Paris Energy Club

16 October 2015

A summary of remarks

Session 1 – Natural gas

The discussion first focused on the US, drawing some connections with the global gas market. We saw how remarkable the change in natural gas production in the US has been in just ten years. In 2005, many specialists simply did not know what shale gas was and whether it was really significant. In fact, natural shale gas has been a game-changer both in the US and for global LNG prospects.

Shale gas has gone from a very small percentage (less than 10%), of US natural gas to more than 50% in ten years, and this figure is headed to soar even higher. Exploitation started in Texas, but has now moved to the very lucrative Marcellus region in Pennsylvania. A short time ago, the Henry Hub price was about USD2.50 per MM BTU, but Marcellus gas was selling for under USD1 in MM BTU just as recently as last month, which has had a huge impact on the price of gas. Not long ago, we talked about USD8 in terms of natural gas prices. Nobody talks about that anymore; now the figure being mentioned is USD3 or USD4, or up to USD5 if you take an optimistic long-term outlook for North America.

The reason for these dramatic developments is technological innovation. We all know about horizontal drilling and hydraulic fracturing, but the remarkable improvement in production growth as well as productivity in terms of wells being drilled per pad and the ability to increase the production rate are all hitting those sweet spots, especially those with high liquid content, because of the much larger arbitration between liquid and dry gas prices up until recently. There has been such a remarkable change: until a year or so ago the rates of return on investment were extremely high, which explains why so much investment went into both natural gas and light tight oil; the drilling rig rate rose dramatically, though of course it has now fallen. However, now with the low prices, most dry gas plays are not profitable at all, so companies have begun focusing on the sweet spots with the highest productivity, i.e. those which contain a large amount of liquids. They were still profitable as recently as January on the strictly oil plays, but even those have since fallen.

Therefore, upstream capital expenditure in the US is down about 20% to 25% on average for 2015, and forecasts for 2016 are along the same lines, with a further 15% to 20% reduction in upstream capital expenditures planned for 2016. Those of us who were at Oil and Money in London heard that one of the most senior executives involved in drilling horizontal wells, going after both light tight oil and natural gas, Mark Papa, expects a large decline in US light tight oil next year. Therefore, the low prices do matter, and the capital expenditure decline, even with expenditure being concentrated in

the more productive areas, is starting to bite. Most people expect a decline next year, at least on the oil side.

The Marcellus and Utica areas—most of which are in Pennsylvania, but which stretch into Ohio and West Virginia—are very important production regions; these have been the most productive and low-cost areas. Marcellus is extremely productive and in certain parts is liquid-rich, which makes it a win-win for producers of Marcellus gas, and we expect it to remain so over the next five to ten years. This makes the point that, even with the lower prices, natural gas has been much more resilient. There has been a steep decline in drilling rates, but production has not fallen nearly as much. You can see that the rig rate declined from about 1,400 to less than 600 as of last week.

When we talk about markets, the key issue for the US, and probably globally, is demand. Demand is not growing as quickly as new supply, especially from North America and especially with LNG exports expected to begin late this year or early next year when Cheniere brings on its Sabine Pass.

Infrastructure was one of the areas we focused on in considering what could derail this resurgence, or revolution, in the US, and in particular whether North American infrastructure could be built quickly enough—because we should not only include the US in this, but also Canada and perhaps Mexico too. Indeed, we are seeing an enormous amount of investment in building infrastructure to move that gas north to south, from areas from which we never expected to be moving gas. A large number of gas pipelines have been reversed so that we now move Pennsylvanian gas as far south as Texas and Louisiana, which no one would ever have expected.

Even more gas processing is required and the expectation is that the US will become a net natural gas exporter sometime in the next 12 to 18 months as Cheniere and a number of other projects come on. The US continues to export a substantial amount of pipeline gas to Mexico and even some cross-border to Canada, and we expect that to continue and grow; in the reference case, the latest EIA projections show modest growth reaching about 5 trillion cubic feet by 2025. However, in EIA's high-resource case the figure is even higher than that, and we would expect US LNG, at a minimum, to be at about 65 million tonnes per year by 2025. Some specialists mention that it could be a lot more than that depending on demand.

