

## DÉBAT

### **Bertrand BADRÉ, directeur général et directeur financier du Groupe de la Banque mondiale**

Olivier, your introduction was quite right when you referred to your teacher, André Giraud, who said that the calorific impact is probably the most marginal impact of all this, as we have seen. All the rest is quite important. We discussed geopolitics and we also saw the structural changes which are at play. Even though there are cyclical dimensions, structural changes are quite important. They differ depending on whether you are considering gas or oil, as you have just said. The role of the US, in particular as a swing producer, is quite critical, at least in the short term. The role of technology is still something that is not totally clear going forward but will have massive impact.

It is interesting as well that besides the direct energy impact, there is the impact on the economy. You rightly say this and it is a big concern for the IMF and for ourselves. The benefits of cheaper energy are relatively well spread on earth, but the costs are very concentrated on a number of countries. On top of that, some of them happen to be quite fragile. We mentioned the Middle East, but you could have mentioned Venezuela, Nigeria and some others, which are of great concern. On the opposite side, you mentioned the positive impact on Asia, which will benefit from this, depending on the move forward in renewables, the role of energy etc. This is a very good way to set the stage. We will discuss competing views on the future and any other issues you might want to discuss with our speakers. Thank you very much to the four of you. This was a great way to introduce the conversation.

### **Abdulmajeed AL-SHATTI, membre du Conseil suprême du pétrole, Koweït**

My name is Abdulmajeed Al-Shatti from Kuwait. I have three questions for the panellists. My first question is for Olivier. When OPEC or Saudi Arabia decided to abandon the quota system, they said, 'We will go after market share and more of a market dynamic'. Do you think the current situation applies the forces of the market dynamics, or are they operating a fire sale strategy, selling whatever you have? This is one. Usually, when you have market dynamics, you adjust your quantities without sticking to a certain quota. However, you adjust your production to at least maintain a certain level of pricing.

My second question is to Masood. You have been dealing with the Gulf States for many years and I have seen many of your reports. I have personally participated in many of our reports in Kuwait. We have offered recommendations so many times regarding what to do in terms of oil decline. All of the recommendations that you have put are excellent recommendations, dealing with subsidy, reducing Government expenditure and rationalisation.

Do you see a more seriousness this time in applying some of these measures? I know that you have helped with the Value Added Tax strategy and they are moving ahead with it, but do you think they are more serious this time? My third question is to Antoine. Do you think we will see consolidation in the shale oil industry? Usually, when you have a decline in prices and some companies going bankrupt etc. after a while, you will see a lot of consolidation, in terms of measures. You will have more efficient industry at that time. Do you see or envision that and what would be the impact on prices?

### **Jean-Yves CARFANTAN, consultant senior, AgroBrasConsult**

My name is Mr Carfantan, I am living in Brazil and I am working as an agri-business consultant. My question is to the last speaker. You spoke about the gas prices and I would like to know whether you believe that ammonia prices will follow the same trend as natural gas prices in the future. In other words, are we entering into an era of what I would call low-nitrogen prices, at least in the Americas?



**Antoine ROSTAND, Senior Advisor, Schlumberger**

On ammonia, I am not a specialist and cannot answer.

On the consolidation of the shale oil industry, we will see this starting in a near future. It will depend on the plays, because the cost and production profile varies a lot depending on the shale locations (plays) in the US. Some plays are heavily impacted, some less.

The whole system in the US is based on borrowing and reserve-based landing in the US. The reserves evaluations are done on a regular basis. Impairments are coming up - USD50 billion of impairment last week - so this is happening.

Up to now, the share prices of many E&P companies have gone down dramatically. However, the value has not dropped in proportion because most companies have a lot of debt and the debt has not been touched up to now. We have to wait for the debt market to be shaken before we see consolidation of E&P companies in the US.

**Olivier APPERT, président, Conseil Français de l'Energie; ancien président, IFP Energies Nouvelles**

I just have an additional comment. If a shale company is bankrupt in North America, it will be taken as zero by another company, which will produce without debt. This may create a financial constraint, but it will not change the supply-demand phenomenon of shale. Regarding the first question, what the Saudis had in mind was what happened in 1984-86. They were convinced that if they maintained the price, the US shale producers would continue to increase their production. This is due to the flexibility of the shale producers, as explained by Antoine.

I would like to remind you about the projections made by the Department of the Environment (DoE) of 1 million barrels more every year, which was expected to continue. The Saudis could have repeated the same scenario as in 1984-86 by reducing their production to 3 million barrels per day. They did not want to repeat this phenomenon. By the way, this strategy also has some geopolitical side effects on some countries important for Saudi Arabia, such as Iran, Iraq and Russia.

