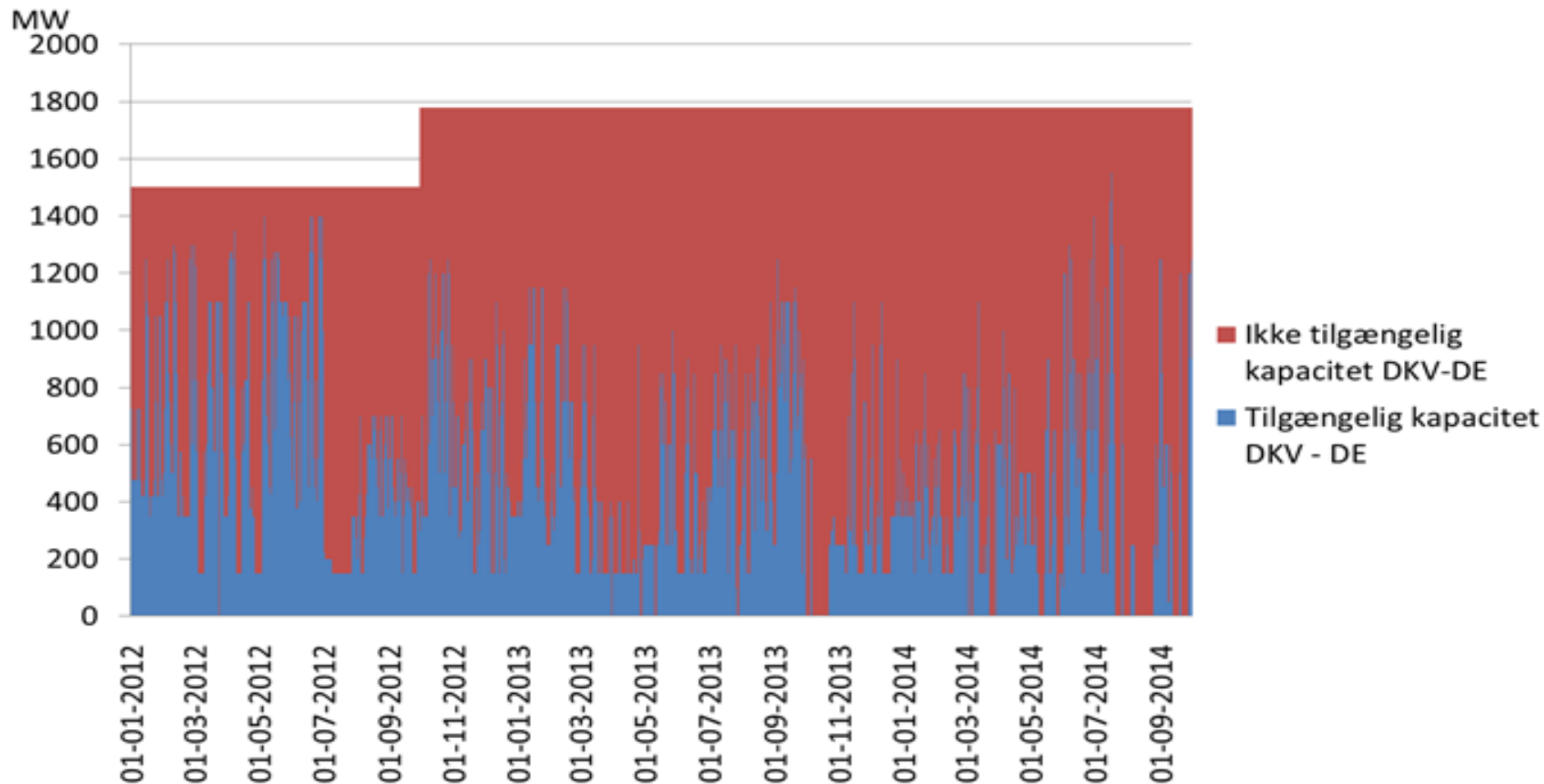


Investigation of welfare effects
of increasing cross-border
capacities on the DK1-DE
interconnector
RWTHAachen University



