

**Nobuo Tanaka:** I am the moderator Nobuo Tanaka, former executive director of the IEA, International Energy Agency. I'm very much honored to come back here again this year to moderate a session. We will have first the speak up of Mr Sechin to present the case, but before having that let me iterate that issues of oil sector or gas sector now. As you can easily imagine, the oil price went very low, now come back a little bit, but still uncertainties of the price is the issue for us. The IEA mentioned about this low oil price scenario. It may continue even in 2020s if several preconditions met. One is that OPEC policy of maintaining the share rather than the price. In second, the peace in the Middle East somehow managed to continue. The third – the resilience of the shale oil in the North America. And the fourth is the slowing growth of emerging economies like China and India continue. Without these continuing conditions all met, probably IEA's view is that low price may not sustain too long, we hope that. But today we have 10 CEOs and chairmen, and let's have discussions about the future of the oil market. Because IEA cautioned, because of the low oil price, that dependency to the Middle East will increase much more. And Middle East due to the shortage of revenue, getting less stable, means the country like Japan (importer) will depend more and more on Middle East which becomes less and less stable. This is the biggest risk, the IEA warning. But to make the different story, that role of Russia is very important as non-Middle East supplier. So, now let's listen to Igor Sechin, the Chairman of the Management Board of Rosneft. Please, Mr Sechin.

**Igor Sechin:** Dear colleagues, participants and guests of the Summit,

On behalf of Rosneft, one of the organizers and sponsors of the Forum, I would like to welcome the participants of the Summit and wish successful work to all of us.

Our Summit is different from all other events, including those held within the framework of the Saint Petersburg Forum – today it is attended by genuine leaders of the oil and gas business, that carry out substantial extensive work in the industry and play the key role in supplying energy to the world economy.

In this regard, sharing our opinions about the situation in the world oil market is especially important.

Please note that my liability is limited due to deliberative nature of this presentation.

The current situation at oil market is rather more complex and puzzle-like than what we've seen in the period of balanced market. It can be said that market tools regulating industry functioning have been deformed. The reason for it lies in those notorious sanctions, as well as in reliance on short-term financial market instruments and in manipulation with market institutions at the expense of damage for long-term relations between consumers and hydrocarbon producers as well as for fundamental development factors. Different players are testing the industry and market mechanisms, looking for an opportunity to secure their interests, often to the detriment of the fundamentals of its development.

Even statistics is no longer a reliable benchmark for analysis, since reference points for making both strategic and investment decisions are disappearing.

The market is experiencing unprecedentedly high volatility. Today, the prices have almost reached the level of the year ago, although this January-February, they plummeted down to USD 27/bbl, and a number of large investment banks were testing the levels of USD 20 and below, predicting severe downturns in the global economy, including a “hard landing” for the Chinese economy and stagnation of the economy of the USA.

Analytical agencies do not contribute to forming rational expectations of the market players. On the whole, this is not surprising – the International Energy Agency represents consumers' interests who were happy with low prices; the American Energy Information Administration of the US Department of Energy published its forecasts without linking them to price levels at all; the position of OPEC's Secretariat is at odds with comments of its member countries' representatives. Obviously, the issue of adequate information and balanced, substantiated market analysis has become one of the most urgent ones.

In the oil industry, price volatility is projected on a long-term investment cycle of capital expenditures, and the ability of oil companies to meet the demand of the global economy. Thus, the decline in oil prices and volatility have already resulted in the loss of approximately USD 350 billion in investments, which will definitely have its effect in the mid-term. If previously the industry was based on implementation of long investment cycle objectives, now the balance is definitely upset.

Presently, the oil market has started momentum towards achieving the balance in the mid-term. Our expectations in this regard are, for the most part, associated with the year 2017, rather than with the second half of this year. Of course, there is a number of uncertainty factors, primarily, pertaining to the behavior of certain producers, who have actually assumed the role of regulators in the oil market, as well as in the financial sector. At present, a certain positive trend has emerged, but, despite the visible search for balance, risk factors are so numerous that we may lose the equilibrium at any time.

Today, as we move away from the acutest phase of this severe crisis, we can pay more attention to analysis and discussion of underlying factors decisive for the industry development, and it is necessary, in some sense, “get back to basics” by discussing the relevance of the long-term investment cycle for the consumption and the relation between them.

First of all, demand continues its sustainable growth in emerging economies. We all know relevant GDP growth statistics for such rapidly growing economies as China – 6.5% per annum, India – more than 7%, Indonesia – 5%, Vietnam - 7%.

Therefore, in general, we believe that what we hear frequently about threats to development of the global economy and of economies driving the energy demand growth is grossly exaggerated. Even in OECD countries the decline in demand reversed with the growth reaching 1.1% in 2015. At that, along with this potential, the role of alternative energies is presented in a distorted fashion. Not only is it the matter of construction of expensive infrastructure, it also entails loss of budget revenues in the countries that implement programs aimed at developing this sector.

I have already mentioned elsewhere that such oil market short-term and mid-term development fundamentals as sustainable demand growth, including new growing markets of emerging economies, and decline of investment activity in the sector, within the forthcoming 4-5 years should result in a dramatic change of the market and its growth after stabilization.

In the medium-term perspective, a certain shortage of new oil supply will appear. It will hardly be a matter of physical deficit, rather, a growing tension in the balance of demand and supply. If the financial market feels it in advance and reflects in prices, we will be able to avoid a new turbulence and to resume the investment process via ensuring an adequate diversification of liquids supply sources.

At least, today energy agencies are unanimous about their confidence with regard to the growth and consistent recovery of oil prices (in real terms). Thus, a few days ago, I discussed these matters with one of the most distinguished global energy expert and analyst Edward Morse, who, in one time, had been the first to predict the shale revolution in the USA. Today the Citi Group analytical service headed by him gives quite optimistic estimates regarding oil prices in the nearest years – more than USD50 this year, about USD60 in 2017, and USD64 in 2018. At the same time, he confirmed that even these price levels fail to cover the full cycle costs for many projects that the industry needs, and, therefore, investments into such projects involve high risks. There are also alternative opinions, for example, many financial agencies are talking about a potential oil price decline - however, in my opinion, and such estimate may be attributed to the attempts to solve the task of creating financial reserves. Everybody pursues own interests. It is essential, though, that industry trend expectations should be articulated by industry-related agencies, thus helping ensure the necessary coordination and unbiased balance of interests.

Separately, I would like to note, that this unprecedented price volatility that we've witnessed, has tested the very basics of the industry. Events of last several years have shown that in fact the paradigm of oil market had changed: for a long time it has been a common belief that OPEC cartel of producers is regulating the oil market; then, owing to groundbreaking technologies, a new regulator appeared which is the shale oil production in the USA. However, in our view, the new reality lies in the fact that market developments are increasingly determined by a number of factors that include availability and quality of resources, impressive progress in development and application of cutting-edge technologies of the

physical market, plus development of financial instruments and financial technologies, regulators' activities. A special role belongs to regulators.

Objective differences in geology and resource base affect the role of certain countries in the world market. I would draw your attention to such countries with a unique resource potential as Venezuela, where our company is actively operating, and Iran, which has been building up its production since the sanctions were lifted. Of course, realization of this potential is currently complicated by a number of factors – infrastructural constraints, the amount of the requisite capital, political factors.

The result of the current crisis, as I see it, is re-estimation of the role, which three main oil producing countries are playing now and will play. They possess not only geological resource potential, but also a wide range of factors needed to influence markets. So the main players are being crystallized. These countries are Saudi Arabia, the USA and Russia. Each of them finds a way to meet these challenges, basing on its resource and technological possibilities, market structure and peculiarities of political and economical decision-making.

Let us first look at the USA – the country where oil industry has become the driver both for the oil market changes that we see today, and the current phase of the technological breakthrough in the industry.

