



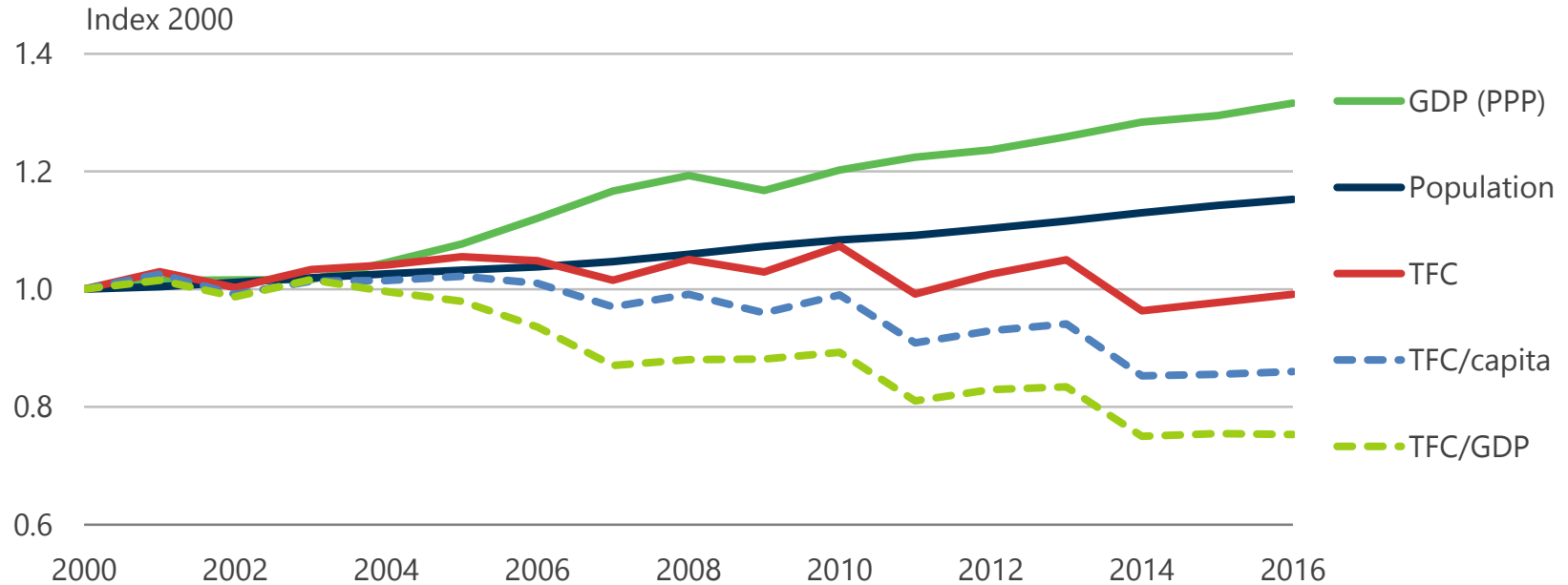
IEA In-depth review of Switzerland

Paul Simons, Deputy Executive Director, International Energy Agency
Bern, 8 October 2018



