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Peter Hutton^ Ladies and gentlemen, welcome to the 2019 Edition of the Equinor Gas Seminar. A real pleasure to welcome you here today. Same as last year, we did the CMU at different venue. A bit like being back at school, but hopefully we can be a bit more interactive in these than those days. For those of you -- and also I'd like to welcome everybody on the web as well. It's good to be able to connect for those of you who can't make it live. For those of you who are here today, I'd like to start with a brief, but important safety announcement.

If the building needs to be evacuated, the fire alarm will sound. On hearing the alarm, security and support staff will be on hand to direct you to the nearest emergency exit and to the assembly point. The assembly point is Copthall Close, which is next to the Apex London Wall Hotel, i.e., just across the street from this venue.

After the presentations, we'll have the normal question-and-answer session in the hall. And also as we've got no phone lines connected, if you've got -- if you're not here and you're watching on the web and you've got any questions, please send those through -- those questions through to Erik at ergon@equinor.com, and we will put those questions through -- during that session as well.

So with that, let me ask Irene Rummelhoff, EVP of Marketing, Midstream & Processing, MMP, amongst friends, to open the gas seminar. Thank you very much.

Irene Rummelhoff^ Well, thank you so much, Peter. It's a bit of an awkward stage here, so I'm not sure where to -- it's good to see so many of you, quite a few familiar faces. And I think we have a pretty intriguing program for you today. So I hope you'll enjoy it, and I'm certainly looking forward to engaging with you in the Q&A session later as well.

As Peter said, this is our fourth gas seminar, but it's my first, just took on the job as Head of MMP, I guess, this August and some of you might recognize me as heading up the New Energy business until August this year.

I assume most of you followed the CMU a couple of weeks ago, so I'm not going to bore you with the details from that, but I'm going to do share with you a few highlights. After very strong 2018, we come up with some pretty strong and impressive promises. We said that we're going to increase and deliver $14 billion free cash flow towards 2021. We're going to grow our return on capital employed up to 14% by 2021. We're going to continue to invest in world-class development projects, which will allow us to grow our production with an annual rate of 3% towards 2025. We've also announced that we increased our quarterly dividend by 13%. And I hope we gave you some comfort that we're progressing along our strategy, “Always safe, high value, low carbon”, on a way to transitioning to broad energy company.

And I think you're supposed to -- someone is supposed to click, but maybe I'll do it myself. We do believe that our low carbon strategy increasingly will become a competitive advantage for us going forward. Climate change is happening, it's real. The energy systems need a comprehensive transitioning, and our industry needs to be part of that. We -- in Equinor, we aim to be in the forefront of that transition, and we're quite encouraged by the recent CDP rating A minus, proving that we are at least for now in the forefront.

And the main topic today, gas, is absolutely part of that solution. And you don't have to look any further than outside these windows to see what gas in combination with renewables can actually do for CO2 emissions. You guys here in the U.K. are at the lowest emission level since the Victorian era, I've been told. We're also very encouraged by what we've seen in Germany lately. The coal commission, just a couple of weeks ago, came up with their report, announcing that coal will be phased out of the power sector in Germany by 2038, but starting with a significant amount already in 2022. And maybe more importantly, we saw Angela Merkel at Davos saying that if we're going to do this, we cannot hide it the fact that there is only one alternative and that is gas needs to be out there. So this is something we have anticipated, this is something we talked about for quite a while, and now it's happening.

Lots of uncertainty around the energy transaction, but there's one thing, I think, in all of this that is pretty certain and that's demand for energy is growing. So the world needs to produce as much renewable, solar and wind as quickly as we can. We're part of it. But the world also need to develop more oil and gas resources. And why do I say that? I say that because in any 2-degree scenario that I've ever seen, decline from existing oil and gas production is always falling more rapidly than demand. So something needs to fill that gap, but that thing that needs to fill that gap need to be with the lowest carbon footprint available.

So what does that mean to be a broad energy company? We talk a lot about that. And I actually think that my business or our business unit, MMP, sort of embraces the whole element of being a broad energy company. We

are designed to capture additional margins from everything that we produce in Equinor, gas and oil and solar and wind. We set up extraordinary commercial organization, currently including the Danske Commodities. We're about 3,600 people. We're located in 20 different locations and 10 different countries, and we're working within all time zones. To allow us to capture maximum value from our products, we have assembled quite a significant asset portfolio. We have 7 onshore plants that allow us to upgrade quality of the products that we're selling and trading. We have something like 10,000 kilometers of pipeline. We've got, at any given time, I think, between 90 and 20 vessels, and we've got something like 1,100 rail cars that allow us to transport our products to premium markets. Last year, we sold 800 millions of oil -- barrels of oil, making us into one of the largest net sellers of crude in the world. We sold 100 bcm of gas, putting in us -- in the position as the second largest gas supplier to Europe. And with the Danske Commodities acquisition, we're actually in now position also as one of the largest short-term traders of power.

More surprisingly, maybe, is that we also trade about 10% of all the waterborne LPG in the world, and we are marketing about 10% of the methanol demand in Europe. Tor Martin will come back to more details on how we trade and manage that portfolio. He also to touch upon Danske, but I'd just like to say a few words around that acquisition. It might not be the largest acquisition that Equinor has ever made, but I think it can easily turn out to be one of the most strategic acquisitions that we've ever made. And why do I say that? I say that because with the rapid cost reductions in renewables, means that renewables are in more and more markets reliant on market prices and merchant risk and to have someone capture that additional margin on top of the power prices, similar to what we are doing in oil and gas, is going to make us much more competitive. I think also it's going to be a value accretive transaction. We paid about EUR 400 million for it. And last year, their EBIT is estimated to USD 80 million.

As the new head of MMP, I've spent most of my time trying to be close to the people and business. I've traveled to all our onshore plants. And I think this is really where you see our strategy “Always safe, high value, low carbon” come to life. Meeting all these wonderful and very motivated people, I think it's -- we say safety is #1 priority. But when you met all these people, it just becomes very, very natural that you want to take care of them and it is no doubt #1 priority. And I think in MMP, we can only have one target and that's zero serious incidents because if we can do more, we just have to do more to take care of our people and our assets.

On value, we've guided you, I guess, guys, I guess, on the market and also internally that we think we're going to make -- our results going to be somewhere between USD 250 million and USD 500 million on a quarterly basis. We're coming out of a pretty disappointing 4Q. Nevertheless, I do see that we're making a lot of progress on our strategy. We're following and quietly developing our asset backed trading strategy. We have Danske Commodity into our portfolio. And we are into marketing, we'll back to that later changing the way we market our gas. So I dare, I guess, to say here in front of you today and say that going forward we aim to be in the

upper part of that range given that refinery margins will cover at least from where they are today. I think they are at around $2 or something at the Northwestern Europe these days. So not an entirely new guiding, but at least an indication that we think we're going to be in the upper half of the current guiding.

On low carbon, I see a lot of good work and a lot of motivated people working on this. And last year, we've reduced our emissions with 100,000 tons and a low carbon business is also a better business because every ton we reduce we save CO2 tax and also power prices typically because this is a lot about energy efficiency. So it's a true win-win. Most -- well, all of Equinor have gone through a tremendous cost reduction basically totally reset our cost base over the last 3 to 4 years, so have we in MMP. But we need to continue that journey. And to really move up to the next level, I think digitalization is going to help us a lot.

On the commercial side, we focus a lot on big data analytics, algo trading, blockchains, on the operational side with focus on drones, automations, 3D printing. And I'd like to give you a small example, and it's a tiny one, but it - nevertheless, it tells you something about the future. On the Kårstøplant, couple of week -- well, sometime ago, we needed a new impeller. You might not even know what an impeller is, but it's kind of a steel beam that you put around some equipment, and tip, we called around and as they said, well, it's going to take us 12 months to get there and it's going to cost the fortune, so we decided to go ahead and 3-D print it. It took us 4 months to get it and get organized, but we saved 50% of the cost. Next time around, we think we can get it in 6 weeks and saved 67% of the cost. So this is today and can you just imagine the development we're going to see within 3D printing. So if any of you who is sitting wish there is an impeller business, I'd want to sell them more or less immediately.

Then to the core of our business, I guess, Norwegian gas machine. As you know, we're supplying 25% of Europe with reliable, sustainable and affordable gas. In 2018, we sold gas for about USD 26 billion, that's more than USD 2 billion a month, quite staggering, and a bit scary, I guess. But this just goes to tell that Norwegian gas is very well positioned. We're producing our gas short distance from the big markets. We have a very competitive transportation costs, less than $1.5 from mmbtu. And our gas also comes with very low methane emissions, less than 0.3%. And we do have reserves to supply Europe for quite some years to come. We just, and I think that was announced at the CMU, updated our recovery factor ambitions on our gas assets to 85%. We sanctioned Troll, Phase 3, which will produce gas way beyond 2050 last year. We also put Aasta Hansteen on production late last year, and that's quiet an intriguing field because it's opening a new gas province up in the north Norwegian Sea.

And if you recall, one of the slides from Arne Sigve's presentation at the CMU where he talked about the largest unsanctioned projects on Norwegian Continental Shelf, 3.5 of those, I guess, were gas assets. And Arne Sigve also talked about an active exploration campaign for gas on Norwegian Continental Shelf.

