

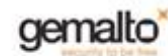
Meeting of the Chairpersons of Economic
Affairs Committees on Energy Union

The future of smart EU energy systems with the consumer at the centre

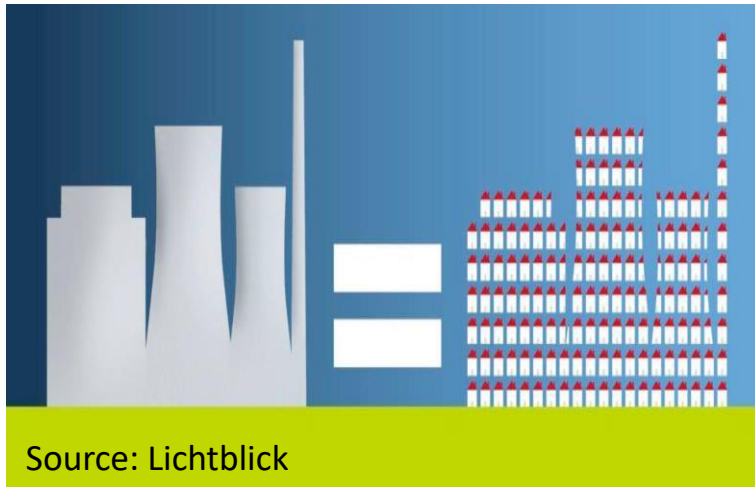


Frauke Thies
Bratislava, 2 December 2016

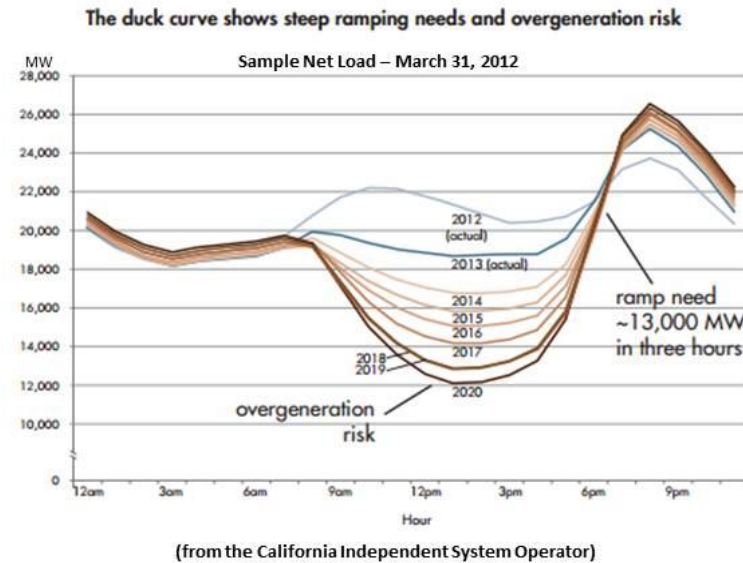
SEDC Membership



The new realities



Decentralisation



