



# The RES Integration Study – Methodology, Overall Results and Recommendations

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eclareon



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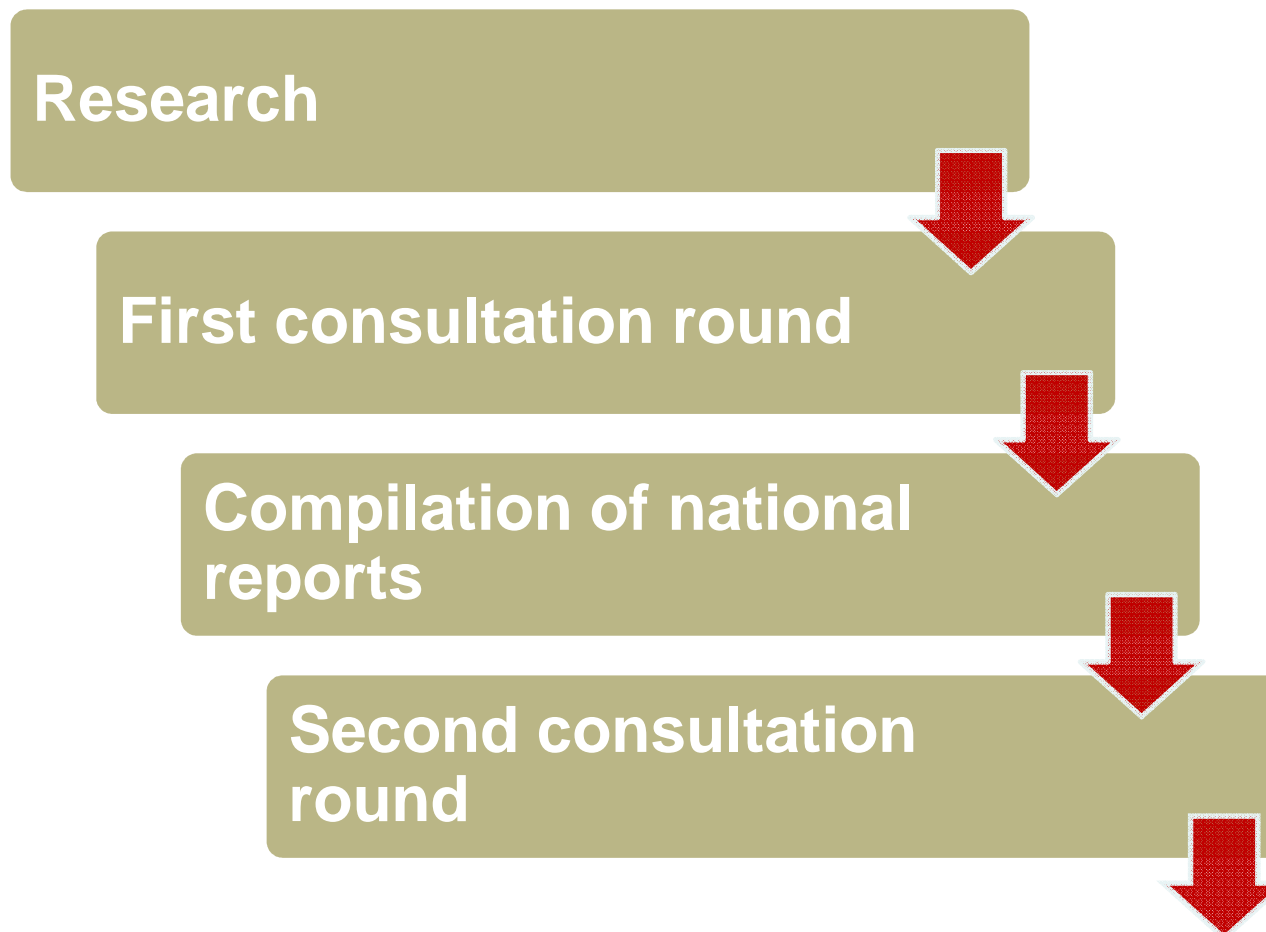
## Structure of presentation

- Purpose of the contract & tasks
- Methodology
- Main findings
- Barriers & solutions
- NREAP assessment

## Purpose of contract & tasks:

- *“Assessment of current legal, technical and operational framework of grid and electricity market related issues in each of the EU-27 Member States.”*
- *“Establishment of a comparative study of the present situation and the future plans, description of the regulatory framework and identification of best practices and recommendations regarding grid and market integration of electricity from renewable sources.”*
- *“Assessment of Compliance with the requirements of Article 16 of Directive 2009/28/EC on the promotion of the use of energy from renewable sources.”*
- *“Evaluation of the consistency, viability and credibility of the foreseen measures related to the sectoral electricity targets reported under each NREAP.”*
- *“Formulation of recommendation for each Member State and the EU as a whole.”*

## Methodology steps I



## Methodology steps II

Harmonisation of  
barriers



Open final consultations



NREAP evaluation



National & European  
recommendations

# **Grid connection as very critical phase for integration**

## **Grid connection as very critical phase for integration**

40 barriers  
detected  
(Operation: 7;  
Development: 16)

Most information  
available

No opposition to  
current focus of  
debate on  
development

# **Very strong link between connection and development phase**



## **Very strong link between connection and development phase**

Two sides of  
same medal

Reciprocity of  
barriers

Especially  
relevant for  
costs as well as  
for waiting time

**Grid operation presently no  
serious issue**

## **Grid operation presently no serious issue**

Low share of  
volatile RES-E in  
many MS

Situation may  
change  
dramatically in  
the future

Early steps  
required to  
minimise future  
impact

# **Grid development suffers quite strong lack of regulatory instruments**

## **Grid development suffers quite strong lack of regulatory instruments**

High costs for grid operators for RES integration

Current regulatory instruments only partially cover costs

Problem especially at DSO level in regions with low population and high RES-E potential

Unbundling has impaired financial situation of some grid operators

**NREAPs mainly do not  
address the barriers identified  
in this study**

## **NREAPs mainly do not address the barriers identified in this study**

MS were not aware of issues

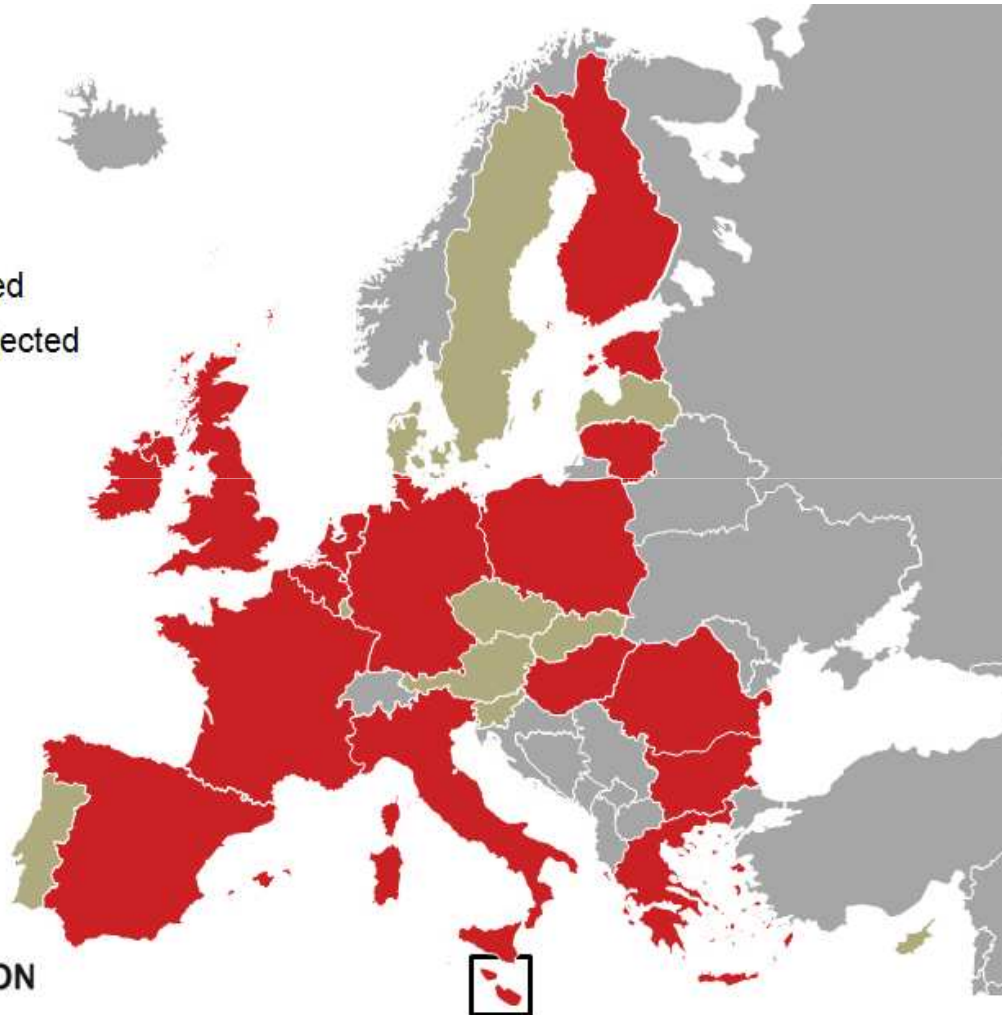
MS had no interest in sharing information with Commission

Issue did not fit in categories of NREAP template

## Lack of grid capacity / different pace of grid and RES-E development



- Barrier detected
- Barrier not detected



- Impossibility of connection due to insufficient infrastructure
- Higher growth rate of RES-E than development rate of infrastructure
- Consequence: deployment and RES-E integration slowed down



**Different pace of grid & RES-E development leading to lack of grid capacity**



**Enhance coordination between RES-E & grid infrastructure development**

## Concrete Steps:

### Data

- Clear data basis of existing and planned RES-E plants
- Ambitious long term targets (2020-2050)

