

# European transmission tariff structures

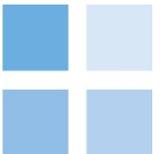
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Cambridge Economic Policy Associates

2<sup>nd</sup> ACER workshop on electricity transmission tariff harmonisation

16<sup>th</sup> June 2015

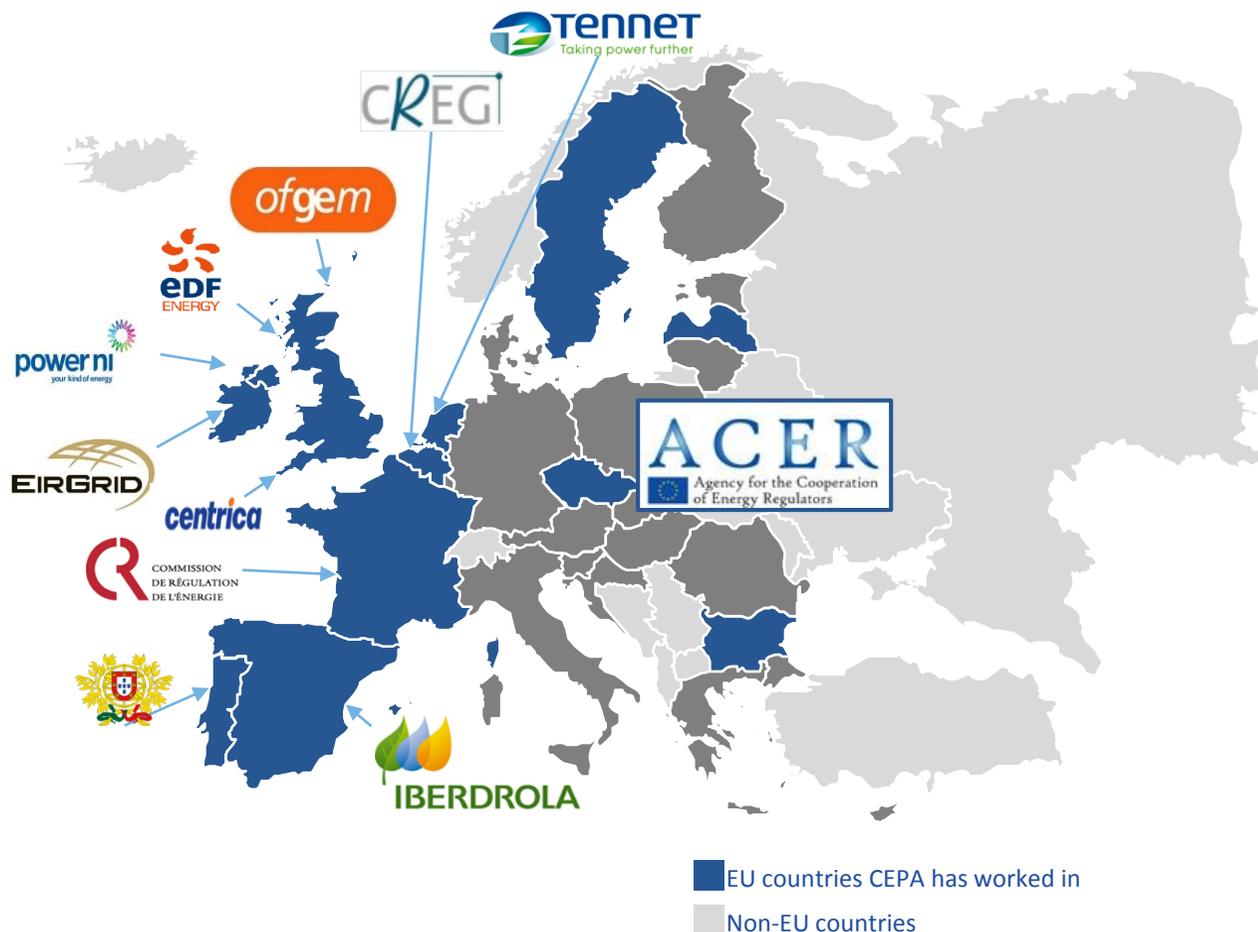
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## We are an economic and financial policy consulting business

