European
Commission

SMART AND CLEAN ENERGY FOR ALL

New Electricity Market Design

GOALS OF THE CLEAN ENERGY FOR ALL EUROPEANS PACKAGE

LEADING THE ENERGY TRANSITION - CREATING VALUE FOR CITIZENS AND BUSINESS

Putting energy efficiency first
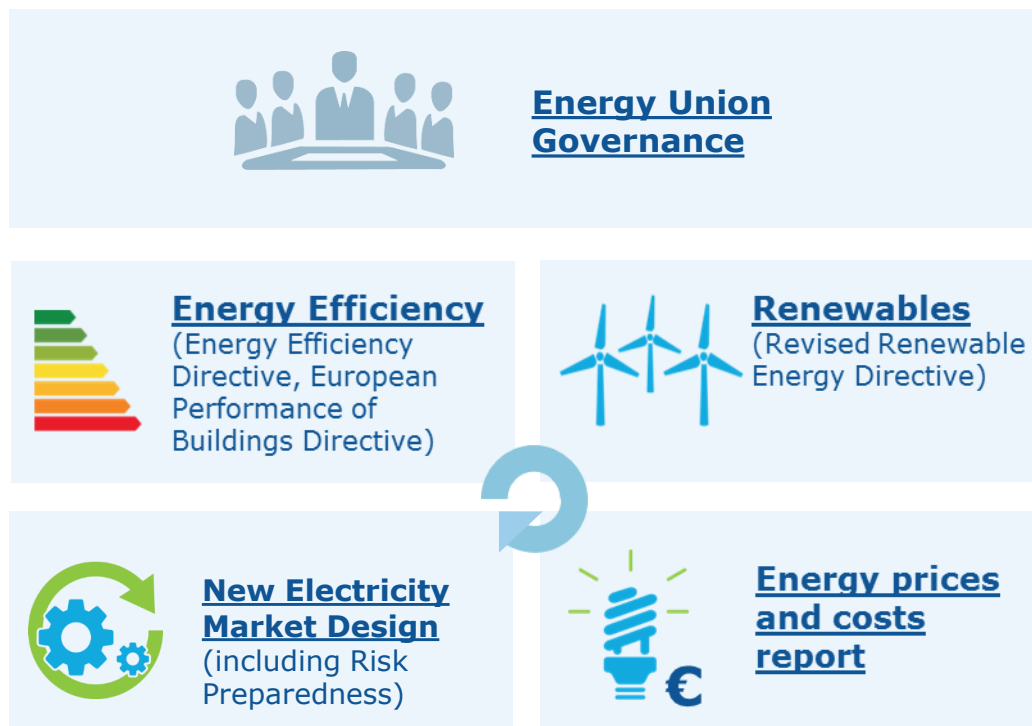
Demonstrating global leadership in renewables

Delivering a fair deal for consumers

European Commission

ELEMENTS OF THE PACKAGE

A SET OF COHERENT MEASURES

" In essence the new package is about tapping our green growth potential across the board"
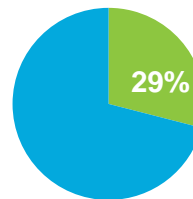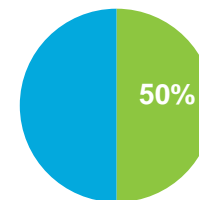
Commissioner Miguel Arias Cañete (2016)

Energy Union Governance

Energy Efficiency (Energy Efficiency Directive, European Performance of Buildings Directive)

Renewables (Revised Renewable Energy Directive)

New Electricity Market Design (including Risk Preparedness)