**Masood AHMED, directeur du département Moyen-Orient et Asie Centrale du FMI**

Your question was, is there any more sign of applying some of these policies that would raise money in ways other than oil and cut back spending? The answer is yes. I will give you two examples of it. It varies a bit country by country, but for example, in the last few weeks, the UAE has raised energy prices. Gasoline prices are now at international levels, which is a big change. Kuwait is thinking of raising prices in certain areas and other countries are doing so. I do see some movement there.

Second, on capital expenditure, I see that people are cutting back projects almost everywhere. You hear that not just from the Governments, but from the banks and the businesses. They are beginning to see some slowdown in capital expenditure coming about as well. I do get a sense of it in a more generalised way, but I have to say that it is easier for some countries to make the change than it has been for others. You will not find an even pace of progress for it.

**Jean ABITEBOUL, président de Cheniere Marketing Ltd**

I am Jean Abiteboul, with Cheniere. I do not know if it is a question, a statement or a reflection, but you will see. It has been said, and I agree with that, that the US will be the swing supplier for oil. It has been said that the export of natural gas to Asia will change the mechanism of price by influencing the gas prices with the gas index in the US. It will be the same for Europe. This is rather than on an oil escalation.

All the participants have tried to foresee what could happen in the oil production. This is by taking into account the oil price, the cost of production and the level of the price which is needed to balance the budget of the exporting countries. In my mind, there is an issue which has not been discussed today, because it is probably much too complicated. Maybe it is not the subject of our roundtable. This is the issue of demand. When the oil prices change so dramatically,



it also completely changes the demand. Since the demand is linked with coal, the nuke production in Japan and the CO<sub>2</sub> price, it is so complicated. At the end of the day, it is almost impossible in my mind to make any kind of prediction.

My point is the following. If we all agree that the US will be the swing supplier, it means that it will no longer be OPEC which sets the oil price, but the market. It will be the same for gas, with the export of natural gas from the US to Europe and Asia. There is a major change that we will see within the next month or the next few years. We will see an era when the oil and the gas price will be decided by the market rather than by any kind of player.

We should try to implement an organisation of the market which makes the market responsive to all price signals for every kind of energy. This is not only oil or gas but also coal. Electricity is a little bit different, because it is regional and it is not a primary energy, generally speaking. There is also CO<sub>2</sub>, and maybe if this market is efficient, we could see a completely different dynamic in the oil price formation and a more optimised energy market.

**Philippe CHALMIN, professeur d'histoire économique et directeur du Master affaires internationales à l'université Paris-Dauphine**

I am Philippe Chalmin and I am a university professor in Paris. I am always puzzled about this information regarding cost of production. When I look at natural gas, 2-3 years ago, one was saying in the States that the cost of production for shale gas was around USD 400 per million British thermal units (BTU). Now I hear that shale gas producers are still surviving at USD 1.8 per million BTU and maybe less.

I am wondering what the real break-even cost of production is for shale oil producers. 2-3 years ago, people were saying it might be around 50-60. Now, it seems that 30 is perhaps a level and it might even go down further. I have the same question regarding Canadian therms. I remember at the time, people were saying Canadian therms would be effectively around USD 80 per barrel. Now I hear that it might be 40. What is your view about that? Can we make any forecast and are we not always underestimating the influence of technological changes on financial constraints?

**Nelson CUNNINGHAM, président, McLarty Associates**

I am Nelson Cunningham with McLarty Associates. This is the most melancholic discussion of a blessing that I have ever heard. Maybe it reflects the difference between those of us in the United States and those of us in the rest of the world. However, when we in the United States talk about low energy prices, we view it as a blessing across a whole range of issues. Cheap, abundant energy means cheaper inputs for manufacturing and petrochemicals and lower inflation. It means that our consumers can do more with their dollars and they spend less on heating their homes and driving their cars. They can spend more on other things.

We view it in the United States not only as an economic blessing which is driving our economy and adding to our GDP growth, but we view it as a geopolitical blessing. We look around the world at the countries that are hurt by low energy prices. You look at the Russias, the Irans and the Venezuelas. These are the countries that we do not mind coming under pressure on international markets.

Am I the only American here? This is a discussion that we would simply not be having in the United States. If we were having this excellent factual discussion, the spin would be entirely different and Ambassador Levitte would know this very well. Maybe it is a difference of American character, or the difference is simply down to the fact that we are benefitting most immediately at home from these cheap prices. Smile, this is good news, maybe not for Total and Schlumberger, but for the rest of us.

