

6<sup>th</sup> Bruges European Business Conference “Drivers of Growth” How  
to achieve European energy integration

17<sup>th</sup> March 2015

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The E.ON logo, consisting of the lowercase letters 'e.on' in white, italicized font, set against a solid red rectangular background.

# Energy Union – five dimensions



1. **Energy security, solidarity and trust:** diversification of gas supplies, EU energy and climate diplomacy on global energy markets
2. **Internal Energy Market:** trigger investments, reduce market concentration, increase competition (or state aid if there is market failure), regional coordination (like Pentilateral Forums), strengthen ACER
3. **Energy efficiency:** increase Member States' energy efficiency efforts, transport and heating sectors, protection of vulnerable customers
4. **Decarbonisation:** ETS reform, including transport sector, expand RES technologies cost-efficiently
5. **Research and Innovation:** nuclear energy, CCS, multi-disciplinary scientific initiative to define decarbonisation pathways

# Costs of lack of Energy Union

Estimated welfare loss for the EU due to gas market inefficiency:

**11-18 bln EUR/year** [ACER\*]

**30 bln EUR/year** [Booz&Co\*\*]

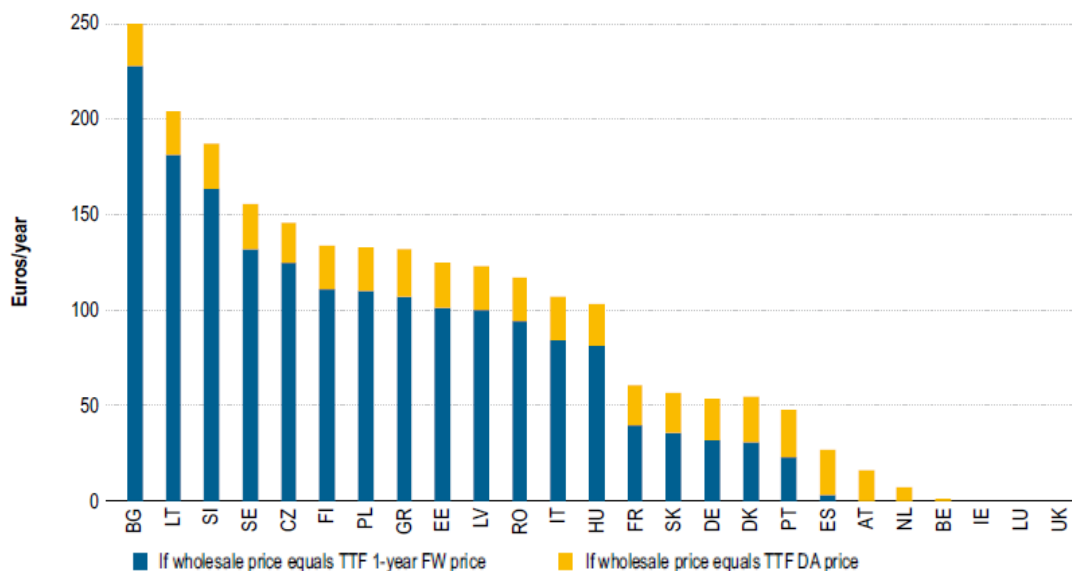
Per household, split by Member States:



Conclusion:

The costs are mostly borne by **customers in CEE region**

Figure 77: Gross welfare loss per year per typical household consumer due to a lack of wholesale and network integration in the EU-27 – 2012 (euros/year)



