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Interaction of Green Certificates with Green Pricing and Emissions Trading

Hans-Joachim Ziesing
German Institute for Economic Research (DIW Berlin)

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The range of different support systems for renewable energies in the EU

- feed-in tariffs
- quota obligations
- tendering systems
- tax incentives

Beside this there exist some voluntary systems

- Green certificates with a voluntary trading system
- Green pricing (specific products offered by producers/utilities)

The role of Green Certificates (GC) - 1 -

A green certificate is nothing else than “a proof that a defined amount of electricity has been produced by a renewable electricity production unit.” (RECS)

Green certificates as well as the guarantee of origin (GoO) facilitate cross border trade with renewable electricity and increase transparency for the consumer’s choice.

The demand for green certificates is based either on voluntary demand or on obligation.

GC certificates are financial assets and can be traded separated from the physical market and need no switch of electricity suppliers.

The role of Green Certificates (GC) - 2 -

A system of voluntary international trade on the basis of green certificates is already in place. The framework of this is the “Renewable Energy Certification System” (RECS), and big players in electricity markets are actively involved.

Green certificates in combination with quota systems are implemented in some European countries.

In such a system, some of the players in the electricity market, typically the end-user, are required to buy green certificates according to a defined percentage of their electricity consumption.

The role of Green Pricing (GP)

"Green pricing refers to an optional utility service that allows customers of traditional utilities support a greater level of utility investment in renewable energy by paying a premium on their electric bill to cover any above-market costs of acquiring renewable energy resources." (European Environmental Agency, EEA)

In this sense green pricing is a voluntary contract between a utility and a consumer, who is willing to pay more for the benefits of using renewable energies.

The role of Emission Trading (ET) - 1 -

The EU internal emissions trading system limits carbon dioxide emissions from a broad range of industries, such as power generation, and places them within a regulatory framework.

The large carbon dioxide emitters will be allocated allowances on an annual basis through national allocation plans.

For more flexibility the EU passed the Linking Directive, that links credits from JI and CDM projects with the ET system. This will allow to convert credits from JI and CDM projects for use towards meeting their commitments under the ET system.

The role of Emission Trading (ET) - 2 -

If participants to the ET system reduce emissions to a level below their limits, they can sell the excess allowances to other companies or keep them for future use.

Vice versa, companies that exceed their limits can invest in abatement technology or buy allowances on the market to match their emissions, whichever is the cheaper.

In this way, the EU scheme will allow emissions reductions to take place at minimum cost to the economy.

Differences between the purposes of Green Certificates/Pricing and Emission Trading

- Green certificates and green pricing (like all the Feed-in-tariffs systems) are instruments to enlarge the use of renewable energies particularly. In this sense these instruments are focused on specific techniques or energy systems.
- The ET- Directive establishes a scheme for greenhouse gas emission allowance trading within the Community ... in order to promote reductions of greenhouse gas emissions in a cost-effective and economically efficient manner. ET is neutral vis-á-vis the ways and the techniques how to comply with the given emission targets.

Differences concerning the target groups of GC/GP and ET

- The **emissions trading scheme** targets mainly emission sources in the industrial companies and the electricity generators,

while

- **green certificates and green pricing** mainly affect the consumers of renewable electricity.

Overlapping between Green Certificates and Emission Trading

CO_2 emissions can be reduced on two ways:

1. **A more efficient use of fossil fuels,**
2. **Fuel switch not only within the fossil fuels itself (in favour of natural gas) but also to energy sources like renewable energies with no emissions.**

With the promotion of renewable energies green certificates and green pricing activities contribute to the targets of emissions trading.

Because the support schemes for renewable energies are focused on electricity, the same group is touched which is subject of the ET scheme.

The impacts of additional renewable energies within the ET scheme (according to CEPS)

"The amount of emissions from the covered installation will correspond exactly to the amount of allowances allocated plus the amount of certified emission reductions and emission reduction units allowed into the ETS market through the Linking Directive (2004/101/EC). The purpose of the ETS is to ensure GHG emissions reductions.

This means that additional RES-E production has no CO_2 effect as the caps under the National Allocation Plans (NAPs) remain unchanged."

