

Corporation:	Fortum Oyj
Title:	Fortum's Interim Report January-September 2018
Speakers:	Pekka Lundmark, President & CEO Markus Rauramo, CFO & COO Ingela Ulfves, Head of IR
Date:	24.10.2018
Duration:	01:16:48

Ingela Ulfves: Welcome to all of you, both those of you who are here with us today at our headquarters in Espoo, and those of you who are listening online. We are hosting a joint webcasted news conference on Fortum's third quarter and nine months here today. Please note that this event is being recorded, and a replay will be available after the webcast on our website. My name is Ingela Ulfves, and I am the investor relations here at Fortum. Our presenters today are our CEO, **Pekka Lundmark**, and our CFO, Markus Rauramo. And, with me here is also my colleagues from the IR team, Måns and Rauno. Pekka and Markus will start by presenting Fortum's Q3 numbers and the performance, after which we will then enter into the Q&A session. You are also able to ask questions online in the chat. I now hand over to Pekka, who will start the presentation, please.

Pekka Lundmark: Thank you very much, Ingela. Dear investors, dear analysts, dear representatives of the press. The third quarter in Fortum is of course always seasonally weak. This time, it was characterised by volatile power prices, volatile commodity prices, volatile CO₂ prices, and especially a warm and dry weather. On the positive side, power prices were up significantly year over year. But, of course, this could not compensate the historically low hydro volumes that we had because of the dry weather. On the positive side also, clearly, in the quarter where the results of the Russia division which contributed to the overall results of the third quarter. As you have seen, we had comparable EBITDA of 230 million, which is up 10% from last year, and a slight increase in comparable operating profit to €96 million. What I want to point out, though, is that both EBITDA and EBIT figures here, the comparable numbers, they include 26

million from the sale of the Indian solar stake, which is part of the “capital recycling strategy” as we call it, where the idea is to be able to continually invest in new projects to take advantage of our competences in designing, building and operating our plans, but not necessarily having to own 100% of them in the long run. This is our way of releasing capital so that we would be able to reinvest that capital, then, into new projects. And, this gain of 26 million is recorded in the profit of this quarter. Our EPS was 5 cents. There are again items affecting comparability, both this year and last year. If both of them are eliminated, this would have been on the same level as last year. And, of course, what is very important, which is also connected to the release in capital in Indian solar is that we want to continue a high degree of balance sheet discipline, with focus on cash flow. This is really important now, especially after the Uniper transaction has been closed, which puts a stretch on our balance sheet.

Before market and result analysis, a quick update on some recent events. First of all, Uniper, after closing the transaction in June, we have taken steps to start working with the company, and our CFO, Markus Rauramo, has now taken his seat on the Uniper supervisory board, and he has been elected vice chairman. Our current key priority remains to agree with Uniper’s management on how to effectively cooperate in order to create value for the stakeholders of both companies. Unfortunately, this is taking longer than we would like. But, as you know, we have agreed with Uniper not to comment on any specifics about the cooperation talks, so this is all I will say about this matter today.

Other events. At the end of June, we won the right to build a 250-megawatt solar power plant in Karnataka, in India. This will be commissioned in 2019, and this is now exactly part of this capital strategy that I was talking about in the beginning. We released significant amount of capital, booked 26 million profit as a result of that transaction, and now we are reinvesting this, then, into new projects where this 250-megawatt will be the first one. Earlier in June, we also won a CSA auction in Russia to build 110 megawatts of solar, to be commissioned in 2021/2022, and our jointly-owned Fortnum-RUSNANO joint venture wind investment fund won the right to build 823 megawatts of CSA-supported wind capacity. These investments, some of them are pending, they will be done over time in due course. This is a right to build that capacity, but each investment decision will be done separately. Just this week, actually, we made an investment – or the fund, the joint venture fund made an investment decision to build 200 megawatts, and as we have earlier communicated, CSA tariffs for RES in Russia are valid for 15 years, and our view is that they are on a pretty attractive level. We have in our previous communications published what those tariffs are.

To continue on wind, we recently formally inaugurated a 76-megawatt Solberg wind power park in Sweden. This park is co-owned by Fortum and Skellefteå Kraft in equal 50-50 shares. After these investments, we have almost 300 megawatts of operational capacity, excluding the divested part of the Indian solar, and we have a pipeline of clearly over 1 gigawatts of new projects, so this shows that when we have in our strategy been talking about the ambition to grow into gigawatt scale in solar and wind, that this is actually happening.

In September, we inaugurated a multi-fuel combined heat and power CHP plant in Zabrze, Poland. It is among our biggest capacity investments lately, new capacity build-up projects. This plant will provide district heating to some 70,000 households in Zabrze and Bytom. And, most importantly, it will replace the outdated purely coal-fired units in Zabrze. The new plant has a production capacity of 140 megawatts of heat, and 75 megawatts of electricity, and the annual production is expected to amount to approximately 730 gigawatt-hours of electricity, and 550 gigawatt-hours of heat. In addition to Poland, we are taking active steps to reduce coal, used in district heating also here in Finland, and actually, just this morning, we published a decision to build a biomass-fired heat plant here in Espoo, with a capacity of 58 megawatts, commissioning 2020, and this will enable the shutdown of an old coal-fired heat boiler, also here in Espoo, reducing significantly emissions of the district heating system here.

We also just announced acquisition. This is a small bolt-on acquisition of a metal-recycling company in Finland, turnover of that company is 40 million, so it's a small company, but this is a small bolt-on, which goes together with the earlier Ekokem acquisition to strengthen and boost up the capabilities in our recycling offering.