- Our energy practice is involved in many of the issues that affect energy production, transportation and distribution
- We have worked across Europe for NRAs, governments, producers, network companies, suppliers and investors
- Our staff have worked extensively on electricity transmission pricing, competition and wholesale market design issues across Europe and internationally





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## CONTEXT AND OBJECTIVES FOR STUDY



## What are transmission tariffs?

- Electricity transmission tariffs are used to recover the costs of providing electricity transmission services
- Internationally, many different systems of electricity transmission pricing and associated tariff structures are applied
- In the electricity industry, there is a close interaction between the approach to transmission pricing and wholesale market arrangements
- Both can be used to achieve some of the principal policy goals and objectives for the electricity industry, although some policy tools may be more efficient than others



The IEM introduces a new perspective to the optimal design of transmission tariff structures across Europe...

## **Increasing emphasis on European electricity market integration:**

- Day-ahead market coupling achieved from Finland to Portugal
- Further expected growth in cross-border trade
- Transnational focus of generation and network investment decisions
- Level playing field to support single market competition

**... and understanding the impacts on electricity market outcomes and electricity market participant behaviour of current national choices on transmission tariff structures has become an important regulatory issue**

# Purpose of study

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## European transmission tariff structure study

### **Purpose of the study is to:**

- Assess whether increased harmonisation of electricity transmission tariffs structures would be beneficial; and if this is the case
- Recommend the most appropriate policy option(s)

### **The focus of the study is to:**

- Analyse the extent to which current tariff structures enable or impede market integration, effective competition and effective functioning of the internal European electricity market
- Identify and develop proportionate policy options to address any shortcomings that may be identified

# Our objectives for the day

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What do we want to achieve today?

**There are really two main aims for us:**

1. Feedback on the findings of the study – draft report provided ahead of the session
2. Provide an opportunity for stakeholders to comment on our draft findings and recommendations

**We have split this part of the workshop into two sessions – the second session will be interactive facilitated by a set of discussion questions**

# Our approach to today

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We would like participants to:

1. Ask clarification questions as we go along but save comments and more significant questions for the end of each session – time has been allowed for Q&A
2. Treat this workshop with Chatham House rules i.e. no comments made today by participants are attributable to those individuals/institutions



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**Any questions?**



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## **2** STUDY FINDINGS

# Tariff structures today

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Tariff structures currently applied in Europe are varied—no common “model” has been adopted

## Transmission tariffs structures today reflect:

- Different features of each national electricity market:
  - Different location and mix of generation and planned future network investment
  - Different physical properties of transmission networks
- The emphasis individual countries have placed on achieving certain policy objectives:
  - Need for design of transmission tariff structures to support the national focus of the design of wholesale electricity markets within European countries

**Some countries place more emphasis on cost reflectivity, while others focus on simplicity and ensuring cost recovery.**



# Impacts of current arrangements

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Our analysis suggests there may be potential problems created by absence of harmonisation...

Current transmission tariffs may potentially prevent the efficient (i.e. least-cost) development of the European electricity system, and may, therefore, reduce economic welfare by distorting the *investment* and *operational* decisions of market participants.

**These effects are more likely to occur where the following conditions are satisfied:**

- Markets are physically interconnected;
- Bidding zones are highly integrated resulting in cross-border competition
- Market participants have the flexibility to alter their behaviour in response to incentives created by transmission tariff structures.

**...these problems are likely to be more of an issue in the future as national electricity markets become more interconnected and integrated.**

# Impacts of current arrangements

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Absence of harmonisation may potentially lead to distortions of *investment* decisions

## Theoretical impact:

- Transmission tariffs and tariff structures have the capacity to influence investment decisions of generation and large (transmission-connected) loads.
- If transmission tariffs are not cost-reflective, distorted investment decisions may result in a non-efficient (not least-cost) development of the system

## Findings:

- We have not found direct evidence of negative impacts. It is highly uncertain that there have been, or will be, investment inefficiencies that can be specifically attributable to the lack of transmission tariff structure harmonisation, but distortions can occur in combination with other factors.
- Transmission tariffs form part of the investment decisions but other factors (e.g. fragmented national taxation or renewable generation support mechanisms) potentially have a far more material influence on investment choices