Solutions to solve the interaction problems: The radical version

Because the support of the electricity production on the basis of renewable energy would have no effects on additional emissions reduction, in Germany, for instance, the academic advisory council of the Federal Ministry of Economics with 37 well-known economists and jurists recommended to abolish the specific support for renewable energies (in the case of Germany the feed-in tariff according to the Renewable-Energy-Act) and to leave all to the emissions trading scheme.

Emissions trading and threats for renewable energies

Provided that within the emissions trading scheme

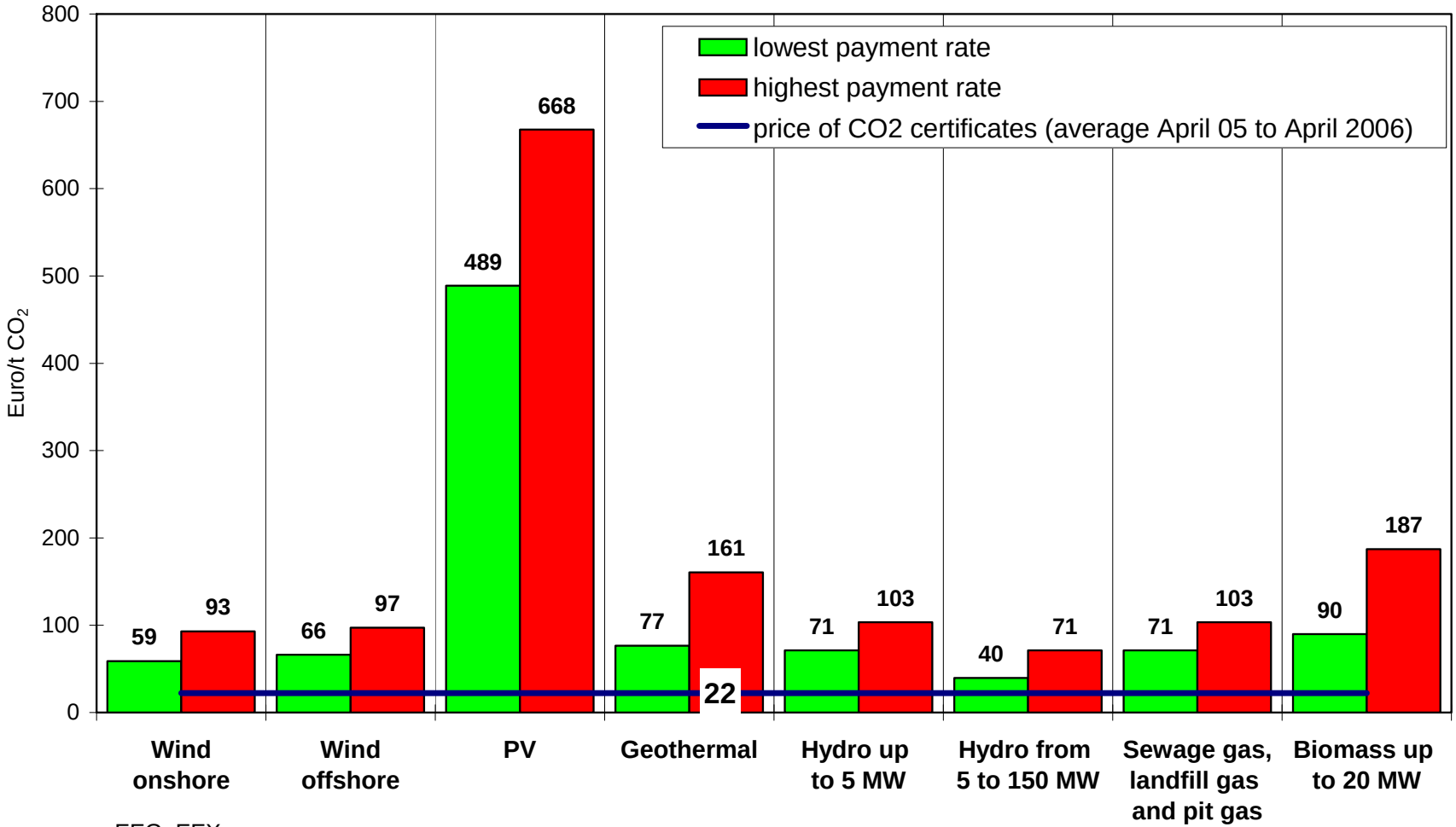
a) the most cost-effective and economically efficient measures to reduce GHG emissions will be taken, and

b) the renewable energies are not usually the cheapest greenhouse gas abatement method,

renewable energies will not benefit from emissions trading on a direct way.

