

System efficiency First:

how energy end-users can play an active role in the clean energy transition



All Things Energy Forum
3 June 2021

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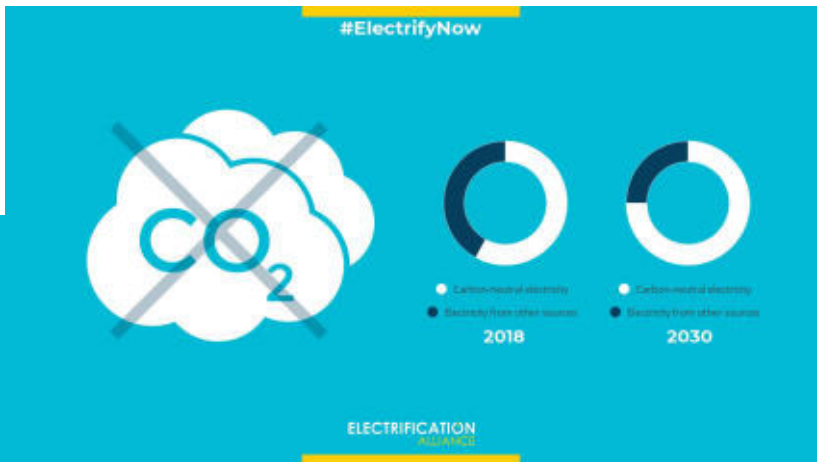
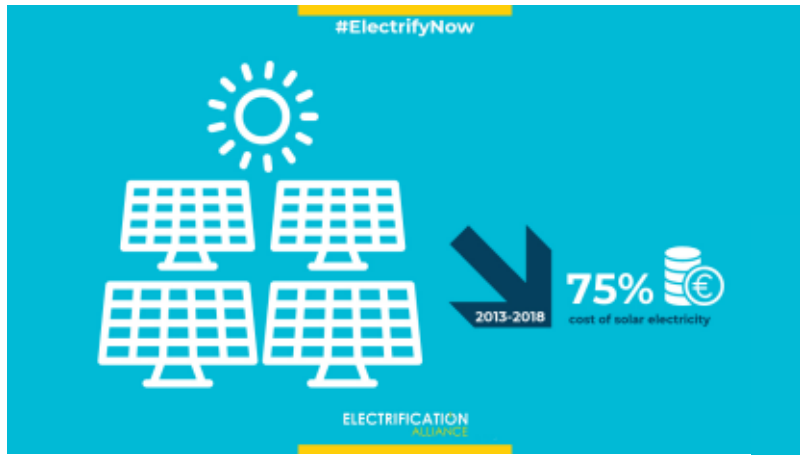


Associate Members





From scaling renewables to running an efficient system with very high shares of variable and decentralised generation



