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Session 3: Round Table “Attaining of the RES-E target – Are we on the right track?”

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REALISE Forum Final Conference: Summary of the highlights and activities of Realise Forum

Dr. Maria Rosaria Di Nucci

Environmental Policy Research Centre (FFU), Freie Universität Berlin

**REALISE-Forum
Final Conference**

Summary of the highlights and activities of
Realise Forum

*Maria Rosaria Di Nucci,
FFU- Freie Universität Berlin*

Berlin, November 2, 2006




Slide 1

REALISE Forum attempts to:

- **develop** a novel actor focused analysis;
- **investigate** the level of national cohesion on the prevailing support schemes;
- **identify** existing barriers for a co-ordinated approach;
- **establish** a platform for stakeholders and decision makers to discuss in a balanced way specific support policy issues and promote the exchange of information and experience;
- **initiate** an organised dialogue to discuss steps on the way to future incentive schemes compatible with market criteria, sustainability and social acceptability;
- **Work out** guidelines and draw lessons for policy

REALISE FORUM brings together international members from public authorities, industry, electric utilities, financial institutions/brokers, consumers' associations, environmental NGOs and other stakeholders involved in policy making or research and dealing with renewable energy policy issues




Slide 2

The Work plan

- REALISE-Forum has been concerned with both setting and fine tuning an analytical framework as well as with operational tasks.
- REALISE counts on WPs with a strong analytical content and on others providing the "infrastructure" of the project.





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Project's Phases

- **Phase 1:** Set-up and kick start of the project, establishment of the REALISE-Forum infrastructure (WP 2-3-7).
- **Phase 2:** Refinement of the analytical framework. The executed tasks have been at the same time conceptual and operational and have involved the general design of the project and a certain restructuring according to changed political and policy frameworks of the participating countries and stakeholder consultations. The national consultations and the analysis of the RES-support systems have been carried forward and the results have been integrated into country reports.
- **Phase 3:** Analysis, dissemination of preliminary results, preliminary lessons for policy. Preliminary results have been discussed in 2 international workshops and with the steering group.




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Analytical framework

- The concept is based on criteria such as the typology of the electricity market (degree of liberalisation and "greening"), actor cohesion about the national support scheme as well as the interplay between actors. The consensus on national support schemes and/or willingness to change the schemes in use has been analysed against criteria such as the degree of competitiveness, of risk and of specification of the respective systems.
- This structure has been taken into account in the course of evaluation of the national surveys and by drafting the country reports.




Slide 5

Political Embedment of the project

- In the third project's phase additional working steps were taken up to consider the policy change at EU level and major documents such as for example the EC Communication of December 7, 2005 as well as political and policy changes of some of the participating countries.
- REALISE-FORUM has taken into account the changing specific legal, administrative and economic situation in the RF countries and other relevant countries as well as national objectives and activities planned or underway in the countries under scrutiny and elsewhere (as for example the so called feed-in co-operation between Germany and Spain).




Slide 6

Our “Infrastructure“

- WP2: Joint contact point
- The JCP has guaranteed a continuous, up-dated flow of technical information between partners and energy policy actors. To that extent a virtual library has been created in the intranet section of the web page and major official reference documents have been placed at the web page.
- The JCP has also ensured the interface with running, complementary EU-projects
- WP3: National Desks
- WP7: Web platform





Slide 7

The web platform





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The National Desks

- On the *national level*, national desks have been established by the project partners in their respective countries (D, NL, I, SI, NO)
- They are managed either directly or together with other actors (NGOs, RES-producers, RES Associations, etc), according to the national peculiarities.
- These components of the project management have acted as national contact points with the following functions:
 - Networking;
 - Gathering of national data/ analyses for the country reports;
 - Initiation of a dialogue with major national stakeholders;
 - Organisation of national/ international hearings and workshops.





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National stakeholder consultations

- The stakeholder consultation in the participating countries has followed different paths concerning its timing and methodology.
- In spite of different characteristics of the countries involved, it was possible to draw a common structure for a stakeholders survey.
- Thus three countries (Germany, NL and Italy) opted for a questionnaire followed by national hearings (Germany: 19 October and Italy: 15 November), Slovenia 20 Sept 2006
- The Scandinavian consultation took another path, based on in depth interviews and workshops.
- Slovenia: 7 workshops in 2005-2006. Hearing in Sept. 2006
- The NL partner has carried out 2 surveys, one in 2005 and one in the Summer of 2006.





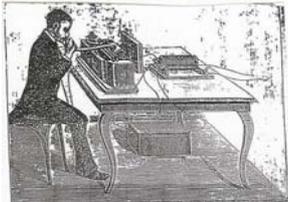
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Surveys

- Surveys in 3 countries in 2005 : Italy, Netherlands (online) and Germany, followed by national hearings. In Slovenia in Summer 2006 only for selected stakeholders

Response:

- Italy N=82
- Netherlands (1) N=52
(2) N=62
- Germany N= 70





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Critical questions addressed in the questionnaire and in depth interviews with national stakeholders

- Which of the currently implemented support schemes are
 - most effective (increase in the share of RES)
 - most efficient (social and economic costs of the system)
 - most compatible with the principles of the internal electricity market
 - Stakeholders viewpoints on co-ordination of support systems
- Interactions between various RES-E schemes in different countries.
- Would co-ordination of RES-E support in Europe represent a better solution with respect to effectiveness and to efficiency of the system?





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Consultations in the Netherlands

The Dutch partner decided to undertake a more pervasive sort of consultation based not only on a survey and a one-day hearing. It was considered more promising to follow a different path including:

- A first online survey.
- In-depth interviews with stakeholders.
- Additional analyses of documents of organisations expressing their view and position on topics relevant for RF.
- A second online survey in 2006. This collected evidence that the major actors have not changed position after one year and following the publication of the Commission’s communication on RES-E support.




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The Nordic desk activities

- The work at the Nordic desk consisted of reviewing the policies and stakeholder views of 4 countries: Denmark, Norway, Sweden and FL.
- Given budgetary constraints it was not possible to have permanent bases in all countries. The Norwegian partner had therefore developed an “ambulatory” desk which basically implied that the research team travelled around to the Nordic capitals and holds stakeholder meetings/interviews there.
- This approach also made it possible to contact higher level representatives, that are constrained from spending too much time for travelling to meetings.
- The Nordic desk communicated with Nordic stakeholders through its collaboration with Nord Pool, the Nordic power exchange, which helped arranging workshops with broader Nordic representation




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Consultations in Slovenia

- The stakeholders participation approach was based on in depth interviews, workshops and consultation with homogeneous groups of stakeholders.
- Three workshops with the representatives of these different groups have been organised in 2005 and 2 in 2006, followed by a hearing.
- Compared with other energy policy matters, the choice of the support scheme is not perceived as a major issue. There is however a latent consensus about FIT Systems.
- The main obstacles for a balanced, consensus oriented dialogue on RES were identified and discussed. The majority of stakeholders is interested in EE.
- Especially problematic is the complex framework. The present feed in price/premium scheme is still under investigation of the EC and is alleged to be non-declared state aid.
- Most NGOs (Nature protection) are critical towards RES.
- The main barriers for a consensus oriented dialogue are un-coordinated and contradictory targets as well as insufficient engagement of the major energy actors




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Italian consultation/Findings (1)

- The largest participating actors group included around 50% RES-E producers and their associations.
- Fairly good cohesion between stakeholder groups. Some discrepancy in fewer cases.
- The former CIP 6/92 feed-in system got better ratings than Quota/TGC as to capacity deployment, investors' risk, understanding, fair deal with sources, but its cost to the whole system was deemed higher.
- Quota/TGC system is considered more compatible with the liberalised electricity market.
- A mandatory RES-E quota is felt to be needed for maintaining RES-E plant deployment.




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Italian consultation/Findings (2)

- A number of stakeholders felt that Italy is unlikely to achieve its 2010 RES-E target set by EU Directive (authorisation procedures, grid problems and public acceptance issues)
- Co-ordination of support systems in the EU was felt necessary, but mostly deemed feasible only after 2010
- Opposite views about changing the current Quota/TGC system in the next 5 years, with nearly the same trend in main stakeholder groups
- The preferred change would be to reduce investors' risk by extending TGC beyond 8 years.
- The main reason for change is financial (encourage investment), then (to a lesser extent) political and economic. Technical reasons come last
- The chance to sell energy on a liberalised electricity market is seen as a good opportunity for RES-E producers




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German Consultation/Findings (1)

- Support for renewable energy cuts across traditional political fields.
- The majority of respondents ranked FIT systems better than Q&C with respect to all categories, except price competition.
- The level of remuneration in the RES Act (EEG) for the individual RES is considered to be adequate by the majority of stakeholders
- Only a small fraction of respondents advocated a change to a Q&C system.
- The main grounds adduced justifying a change were economic reasons (need to minimise the electricity price to end-users) and a perceived low compatibility of the German system with requirements of a liberalised EU internal market.
- The pre-eminence of the FIT system is also explained with the geographical spread of this instrument: 18 out of 25 MS opted for FIT.
- The Q&C opponent front was very wide and, though most of them recognised that it is inappropriate to generalise the performance of these systems before they have reached maturity. Their position ranged from sceptical to very critical.




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German Consultations/Findings (2)

- Public opinion has shown a rather indifferent position on harmonisation issues.
- German stakeholders do not endorse harmonisation on account of preservation of established and favourable domestic support conditions.
- The consulted stakeholders saw no obvious contradiction between a liberalised European market and the support scheme in use.
- For a number of stakeholders, esp. the RES Associations, there is no level playing field so far in the electricity sector. RES needs support in order to counter the bias in favour of fossil and nuclear energy.
- As far as the degree of market conformity of the present support system is concerned, esp. the RES Associations remarked that market distortions associated with the traditional energy sector are still high and need to be removed before a support scheme based on tradable certificates can be introduced in an open electricity market.




