



## Cooperation mechanisms

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# COOPERATION MECHANISMS

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IEE Project Res4less [www.res4less.eu](http://www.res4less.eu)

## COOPERATION MECHANISMS

- Types of cooperation
- Benefits of cooperation
- Barriers for cooperation
- Cooperation mechanisms analysed in case studies for off-shore wind, biomass and solar power generation

## TYPES OF COOPERATION MECHANISMS

- Statistical Transfers
- Joint Projects
- Joint Support Scheme
  
- Regulatory requirements/changes increase from statistical transfers to joint support scheme

## TYPES OF COOPERATION MECHANISMS IN OUR ANALYSIS

- Statistical Transfers
- Joint Projects
- Joint Support Schemes
- Regulatory requirements could still involve transfers under joints projects and joint support schemes

## COOPERATION BENEFITS

- Increased competition in RES supply and thereby:
- Cost reduction in meeting RES target
- Cost reduction in meeting CO2 obligations – not additional reductions
- More efficient electricity production – additional RES located where the electricity has the highest value (capacity needed)
- Located where RES integration costs are the lowest
- Harmonisation initiated and tested on small scale without abandoning existing regulation and support scheme
- Possible risk reduction in national RES target compliance and support costs

## OBJECTIVES

- Identify barriers that must be removed to use specific cooperation mechanisms and which mechanisms has the least barriers in different situations
- Identify the coordination mechanisms that can be employed to support the inclusion of excess RES potentials and reduce the target compliance costs in the short run
- Examine for the three technologies wind, biomass and solar *how* the potentials can be exploited with the identified cooperation mechanisms

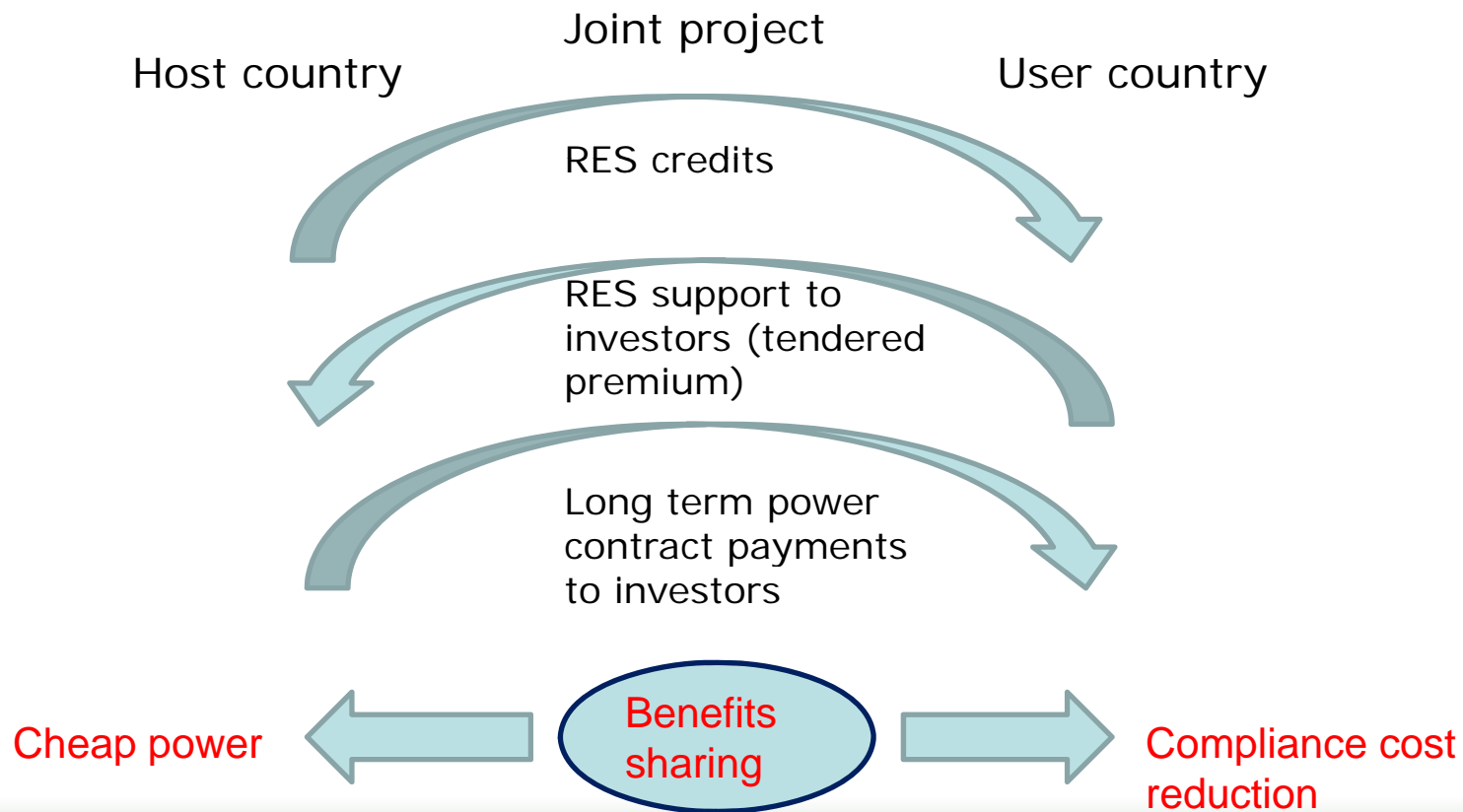
## Barriers and critical factors for cooperation success