They will benefit in an indirect way only mainly because of rising prices of electricity

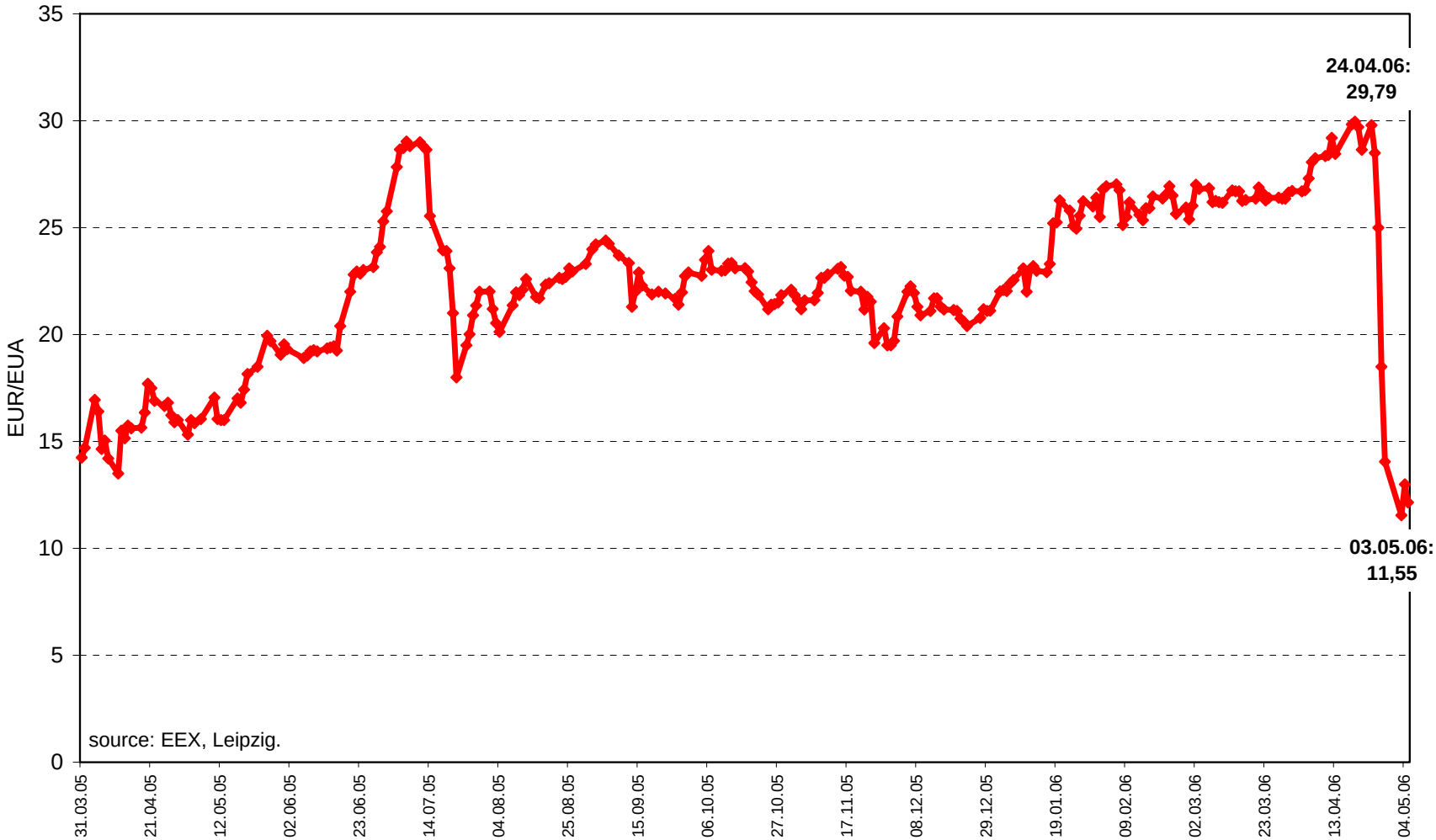
Payment rates according to the German EEG per t of CO_2 avoided and price of CO_2 certificates



sources: EEG; EEX.