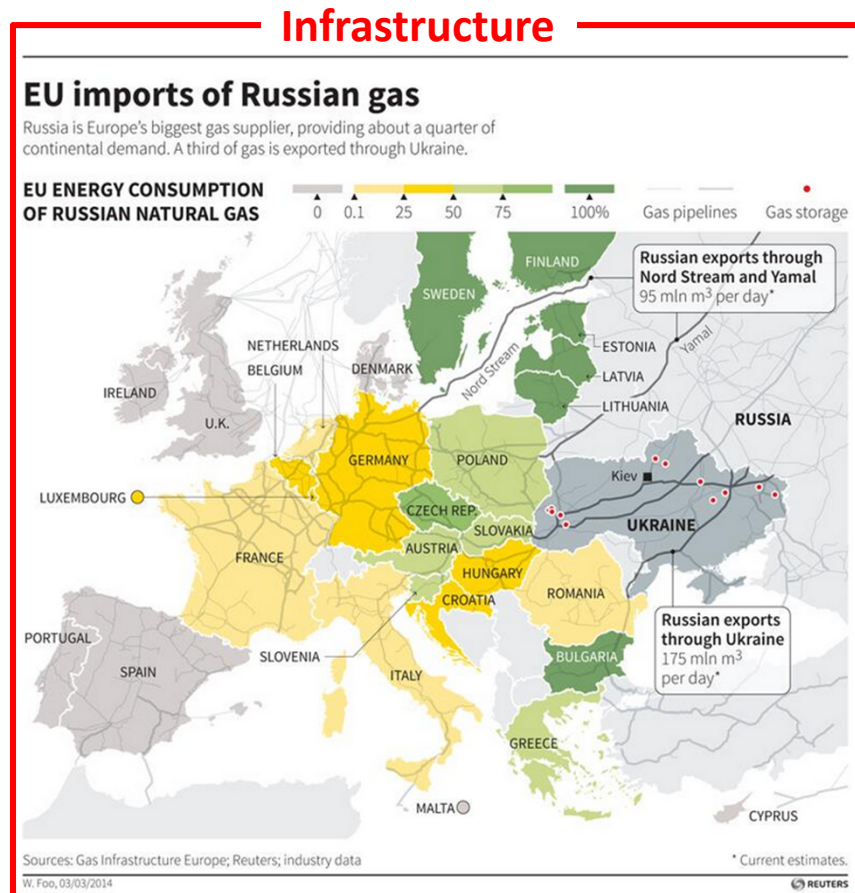
Source: ACER\*

\*ACER, *Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2012*, November 2013

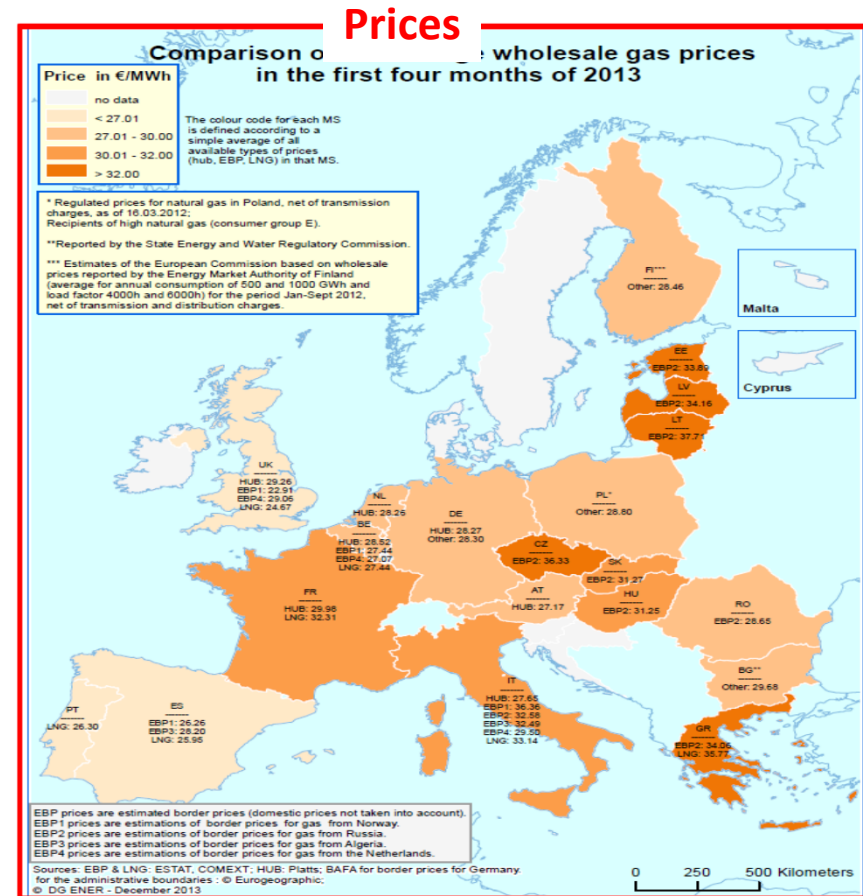
\*\*Booz&Co report for DG ENER, *Benefits of an Integrated European Energy Market*, July 2013