Decoupling of economic and energy growth since 2000

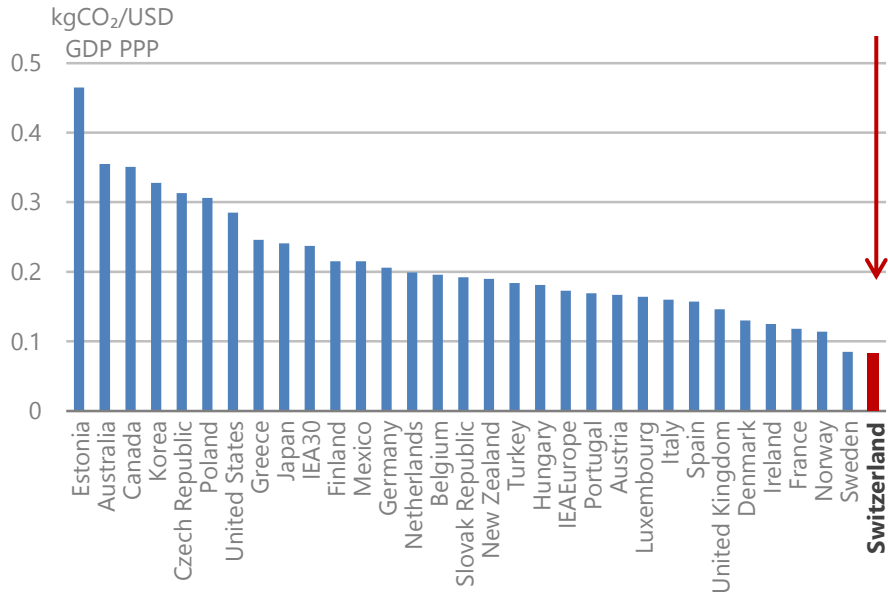
Energy intensity drivers, 2000-16



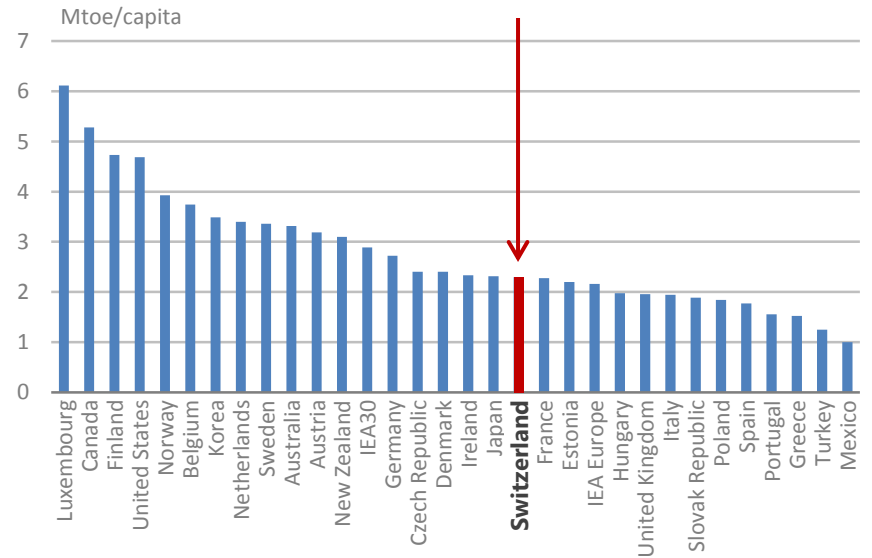
Since 2000, 15% population growth

Switzerland compares well to other IEA countries

Energy-related CO₂ emissions per GDP in IEA countries, 2016

