

ECOWEEK

No. 19-19, 10 May 2019

Europe: lower CO2 emissions from energy use

- In the European Union, CO₂ emissions from fossil fuel combustion declined 2.5% in 2018 compared to the year before
- Considering that GDP grew, this implies a reduction in carbon intensity, thereby continuing a long-term trend
- The developments in individual countries vary and quite a number of countries have seen an increase in emissions
- Likewise, the differences are considerable concerning the emissions per capita depending on the level of economic development, although this is just one factor amongst many which influence the emission intensity

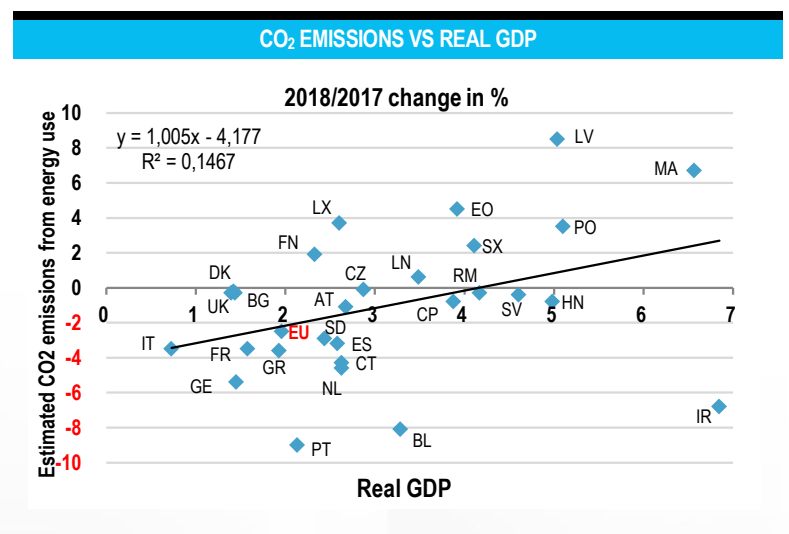
Eurostat estimates that in the European Union CO₂ emissions from fossil fuel combustion have declined 2.5% in 2018 compared to the year before. This continues a long-term trend: calculations by the International Energy Agency show for EU28 a decline of 20.7% between 1990 and 2016. Considering that over this period economic activity grew significantly, the carbon intensity declined 48.7%¹.

As shown by the first chart, there is however a wide dispersion between countries. Latvia, Malta and Estonia saw big increases, whereas Portugal, Bulgaria, Ireland and Germany experienced considerable declines.

To some degree, differences in real GDP growth play a role (there is a statistically significant relationship between growth and change in emissions) but it should be emphasized that countries which saw a reduction in emissions still had positive growth, implying that the CO₂ emission intensity of economic activity declined further.

The low R² of the regression reminds us that many factors influence emissions: weather conditions, domestic production versus imports (an increased share of imported electricity lowers emissions in the importing country), the mix in terms of primary energy source (alternative, fossil, nuclear), population size, transport infrastructure, etc. The level of economic development as measured by GDP per capita also plays a role, as shown in the second chart. As people get richer, the per capita CO₂ emissions from fossil fuel combustion increase.

.../...



p. 3

Markets Overview

p. 4

Pulse & Calendar

p. 6

Economic scenario

ECONOMIC RESEARCH DEPARTMENT



BNP PARIBAS

The bank
for a changing
world

Eco
WEEK

Yet, the dispersion, for a given level of per capita GDP, shows that other factors may be at work as well, such as the use of coal versus nuclear energy as a primary energy source. Moreover, as countries become richer, the sector composition of value added changes and services tend to gain in importance. Considering that industry has a bigger carbon emission footprint than services, this may explain why, as shown in chart 3, there is a negative relationship between per capita GDP and CO₂ emissions per unit of GDP.

The diversity of the drivers of the carbon footprint of a country may be a challenge for policy in coming to grips with global warming and entails finding a balance between the level of energy independence of

a country, security, emissions, the costs of change whilst taking into account issues such as the intermittency of wind and solar energy. The necessity to make significant progress is beyond doubt however as illustrated by the request of eight countries (Belgium, Denmark, France, Luxembourg, the Netherlands, Portugal, Spain and Sweden) to EU members to achieve net-zero emissions by 2050 ⁱⁱ.

William De Vijlder

ⁱ Calculated as the ratio of CO₂ fuel combustion emissions and real GDP. Source: International Energy Agency, CO₂ emissions from fuel combustion highlights (2018 edition)

ⁱⁱ *Eight nations push for net-zero emissions in bloc by 2050*, Financial Times, 8 May 2019

CO₂ EMISSIONS / HEAD VS NOMINAL GDP / HEAD

CO₂ EMISSIONS / NOMINAL GDP VS NOMINAL GDP / HEAD

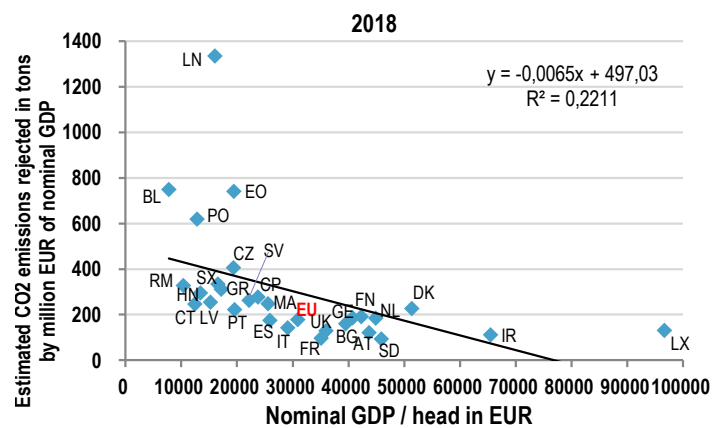
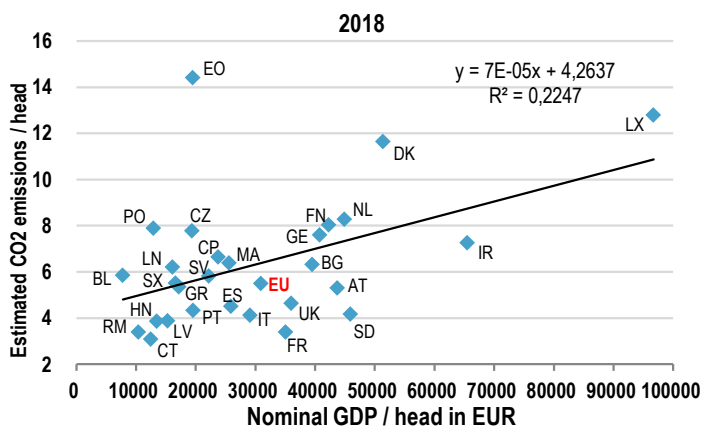


Chart 2

Source: Eurostat, BNP Paribas

Chart 3

Source: Eurostat, BNP Paribas

EU EU28, AT Austria, BG Belgium, BL Bulgaria, CT Croatia, CP Cyprus, CZ Czechia, DK Denmark, EO Estonia, FN Finland, FR France, GE Germany, GR Greece, HN Hungary, IR Ireland, IT Italy, LV Latvia, LN Lithuania, LX Luxembourg, MA Malta, NL Netherlands, PO Poland, PT Portugal, RM Romania, SX Slovakia, SV Slovenia, ES Spain, SD Sweden, UK United Kingdom