# 1. Security of gas supply: what is the key issue?



Source: zerohedge

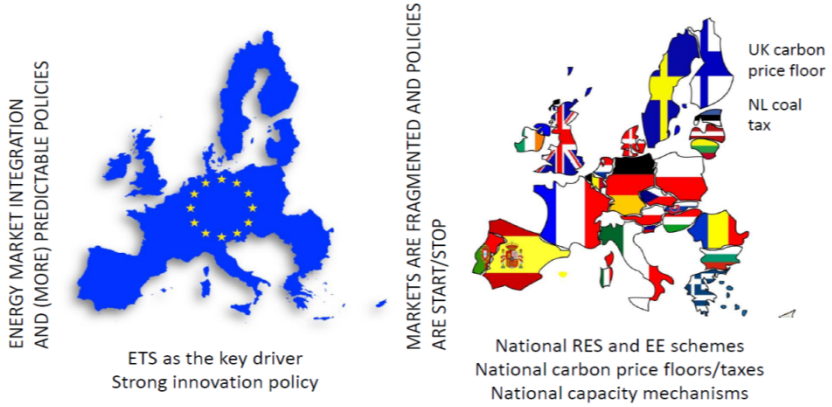


Source: DG Ener


# 2. EU internal energy market or 28x chaos?


## Political drivers


Today: internal energy market or x28 chaos?




## Commercial drivers

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**Innovation:** New technologies shape future energy landscape
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**Structural change:** fossil/RES – Centralised/distributed generation
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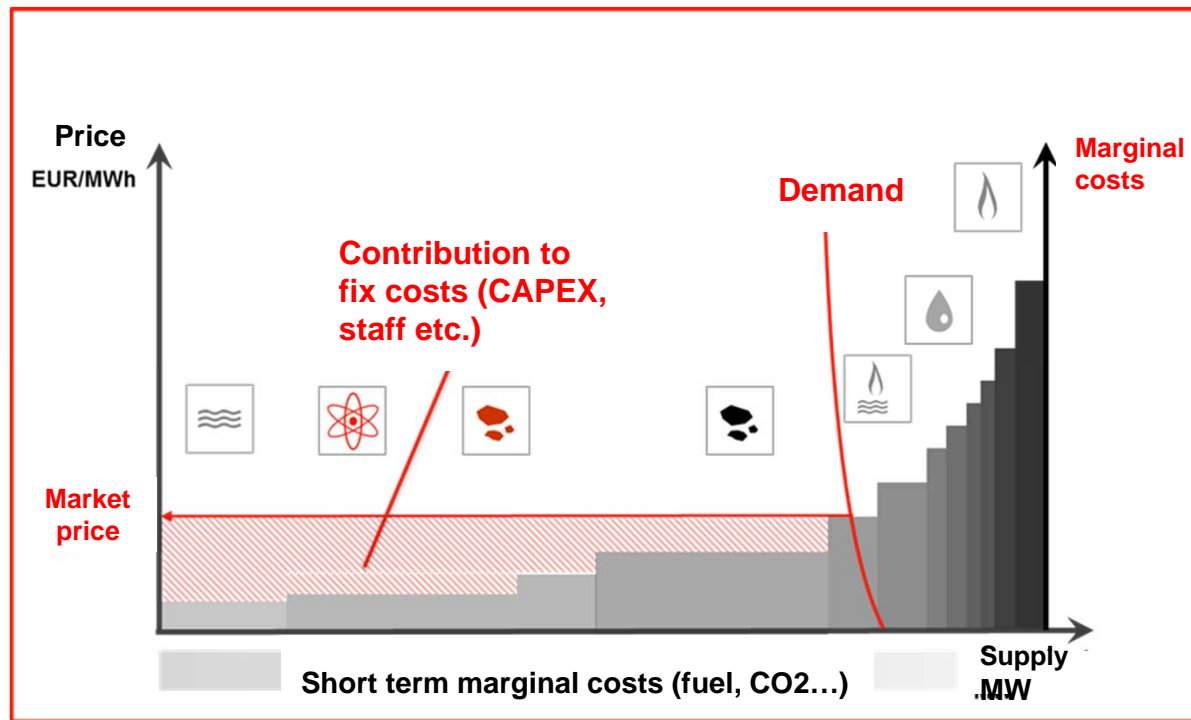
**Markets:** one regulatory framework for highest performance: IEM!
- 

