

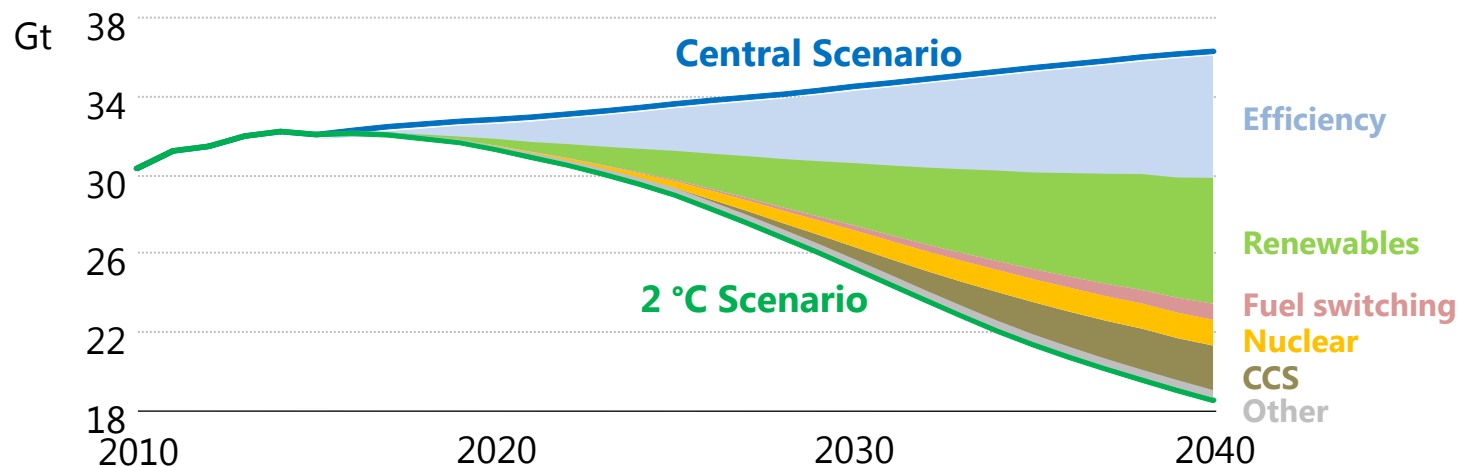


The energy transition of France in the global context

Paul Simons, Deputy Executive Director, International Energy Agency
IFRI, Paris, 10 October 2017

