ECN

Energy research Centre of the Netherlands

Do we need a common support scheme for renewables-sourced electricity in Europe?

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Outline

1. European harmonisation?
2. If so, which common support scheme?
3. Case study
4. Conclusions

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European harmonisation of RES-E support in the medium run? -1-

We would argue: **Yes !**

- Utilisation of EU-wide cheapest potential for RES-E key for cost-effectiveness of support: 27 different national approaches are increasingly inefficient
- Realising *gains from trade* through the Internal Electricity Market concept is increasingly urgent

➔ More competitive Europe

European harmonisation of RES-E support in the medium run? -2-

BUT ...!

Due allowance needed for country-specific conditions:

- Many MS keen to limit social cost of dedicated RES policy
- Other MS keen to pursue national green industrialisation policies; even at higher (short-term) social cost
- Trade-off between short-term efficiency gains and long-term gains of technology diversity

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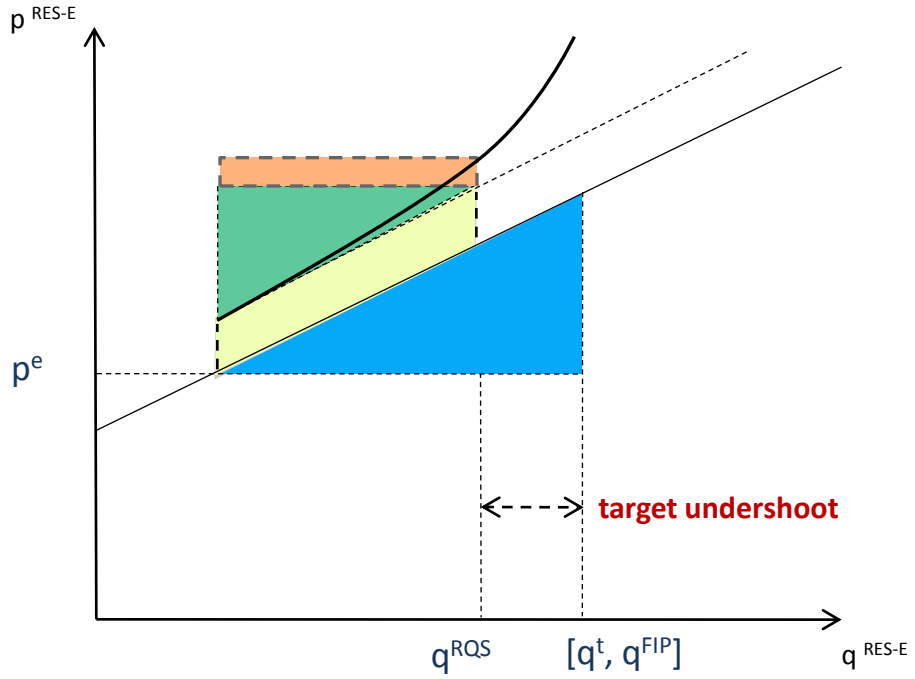
Which common support system(s)? -1 -

- Joint feed-in tariff scheme **(FIT)**
  - Common guaranteed technology-specific feed-in prices
  - Priority network access
- Joint feed-in premium scheme **(FIP)**
  - Common technology-specific price (premium, bonus) subsidies
  - Own responsibility (of RES-E generator) to sell his power
  - Own responsibility to match notified with real production
- Joint renewable quota scheme **(RQS)**
  - Power suppliers have to meet a RES-E quota target
  - All eligible RES-E generators get a certificate per MWh generated
  - Power suppliers need to prove target compliance with certificates
  - **Trade in electricity and certificates de-linked**
- Joint hybrid renewable quota Scheme **(hRQS)**
  - Joint RQS
  - *MS- and technology-specific* **additional** support measures

Which common support system(s)? -2 -

- Common uniform FIT?
  - Stable environment for investors ➔ Effective
  - Technology diversity ➔ Probably high dynamic efficiency
  - Poor market integration ➔ Some key FIT countries move towards FIP
- Common uniform FIP?
  - Fairly stable inv. environment + better market integration
  - (Like FIT) Administratively less feasible (e.g. common fund and rates)
  - (Like FIT) Less efficient RES-E investment portfolio and siting
  - (Like FIT) High risk of target over/undershoot
- Common uniform (technology-neutral) certificates-endorsed Renewable Quota System (RQS)?
  - A *pure* RQS has compelling features regarding market efficiency
  - .... **but also some serious cons** (windfall profits risk; poor technology diversity; no allowance for specific national conditions)

