



Summary - Climate Chance Talk 4

Energy

Speakers:

- **Frédéric Boyer**, Project Manager, Covenant of Mayors, Energy Cities
- **Jean-Yves Grandidier**, Founding President of Valorem
- **Alain Mestre**, Economic Analyst, Syndex and member of the advisory group of the French Citizen's Convention on Climate
- **Matthieu Auzanneau**, Director, The Shift Project

Moderated by: Amaury Parelle, Coordinator of the Climate Chance Observatory

The **Global Synthesis Report on Climate Action by Sector Report** was released in the first week of December and is available in both [English](#) and [French](#). A series of "**Climate Chance Talks**" dedicated to the key trends of each sector took place from December 1st – 4th 2020, all the recordings are available to watch [here](#).

Please find the pages related to the Energy Sector at page 16.

Key points highlighted by speakers:

- The Energy section of the **Climate Chance Observatory** Synthesis Report on Climate Action by sector points out several key takeaways. First of all, the decline of coal in the electricity mix is a powerful factor in the reduction of greenhouse gas emissions from the energy sector, as illustrated by the years 2019 and 2020. Renewable energies (RE) have benefitted from priority access to the grid, massive investment by oil companies whose fossil fuel profitability is declining, and the enthusiasm of local authorities and citizens.
- **Matthieu Auzanneau** (The Shift Project) showed that the pandemic has increased the likelihood of a peak in fossil fuel supply before the peak in demand, which could threaten energy security in the coming years if not properly anticipated. The diversification of the activities of large European oil and gas companies towards electricity generation and distribution is marginal compared to their fossil fuel production activities, which have not declined.
- **Jean-Yves Grandidier** (Valorem) recalled the market mechanisms that have led to the decline of coal since 2018. According to him, the European electricity mix will increasingly integrate renewables, whose complementarity will help to overcome the problems of irregularity. This boom in renewables will have to be accompanied by innovative energy storage devices in buildings to make the best use of peak production.



- According to **Frédéric Boyer** (Energy Cities), local authorities primarily lack the human resources, and not the financial resources, to develop ambitious energy policies. Their actions focus more on reducing demand through building renovation than on RE production.
- **Alain Mestre** (Syndex) underlined the importance of European financial support in the decline of coal and the boom in RE observed in recent years. He reminds that behind ecological decisions (closure of coal-fired power plants, mines, etc.) there are major social dramas at play: it is therefore essential to invest massively in the retraining of workers in these sectors towards "green" jobs.

Key Takeaways from the Energy Section by Amaury Parelle, Coordinator of the Climate Chance Observatory



ENERGY

- 1** Electricity production emissions fell by 1.3% in 2019, due firstly to a moderate increase in economic growth and consumption and secondly to the historic 3.1% decline of coal in the international mix, up to -19% in Europe and -15% in the United States. For the first time in the industrial era, low carbon energies (renewables and nuclear) have overtaken coal in the electricity mix (37% vs 36% respectively).
- 2** The Covid-19 pandemic has led to renewables gaining an increasing share of the global electricity mix due to their low operating cost and their priority access to the grid. Conversely, coal and gas generation is in sharp decline. However, electricity consumption is expected to decline by only 2% in 2020, with the drop in industrial consumption being offset by that of households. While recovery plans have a mixed record, with USD 13 billion being allocated to fossils compared with 14 billion for renewables, falling revenues are expected to reduce access to electricity in many developing countries.
- 3** Asset losses and impairments are accelerating in 2020 for major European and US groups in the oil and gas sector. Some are reorienting themselves more seriously towards renewables. Big public and private electricity companies are struggling to formulate and implement a fortiori long-term transition plans. On the consumption side, direct purchases of renewable energy by these companies picked up quickly in the second half of the year.
- 4** The actions of cities and regions demonstrate a growing ambition to mobilise their local players and their inhabitants in the energy transition. At the end of 2019, 58 cities or regions, including 44 in Europe, were being supplied with 100% renewable electricity through direct purchases and certificates, as well as through investments in their territory and elsewhere. More recently, they have become players in fossil fuel disinvestment through their public investment funds or their legal actions.
- 5** Citizens continue to transform into "prosumers", but the crisis has seriously impacted off-grid solar power and the capacity to equip lower-income households in developing countries. On the other hand, this is less the case in richer countries where solar electricity in the residential sector is driven by falling prices and local regulatory measures. Energy cooperatives are still marginal in capacity, but are increasing in number: 3,500 in 2019 in Europe. Finally, citizens are not slow to mobilise against certain wind projects deemed harmful to the environment and wildlife.