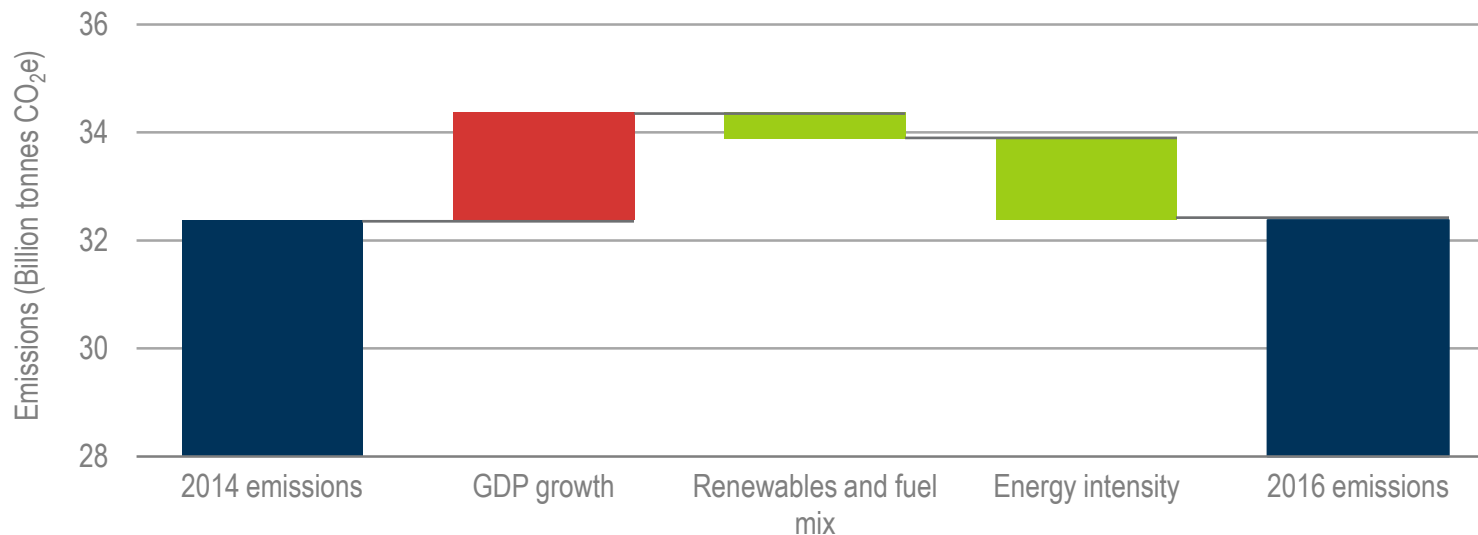


Global CO₂ emissions reductions in the Central & 2 °C Scenario by technology



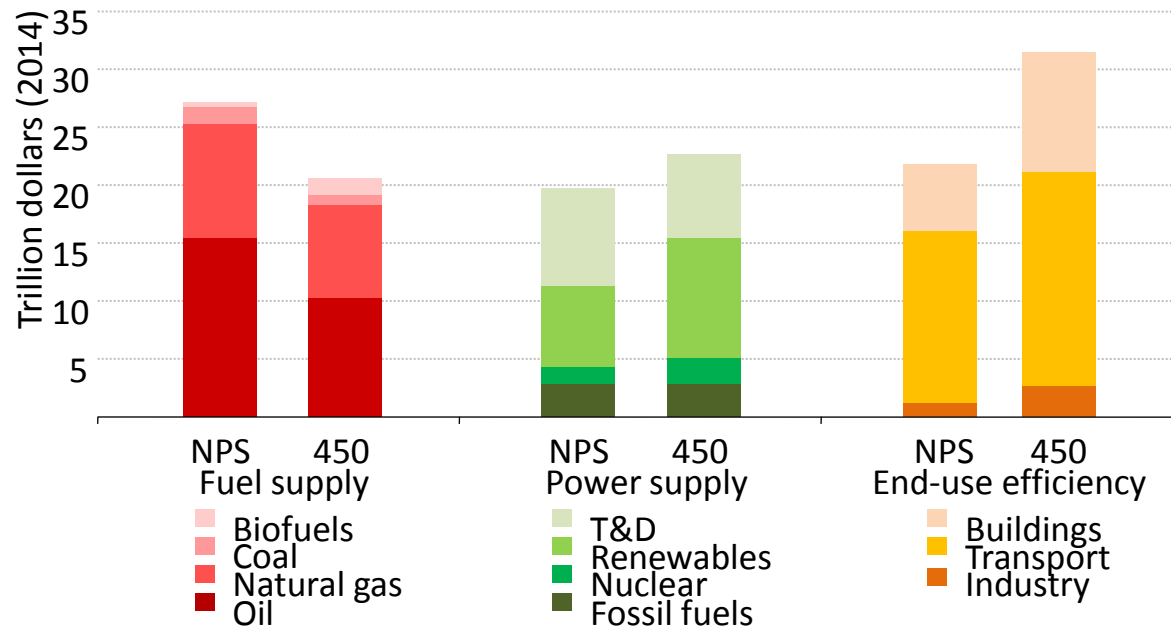
Supply-side investment needs to be re-directed, not increased; demand-side investment for energy efficiency, electrification & renewables needs to ramp up significantly