# Impacts of current arrangements

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Absence of harmonisation may potentially lead to distortions of *operational* decisions

## Theoretical impact:

- Negative operational impacts may arise from distorted dispatch of generation due to differences in non-cost reflective generation charges

## Findings:

- We have identified instances where operational effects could have occurred;
- This may particularly be the case where energy based generation tariffs are applied;
- However, the overall magnitude of the potential operational inefficiencies is unknown. Magnitude of impact depends critically on conditions under which market competition takes place (e.g. degree of market integration, merit order of supplies in each country)

# Broad policy options to address the concerns

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*A short-term* regulatory response could include some immediate harmonisation measures

Short-term harmonisation measures e.g. elimination of G-charges or an application of a common G:L split across Europe were proposed by some stakeholders.

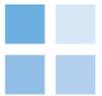
**These do not seem justified on cost reflectivity grounds nor have a strong theoretical basis:**

- A blanket removal of G-charges from some current tariffs could result in a less efficient development of the European electricity system, if those G-charges are sufficiently cost-reflective.
- The choice of a common G:L split would be arbitrary, and differences in the historic cost base of the TSOs mean that in practice tariff levels would still remain different.
- Furthermore, given the uncertainty about the magnitude of the current impacts, any benefits associated with such short-term harmonisation would be highly uncertain.

**In the short-term, existing policies (e.g. Regulation (EU) No 838/2010) should be sufficient to prevent potential negative effects due to a lack of harmonisation.**

# Broad policy options to address the concerns

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Biggest problem seems to stem from absence of agreement on *charging principles*

**We do not currently observe agreement on the principles for an ‘optimal’ tariff structure across Europe today**

- Current tariff structures in many countries do not align with an economically optimal tariff structure
- As markets become more integrated this becomes increasingly a European problem

**The necessary principles should be agreed as part of a *longer-term* road-map to facilitate overall harmonisation, integration and efficiency of the European electricity market.**

**Harmonisation of other elements of the market arrangements would ideally be addressed ahead of agreement on principles for an “optimal” tariff structure to help ensure they support these market arrangements.**

# Recommended option: Longer-term regulatory response

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Our recommended option is a *longer-term* regulatory response focusing on a harmonised set of principles for transmission charging

**This option would involve establishing a harmonised set of principles for transmission charging, with a focus on:**

- (1) cost reflectivity; and**
- (2) cost recovery**

**There is a stronger case for this option, since pursuing it can do no harm, but it would facilitate future harmonisation. Therefore, we recommend developing a harmonisation road-map that builds on the existing objectives for tariffs introduced in the Third Package.**