- Legislation for renewables/support
- Level of support and type of support scheme
- Market organisation differences – power market price levels
- Corporate tax rates and tax credits
- Sharing benefits/compensation rules
- Impact on other domestic conditions/disincentives to invest in non-covered regions/technologies
- Secondary benefits – employment/business activity concerns (if investment elsewhere how can these concerns be included?)
- Do the technologies behave differently with respect to barriers?



# Compensation and RES credits principles

## Host and donor country full transfer



## COOPERATION COST ISSUES

- Cost sharing in terms of financial support to investors
- Cost increase (support level) in some area/country
- Cost of connections and network reinforcement
- Integration costs of renewable variable generation technologies
- Competition between domestic support area and the cooperation area/project

## Timing of contracts under cooperation mechanisms and risk sharing for both countries and investors

A critical difference between cooperation mechanisms is the timing of contractual arrangements for investments and the RES target

Investments with a long lifetime and considerable uncertainties do not match RES targets for a single year, namely 2020

The RES credits beyond 2020 have a certain value as do the value of the generated electricity and avoided CO<sub>2</sub> emission beyond 2020

### **Swapping of RES credits in time:**

We will address how joint projects might incorporate flows of RES credits that varies in time

For example: a joint project might transfer the RES credits to a donor country in 2020 against full support from that country up to 2020. Beyond the 2020 target the credits generated will be shared 50/50 between countries as will the support costs

## BROAD OR NARROW DEFINITION OF JOINT SUPPORT SCHEMES

- Moving to a common support system for at least two countries
- Identified as the most demanding in terms of changing RES legislation, network regulation and grid codes
- With the highest potential for cost reductions
- An alternative less complicated option can be found in the introduction of a joint support system for a segment of the RES market; for example a technology or specific border area
- Retaining the national support systems and all other sector regulation is possible in combination with introducing support systems
- As a majority of the expected excess RES potentials available in some countries are technology specific the joint support schemes could be designed to cover just one technology in both countries

## Case studies – technology focused

- Wind – we expect to focus on off-shore wind in the North sea
- Biomass – with focus on central/eastern Europe
- Solar – with focus on Southern Europe

