

## Tim Gould Interview

2020



**Tim Gould**

Head Energy Supply & Investment, IEA

The following interview was conducted by Ms. Randa Takieddine 21 October 2020. This interview with Mr. Tim Gould provides his insight and thoughts about the future of fossil fuels; his opinion on the energy outlook for 2021, what could delay recovery following the COVID-19 pandemic, and what could improve sustained growth for the industry as a whole?

Mr. Gould is the Head of Division for Energy Supply and Investment Outlook at the International Energy Agency (IEA). Mr. Gould designs and co-directs the World Energy Outlook series at the IEA, one of the world's most authoritative sources for strategic insight into long-term energy and environmental trends.

Before joining the IEA, Mr Gould worked on European and Eurasian energy issues in Brussels and has ten years of experience in Eastern Europe

**Q.** To start the conversation, could you guide us through some of the scenarios considered in the IEA's World Energy Outlook 2020, and the differences between them?

**A.** Every year, we discuss amongst ourselves, at the IEA, and with our executive director which scenarios we will need to envision to help us understand the particular challenges that the energy sector faces. And of course, this year has been extraordinary in so many ways. So, we had to factor in the major question of how the pandemic and its aftermath might reshape the energy sector.

This scenario-based approach is more important than ever. When you look at the range of uncertainties both in the near term and long term, you cannot put together only a single scenario or storyline about the future of energy.

So, what we try and do with the scenarios put together in the World Energy Outlook (WEO) 2020 is looking at the direction we are heading to, based on the things governments say they would like to do. We look in detail at policies and measures that are either in place or that have been announced and see how they might be affected by different assumptions of the Outlook for the economy's public health. And then we also look at what more would be needed for the world to reach net-zero emissions (NZE).

Within that overall framework, the stated or official policies scenario is one we look in detail at government policies, what is in place, what has been announced, and we take the view that Covid-19 vaccine will gradually bring the pandemic under control in 2021. And that allows for a steady recovery in economic activity.

We also wanted to consider what happens if assumptions about public health in the economies are too optimistic. So, we have these delayed recovery scenarios (DRS) where the pandemic is prolonged, the initial economic slump is deeper, and there's long-term damage to the global economy's growth prospect.

Now, the alternative way of thinking about the future is what if those policies were to change? As you know, in our sustainable development scenario (SDS) we think about that primarily in terms of energy-related sustainable development goals, meeting the Paris Agreement target, and ensuring universal access to modern energy and improvement in air quality. So, SDS relies on a policy shift much more than what we see in policymakers' statements and ambitions around the world today.

In terms of global emissions, the SDS is on track to reach global NZE by 2070. To do that, many countries and companies would need to reach NZE by 2050. Still, this idea of NZE by mid-century is increasingly coming up in conversations about private actions and is prominent in many corporate strategies.

So, we want, in addition to the SDS, to look at what it would take to get the whole world to NZE by 2050—the entire global energy economy, and that is this additional case looking particularly at what would need to happen in the next 10 years.

What is clear from our analysis is that for the moment, we are not on track to have a decisive break in the CO<sub>2</sub> emission threat. CO<sub>2</sub> emissions came down strongly in 2020, in our estimation by 7%, and they will rebound much more slowly in our base

policy scenario than they did after the financial crisis of 2008/2009.

There isn't that early peak, and then, a rapid decline in emissions, which would hit the Paris Agreement goal. Even though there are reasons for optimism on the climate change front, we are still well-off track from a trajectory that is compatible with avoiding severe impact from climate change.

**Q.** Following that concern, dealing with investment in the energy sector, there appears to be a real danger of a shortfall in investment both on the renewables side as well as with oil and gas. Is this true?

**A.** I think that is the case. Looking at the numbers for 2020, energy demand in our estimation is declined 5% this year and energy investment by 18%. In both cases, those headline numbers can see wide variations across different fuels and technology.

Suppose we take the 5% drop in energy demand for oil. In that case, that is more like 7-8% for coal, 3% for natural gas, but certain renewable technology, particularly in the power sector, has increased this year. But likewise, there is a variation on the investment side.

In our view, investment in new gas and oil supplies has fallen around one third in 2020 and particularly hard for areas like US shale, and for the investment budget for sole national oil companies like Algerian Sonatrach, which has been cut up to half.

The implications of that fall of oil and gas investment are not felt immediately; the less time for new investment projects means that

these would be felt on oil and gas balances only in a few years. So, in our estimation, the cut in oil supplies investment this year would take around two million barrels/day of 2025 oil supply.