Factors influencing greenhouse gas emissions, 2014-16



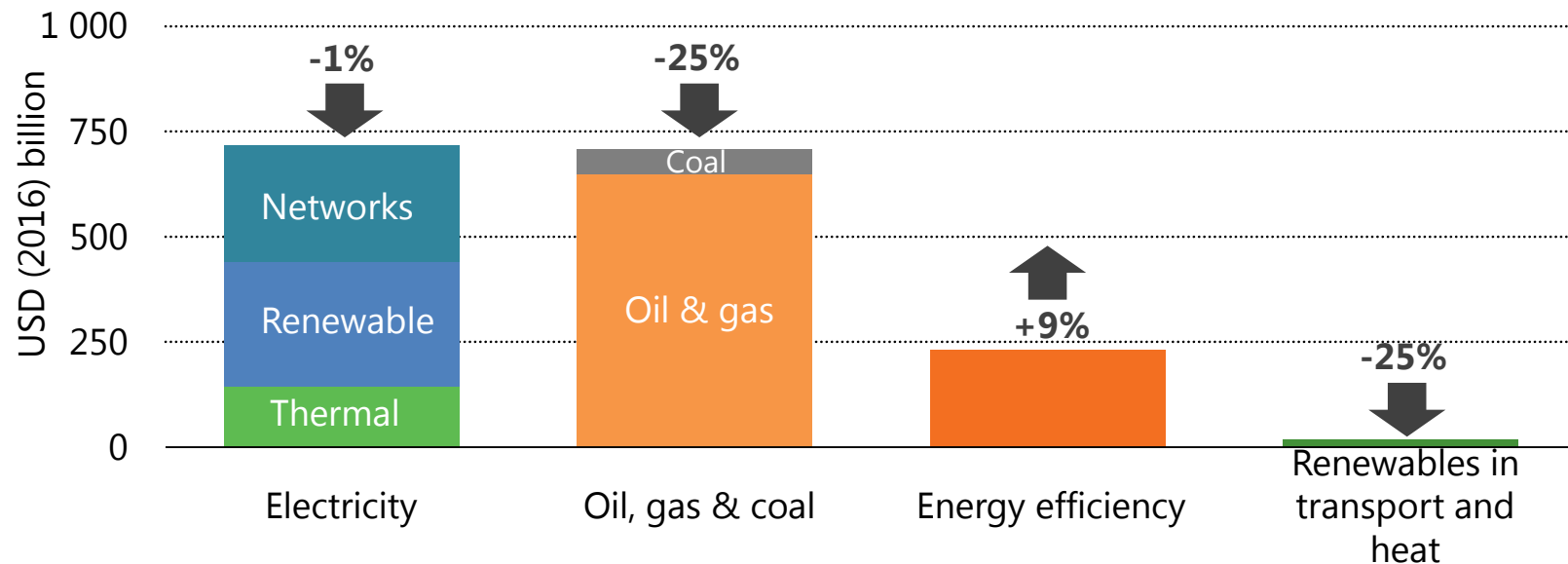
Without the combination of energy intensity improvement and the move towards renewables and cleaner fuels, emissions would have been 2 billion tonnes higher in 2016

Cumulative world energy sector investment by sector & scenario, 2015-2040



A 2 °C pathway requires changing the investment balance across fuels & sectors, and across supply & demand, rather than the scale of the global energy investment

