

## JEAN ABITEBOUL

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**Olivier Appert, Chairman of France Brevets, Scientific Advisor of the Centre for Energy and Climate of Ifri, Former President of the French Energy Council**

I think that is a good opportunity to leave the floor to Jean Abiteboul, who is the President of the International Group of LNG Importers and who spent all his career in natural gas. Therefore, Jean, you have the floor for 10 minutes.

### Jean Abiteboul

Thank you, Olivier. I will preach more or less for my church and mention more specifically natural gas.

Slide one seems a little bit complex, but it shows three different things on the same slide. The size of the square is the size of the world market in 2000, 2010 and 2022. Then the color shows the different kinds of energies and, inside one color, you can see the different countries. It is a little bit complex and I will not spend too much time on that, but it gives you all the figures related to the different kinds of energy.

There was a question about nuclear. Nuclear is in orange/pink and you can see that nuclear is still a rather small part of the world energy mix. It was 7% in 2000 and it was 4% in the world energy mix in 2022.

In black, you can see coal. You can see that coal is still very important and increasing its shares from 25% in 2000 and 27% in 2022. Therefore, coal is still very important.

You can see the growth in green, of renewables – 1% in 2000 and 7% in 2022. The size of natural gas is more or less the same – 22% in 2000 and 23% in 2022. However, of course, at 23% of a large square, the global energy mix went from 9.2 billion tons oil equivalent to 14.4 billion tons equivalent.

Just a snapshot on coal. Coal was 30% in 2010 and is 27% in 2022. A big part of this decrease in coal consumption has been replaced by natural gas.

As a consequence, the next slide, you can see that the GHG emissions, CO2 emissions, to be more specific, have been growing by 2.8% per year from 2000 to 2010; and from 2010 to 2022, the growth is only – only, it can be discussed but it is fact – by 0.9% year on year. The main explanation to that is the replacement of coal by natural gas.

There is also a small part for renewables, but the share of renewables is still too low to have today a significant impact on CO<sub>2</sub> emissions.

Now, LNG, this is the part of inter-regional gas trade on the left side. You can see that the pipeline part of inter-regional gas trade has decreased from 2021 to 2022 by 5%, and has been replaced by LNG. Therefore, it is a direct consequence of the Ukraine war.

On the left, you can see the LNG imports by sources and by destinations. You can see, at the top of the graph, the big three export countries – the United States, Australia and Qatar. Qatar and Australia are more or less the same, but you can see the growth in the United States in 2021 and 2022. You can also see that Europe, from 2021 to 2022, on the downside part of the slide, has grown significantly, also as a consequence of the Ukrainian war.

In Europe, LNG has filled the gap created by the disruption of Russian gas. You can see on the left the Russian pipe imports in red/orange. You can see the decrease and you can see, on the right, the increase of the US LNG to Europe. To make it simple, in Europe, the Russian gas has been replaced by LNG from the US.

I like this one because the title of this one could be ‘The Invisible Hand of the Market’ or it could also be entitled ‘Leave me Alone’. What do I mean by leaving me alone? All the governments have tried to do something to cope with the issue of the Russian gas in 2022 and the beginning of 2023.

They have tried to imagine new systems in Europe of common purchase – which, by the way, is illegal and there is a competition law. They have tried to imagine price caps. They have tried to imagine common tenders, etc.

One could think that part of these measures have been useful. Personally, I believe that the market has done the job. When you look on the left part of this slide, you can see that the LNG imports from 2021 at the top to 2022 on the back grew from 70 million tons to 110 million tons per country.

On the next part of the slide, you can see the decrease of LNG imports in Asia per country. You can also see that there is an increase in Europe of 40 million tons of LNG imports, partially offset by the decrease of about 20 million tons of LNG which used to go to Asia.

How is it possible that this LNG no longer goes to Asia? The answer is very simple. The answer is coal. The prices of LNG have skyrocketed so much that some Asian countries, especially China, India and Indonesia, have naturally replaced LNG with coal for their electricity production.

It is not an intervention of the government. It is not because Emmanuel Macron has asked China, ‘Please give me some LNG to replace Russian gas’. It is just because the market has been working. There was a double swap – LNG to coal in Asia, and LNG from Asia to Europe to replace Russian gas.

The price signals did work without any intervention from the government and from Europe. Today, in the LNG market, 30% of the quantities are spot. You have 20 exporting countries.

You have 45 importing countries. You have 734 LNG tankers, so you have a huge fleet of LNG tankers. The market works.

We had already seen that during the Fukushima issue, where it was exactly the other way round and additional LNG went to Japan to replace the nuclear which was cut by the Fukushima issue.

My main message is the LNG market really provides flexibility. The price signals work. Of course, the replacement of LNG by coal in Asia is not good news, as far as CO<sub>2</sub> emissions are concerned. However, there is, today, such flexibility in the LNG market that the LNG market can cope with crises.