**Antoine ROSTAND, Senior Advisor, Schlumberger**

On the break-even price of gas, it depends a lot on the place or play, and we know there is huge variability. In some plays, the industry is producing at 1.8 USD per MBTU and making money, and in other plays it is not economic to drill new wells. It is a matter of the quality of the resources. Most people think that at US 3 and even at USD 2, there are enough sweet spots to be drilled and fracked to be able to fulfil the market.

In oil today, it is very different, because the resources are smaller. The technological advances have been focused on costs up to now, rather than the recovery of the resources. The recovery of oil for shale oil is quite low compared to the recovery factor in conventional reservoirs. There is a lot of R&D now about how to increase the recovery of LTO resources. If R&D is successful, the break-even price for oil will probably decrease in most plays.

**Masood AHMED, directeur du département Moyen-Orient et Asie Centrale du FMI**

I want to thank Nelson for having brought in the fact that for every dollar that the oil exporters are not getting anymore, that is an extra dollar that somebody else is keeping and using to other effects. However, there is an interesting point. At the beginning of the year, we had anticipated in the IMF that this drop in oil prices would lead to an increase in global growth of about 1%, everything else being equal. As it happened, we have been revising our global growth numbers down rather than up.

How do you explain the fact that theoretically, this should have been a big boost for the world, but it does not seem to have materialised? There are three reasons why it has not come about. One is that probably in a number of countries, it was not passed through to the consumers. In the US, more of it passed it through, but in many other countries, it actually strengthened budgets rather than passing through the consumers. There was thus probably less of an impact.

The second reason is that there were many concurrent events in the world which were unrelated to what was happening in oil markets or partly related to what was happening in oil markets. These actually brought down global growth. The third reason is simply that the fact of it being spread so broadly means that, as somebody said at the beginning, you do not see the gains concentrated in that sense. I agree with you that there is still a net gain to global output from lower oil prices. Most of the analysis supports it. It is less than we thought it was going to be. Perhaps some of it was driven by slowing demand rather than increased supply, and if we are slowing demand, that is not good news, because it is actually reflecting weakness in the economy. The concentration of the losses means there is a greater focus on what we do to address the consequences of that.

**Tatsuo MASUDA, professeur invité à la Graduate School of Nagoya University of Commerce and Business**

May I just comment on that? Your view is very fresh to me. Thank you for that. There are a few points. In Asia, there are mixed feelings. Number one, low energy prices may slow down the implementation of climate measures. Number two, particularly in Japan, we are fighting against deflation. High oil prices tend to push up inflation. The target is 2%, but we are facing deflations. Number three, unlike in the United States, most of the OECD member countries have very high tax on gasoline and diesel.

In Japan, it is more than 50%, in Norway, it is more than 70% and in Britain, it is 60%. Consumers do not feel the benefits of low oil prices to the extent that you feel them. The last point is that the reason prices are low is not just the supply-side effect. It is the slowdown of the big engine called China. This is eating into all the trading partners in East Asia and South East Asia. All these mixed signals send us very mixed feelings, as Masood said, and honestly, we are not too happy about this.

**Olivier APPERT, président, Conseil Français de l'Energie; ancien président, IFP Energies Nouvelles**

I have two comments. First, I want to promote IFRI publications, and there was a comprehensive study by IFRI, which was released in February on shale oil and shale gas in the US. It gives quite interesting information, but unfortunately, it is clear that it has to be renewed, because it appears that a lot of things happened since this very interesting study. That is the first point. The second point is an additional comment to Philippe Chalmin's question.

I remind you of the CERA cost index, which refers to the costs for the supply and service industry and the oil industry. It was 100 in 2000 and it went up to 200 in 2008. This is exactly what Antoine referred to. After the crisis of 2008, the CERA Index was reduced by 20 or 30% and went up again to 200 in 2014. The cost of conventional oil and the cost of the supply and service industry is also linked to the cost of steel and so on. This is a key challenge for the oil companies, but it is also a key challenge for the supply and service industry.



There is an ongoing, dramatic restructuring of the supply and service industry. This is not for the first time. It already happened in 1986 after the oil countershock. At that time, we were anticipating some major technological changes. It was 3D seismics and we were anticipating some technologies on seismics and also on drilling. Frankly, what will be the technologies in the future that may achieve such a dramatic change in the cost? Maybe IT will bring something.

**Bruno LAFONT, co-président, LafargeHolcim**

I am Bruno Lafont from LafargeHolcim. My questions to the different speakers is, in your estimations, how do you take into account the potential impact of COP 21? This means a huge change in energy mix and theoretically a huge change in consumption habits in energy consumption everywhere. That is my first question. Then there is my second question. There is an answer and of course we should be happy about the price and as industrials, we are very happy. However, at the same time, we do not know what will happen, because a lot of money has been spent without being profitable. My question is, at which price is shale gas really profitable?