Variability



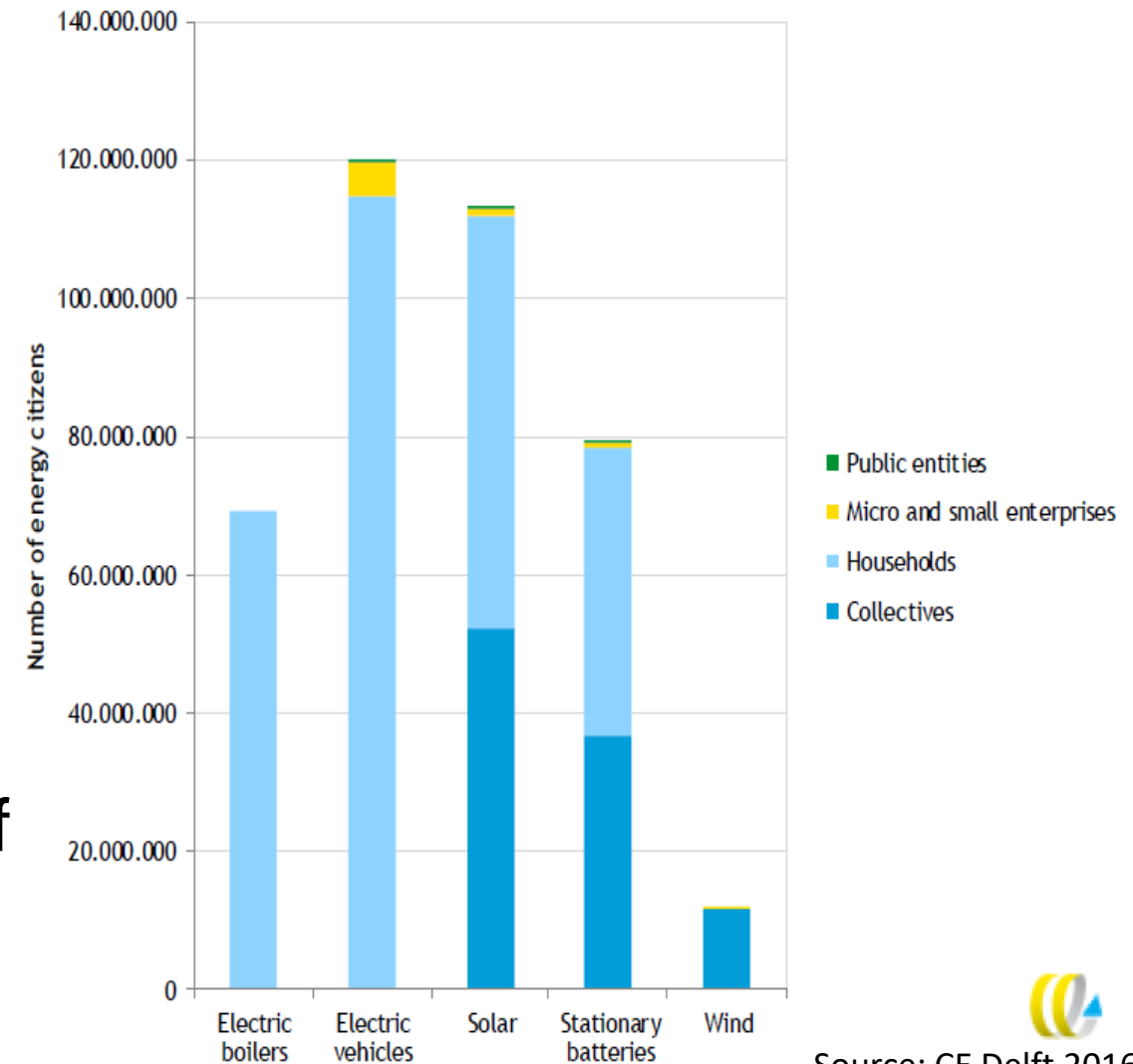
Digitalisation

Engagement Opportunities

- Automation of consumption
- Self-generation & -consumption
- Community projects
- Valorisation of flexibility

-> consumers become an active part of the energy system

Figure 12 Number of energy citizens for the various technologies assessed, potential to 2050 for the EU28