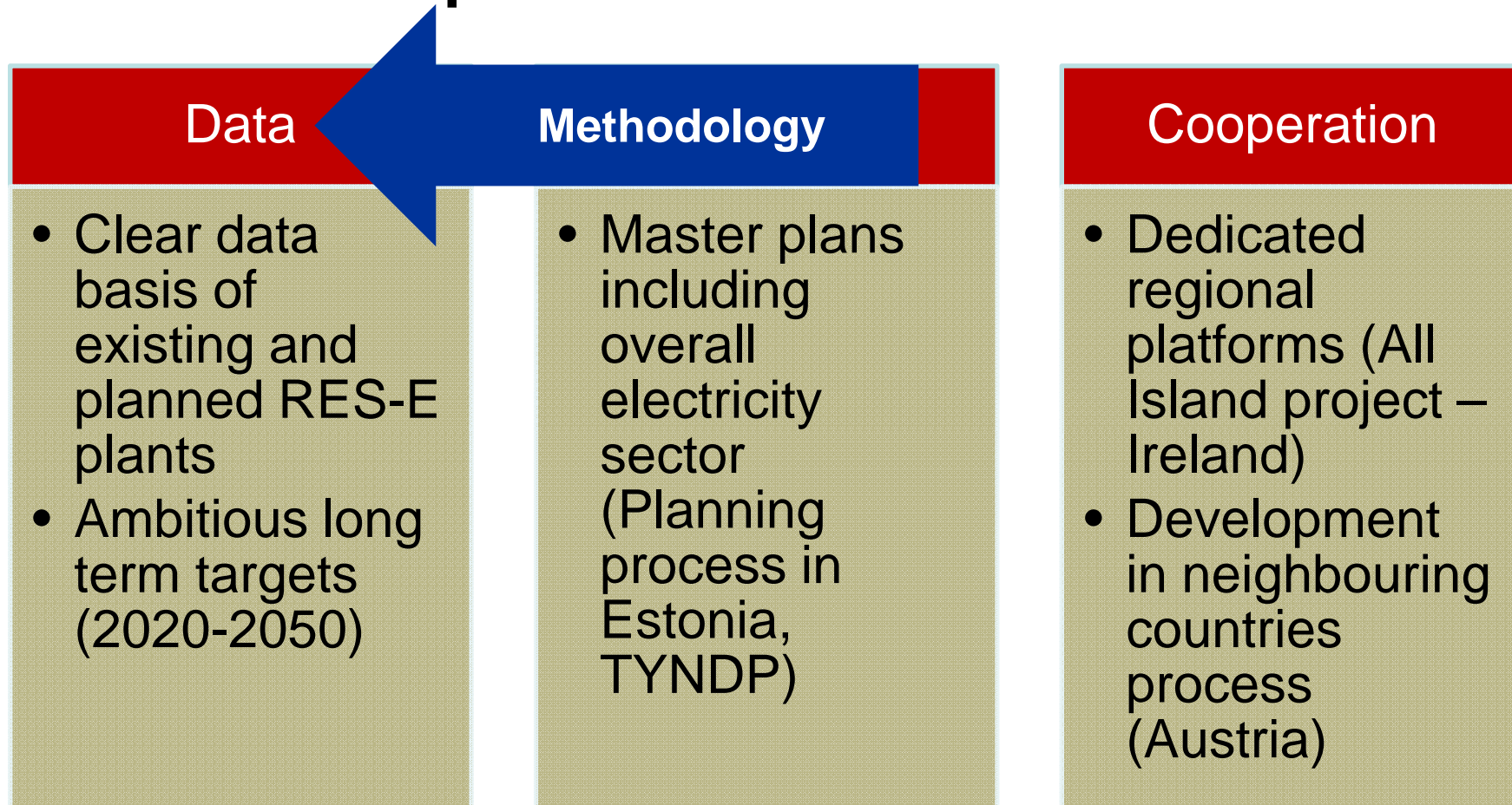
### Planning

- Master plans including overall electricity sector (Planning process in Estonia, TYNDP)

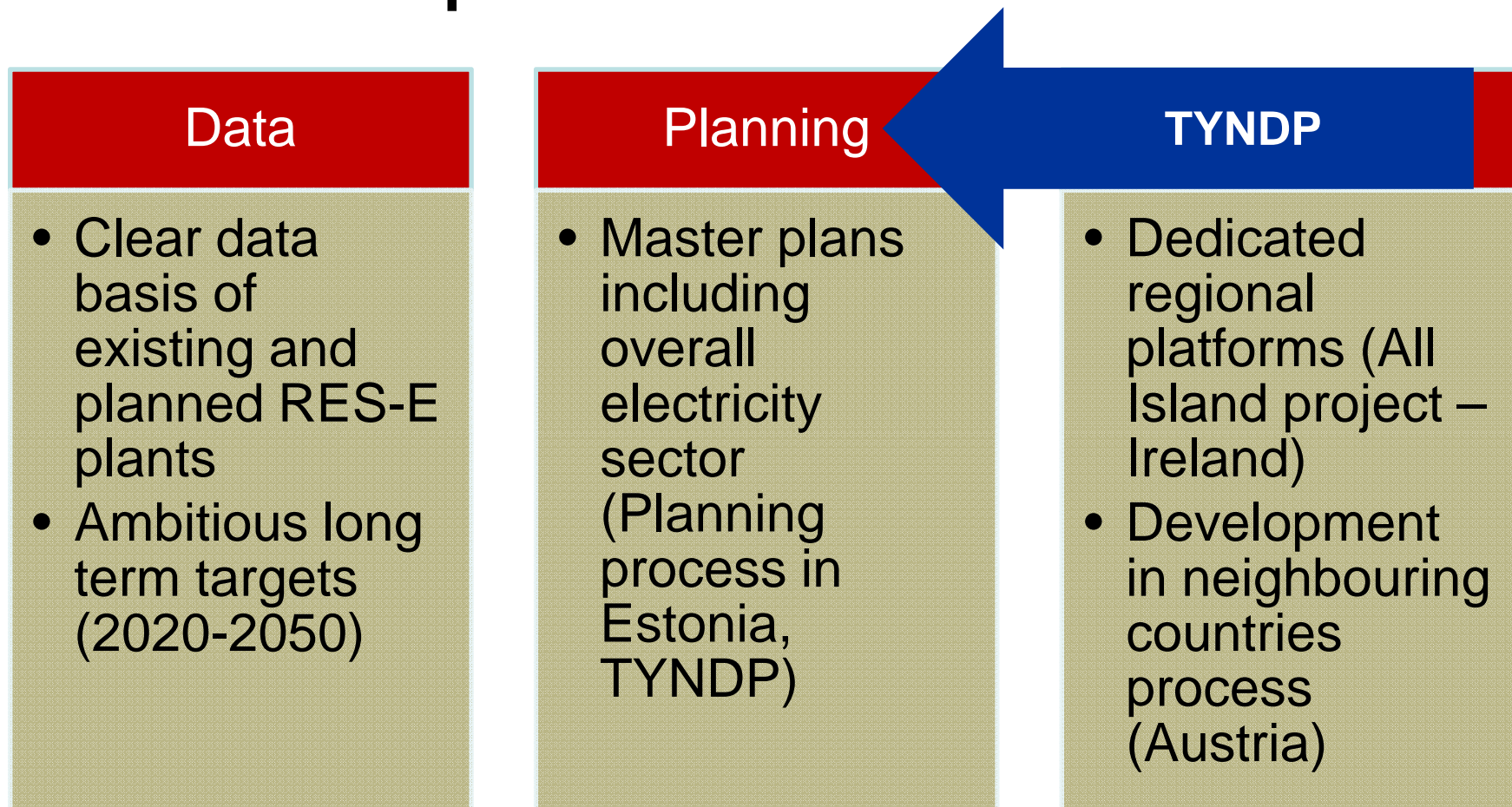
### Cooperation

- Dedicated regional platforms (All Island project – Ireland)
- Development in neighbouring countries process (Austria)

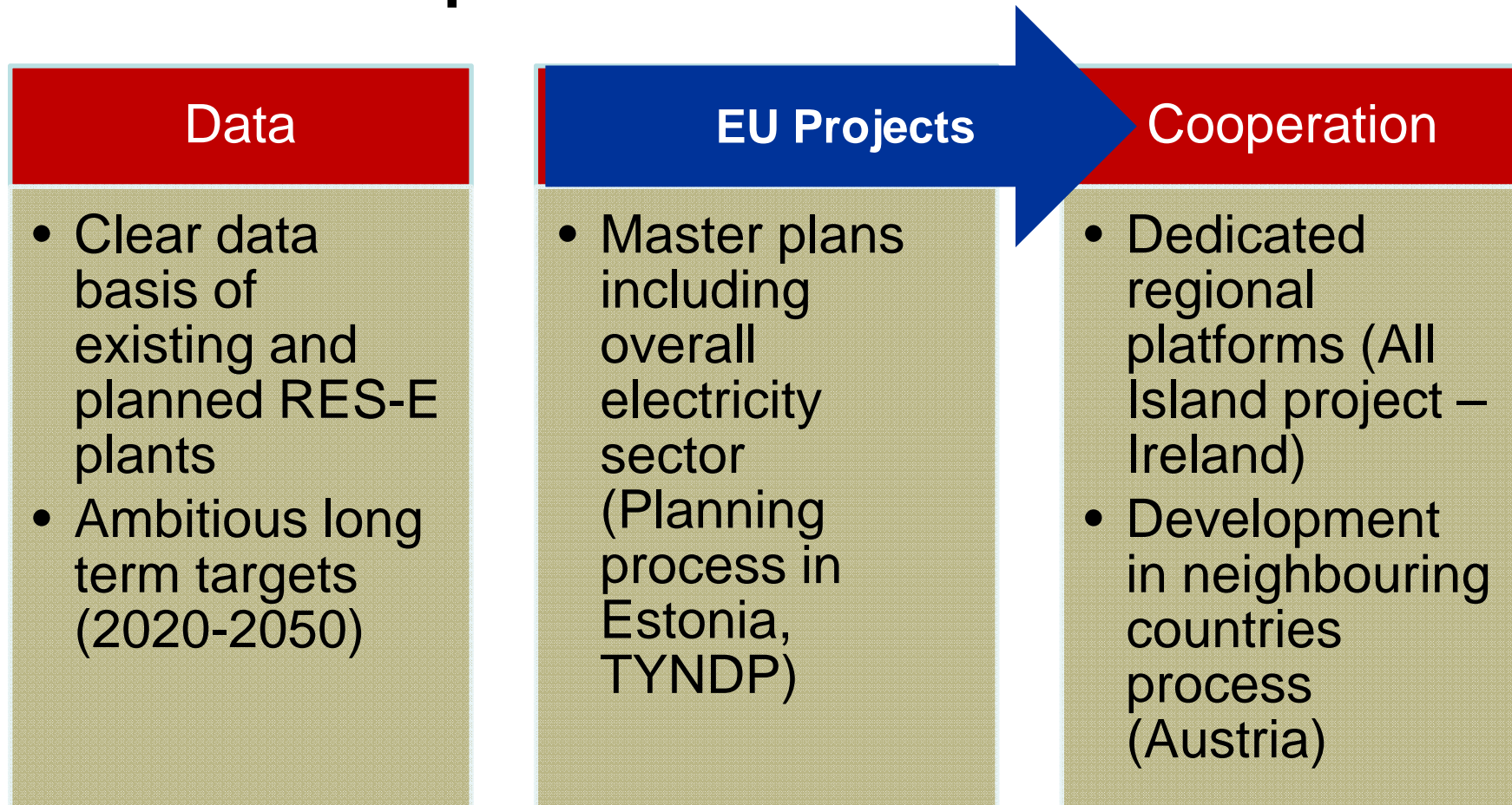
## Action at European level:



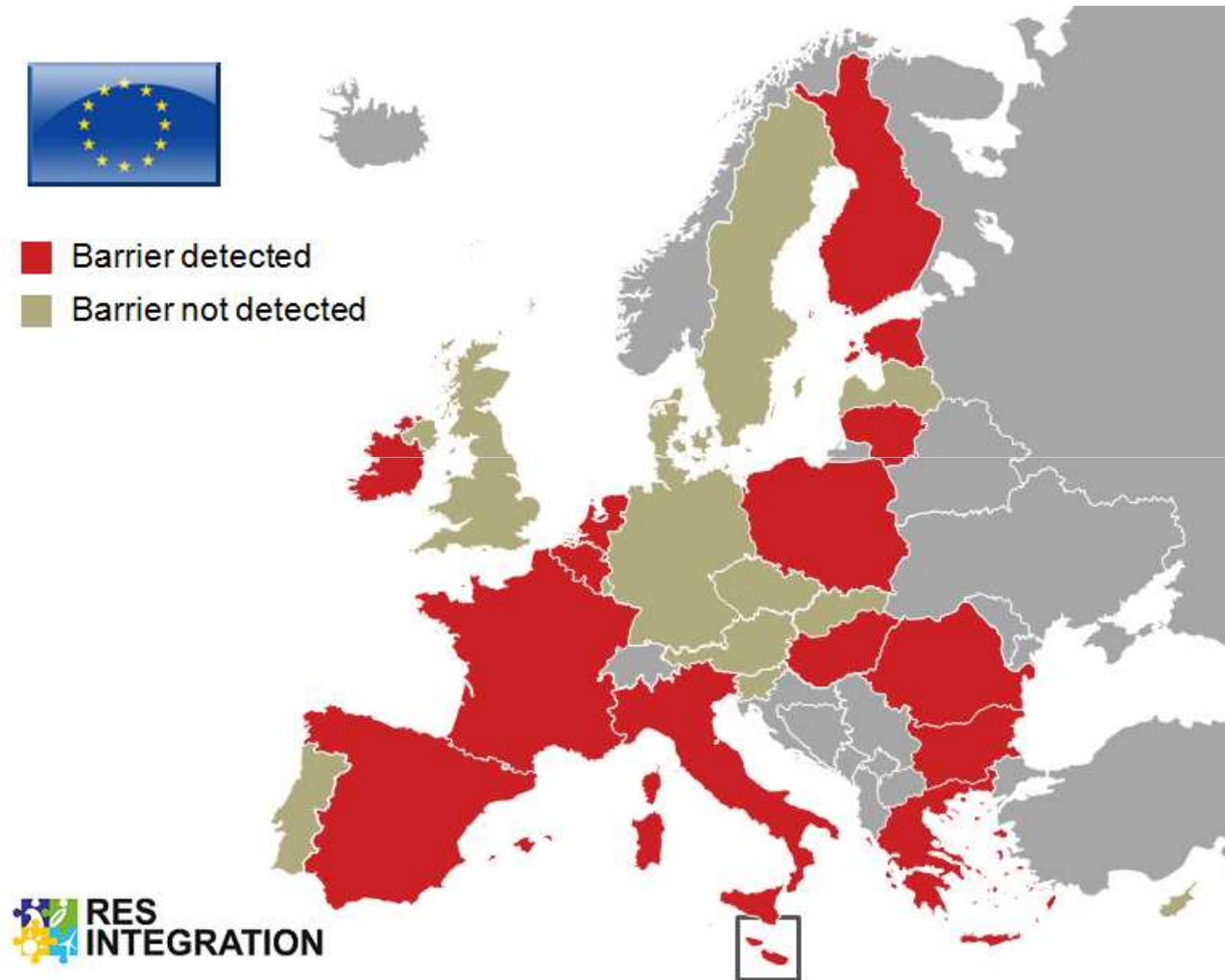
## Action at European level:



## Action at European level:



## Virtual saturation and speculation



- Connection not possible, because whole capacity is reserved by plants that are not yet connected
- Speculation main reason

## **Speculative behaviour and virtual saturation**



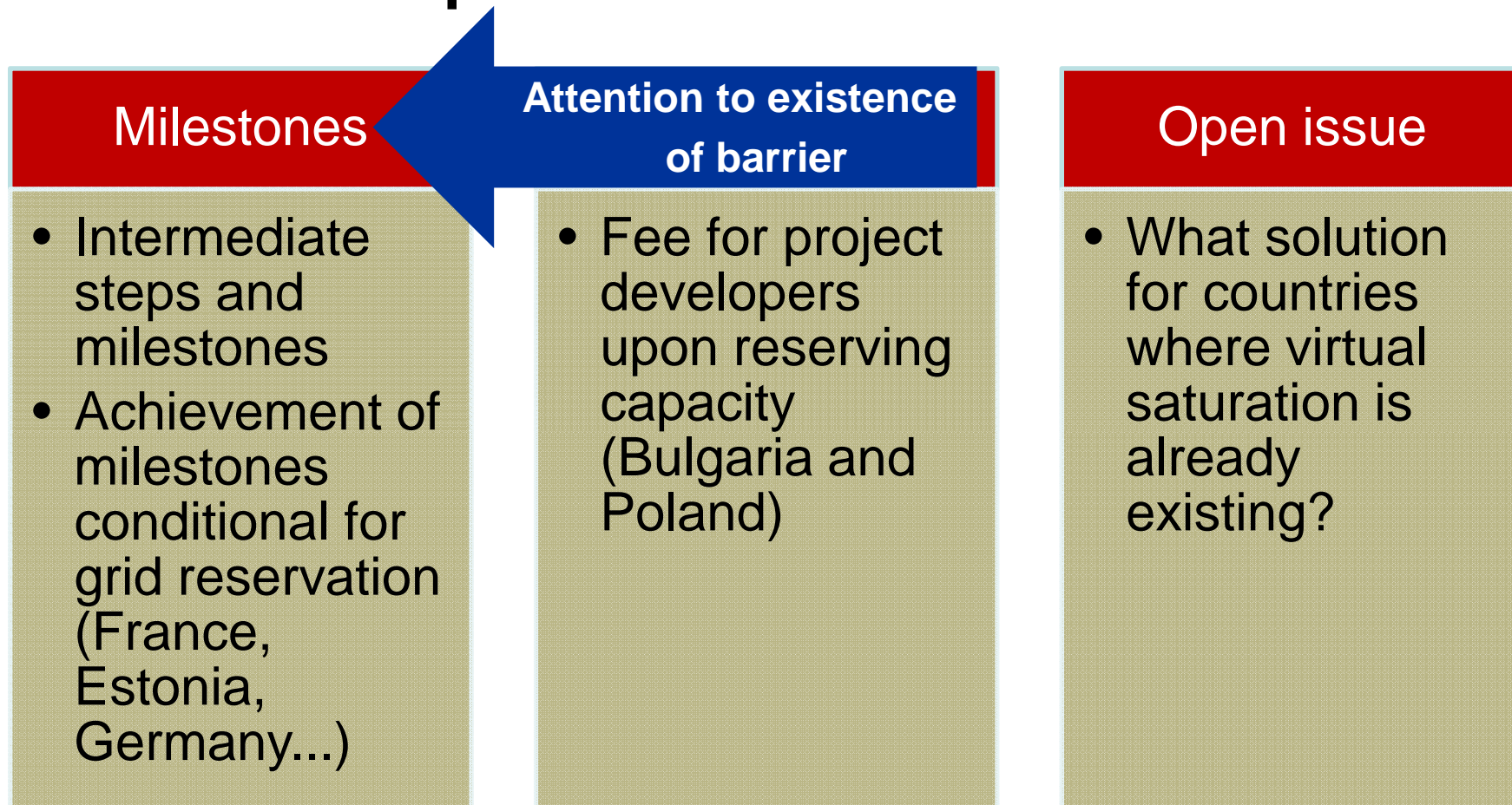
**Adopt national legal framework to more and different stakeholders**

## Concrete Steps:

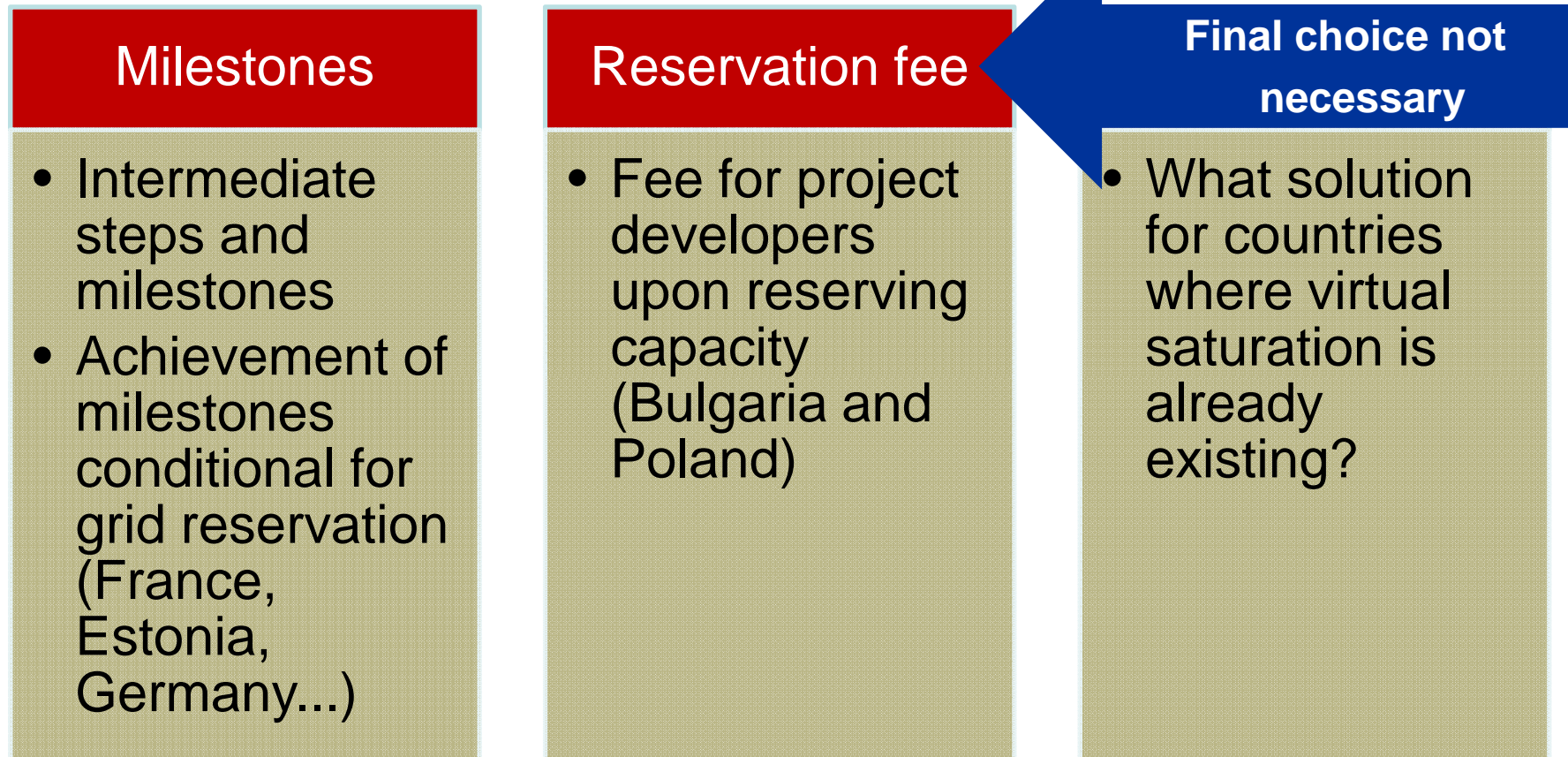
Milestones	Reservation fee	Open issue
<ul style="list-style-type: none"><li>• Intermediate steps and milestones</li><li>• Achievement of milestones conditional for grid reservation (France, Estonia, Germany...)</li></ul>	<ul style="list-style-type: none"><li>• Fee for project developers upon reserving capacity (Bulgaria and Poland)</li></ul>	<ul style="list-style-type: none"><li>• What solution for countries where virtual saturation is already existing?</li></ul>



