

FINANCE REPORT  
ORKUVEITA REYKJAVIKUR  
(OR; REYKJAVIK ENERGY)

2015



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## 1 Summary

Implementation of The Plan, a joint action by OR and its owners, realized significant improvements in OR's financial position. The Plan included cuts in operation, sale of assets, lowering of investment and adjustment of tariffs among other actions. The financial goals of The Plan were reached in mid-2015, a year and a half ahead of schedule. The action plan is still fully effective through 2016 in order to further strengthen OR's financial foundation. Divisions of The Department of Finance have been considerably strengthened and a new risk policy has been adopted and implemented. Today, OR's Board receives a monthly report on OR's risk profile along with the key financial indicators.

Much has been accomplished these last few years. Not least OR's greatly improved access to international financial institutions for both borrowing and hedging. The number of banks now seeking to do business with OR has increased and OR is now in a position to choose which financial institution to do business with, dependent on terms. This is a significant change and a source of satisfaction. This position of trust will be maintained by securing a strong liquidity position and active risk management.

Since 2012, OR has entered into hedging agreements to mitigate market risks. Prior to that time there were limited opportunities to do so. Hedging contracts are now more numerous and their term has increased in line with OR's increased trust with financial institutions. Hedging contracts now cover interest, aluminium price and currency exchange (incl. ISK) with up to five years maturity. OR can access hedging for interest rates up to 2030 coinciding with the maturity of its foreign currency loans. Economic risk due to foreign currency exchange rates has been reduced by OR's operational currency being in USD as well as by increased risk hedging.

Financial planning has been overhauled with increased emphasis on goalsetting and by defining values for key financial indicators in tune with the owner's policy and OR's overall policy. Decisions were reached to simplify the planning procedures and to adopt the method "Beyond Budgeting". By adopting this method OR is aiming for a simpler and more independent culture within the company, where decisions are made in a timely manner when needed.

On November 6<sup>th</sup> 2015 The Board and the owners decided on financial conditions to be fulfilled before payment of dividends could take place. Dividends will not be paid out until these conditions have been met and then only to be paid out if conditions are met after payment of dividends. A more detailed description is to be found in Chapter 2, Conditions for payment of dividends.

OR still faces challenges and focus is on reducing risk and improving financial stability.

The purpose of this report is threefold:

- To improve awareness and knowledge of OR's financial management and position
- To reflect on what has been done well and what can be improved
- To put in place measurable goals for both the short and the long term.

These goals are all suited to support OR's improved financial position.

### **Finance:**

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\*[www.bbrrt.org](http://www.bbrrt.org)



## 2 Requirements for dividend payments

Key indicators of OR's liquidity are observed closely. Benchmarking with other companies in similar activities is important although no company closely corresponds with OR, i.e. is in the same country, operating in the same market environment and in the same sector.

The owners and The Board of directors decided in November 2015 which financial indicators should determine whether to pay dividends and also what their values should be in order to do so, both before and after payment of dividends. Thus reaching a common goal of solid financial foundation for OR and a benchmark for paying out dividends that does not threaten OR's financial strength.

The company's position at 2015 year-end:

Financial ratios	Goal 2016-2018	Goal 2019 >	OR Cons.	Landsvirkjun	HS Orka	HS Veitur	Rarik 2014*	Vattenfall
Current ratio	> 1.0	> 1.0	<b>0.8</b>	0.7	0.9	3.5	0.4	1.4
Equity ratio	> 35%	> 40%	<b>36.9%</b>	44.7%	58.6%	42.0%	60.8%	25.1%
FFO Interest coverage	> 3.5x	> 3.5x	<b>5.5x</b>	4.3x	12.0x	3.7x	5.6x	7.3x
RCF/net debt	> 11%	> 13%	<b>13.8%</b>	11.4%	28.3%	16.7%	22.7%	NA
FFO/ net debt	> 13%	> 17%	<b>13.8%</b>	11.9%	31.4%	23.5%	24.7%	24.5%
ROCE			<b>4.8%</b>	4.9%	2.9%	6.7%	6.4%	-5.8%
Moody's	Baa	Baa	<b>Ba3 Stable</b>	Ba1 Stable	NA	NA	NA	A3 Negative
Fitch Ratings	BBB	BBB	<b>BB-Stable</b>	NA	NA	NA	NA	A-Negative

\*Financial information for 2015 was not available

The indicators show the company's financial strength and the table above depicts OR's goal for each indicator. Current ratio describes the company's strength to service its obligation in the near future and liquidity for the next 12 months. OR's current ratio has improved and OR's aim is to have a current ration above one. This goal has not been reached as OR did not complete any borrowing in 2015. The goal is expected to be reached in 2016. A company's strength is greater as its equity ratio is higher.

The interest coverage ratio is indicative of a company's ability to service interest payments on its debt. OR's average interest rate on its loan portfolio is favourable as reflected in the interest payments, resulting in a high interest coverage ratio. Funds from operations against net debt indicates an entity's ability to service debt. For OR the indicator has been improving as OR has been emphasizing paying off long term debt and increasing cash and cash equivalents.

Rating agencies have expressed their satisfaction with OR's financial indicators and that the conditions set forth are suitable to keep OR financially sound in the future both before and after payment of dividends.

### 3 Liquidity management

Liquidity management consists of investing liquid cash for the short and long term. The aim of liquidity management is to maximize return with regards to risk.