Source: CE Delft 2016



The solutions

Option 1: Implicit Demand-Side Flexibility

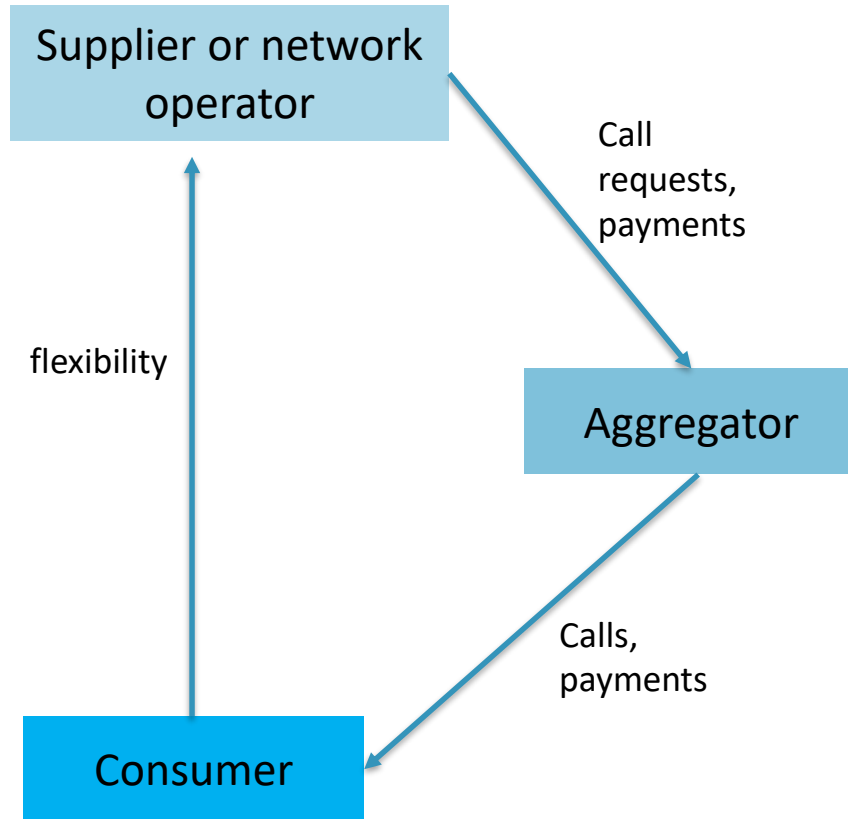
Consumer adjusts to variable market-price signals