Energy prices and costs report

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CONTEXT

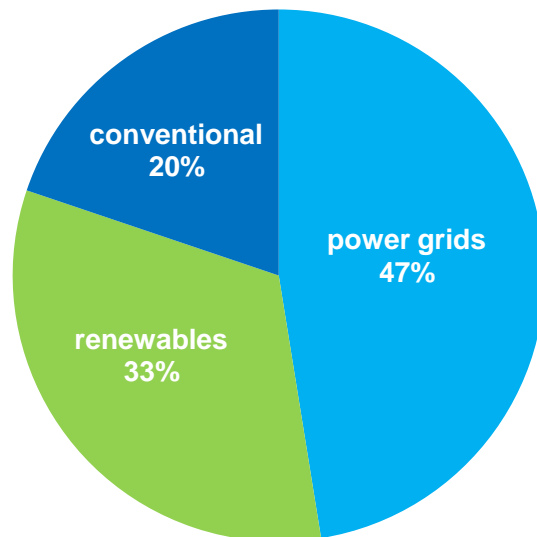## MORE POWER COMING FROM RENEWABLES
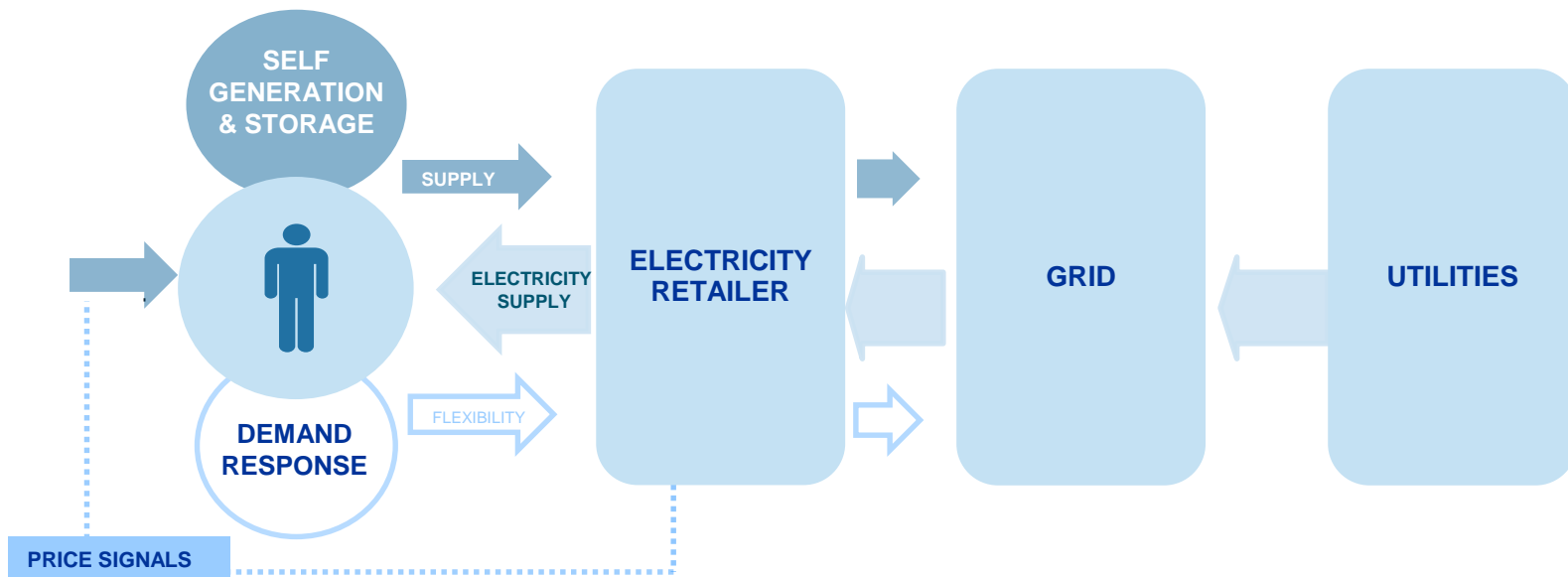
2014 29%

2030 50%

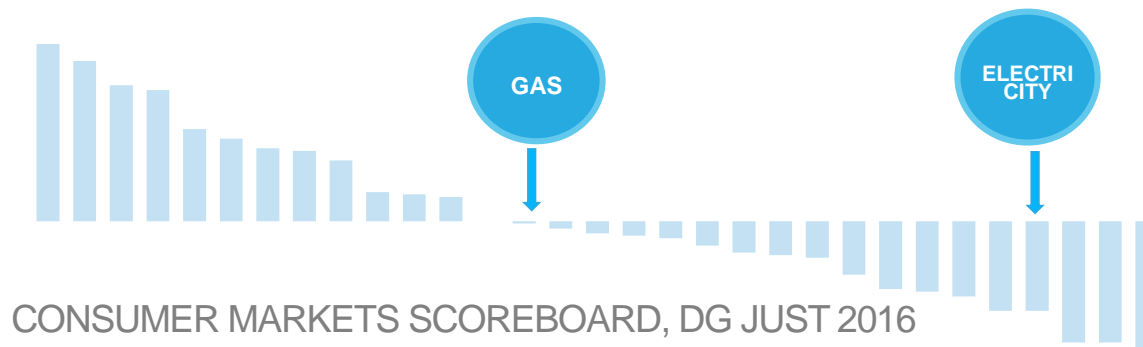Today up to **90%** of variable renewable electricity is connected to distribution grids

