

ENERGY MARKET OVERVIEW

In 2021 energy consumption rebounded globally after Covid-induced recession in 2020 and continued to grow.

Fossil fuels remained the predominant energy source accounting for 82% of total energy consumed, with oil as a leading commodity (31% share). In contrast, renewables including hydro energy accounted for 13%.

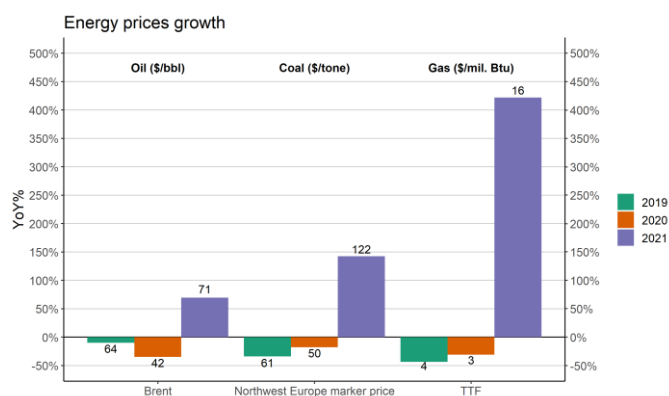
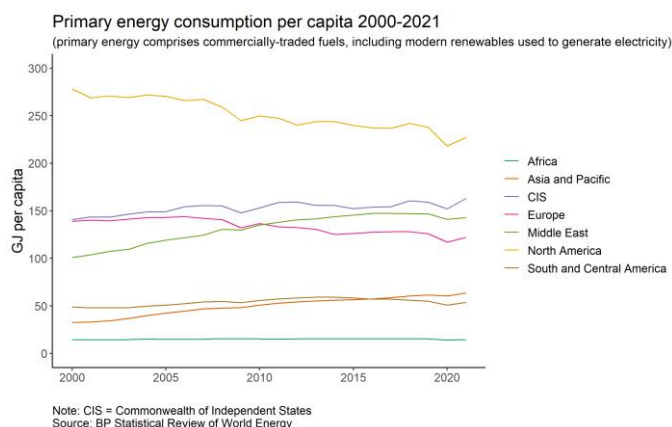
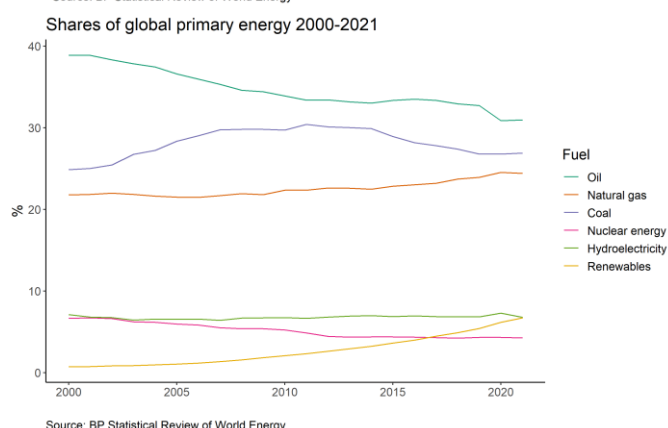
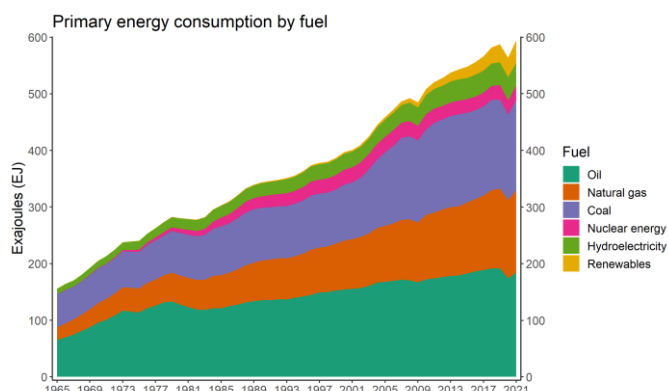
Compared to renewable energy, dependence on oil is slowly diminishing over time. However, independence on fossil fuels is nowhere near as natural gas and coal are still widely sought energy sources. Strong economic growth in China had a major impact on overall coal consumption. Its share peaked at one-third of world consumption in 2011 and has since turned downwards. Natural gas, on the other hand, is being used even more over time and is likely to surpass coal in the near future as its combustion is cleaner than coal or oil with respect to lower carbon emissions.

North American per capita energy consumption remained the highest across all world regions with 227 GJ of energy consumed. The CIS (163 GJ) and Middle East (143 GJ) regions were the second largest consumers, closely followed by Europeans (122 GJ). The lowest consumers remained Asia and Pacific (64 GJ), South and Central America (54 GJ) and Africa with only 15 GJ.

The last two decades show that the amount of energy consumed in the North American and European region is slowly decreasing. In contrast, there has been a steady and noticeable increase in the Middle East and Asia and Pacific, while South and Central America, the CIS and Africa mostly levelled off.

The price of all three major energy sources – oil, gas and coal – rose dramatically after two years of consecutive decline.

Oil price increased by 69% from 42 to 71 US dollars per barrel. Coal went from 50 to 122 US dollars per tonne by 143% and natural gas went from 3 to 16 US dollars per million Btu by 422%, the highest price growth of the three.



R: Energy prices chart

```
ggplot(aes(Fuel, Growth, fill = as.factor(Year))) +
  geom_hline(yintercept = seq(-50,500,50), color = "lightgrey") +
  geom_hline(yintercept = 0) +
  geom_bar(stat = "identity", position = "dodge") +
  geom_text(aes(y = c(-20,-50,-45,-45,-40,-28,85,435,155), label = round(Price, 0)),
            position = position_dodge(0.9)) +
  annotate("text", x = c("Brent", "Northwest Europe marker price", "TTF"), y = rep(475,3),
            label = c("Oil ($/bbl)", "Coal ($/tone)", "Gas ($/mil. Btu)"),
            color = "black", fontface = 2, size = 4) +

  scale_y_continuous(breaks = seq(-100, 600, 50),
                    labels = paste0(seq(-100, 600, 50), "%"),
                    limits = c(-50, 500),
                    sec.axis = dup_axis(name = NULL)) +
  scale_x_discrete(labels = c("Brent", "Northwest Europe marker price", "TTF")) +

  labs(x = "", y = "YoY%",
        title = "Energy prices growth",
        caption = "Source: BP Statistical Review of World Energy",
        fill = "") +
  scale_fill_manual(values = brewer.pal(n = 3, name = "Dark2"),
                    labels = c("2019", "2020", "2021")) +
  theme_classic() +
  theme(plot.caption = element_text(hjust = 0),
        text = element_text(size = 14))
```