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# **Institutional conditions for a joint development of RES-E with market-based instrument: A plea for pragmatic solutions**

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# Content

- Introduction:
  - What about a regional integration of RES-E instruments along an integrated TGC markets?
- Different issues around heterogeneity of property rights
- Local and national externalities: a major source of heterogeneity
- Some pragmatic solutions

# 1. Introduction

One of the main ideas of the Viewpoint

An ambitious RES-E development with the help of integrated TGC/quota systems.

for a joint development at the regional level of EU

One of the goal of RES directive with differentiated binding obligations in relation to the level of Member States' wealth and resources.

A big bang to a European Tradable Green Certificate (TGC) market ?

- The « economist » would say:
  - **Yes because it is so efficient to exploit the best and cheapest resources at the regional level**
  - Remember: The exercises REBUS, GREEN-X,... show the benefits of such integration
  - in perfect informations , perfect foresight, perfect design and ignorance of local externalities

# Introduction following

I do not develop discussion about the qualities of a market-based instrument for promoting capital intensive equipments ?

- Foreseeability of the price signal, stability, political credibility....

I suppose that every country adopt this instrument

The issue of decentralised exchange of property rights between private players rather than states

Focus on the characters of an integrated TGC market for promoting capital intensive equipments with strong local and « territorial » print ?

- Integration needs homogeneity of design
- Integration must be aware of interference with linked goods (the grey electricity, carbon permits)
- property rights are not clear around the « externality » part of green kWh which is not only CO2 avoided emissions

**Externality and Political economy of an instrument of public policy**

## 2. Different issues on the heterogeneity of property rights

- 2.1. What else if different designs of TGC systems ?
  - Inclusion or not of existing equipments
  - Set of technologies ( with coefficient of support)
  - price floor,
  - price cap: safety valve or penalty
- Need of strong political will to harmonise
- 2.2. What else if other supports (investment subsidies, environmental bonus, local support, etc. ) are maintained?
  - Could they be suppressed or harmonized?
  - Problem with TGC/quotas
    - the need to have other supports for other technologies than the front runner.

## 2.3. No convergence of grey electricity prices

- Remember : we have two linked products and a hypothetical single market of TGC
- Integrated TGC markets would need in fact **integrated electricity markets and grey electricity price convergence**
  - Difference of grey electricity price if weakly integrated markets
    - E.g. average Nordic price 25 €; Iberic price: 70€/MWh
  - Amplification of the problem with EU ETS
    - Different technologies in the merit order on separated markets
      - » between UK, Italy, Nordic markets , German/continental markets, iberic markets, etc.
- Solutions:
  - 1. only TGC markets integration within groups of quasi-integrated markets: Iberic, Nordic, continental markets
  - 2. **to regroup grey electricity and TGC in one good:**
    - **only exchange of green electricity on new equipments with long term contracts**

# Illustration

## Country A

### Case of separated elec markets

- Wholesale price : 20€/MWh
- Certif.  $P_{TGC}$ : 40€/MWh

Cost of the marginal project to be developed:  
60€/MWh

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## Country B

### Case of separated elec markets

- Wholesale price: 50€/MWh
- Certif.  $P_{TGC}$ : 40€/MWh

Cost of the marginal project to be developed:  
90€/MWh

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# Illustration

## Country A

### Case of separated elec markets

- Wholesale price : 20€/MWh
- Certif.  $P_{TGC}$ : 40€/MWh

Cost of the marginal project to be developed:  
60€/MWh

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### Case of integrated elec markets

Wholesale price: 40€/MWh  
Idem  $P_{TGC}$  40€/MWh

Cost of the marginal project to be developed:  
80€/MWh

## Country B

### Case of separated elec markets

- Wholesale price: 50€/MWh
- Certif.  $P_{rec}$ : 40€/MWh

Cost of the marginal project to be developed:  
90€/MWh

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### Case of integrated elec markets

Wholesale price: 40€/MWh  
Idem  $P_{TGC}$ : 40€/MWh

Cost of the marginal project to be developed:  
80€/MWh



## **2.4. Inside the property right on the externality part of RES-E :**

### **Other public goods and induced effects**

- Avoided environmental externalities other than CO2 emissions (local emissions and other effluents) in the electricity systems,
- Human settlements effects:
  - RES-E are non-dense energy sources
- Industrial policy :
  - RES innovation and opportunity for first mover countries to build a new industry in a new field of growth
- Interest for national energy security: energy diversification

### **3. Local and national externalities :**

#### **Some political economy of integration of green RES-E market systems**

- **If there is exchange, that means :**
  - **the social benefits attached to the green component of electricity production must not differ with respect of national origins.**
- **So forget the other aspects**
- **The “rational economist” says:**
  - **Countries should give up their national and local/regional goals that are associated with green electricity production**
  - **Externality benefits that are searched by RES-E promotion are mainly cross-border and could be coped at the EU level**
    - **Some discussion: does EU so efficient in matter of energy policy and security?**

## **There is a real problem of political economy**

In this perspective “clever governments” should convince public opinion and local powers

- that it is better to forget energy diversification, industrial policy and local development impacts

**But in fact it is not a question of social and political engineering.**

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**Positive externalities remain a major aspect for acceptability**

- **Consumers of one country would pay for the development of ReS-E projects in another country**
  - These developments will have positive externalities in this country, not in the first one
- **Should we compensate for these externalities ?**
  - They are intrinsically political; people think first in relation to national identity
  - Local and national government cannot give up their « raison d’être » : **welfare and security in relation to national identity**

# Political economy of integration of green RES-E market systems (suite)

Other perspectives if acceptance by public opinions

**Countries willing to pay** and to contribute to preservation of global goods (climate stability)  
**but with low endowment of RES**

**Countries with large problem of acceptability with sitting,**

- Obligated to develop expensive resources (high social costs added to renewables cost because acceptability)
  - Why not to discard their quotas obligation on other countries?
- In these cases, **mind the gap** between different designs and separated grey electricity markets:
    - Quid of exchange between private players?

## 5. Concluding remarks: For some pragmatic solutions

- **Exchange of tradable certificates between governments**
  - The governments mediate of the different social values and interests
    - in particular on the industrial and employment effects in the country
  - Overcome the issue of different designs
  - Question: on which economic base for the parties?
- **Between private players**
  - 1. Joint projects with green electricity exchanges
  - 2 Could we imagine a TGC countries group with private exchange?
  - Only if a common system of support

# Annex

## Four ways of exchanges of TGC in the present proposal of the 3 package directive

- Exchange of « **Tradable accounting certificates** »
  - Proposal of the Commission
    - Transfer between companies
    - Joint projects
  - Adjunction by the Parliament
    - Exchange of volumes of TAC between government
    - Common system of support between governments

# Differentiation of carbon price impact between markets

Carbon price effects depends on respective periods of coal and gas  
marginality on the year (hypothesis: 20€/tCO<sub>2</sub>)

	Share of coal marginality period  19€/MWh	Share of gas marginality period 9€/MWh	impact on the annual average price €/MWh
<b>Germany</b>	75%	25%	<b>17.5 c/MWh</b>
<b>Peninsula Spain</b>	25%	40%	<b>7.6</b>
<b>Peninsula UK</b>	35%	65%	<b>12.5</b>
<b>Peninsula Italy</b>	20%	70%	<b>10.1</b>