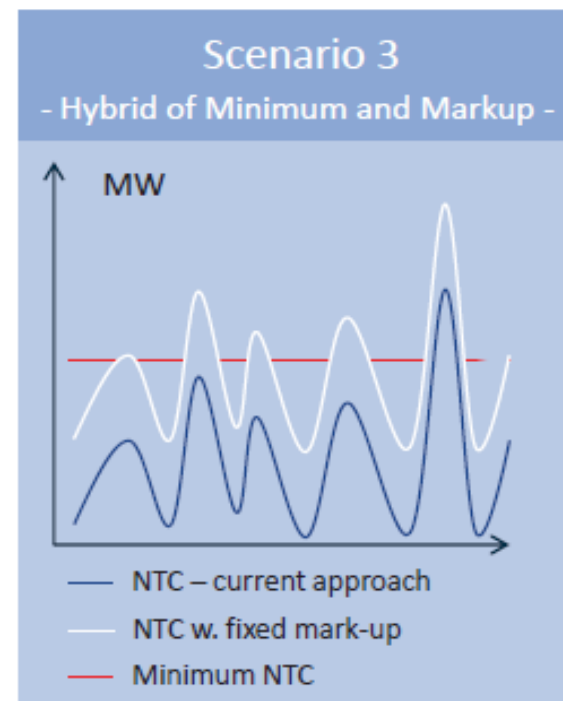
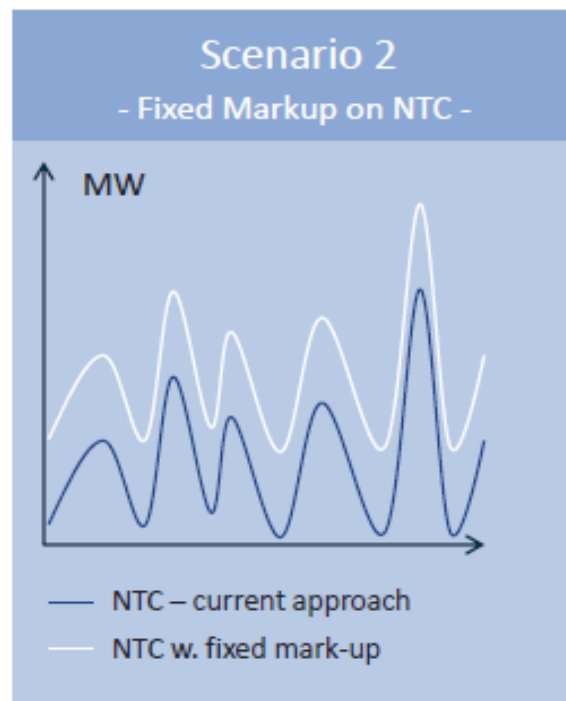
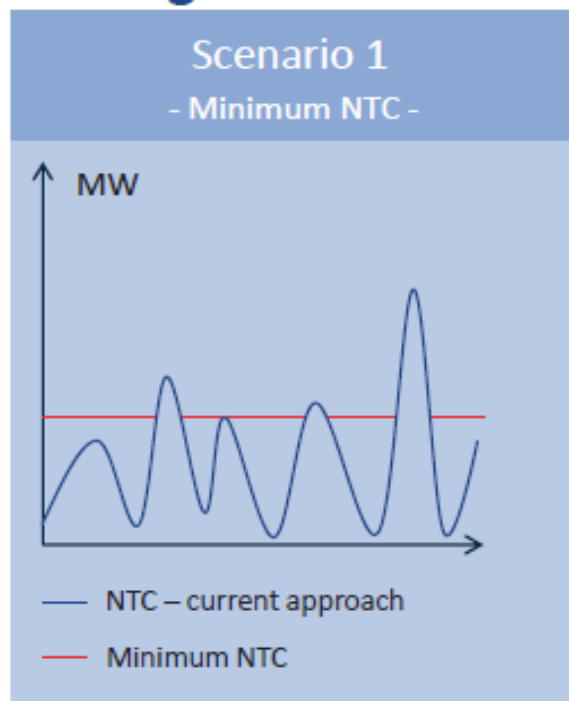
Varför? – Därför!