Global energy investment fell 12% in 2016, a second consecutive year of decline

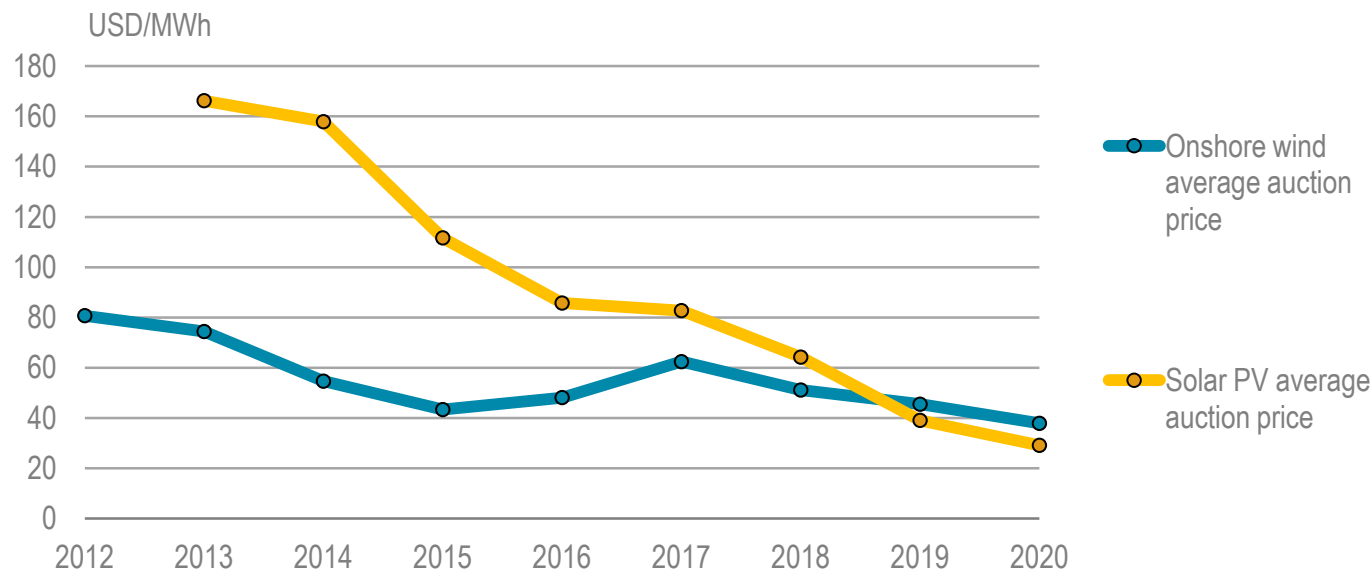


Total energy investment was \$1.7 trillion in 2016. Electricity sector investment overtook oil and gas for the first time, while energy efficiency was the biggest growth sector.