Activating Demand-side Flexibility

Controllable loads



Storage devices



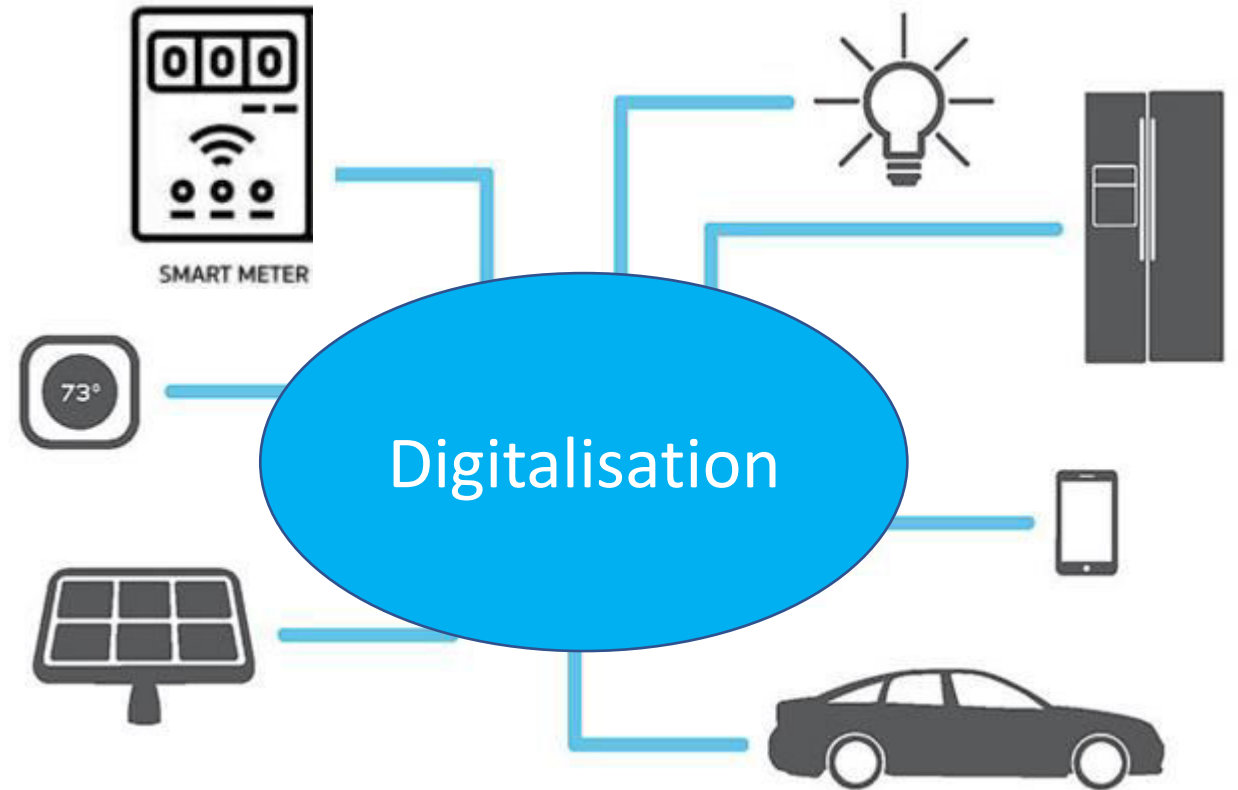
Small scale RES generation



All of them digitally connected

Digitalisation enables Demand-side Flexibility

- Monitor and manage energy flows continuously
- Process signals from the grid
- Integrate multiple assets



Can the system cope with the increased electrification of end-use sectors at the same time?

