

London, 11 October 2019

ETem2019

Jan van Aken
Secretary General



European Federation
of Energy Traders
SO YOU CAN RELY ON THE MARKET

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Assessing yesterdays trends to forecast tomorrows

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Contents

- What have we seen develop in the energy markets in the last few years ?
- What should we expect in the future?
- What do energy trading market participants aspire to and what could be improved ?

Our vision - Europe without borders

We promote
competition,
transparency and
open access
in the European
energy sector

Our **Vision:**

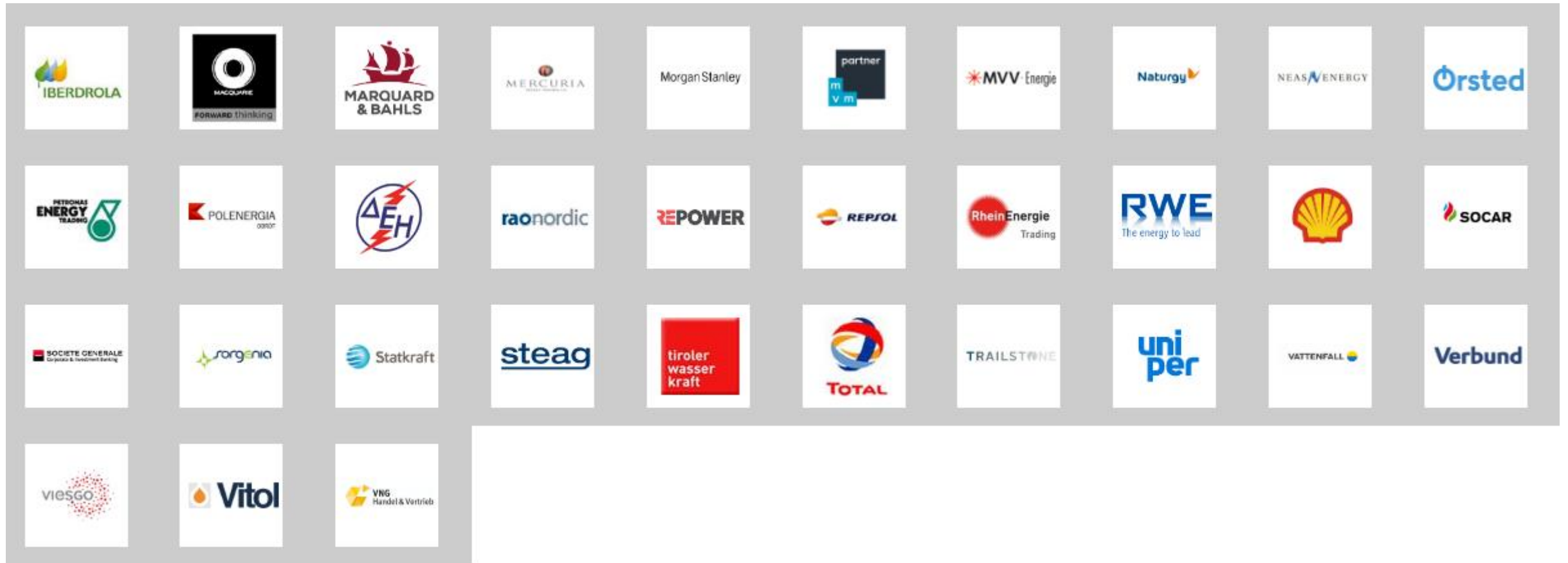
A wholesale European energy market
with no undue barriers to trading



EFET Regular - Member companies



EFET Regular - Member companies



EFET Associate - Member Companies



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European solutions

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What have we seen develop in the energy markets in the last few years ?

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- 20 years ago started: Customer choice & competition
 - Customer choice/ competition
 - System operation unbundling
 - Level playing field & equal 3rd party access
 - energy regulation & European cross border cooperation & harmonisation

