

# Olivier Appert Interview

2020



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### Former CEO, IFP Energies Nouvelles

The following interview was conducted by Ms. Randa Takieddine with Mr. Olivier Appert on 23 October 2020 on the topics of; the future of fossil fuels, Mr. Appert's thoughts on the new reality for energy after the pandemic, and the future of climate change policy between governments.

Mr. Olivier Appert was chairman and CEO of IFP Energies Nouvelles from 2003-2015. He has been chairing the Conseil Français de l'Energie, is a member of the French Academy of Engineering, and a scientific advisor of the energy center at the Institut français des relations internationales. Prior to his chairmanship of IFP Energies Nouvelles, he was appointed director of the International Energy Agency's Long-Term Cooperation and Policy Analysis Directorate. He also held the title of executive director of the French Industry Minister's cabinet from 1984 to 1986 and was a member of prime minister's cabinet from 1981 to 1984.

**Q.** In this interview, we I'd like to look into the future of the energy industry due to the changes occurring at present. Two things dominated thinking and actions in 2020, the Covid-19 pandemic with its effect on energy demand, and the longer thinking and actions on climate change. An interesting aside perhaps, is that the viral pandemic may have sped up climate change actions.

Will there therefore be a series of shutdowns, as the world copes with wave after wave of infections until the vaccine is effective?

**A.** I think it is clear that there are many uncertainties in the short term: what will be the evolution of the pandemic; when will the vaccine become truly globally effective? And you also, you have to take into account an increasing opposition to any vaccine in parts of the world. So, we are faced with a reoccurring shuttering and opening of economies for many months.

The Spanish flu lasted three years one century ago. What is clear is that the pandemic has had a dramatic impact on economic growth and energy demand. Up to 50% of the population has been locked down, and clearly, the impact on the world economy and the oil sector is greater than previous oil shocks or the subprime crisis in 2008.

The pandemic has hastened climate change policy because, in recovery packages put in place around the world, there is a significant share focused on the environment and on change.

**Q.** Many energy-consuming industries have been hit with falling demand in 2020. Which ones do you think will recover well and which are in grave danger?

# Olivier Appert Interview

2020

**A.** In the short term, the impact of the lockdown has been huge for the transport sector and services. Due to travel restrictions, the consumption of petroleum products for transport has been dramatically reduced, and it is still the case: for the time being the jet fuel demand is 50% lower than before the crisis. So, the impact on the transport sector will last for some time as well as services, but the impact on services will stop as soon as the lockdown ceases; this is in the short term.

In the long term, there will be an impact on climate change investments. In most countries, recovery packages have been put in place, and in every recovery package, there is a climate dimension. That is the case, for example, in Europe for the Green Deal; but the energy system has huge inertia and the impact of the investments, will again, take quite a long time.

I want to focus on oil, and what is very important for me is that there is a rising consensus that after the pandemic we will reach peak oil soon, not the peak of supply but that of demand. The peak of oil demand has already been reached in European countries. The peak for demand worldwide may happen at the end of this decade or during the next decade.

We have to remember Sheikh Zaki Yamani's statement, the Saudi Minister of Oil during the seventies, who said that the "stone age did not end due to a lack of stone"; it will be the same for oil. This is a dramatic long-term evolution, which will have a major impact on producing countries' and oil companies' strategies. Already you can see some statements from companies such as Shell, Total, and BP who are putting in place a clear strategy to diversify from oil and gas.

I also think the transport industry will be hurt, especially air transport with jet fuel. For the time being, there is no real alternative. Bioproducts are not available at the scale required for world demand. Due to investment in energy saving and energy efficiency, there will be a reduction in heating consumption.

**Q.** During the pandemic, we have seen some major improvements in air quality because of lower fossil fuel burning. Will we maintain this improvement or slip back to our old, polluted cities?

**A.** There has been a huge improvement, mostly in cities, due to the dramatic drop in mobility, supporting significant air quality improvement. Nevertheless, I am afraid it will slip back; demand for transport fuel worldwide is already back to 96-97% of pre-crisis levels. There will be some changes favouring promoting bicycles in cities in the medium and long term, and efforts to boost electric vehicles adoption.



You can see in France, for example, the increase in sales of electric vehicles. There will also be investments in public transportation, but this takes time because it requires huge investment. So, in a nutshell, there has been a huge impact, which will not last long, but there is a growing trend seeking better air quality.

**Q.** You cited France's uptake in electric vehicles as a growing trend, but France is already unique amongst major European, and even world economies, with more of its energy produced by nuclear power than oil, ensuring France has low carbon dioxide emissions. Is this a climate change win for France with even though energy security was the original reason for the nuclear power programme?

**A.** There has been major success in the past with the French nuclear. The share of nuclear energy in electricity production is still very high, the highest worldwide: around 80%. As a result, when France is consuming 2% of the total energy demand, it represents only 1% of the global GHG emissions.

So, thanks to nuclear energy, France is very well positioned among various countries. A clear message from the IPCC and IEA is that nuclear and Carbon Capture and Storage (CCS) are mandatory to solve the climate change challenge. They are not a silver bullet, however, particularly nuclear.

While nuclear is not emitting CO<sub>2</sub>, about 60% of citizens consider nuclear to be a CO<sub>2</sub> emitter; it is completely wrong because the CO<sub>2</sub> content of nuclear electricity is much lower than the CO<sub>2</sub> content of wind or solar electricity. There is another opportunity for the nuclear industry: it is necessary to replace or renew the ageing nuclear plants.

The first programmes were launched in the seventies, so it will be necessary to renew them; also, different countries want to build new plants. These are huge opportunities for the nuclear industry, but costs are high due to nuclear energy not being intermittent like renewables.

