Action Plan - Recommendations

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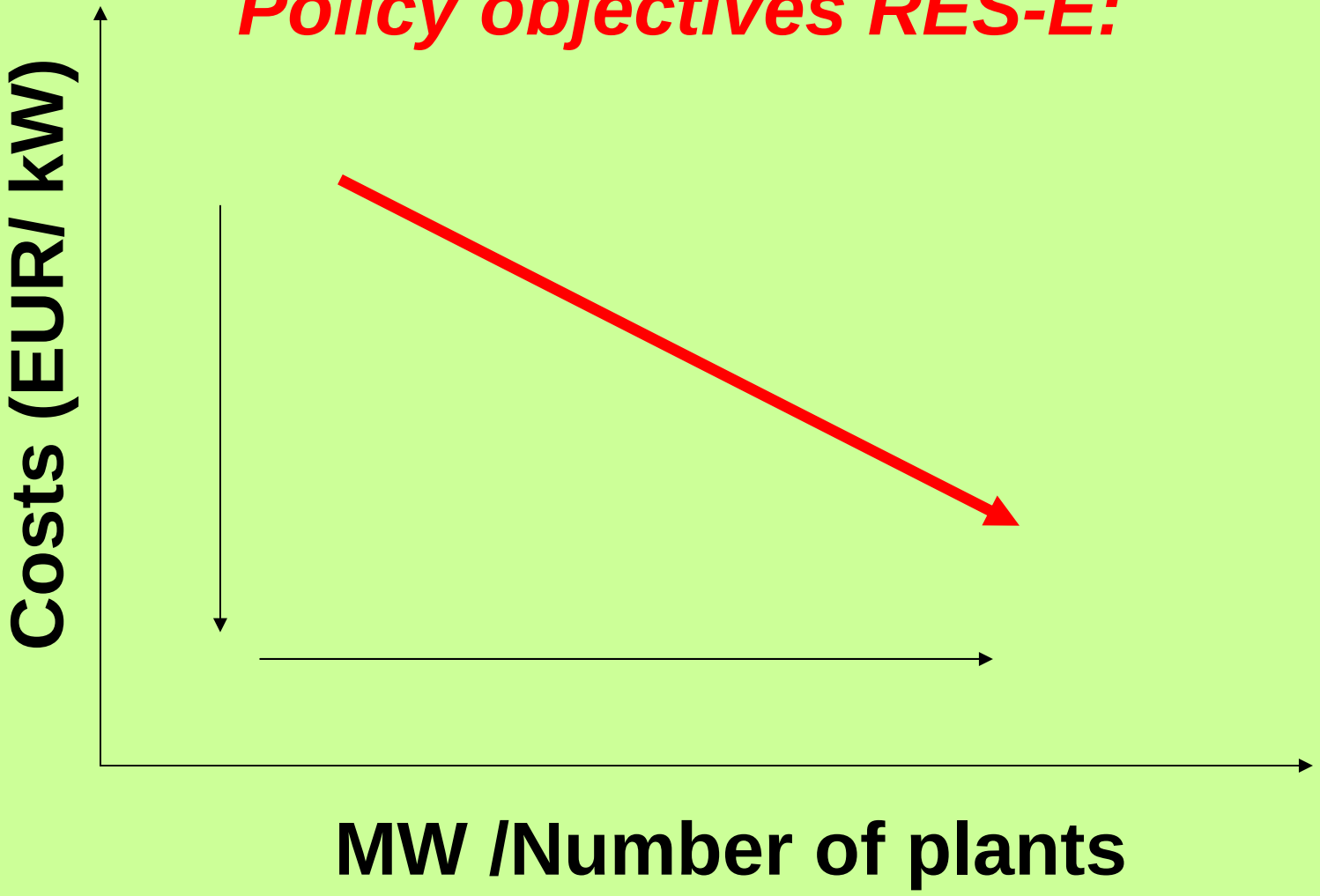
Overview

- Introduction
- Which instrument fits best?
- Harmonisation of RES-E policies?
- General conclusions

Introduction

Policy objectives RES-E:



Introduction

Current policy objective RES-E Directive (2001)

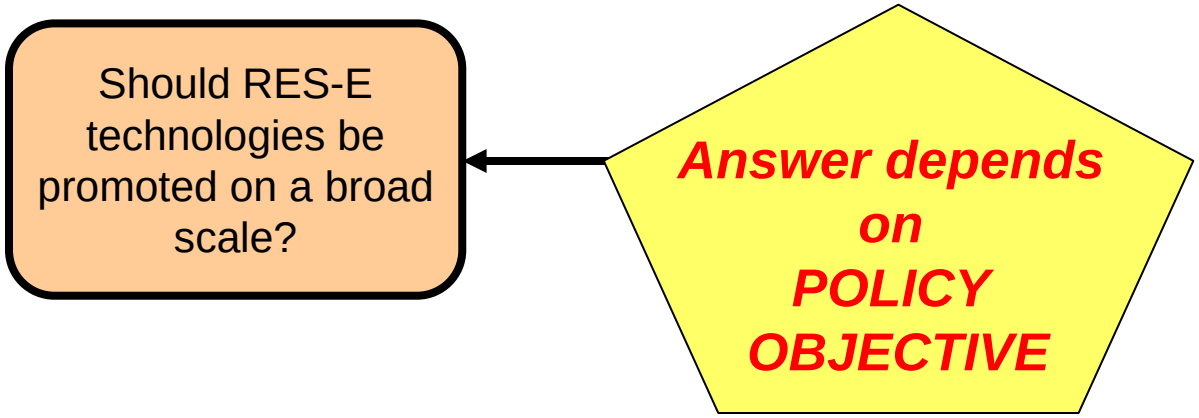
+ **Increase the share** of green electricity from 14% to 22% of gross electricity consumption by 2010
+ Directive does **not** propose **a harmonised support** system for RES-E
+ **Assessment** of support mechanism taken by MS **up to 10/2005**
+ The Commission may, **if necessary**, propose a **support framework**

This framework should take into account:

+ **compatibility** with the principles of the internal electricity market
+ technical and geographical features of RES
+ the simple and **efficient promotion** of RES
+ **investors' confidence** (e.g. transition period 7 years)

} **Issue of design**

Which instrument fits best?



Should RES-E technologies be promoted on a broad scale?