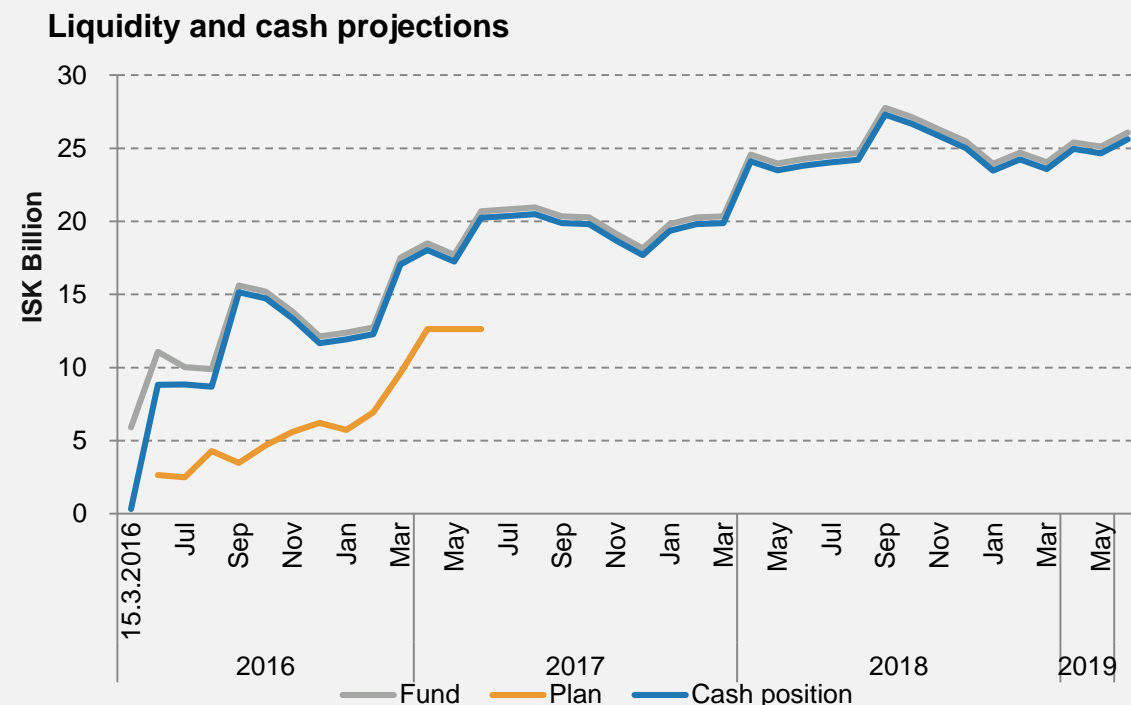
Emphasis has been placed on return for the short term as instalments have been front loaded and will be approximately ISK 15 billion annually for the next few years. Refinancing creates an opportunity to look further ahead. A new cash flow projection method has been implemented in conjunction with other financial planning.

Financial plans including cash flow projections are now updated quarterly, allowing for a closer observation of the cash position from day to day. This in turn creates opportunity to manage cash position considering returns, financing and foreign currency buying. Liquidity management needs to look at all these parameters in conjunction.

OR's investment framework is considered when decisions on investment opportunities are weighted as is OR's risk policy. One of OR's goals is to maintain a current ratio above one as the ratio shows OR's capacity to service payments for the coming twelve months. The aim is to reach this goal with active liquidity management and improved access to borrowing.

#### 3.1 Cash flow management

Cash flow management follows the flow of funds, in all currencies on a daily basis. The cash flow report is updated every day capturing information from all the main financial systems. It is important to watch the actual position of the bank accounts along with the expected inflow and outflow. The outflow stems from, for example, paying bills, instalments and hedging strategies. The graph below shows OR's cash position based on the adopted consolidated budget.



The orange line shows the original cash flow position according to The Plan. The blue line shows the actual position at the beginning of 2016 and the grey line shows the forecast for cash flow position including time deposits. The cash flow forecast is based on the adopted budget for 2016-2021, including planned borrowing of ISK 29 billion over five years.

OR also has at its disposal, until 2020, unused revolving credit facilities of ISK 8.5 billion.

### 3.2 Return and investment framework

The goal is to maximize the cash of OR consolidated, considering risk and the investment is subject to OR's needs at any time. The choice of investment vehicles is decided on while considering the investment framework adapted by The Risk Committee in 2014.

**Goal:**  
To maximize return on cash with respect to currency, type of asset and risk.

OR's investment framework lays out the course for managing the asset portfolio. This framework is reviewed every year.

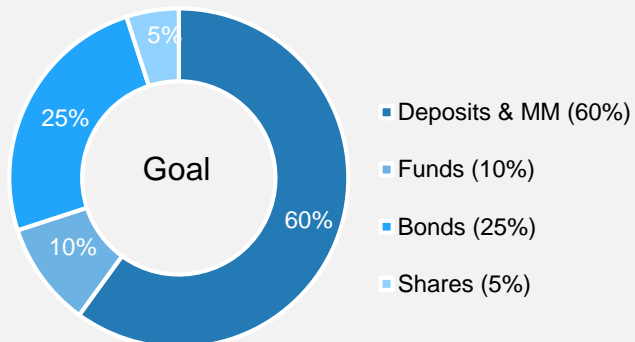
OR's cash is mainly invested in deposits, time deposits and cash funds. Also with asset management funds.