Competition driving renewables costs down

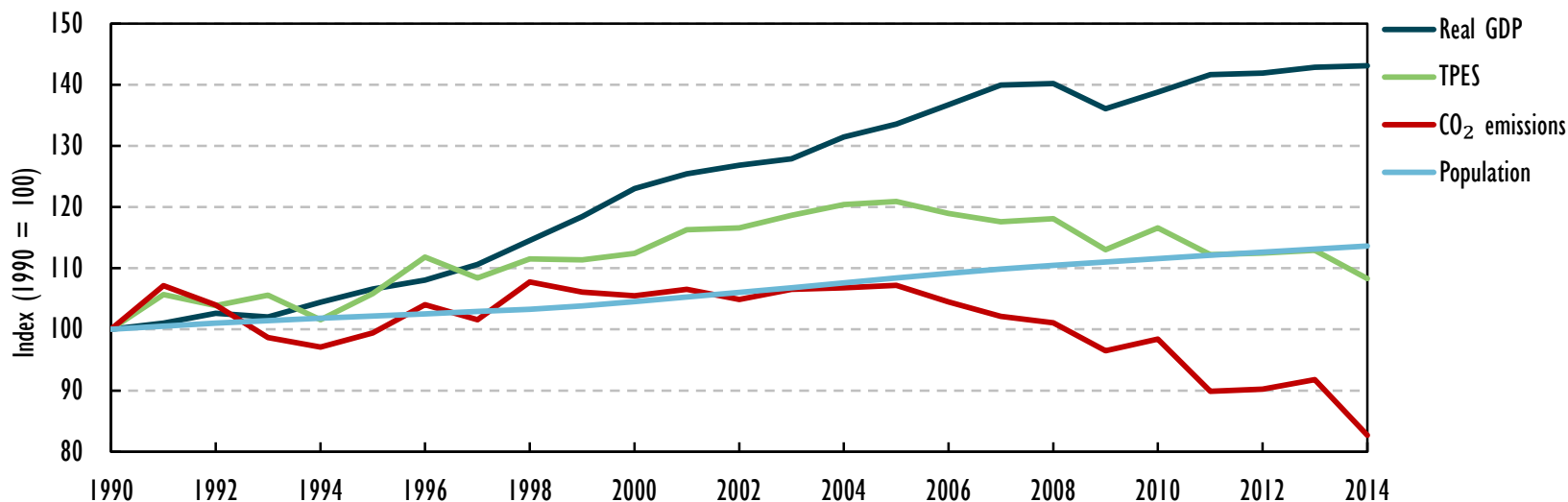


Announced wind and solar PV average auction prices by commissioning date



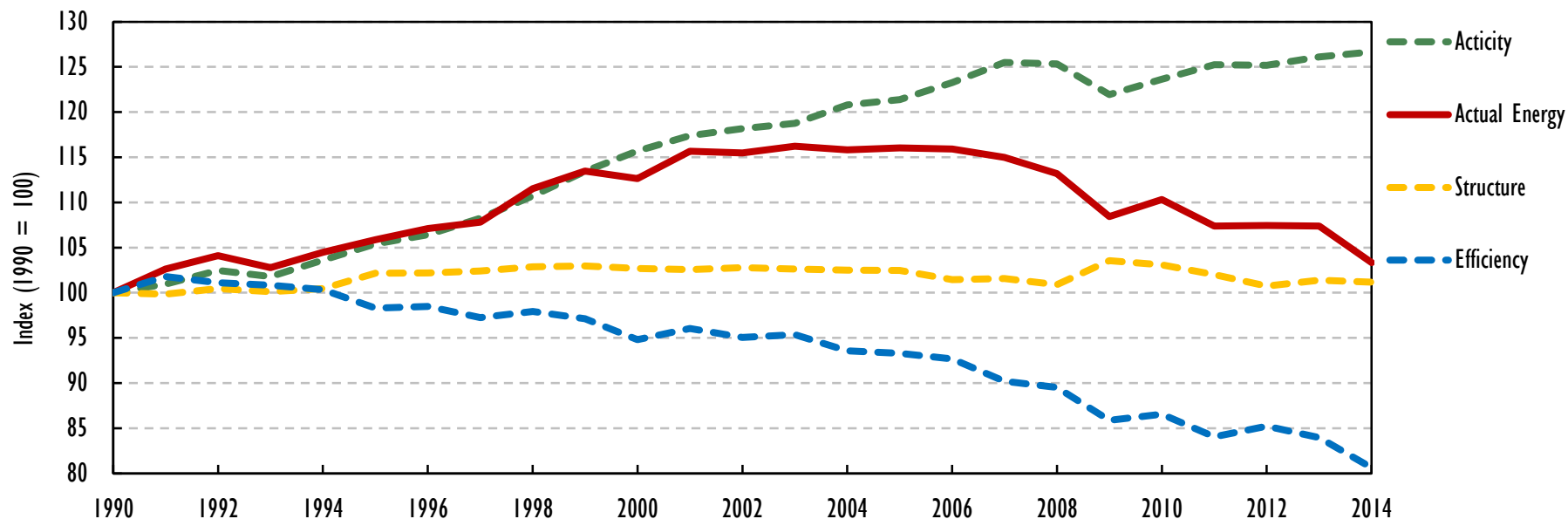
**Price discovery through competitive auctions effectively reduces costs along the entire value chain;
Auctions with long-term contracts will drive almost half of new capacity growth over 2017-22**

Emissions: Low-hanging fruits are gone...