As regards LNG exports, there are five new LNG liquefaction plants under construction, with final investment decisions as well as final approvals from both the Department of Energy and FERC. Most analysts expect that those five plants will be built and be in operation by 2025, which would put the US somewhere just short of Qatar's exports which are about 77 million tonnes. US exports could be between 60 and 65 million tonnes.

There are ten other projects in the queue, and while most people do not believe that a large share of these will be built, there are expectations for even more. So this leads to the conclusion that the LNG market will be quite soft for at least the next three to five years, due to the large number of new projects coming on in the US, as well as the Australian projects that are coming on stream as we speak. A number of other projects are also coming on stream and the demand for LNG seems to be levelling off somewhat after the significant growth that followed the terrible tragedy at Fukushima in Japan, which ramped up its imports of LNG from 2012 to 2015. The expectation now is that there may be some return of nuclear units; two have restarted and others are expected to do so, which could reduce LNG demand in the largest market.

Therefore, most forecasts, including that of the EIA and our own at CSIS, expect a relatively soft global LNG market in the next five years, with some optimism beyond that. This is mainly a demand-constrained world we are looking at, with continued oversupply as many new LNG projects come online. Eni has great expectations for the Mozambique project coming online; there is also the Yamal project and many others.

In the US, there are without question abundant resources. There is no longer an issue as to whether the US should export gas; that political debate is over. What could slow things down are local environmental issues and the ability to bring infrastructure on as quickly as needed. Consequently, for the next three to five years at least, we expect Henry Hub prices in the US to be in the region of USD3 to USD4, however, that estimation may be on the high side.

The discussion then went on to consider how the world will welcome these huge quantities of LNG.

Firstly, regarding the evolution of EU gas demand, in bcm terms, from 2010 to 2014, we can split demand into two, with, on the one hand the non-power generation sector, which covers residential and commercial industry demand, and on the other, the power generation sector. Demand for the non-power generation sector in the EU is completely flat, standing at around 340 bcm over the last five years, and demand for power generation has decreased by 60 bcm. Therefore, the first issue is a strong decline in demand for gas power generation in Europe which is decreasing steadily by about 50 bcm each year.

We already know the reasons behind the decline in gas demand. Splitting power production for the EU into two parts, we have what we call the must run (nuclear, hydro, wind and solar), and the residual load—which is total production less the must run—and this residual load has decreased over time from 50% of total production to only 40%, due to the strong increase in renewable energy (wind and solar). Within the residual load, the share of gas has itself decreased from 43% to 33%, because gas is unfortunately not very competitive compared to coal in terms of residual load power generation. One positive signal is that this trend seems to be levelling off, that is, the residual load seems to have stabilised at around 40%, and the share of gas in the residual load seems to have stabilised at around 33%.

So what impact has all this had on the LNG market? For this we shall look at European supply and developments on the LNG market. That decrease in demand of 60 bcm had absolutely no impact on pipe imports, which remained flat at 300 bcm, but had an impact on LNG imports. LNG imports to Europe between 2011 and 2014 decreased by 32 million tonnes, or 43 bcm, which corresponds roughly to the decrease in demand for power generation. Therefore, the decrease in demand for power generation only affects LNG demand in Europe.

How did the LNG market redistribute itself from 2011 to 2014? The 32 million tonnes unconsumed by Europe went partly to Japan in the aftermath of the Fukushima disaster (25 million tonnes), and partly to Latin America, particularly Argentina, which needs LNG in the winter because it has no gas storage capacity. Some also went to Brazil which was lacking in hydropower due to a severe drought and therefore had to rely on thermal power generation using LNG to compensate for the lack in hydro. Therefore, things in fact panned out very nicely for the LNG market. Total production over the period was 238 million tonnes, and when Europe did not need LNG because there was no gas demand for power generation, LNG immediately went where there was a need for it.

The second key issue presently is the importance of LNG in China. From 2010 to 2014, gas demand in China rose steadily by 18 bcm per year. So, optimistically, we believe that demand in China will increase regularly over the long term. Looking at the full year for 2014 and the first eight months of 2015, demand did not increase, going only from 15 to 15.2 bcm per month. This year, we expect that demand will increase by only 3 bcm, rather than 18. The question we have is whether this is only a 2015 issue or if it will last into the future. We believe internally that it is just a 2015 issue, the reason being that China is restructuring its economy, which is causing a lot of inertia in terms of how gas prices are fixed. The price of gas in China in 2015 reflects the Brent price in 2014, so they are still living in a USD100-per-barrel environment in terms of gas prices. We expect that to be corrected in the near future.