Investment framework	Goal	Minimum	Maximum
Available within 30 days	<i>Est. outflow &lt; 30 days</i>	<i>Est. outflow &lt; 30 days</i>	85%
Available in foreign currency	<i>Est. outflow in FX &lt; 12 months</i>	<i>Est. outflow in FX &lt; 12 months</i>	
Term deposits and MM	60%	0%	90%
Liquidity funds	10%	0%	30%
Bonds and bond funds*	25%	10%	70%
Shares and share funds*	5%	0%	15%

\* According to the risk policy bonds and stocks non-related to the core business shall not exceed 5% of consolidated equity. Now OR's position exceeds this mark.

While the current ratio is below one OR will mostly place money in deposits and liquid assets.

OR owns a bond and stocks in a company related to OR's core business. These stocks and bonds are outside the realm of daily cash flow management. The portfolio's distribution between asset types is thus less than is aimed for according to the investment framework and also the concentration of issuers is greater.



As OR's cash position improves, the investment framework will be reviewed focusing on maturity of bonds considered for investment. In monitoring counterparty risk OR makes comparison between local financial institutions OR is doing business with (Presented in Addendum A).

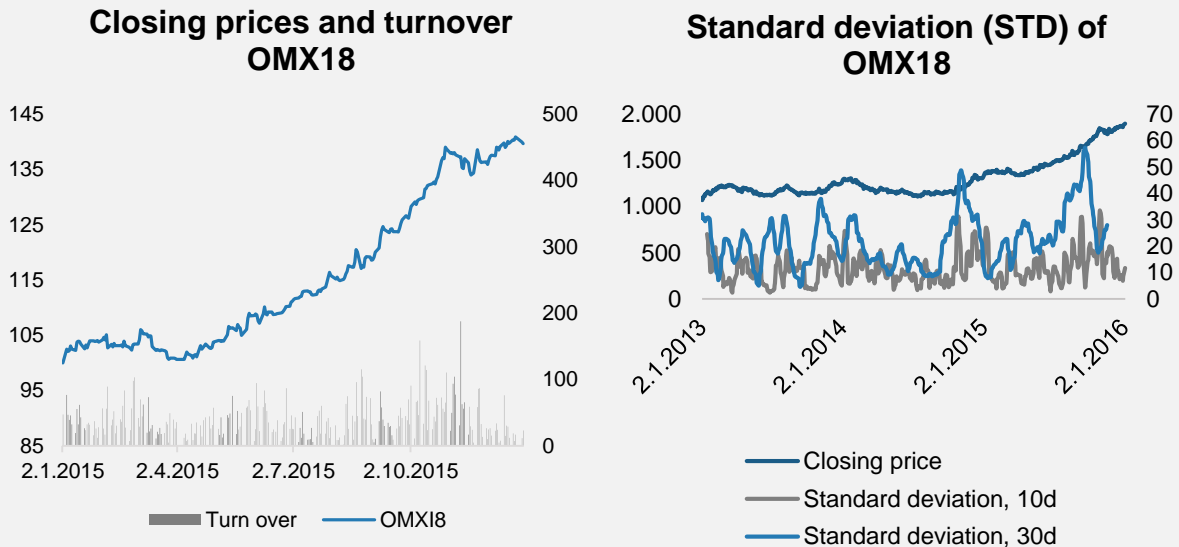
Goal for 2016, considering risk and the investment framework:

- *Maximize return on cash considering currency, asset type and risk*

Bond issuing is scheduled for the first quarter of 2016 which will strengthen OR's cash position and improve the current ratio.

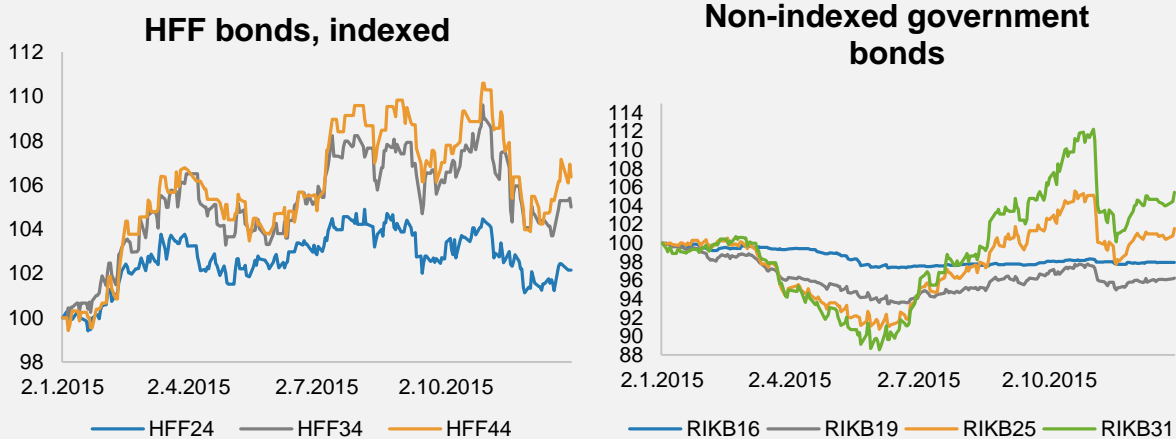
### Circumstances and prospects

The graphs below show developments in both the stock and bond markets in Iceland. Common approach is to consider the market turnover, volatility and price. Results in the past do not forecast the future but are indicative of fluctuations.