The USA oil industry is one of the oldest in the world, and its onshore conventional resources are mostly depleted. Nevertheless, the USA stands apart due to the size of its domestic consumption market, which consumes more than 800 million tons per year, therefore, in many respects, the domestic market “absorbs” the fluctuations in the production level.

Nonetheless, future production trends will largely depend on the progress in development of shale resources and access to the offshore areas and federal lands – the issue, which is under discussion at the political level.

Anyway, because of the quality of the USA oil resource base, its full utilization will require quite high prices, despite the technological achievements.

Forecasts for US production till 2025 vary significantly

The prospects of the US shale production depend on intensive development of technologies, cost reductions over the entire production chain, and, apparently, the evolving price levels will result in stabilization and even recovery of the shale production. However, contrary to expectations of the many, this growth will not be explosive, since there is no longer any euphoria about unlimited financing of this sector, and a better understanding of risks will lead to a more balanced financial policy.

Importantly, the US shale industry is commencing to “clear up the debris” resulting from the tight situation in a lot of companies that failed to adapt to the market downturn, are heavily indebted and often operating at a loss (as of the end of 2015, the long-term debt of the companies in the sector exceeded USD350 billion). The spread of efficiency parameters and performance indicators across the industry is extremely wide – as of today, 23% of the most productive wells yield about 70% of shale production, while the rest 77% of wells or a significant part of them generate losses.

Unfortunately, it could be ascertained that at least some of the American industry has found itself in the existing situation because of application of “spot”, financial approaches to the real sector. We believe that such approach is unsustainable – the volatility in the financial sector is too high, and long-term investment decisions cannot be made on the basis of daily dynamics of price quotations.

US production forecasts till 2040 vary greatly

The long-term outlook for the US production deserves our close attention, in particular, because shale production in the USA may prove to be a more durable factor that it was thought before.

Today USA's energy sector has found itself at the crossroads in view of major differences in its development prospects which feature in the programs of Presidential candidates – Senator Hillary Clinton and the famous businessman Donald Trump.

In fact:

- The Republicans already today are proposing measures aimed at development of domestic oil, gas and coal production and exports, while Hillary Clinton suggests enhancing support to renewable energies;
- Trump proposes lifting the ban introduced by President B. Obama on exploration and production of hydrocarbons on federal lands, while the Democratic candidate Clinton proposes leaving the same in place;
- Trump’s program contemplates development of market competition among different energy products, including renewable ones, while Clinton’s program implies massive multi-billion subsidizing, including budgetary subsidies, of such sources as solar energy, with raising its generating capacities to 500 GW;
- Trump talks about doing away with domination of the climatic and environmental agenda, up to and including potential withdrawal of the USA from the Paris Climate Agreement, whereas Clinton gives priority to such ambitious goals as reduction of greenhouse emissions by 80% by the year 2050.

The list of essential differences between the two programs can be continued.

Considering the role played by the American economy, such uncertainties about the development of the US oil and gas industry (technological, political, and economic) increase the risks for the global economy.

Like in the USA, where the crisis has necessitated structural reorganization of the shale industry, in Saudi Arabia it highlighted the need for change in the oil and gas industry and economy as a whole. Unlike the USA, Saudi Arabia has no sizable domestic consumption market, therefore, the success of the Saudi oil and gas industry will depend, among other things, on the Saudis’ ability to enter new consumption markets, to create integral partnerships. This ability has to be tested yet, some questions still remain.

I would put it more definitely – having caused the shocks to the world market, the American market could afford the risks only with Saudi Arabia standing behind its back, with its richest conventional oil resource base, which, seemingly, could gain from some new approaches and technologies of the American market. But, as a result, this country did not avoid the shocks either.

In terms of production, Saudi Arabia attempted at coming up with “its own response” to the shale revolution, which we have observed in action for the recent two years. This “response” has proved to be quite painful for Saudi Arabia as well: the dramatic fall of oil revenues and budget deficit of USD100 billion in 2015. The Kingdom has already taken serious steps aimed at changing the taxation system and pricing policy, but in 2016 the budget deficit will exceed USD85 billion anyway. Recently (I mean Vision 2030 initiative) unprecedented reforms have been declared both inside the industry, including partial privatization of Saudi Aramco, and tax reforms of the oil industry related thereto, which are aimed at achieving market capitalization of the company, and in the economy in general, with the purpose of doing away with the “oil dependency” already in the near-term perspective.

As for privatization of Saudi Aramco, we believe that this process will help substantially improve the transparency of the national oil industry, including publicly available data about oil reserves, which have not been updated for three decades already (over this period, information about Saudi Arabia’s reserves has not changed at all), the economic figures of this country’s major oil resources development. Furthermore, material changes in the technological and financial infrastructure of the country’s oil and gas sector will be required.

As for “shifting away from oil dependency” as the goal of the declared in the plan Vision 2030, we know from our experience how complicated this path is, even considering such Russia’s advantages as highly qualified research talent, advanced positions in a number of spheres of high technology machine building, favorable conditions for development of food and processing facilities. We will be watching Saudi Arabia’s moving along the chosen path with interest.

Before discussing how Russia responds to these challenges, I would also like to comment on “cross-cutting trends” affecting the whole industry.

Today, a “new technological format” of petroleum industry is being formed, including entry of technologies of fast processing of large arrays of geological data in the industry, which, given

visualization and analysis technologies, allows us to speak about a new round in development of the industry's abilities to use the resource potential.

Considering new prices and technologies development, we see how the role of servicing changes and how requirements thereto increase. The services should be at the forefront of mastering new technologies and suggest the most efficient solutions to operators. Competition in this sphere grows. In our view, cusses will attend only those service companies that take the lead in innovations.

Forecasts show that transportation and Petrochemistry will continue dominating in liquids consumption

In future, development of our industry will be more determined by expansion of transportation sector and increased demand for petrochemical products, in emerging economies first of all.

According to forecasts, the gas industry will be growing faster than the oil industry. We are actively developing this business and are interested in its growth. Here the drivers are, of course, increased importance of gas for the power industry – a fundamental yet a low-margin sector, and growth of production and use of “gas liquids” in Petrochemistry.

It is distinctive for the gas industry to have expanding competition at main export markets and to conduct policy of gas "sources and supply routes diversification. Entry of LNG from the USA is among it. In the super-low price environment, we face, and have not overcome yet, hazards of “global market decay” and impossibility to implement major infrastructural projects. We observe marginality reduction in the industry amid evolving medium-price environment. We see the necessity of efficient "Russian gas answer" - first of all, meaning providing equal terms at external markets.

Other energy sectors also keep developing. The nuclear energy sector is an important alternative and destination for diversification in power generation. It's a high-tech industry, and in its development we see a transit to technological solutions of civil application of atomic technologies. The maturity stage, which atomic energy sector has entered, makes it very important to obtain experience of “full cycle costs”, which include decommissioning of facilities with expired service life, and further accounting of relevant costs related to implementation of new facilities. It is important to find the right place for nuclear sector in regional energy balances so that to avoid an additional burden for the consumers from lengthy implementation and high CAPEX.

Extensive discussions are also held on renewable energy, and here we find it critical to achieve progress in creation of such important components of renewable energy development as invention of powerful and cheap means for electric energy accumulation and storage, development of fuel stations network infrastructure, and a number of others including the above-mentioned disappearing budget revenues.

I would like to draw your attention specifically to information ambiguity in the energy sector and necessity to cooperate and communicate for all of its members, since development of efficient regulation for global and regional markets falters. I hope that development of interaction, at this Summit of Energy Companies as well, will contribute to filling and in some areas fill this gap.

As you know, Russia is one of the countries with the largest volumes of oil production and supply to the global market.