But our gas business is also becoming more International. We're well positioned in the humongous, I guess, Marcellus field in Northeast U.S. We're seeing that we'll get an enormous amount of associated gas coming out of our asset portfolio in Brazil towards market with a tremendous potential. And through our LNG business, Snøhvit, we are already selling gas to -- last year, I think, it was 20 different countries.

But interestingly and this is something, I believe, we've told you before at these seminars, you no longer need to be in the LNG business to get exposure to LNG prices. With LNG being the marginal supplier to Europe, we're seeing that in 2018, the gas prices in Europe were correlating almost one to one with Asian prices. So we have very high Asian prices of under 11-ish for a while, and European prices were 9.5 at that point in time. More supply came to the market and, unfortunately, Asian prices went down and also European prices went down. So -- of course, we love to have more LNG into our portfolio, but we certainly do get quite a bit of exposure to those prices anyway through our gas position.

With more in LNG and coming into Europe and more and more intermittent renewable, I guess, we're seeing and anticipating more volatility in the gas markets going forward. Volatility is always something that traders like, they are excited about that and see that as an opportunity. And as a result of that, we are changing our gas strategy. Tor Martin will definitely talk more about that later on. But the point is, we're moving more towards shorter indices and we're going to have a more active management of the way we market our gas.

So let me round up where I started. The world needs more energy, but less emissions. We believe gas is very well positioned. The most effective climate initiative you can do is to switch from coal to gas, reduces immediately emissions in the power sector with 50% to 60%. Gas can enable higher penetration of renewables and will be needed as backup capacity, and we also do believe that gas has a future as a destination fuel. If you transform gas into hydrogen, store the CO2, we are in a position to actually offer our customers an emission-free gas.

So in short, we need both electrons and molecules. And we believe that we, in Equinor, are well positioned and well on our way to developing ourselves as a broad energy company.

So now I would like to leave the word to Eirik, who is going to talk about the macro picture and then I'll leave it to Elisabeth after that. She is going to give us more detail into the development of the gas market. So thank you for the attention.

Eirik Waerness^ Thank you, Irene. Thanks for the introduction, and thanks for the overview of our big gas business and our transformation to become a broader energy company. Good morning, everyone. It's nice to be back in London, and it's nice to see so many of you again. I'll give you an update on the macroeconomic situation, that's affecting all our energy markets, focused on some of the geopolitical trends and variables and uncertainties that will affect both macroeconomics, but also energy markets going forward. And then towards the end, I'll remind you of what is possible developments in the global regional gas markets as we go

beyond 2025 and towards 2050. You have to remember that this is a long-term business. We're in it for the long term.

Global economic growth performed well in 2018, slightly above the historical average growth, and that's in spite of this being an extremely tumultuous year in many ways, with increased trade tensions, growing signs of lack of International trust and volatility in financial and commodity markets. The current situation is that global economic policy uncertainty is very high. Investment and trade growth are weaker than any anticipated. The imbalances in some important -- some of the important emerging markets are significant, I'll come back to that. And as a consequence, most of us who are in the business of forecasting, we expect global economic expansion to slow down and the growth to be lower this year than it was last year and the year before. We have, all of us, downgraded growth in 2019 relative to 2018, one exception being the United States, which is in a sense a special situation. And our forecast in terms of global economic expansion this year is slightly lower than that of the IMF, so we're at 2.8% this year and 2.7% in 2020. And of course, one of the key uncertainties is the ongoing short-term development in China. But note that we believe in continued growth. There are some people that talk about the possibility of a recession. That's not in anyone's base case, I think. There might be some countries that go into recession, but global economic recession is something very different.

On the energy side, global energy demand, as we show in this chart, has grown steadily since the financial crisis, and it's important to note that we demand 30% more energy now than we did in 2000, and energy was a large part of the global economy then as well.

Gas demand has increased more than overall energy demand and also more than oil demand since 2000, and the reasons, of course, is competitive supply cost and as a consequence low prices and particularly in the United States, development in infrastructure and the fact that gas is a versatile and clean fuel. And we believe that the gas demand going forward is going to be relatively robust in our central case, and I'll come back to the longer-term uncertainties.

As I mentioned, key emerging economies that we used to deliver growth and help the global expansion struggle now with key economic imbalances, any particular trade deficits and fiscal deficits. And a slowdown in the advanced economies will hamper growth in the emerging -- in these emerging economies. And several of these several economies have seen their currencies fall significantly during 2018. Argentina and Turkey are examples of countries that have been particularly hurt. The depreciation of these currencies against the dollar and the euro has increased their debt burdens. And then that adds to financial stress given that they already have large fiscal imbalances, large trade -- negative trade balances and a higher U.S. interest rate, the ongoing trade conflict and policy mismanagement have all contributed negatively to the currency prices.

And the shown emerging economies we have here, they have the twin deficits, adding to the economic burden and it increases their dependency

on a continued flow of foreign investments. And then in a situation without trust that becomes an increasing challenge. And then all the factors affecting the situation and that also calls this capital flight to at least less capital imports are then reduced global economic demand or just slightly lower growth in the economic demand -- in global demand. And also as a consequence of the foreign exchange movements, an increasing burden of their energy bill because these are energy importing countries. And some examples here. In terms of Argentina, we expect economic contraction this year, both as a result of last year, but also this year. I know it's significant uncertainty about the result of the election and subsequent economic policies. In Turkey, they're in a currency crisis with marginal to negative growth this year and risking a debt default. In terms of Brazil, Bolsonaro's proposal are very ambitious, radical change in simplification of several parts of the framework conditions in Brazil, but with significant implementation risk as to how will they -- these reform proposals go through, will they go through and what will be the short-term impact on the economy as they change. And even the fastest growing G20 country here, India, has its challenges with a trade deficit that reached a 5-year high in July with the policy rate now from Central Bank at 6.5%, which is cooling down, both business and consumer sentiments. We don't get the help from some of these large emerging economies in driving overall global economic expansion. And then we're in a situation of protectionism, increasing protectionism driven by the United States, exemplified by the exits from the TPP. There's renegotiation of -- renegotiations of the NAFTA treaty.

Since the beginning of the summer of 2018, trade tensions have intensified and several import duties have been imposed by the U.S. And then as a consequence of that, tit-for-tat retaliations by some of its trading partners and examples that you all know is import tariffs on steel and aluminum from both EU, Canada and Mexico, tariffs on imports from China worth some $250 billion, where China then retaliated by tariffs on U.S. imports of $110 billion, including LNG. And where the United States is still formally contemplating an increase in tariffs on another $270 billion of imports. But at the same time, in December, they agreed a 90-day trade truce, making a shift for the positive look, it looks as it might become slightly less situation of conflict where they had plans to reach a deal by the 1st of March, we'll see, to revert the escalation of tariffs. They're also talking now with EU on regulatory hurdles where the outcome would depend on how much extra goods the EU buys from the United States as an example being LNG. But of course, if these trade tensions further escalate, International supply chains and small open economies will experience challenges. And in a worst case, full-blown trade war scenario and IHS has estimated that economic growth globally could lose as much as 2 percentage points. That means we're close to a global recession, if that happens.

In terms of energy and these trade protectionism efforts, if you like, LNG flows are so far very, very marginally impacted by the tariffs. And in the case of China, the LNG actually going to China is very low, very small. So there is no immediate impact. But of course, going forward, as gas markets continue to globalize, as I'll come back to these markets, will be more exposed to geopolitics under this type of trade attention if they were to occur yet.

So as noted by -- also by Irene, LNG is now the main mechanism that links global gas markets. And if that mechanism, as we've spoken about in all these gas seminars, is that mechanism that opens up for a global price formation on gas, and we see tendencies of that already in terms of the short-term markets. And then various gas markets around the world are relying on 1 or 2 physical pipeline gas sources. Those are indicated in red and yellow countries that are dependent -- very dependent on 1 or 2 physical pipelines.

To some extent, some of these countries, to the extent, they have a coastline or a good neighbor on the other side, are able to rely then on increased LNG imports to increase the security of supply. On the other hand, the growth in LNG, then as I said, means that gas flows become more exposed to geopolitical risks that traditionally has only troubled the oil market. And you have the Russian sanctions since 2014, as an example, and the recent U.S. proposal to stop the Nord Stream 2 investment is an example of the geopolitical aspects now affecting gas markets more than previously. Iran has been subject to sanctions from 2006 to 2015, and again from now from November, that will affect their strategic financial energy, petrochemical and automotive sectors. Turkey is still buying Iranian gas, but payments and currency issues in such a situation pose a challenge. We have Qatar cut off by the rest of the Middle East, if you like, and going out of OPEC. Any escalation of that driver in the Middle East will have serious impacts on the global gas market as Qatar is the largest LNG exporters in the world. We have Yemen, tragic example, of course, but it's a gas market or is gas supplier that has not delivered since 2015, as a consequence of the war. And U.S. protection is now calling for increasing LNG deliveries to Europe and Asian markets to improve the U.S. trade balances. At the same time threatening or putting tariffs on LNG exports to China is an example of how these geopolitical developments could affect markets. Brexit, it's a development that would mainly affect U.K. trade relationships at an operational level. But of course, the general uncertainty there has the impact also on larger global markets like oil and gas and other types of trade.