DKVest til Tyskland jan 2012 til sep 2014



Kilde: Energinet.dk

Investigation NTC Scenarios



○ minimum NTC of

- ◆ 600 MW
- ◆ 800 MW
- ◆ 1000 MW

○ fixed markup of

- ◆ 200 MW
- ◆ 400 MW
- ◆ 600 MW

○ fixed markup of 200
and minimum NTC of

- ◆ 600 MW
- ◆ 800 MW

Assumptions and Focus Area

Assumptions

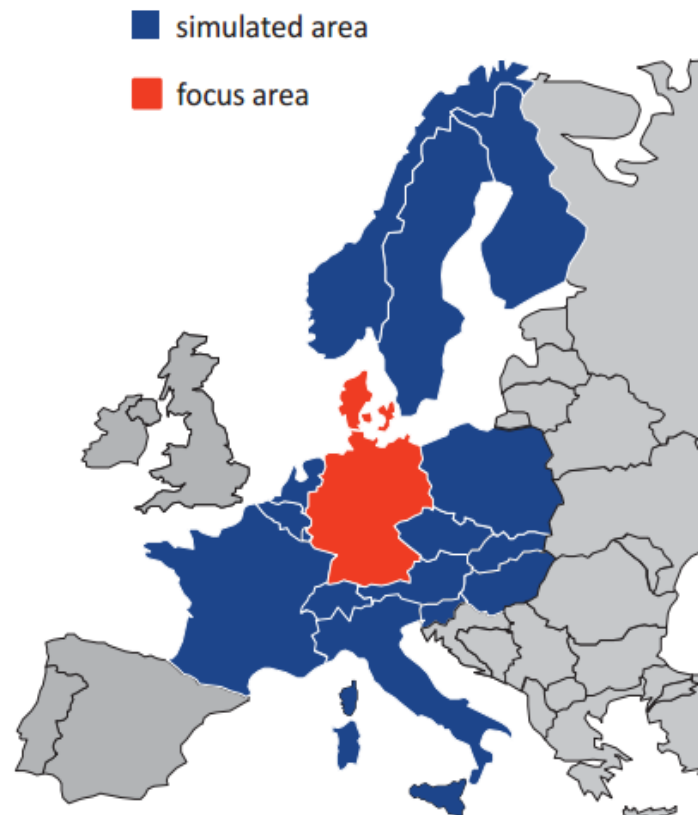
- market design
 - ◆ no congestion constraints inside of market areas
 - ◆ cross-border flows limited by net transfer capacities (NTC)

Focus

- focus area: Germany and Denmark
- DK1-DE interconnector

Transfer Capacities

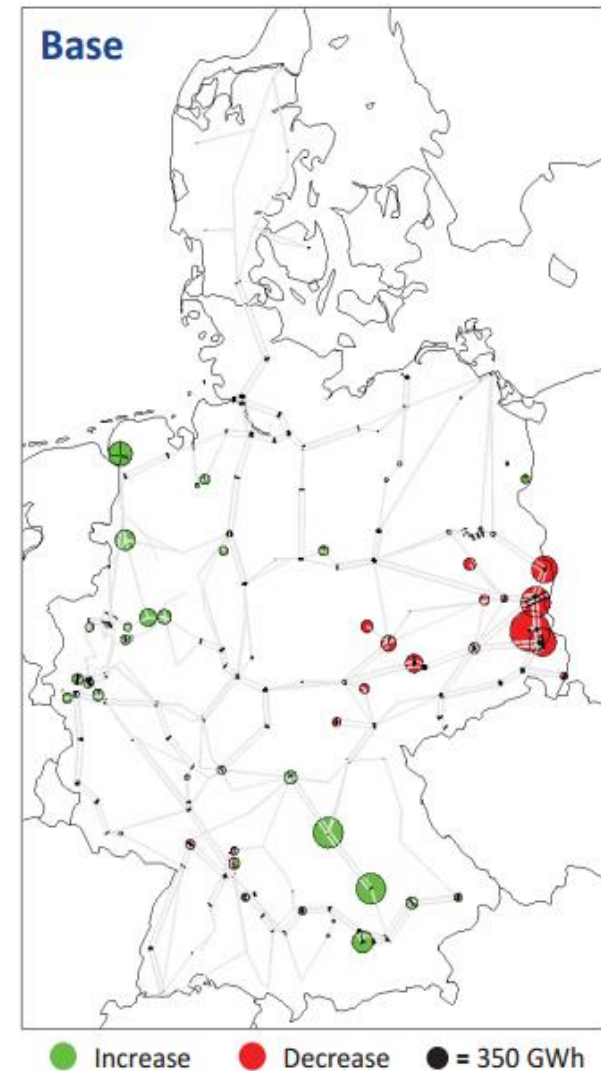
- historical NTCs by ENTSO-E/TSOs
- hourly NTC for Danish borders by energinet.dk/TenneT