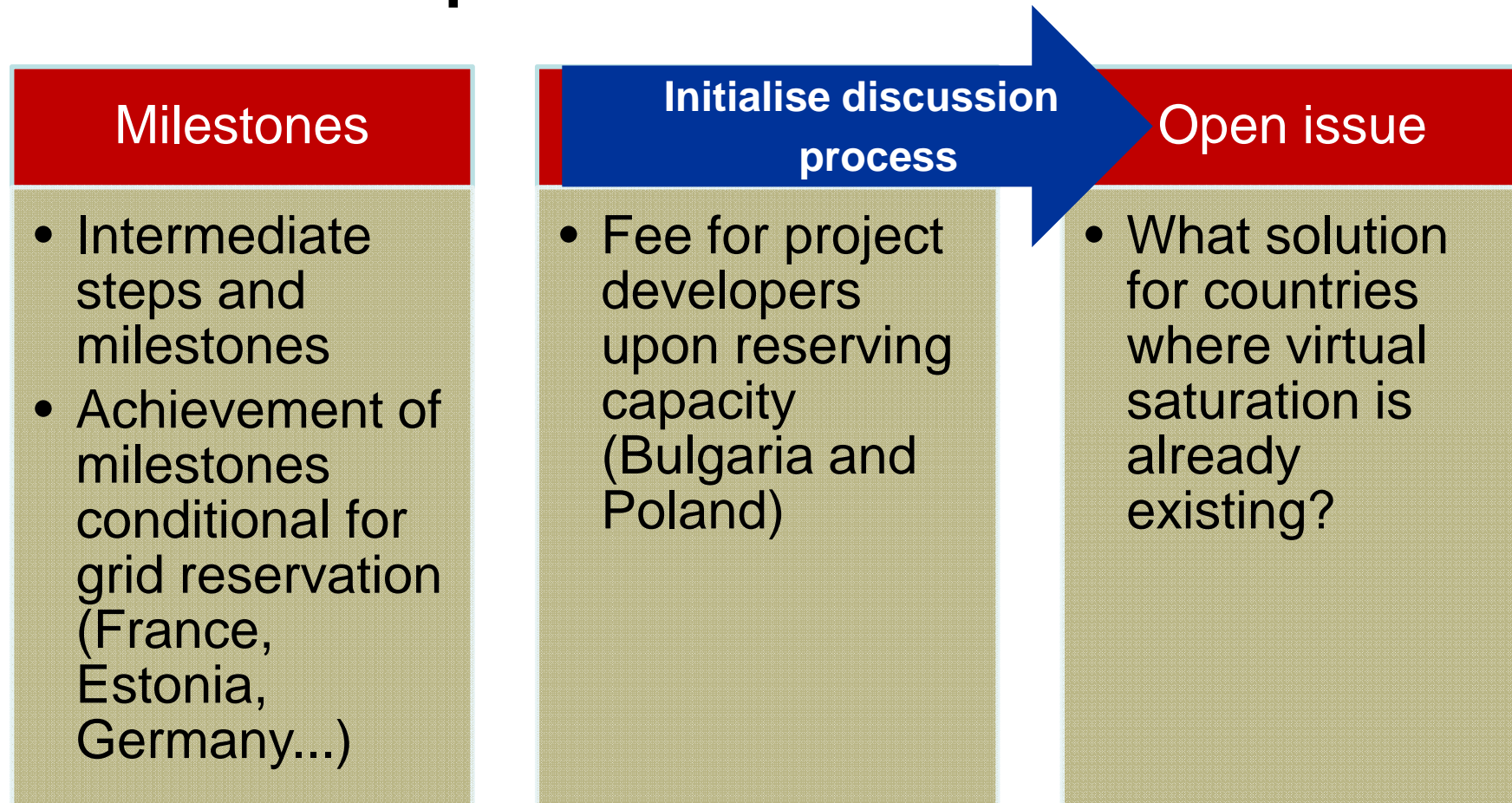
## Action at European level:



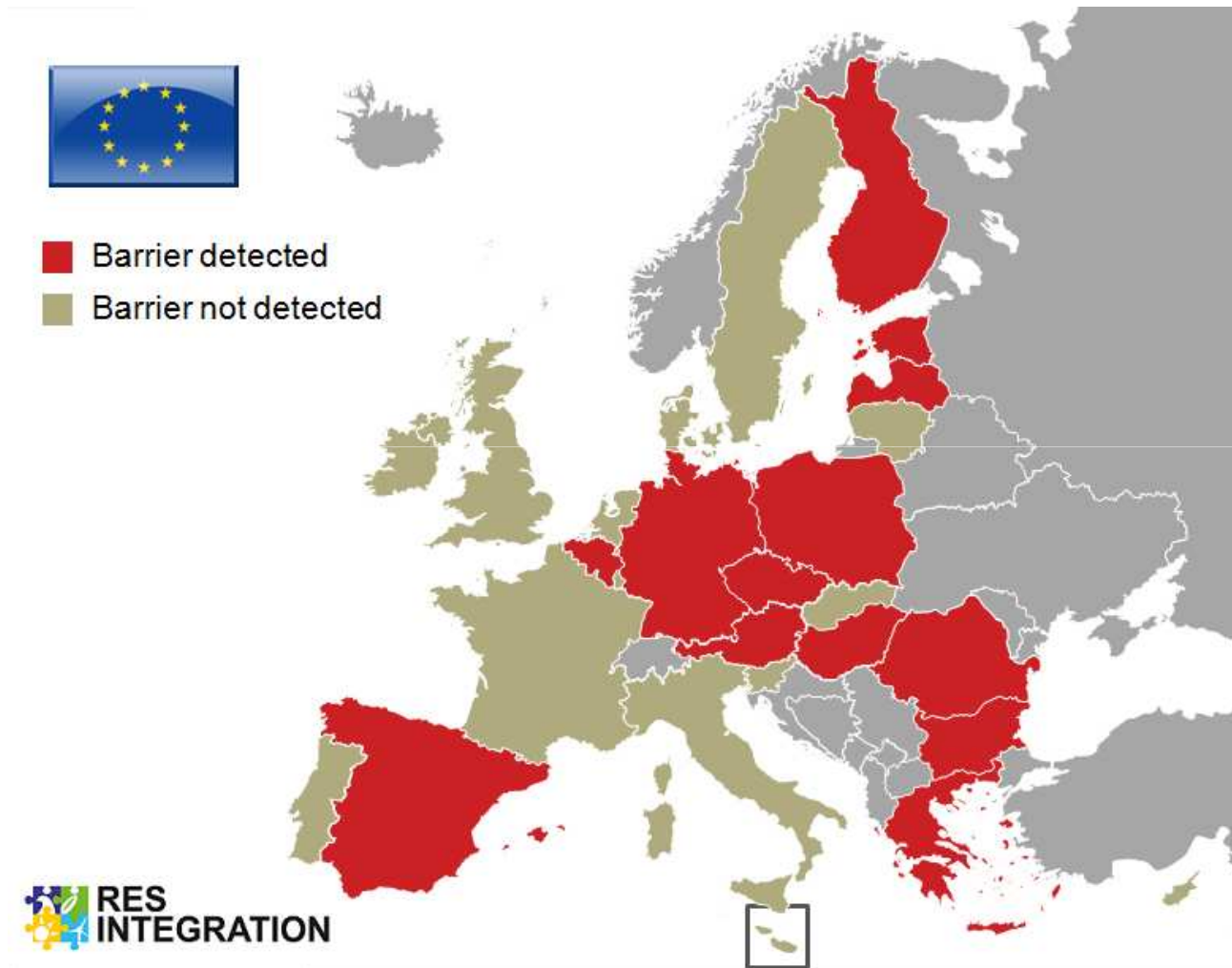
## Action at European level:



## Action at European level:



## Lack of communication & conflicts & weak position of plant operators



- Communication problems and other general conflicts between grid operators and plant operators
- Weak position of plant operators
- Lack of trust in judicial procedures

