



Legislative and Regulatory policies in the EU

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Coherent Energy Sector Actions

EU Policy Commitments and Targets

Directives and Legislation

Market support, Trading & Certification

Promotion of RES and RUE

Demo's using innovative approach

Pilot Plants

Research and Development





EU White Paper on Renewable Energies - COM(97)599, 26.11.97

- Sets out Community Strategy and **Action Plan** to double the share of renewable energy from 6 to 12 % in Gross Inland Production by 2010
- Establishes sub-targets in the various sectors. eg: 3 GWp of PV by 2010, 40 GW of Wind by 2010, 100 million m² of solar collectors by 2010
- Campaign for Take-off includes co-operation with third countries, partnerships with stakeholders
- Promises a bi-annual progress review (COM)





RENEWABLE ELECTRICITY DIRECTIVE

The Directive **obliges** Member States to :

- establish **targets** for **future consumption** of RES-E
- assure **guaranteed access** for RES-E
- issue **guarantees of origin** of RES-E
- assure that the **calculation of costs** for connecting new producers is **transparent, non-discriminatory**

The Directive

- does not propose a **harmonised support system**
- requires the **Commission to monitor progress**





ENERGY PERFORMANCE OF BUILDINGS PROPOSAL FOR A DIRECTIVE



Objectives

- Promoting the improvement of energy performance of buildings within the EU through cost-effective measures
- Convergence of building standards towards those of Member States which already have ambitious levels

Proposed measures

- **Methodology for integrated buildings energy performance standards, including on-site renewables, and bioclimatic design**
- Application of these standards on new and existing buildings
- Certification schemes for all buildings
- Inspection & assessment of boilers/heating and cooling installations





EC R&D Programmes on Renewables

5th Framework Programme (1998 -2002)

- Long term research and development
- Short term research and demonstration
- Target actions
- Accompanying measures, Networks

6th Framework Programme (2003-2006)

- Work programme under preparation





Other EC Programmes on Renewables

SAVE-ALTENER Programme (1998 - 2002)

- **Fills gap between demo' & commercialization**
- **Actions to overcome non-technical barriers**
- **Market and sector studies, Standards (CEN, IEC)**
- **Promote and monitor new legislation / Directives**

Intelligent Energy Programme (2003 - 2006)

- **Work programme under preparation**





Solar Thermal Power projects supported by the Commission

- **PS10 (Plataforma Solare 10) - 10 MWp Tower**
(Total cost 22 M€, contracted in 2000)
- **Solar Tres - 15 MWp Tower with salt storage**
(Total cost 54 M€, on-going negotiations)
- **Andasol - 50 MWp Trough**
(Total cost 160 M€, on-going negotiations)





Key policy issues

- **kWh costs are too high to compete in today's electricity markets - transitional support is needed**
- **Overall project costs are still high - project financing is difficult in view of the technology risks**
- **MW scale is attractive - large projects could help to meet RES-electricity targets**
- **Only works well in cloud free skies - key markets are in Mediterranean and developing countries**





Techno - Economic issues

- **Solar electricity at ≤ 0.2 € per kWh**
- **Installed project costs at 2 - 3 k€ per kW**
- **Lifetime - (Luz since 1984) ~20 years ?**
- **Maintenance ~2% of capital costs per year ?**
- **Storage of energy is important - energy is only delivered during the day, so the storage strategy must be directly related to the peak charging tariff scheme**





Next generation of technologies ??

- **How to lower costs ?**
- **Which heat transfer fluid ?**
- **Which operating temperatures ?**
- **Which kind of storage ?**
- **Which optics - Trough, Tower, Dish ?**
- **Full scale integration with a gas fired power station, optimising the performances of both**





G8 Communiqué from Genoa

- **”We recognise the importance of renewable energy for sustainable development, diversification of energy supply, ... environment.**
- **We will ensure RES are adequately considered in our national plans encourage others to do so**
- **RES can contribute to poverty reduction.**
- **We will help developing countries strengthen institutional capacityattract private sector investment market-based financing mechanisms.**
- **We urge ... GEF to .. continue support efficient energy use ... RES ...in the developing world**
- **...G8 energy ministers meeting in the coming year.....”**





Public sector actions

- **Establish long term policies and targets**
- **Transitional support / incentives (€/ kWh)**
- **Information, promotion (reduce sales costs)**
- **R&D, Demo's to raise investor confidence**
- **Simplify permit applications, remove barriers**
- **Standards ; certify products and installers**
- **Legislation (EU Directives, Municipal codes)**





Industry actions

- **Build confidence - market pull**
- **Grow markets to achieve economies of scale**
- **RTD to reduce plant construction and operating costs**
- **Adaptation of conventional technology to develop standard CSP systems at competitive costs**





CONCLUSIONS

- **Policies and Targets**
 - security of supply, diversification, RES and RUE
 - environment
 - competitive EU industries and jobs
- **Transitional support - which type ?**
 - support for specific technologies including CSP ?
 - long term feed-in law to create “Bankable” projects ?
 - grants to reduce initial capital costs ?
- **EU and Member State actions**
 - legislation, Directives
 - R&D to reduce capital and operating costs
 - Technology demonstration and promotion