Slide 19

Country Reports

- The 5 reports illustrate the situation as of late 2005 with regard to the national energy policy frameworks, production of RES-E and support schemes aimed at promoting an increase in their share. (General update by end of November).
- They also analyse the relationship between RES-E support policies and their interaction with the reform of the national electricity markets, especially from the angle of the impact of liberalisation on "greening" the power market.
- The reports were drawn up a.o. on the basis of the consultation carried out within the framework of the activities of the national desks.
- Parts of them have been devoted to the expectations and viewpoints of national stakeholders in the field of RES-E




Slide 20

Milan Workshop

- "Three Years of Green Certificates: Are They out of the Infancy Phase?" organised in Milan by CESI on Dec.15-16, 2005.
- Around 50 participants. Proceedings on the web site
- The event focused on TGC-schemes and also aimed at discussing the feasibility of co-ordinated approaches at regional level, as indicated in the communication of the EC of December 7, 2005 which was also briefly analysed and discussed.
- The workshop was organised in a country like Italy where, in the last decade, the electricity market has been evolving from the monopoly of a state utility towards full liberalisation. At the same time, the major RES-E support system has been shifting from FIT to a RES-E quota obligation and TGCs. It was felt that the Italian audience could benefit from a wider international exchange, and participants from other countries could, in turn, draw some interesting insights from the experience gained in Italy with the implementation of TGCs.




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Milan: Lessons for policy

- As a very general outcome of the whole event, it could be stated that some TGC schemes have shown that this kind of instrument can work for the deployment of new RES-E capacity, but in a way and to an extent that vary from one country to another.
- Nevertheless, TGC schemes are more suitable for the RES technologies closer to maturity, whilst less competitive technologies need other instruments such as FIT-schemes.
- It can hence be inferred that TGC and FIT-schemes could be complementary rather than competing, and the optimum set-up of RES-E support instruments can therefore vary widely from one country to another, depending on its peculiar electricity market and economic and social conditions.
- Making an effort to achieve better co-ordination of national support schemes looks, at least for the time being, a more feasible path for the EU than implementing a fully harmonised support




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Maribor workshop

- "Experiences with Feed-in Tariffs: Lessons from the German and the Spanish Model for the New Member States", organised by SE-F in Slovenia on May 10 and 11, 2006. Participation of around 60.
- The workshop presented potential strategies of RES for the new EU members and accessions countries in transition from a centrally-planned monopoly to a more market oriented structure.
- The existing trans-national/regional co-operation schemes were presented and discussed as for example the feed in co-operation between Germany and Spain and the Scandinavian certificate market.
- Alternative models with GO as "currency" were also discussed
- The topics of the presentation ranged from a comparative analysis of the diffusion of support schemes for green electricity in the enlarged EU to the interaction of green certificates with green pricing and emission trading. Insights were also provided from ongoing projects and policy diffusion and replicability of national policy paths (comparative analysis of instruments in Spain and Czech Republic)

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Preliminary general lessons for policy following the two workshops

- There is a scope for establishing a platform for stakeholders and decision makers to discuss specific support policy issues and promote the exchange of viewpoints and perceptions on possible coordination paths.
- The consensus on national support schemes and/or (un)willingness to change them is dependent on the degree of competitiveness, of risk and of specification of the respective systems.
- In spite of different positions, there is a certain acceptance (though this does not necessarily mean satisfaction!) within the various stakeholder groups (actor cohesion) on the effectiveness of national support schemes for RES-E with regard to a number of key market aspects.
- The optimum set-up of support instruments for RES-E can vary widely from one country to another depending on the peculiar electricity market and economic and social conditions. FIT represent the most widespread and successful instrument.
- There is a general consensus on the rejection of harmonisation of European support systems.

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Comparative Survey

- Following the two workshops the results of previous WPs have been integrated and updated to provide a comparative analysis.
 - The theoretical framework to draw policy recommendations has been defined.
- The work carried out was aimed at:
- analysing, integrating and updating the results from previous work packages,
 - mapping and weighing the barriers hampering a co-ordinated support system and assess criteria for success,
 - formulate guidelines for a possibly co-ordinated approach,
 - prepare theses to be discussed first with Steering Group and then in the final conference.

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Some pressing questions to be answered soon...

- Are instruments and institutional frameworks of the analysed countries complementary or incompatible?
- Is there a common consensus (even if at a minimal level)?
- Are the national/European interest conflicts too high?
- Is there a supra-national alliance on common targets?
- The REALISE project has chosen dissimilar countries. Which of them show a convergence of policy system design and of (primary and secondary) objectives?



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for your
attention

www.realise-forum.net
contactpoint@realise-forum.net

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REALISE Forum Team: Preliminary recommendations

Dr. Maarten J. Arentsen

CSTM, University of Twente, The Netherlands

Realise Forum core idea

Stakeholder positions and perceptions on RES-E support in context of liberalisation and ecologisation EU electricity market

- To learn about ideas behind the willingness to change support scheme
- To learn about similarities and differences in stakeholder's ideas on support of RES-E
- Based on this learning, to recommend on next steps in the coordination/harmonization of RES-E support



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Slide 1

Realise Forum Analytical focus

- Actor centered analysis in context
 - Stakeholder's willingness to change RES-E support system
- Context
 - Electricity market liberalisation
 - Electricity market ecologisation
 - RES-E Support system currently in use



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Slide 2

Realise Forum Core conclusion

1. Diverse patterns of state of the art in liberalisation, ecologisation and RES-E support in the EU
2. Diverse stakeholder positions and perceptions
3. RES-E discourse taking place within multidimensional space (pentagon of complexity)



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Slide 3

Diversification

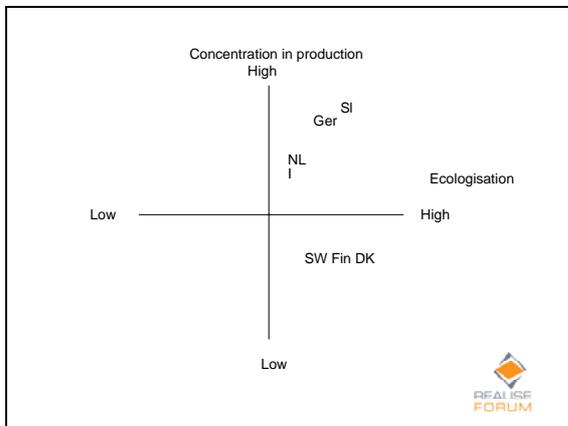
On context:

- Liberalisation: more and less concentrated electricity markets plus variety of institutional practices
- Ecologisation: relatively fast and relatively slow moving countries
- RES-E support: Diversified European landscape. (Come back to that later)

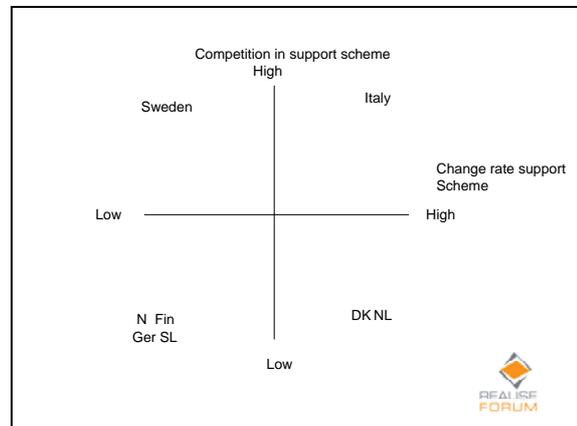


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Slide 4



Slide 5



Slide 6

Diversities

Stakeholders:

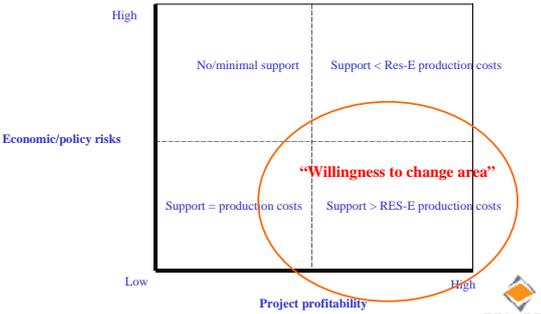
- Dissatisfaction with the state of competition in the home market
- In general acceptance (but not complete satisfaction) with RES-E support system currently in use in the home market
- Perceived compatibility of feed-in and certificate trading system with liberalised electricity market
- Willingness to change current support system only for the benefit of reduction (investment/production) risks **Next slide**



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Slide 7

RES-E investment context

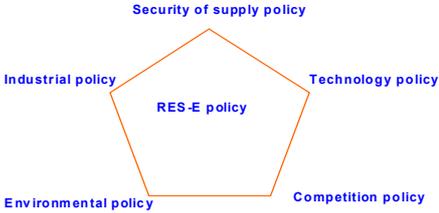


Source: Dinica 2003



Slide 8

Complexity RES-E discourse




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Next steps?