And finally, on the map or partly on the map here, another uncertainty would be the North African situation, where -- which North Africa is an important supplier of gas to Europe and the geopolitical uncertainty there is primarily impacting the supply from Libya through pipelines, but could also in a given situation affect at least the notion of secure supply from Algeria, both in terms of pipelines and LNG. And of course, the flip side of that increased uncertainty is that there are business opportunities for companies, for countries that are stable and working at predictable policy and regulatory regime. Us, one of your good neighboring countries, is an example of.

Then another geopolitical or global issue that Irene was referring to that affects all International oil companies' strategy developments at the moment and the carbon challenge. And that requires a global cooperation at scale. And we're not there at all. We need a price on carbon. That's very simple being an economist, extremely difficult being a politician. More and more countries and regions introduced carbon taxes or emission trading type of systems to put a price on carbon and EU ETS

is one of them. In the case of Norway and the U.K., we have carbon prices in addition to the ETS. I mean, in the case of Norway, we experienced one of the highest carbon prices in the world, with Norwegian carbon tax on top of the ETS price, for our emissions as an example. A local regulatory drive, not a global, but a local one, in many places seem to be relatively efficient and relatively successful. A good example could be the U.K. power sector with a carbon price floor has strongly contributed to the reduced coal electricity generation and, as Irene said, the lowest emissions since Queen Victoria. Congratulations. And you're a strong example relative to your German Friends. Unfortunately, the Germans now seem to come after you. Another example of these local regulatory changes are the drive that is happening in some of the U.S. states. And EU ETS system is, of course, an interesting example where the supply side is basically a policy instrument, used to achieve climate policy ambitions, with the demand side then fluctuates with economic activity and policy changes and expected policy changes. And a rapid increase we saw in ETS price last year is an example of how political changes on supply side affect the markets in a given situation. And then for, global climate collaboration, the story is more complex and less positive. There is still a significant gap between lofty, optimistic targets and the ability to implement measures that would contribute to achieve those targets, unfortunately. With all that uncertainty, moving towards the long-term energy future, I wouldn't be honest or serious, if I say that you can foresee with several different outcomes with the global energy system going forward depending on which are the key drivers on the supply and demand and the policy side you decide to assign weight to. Here -- as an example, here I illustrate potential outcomes for electricity generation, going from now to 2050. You know, we have 3 long-term global energy scenarios to 2050 that we published in our Energy Perspectives Report every June. Irene showed in her -- at start of her presentation a few of the outcomes of that from last year's publication and here's another one. What was -- what will electricity generation look like going forward?

One key is, of course, that electricity generation will grow significantly. We will become more electric. We will not become electric, still up to -- at the lowest level, 65% of our primary -- final energy consumption will still not be electrons, it will be molecules in the 2-degree scenario. But it will become more electric. Transport, the dark blue up there, becomes a new visible source of electricity demand due to electrification of light-duty vehicles, et cetera, et cetera. You can see in the middle that new generation capacity will overwhelmingly come, we think, in all scenarios from wind and solar and a slightly some increase also in geothermal, a new renewable electricity will be the new generation. There will be some new gas base generation, both in, what we call, the reform case, the central case and the rivalry case, where gas is keeping its market share in those 2 scenarios in a very significantly growing electricity market.

In the renewal case, the middle one, the gas share in the electricity generation goes down, but in a market that is almost 60% larger. So the decline in gas demand from electricity is less than what the market share would indicate, because the market grows by 60%. So the gas demand from electricity declines, but not that much as you can see in the chart.

Then, in terms of overall gas demand, as you know, gas is not only about electricity. Electricity is only 25% to 30% of gas demand. The rest is transport, manufacturing, heating and cooling. The long-term outlook for gas is solid, and you can see that by 2025, we don't see a lot of difference between these scenarios, solid growth, as -- robust growth, as I said. But even in a 2-degree role, the blue line there, with 8% to 10% decline in overall gas demand to 2050 from now. That calls for massive investments to keep pace with demand, the difference between the decline rate and potentially moderately declining demand is important to keep in mind, as Irene reminded you. In all scenarios, look to the right, we have significant growth in Asian demand. And even in the 2-degree scenario, the gas demand growth in China and India is equivalent to a new Europe, up to 500 bcm in Asian gas demand growth from now to 2050. That gas demand has to be satisfied, and that's even in a world where we actually reach the climate targets. And the consequence, of course, is that there will be large changes in gas transport from surplus to deficit regions, even if China, as an example, also will grow its indigenous production significantly. And then showing you some examples of that, these are regional gas balances illustrated into reform case. They're important. We have some surplus, some deficit regions based (inaudible) and then, as I said, this is in the reform case. And the global gas demand forecast that I just showed you, as an example here it hides very different supply-demand balances in different regions. The United States and, therefore, North America is already well on its way to strengthen its export capacity and will have a large gas surplus that has to or could go somewhere if somebody wants to pay for it. Europe will need additional imports despite likely a very moderate demand development or a significant decline in the case of 2-degree scenario, it will still need growing or constant imports. And the reason is that the indigenous supply is declining. In the case of Netherlands is one of the best examples, and I know -- and most recent data now show that the Groningen Field falls even more than expected down to 16 Bcm next year and declining supply elsewhere. And here we include Norway as an indigenous source of supply, and in this case, we have assumed that the Norwegian supply is flat until 2030 on growing imports.

And then Asia is in need for increasing imports, as I mentioned, significantly in spite of China, for instance, more than doubling its own gas supply from now to 2040. So -- and then, of course, that would partly be pipeline supply from Russia, as an example, the Power of Siberia pipeline from 2020, but also all their sources of pipeline supply, all the parts from all the parts of the Former Soviet Union as well as significant need for LNG imports. So therefore -- and consequently, I mean, the long term -- the growing part of LNG is absolutely -- growing LNG market is absolutely necessary to close these regional imbalances in the same way that oil transport currently does. So we see a globalizing gas market.

And then finally, used to remind you, on the need for new investments, investments in new supply, if you like, or gas. Without supply -- without investment, supply we'll fall possibly by 5% per year, 3% to 6% per year is what we illustrate here. So that means that is why demand gap opens very fast if we don't invest and there's a significant uncertainty in that gap already to 2025 depending on what you think about decline rates,

1,000 to 1,700 Bcm already in 2025. And then as these -- as we go further off, the gap becomes enormously big. And then depending on the demand scenario, you have in mind, the size of the challenge becomes different. But even in that 2-degree scenario, which is the bottom of the demand range, when you get out to where the global demand by 2050 is 8% to 10% lower than today, we might have to deliver 70 trillion cubic meters -- 70,000 billion cubic meters of new gas from now to 2050 to satisfy demand. So new gas from something that does not produce today and that needs investment, 70 trillion cubic meters, very few of us have an intimate relationship to 1 trillion cubic meter of gas, is that a lot? Well it is 60% more, as an example, 60% more new gas than what has accumulated been delivered combined from the United States, Russia and the Middle East over the last 35 years. So if you add the combined gas deliveries from all of the Middle East, Russia and United States over the last 35 years, we have to up that by 60% to get the figure for new -- potential new gas supply over the next 35 years in that 2-degree scenario. And if you don't believe in the 2-degree scenario, the challenge is even bigger. And, of course, those investments don't come by themselves, they need capital and they need price signals to ensure sufficient investments. And those price signals, we hope, are there. And now, Elisabeth will tell you more about at least short-term price signals.

Elisabeth Aarrestad^ Thank you, Eirik, and good morning, everyone. I'm Head of the Equinor Market Analysis Group, and we are responsible for analyzing all the commodity markets for oil, gas and electricity, and we look both at the short term as well as at the long term. And today, I would like to focus on the latest developments in the global gas markets, and I will also touch upon the electricity market. I will take a closer look at some of the key supply and demand regions for gas, and I will round off by focusing on Europe.

But first, I would like to take a look back to refresh what we said a year ago and how that turned out. So what did we say last time around? Well, firstly, we said that gas will be an important flexible source for electricity, both in the U.S. as well as in Europe. And in the U.S., gas has gained market share for 2 main reasons. It's due to lower natural gas prices, and it's due to coal retirements. The reduced gas prices are linked to the strong growth in U.S. gas production, with more than 50% growth since 2010. These lower gas prices have made gas fired generation more competitive relative to coal, leading to significant coal-to-gas switching. And due to new environmental regulations, we have seen a number of older and less efficient coal plants, retire over the recent years. And the share of gas in the U.S. electricity mix is now above 30%, and the share of coal is below 30%. Secondly, we said that Asia will be the engine for global gas demand growth. And the China's gas demand growth will substantially exceed the growth in the U.S. LNG exports. The global demand for LNG in 2018 was driven by Asia and China, in particular. China is phasing out coal in favor of gas in some regions to reduce local pollution. And last year, we indicated an expected growth in Chinese LNG import of around 8 bcm. The year-end numbers show an increase of more than 20 bcm, and that's 3x the new U.S. LNG capacity added last year.

And finally, we said that Europe is increasingly reliant on gas imports and will face competition to attract the required LNG. Through the first 3 quarters of 2018, we witnessed high competition for LNG supply between Europe and Asia. Asia absorbed most of the incremental LNG supply due to the high LNG prices in Asia in that period. However, in fourth quarter, this trend shifted, as you can see on the final illustration. In fourth quarter, the European LNG import increased by more than 40% versus fourth quarter of 2017 or a volume of 8 bcm. So I think it's fair to say that the market delivered on all of these 3 key messages from last year.