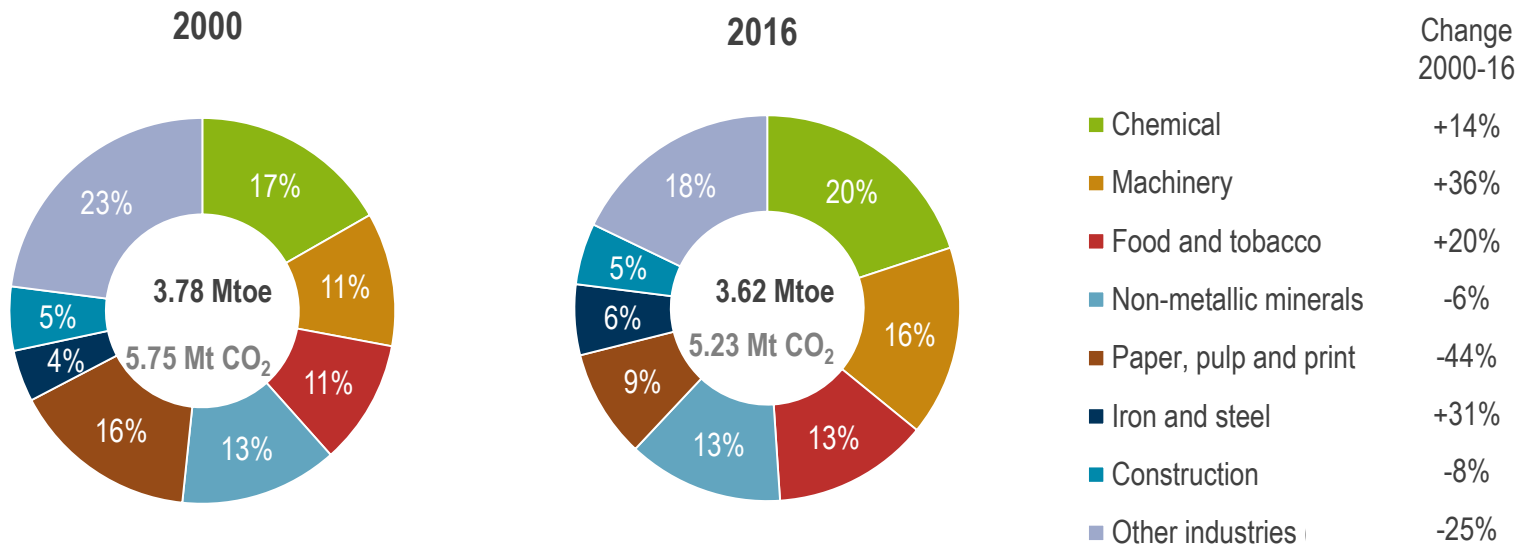


Final energy consumption per capita in IEA countries, 2016



Industry energy use and emissions are stable, but with sectoral changes

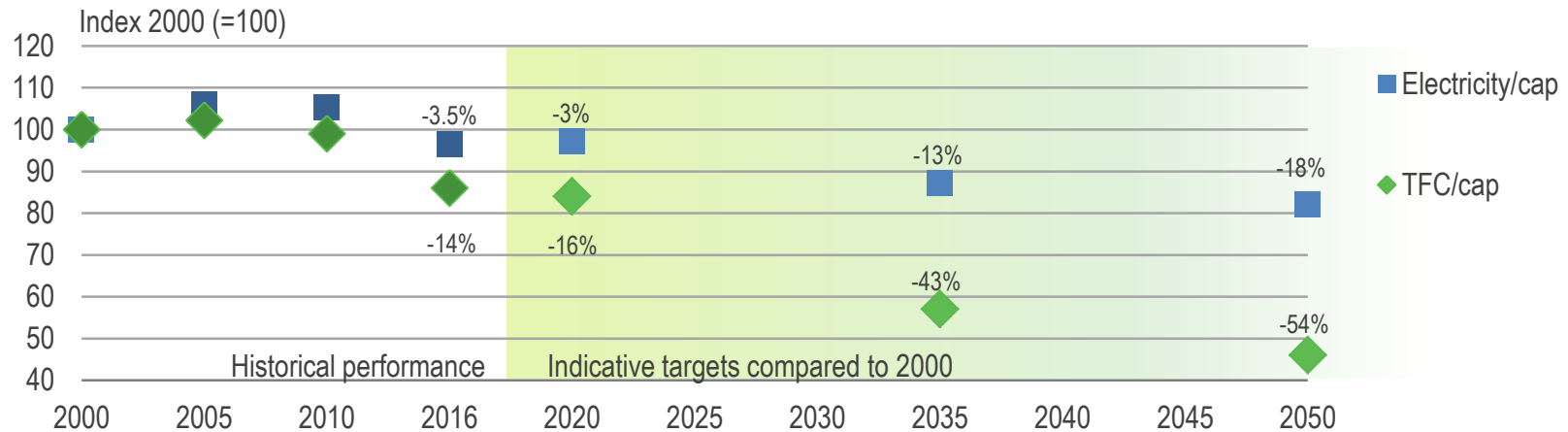
TFC in industry by industry sector, 2000 and 2016