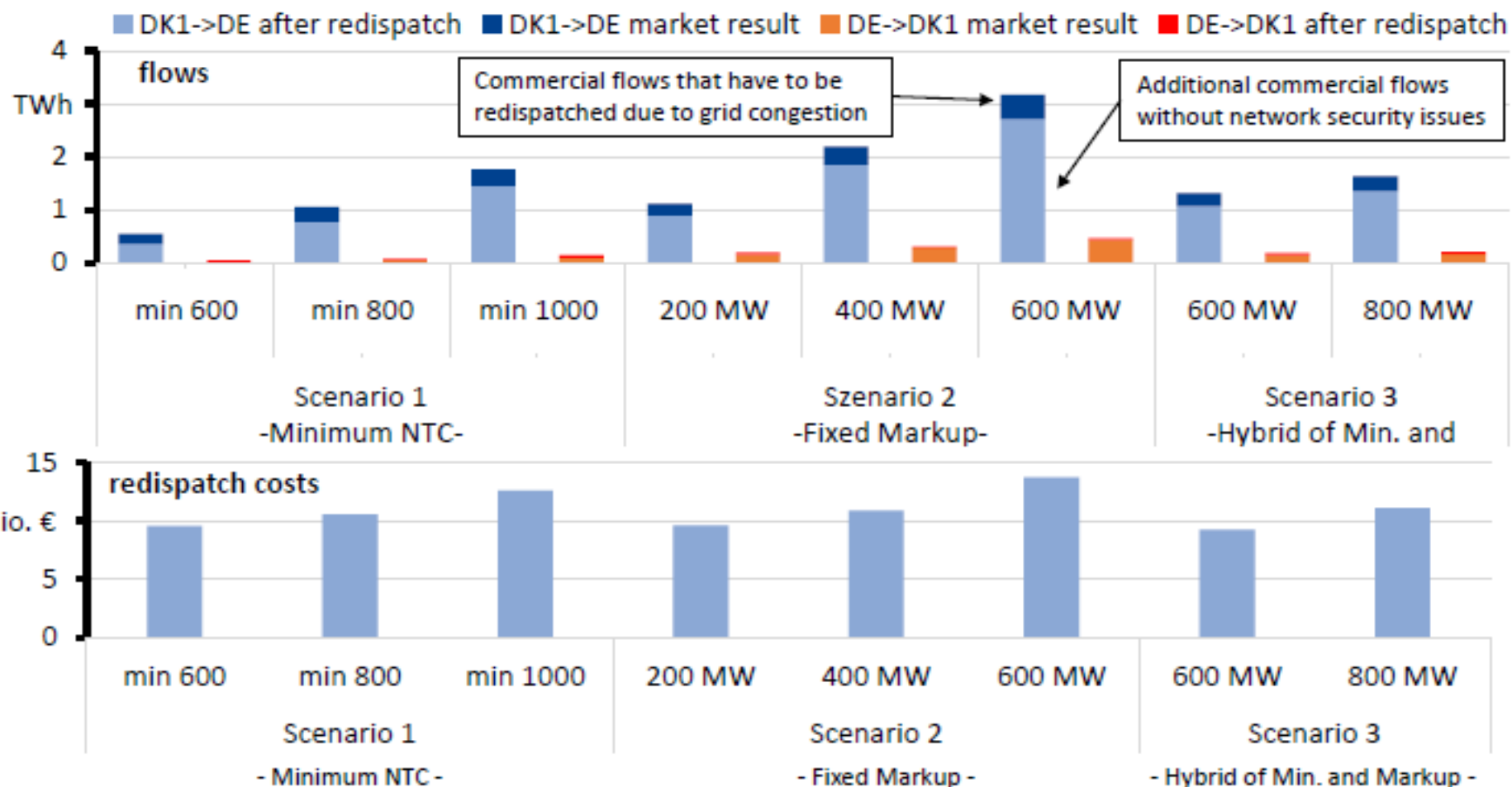
Redispatch Results

Base 2012

- mainly redispatch of lignite power plants in control zone of 50Hertz
- all overloading of Danish 380 kV lines less than 120%
- interconnector DK1-DE is not limiting the physical power flow
- total simulated values