Let us now take a look at the price movements in 2018. In Q1, we saw significant strengthening of European prices. A cold spike in end of February brought the European demand to between 700 million and 800 million cubic meters a day, which is significantly above the average seasonal level of 550 million. In addition, a number of unplanned production outages in the U.K. and on the NCS provided further volatility and support to prices. In March, an unusually cold weather in Europe supported gas demand in the residential sector and also led to strong storage withdrawals. As a result, the storage levels in Europe approached the lowest level ever seen, and the prices moved towards USD 9 per MMBtu.

And then, after normalization of the price levels in Europe in April, the gas prices continued increasing consistently through Q2 and Q3. And this price increase was linked to several factors. Firstly, it was an overall rallying energy contracts with coal, oil and CO2 price increases. Secondly, above average storage injections to refill the historic low storage levels. Thirdly, a strong call for gas to power due to a warm summer and need for cooling. Number four was due to high level of maintenance, both on the NCS pipelines as well as on -- for Russian pipelines, which limited the gas availability to Europe. And finally, it was due to limited LNG availability in Europe, due to the strong Asian demand, which, again, was supported by weather factors. And then during Q4, the prices weakened from the unusually high levels in the previous quarters. In Q4, we saw increased LNG availability into Europe and parallel with warmer than normal seasonal weather, reducing the need for heating. In total, this resulted in falling prices.

In Q4, also the Asia LNG spot prices gradually weakened due to ample supply of LNG from new facilities and comfortable inventory levels in the Far East. In the U.S., the prices peaked in Q4 due to a cold spell and concerns on low storage levels. The storage levels in the U.S. entered the withdrawal season nearly 20% below the 5-year average, but the market had yet to react to the deficit because it was confident that record production could make up the difference. The arrival of such extreme cold so early in the winter season briefly frightened the market. And besides such cold periods, the U.S. prices hovered around USD 3 per MMbtu throughout the year.

On average, the European gas price for 2018 was very strong. The NBP average was USD 8 per MMbtu, which is close to 40% above the 2017 average of USD 5.8. Due to the increasing importance of electricity in the future global energy mix and also in our portfolio, I here illustrate the electricity price development in Germany as one of the large European electricity markets. During 2018, we saw a significant increase in

Germany electricity price, from around EUR 30 per megawatt hour in May to more than EUR 50 per megawatt hour in July. This increase can mainly be explained by looking at the drivers behind the short run marginal cost of electricity generation, namely, the fuel costs for gas and coal and also the CO2 costs. In this period, the prices for gas, coal and also CO2 all increased, as you can see on the right-hand side.

Prices for both German electricity and the drivers of short run marginal cost remained at the high level throughout the second half of 2018. The average prices in this period were much higher than the average prices in the same period the previous year: 62% higher for German electricity, 40% higher for gas, 7% higher for coal and close to 200% higher for carbon. During the summer, lack of rain lowered the water levels in major rivers, as you can see on the photo here. Such low water levels limited the delivery of coal to some power plants, which again resulted in larger coal and gas in the power sector. And this is another example of the flexibility gas has in the electricity sector, which is also not -- which is independent of the price drivers.

Let us move to the U.S. and take a look at the supply development and the increasing exports. The first illustration here shows that the U.S. has a very large amount of resources available under $5 per MMbtu. The EIA estimates that at current demand levels the U.S. has enough technically recoverable resources to last around 90 years. We have seen abundant production growth of the out of Appalachia with the Marcellus and Utica plays, where Equinor has a large position. Appalachia has one of the lowest breakevens in North America. Additionally, we are seeing more associated gas volumes in the U.S. which is driven by oil and not gas economics. Meaning that even more cheap gas has come into the U.S. market.

The second illustration shows that 2018 was a record year for U.S. production, totaling 830 bcm, growing by more than 90 bcm year-on-year or 12%, which is the highest growth ever. Now only 50% of this growth came from Marcellus, Utica and 30% from the associated gas in Permian. The third illustration shows the growing U.S. export. The abundance of U.S. gas supply and lower natural gas prices has increasingly made the U.S. an attractive exporter of natural gas into global markets. U.S. exports have also turned into a crucial source to help balance what would otherwise be an oversupplied U.S. gas market. Since 2005, the U.S. turned from being a small pipeline exporter to Mexico with 8 bcm to last year being a major pipeline and LNG exporter with total export volumes reaching 77 bcm. That's a 69 bcm increase in export level in only 13 years or it's about the same size as the total Italian gas market.

This year should be another large year for U.S. LNG exports with a number of new terminals scheduled to start over the course of the year. We expect another 40 bcm of capacity coming online this year from 5 different projects. That is more than a doubling in capacity from end 2018 capacity levels. The LNG export capacity from the U.S. is expected to further grow to around 90 bcm in 2020 and to above 100 bcm in 2025.

My key message here is the power of low prices. Low prices spur demand and that's what we are seeing in the U.S. Even in a year when we saw

record production growth, we saw relatively tight market balances late in the year. This shows how strong demand growth has been in the U.S. Going forward, there are signs that production growth should slow somewhat from the previous levels. As production growth slows, demand and especially from export will continue to grow with the continuous expansion of LNG export capacity. This leads to tighter balances and consequently higher prices, which will impact the competitiveness of U.S. exports through the global markets, closing the arbitrage window for the U.S. LNG exporter.

Now let's take a look at the global LNG market. In 2018, we saw an LNG capacity build out globally totaling 56 bcm by the end of the year. This is one of the largest yearly capacity buildups ever. However, please be aware that LNG capacity does not equal LNG production. The yearly LNG production was lower than this, as the capacity was not available throughout the year, and also that LNG production may be limited by other factors. New capacity additions are illustrated on the middle graph. New capacity for 2019 is expected to be around 45 bcm, of which 40 bcm is from the U.S. In 2020, we expect additionally 28 bcm. This additional capacity will contribute to the increasing globalization of the gas markets, but is still a small part of the total gas capacity globally. And in context, it means that the LNG share of the global gas capacity increases from around 10% in 2015 to around 14% in 2020.

The global LNG demand will continue to be driven by Asia. We anticipate some slowdown in the growth from China based on the assumption on slower economic growth, slightly less policies on coal as well as on import capacity constraints. In Japan, we expect flattish import after a few years with reduced LNG as a result of the returning nuclear reactors. At the same time, we expect LNG demand growth in countries like Pakistan, India and Bangladesh, which need to reduce their energy deficit. And 2019 and 2020 will be good period for these countries with a lot of new supply coming online, providing affordable price levels, which then again is expected to spur the demand for global LNG.

This softer period has been expected for some time, which I also have referred to in previous gas seminars. However, the LNG overhang has been pushed out in time due to both delays in LNG capacity buildups as well as surprisingly strong demand growth. Our current assessment is that we will face a shorter period with softness than previously expected. The strong capacity buildup we are currently experiencing is originating from the investment decisions taking in the high price environment from 2012 to 2015. The market is cyclical, as you can see on the left graph, and the lead time is 4 to 5 years from FID to production.

From around 2022 and not 2025, which I have said earlier, we expect demand to have caught up with supply, consequently leading to higher prices. And the lower the price drops in the short-term, the sooner the market will rebalance and the sooner the price will recover. On the right-hand side, you can see our assessment of which regions that will absorb the incremental LNG in 2019. We expect Asia to absorb around 75% of this, leaving around 8 bcm of LNG to fill the increasing gap in the European balance, which I will come back to.

As illustrated in the global LNG balance, the development in China is key. In 2017, the Chinese gas demand was just above 240 bcm, which is roughly twice the NCS gas exports. In 2018, the gas demand in China is estimated to be around 280 bcm, corresponding to a growth of 17%. In a global context, this means that China is the third largest gas market in the world, following the U.S. and Russia. In China, the air pollution control policies from 2017 continue to support the gas through the first 3 quarters of 2018, in addition to high demand from the industrial and residential sectors, a hot summer and storage buildup. In Q4, the gas demand growth was reduced due to softening air pollution control policies that allow the use of cleaner coal.

In the context of domestic energy use, gas demand is small with just 7%. Chinese authorities want the gas' share of the total energy mix to grow to 10% by 2020 and towards 15% in 2030, which means a healthy growth rate going forward. LNG growth is expected to be somewhat lower than last year, but still significant in absolute volumes, and it will grow to above 100 bcm in 2022, 2023. The right-hand side illustration shows Chinese gas demand predictions from various sources. Woodmac's prediction show a demand growth of 160 bcm or more than 60% in a 5 years period. In addition to increased LNG import, this demand will be covered by increased pipeline imports and domestic production.

Now let us move to our home turf and take a look at the development of gas demand in Europe. The first graph shows how the short run marginal cost of coal-fired electricity generation, which is the black band here, has jumped to a much higher level as a result of the increase in CO2 costs of nearly 200%, as I referred to early on in my presentation. The commodity forward curves indicate that gas-fired generation, which is here in the blue band, will be increasingly competitive to coal in the medium-term outlook. The band showed a span from the most efficient plants at the lower end of the band to the least efficient plants at the higher end of the band.

So the second graph illustrates how gas consumption in the electricity sector is expected to continue to trend upward in the medium term with higher utilization of gas turbines at the expense of coal plants. We anticipate our gas demand increase in power generation for all of EU of around 12% or 17 bcm in 2019 from the level of 2018.