**Volatility.** Structural uncertainty, no investment appetite, SOS!



## 2. IEM: what is key for electricity? Capacity markets

- Disconnection of wholesale electricity prices from complete power costs
- increase of non market based support



Dispatch function



Investment function



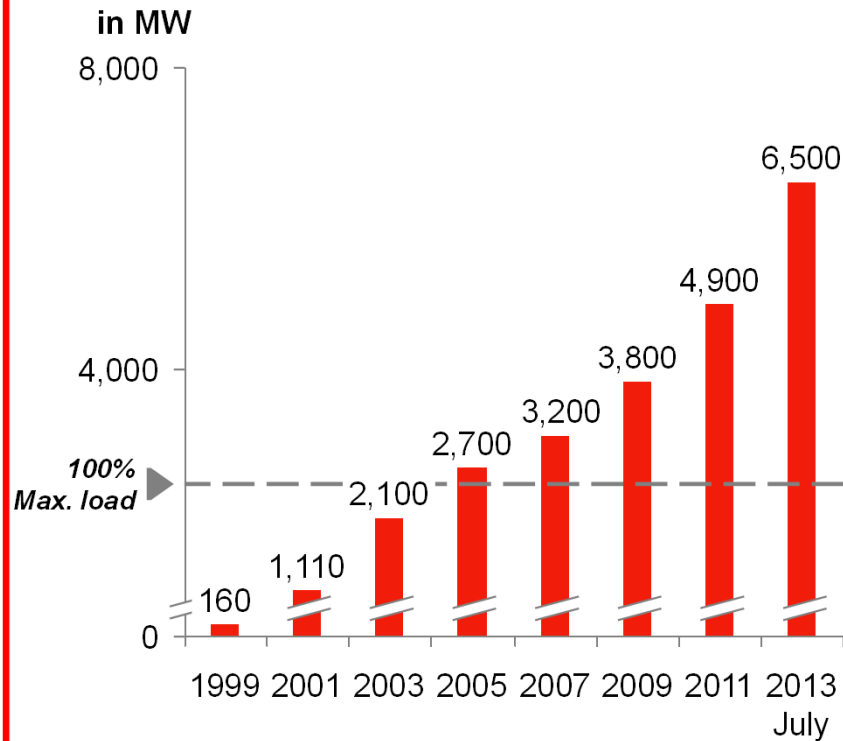
## 2. IEM: Innovations need a capacity market too

- Endorsement of investment and innovation capability and readiness needed
- Intensive competition between all available options (generation, flexibility, storage)
- Incentives for innovation
- **Requirements:**
  - As little public influence as needed
  - Focus one target – one instrument
  - Market-oriented and non-discriminatory regime, EU compatible
  - Moderate contract duration to allow market entry of innovative technologies
  - European coordination and definition of generation adequacy