 - ◆ redispatch volume of 4.14 TWh
 - ◆ redispatch costs of 183.1 Mio. €*
- ➔ realistic redispatch results for Base case simulation with only congestions within Germany

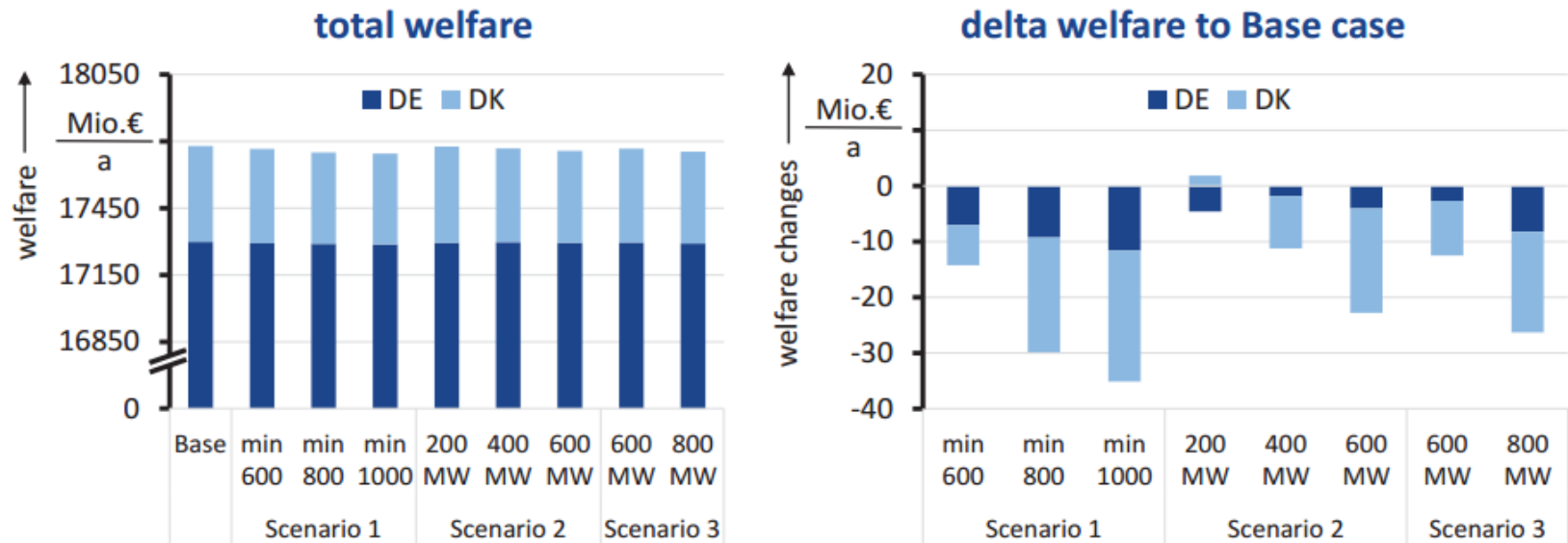


Exchanges and Redispatch Costs (Differences to Base Case)