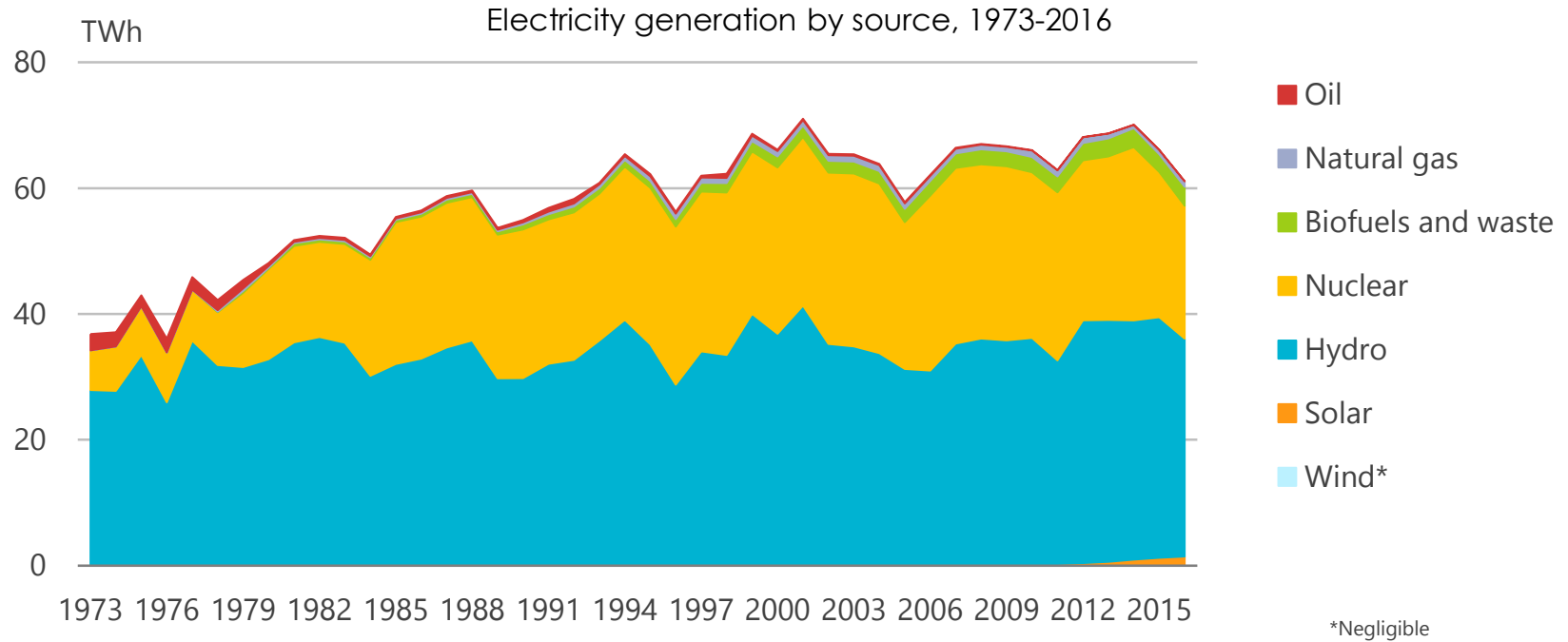
**Between 2000 and 2016, energy use in industry declined by 4% and emissions by 9%
However, large changes per sub-sector indicates a structural shift in industry**

The Energy Strategy 2050 – transforming the energy sector

- Gradual nuclear phase-out starting in 2019
- 50% GHG reduction by 2030 - Aspiration of 1–1.5 ton CO₂/ per capita in 2050
- Indicative energy efficiency targets to 2035 and aspirational targets to 2050