And, finally, I would like to welcome Arun Aggarwal to Fortum, and Fortum's management team. Arun has officially started last week, and he will lead our strategic IT as well as digital innovation and transformation. As we've, several times, been speaking about digitalisation, artificial intelligence, many related technologies will fundamentally change many aspects of the energy system, and we have a high ambition level there. We want to be the digital winner within the utility space, and now we have a clear owner within the management team to drive this initiative for us.

IPCC report on climate change was published, and this was, of course, something that needs to be taken extremely seriously. According to IPCC, there is a robust difference between the impact of 1.5-degree and 2-degree scenarios, and adaptation needs are much lower in 1.5-degree scenario, and therefore focus should be on pursuing 1.5 degrees. But, this is really challenging

and requires a lot of actions. Major points in the report, which are connected to also to our sector is that the global net CO2 emissions should decline by 45% between the years 2010 and 2030. By 45%. And, our world should be net zero CO2 by 2050. Power sector should reduce emissions by 100% well before 2050, and of course, an interesting and important note in this context is that, according to IPCC, nuclear will play a big role, also, in the future. According to IPCC, full decarbonisation will not be possible without nuclear. Fortum calls for an ambitious EU climate strategy to reach carbon neutrality by 2050. Focus should be on early action. A stable visionary and long-term political framework for the economy is a prerequisite for European businesses investing in low-carbon technologies to remain competitive in the global market, and as we have said several times, our opinion is that when it comes to policy instruments, carbon pricing should be the key for reaching carbon neutrality, and in addition to that, if we really want to go to complete carbon neutrality by 2050, most likely we will also need market mechanisms to be developed to reward CO2 removal. Carbon pricing makes, obviously, those who emit CO2 pay, and that policy should be tighter and tighter every year, but in addition to that, we will need mechanisms also for rewarding CO2 removal.

Then, I move onto the hydrology situation. Q3 started with low precipitation, and hot weather, which decreased water reservoirs versus normal, and on this chart, the brown coloured line indicated 2018, and as you can see through the quarter, we have been below the normal levels, the grey dotted line represents the long term average. Weather changed in late August, and in Norway, September and consequently also, Q3, were the wettest on record in energy terms. High precipitation was followed by a rapid increase in water reservoirs there during September. However, still Norwegian reservoirs are below the normal level, and at the end of Q3, Norwegian reservoirs were about 7 terawatt hours below the long-term average. And, when you look at the smaller big graph here on this slide, you can see that this increase in reservoirs during Q3, or at the end of Q3, happened more or less exclusively in Norway. And, this explains our challenging situation. Prices were pushed down by the wet weather in Norway, but our key countries, Finland and Sweden, did not get that much precipitation. So, the wet weather did not reach Sweden, and therefore water reservoirs have stayed at therefore water reservoirs have stayed on a low level and clearly lower than long-term average. At the end of Q3, Swedish reservoirs were 6 terawatt hours below the long-term average. And, overall, at the end of Q3, Nordic water reservoirs were 89 terawatts, which is 13 terawatt hours, the whole Nordic, below the long-term average, and 10 terawatt hours below one year earlier. And, the most recent reservoir figures, the most up-to-date figures that we are currently -11 terawatt hours compared to long-term average, which

is roughly 10 terawatt hours below the situation a year ago. The Swedish reservoirs are currently 5 terawatt hours below long-term average.

Then, I move onto commodities, and I start from gas. As you can see here, gas prices were extremely strong during Q3 as the market was busy injecting into gas, gas into storages, while LNG supplies to Europe have been low. Despite this uptrend in CO2 prices, which we have seen, coal to gas switching has been minimal in continental Europe as the tight gas market has sought to reduce gas demand. Asia keeps growing in LNG imports, year-to-date growth in Asian LNG is 12%, with major contribution coming from China. China, where year-to-date import growth is 42%. Coal prices have found support in Q3 from boosted European generation margins as a result of nuclear outages, low hydro levels and improved competitiveness against gas. Clean dark spread has been going clearly up in Europe. In contrast to Europe, the coal market has been showing signs of weakness lately as the Chinese power utilities have been building higher stocks levels and authorities seeks to reduce coal imports. Some declines in Chinese coal imports in September, -7%, but still year-to-date 11% higher than in 2017. And, then, finally, on commodities comment on CO2 price, the tightened linear reduction factor in the European emission trading scheme of 2.2% will cut supply more aggressively during 2021-2030, than the current trajectory of 1.74%. However, even this is not enough for the Paris agreement emission level of even 2 degree global warming, let alone 1.5 as strongly recommended by the IPCC. Consequently, our opinion is that latest in the next LRF review in 2024, the EU should align and further tighten the ambition level. The cumulative CO2 allowance surplus is currently around 1,600 million tonnes, based on which the market stability reserve will take away 24% of next year's auction volumes, and put them into the MSR. And this decreases the total allowance supply and leads to an increased need for abatement. The classical source of abatement is to switch gas in front of coal in the merit order, but despite the good development in CO2 prices favouring gas, the gas price, as we saw earlier, has increased so much that the actual switching volume remains marginal so far. The switching volume is of course constructed so that the lower limit, which is currently around €20 with current coal and gas prices, shows competitiveness of inefficient coal versus efficient gas, and the high limit which is around €50 at the moment, is the switching point from efficient coal to inefficient gas. So, this explains why this current level of CO2, which is around 20 or so, is not yet driving any meaningful coal gas switching.