➔ marketwise additional exchanges between DK1 and DE desirable, but cross-border redispatch results in significant increases in redispatch volumes and costs

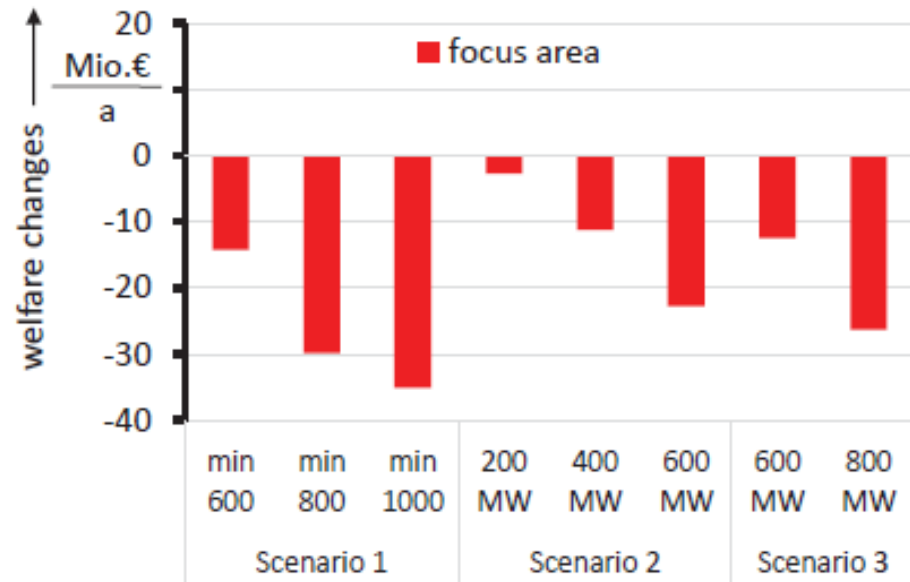
Effects on Combined Welfare in Germany and Denmark (I)



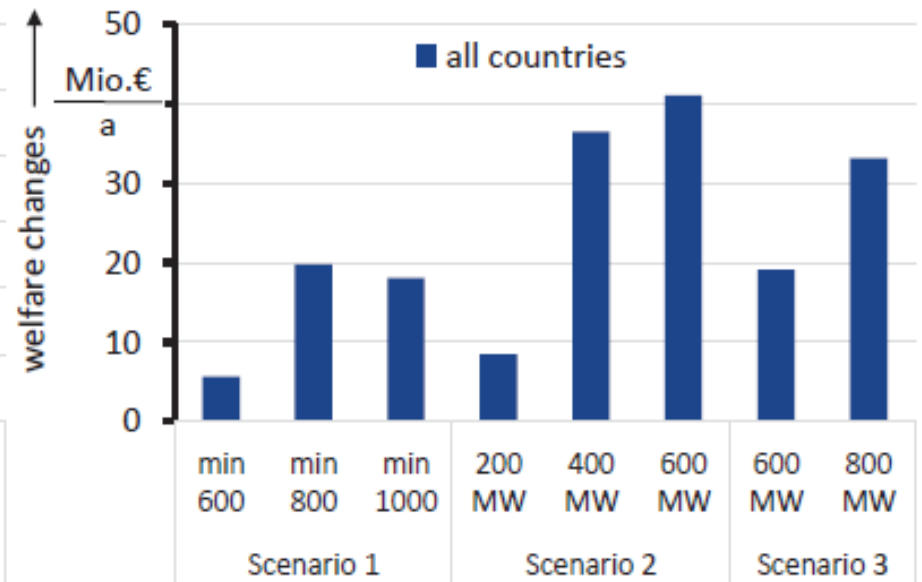
- decrease of welfare in both Germany and Denmark mostly due to lower German producer rent and higher redispatch costs
- ➔ resulting in a slight decrease of welfare in focus area, but might have
 - ◆ positive welfare effects in other countries (e.g. NO and SE)
 - ◆ not quantifiable positive effects on markets, e.g. increased liquidity