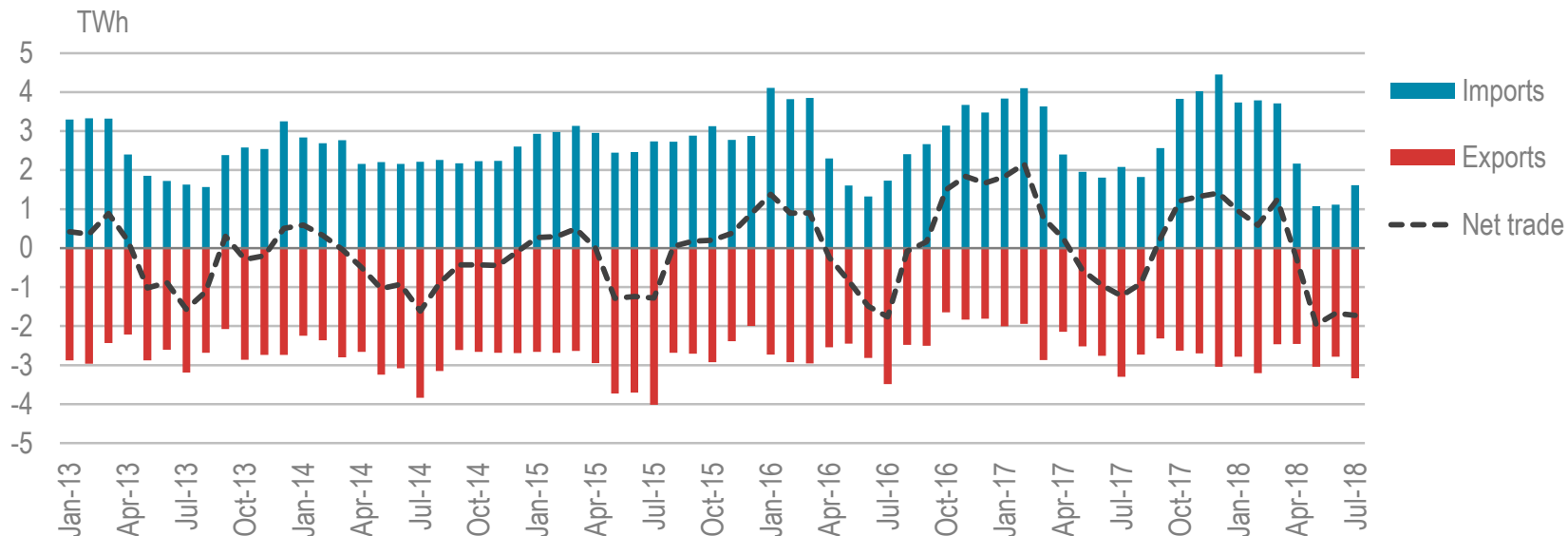
Electricity sector largely carbon free with 35% from nuclear...BUT



...20 TWh nuclear needs to be replaced by 2035

Imports continuously increasing to meet winter peak demand

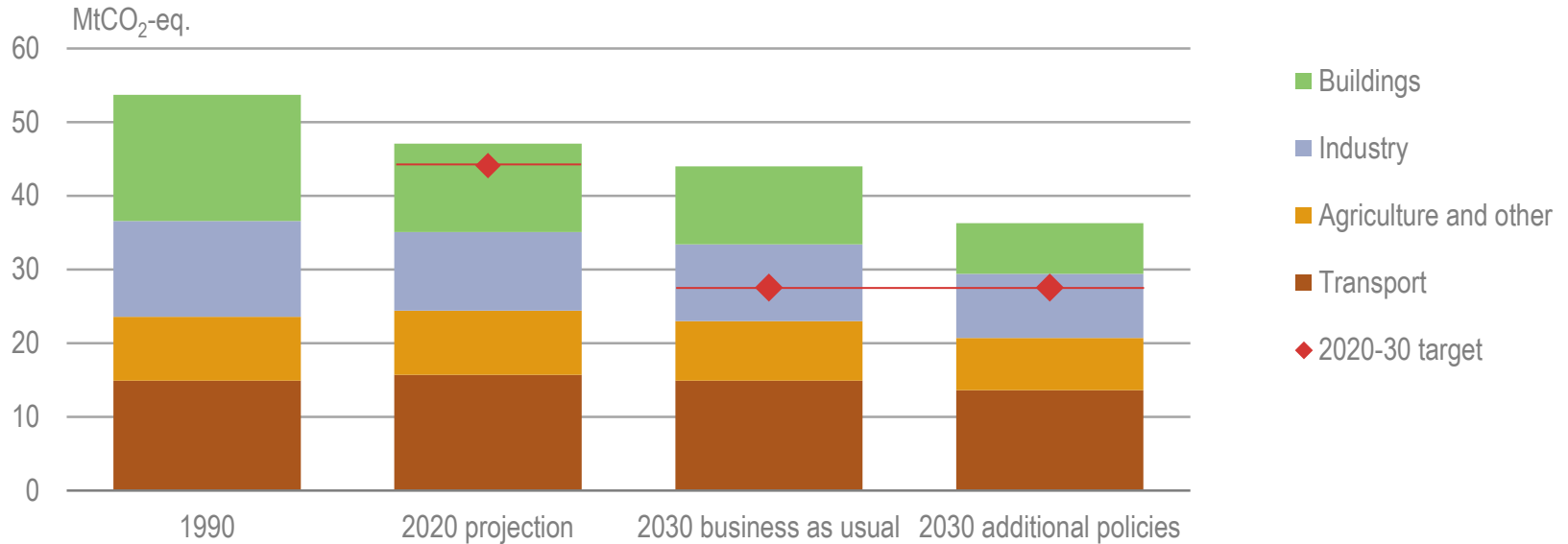
Monthly electricity imports and exports, Jan 2013 – Jul 2018