Promote only the cheapest technologies

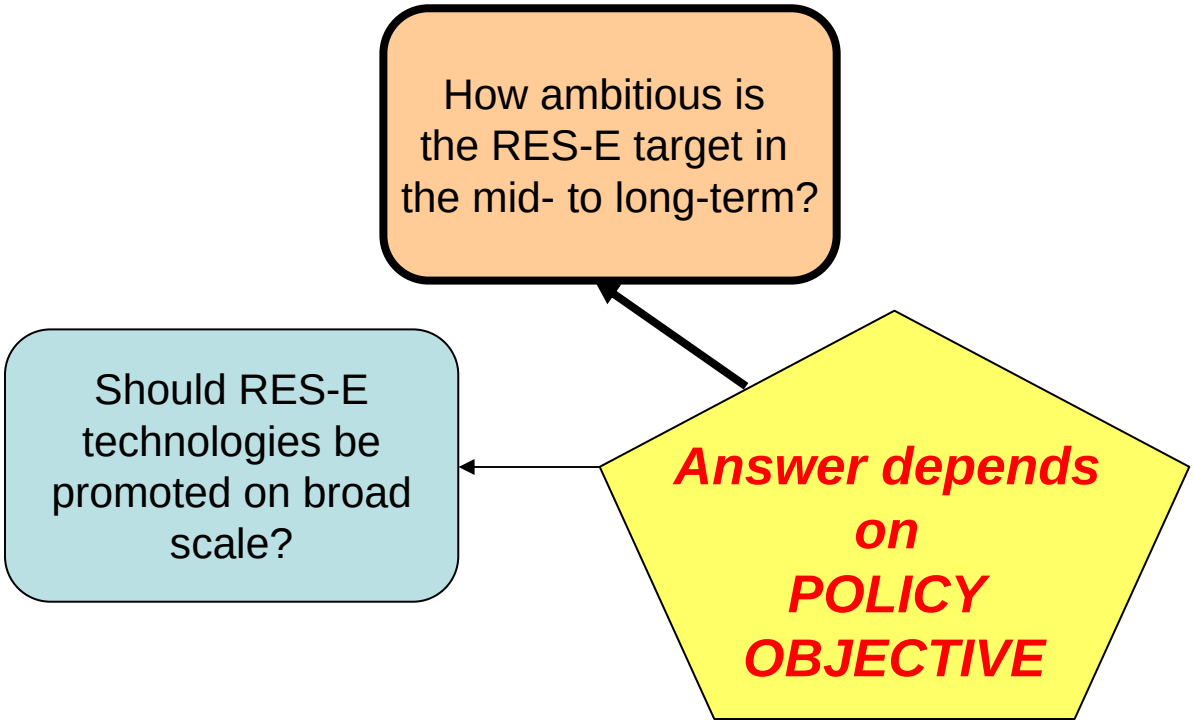
+ cost reduction of already most cost efficient technologies (facilitate breakdown to competitive market prices)
+ low generation costs (in the early phase of the system)
+ less complex system

Promote technologies on a broad scale

+ stimulation of less mature technologies
+ high deployment rate possible
+ lower transfer costs for consumer in the long-term
+ lower generation costs (in the later phase of the system)

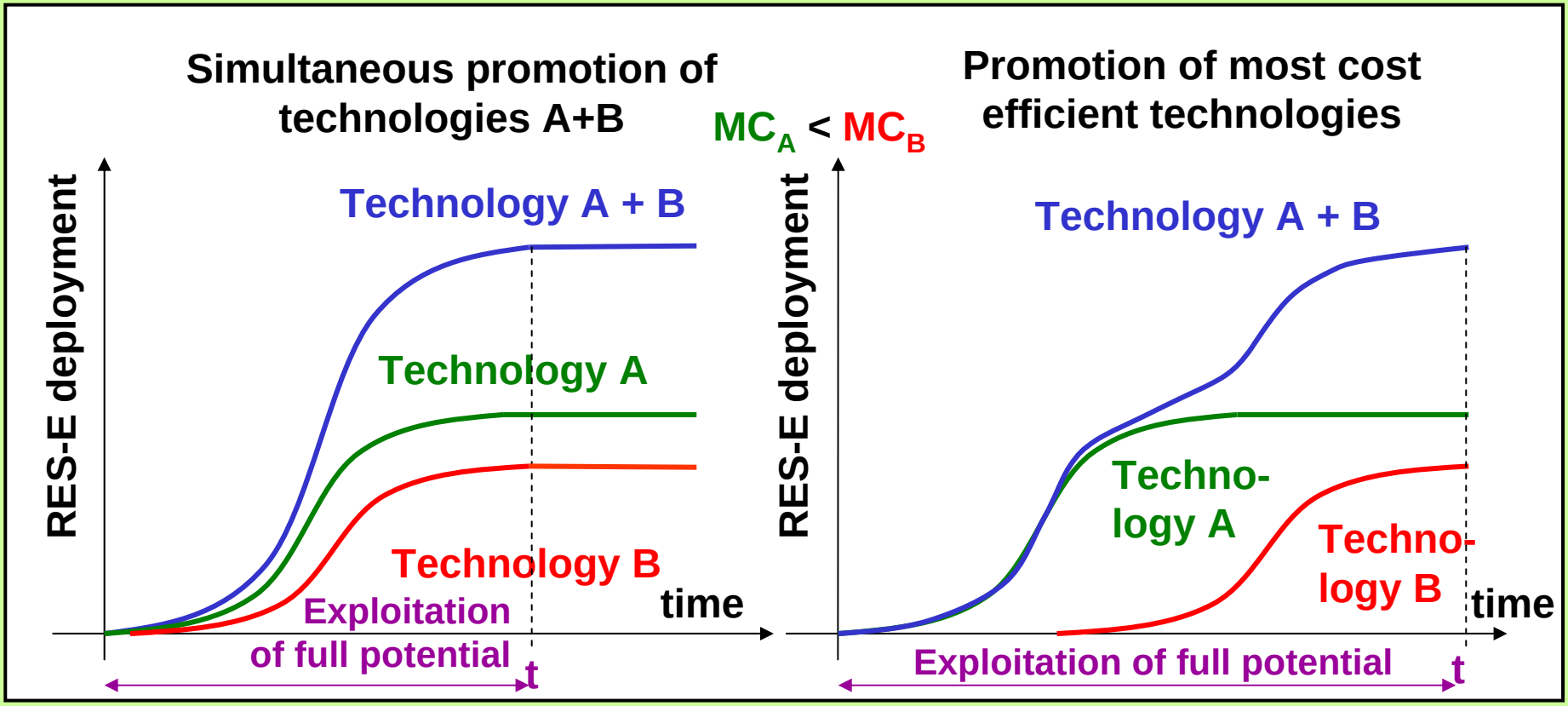
Ability to split the support depends on the policy instrument (FIT: high, tender: medium, TGC low)

Which instrument fits best?