Comparison of Welfare Effects in Focus and Simulation Area

delta welfare to Base case



delta welfare to Base case



- overall welfare effects are negative in focus area and positive in all simulated countries
- size of effect highly depending on NTC variation scenario
- ➔ decreasing welfare in focus area is compensated by positive effects in other countries

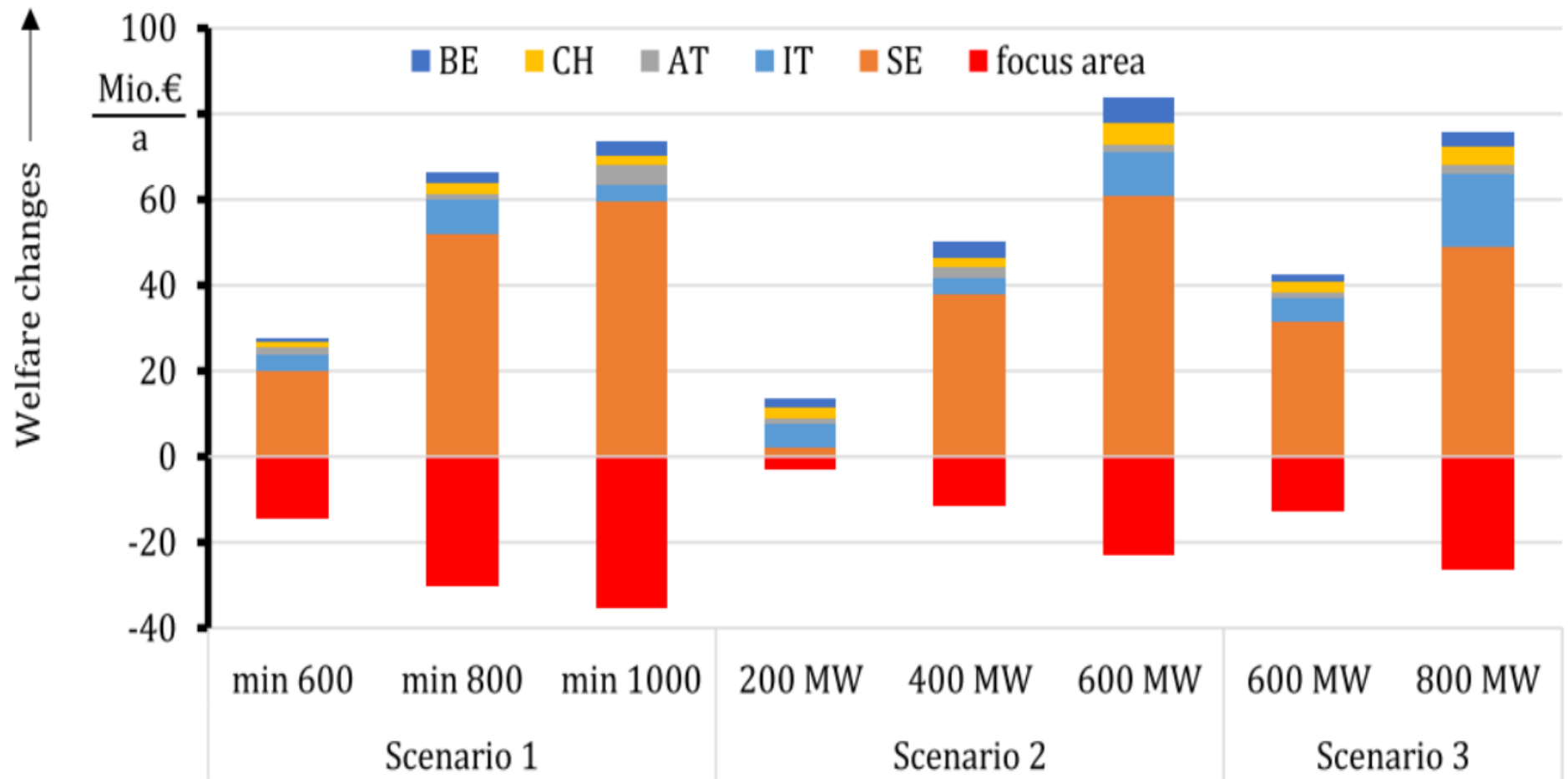


Figure 1: Welfare changes compared to Base case

SE brev till KOM, cc ACER

First of all it is important to note two things. The report makes it clear that “ [...]since all the overloadings are *located inside the German power grid* [...]” (p.41, our italics) TenneT is moving internal constraints to the border. And seemingly there are actions that if taken would alleviate this situation.

We further note that in the case SvK vs the commission [cf. http://ec.europa.eu/competition/antitrust/cases/index/by_nr_78.html#i39_351] the cost of counter trade did not enter as a major obstacle. The principle that congestion should be managed where it occurs is maintained in current European legislation, should be maintained across Europe and thus trade maximized where possible. Swedenergy strongly urge the involved parties to consider this simple


is Sweden through the “Hansa bridge”). The current and future congestion management has implications for the profitability of those projects and the decision of German authorities in this case should guide those decisions. An interconnector should only be built if it is planned to be used to full capacity.

Question for written answer
to the Commission

Rule 130

Morten Helveg Petersen (ALDE)

► Subject: Single energy market

 Answer(s)

The single energy market is one of the most efficient ways to strengthen the EU's energy security. Increasing the interconnectedness of the Member States will mean that the EU is less vulnerable to supply shocks. Furthermore, a single energy market will make it easier and cheaper to reach the targets for greenhouse gas emissions and renewable energy. For these reasons, the European Council decided to include a target for interconnections in the 2030 climate and energy framework.

However, there is still a long way to go to reach this goal of a single energy market. On the border between Denmark and Germany, the German Transmissions System Operator TenneT has switched off the link between the Danish and German energy grids in order to save a small redispatch cost.