Further, the second graph illustrates how gas consumption in the electricity sector is expected to continue to trend upward in the medium term with higher utilization of gas turbines at the expense of coal plants.

We anticipate a gas demand increase in power generation for all of EU of around 12% or 17 bcm in 2019 from the level of 2018. This is based on significantly higher prices for CO2, together with outlooks for somewhat lower gas prices compared to 2018, which makes the gas-fired generation more competitive relative to coal.

From 2020, we expect a gas to power demand level of around 166 bcm in Europe or an additional growth of 8% from 2019. Looking at the total gas demand in Europe in the third graph, the observations are, firstly, EU

gas demand has experienced a strong recovery in the last years. However, we expect the demand to remain below the 2010 levels going forward.

In addition to the gain from coal to gas switching, the strong economic recovery in the Eurozone has also pushed up gas demand in the manufacturing industry sectors. And further, more normal winter temperatures has also led to increased consumption from the heating sector.

Going forward, we expect a flattish demand in Europe with a slight decline in residential, commercial and industry segments due to efficiency gains, but that is combined with an increase in gas to power. Let us now look at the supply side in Europe and how the demand will be filled going forward.

As can be seen from the left-hand side illustration, the European domestic production is declining and is expected to decline 10% from 2019 to 2020 then dipping below the 100 bcm. One of the main reasons is the cut in Groningen production based on the earthquake activity in region. Groningen produced around 20 bcm in gas year '17, which was below the cap. The cap for gas year '18 is around 19 bcm, but the target is to produce less, which also Eirik refereed to.

Further, Groningen production is planned to reduce to 12 bcm from gas year 2021 and to be closed fully by 2025. In 2018, the production from the U.K. was around 38 bcm, which is about 2 bcm higher than in 2017. The U.K. gas production is expected to be at around this level in 2019 and thereafter, decreasing rapidly from 2020 and onwards. The NCS gas supply going forward will continue to be strong at levels slightly above the recent levels and this is illustrated in the bar diagram on the right-hand side.

North Africa is expected to be stable at current levels around 38 bcm and start declining from 2020s. Supply from Caspian region will arrive to Europe around 2020 primarily to Italy and with a slow buildup. The balance for Europe shows an increasing import dependency with Russian gas and LNG filling this gap. The Russian gas supply is expected to remain at 2017 and 2018 level, which means the market share of around 35%. This means that LNG import to Europe needs to be grow to above 70 bcm by 2022, representing a growth of more than 40% from the current level. And this fits well with the increase in global LNG coming on stream and that would find its way to Europe.

In 2018, Europe absorbed around 10% of the global LNG capacity. Whilst in 2020, Europe will need to attract 15% of the available global LNG capacity to cover their supply gap.

To sum up my presentation, I will illustrate the various drivers with some symbols to show their impact on the prices in Europe for this year and also on the -- for the development beyond 2022. Domestic production will continue to decline that puts an upward pressure on the prices in both these time periods and pipeline imports will continue to be strong providing a negative price pressure. The storage inventories are currently high, which provides a negative pressure on the prices.

However, going forward, we asses storage to have a neutral impact on price. The demand is expected to be flat and consequently has a neutral impact throughout this time horizon.

As the marginal source of supply, the development of the global LNG supply-and-demand balance will impact the European markets prices. In the short term, we expect the supply to grow somewhat faster than the demand, putting up downward pressure on prices from the very strong level we have seen in 2018. We are not facing the supply -- the LNG supply overhang we have predicted for some time. However, this supply overhang came later than assumed due to delays in capacity buildup and it will last shorter due to the continued growth in demand. There is still significant uncertainty and we will experience volatility going forward also when taking into account weather factors that influence strongly on the gas market.

The lower price level is a temporary effect as low prices will stimulate the demand and by 2022, the global balance looks tighter. If the prices drop further from the current level, the price will recover earlier as the market rebalancing will be accelerated.

On the right-hand prize graph, you can see that European forward pricing fall within the coal switching range, which stimulates demand. Further, we see the forward prices are mostly within the Henry Hub Europe band, which means that the U.S. LNG producers do not have full cost recovery with such prices. We believe the situation will not last beyond the next couple of years and prices will start to recover from early 2020s.

And now, I would like to hand it over to Tor Martin, who will talk around how we create value from our portfolio of gas. Thank you.

Tor Martin Anfinnsen^ Thank you, Elizabeth, and good morning, ladies and gentlemen. I'll spend the next few minutes taking you through our gas marketing and trading activities in 2018 and also gaze a bit forward for the next couple of years.

Now as Head of Equinor's Marketing and Trading unit, my main priorities are first to bring whatever we produce to market and to honor the commitments we have in the market and secondly, to ensure that we capture full and fair value of our production. Then lastly, and you could call it the icing on the cake is, to trade for additional margins on top of that but also to trade to support the value of our equity production.

Now in the presentation I have for you here, I will address primarily how we provide competitive and reliable gas to the markets in 2018, how we now prepare for future deliveries of gas and how we sell the gas and how we also reinforce and strengthen our commercial capabilities going forward. But before I start, I just want to remind you that the volumes we market on the gas side as one portfolio comprises of Equinor equity and also the Norwegian state equity. Just to avoid any misunderstandings, I talk about that combined portfolio when I present here to you today.

So there are 2, let's see, if they both work. This one didn't. This one did. Thank you. So looking back at 2018 and what a year that was. Prices

were exceptional. I can hardly remember and I've been at this for quite a few years that we had price levels as we saw in 2018. And we had high demand and we had high volatility, which is good from a trading point of view and also, we saw LNG continuing to drive the commoditization of natural gas moving from regional to an increasingly global market for gas.

We responded to the market by selling more than 100 bcm of gas and some third-party volumes into this market and that is the bigger volume than for example, Shell's global LNG portfolio, just to put it in context of size.

And in total, we and the NCS had an export of 114.2 bcm in 2018, which is just shy of the 2017 figures and this gas ends up in all the main markets in northern Europe. This was enabled by high flow levels to our customers, supported then by good regularity on the NCS and in the delivery system to the market.

So as compared to 2017, the results within trading and marketing and trading improved significantly supported also by high LNG prices and cold spikes in the U.S. last winter.

Now looking at the last quarter of 2018, our average invoiced, not the market price as observed, but our invoiced European gas price increased by 22% compared to the same quarter of the year before. This was very much related to the increasing coal prices, as Elizabeth just alluded to, high demand from storage and storage injection and lower LNG supply.

In the U.S., our average U.S. invoiced price increased by 42% in the same period again, mainly due to an increase in the Henry Hub prices. For 2019 and for 2020, what we need to prepare for is continued strong demand for gas in Europe, but as Elizabeth said, more volatility, primarily driven by LNG demand in Asia and the increasing share of intermittency or intermittent power generation here in Europe. The dark horse in all of this will be Asian demand for gas, in particular Chinese demand. And as Elizabeth pointed out, there is a possible supply overhang of LNG. But I think, this is at least the third year that we have cautioned about supply overhang and what that can do to prices and we've been surprised, if you will, on the positive side every single year. New supply is much more easy to predict than new demand. The bottlenecks on demand are unplugged more quickly than the bottlenecks, if you will, on supply.

So I lean heavily on and trust Elizabeth's analysis, but I just remind you, we have been surprised on the upside previously. Anyway, we need to be prepared for all different outcomes and we do so primarily by preparing new and competitive supplies of gas into the market and we do have the most competitive offering of gas into Europe. There is no one can beat us on cost to market, including U.S. LNG. And we do that by utilizing the flexibility we have and ability to flow and flow between the main European markets. And lastly, by strengthening our trading capabilities, creating further market opportunities also for our equity volumes.

So our Norwegian gas continues to be well positioned to supply competitively in the European market. Through the flexible gas machine, as we like to call it, Irene said 10,000 kilometers, I say 9000-plus kilometers of integrated pipeline system, where there are 40 producing fields bolted on to this integrated system. It's the world's largest offshore integrated delivery system for gas. We can provide gas to all the main markets and we can shift between these markets as the demand/pricing signals dictate.

In 2018, we took further steps to maintain the competitive position of the NCS. And we are on track to maintain a very high and profitable standard at roughly current levels towards 2030.

And in August, as Irene alluded to, we presented a strategy for more gas exploration and over the next 10 years, we are planning on drilling up to 3,000 production and exploration wells on the NCS to deliver on this ambition. Also, late last year, just before Christmas, we had a new field starting up. The field is called Aasta Hansteen. Don't you just love these Norwegian field names. It so rolls so easily off the tongue.

This is a remarkable field in many ways. It's very deep water, it's very far up north. So it meant we developed our infrastructure, delivery system much further north than what we have done previously. So it opens up a new province of gas in the North Sea. Then the 482 kilometer pipeline that connects this field to the Nyhamma receiving facility on the West Norwegian Northwest Coast constitutes the northern leg of what then becomes a 1,700 kilometer gas highway from Aasta Hansteen in the north to the U.K. market in the south.

And once you've taken these fundamental investments and infrastructure, it means it is much easier to bolt-on new reserves that lie close to this pipeline tranch at very competitive terms.

