

MARKET DESIGN OPTIONS FOR EUROPE

Session II: What market design for an efficient integration of renewables?

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The Winter Package 2016: Which Way Forward for
Renewables in Europe?

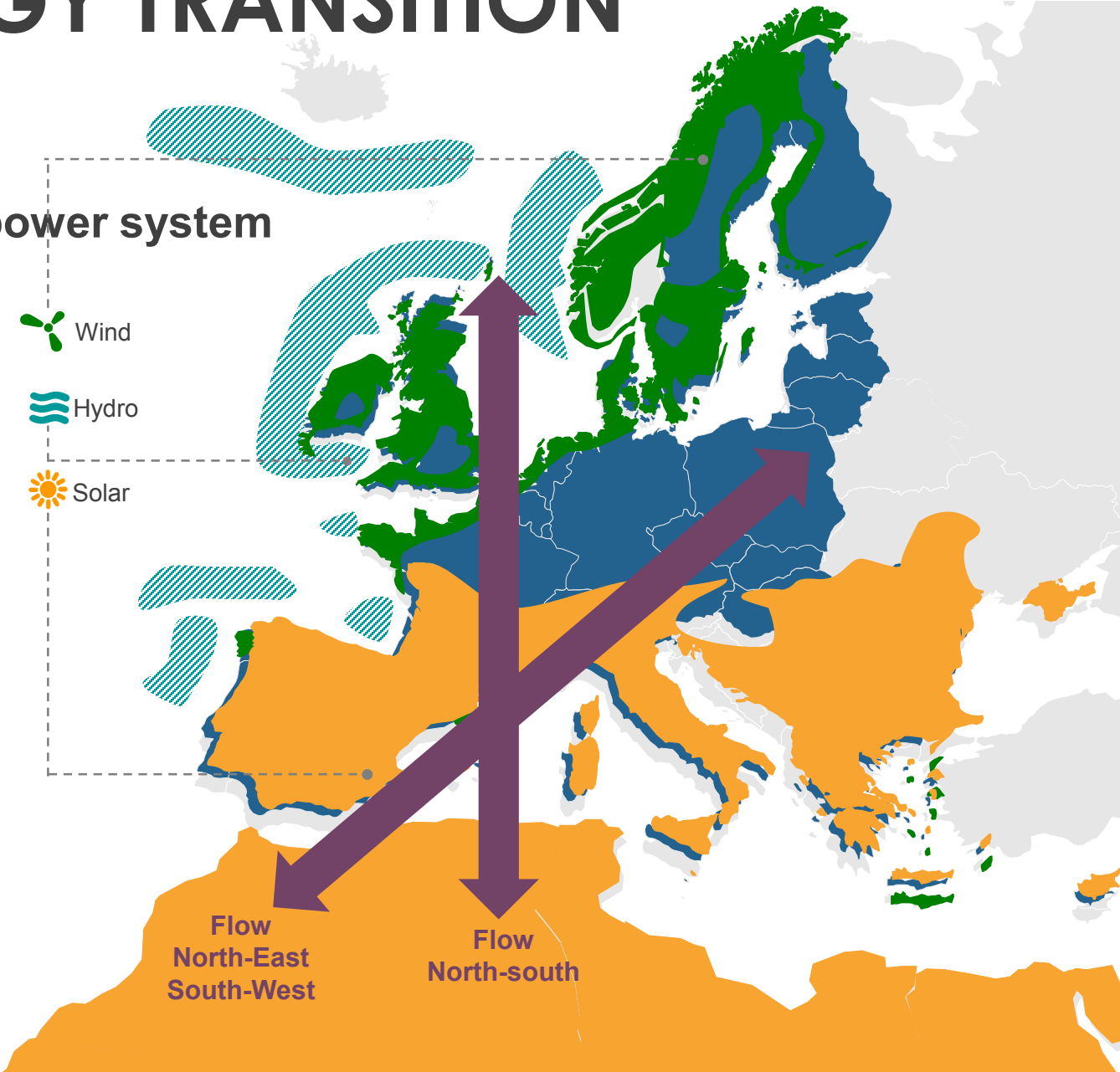
22 November 2016

DELIVERING THE ENERGY TRANSITION

27% renewables by 2030 = +/- 45% for the power system

NEW CHALLENGES

- System stability
- Resource variability
- New connections
- Changed power flows
- Integrating demand-side resources
- Empowering consumers & managing data
- Unlocking flexibility



