ERA Bioenergy

ERA bioenergy strategy – short term measures to develop the European Research Area for bio-energy RTD

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BIO-ENERGY
ENLARGED PERSPECTIVES

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Objectives

- To develop strategies for co-ordination of bioenergy RTD policies and programmes between EU and the MS through an analysis of existing and future RTD actions at a national and European level
- To identify opportunities for short-term actions leading to the ERA for bioenergy RTD ("ERA Actions")

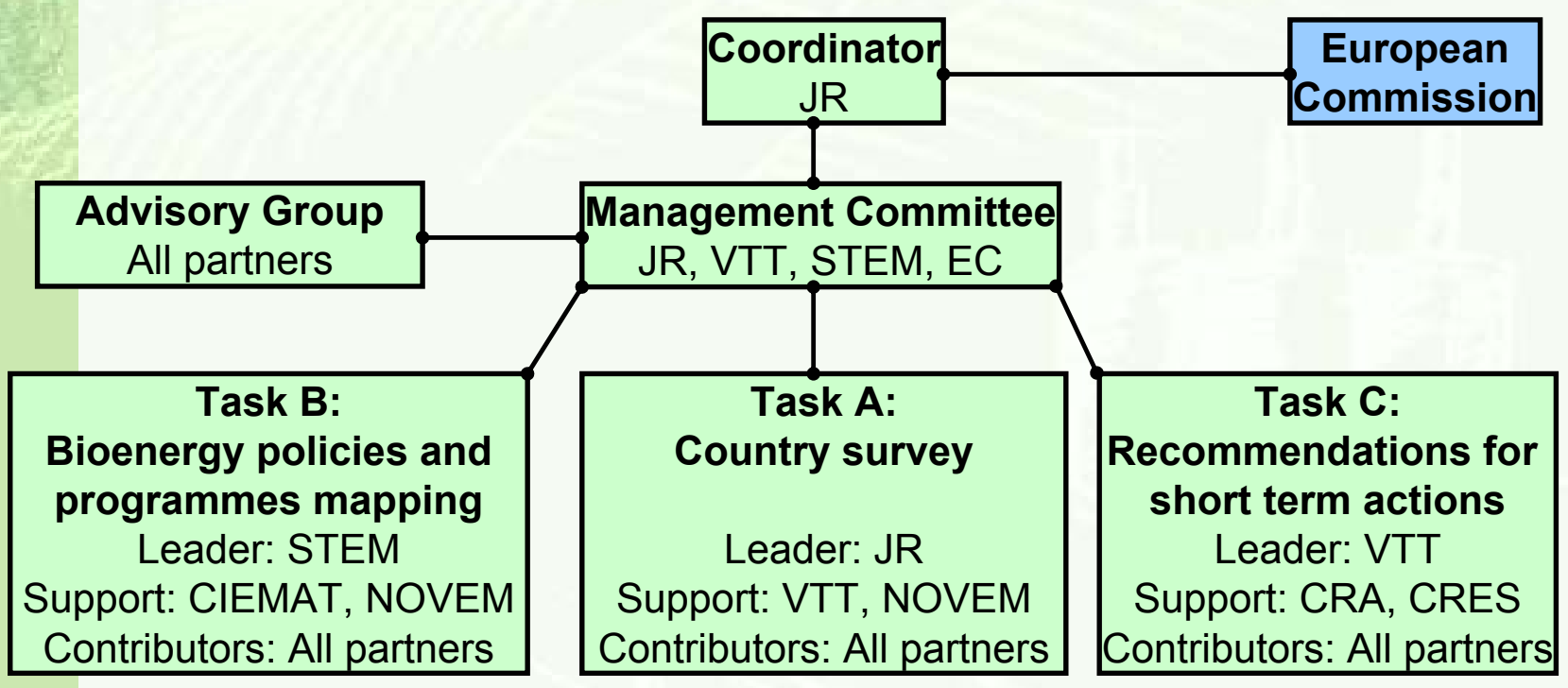
Participants/Organisation

- Accompanying Measure with 18 partners:
  - 13 MS: A, B, DK, FIN, D, EL, IRL, I, PT, E, S, NL, UK
  - 5 AS: CZ, LV, LT, SI, SK
  - via subcontracts: BG, CYP, EST, POL, HUN, ROM
- Management Committee: A, FIN, S, EC
- Advisory Group: All partners

Work programme

- Task A „Country survey“
  Survey of national bioenergy RTD policies and programmes using questionnaires
- Task B „Policies and programs mapping“
  Categorisation and comparison of national policies and programmes
- Task C „Recommendations for short term actions“
  Identification of opportunities for short-term actions leading to the ERA for bioenergy RTD

Management Structure



Preliminary results (1)

- ERA Actions should aim at
  - Supporting transfer and optimization of ***existing knowledge and mature technologies*** to minimize "double work"
  - Organizing joint RTD initiatives on ***topics requiring further development***
- Existing FP6 (and other EU) instruments are suitable for these actions, in particular if NoE, IP and ERA-NET will be successful
- Additional ERA Actions should be developed to initiate, coordinate and optimize non-EU-funded RTD

Preliminary results (2)

- Existing knowledge and mature technologies
  - Liquid/gaseous biofuels: Ethanol from sugar/starch crops, biodiesel, biogas
  - Combustion of wood and wood residues: Medium and large scale boilers, steam cycle power production
- Modifications and optimizations are needed
  - To account for local conditions
  - To improve operation and economy

Preliminary results (3)

- Topics requiring further development (1)
  - Feedstock production and pre-treatment
    - Forestry residues, biogenic MSW fraction, energy crops
    - Production and trade of standardized solid fuels
    - Systems studies on land use change and non-energy market competition

Preliminary results (4)

- Topics requiring further development (2)
  - Conversion processes
    - Advanced gasification for power and hydrogen/syngas (methanol) production
    - Ethanol from wood in “integrated production plants”
    - Bio-oil from flash pyrolysis
    - Adaptation of combustion engines and gas turbines for biofuels, e.g. for IGCC plants

Preliminary results (5)

- Topics requiring further development (3)
  - End use integration
    - Co-combustion of biofuels with fossil fuels
    - Small scale combustion with automatic operation and emission control
    - Transport fuel logistics and vehicle adaptation
    - Accounting models for Kyoto-related benefits
    - Models for energy, environment and economic assessment based on market demand (heat, power, fuels) and feedstock availability
  - Concentrate on “high volume low cost” applications

Bioenergy production chains

Topics requiring further development | Topics requiring transfer and optimization

Feedstock

Agricult. products | Lignocell. mat. | Biogenic MSW | Liquid waste

Conversion processes

Combustion | Pyrolysis | Gasification | Hydrolysis

Power systems | Synthesis | Anaer. digestion | Fermentation

End-use energy system

Electricity | Residential heat | Transport fuels | System analysis

Preliminary results (6)

- Additional "ERA Actions" to be developed
  - Background: EU funding is less than 10% of total RTD funding from national and industrial sources
  - Actions should therefore be aiming at bilateral and multilateral cooperation outside EU programmes
    - Identification of RTD and application areas of common interest related to regional feedstock availability and end-use structure
    - Initiation of cooperation projects for technology RTD, demonstration and implementation
    - Assure market oriented approach through industrial involvement
- An ERA-NET for bioenergy and the "NoE Bioenergy" should support this development