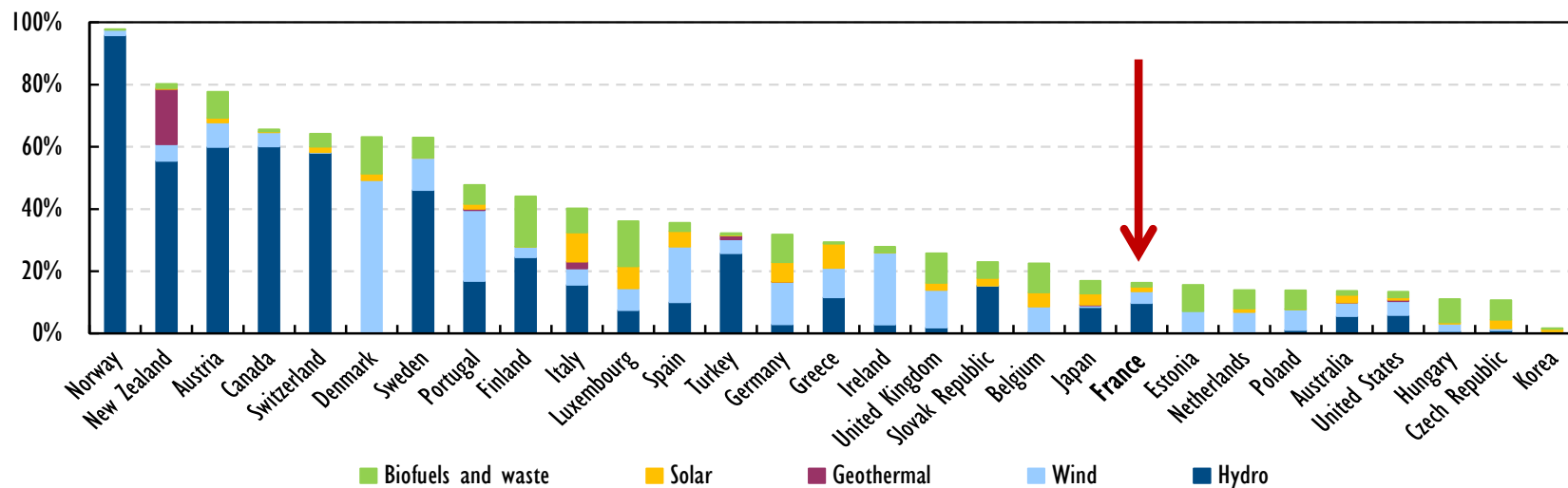
Since 2008, energy supply, consumption and energy-related CO₂ emissions have been falling fast, except in the transport sector

Energy efficiency progressed



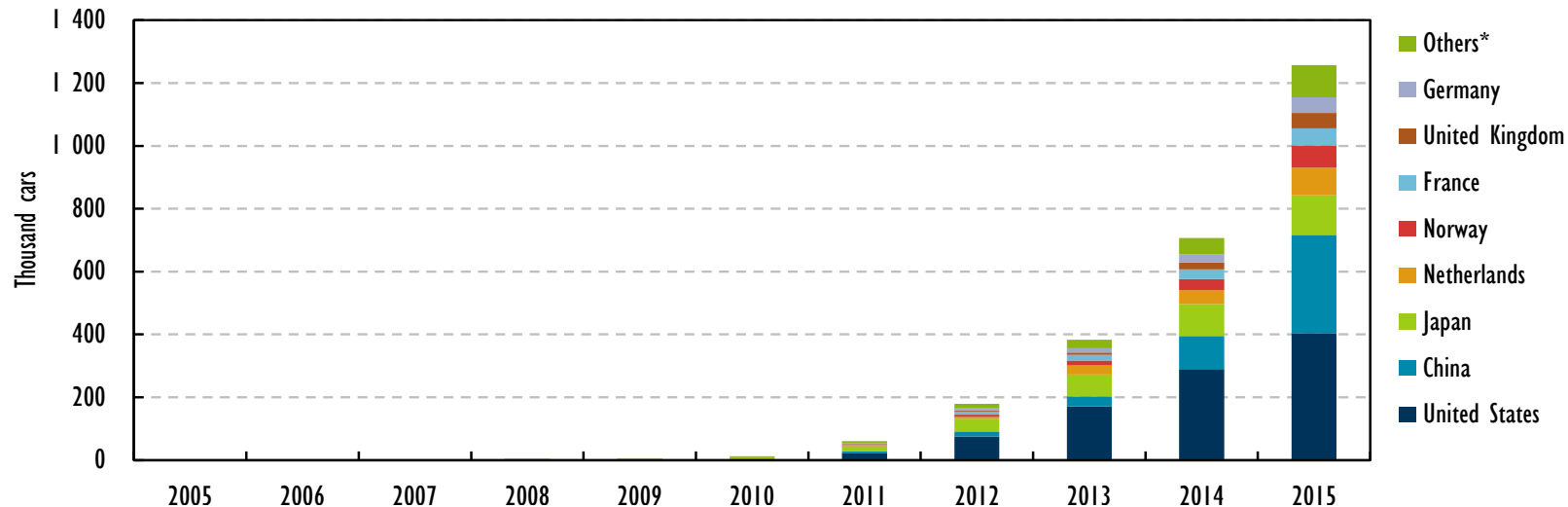
Decline in energy consumption is mainly the result of greater energy efficiency, notably in the residential sector but renovation requires attention