Power prices, the Nordic system price in Q3, was clearly higher a year ago, mostly due to higher cost of thermal production, but also due to drier hydrological situation compared to last year. So, we were clearly above last year's levels. But, as you can see here, it was the blue line in the annual graph which is in the upper right hand corner, the Nordic system price decreased with very wet

weather. That downward price trend continued also in October. Nordic forward prices, which is the other graph on the right hand side, this is forwards for 2019. They decreased from the peak at the end of August, due to the changed hydrological situation, short end of the curve has come down more with wetter hydrology, but also full year 2019 has decreased a little bit. But, still, price for 2019 is around €10 higher than a year ago, driven by higher cost of thermal production. German price was €3 higher than Nordic price in Q3 2018, but German price was actually €1.10 lower than Nordic's system price during the first three quarters. But now, looking at the recent development, the forward price spread between Nordic and German system price has increased clearly during Q3 as you can see in the graph. As German price has got continued support from increasing cost of thermal production, and at the same time Nordic price has been depressed by wet weather hydrology. The spread is actually pretty high at the moment, it's about €15, which can be compared to the long term realised average, which is about €5. The spot prices, as I said, in Q3 increased significantly, and we saw very handsome growth of 77% in spot price, between Q3 this year, and Q3 last year. Spot price for power was driven by higher coal, increased from \$87 per tonne last year to \$99 per tonne this year, and of course CO2 from 9 to 19. But, of course, achieved power price so limited upside due to the hedging levels that we had, and then on the Russian side, spot price was affected by a weaker supply demand balance, and achieved power price which was slightly lower than a year ago was affected by weaker rouble.

Here in summary format, the key figures we had in Q3 sales. 6% increase, I already mentioned the EBITDA and the operating profit numbers and also commented on EPS, one number to note is last 12-month comparable EBITDA, which is now 1,474 million, compared to 1.275 in full year 2017.

Then, before Markus continues, I will make short comments on EH division, and I start from generation, which of course was the division that was heavily in this quarter impacted by low hydro production. This was clearly the lowest production quarter in Fortum's history by quite a big margin. Production was 2.9 terawatt hours, last year 5 terawatt hours. This was partly, but only partly, compensated by higher achievable prices and lower taxes in Sweden. On a more positive note, all nuclear outages, all eight units that we own either directly or indirectly, through joint ventures, all eight units have not passed their annual outages, which means that we are looking at a pretty stable production expectation for Q4. Despite the weaker Q3 in the generation division, year-to-date, the first three quarters, we are still looking at quite a handsome increase in comparable operating profit – 442 million, compared to 317 million.

City solutions – I already commented earlier that the quarter was warm and consequently our heat volumes were 10% lower than a year ago. Of course, now, as we have discussed earlier, the Hafslund heat acquisition, the joint venture that we now are consolidating in Norway, is increasing the seasonality of the city solutions business, since the heating business makes more or less all of its profits in Q1 and Q4, and that's why the result also this year was weak, roughly on the same level as last year. Fortum Oslo Varme was 11 million negative in the quarter, last year 6 million negative. This comes from the fact that this year it was consolidated for three months, and last year only for the months of August and September. If this is eliminated, then the rest of city solutions, despite what they actually improved their result.

Consumer solutions was suffering from continued high churn and very strong competitive situation. We had increased comparable EBITDA 22 million versus 10 million, but of course, then because of the Hafslund-related depreciation, decreasing comparable operating profit was 5 million to 7 million. Here, of course actions continue to renew the product offering in new IT systems, and integrate and consolidate Fortum and Hafslund operations are ongoing and we, of course, continue to stand behind the earlier communicated synergy targets that we have for this division.

Russia had and delivered a pretty good quarter comparable operating profit – 40 million compared to 26 million a year ago. This is a good development, this comes first of all from new units, that they are now in production compared to last year's Chelyabinsk GRES number 3, is now in production, it was taken into use in November 2017. It is not a CSA unit, but it is of course participating in the market in a normal way, contributing to our results, and compared to last year we now have 35 megawatts of wind operational in Russia, and 35 megawatts of solar in Russia since the beginning of this year. In addition to that, there were other drivers behind a strong CSA payment development. Worth noting are Nyagan 1 and Nyagan 2 units, which are now entered the final four years of CSA payment, with an increased level of compensation. So, good quarter in Russia overall.

So, that was short comments on the divisions, and now I will ask Markus to continue before we take questions.

Markus Rauramo: Thank you, Pekka. Okay, so, to summarise Q3. Result up on a year-on-year basis, 2 million. Hydro volumes down significantly. City solution, consumer solutions, flat when you look at the total result, practically. Russia improved higher CSA payments, improved bad debt collection, and positive contribution from new units. And then, in area other, the profit from the

sale of the majority of our solar activities in India, had a 26 million positive impact, so all in all, practically the same small improvement, but with very different structure compared to last year.

If we then look at cumulatively year-to-date, we actually had an improvement of 138 million. Generation made 125 of that improvement, even despite a negative volumes, the better prices and lower taxes offset that significantly. City solutions, consumer solutions had a positive impact, both divisions both had a consolidation. Russia negative, but when you clean out the bad debt impact, and the foreign exchange impact, actually the underlying operating are positive. And then other positive for the same reason as third quarter. The 26 million positive impact from the solar sale.

Then I go into the cash flow statement, which has a lot of items quite busy. If I start from the top. EBITDA up on all comparison periods, positive development there. In Q3, when we go down, Q3 had a positive impact from foreign exchange due to the rolling of our foreign currency internal loans. Financial items on the surface are flat, but they are including various items, including the 20 million loss that we had from the NASDAQ default fund.

Working capital negative due to the future settlements, due to electricity prices going up. Slight change there, capex is coming down, as we have been communicating, and acquisition of shares looking at Q3, of course significantly lower, because in previous periods we had Hafslund and Uniper large acquisitions. And then cash collaterals had a positive impact in the row change of cash collaterals due to that we are gradually having less and less hedging with forwards, so the cash capitals are being released. The other big items to note on the cash flow statements are the Hafslund acquisition, and transaction last year, which affected both the acquisition and divestment of shares, so you can see the large impact on both lines, and there of course in the first part of this year the Uniper acquisition, which has a significant impact. And, finally, dividend payments in the first half of the year, so these are the big moving part in the cash flow statement.