Furthermore, before Christmas, the Norwegian Ministry… Just before I quit on Aasta Hansteen, Aasta Hansteen is now at peak production or plateau production 6 bcm, but that plateau will increase towards 7.5 over the next few years. Then, in addition to this, before Christmas, the Norwegian Ministry of Petroleum and Energy approved the plan for development and operation or the so-called PDO of the Troll Phase 3 development and for those of you who are not familiar with what Troll is, Troll is the biggest gas producer on the NCS, currently providing roughly 7% to 8% of total European gas demand. And with this Phase III development, this will extend the productive life of Troll to beyond 2050, at which time, I can guarantee you I will not be standing at this podium.

Turning to LNG. Now, although our European gas market is exposed to the global energy market, we are a small player in LNG per se, but as, Irene said, we do live with the exposure of LNG even if we have a low LNG share through the interconnectivity now or the inter-linkage of the markets. However, the flexibility of our LNG portfolio provides us with quite a lot of optionality, commercial optionality that we utilize quite extensively.

And as for natural gas, we add some third-party trading to support the equity portfolio we have. We delivered LNG to most continents. In 2018, we had 58 cargoes. 90% of this came from our Hammerfest and Snøhvit facility.

I'm a bit ahead, don't I. I think the slides are slightly different sequence there. Okay. Anyway. So let's see if it now matches, yes, now the slide matches the text.

Turning to the U.S. then. Of course, outside of Norway and the activities we also have in Brazil, U.S. is one of our core production areas. And onshore, in the U.S., we operate the fields in the Bakken area, the Eagle Ford area and the Marcellus area. And we are now producing roughly 1 Bcf per day, which equates to roughly 10 bcm annually in the U.S. And the positions we have in the Marcellus Utica area alongside the transportation infrastructure, we have out of those areas. So the egress we have out of those areas constitute the backbone of our natural gas marketing operations in U.S.

And as the map shows, here, we have long-term export capacity to the premium consumption areas, both in and around New York, Toronto and the Eastern Canada. And starting from Q1 this year, we have also secured new capacity going south, which was secured access to the U.S. Gulf Coast area, a market with industrial growth using gas, exports of LNG and also exports to Mexico. And our production then, combined with a long-term transportation we have into this region enables us to take out the full value also of these premium markets.

I'll be excited to see what comes up. Yes, okay. Looks good. Back to Europe. We just heard Elizabeth say that 2018 was a very volatile year. We saw gas prices moving a lot by factors like weather, Asian demand and also by the intermittency in power generation and going forward, and as gas in the power sector increases, this volatility might very well increase further by the increase in intermittency that will need gas response, so to speak. And we are actively responding to the changes we see in the gas market.

Now, as you know or as I think at least most of you know, our gas sales today are based on a basket of different indices, mainly to reflect the demand we see in the market. And over the years, of course, we went from long-term contracts with oil indexations to what we have today, i.e., pure gas indexation. And at every turn, when we made these changes, we've also realized further commercial potential in our portfolio. Now we are changing how we price into the market again. We will be through 2020 now tilting our gas sales towards day-ahead and month-ahead indices with a waiting on the former over the latter.

And then, as we get towards 2020 and beyond, the realized price should mostly reflect the short-term market indices. And we do this because the demand also for longer-term indices is fading away. But we also do this because this gives us the flexibility to manage our portfolio differently. It gives us the possibility now to have a larger share of our total gas send out benefit, for example, from events like the Beast from the East that we saw last winter and also from spiking in the market

for other reasons. It also enables us to actively risk manage the total portfolio we have better through hedging positions and otherwise taking active positions in the market also.

So what you will see in our reporting is gas result through the realized prices in our upstream unit that largely reflects volume times short-term indices. And then, you will see gas result in the downstream part of Equinor or the MMP part that largely reflects the deviations we choose to take from those short-term indices, i.e., when we choose to actively manage the portfolio. And that is an important change to us. Don't expect that this will create massive windfalls, but it contributes, if you will, to what Irene just said about expectations to be in the higher end of the value delta we report.

Turning now to Danske Commodities and this is something that is sort of on my plate and agenda every day now. It's in a critical phase. We just passed financial close, 1st of January, and I think it's the most significant step towards further commercial -- developing further commercial capabilities that we have taken, if not ever, then at least for a long, long time. And this is an acquisition, actually one of Europe's largest short-term power traders, but they also have a significant gas trading activity as well. I'll dwell a little bit upon that.

Irene, gave you the key rationale for why we're doing this and it is associated with our high ambitions on the new energy side and our believe that we are not able to deliver fully on that unless we also have the full commercial capabilities to take this out to the market and also take the margin that lies beyond, if you will, of the power purchasing agreements.

And what then is the Danske Commodity delivers in terms of this. They have a market presence in basically all European power markets. So they have a scale of operations. That means that anything we do in Europe, we can more or less bolt-on to the capabilities they have and the existing presence they have. They have competence that goes much deeper than what we have had in Equinor within this space ourselves. That also means that, that they are or that also enables them to be, if you will, the leader of the pack today out in the European power trading scene. They have state-of-the-art systems to manage their power portfolio and that is something we will benefit from both in terms of the power trading they do, but beyond that also, I'll turn to that.

And of course, this is a company with a proven track record. They've demonstrated year after year after year that they are able to turn healthy profits and have actually grown profits quite consistently. When we combine then the power of the portfolio of Danske Commodities and Equinor and all this by the way, all the power we handle will be handled by Danske Commodities going forward. We marketed and traded 300 terawatt hours in 2018. We have to wait till the end of 2019 before we can say we really had the shared portfolio, but it's something about the order of magnitude of this.

But this acquisition has value to us beyond the strategic rationale linked to power. Again, because they have state-of-the-art systems to support their business. We believe that they can be utilized also for the main part of our gas business. They are very advanced in algorithmic trading, use of machine learning and through that can also contribute to the rest of our business, including the gas business. We say jokingly that what we have acquired is really an IT company with traders. So they place that much emphasis on technology and to be in the technological lead, if you will, or vanguard of the trading business.

So far and this is before the financial close, before we could sort of really look under the hood of this company and what it was, we had already identified EUR 15 million of synergies on the power side alone. This is before we factor in, call it, the strategic value of having this capability in terms of future projects in our nice portfolio and also before we start factoring in and realizing synergies on the gas side. And then also, on the basis of the strong EBIT that this company provides, we're actually very happy with the acquisition price of EUR 400 million that we paid for it.

And for those of you who are concerned about that Equinor will sort of drown out the unique DNA of a company like this. We are very cautious about that and we'll be very nimble in our approach. We want this to be something that we can learn from in the rest of our commercial activity, rather than something we drown out. Now to conclude, as responsible then for trading and marketing of natural gas and power in Equinor, my focus this year will be to develop our capabilities further by amongst other things, capture the synergies related to our acquisition of Danske Commodities, to implement the new pricing benchmark and our revised approach to risk management and to continue our progress within algo-assisted trading and machine learning. And all this to support our main priorities to end off where I started, which is to bring our production to the market on time and in accordance with our commitments, to ensure that we capture full and fair markets value of this production and lastly, to trade, to generate additional margins and to support the value of the equity portfolio. And with that, I close, and thank you, very much.

Peter Hutton^ Thank you to, Martin, and thanks to everybody. I'd like to thank all the speakers, Irene, Eirik, Elisabeth, and to Martin. Particularly, I'd like to thank Irene, who you may noticed is struggling with a cold today. So we talk about commitment to our shareholders and I think here we are in physical form. So thank you very much for being able to do that today. Now we'll do some questions around. There is an opportunity in this session here and also afterwards as well over a drink and expensive sandwich and also if you have any coming in on the web as well. So we're fairly small here. If any question, please raise your hand. I saw you first, Michele, and then John and then we'll go around the room. I think it might be if you're able to, yes, okay.

Michele Della Vigna^ Thank you. Thank you for the presentation. Two questions, if I may. The first one relates to your power trading capability, which you are now building up with acquisition of the Danske trading. And historically, you have always had trading around physical

assets in oil and in gas. Do you think to be successful in power you will need physical assets as well and not just some of the renewable power that you are building but also gas-fired power stations. Secondly, on the long-term versus short-term selling of gas, could you lay out for 2019 how much of at least the split between where you will sell on a 1 day, 1 month forward versus what you sell effectively 6 to 12 months forward? And given that you lay out a short-term bearish view on gas for 2019, would you be rationale to assume that you sold more long-term in 2019 than what you intend to do longer term? Thank you.

Irene Rummelhoff^ You want to the last one and I can take the first one.

Tor Martin Anfinnsen^ So the basket of indices we have will roll off through this year, as you realize every day of the year. To the extent we hold on to some of those indices beyond 2019, that is because we will then have an active market view on longer indices being better than shorter indices, but we won't do that for all the portfolio. You will see that rather on the margin than you will see it as shifting the entire portfolio on to longer indices and...

Irene Rummelhoff^ Just to comment on the physical assets for Danske commodity, they are actually also trading around physical assets already. One of their main businesses is actually trading around interconnector capabilities. So they'll take short-term interconnect capability or capacities and trade around the geographical differences. Going forward, they will trade the power out of our renewable assets and we are certainly hoping to grow that one. And I also do think there is a very interesting and emerging scope with the corporate PPAs selling renewable into which we're hoping they're going to help us develop such capability I think.

Peter Hutton^ Next question is Jon, then Oswald and then behind as well.