EEX CO_2 Index March 2005 – Mai 2006

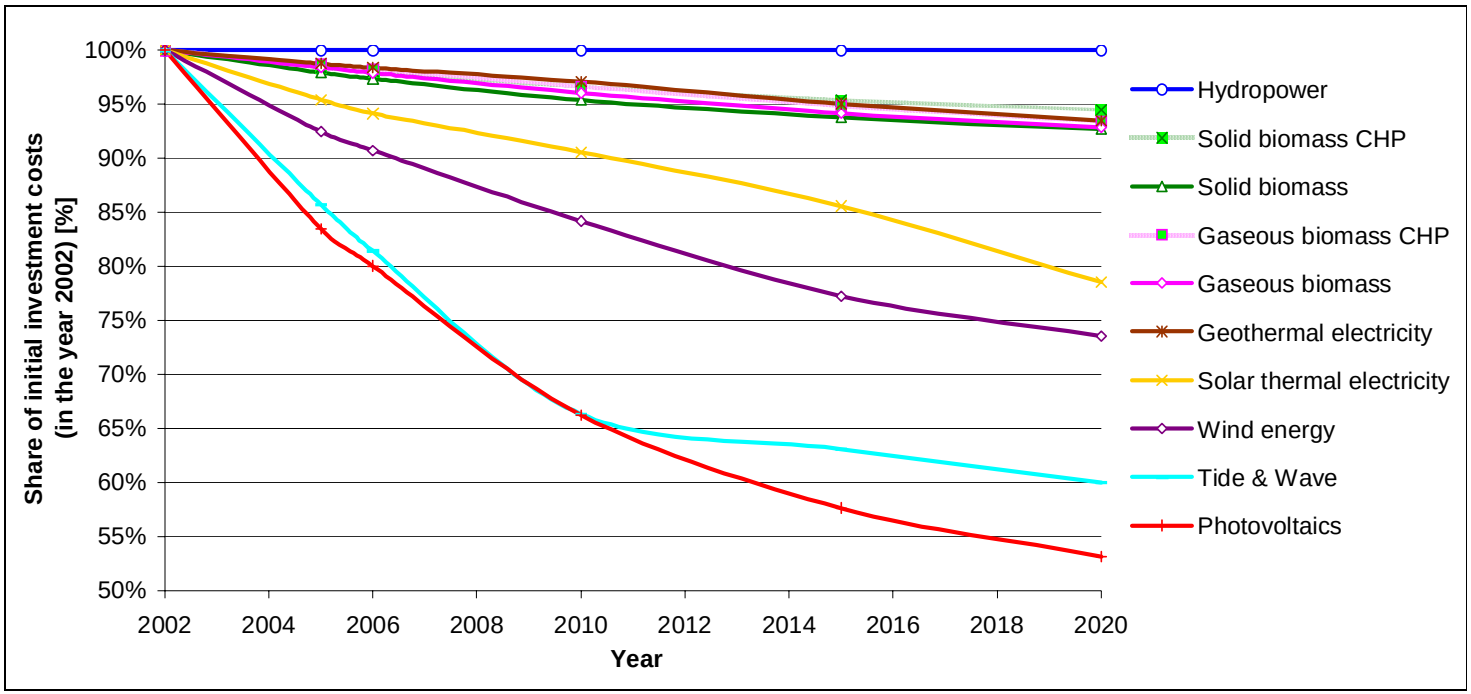
(European Carbon Index)



Benefits resulting from renewable energies

- **Mitigation of greenhouse gas emissions by the EU power sector.**
- **Improved security of energy supply.**
- **Enhanced competitive edge for the EU in the renewable energies technology industries.**
- **Mitigation of regional and local pollutant emissions.**
- **Improved economic and social prospects especially for rural and isolated regions.**

Cost trends of different renewable energy sources



Solutions to solve the interaction problems: The constructive recommendations

1. **Combine the TGC market with a market for TEPs. It is necessary that the quotas of the two markets are adjusted in a co-ordinated manner: When the green power production is increased, the tradable permits quota should be decreased correspondingly. (Riso, 2004)**
2. **Reduce the emission allowances to the participants of the ET scheme as far as the expected impacts of the renewable energies on the reduction of CO_2 emissions. This means to extend the overall cap.**

Conclusions (I)

1. Green certificates for renewable energies and emission trading pursue different targets: Green certificate will expand the use of renewable energies, while emission trading will ensure that a given limit of greenhouse gas emissions shall be realised at minimum costs.
2. The interactions between these instruments is due to the fact, that an enlargement of renewable energies in electricity production will reduce the amount of electricity based on fossil fuels and therefore the emissions caused by burning fossil fuels.

