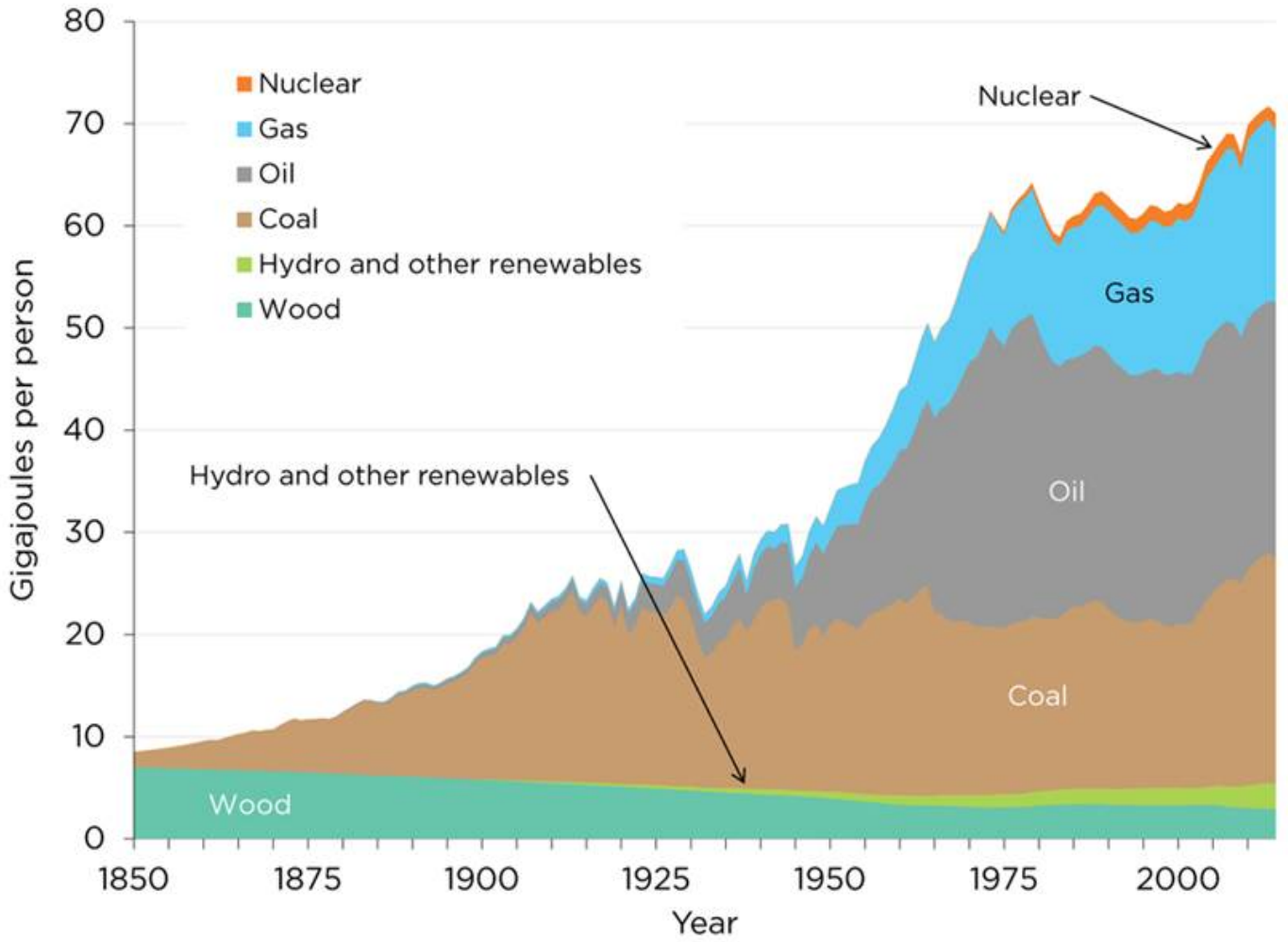