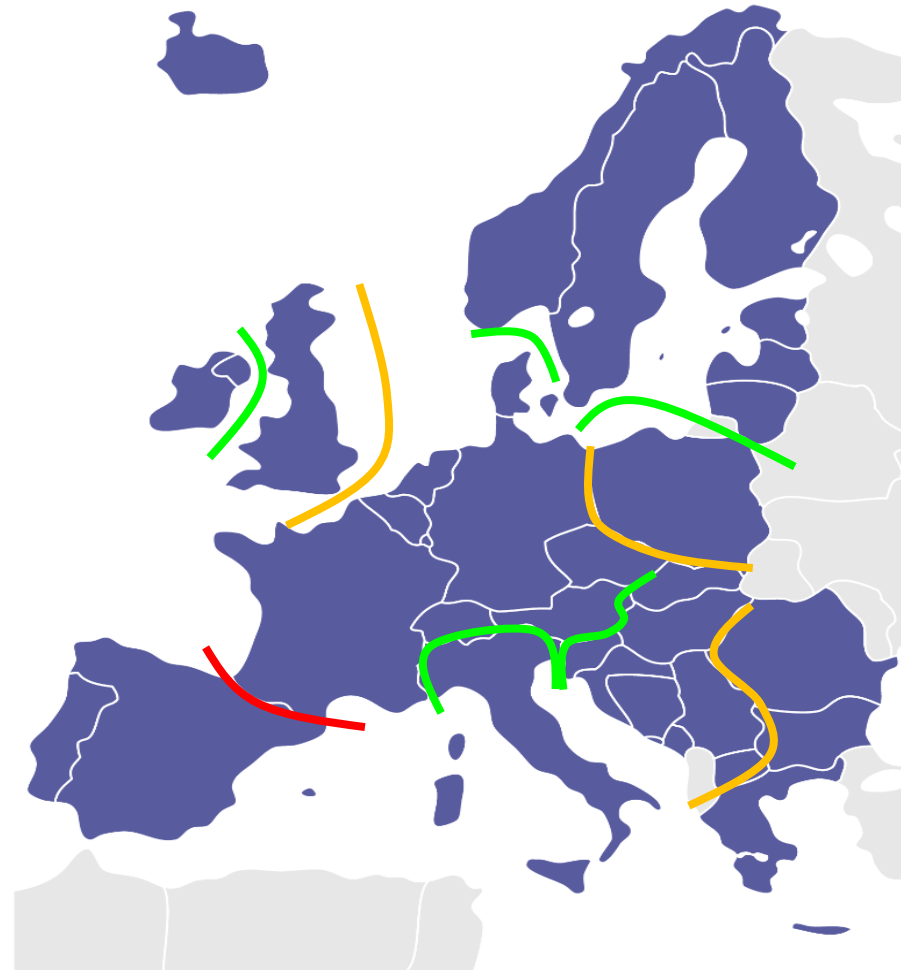
TYNDP 2016 – putting the right infrastructure in place to integrate renewables