The next slide is expectation and the future. I will not spend too much time on that, but it is numbers coming from the EIA in two assumptions. The one at the top is the stated policies scenario, and the one at the bottom of the slide is the announced pledge scenario.

On the top, it is a state-of-the-art assumption and, at the bottom, you can see what would be the consequences of what different states have announced in terms of pledges to reduce greenhouse gas emissions.

On the right, just for information, you can see different scenarios on the growth of LNG. You can find the big three – the United States, Qatar and Australia – and there are two countries which can provide additional LNG, which are the United States and Qatar, on a significant scale.

This is basically what I wanted to say, Olivier.

### **Olivier Appert**

Thank you. I will look to the floor for a few questions. Yes?

### **Renaud Girard, Senior Reporter and International Columnist at *Le Figaro***

Jean, regarding the Russian attack of Ukraine, do we have an idea how much it cost European consumers to shift from Russian gas to American LNG or Qatari? Do you have a vague assessment of how much it cost the European consumer? That would be interesting to know.

My second question is, in terms of carbon emissions, the fact that we saw that India, China and Indonesia went back to coal, what is the impact on the carbon emissions of the decision of the West to stop importing Russian energy?

### **Jean Abiteboul**

These are good questions and I am not sure I have the full answer to them.

On the first question, I read – not by you, of course, but others which are less informed – that Europe has paid a huge amount of money because Russian gas has been replaced by US LNG. This is factually true because, to make it simple, in Europe, the spot prices were around,

let us say USD 8 or USD 10 per million British thermal units (Btu), Olivier, the order of magnitude.

### **Olivier Appert**

Not in 2020. It was 47 in 2021 up to...

### **Jean Abiteboul**

Okay. This is the order of magnitude. After the invasion of Ukraine, this number went, at the height of the crisis, to USD 50 per million Btu. Therefore, it has increased by 400%.

People said, 'The US LNG cost a huge amount of money to the European consumer'. No, it is not the US LNG. It is because there was less LNG on the market and the price signals did work. If there was no US LNG to replace part of the Russian gas, the prices would have been maybe not USD 50 per million Btu but maybe USD 100, USD 200 or whatever it is because there would be a physical gap in the supply demand of LNG, and this gap would not have been filled by prices. We would have had to cut the gas in Europe to consumers or to industrial consumers or whatever, which has not been done.

Having said that, it is true that multiplying the prices by four or five, even for a limited period of time, has cost a lot of money. There was a competition between Europe and Asia and it took time to displace gas in Asia to be replaced by coal.

I have no idea of the exact numbers but, if you take maybe Olivier's idea, if you have an increase of 400% of the gas prices during three months, this is the equivalent of doubling or tripling the prices during one full year. Therefore, if I multiply by – I need a few seconds to do the multiplication.

### **Olivier Appert**

I gave some figures in my presentation and, in fact, the cost for Europe of the two crises – the crisis of the European gas and electricity markets 2021 and, on top of that, there is the Ukraine crisis – the figures I presented mean that the spending on energy in Europe represents 2.2% of the GDP in 2020. It moved to 4% in 2021 and 8% in 2022.

This may mean that the crisis in Europe of the electricity and gas markets cost 2% of GDP and, on top of that, 4% due to the Ukraine crisis. That is just a rough idea.

### **Jean Abiteboul**

Regarding the second question of Renaud on cost in terms of CO<sub>2</sub> emissions.

In rough numbers, in China, there was an increase by 30 million tons oil equivalent of coal, plus 50 million. I would say 100 million tons oil equivalent and each time you replace gas with coal, you double the CO<sub>2</sub> emissions. Therefore, I will ask for help from my friends Nicolas and Olivier on 100 million tons oil equivalent, if you multiply by two, how much CO<sub>2</sub> does it create?

### **Olivier Appert**

We will give you the figures afterwards.

**Jean Abiteboul**

Okay.

**Olivier Appert**

There are two questions? First?

**Ana Birchall, Special Envoy for Strategic and International Affairs Nuclearelectrica**

Thank you, Olivier. It is not necessarily a question, more of a comment. It is very interesting to look from the policy point of view of the cost after, but I would kindly put for the analysis to look at the costs before because of the dependency of Europe on the Russian gas.

Olivier, in a humble way, I can challenge that the winner of Nord Stream 2 was the United States. In my humble opinion, I think the big winners were the Central Eastern European countries, who got their chance to not be prisoners of the Russian gas used by Putin as a weapon.

I can tell you from my personal experience, when I was Deputy Prime Minister in 2018, it was Romania and Poland who were saying, in Brussels, on and off the record, 'Take away the energy from Putin's hands because he is going to use it as a weapon'. Unfortunately, we were right.

Maybe, as we are talking from the policy point of view, it would be interesting to look at the cost of being so dependent on Russian gas. It is not necessarily the case of my country, Romania, because we have been quite wise in terms of having the energy mix and we practically, from all the Central Eastern European countries, had the least dependency.

