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Ministério da Economia e
da Inovação e do Desenvolvimento



#GridWeek

GridWeek 2010

- Started from an IDEA
- Ten leading European Research Institutes have taken up the challenge to found an European Energy Research Alliance (EERA).
- Key objective - to accelerate the development of new energy technologies by conceiving and implementing Joint Research Programmes in support of the [Strategic Energy Technology \(SET\) plan](#) by pooling and integrating activities and resources, combining national and Community sources of funding and maximising complementarities and synergies.

EERA: European Energy Research Alliance

Why Europe needs the EERA:

- Improve coordination of energy R&D in Europe
 - EU Member States funds approximately 70 % of energy R&D
 - European Commission funds approximately 30 %
- Technology development (and deployment) is often on global scale
 - Not efficient to work on an individual basis when still in the pre-commercial phase
 - Coordination between countries in the Europe is needed

EERA: context

- To be competitive at Global Scale:
 - More coordination of national efforts between countries in Europe (Europe is not Japan or US)
 - More strategic planning and implementation of European R&D
 - Maintain (increase) attention for medium to long term research
 - just demonstration and deployment is not enough
 - In addition: collaborate with leading regions in the world
- The European Energy Research Alliance (EERA) was initiated in order to achieve this
 - In principle, every public research institute which can provide a relevant contribution to an EERA Joint Programme can participate
 - The EERA is not just a membership; need to bring in significant R&D capacity
 - Leading public research institutes in Europe in a particular field

About the EERA

- Aim of the EERA: accelerate development of new energy technologies
 - Harmonisation of national and EC programmes, decrease fragmentation
 - Draw on results from fundamental research
 - Mature technologies to hand over to industry driven research (industry groupings)
 - Build upon well accepted Strategic Research Agenda (SRA)
 - Link to Industry Initiatives (public private partnerships)
- The EERA is not a body of the European Commission (EC)
 - At first instance, joint programming is based on own resources (Member State funding)
 - In time, alignment with EC programmes will follow

- When appropriate, engage in International Cooperation actions with leading research organizations in developed and emerging nations in support of the EU strategy on energy technology.
- Systematically monitor and review the progress of the Alliance and its research programmes, using appropriate indicators, in association with the SET-Plan Information System (SETIS).

Governance Structure

SET-PLAN Steering Group

EERA

EERA General Assembly
= All participants in EERA JPs

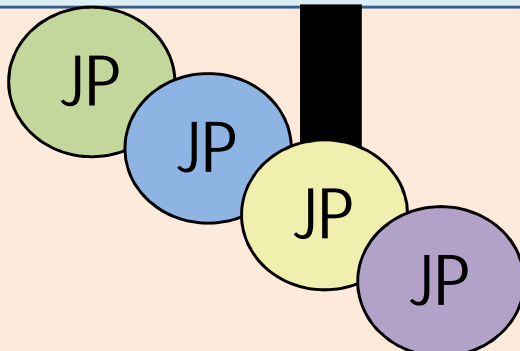
EERA Executive
Committee

=

15 most active EERA Members
(R&D budget criteria)