- EU Commission's Coordinated Approach:
 - **Cooperation** between countries
 - Feed-in and certificate alliances
 - **Optimisation** of impact of national support schemes
 - Stability and reduction of investment risk
 - Reduction of administrative barriers
 - Addressing grid issues
 - Encouraging technological diversity
 - Ensuring compatibility with the internal electricity market
- Instrumental "What if" approach
 - Technical adjustments support instruments based on ex ante impact analyses
- Realise Forum's Learning approach



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Slide 9

Realise Forum guideline assumptions

1. Europeanisation of RES-E support in context electricity market integration as reference point (red arrow)
2. Co-existence current support systems
 - Feed in
 - Quota
 - Voluntary market
3. Next steps common effort: "Tailor made" guidelines
 - EU Commission
 - Member State
 - Stakeholder groups



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State of the Art RES-E support EU

Europeanisation	Feed in System	Quota system	Voluntary Green Markets
Pan EU integration	Open European feed in system with equal access for all	Open European quota system with equal access for all	One European green market
Cross national/regional Markets	Regional feed in	Regional quota system <i>(Nordic initiative)</i>	Regional green market <i>(Voluntary Green Market)</i>
National similarisation	Closed national feed in systems with similar rules/tariffs	Closed national quota systems with similar rules/tariffs	National green markets with similar rules
National Differentiation	Closed national feed in systems with different rules/tariffs	Closed national quota systems with different rules/tariffs	National green markets with different rules



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EU Commission

7. Enforce the link between GO and national RES-E support scheme
8. Explore the impact of the complementarity of support systems in a dynamic perspective See next slide
9. Explore the complementarity of RES-E support systems by Member State collaboration
10. Acknowledge that strengthening of competition in the internal electricity market is considered a necessary condition for next steps in coordination RES-E support



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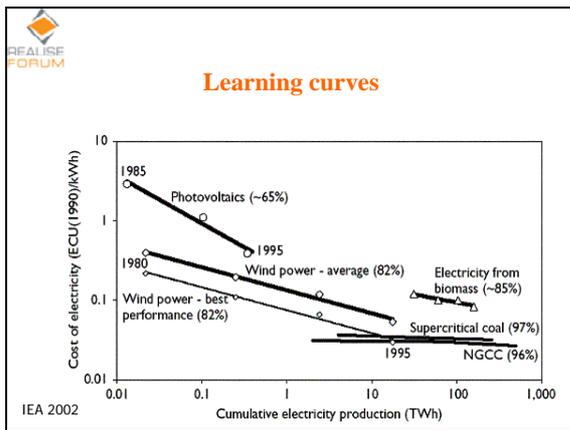
Commission

1. Co-existence of current support systems is no barrier but point of departure for a coordinated approach
2. Co-existence of current support systems represents the ideal ground for learning about RES-E support
3. Initiate more actively feed in and quota "discourses" and coordination between Member States
4. Learn from experiences in voluntary green market to strengthen coordination between feed in and quota systems in EU
5. Consider the introduction of a (minimal) set of common rules for disclosure, redemption and labeling based on standardised GO
6. Set of common rules could bring current differentiated national support one step up towards Europeanisation



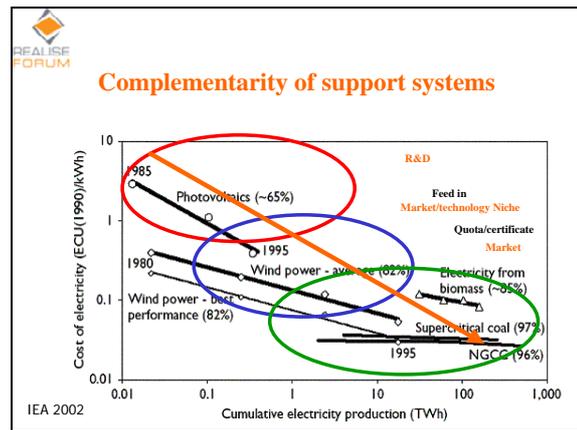
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Slide 13



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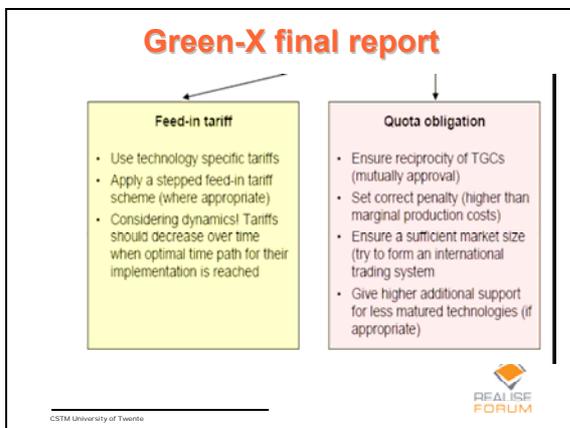
- EU Commission**
- To stimulate market incentives: New targets for RES-E increase after 2010 should also act as a guidance for corporate RES-E investment strategies (technology forcing rules)
 - RES-E increase could benefit from an obligatory procurement of renewable based electricity for the EU administration
 - RES-E increase could benefit from strengthening technology networks (science, technology, business, civic society) at the EU level
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- Member States**
- Stabilise national investment context by setting clear tariffs and time periods
 - Coordination of RES-E support would benefit by:
 - joining the feed in or quota discourse
 - redesigning the national support system according to recommendations to the Commission (see next slide)
 - Implementing the standardised GO
 - making the standardised GO basis for disclosure, redemption and labeling in the home market
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Slide 18

- Member States**
- Take more strongly a European perspective in technology and industrial policy
 - The increase of renewable based electricity will benefit from:
 - Active mitigation of technical and non-technical barriers in the home market
 - Obligatory procurement of renewable based electricity for the entire governmental bureaucracy
 - Strengthening the technology networks in a European perspective
 - Incentives to stimulate the consumption of renewable based electricity
 - Early participation of stakeholders in projects
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- Member States**
- The Member State is involved in the voluntary green market
 - make the standardised GO a basis for the regulation of the voluntary green home market
 - The Member State is not involved in the voluntary green market
 - Stimulate domestic market parties to join the voluntary green market and make the standardised GO a basis for the regulation of the voluntary home green market
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- Energy companies**
- Develop business strategies for a carbon restrictive economy
 - Join and support the voluntary green market in the EU
 - Develop a corporate strategy for the greening of the electricity supply
 - Produce, offer and label renewable based electricity as much as possible under the standardised rules of the GO
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Grid management

1. Standardise access conditions for renewable based electricity
2. Solve technical problems of grid connections
3. Implement grid codes taking into account minimum technical standards for intermittent RES-E technologies like wind power (i.e. aggregation of production forecast requirements)



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Issuing body

1. Commit to the standardised GO and use it for disclosure and redemption



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Slide 24

Producers of RES-E technology

1. Intensify R&D cooperation for the benefit of efficiency
2. Intensify cooperation with technology users to speed up technological learning (curves)



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Consumer associations

1. Push the standardisation of labeling of renewable based electricity in the EU
2. Start consumers' campaigns for the increase of renewable based electricity



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NGOs

1. Initiate a pan European NGO dialogue on RES-E production siting in the EU
2. The dialogue could suggest areas in the EU suitable for RES-E production and areas not suitable for RES-E production on the basis of nature conservation, environmental and sustainable development considerations
3. Propose and support best practice in development of RES-E projects



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Coming soon
Final report/book
With details

Thank you for your attention



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Optimal promotion strategies – Lessons learned from the OPTRES project

Prof. Dr. Reinhold Haas

Technical University, Vienna

OPTRES: OPTIMAL PROMOTION STRATEGIES FOR INCREASING THE SHARE OF RES-E

Reinhard Haas, Mario Ragwitz, Gustav Resch, Thomas Faber, Anne Held

Energy Economics Group, Vienna University of Technology & ISI Karlsruhe

BERLIN, 2nd November 2006

Slide 1

SURVEY

1. Introduction
2. Survey on policy strategies
3. Objectives of promotion strategies
4. A comparison of the success
5. Success criteria for Feed-in tariffs
6. Success criteria for TGC-based quotas
7. The issue of competition
8. Conclusions

Slide 2

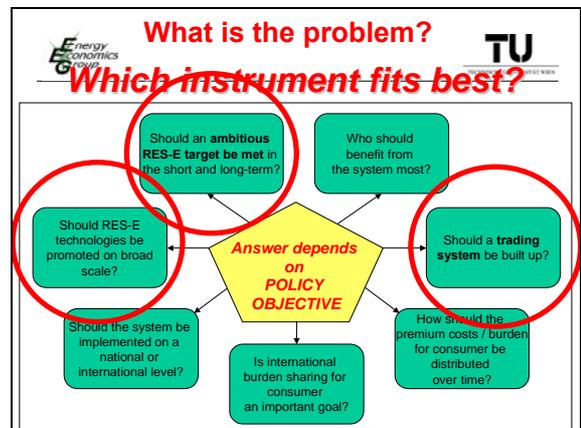
1 INTRODUCTION

CORE MOTIVATION:

Policy targets for an INCREASE of RES-E!

(e.g. RES-E directive of the EC to increase the share of RES-E from 12% to 22% until 2010)

Slide 3



Slide 4

INTRODUCTION

MAJOR PROBLEM:

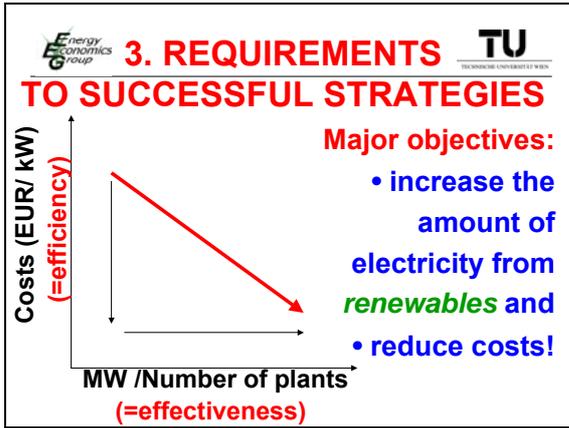
Correct design of policy

- with respect to:
 - renewable targets
 - Financial incentives
 - Credibility for investors
 - Transfer costs!