As we have seen, major oil producers significantly differ in their resource potential, infrastructure availability, technologies and competencies, as well as in structure of their regional supply and demand balance. As for supplies to the global market, Russia has important advantages vs. other countries: well-developed export infrastructure including pipelines, fairly low debt burden, marketing system tested by decades and successfully supplemented by long-term contracts, integration in growing eastern and stable western markets. This model provides consistency, efficiency and stability of Russian oil exports.

Another matter of importance is the balance of supply and demand in Russia - given the high level of domestic demand; existing capacities allow exports diversified in accordance with directions and products. This is what makes the place of Russia in the global petroleum industry very distinct.

Within last two years, oil industry of Russia has been affected by the global crisis as well. However, this negative impact was rather limited, especially if you recall the reaction of many other players. This

surprised many observers and analysts, who were not prepared for such development – in the midst of upheaval Russian oil industry seemed to be a terra incognita to many observers and analysts, but "as a result, taking into account its resource base, the results achieved, market institutions, presence of quality market channels, it is becoming a terra fertilis, a fertile land.

What lies behind of this phenomenon?

Russia has a huge resource potential and Russian oil projects are cost-efficient even if the oil prices are low.

First, I would mention the scale and high quality of Russian hydrocarbons resources. In addition, well-developed supply infrastructure, long traditions of industry workers training, and good engineering school. Based on these pre-conditions, Russian oil companies ensure one of the lowest in the world levels of "per unit" costs of resources development. For Rosneft today it is 2.1 USD/bbl.

There are new big promising projects in Russia, allowing us to maintain the oil output and the investment level while the majority of foreign public and national companies are cutting their capital costs and are forced to re-evaluate their project portfolios due to the lack of attractive investment projects in the evolving price environment.

Russian oil production so far has been developing under an upside case but it is not the limit

Growth of oil production in Russia was ensured through introduction of new projects that were mostly prepared with the governmental support before the crisis. During the economic downturn leading Russian oil companies optimize expenditures and do not suspend implementation of these projects. In accordance with the base case of the General Plan of Oil Industry Development till 2035, which is under approval now, oil production in Russia will remain stable. However, in order to achieve this target, a stimulating taxation system is required. This work should be accelerated before discussions of pilot projects result in the start of production decline.

A key parameter determining oil production in Russia is fiscal environment, not oil prices. According to the official independent evaluation by Ernst&Young, in 2015, when the average oil price was \$51 per barrel, Rosneft paid taxes of almost \$25 per barrel of oil produced. It is much more (in some cases 4 to 5 times more) than foreign companies did. It should be noted that these tax payments are fixed as part of the so-called 'big tax maneuver' that was developed and implemented considering the oil price above \$100 per barrel. Obviously, it is important to readjust it in accordance with the new reality of medium-term oil prices. Even more so that literally yesterday we saw the Ministry of Finance's evaluations of risks of further oil prices decline.

In my opinion, the point of taxation is quite simple: oil price is \$50 per barrel; production cost is \$2 per barrel. Even if the full cost is a little higher than \$10 per barrel – accounting for transportation and other costs. Target fiscal system must provide for the stimulus to upstream investment until production cost of additional barrel is less than market price for a barrel. If we talk about downstream, cross-subsidization within vertically integrated systems cannot be treated as economically appropriate method of business operations - all dimensions of company's activities should be economically justified. That is why taxation of downstream should also be rational and stimulate investment.

Two most important sources of oil production: Brownfield and non-conventional resources

I see significant untapped capacity of the fields in West Siberia, yet I would also like to mention that Russian non-conventional resources are the largest in the world and by 1/3 exceed similar resources of the USA (according to Goldman Sachs). They include a whole range of geological formations, in particular Tyumen, Bazhenov, Domanik, Khadum suites, etc. In order to develop each of them efficiently, certain technology modifications are required. In the last years, Russian companies made serious progress in those areas. We actively apply multistage hydraulic fracturing, we drill extended directional wells. You also know about our joint experience with Exxon when we drilled directional wells with a record step-out of more than 12 km.

For such capital-intensive industries as oil and gas production, it is important to account for multiplier effects showing how the investment and operational expenditures occurring here spread out through the

system of inter-industry relations, and increase production and revenues, hence the growth rates of the economy at large. Judging by the investment projects of our company, we know that additional growth of production in economy during the lifetime of the projects sometimes exceeds the initial costs by tens of times.

We believe that in the nearest decade maximum potential is related to efficient use of our unique resource base of conventional oil, including areas of West Siberia with well developed infrastructure. Only Rosneft's proved reserves amount to 29.8 billion barrels, which is sufficient for us to develop for another 20 years even without expanding this base.

In Russian oil industry, which has been operating for many decades, there are a lot of Brownfield assets. Certain stimuli for oil production increase were introduced, and in the last years production went up in these fields. Yet, with due tax stimulation, oil recovery ratios currently slightly exceeding 20% may well be increased to over 40-50%, which the best global projects have been showing in the last years.

Such development will be accompanied by the most efficient use of the existing infrastructure and in the mid-term will maintain the environment of mutually beneficial cooperation of state and business – development of the most efficient resources and, hence, sufficient budget payments.

Of course, it all speaks of the increasing role of efficient regulation of our industry.

When planning the rate of changes in the Russian oil industry, one should account for the fact that under the severely complicated operational conditions such countries as Saudi Arabia, Iran, and Mexico already have taken actions for improvement of investment attractiveness of the industry and its projects. This is not to mention the USA, where without significant governmental support the shale oil industry would not even come to life considering the high prices at the period of its establishing.

Let me make some final comments on behalf of the Company. Today, Rosneft is the largest publicly traded oil company in the world, taking the lead on the global level by a number of economic and resource indicators.

We are aimed at development of the new projects. Our role is to combine unique geology of Russia with capital and the leading expertise of the partners.

In September 2014, in the Kara Sea, Rosneft and Exxon's JV drilled the northernmost oil well in the world – Universitetskaya-1 – and discovered the Pobeda field. This is the largest field discovered in 2014 in the world. The field reserves amount to 130 Mt of oil and 396 bcm of non-associated gas. As a result, we successfully created a new strategic area for shelf development.

Pobeda is the northernmost project in the global oil and gas industry, unique both from the viewpoint of technologies and interaction with partners. Nevertheless, it is only the beginning. Successful discovery of the new field by drilling of the very first well confirmed justification of estimations of our geologists and our partners' specialists – in essence, we speak about a gem of the global oil and gas industry.

This discovery allowed confirming continuation of the largest West-Siberian petroleum-bearing province to the Kara Sea shelf. The experts say the scope of resources here is larger than in the Gulf of Mexico, the Brazilian shelf, the Arctic shelf of Alaska and Canada, and will be comparable to the whole of the existing resource base of Saudi Arabia. More than 30 structures are found on three East-Prinovozemelskiy blocks of the Kara Sea only. DeGolyer & MacNaughton estimates the resource base of these blocks at 87 billion barrels or ca. 12 billion toe.

We are looking at the years of intensive work, billions of investments, application of the most advanced and innovative technologies, but the biggest thing is already in place – there are no doubts that this is the richest region full of high quality oil! Of course, the projects of this scale are advisable to develop in cooperation, and we are fully prepared for that.

Upon the whole, I would like to note that we are ready to open our resource base; we attract foreign investors both to share risks and to strengthen and develop technological competencies of the industry.

In addition, I would like to mention the transactions for investors entering the Vankor Project. In the end of May 2016, we closed the deal with ONGC for purchase of 15% in the Project. This is a marquee transaction for both companies and marks transit to the new level of cooperation in Russian-Indian

relations in the energy sector. ONGC will receive a significant share and corresponding rights in one of the largest projects of Rosneft over the past decade.

We relentlessly improve efficiency of our work in all areas and try to turn the Company into one of the leading transnational players, responsible, open and determining the face of the industry in the nearest decades. An important factor of such success will be the efficient dialogue with our dear colleagues and partners present here today.