Source: <http://www.nasdaqomxnordic.com/>

The OMX18 rose 43% in 2015. The market turnover increased by ISK 101 billion in 2015. Turnover of non-indexed bonds decreased in the first two quarters of 2015. This was due to uncertainty in the market over increased inflation following new labour market contracts and also due to apprehension following the government's next steps in loosening capital controls. In the first two quarters of 2015 the yield of indexed bonds has been flat but the yield of non-indexed bonds has risen considerably.



Source: NASDAQ internet site <http://www.nasdaqomxnordic.com/>

### 3.3 Foreign currency purchases

In accordance with OR's risk policy OR bought currency in 2015 to meet the outflow for 2015 and 2016. Chapter 5.1 gives a more detailed view of OR's currency flows.

OR's department of Treasury, planning and analysis closely follows the FX-market and economic indicators related to OR's funding currencies. The department continues to strive for the most favourable terms.

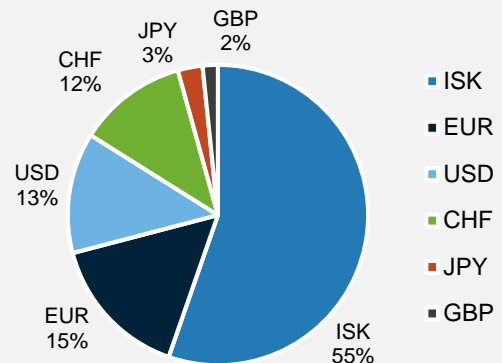
Around 73% of OR's loans are in foreign currencies and 84% of revenue is in ISK. It is therefore important for OR to conduct an active currency risk management. Foreign currency amortization of recent years have been considerable.

Goal for currency purchases in 2016:

- Have on hand currency for a minimum twelve months outflow.

**Goal:**  
Have on hand foreign currency to cover at least six months outflow of each currency.

**Deposits by currencies on Dec. 31<sup>st</sup> 2015**

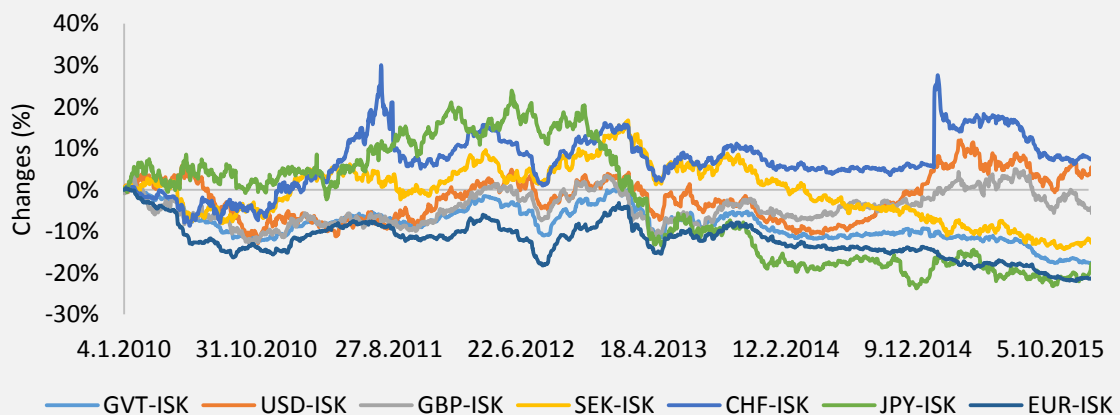


### Circumstances and outlook

2015 was an active year for the currency market. The ISK is not linked to any other currency but it appears that The CBI attempts to keep the ISK fairly stable by intervening in the market. The CBI's net buying of foreign currency in 2015 was ISK 236 billion.

The Icelandic Parliament passed a bill on the liberalisation of capital controls in June 2015. Expectations are that this will lead to loosening of capital controls in 2016.

### Currency fluctuations



Source: Sedlabanki Íslands, web : [www.sedlabanki.is](http://www.sedlabanki.is)



## 4 Financing

One of the main functions of Treasury, planning and analysis is to source favourable financing for OR. Since 2011 OR has emphasized strengthening the relationship with national and international financial institutions. The company regularly updates its current and potential financial clients and publishes material on OR's financial position, OR's policy and progress of The Plan. This endeavour has been successful beyond expectations.

**Goal:**

Net Debt / EBITDA < 5  
Current ratio > 1,0  
Ensure financing and financing plan for the next 5 years. Extend credit lines by 2 years.

OR's financing opportunities steadily increase and new opportunities and solutions are constantly being sought. OR's scope for borrowing, credit lines and hedging have all improved.

As mentioned before, The Plan has been more successful than anticipated and OR's financial position has improved considerably. An agreement was reached with Dexia on rescheduling instalments of all loans with the bank. This agreement reduced OR's borrowing needs for 2015. Borrowing of ISK 10 Billion had been anticipated and this figure was brought down to ISK 6 Billion. This borrowing was not executed in 2015.

The November 2015 budget provided a plan to borrow ISK 9.65 billion in 2016 in order to reach the goals of an improved cash position and better current ratio. Furthermore, the planned borrowing of ISK 6 billion from 2015 is scheduled to be executed in 2016. And it is planned to borrow ISK 13.5 billion in 2017-2018. This borrowing is to finance new investments and to improve OR's liquidity. Budgeted borrowing is reevaluated in conjunction with reviews of OR's Borrowing Plan which is a part of OR's continuous budgeting.