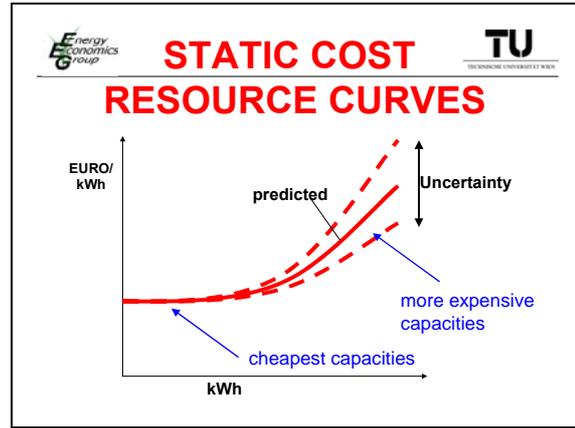
Slide 5

		REGULATORY	VOLUNTARY
Capacity-driven strategies	Generation-based	<ul style="list-style-type: none"> • RPS • Quota-based TGCs 	<ul style="list-style-type: none"> • National generation targets
	Investment focused	<ul style="list-style-type: none"> • Bidding/Tendering 	<ul style="list-style-type: none"> • National installation or capacity targets
Price-driven strategies	Generation-based	<ul style="list-style-type: none"> • feed-in tariffs, net-based incentives • Net metering 	<ul style="list-style-type: none"> • Green Power Marketing • Green tariffs • Solar stock exchange
	Investment focused	<ul style="list-style-type: none"> • Rebates • Soft loans • Tax incentives 	<ul style="list-style-type: none"> • Shareholder progr. • Contribution • Bidding
Other		-	<ul style="list-style-type: none"> • NGO-marketing • Selling green buildings • Retailer progr. • Financing • Public building progr.

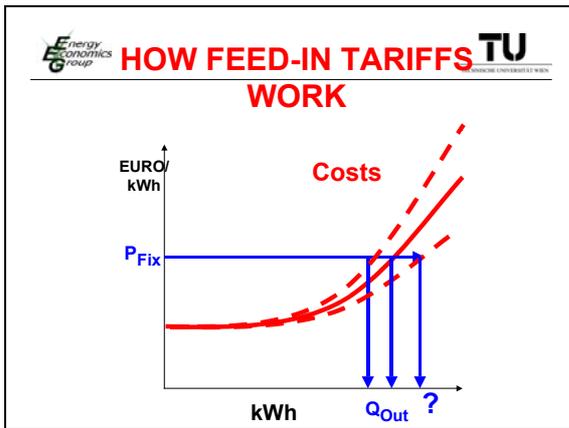
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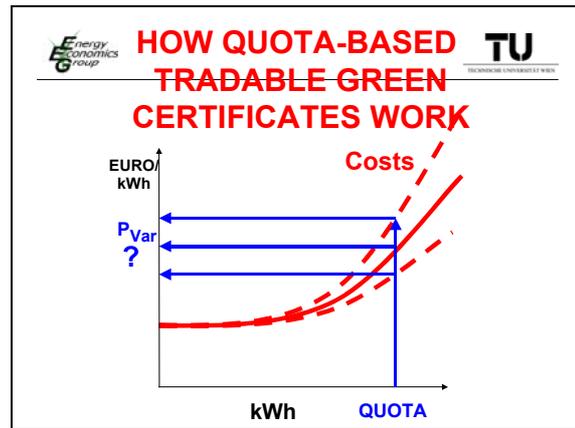
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Slide 8



Slide 9



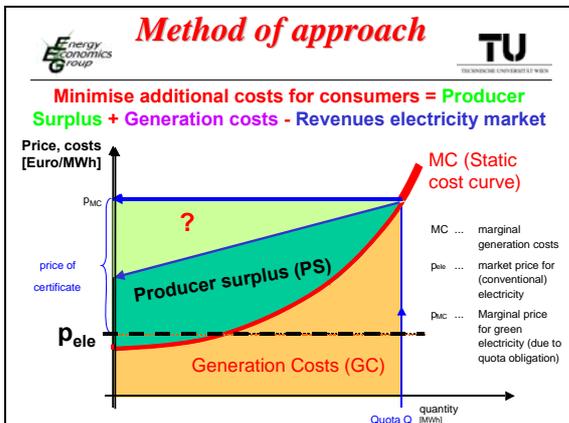
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*Quota-based TGC systems as well as Feed-in tariff systems create an **artificial market** and cause **transfer costs (additional costs)***

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Why is it important to minimize these additional costs? These additional costs have finally to be paid by the final customers (regardless which promotion scheme is chosen)

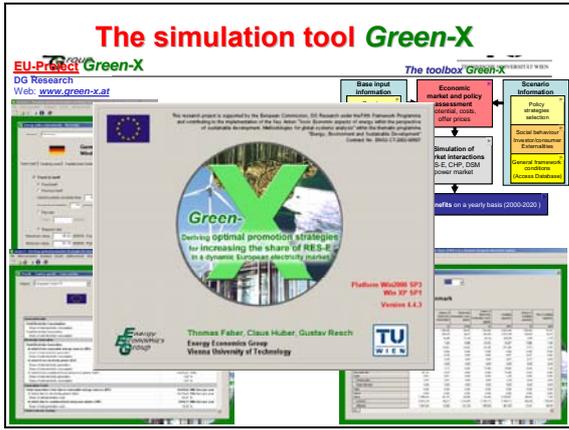
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The lower the costs are which have finally to be paid by final customers the higher will be public acceptance the larger will be the amount of additional electricity generated from RES.

Slide 14



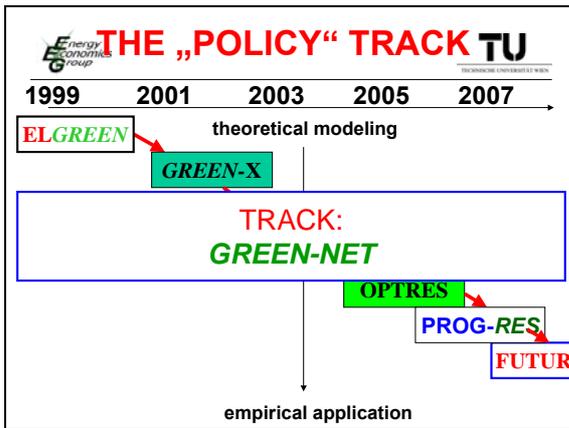
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GREEN-X allows...TU

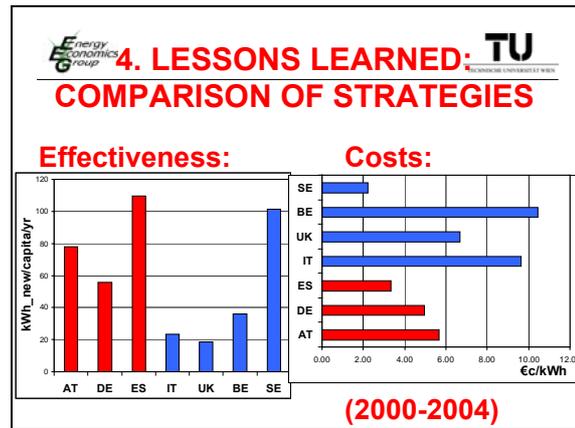
... to simulate various policy strategies for the promotion of RES-E in a dynamic framework on a national or international level (considering DS-effects)

(Current: EU-25, end 2006: EU28, future: EU 39???)