Thank you very much for your attention.

**Nobuo Tanaka:** Thank you very much, Mr. Sechin. You've covered so many important issues in the oil market about technologies and shale oil or Saudi Arabia's service sector, restructuring, transportation, demand, side issues, collaboration. We will come up from what you have mentioned to my question to the other panelist, and so, he is here. Let me start with Bob Dudley, CEO of BP. Bob, BP has invested in Russia for some period of time. You yourself were in Russia. What are other strengths of the Russian oil and gas sector? Can it remain robust in the current turbulence of world oil market, and also, in this kind of low price, oil situation? There are lots of discussions that M&A could happen in the oil sector. Do you have any view on that? Can you respond in 5 minutes, please?

**Robert Dudley:** I could probably do it in 1 minute, because my friend Mr. Sechin has described everything in lots of detail. I think, there won't be 5 minutes. I think, Mr. Tanaka, there are some unique strengths of Russian oil industry, that Mr. Sechin has went through. It is incredibly large resource base which was outlined earlier, it is a very resilient energy industry in Russia. Oil production in Russia has increased now for seventh year in a row, growing by 1.2% last year. It is the largest oil exporter in the world. And it remains to be the largest gas exporter in the world. So it is a resource base that is very competitively priced. It's open to foreign investors. It has a set of very strong experienced set of operators and professionals, such as Rosneft and other companies that are here today. It has a very sensible national policy of currencies flowing. It has moves with changes in last two or three years. I think most people forget that with the floating of the ruble that the cost structure of the industries moves with rubles and the revenue stream is still in dollars. So it's a very healthy industry. With the restrictions, it has to work within the sanctions. It also has very vibrant local oil service sector. So this is unique set of combinations. It has very well developed infrastructure in core oil areas to move its products to market quickly with lots of potential. As I've said earlier, the operating cost per barrel is \$2.10 is about as good as anywhere in the world. So I think all of those things go well for industry that is moving through yet another commodity cycle. We've been through this before. Each time we think it's gonna last, you roughly depending on whose numbers you use. \$400 bln of investment to a firms and I've just said the IHS CERA outline more than a \$1 trl of operating cost and CAPEX being deferred, now it can be identified of which about half is probably cost reductions, but we have half of its real. Now we know from history that every time world stops investing in energy, we were heading towards a world of 2 bln more people in 2035, we may end up with a different problem going forward. So that answers your question about Russian sector, but I obviously optimistic, it is based I think on realism. Regarding industry consolidation, you know, now we have into 2.5-3 years since two major changes in the price cycle. I don't think, you'll see big industry consolidation. It's happened. There's been some sides. I think what's very advantageous is people are short of CAPEX around the world to make investments in projects that are under way. So what I see, more happening is people bolting on project areas that make very much sense and I see the focus on companies happening all over the world. And so others can always be outliers and there is some consolidation. That's what I see as the major strategic trend right now. That's less than 5 minutes, I give you a couple of minutes back.



**Nobuo Tanaka:** You still have 2 minutes but... Yes, Bob, you mention about Russian situation. What is your (BP) view about what Mr Sechin talk about Saudi Arabia? It's now moving for the restructuring. What transferences are the alarm call on public? Do you think this is a good direction?

**Robert Dudley:** There've been some remarkable ambitions in announce by Saudi Arabia. And, Mr Tanaka, I'm not an expert on Saudi Arabia but today 30-32% of the world's energy is oil. And it's going to be a large percentage as the world is going forward. So, I don't think it's actually realistic for Saudi Arabia to not worry about oil going forward, I think they will. This is going to be a long, long wavelength transition, but I think Saudi Arabia is starting. I have been sympathetic to Saudi Arabia's position: essentially why should we shut the lowest cost oil producing in the world and subsidize highest cost oil? And I think this has been their policy, which is driven events to the grades in the last 2-3 years. So, I think, as Mr Sechin said, our industry need to be based on some fundamental economics and what sufficient for investments to be made. And I think for whatever the reasons that brought us to this period, which, I think, in many ways were the high production rates in the United States from the revolution of fracking. It's also now as always happens with commodities when they get overproduced and the prices drop, the marginal barrel usually determines the price of oil. So in the period even today we probably are producing more than we are using. But I do think demand is as response to prices, as there have been low prices of oil and fuels, we are now seeing an increase in demand for oil and fuels. You see that in China, you see that in North America, you see that in Europe. It always leads to recorection, which shows that the market is working. We'll see how things are unfolding in Saudi Arabia. It's very ambitious, it's a big change and the world is looking at it very, very closely. People are wondering and starting to think about the age after oil. It's a good thing to do, we're on a long wavelength transition to low-carbon energy, it's gonna take time. It has to because of the population of the Earth. I think that changes announced are healthy.

**Nobuo Tanaka:** OK, thank you very much, Bob. Let's move to Lorenzo Simonelli of the GE Oil Gas. Lorenzo, it's to some extent the same question: what do you see the prospects of the oil and gas sector through this downtime? Also, important point, is that Mr Sechin talked about - lots of technology innovations in this sector to overcome this downturn. What technology do you think is important? If we are talking of digitization or subsea technologies, what is your view on this?

**Lorenzo Simonelli:** Thank you, Tanaka-san, and thank you Mr Sechin, thank you. It's great to be at the forum at such a great distinguished panel. As you've said, we are in challenging times, that are very volatile. We do believe that the long term, though, is still very positive. We've got to navigate through the short-term sick locality that you've heard about, the tremendous reduction we've seen in capex, the projects' slowdown. We've got to focus on really new technologies, and the way in which we can provide a new era for the industry to be profitable and actually continue at a lower cost per barrel. We think that is possible. The way in which we actually become successful is by challenging ourselves through technology, innovation and destructive thinking. The way in which we do that is through a program of digitization. I'd just like to cover digital for a few moments, and then some other topics. But General Electric has invested heavily in becoming, what we say as a digital industrial company. We think that the fourth industrial revolution is really around the usage of data and becoming more predictive, being able to become more analytical and actually utilizing the data to lower the cost going forward. And if you think about costs, the large cost within this industry is based on unplanned downtime. We think that by providing way in which you utilize the algorithms, you take data, you can actually reduce the unplanned downtime by effect that is significant. Now, I'll give you an example. If you think about a subsea well. On a daily basis this well is not producing, you have \$2-3 mln lost from the revenue perspective. Now, we can actually take information from the well, it be a reservoir information, or

machine data, and perform algorithmic assessment to be able to provide an outcome that reduces the unplanned event. We actually have programs that have been in place with a number of our LNG facilities where we are now providing uptime of 99.9% reliability. And that's being achieved through new software, such as a reliability map. Destructive technology means that you have to create what is now known as an industrial operating system. And that's what we call predex within General Electric. It's a way in which, like all of you have your iPhones or your Galaxies, with map is created within an industrial operating system for large-scale data. That large-scale data can now interface between the RPs, between different dislocated systems and provide the capability of assessing an algorithmic math required for the better outcome. Another example would be field advantage which is a software application that you utilize within onshore fields and can be used even here in Russia where we're utilizing them at least at the moment. By looking at differences in water card, between oil, water and also dielectrical submersible pump, you can optimize the production of the well. And that provides anywhere 2-5% increase in production, which is a better outcome for the industry. I'd just say another final example is a project we are undertaking with Bob Dudley and BP monitoring 4,000 wells and looking at the data from those wells to insure we reduce the unplanned downtime. We are taking that also to platform information. So if you look at the way in which we improve technology, data's gonna be central, and being able to utilize that data to become more predictive and improve the outcomes for the customers. Additionally, technology allows us to look at new products, standardizations. You've seen the effort discussed before in the industry. But there's still more that we can do from the aspect of taking away ad hoc, taking customized engineering out of the equation, and focusing on standardization of products and then also moving towards innovative commercial approaches on services. We've launched the fast contractual service agreement in the industry around blow-up preventers, but we think there's more that can be done by actually marrying the service sector with the operators and looking at the way in which we engage in undertaking the management of equipment out in the field, where the true expertise is, and utilizing contractual service arrangements, financing arrangements to get a better outcome. So, we feel very positive that over the long term, as the industry comes back, as we take some of these steps, with data, with some of the aspects of product standardization, and also services, that we can find a new better standard of working together, and in Russia in particular. We feel very positive about the way in which Russia is positioned in the industry. We all know about resource capabilities, we also know the costs is very productive here in Russia. So we are engaging in a number of collaborations our thirds in strategic partnerships with Rosneft, as well as the joint projects on regasification solutions, which we think will help the industry as we continue to progress. So, there are difficult challenges at the moment but through technology that we provide and also by collaboration we've got an optimistic outlook and feel very positive about the age of gas continuing as we go through the increasing need for energy which is going to be here for the next 20 years. So, Tanaka-san, that's a technological view.