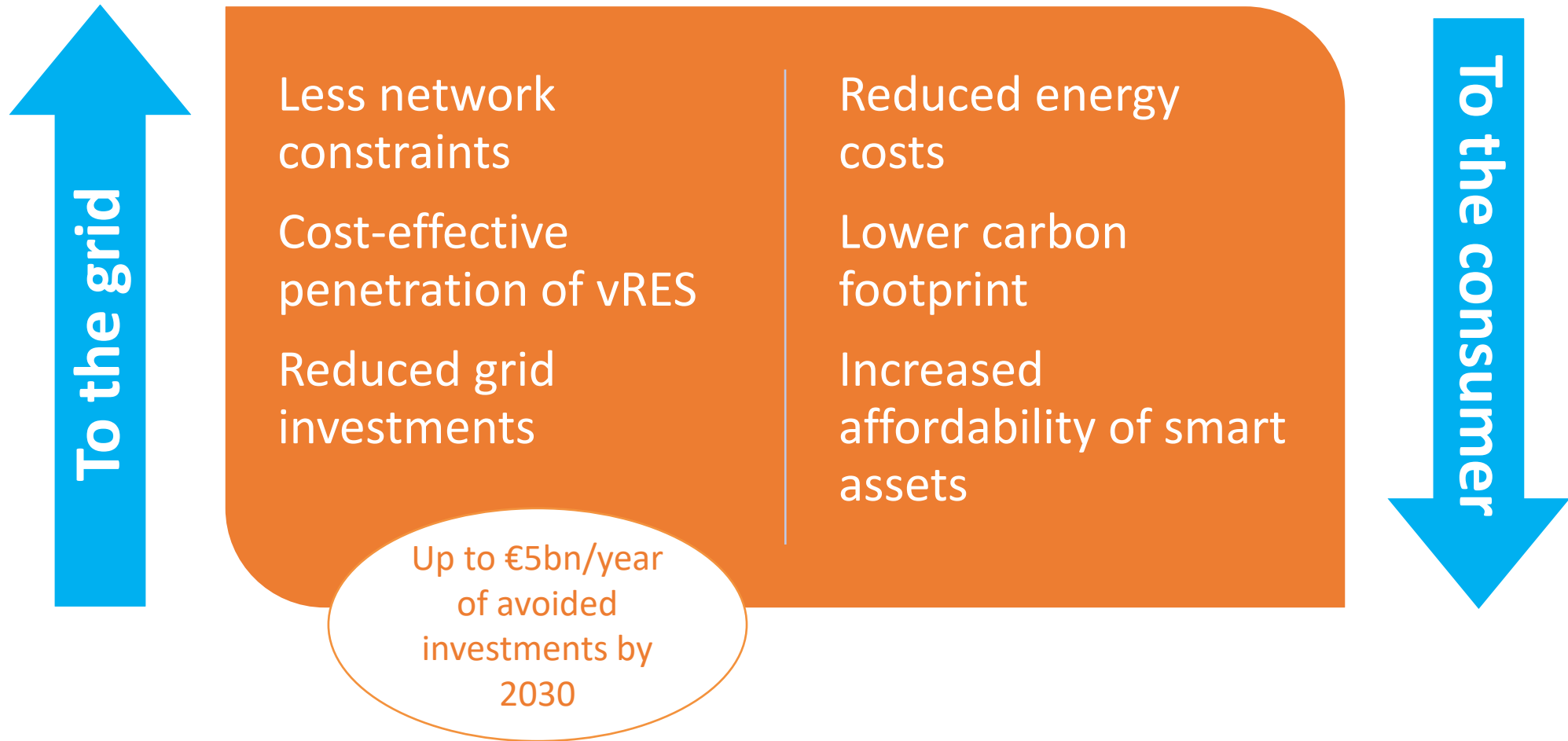


Sector integration can significantly increase electricity demand
(from 23% today to 30% in 2030 and 50% by 2050)

EE can reduce energy consumption and DSF activation can help shave the peak

System efficiency

What are the benefits of a consumer-centric system?



Is the cost too high?

No upfront costs

“Non-dedicated assets” already present (H&C systems, EVs, etc.)

Upfront costs to be reduced through DERs activation

Dynamic pricing

Aggregation

Communities/P2P trading

Use of EU funds

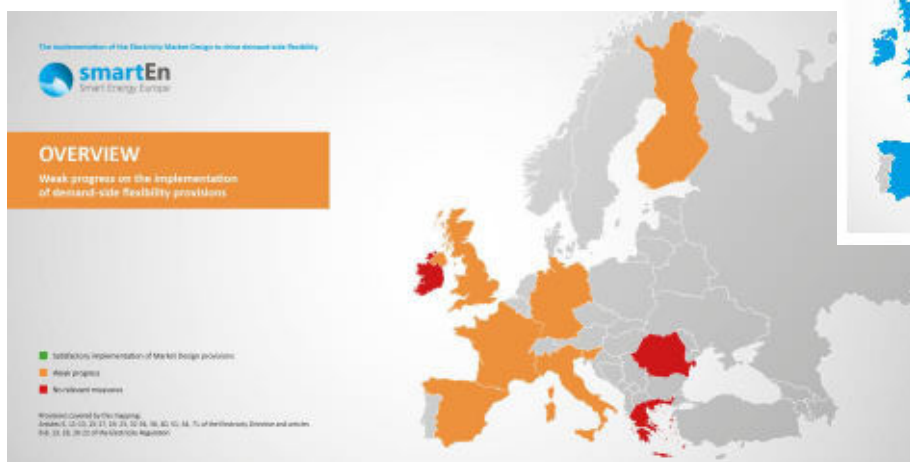
37% earmarking in the EU Recovery and Resilience Facility for green assets and 20% for digital assets

Is it already possible?

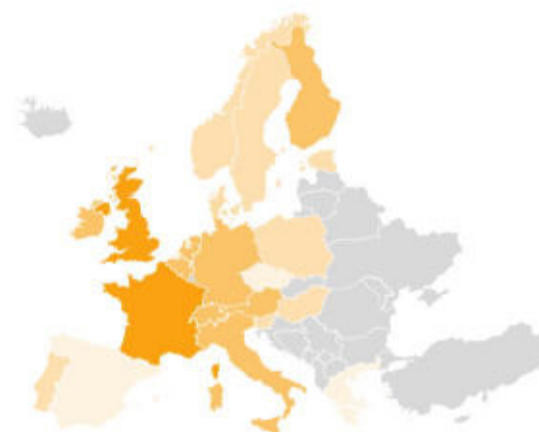
Existing regulatory barriers still limit major increase in DSF activation

- Market-based procurement of all Decentralised Energy Resources (DER) by System Operators
- Non-discriminatory participation of all DER to all markets and mechanisms
- Frameworks for innovative services
- Access to price signals for end-users

smartEn monitoring report EMD implementation
(November 2020)