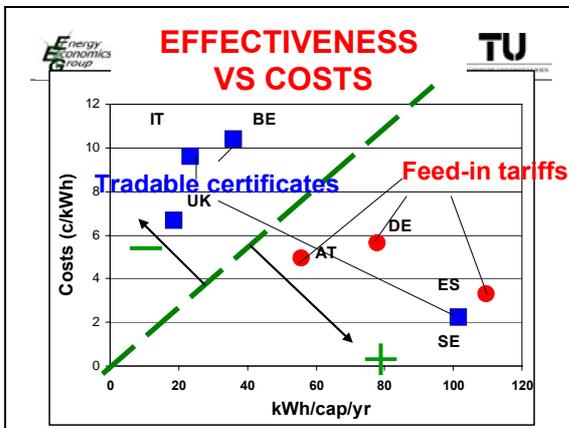
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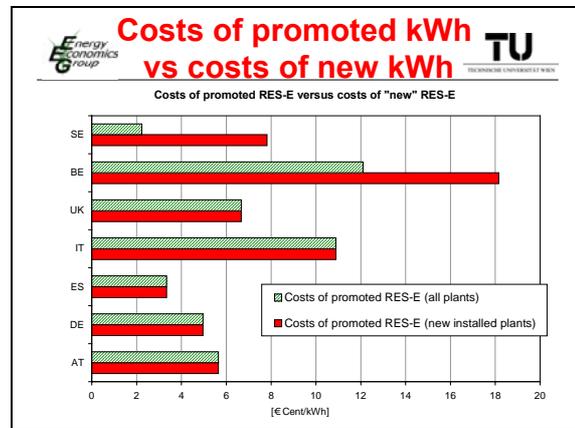
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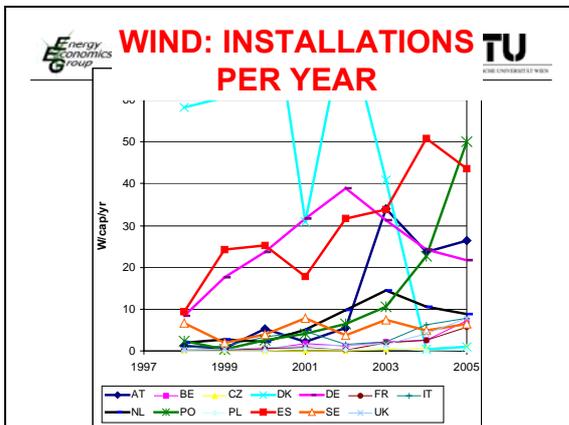
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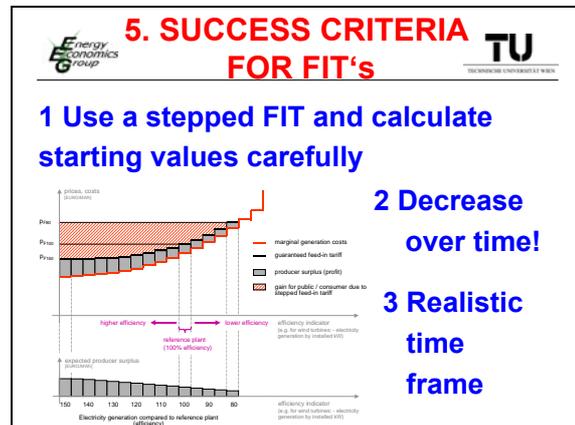
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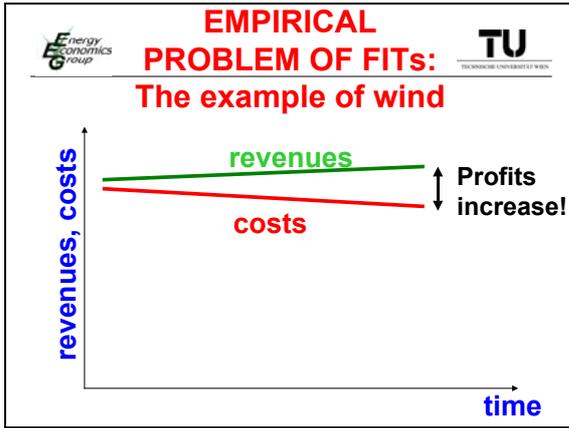
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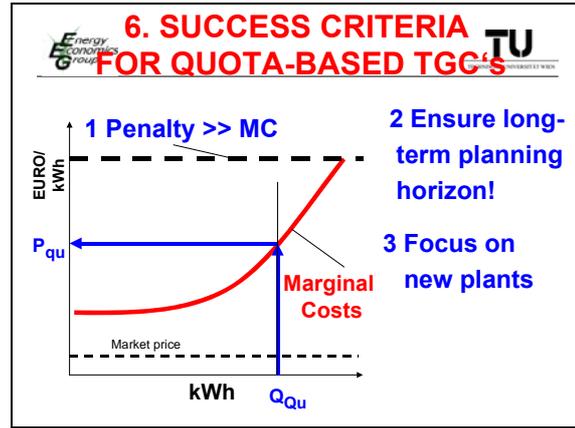
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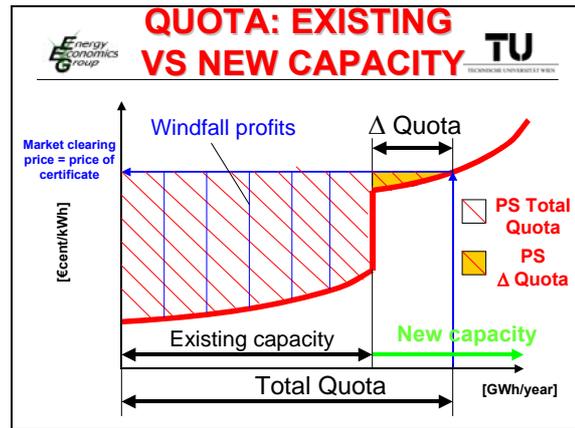
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-
- MAJOR PITFALLS FOR QUOTA-BASED TGC'S**
- 1 Market is too small: e.g. in a small country for one technology with very limited potential -> Non-Liquid because every single plant is known (e.g. Flanders (BE))
 - 2 Windfall profits for existing capacities (e.g. Flanders (BE), Sweden)
 - 3 Penalty is too low (e.g. UK)
 - 4 Planning horizon too short (e.g. UK 2003, Italy)

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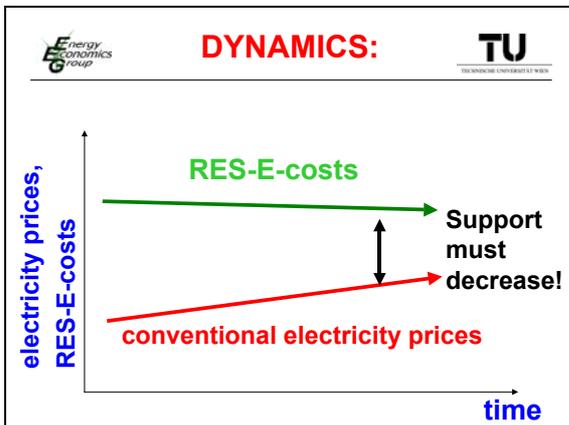
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-
- 7. COMPETITION?**
- Competition among manufacturers exist
 - Most important argument for TGCs: it is assumed that they foster competition between generators
 - Objective of competition -> competitive prices
 - competitive prices:
Prices = marginal costs (of generation)
 - Currently: certificate prices > average feed-in-tariffs
 - No indicator for real competition in TGC markets!
 - -> Utilities are in favour of TGC because they can make more money in TGC markets !

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-
- 8. CONCLUSIONS (1)**
- Careful design of a strategies: by far the most important success criteria!
 - There should be a clear focus on NEW
- IMPROVE THE CURRENT SYSTEMS!**
- and-go“ approaches

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-
- 8. CONCLUSIONS (2)**
- Instead of harmonisation: Stimulate/Foster competition between promotion schemes/between countries: Which system/where provides new RES-E capacities at lowest costs for society?
 - Exchange of lessons learned: Improvement of strategy design must build on learning from each other: e.g. Feed-in-cooperation DE and ES -> Why not a similar “Club” of TGC – countries?
 - Currently, a well-designed (dynamic) FIT system provides a certain deployment of RES-e fastest and at lowest costs for society
 - However, for sustainable policy -> parallel focus on demand-side conservation of high priority!

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Lessons from the project “A European Tracking System for Electricity” (E-TRACK)

Christof Timpe

Öko-Institut, Germany

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Lessons from the project:
A European Tracking System for Electricity (E-TRACK)

Öko-Institut e.V.
Institut für angewandte Ökologie
Institute for Applied Ecology

What is the problem? Some examples

- **Double counting**, e.g.
 - RES-E generation in country A is allocated explicitly to consumers based on “green power” contracts. Other suppliers use national production statistics for disclosure, which are not corrected by the direct green sales.
 - Country B exports most of its RES-E generation to customers in other countries. Other countries import “grey” power from country B, and use the national production statistics as the attributes for this import.
- **Unclear interaction with support systems**
 - Country C uses a feed-in support scheme, but does not specify who owns the “greenness” of supported power.

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Lessons from the project:
A European Tracking System for Electricity (E-TRACK)

Öko-Institut e.V.
Institut für angewandte Ökologie
Institute for Applied Ecology

Project Objectives

Overall goal of the project

- To investigate the feasibility of a harmonised standard for tracking electricity generation attributes in Europe

Additional project objectives

- To cover all tracking requirements which are imposed by European and national policies (disclosure, guarantees of origin, support schemes, Green Power etc.)
- To facilitate cross-border trade of electricity and generation attributes
- To avoid multiple counting of electricity attributes (e.g. from renewable energy sources) and loss of information
- To simplify verification of tracking procedures

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Lessons from the project:
A European Tracking System for Electricity (E-TRACK)

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Institute for Applied Ecology

Some preliminary findings

- There should be clear rules for the allocation of electricity generation attributes (comprehensive & binding for all actors)
- These rules should be co-ordinated between European countries (at least EU + EEA)
 - More detailed harmonisation should follow the actual integration of electricity markets
- Contract vs. de-linked tracking is not the problem
 - Both types of explicit tracking possible, should be implemented based on a central registry
- Any tracking system should consist of two elements:
 - An explicit mechanism (for optional use)
 - A residual mix for implicit tracking, based on regional generation | ex-/imports | explicit tracking

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Lessons from the project:
A European Tracking System for Electricity (E-TRACK)

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Example: Feed-in support & tracking

- Feed-in: Obligation on system operators to purchase RES-E and to pay a defined minimum price
- Who owns the greenness?
 - The one who pays in the end (usually ~all final customers)
 - The one who pays first (the system operator)
 - The generator (feed-in becomes a bonus payment)
- How is supported generation tracked to final consumer?
 - Separate allocation mechanism (e.g. EEG: pro-rata)
 - Use of a general explicit tracking mechanism
 - No tracking at all (part of national average)
- **Outlook:** At the time when RES-E becomes viable in the market, a well-developed tracking system can help generators to obtain fair prices for their green production!

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Lessons from the project:
A European Tracking System for Electricity (E-TRACK)

Öko-Institut e.V.
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Institute for Applied Ecology

E-TRACK project partners and duration

Project partners

Öko-Institut (coordinator)	DE
Austrian Energy Agency	AT
Energie-Control GmbH	AT
Büro für Energiewirtschaft und technische Planung (BET)	DE
Ademe	FR
Observatoire des énergies renouvelables (ObservER)	FR
IT Power	GB
Pure Energi	GB
Gestore dei Servizi Elettrici (GSE)	IT
Lithuanian Energy Institute	LT
Energy Research Centre of the Netherlands (ECN)	NL

Project duration:
Jan 2005 until Jun 2007

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Intelligent Energy Europe

Lessons from the project
“A European Tracking System for Electricity”
(E-TRACK)

Christof Timpe (c.timpe@oeko.de)

Final Conference of the REALISE-Forum Project
Berlin, 2.11.2006

Project sponsored by the European Commission
(EIE/04/141/S07.38594)

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Session 3: Round Table

"Attaining of the RES-E target - Are we on the right track?"

Statement by

Claudio Casale

CESI RICERCA, Italy

Historically, renewable energy sources, particularly hydropower and, albeit to a lesser extent, geothermal power, have long made a substantial contribution to Italy's electricity needs. In the last few decades, however, ever growing electricity consumption has caused Italian producers to have recourse to more and more fossil fuels, thus making the share of renewable energy contribution smaller and smaller in percentage.