## 2. IEM: Distribution grids face significant challenges

Installed RES capacity in E.DIS Distrib. grid



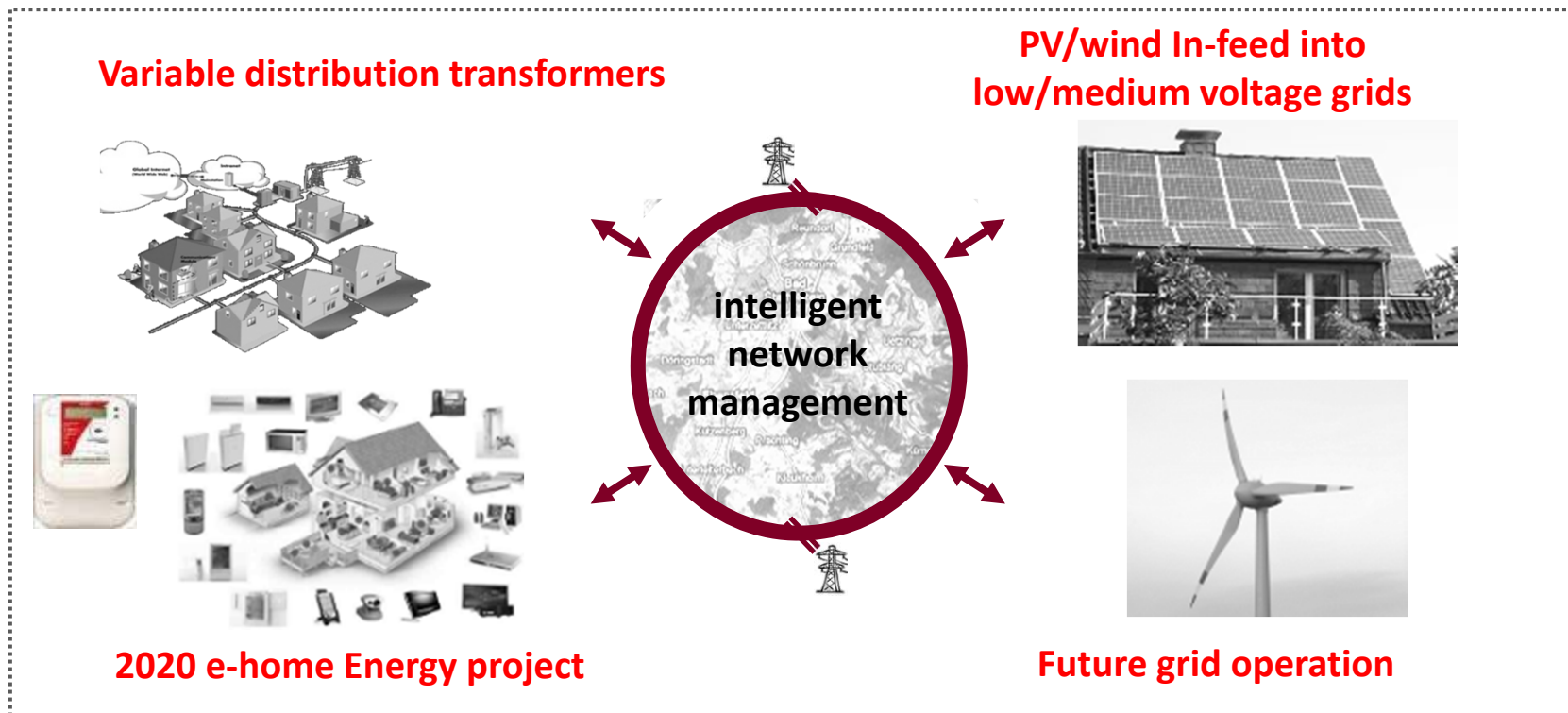
Challenges

- Originally distribution grids were built to transport electricity according to maximum load
- Today, installed RES capacity corresponds to factor **3-5 of maximum load** in some parts of DE
- Accordingly, distribution grids need to expand significantly