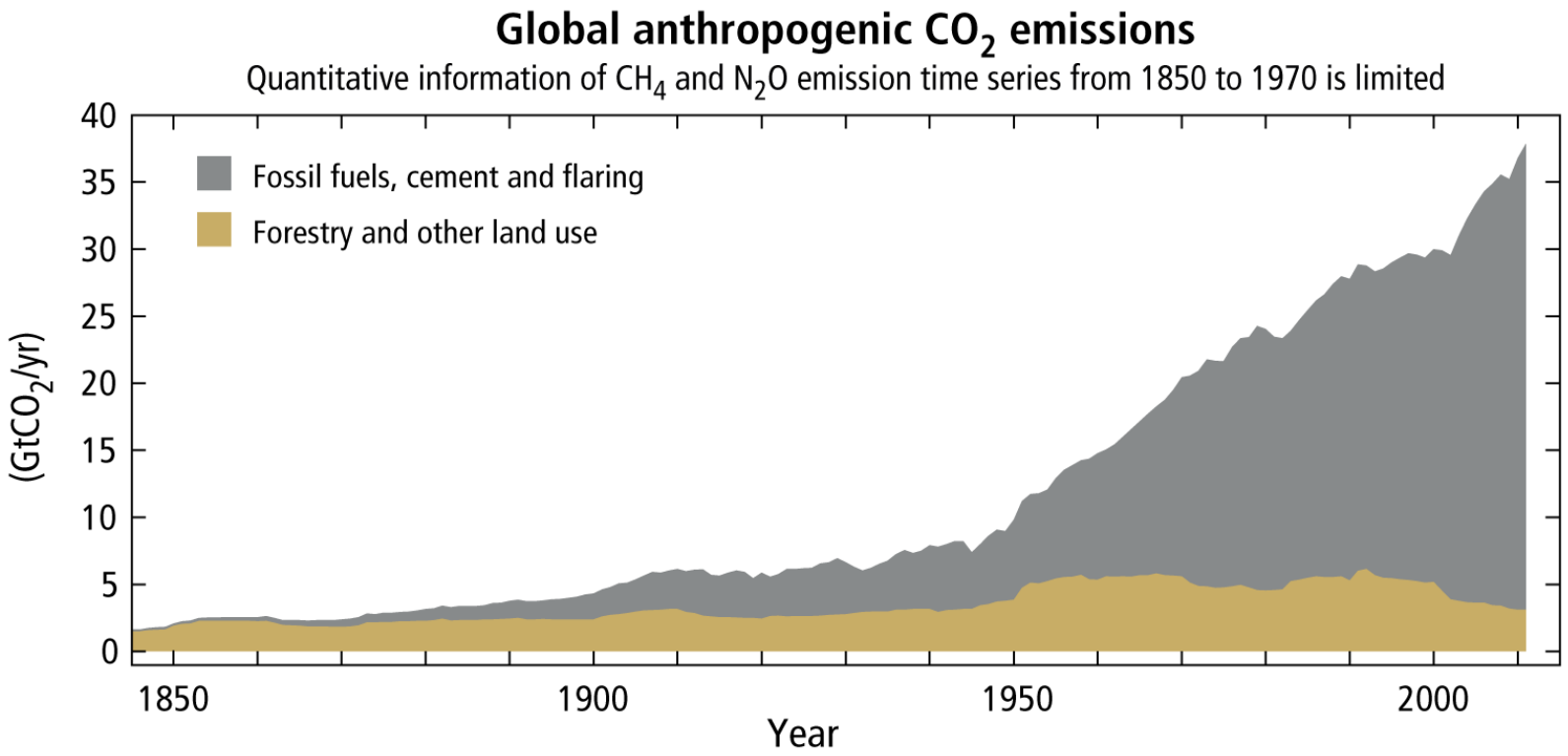
Global energy mix