If we look at the key financial indicators and balance sheet indicators, EBITDA up significantly compared to 2017 versus the LTM, but also debt up. This leads to net EBITDA 3.6 times versus our target of 2.5, but again I would remind that if we would proportionately consolidate both Uniper EBITDA and the debt, then this ratio would be much closer to our stated targets.

Liquidity is very good, and the undrawn credit lines, so financial position is strong. Because of the higher leverage, as we have earlier communicated, we are very focused on the leveraging and meeting our financial targets moving towards the right numbers. We are prioritising our capex, deep work is ongoing continuously on that and evaluation of our capex pipeline, the focus on our

businesses with example like the solar divestment and capital recycling, the sale of Hafslund Produksjon, result in multi hundred millions of capital being released. And then we are prioritising our activities, we are prioritising our cash flow and working all the time on the efficiency of the organisation, so the target is to delever but also make room for limited selected investments into the future, Finncumet being one example of those.

Then, finally, to the outlook. Hedging, first of all, for the remainder of this year, we have 80% hedged at €30, for next year 65% hedged at €30, and now for the first time, we communicate the 2020 level, we are hedged 35% at €28. The capex estimate for this year is in the same range as we have earlier, 600 to 700 million we are well on track for that. The synergy targets from the Hafslund transaction are, in city solutions, 5 to 10 million, and in consumer solutions, 10 million. The effective tax rate for the year is estimated to be the same as before, 19% to 21%, and a reminder that we get both the positive impact from the hydro and nuclear tax changes in Sweden, and that will continue reduction until 2020, when we reach the targeted level. And, then, demand growth is expected to remain at 0.5%, and we see that the electrification continues, and there is structural support continuously for our business, through the strengthening of ETS, ESR, the interconnections between Nordics and intercontinental Europe, and then the closers in the continental European nuclear and decarbonisation. With this, Pekka and I are now ready to take your questions.

Ingela Ulfves: Thank you, Markus, and thank you, Pekka, for your presentation. We will now open up for the Q&A session, starting with questions from here among the audience in Espoo, and then questions from the teleconference participants. If you raise your hands, I will give you a microphone, and then please state your name and company before the question.

Artem Beletsky from SEB. Three questions from my side. So, first, start in this newly issued 2020 hedges. Is it fair to assume that the source include quite limited amount of for every price premiums? So it's basically a lot of system price, which is included there. And then secondly, what comes to Russia and CSA payments, so we have seen, let's say – rates have increased by 23% year over year, and these is vastly increasing base related to Nyagan. Two unit and what related road map, relating to the remaining units basically entering year seven in terms of CSA income. And the last topic is, say, I just wanted to pick up your brains on this kind of too wide spread what we are seeing between Nordic and German power prices, I guess it has been one phenomenon during the quarter, and CO2 price are going up, so do you expect the spread to basically tighten from this €15 what we are seeing now?

Pekka Lundmark: If Markus takes the CSA question, the hedge is, it is very much what you just said. So, the market is significantly less liquid when we talk about the area prices, but, more details than that we do not open up. When it comes to the spreads Markus already briefly commented that the long term average in realisation is €5, and now we are looking at a €15 difference. We do not give out power price forecasts, so that's why we do not give out spread forecast either. There are certain factors that are supporting prices getting closer to each other in the future, and then there are factors that are driving for wider spreads. The factors driving smaller spreads are clearly the interconnections, we are currently as 6,000 megawatts between Nordics and the rest of Europe. That will grow in a few years to 12,000 megawatts, and everything else equal, that should clearly drive the prices closer to each other, but then of course, things like the nuclear closer in Germany will have a major effect of this and that will most likely push the spreads in the other direction. What the balance is between these two is very difficult to say because then, of course, the whole commodity price situation, coal price, gas price, CO2 price, affects the balance. And finally, as we know, the Nordic hydrology plays a major role, as we have recently seen.

Markus Rauramo: Okay, I can take the CSA. So, again, as a reminder, the big factors are the case spot correction, depending on who are the spot rates have realised, and then you have the 6+4 year profile, which now starts to be a very significant factor. The CPI index and the bond deals, and two of these were positive in this quarter, and two were negative, and going forward like for like, the profile has a big impact now in the coming few years, and the easiest way, again, to plot this is to look at what were the commissioning dates of our units. There's a little bit of variation depending on when the CSA agreements started, and when did we actually commission the new units. But, as a pretty good proxy, you can follow the commissioning dates.

Pekka Lundmark: And then you should not forget the new solar and wind units, which are also receiving CSA payments, and now, which was not the case a year ago.

Artem Beletsky: So, the smaller acquisition what you made in city solutions, could you maybe talk about, let's say, your source regarding recycling business, are you planning to expand further basically your offering, and how Ekokem in general has developed operationally.

Pekka Lundmark: Ekokem has overall developed according to expectations. The result in Q2 was a little bit lower than expected because of some operational hiccups, that recovered very well in Q3, so overall we are happy. We have a significant restrictions on our capex capacity at the moment because of the tight balance sheet. That's why we are choosing in the recycling business

a strategy where we are now focusing on more regional growth and bolt on acquisitions, and then we'll come back to this question later that whether and in that case how the ambition level would be increased This is a very small bolt-on that adds some important capabilities and non-ferrous metal recycling, which have been lacking at Ekokem, and there has been a clear need for that. It is financially attractive, but it's more makes strategic sense. And, of course, in the upcoming capital market day that is only a few weeks away now, we will open up the overall strategy a little bit more and we will there also be talking a little more about the role of recycling, and circular economy and the overall strategy.

Artem Beletsky: Right, thank you.