**Lack of communication, conflicts and weak position of plant operators**

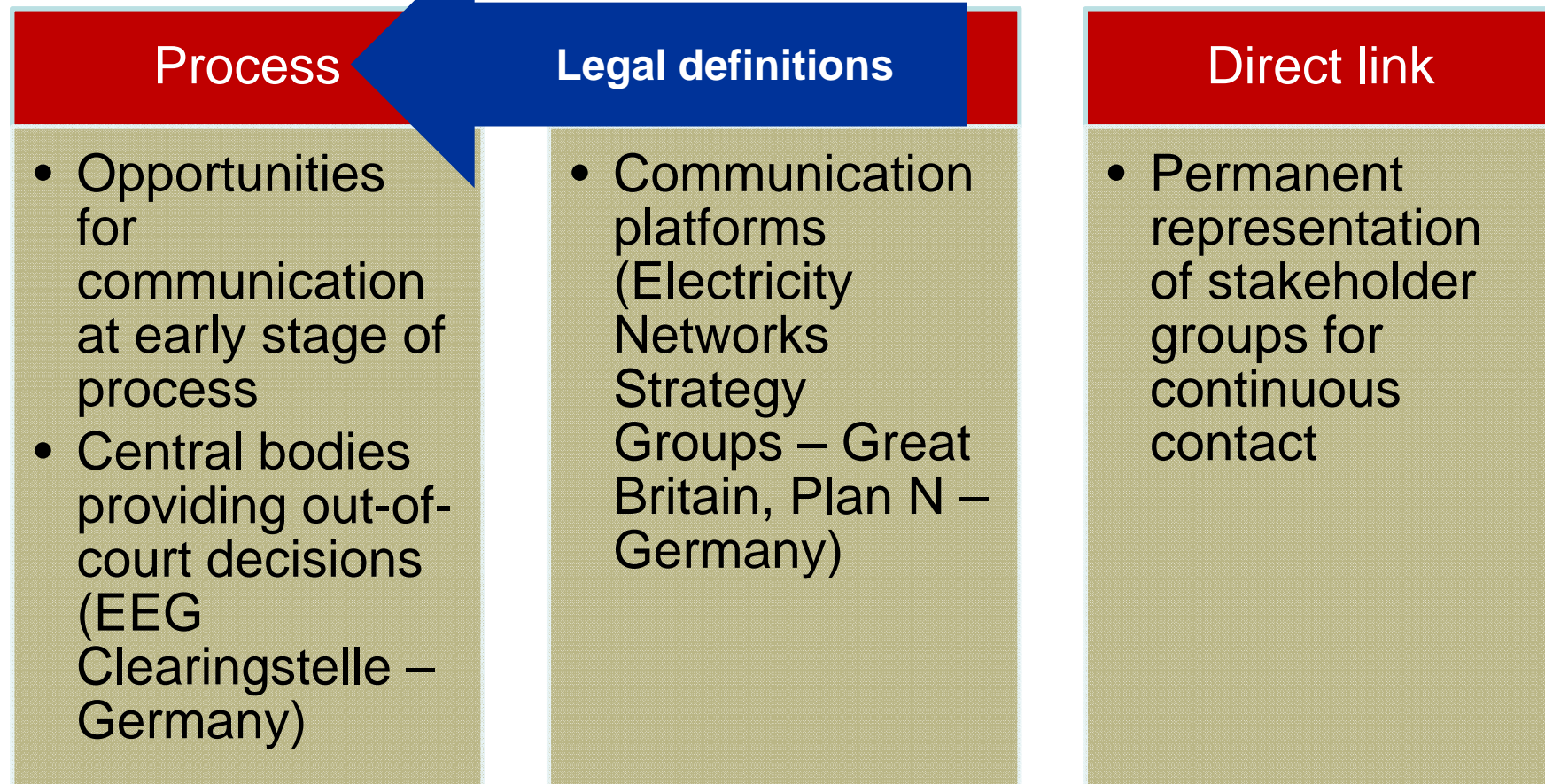


**Improve communication between stakeholders**

## Concrete Steps:

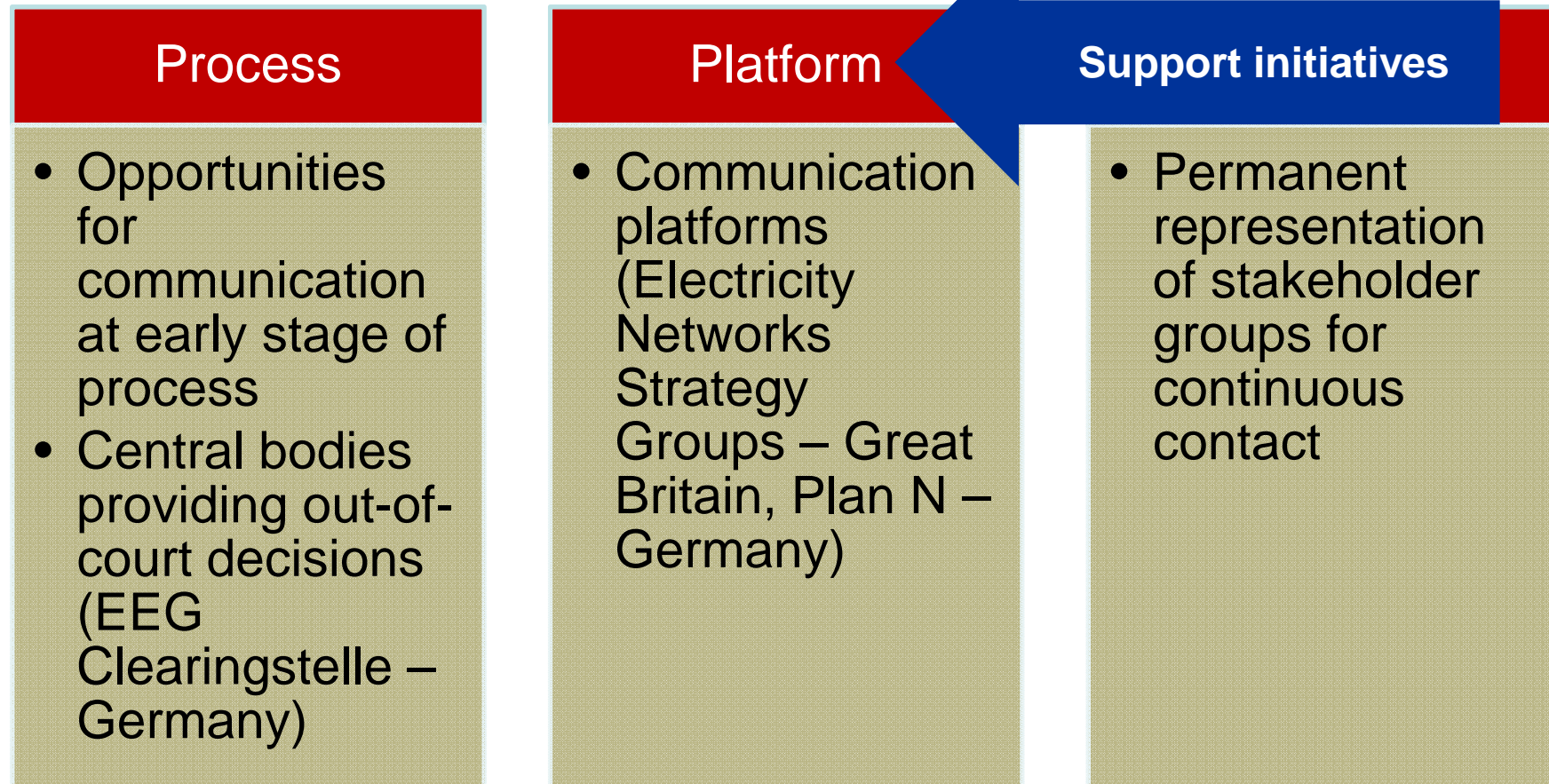
Process	Platform	Direct link
<ul style="list-style-type: none"><li>• Opportunities for communication at early stage of process</li><li>• Central bodies providing out-of-court decisions (EEG Clearingstelle – Germany)</li></ul>	<ul style="list-style-type: none"><li>• Communication platforms (Electricity Networks Strategy Groups – Great Britain, Plan N – Germany)</li></ul>	<ul style="list-style-type: none"><li>• Permanent representation of stakeholder groups for continuous contact</li></ul>