Additional costs of RES-E support schemes according to FIP (FIT) proponents



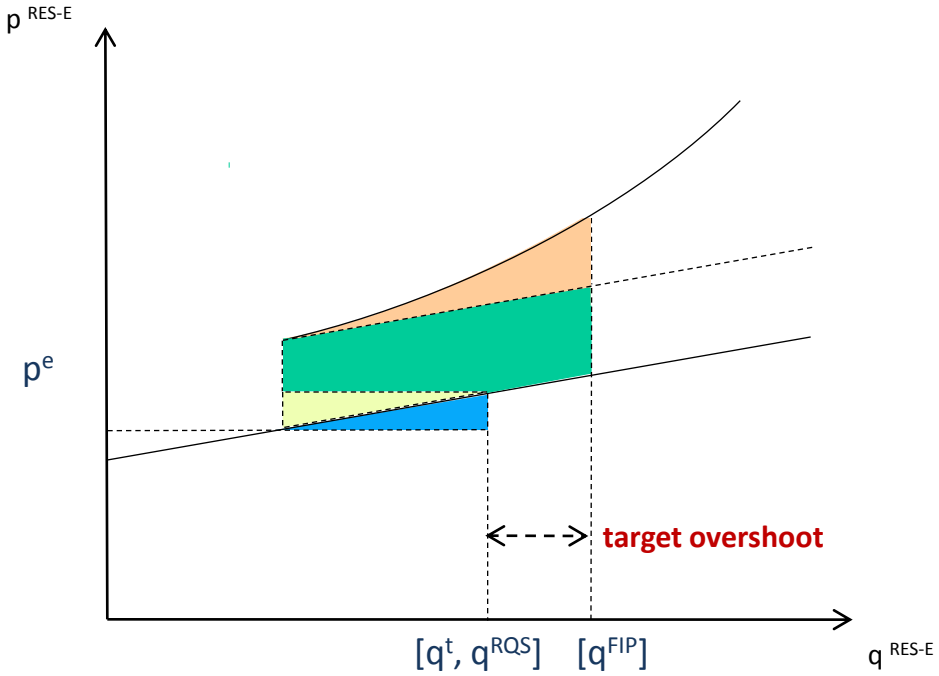
Additional cost of pre-commercial RES-E under a FIP(FIT) regime

Extra additional cost under a RQS regime due to extra financing risk premium

Windfall profits under a RQS regime

Extra windfall profits due to exercise of market power

Additional costs of RES-E support schemes according to RQS proponents



- Additional cost of pre-commercial RES-E under a RQS regime
- Windfall profits under a RQS and a FIP regime
- Extra windfall profits under a FIP regime (asymmetric info + lobbying)
- Extra additional costs under a FIP regime (inefficient RES-E portfolio + siting)

A hybrid RQS: framework conditions

Technology- and MS-specific additional support measures:

- To be based on subsidiarity: not all MS are capable or willing to allocate additional money on supplementary support measures
- Subject to prior approval by the RQS supervisory body
- Any rejection to refer only to *justifiable* arguments on:
  - incompatibility with proper functioning of the RQS-certificates market
  - major electricity market distortions

A hybrid RQS?

Pro's

- Compared to a pure RQS: windfall profits substantially reduced
- Broader technology base ➔
  - higher (certificates) market volume
  - less supply-side (certificates) market concentration
  - Better prospects for target realisation
  - Better prospects for high *dynamic* (electricity) market efficiency
- Better control of cross-border transfers (**less congestion in networks of exporting MS**; extra instrument to manage the certificate price)
- Allowance for MS-specific concerns (subsidiarity)

Cons

- More complex
- Slightly lower *static* efficiency compared to a pure RQS

Qualitative assessment
{(scores from 1 (lowest) to 5 (highest)}

	Well-designed *joint* support schemes			
	FIT	FIP	Pure RQS	Hybrid RQS
Speed of RES-E penetration	5	4	2	3
Target achievement	2	2	4	5
Market integration	1	3	4	4
System integration	1	3	2	3
Static market efficiency	2	2	5	4
Dynamic market efficency	5	4	3	4
Allowance for MS-specifc concerns	5	5	1	4
Conceptual simplicity	5	5	3	1
Administrative feasibility	1	1	4	3
Σ/n	3,0	3,2	3,1	3,4

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3. Case study: joint NO-SE-NL support scheme
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A joint support scheme for Norway, Sweden and the Netherlands -1-

- **The imminent RQS between Norway and Sweden denotes a breakthrough regarding 'joint support schemes'** (a cooperation mechanism of the RES directive)
- Norwegian and Swedish governments have indicated an interest in international expansion
- **In the Netherlands the government intents to introduce an RQS as from 1 January 2015 ("Green Deal")**

A joint support scheme for Norway, Sweden and the Netherlands -2-

Consequences of a joint *pure* RQS

- NL has steeply rising RES-E supply curve as against gently sloped ones in NO and SE
- Accession of NL to the NO-SE scheme will bring about a massive NL import of RQS certificates originated in NO and SE
- Higher risk of undesirable:
  - upward movements of certificate price
  - network congestion problems in NO and SE
  - downward movements of Nordic electricity price
- Risk of RQS target undershoot increases
- **High risk of undesired windfall profits for low-cost RES-E producers**

A joint support scheme for Norway, Sweden and the Netherlands
-3-
Consequences of a joint hybrid RQS

- Assumption: NL opts for *acceptable* additional feed-in premium support for high-cost RES-E

  ➔ extra certificates originated in NL

  ➔ extra control instrument to check NL import of RQS certificates originated in NO and SE

  ➔ *controlled* upward impact on certificate prices + downward impact on Nordic electricity prices **(less congested Nordic networks including Nordic interconnectors to e.g. NL)**

- **Low risk of undesired windfall profits for low-cost RES-E producers and/or RQS target undershoot**

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4. CONCLUSIONS

European harmonisation of RES-E support can *not* remain on the backburner

A hybrid RQS for bottom-up harmonisation warrants further consideration

To avoid congested networks investment in interconnections (with among others NO and SE) need to be stepped up!

Contact

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