Ingela Ulfves: Let's take one question now from the chat before we continue with the teleconference questions.

Måns Holmberg: Okay, so Sofia Savvantidou asks about Olkiluoto 3, and about the timing and progress and current commissioning date and also how the – if this will then be accretive to our earnings, once it's taken into use.

Pekka Lundmark: Well, since we are not the operator in Olkiluoto 3, we do not comment anything else other than what they have commented, and the official schedule is currently September 2019, but there has been a press release from TVO, saying that the supplier will confirm a new schedule at the end of the year. This is all we can say about it, we don't have any other information than this.

Ingela Ulfves: Thank you for this. Operator, we are now ready for questions from the participants from the teleconference, please go ahead.

Operator: Thank you very much. Ladies and gentlemen, if you have a question for the speakers, please press 01 on your telephone keypad. We've received the first question. It comes from Alex Lang of UBS, your line is now open, please go ahead.

Alex Lang: Hi, Alex Lang from UBS here. Two questions from me. First, on the hydro conditions. So, we're a few weeks into Q4 already, and you spoke about the latest data. So, I just wanted to ask, if you have a sense from the current reservoir levels what year end production could look like, and second, Bloomberg reported yesterday that Swedish politics is in the deepest political gridlock ever seen, and we're still waiting for a new government to be formed after the September elections. So, clearly, we don't know how this will shake out. But, can you give us any

sense of the energy-related issues that are at stake, and how various political items could affect you? Thank you.

Pekka Lundmark: Okay. When it comes to the first question, unfortunately we need to stick to our policy, which is that we do not publish production forecasts in advance. Currently, as I said, the reservoirs including in Sweden are slightly below long term average, but nobody knows how the weather will develop from here, so that's why there would not be a point in producing any forecasts on that one. When it comes to Sweden politics, I guess what you are after is what political risks there could be in connection with the next government, for example, to things like the broad energy agreement that was put in place two years ago. We have not seen or heard anything that would put that agreement in jeopardy. We have to remember that it was not a law that was only passed with the support of the minority government in Sweden, it is a broad agreement where most of the opposition parties also supported it, and the whole purpose of that agreement was to give long term visibility to investors in both hydro and nuclear, and this has been a very thorough discussion in Sweden which then led to this decision, and of course it's impossible to predict what the future will bring, but at least we have not seen in or heard anything that would risk this agreement.

Alex Lang: Thank you.

Operator: Thank you, we have a next question, it comes from Lueder Schumacher of SocGen. Your line is now open, sir, please go ahead.

Lueder Schumacher: Good morning. Two questions from me. The first one is going back to the spread between Nordic and German col 19 you mentioned a number of reasons of why the spread has widened so much but you haven't mentioned the default of [xxx] and the subsequent liquidation of his position. If you look at the chart between the German col 19 and the Nordic, when these positions were cut, this is exactly when the discount blew out the quite unusual €15 we are seeing now. If all of this was caused by a one-off, how can we still be at these levels? Is there just not enough volume being traded col 19? I mean, how do you explain the gap which over years tends to be rather stable, has blown up so much and has not corrected yet. That's the first question. The second one is on the fuel-switching range. You mentioned a range of €20 to €50 per tonne. The lower part does seem to be a bit low, could you share with us the efficiencies for coal and gas plans you assumed to come up with that number?

Pekka Lundmark: Can we have the numbers? Måns probably has the low efficiency and high efficiency that we have used in this calculation €20-€50.

Måns Holmberg: Well, we don't have the exact numbers here on the efficiency, but this is of course a question of – what do you use when there are different things? What we are talking about when we talk about the spread is looking at very efficient gas, versus very inefficient coal, and then everybody can do their own calculations of what kind of efficiency number do you use there. I think, compared to what we have seen externally, yes we have seen some ranges which would be starting slightly higher than our quoted €20.

Pekka Lundmark: But the fact is, at least, that we have seen very little coal to gas switching realised in Europe, so regardless of how you calculate, the end result seems to be that at these levels of CO₂, which obviously peaked at €25 and now has come down a little bit since then, that has not been enough to drive any significant switching with this increasing gas prices. Markus, if you...

Markus Rauramo: I can take the NASDAQ. So, first of all, of course it was a very unfortunate event that happened, and our understanding is that was due to the underlying movement of the spread. The process at least it seems that it has worked according to regulation, and NASDAQ's own rules, and that led to us taking ultimately a 20 million loss through our participation in the default fund. What we are working on now is then of course to see what can be recovered of that position, and then a proper review of the processes – how can things be developed together with the exchange, to avoid these kinds of situations. Where the position is that we don't know, we did participate in the bidding for that, that's part of the deciding process, but we didn't win it, and both Startcraft and Uniper have given their comments about whether they have it or not, but where it is, that we don't know, and who has it and what are they doing with the position we don't know, so I cannot speculate on what is that decision's impact on the spread.

Lueder Schumacher: Okay, thank you.

Operator: Thank you, the next question is from Sofia Savvantidou of Exane. Your line is now open, please go ahead.

Sofia Savvantidou: Yes, good morning, thank you for taking my question and thank you for answering the earlier question through the webcast. Two additional ones from me. First of all, on the solutions business, as you've said it's become more seasonal of Hafslund's transaction, is there any way that you could give us a metric we could use of what is a normal level of finalised stability, whether it is any EBITDA or EBIT margin we should look at, or return capital employed, or an absolute level of stability, just to show – we can have a feeling both for city solutions and consumer solutions, so for – what is the annual trend, that will make it easier for us what to track,

whether the quarter is on track for the full year or not. And the second question is, is a little bit on what you've said around CO2, in addition to penalising the polluters, rewarding those that reduce CO2 emissions, those that are already clean I think this is the strongest emphasis you've put in recent calls in terms of rewarding the cleaner generators as well. Just in interested, how does that tie in with the comments you are making around – despite the fact that CO2 has gone up, I don't know, three or four times in the last 12 months still with not switching cost, why do you still CO2 price as the right mechanism for decarbonisation when even though it's gone up so much, it's not triggering switching, instead of say, direct action of mandating closings of plants, or mandating limits to annual CO2 emissions for individual CO2 plants? Thank you.