In a global context, we believe that the forthcoming LNG volume will amount to close to 180 bcm: 84 bcm from Australia, 73 bcm from the US and 23 bcm from Russia with the Yamal LNG project. Looking at this 180 bcm coming onto the market and comparing it to the existing production of 325 bcm, we can see that it will create a huge shock on the market for the next five years. That is how we see the LNG balance – moving from 325 to 500.

Asia can be expected to take the greatest part of new LNG volumes. Even if China is experiencing slow growth in gas demand, we expect that it will recover and that its needs for LNG will rise. The main reason we believe this is that our scenario is based on a green or climate change environment, in which countries will do what they can to tackle climate change, meaning that Asia will have to opt for gas and import LNG. Nevertheless, part of the LNG that is coming to the market in the next five years will have to go to Europe. This is because Europe can be considered as a last-resort market for LNG. It is structurally an importing market and an open market which means you can bring and offer LNG to the European market without a long-term contract. This is the only area in the world that operates in this way.

Therefore, Europe will take LNG; the problem is how this incoming will LNG destabilise Europe. Firstly, how will European gas demand change over the future? Will gas recover its share in power generation or stay at its current level? With respect to supply, we are currently facing a major problem in the Netherlands with Groningen, where production—which was 55 bcm in 2013—decreased by 12 bcm in 2014 and by a further 12 bcm in 2015, leading us to ask how far it could drop. This is a political issue and it is very difficult to know what the Dutch Government will decide.

Also on the issue of supply, we may ask what the impact of a low oil price environment will be on North Sea production. It was mentioned that the oil price has an impact on conventional gas production, and that is the question we ask. Regarding LNG availability, we mentioned that Europe is considered, and will work as, the market of last resort. LNG coming into Europe will compete with Russian gas, so the question is whether Russia will stick to its target of retaining a 30% share of the European gas market and try to push out US LNG, which is their goal, or accept a slightly lower figure such as 25% or something between 25% and 30%.

The last question discussed today, on the Energy Union, which seeks to reduce the EU's dependence on Russian gas, leads us to ask how things will play out for the EU with existing long-term contracts and Russian flow, on the one side, and the possibilities that this new LNG brings for diversifying European supply in a larger way, on the other.

All of the above questions are on the table, and we do not have the answers yet because, as you can see, they result not from market or economic considerations, but merely from political ones. Groningen is a political matter in the Netherlands and what Russia will, or will not, do in terms of maintaining its position in the European market lies in the hands of Gazprom.

Session 2: Geopolitics

The session started with a review of the two big heavyweights in the region: Saudi Arabia and Iran.

If we are to try to characterise the current climate in the region, the images that spring to mind are those of war, battles on the ground, airstrikes, disputes and a new resurgence in violence between the Palestinians and the Israelis. Our review however aims to look beyond the headlines.

One major development since we met in April was the Iranian deal with the so-called P5+1. In April we made a kind of gamble on whether an agreement would be achieved by the countries of the Security Council and Germany with Iran on this front. Few of us at that time were optimistic of a positive outcome from the negotiations, but those few were right and a final agreement was signed on 14 July.

The so-called Joint Action Implementation Agreement covers a lot of issues, the most important being the reduction of enriched uranium, under which some facilities are placed under the control of the IAEA and some enrichment sites, like the one in Fordow, are to be converted into research centres. Other requirements were also brought to the table and accepted by the Iranians. The general belief is that those items in the agreement would not prevent Iran from developing a weapon if, at some point in time, they were to decide to do so, but that they would make it very difficult, not to mention jeopardise Iran's credibility if such a thing were to happen. Therefore, experts say that if Iran were to cheat on its commitments, it would take it somewhere in the region of 15 years to develop a weapon.

In exchange, some of the key elements of the deal were the unfreezing of USD100 billion in Iranian assets abroad and the lifting of some financial restrictions which made it previously very difficult for Iran to do business, particularly when contracting in dollars.