How ambitious is the RES-E target in the mid-to long-term? How fast should the growth of RES-E deployment be?

An ambitious RES-E deployment in the long-term can only be reached with low costs if different technologies are supported simultaneously



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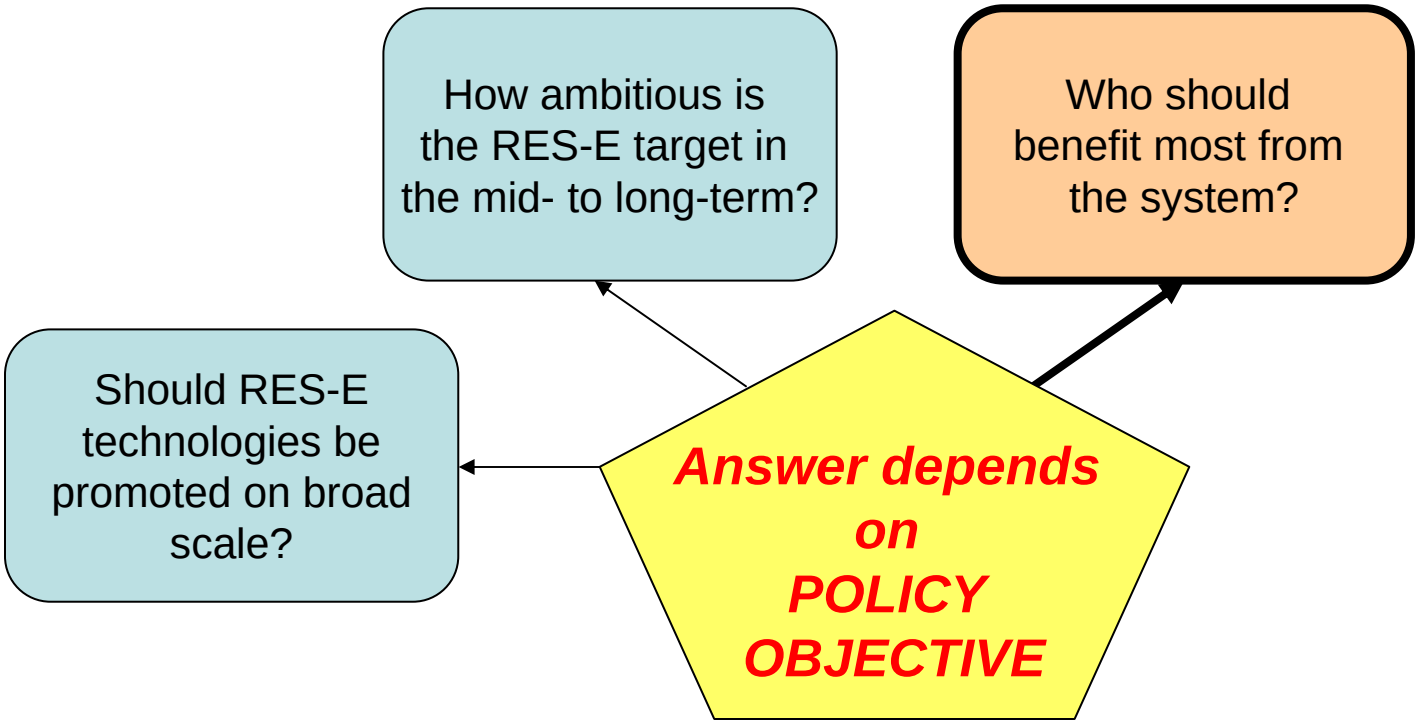
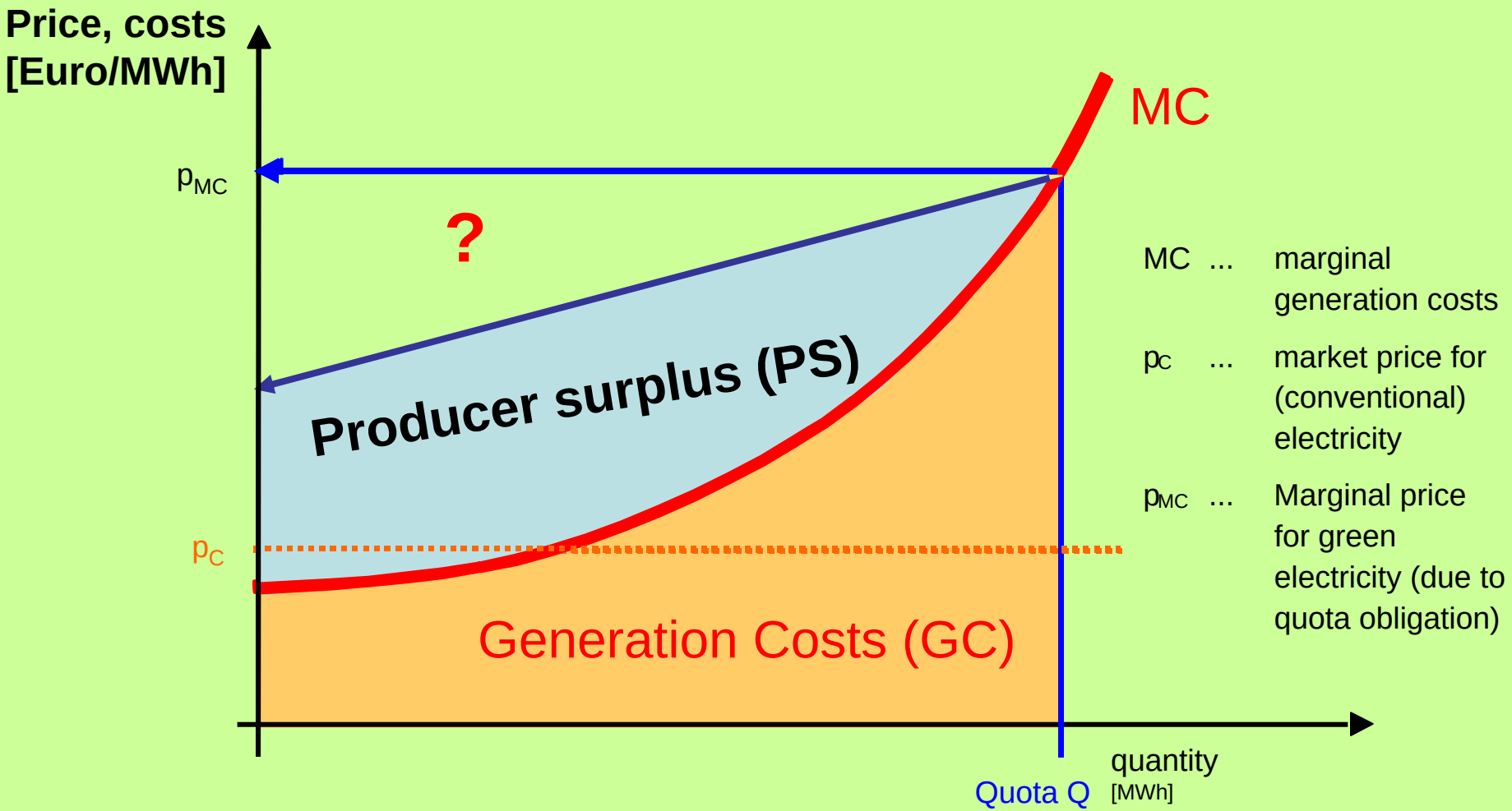