## Action at European level:



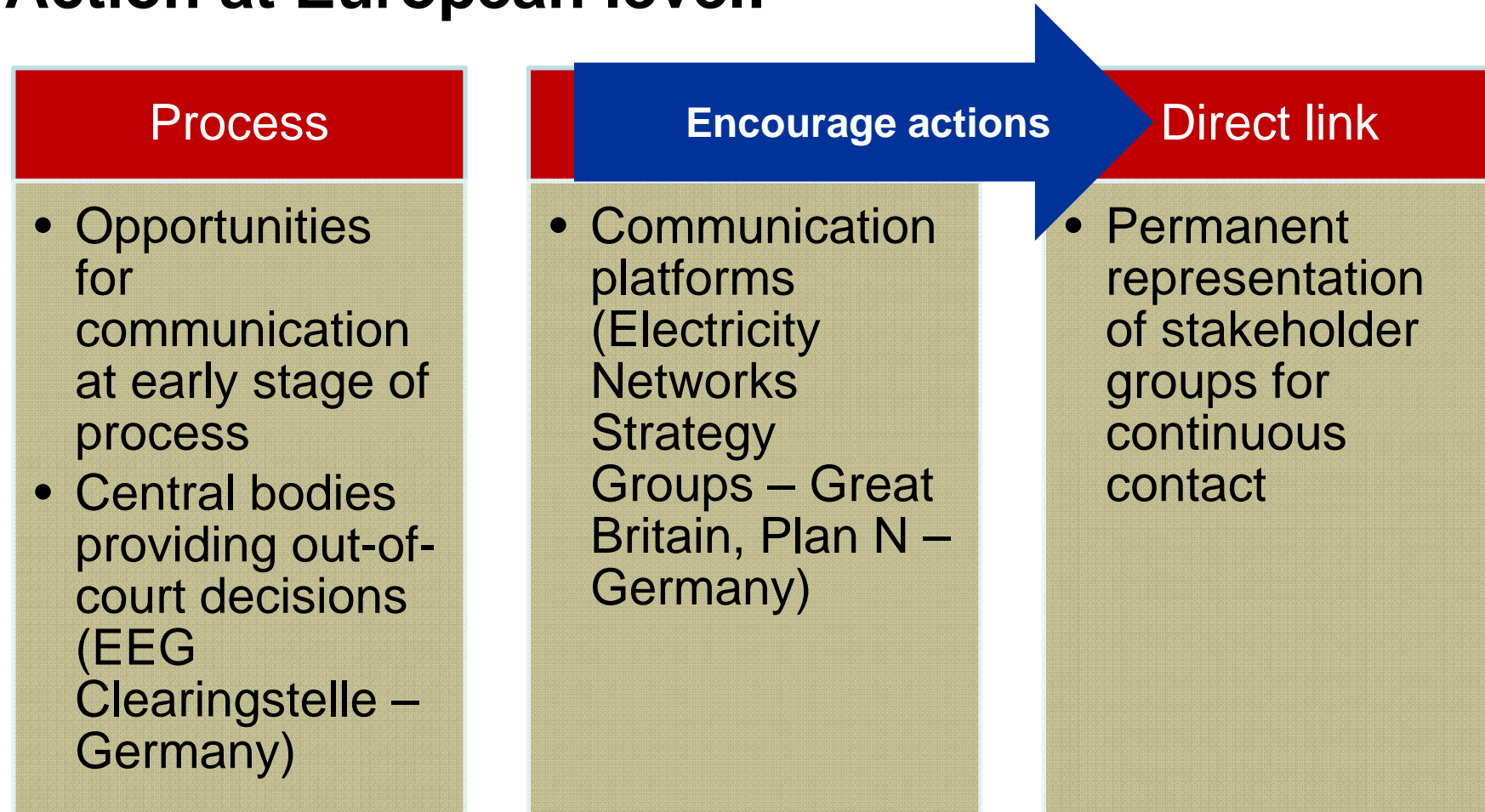


## Action at European level:





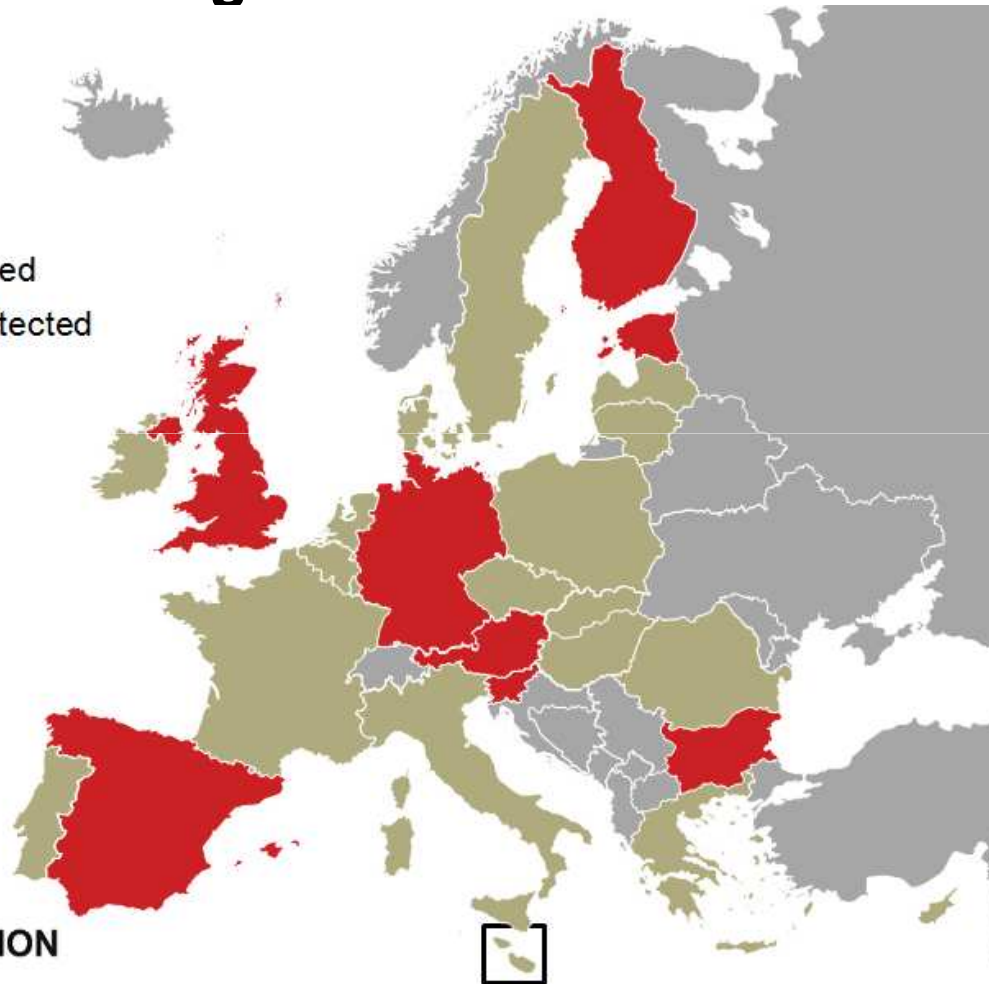
## Action at European level:



## Lack of incentives & regulatory instruments for the grid operator to integrate RES-E



- Barrier detected
- Barrier not detected



- Mismatch between incentive regulation that aims at cost reduction and network extension needed for RES-E development that leads to higher costs
- Particular problem at DSO level in case of DSOs in large and uninhabited areas

**Lack of incentives or regulatory instruments for grid development**



**Increase investment security for grid development**

## Concrete Steps:

### RES-E integration considered by regulation

- Provide priority premiums for projects supporting integration of RES-E
- Improve deadlines through carrot-for-less-and-stick-for-more-solution

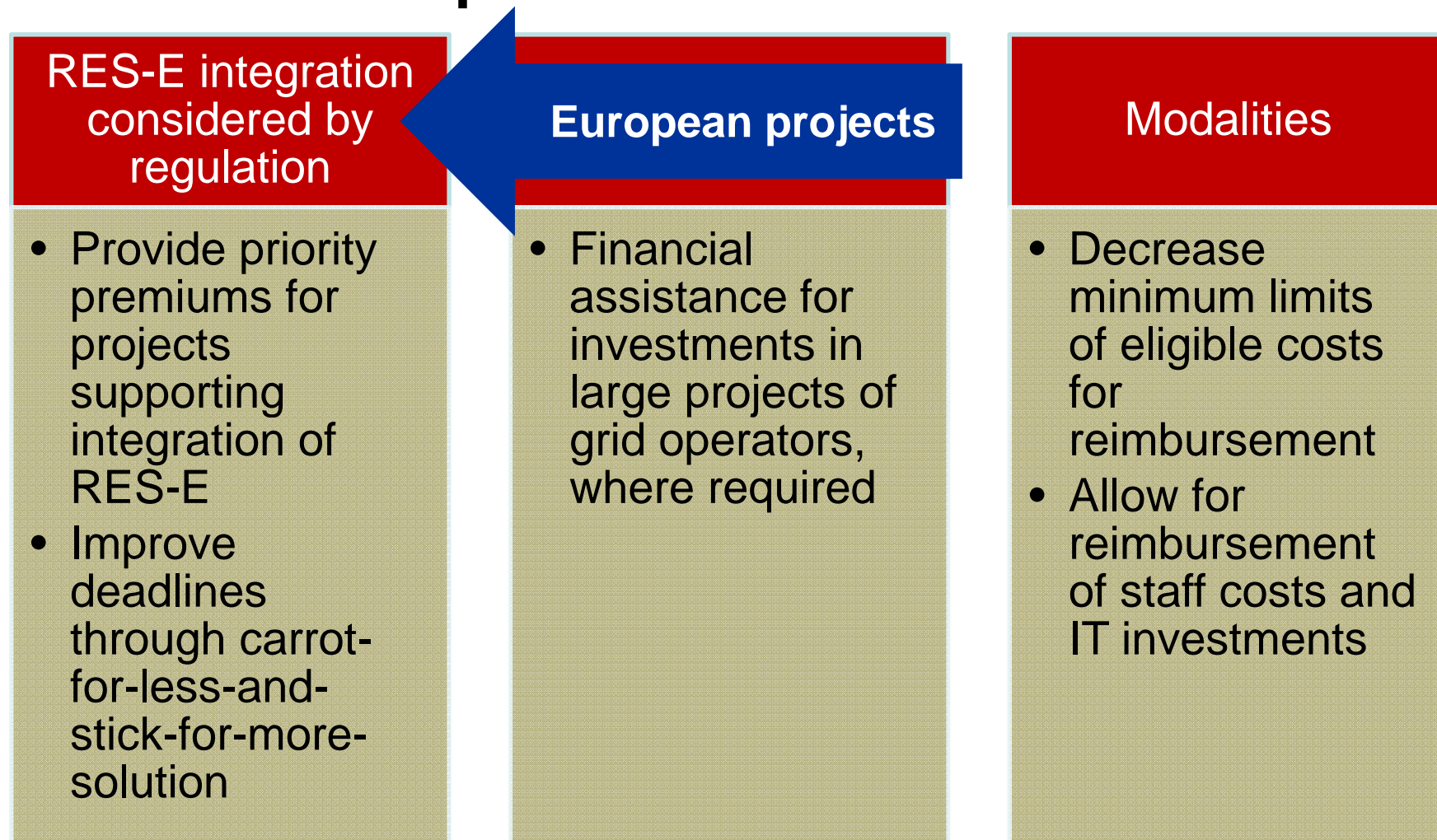
### Financing

- Financial assistance for investments in large projects of grid operators, where required

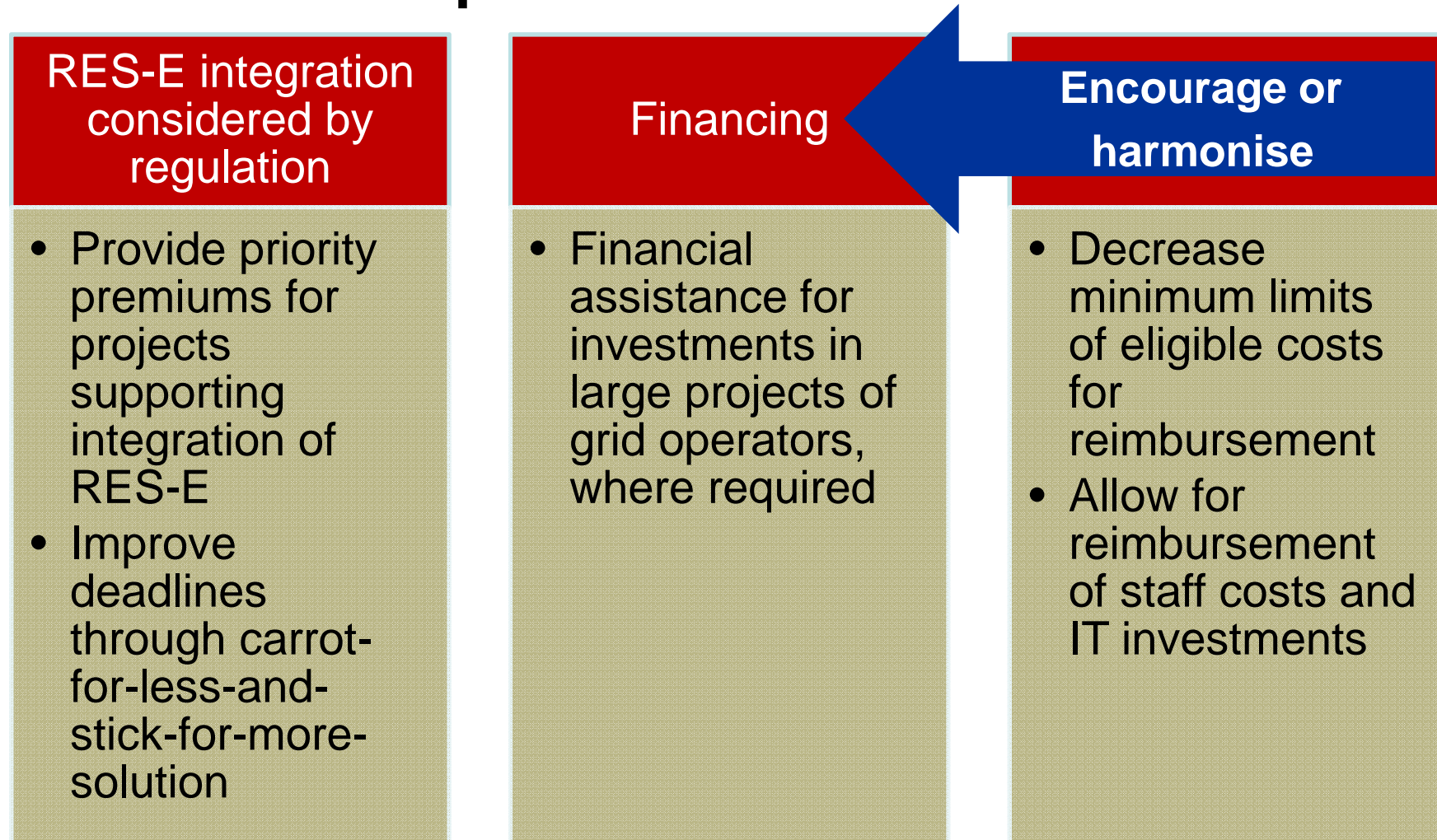
### Modalities

- Decrease minimum limits of eligible costs for reimbursement
- Allow for reimbursement of staff costs and IT investments