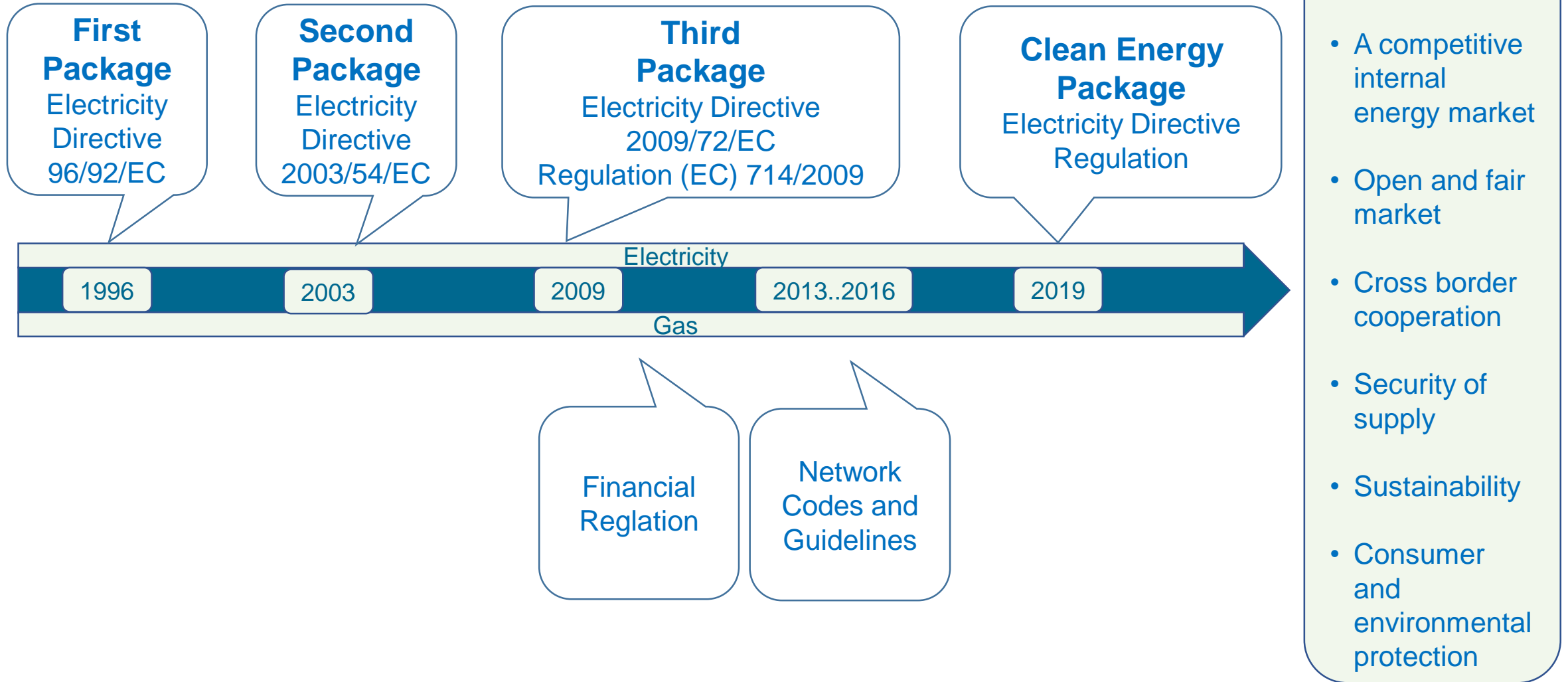
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- 10 years ago started: response to bank crisis + promotion of RES-E
 - Tsunami of Financial regulation:
 - REMIT, EU Passport Regime (License), Market Abuse Directive Review, EMIR, MIFID review, Capital Requirements Directive, Short Selling Regulation; EU Financial Supervisory Reform, EU Netting Regulation
 - Reporting obligations
 - Subsidies for RES-E & RES certificates (also for the voluntary market)

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 - Reporting obligations
 - Subsidies for RES-E & RES certificates (also for the voluntary market)
- +/- 3 Years ago: “3-D’s” + recently: Sector coupling
 - Decarbonisation
 - De-centralisation
 - Digitalisation

Timeline of Internal Energy Market Legislation



Clean Energy Package: an overview

- **European Commission** published major legislative package at the end of November 2016:
 - **Energy Efficiency:** Energy Efficiency Directive & Energy Performance of Buildings Directive Reviews
 - **Market Design Initiative:** Electricity Directive and Electricity Regulation Reviews, Sector inquiry into capacity mechanisms
 - **Renewable Energy Directive Review**
 - **Energy Union Governance Proposal (new)**
- Key legislative package, setting the 2030 policy framework for the energy sector.
- Three key aims:
 - Put energy efficiency (EE) first
 - Make Europe #1 in RES
 - Empower energy consumers