Benefits

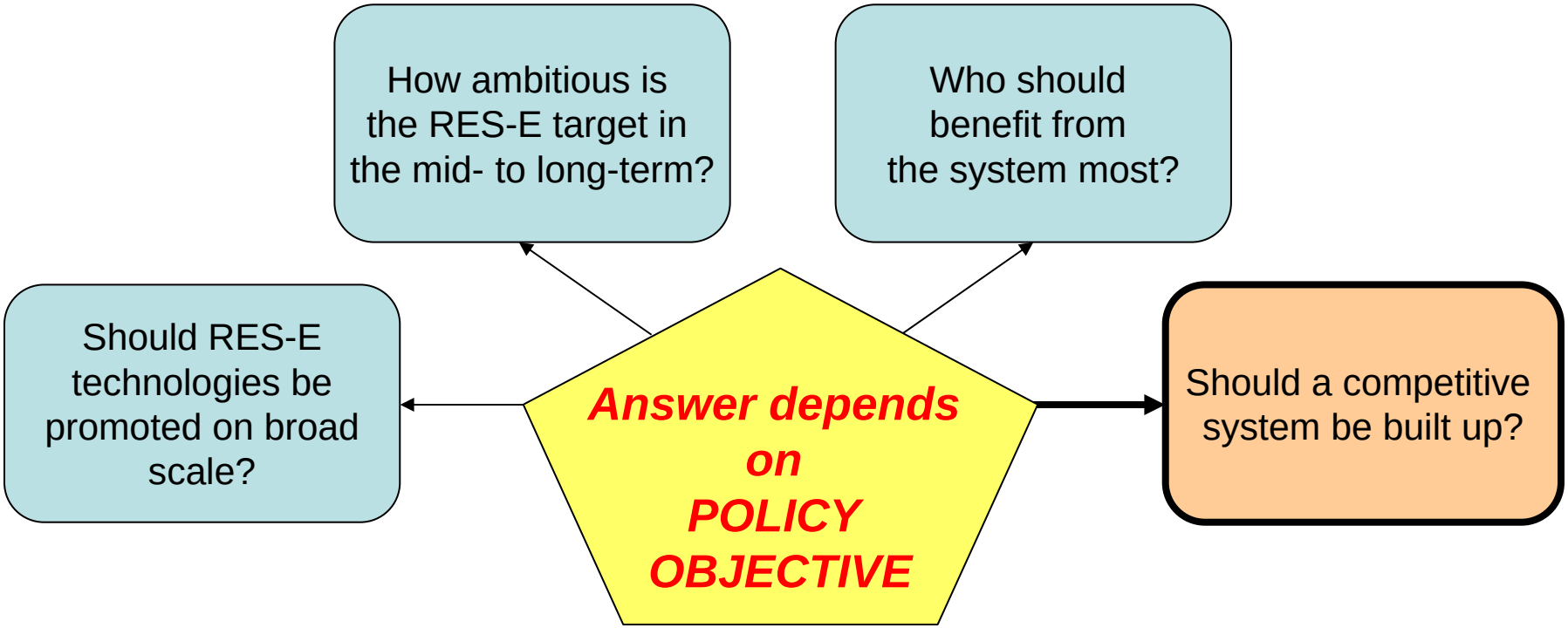

Price, costs [Euro/MWh]
MC
p_{MC}
?
Producer surplus (PS)
p_C
Generation Costs (GC)
quantity [MWh]
Quota Q
MC ... marginal generation costs
p_C ... market price for (conventional) electricity
p_{MC} ... Marginal price for green electricity (due to quota obligation)

Who should benefit most?

Consumers:
FIT scheme (in most cases)

Investors:
TGC for cheap options
FIT more expensive options

Which instrument fits best?



Should a competitive system be built up?

Should competition between generators be enforced?

Competition depends on market volume, competitors (national / international), transparency, etc.

TGC system, tender scheme or a combination of both;