It is well-known that Italy is not rich in domestic resources of coal, oil and natural gas, and depends heavily on imported fossil fuels. This trend has therefore been increasing also Italy's foreign energy bill, drawing attention to the need to save energy and exploit all domestic sources, particularly the renewable ones.

The current structure of the electricity market in Italy has been shaped by Legislative Decree No. 79 of 16th March 1999, which was issued to transpose the European Union's Directive 96/92/EC, but actually brought about a thorough restructuring of the domestic electricity sector.

This sector had, since 1963, been controlled by the state board Enel, a so-called "vertically integrated undertaking" which was concerned with production, import, transmission, distribution and sale of electrical power. The first signal of the Government's willingness to liberalise the electricity market was the establishment of the Regulatory Authority for Electricity and Gas in 1995, but it was not until 1999 that the aforementioned Decree 79/99 (also known as Bersani Decree) actually changed the situation on both the offer and the demand side.

Enel was turned into a holding company controlling several subsidiaries. Its stock was mostly sold out to the public (now about 70% of the shares are held by a large number of private people and bodies). No Italian company was allowed to hold more than 50% of produced or imported electrical energy and Enel was therefore obliged to hand over 15000 MW of its generating capacity to newly-established companies. Production was fully liberalised and an independent Transmission System Operator was set up (at present the TERNA company plays this role), along with the Electricity Market Operator (GME).

The same Decree 79/99 (Bersani Decree) that restructured the electricity market also set up a new RES-E support system. Unlike the former CIP 6/92 scheme based on feed-in tariffs, the new system was intended to be more market-oriented and consisted of a RES-E Quota obligation upon non-RES electricity producers and importers, and tradable green certificates (TGC) to be issued to RES-E producers.

Italy's RES-E support system as it is at present, with the Quota/TGC scheme as major instrument but with the recent complement of some feed-in tariffs available for photovoltaic (PV) installations, seems to be able to keep up the confidence of investors and financial institutions. This has been demonstrated by the brisk deployment of some new RES-E technologies (especially wind farms and small hydro) in the last few years, and by the very recent surge of new PV plant projects following the Decree on feed-in tariffs.

It has to be borne in mind, however, that the Italian Quota/TGC scheme has features that make it somewhat different from those running in other countries. It could be defined as a "mixed type" scheme, which is placed in between the two main concepts of feed-in tariffs, on the one side, and TGC, on the other. In fact, the TGC market price is not set by the free play of offer and demand only, but it is controlled in a way that gives investors some more guarantees of profitable income, at least in the short term.

The Annex to RES-E Directive 2001/77/EC set, as indicative target for Italy, an increase of RES-E contribution to gross domestic electricity consumption from 16% in 1997 to 25% in 2010. Nevertheless, in a footnote to the same table, Italy stated that *"...22% would be a realistic figure, on the assumption that in 2010 gross national electricity consumption will be 340 TWh. When taking into account the reference value set in this Annex, Italy has assumed that gross national electricity production from renewable energy sources will attain up to 76 TWh in 2010....."*.

The Directive has been transposed into Italy's legislation by Decree 387 of 29th December 2003 and the 22% target has, for the moment, been taken as the reference for Italy's RES-E development. Raising the RES-E percentage from 16% to 22% could seem rather easy, but this job is actually tougher than it would seem.

Since Italy's domestic RES-E production has been, in the last few years, steadily in the range of 48-55 TWh/year, reaching a top of 55,7 TWh in 2004, and considering that the hydropower potential has almost been wholly exploited with regard to large plant sites, and geothermal resources are confined to certain areas, a considerable effort should be made to develop the other new renewable sources in the next few years if the target of 76 TWh/year is to be reached by 2010 through domestically-produced RES-E only.

Furthermore, it should be remembered that 76 TWh/year is a 22% contribution only under the assumption that the 2010 gross electricity consumption will be about 340 TWh, as stated by Italy in the Annex to the Directive. In fact, this quantity was exceeded already in 2004, when Italy's gross consumption was nearly 349 TWh (it became 353 TWh in 2005). It could therefore be inferred that it would not be so easy for Italy to achieve a 22% contribution through domestic RES-E production only.

This feeling was also shared by many of the RES-E stakeholders who answered the questionnaire sent out within the framework of the REALISE-Forum project, as part of the Italian consultation desk. Only few stakeholders felt Italy is likely to achieve its 2010 RES-E target set by Directive 2001/77/EC. The discussion at a subsequent hearing pointed out that some sources, such as small hydropower and wind, had been going ahead at a brisk pace thanks to support schemes, whilst others, such as biomass and solar energy, had long been behind schedule for the lack of a more suitable policy. The former CIP 6/92 feed-in tariff scheme was also blamed for diverting plenty of subsidies from real RES-E plants to other, so-called assimilated ones (e.g. CHP plants, even if fired by fossil fuels).

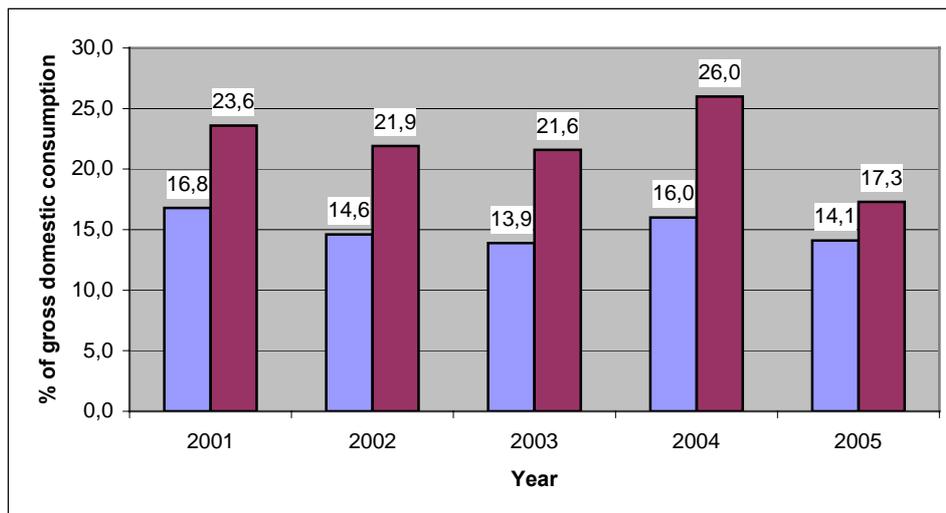
It should also be added that RES-E production has not been growing at a steady rate even in the last few years. In 2005, for instance, total gross RES-E production dropped by 10,4% in respect of 2004. This can be explained considering that most (over 70%) of Italy's RES-E capacity still consists of hydropower plants, which depend upon yearly rainfalls.

Referring to 2005 data taken from a recent report [1] by GSE (formerly GRTN, the body in charge of running RES-E support schemes), total gross RES-E production corresponded to 16,4% of total gross domestic production, and only 14,1% of gross domestic electricity consumption (Italy imports about 15% of its electricity from neighbouring states every year). The same percentages for 2004

were, respectively, 18,3% and 16,0%. Hence one could remark that even 2005 saw the continuing up-and-down trend of RES-E percentages over time, as shown by Figure 1.

Even though more plentiful rainfalls can well occur in next years, along with the continuing build-up of new RES-E capacity from technologies other than large hydropower thanks to support policies, there seems to be some ground for the pessimistic outlooks many Italian RES-E stakeholders set out about the chances of attaining the Directive's target by 2010.

Figure 1 - Percentages of gross domestic RES-E production (blue) and overall RES-E input inclusive of certified RES-E imports (red) from 2001 to 2005.



The situation however looks better if imported RES-E (provided it is certified by a Guarantee of Origin like that each EU country should set up according to the Directive) is also taken into account in calculating the national percentage. In fact the Directive seems to leave this way-out open, as it does not state explicitly that the contribution to gross domestic electricity consumption must come from domestically produced RES-E only. If certified imports were included, according to data available from the recent GSE report mentioned above (see Figure 1), Italy's overall RES-E percentage would get close to, or even exceed, 22% in some of the past years. Particularly, it would rise from 16% to 26% in 2004, and from 14,1% to 17,3% in 2005.

In this connection it has also to be recalled that, in the nation-wide REALISE-Forum enquiry, many a complaint came up from RES-E stakeholders as an alert that the whole process of promoting RES-E in Italy is not yet fully satisfactory and still needs some further measures to be taken without delay.

Complaints did not concern so much the current support mechanisms, which generally seemed to be pretty well accepted. This was shown, for instance, by the fact that a significant share of respondents to the questionnaire were against any change to the current system in the next 5 years. Many chose "only harmful" as their judgement on any possible change, others said a change would be only "somehow useful". Only a minority were convinced that some change would be quite useful.

Complaints rather referred to some practical ways Italy's RES-E support policy had been implemented so far. Actually, RES-E stakeholders, especially investors, often complained of delays in issuing long-awaited implementing measures regarding e.g. new grid-connection rules, a single

streamlined procedure for plant permitting, RES-E Quotas for the years from 2007 onwards, regional RES-E targets and several other implementing measures required by Decree No. 387 of 29th December 2003 (transposing Directive 2001/77/EC). Some of these measures are still lacking at the present time.

It is felt that some of the above-mentioned matters could also have a bearing upon the envisaged EU-wide co-ordination process of national RES-E support systems. When asked, in recent interviews, what should be done in practice to favour co-ordination of support schemes at the EU level, some major stakeholders said that it would, first of all, be helpful to undertake actions aimed at setting up more similar rules on key issues such as plant permitting procedures, market access, grid-connection codes, RES-E priority in dispatching etc. in the various EU Member States. Without previously bringing these aspects to more uniform conditions, efforts for co-ordinating national RES-E support systems might be thwarted.