**Nobuo Tanaka:** Thank you very much, Lorenzo. Now we have to talk about... I remember some time ago Al Naimi was the Minister of the oil of Saudi Arabia. He measured about if we have: "Mr Tanaka, you are talking all about clean call. There should be clean oil". So that is his strong incentive for investment in renewable energy. Now we have to talk about digital oil. This is a very interesting concept. But we've spent five minutes already, so let's move to the next speaker panelist. Next question is to Claudio Descalzi, the CEO of Eni, Italy. The renewable energy is certainly under challenge with very low oil price and price of gas because renewable is very expensive in a way. What do you think the prospect of oil and gas market prospects in the view of development of alternative energy and renewable energy sources? What is the strategy for Eni in this context?

**Claudio Descalzi:** Thank you. I think that the question is very right because now the oil price and the gas price is very low, and it's not easy for the renewable. In Paris, I think that in 1990s 6 countries

recognized the issue, and I think that there are any for us, that we have very strict commitment. And if you look at the present situation, 80% of the energy is based on the fossil fuels, 30% is the coal, and the rest is oil and gas. And if we look in perspective, the International Energy Agency gave us the perspective that by 2030 the energy mix is practically still the same – we have 70% of fossil fuels, we have the a renewable that pass 1%, or a while to 4%, and that with this kind of scenario things are not changing, and at least we don't change the energy mix. So the real point is to change the energy mix. In energy, we know that we are producing about 32 bln tons of CO2 per year, and a big part of that is due to coal. 40% of coal is responsible for 70% of the CO2 emissions. So, the solution is really to change the energy mix. First of all, because we have the possibility – we have the huge amount of gas discovered, and we can move it. In Europe we have one of the best network in terms of pipes, recalcifiers and storage facilities, and unfortunately, what happened is that in the last 7-8 years we lost about 100 bln cubic meters per year. So we are reducing the gas, we are increasing the subsidies for the renewable that is very expensive, very increased the bill for the European consumers, but at the same time we are increasing the coal consumption, we are increasing by about 10% of coal, and we are increasing renewable. So, instead of going to the right road, to the right direction – the gas and renewable system to reduce the CO2 – we are going toward the worst one – coal and renewable. 1% of coal is destroying 10% of renewable. So, that mean, we are not subsidizing the renewable, we are subsidizing the coal, but that is normal because is the market that is leading. There is no policy. So, I think that the energy mix is something that we are to address. In the CAP21 in Paris big success is true, but no one is talking about coal, everybody avoid to talk about coal, everybody avoid to take strict commitment. Only Europe took a very strong one in terms of emissions, efficiency and CO2 reduction. So I think that, also for the long run we need the fossil fuel, we need absolutely to reduce coal, we need to increase gas, and we need to focus on the right energy mix. And we have to consider also that we're talking about developed countries, but we have a lot of people that are still using biomass, and access to energy is not completed, and we have 600 mln people in Africa without energy, they're using biomass, and that is causing millions of death every year. So I think that we have also to think about that we are going to increase our needs - from now to 2030 we are to increase by 21% the energy needs, so we have to be realistic and think that fossil fuel is there, we are to develop, we are to use fossil fuels, we are to make the right choice, and I think we have to provide access to energy to a large number of people. So, I think that we have to be realistic, with our feet on the ground and understand the situation, and work to develop energy. And for that reason, the point that we are like before. Now we are really in a structural situation, we don't have any more regulators, so the fundamentals are driving the market, but we invest without knowing what will be the floor for the price, it's not easy. In 2014, when investors understood that OPEC didn't want to play the same role that it played the last 30 years, all the long positions left ran away, and does it only the short positions, the edge remained on the market, and the volatility, and the financial volatility increased a lot. So, from one side, we are to invest for the next 30 years, we don't have any more long institutional, the long position in the market. And there is no floor. Before we knew that when the price was \$70-80, we reduced production and increased the price. Now there's no more like that. So, I think that the future will be very difficult. We have the call-21, we have all these environmental targets, but we need energy. So, we are to think about the energy mix and also how to remain steady in our price to allow us to invest. Thank you.

Nobuo Tanaka: Thank you, Claudio. Before moving... yes, coal is a very interesting issue. In Japan, because the nuclear plant was shut down, coal is very cheap and attractive, so many plants are coal plumbing plants were on-going, but suddenly there's a risk – if carbon price or carbon tax may rise in the future, this could cause strangled assets, and that's a warning for the Japanese industry not to go too far. To stop this kind of thing, usually, the many companies have internal carbon price for future investment criteria. In Eni, do you have internal carbon price? Of what level?

**Claudio Descalzi:** Yes, we have. We have price for each project – a price of \$40 per ton, and that is what we... the price that we run our economics.

**Nobuo Tanaka:** Thank you. Bob, how about BP? You have \$40?

**Robert Dudley:** \$40.

**Nobuo Tanaka:** \$40, okay, that's very interesting. How about Patrick? Total has \$40?

**Patrick Pouyanné:** We have 30 to 40 according to the oil price. We are more clever, maybe.

**Nobuo Tanaka:** Interesting. How about you, Lorenzo?

**Lorenzo Simonelli:** So, we actually go with \$40.

**Nobuo Tanaka:** \$40, interesting. So, almost everybody has \$40. How about you, Igor? Do you have internal carbon price in Rosneft?

**Igor Sechin:** Our price is lower.

**Nobuo Tanaka:** Thank you very much. Well, let's move to the next question to Gérard Mestrallet of Engie, the major gas company of France. Said that gas sector, as Mr Sechin mentioned, is promising in the future. So, under the current oil market, oil price situation, how do you see the future of the gas, and how do you see the cooperation with Russia in your company?

