OPTIMAL PROMOTION STRATEGIES FOR INCREASING THE SHARE OF RES-E – LESSONS FROM THE OPTRES PROJECT

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SURVEY

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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. Conclusions

1 INTRODUCTION

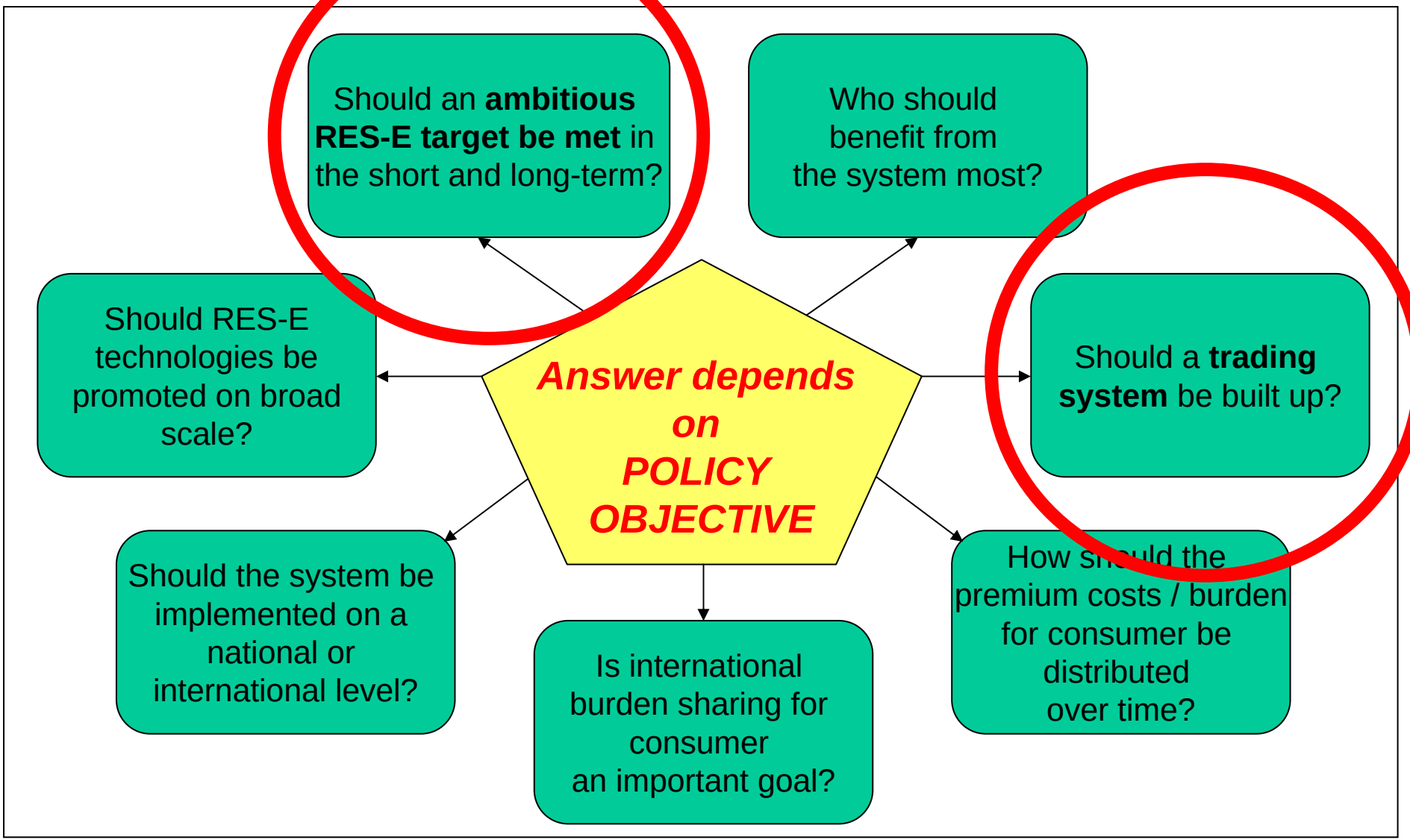
CORE MOTIVATION:

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)

2. What is the problem?

Which instrument fits best?



INTRODUCTION

MAJOR PROBLEM:

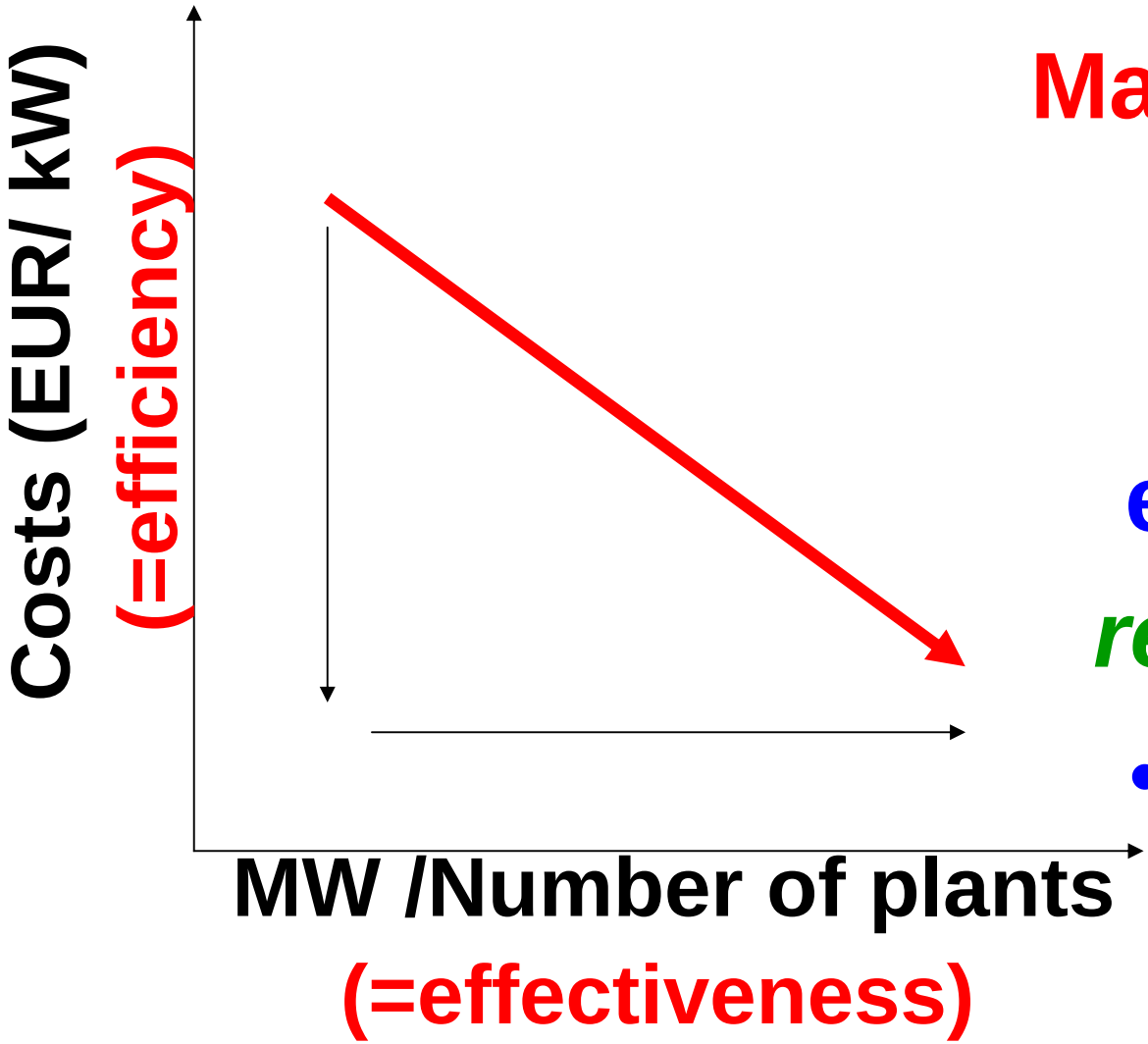
Correct design of policy

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

2. SURVEY ON POLICY STRATEGIES

		REGULATORY	VOLUNTARY
Capacity-driven strategies	Generation-based	• RPS • Quota-based TGCs	• National generation targets
	Investment focused	• Bidding/Tendering	• National installation or capacity targets
Price-driven strategies	Generation-based	• feed-in tariffs, • [illegible] • Net