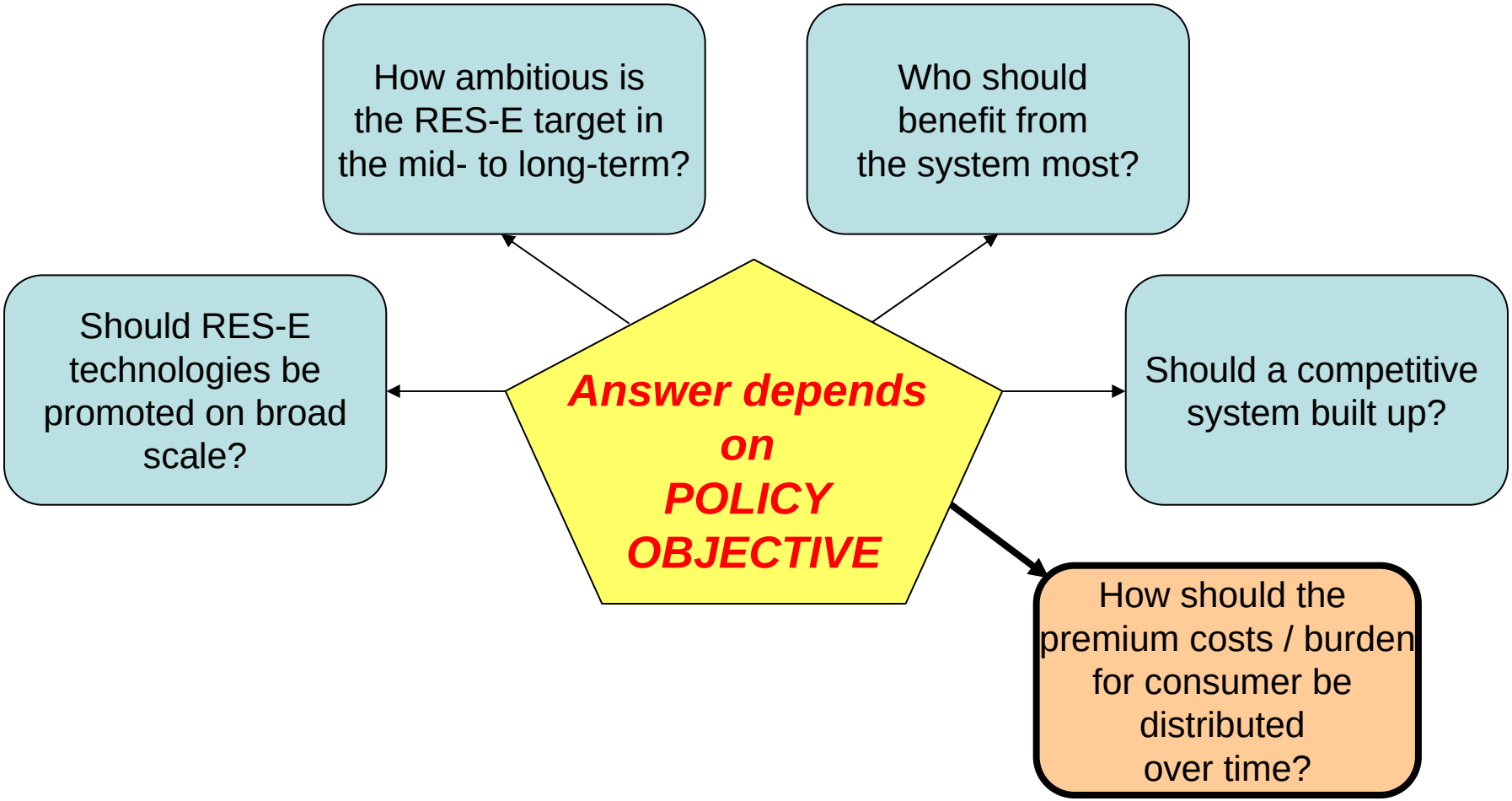
Should competition between manufacturers be fostered?

Competition mainly independent from the support mechanism

TGC system, tender scheme:
pressure to produce most cost efficient components

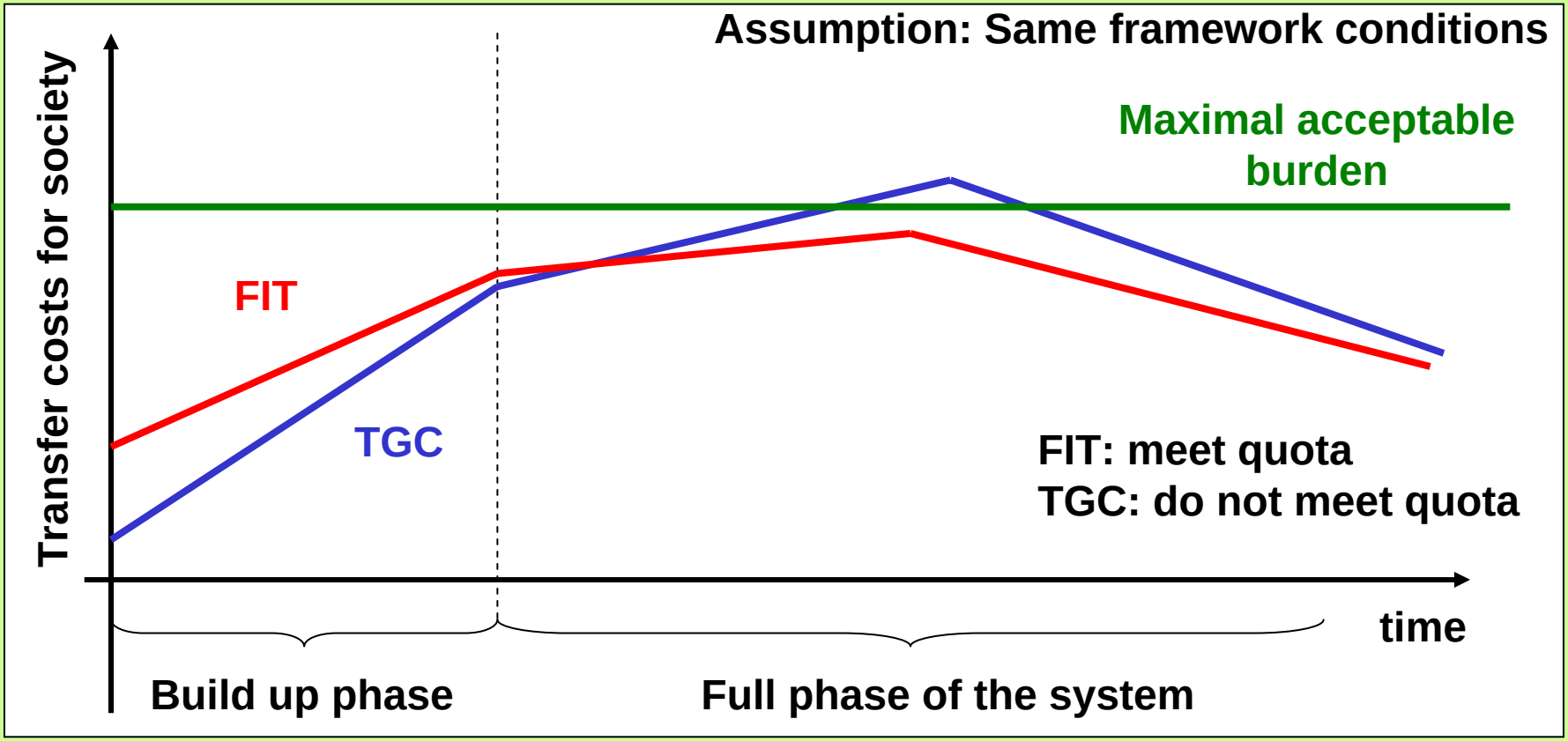
Feed-in tariff:
pressure to provide high quality components

Which instrument fits best?



How should the premium costs (burden) for consumer be distributed over time?

