



## 2018: Historically High Energy Consumption & CO<sub>2</sub> Emissions Insufficient Energy Efficiency and Decarbonisation Trends, far from 1.5-2° Trajectories

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Enerdata has now released its annual publication *Global Energy Trends*, the first detailed analysis of 2018 figures available to energy market players. Based on data for the G20, which accounts for 80% of global demand, this analysis identifies the key trends in the evolution of global markets.

2018 looks a lot like 2017: Steady economic growth and weak improvements in energy intensity, resulting in significant increases in energy consumption and CO<sub>2</sub> emissions.

After a 3-year period of CO<sub>2</sub> emissions stabilisation (starting in 2014), is the trend permanently deteriorating?

- 2018: A repetition of 2017?
- Fossil fuel consumption: What is the global trend? Noticeable fossil fuel switch?
- Which countries managed to avoid the global trend of increasing CO<sub>2</sub> emissions?
- What is the resulting delay in achieving Paris Agreement's objectives?

### Key Points from the 2018 *Global Energy Trends* Report

- **+1.7%: Another increase and record-high CO<sub>2</sub> energy-emissions**

After a 3-year stabilization (2014 to 2016) and a rebound in 2017, CO<sub>2</sub> emissions in G20 countries have again increased (to **27 GtCO<sub>2</sub>**) bolstered by **global economic growth**. This increase is **slightly less than last year's 2.2%**. The figure is the average of non-OECD (+2.5%) and OECD (+0.5%) countries.

*Where does it come from?*

- **+3.8%: Stable GDP growth in 2018**

Overall, **economic growth has been similar to 2017**, both in OECD (+2.4%) and non-OECD (+5.4%) countries. These figures are also close to the 10-year trend.

*Is the economy decreasing its energy consumption? Is this the expected "decoupling"?*

- **2.2%: Energy consumption continues to grow at the same rate as last year**

The same economic growth produced the same energy demand increase recorded in 2017.

In non-OECD countries, growth (3%) continues to follow economic development. **China and India** (around 3.7% each) represent a significant portion, but their **energy demand growth remains below the historical trend**.

For the **OECD** countries who's energy consumption grew (+1% on average), this year it was **mainly due to US demand** (+3.5%) pulled by economic development, and by specific climate conditions in 2018 (**cold winter** requiring more heating; **hot summer** requiring more air-conditioning). EU energy demand went down by -1%, with a noticeable decrease in Germany (-4%, helped by a warm winter).

- **The world's economic development remains highly energy-intensive**

With 1.5% improvement in 2018, *energy intensity* is **improving more slowly**, among the lowest of the past 10 years, and **far what is required to meet a 2° climate change goal**.

*If energy intensity is not improving as much as required, what about the other lever: Is energy production progressively decarbonising?*

With increases of 2.1% in energy consumption and 1.7% in CO<sub>2</sub> emissions, there is only a 0.4% improvement in the “carbon factor”. The **primary energy mix – still 80% fossil fuels** – is not deteriorating anymore (as it was until 2013) but is not improving significantly.

Still, there are trends in renewables in the power sector and growth in gas – the least carbon-intensive fossil fuel.

- **Paris Agreement objectives are slipping away.**

As mentioned last year, another year without CO<sub>2</sub> emissions reduction has a direct and quick impact on what remains to be accomplished to meet the Paris agreement objectives.

**At the end of 2015**, the **COP21 agreement** meant halving CO<sub>2</sub> emissions by 2050. At that time, required reductions were **2.9%/year** on average. Four years later, it **now requires a 3.3%/year** reduction.

With the IMF’s 3% average GDP growth/year forecast (2020 to 2050), fuelling economic development and meeting needed CO<sub>2</sub> emissions reductions require a **6.3% yearly reduction in carbon intensity** of the economy – a figure which has averaged less than 2% over the past 10 years.

### **Energy markets: Gas and electricity growing quickly, but coal and oil are not peaking yet.**

- **Coal consumption is not decreasing (+0.7%)**

Bolstered by India and China, global coal demand increased for the second year in a row. In China, consumption increased (+1%) despite anti-pollution policy and transitions toward gas and renewables. Consumption strongly contracted in Europe (-4.9%) and in the US (for the 5<sup>th</sup> consecutive year, -3.4%), where coal is progressively being replaced by gas and renewables.

- **Oil consumption keeps rising (+1%)**

Oil consumption in the G20 increased in 2018, supported by the **petrochemical industry** and growth of the **global car fleet**, particularly in China (+5.8%). Overall, oil growth was supported by non-OECD countries, and remained stable in OECD countries – but with contrasting trends (-1.3% in Europe and +2% in the US).

- **Strong acceleration in gas consumption (+4.8%)**

Increasing since 2014, global gas consumption increased significantly in 2018, boosted by the US and China. Together, these two countries created more than 70% of G20 gas demand increase. In China gas demand was encouraged by **coal-to-gas switching policies**. In the US, it was linked to abundant supply, cheap prices and robust energy demand. Global LNG flows followed this trend with an 8.5% growth (11% of natural gas supply).

- **Electricity (+3.7%) keeps increasing at a higher pace than total energy consumption**

Electrification of uses is driving consumption growth, with accelerating consumption in China (7.7%) and India (+5.4%). In the US, electricity consumption recovered with 2.2% growth, supported by weather conditions.

- **Strong growth of solar (+24%) and wind (+10%) power generation but new capacities added in 2018 remained just stable vs. 2017**

Renewables were 47% of total 2018 power generation increase. No acceleration of commissioned capacities was noted: 44 GW of wind capacity was added (46% of which in China) and 84 GW of solar (52% of which in China).

\*: **CO<sub>2</sub>-energy**: emissions linked to energy combustion (about 80% of CO<sub>2</sub> emissions)

\*\*: **Carbon intensity of the economy**: Measuring CO<sub>2</sub> emissions per unit of GDP, carbon intensity is the key indicator for the structural evolution of diverse economies toward less energy-consuming and less carbonated development.

*Carbon intensity evolves with:*

- *Energy intensity*: energy consumption/unit of GDP
- *Energy Carbon Factor*: CO<sub>2</sub> emissions by unit of energy



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