Security of supply is always a challenge. In the seventies, when the nuclear programme was launched worldwide, it solved two major issues: first security of supply and the reduction in the cost of electricity. At that time, the bulk of electricity was produced with fossil fuel.



After the first oil shock, the fuel oil price rocketed, and there was concern about supply. So, it was a unique solution. Today, nuclear has to compete with alternatives on a cost basis. There is also a threat from the big opposition from public acceptance.

As far as the French nuclear industry is concerned, past success is remarkable. Still, for the time being, it is facing some challenges to demonstrate that French industry can produce nuclear power plants cost-effectively and in due time.

The new concept of a European Pressurised Reactor (EPR) has been put in operation in China; its success is evident. In France, we have to wait for 2022, 2023; at that time, I think that the EPR at Flamanville will be in operation and connected to the grid.

The nuclear waste programme of Bures will be launched; the dismantling of the first PWR power water nuclear reactor at Chooz in the north of France will also be finalised. So, wait and see. The next two years will be crucial for the future success of the French nuclear industry.

# Olivier Appert Interview

2020

**Q.** Focusing on the future, current climate change thinking and discussion revolves around implementing a full suite of renewable, and non-fossil fuel energy sources to achieve an energy transition. Do you agree, or would you pick any specific technology as a certain winner? What about the future for electricity by nuclear power?

**A.** What is clear is that what you can see in the report of the IEA or IPCC is it will be necessary to mobilise a lot of technologies, not one specific technology, which will be a leader. We need a set of different technologies that are energy efficient. The concern for me is people thinking that climate change will be solved by solely developing wind or solar energy. Wind and solar are only satisfying 25% of the total electricity demand, so it is necessary to think more broadly.

**Q.** What about gas? Is it to just be considered a transitional fuel, or can it be a supporting fuel on days when the wind is low, and the sun does not shine? What about the ongoing challenge of limiting methane emissions?

**A.** It was said in the Paris Agreement that net-zero emissions should be reached before the end of this century, but I think the consensus is that net-zero emissions have to be reached by 2050. I think that challenge is so great we won't be able to reach net-zero emissions as our energy system is presenting huge inertia. So, energy transition will take time.

Now, natural gas has major advantages in transitioning to a new energy system: low CO<sub>2</sub> emissions, flexibility, storage capacity, which is very important for the energy

system. So, natural gas will be the energy for the transition, and it will, for many years, continue to play an important role, substituting coal and oil.

However, a major challenge for the gas industry is methane emissions: the warming impact of methane is 25 times higher than CO<sub>2</sub>. It is necessary to avoid any methane leakage: the energy industry is very aware of this challenge and is taking action.



**Q.** Couldn't CCS mitigate the shift from oil and gas towards low carbon sources? Some facilities are currently using CCS and are capturing around 40 million tons of carbon dioxide per year. What is the outlook for this technology? To what extent does CCS represent an opportunity for the oil and gas industry in a decarbonised economy? Can carbon capture ever become competitive?

**A.** The IPCC and IEA think both technologies, nuclear and CCS, will have to be part of the energy sector's transition to net-zero emissions and a decarbonised economy. CCS technology is very mature and already widely used in the oil industry. For example, gas treatment is a common technology in the oil industry and CO<sub>2</sub> and gas transport. You mentioned 40 million tons stored every year; the significant part of this, however, is related to oil recovery processes, which is the case in the US where you introduce CO<sub>2</sub> in an oil field to enhance oil recovery.

# Olivier Appert Interview

## 2020

There is the problem of cost if you consider the CO<sub>2</sub> price and the problem of non-acceptance by people of nuclear power or where carbon storage would occur; 10 years ago, there would have been optimism on the volumes of carbon that can be stored. It appears that it is now necessary to assess, very precisely, the capability.

However, there are projects like Sleipner in the North Sea, where CO<sub>2</sub> is separated from natural gas and stored in an aquifer. One million tons of CO<sub>2</sub> per year has been stored since 1996. There is also a new business model in Norway, where the CO<sub>2</sub> is captured onshore, transported offshore, and is stored in another aquifer in the North Sea.

**Q.** Let us turn now to IFP innovation, “Sustainable Mobility” and “Renewables” are two of the major areas of activity. Are they becoming more important than IFP’s traditional areas of oil and gas?

**A.** Oil and gas are not dead and will still play a major role for quite a long time. Oil and gas represent 50% of the total energy demand, and according to the IEA, this share will remain relatively high in the next 20-30 years. In the context of energy transition, new technologies are required. When I was chairing IFP, we considered the challenge and the opportunity of energy transition, and we changed the name of IFP to IFPEN in French for IFP Energies Nouvelles (New Energies).

In this new context, we can mobilise our expertise, which has been developed in oil and gas. Just take one example: energy efficiency is very important in the transport sector. We have been developing projects for cars consuming less than two litres/100

km and even one litre/100 km combining digital technologies, efficient engines, and rechargeable hybrid technology.

A second example is biofuel for cars, trucks, and aeroplanes. It appears that the bio-jet fuel may be the most important technology to solve the climate change challenge for air traffic. As far as renewable electricity is concerned, we have developed offshore wind technologies based on our offshore oil production expertise.

**Q.** Finally, the IFP School has become famous as a training centre in the energy industry. Is fostering this school one of IFP’s greater achievements?

**A.** When I was chairing IFP, I was very focused on IFP School, which is one of the leading training centres. We have built close links with research and technology centres and also the industry.

So, IFP School can provide first-class engineers, industry-oriented engineers. We have also created a subsidiary IFP Training to offer a wide set of training programmes delivered locally for engineers and technicians.

In the past, the bulk of our students were working in the oil and gas industry. Today, a significant part of our students are working in every industry, even in banks and financial institutions. It is a success, and students come from all over the world because every student has a job at the end of scholarship or even before.

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