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1. About the EERA

On the 27th of October 2008 the European Energy Research Alliance (EERA) was founded by ten leading European institutes in the field of energy research. The aim of the EERA is to accelerate the development of new energy technologies in support of the SET-plan. The EERA aims to strengthen, expand and optimise EU energy research capabilities through the sharing of world-class national facilities in Europe and the joint realisation of pan-European research programmes. EERA will draw on results from fundamental research in order to mature technologies to the point where it can be embedded in industry driven research. The declaration of intent, signed by the ten founding partners, is available for download at <http://www.eera-set.eu/home>.

2. Joint programming

In order to achieve these aims EERA will identify and define so-called Joint Programmes covering the various thematic areas as outlined in the SET-plan. In principle, the programme level is open to all institutes that can provide a relevant contribution to the programme. The working methodology of EERA is by conducting a series of pilot workshops and follow up workshops which should support the creation of joint programmes by identifying the options, value added and interest for alignment of research programmes of the participants at the workshop. The evaluation process is meant to create a basis for the formation of the dedicated scientific communities as well as the formulation of written programme proposals to single Joint Programs, including the specification of dedicated work plans and work packages, the allocation of contributions to single participating institutions etc. It is intended to launch the first Joint Program Activities by the end of 2009.

3. EERA Workshops

Over the last six months, initial workshops have been held for a number of technological areas such as CSP, CCS, Wind, PV and Geothermal Energy in order to identify if and on what topics a common interest for alignment of programmes does exist. EERA is not a platform, but is build upon active participation of key stakeholders. Therefore, participation to the workshops is on invitation only and participants are selected based on their potential to commit own resources to the programme as well as leading position in the research field. The initial programme launched by the key players will act as a nucleus and will grow in time, both with respect to resources as well as actors involved.

3.1 CCS

For CCS, it was decided to further break down the research area into (1) pre-combustion and oxyfuel, (2) post-combustion and (3) CO₂ transport and storage.

Pre-combustion and oxyfuel

On the 11th of December 2008, the first workshop on Carbon Capture with focus on pre-combustion and Oxyfuels was held in at Sintef (NO). The participating institutions were BRGM, CESI RICERCA, CIUDEN, ECN, ENEA, FZJ, GKSS, IFE, IFP, INETI, Poli Milano, RISOE, SINTEF, TNO and UK-ERC. At the workshop, *Separation technologies for pre-combustion and oxyfuel CO₂ capture* (coordinated by ECN), *Oxy-combustion* (coordinated by IFE) and *Cross cutting issues* (coordinated by IFP) were defined as priority areas for a follow-up workshop. In this follow up workshop, in depth discussions on key research topics and corresponding common interest and potential commitment of resources should take place.

At the follow-up workshop on *Separation technologies for pre-combustion and oxyfuel*, it was agreed to draft a joint work plan covering the following areas: *Oxygen transport membranes* (coordinated by FZ Juelich), *Sorbents including high temperature S-removal* (coordinated by ECN), *Hydrogen separation membranes* (coordinated by SINTEF) and *Sorption-enhanced reforming* (coordinated by IFE). *Oxyfuel boilers, CO₂ processing specific for oxyfuel, material selection for oxyfuel, gas turbine development and separation technologies* were identified to be of most interest for a first start of joint activities on a European level during the Oxy-combustion workshop.

The workshop on *Cross cutting issues* is foreseen to take place on the 24th of June 2009 in Paris. The workshop will cover a.o. common benchmarking framework, simulation and techno-economic evaluation, life cycle analysis, process simulations, dynamics and diagnostics as well as up scaling of tests and manufacturing.

Furthermore, it is expected that the initial workshops on post-combustion and CO₂-Storage will be arranged in September 2009.

For further information please contact René Gail, (r.gail@fz-juelich.de)

3.2 Concentrated Solar Power

Following the EERA initial workshop on CSP on the 4th of December 2008 at PSI (CH), a follow up meeting was arranged at CNRS in France on 11th of March 2009. The participating institutions were CEA, CESIRICERCA, CIEMAT, CNRS, DLR, ENEA, PSI and LNEG. Besides the identification of key topics for joint research, also the interaction between SolLab and EERA was a major topic for discussion since the objectives of SolLab fit quite well with the objectives of the EERA.

At the follow-up workshop, five research areas of major interest were identified:

- Thermo chemistry / high temperature chemistry (coordinated by PSI)
- Power generation and desalination (coordinated by CIEMAT)
- Thermal storage (coordinated by ENEA)
- Accelerated aging (coordinated by DLR)
- Engines, e.g. dish stirling technology (coordinated by CESIRICERCA)

The aim is to write a draft work programme by September 2009, aiming to launch a first EERA programme on CSP by the end of 2009.

For further information please contact Massimo Busuoli (massimo.busuoli@enea.it)

3.3 Geothermal Energy

The EERA pilot workshop on Geothermal Energy was held on the 26th of February 2009 at the GFZ Potsdam (DE). As major result of the EERA pilot workshop within the general topic four research areas of major interest were identified:

- Reservoir exploration
- Accessing and engineering the reservoirs
- Thermal water loop, and
- Efficient geothermal provision of power, heat and / or chill.

The workshop participants proposed to establish a European geothermal resource map and additionally some “source-sink matching” in order to record not only the available resources of a country but also its energy consumption.