Jonathon Rigby^ It is Jon Rigby from UBS. Three questions actually. The first is on, sorry, they are related though. The first is just on the structure of pricing as we move forward and you alluded to the increase of U.S. export capacity rising, but also indicated and flagged up that Europe was effectively traded against Asian pricing and therefore by virtue of that, really oil prices, I think, and that was sort of implicit in that chart you showed. Do you think as we move forward, we're going to start to see a sort of bifurcated year where Asia influences sort of winter pricing in Europe and the U.S. influences summer pricing in Europe because of the nature of exports and seasonality of demand or do you think there's a seasonality of supply as well? The second is just on China on your demand numbers. Do you get nervous in terms of China? You, I think, alluded to an 8 bcm expectation and 20 bcm outcome. A lot that's driven by policy. Even within the year, demand was driven by, I think, inventory buying in the summer, which I think, the Chinese did in reaction to the shortage of gas in last winter. So again, I think, people got carried away with demand rolling through 2018 and were disappointed in 4Q. And then just one sort of more philosophical question is you talked about trade disputes and highlighted the fact that the Chinese have put tariffs on U.S. LNG, but U.S. LNG is just a commodity like any other and therefore, can be substituted by supply from somewhere else. So

do you think that's all a bit of a sham and I hope that actually is that kind of thing, doesn't really affect either oil markets or gas markets in the medium term? Thanks and thanks Peter for your indulgence.

Irene Rummelhoff^ You take the first one.

Eirik Waerness^ Okay, that's fine. I think on your first question on how these different regional markets will interact during the season, I think, part of the story here is it is difficult to say something systematic about that because the seasonal variation will depend on the local weather every season and the local expectations for weather. And what we are seeing is, of course, that to the extent that we have inter-linkages between these markets, now de facto being established, there will be much less scope for regional price variation at any given point in time. And then you can during some periods of the year, it's the impact of the Asian prices that comes into Europe because of differences in weather conditions, et cetera, et cetera, and also supply disruptions. So I think, the main story is that it is difficult to see anything systematic here happening due to the fact that we suddenly are more closely interlinked with Asia and have access to U.S. supply. So but then, of course, depending on how the market acts you see that from every season to season, you can guess the prices and be prepared to be surprised is the general piece of advice, I guess. On the trade protectionism and the signals in terms of tariffs, et cetera, et cetera, on the U.S. LNG to China, I mean, it's tiny. It has absolutely no impact on U.S. exports or revenues and it has hardly any impact on Chinese gas demand or gas costs as well. So this is part of politics. It's an important signal to the extent that it signals a greater concern on the Chinese side and potential for more tariffs on all the types of trade. As I showed you in the chart, I mean, there is a massive imbalance here in terms of how much The United States imports from China and vice versa. So relative to the size of the economy, it's the imports from -- in United States from China that is sort of the big market here. And then of course, any kind of tariff, as you say, it's a global commodity and if LNG as a consequence of higher tariffs doesn't become competitive in China, that LNG will move elsewhere. So at the margin, will then contribute to a slightly weaker global market in a sense, but a more tight market in China and they have to get their gas elsewhere from. So it's -- but the general worry is of course that this is a protectionism movement that we see now. Will increase risk premiums, it will increase or decrease consumer and business sentiment and it will lower economic growth compared to what we otherwise would have.

Irene Rummelhoff^ Do you want to talk to the slowing demand in China?

Elisabeth Aarrestad^ Yes, I'll touch upon that. Because as I said last year, we estimated a growth in China of around 8 bcm on the LNG side, which is similar size that we also see going forward. So I would say that it was a very strong surprise to the upside in 2018 would go into 2020. So I think it's -- I'm not too nervous on the growth, it will be muted compared to 2018, but that was really exceptional with the growth we saw there.

Peter Hutton^ Oswald?

Oswald C. Clint^ Thank you very much. Just some of your assumptions obviously, with Europe, you're implying a greater import dependency from LNG into Europe and one of the assumptions underpinning that is Russia being stable you said at 35%. So I just want to understand, why you think Russia will just allow that to happen? It's obviously that perennial question will they remain with a stable position? What intel do you have that leads you to believe that will be the case? And perhaps just linked to that, what do you expect for the Ukrainian pipe negotiations at the end of 2019? And then my second question was more flipping over to Brazil. You talked about this offshore Norwegian gas system, the largest in the world, but you also said significant gas offshore in Brazil. I remember BG talking about this 10 years ago where Bcf of gas for every billion barrels of oil and maybe they weren't the right company to develop that. So what steps are you taking? How soon do you think you can do something meaningful with offshore gas monetization in Brazil?

Eirik Waerness^ You want to take the last one? I can take the first one and we have an expert in the back to take the second one.

Irene Rummelhoff^ I can definitely take the last one. And also just a general comment, I guess, we worked alongside them for 50 years and they've always behaved rationally. They've never had any intention of overflooding the market with gas and we see no indication of that going forward either, but...

Eirik Waerness^ No, I think, given the general story is of course that there is a bilateral dependence between Russia and the EU and they've been depending on the market and we depending on supply as Europeans. We don't have any specific intelligence, but there is something about being at least if you look at this as an economist, with an LNG price delivering a price level to Europe, it is fundamentally in the interest of all the economic players delivering gas to allow that LNG to be part of the market. And then the question is of course, to what extent, what are the short term costs potentially increasing your exports, if you see a market that is growing and increasing import gap or if you allow that to be stable. And then in the balance of our analysis, we assume that the Russian exports will be relatively stable and then the LNG takes the swing. If you have supply disruptions going on somewhere and then somebody has to step in and generally those player with most of the flexible capacity.

Peter Hutton^ We have an analyst at the back to maybe...

Irene Rummelhoff^ And also with respect to Ukranian question.

Elisabeth Aarrestad^ Then there is a kind of not so many things which I can add on what you'd already said, so it doesn't make sense for the Russian supply to just flow lot of more gas just to kind of dipping of the prices. So I think, they will then act rationally. Also, there is a question of the extra capacity available. So even they want to flow more, there is also limitation how much they can flow. On the Ukrainian situation, I mean, on the transit arrangement, which is expired by the end of this year. There's been a quite a few rounds already. There is

also new expected round of negotiation, which is going to be in May. What we think at the end of the day maybe the parties will agree because both parties desperately in need for this arrangement to be in place for Gazprom, also as for the Ukrainian route. So it's probably will be delayed till probably last day of this year, but we expect that it will be in place, maybe not a long-term arrangement, maybe for a year, short-term arrangement with a different but not booking the full capacities, but we expect that it will be in place.

Irene Rummelhoff^ Because if not, there will be a serious disruption of gas coming into Europe because we don't expect Nord Stream 2 to come on stream until maybe 2021, so yes. Brazil, and we have a significant demand of associated gas with our Carcará field and we also have a gas condensate discovery in Pão de Açúcar. And I think Margareth said at the Capital Markets update that for the first phase of Carcará, we're going to reenter the gas to increase the oil recovery. But there's going to be at least a second phase and maybe even a third phase of Carcará and definitely a bmc 33 Pão de Açúcar needs gas monetization solutions. And we know that Brazil is underdeveloped, I guess, when it comes to utilizing gas in the market. So we're almost back to where we were when we started developing the Norwegian continental shelf. We need to develop infrastructure from the offshore installations to shore and we might even have to stimulate, I guess, demand through investments or partnerships with gas-to-power plants, petrochemical plants, et cetera, et cetera. And we have a strong team and Todd Martin has some people down there, we have some people who actually were almost part of developing the Norwegian continental shelf. There is some serious confidants down there. So we remain optimistic and see this as an opportunity and to add value to the Brazilian assets, but it's not straightforward.

Peter Hutton^ There is a question on the back and then we will come forward.

John Twomey^ My name is John Twomey from Bloomberg and I have a question mainly about Troll. So we talked a lot about in the past and Equinor have had the mantra value over volume and also we talked a lot about utilizing the flexibility in portfolio. The second thing we talked about is particularly bearish outlook potentially for European gas prices this summer with high storage and lots of LNG. My question is, what are the kind of economics that you're thinking about to utilize the flexibility in Troll? And by that, I mean, differing production from summer '19 to summer '20. What type of rate of return would you be motivated to think about that decision?

Irene Rummelhoff^ Seems like the Bloomberg colleagues are well coordinated because we have that question earlier and Tor Martin answered in a good way so I'm going to let him...

Tor Martin Anfinnsen^ So I think I have to start, if you will, rather more technically because otherwise I can't follow the logic towards the end, but the Troll field is a field that has given daily production capacity, but the Norwegian Ministry then has said that you can't utilize that full capacity every day of the year because the outtake from the field then could then undermine or reduce the oil outtake, not only day

by day basis, but the total oil we could get out of the reservoir, how much interconnection is there between these reservoirs. So they said, you can't utilize it daily, max we'll give you an annual production quota, but you can swing within the day as long as you don't exceed the annual quota in total. Now, over time, as we've gained experience, there is less and less concern that there is, if you will, this link between gas outtake and what you can get out of the oil part of the reservoir. So over time the ministry has granted us a higher annual take out of Troll to the limit where there is now a very little, call it, flexible capacity left. Our default is always on all fields produce flat-out. We are a price taker, but as I also said that we do have the most competitive gas into this market. So if anyone should turn off the tap, it should not be us. And then in addition to this flexibility now being reduced, there is still a little bit left, at least for the time being, but we operate that flexibility on the basis that you can take out more 1 year provided you redeliver that flexibility to utilize another year. We are now in a redelivery year. So you will see that this technical flexibility we have is even more reduced than it would have been otherwise. So don't expect anything big from Troll in terms of additional value from utilizing this wing unfortunately.

