Joint renewable energy support schemes in the Visegrád countries

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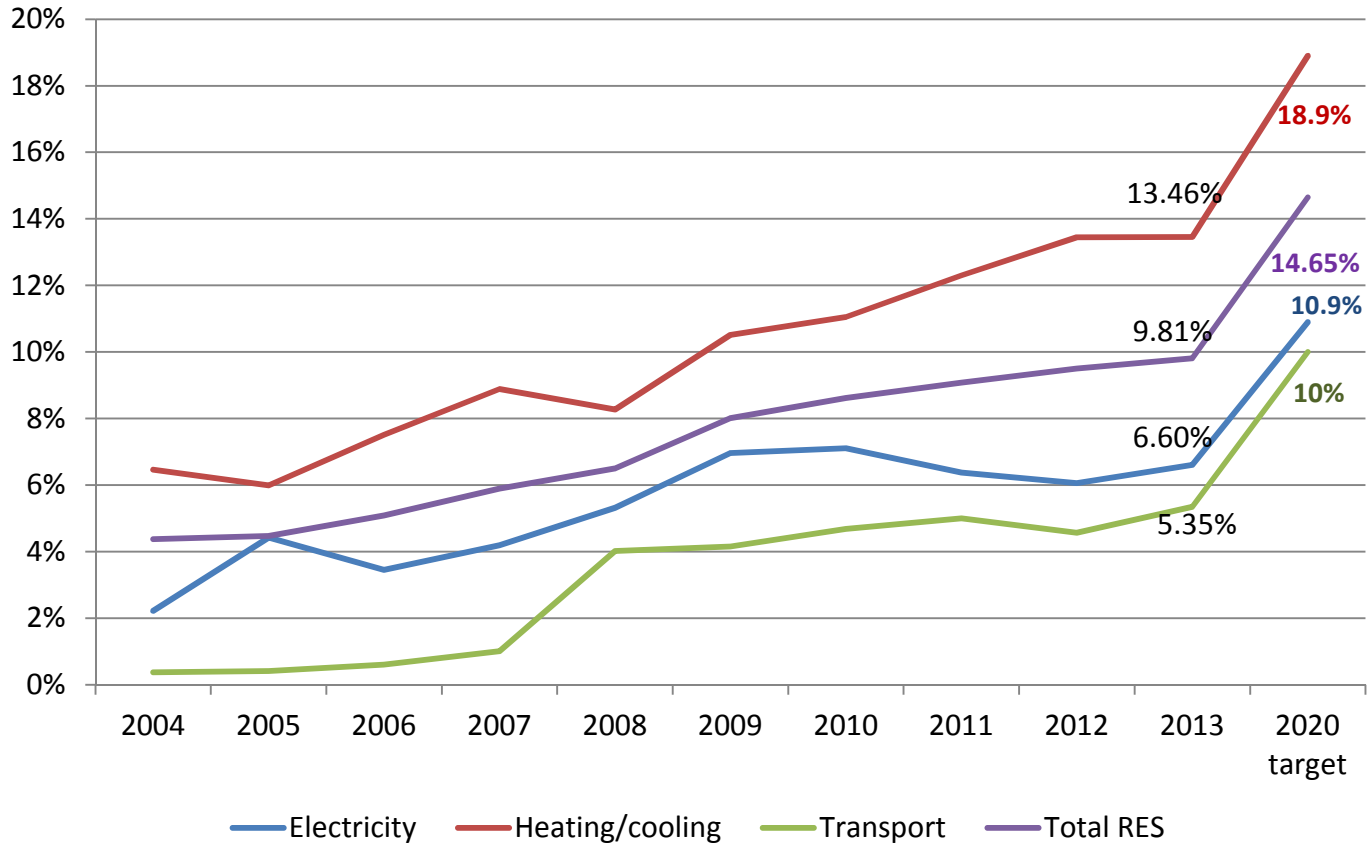
SECURITY OF SUPPLY • AFFORDABILITY • QUALITY OF LIFE

Main topics

- RES targets and their fulfilment in Hungary
- The role of renewable cooperation mechanisms
- Forms of renewable cooperation
- Joint renewable support schemes
- Regional RES support schemes in theory
- The Swedish-Norwegian joint green certificate scheme
- Possibilities of a joint premium system in the CEE region
- How could a joint premium system work in the Visegrád countries?