Pekka Lundmark: Well, I take the CO2 and Markus can calculate the trend in city solutions. The answer is actually pretty simple. If we want to significantly and seriously reduce emissions in the world, we need simple, understandable, market-driven policy measures. And we feel that cap on trade, or ETS, or whatever you want to call it, is really delivering what it is designed to deliver because it is volume-based. You define what is the annual volume of emission rights that are auctioned, and then that volume is every year driven down by this linear reduction factor. So, it is a tool that delivers exactly the result as it is supposed to deliver, so that is now why we are calling for a higher ambition level in the EU, so that the linear reduction factor among other things will be further tightened in the system, so that it would be driving the European emission towards the first 2 degree and then 1.5 degree target. We have also said that we feel it would be a very good idea to discuss how the coverage or the scope of ETS could be widened, so that when it comes to heating, it could potentially include also decentralised heating, not only district heating, and later even traffic like the Californian cap on trade system is including all of these. If you make it wide enough, and then you have a strong enough linear reduction factor, it will achieve the result as you want. And the problem with that is that we have ETS, if we then have on top of that put a lot of overlapping policies measures, there is always a risk that these additional measures, whether they are forced closers or energy-efficiency targets or rest targets or whatever, the only thing that they actually achieve is that they dilute the ETS effect, but actually, they don't lead to emission reductions, because you are just moving the problem to another place. A long answer, but this is a really, really central question and these are the reasons why we are definitely in this camp that is calling for higher ambition in EU, and ETS being the central policy mechanism.

Markus Rauramo: Okay, then how to – I try to give some insights into how to view the city solution business. There are three big components. The former district heating business that Fortum had. Then you have the old Ekokem recycling and waste solutions, and you have Fortum Oslo Varme These are in the comparable operating profit. One should not forget Stockholm

Exergi, which is a big component in the income-associated companies. All of these have quite a lot of profile, so that makes the modelling already challenging. 2018 will be a fair proxy, then, for what the business looks like when all the components are there. But, what one has to then take into account is the weather conditions. What are the heating degree days? How volatile are the days and weeks, which then impacts the fuel mix, which impacts are we using heat-only boilers, gas-fired and so on, electricity prices of course play a role, and then you need to take into account that when you look at the return on the surface, we do have acquisitions and old acquisitions all the way from Espoon Sähkö times, and to give an idea of what we are targeting as returns on a clean basis, then the project returns that we are estimating for things like Zarbze are in the low teens, mid-to-low teens, even high teens, depending on the project IRR basis. So, here are some components that you can think through. But, the reality is that there are a lot of moving components.

Pekka Lundmark: And, Sofia, yes, as you anticipated, we will provide more information about this at the capital market day.

Sofia Savvantidou: Okay, thank you both.

Ingela Ulfves: Operator, before we continue with the next question, could you please repeat how to dial in and ask the question, there seems to be someone who is not able to log in, thank you.

Operator: Yes, sure. As a reminder, if you would like to ask a question, please press 01 on your telephone keypad, and we have a next question, it comes from Wanda Selvinowska of Credit Suisse. Your line is now open, please go ahead.

Wanda Selvinowska: Good morning, Wanda Selvinowska from Credit Suisse, two questions from me. The first one is on the talks with the talks with Uniper. When could we hear more about the talks with Uniper, because every time we hear you you've been saying "we do not comment"? And the second question is on your wind investment in Russia. What is your capex per MWh that you are looking at, and what is your load factor that you are looking at in Russia? Thank you very much.

Pekka Lundmark: When it comes to Uniper talks, I think I have said several times that we expect that these talks will take time, as I commented earlier, we would of course like them to proceed faster, but there is a lot of things to discuss and we have agreed with Uniper that we will not comment the content of those talks in public before there are some concrete results that can be published. This is the reason, we have tried to anticipate the situation earlier by saying that these

will take time, we have to remember that we have only one quarter now behind us as an owner, Markus is now on the supervisory board – I think he has had one meeting so far – so, this is very, very early days still. Then, Markus can take...

Markus Rauramo: Okay, I can take the question on Russia. So, the capex was actually very, very competitive. It's comparable to European levels, of course, and then there are balance of plant and so on that are always local conditions. But, because of the size, and that was the idea of going to the joint venture with Rusnano, that we get the critical size to get the localisation, and we did get very competitive capex. And, then, when it comes to capacity utilisation factor, of course we are looking – we are doing deep analysis on the sites and the joint venture. We have had measurements for longer times, we have had our own first industrial wind site in Russia, and there are certain threshold levels on the CSA agreements that you have to meet for the capacitisation, and according to the publicly available satellite data and so on, the utilisation factors will be well above those that are required, so all in all, good wind conditions.

Wanda Selvinowska: Are we talking about 15% or 20%? If you just give us a flavour what kind of load factor are we talking about? 30%? 20%? Just roughly.

Markus Rauramo: Yeah, that...

Wanda Selvinowska: Or what is the CSA, what is the flow?

Markus Rauramo: The CSA stipulates certain level which is already in the areas in the higher end of what you are commenting, and what we are estimating are above that.