Renewables integration in the market is only starting

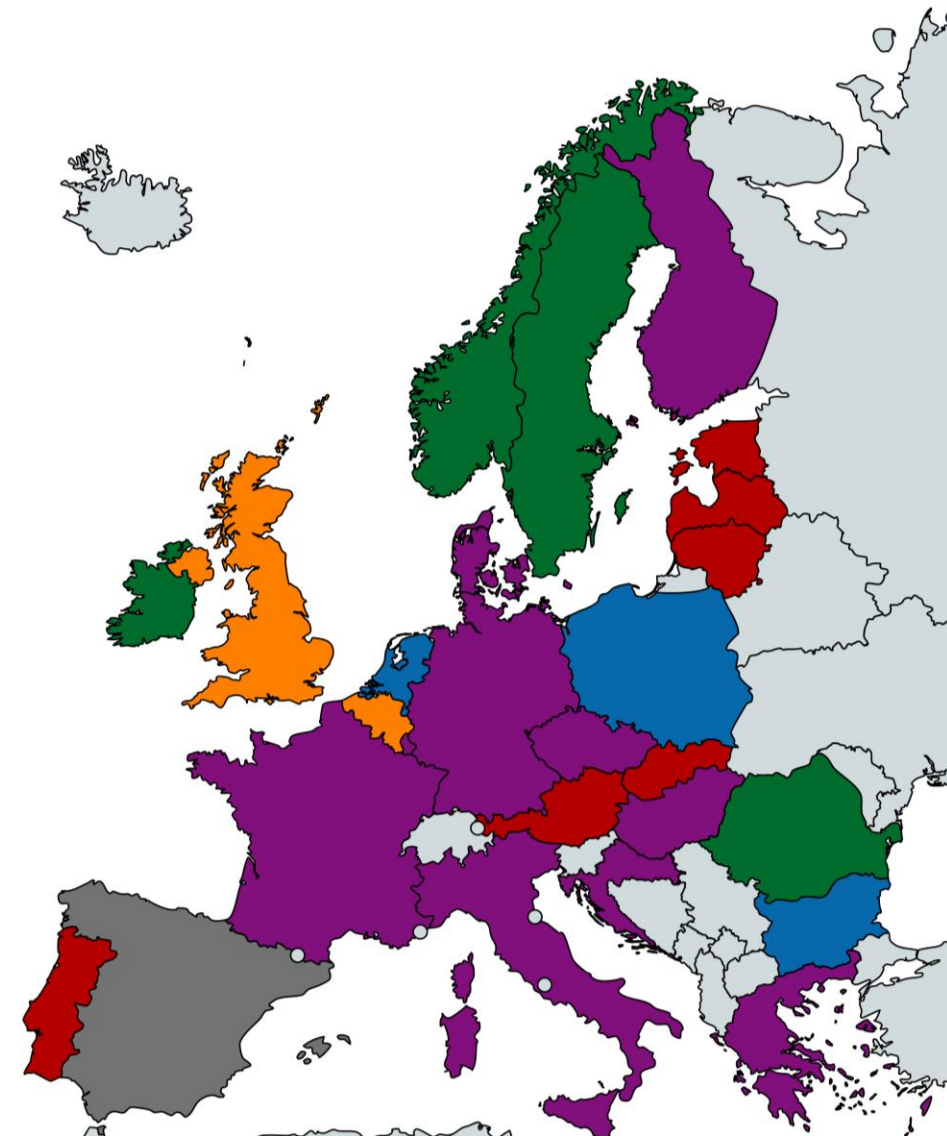
■ Progress in the Clean Energy Package*:

- market-based support
- end of priority dispatch
- balancing responsibility for all

*** but current schemes grandfathered**

■ **Still a wide diversity of support schemes, and no tradability of renewable attributes**

■ **No coordination with EU ETS**
EFET (overlapping policies)



Source: EFET, based on CEER data

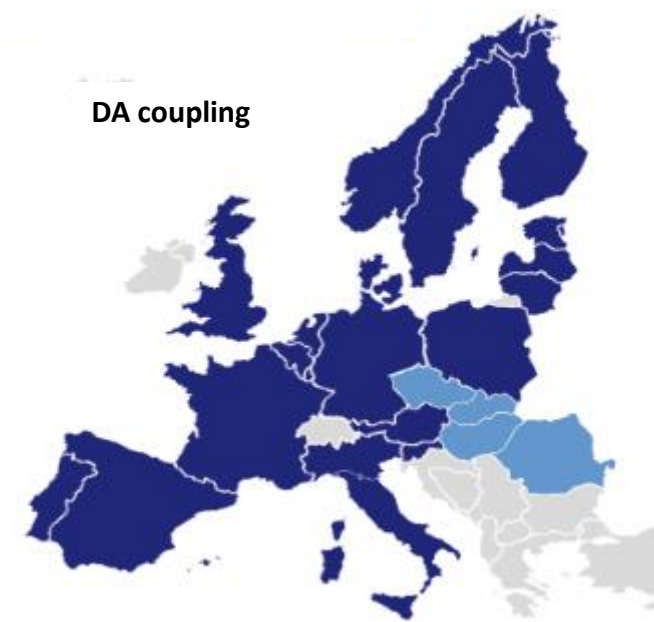
Continued integration of electricity markets

■ Well advanced DA market coupling

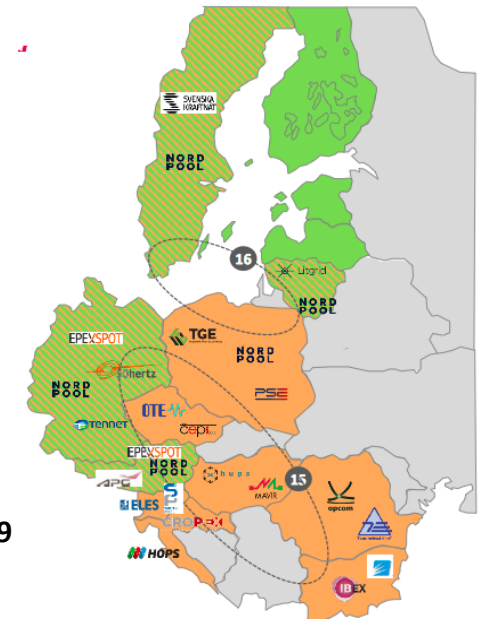
- > MRC (NWE, Nordic, Baltic, SWE and Italy) including CWE with flow-based calculation
- > 4MMC (CZ, SK, HU, RO)
- > Q3 2020: coupling of MRC+4MMC+PL