People are beginning to talk about what might happen now in terms of Iranian oil and gas production. Many businessmen are heading to Iran and there is a big appetite for this large country which is endowed with large reserves of both oil and gas. However, we are not at that stage yet. The agreement was signed, but the implementation calendar on the table gave the major countries involved in the deal, including Iran and the US, 60 days to ratify the agreement ; this was done in the US Congress despite fears that it might not happen. There was a large majority, both of Democrats and Republicans, in favour of the deal and it went through quite smoothly. By 13 October, the Iranian Majlis had also endorsed the deal despite fierce opposition from many Iranian parliamentarians.

However, many other things need to be put in place, including a number of laws that must be implemented by the partners as well as laws that show Iran's commitment to start implementing the deal. As far as increasing oil and gas production is concerned, we know how the country's industry is

outdated and in need of considerable investment. Going back to before the sanctions era, there was a lot of talk about developing LNG and oil, but even if all aspects of the deal are implemented, there are still two other conditions that must be fulfilled.

The first is the appetite of the oil industry to invest in Iran. Before the sanctions, the contractual agreements that were put on the table by the Iranians were not that appealing to international oil companies. The Iranians have thus been saying for a while now that they will be providing a new framework which is much more attractive to the international oil industry than the one they used before.

The second thing is the willingness of the service industries to make this happen. The announcement made by the officials and more recently by the Iranian minister at the OPEC symposium was that, immediately after the lifting of sanctions, they would be able to increase production by half a million barrels a day, with another half a million to come in the six months after that, which puts the expected increase of Iranian production at one million barrels a day. In addition to the conditions that have to be met in terms of the technical and the feasibility side, this additional production needs a market and the question is whether the market is able to take it. We can also expect a fierce discussion to take place within OPEC parameters to make room for this increase in Iranian production, which will again open Pandora's box on the quota issue which has been side-lined for some years now.

Therefore, all in all, Iran is on the radar again with quite a positive image, having negotiated this deal and a renunciation of any development of their nuclear industry beyond civil applications. Secondly, its revenues are expected to be on the rise; instructions have already been given to tankers of the NIOC—because Iran has to put some of its production on tankers in order not to hamper its fields—with some of them being told to head toward expected markets. In this regard, the US missions abroad received a note from the State Department reminding them that sanctions had not been lifted yet; they thus had to remind the host countries of this. All in all, we can see that Iran has a positive image and is attracting a panorama of business and investment.

Let us move to the other side of the Persian Gulf. This is the first time that Saudi Arabia has been so visibly involved in so many issues in the region, be it through proxies, like other countries, or directly. When we think of direct involvement, of course, we think of the airstrikes on Yemen during which Saudi Arabia led a coalition for the first time. Yemen is very important to Saudi Arabia; more than a million Yemenis live there, providing a substantial remittance to impoverished Yemen. The Saudis pledged more than USD 3 billion to Yemen after President Saleh was removed, representing a little over 10% of the country's GDP, and could not afford to have a country such as Yemen in chaos. They therefore had no other option than to intervene. It was the first time in history that we have seen such direct intervention.

Looking west, we also see the developments in Egypt, and though the Saudis are not directly involved there, the political change that took place was largely supported by Saudi Arabia, including the funding of some acquisitions and purchases related to enhancing and enforcing the military capacity, or the security capacity, of Egypt. The Saudis are also involved in the north, having helped to fund the strengthening of the Lebanese army; a number of contracts were also signed to provide the Lebanese the most modern equipment. They are also involved through proxies in some of the other countries that are in chaos, such as Syria and Iraq, not forgetting that Saudi forces are still in Bahrain. Therefore, looking at the map, the Kingdom is surrounded by quite a large number of issues.

Beneath this situation, we have the opposition between the Shiites and Sunnis. If we had a map showing the proportion of Shia and Sunni muslims across the Middle East, we would almost have a parallel with the regional confrontation led by Iran and Saudi Arabia. The two countries have confronted each other for many years on a variety of issues, to the extent that this confrontation has reached a very high level of tension today. A declaration of the General Chief of the Army of the

Guards of the Islamic Revolution last week spoke about the Saudi royals in terms that diplomatic circles have never heard before. Tensions have risen to another level following the death of 150 Iranians during the Hajj stampede in Mecca about two weeks ago and the very difficult conditions under which the bodies were repatriated to Iran.