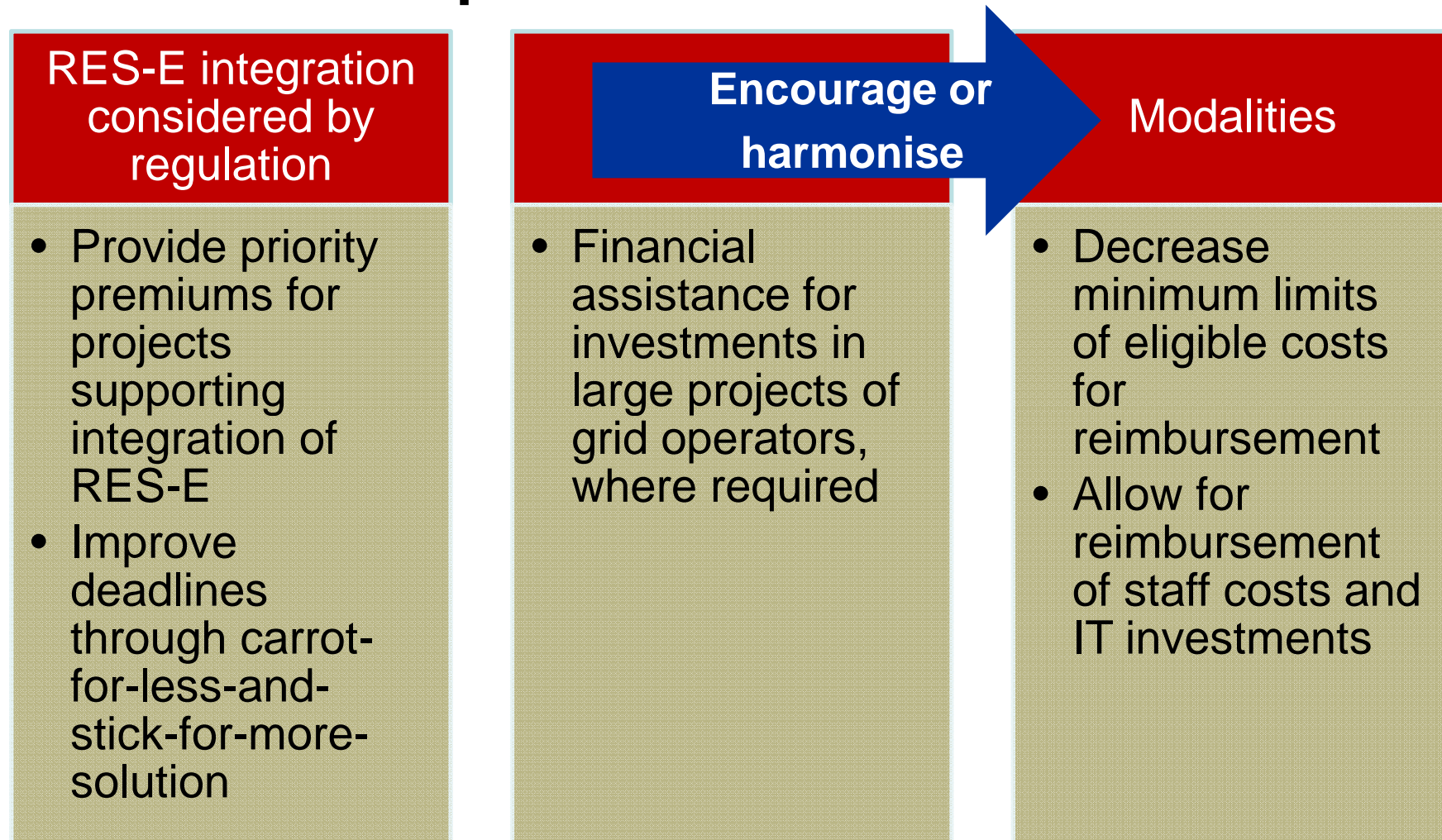
## Actions at European level:



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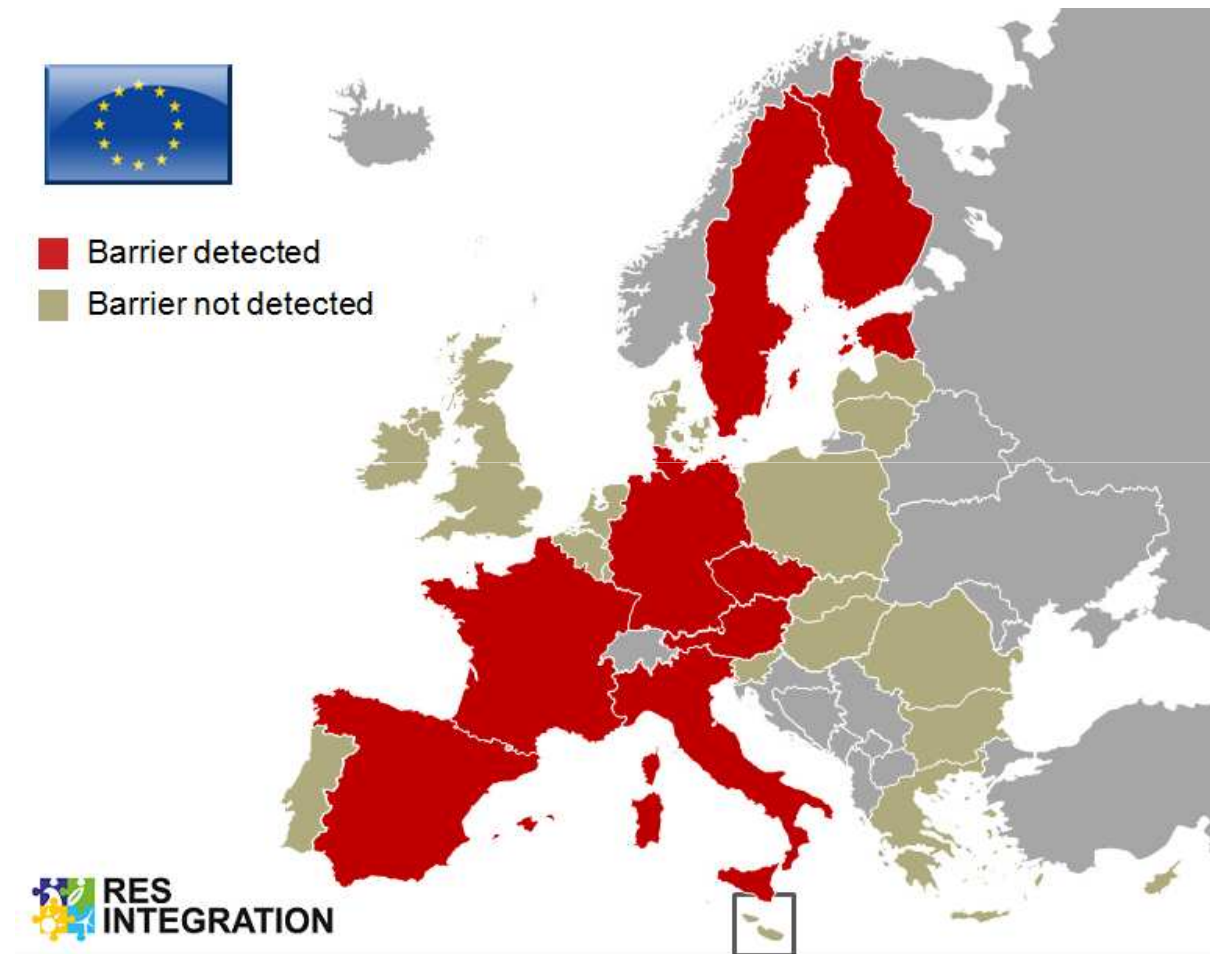


## Actions at European level:





## Long lead times / inefficient procedures – development phase



- Time the plant operator needs to wait before connection to the grid and feeding of electricity in the grid
- Strongest category assessed throughout the EU 27 Member States