Share of renewables in the electricity mix still below IEA average



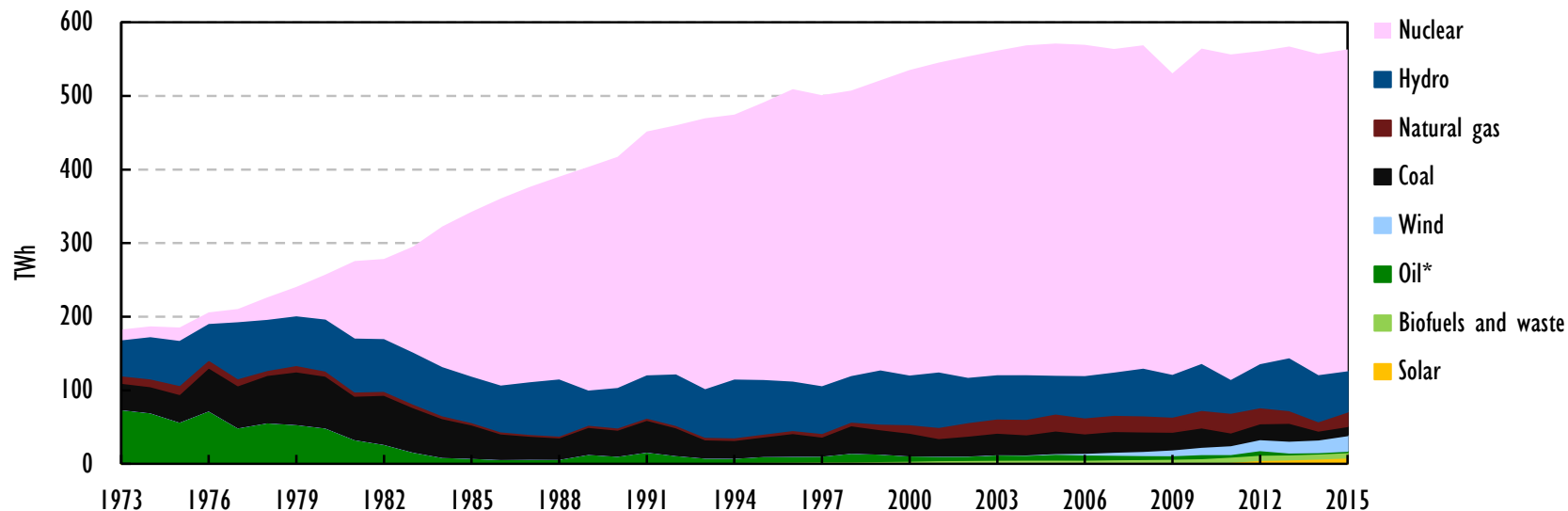
Introduction of single permit, feed-in premium/auctions, and broader tax base are welcome reforms and will support solar and onshore wind development