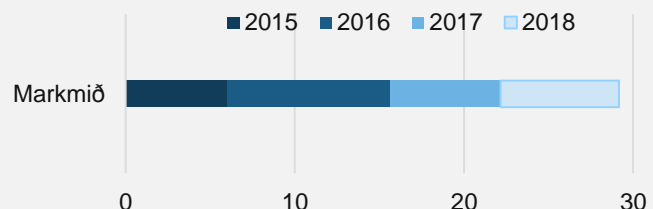
OR has presented a goal for borrowing in line with the budgets for 2016-2021, allowing for necessary changes. As stated before, OR's methodology of planning is being changed. Plans will in the future be updated quarterly. This includes the borrowing budget to be reviewed four times a year. Both domestic and foreign borrowing is planned.

B.ISK.	2016	2017	2018	Total
<b>Borrowing of OR consolidated</b>	15.650	6.500	7.000	<b>29.150</b>

OR's borrowing opportunities are:

- *Loans from institutional banks i.e. NIB, EIB and CEB.*
- *Issuing bonds domestically.*
- *Loans from commercial banks, domestic or foreign.*
- *Issuing bonds abroad.*

### Financing Plan (B.ISK)



The process of evaluating most favourable terms and type of borrowing is underway, both for this year and the following five years. Every new borrowing executed requires an evaluation of the loan portfolio considering parameters e.g. currency, interest rate, maturity and risk.

OR's board of directors has approved issuing of bonds for up to ISK 4.5 Billion. The issuing is planned for March 2016. OR will adopt the method of framework borrowing covering OR's

activities in the bond market in the next few years. This method allows for an easier, faster and more efficient approach to raise funds. The method also allows for fund raising flexibility in both the short and the long term.

Discussions with foreign banks on long term loans, guaranteeing OR access to foreign currency, are in the final stages. Also a greater number of banks have shown their interest in lending to OR.

OR's Financial Report for 2015 shows that net interest bearing debt/EBITDA equals six which is below the goal of seven.

Future goals to reach stronger financial health involve:

- Achieving net interest bearing debt/EBITDA below six for the next five years
- Reaching a current ratio greater than one.

### 4.1.1 Installments patterns and interest terms

OR has worked towards deleveraging by paying down its debt.

Since the start of The Plan OR has paid ISK 69.8 billion in instalments.

The weighted average interest rate on OR's present loan portfolio is 1.67%. This rate is extremely favourable both in an historical context and in comparison with financing terms in Iceland today.

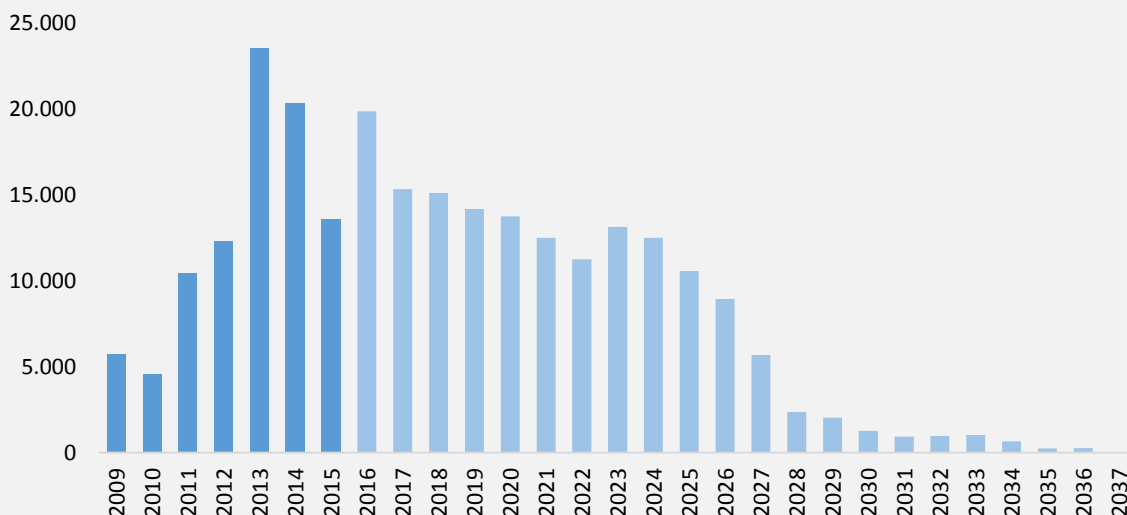
**Goal:**  
Decrease OR's debt ratio.  
Keep interest coverage over 3.5x.  
Positive interest rate differential.

Contrary to low interest rates in Europe the high Icelandic base rate pushes up interest rates in Iceland. OR has focused on fixing interest rates in foreign currencies in order to reduce risk.

OR's interest coverage was 6.0 at year-end 2015 indicating a good capacity to service debt. This compares favourably to benchmark firms as can be seen in Chapter 2. OR aims at maintaining an interest coverage above 3.5.

OR's equity ratio is 36.9% but as presented in the table for key ratios the aim is to keep it above 35% after paying dividends for the period 2016-2018 and 40% after the year 2019.

For the next five years OR plans to annually pay down debt by ISK 15.6 billion, on average.