# Recommended option: Longer-term regulatory response

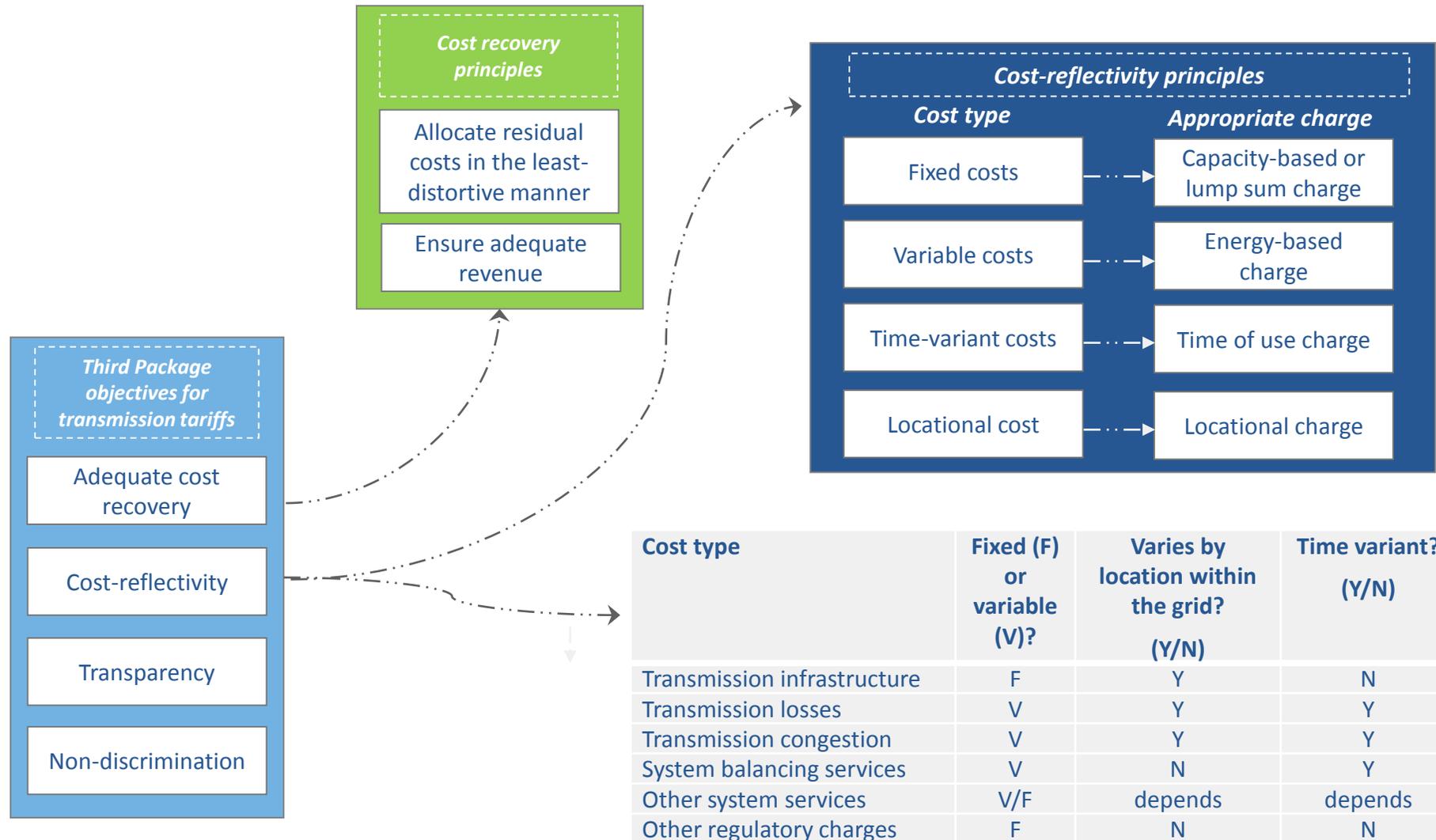
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Key principles that need to be harmonised are:

- **Cost reflectivity**—including:
  1. charging basis for each cost type included in the tariff;
  2. application of forward looking (marginal) cost charging;
  3. role of transmission tariffs in supporting the wholesale market design (e.g., providing locational signals)
- **Cost recovery**—harmonised principles to ensure that residual transmission costs are recovered in the least distortionary manner.
- **Other practical issues which might be addressed:**
  1. consider harmonisation of different voltage classifications currently applied across Europe;
  2. potential adverse impacts on existing users due to changing terms of network access.

# Key principles to consider for longer-term option





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**Any questions?**



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## **3 DISCUSSION SECTION**

# Discussion session

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We would like to use this session to discuss four issues

1

Are the *potential* problems which we have identified from absence of harmonisation ones that IEM stakeholders are familiar with?

2

Do stakeholders agree with our assessment of the impacts of current arrangements – i.e. the impacts from absence of harmonisation?

3

Do stakeholders believe that the *potential* problems that we have identified are more of a risk that policy makers should be aware of in the future?