Though on an annual basis Switzerland is a net exporter in most years

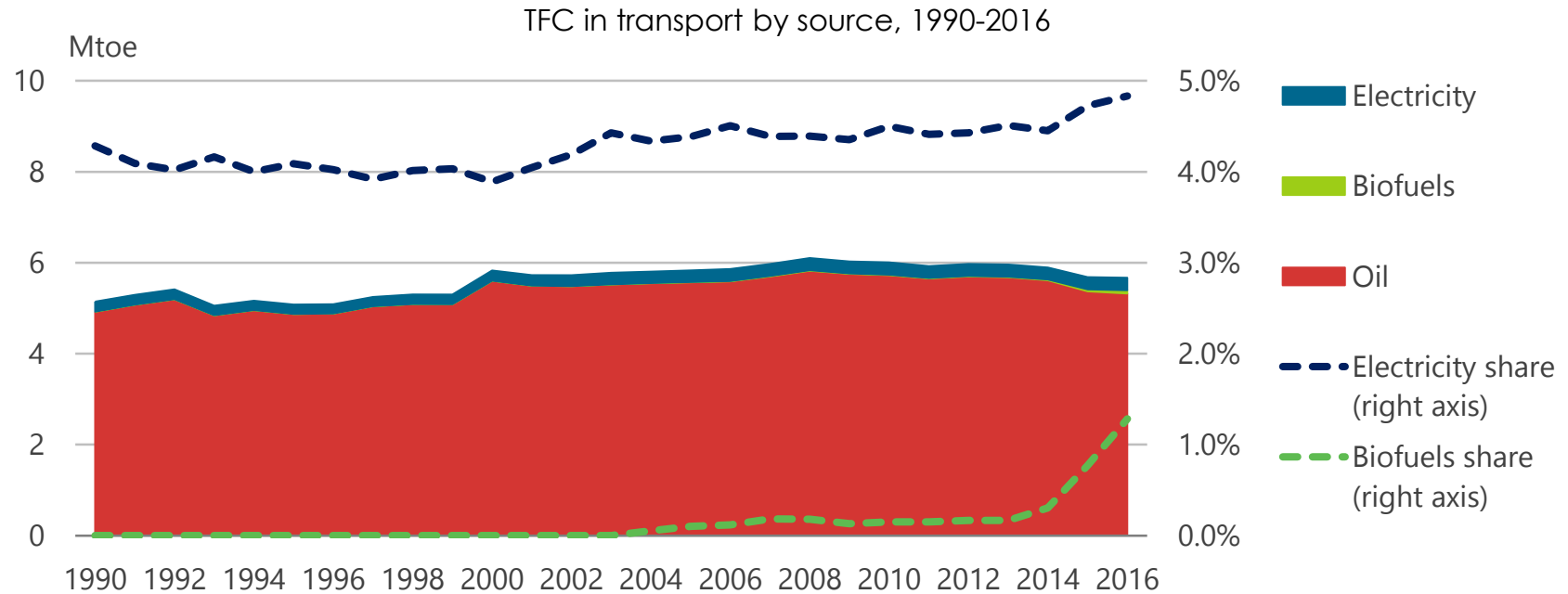
- Adequacy assured to 2025 but winter generation gap poses security challenges
 - Technology neutral strategic reserve may be required
 - Timely new hydro capacity challenged by low prices and water royalty
- Full Opening the electricity market for all consumers
 - Benefits independent from EU agreement
 - Innovation and more choices for consumers
- Security of Supply depends on close integration with EU markets
 - Market coupling with EU brings social welfare gains and benefit consumers
 - Gaining access to flexible energy supplies reduces need for strategic reserve mechanisms
- Digital technology offers solutions
 - For growing share of decentralized and variable generation
 - Improved demand-side management to enhance energy efficiency