metering	• Green Power Marketing • Green tariffs • Solar stock exchange
	Investment focused	• Rebates • Soft loans • Tax incentives	• Contracting • Shareholder progr. • Contribution • Bidding
Other		–	• NGO-marketing • Selling green buildings • Retailer progr. • Financing • Public building prog.

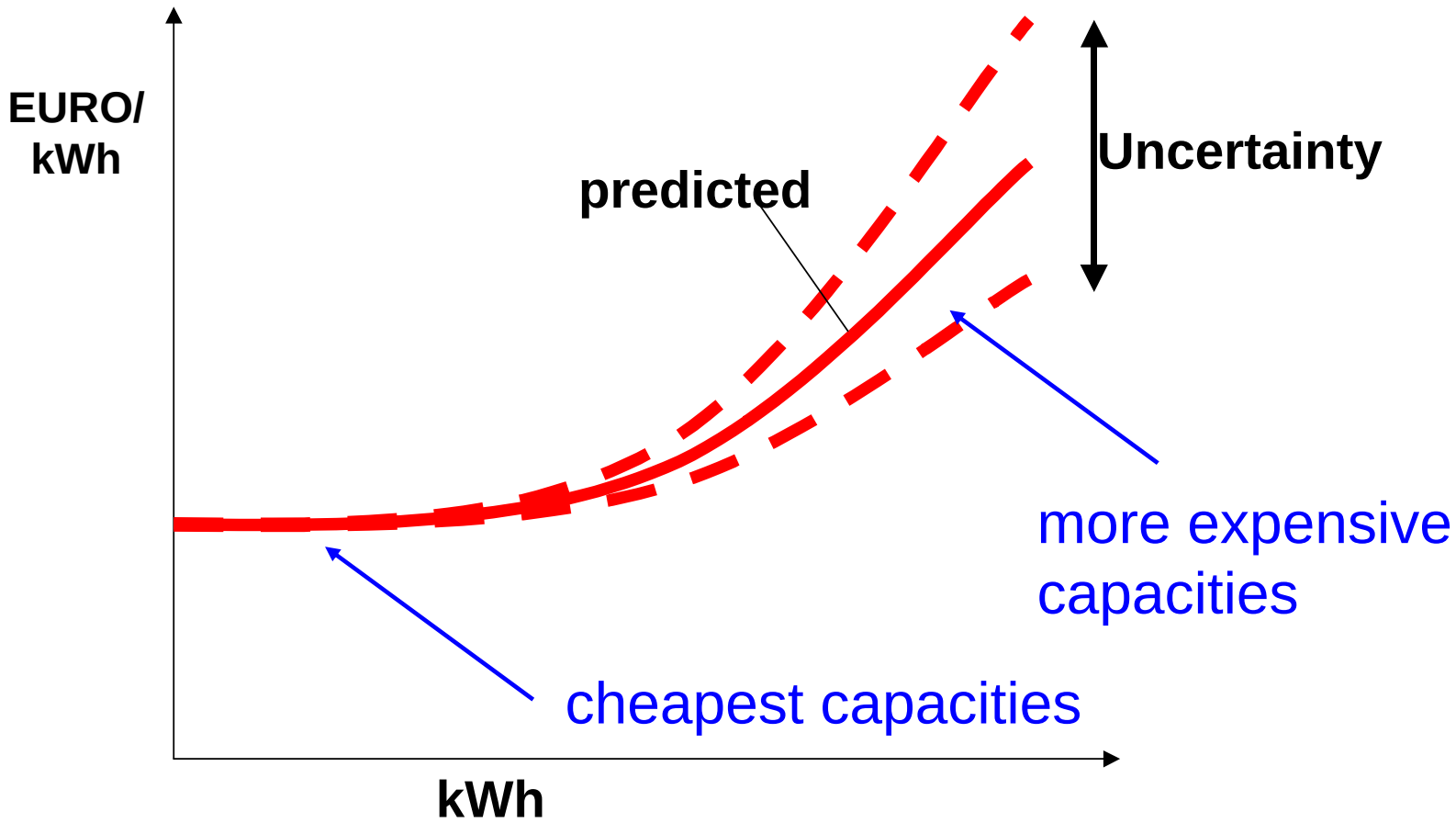
3. REQUIREMENTS TO SUCCESSFUL STRATEGIES



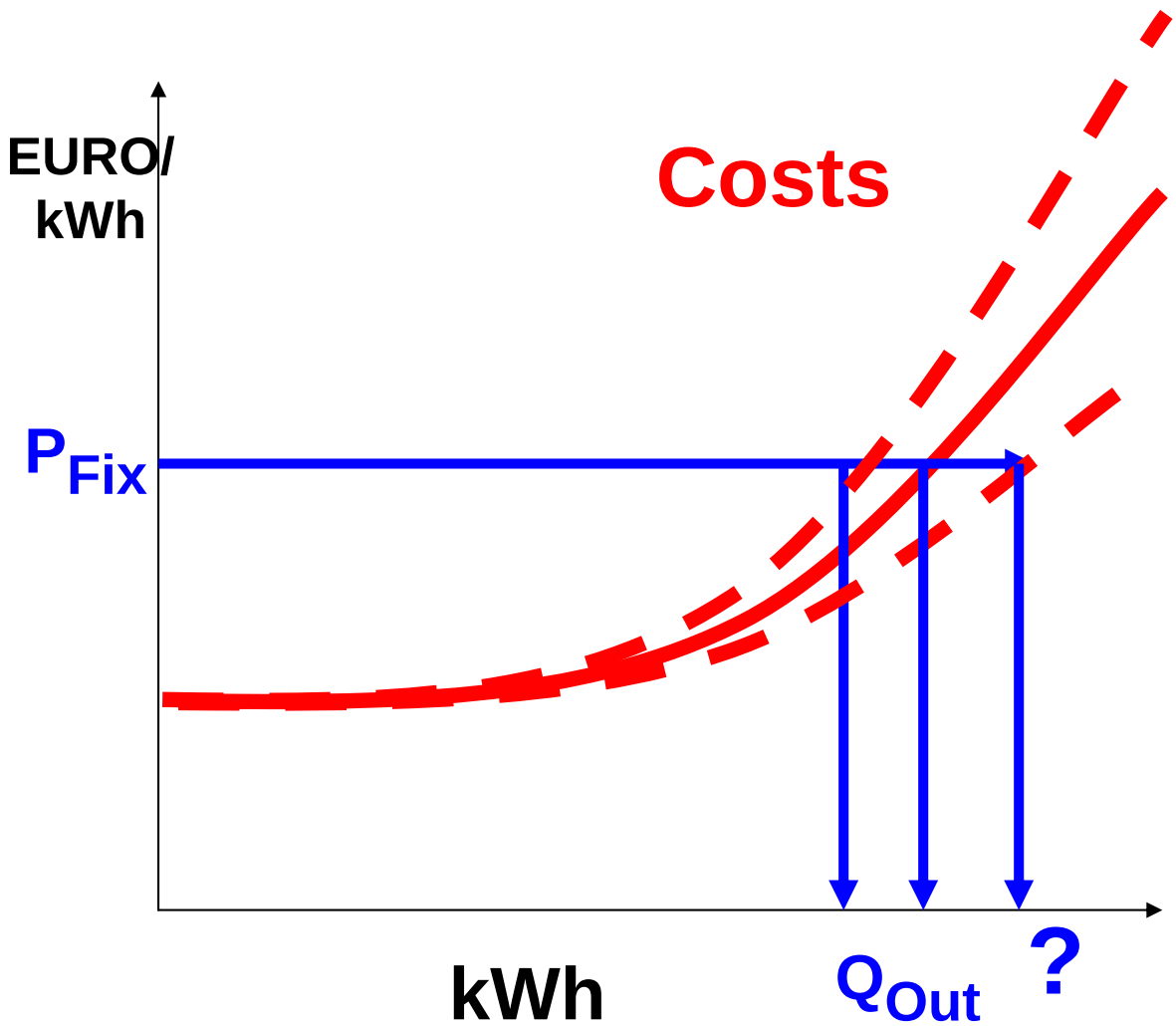
Major objectives:

- **increase the amount of electricity from *renewables* and**
- **reduce costs!**

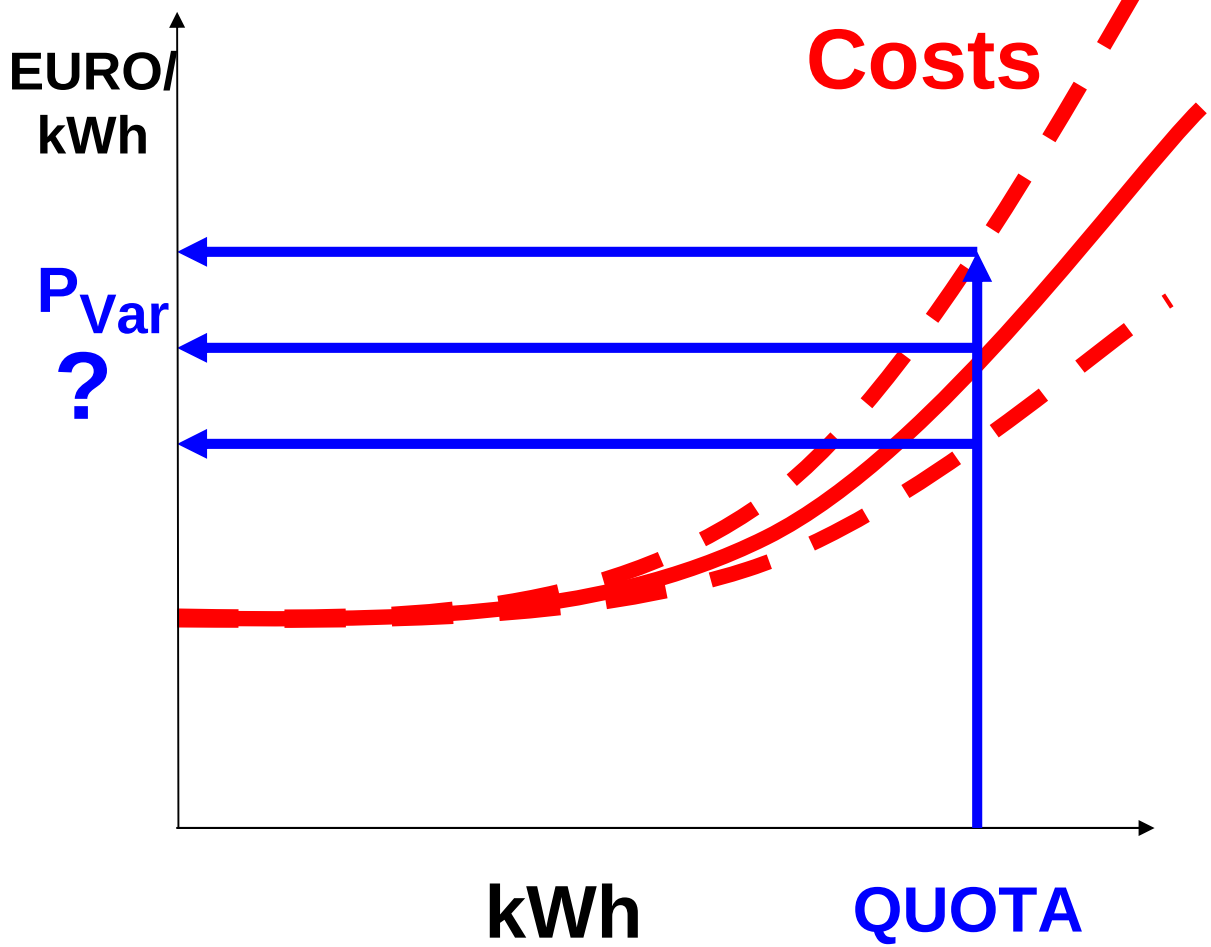
STATIC COST RESOURCE CURVES



HOW FEED-IN TARIFFS WORK



HOW QUOTA-BASED TRADABLE GREEN CERTIFICATES WORK



Quota-based TGC systems as well as Feed-in tariff systems create an

artificial market

and cause

transfer costs

Method of approach

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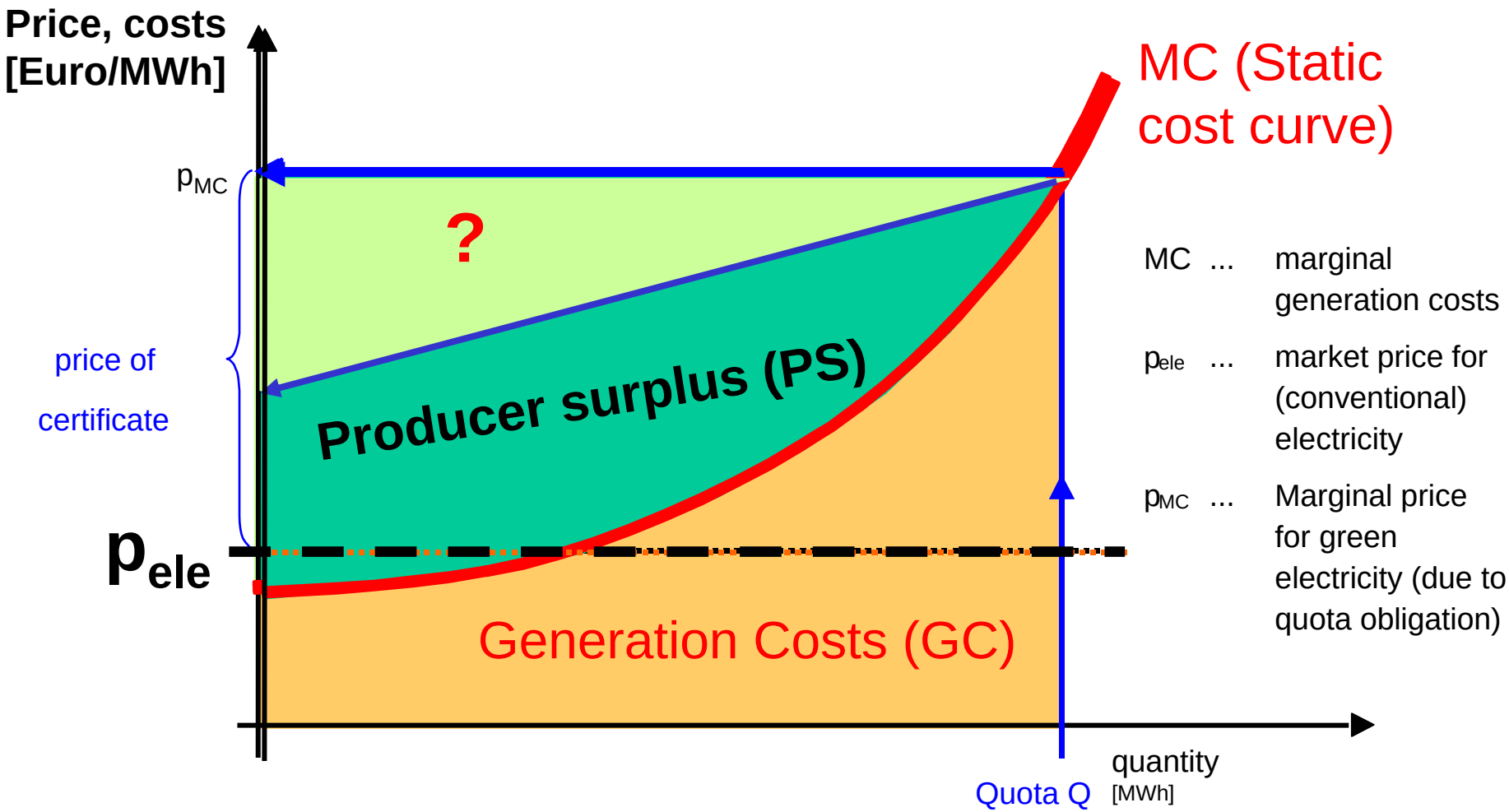
Minimise transfer costs for consumers = Producer Surplus + Generation costs - Revenues electricity market



Why is it important to minimize transfer costs?

Transfer costs are extra costs finally to be paid by the final customers

(regardless which promotion scheme is chosen these extra costs will finally be paid by the final customers)

The lower the transfer costs are

the higher will be public acceptance

the larger will be the amount of additional electricity generated from RES.

The simulation tool *Green-X*

EU-Project ***Green-X***

DG Research

Web: ***www.green-x.at***

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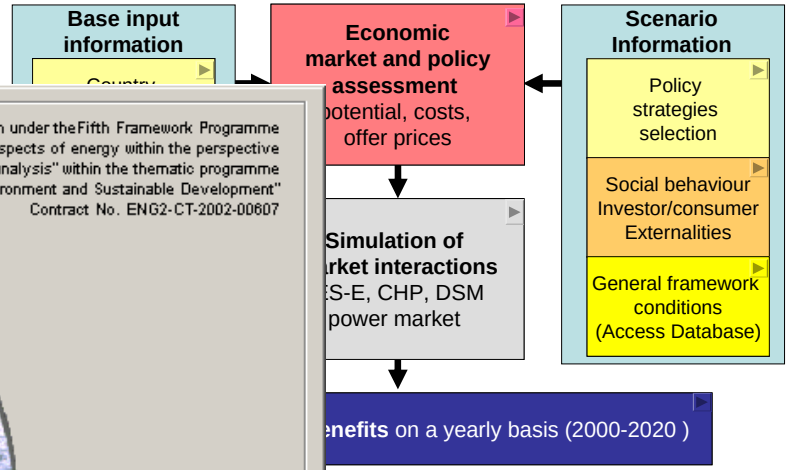
The toolbox Green-X



GREEN-X allows…

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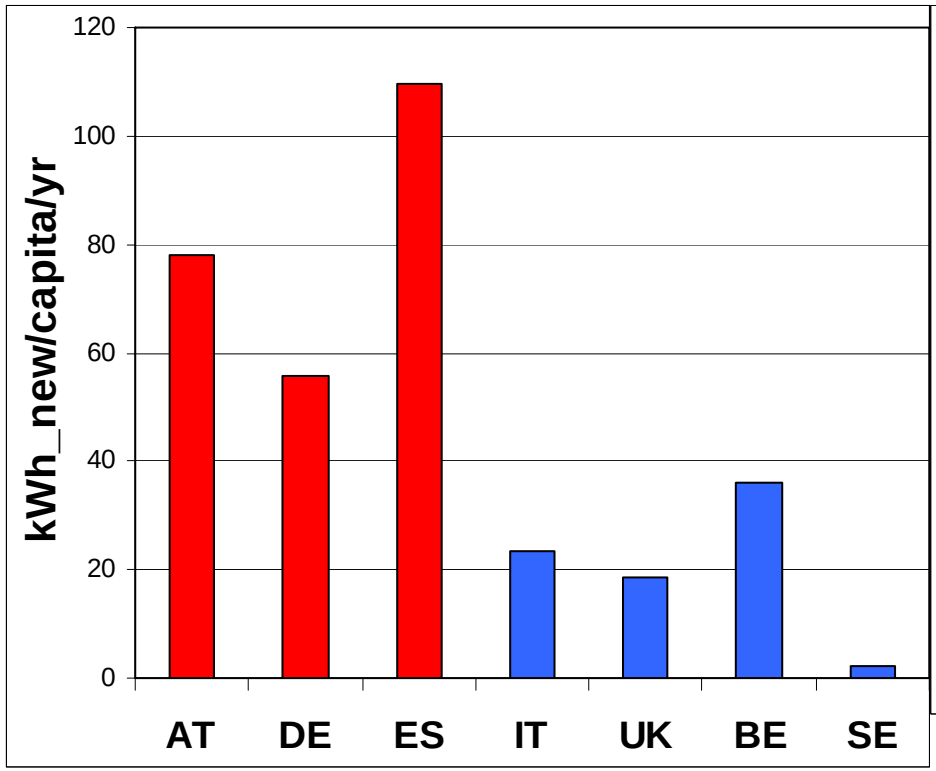
… to simulate various policy strategies for the promotion of RES-E in a dynamic framework on a national or international level

(Current: EU15, end 2005: EU27, future: EU 39???)