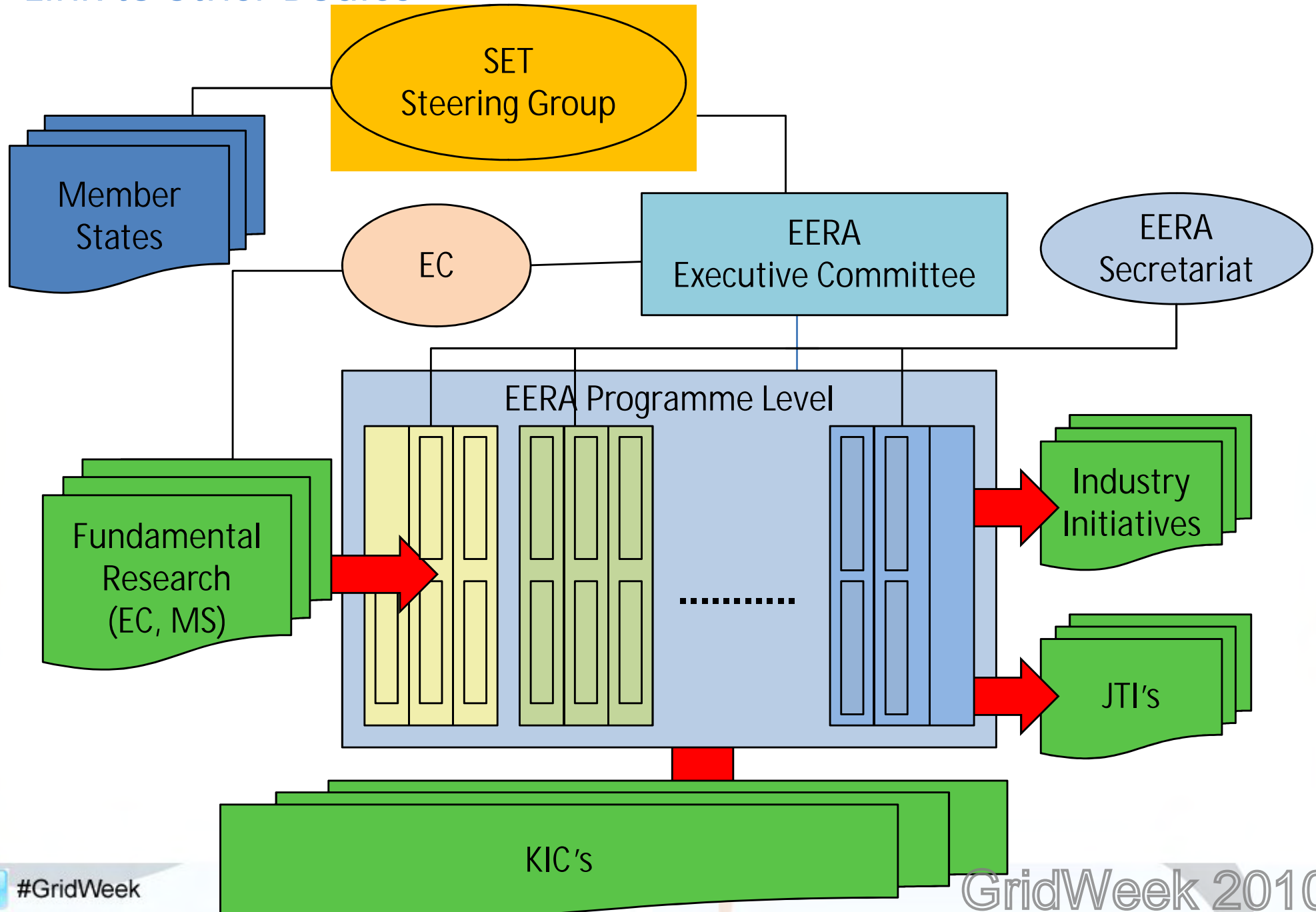
Observers
EC, EUA, EUROHORCS

EERA Secretariat
(CEA, ENEA, ECN,
Riso; Helmutz)



JP Coordinators
(selected by JP membrs)

Link to other Bodies



Establishing the Joint Programmes

The Executive Committee selected research fields where EERA prepares for the creation of different joint programmes:

Basic Science for Energy

BioFuels

Clean Coal – CO₂ capturing

Clean Coal – CO₂ storage

Clean Coal – other aspects (eg. Coal to Liquid)

Concentrated Solar Power

Electric power storage transportation & networks

Fuel Cells

Geothermal Energy

Marine Energy

Materials for Nuclear

Solar Thermal and Photovoltaic

Transmission and distribution network for the future

Wind Energy

The first Joint Programmes (JP)

By June 2010, EERA launched its first 4 Joint Programmes :

- Photovoltaic Solar Energy (PV), Wind Energy, Geothermal Energy and Smart Grids

The 4 launched JP have participation from more than 40 public research organisations, represent an R&D spending of more than €50 million per year and an effort of more than 500 researchers (full time equivalent), as yet financed by own resources of the public research institutes involved. All EERA JP are currently working with, or plan to work with, the relevant industry and university communities , including EIIIs, KICs and JTI, in order to align their activities.

EERA expects to launch 4 new JP during the next SET-Plan conference in Brussels and 5 other are under preparation, some of them to be launched on the spring of 2011.

With all planned Joint programmes launched EERA will cover most areas of energy research and undoubtedly see the participation of all the most relevant European public research institutes and universities, and have close cooperation with the relevant industries.

The Smart Grid Joint Programme

- Why Smart Grids?
 - Lower investments in electricity grid
 - Intermittent resources (wind, pv)
 - Load management (electric vehicles)
 - Grid stability and power management
- Matching demand and supply: still substantial uncertainties
 - Market share production options: PV, micro-CHP, wind
 - Market share demand options: electric heat pumps, intelligent appliances (fridge, freezer, washing machine, clothes dryer) but also electric vehicle (EV)
 - In addition: capacity of electricity grid varies throughout Europe
 - Major differences between countries
 - Complicating factor: liberalisation energy market

EERA Smart Grids

SP1: Network Operation

SP2: Energy Management

SP3: Information and control System Interoperability

SP4: Electrical Storage Technologies

Milestone						
M1.1	M2.1	Milestone				
M1.2		M2.1				
M1.3		M2.2				
M1.4		M2.3				
M1.5		M2.4				
M1.6		M2.4				
		M3.1	Milestone	Title	Measurable Objectives	Project Month
		M3.2	M4.1	Existing and future promising ESS technologies	Report on ESS technologies	12
		M3.3	M4.2	ESS performance and testing methods	Best practices to carry out the performance testing and their standardisation needs	24
		M3.4	M4.3	Integration and control of ESS	Concepts for grid integration and control strategies	30
		M3.4	M4.4	Economic and technical benefits	Opportunities for using ESS in the different markets	36
		M3.5	JPoSG position with respect to control systems interoperability definition		Position paper available on control systems interoperability : standards, testing, roll-out	30
		M3.6	SGJP Guidelines on technical communications defined		Guidelines document available describing recommended standards, practices, specific implementations, roll-out scenario on communications.	36

International cooperation

- Contact person EERA Smart Grids programme:
 - Luciano Martini, Luciano.Martini@erse-web.it
- In principle: EERA open to leading non-EU organisations
 - Remember: EERA does not want to be a platform
 - Aim: technology acceleration through cooperation (not: only talking)
 - minimum participation level participant > 5 fte
 - But: EERA has to walk before we can start running
 - Exchange programme currently being prepared between EC (Europe) and Japan
- Also interest from US to participate in (link to) EERA
 - DOE, NREL
 - Context: EU – US Energy Council

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