- > saves hedging cost & supports system
- > uses power when it's cheapest



Credits: brincadeira89.wordpress.com

Option 2: Explicit Demand-Side Flexibility



Consumer sells local flexibility via an aggregator

- > Income on committed flexibility
- > System support

Flexibility today



Vivaqua – Water Treatment



Sainsbury's – Supermarkets

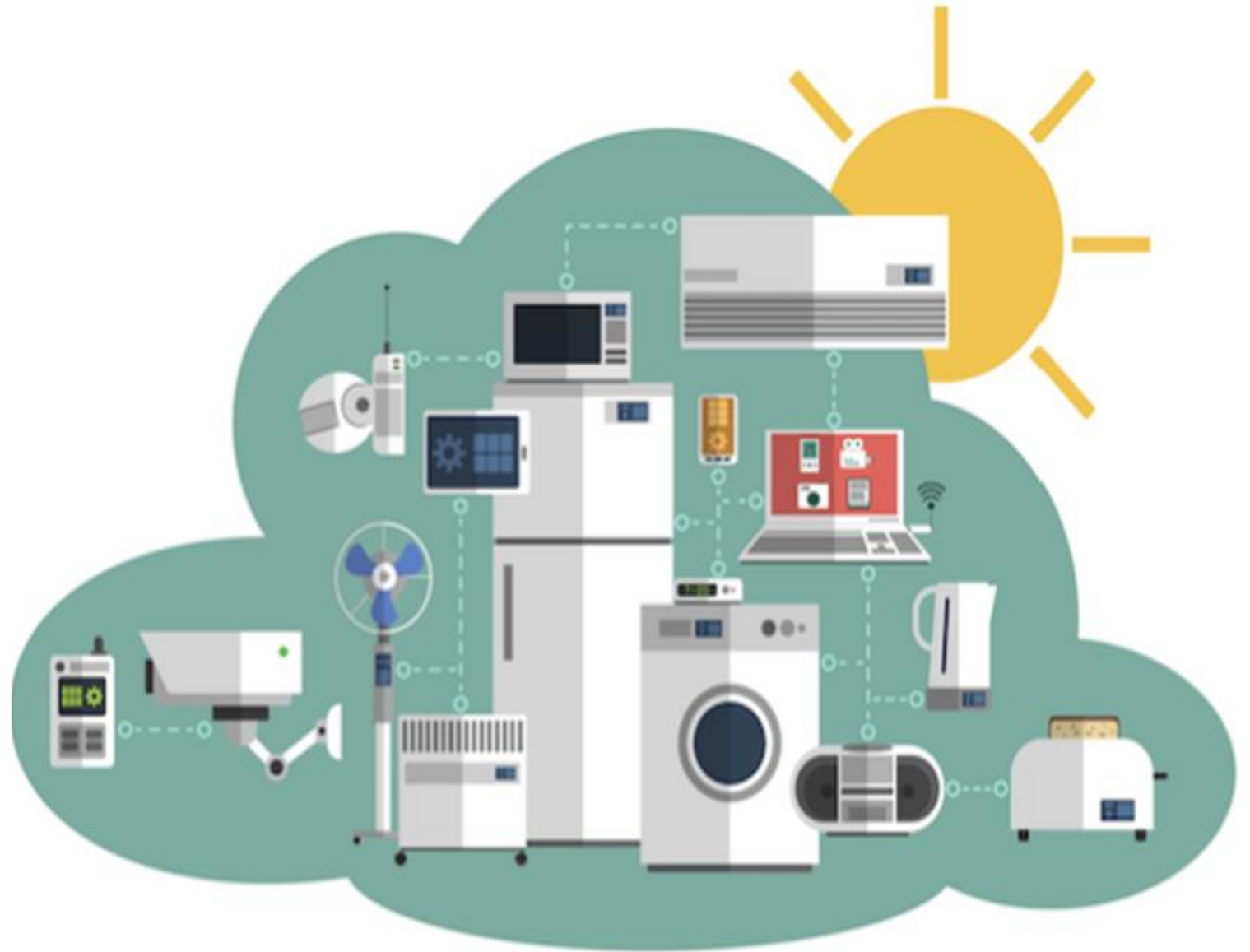


ArcelorMittal – Steel Production

Sources: REstore,
Open Energi

Flexibility at home

- Heating systems
- Battery storage
- Smart EV charging
- Smart thermostats/ HVAC
- Smart appliances (e.g. freezers, refrigerators etc.)
- Services from self-generation



The Potential

European Commission @Florence Forum (preview on Impact Assessment):

Theoretical Demand Response potential is about **100 GW** in Europe.

For 2030, the potential could go up to **160GW**,
driven by electrification of transport and heating.

What does it mean for policy and market design?



Enablers at prosumer level

Making flexibility accessible:

- Smart energy building certificate & appliance label
- Access to smart meter
- Quality data & standardised communication