Therefore, the tensions between the two countries are very high and while no one is thinking of a direct confrontation, some analysts have tried to look at what could happen if the situation was to worsen. Indeed, the picture is not very encouraging given the importance of these two countries in the region. On the oil front, we mentioned Iran's projected additional production of one million bpd, which will increase its production from 2.3 or 2.4 million to somewhere in the region of 3.7 or 3.8 million bpd following the lifting of the sanctions under which the country was severely penalised. We also have another OPEC country, Saudi Arabia, which is producing at its highest ever level of 10.4 or 10.5 bpd. While this is not its "real" full capacity, it is its full capacity if we take into account the fact that it will never fully use its installed capacity as the country's governing law stipulates that it must keep a certain amount of spare capacity to be used in the event of severe problems elsewhere in the world.

The discussion then shifted to Libya. Following the uprising, or 'Revolution' in 2011, production collapsed, but after the end of the civil war there was a very quick and unexpected recovery and a period almost of stability suggesting that things could become permanently stable. However, the very delicate balance within the country was broken, essentially by the political isolation law that banned practically every senior person in the country from taking a position in government institutions. There was a period of optimism after a new House of Representatives was elected in a tentative attempt to establish a democratic path. The previous government also attempted, with the Jadran militia, to reopen part of the eastern terminal.

Following this, production went up, but even in this period we saw Operation Dignity, when General Haftar launched an attack on the western side of the country. Then at the end of last year, the conflict between the two parliaments broke out and escalated with the decision of the court and production fell. The country is now only producing 400,000 bpd of oil, which is less than a third of its capacity; the situation on the ground is highly fragmented, which goes some way to explaining why it is so complicated. We tend to simplify things, in terms of two blocs fighting one against the other, but this is not the case, as within each bloc there are a number of factions and strong divisions are developing.

The western camp, the ones we call the House of Representatives, based in Tobruk, has of course been supported by Egypt, but also by other important players in the region such as Saudi Arabia and the Emirates, because they represent the logistical movement of the country. However, it is not restricted to the western part, as one of the strongest militias in Libya, Zintan, is located in the eastern part, and to cut a long story short, the fighting between the two is provoking a division of the main economic institutions of the country, the National Oil Company (NOC), the Central Bank and the Libyan investment authorities, which is threatening the flow of demand in the country.

This threat is first of all to the collection of money, because many fields are closed due to a major blockade of export terminals, such as in Ras Lanuf and Brega, which is effectively preventing the export of crude oil. There is also conflict locally, as the production of two big fields in the south of the country, El Sharara and El Feel, is being blocked by fighting between the Toubou and the Tuareg minorities, who disagree on the way revenues are shared.

So, what currently *is* online? Gas is currently online with ENI IS being practically the only producer in the country. ENI is in the far west of the country and benefits from a relatively safe position, but also has two other advantages. One is that a large portion of its production is supplied to the local market for power generation, providing electricity for Tripoli as well as the east; there are however blackouts and social problems on the other side.

The second is integration. Operations are run by Libyans, that is, by local people, not expats. Offshore production is run by Total at Al Jurf and by Eni at Bouri, which both produce and export, along with some minor fields in the eastern part of the country.

What is the outlook? First of all, we have to look at the UN-brokered deal. The UN Special Envoy, Bernardino Leon, has proposed a possible unity government, but there is no consensus as to whether this deal will ultimately be accepted. After long negotiations the two sides did reach an agreement, but more recently there have been problems in deciding the titles of those who are to lead this government. Leon presented his own list as the other two parties were unable to present their proposals.

The outcome of this situation will influence whether or not production is restarted since Jadran is the head of the Petroleum Facilities Guard which now controls the vast majority of oil production. As a result, the richest province of Libya and even the two main oil-exporting facilities are in favour of restarting production. Therefore, between half a million bpd and 600,000 to 700,000 bpd could easily return to the market if a deal is reached. However, it is far from certain that such levels of production could be stabilised, because it is General Haftar, a fierce opponent of the agreement, who stands to lose the most from it. It will therefore be interesting to see whether a deal can be reached with him.