2x more interconnection capacities by 2030

Integrating up to 60% renewable energy sources

Up to 5 €/Megawatt hour reduction on bulk power prices



1% increase in the total consumer bill

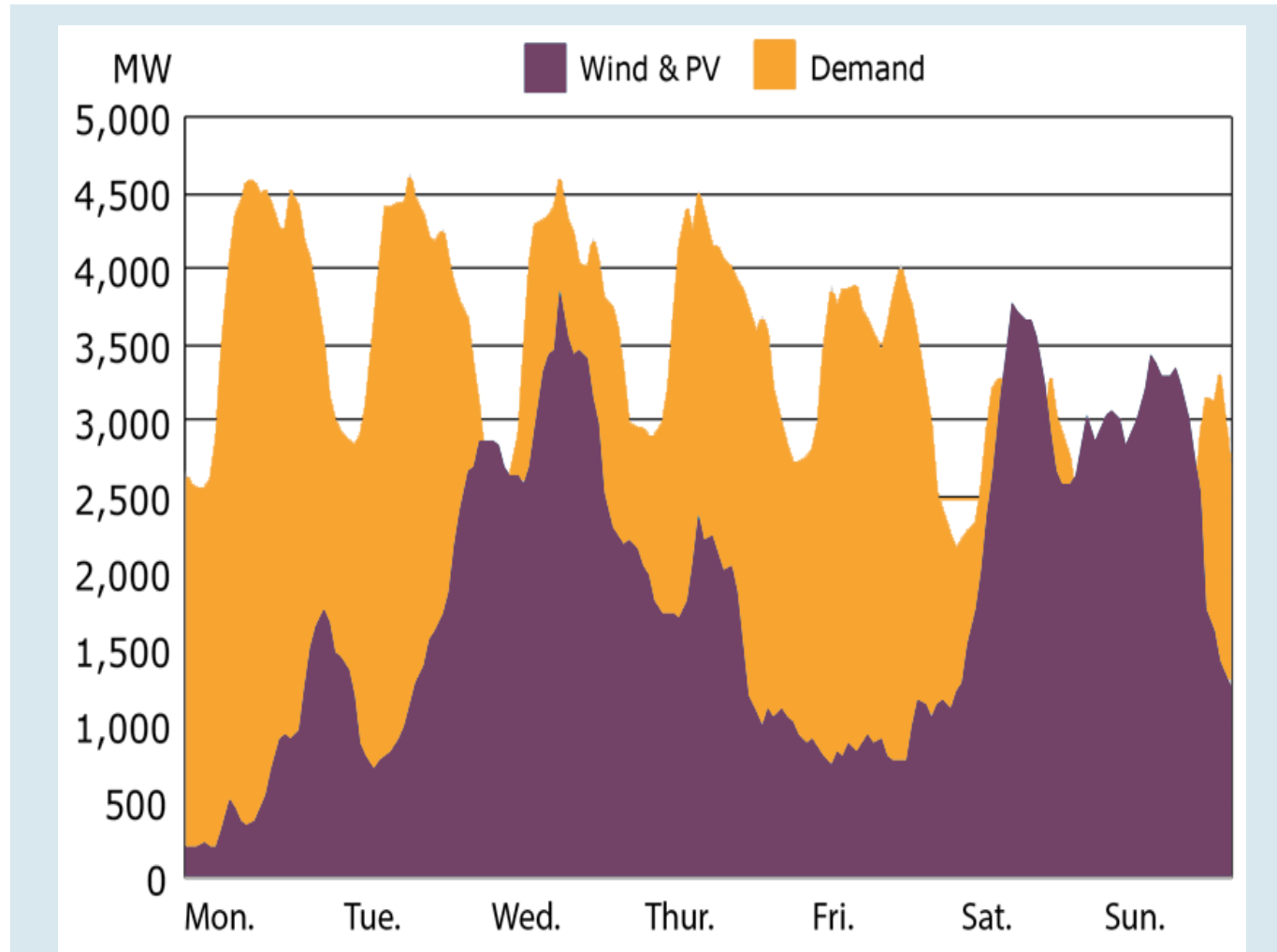
€150 billion investment

50 – 80% emissions down

30 – 90 TWh reduced RES spillage

A new paradigm for the power system

Consumers will play an increasingly important role



Sept 2016 in Denmark, one week
(source Energinet.dk)

How to meet this challenge?

The current market design needs adjustment

Missing market design

- Enable scarcity pricing
- Integrate RES and Demand into the market
- "EU Framework" for CRM
 - Adequacy-based
 - Cross border participation

Signals to Customer

- Dynamic pricing
- Easy to switch
- Data management, smart meters and hubs

New Governance

- DSO-TSO cooperation
- Regional TSO cooperation
- Stronger NRAs and MS cooperation

PRICE SIGNALS REFLECTING THE REAL COST OF ELECTRICITY



Prices should **drive power usage**, dispatch and investments
Prices should thus **reflect the actual situation** of the system

Enable scarcity prices in all market timeframes (DA, ID, Balancing)

Imbalance prices to be more cost-reflective (up to VOLL in times of scarcity)

Introduce dynamic pricing at retail level

Markets should value flexibility and all system services

Allow development of risk-hedging products to protect oneself against price volatility

ENCOURAGE DEMAND RESPONSE by:

Allowing customers to play their part in supporting the system and therefore reducing the need for additional thermal generation capacities



HOW?