## Case studies content

### **Off-shore Wind:** intended setup

Examine a case with 5 GW new installed capacity in north sea area including a shared siting in at least two markets/support areas Denmark, UK, Germany, Netherlands

Analyse the setup of a common tendering scheme in this area: Exclude the area from national support scheme and use a new common tendering:

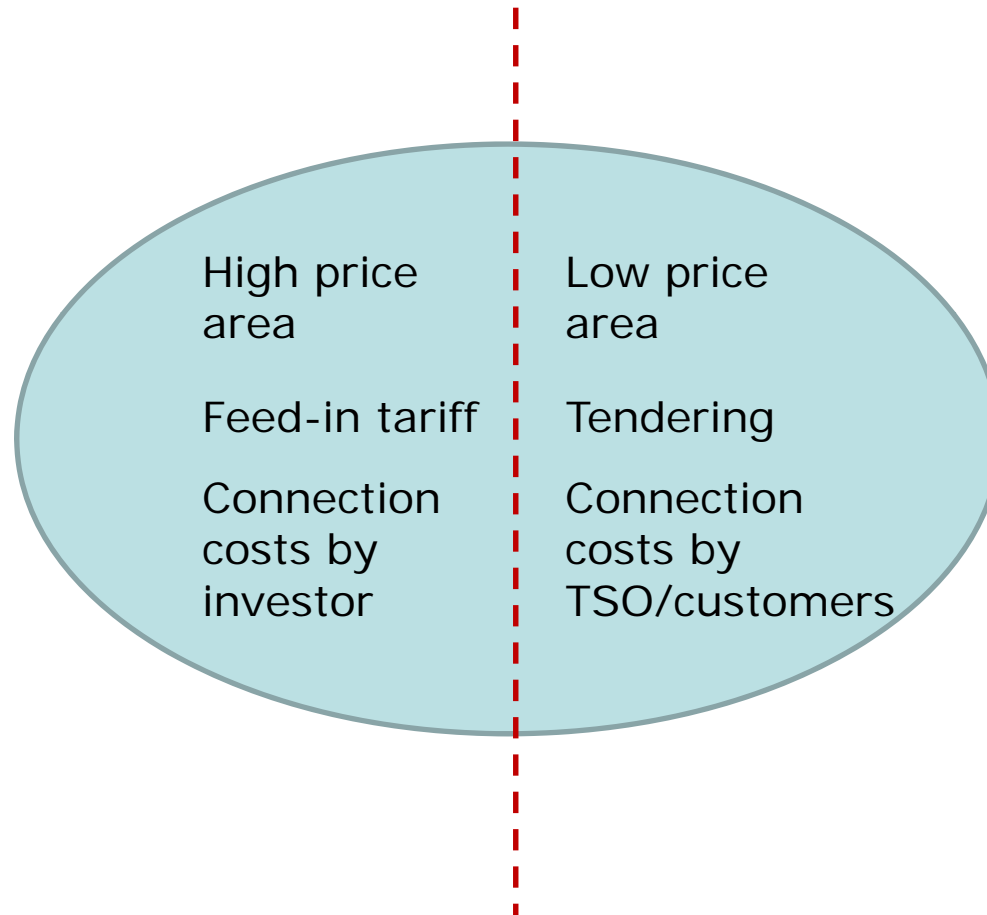
Address the issues/barriers related to different connection rules, tax, and the cost sharing especially in relation to connection costs and benefits

Address the direct effect on:

- national markets
- generator revenue
- costs

## Case studies Wind

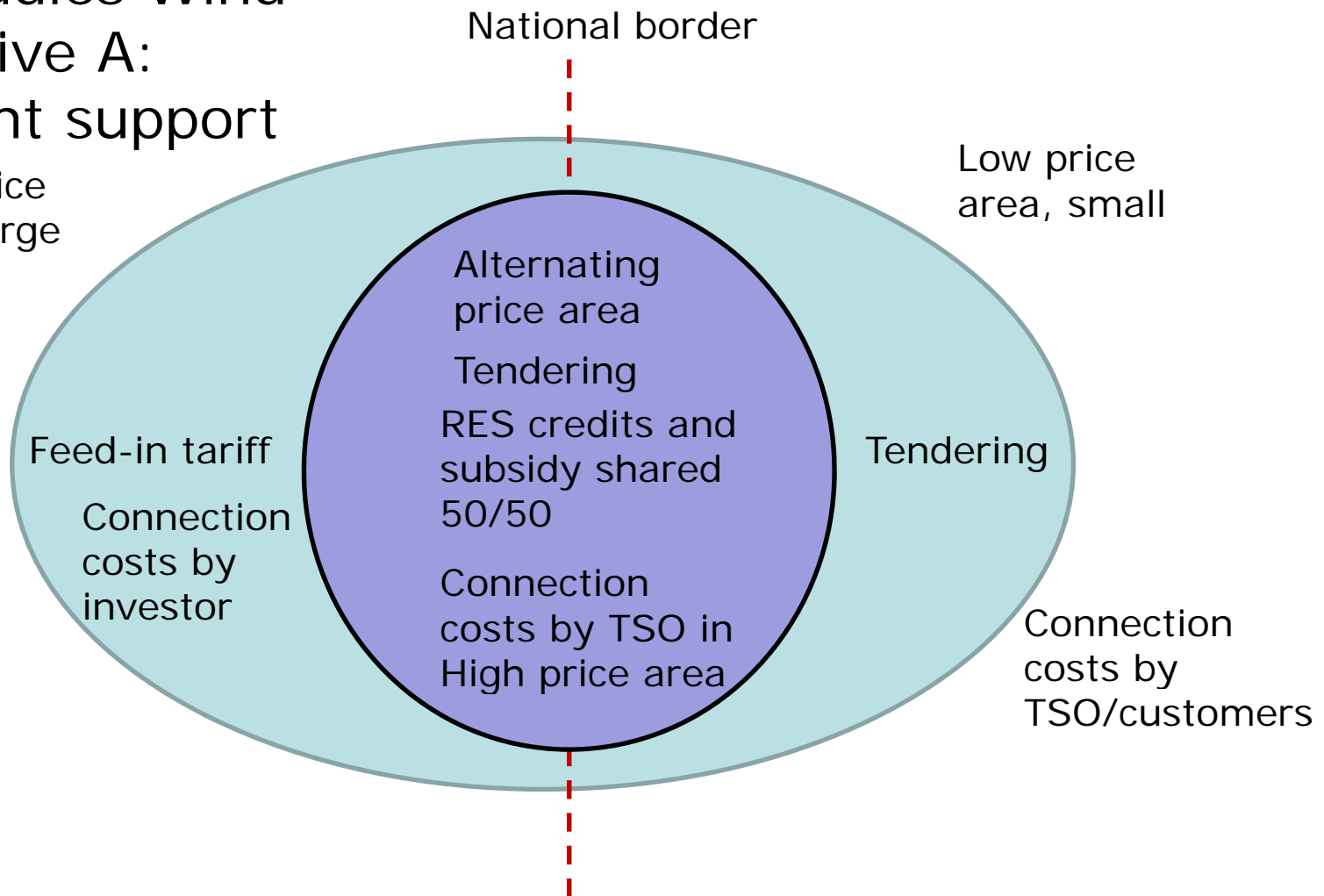
National border



# Case studies Wind Alternative A: local joint support

High price  
area, large

Low price  
area, small





## Discussion issues

- Contribution from participants are most welcome
- Power markets: benefits and costs in cooperation
- Benefits for host country?
- Market aspects – power market prices – where?
- Case studies – how much focus on pre 2020 relative to 2020-2030?
- Which types of coordination mechanisms most relevant for case studies on biomass and solar?

**Thank you!**

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