EC Co-firing Strategy

DEBCO Final Conference Brussels

10 December 2012

Julie Tondeur
Outline

- Introduction
- Policy
- Technology
- Market
Introduction

Co-firing strategy integrated in Renewable Energy strategy

EC Coherent Actions for RES

EU Policies and Targets

Directives and Legislation

R&D&D

Projects, Actions

Market development, Certification, Standardization, Financing, Promotion
Outline

• Introduction

• Policy

• Technology

• Market
• 1997 White Paper Energy for the Future

• 2001 Green Electricity Directive

• 2005 Biomass Action Plan

• 2009 Renewable Energy Directive

• 2010 Report on Biomass sustainability

• 2011 Energy Roadmap 2050
White Paper Energy for the future

"Energy for the Future: renewable sources of energy"

Target by 2010:
12% primary energy consumption from RES

Vision: 1/3 renewable electricity from Biomass
Green Electricity Directive

Directive 2001/77/EC
Promotion of electricity from renewable energy sources

Target by 2010:
21% electricity consumption from RES
Biomass Action Plan

**COM(2005)628**

**Goal:** increase the demand for biomass
improve the supply
overcome the technical barriers
develop the research

**Measures to promote biomass in heating, electricity and transport**
SET-Plan Communication
A European strategic energy technology plan (SET-plan) - 'Towards a low carbon future' COM/2007/0723

sets out the long-term energy R&D&I agenda

Goal

- accelerate development and deployment of cost-effective low carbon technologies

Comprises measures

- to guide the research and development of innovative energy technologies
- to promote their uptake by the market
Implementation

- Industrial Initiatives
- EERA
- SETIS
- Increase of R&D&I investments
- Increase of international cooperation
Renewable Energy Directive

Directive 2009/28/EC
« Promotion of the use of energy from renewable sources »

Binding Target by 2020:

• 20% reduction of EU GHG emissions compared to 1990
• 20% of EU gross final energy consumption from RES
• 20% reduction in primary energy use compared with projected levels

National Renewable Energy Action Plans (NREAP)

• Describe how MS intend to reach targets for each year
EC Report on biomass sustainability

*COM(2010)11*

Report on sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling

**Goal:**

- Promote sustainable production and use of biomass
- Well functioning internal market in biomass trade
- Lift barriers to bioenergy development

**Recommendations**

- **National sustainability schemes as RED**
- **Common GHG calculation methodology**
- **Differenciate support schemes in favour of high efficient installations**
Energy Roadmap 2050
Communication COM/2011/0885

outlines scenarios for the coming decades

Electricity to almost double in final energy demand

a large quantity of biomass for heat, electricity and transport will be required
2007 situation
Share of Renewables in EU energy consumption

2010 situation

Fulfilment of objectives

- White Paper reached at 85%
- Green Electricity Directive reached at 95%
- RED on track for GHG and RE

Biomass Electricity more than doubled in period 2005-2010

Solid renewables share in heat production went from 4% in 1990 to 13% in 2010 (increase of 62% in absolute terms)
Gross electricity generation from RES (GWh)
2020 Projections based on 2011 NREAP

RE consumption

- to double from 103 Mtoe in 2005 to 217 Mtoe
- 20.7% of gross final energy consumption

½ of Member States would exceed their national targets

Biomass is the most called upon sector

- 90.4 Mtoe Biomass heat production
- 232 TWh (20 Mtoe) Biomass electricity production

Progression of renewable energy shares in the 3 sectors against 2010:

- Electricity: 19.6% -> 34% (77 TWh -> 155 TWh)
- Heating & cooling: 13% -> 21%
- Transport: 5% -> 11%
Renewable energy share in the 3 sectors

Renewable energy share in the three sectors in 27 Member States

- Heating & Cooling
  - 2005: 10.13%
  - 2010: 12.75%
  - 2020: 21.31%

- Electricity
  - 2005: 15.51%
  - 2010: 19.58%
  - 2020: 34.06%

- Transport
  - 2005: 1.39%
  - 2010: 3.96%
  - 2020: 11.29%
Technology Results from the National Renewable Energy Action Plans

- Heat pumps
- Biomass
- Wind
- Tide, wave, ocean
- Solar
- Geothermal
- Hydro
Outline

• Introduction

• Policy

• Technology

• Market
Technology

RTD Framework Programme

Research Fund for Coal and Steel
RTD Framework Programme

- Co-Funding R&D&D

- Multiannual programmes with annual calls for project proposals (currently FP7)

- 10 co-firing projects for budget of >30 M€
  Mainly under FP6
EU contribution per activity (FP7 Energy, 2007-2012; Mio €; share of total)

- Renewable energies: 786.2 Mio €; 44%
- Smartgrids: 228.2 Mio €; 13%
- CCS/Clean Coal: 182.8 Mio €; 10%
- Energy efficiency/SCC: 180.8 Mio €; 10%
- FCH: 296.9 Mio €; 17%
- Knowledge for policy making: 15.7 Mio €; 1%

Others: 3.6 Mio €; 0.2%

- Heating and cooling (including geothermal energy): 94.1 Mio €; 5%
  - CSP: 94.9 Mio €; 5%
  - Ocean: 52.7 Mio €; 3%
  - Hydro: 5.8 Mio €; 0.3%
  - Bioenergy: 275.8 Mio €; 15%
  - PV: 146.8 Mio €; 8%
  - Wind: 130.3 Mio €; 8%
Breakdown of FP7 energy funding (calls 2007-2011) DEMO.(DG ENER)
Horizon 2020

• 2014 – 2020

• *Horizon 2020 reflects the policy priorities of the Europe 2020 strategy*

• *Research, Demo and Innovation*

• *Increased Energy Budget share from 5.5 to 7.3% (5.8 bn € out of 80bn€)*

• *Adoption by mid-2013, Info day summer 2013*
Technology Map 2011

- **Biomass co-firing challenges:** feeding, fouling, ash disposal
- **Main barriers to bioenergy use:** costs compared to fossil fuels, conversion efficiency, feedstock availability, lack of long-term policies

**Bioenergy Technology Roadmap, Thermo-chemical pathways**
RFCS (Research Fund for Coal and Steel)

Started in 2002

To enhance safety, efficiency and competitiveness

Research, pilot, demo and knowledge promotion

> 50 M€ per year

> 10 co-firing projects for budget of 18 M€
Outline

• Introduction
• Policy
• Technology
• Market
Market

Standards

Intelligent Energy Europe
Standards

**Mandates to CEN**
- To develop TS and/or EN
- To facilitate trade and increase use

**Solid biofuels**
- **M/298 in 2000**
- **CEN/TC 335**
  - TS in 2006, EN 2009-2012

**SRF**
- **M/325 in 2002**
- **CEN/TC 343**
  - TS in 2010, EN published in 2011 and 2012
Intelligent Energy Europe

Part of the Competitiveness and Innovation Framework Programme

non-technological programme in the field of energy

2007-2013, 730 M€

Annual calls for proposals
To stay updated

- [http://ec.europa.eu/energy/index_en.htm](http://ec.europa.eu/energy/index_en.htm)
- [https://ec.europa.eu/research/participants/portal/page/home](https://ec.europa.eu/research/participants/portal/page/home)
Thank you for your attention