Conclusions (II)

3. Given a well-defined cap on GHG/CO_2 there will be no additional contribution of the renewable energies to the reduction of greenhouse gas emissions. This is the reason for some academics to recommend an abolishment of specific support systems for renewable energies.
4. The direct effects of emission trading on renewable energies are very poor, because almost no RE-system can economically compete with conventional measures to reduce emissions. Without a specific support renewable energies would not expand under an ET regime.

Conclusions (III)

5. There are several reasons for a specific support of renewable energies furthermore, like their contribution to the security of energy supply and other environmental and economical purposes, also regarding the long-term dynamic CO_2 efficiency.
6. The additional contribution of renewable energies in respect of emissions reduction must explicitly be considered within the national allocation plans.

Conclusions (IV)

7. Additional CO_2 reductions could be realised if allowances to participating facilities would be reduced and thus a **lower cap** would be created that reflects the impact of these supporting programmes when establishing the total amount of allowances of the Member State's allocation plans.
8. We shouldn't forget: The long-term requirements for a sound climatic protection policy **need a substantial contribution of renewable energies**. Without an appropriate support today, we will not lay the foundations for such a desirable development.

Thanks for your attention

hziesing@diw.de

German Institut for Economic Research
Koenigin Luise Strasse 5
D-14195 Berlin

Criteria for National Allocation Plans

(EU DIRECTIVE 2003/87/EC of 13 October 2003, ANNEX III)

“8. The plan shall contain information on the manner in which clean technology, including energy efficient technologies, are taken into account.”

The Conclusions of the EU Commission regarding the supporting schemes for RES (I)

While gaining significant experience in the EU with renewable support schemes, competing national schemes could be seen as healthy at least over a transitional period.

Competition among schemes should lead to a greater variety of solutions and also to benefits: for example, a green certificate system gains from the existence of a feed-in tariff scheme, as the costs of less efficient technologies fall due to the technological learning process, which in turn leads to lower transfer costs for consumers.

The Conclusions of the EU Commission regarding the supporting schemes for RES (II)

Moreover, it is too early to compare the advantages and disadvantages of well-established support mechanisms with systems with a rather short history. Therefore, and considering all the analyses in this Communication, the Commission does not regard it appropriate to present at this stage a harmonised European system.

The Commission considers a co-ordinated approach to support schemes for renewable energy sources to be appropriate, based on two pillars: cooperation between countries andoptimisation of the impact of national schemes.

The Conclusions of the EU Commission regarding the supporting schemes for RES (III)

Major regulatory change at Community level in the short term is not recommended in view of meeting 2010 targets.

The Commission will closely monitor the state of play in EU renewable energy policy and, not later than December 2007, make a report of the level of Member States systems for promoting renewables electricity in the context of the on-going assessment related to 2020 targets and a policy framework for renewable energy beyond 2010.

The Conclusions of the EU Commission regarding the supporting schemes for RES (IV)

Based on the results of this evaluation, the Commission may propose a different approach and framework for schemes to support electricity produced from renewable energy sources in the European Union, taking into account the need for adequate transitional time and provisions.

In particular, the advantages and disadvantages of further harmonisation will be analysed.

The EU Commission's conclusion concerning the support mechanism for renewable energies

"The Report analyses the different support mechanisms used by Member States. It finds that feed-in tariffs, which are fixed prices for green electricity and used in the majority of Member States, are currently in general cheaper and more effective than so called quota systems, especially in the case of wind energy. One reason for quota systems being more expensive is probably the higher risk for investors due to immature green electricity markets."

[EU press release, IP/05/1546, concerning: EU Commission, 07 December 2005 COM(2005) 627, The support of electricity from renewable energy sources {SEC(2005) 1571}]