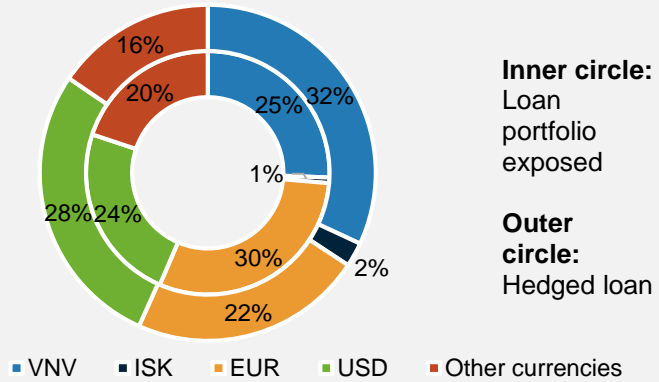
Loan instalments of 2016 are close to ISK 20 billion and this figure will reduce to 15 billion annually in the following two years.

OR's existing hedging contracts reduce the imbalance between currencies in its loan portfolio. Effects of the loans currency fluctuations and effect of interest rates are also fixed for the next five years.

The chart to the side displays the effect of currency hedging on the loan portfolio. The inner circle shows the state of the portfolio without hedging. The outer ring shows how the risk hedging contracts reduce the weight of other currencies than the USD and CPI-indexed ISK (VNV)

See more details in Chapter 5.2.1 on Currency risk.

### Loan portfolio hedged and exposed



## 5 Risk management

OR's Board of directors has adopted a risk policy which is reviewed and updated annually. The Board's policy aims at increasing risk awareness throughout OR in all its operations. Thus supporting responsible and efficient decision making and management. The risk policy reflects the Board's vision and main goals. The policy also defines the main types, measures and values adopted to evaluate risk. Furthermore the policy defines the main risk categories, methodologies in risk identification and aims and goals in risk management from day to day. One of the main pillars of the risk policy is to keep track of the risk elements weighing heavily in this context, measuring their effect and defining acceptable boundaries within which to manage them.

At year-end 2015 OR's Board approved to narrow the boundaries of interest rate risk and aluminium price risk and that cash flow should be able to withstand stress tests spanning the following twelve months.

Risks in Orkuveita Reykjavíkur operations					
Risk	Core risk	Financial risk			Operational risk
		Market risk	Liquidity risk	Counterparty risk	
Definition	<p><b>Always connected to OR's core business</b></p> <p><i>Risk connected to electricity, and sewage and fiber network</i></p> <p><i>Risk due to power production and sales</i></p> <p><i>Competition in core business.</i></p>	<p><b>The effect of market fluctuation on OR's financial status.</b></p> <p><i>Foreign exchange rates</i></p> <p><i>Foreign and local interest rates.</i></p> <p><i>CPI</i></p> <p><i>Interest spread</i></p> <p><i>Aluminium price</i></p>	<p><b>OR's ability to pay debts and seize opportunities</b></p> <p><i>Operating expenses</i></p> <p><i>Amortizations</i></p> <p><i>Investments</i></p> <p><i>Asset portfolio</i></p>	<p><b>Effect from possible defaults from OR's customers</b></p> <p><i>Size of individual customers</i></p> <p><i>Consolidated risk of customers</i></p> <p><i>Collection and resource recovery</i></p>	<p><b>Effect from crisis and unpredictable damage on OR's finance.</b></p> <p><i>Breakdowns in distribution-, control- or monitoring systems</i></p> <p><i>Errors and fraud</i></p> <p><i>Regulatory and legal actions</i></p> <p><i>Natural disasters</i></p> <p><i>Reputation</i></p>
Goal	<p><b>Core risk is connected to OR's core business</b></p>	<p><b>Financial risk shall be managed</b></p>			<p><b>Reduce operational risk</b></p>

OR aims to reduce effects of fluctuations in risk factors and guarantee stable prices of OR's products in the future applying efficient financial risk management. The Department of Risk Management both leads the risk control management and assumes the role of a consultant when evaluating OR's financial and operational risks.

The department leads the monthly meetings of The Risk Committee. This is where decisions on appropriate measures are taken and where information is presented on significant changes affecting the development of risk factors and how they impact on OR.