**Gérard Mestrallet:** Thank you, Tanaka-san, thank you, Mr Sechin and Rosneft. At first, my company Engie – Engie is a new name of GDF Suez. We are not an oil and gas company but power and gas company, and among the \$80 bln, more from half come from natural gas. By the way, we are today the second largest buyer of natural gas in Europe and the largest energy importer in Europe. So, we are very much concerned about the future of natural gas, and for the last 40 years, we have said 40 years of cooperation – initially with Soyuzneftegaz Export. We have bought more than 300 bln cubic meters from Russia, and Russia presents today 22% of our supplies in gas in Europe. Well, we consider that natural gas is the future, brilliant future in the energy mix – not only in Europe, but in the world. And the relationship between European Union and Russia should be strengthening in the future. One of the main reasons is that because of the decline in European natural gas production in Netherlands, in Germany, and in United Kingdom. And so, even if the demand for natural gas in Europe would be more or less stable or even declining, the decline of the domestic production in Europe will be faster than the demand. And so, the need for import will increase in Europe, and therefore, I consider that there's an agreed potential for partnership between Russia and the EU. There is a complementarity. Instead of speaking of reliance or dependence, I prefer to speak about intercooperation and interdependency between Russia and Europe. Europe needs to import more natural gas from Russia, and Russia needs to sell its natural gas to Europe. I would like to also mention the fact that in order to improve the security of supply of Western Europe, natural gas infrastructures are keen. And the involvement of Engie in Nord Stream 1 and Nord Stream 2 projects clearly fits with this perspective. In September 2015 with the experience of Nord Stream 1 we decided to join the Nord Stream 2 project even, we mentioned that publicly, we mentioned our support even during sanctions period that was not always so easy. And I'm pleased to mention, to present sir Gerhard Schröder here, our chairman here, in Nord Stream. This is one of the crucial gas projects for the supply of Engie, my company for I work in Europe, and France, and also for Europe based on the first commercial and technological success, we need to increase the capacities of supply of Western Europe from Russia natural gas. And I'd like to mention also that it is a truly European project with several European companies from 6 different countries – from France, from UK, Netherlands,

Germany and Austria. And so, you know, to improve the security of supply of Western Europe and France – but we have customers in many European countries – the development of infrastructure connecting Russian resources of natural gas and Western Europe are very important. I would like also to mention that it is absolutely necessary to see differently natural gas in the future. Sometimes, and especially, in the perspective of the CAP21 agreement in Paris, where all the countries in order to support an important higher carbon price – and we also have internal carbon price at Engie, it is in fact occurred starting below 40 euros now but going much higher in the future in 2025-2030 – around 50. We consider that we have to make a difference within the fossil fuels, fossil energy, and to consider natural gas as having specificities. Natural gas is clean energy, natural gas emits half of the CO<sub>2</sub> than coal, it does not emit any particles, and it is in fact complementary to the renewable. We have not and we do not consider at Engie a competition between renewable and natural gas – they are in fact complementary – renewable are developing, renewables are wind, and solar, biomass, geothermal. But most of the renewables are intermittent – we have power if we have wind and sun which is not the case during every 24 hours. And so, natural gas by its flexibility hold the capacity to be exact leader, the perfect complement to the renewables. And we must see the future of natural gas as positive, and we have a positive view on the future of natural gas in complement to renewables. Natural gas is the friend of renewables, we must see it like that. Thank you.

**Nobuo Tanaka:** Thank you. Gérard? I ask again the question – what is your internal carbon price?

**Gérard Mestrallet:** We have no fixed internal carbon price, we have a curve which is growing starting below 40 euros – in fact, around 30 – that growing above 40 in 2025 and even to 50 in 2030. But I would like to mention that a friend of mine asked me to report on carbon pricing, and some of my colleagues, we are proposing a corridor in Europe, we don't know if it will be accepted or not, a corridor means flow price for carbon rising during the period, and also a ceiling price, top price, rising also. You know, to give visibility to the investors, you know, if we want an acceptable shift from the current energy system to a more cleaner energy system, more low-carbon energy system, the investors, corporations need to have visibility. Today we have no visibility on carbon price, and internal carbon price cannot replace the true price, and so we need to have such visibility, and we're saying that the corridor of carbon price at the level of delivery of Europe could be the right tool. Thank you.

**Nobuo Tanaka:** Thank you. Let's move to Patrick Pouyanné of Total. Patrick, certainly you have invested in Russia, so you have the strong prospect in this country, I'm sure, but also as a whole, there's a gap in investments because as IEA said and Mr Sechin also mentioned that investment in upstream has been declining in these years. But in Total, what is your strategy of future investment, and how can you use some kind of financial instruments to restore the investment activity?

**Patrick Pouyanné:** Clear. So, first of all, thank you Igor for inviting me to this panel. I'm honored to be here again, like last year. And I would like first to say that yes, I'm fully agree with most of the comments which were already said, so I won't repeat them. But yes, we are deeply involved in Russia. You know that we are investing in our joint projects in Artic and the Yamal peninsula, \$ 40-billion projects. We are just close to financing of these projects despite of sanctions with Russian banks and Chinese banks. It's not so easy, I can tell you. But you can find euro in many places in the world. And so we're deeply committed for simple reason. As Igor said: in fact in Russia you can find low cost resources, among the lower costs resources in the world. So we will be able to produce this gas in Yamal peninsula on shore for few dollars per barrel, and even if transportation to the main markets is a little more expensive, because we need ice ranker and energy tanker. At the end of the day it's very competitive to compare to other energy sources. So, this is a main driver for us.

In fact, this is for me a main lesson for future strategy is if you want to face the volatility of commodities because I know that some of my colleagues and people speak about equity on price, but I don't think we ever be on equity on price. That would be volatility. The lesson for me is that I learned: the position of our company on cost-competitive assets in Russia is clearly offering some opportunities in that prospective like over reagent for example.

The second part of your question is about investment in the industry. It's clear. That I think, the industry is facing such a strong volatility: you know, when the bound is going from \$1 to \$30 in 18 months, It's absolutely urged for all the companies. In Total we have lost in 18 months around \$12 or \$13 bln of cash. When you invest \$20-25 bln, you just have a big gap to fill. And of course, if there was a storm, it is better to be major company like most of my peers at this round table, because we have the balance sheet, to cope with the storm. We have reduced our investments. The industry is dramatically reducing its investments: \$700 billion in 2014, \$400 billion this year. It's clearly not enough to replace the natural decline. Natural decline is around, let's say, 5%. But I can tell you, and by the way when the price is low, demand is also accelerated.

Like we can see today. Look India is becoming number three country in terms of oil demand in last months because of low price. So, we have a gap, if you just look in 3-4 years, what we have in oil shale field in the United States or in other OPEC countries we'll have a lack of supply, because we do not invest enough. We do not sanction anymore any new oil project. And of course, we need to do our best, and the best is of course to be able to lower costs globally, I know that we can use maybe digital matters. But I think, it's mostly about that. If we want to sanction on projects, and we have excellent projects in our portfolio in Brazil, for example. It's a question of being able to lower costs globally in the industry. It is really taking a good decision, and then to start again in order to be able to produce this oil. Today it's still difficulties, so we have to be patient, but my message is clear: we will have a lack of supply for 3-4 year in this world, because we will not be able to accelerate investments. Within this way, it's a 3-4 year investment cycle, it's not a 1-2 year. It's not true.

Can we be out of financing or no, today financing, you know, is very low, even too low, if I can say. For our company it is question of being able to select the right assets and again to lower costs of projects to be able to launch again new projects.

A large word, maybe, about the strategy. I fully agree with said by Gerard, not because he is owning gas company, and I own gas company, or because we are French together, by the way, you see, the French people are complex, they don't have one price, simple price. But because just if we look to the future of energy mix, question of markets for me. When I look to the future of the markets, I observe and we are convinced, all the experts are convinced about some 2, 2.5, or 3 degree scenario, that gas are a bright future, good news for Russia. And we need to invest more in gas. Like you said, Gerard, gas is the cleanest hydrocarbon. But as people want an energy which is secure, affordable and clean, secure is also important. We cannot just have renewables, and the gas, right mix could be power at least gas and renew resource, in our strategy we link both of these energy sources. That was my comments just to answer your questions.

**Nobuo Tanaka:** Thank you, Patrick. Do you see that in your portfolio you still put that Russia has a very high priority?

**Patrick Pouyanné:** Yes, for sure. No problem. You know, I'm committed, I have more than 10 billion of assets in Russia. So if I'm not committed, I don't know what I can do more than that to demonstrate it.

And we have, despite all the sanctions, continued to invest. But, you know, it's a question for me of long-term vision. And I am sure and I'm sure all my peers will agree: in energy business we invest in a country, invest in projects for many years, and we face the difficulty, we face volatility, but we have to accept that. Whatever the storm, to keep straight sometimes, I would say. Our project in Yamal is there for 25-30 years. Things will happen during 30 years. I can tell you: price will go high, price will go down, sanctions will go, then will lift. And we'll face the events. That's one of the capacities of the business model of the major companies.