Illustration transfer costs for society over time



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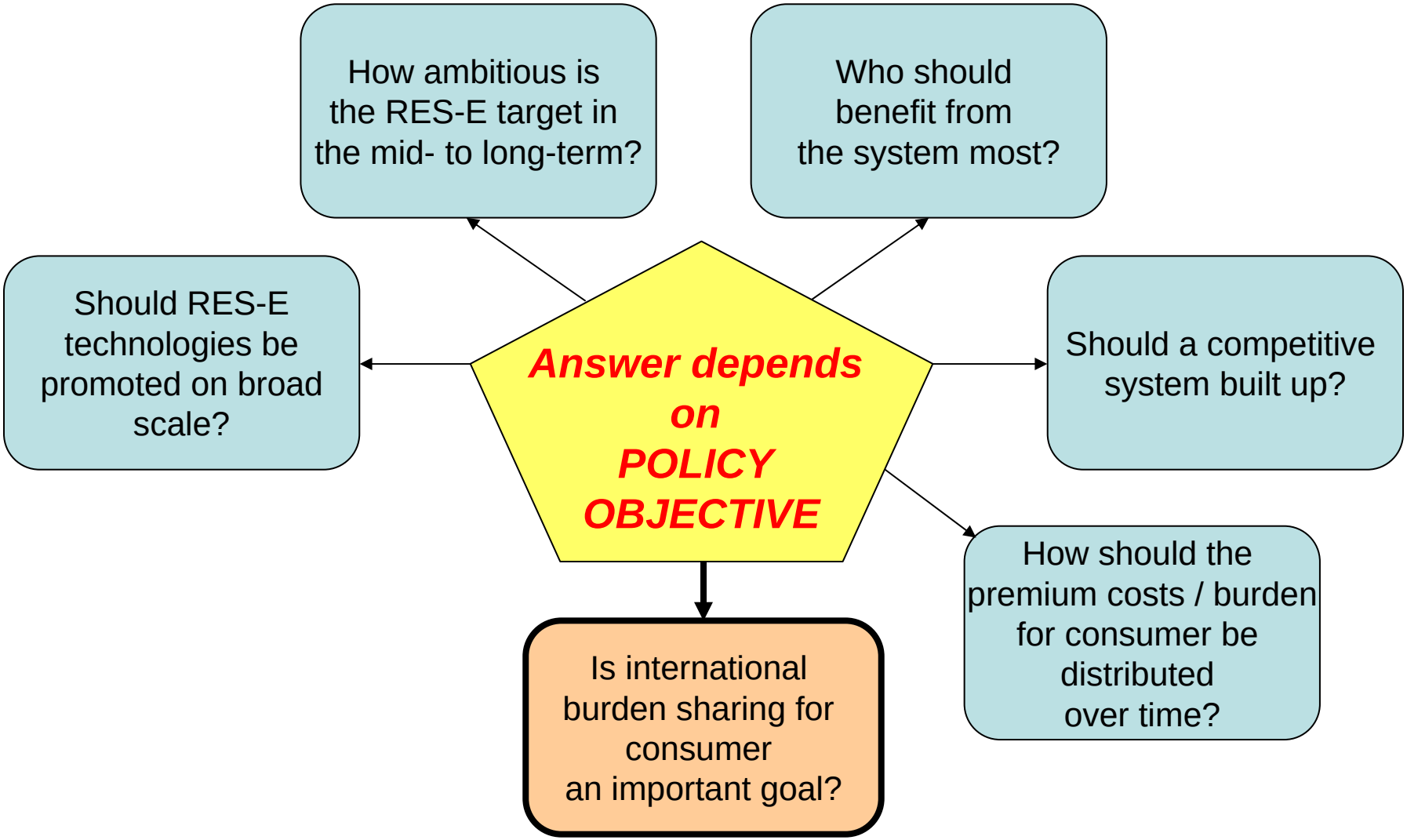


Is international burden sharing for consumer an important goal?

- International TGC system:

  a homogenous and fair distribution of the RES-E costs (same transfer costs for society)among the countries (consumer) is possible if RES-E target is set equal among the countries

  Reason: Transfer costs for society depends on the (agreed) target

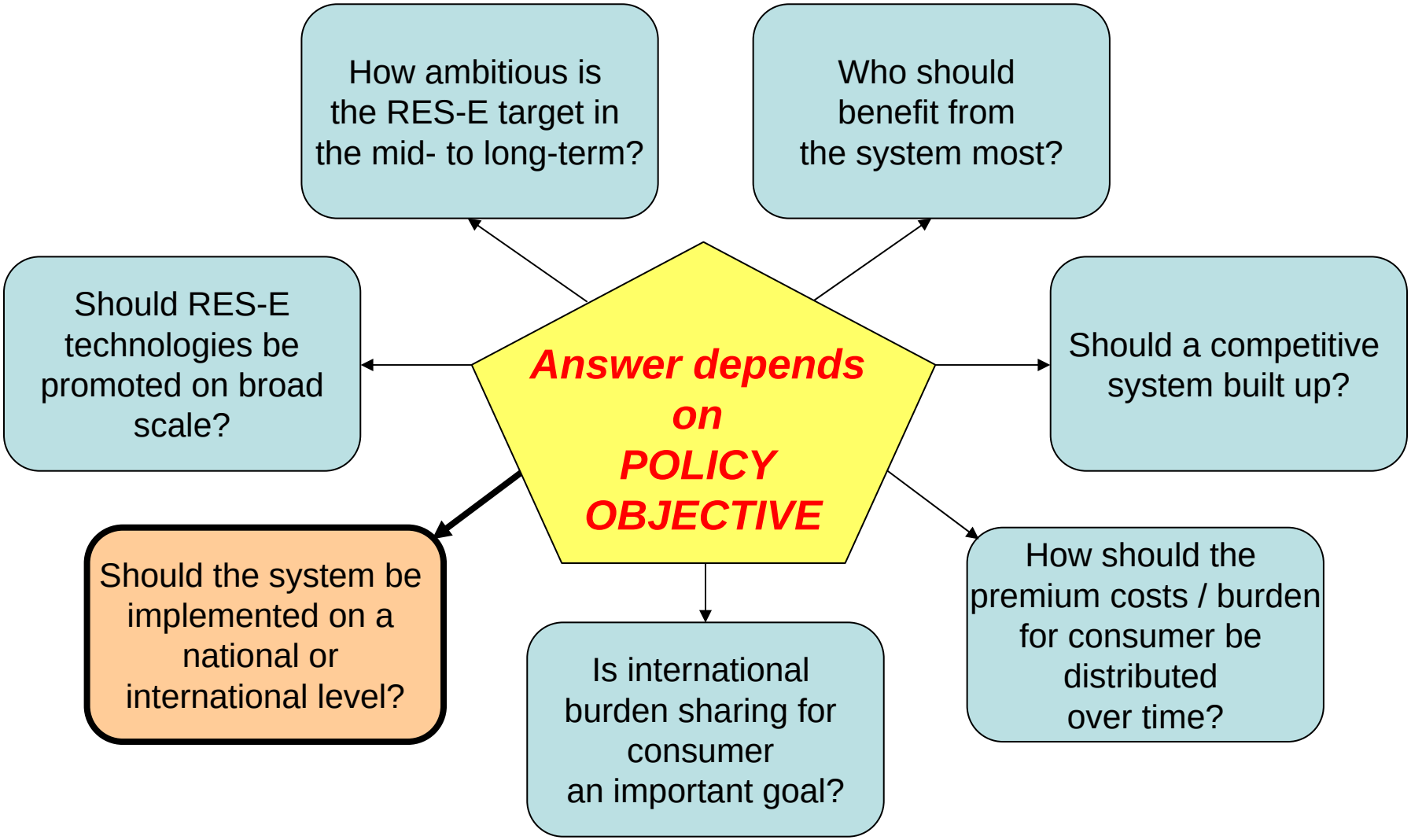
- Feed-in tariff scheme, tender procedure and national TGC:

  reach a fair burden sharing among the countries requires a central cost balance system

  Reason: Transfer costs for society depends on the national RES-E generation (high actual deployment high, transfer costs for society)

However: Additional benefits (regional development, employment, CO_2-emissions, etc.) occur due to the actual RES-E deployment, which should be compensated too

Which instrument fits best?



Should the system be implemented on national or international level

Important whether the power market is open or closed

Open power market

No distortions occur for all investigated policy mechanisms

Closed power market (limited interconnections)

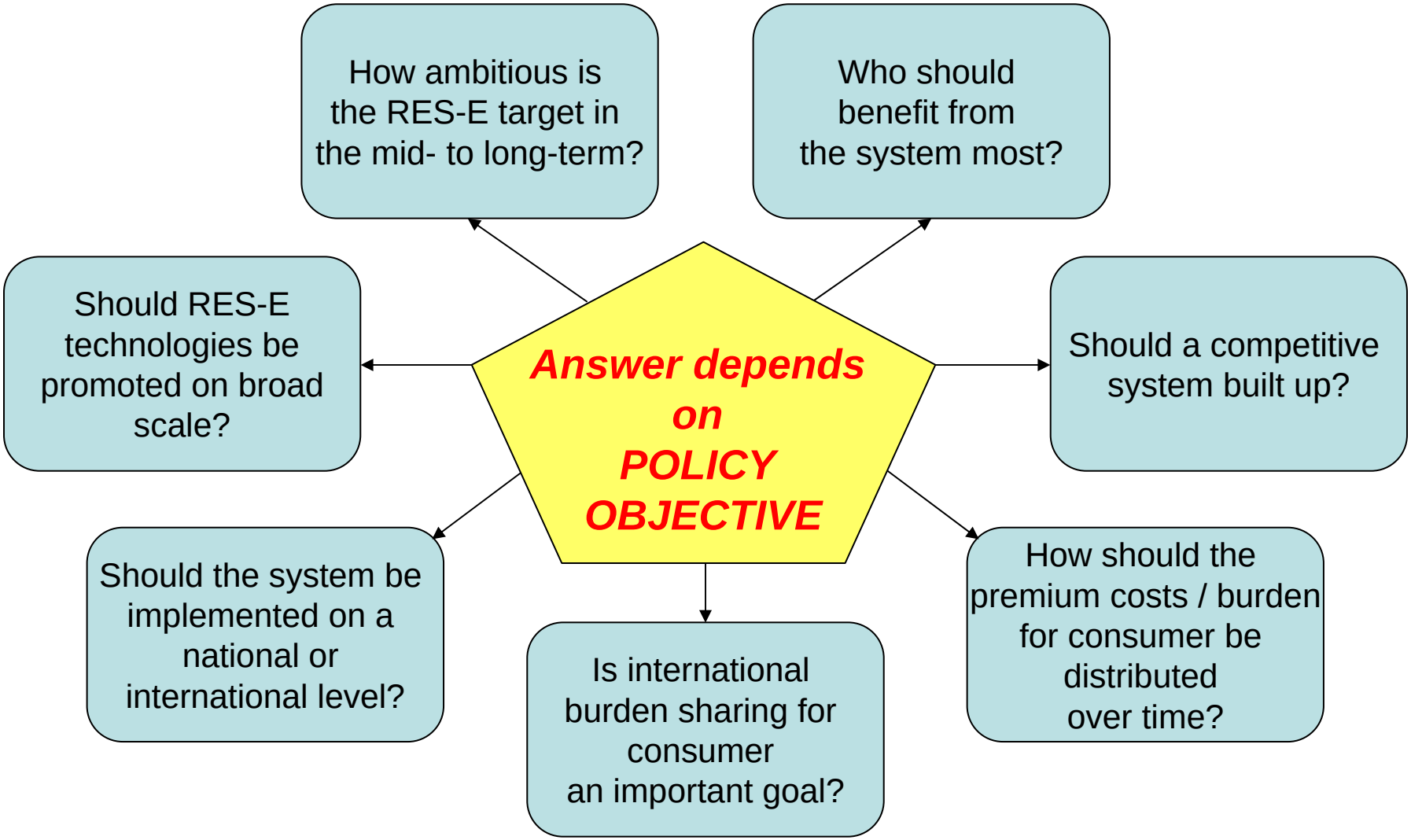
Distortions within an international TGC system / premium FIT

No distortion in the case of a FIT / tender scheme RES-E development is independent from the power market structure

Depending on the national (indicative) RES-E targets

On average EU countries gain from international system, however, some countries loose

Which instrument fits best?



Summary - which instrument fits best to provide a RES-E deployment?

Policy issue	Feed-in tariff	National TGC system	International TGC system	Tender procedure
Ensure a broad RES-E technology portfolio	+ +	-	-	+
Allow an ambiguous RES-E target in a short duration	+ +	- -	- / +	+
Minimise generation system costs	-	+	+ +	-
Minimise transfer costs for consumer	+ +	- -	- / +	+
Encourage competition between generators	-	+	+ +	+ +
Leads to a more homogeneous burden for consumer over time	+ +	- -	- / +	+
Can contribute to a fair international burden sharing	-	-	+	-

How can a harmonised approach look like?