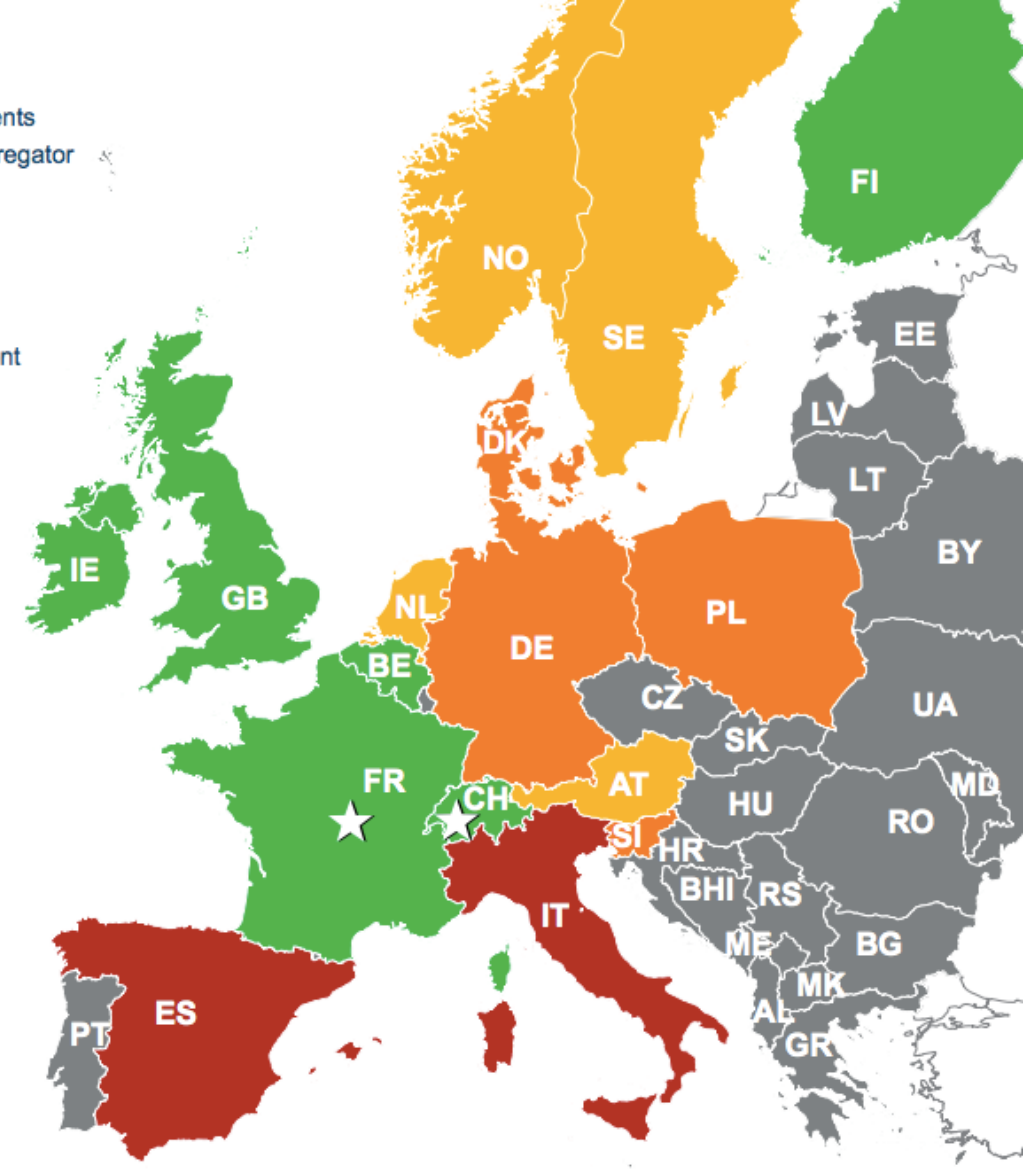
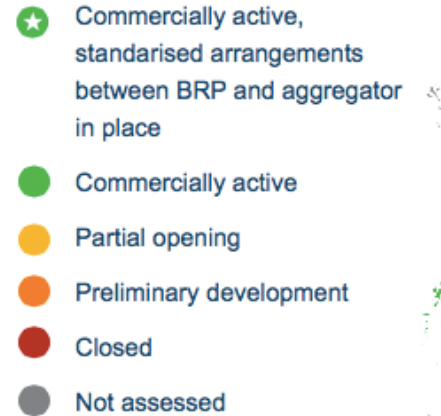
Marketing flexibility:

- Right to market-related short-term pricing
- Free choice of service providers/ aggregators
- Right to self-generate and -consume



Enablers at market level I

- **Open all markets** to DR and storage, incl. at DSO level
- Adjust **product definitions** for a level playing field
- Framework to enable **access for aggregators** without prior agreement of retailer
- **Network tariffs** support and don't hamper flexibility