Reference

- [1] Annual Report "Statistiche sulle fonti rinnovabili in Italia - Anno 2005", published by GSE S.p.A. (formerly GRTN) in October 2006 and available from the web site www.gsel.it.

Belated French RES-E take off

Dominique Finon

CNRS & Paris University, France

Belated French RES-E take off

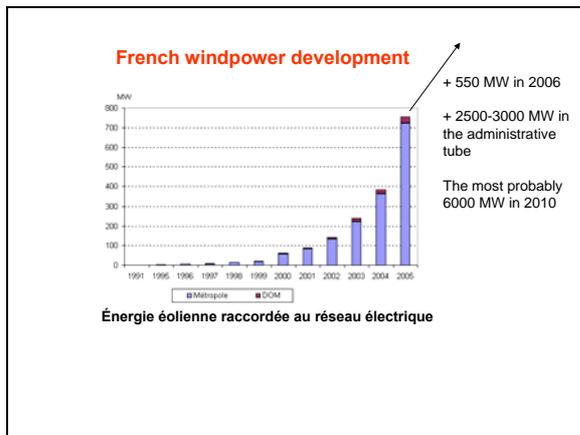
Dominique FINON
CNRS & Paris University, France

Realise Forum, Berlin November 2, 2006

- In order to respect the French commitment of the 2001 directive on RES-E (5, % share of new RES-E), the capacity new RES-E should have to be between 10000 à 14000 MW à l'échéance 2010.
- In 2002 France have only very modest installed RES-E capacity of 150 MW in windpower , the most developed RES-E technology
- **Explanation of the lateness** by nuclear option and influence of the national power utility:
 - Low stake of industrial policy
- **Present take-off of installed capacities in wind power**
 - New focus on bio-electricity (biogas)

Slide 1

Slide 2



- The first two steps of the French RES-E policy:**
- **1995 under right-wing government, despite national electric opposition**
 - **Bidding instrument**
 - Windpower : program Eole 2005 : goal of 500 MW
 - Modest Bidding programm for biogas RES-E in 2000
 - Feed in tariffs for CHP
 - **2001 under socialist, communist and green coalition: adoption of FIT**
 - Decree of creation of generous feed-in tariffs for different technologies
 - limit of project capacity: 12 MW legacy of the former decentralised limited and EDF's purchase obligation
 - **FIT Design with**
 - sliding scale tariffs for the successive new projects,
 - two steps tariffs on the lifetime of the equipment (5 years , then 10 years)
 - Revision after 1500 MW of installed capacity
 - **Complementary tool : tendering for large scale projects in on-shore windpower, off-shore windpower and new technologies (biofuel):**
 - Tender in 12, 2003 for 500MW on shore and offshore/ 200 MW biomass/ 50 MWbiogas and in 2005 tender on CHP biomass
 - Selection in 2005 of 280 MW on shore (7 prj.), 105 MW off shore (one project), 216 MW biomass (14 projects): mean bidding price 86€/MWh
 - Financing of the RES-E cost by tax on every kWh going to the public service funds

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- Main barriers to projects**
- Numerous candidates in 2003 : 12000 MW
1. **Very long learning in planning and licensing for**
 - Numerous administrative controls
 - Social acceptability and lack of procedures of local dialog
 - Diverging attitude of local authorities in different regions
 - No law on planning as in Denmark and Germany
 - So administrative costs and high risk on projects: important rate of refusal and
 2. Quite high cost of connexion tariffs for small units
But no problem with balancing costs with the help of purchase of obligation by EDF
 3. Classical barriers in the fields where needs of coordination with other policies
(agriculture, forestry, waste management)
 4. Insufficient level FIT for some technologies: biogas, methanisation, forestry waste

- Adaptation of RES-E policy in 2005**
- Since 2003 under right wing government, Large energy policy debate and vote of an energy law in July 2005
 - Review of the FIT tariffs with stakeholders
 - decree in July 2006 and improvement of tariffs
 - Extension of the first period of high tariffs from 5 years to 10 years for windpower
 - Off shore tariffs
 - Adjustment of biogas and PV tariffs (doubling)
 - And smart definition of the obligation to purchase (from mid 2007):

Slide 5

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	2005 tariffs	2005 New technologies	2001 tariffs
Windpower FIT 2005	-on shore : 8,2 c€/kWh during 10 y. -puis entre 2,8 et 8,2 c€/kWh pendant 5 ans selon les sites. -	2005 off-shore : 13 c€/kWh during 10 y, puis entre 3 et 13 c€/kWh pendant 10 ans selon le sites.	2001 8,38 c€/kWh (during 5 years, puis 3,05 à 8,38 c€/kWh pendant 10 ans selon les sites
Biogas/ méthanisation	7,5 et 9 c€/kWh + premium for energy efficiency comprise between 0 - 3 c€/kWh, + premium to méthanisation 2c€/kWh.		4,6 c€/kWh + premium to energy efficiency 0- 1,2 c€/kWh
Biomass and animal wastes	No adaptation		4,9 c€/kWh + premium to energy efficiency 1,2 c€/kWh
PV	30 c€/kWh, + prime d'intégration au bâti de 25 c€/kWh		15,25 c€/kWh

Slide 7

Smart redefinition of the obligation to purchase

- Every RES-E equipment set in specific zones defined by the local and district communities
- so-called « Zones de développement éolien » by order of the prefect
 - Improve the local dialog
 - Direct Involvement of local community
 - Integration of the issue of land scaped conditions by the developers

Slide 8

Future problems

- Success :
 - Importance of involvement of the main French energy companies (EDF, GDF, Total) + independent developers-producers with foreign companies (ENEL, etc)
 - Banks' Specific financial funds
- But hostility of some major players (regulator CRE, staff of ministry, TSO, nuclear industry) to the FIT system :
 - too high tariffs , too costly (estimation of 600 M€ in 2010 by Regulator)
 - Preference for quotas: no externalisation of RES-E cost
 - Some politicians: focus on other RES : wood, solar thermal
- But too large focus on windpower:
 - In mid-2005 on 3100 MW of demand of connexion, only 110 MW on other techno.
 - how to skip effort to other RES-E technologies?

Slide 9

Attaining of RES-E targets – Is Germany on the right track?

Statement by Uwe Büsgen / Franzjosef Schafhausen

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

Realise Forum

November 2, 2006

**Attaining of RES-E targets
Germany on the right track**

Uwe Büsgen
BMU, KI III 1, Division Renewable Energy
Deputy Head of Division

Slide 1

Outline of the Presentation

- I. Targets for the share of renewable energy in Germany
- II. Past and future development of the use of renewable energy in Germany
- III. Conclusions

November 2, 2006 Uwe Büsgen, KI III 1 2

Slide 2

Achievements and Targets - Share of Renewable Energies -

in %	Year	1998	2005	2010	2020	2050
Primary Energy		2.1	4.6	>4.2	>10	~ 50
Electricity		4.7	10.2	>12.5	>20	-
Fuels		0.14	3.6	6.75	12,5	-

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Slide 3

Electricity Generation from Renewable Energies in Germany

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Slide 4

Expected Future Development

Final capacity and generation 2020:

- Wind-Offshore: 20,992 GWh/a, 12,000 MW
- Wind-Onshore: 41,772 GWh/a, 23,600 MW
- Photovoltaics: 9,272 GWh/a, 9,973 MW
- Biomass, total: 28,141 GWh/a, 4,493 MW
- Geothermal: 1,468 GWh/a, 530 MW
- Hydro Power: 24,511 GWh/a, 5,237 MW

RE total, incl. import: 151 TWh/a, i.e. 25.5% of gross electricity consumption.

Source: DLR, ZSW, WI, Wenzel 2005

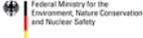
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Slide 5

Comparison of DLR and EWI/Prognos Scenarios

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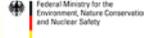


Achievements in Germany by 2005

- Share of renewable energies in power supply: about 10.2 % [1998: 4.7%]
- 170,000 jobs in renewable energy industries
- € 16 Billion turnover
- 83 Mio. tons of CO₂-reduction
- 38 Mio. tons of CO₂-reduction due to EEG (2004: 34 Mio. tons)

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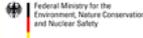


In Germany, RES-E...

- grows faster than expected
- can cover large parts of the energy consumption in the medium to long term (e.g. ¼ of the electricity consumption by 2020)
- reduce relevant amount of THG-emissions
- reduce dependency from energy imports and increase energy security

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Slide 8



Thank you for your attention!

For more information, please visit:

www.bmu.de

www.erneuerbare-energien.de

www.feed-in-cooperation.org

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Slide 9

Attaining of the RES-E target - Are we on the right track?

Statement by Prof. Dr. Niels Meyer

Denmark's Technical University, Denmark

LIBERALISED ENERGY MARKETS

- Problems after 10 years of experience:
- Supply security – market signals too weak + unstable
- Too short planning horizon, based on short term profit
- New monopolies with dominating market power
- Less utility innovation and less maintenance of grids
- Less concern of environment, including global warming
- Insufficient promotion of renewables by market forces
- Higher electricity prices for private households in most EU member states (in contrast to goal of directive).

Niels I. Meyer (1)
Berlin-Realise, October 2, 2006

Slide 1

SOCIETAL PLANNING AND REGULATION

- New energy directive is needed with alternative priorities
- High priority to sustainable energy development and supply security – less priority to liberalistic market schemes. Energy is not like any other commercial good
- Internalizing of externalities and abolishing of direct and indirect subsidies of fossil fuels and nuclear energy
- Long range EU and national plans and regulations with binding commitments for energy conservation and renewables
- Stricter rules for emission trading.