**Nobuo Tanaka:** Thank you, Patrick. Let's move to Mister Del Pino. Eulogio, you are the Minister of Petroleum and Mining in Venezuela, and at the same time the President of PDVSA. We know that OPEC has new Secretary-General elected and also Saudi Arabia has a new oil Minister. Do you think that a policy of OPEC is moving more cooperation or more consolidation, or the other way around? And also do you maintain that the policy of testing the resilience of shale production in the United States is a process of maintaining solidarity of OPEC?

**Eulogio Del Pino:** Thank you, Mr. Tanaka. Thank you, Igor for inviting me for a second year in a row. We together with Rosneft share several joint ventures in Venezuela, 5 joint ventures actually, and it is actually a huge and many gas field, so you are an excellent example to diversify opportunities and investment, because at the same time you are investing in huge resources you have in Russia, and have investments in huge resources of oil we have in Venezuela.

Regarding your question. I'm going to take one of these slides that Igor shown, and to compare to last year, last year at this time we were with the price in the order of 60-62 euros, we were really disappointed, and then after there was a range of 48, and we were very happy, you know. That was a huge question, big discussion that we had in OPEC. How it happened that one year after now we feel more comfortable when the price is \$12 less, and, probably, the answer is that now we have gone through very difficult times. And we have gone through longer cycle and with low price we had in the last 45 years, and we learnt a lot. We learnt that we have a new channel of production coming to the market, which is non-efficient, which has to solve very important environmental issues. Most of the major companies are not investing in that kind of production because of the risks for environment, and we consider that we were able to propose together with the Minister of Russia, the Minister Naimi, the Minister of Qatar and myself, we propose, let me remember, in January we did that proposal, we finally proposed publically in February 2015 the price was in the order of \$25. And there were comments in the news, that are fundamentals. I really believe that part of the answer are fundamental. But another risk that another major producers in the worlds, especially Russia and Saudi Arabia together we were able to sit together in February to propose some action to recover the price. And from that point to today we were able to lower the price of the oil in the middle of the winter, which is not easy.

Unfortunately, we were not able when we for the very first time we were able to meet 18 different countries, more than 50 mln barrels a day were producing for those 18 companies, in Doha in April 17th. Unfortunately we know some issues that were arise there I guess were solved in the last meeting. I guess now we have two positions I heard about them proposed from our friends from France aloud a ceiling of price in the coal, that's very funny because them has been always blame to try to have this ceiling price or whatever. We were proposing to you ideas, you know, all you in OPEC we were this closing out the possibility to have a ceiling volume but he shouldn't go to the quota system and that's discussion, you know. We preferred to monitor the market during this summer looks very optimistic on the price our view, has I am mention in different times, and we were very worried, I'm worried about how it's gonna be the behavior in the winter, because if at this time of the year we are \$12 or \$14 below the price last year what is gonna happen in the winter if we are not able to control the inventories. We have, and this is very

well known, we have more than three hundred million barrels above the average in the last five years of the inventories that are gonna be taken in this summer to compensate the difference between the offer and the demand, so we are thinking on the new ideas, some new ideas could be to ruin the bit of between ceiling volume or quota system that could be to load to a supply a range of production. Well, even OPEC and non-OPEC countries club adjust. That is gonna give us the possibility that example is very well known that from the last meeting we're having on the Doha up to now three million barrels out of the market because of different situations in Canada, in Nigeria. You know, what happen, who's gonna supply those barrels? Who have a need to adjust globally because we need to supply to the world with ninety five million barrels a day, and we need the investment to sustain, you know, that production of ninety five plus the increase demand. Ninety five million barrels a day, you know, with the declination rate that we have now present day. We need to supply nine million barrels to replace that declination, and that is where the point that you mention about the shale companies. I guess the shale is having like a roll of topping the price at this time. It is very well known that they are able to produce within range between \$40 and \$50. But this is also very well known that more than one thousand leaks less are used now in the shale region. It's also very well known that from the financial point of view, the financial legend that we use to sustain the decline of the price, you know, has been aspired. So, what is gonna happen after day we have more than three hundred wells drills but unconnected. That is a pool of potential production, but the declination rate of those reservoirs we know very well is very high. It seems the order of seventy per cent. What is gonna happen in the medium to long term when they need to recover maybe one million barrels a day, one million barrels a day is gonna mean to any thousand wells when they need to drill with more than one thousand ricks out of the market, how able that they gonna be, you know, reassure those rates. They need to recover 1 million barrels a day, that means 28 wells that they need to drill. With more than 1,000 rigs out of the market, how are they going to be able to reassume those rigs? Definitely, countries like the OPEC and Russia are the ones that are going to be able to produce efficiently and in the range of \$70-80, when in the medium to long term is gonna be late event of price, when everyone cancels right and we can sustain the demand of oil that is going to be in the market for the next 2-3 years. If not, what is going to happen is huge change of price that is against this volatility that Igor showed in the slides, which is not good either for producers or consumers. In OPEC we do not agree with this kind of volatility. We have a responsibility to supply the world with that kind of energy and we need a price that can sustain the investment of required \$300,000 less million in projects and fares. In the last 2-3 years underinvestment was huge and we are gonna see the impact of that in the next 2-3 years. That's something that we need to correct. That's why we support conversation between all the major oil producers, we invite to the international companies, we need to be included in those discussions because when I talk to the CEOs of international companies, they say, well, do you word or record the price? That what needs to be done together, you know. Not only the producing countries, it's not only our responsibility.

Nobuo Tanaka: Thank you, Eulogio. I cannot agree more to what has been said as a former executive director of IEA. Consumer countries suddenly concerned of this volatility, and some stability is necessary for oil pressure to be not too low, but at the same time not too high. So, where is the best price? It's a really difficult question to define, but certainty you're right to say that. Mr Sechin, I have one question, this OPEC-Russia cooperation question. You are not a government official, but you have some influence in Russia government. What is a Russian policy about cooperation with OPEC countries?

**Igor Sechin:** Well, we have Minister of Energy of the Russian Federation, and he is a government official, and he is in charge of coordinating all the activities that also involve OPEC. I think we can ask Mr Novak to answer this question.



**Nobuo Tanaka:** Minister Novak, can you answer?

**Alexander Novak:** Thank you, Igor Ivanovich. Well. In fact, I've been answering this question for the whole day today and I'm very grateful to you for raising it once again. We've been discussing this issue in different formats. It was one on one meeting with Mr Del Pino who shared the new developments at two-day appointment after the Secretary-General and the consensus parameters that were to establish the quotas that were discussed. But as I understand, OPEC is not yet ready to make a coordinated decision because there're too many contradictions or disagreements inside OPEC. Speaking about my personal opinion and the opinion of the Ministry of Energy, we, despite the failure to reach a complete agreement at Doha, we still have to keep developing our dialogue with OPEC, because it is an organization that has been in an existence for more than 50 years, that unites a big number of oil-exporting countries, that in aggregate do have a lot of impact on the existing oil and gas markets. Russia as a major exporter and as a country that produces the biggest volume of oil globally has to be involved in discussing all the current and relevant issues that are on the reader's screen today, and Russia has to discuss all the challenges that have been faced by the oil and gas industry as a whole. We are all aware of those challenges, but I'd like to emphasize that the reasoning for communication, the reasoning to communicate about development and continue the dialogue, both to keep developing two-sided relations with OPEC countries and multilateral relations with our colleagues who are members of OPEC

**Nobuo Tanaka:** Thank you very much, Mister Minister. Let's move to the next question to our front row participants. Mister Rex Tillerson, my question to you. Certainly Exxon is committed to the Russian oil and gas sector. Certainly the problem is the sanction. How do you see the US sanction on Russia? Do you see it's moving away or this still insisting on that? Also there was discussion about this shale. How do you see the new technologies on the shale that is making it very resilient, or do you expect this situation continues? Is there any new technology which makes you think is important?