Moving from **flat rates** to **dynamic pricing**

Avoiding the **price-blunting effect** of some taxes and levies put on electricity

Offering customers different types of **power contracts/options** to make profit of their flexibility potential

Allowing customers to **value this flexibility** in all markets and regardless of which grid they are connected to or which supplier they have a contract with

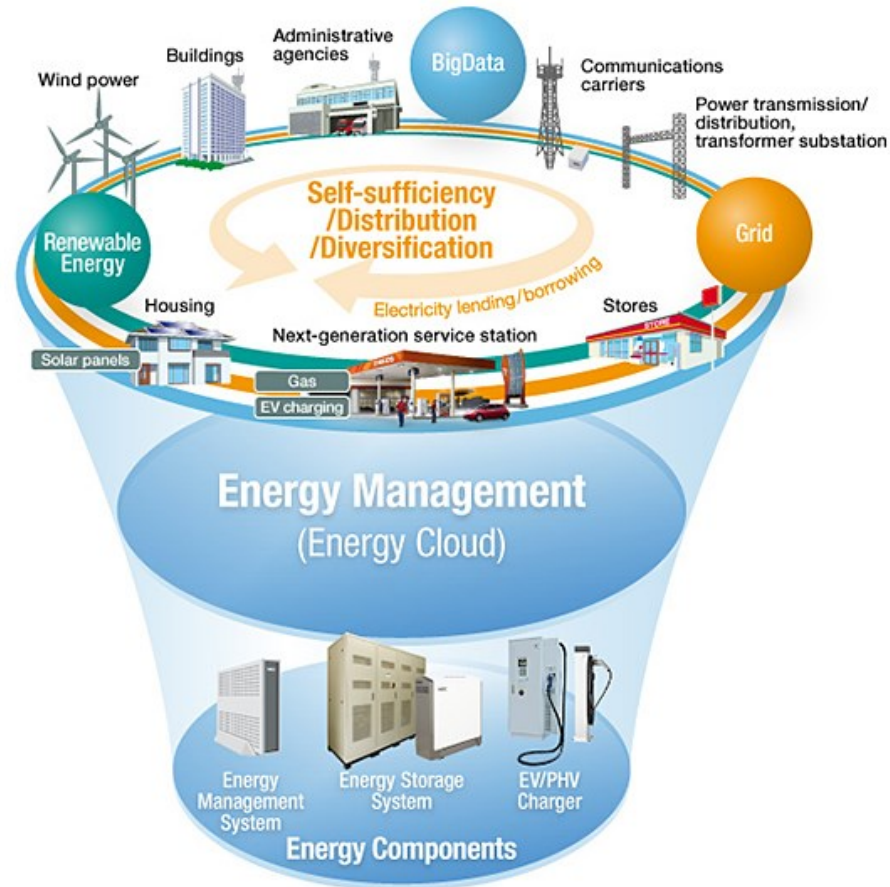
EMPOWERING THE CONSUMER

Some countries are using **dynamic pricing**

Implementation of:

- Europe wide market coupling (CACM)
- Balancing network code as facilitator of demand response

Data privacy and security



Dynamic retail pricing registered in **EU legislation**

- Demand response for balancing and **other markets**
- **Smart apps, data hubs, non-discriminatory access** – well integrated with DSOs/TSOs' software
- Compliance with **data protection regulation**

2020

INNOVATION

2025

What steps forward to improve RES integration into the market?



- 1** Phase out of the priority dispatch for RES
- 2** Expose 'mature' renewable energy sources to the market
- 3** Renewable energy sources need to have balancing responsibilities
- 4** RES support needs to be market-based
- 5** Create a regional and European framework for RES support

THANK YOU FOR YOUR ATTENTION



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