What are our RES goals? Are we approaching them?



Source: Eurostat

How to reach these goals?
The role of renewable cooperation mechanisms

- Possibility of less expensive RES target fulfilment with the usage of so called renewable cooperation mechanisms
- Statistical transfers, joint projects, joint renewable support schemes
- Few practical experiences, mainly theoretical evidence
- Difficulties: design, uncertainty of lack/surplus in target fulfilment, indirect benefits are hard to share, financing of foreign projects, political conflicts, loss of sovereignty, etc.
- **However, Commission considers positively new or modified RES support schemes open to other countries in notification procedure!**

Forms of renewable cooperation

(according to Directive 2009/28/EC)

Statistical transfers

- Loosest form of cooperation: agreement on statistical transfer of a certain amount of renewable energy from one to another MS
- Transferred energy can be electricity, heat or fuel
- Agreement can be valid for one or more years

Joint projects of Member States

- Cooperation of two or more MS in a joint project for renewable electricity production or heating/cooling (renewable fuel production not included)
- One MS can assume the financing of the project, in turn it can count one part of RES production into its own target compliance

Joint projects of MS and countries outside the EU

- Can comprise only renewable electricity production, physical import into the EU is a prerequisite
- Private parties can also be involved

JOINT RENEWABLE SUPPORT SCHEMES – THE HIGHEST FORM OF COOPERATION!

Joint renewable support schemes

- Two or more countries voluntarily combine or partly harmonize their national renewable support schemes
- A joint RES support scheme can comprise renewable electricity and/or renewable heating/cooling
- **How to share renewable energy produced?**
  - Statistical transfers
  - Physical electricity flow
- How to share funding? => **Joint support fund**
- **Joint RES support schemes can contribute to lower support expenditures at an aggregate level**

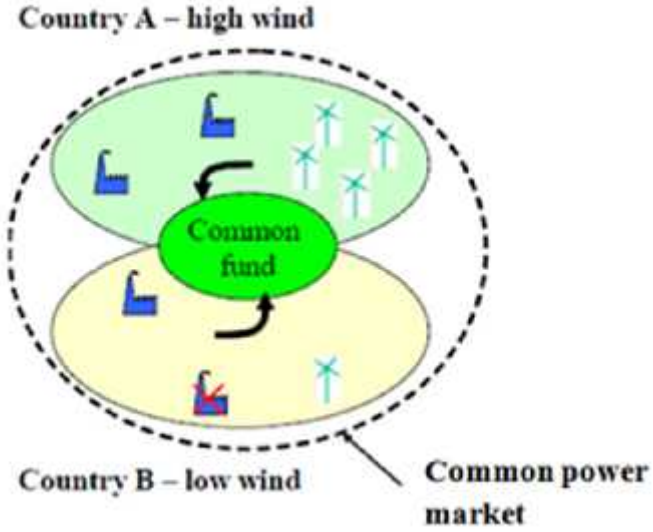
Regional RES support schemes in theory

Regional joint feed-in tariff system supposing joint power markets

- Country A and B: different conditions for wind power production and difference in efficiency of fossil power plants
- Joint power market, joint feed-in tariff system with joint fund

Outcome:

- More wind power plants built in country A, which squeeze out inefficient fossil power plants in country B
- Spot market price decrease felt in the whole region
- Higher balancing costs in country A, should be also shared between countries



Source: Jensen and Morthorst, 2006

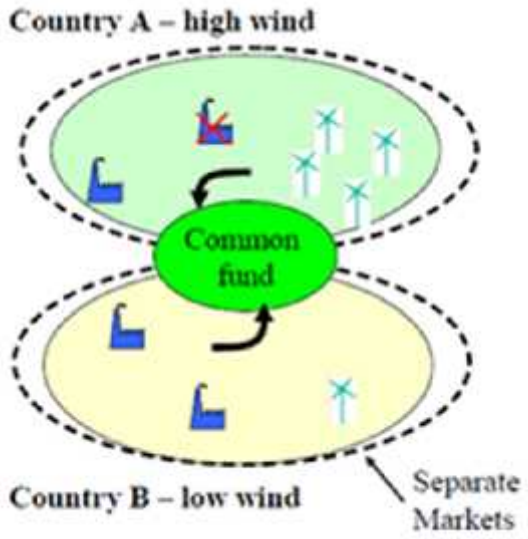
Regional RES support schemes in theory

Regional joint feed-in tariff system supposing separate power markets

Outcome:

- More wind power production in country A but because of separate power markets, wind power plants cannot squeeze out inefficient fossil power plants in country B => it can happen that they will push efficient fossil plants in country A out of the market
- Problem: decreased spot power price in country A doesn't induce investment into fossil power plants though it would be needed as back-up capacity to balance intermittent generation

Conclusion: a joint power market is needed before introducing a common RES support scheme!



Source: Jensen and Morthorst, 2006

Regional RES support schemes in practice

Swedish-Norwegian joint green certificate scheme

- Started its operation from 1 January 2012
- So far the only joint RES support scheme in Europe
- Joint quota target for 2020 (26.4 TWh RES electricity) financed equally by members
- Joint green certificate market

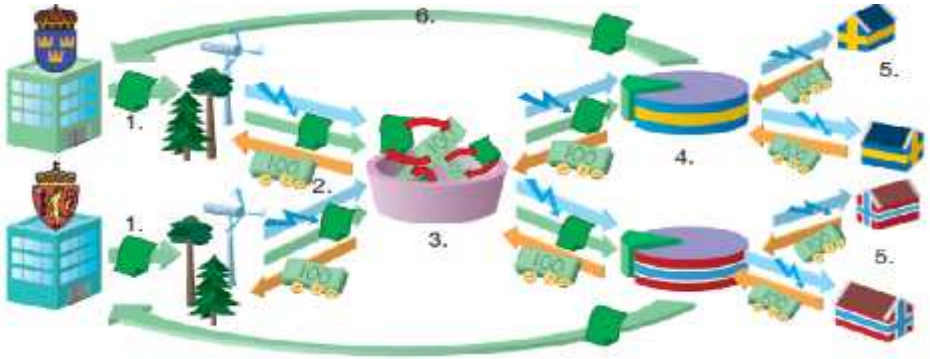


Illustration of the electricity certificate market

1. Electricity producers receive one electricity certificate for each megawatt hour (MWh) of renewable electricity produced for a maximum of 15 years.

2. The electricity certificates are sold on the electricity certificate market, where supply and demand govern the price. In this way, the producers receive an extra income from the electricity production in addition to the price of the electricity.

3. Demand for electricity certificates is created by electricity suppliers and some electricity end users being obligated by law to buy electricity certificates corresponding to a certain proportion (quota) of their electricity sales or usage.

4. It is the electricity end user who finally pays for the expansion of the renewable electricity production, as the cost of the electricity certificate is part of the electricity invoice.

5. Each year, the body with quota obligation must cancel electricity certificates in order to fulfil its quota obligation.

Source: The Swedish-Norwegian Electricity Certificate Market, Annual Report 2012

Expected and past experiences of the Swedish-Norwegian joint green certificate scheme

Expected effects:

- The number of market participants shall increase, which induces market competition and enhances the liquidity of the market
- This helps to mitigate volatile green certificate prices
- Renewable investments shall flow to the country where conditions for given RES technology are the most favorable (e.g. Norway: better hydro power potentials), thus the cost of reaching quota targets will probably decrease at an aggregate level

Experiences so far:

- In Sweden, most support has been allocated to biomass power plants, while in Norway almost exclusively hydro power plants have been supported (this was expected based on RES potentials)
- In 2013, green certificate prices have already declined => this reduced support expenditures
- But: different quota targets in SWE and NOR (higher targets in SWE) => unevenly distributed support costs (unit support is lower in NOR)