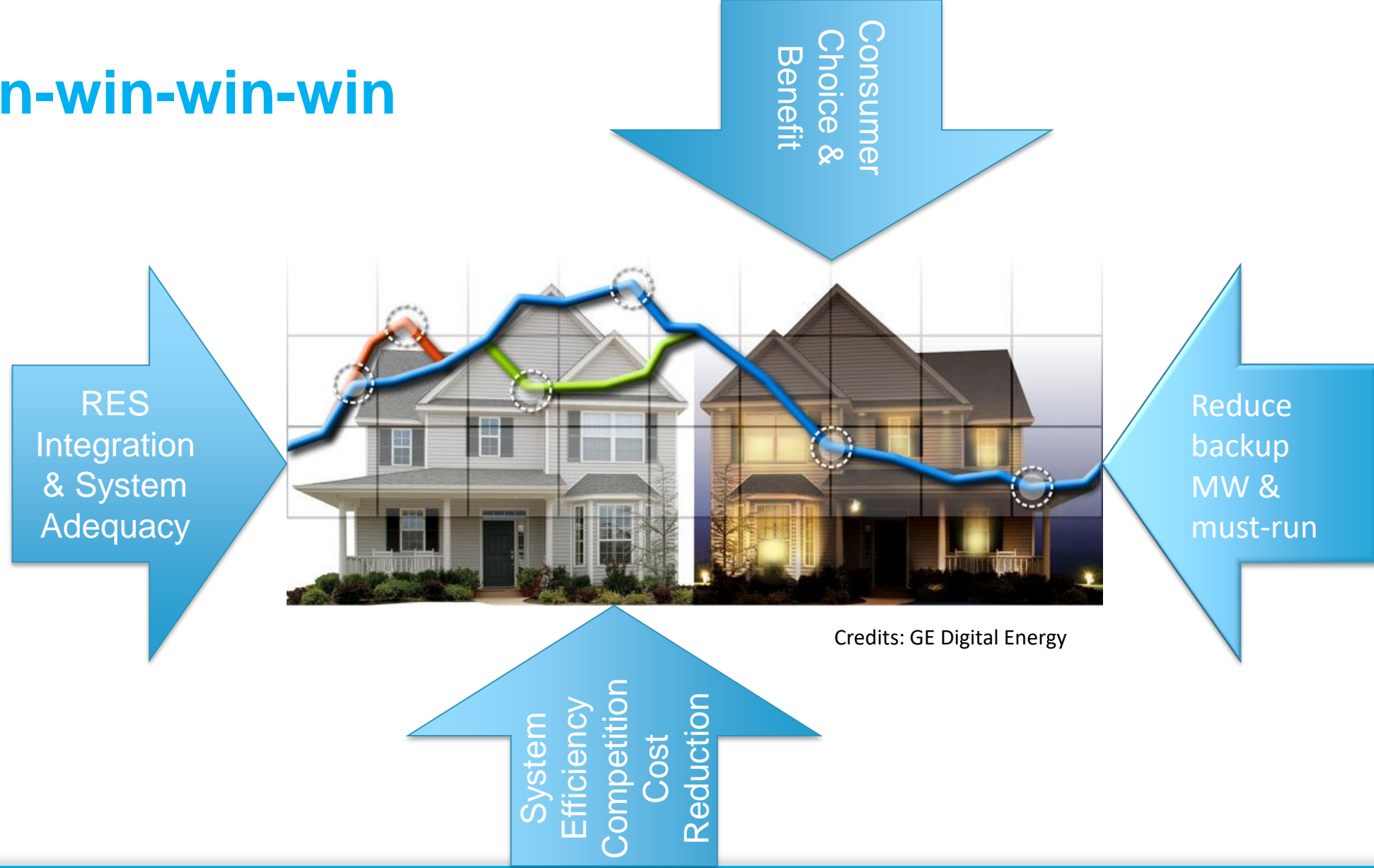


Enablers at market level II

- Ensure prices reflect the **real value** of electricity **at any moment**
- Include **DSF in Resource Adequacy** and avoid overcapacity



A win-win-win-win





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