Two options exist:

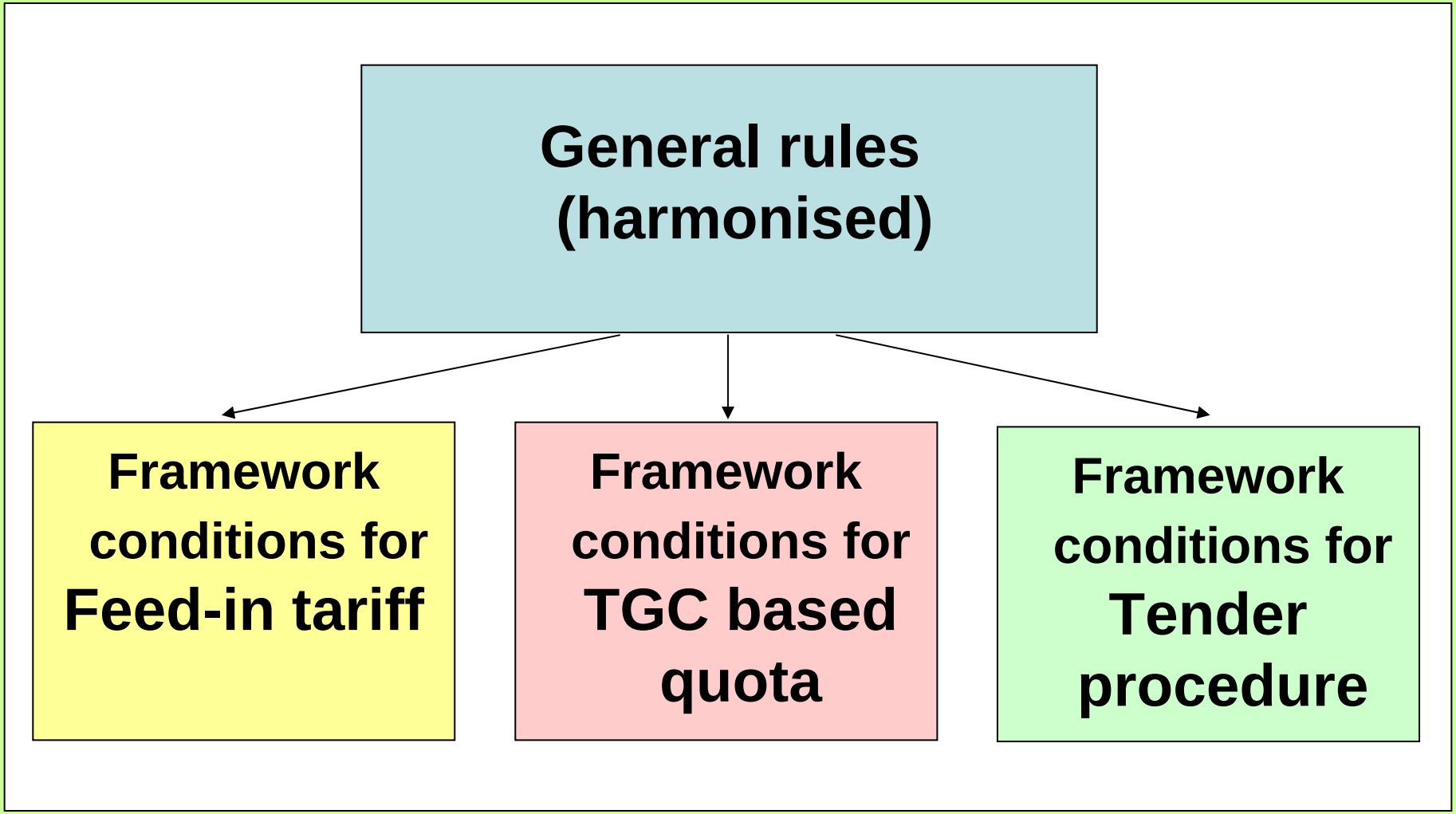
- Full harmonisation

  If policy find a joint agreement, which policy objectives (discussed before) are most important and, hence, should be consequently realised, a full harmonised approach is preferable regardless which instrument is chosen

- Sub-harmonisation

  If no joint agreement can be reached, a harmonisation of the general framework condition should be pursued

How can a harmonised approach look like?



General rules

- High investor confidence (stable planning horizon, predictability, creditability);
- Pursue a continuous RES-E policy (no stop-and-go nature);
- Existing capacities and new capacities should not be mixed;
- Financial support given by any instrument should be restricted to the same time frame (e.g. 13 years);
- Encourage competition among the manufacturers;
- Remove non economic barriers
- Compatibility with other policies (climate policy, agricultural policy, demand-side measures);

Feed-in tariff

- Use technology specific tariffs
- Apply a stepped feed-in tariff scheme (where appropriate)
- Consider dynamics! Tariffs should decrease over time when optimal time path for their implementation is reached;

TGC based quota obligation

- Ensure reciprocity of – mutually permitted
- Set correct penalty (higher than marginal production costs)
- Ensure a sufficient market size (try to form an international trading system)

Tender procedure

- Ensure a continuity of calls and predictability over time
- Set technology-cluster specific tender
- Call of right technology specific tender capacity is important
  - + Avoid to launch a too low capacity (monopolic or oligopolic structure)
  - + Avoid to launch a too large capacity (strategic bidding)
- For large projects predefined site, interconnection, etc.
  - + Lower transaction costs
  - + Co-ordinated development for capacity, grid

Conclusions – RES-E policy instruments

- There is no clear favoured support mechanism
- The design of a strategy is by far the most important success criteria!
- To ensure significant RES-E deployment in the long-term, it is essential to built up a broad portfolio of different technologies
  - To increase experience and confidence in new technologies. This issue is important to prepare the market for the case that these technologies should be used in the future.
  - Demonstrating the possibility is important for becoming market maturity (bank and risk assessment, learning of administrative burdens, etc).

Conclusions – interactions

- The achievement of most policy targets for RES-E as well as the accompanying transfer costs for society is closely linked to the development of electricity demand.
  Therefore, aside from setting incentives on the supply-side for RES-E, accompanying demand-side measures help to minimise the overall burden for consumer
- The future development of transfer costs for society due to the promotion of RES-E is significantly influenced by the further level of electricity prices on the conventional market.
- Harmonisation of framework conditions on EU level is favourable