That is a question regarding shale gas, and it is the same question for all the renewables, which might be put in place to replace fossil fuels. We know that utilisation of renewables is not the same everywhere, and that is also an issue. That impacts the profitability of those investments. In the end, what will be the cost? What should be the normal theoretical correct cost for oil? I remember speeches from oil companies 4-5 years ago, saying that the oil price should and will remain high. I do not know on which assumptions they were saying that. Now they are saying completely different things and it looks like it is a truth, but maybe two years from now, you will come up with other assumptions. How solid are we when we are talking about this? We are the users and we are talking about investments for 20, 30 or 50 years?

**Bertrand BADRÉ, directeur général et directeur financier du Groupe de la Banque mondiale**

Your two questions will provide an interesting transition as well to our second set of speakers, but who wants to react first?

**Olivier APPERT, président, Conseil Français de l'Energie; ancien président, IFP Energies Nouvelles**

Perhaps first, I will make a provocative statement. I do not anticipate a significant impact from COP 21 on the evolution of the oil market in the next few years, because we have to take into account the fact that with COP 21, we are discussing long-term issues. Energy has a huge amount of inertia and the decisions which will be taken will have almost no impact on the future of the oil market in the next two or three years, which we are discussing now. The changes in technology will take time. If there are breakthroughs in technologies such as batteries, it will take a very long time to deploy these technologies.

However, on the long term, there is an ongoing long-term trend due to the evolution of the transport technologies and the regulations on the transport technologies. As you know, transport sector represents the bulk of oil demand growth. The standards are putting a very strong pressure on consumption. We may consider that thanks to technologies which are deployed now, the potential for energy consumption per vehicle may be reduced by a factor of two. However, it will take time, because the turnover of the fleet. The turnover of the fleet is almost 15 years, so it will take time. On the top of that, there are also substitutes for oil in transport. I am a firm believer in the peak oil, not peak supply but peak demand. Peak demand for oil may come in 2030 or 2040, and it will happen because of the technology changes which are going on. For example Hybrid technology will be deployed widely all around the world.

**Bruno LAFONT, co-président, LafargeHolcim**

Do you believe that the oil market is completely independent from the other energy markets? For example, the change in energy mix in Europe happened extremely quickly, at a cost which is huge.



**Olivier APPERT, président, Conseil Français de l'Energie; ancien président, IFP Energies Nouvelles**

I will not comment on the electricity market, which is a real disaster in Europe. I refer to the fact that oil equals transport and transport equals oil. The future of demand for oil has to be analysed in the framework of the future energy demand for mobility. 95% of the energy demand for transport is for petroleum products and on the opposite side, 60% of oil demand is focused on transport. The deployment of new technology within all the fleet will take time.

**Tatsuo MASUDA, professeur invité à la Graduate School of Nagoya University of Commerce and Business**

My first point is quite the opposite to what Olivier said. I believe COP 21 will have an impact, not because many Governments will toe the line and make their best effort, but because the private sector and the business sector are driving themselves to help others. In other words, climate compatibility will become the new rule of the game in doing business. That will be the dominant rule of the game and will go through the entire sector. If all the sectors drive themselves to compete with each other, the impact will be far bigger than the Government can have. Yes, it will have an impact and that is my belief.

**Masood AHMED, directeur du département Moyen-Orient et Asie Centrale du FMI**

I just want to make one small point, which is that if you look at the last 80 years, the period during which world growth was high, incomes increased and it was an oil-based world. The real price of oil during that time has been between USD 20 and USD 40 in today's prices, except for two periods of 10 years. These were 1973 to the '80s and then 2004-14. In the past 60 years, it has been between 20 and 40 in real terms. The next 50 years will be less oil and carbon dependent and the world will not grow that much faster than we were growing before. It is hard for me to figure out the dynamics that would deliver a higher real oil price for the future than we have had in the past 60 years.

**Antoine ROSTAND, Senior Advisor, Schlumberger**

COP 21 will have an impact because of innovation. A lot of individuals, people and companies realise that there they can act, and they will drive innovation.

On the price, my final comment that anything between 30 and 100 is equally plausible is not a joke. It is what many informed people think today, in particular the EIA.

One can see a very plausible scenario at USD 30. with a lot of innovation in batteries, climate related regulation and a lot of LTO in the US. You can also have turmoil in the Middle East, a sharp decline in the mega fields in the Middle East, and high demand for transportation in India and Africa, leading to a USD 100 + scenario. In summary, the range of uncertainty has increased tremendously.