**Rex Tillerson:** Thank you, Tanaka-san. Well. Ok. Thank you. As of the sanction question, I used to have the same approach as my friend, Mister Sechin. That is the question to the government. So, if there's a US government official here, who would like to respond, I'd be happy to toss it to him. So, let's move to the new technology. One of the underappreciate aspects of the technologies in gas business technology has played not just more recently across the history of our industry. It has been most potently demonstrated with development of the shale resources in North America in the last few years. But I think you really want to look across the history of the industry, because it always has been vital to the development of stable supplies of oil, natural gas at affordable prices, reliably. And I realize that periodically the price goes beyond what is considered to be affordable, and often prices goes below what some people feel is needed to stimulate investment. But if you look across long periods of time, the truth is the price has been at a level that has supported economic growth and development, in our developed world and in developing world as well. And I think that is a long-term obligation in this industry, this industry to meet the need for the stable supplies at a price the people and economies can afford, and it's reliable. That has been enabled by entire technology, if we speak about the deep water or us moving to enormous expensive and natural liquefied gas resources to provide new supplies of alternatively cleaner low carbon impact fuels around the world, almost recently opening a commercial window to shale in North America. It is all underpinned by technology. Certainly public largely does not always understand it. Because all they want to know is the energy is available or I want it, it's at a price I can afford it, and if it's not it's somebody's fault. So, the industry has an enormous task to meet that public expectation, and I think it does it extraordinary well all underpinned by technology. In the past people worried over this industry. Today people are worrying about industry over carbon, and carbon-free sources of energy. I would say people worry about it prematurely just as technology has supplied the energy, technology will

be the pathway to the carbon future that we seek. We have to continue supplies of oil and natural gas in a way that is less impactful, but it will be opening the doors to power that we can consume, that energy source in a less impactful way. And people who say “we must get off fossil fuels because...” really don’t believe in technology, they don’t have any faith in technology, they’re short on technology. And the only thing I’ve learned working for 41 years in these businesses, and I can say - never short on technology!

**Nobuo Tanaka:** Thank you very much, very interesting, very good point. I remember that you mentioned some time ago about the Exxon’s policies in a way when prices come down – investing through the cycle – is your strategy. You keep on doing that in this time?

**Rex Tillerson:** Yes, we continue, yes, of course.

**Nobuo Tanaka:** Simple another question. I’m sorry to ask you that. In Exxon, do you have internal carbon price also?

**Rex Tillerson:** Yes, our energy forecast, we’re updating it every year, publish it. We set a carbon price for almost ten years and it’s around 40 dollar level. And in 2040 it will be around 80 dollars per barrel.

**Nobuo Tanaka:** Ok, thank you very much. Next, let me ask Marco Tronchetti of Pirelli. Pirelli is a tire company, right. And I was invited about a month ago to the Saudi Aramco’s board meeting with you. We raised the question that the new technologies in the electric vehicles like Tesla model 3 make a huge difference in an oil-demanding peak, oil demand may come sooner than later. Do you think this electric vehicle is a real thing?

**Marco Tronchetti:** Thank you, Tanaka-san. We have to take into account that today’s car park, vehicle park is more than 1 bln, 2 mln electric vehicles, and the expectation is to have by 2020 about 17 mln. So it shows that that image will not be abruptly changed. There are some game changes that could happen. The two game changes that we see are: first-the evolution of the batteries that raises another issue – that is the recycling of batteries, but the second game change is the attitude of China. China today invests a lot of money in electric cars. And they remove the barriers they have to in the big cities. They produce more than 20 mln cars every year, so the new cars – a large part of them is electric. So in the short run, there’s no issue.

**Nobuo Tanaka:** For the car business, I think the future demand is in the emerging countries, like China or India. Pirelli’s strategies also investing into these major markets in the future. Yes?

**Marco Tronchetti:** Yes, we’re investing heavily in China, this is the premium segment. There we invest only in a premium iron segment. There are questions of noise, rolling resistance, so there is a lot of technology requirements. We invest in Indonesia. So, we are everywhere, in every country. But the larger part of the investment today is US and Asia. These are our main drivers.

**Nobuo Tanaka:** You are investing in Russia, also.

**Marco Tronchetti:** Yes, of course, we are investing in Russia as a very interesting market for winter times, high level of technology. Today’s market is a bit depressed for obvious economic reasons, but we’re using Russian basis for export, this is a very good basis, so we didn’t reduce our production and we continue to invest. And in 2017 we expect recovering Russian market, so we stay positive about investment in Russia.

**Nobuo Tanaka:** Do you have internal carbon price?

**Marco Tronchetti:** No.

**Nobuo Tanaka:** No?

**Marco Tronchetti:** No, we continue to adapt our internal price to the one of the major oil companies.

Nobuo Tanaka: OKAY. Good. Last but not the least. I will ask the question to Adi Karev Oil and Gas global leader of Oil and gas team. I will give you the most difficult question to answer. In your view, what is the most important risk or challenge for the global oil and gas sector now? Just pick one.

**Adi Karev:** So if I do a quick calculation we have about almost 1000 years of experience here and you are asking me that question? I don't think there is one most important risk but I will tell you this. I think that...I agree with everyone although not everyone states exactly the same comments and that gives me a balance to say that I was right. I think that the most important thing is the risk that we will not get to the stability of price that we need to, and the longer we will stand with the volatility the longer we have to experience that risk, the longer we will operate in the environment that has shown us more unknown than known, the more we will get closer to what Mr. Pouyanne said about the fact that we would be reaching the point where supply is substantially shorter than demand, the longer we will have an inability to make large investments on projects that Mr. Tillerson said are needed from the technology perspective. So, to me, the riskiest thing is the fact that we were used to having OPEC help us somehow control the price of oil and that we have found out in the last couple of years that they can't control the price of oil and in fact none of us could control the price of oil. So we are operating in an environment where we found out that this lever is not within our control as we have thought. To me this is the riskiest thing.

**Nobuo Tanaka:** What is the second?

**Adi Karev:** Not recognizing the first. The second is that we were actually been long into the process of thinking that this is a fine act, that this is just one more thing that we've seen in the past and if we can weather the storm, or if we have large balance sheet, or if we somehow go through the financial process and we have capability to run through this we will end up in the same place we were before. That is to me the risk, because I don't believe that would be the case.

**Nobuo Tanaka:** Thank you very much. The time has almost passed to the 6 o'clock so I'll return the microphone to Igor Sechin now. But as a moderator I've asked so many questions which I really wanted to ask myself. I'm so sorry that maybe it embarrassed some of you, I really ran a lot. I see these major's CEOs under strong pressure of this uncertainty, instability of prices, market forces etc. But it is also true that this kind of discussion with major companies CEO's gives us some hint of understanding the future, what they think about the current situation and preparing for the future. It is very difficult to see the future. When I was the head of the IEA the only thing I tried to avoid was just making any prediction about the future price, because I know I'm always wrong. But this kind of exercise is always interesting and I'm very much happy to come back this year and I hope that Igor Sechin, you will continue this kind of exercise in the coming years. And, finally, the floor is yours, Mr. Sechin.

**Igor Sechin:** I'd like to thank all those present and also those who took part in our today's discussion. No doubt, I'd like to extend my sincere thanks to you, dear Mr. Tanaka-san, for your expert moderation of our panel discussion, because thanks to that it has become one of the most meaningful events of the St. Petersburg Economic Forum. And closing this panel with my words of gratitude I want to say that we have oil and gas, the technologies are here, provided that there is sufficient finance we will have no risks. Thank you very much. Thank you.