Summary

- **Matthieu Auzanneau**, The Shift Project

Question: Do you think this crisis has affected the investment capacity of oil and gas companies? Has it brought forward the famous "supply peak" of oil and gas, or at least structural factors of this peak?

This is an unprecedented crisis for the energy sector, and in particular for the oil and gas industry. Investments are falling sharply, while there were already questions about the ability of this industry to maintain production.

The International Energy Agency (IEA) has just released a report in which it warns that the decline in investment in production because of the pandemic could threaten energy security in the coming years. It was a trend already there: oil companies have never found as few conventional oil deposits as in recent years, and the sustainability of shale oil is far from being assured given the level of indebtedness of operators in this sector. But the pandemic has accelerated this trend.

Today, there is high uncertainty about the oil industry's ability to maintain its production. There is much talk of a "peak in demand", but for the moment it has not happened (a temporary break because of the pandemic currently, but not a real exit). But in fact, there is a chance that the "peak in supply" will come before the peak in demand, and even more so after the pandemic: it is not impossible that oil companies will cut back on their oil investments before society has begun to want to get out of it. But the investment capacity of oil companies is a kind of a driver for our economy.

In conclusion, this worsening of the oil crisis thus gives us a second extremely pressing reason, in addition to climate change, to organize ourselves to address the problem of the security of future energy supplies.

- **Jean-Yves Grandidier**, Valorem

Question: The decline in demand was absorbed mainly by coal and gas, and favoured RE. Does this crisis show the feasibility of a much more renewable energy mix, and undermines the difficulties often attributed to renewables such as intermittency?

The decline in coal-fired power generation due to the crisis is the result of processes that started in 2018, particularly in Europe, due to changes in the electricity market. Indeed, two phenomena have brought change :

- 1) The price of carbon went from €5 in 2015 to €25 in 2018, because emission allowances had been granted too widely to industrialists, and Europe has proceeded to rebalance, and thus a rise in the price of a ton of carbon.
- 2) The conditions that had allowed the increase of coal in Europe have faded away. Indeed, in the early 2010's, America did not have the infrastructure to export shale gas, whose production was exploding, and so this gas replaced coal, which was very present in America and easier to export (easily transportable). Europe was therefore able to benefit from cheap American coal, and so unfortunately gas-fired power plants (which emit half as much GHG as a coal-fired power plant) closed down in favor of coal-fired plants. But since 2018, the price of gas has fallen sharply and the price of carbon has risen sharply (which impacts coal-fired power generation, which is highly emitting). Gas has therefore been given priority over coal in the order of priority of electricity sources for injection into the grid (merit order).



Today, because of these phenomena, this merit order gives priority to renewable energies, then nuclear, then gas, and finally coal. So, coal-fired power plants are there to provide the peak. However, consumption fell during the pandemic, so it was mainly coal that was impacted.

In conclusion, yes, we can move towards a more renewable mix. The problem of irregularity or intermittency,, which is often attributed to renewable energies, is not so serious: the complementarity of wind and solar power regulates a good part of the year's energy supply. Of course, there will always be a need for controllable power plants (i.e., fossil or nuclear), but they will only operate for a few hundred hours a year. So finally, we will be able to have a very decarbonized mix.

- **Frédéric Boyer**, Energy Cities

Question: Has the crisis weakened the capacity of cities to invest in renewables, or to support local actors such as cooperatives, and if so, at what level?

In Europe, new legislation is making it easier for local authorities to support renewable energy production initiatives. Pilot cases are gradually being set up in member states, which we hope will gradually spread.

Before the crisis, there was already a strong political will for Europe to become the first carbon-neutral continent, with significant financial support for local authorities in the low-carbon economy (RE production, demand reduction). This willingness has increased with the post-covid economic recovery.

On the other hand, cities and regions lack the human capacity to set up such projects. It is more a lack of human capacity than a lack of financial capacity.

At Energy Cities, we are working to ensure that the rules are not too restrictive and allow cities to innovate. We also want the recovery plan to go to the right place, i.e. as little as possible to aviation, for example. We advocate a green and local recovery.

- **Matthieu Auzanneau**, The Shift Project

Question: How do you perceive the first signs of reorientation of oil companies towards the electricity market? Is it simply a diversification of activities or can it go very far, for example carbon neutrality, as some have committed themselves to?