## 2. IEM: E.ON testing new technologies in pilot projects



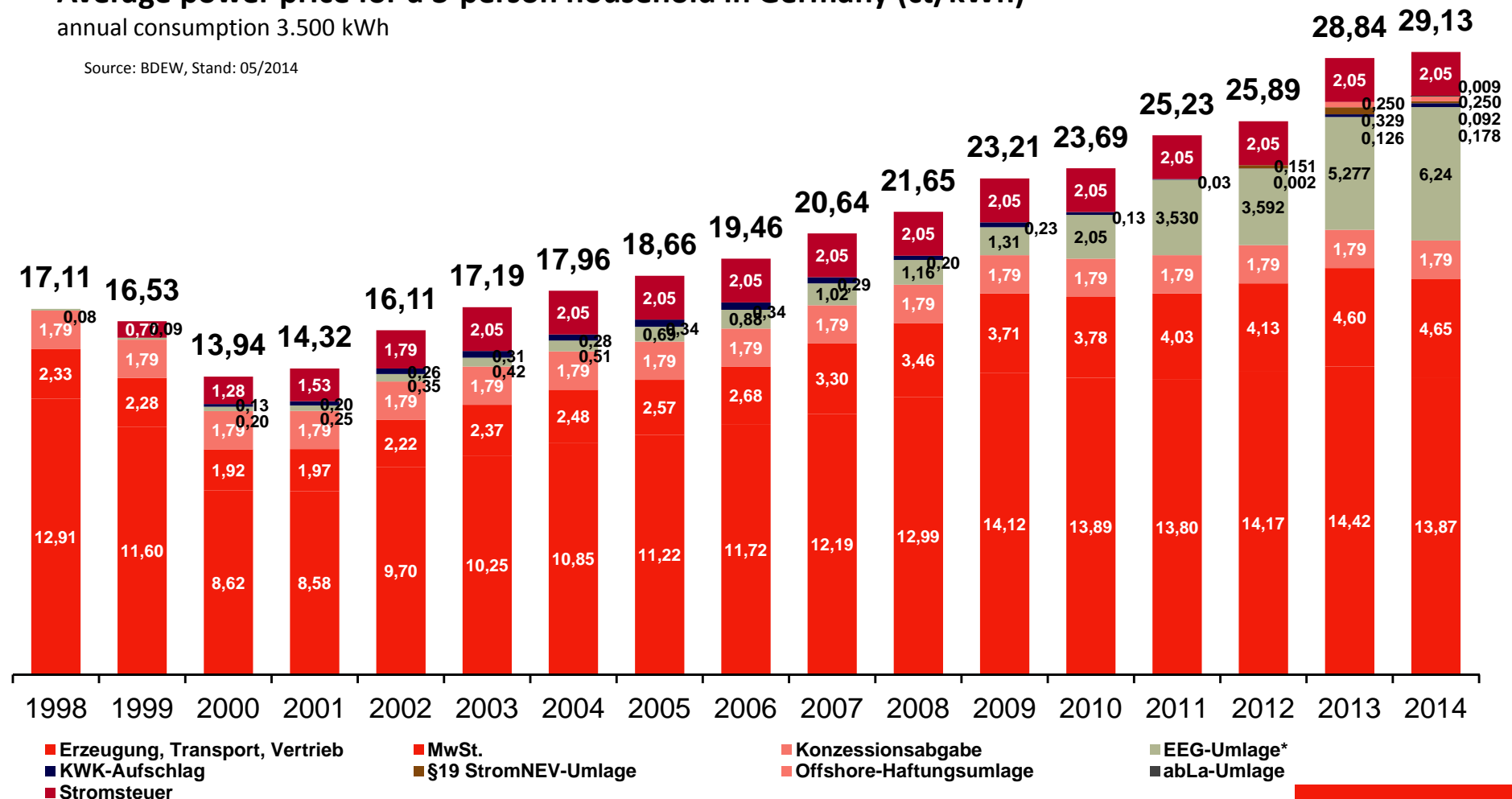
▶ Technical know-how of regional energy supply is the basis of a holistic smart grid innovation concept