However, I can tell you, for that 15% that we were getting from Russia, the same gas from Russia for Romania was the highest. Actually, there was another country that paid more, which was the Republic of Moldova. Then it was Romania. The same amount of gas on the same day from Russia, we were paying the highest price where other countries in the European Union, quite frankly, were paying less.

Therefore, I think drawing some lessons and recommendations for the future is to look at what was happening and how energy is practically a matter of security, in my opinion, and should be treated this way.

**Olivier Appert**

I agree. When I said that the US were the winners, it is from the economic point of view because it reinforced it and, now, the European Union is depending more and more on US LNG.

We discussed Ukraine. I would like to highlight the fact that, in 2014, the share of Russia in the gas supply of Europe was 30%. In 2014, there was the invasion of Crimea and the share increased from 30% to 40%. How blind we are, especially Germany.

**Ana Birchall**

Thank you for saying that.

**Jean Abiteboul**

I would like, if you allow me, Olivier, to say a few words about the US being the winners, etc. I think you are right when you say that the West was against the use of Nord Stream. It is because the US was not comfortable having Europe too dependent on Russia, for strategic reasons.

**Ana Birchall**

They were right.

**Jean Abiteboul**

They were right. However, it does not mean that the aim was to replace Russia with US energy. They are two different issues because, in the US, there is a debate. There are people who believe that it is not a good idea to export gas from the US. They believe that the consequence would be, first, to increase the price of gas for domestic consumers and they also believe that, in doing that, the US is not keeping its strategic advantage of having cheap energy.

There is a real debate on that and, until Cheniere built its first export facility in Sabine Pass, exporting natural gas from the US was illegal. The law forbade the US to export gas. Therefore, in order to do that – it was during President Obama's mandate – they had to change the law.

I do not believe that the US had in mind to do something which, at the end of the day, would allow them to export gas to Europe.

**Ana Birchall**

Yes, I would like to clarify. Can you just give me one second?

**Olivier Appert**

Sorry, the time is moving rapidly.

**Ana Birchall**

I would like to clarify – I was not implying that. However, I was just saying that energy was treated as matter of security and, exactly from that point of view, yes, I do not think that was wise for Europe to be so dependent on Russian gas.

As a matter of principle, I think, going forward, we should be very careful not to replace one dependency with another, disregarding the names, just as a matter of principle and as a lesson going forward.

**Olivier Appert**

I am afraid that, if Trump is coming back, it will be very difficult to find natural gas for the supply of Europe and, anyway, it will be very, very expensive. That is just my comment.

Yes? Just a short question and a short answer.

**Philippe Chalmin, Founder of Cercle Cyclope, Professor Emeritus at Paris-Dauphine University**

A short comment and a short question. My short comment is that you focus on US exports of LNG. Remember that, just from July 2022 to August 2023, the export of US coal to Europe rose by 50%. The export of US oil to Europe, to the point that now the Dollar is a commodity currency. That is just a point.

My question is, we spoke about the price of natural gas. Usually, we had three markets – we had the US market, the European market and the LNG market in Asia. We still have the American market and, more and more, the European market is linked to the LNG market in Asia.

That LNG market used to be, for a long time, a market of long-term contracts. In recent years, spot transactions developed and all the prices you mentioned were on spot transactions. What is the situation nowadays? I heard that, for example, TotalEnergies signed a 27-year contract with Qatar. NE and Shell have more or less done the same.

I do not know what the conditions of pricing are, but does this mean that the reference of prices will be an eventual spot market? What kind of spot market? We do not have, at the moment, any futures on LNG. What do you think could be the future, knowing that the price of gas in Europe now is subject to what happens with strikes at Chevron and Shell facilities in Australia, or eventually the absence of export of Israeli gas to Egypt?

Do you think we will have a globalization of the LNG market with spot and futures? I do not know if TotalEnergies could tell us how much they will pay in 27 years for the natural gas they will import from Qatar, but what kind of price mechanisms do you have or are we going to have any other commodity, just on spot and futures?

**Nicolas Terraz, President of Exploration and Production and Member of the Executive Committee of TotalEnergies**

I will be very quick. First, what we need to keep in mind is that, today, the LNG market is tense and will remain so for three or four years. We can see that each time there is a tension in supply, the price goes up very quickly. However, a number of projects are coming. By 2028, that will probably change. That is number one.

On number two, the long-term contracts, yes, of course. Everybody is in favor of long-term contracts. We advocate for long-term contracts. The problem is that, to make a long-term commitment, you need to have long-term visibility and, in Europe, that is a problem for gas.

In Europe, if countries are saying, 'We want to eradicate gas from the energy mix' then how do you want companies to build infrastructures and make long-term commitments on gas?



Therefore, it is complex and, in fact, there is a risk that we are going to pay the price for this in Europe.