■ Coupling of ID markets in progress

- > Go-live June 2018 with CWE, Nordic, SWE
- > 19 Nov 2019: coupling CEE/Baltic
- > Extensions to Italy (2020) and SEE (tbc)



XBID First wave 2018



XBID Second wave 2019

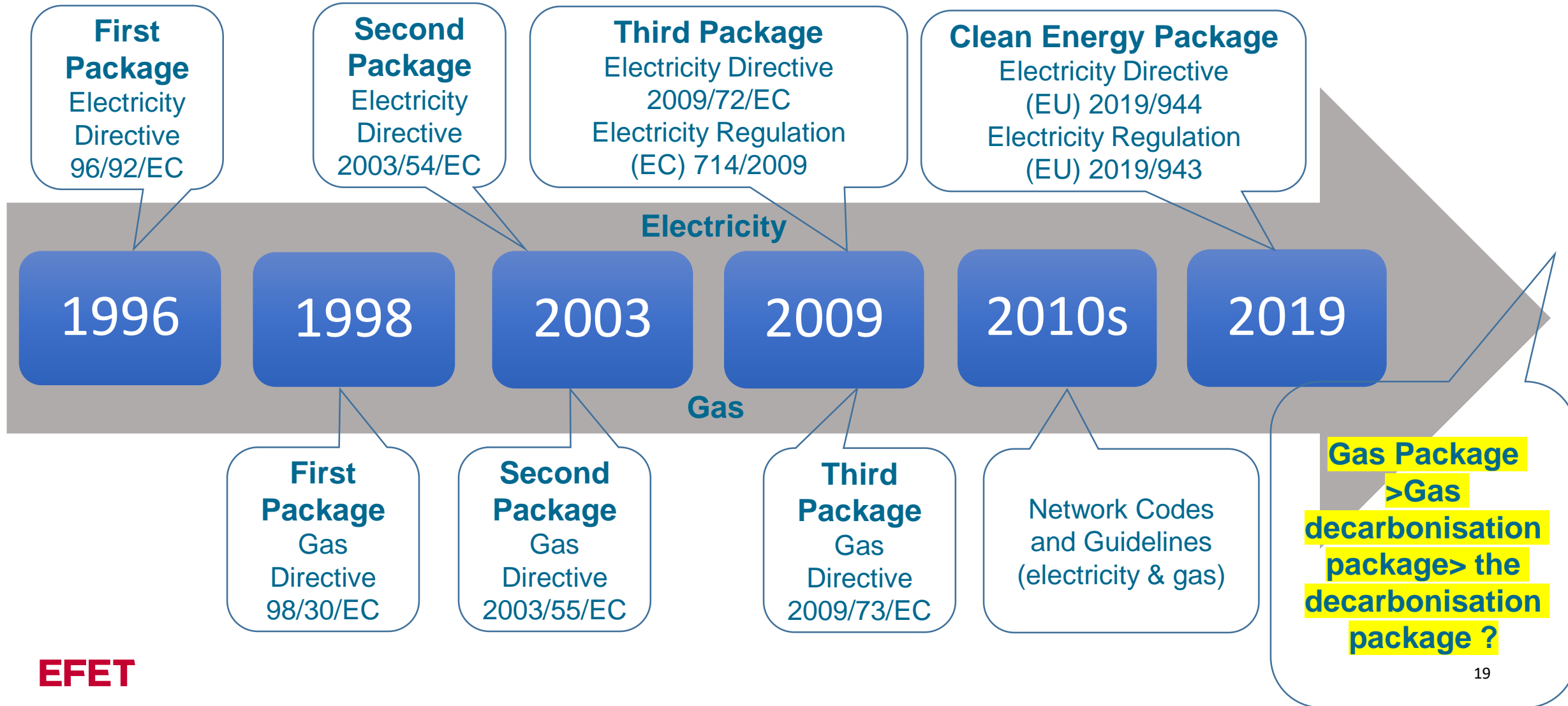
The robustness of price signals deserves continued attention

- **The imbalance price is the corner stone of electricity markets.** Need for reforms:
 - >No artificial component linking to spot prices
 - >Harmonisation at EU level
 - >Information in real time
- **Price caps** prevent scarcity pricing
- **Regulated retail tariffs** shield consumers from energy market reality



What should we expect in the future ?