Transport sector: Low carbon mobility on the rise



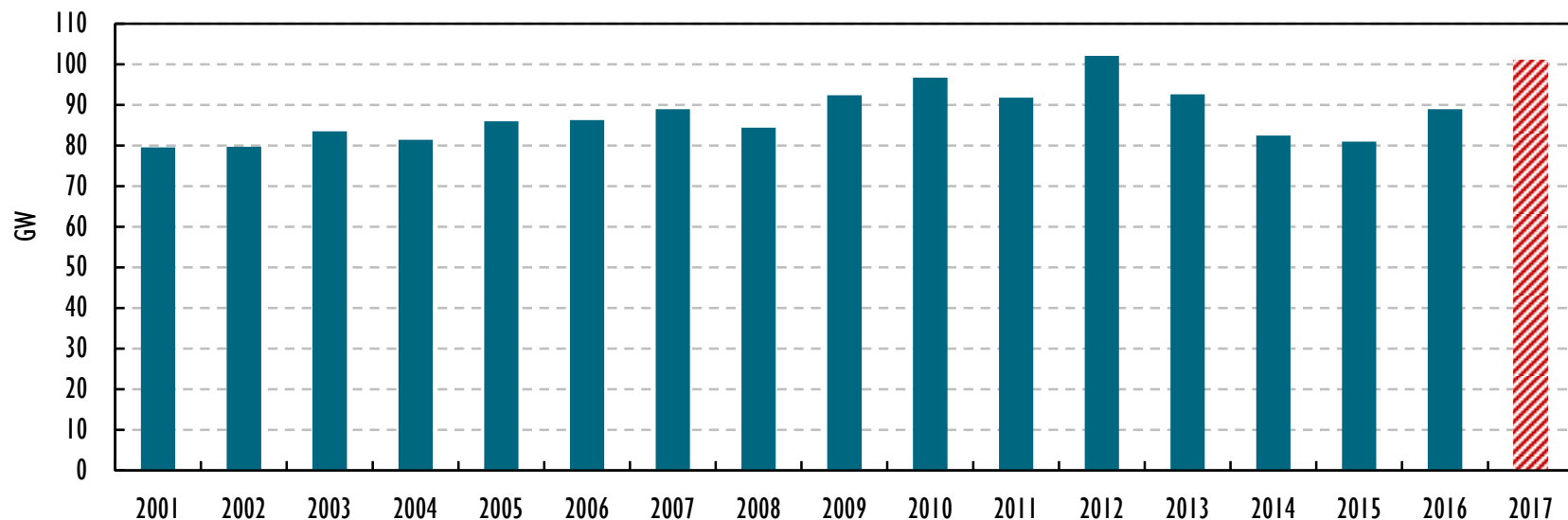
France is among Europe's leaders in the deployment of Evs, also thanks to bonus-malus, tax incentives and smaller diesel-gasoline tax differential, Climate Plan 2017 and ban of petrol/diesel car sales by 2040.

Electricity: Role of nuclear energy



France has a low-carbon energy mix, thanks to the 78% share of nuclear energy. However, the nuclear fleet is ageing and the market highly concentrated

Electricity sector: More flexibility to meet peak demand



**France is experiencing lower nuclear availability.
Imports play an important role to cover weather-induced peak demand. A smarter system is needed.**

Progress in many sectors

- International leadership in climate change and green finance (COP21)
- Legal framework and governance: Energy Transition for Green Growth Act with ambitious targets for energy efficiency and renewables
- Market opening: end of regulated tariffs for large consumers, new interconnections and demand-side response

Challenges ahead

- Electricity security and system integration with nuclear and VRE
- Financing the energy transition
- Catching up on renewable energy and energy saving goals for 2020
- Local air quality in the cities
- End of regulated tariffs for all?

The French energy transition is raising international leadership at home and globally.

- **Accelerated transition:** *Ensure long-term visibility of financing and adopt progress reviews and roadmaps based on robust scenarios.*
- **Rules for clean energy investment:** *Boost energy efficiency and renewable energy based on the PPE and national action plans.*
- **The future of nuclear:** *When implementing the 50% nuclear target, guarantee continuous security of electricity supply and maintain the low carbon footprint. Take into account supply/demand, safety and economic aspects when deciding on LTOs and new builds.*
- **Strong energy markets:** *Continue work towards market opening, competition, and consumer empowerment in gas and electricity retail markets and consider the phase-out of regulated tariffs.*

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