However, if this becomes the 'new normal', and the investment of 2020 is maintained at the same level for a few years, then the impact on 2025 supply will, of course, increase. Then you are taking around nine million barrels/day of previously expected supply in 2025.

So, if demand gets back to anything like its previous trajectory, that creates the possibility for new mismatches, new crisis cycles, and new market volatility down the road. The situation in the renewables or the clean energy technology sector is not entirely similar because, in practice, many of these investments have been resilient in 2020.

It remains true that the level of investment today is well short of what would be required to meet the goals that are tackling climate change. So, we are not investing enough to keep our traditional pathway secure; we are also not investing enough to change course. From the IEA perspective, we do see a risk on the investment side.



**Q.** It appears that climate change has a greater impact on less developed countries. Is it true therefore that “climate change is just a rich country game”?

**A.** It is certainly true that climate change has a disproportionate effect on some of the world's most vulnerable and poorer parts. However, I don't believe that the response to climate change can be a game played by a few countries. If we are to solve the climate problem, then, in the end, it will be addressed everywhere, and I think for the elements you mentioned: poverty, famine, disease, in a sense climate change, can act as a threat multiplier in many parts of the world.

The challenge is decarbonising the existing system and offering a way for countries to meet their development aspirations without adding burden to their response to climate change. In that respect, there is some good news in some key areas; the clean choice is already a cost-effective choice for solar in many parts of the world, which is consistently becoming cheaper than other energy competitors in many cases.

In our new outlook, we proclaimed that solar is the new king of electricity supply because of this combination of falling technology costs and support and advantageous financing terms. That is a formidable value proposition in many parts of the world. We also have to recognise that the pandemic has made the challenges in many developing economies much more difficult. One piece of analysis we have done looks at sub-Saharan Africa. In our view, after several years of improvement, we are likely to see in 2020 an increase in the number of people without access to electricity.

And then, even among those who do have an electricity connection, the rise in poverty levels may mean that a basic set of essential electricity services may become unaffordable for up to 100 million people worldwide. They then, in essence, fall back into reliance on more polluting fuel. That is a big warning sign for us as a result of the pandemic.

We ought to recognise that electricity cannot be the only vector for development. Suppose you are talking about industrial growth or infrastructure development; in that case, there has to be a way of producing all of these energy-intensive goods that seal cement to build up a modern economy. We are very aware that there is still work to be done through innovation and accelerated deployment to allow for that inclusive low-cost, low carbon development model covering all aspects of the energy economy.

**Q.** What are your thoughts then on a low carbon model and climate change? Could it spell the end of coal?

**A.** Climate change is a huge challenge for coal, which is the largest source today of CO<sub>2</sub> emission. In our projections, we see that coal demand has not and will not rebound after the pandemic ends even in the state-policy scenario. It does not get back to the 2019 level, and its share in the energy mix steadily declines over time, so by 2040, it is down below 20% for the first time since the industrial revolution. In the power sector, you have already seen in 2020 that coal power generation is often the most exposed when electricity demand is down.

If we look forward in many parts of the world, particularly in Europe and North America, a combination of the explicit phase-out policies in some cases, but also the rise of renewable competition from relatively cheap natural gas, is leading to some significant retirement in the fleet.



Our analysis is that if you want to tackle climate change, it is not enough to stop building new coal plants. You have to look at emissions that are, in a sense, locked in by your existing infrastructure. We have to be aware that while the average age of a coal fire plant in Europe or North America is over 40 years, the plants built in Asia are much younger. They are still teenagers, and under normal circumstances, they will continue to operate for many years to come.

You also have to think about policies and technologies that find a road for power plant; in some cases, there will be retirement. However, there could be other ways to repurpose power plants for more flexible operations in a power system or retrofit in some cases with carbon capture technology. On the carbon tax, it has played a role in parts of Europe and the UK. Still, I think it has been a combination of carbon pricing with developments elsewhere in the energy economy and some explicit commitment to phase out coal.



**Q.** An intrinsic part of a low carbon model is CCS. Some facilities are currently in operation 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.** There is a significant opportunity for carbon capture technology in the future, at least if you look at our scenarios for reaching NZE; it plays four important roles in the future energy system. One of which I have already mentioned during capturing emissions from existing infrastructure, and in the case of China, it will be mainly from coal, and potentially, in other parts of the world, it could be from natural gas.