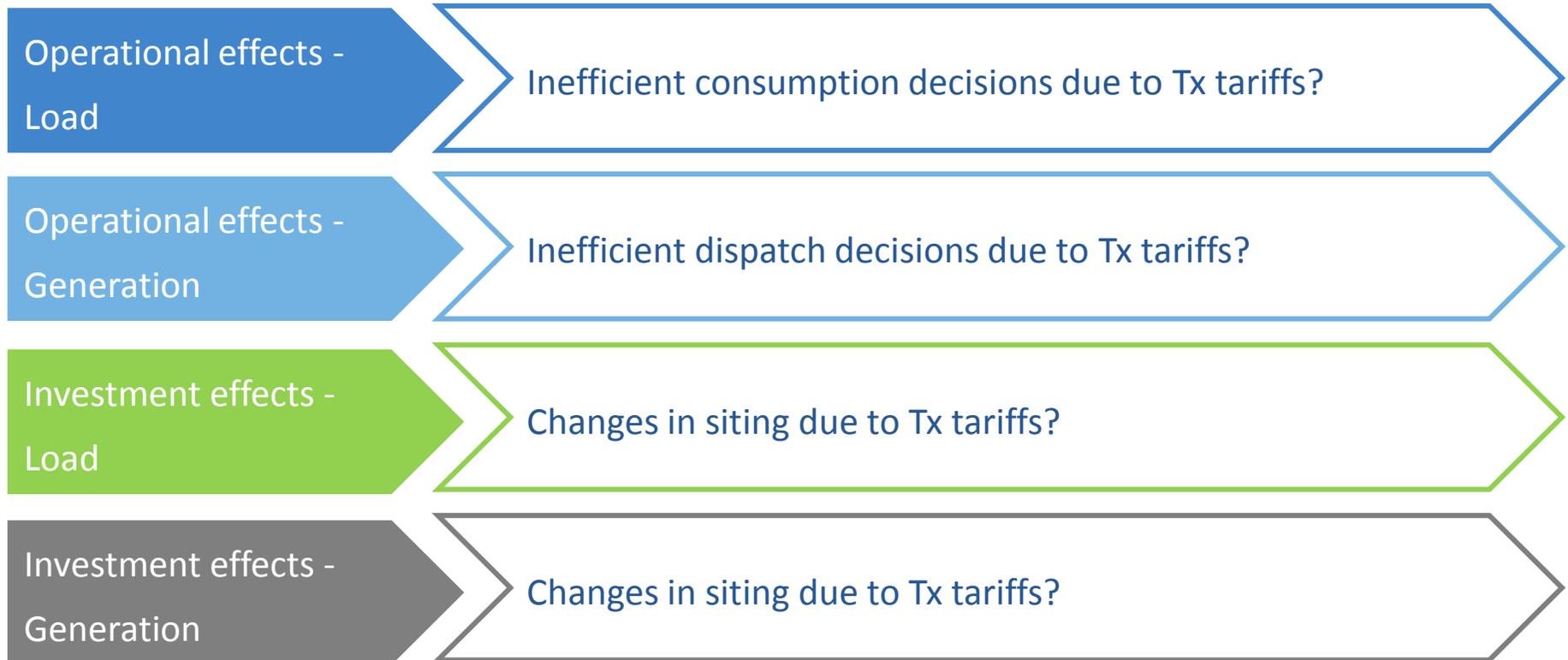
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Do stakeholders agree with the transmission tariff structure principles we have proposed?

# Issue (1) - *Potential* problems



Are the *potential* (theoretical) problems ones stakeholders are familiar with?



***Are the problems due to absence of harmonisation at the EU level?***

## Issue (2) – Assessment of current impacts

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It is unclear that the absence of harmonisation currently impacts negatively on the efficiency of the European electricity market

- There are examples of tariff structures that may align better with economic principles (i.e. cost reflective tariffs)
- There are examples across Europe where current transmission tariff structures may have influenced:
  - consumption decisions of load;
  - consumption and investment decisions of generation.

**But are these impacts a consequence of the *absence* of harmonisation at an EU level?**

## Issue (3) – Are *potential* problems more a future risk?

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Significant progress has been made with the development of IEM but further market integration is expected in the future

- Increasing European electricity market integration is likely to result in:
  - Increased physical interconnection between countries
  - Growth in cross-border trade and cross-border competition between generators
  - Transnational focus of generation and network investment decisions
- We have identified interconnection and market integration as necessary conditions for the potential impacts to occur.