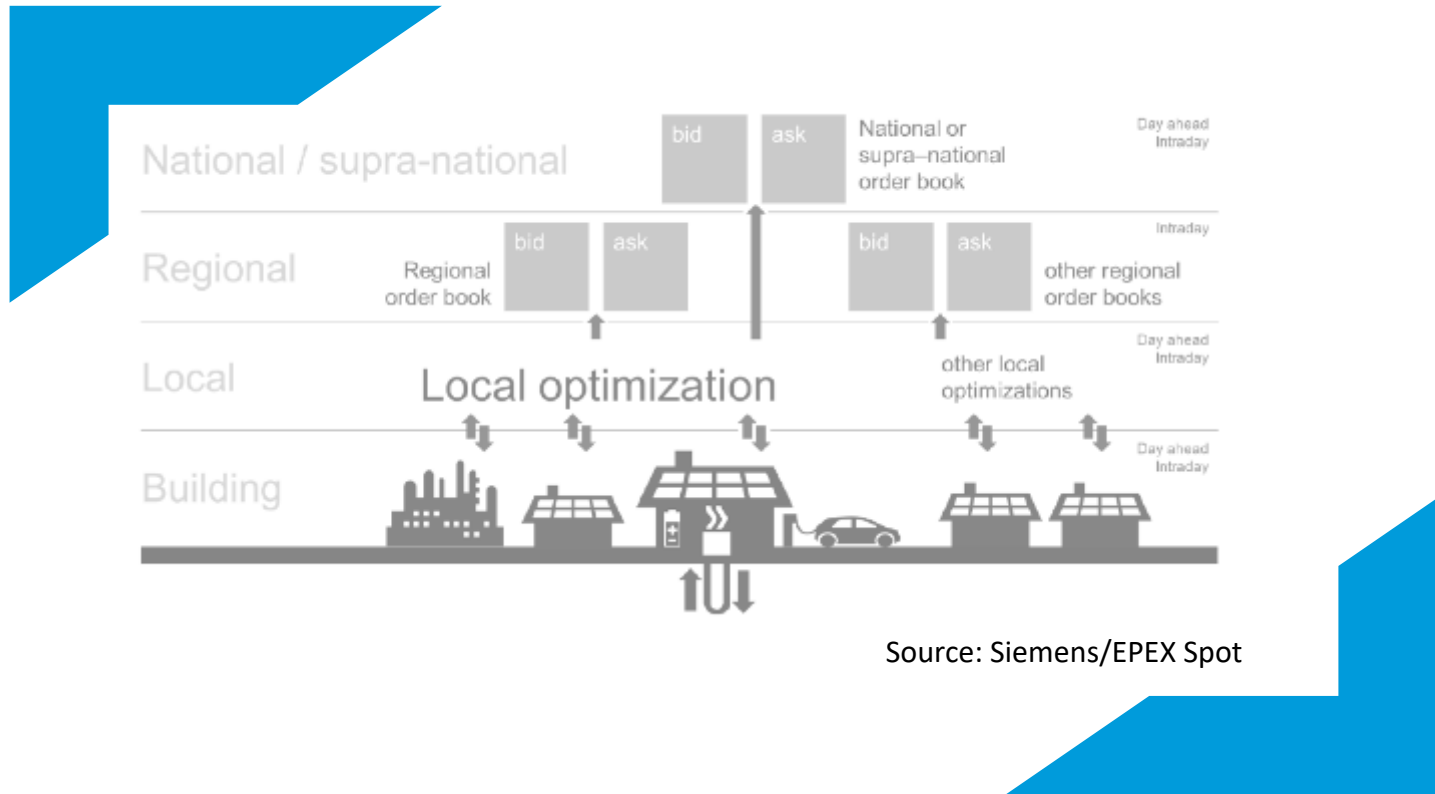


smartEn/Delta-EE DSF Market Monitor (March 2021)



- Scope of Market Monitor:**
- Availability and accessibility of DSF to value streams
 - Monetisation of DSF in value streams
 - Breadth of asset types used for DSF
 - Breadth of customer segments engaged with DSF
 - Number of stakeholders active with DSF

Towards a Digital Ecosystem connecting the levels



Source: Siemens/EPEX Spot

- Wholesale/ Transmission: system monitoring and management, advanced algorithms for operations
- Regional/ Distribution: system monitoring and automation, procurement of system services
- Aggregators/ Suppliers: activation, aggregation and optimisation of flexibility (incl. e-mobility, heating etc.)
- Prosumers: smart assets





Thanks

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