### 5.1 Stress test

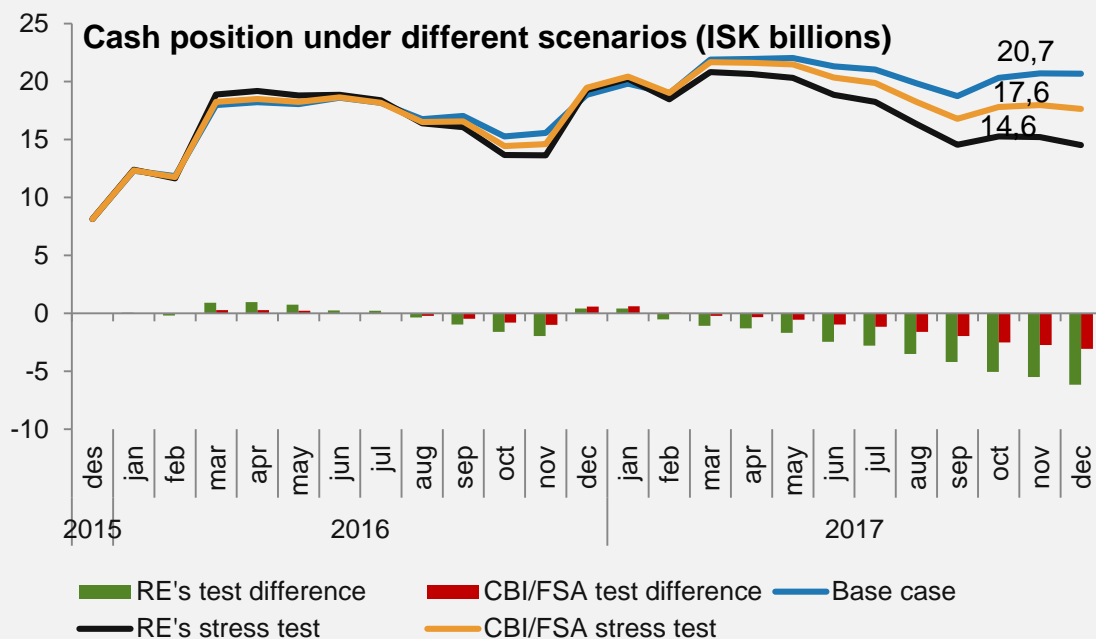
According to changes in the risk policy, expected cash flow must withstand a stress test for at least 12 months looking forward. The assumptions of the stress test state a 43% devaluation of the ISK and aluminium prices to drop to 1300 \$/mt or around 13% during the first six months of the test period. Information from independent analysts of the aluminium markets assume 80-90% of aluminium smelters worldwide to be operated at a loss at the

assumed price level. Therefore, one would expect a reduction in aluminium production which in turn will bring on upward price pressure, assuming other parameters to be constant. The test also rests on the assumption that foreign interest rates will rise considerably, shifting upward by 300 basis points over a 24 month period. Furthermore, inflation is expected to increase by 18% over a 24 month period. The stress test is rigorous as the devaluation of the ISK is assumed to be half of what it was due to the economic recession of 2008 bringing the real exchange rate of the ISK close to a 30 year low.

The table below shows the results of OR's stress test compared to the stress tests of The Icelandic Central Bank (CBI) and that of The Financial Supervisory Authority (FSA) conducted on the domestic banking system as published in The CBI's publication Financial Stability 2015/2 from October 2015.

OR's stress test assumptions (accumulated)				
	TWI	CPI	Aluminium	Rise in interest rates
12M change	43%	13%	-13%	1,50%
18M change	43%	16%	-13%	1,88%
24M change	43%	18%	-13%	3,00%
CBI/FSA stress test assumptions (accumulated)				
12M change	27%	8%	-10%	--
24M change	27%	15%	-10%	--

The graph below shows the expected cash balance for the next two years following year end 2015. The stress test and the basic scenario assume borrowing of ISK 22 billion, ISK 35 billion investment along with long term loan repayments of ISK 34.5 billion. The basic scenario is based on price levels, currencies and aluminium prices at the beginning of the stress test and on forward interest rates. The expected cash balance for both stress tests at the end of December 2016 is almost the same as the one for the basic scenario. All scenarios assume a final payment of a USD bond that OR holds at the end of December 2016. The expected cash balance at the end of the stress test covering 24 months is ISK 6.1 billion lower compared to the basic scenario and the expected value is ISK 14.6 billion. In comparison the cash balance is expected to be ISK 17.6 billion based on the less adverse stress test assumptions structured for the domestic banking system done by The CBI and FSA.





Results indicate that OR is well positioned to withstand considerably adverse conditions on domestic and international markets regardless of additional hedging actions. If there were diminished access to financial markets this would prompt a re-evaluation of the investment plan. In addition to a strong cash balance OR has also secured access to credit facilities in the amount of ISK 8.5 billion with the three largest domestic banks, in order to respond to potentially negative developments in OR's operating environment.

## 5.2 Market risk

Market risk is defined as the risk of changes in international markets i.e. FX changes, aluminium price changes and interest rate changes having a detrimental effect on a company's balance sheet and income statement. Hedging against these risks may vary in cost and the net benefits of hedging need to be evaluated in each instance.

### Goal:

To mitigate possible financial loss for the company caused by changes on aluminum market price, foreign exchange rates, change in interest rates or by operating accidents.

### 5.2.1 Currency risk

Even before the Icelandic financial crisis of 2008, currency risk has been OR's greatest risk factor. Imbalance between foreign currency debt and OR's assets - nearly all in ISK - was greatly affected when OR's debt doubled in local currency due to the devaluation of the ISK. Currency distribution of OR's revenue was and is quite different from the currency distribution of debt. Thus the revenue did not increase in conjunction with debt payments.

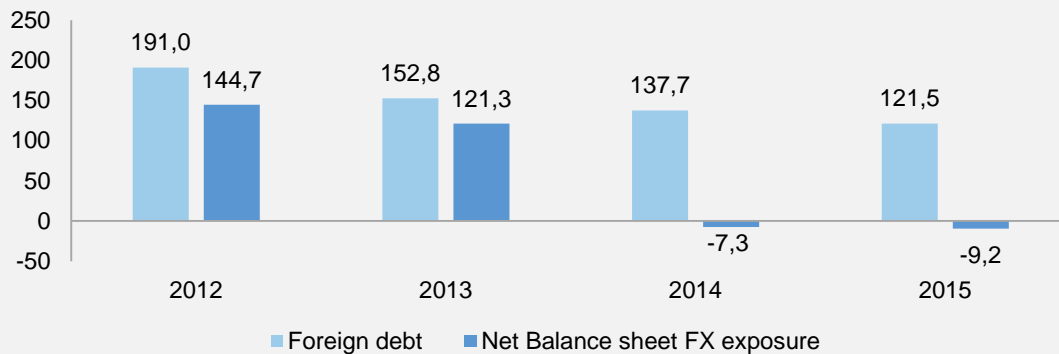
### Economic risk - currency

The unbundling of OR on January 1<sup>st</sup> 2014 created the subsidiary "ON Power" (ON). ON's operational currency is USD. Therefore, OR's consolidated balance sheet after unbundling better reflects that OR has a revenue stream in foreign currency against loans.