For further information please contact René Gail, (r.gail@fz-juelich.de)

3.4 Wind Energy

A first workshop on Wind Energy took place on the 4th and 5th of March 2009 at LNEG (PT). The participants were CENER, CIEMAT, CRES, ECN, LNEG, ISET¹, Risø/DTU, SINTEF, University of Porto and University of Strathclyde. During the workshop four potential subareas for joint activities were selected:

- Wind conditions (Risø/DTU). Workshop planned for the 8th of September.
- Aerodynamics (ECN). Workshop on the 18th of June.
- Electrical integration (FhG Institute for Wind Energy and Energy Systems Technology (IWES). Workshop around 25th – 26th of September
- Offshore (SINTEF). Workshop not planned yet.

For further information please contact Soeren Knudsen, (soeren.knudsen@risoe.dk)

3.5 Photovoltaic

The EERA Pilot workshop on Photovoltaics was held on the 19th of May. Attending institutes were CEA, CIEMAT, CRES, ECN, ENEA, FhG-ISE, FhG-ISET, FZ-Juelich, IMEC, HZB, Risø/DTU, Sintef/IFE, VTT and the Warsaw University of Technology. During this workshop, the following topics were selected as basis for in depth discussion:

- Silicon materials (FhG-ISE)
- Organic PV (Risø/DTU)
- Module technology (ECN)
- TCO (FZ Juelich)
- Education and training (Helmholtz: FZ Juelich and HZB)
- Large area deposition / interfaces (HZB)

The aim is to draft a work plan for joint programming by the end of September, aiming for an official approval and launch still in 2009.

For further information please contact Harm Jeeninga (jeeninga@ecn.nl)

3.6 Smart Grids

In order to prepare the initial workshop in the field of Smart Grids, an information workshop was organised on the 5th of June. The aim of the information meeting was to inform key research institutes in the field of Smart Grids about the EERA activity and to explain the selection procedure for the EERA workshop on Smart Grids (<http://www.eera-set.eu/index.php?index=38>) that will be held on the 10th of September 2009 at VITO (BE). This workshop will be organised by ECN, ENEA, ERSE and VITO.

For further information please contact Massimo Busuoli (massimo.busuoli@enea.it)

3.7 EERA workshops to come

In addition to the workshops organised in the thematic fields listed above, initial workshops are also under preparation for Marine Energy and Structural materials for innovative nuclear systems

a. Initial workshop on Marine Energy

The initial workshop will be arranged by UK-ERC. A specific date for the pilot workshop on Marine Energy has not been fixed yet. It is foreseen to be arranged in autumn 2009.

For further information please contact René Gail, (r.gail@fz-juelich.de)

b. Initial workshop on Structural materials for innovative nuclear systems

This initial EERA workshop is organised by FZ-Karlsruhe, CEA and ENEA for the 19th of June at the Forschungszentrum Karlsruhe (DE). Up to now responsible program managers from CEA, CIEMAT, Dalton Nuclear Institute, ENEA, FZ-Juelich, FZ-Karlsruhe, FZ-Dresden, INR, JRC-Petten, NRG, PSI, RCR, SCK-CEN, UK-ERC and VTT are invited to participate.

For further information please contact Claude Ayache (claudio.ayache@cea.fr)

c. Initial workshop on 2nd generation bio fuels

Given the high interest to participate in EERA activities for 2nd generation bio fuels, the options to break down the topic in sub-areas is being discussed. It is intended to finish this process by September 2009. Next, it is expected that a number of initial workshops for each of the sub-areas will be organised.

For further information please contact Harm Jeeninga (jeeninga@ecm.nl)

4. Governance Structure: call for new members

On the 27th of October, the European Energy Research Alliance (EERA) was founded by 10 leading research organisations. One of the tasks of the founding partners was to develop a governance structure for the EERA, addressing the interest of the partners in the EERA programmes in a democratic, transparent and effective way. Since the EERA programmes are still under preparation and have not been launched yet, an interim structure to govern the EERA will be implemented first. In this interim period the Executive Committee of the EERA will consist of the Founding Partners and an additional five new members. Out of these five new members, a minimum of two positions are reserved for institutes from new Member States. An open call for additional members of the Executive Committee has been launched through the EERA website on the 15th of June (see <http://www.eera-set.eu/index.php?index=28>). The interim structure will be replaced by a final governance structure after two years of operation. The call will close on the 1st of September 2009. Final decisions will be taken at the EERA meeting on the 7th of October.

5. IPR-Issues

Despite the fact that the EERA is aiming to align research activities that are still in the pre-competitive face, IPR issues will play an important role. Therefore, a taskforce of experts in this field has been established. This task force prepares for a general baseline on IPR-issues in EERA close to common and already known regulations in EU-contracts. In a first step the group will propose a model contract for scientific cooperation's as well as a model contract for joint usage of scientific infrastructures in EERA Joint Programs.

6. International Cooperation

It is the intention of EERA that in time its activities will be expanded beyond Europe by developing a strong relationship with research activities carried out in e.g. the US and Japan. The EERA aims to establish first contacts through the visit of a joint delegation of EERA members and the European Commission to the Department of Energy (DOE) and several National Laboratories.

7. Involvement of Universities and European Research Councils

The European University Association (EUA) as well as the European Heads of Research Councils EUROHORCS are supporting the EERA and participate as observers in the meetings of the EERA Executive Committee. The EUA has created a European Platform of Universities engaged in Energy Research (EPUE) to be able to introduce the university based research and training programmes into upcoming EERA Joint Programs. EUROHORCS is also preparing for similar dedicated instruments.