1. Is the Commission of the opinion that such cases of shutting down the internal market are acceptable? If not, what is the Commission's response to this?
2. How will the Commission ensure that, in future, the self-interest of transmissions system operators does not stand in the way of the greater societal gains of a single energy market (the value of which is estimated by the Commission at between EUR 16 billion and EUR 40 billion per year)?

Answer given by Mr Arias Cañete on behalf of the Commission

The internal energy market is a cornerstone of EU energy policy, contributing to security and affordability of energy supplies and increasing integration of environmentally sustainable energy sources. As confirmed in the communication on Progress towards completing the Internal Energy Market⁽¹⁾, this requires investments in modern infrastructure, in particular interconnectors, and a clear, commonly applied regulatory framework.

The Commission services are aware of the difficult network situation at the border between Denmark and Germany and agree that interconnector capacity should not be reduced without a valid justification. Accordingly, the Commission has intervened in previous cases where TSOs reduced transmission capacities in an unjustified manner⁽²⁾.

The Commission services are following the situation at the German-Danish border. A study commissioned by both transmission system operators has recently analysed measures to increase cross-border capacities (e.g. by using cross-border redispatch measures). According to the study, such measures would result in negative welfare effects in Western Denmark and Germany. Against this background, the transmission system operators TenneT and Energinet.dk have published on 27 November 2014 a joint statement establishing that cross-border capacities will be made available only in monthly and daily auctions (i.e. not in yearly auctions) until network infrastructure projects in Northern Germany have been realised. The Commission services are in contact with the transmission system operators and other stakeholders to analyse whether the proposed solution ensures optimal market integration and is compliant with EC law.

(1) COM(2014) 634 final.

(2) See e.g. the Commission's intervention in COMP/39.351 — Swedish Interconnectors, http://europa.eu/rapid/press-release_IP-10-425_en.htm?locale=en