Pekka Lundmark: What you can actually do if you want to do your own calculations, we have published an estimate of the achieved price per megawatt hour over the life time of this units, and the CSA contract obviously is for capacity. So, it is the combination of these two factors – the load factor and the capacity – that then leads to this price permit or whatever, and we have given a range, if you look at our earlier communications. For each contract, first for the 1,000 megawatt, then for 830 megawatts, we have given a range as to how much it will be in Russian roubles per megawatt hours, so that hopefully gives you an idea.

Wanda Selvinowska: Thank you very much.

Operator: Thank you, the next question is from Harsha Aichuri of JP Morgan. Your line is now open, please go ahead.

Harsha Aichuri: Hi, this is Harsha Aichuri of JP Morgan. I wanted to ask a question regarding the hedging again, the level we see for 2020 at €28 is a bit low, you say that there is little liquidity on this outlook, although with rising power prices, the demands for longer edging could actually come, what is your view on this specific topic, and what if this type of approach of approach or analysis is valid, why did you see more liquidity developing toward the back end of the curve as end users may want to protect themselves, so that's the first question. The second question is regarding Russia, CSA and renewable investment. Could you give us a bit of colour regarding your approach towards country risk and investments in Russia? Is it fair to assume you have some constraints on the capacity to [inaudible] cash flow from these investments and therefore you have to consider local opportunities as an alternative? Thank you very much.

Markus Rauramo: Okay, so with regards to the hedging, I would approach it actually from the point of view that we are hedging with the same principles as earlier. There can be some volatility as you can track from what are the hedging levels at the given time, but the key point with our outright and very flexible position is to have the forecast ability in cash flows. Because as we have seen in Q3, the variation between quarters and years can be very significant. Today's system price is 33, so 28 given that we have started hedging already some time ago, for me is not an abnormal level. And, then, when it comes to the country risk approach, what we have said with regards to the Rusnano joint venture, we limit our exposure increase there in the 15 billion roubles, which equates to around €200 million, so we are able to mobilise even 1.8 gigawatts through this joint venture with capital recycling, with selected equity investment, and really take big steps in renewables, and with the dividend, we have no limitations as such with regards to taking dividend out. We have taken the first dividend now this year, no restriction. The reason why we haven't taken earlier is that we just completed, actually, the long programme of building the CSA capacities that we had won a long time ago when we entered the privatisation in Russia. But, of course we observe the country risk in any country, including Russia.

Pekka Lundmark: We are now, as Markus said, for the first time in a situation where we have economic possibilities to take dividends, so that's exactly what we have started to do. I would like to add one thing to this hedging level question. Now we published for the first time 2020, and that was published at €28. A year ago, when we first published 2019, we published that at €24. So if you take this for a measure, there is a €4 increase in price.

Operator: Has your question been answered?

Harsha Aichuri: Yes, thank you very much.

Operator: Okay, then we have a next question. It comes from Jose Lopez from Millennium. Your line is now open, please go ahead.

Jose Lopez: Hello, good morning. Thank you for taking my question. Just an observation. The issue with the EU ETS is that precisely of the market mechanism, perhaps it's a Soviet market mechanism, but it's definitely not a free market mechanism. It has unintended consequences. It produces higher windfall profits for the onus of legacy, low CO2 assets, which ironically, its profits can then be deployed to invest in dirty generators, which is what you're doing when you're just trying buy Uniper, a company with a carbon footprint of over 500g of CO2 per KW. Right? So, we're seeing across Europe that will definitely take hold of the system. They are called mandatory coal closure dates in the UK, France and the Netherlands. Specifically in France, your new associate Uniper is complaining about these moves. How do you feel about Uniper's protestations to shutting down dirty generation in France, given that you're so concerned about climate change? My second question is on safety. Now, the gravity of the incident in the St. Petersburg heating network have taken a turn for the worse this past month, with the death of two people this past September. What actions are representatives in TGC-1 taking or going to take to make sure that incidents like this stop? I understand that there was an attempt to transfer this network to another operator who was willing to improve the safety, but this was blocked by Fortum. Any thoughts about this situation, given the events that took place last month? Thank you.

Pekka Lundmark: First of all, the EU ETS, as I said earlier, that is a system that delivers exactly what it is designed to deliver, and we are all for emission reduction and as I just said, we are calling for more ambitious targets for EU carbon footprint reduction, and it would be perfectly possible to design the EPS system in such a way that it delivers pretty ambitious coal closure results if we just make the system tight enough and we would be ready to support that at any time. When it comes to Uniper, I would like to quote Uniper's management, who are saying that, coal condensing is a technology of the past in power generation, it's not a matter of whether, but rather a matter of how and when that capacity is to be shut down. I have said several times that we did not invest in Uniper because of coal, because of the fact that 30% of their capacity is coal, because exactly as you said, several countries already have decision on forced coal shut downs, which we are of course perfectly aware of. The point in the Uniper investment is actually to use the Uniper portfolio indirectly through our investment and our own portfolio to drive overall decarbonisation of Europe. Uniper has significant hydro capacity both in Sweden and in Germany, they have significant nuclear capacity in Sweden, and they have very significant gas-fired capacity, which will be needed in the decarbonisation when both nuclear and coal is to be shut

down in Germany. So this is the overall logic as we have communicated several times. Then, when it comes to TGC-1, where of course, we are a 30% minority owner, so our possibilities to influence there are clearly limited.

Markus Rauramo: I can just comment so that... first of all, our approach to safety is that that is the number one thing, and the first thing we are handling in any management team meeting in Fortum in any board meeting is actually safety. So, yesterday in our board meeting, we have been talking in the first thing for quite a long time is the safety of each individual incident that has been happening. Our own safety track record is on a very good level, when it comes to own personnel it's excellent. When it comes to contractors, that is area that we are working on, but our target for this year is to have a combined lost work danger frequency of 2.1 incidents per million work hours, and we are within that, which is a very, very good level. So, the focus is very high. Then, we wouldn't as we haven't before even when we have had very unfortunate events happening, we don't comment on the individual incidents and happenings, but they are always being investigating internally and externally and like Pekka said, depending on what is our influence on the joint ventures, they are handled in a certain way, but I can assure that safety is the paramount issue for us.