INVESTMENT NEEDS FOR POWER: €75 bn PER YEAR FOR 2021-2030

conventional 20%

power grids 47%

renewables 33%

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ACTIVE CONSUMERS ARE KEY TO DELIVERING A MORE FLEXIBLE ENERGY SYSTEM…

SELF GENERATION & STORAGE

SUPPLY

ELECTRICITY SUPPLY

ELECTRICITY RETAILER

GRID

UTILITIES

DEMAND RESPONSE

FLEXIBILITY

PRICE SIGNALS

…BUT LOW CONSUMER SATISFACTION REMAINS A CHALLENGE

GAS

ELECTRICITY

CONSUMER MARKETS SCOREBOARD, DG JUST 2016

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EMPOWERED CONSUMERS

COMPETITIVE PRICES, DEMAND-RESPONSE, SELF-GENERATION, NEW SERVICES

160 GW
Theoretical demand response potential in 2030

100 GW
Theoretical demand response potential today

20GW
Demand response activated today
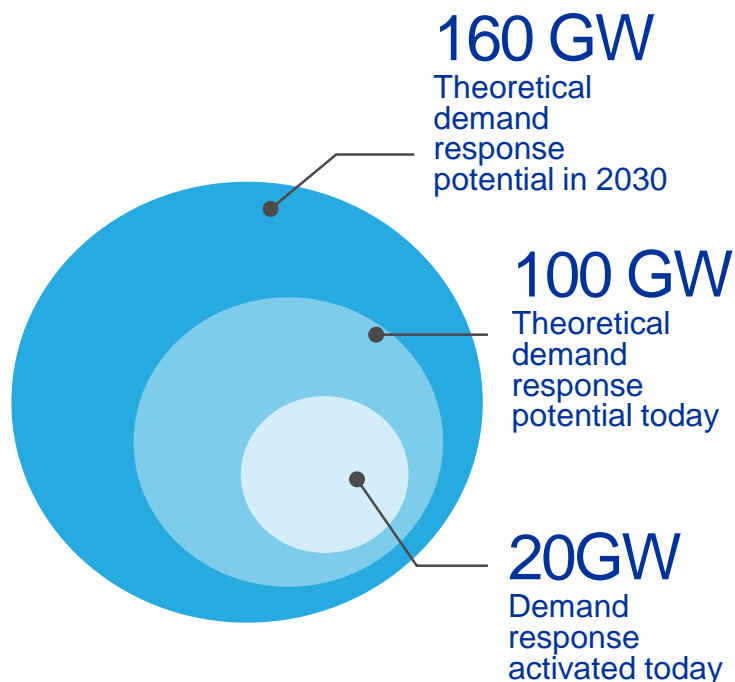
- 17 Member States maintain some form of price regulation for either electricity or gas services for households.
- In some Member States self-generating and self-consuming electricity is effectively banned.
- Most consumers in the EU do not have access to independent aggregators which are the gateway to trading self-generated electricity and to effectively benefit from demand response schemes.

EC PROPOSAL

- Allow price signals to pass from wholesale to retail markets.
- Grant consumers the entitlement to generate electricity and either consume, store or sell back on the market.
- Ensure fair and full market access for independent aggregators and other third party service providers.

Active consumers can gain more control over their energy consumption and spending and keep their energy costs in check

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How can R&D support energy policy?

Multiplication of connected objects (Internet of Things) and generation of data (Big Data) require a reliable infrastructure that is up to the challenge

Horizon2020 focus on (a.o.) digitalisation and grid integration of renewables & promotion of demand response & energy efficiency

What are the energy sector's use cases & requirements for the communication network of the future?

Panel 1
5G opportunities supporting mission critical power system services - What mission-critical services of future grids could benefit from enhanced networking capabilities? What new capabilities are planned to be offered by 5G?

Panel 2:
5G opportunities supporting customer-centred services - What user-oriented energy as a service could be offered thanks to the new capabilities to be offered by 5G?

Panel 3:
Structuring R&D&I – what are the research, development and innovation needs and opportunities for 5G in the energy sector?

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