**Long lead times and complex procedures**



**Increase efficiency of grid development process**

## Concrete Steps:

### Analysis

- Identification of existing inefficiencies

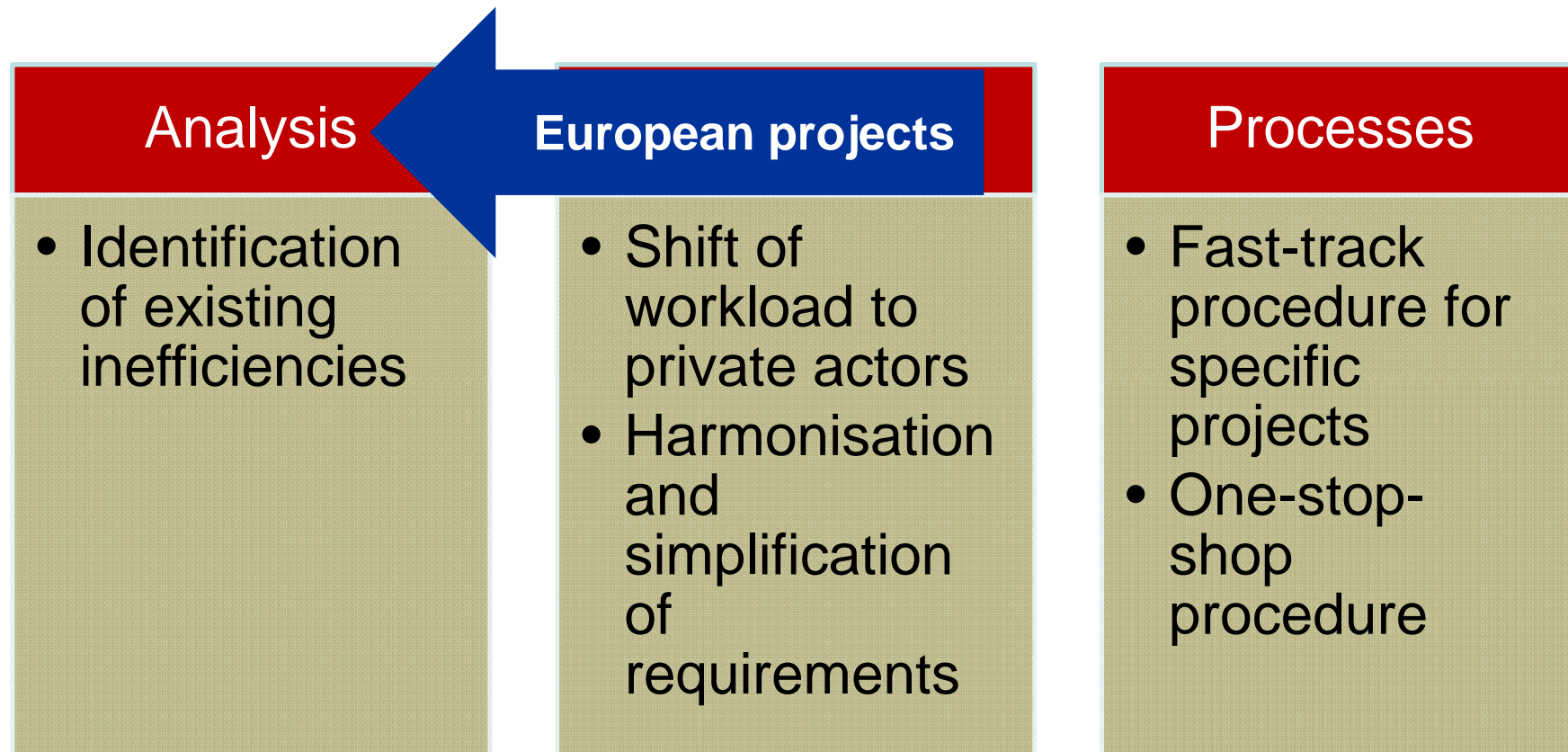
### Organisation

- Shift of workload to private actors
- Harmonisation and simplification of requirements

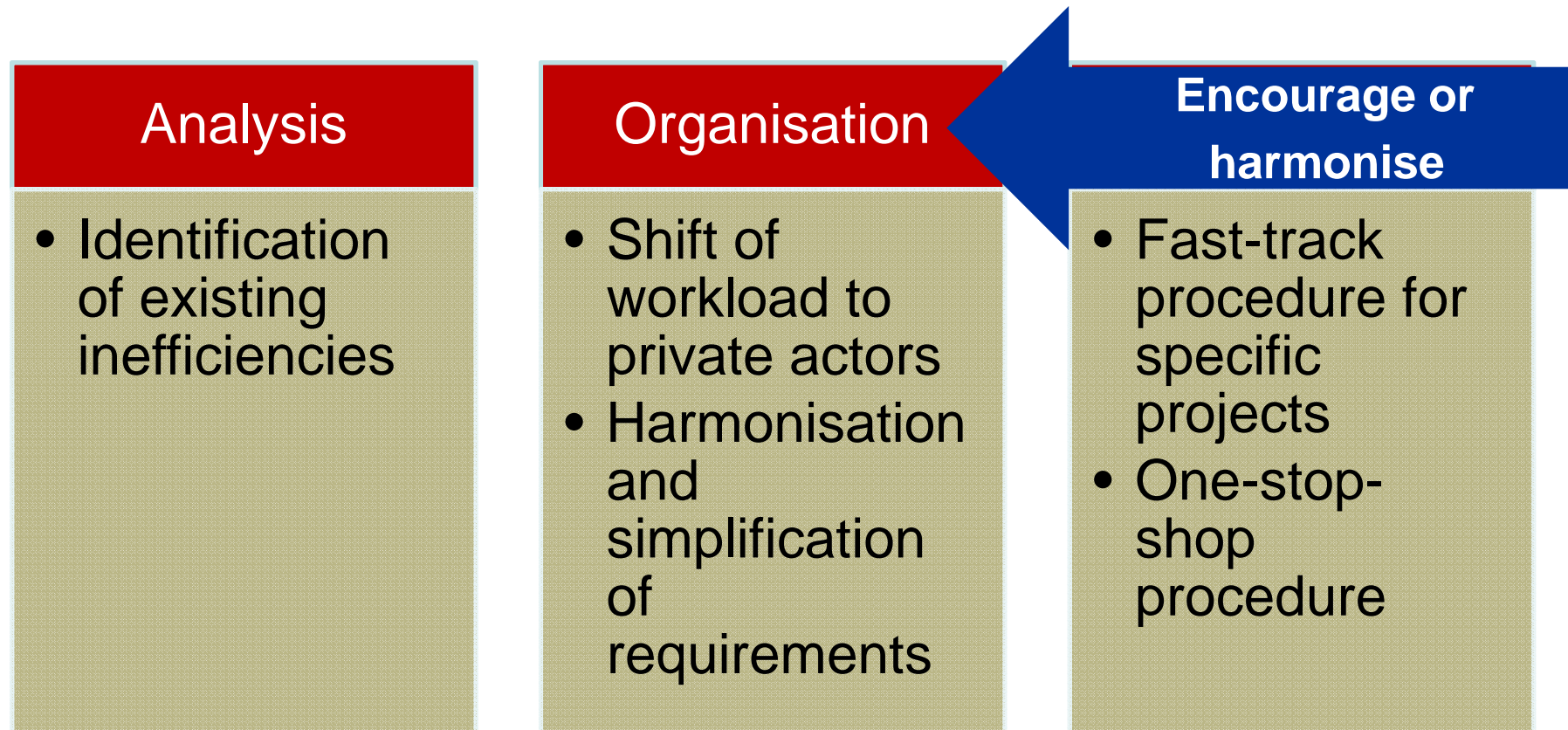
### Processes

- Fast-track procedure for specific projects
- One-stop-shop procedure

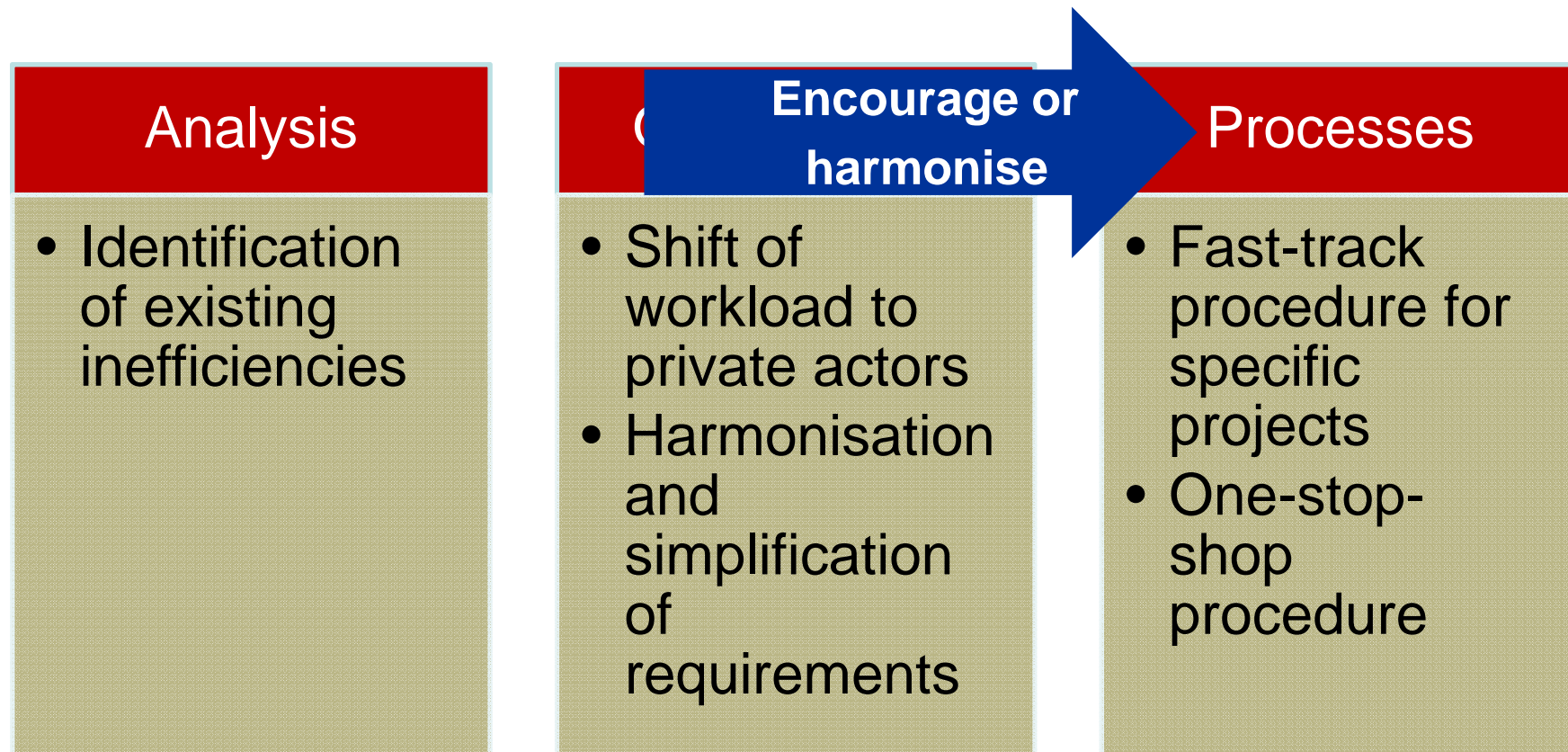
## Action at European level:



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## Action at European level:



## Considerations on NREAP assessment

### MS were not aware of barriers

- Enhance information flow in MS
  - monitoring mechanism
  - collection of interviews
  - „suggestion box“

### MS had no interest in sharing barrier

- Convince MS that it is them who mainly benefit from the NREAP process
- Provide the Commission with sufficient information to base its findings on own sources

### Categories of NREAP template not suitable

- Widen the scope of the NREAP template and supplement it by open questions

## Summary of main findings

- **Grid connection as very critical phase for integration**
- **Very strong link between connection and development phase**
- **Grid operation presently no serious issue, but potentially in the future**
- **Grid development suffers quite strong lack of regulatory instruments**
- **NREAPs mainly do not address the barriers identified in this study**



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Policy Consulting

Strategy Consulting

Financial Advisory

Market Intelligence