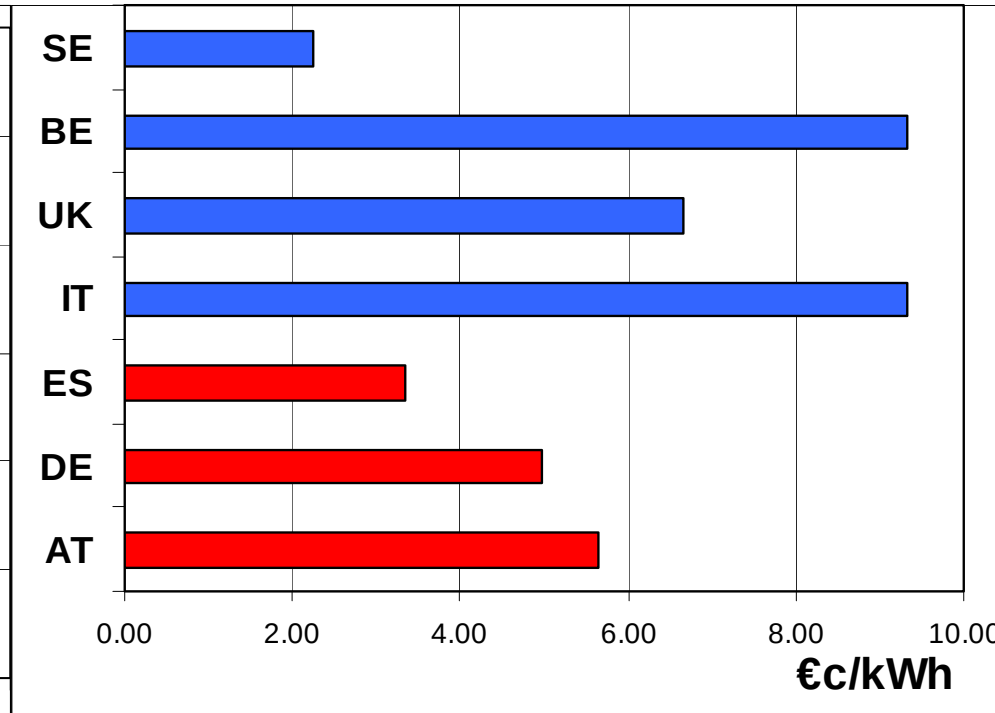
4. LESSONS LEARNED:

COMPARISON OF STRATEGIES

Effectiveness:

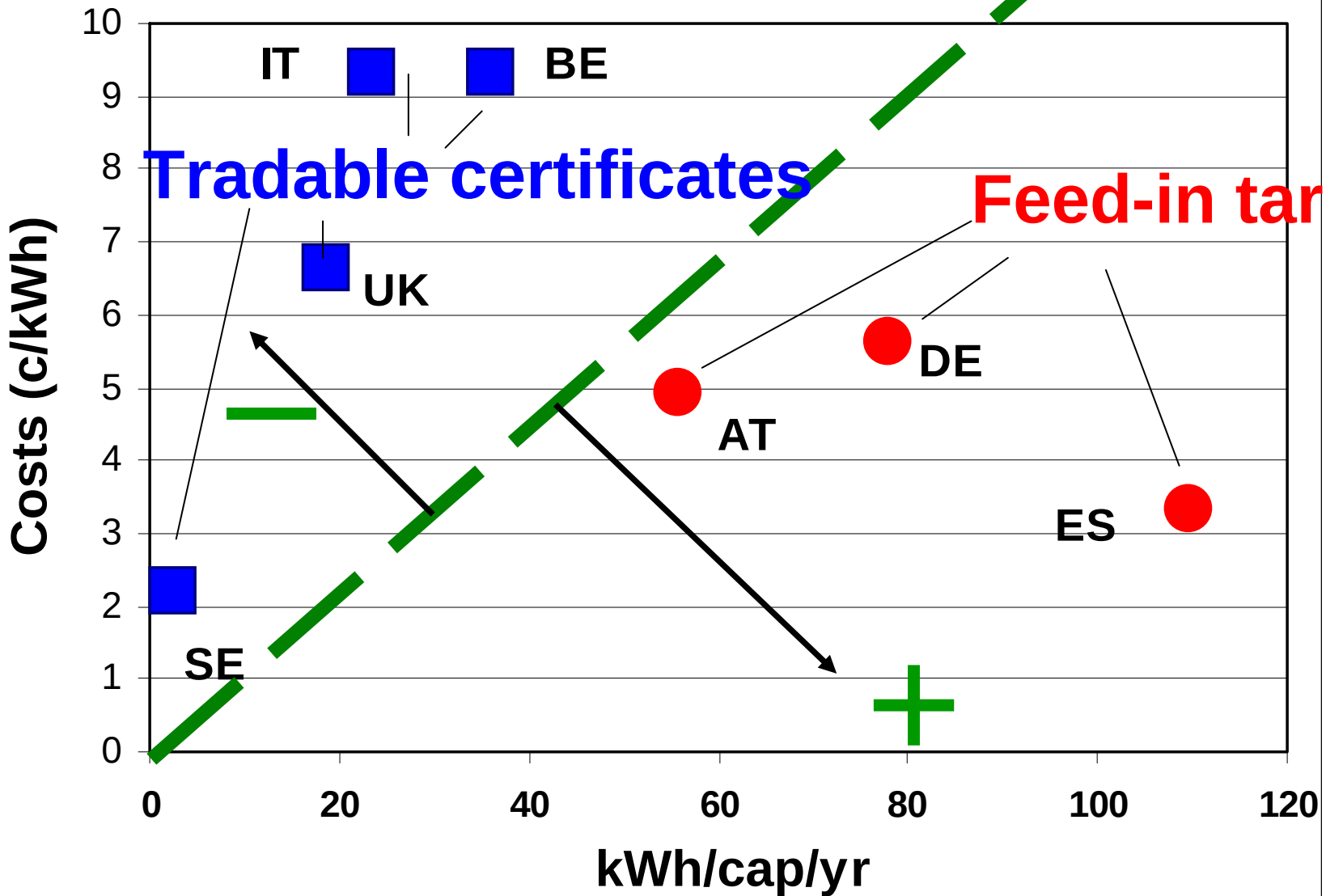


Costs:

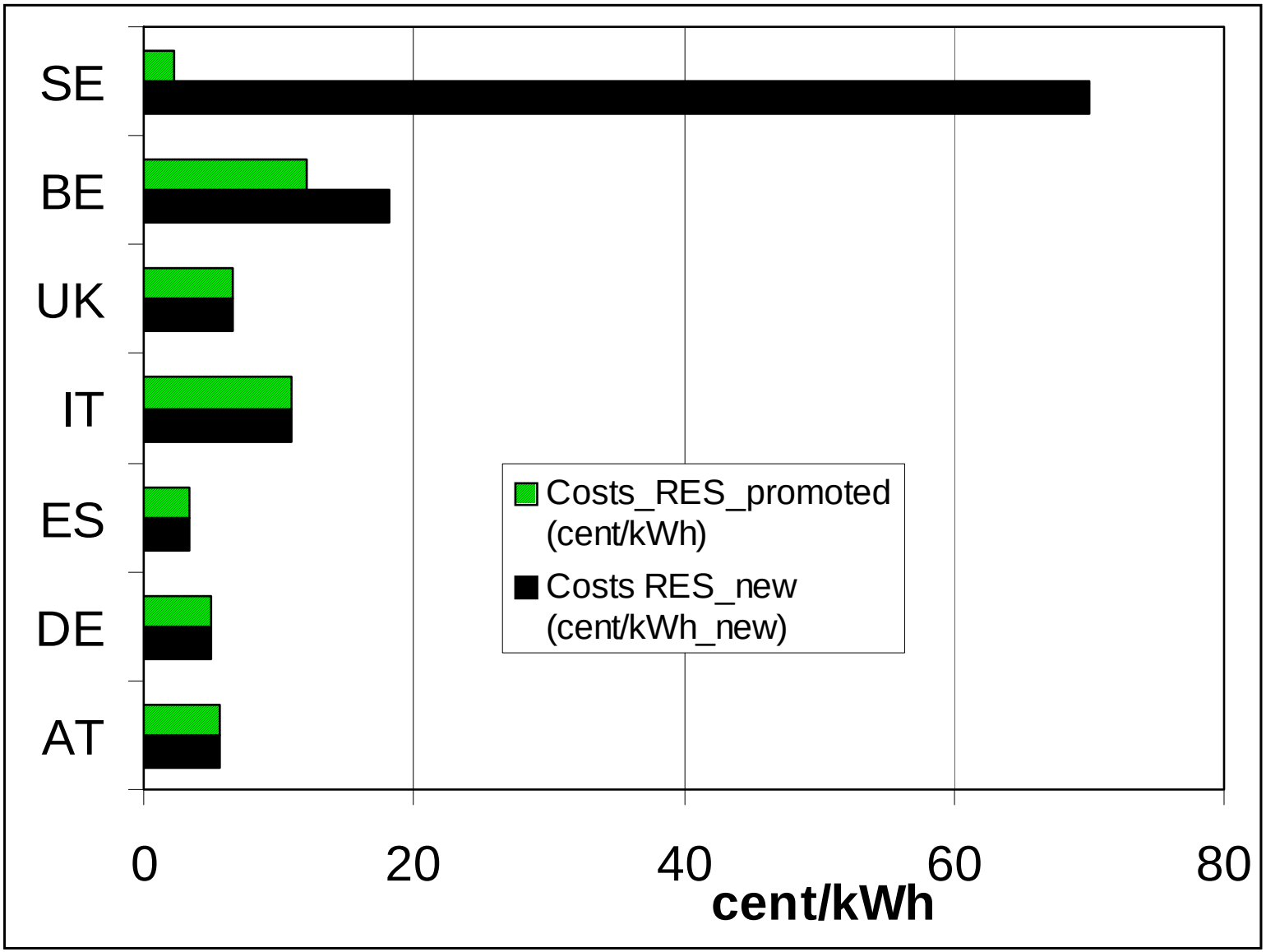


(2000-2003)