Timeline of Internal Energy Market Legislation

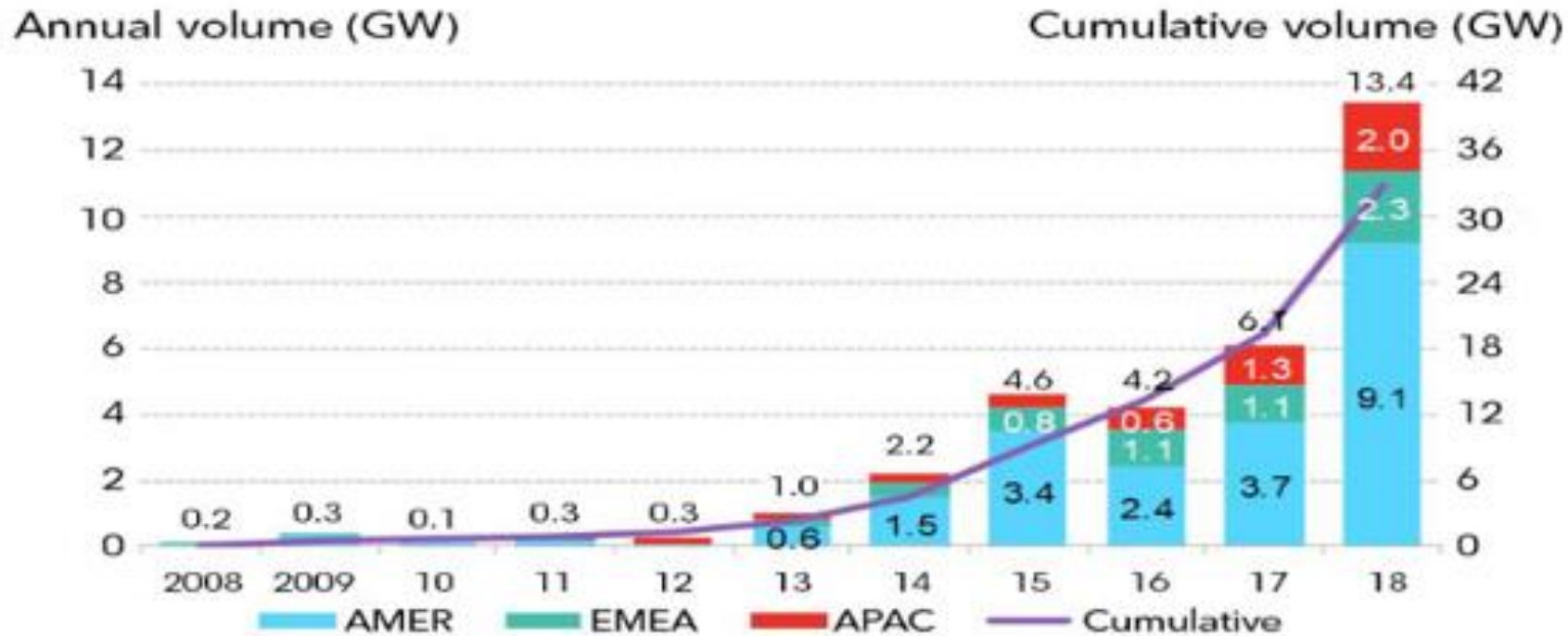


What should we expect in the future

- More short term trading
- More automated trading
- More RES-E development without subsidies > PPA's
 - New players, willing to pay more for green electrons

PPA's – Power Purchase Agreements

Figure 1: Global corporate PPA volumes



Source: BloombergNEF. Note: Data in this report is through 2018. Onsite PPAs not included. Australia sleeved PPAs are not included. APAC number is an estimate. Pre-market reform Mexico PPAs are not included. These figures are subject to change and may be updated as more information is made available.

