Overview

After the recent huge increase in oil and gas prices, these prices will remain high due to the imbalance between supply and demand.

Methods

Analysis of the oil and gas supply/demand balance. Analysis of the need for the reduction of greenhouse gases emissions. Analysis of the development of renewables

Results

Our analysis shows the imbalance between the future demand for oil and gas and the potential supply due to the reduced investments in the oil and gas industry.

Conclusions

Due to the lack of investments in oil and gas exploration and production, oil and gas prices will remain at unprecedented high levels

References

EIA (Energy Information Administration), OPEC, BP Statistical Review, Petrostrategies, Books of the author (Geopolitics of Energy)

Oil and gas between climate constraints and the need for energy and mobility

The price of oil broke through the $100/barrel barrier again in January. Russia's invasion of Ukraine caused a jump to $120 but the price then returned to the January level. Similarly, the price of gas on international markets has risen sixfold in 2021. The war in Ukraine is only keeping the price of gas at record highs. It should be remembered that Russia is one of the main producers of oil and gas.

The rise in price from $20 per barrel at the height of the pandemic in May 2020 to over $100 per barrel today is not primarily due to the war in Ukraine. As for the rise in gas price, it is more simply due to a problem of balance between supply and demand: investment in the oil and gas sector fell considerably after the collapse of the oil price in 2015.

The return to economic growth, particularly in emerging countries, is resulting in a strong demand for oil and gas. Thus oil consumption, which was around 100 million barrels per day (mbpd) in 2019, after having fallen sharply in 2020 due to the pandemic, should reach more than 100 mbpd in 2022 and should grow to 105 mbpd in the coming years. The worldwide demand for gas is also increasing.

The drop in investment, linked in 2015 to the fall in the price of oil, has been accentuated recently by the reluctance of large companies and banks to invest in fossil fuels, which are responsible for a large proportion of greenhouse gas emissions and therefore of climate change. Investments in the oil and gas sector have fallen by almost 50%. A year ago (April 2021), the International Energy Agency (IEA) called for a virtual halt to investments in fossil fuels to limit CO2 emissions. Some companies are sharply reducing their commitments to hydrocarbon exploration and production.

The consequences of climate change are obvious and ... catastrophic. Reducing greenhouse gas emissions is therefore a priority. Reducing coal consumption in particular is necessary. But oil, coal and natural gas still cover more than 80% of energy needs and replacing them is not easy. Nuclear power (4-5% of needs) is contested and its large-scale development is unlikely. Hydropower (about 7% of needs) can still progress but is now facing hostility from some NGOs. Solar and wind power are in full development. In 10 years their share has risen from about 1% to almost 5% of energy consumption. The operation of wind turbines and solar panels does not emit CO2. But these energies are intermittent and require alternative solutions (back-up - generally gas or coal-fired power stations). They require raw materials (lithium, cobalt, metals and rare earths), the availability of which is limited and for the moment restricted to a small number of countries (South America for lithium, Democratic Republic of Congo for cobalt), China for metals and rare earths.

The main use of oil is in transport. As one economist said, "Oil is liquid" and this liquid, which is easy to use, is concentrated energy. With a tank of petrol or diesel, that you fill in two or three minutes you can travel several hundred kilometres. The development of electric cars is impressive. But it will be a good number of years before the car fleet is essentially electric. Similarly, the replacement of jet fuel will be complex and electric aircraft are not for tomorrow.

The electrification of transport using low-carbon energy sources is inevitable. But in the next few years we are likely to see an increase in the need for oil. Tha demand for gas will also increase.

Gas and oil prices are therefore bound to remain high. The price of gas, which has reached extraordinarily high levels, should eventually return to more moderate values. Oil prices are expected to remain close to current levels.

These high prices could accelerate the development of renewable energies. But the fight against climate change will also require energy sobriety (lower consumption) and efficiency (more efficient equipment).

Jean-Pierre Favennec - 18 April 2022