Meeting 2020 and 2030 climate targets is challenging



Transport sector is off the required emission pathway

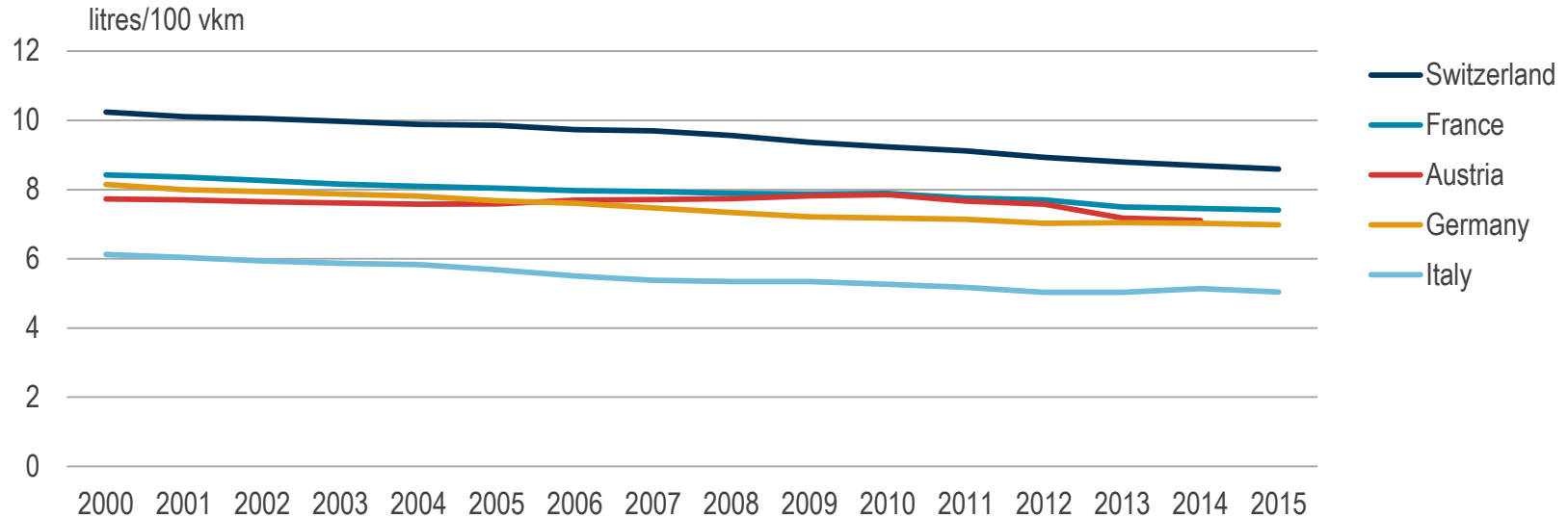
Transport is oil dependent, but electricity and biofuels are growing



Digitalization offers new possibilities for electric mobility

Cars are getting more efficient, but Switzerland is behind its neighbours

Fuel intensity for light-duty vehicles, 2000-15



Passenger cars are relatively large and energy intensive

- **Market Opening:** Move forward with full market opening to meet future energy needs and climate targets through the revision of the Electricity Supply Law and by introducing a Gas Supply Law.
- **Relations with the EU:** Continue efforts to integrate energy markets with the European Union
- **Water Royalty Reform:** Align with electricity market prices/market value of resource
- **Climate Policy:** Ensure timely entry into force of the recast CO2 law, to support continued climate policy post-2020 and help achieving the binding 2030 climate goals
- **Carbon Pricing:** Balance abatement cost across sectors
- **Transport:** Develop a long-term strategy for transport to 2050 that contributes to decarbonisation pathways by providing stronger market signals.



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