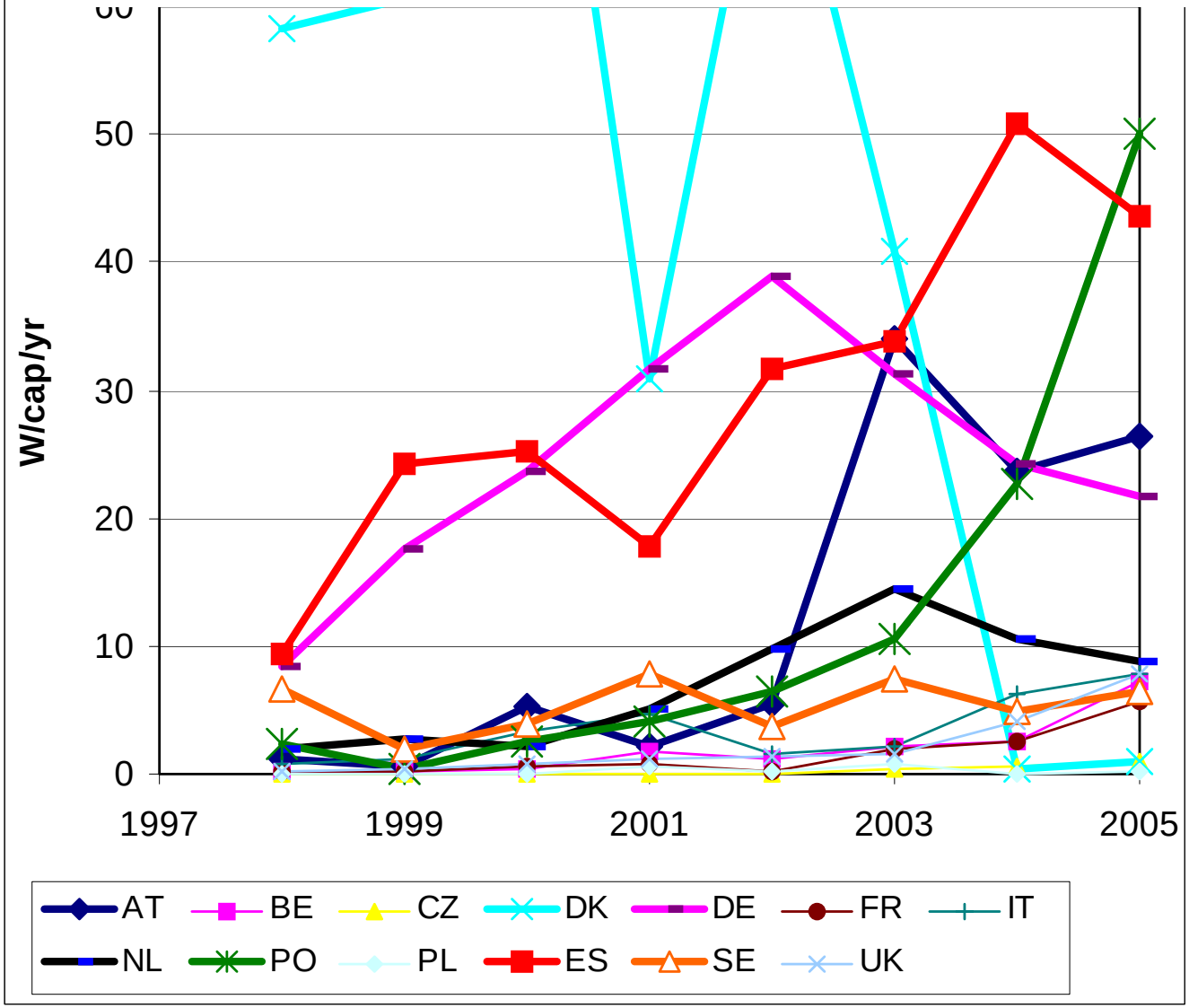
EFFECTIVENESS VS COSTS



Costs of promoted kWh vs costs of new kWh

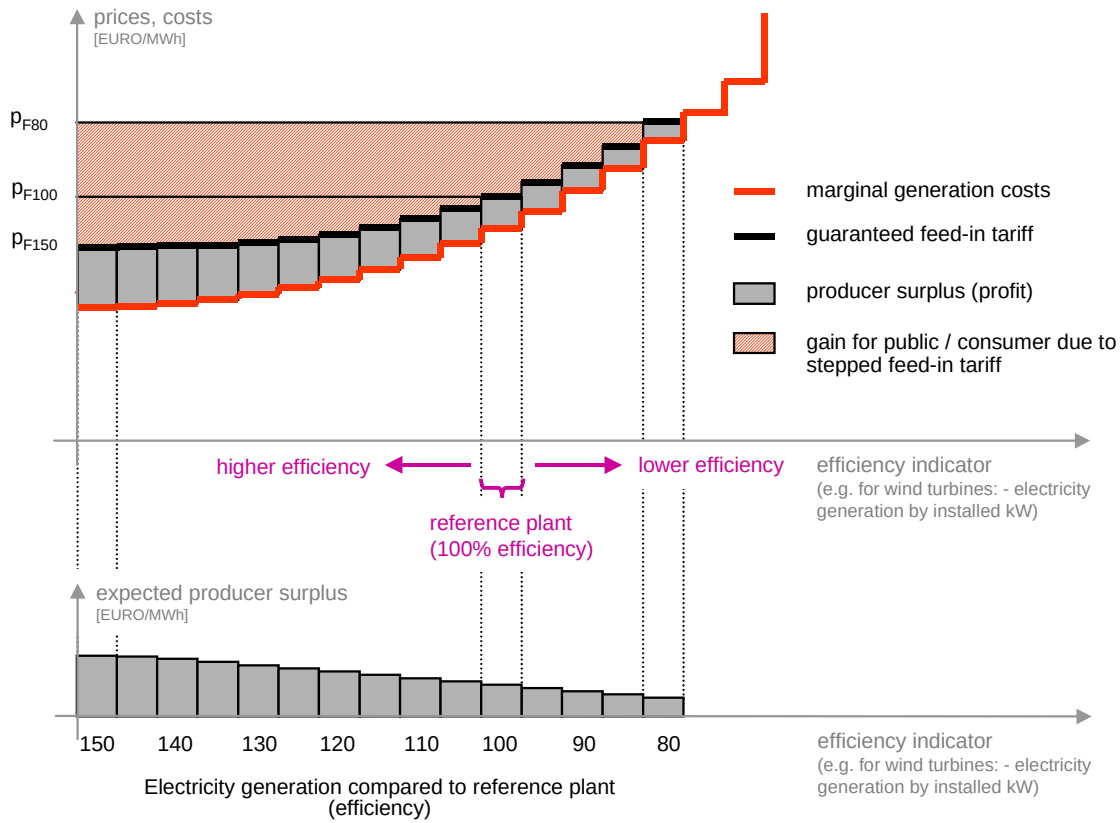


WIND: INSTALLATIONS PER YEAR



5. SUCCESS CRITERIA FOR FIT‘s

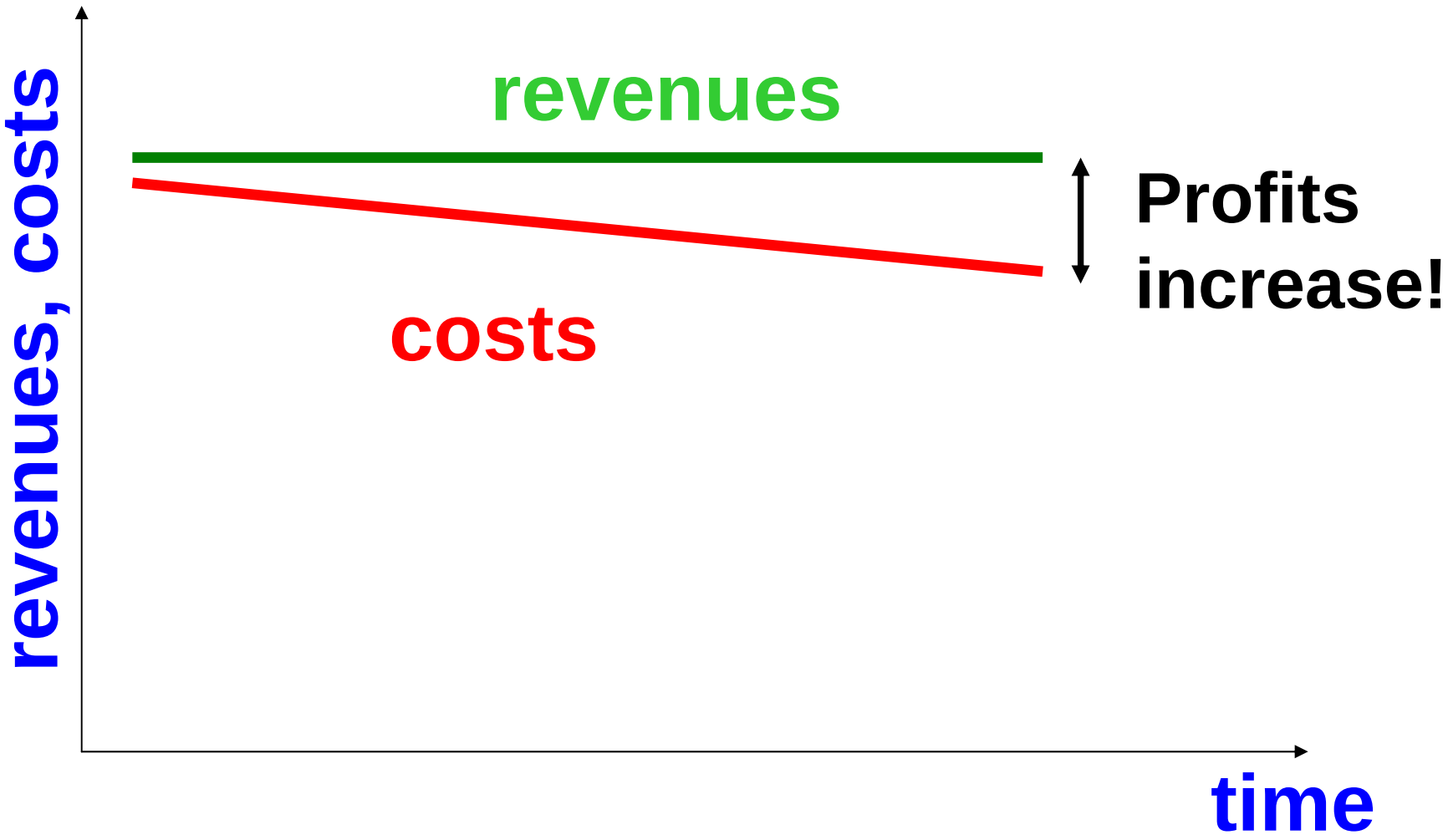
1 Use a stepped FIT and calculate starting values carefully