Another important element of instability is the Islamic State. Although its presence in the country is quite limited, it has put forward its own agenda. It is not siding with either party, so we can forget the narrative. Its own agenda is simply to control part of the territory. We should also mention that the Islamic State has made several mistakes. It thought it could control Derna, a town in the eastern part of the country, but it did not take into account the fact that the town was controlled by numerous minority groups. A few months ago Derna was perceived as one of the main strongholds of IS, but they no longer control it. The IS poses a threat to oil facilities. Some of the minority groups are against the agreement, so it is possible that the confrontations aimed at gaining control over parts of the territory will continue and this will of course provoke some disruption and uncertainty.

A positive outlook may be possible if Bernardino Leon's proposal is accepted. We therefore await the decision of the House of Representatives, which is due in the next few days (October) and from the General National Congress (the Tripoli-based parliament), which should come in the following days. So, in the next week we should have a better idea as to how this story will evolve. It might not be good for the oil price, but perhaps some production can come back online if Leon's deal is implemented.

Session 3 – Climate change and COP 21

Regarding COP 21, there are now less than 50 days until the Paris conference, so there is very little time left; the pressure is building and Laurent Fabius, the French Foreign Affairs minister is devoting

80% of his time to preparing for the conference. The whole government is mobilised on this, not just Laurent Fabius, and from now until 1 December you can be sure that all visits paid abroad will have something to do with COP 21—Francois Hollande's trip to China in a few days is just one example.

According to some participants, of course, we cannot talk about a success, but all the parameters for a success are in place. However, these participants who were not that optimistic a month ago are much more so today.

We all know the main components that would be in the Paris Alliance for Climate, which would enable us to limit the planet's average temperature rise to less than 2% or 1.5% above pre-industrial levels and adapt our societies to deal with the existing disruption.

There are four main components. The first is a universal agreement in accordance with the Durban Mandate, establishing rules and mandates capable of progressively achieving the goal of respecting the aforementioned limits. This agreement has to be ambitious and legally binding and of course that will be one of the main difficulties. The French authorities are working very hard today on how to strengthen our capacity to check that the commitments taken in Paris are fulfilled. They are also working on the scientific aspect that will allow us, with tools we did not have 20 years ago, to check how these commitments are being fulfilled. For example, we have new satellites that could be launched within the next few years, enabling us to check the real emissions from specific countries and verify that the commitments are being fulfilled. This is costly; however, a lot of people want to commit, but are asking us how they can be sure that their neighbour will also fulfil their commitments, and for this we have tools that we did not have 20 years ago.

The second aspect of this agreement is the presentation by all countries of national contributions, or the so-called INDCs, ahead of COP 21, which is a different approach from those taken by other chairs. All parties have to submit their commitments before COP 21. As of today, 150 countries, accounting for 90% of global emissions, have tabled their INDCs. Most of the big oil and gas countries have not yet tabled their very much anticipated contributions. Saudi Arabia should table its contribution by the end of this month and we are extremely keen to know its contents. So, why was it necessary to have these contributions in advance? Perhaps to show that all countries are moving ahead in the same direction depending on their national situations.

The third component of the agreement is the financial aspect, which is essentially a question of us putting a lot of money on the table to give developing countries the feeling that they will be supported in their transition to becoming low-carbon economies. We know we will have to have put EUR100 billion on the table, which is a lot of money. We had good news last week in Lima, because the financial institutions agreed to put an additional EUR50 billion on the table, and adding to the efforts being made by private companies and the countries themselves, we now know that this target of EUR100 billion is reachable, which is very new.

The last component is what we call the action agenda, which includes dozens of mitigation initiatives in key sectors. For example, initiatives which have already been taken in the energy field were stressed, and also in transport and all other sectors of activity. This agenda also has to do with adaptation and resilience, with the idea being to trigger growing engagement from business by helping them to build and demonstrate concrete, ambitious and lasting actions on climate change. One thing that is quite interesting is that over the last two months, and especially over the last month, more and more commitments have been made by the private financial sector, including both insurance and banking. For example, more funds want to go green as do an increasing number of companies. Some of the funds and banks no longer want to finance projects that would raise the concerns of NGOs. For example, BNP refused to finance a coal project in Australia; many other banking institutions followed suit and the project is consequently now frozen. We may also cite some

rating agencies that have decided to specifically focus on the level of commitments from business in this respect.

It is very interesting to see financial institutions, such as banks, rating agencies and insurance funds, joining this movement as they can have a huge impact on the overall outcome in terms of the financial component of the Alliance for Climate.