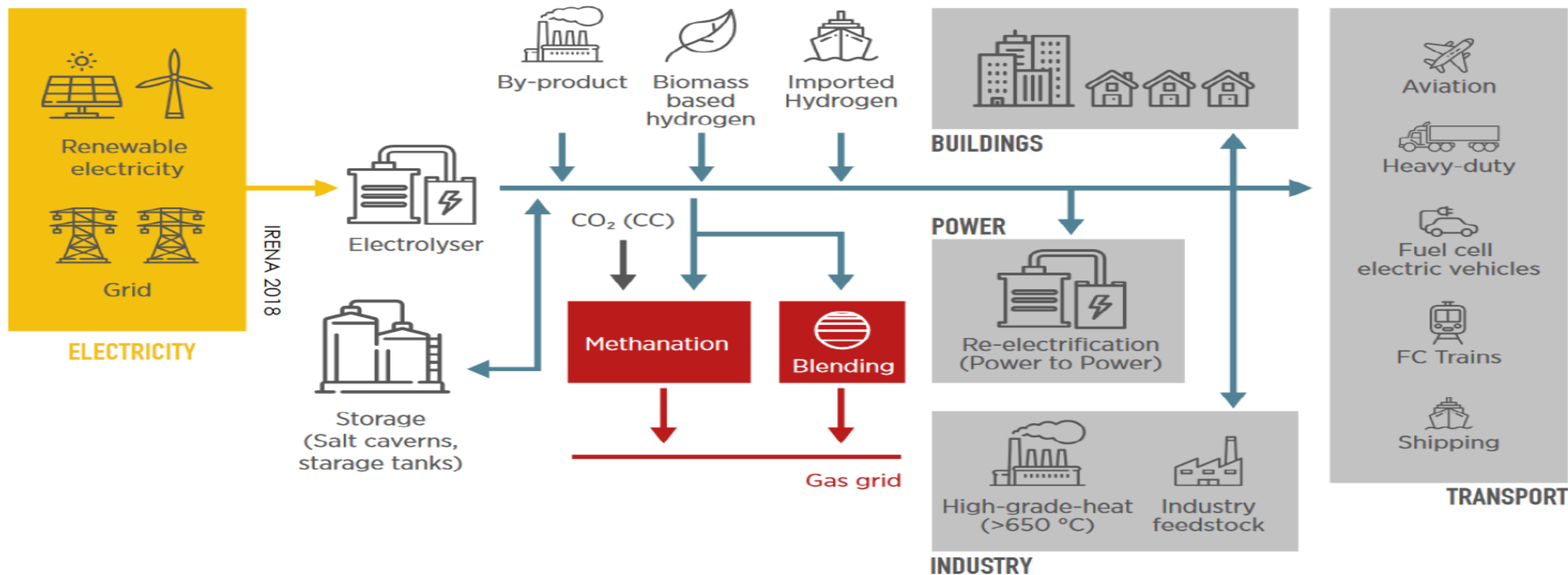
What should we expect in the future

- More short-term trading
- More automated trading
- More RES-E development without subsidies > PPA's
 - New players, willing to pay more for green electrons
- RES gas & RES gas certificates
 - (biomethane & hydrogen Guarantees of Origin GOs)
 - New players, willing to pay more for green molecules
- More Sector coupling

Sector coupling



Hydrogen is an important piece of the puzzle for sectoral integration



What should we expect in the future ?

Is the world moving from an era of change into a change of era ?

Geo-political transition: from Unipolar to Multi polar world ?



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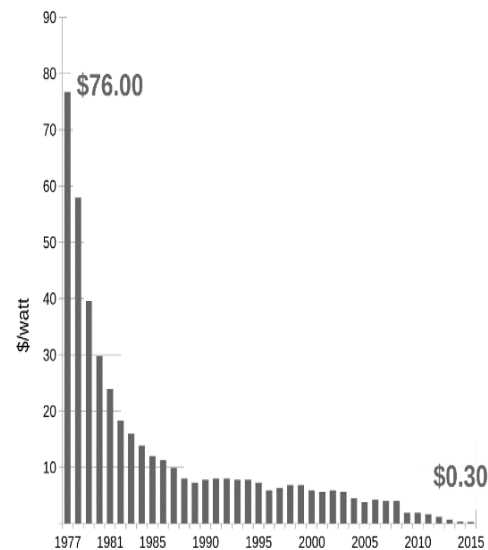
Energy transition (De-carbonisation; De-centralisation; Digitalisation)

Power systems of the future

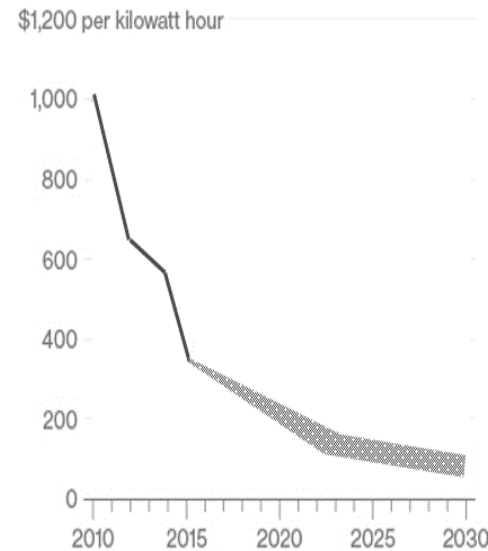
Disruptive developments driving key changes in future grids

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Price history of silicon PV cells¹ in US\$ per watt