Pekka Lundmark: Our lost LWIF figure for last year was 2.4, which is not bad in any international comparison, but our ambition level, like Markus said, is higher. Our target for this year is 2.1, and we are currently and 1.9 annualised, so we seem to be heading toward that target. But, this is clearly the most important thing in anything and everything that we do.

Operator: Thank you. The next question is from Ingo Becker of Kepler Cheuvreux, your line is now open. Please go ahead.

Ingo Becker: Uh yes, thank you, good morning. Two questions, also on CO2, and one of the hydro conditions in the Nordics. Can you share when you saying you're supporting the ETS and working to convince the EU for a together mechanism, can you share maybe the feedback you get in Brussels? Is the support for the scheme unbroken, also, I meant the price rise? Or, do you sense changes there? Related to that, if the acceptable level remains high, would you think that Europe might lobby for the next step, and taking the scheme global? Apparently, Europe shares very high costs for running this scheme. And as permissions are global, what seems to be a plausible next effort on a European level? For hydro, just interested in your local insight there, also maybe from a meteorological offices you're in contact with, do you sense any kind of more structural changes? I'm perfectly aware that this is difficult to say after one summer, but does analysis go

in that direction, or is it just a somewhat odd year, and it's best thing is to expect next year is going to look much more normal as we used to again.

Pekka Lundmark: It's very, very difficult to comment on any potential fundamental structure changes in the hydro condition. I mean, there are mentioning about this in some of the climate change models suggesting that in winter times, we should more rain in the future, and in the summer times, it should be more drier but, then the reality is that the individual fluctuations between years will for a long time most likely play a much more significant role than this. That's a very, very difficult – understandable – but very difficult question. When it comes to EU ETS, before I talk about the future, I would like to repeat one thing why in addition to being volume-based, cap and trade is a good system, because this whole CO2 abatement is going to be an extremely expensive issue for the world, and in a cap and trade ETS type of system, which is volume-based, the beauty of that type of system is that it directs the efforts to places where you get the most cost efficient CO2 reduction. That's why we are saying that it is market-based as long as we would be able to minimise the overlapping decisions by countries, or that in any case, to such extent that there are overlapping measures, then the effects of those would be neutralised, as the current proposal is from the ETS. European Unions is currently planning the 2050 climate strategy. We have to remember that this ETS directive was just approved some time ago for the years 2021 and 2030. And there are some checkpoints included in this directive now, for both linear reduction factor, and the MSR intake rate. And this is what we are focusing on right now, to making sure that those checkpoints would lead to ambitious results, and then we are of course, whatever our voice is worth, we are discussing with the right people possibilities to extend both sector-wise to potentially cover decentralised heating, and maybe traffic in the future, and very important point that you made that the system should still somehow be connected to an international arrangement. This challenge of 1.5 degrees or even 2 degrees that there is no way EU can solve alone. The only way the world can really reduce emissions as much as is really needed is through a major international agreement, where a similar system would be taken into use in other key emitting countries. China is installing similar systems, which of course is very good, and already, if we were able to get China to join, that would roughly double the share of emissions in the world that are subject to some kind of trading systems. So, we are definitely supporting all these developments.

Ingo Becker: Right, thank you.

Operator: Thank you. As there are no further questions, I would hand back to you.

Ingel Ulfves: Thank you, Operator, and thank you, all for all the questions. We seem to have some questions still on the chat, so I hand over to Måns now to ask those questions.

Måns Holmberg: Yes, so firstly we have a question from Danila Kashapov. Do you plan any actions with your shares in TGC-1?

Pekka Lundmark: That is something that comes to other potential transactions also. We simply do not comment, we are always keeping our eyes open for both investment and other structural opportunities, but we do not speculate in advance. This is an overall policy not only regarding TGC-1, it is true to all our holdings.

Måns Holmberg: And then we have a final question from Elchin Mammadov. Can you please give us an update on the timing of the upcoming modernisation capacity auctions in Russia?

Pekka Lundmark: The modernisation capacity auctions in Russia, when it comes to our portfolio, are quite much less relevant than for some other actors because our capacity is so much newer and so much modern and so much more efficient in terms of load factors than basically any other operators in Russia, so the relative importance of these modernisation auctions is less important for us. What we have been trying to maintain in our Russian policy comments is that the original targets that the whole CSA system has had has included the ambition to shut down the oldest and most inefficient capacity, and we would certainly hope that the capacity, or the modernisation auctions would not lead to a situation where we artificially prolong the lifetime of the most polluting and the most oldest units, because what we need in Russia is a good market balance between supply and demand, and that should not be artificially affected through extensive modernisation support programmes. This is not to say that this programme would not be needed at all, I'm not saying that, it just needs to be designed correctly so it does not dilute the original purpose of the CSA programme.

Markus Rauramo: And, significant focus on renewables.

Pekka Lundmark: And, significant focus on renewables. We welcome, of course, this wind and solar CSA and we would hope that when the CSA system in Russia is further developed that this system would be continued in the 2020s in addition to potential modernisations.

Ingela Ulfves: Thank you, everyone, that seems to be it now for the Q&A session, then I would have a last reminder finally and that is related to our upcoming capital markets day that we will host here in Espoo on the 13th November. And, to remind those of you who have still not signed up that there is still time to sign up during this week. All information is available on our web,

either do it through that, or contact us through the IR team and we will help you out. Thank you, everyone for your contribution here and your participation here today. On behalf of Fortum, we wish you a nice rest of the day.