Aside from the Paris Alliance for Climate agreement, companies are invited to join and strengthen this action agenda by committing individually to mitigation and adaptation actions or signing up to a transformational initiative that will feature in the negotiations. This is called the action agenda and many organisations and coalitions are now working to structure and promote large stakeholder initiatives aimed at encouraging and promoting stronger climate action. We heard of the Oil and Gas Climate Initiative and the commitments which have been made under that umbrella. Laurent Fabius was invited to participate in a high-level meeting about this initiative, and the CEOs of ten of the world's largest oil and gas companies, which provide almost a fifth of oil and gas production and nearly 10% of the world's energy, today declared collective support for an effective climate change agreement in Paris, which is very good news.

These companies must make their commitments known to everybody to once again trigger an effect worldwide. The NAZCA portal—so named because it was created in Peru—has been developed for this. In France a lot of companies are being pushed to make their commitments on this portal.

On a practical note, for those who will be in Paris at the beginning of December, a lot of showcasing will go on during the high-level meeting, but we cannot mix the UN conference and the showcasing, as this would create problems with the UN and the NGOs. However, a lot of showcases will be organised, as well as a series of half-days inside the UN negotiation zones which is a first in COP history.

It has been decided that the heads of state and government will gather at the very beginning of the negotiations, which is the very opposite of what was done in Copenhagen, where the heads of state and government gathered during the last 48 hours to try to salvage the agreement. It was too late and too complex; many points were put to one side and no deal was reached at that time.

The heads of state and government will gather in advance of the Paris conference to present their main lines to the negotiators, indicating the limits that they agree or do not wish to reach, and the final agreement will be built within this framework.

A decision on carbon pricing, which is another aspect of the discussion, is not expected to be one of the issues addressed during this conference, even if there is a growing consensus on the need for one. Indeed, an increasing number of governments, companies and investors have recently called for the generalisation of carbon price mechanisms. There is no mandate to deliver a price on carbon within the frame of the business dialogue that has been scheduled, even if such discussions do take place.

However, discussions now need to reach the next level, which means designing the conditions for effective implementation of carbon pricing, identifying the right frameworks and pricing, helping systems to converge over time and giving business the right signal. Regarding pricing, Australia was the first country to adopt a carbon tax; the price, however, was far too high making the system unfeasible and sadly the whole arrangement collapsed. There are many reasons to explain why the price which had been identified was unsuitable, but a high price from the very outset certainly does not help.

We should note that the renewable sector has remained resilient despite plummeting oil prices and of course the increasing role of natural gas in the global energy mix. Renewables may be part of the solution and should be taken into consideration. We are not talking about nuclear as a solution because the cost is for us an obvious issue.

The discussion moved to the position of Saudi Arabia. The Minister for Petroleum is aware that the Kingdom has to be part of the solution and that KSA has to do something and to be positive about what is taking place. KSA cannot just take a defensive attitude, but must show the world that it is aware of the problem and that it wants to be part of the solution. In addition to the INDCs that it will submit by the end of the month, KSA wants to invest heavily in technological solutions to help mitigate the impact of oil and gas exploration and production. It will therefore generally not ask for help because it will finance this itself and ask companies with extensive experience in these areas to take part in experiments for implementation in the Kingdom.

The oil producing countries do not want to be spectators in these experiments but want to be part of them. They want to invest in these experiments and they also want to define them, to shape them and to be part of them from the very beginning, because, ultimately, they foresee that these solutions will open up new avenues in terms of business and they want to be part of that business.

The signs they have sent to date in terms of renewable energy are very mixed. They keep on saying that they must do something in terms of renewable energy, mainly solar but also nuclear, but, at the same time, this is not something that is part of the culture or the expertise of those in charge of implementing solutions. This makes things quite tricky for companies who have to discuss the issue with a country that does not know how to handle it. Aramco could have been involved in financing such solutions, which require a lot of investment, but of course the price of oil today means that it does not have the money to put into them today.

We therefore expect two or three years of uncertainty regarding what the Kingdom may do in terms of renewable energy. They do not want to drop the subject, but for the time being they are giving the impression that they do not know how to handle it. It is still on the table, but we may have to wait some time before we see what they want to do about it.