Cost for lithium-ion battery packs²



Green Power to X



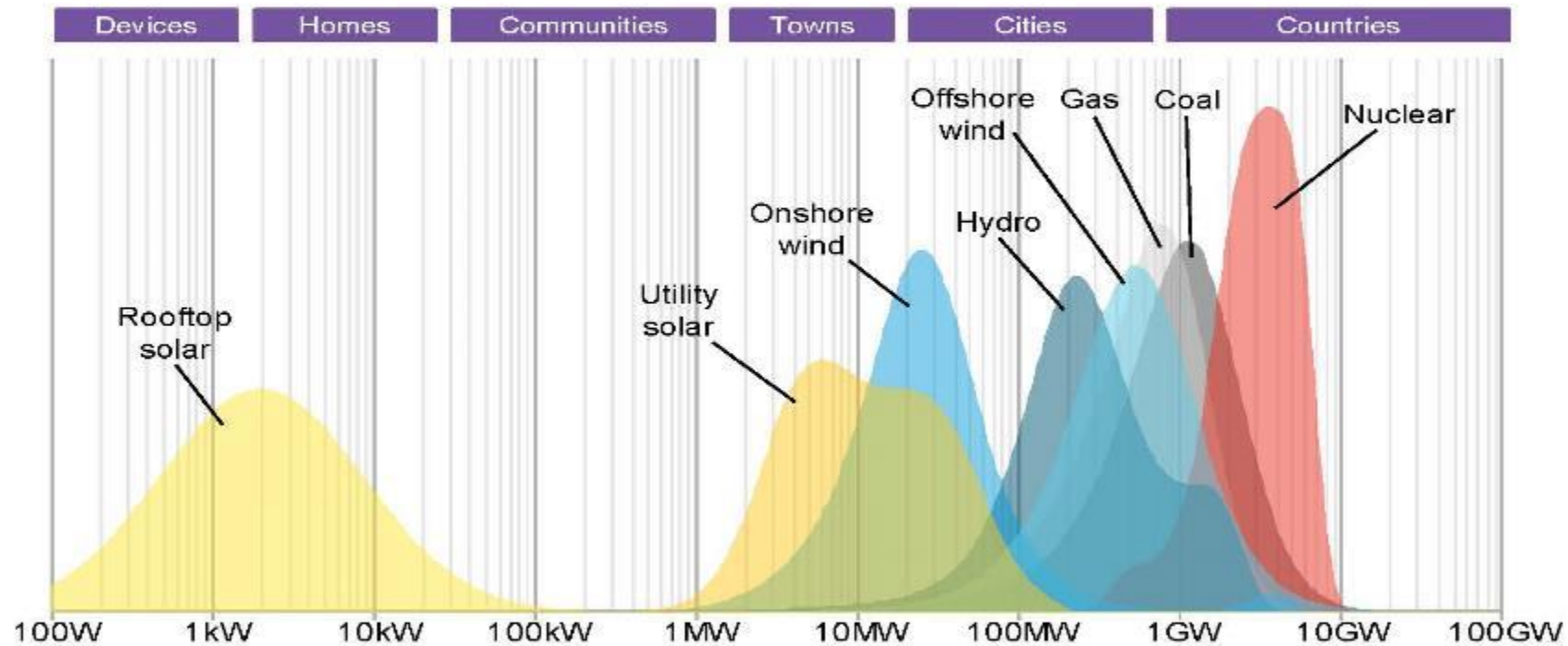
E.g. electrolysis of water on
The basis of wind and solar
energy from ultra cheap
Production sites

Batteries, photovoltaic, PtX

- Dramatic cost reduction – to be continued
- Scalability of technologies
- Consumer investment across market segments accelerating developments

Scale of different types of generation in Europe

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What should we expect in the future ?

Is the world moving from an era of change into a change of era ?

Geo-political transition: from Unipolar to Multi polar world ?

Energy transition (De-carbonisation; De-centralisation; Digitalisation)

IT becoming more important than energy !

- See company listing

2008

**Biggest
companies**

In Market value

Third quarter ^[61]	
	Exxon Mobil ▲403,366
	PetroChina ▼325,097.5
	ICBC ▼237,951.5
	Microsoft ▲229,630.7
	HSBC ▲198,561.1
	China Mobile ▼195,680.4
	Wal-Mart ▲189,331.6
	Petrobras ▲189,027.7
	China Construction Bank ▲186,816.7
 	Royal Dutch Shell ▲175,986.1

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2018

Third Quarter	
	Apple Inc. ▲1,091,000 ^[10]
	Amazon.com ▲976,650 ^[11]
	Microsoft ▲877,400 ^[12]
	Alphabet Inc. ▲839,740 ^[14]
	Berkshire Hathaway ▲523,520 ^[17]
	Facebook ▼473,850 ^[16]
	Alibaba Group ▼423,600 ^[18]
	Tencent ▼388,080 ^[15]
	JPMorgan Chase ▲379,440 ^[19]
	Johnson & Johnson ▲370,650 ^[20]

Is the world moving from an era of change into a change of era ?

Geo-political transition: from Unipolar to Multi polar world ?

Energy transition (De-carbonisation; De-centralisation; Digitalisation)

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New Technologies also driving change ? : AI, Blockchain