## 2. IEM: What's driving electricity prices?

### Average power price for a 3-person household in Germany (ct/kWh)

annual consumption 3.500 kWh

Source: BDEW, Stand: 05/2014

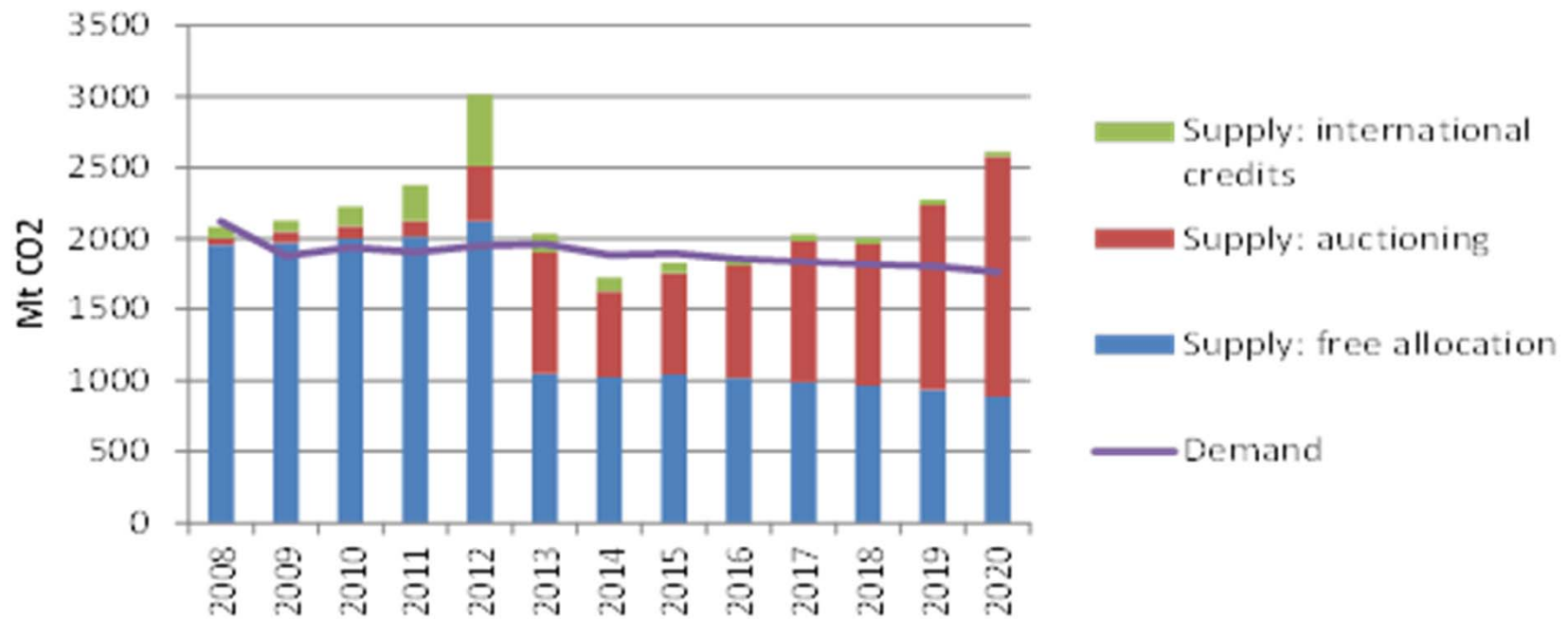


\* ab 2010 Anwendung AusgleichMechV



### 3. Decarbonisation: ETS needs stability now

#### EU ETS supply/demand to 2020 (no MSR)



Current Market Situation – until 2020 auction volumes



### 3. Decarbonisation: The RES increase challenge

#### EU RES growth

2013

≈ 21%

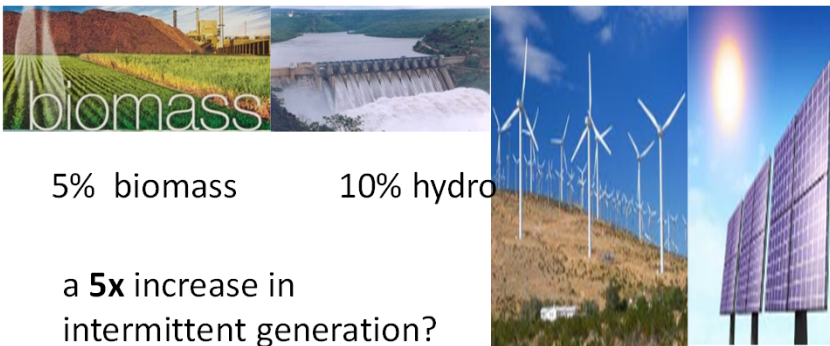


5% biomass    10% hydro    6% intermittent

21% of electricity mix today to 45% by 2030

2030

≈ 45%



5% biomass    10% hydro

a 5x increase in intermittent generation?