Historically, we have had energy *additions*, but not a single energy *transition*



Sources: Data compiled by J. David Hughes from Arnulf Grubler, "Technology and Global Change: Data Appendix," (1998), and BP, *Statistical Review of World Energy*, (annual).

Source: IPCC, Firth Assessment Report



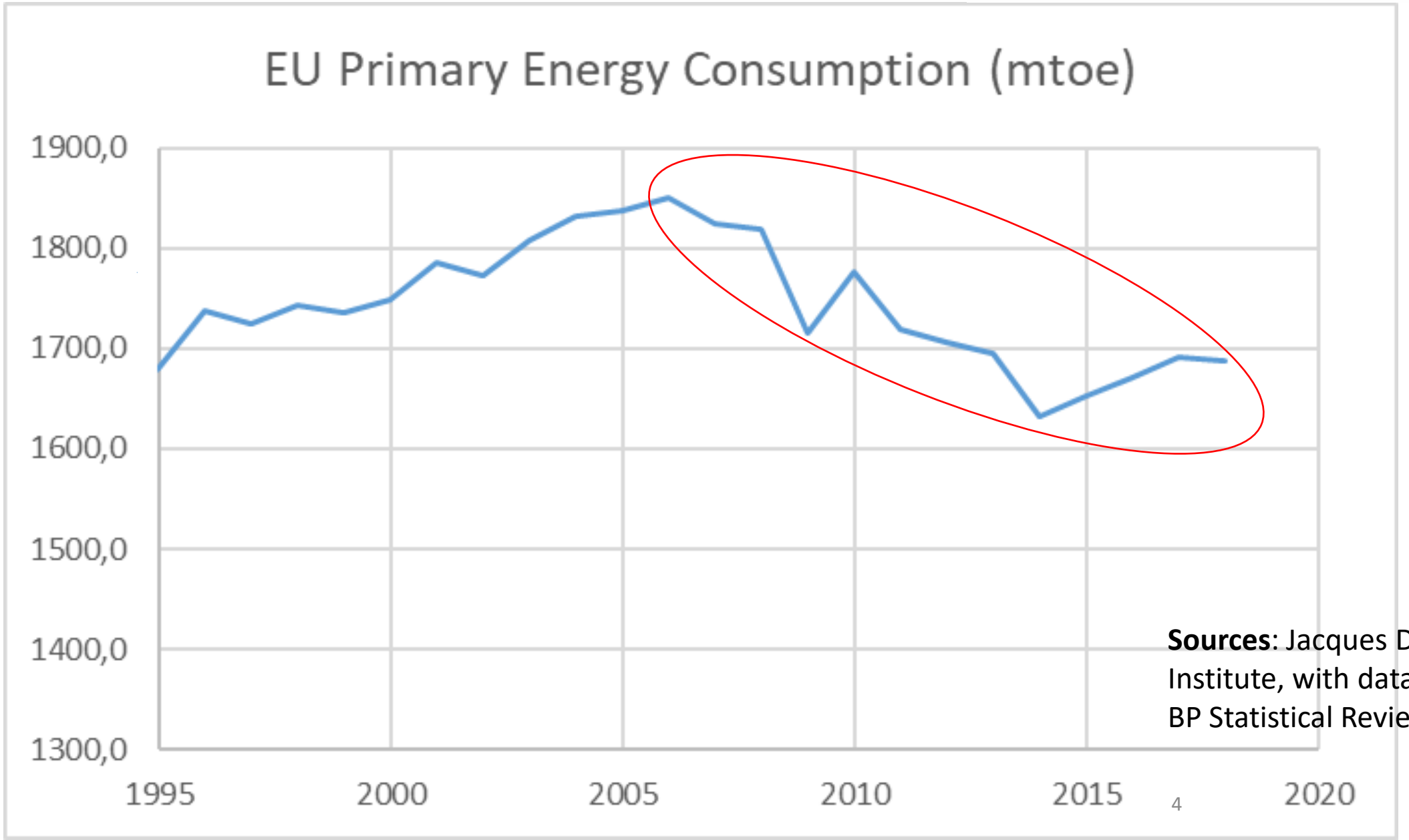
What is an ‘energy transition’?

‘Energy transition’ is the new buzzword to talk about our situation

Coined in 1974 by US administration to replace ‘energy crisis’. It then focused on Arabic oil.
Came to Europe in the 1980s through the german word ‘*energiewende*’. It then focused on nuclear.

Current mainstream definition: renewables and energy efficiency substitute fossil fuels (and/or nuclear).