**Is the current level of European electricity market integration sufficient for significant impacts to occur due to the potential problems we have identified?**

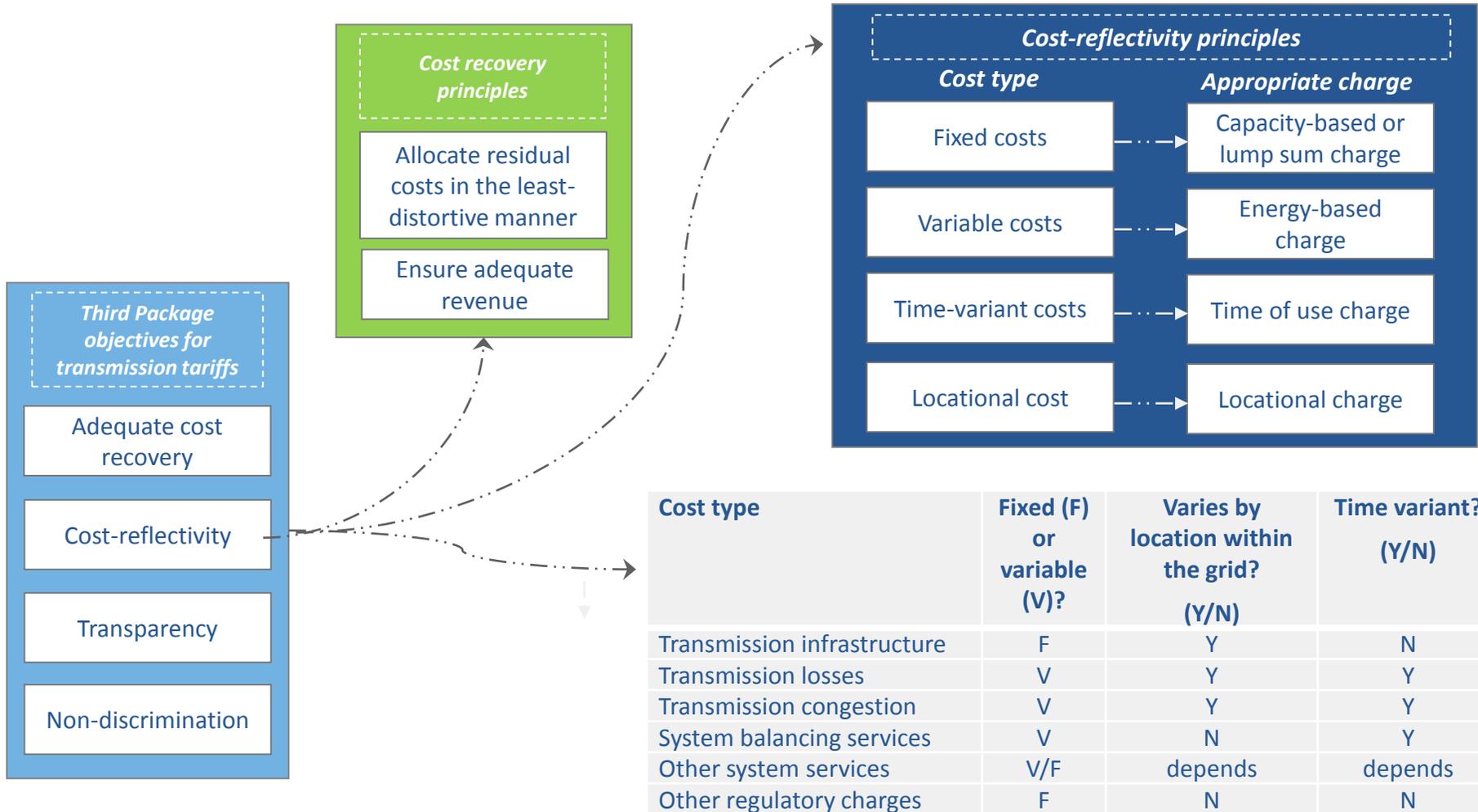
**OR**

**Are the potential impacts that we have identified more likely to be a problem that policy-makers should be aware of in the future once the development of the IEM has progressed further?**

# Issue (4) – Principles



Do stakeholders agree with our proposed principles?





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**Any questions?**



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