#### Support scheme options

~~No RES target~~



~~National targets\_ Market fragmentation~~



EU RES targets with harmonised Support schemes



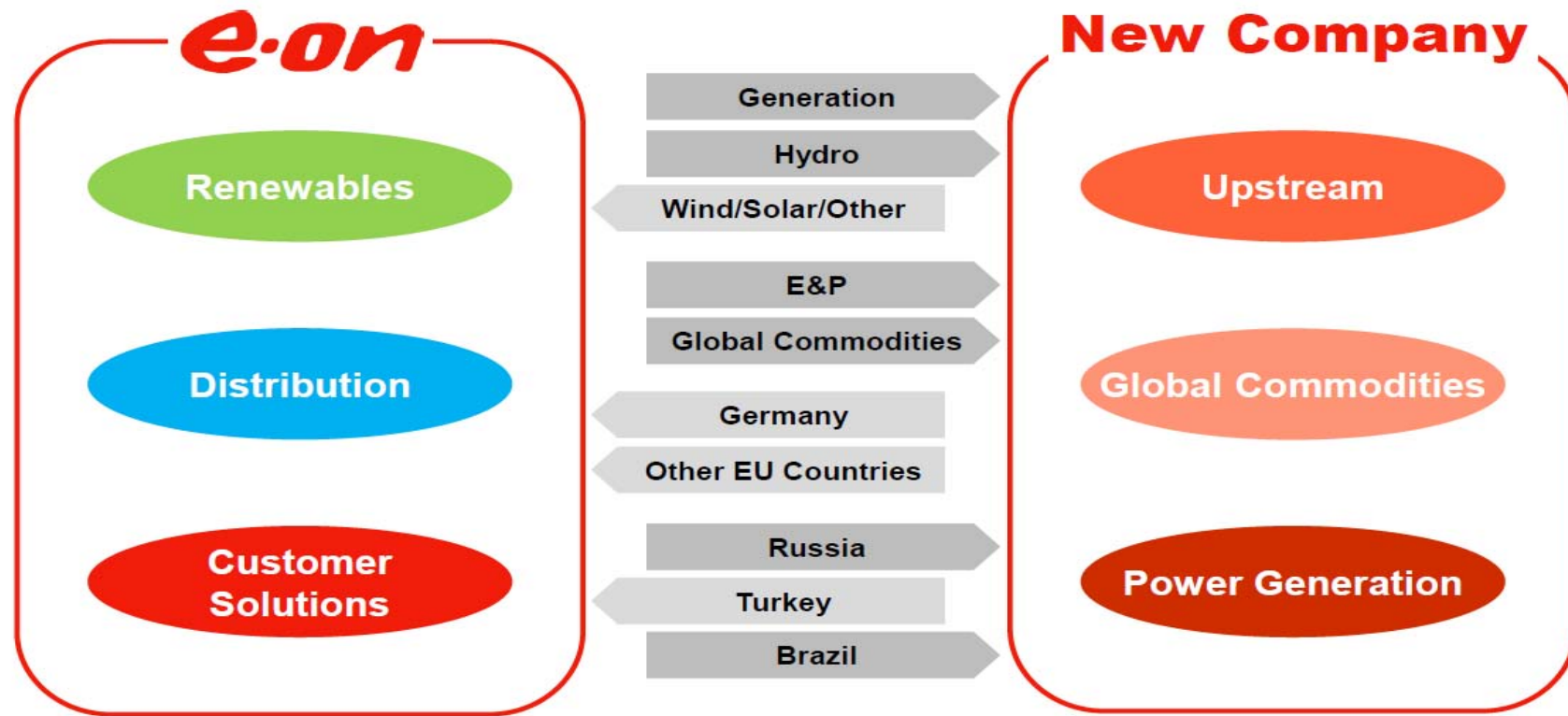
EU RES targets through ETS (mature RES) and R&D support (immature RES)

## Conclusion and recommendations for the Energy Union

- Diversify gas supplies
- Define a sound basis for future public interventions
- Ensure market integration of renewable support
- Phase out RES priority dispatch → balance responsibility
- Ensure cross border trade in renewable energy
- Introduce coordinated regional capacity markets and improve EOM market
- Take demand-side response into consideration to solve the adequacy issue (e.g. flexibility options)
- **Objective:** Use the IEM to its full extent, avoid unnecessary interventions, introduce a capacity market

# E.ON - New Strategy

Two leading companies for two energy worlds



Distinct opportunities, mindsets and capabilities