Source: Swedish Energy Agency, SKM

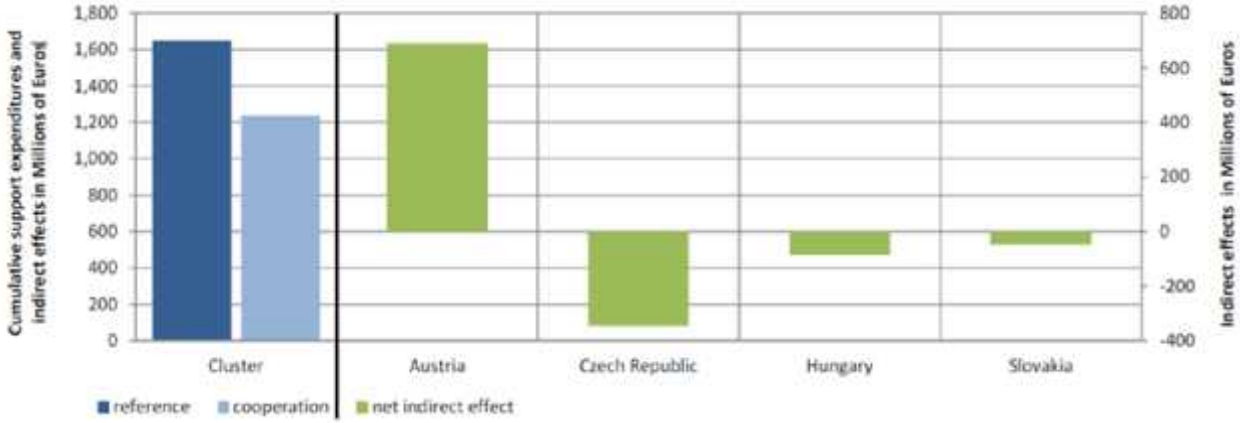
Possibilities of a joint premium system in the CEE region

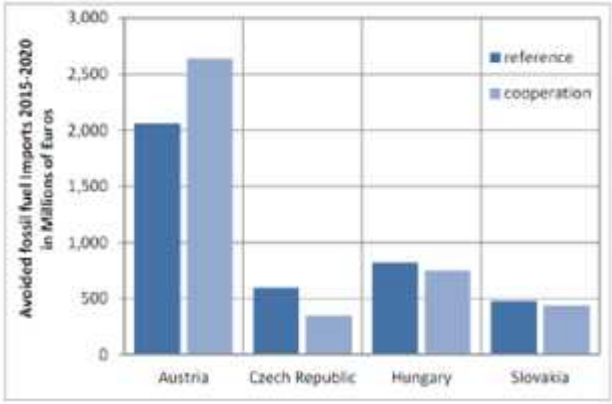
Ecofys model

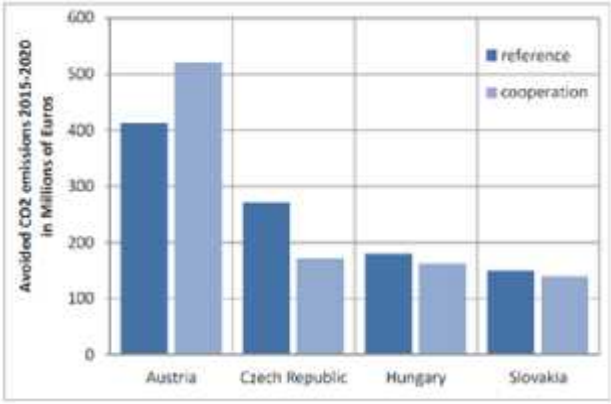
- **Austria, Czech Republic, Hungary, Slovakia:** at present feed-in tariff systems (alternatively premium in CZ) but new EU Guidelines require more market oriented support schemes, for example a premium scheme
- **Common CZ-HU-SK joint day-ahead electricity market** can be a basis for common reference market price
- A joint renewable support system can **decrease costs of RES target fulfilment**
- Balanced country risks may **improve investor confidence**
- Premium support can be financed from a **joint fund**
- Support can be allocated through a **tender process**

Source: Ecofys

Expected outcomes of a joint premium system







Source: Ecofys

How could a joint premium system work in the Visegrád countries?

- What RES support should be made common? **- Support schemes for RES electricity**
- What kind of joint RES support? – **Premium with tender scheme**, which is in line with new EU requirements
- How to share RES electricity between members? – **Statistical transfer or physical electricity flow**
- **How to share costs and benefits?**
  - Support costs: joint fund
  - Balancing costs in case of intermittent RES technologies should be shared according to predetermined rules
  - Quantifiable benefits (e.g. avoided fossil fuel imports, CO_2 emission costs) should be also shared equally
  - Sharing of indirect benefits (e.g. spillover effects) can be a huge challenge

Thank you for your attention!

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