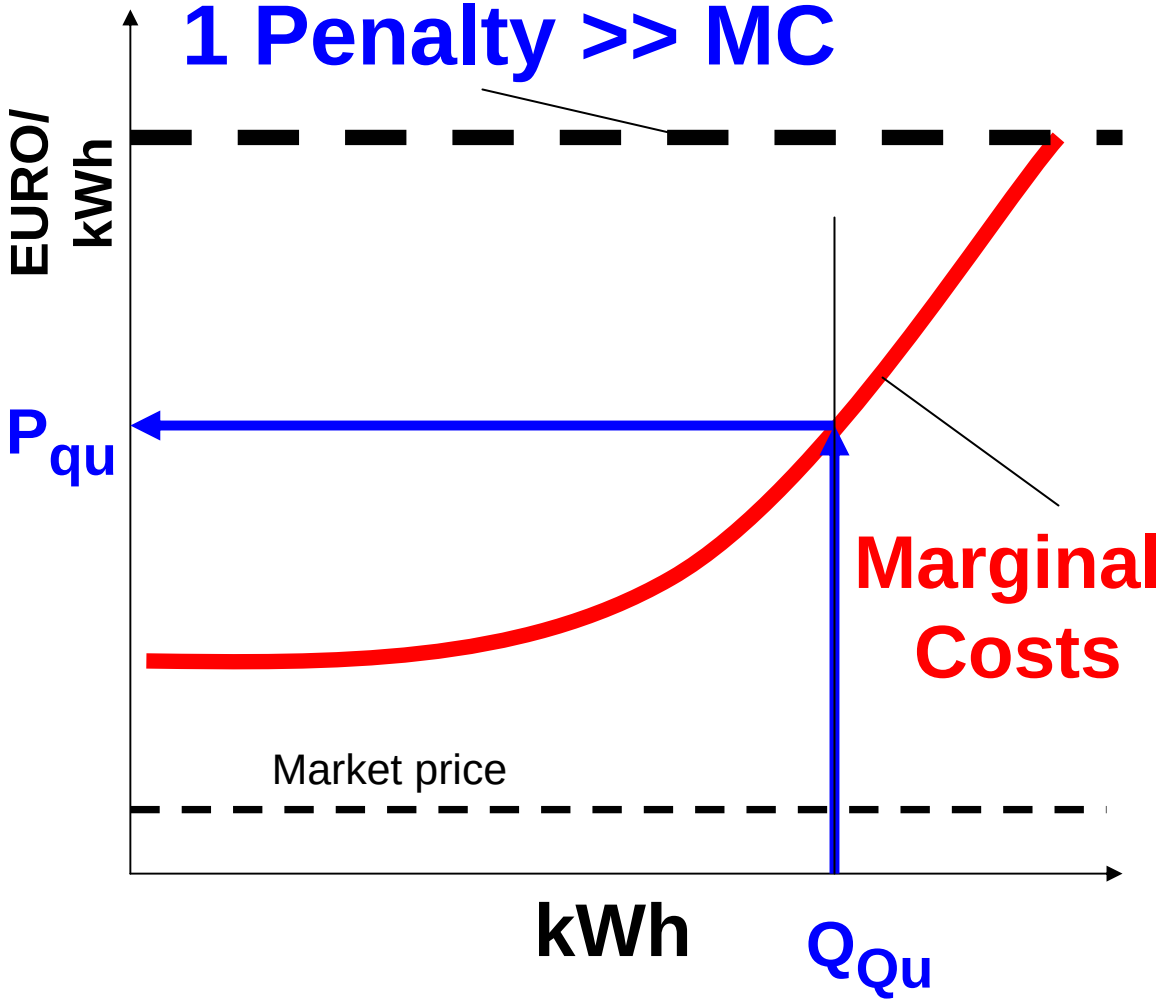
2 Decrease over time!

3 Realistic time frame

EMPIRICAL PROBLEM OF FITs: The example of wind



6. SUCCESS CRITERIA FOR QUOTA-BASED TGC'S



2 Ensure long-term planning horizon!

3 Focus on new plants

MAJOR PITFALLS FOR QUOTA-BASED TGC's

1 Market is to small:

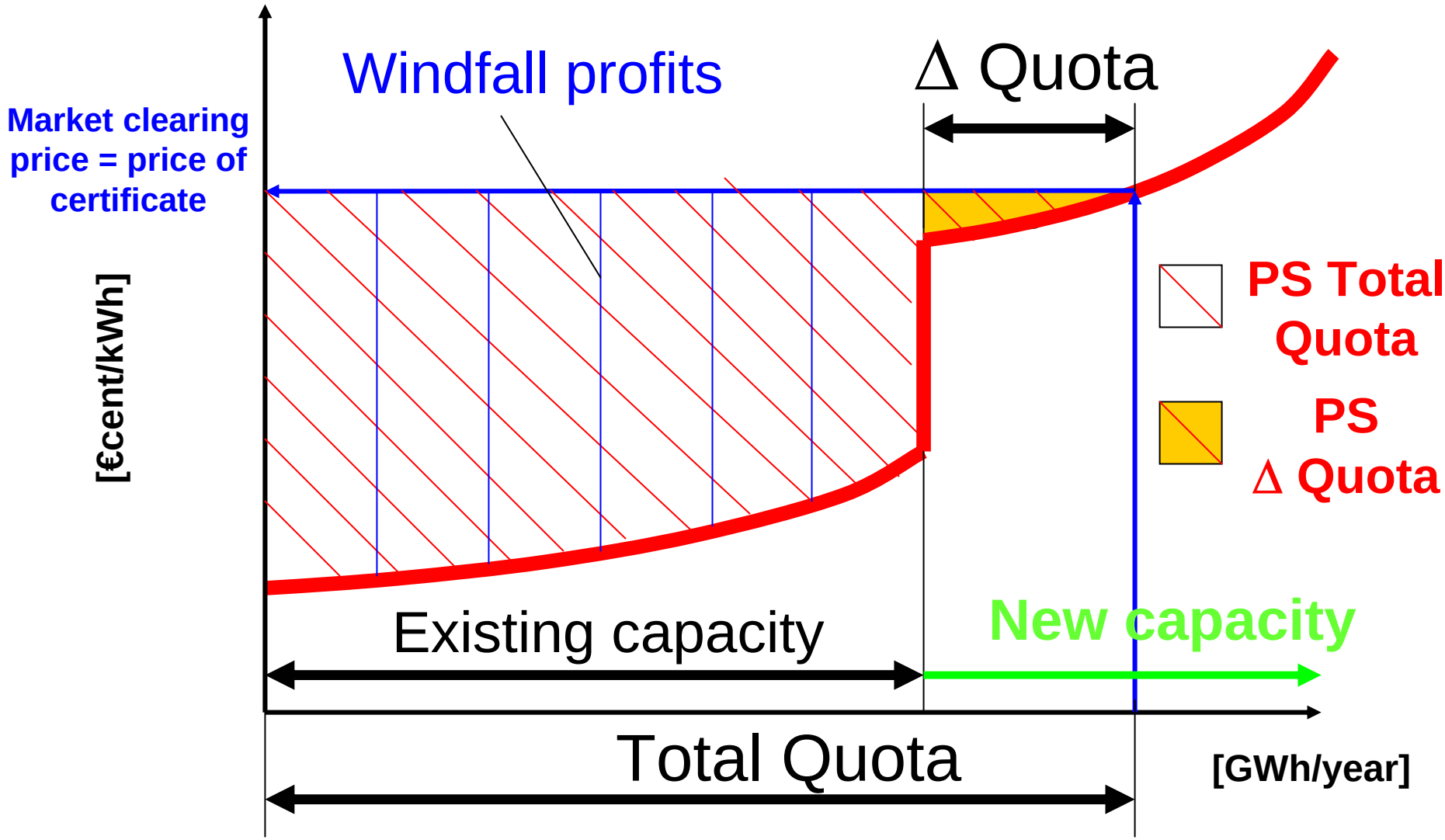
e.g. in a small country for one technology with very limited potential -> Non-Liquid because every single plant is known (e.g Flanders (BE))

2 Windfall profits for existing capacities (e.g Flanders (BE), Sweden)

3 Penalty is to low (e.g. UK)

4 Planning horizon to short (e.g. UK 2003, Italy)

QUOTA: EXISTING VS NEW CAPACITY



7. CONCLUSIONS (1)

- The careful design of a strategy is by far the most important success criteria!
- There should be a clear focus on NEW capacities!
- To ensure significant RES-E deployment in the long-term, it is essential to promote a broad portfolio of different technologies
- Encourage competition among manufacturers
- Consider „learning“ for price-based strategies
- Ensure credibility of the system! Avoid „stop-and-go“ approaches

7. CONCLUSIONS (2)

- FIT: rather diversified structure of investors
- TGC markets: Why should competition work if it does not in the conventional electricity market?
- In addition, it is hard to imagine that a European-wide TGC market will work disconnected from the large incumbent generators
- Utilities/generators are in favour of TGC because they can make much more money and can easier control the market
- A well-designed (dynamic) FIT system provides a certain deployment of RES-e fastest and at lowest costs for society

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