Niels I. Meyer (2)
Berlin-Realise, October 2, 2006

Slide 2

PROMOTION OF ELECTRICITY FROM RENEWABLES

- Promotion of RES-E in EU has been dominated by Feed-in Tariffs (FITs), Trading of Green Certificates (TGC) and tender schemes.
- Different versions of FITs are used by most Member States: Fixed (favorable) Tariff (e.g. Germany) or Market Price plus Environmental Premium (e.g. Spain)
- TGC have mainly been used by Italy, the UK and Sweden. Several problems and no convincing results
- National certificate markets have too large transaction costs compared to actual results + investor uncertainty
- Tender schemes may supplement FITs and TGCs.

Niels I. Meyer (3)
Berlin-Realise, October 2, 2006

Slide 3

OFFICIAL DANISH ENERGY POLICY
Strong influence on penetration of wind power in Denmark

Niels I. Meyer (4)
Berlin-Realise, October 2, 2006

Slide 4

CONCLUSIONS

- Energy is vital for the future of present society
- Energy can't be treated as any other commercial good
- The market is too short-sighted for the energy sector
- Society must make long-range plans for the energy sector and regulate its development
- Global warming and "oil peak" require urgent implementation of renewables and energy conservation
- The present liberalisation directive should be altered to new priorities: environment + energy supply security
- Promotion of energy conservation + RES-E requires stronger tools (e.g. norms, binding targets, individual FITs, internalisation of externalities, stricter trading schemes etc.)

Niels I. Meyer (5)
Berlin-Realise, October 2, 2006

Slide 5

Attaining of the RES-E target - Are we on the right track?

Statement by Andrej Klemenc

Slovenski E-Forum, Slovenia

RENEWABLE ENERGY AND LIBERALISATION IN ELECTRICITY MARKETS: LESSONS AND RECOMMENDATIONS FOR POLICY

ATTAINING THE RES-E TARGET: ARE WE ON THE RIGHT TRACK?

November 2, 2006

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Intelligent Energy Europe

Slide 1

ELECTRICITY SYSTEM OF SLOVENIA

Peak capacity	
- hydroelectric power	886 MW
- thermoelectric power	1,241 MW
- nuclear power	670 MW
Production of electricity	11,667 GWh
- hydroelectric power	3,036 GWh
- thermoelectric power	4,681 GWh
- nuclear power	5,613 GWh
- independent and qualified producers	417 GWh
Length of transmission network	2,514 km
- 400 kV	567 km
- 220 kV	228 km
- 110 kV	1,499 km
Length of distribution network	51,317 km
- 110 kV	793 km
- 35, 20 and 10 kV	15,655 km
- 0.4 kV	41,475 km
Consumption of electricity	11,949 GWh
- direct consumers	2,775 GWh
- eligible customers	4,529 GWh
- tariff consumers	3,075 GWh
Annual consumption per person	6,174 kWh
Average household consumption per month	314 kWh

Intelligent Energy Europe

Slide 2

Share of RES-E in gross consumption of electric power in Slovenia

Intelligent Energy Europe

Slide 3

FEED IN SUPPORT IN SLOVENIA

Feed in price/premium in SLO - 2006

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Slide 4

RES-E DIVERSITY

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Slide 5

BIODIVERSITY

Intelligent Energy Europe

Slide 6



Slide 7

.....PríME MODEL RES-E PROJECT

Solar&Spar project at Willibrord High School in Emmerich (Germany)

Basic characteristic:

- Social inovative EPC project – 60 % of capital raised by parents/citizens
- 50% reduction on heat and power demand by improved energy services trough RUE meassures plus 50 kW PV installation

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Slide 8

Session 3 – Minutes of the Round Table

Prof. Dr. Niels I. Meyer (Denmark's Technical University)

as the first speaker of this round table at the beginning made a remark on the former presentation of R. Haas (TU Vienna, Austria). He had classified Sweden as one of the most effective EU countries regarding the support of biomass RES-E. Meyer disagreed with this statement because a lot of other factors in the Swedish biomass market - such as a long tradition in the usage of biomass for energy production and a good developed supply chain of biomass (paper industry) – contributed to the effective biomass RES-E approach in Sweden. Meyer also pointed out Denmark as an example for the importance of policy support for the success of RES-E. Since the Danish government change in late 2001 nearly all former support measures have virtually stopped and hardly any new wind capacities have been installed there since. He also added that the current EU Directive on the liberalisation of the internal electricity markets should include new targets such as environmental protection and the security of energy supply. Besides, the promotion of energy conservation and RES-E require stronger tools such as binding targets, stricter trading schemes, etc.

Uwe Büsgen (BMU, Germany)

explained the development of RES-E generation in Germany between 1990 and 2005. Whereas the share of hydro power remained almost unchanged, notable increases of wind power were achieved since the late 1990s. This increase regarded also biomass and photovoltaic in the last years. For that reason the share of RES-E in the gross electricity consumption has already more than doubled between 1998 (4.7%) and 2005 (10.2%) and the German target of 12.5% by 2010 should be reached already in 2007 or 2008. In Germany a RES industry evolved during the last years, which at the end of 2005 already created some 170,000 new jobs reaching an annual turnover of € 16 billion. The overall RES deployment also led to a CO₂ reduction of 83 M. t in 2005, whereof 38 M. t came from the RES-E installations in the framework of the German Renewable Energy Sources Act (EEG).

Andrej Klemenc (Slovenski E-Forum, Slovenia)

pointed out that although Slovenia already reaches a high level of RES in its electricity mix, the RES share is decreasing. Furthermore, 99% of the Slovenian RES-E is based on hydro power, of which 93% are large hydro installations. Therefore currently Slovenia is not on the right track in reaching its EU RES-E target of 33% by 2010. Furthermore, the electricity intensity in Slovenia is also increasing mainly because of low electricity prices. Klemenc pointed out, that the Slovenian RES-E policy is supply side oriented and that demand side measures are needed. No demo RES-E projects were installed in Slovenia and only a few awareness raising campaigns were carried out. Nevertheless the support system for RES-E in Slovenia has been improved during 2006 (higher feed-in rates). The biggest challenge for the future growth of RES-E in Slovenia is to reach RES-E diversity without conflicting with biodiversity (issues). Therefore best practice projects which combine energy efficiency and RES-E should be considered.

Dominique Finon (CIRED, France)

gave an explanation of the belated French RES-E take off. The main reasons for the slow French development in RES-E was mainly due to the dominant nuclear power oriented energy policy as well as the huge market power of the national utility EDF. Also very long planning and licensing procedures for RES-E installations were responsible for the slow progress of RES-E in France until now. Mr. Finon illustrated the French RES-E support system which since 2001 is based on a FIT

scheme. One of the main barriers for wind projects was the limitation of the fixed prices to projects only up to an installed capacity of 12 MW (for bigger projects a tendering scheme was applied) and that the initial higher tariffs were only paid for the first 5 years (than decreasing in accordance to the quality of the site). In July 2005, the French FIT scheme was amended (even though the new FIT rates were not published until the end of July 2006). This among other things prolonged the high FIT rates for wind installations to 10 years or increased substantially the remuneration for PV projects. As a reaction of the improved FITs, a number of new wind projects are to be built. Whereas at the end of 2005 the overall installed wind capacity in France only reached 757 MW, between 2,500-3,000 MW are now in a planning phase and possibly 6,000 MW of wind capacity may be installed in France by 2010. Finon also highlighted some future problems of the French RES-E support scheme: On the one side, FITs might be too high (leading to overall remunerations of around 600 M. € by 2010). On the other side, presently there is a too strong focus on wind projects (in mid 2006 of 3,100 MW of applied connections for new RES-E installations only 110 MW were not wind power projects). The main question therefore should be how to shift the effort also to other RES-E technologies.

Grzegorz Wisniewski (EC BREC, Poland)

illustrated the Polish RES-E support approach. Poland already in 1996 introduced a FIT scheme, where all RES-E installations up to 5 MW capacity were eligible. In 2001, Poland switched to a quota system. The problem of the Polish quota system was that no penalties (for non compliance of the quota obligation) were introduced, which led to an only very small growth of RES-E. The fulfillment of the quota is now secured by two mechanisms: Firstly, a buy out price for the TGCs of ~65 €/MWh or by purchasing the TGCs on the market. The Polish RES-E support scheme also introduced a buy out mechanism. Together with the market price for electricity, Polish RES-E producers can get up to ~ 8 €/kWh. As the original quota set for 2005 of 3.1% of RES-E was surpassed and at the end of 2005 already a contribution of 3.6% of RES-E in gross electricity consumption was reached, the quota for 2007 was increased to 5% RES-E. Therefore, Poland is on a good track to reach its RES-E goal of 7.5% by 2010. The main problems of the current situation for RES-E in Poland is that the main part of the RES-E remuneration in the last two years were taken by large hydro power and coal plants (as the Polish RES-E system also allows biomass co-firing in coal power plants) and that nearly nothing was left to small IPPs. A further problem for the biomass supply is that because of the co-firing of biomass in coal power plants hardly any primary biomass remains for small biomass plants. The owner of the coal power plants pay high prices for the biomass while passing this extra costs to the final costumers.

Claudio Casale (CESI RICERCA, Italy)

briefly summarised the Italian RES-E approach. Italy was one of the earliest EU countries adopting a FIT scheme in 1992. This system was applied over ten years, but only led to modest RES-E growth rates. In 2002, Italy switched to a quota system with TGCs. In the EU RES-E Directive 2001/77/EC, Italy committed itself to increase its RES-E share in gross electricity consumption from 16% in 1997 to 22% (76 TWh) in 2010. Even though only an increase of 6% is needed, according to Mr. Casale this is still an ambitious goal as the large majority of the Italian RES-E capacity comes from large hydro installations and their contribution depends on the yearly rainfall conditions. Therefore, a 6% increase has to come mainly from new RES-E installations. In 2005, the share of RES-E in Italy was only 14% because of poor rainfalls. So, Italy is not really on the right track in reaching its 2010 RES-E target. On the contrary the development of wind power installations was quite impressive, although not to the extent needed by the 2010 goal.