CCS is one of the few technology options today able to bring about emission reduction in some industrial processes, like steel and cement production. A third area that could be interesting for the gas and oil industry is low-carbon hydrogen production. There are many areas where low carbon fuel and low-carbon hydrogen, in particular, could take on some of the role currently played by oil and gas. So, you get the energy benefit of hydrocarbons without the associated emissions.

I think the last area we think CCS could be important is in negative emission technology. Some emissions are unlikely to be avoided or reduced directly in any vision of a net-zero energy economy. So, by using CCS, you can have a technology reduction that removes carbon from the atmosphere and then delivers you a net-zero energy system.



In terms of the oil and gas industry's opportunity, an industry with a large-scale project management experience and a huge wealth of engineering skills, we think they are quite a good match between the oil and gas industry capacities and carbon capture utilisation and storage. However, to get that moving, there has to be the supportive policy framework that allows those investments to go ahead. I think competitiveness depends on the policy framework in place. You can already see today, with a relatively modest carbon incentive (this is the case in the US), there is an economic case for investing in capture and storage. Sometimes that captures CO<sub>2</sub>, which goes to activities like enhanced oil recovery. Still, there may be other ways to utilise in addition to sequestering underground.

**Q.** And what of gas? Is it just a transitional fuel or is it part of the ultimate solution, perhaps as a standby fuel? What about the ever-present issue of methane emissions?

**A.** There is a very robust case for long-term roles of different gases in the energy system because they deliver services and qualities difficult to replicate with other sources. Whether it is the winter heating in some countries, high-temperature industrial heat or a source of flexibility in the power sector, it is a solid foundation for building gas

infrastructure and gas-related activities. However, the challenge is that gas remains a fossil fuel, and there is the issue of leaks of methane.

In our view, for gas to prepare itself for the long-term future to have an NZE, the first thing you would need to do is to make sure you are managing those methane emissions much more carefully than at present. There will be a need for a big improvement in the data available on the source of these emissions.



We see many new data from aerial measurements, including satellite data that will pinpoint much more accurately where these emissions originate. There are also much more companies in Europe involved in buying methane, and there is much interest in low-carbon hydrogen and technology like carbon-capturing utilisation storage.

However, those are a long-term set of options about making gases compatible with a low-emission future. In the meantime, we should not forget that gas remains the least emission-intensive of the fossil fuels, particularly where you have countries in emerging economies in Asia and Africa looking to support industrial development and improve their air quality. That offers an opportunity today for the natural gas industry as well, and that is why, in our scenario, gas demand continues to rise in the next couple of decades.

**Q.** Major changes in demand for energy have been seen this year due to the COVID 19 pandemic. The WEO report states that it is too soon to say whether the pandemic is a setback to energy change or a catalyst for change. As further waves of infection hit the world, what are your thoughts?

**A.** The pandemic is not over so you can still have various outcomes depending on how deep and severe the pandemic is and how lasting the economic damage is. That is what we try to capture in our new Energy Outlook analysis. There is another key variable; that is what governments end up doing because governments, in many parts of the world, are launching stimulus packages that will have major implications for the energy system's future. And essentially, what we see are different choices.

Still, the essential choice is whether governments are reviving the energy that existed before the pandemic or using the spending to push the energy sector on to a slightly different track. Earlier in the year, we, with the IMF, put together the IEA sustainable recovery plan, which in our view, boosts economic recovery, creates jobs, and reduce emissions.

This approach has not featured prominently in all the plans proposed today except for plans in the EU, the UK, New Zealand, Korea and others. We think there is still the opportunity for countries through this support of additional investment in clean energy technology.

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**Q.** This latest report on the Energy Outlook has generated enormous interest; what next from the IEA?

**A.** We have a very dynamic executive director; he has set several tasks for the next few months into the next cycle. We are working on a special country report on India, which for us, is such a crucial part of the energy outlook:

1. We are working hard with Indian friends and partners to put that together, and we shall be releasing that early in 2021.
2. There is three other detailed analysis expected in the first half of 2021. One is looking to explore solar power's role in even more depth, not just what solar is about but what needs to happen in other parts of the energy system to accommodate and allow for that rapid growth in solar.
3. An analysis of critical mineral and metal's role at changing energy system as many clean energy technologies require more intensive use of some metals and minerals and fossil fuel technology that could introduce new pressures on supply chains worldwide.

We wanted to explore what those risks are, and what can be done to mitigate them, and then the fourth element is about investment and finance. The pandemic has strained balance sheets worldwide; it has also increased borrowing costs in some developing economies. So, we wanted to look in more details at how you can have that marriage of energy policy design and the needs of financial effects that can allow that flow of capital to clean energy technology in particular.