Peter Hutton^ Question from Danni.

Danni Li^ It is Danni from Barclays. I have got really 2 quick questions, if I may, so both related to your 2020 ambitions for MMP. So the first question is, you talk about a 4% reduction in emissions. Do you think it is enough and given Danske Commodities? And the second question is related to the digitalization. So I'm wondering, could you please talk about potential cost savings from this? Thank you.

Irene Rummelhoff^ I inherited the 4% emission reduction when I came into MMP. I think there is more to gain. And I think there is more to be proud of than just the emissions from our onshore plants, which this target is related to because we are doing tremendous work on reducing emissions, for instance, from the shipping fleet. A lot of our new shuttle tankers and vessels are now running on LNG, that's not counted into that number. There is a potential to electrify some of these plants, so we have established a team that are developing an MMP climate road map that will look into CO2 emissions from all our assets, but also potentially if we can run our refineries slightly different than, et cetera, et cetera. So I think, there is more to be had than more to come on that.

Tor Martin Anfinnsen^ Can I just add on that? We are the first operator to have actually hiring shipping capacity, very large gas carriers fuels on LPG. So that's the first in the world also, which will contribute further.

Irene Rummelhoff^ For both LPG and LNG, and we're introducing much more batteries, I think, in some of these vessels as well to reduce the emissions. Then on digitalization, what are the numbers? We have not quantified what we think the numbers are as of today, but they are significant and I was quite impressed when I was down at Danske to see how they've actually developed the capability. And did I have that picture of -- so we were down there and each trader is sitting there with

15 screens and they are trading at 15 minute intervals. And you just understand that the human capacity is not enough to really grasp all this information and act as quickly and which is something they've taken into account that they have are very active algo-trading system. So I was sitting there and watching 6 trades come in at a second. So that's why they can do 4000 trades. And we have an untapped potential here or the whole industry, I think, has an untapped potential in this respect. But like I also talked about the plants opting the regularity, getting down the cost, getting down the tariffs, it's significant, but maybe next year, I'll have a number, but even...

Eirik Waerness^ Then we'll just have both the screens.

Tor Martin Anfinnsen^ So I guess, it's fair to say that whatever the synergies we can get out of this or the benefits we can get out of this, it will happen a lot faster due to the fact that we now have Danske Commodities and their capabilities on board.

Irene Rummelhoff^ And they also led an industry correlation, I guess, of starting a start-up called VAKT, who is developing a blockchain technology for trading business. So we're in -- very soon we're going to start implementing some of the procedures that they are developing.

Peter Hutton^ Another question in the hall from Alwyn

Alwyn Thomas^ Can I just talk one thing you mentioned on the way you may change your gas realization due to the new businesses between upstream and downstream at MMP, Could you just maybe clarify that comment again, how you report on your earnings? And then just a follow up. Couple of questions, one area that wasn't really discussed very much today was Africa. So I was kind of interested to get your thoughts looking forward there. And on the technology side, what you see on the implement -- how do you think the effective or possible implementation of carbon capture storage will impact the markets over the next 20-or-so years? Thanks.

Irene Rummelhoff^ Do you want to give a go on the transport price?

Tor Martin Anfinnsen^ So we wanted to go from passive management of the portfolio. You get, if you will, the value of the gas where the indices you have chosen to have and that's through more active management. And that means that the active part of this handling will be sitting in our unit, call it the passive indices and the result of that in terms of realized price is what you will see with the upstream. So you will see in the upstream a volumes times price and price then being combination of day ahead and month ahead. You know what you get, if you will, as an analyst there. And the weighting will be more towards day ahead than to month ahead. And without being able to give you a precise number, which is roughly 2/3 on the day ahead and 1/3 on the month ahead. And then any deviation from that and there could still be deviations. Those will be deviations as a consequence of an active view of the market. And then that could mean we could convert some shorter indices to longer indices because we believe that is sensible for whatever reason and that's in a sense what I meant by that if that makes any sense, okay.

Irene Rummelhoff^ Yes, you can or I can. I don't know if you were alluding to the Tanzania LNG project or more demand in Africa or...

Alwyn Thomas^ (inaudible)

Irene Rummelhoff^ Okay. I will then leave it to you.

Eirik Waerness^ I guess, on Africa, you can take one look at the supply side. There is potential for new gas coming out of there, Tanzania, being one example. It is bound to be much lower than it would have been in many other regions, if you look at Africa as a whole because of lack of infrastructure and lot of uncertainty and lack of regulation. On the demand side, Africa is still extremely small unfortunately. It will double its population over the next decades, strong economic growth, but from very low levels in terms of energy demand and you will see significant electrification hopefully with a lot of decentralized new renewables. It should be a lot of potential of modernization, which also would increase the role of gas in the overall energy picture in Africa. But also, that there is an enormous potential for increased energy efficiency and that will then limit the demand growth for primary energy, if you like, if they are able to realize that because it is an extremely inefficient use of energy as they have today. So you won't see Africa making a big dent in global primary energy demand anytime soon, unfortunately.

Irene Rummelhoff^ Few comments, I guess, on CCS. In any of the scenarios that Eirik and his team is developing and IEA and everyone, there is a significant demand of carbon capture storage included to actually meet 2 degrees, 1.5 degrees, but it's not really happening. Why is it not happening? I think primarily because there is no CO2 price and incentivize it. We are, however, working together with the Norwegian government, which are intent on developing a full-scale CCS project in Norway with the intention to capture CO2 from industry, not from the power plant in any form or kind because industry doesn't really have an alternative. A power plant you can exchange with renewables at least in an ideal world, but the industry like a fertilizer company or a steel producer or an aluminum company don't have alternatives of capturing that. Shipping the CO2, which is key because it allows some flexibility and then storing it under the Norwegian continental shelf. And the intention is also to further develop this as a third party storage, meaning that you could go to Rotterdam, you could go to Teeside or some of these heavy industrialized areas and pick up CO2, ship it and store it in the same location. And this has not been decided but it is actively worked and we are part of it. Taking it one step further, this will also then potentially allow us to convert natural gas into hydrogen. So instead of having post-combustion CCS on a gas-fired power plants, we would do pre-combustion CO2 capture basically and deliver hydrogen to customers, whereas, that would be a power plant, whereas that would be for industrial use or even in the transport sector. These are things that are not happening anytime soon, but these are things that we feel as part of our expansion into a broader energy company has to take a lead in because we have significant and probably the most experience in the world with carbon capture and storage having stored CO2 at the Snøhvit field, having stored CO2 at the Sleipner field for years. So this is what I

alluded to that potentially gas can also be a destination fuel, not only a bridging fuel.

Tor Martin Anfinnsen^ And we've been involved in the study of the H21 project in Northern England looking at potential hydrogen also in heating and cooking industry.

Irene Rummelhoff^ And it is a good point because as Eirik talked about in his presentation as well, we tend to think that gas goes into the power sector, but more at least in Europe our gas, almost twice as much goes into the heating segment and it stands for a lot of the emissions. So what you do if you want to electrify that segment, it's going to be super costly and very, very complicated and because the energy density of gas is so high. So if you take Netherlands for instance and if you want to electrify all of what they use, gas and heat segment for, you need to nine-double the investment in the grid and I'm not even sure if it's possible to have that amount of new cables, et cetera, et cetera.

Eirik Waerness^ And where are you going to locate the windmills.

Irene Rummelhoff^ So it's quite a challenge and interesting segment that the world has only touched the surface on, I guess, how to decarbonize the heat segment, how to decarbonize the heavier transportation and so on.

Peter Hutton^ I think there's last question from inside the hall. We did have one more, if I may. Just for your information, we did have some from the web but they've all been asked. So apologies for those people who didn't get those first.

Stephen Carter^ Steve Carter from Citadel. Just a sort of question about some particular fields. So field level data from, forgive me, if I pronounced this wrong, Kvitebjorn and Åsgard show that those fields have produced a little bit less in the last couple of months. Are those fields in any sort of long-term decline or they are just getting constrained by processing facility capacity?

Tor Martin Anfinnsen^ I see you looking at me. I honestly can't answer. I don't know if anyone -- I mean...

Peter Hutton^ We're not aware of any particular issues there. I haven't seen the field data over the last couple of months.

Stephen Carter^ It is the NPD data that's...

Peter Hutton^ I'm not aware of any issues in that one. You can follow-up directly just to be sure on that one but it was correct one on Åsgard.

Irene Rummelhoff^ Not bad pronunciation by the way.

Peter Hutton^ With that, thank you very much to everybody. Thank you to the speakers. I'd like to invite people through to have something to eat and drink with us. In addition to the presenters here, we've got some analysts as well who can also answer some of your questions. And also at

the back is Helge Haugane who has the privilege of counting the money every quarter as well. So you can ask him some questions.

Tor Martin Anfinnsen^ (inaudible) LNG and natural gas activity, where we will be able to answer more specific questions than I am.

Peter Hutton^ So thanks, everybody. Thanks to everybody who joined us on the web. And as ever if there are any other further questions, please come through to Investor Relations. Thanks to Erik and Ida as well for helping to organize this. Thanks a lot. Thank you.