Less trust in central government & media by growing number of people

Negative interest is not sustainable in the long run

Renewable generator business models

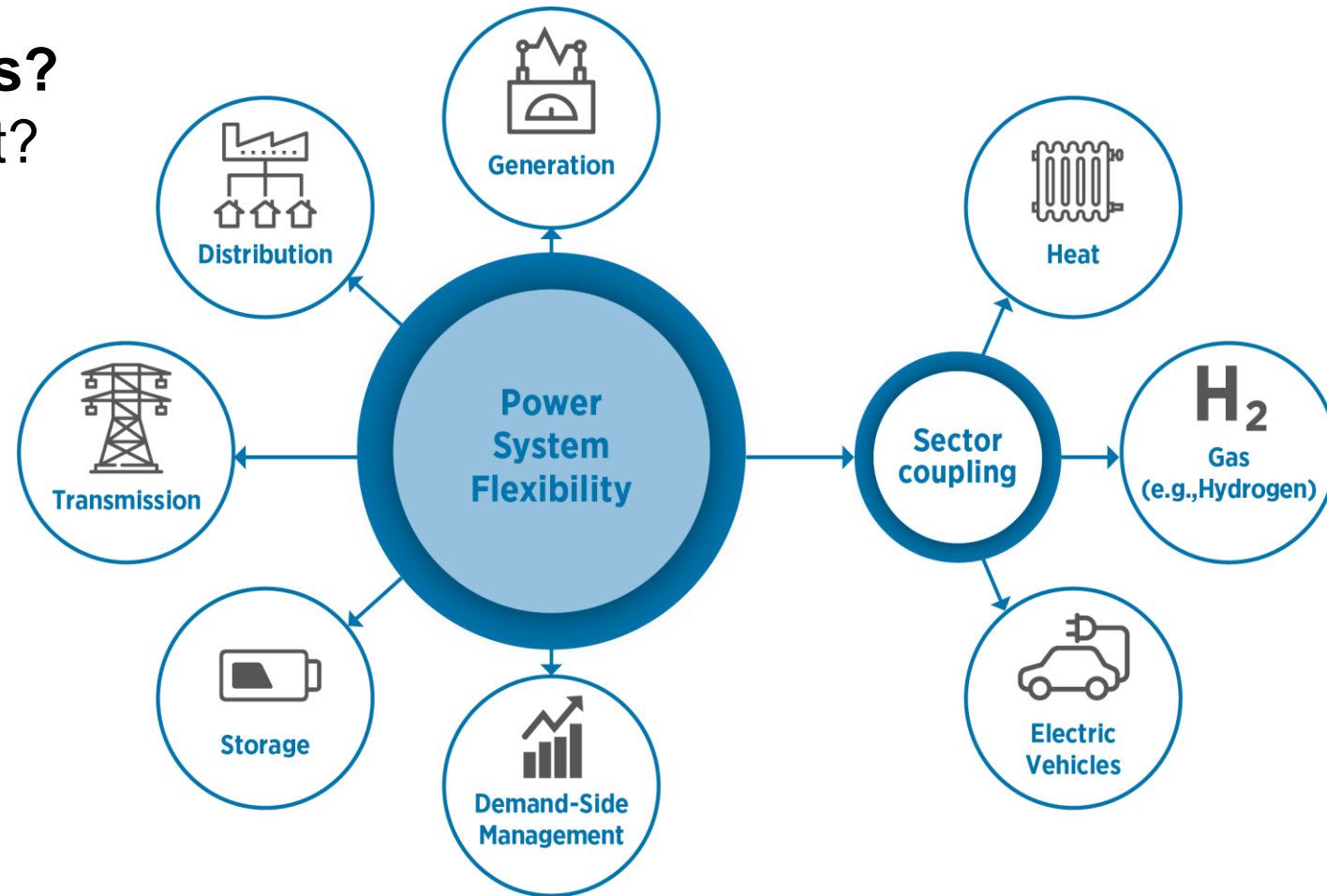
along the entire value chain!



Increasing sophistication				
Feed-in-tariffs	Auctions	PPAs	Electricity markets	New business model
Stable revenues	Stable revenues	Stable revenues	Revenues insufficient	Incentivizes new build
Uncompetitive	Somewhat competitive	Competitive	Competitive	Competitive
Tax burden	Tax burden	Privately funded	Privately funded	Privately funded
Do not solve system problems	Do not solve system problems	Do not solve system problems	Do not create or solve system problems	Keeps the lights on
Verdict: Yesterday's news	Verdict: So hot right now	Verdict: The next big thing	Verdict: Requires new market design	Flexibility is key!

Harnessing the potential of flexibility

- How to **define flexibility products?** (energy? congestion management? something new?)
- How do we maintain **strict unbundling of market and system activities?**
- How to ensure the **true value of energy** enables new technologies and services to emerge?



**What do energy markets participants
aspire ?**

What do growing energy trading market participants aspire ?

- More turnover (opportunities)
- More profit (margin)

What do growing energy market participants aspire ?

- More turnover (opportunities)
- More profit (margin)
- *But also:*
- Be recognised as “green”
- Be seen as socially & environmentally correct
- To have the freedom to carry out the company plans and use the opportunities in the changing energy markets

What do growing energy trading market participants aspire ?

- Less (overhead) costs
- Less risks:
 - Less regulatory uncertainty
 - Less political uncertainty
 - Less legal uncertainty
 - Less financial uncertainty (Energy Taxation Directive (ETD)?)

What can be improved ?

What can be improved ?

- More regulatory certainty
- More predictable policies
 - Stick to market based mechanisms. Not politicians picking winners
 - Stick to clear principles to maintain a level playing field
- More harmonisation and standardisation
- More (European) voluntary cooperation
- Open source standards instead of propriety standards
- Room for innovation

What can be improved ?

- Less unnecessary regulations & “bureaucrazy”
 - Less different national solutions
 - Less propriety standards/US dominated monopolies
-
- More (voluntary) European cooperation - Brexit or no Brexit



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Financial WMDs

\$15
TRILLION
U.S. Money Supply



\$50
TRILLION
World GDP



\$100
TRILLION
Total value of the
world's stock and
bond markets



\$516
TRILLION
DERIVATIVES



The global derivatives market is huge!

\$50 TRILLION



SIZE OF WORLD GDP

\$100 TRILLION



TOTAL VALUE OF WORLD'S
STOCK AND BOND MARKET

**\$ 700
TRILLION**



GLOBAL FINANCIAL DERIVATIVES
MARKET

(Text)

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The **Bureaucracy** is ever expanding to cover the needs of expanding bureaucracy' (Oscar Wilde)

(Text)

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