Energy transition = deep societal change

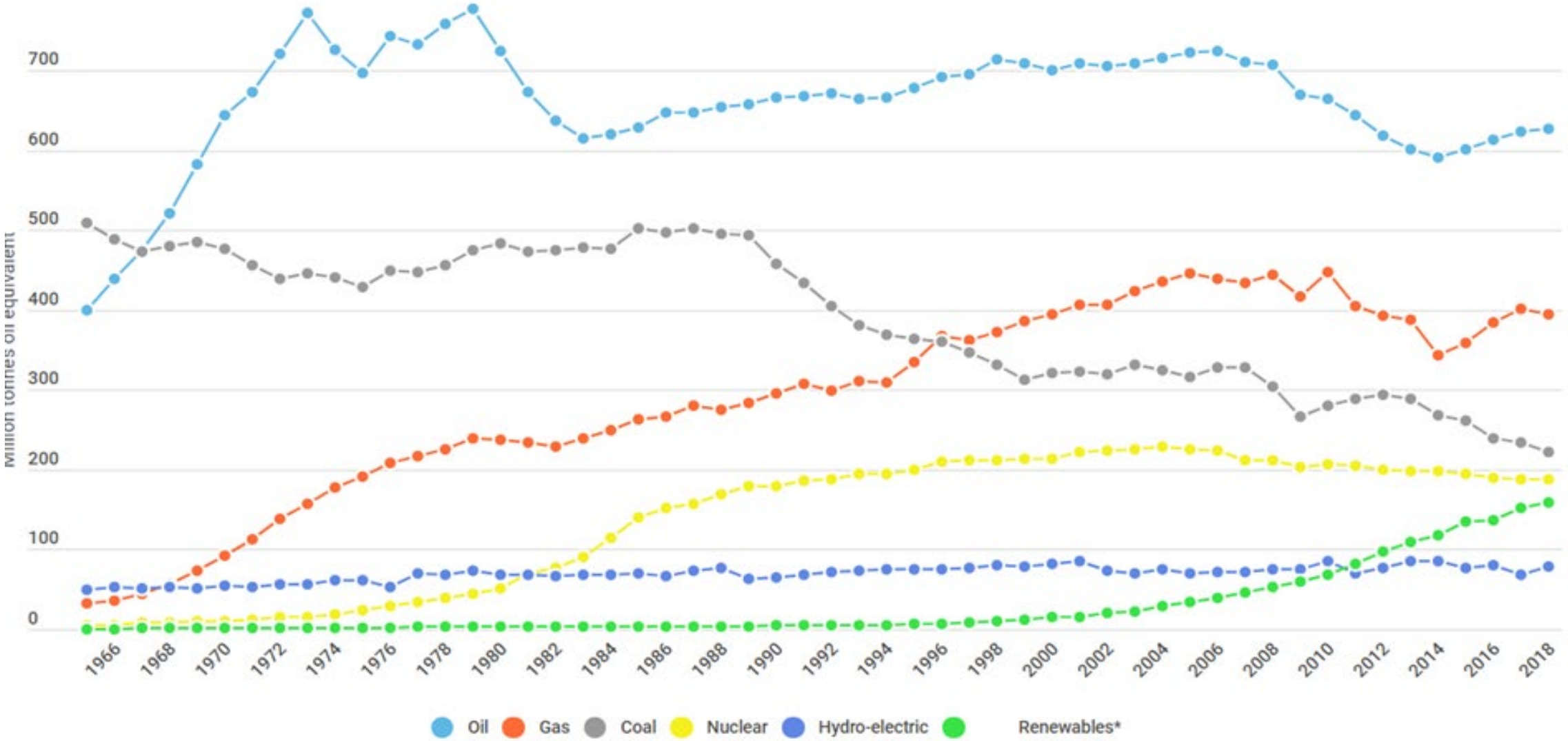


Sources: Jacques Delors Institute, with data from BP Statistical Review 2019

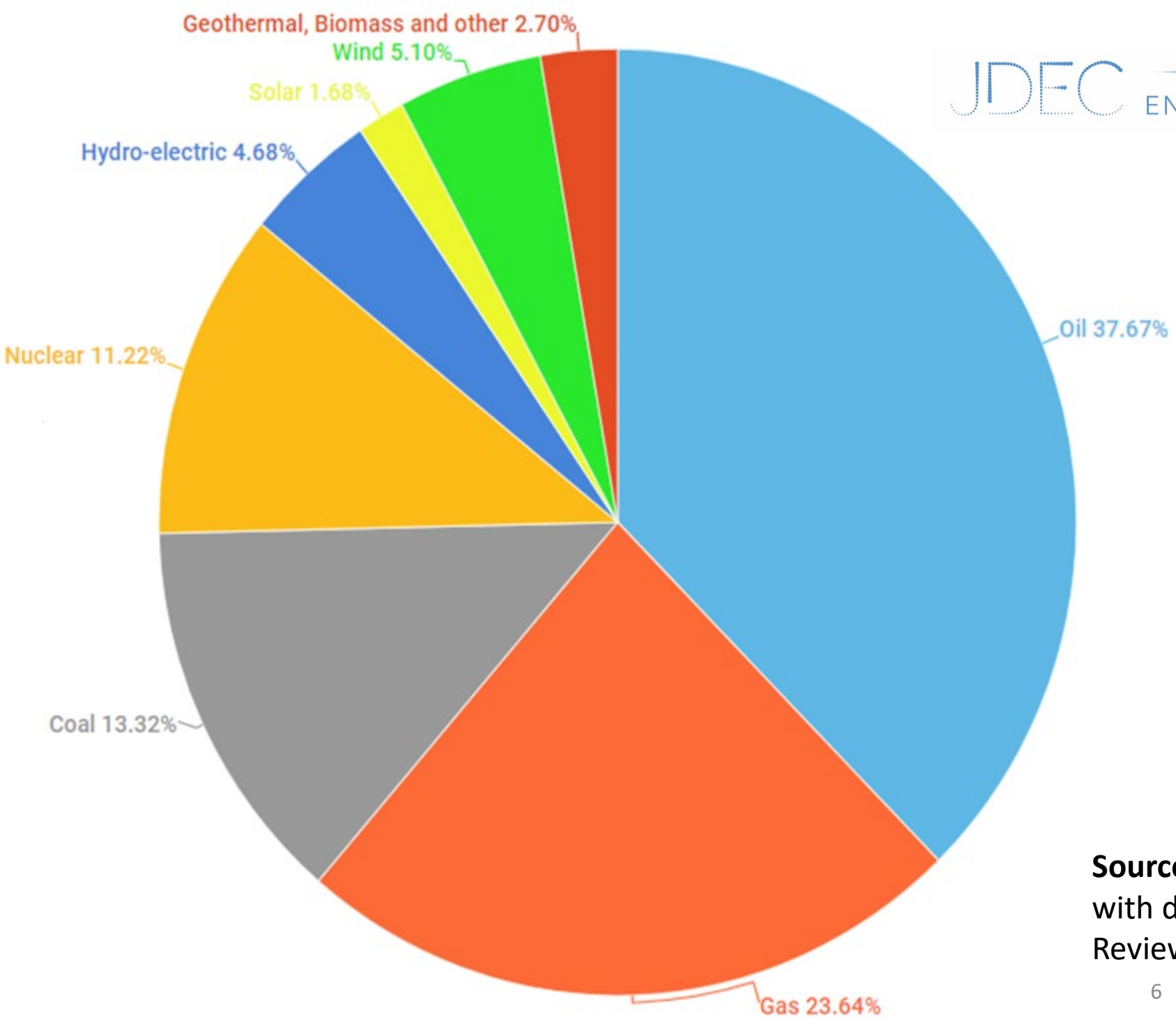
Primary Energy Mix

JDEC — JACQUES DELORS ENERGY CENTRE

Sources: Jacques Delors Institute, with data from BP Statistical Review 2019



Energy Mix in 2018

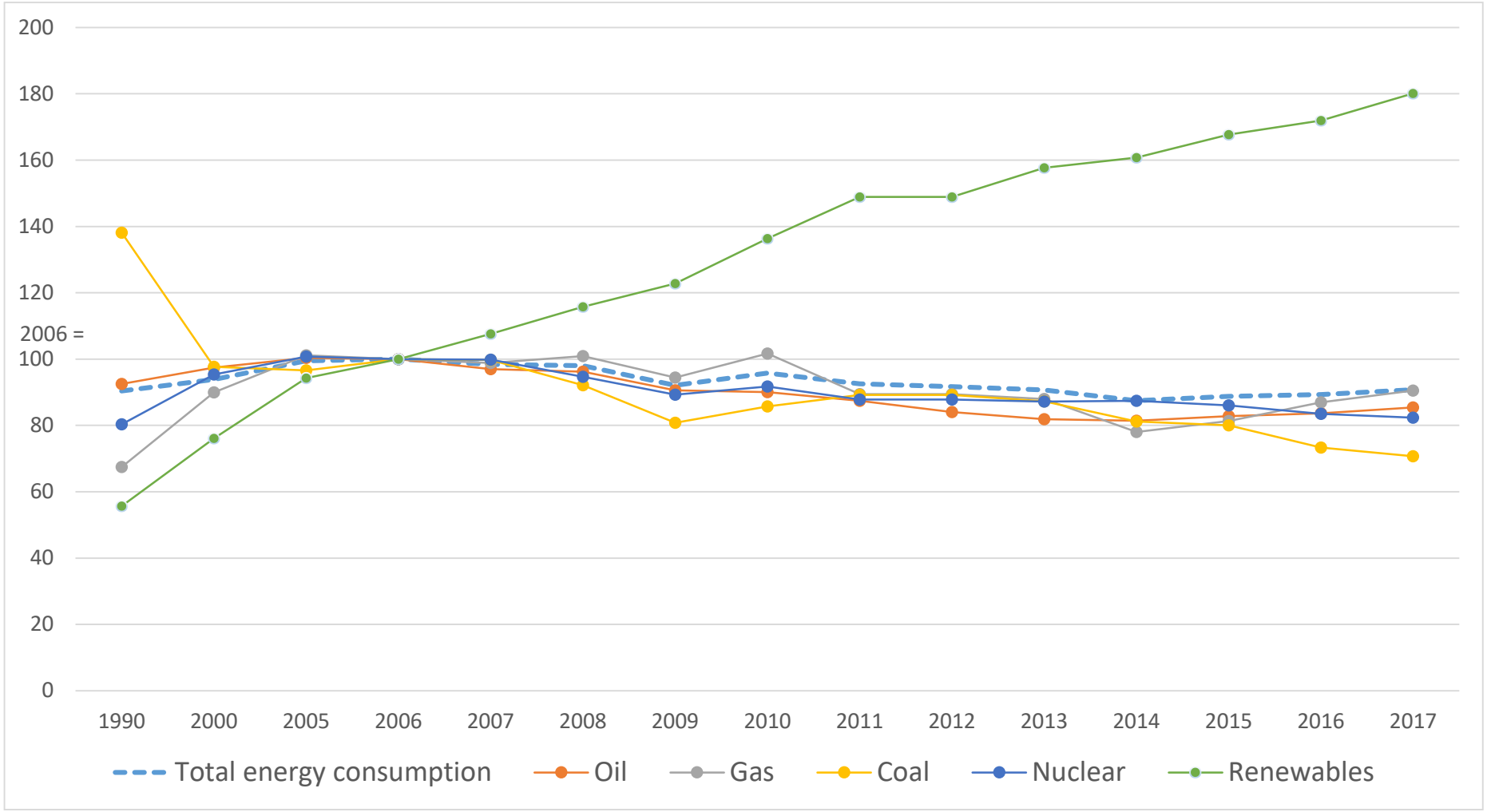


JDEC — JACQUES DELORS ENERGY CENTRE

Sources: Jacques Delors Institute with data from BP Statistical Review 2019

EU Primary Energy Consumption 2006 = 100

Sources: Jacques Delors Institute, with data from BP Statistical Review 2019



EUROPE IN THE WORLD

7% of population

10% of greenhouse gas emissions

20% of global GDP

30% of high-level scientific publications

Energy Transition and Climate Change

To avoid catastrophic climate change, all human emissions of greenhouse gases, especially CO2, need to decrease very fast and quickly reach a near-zero level.

In blue, what the IPCC roughly estimates necessary to have a 66% chance of staying below 1,5°C.

In grey, what the IPCC roughly estimates necessary to have a 66% chance of staying below 1,5°C.

Source: IPCC, 1,5°C report, October 2018