For example, for Total, it's first and foremost a diversification of activities. Total's oil production is not moving, Total does not get out of oil. Total manages to maintain its oil production (even if it has no part in its communication) thanks to asset buybacks. However, at constant perimeter, its production has decreased. During the first half of 2010, Total took advantage of huge gains to buy back assets and compensate for areas of activity that were weakening.

Besides that, they are developing energy activities, but for the moment they only represent a very small part of their activities. And for their electricity supply activity (not production), they buy a lot of nuclear energy, mainly from EDF.

The big European oil companies (Total, BP, Shell) have a will to develop their activity, but we can not say that they are engaged in a decarbonation trajectory.



- **Alain Mestre**, Syndex

Question: You work in many European territories, what impact has the crisis had on the local ecological transitions?

In 2019, in the USA as in Europe, coal has declined. Notably in Spain and Germany, but also in Denmark, which has gone from a 60% coal-fired electricity mix to around 20% today thanks to investments in renewables. In 2019, according to the IEA and Enerdata, 19% drop in coal-fired electricity production in Europe, and it will be even worse in 2020. Even Poland, Europe's most "coal-burning" country, has gone from 2 to 12% renewable. All thanks to the support of Europe.

- **Frederic Boyer**, Energy Cities

Question: RE investments are often criticized for simply adding energy capacities to other existing energy capacities. How can local authorities combine RE production and demand management?

A mayor must first meet the needs of its citizens. That's why it is often the co-benefits of RE (air quality, mobility for example) that make them attractive, sometimes more than the climate issues.

The priority for local authorities is to reduce demand by renovating buildings. Production is much more complex to address at the urban level (unless urban-rural strategies are adopted, as in Paris). In urban areas, apart from producing a little electricity on rooftops, there is little that can be done.

In a European context, the question of reducing demand by renovating buildings is very important. All the players, both private and public, are lagging far behind on this issue, so Europe is trying to encourage this.

This priority given to the energy renovation of buildings is justified: the share of energy consumption by buildings is enormous, greater than that of electricity production.

- **Jean-Yves Grandidier**, Valorem

Question: How can the activities of an RE producer be linked to energy management?

Indeed, it is necessary to combine RE and energy management. France in particular is thermosensitive: there is a large increase in electricity consumption when the thermometer drops below 0. While we represent 17% of the European population, we account for 50% of thermosensitivity (due to poorly insulated housing). So, there is a great need to renovate the buildings, especially those heated with electricity.

Moreover, to combine renewable electricity production and energy management, we will have to learn to consume electricity when it is abundant and cheap. Indeed, in the future, Europe's energy mix will surely be composed mainly of wind and solar power. Because of the specificity of these energy sources, there is often overproduction (for example, around noon, when wind and sun are abundant). And since there is little electricity storage capacity, electricity will be very cheap during these peaks.

But the good news is that 70% of our electricity consumption is either delayable or storable. We therefore need to accompany a policy of investment in renewable energy with mechanisms that allow us to defer use over time or store energy (the current example of the water heater is a good illustration of this).



We must therefore not forget, in addition to investing in the renovation of buildings, to make the investments that will allow people to take advantage of the low prices that will occur during peaks of overproduction.

- **Alain Mestre**, Syndex

Question: The trends we have been talking about (reorientation of oil majors towards RE and decrease in coal) will lead to massive social plans. How can companies manage the transition in terms of employment?

28% of emissions in Europe are due to coal-fired power generation, so even though it has decreased in recent years, it still accounts for a large share of emissions.

In France, there are 4 coal-fired power plants. Their closures pose serious social problems, for example in Gardanne (Bouches-du-Rhône) or Cordemais (Loire-Atlantique). Ecological decisions must therefore take into account their local consequences.

Three years ago, a platform for European coal regions in transition was created. This platform will certainly benefit from the transition mechanism provided for by the European Green Deal (40 billion euros).

In addition, the coal sector is the energy sector where the workers are the most qualified and benefit from very strong social protection, which further accentuates the social conflicts resulting from closures. The challenge is therefore to reconvert all these workers without them being financially and socially impacted. This requires a great deal of innovation in terms of training.

When there are significant European funds to accompany the transition, as in Silesia or the Ruhr, it's more or less all right. Successful experience in the Ruhr: since the 80-90s, this region has benefited from European funds to help retrain workers affected by the closure of coal or lignite mines or coal-fired power plants. Germany wants to get out of coal usage by 2038, and is carrying out very ambitious retraining projects to support workers in "green" sectors (renewable energy, energy-efficient housing renovation, hydrogen, etc.).