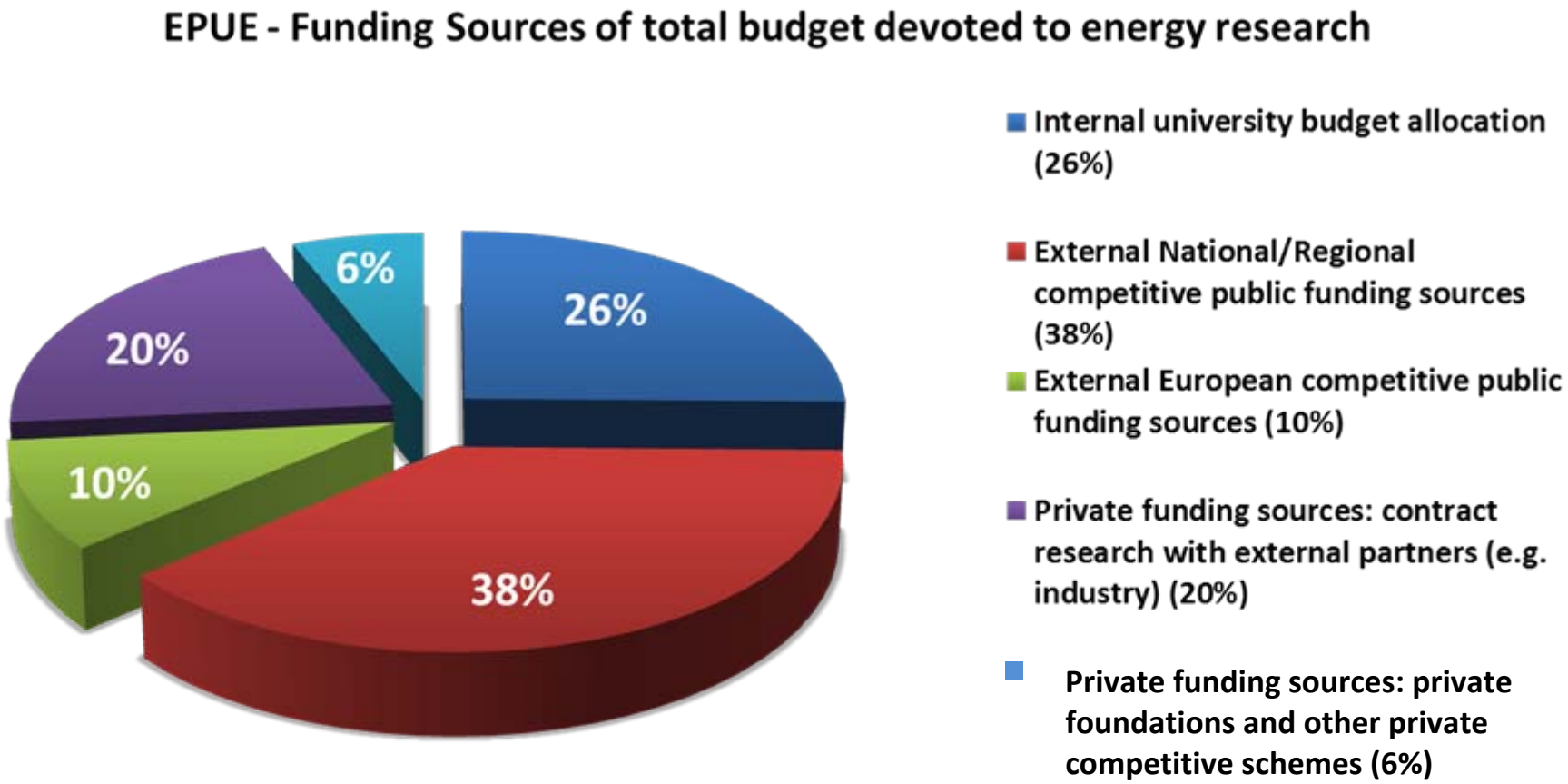


Proportions of institutions devoting:

- **Between 0 and 10% (54% of respondents)**
- **Between 10 and 20% (19% of respondents)**
- **Between 20 and 30% (9% of respondents)**
- **More than 30% (19% of respondents)**

of overall university research budget.

EPUE Questionnaire – Summary of Outcomes (3)



Total university research budgets: 7 Billion €
Total university energy-related research budgets: 986 Million €

EUA-EPUE Actions in 2011/2012 (1)

- EUA-EPUE stresses that basic science and high quality education is essential to develop knowledge for innovation in the energy field and that a long-term perspective is crucial.

- EUA-EPUE establishes a structured dialogue with the European Commission and with EERA on matters of research and education agendas (especially Master and Doctorate programmes) at the EU level of the SET-Plan and the Energy Roadmap 2050.

EUA-EPUE Actions in 2011/2012 (2)

- Part of EUA policy development and public statements:

  - "Smart People for Smart Growth", EUA response to Europe 2020 Flagship Initiative Innovation Union

  - Contribution to the consultation on the Green Paper on a Common Strategic Frameworks for EU Research and Innovation funding.

- Contribution to Energy Roadmap 2050 Consultation:

  ..."This statement of interest emphasises the general point of the centrality of the key future role of basic research and education in the future Energy Roadmap 2050."...

- Organisation of an inaugural event with EPUE members to agree on ways forward for the platform (23rd -24th February 2012 – TU Delft, The Netherlands)

EUA-EPUE Steering Group

- **Chair: Prof. Torbjørn Digernes**, Rector, Norwegian University of Science and Technology, Norway
- **Prof. Dr. Vaclav Havlicek**, Rector, Czech Technical University, CRC Vice-President for economic and social affairs, Czech Republic
- **Prof. Peter Lund**, Aalto University, Finland
- **Dr. Tom Markvart**, Director, Solar Energy Laboratory, School of Engineering Sciences, University of Southampton, United Kingdom
- **Prof. Dr. Michael Muhr**, Vice – Rector, Graz University of Technology, Austria
- **Prof. Juan Pascual Martínez Pastor**, Instituto de Ciencia de los Materiales, University of Valencia, Spain
- **Prof. Dr. Ulrich Stimming,** Professor of Physics and Chemistry, Technical University Munich, Germany
- **Prof. Grégoire Winckelmans,** Président Institute de Mécaniques, Matériels et Civil Engineering, Université catholique de Louvain, Belgium
- **Dr. John Smith,** Deputy Secretary General, EUA
- **Dr. Lidia Borrell-Damian**, Senior Programme Manager, EUA

Thank you for your attention

For further information visit:

www.eua.be