Breakdown of foreign exchange balance by currencies shows that OR consolidated now holds assets in ISK and USD and debt is mostly in USD, EUR and CHF resulting in currency imbalances on OR's balance sheet.

Currency imbalance limits according to Risk Policy is 20% of equity. At the end of 2013 this ratio was 179% but minus 8% at the end of 2015 as OR assets in foreign currency exceeded foreign denominated debt. OR has adopted the goal within risk policy of securing currency equivalent to the outflow of the next 12 months. The aim is to secure that FX fluctuations have limited effect on OR's finances in the short term and to allow for increased leeway to tackle challenging developments.

### Balance sheet FX exposure



### Cash flow risk - currency

In order to reduce risk in cash flow and in the balance sheet, hedging contracts have been entered into with domestic banks where foreign debt is swapped into ISK for up to five years. These contracts come under the currency restriction laws thus requiring exceptions from The CBI. Ever since the year 2013 OR has swapped cash flow in EUR for both indexed and non-indexed ISK. The longest contract matures in 2018.

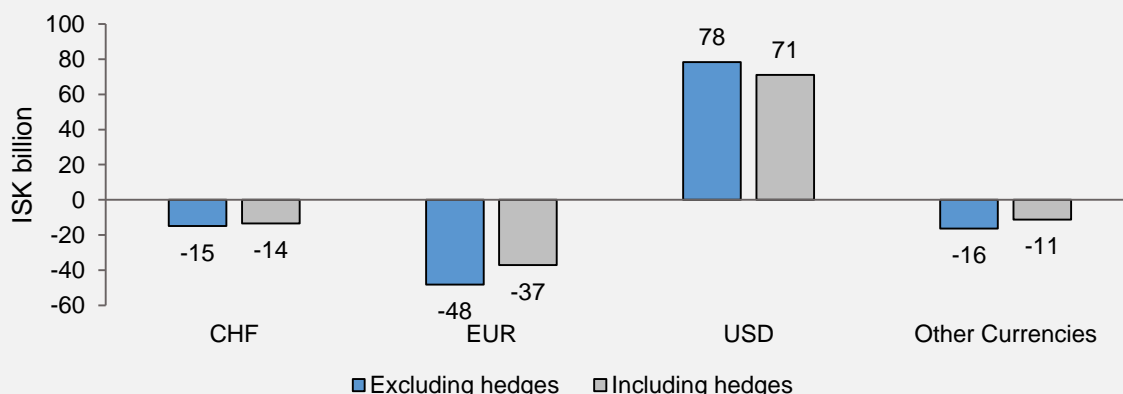
**Goal:**

Currency imbalance shall not exceed 20% of OR's equity. Further reduce imbalance between currencies in cash flow and OR's balance sheet.

In order to diminish imbalances between foreign currencies, currency swaps exchanging debt in various currencies for USD have been executed. This was in response to revenue in other currency than ISK being solely in USD, whereas foreign currency debt is mainly in EUR.

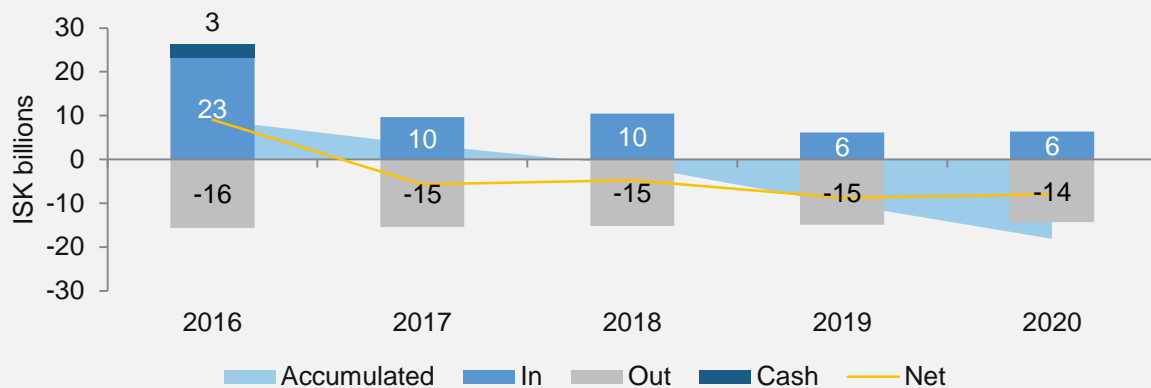
The aim is to further reduce the risk of cross currency fluctuations affecting the balance sheet. Furthermore, OR aims to reduce the debt in EUR and CHF as there are no assets or revenue against debt in these currencies.

### Net FX balance sheet exposure



At year-end 2015 the cash position in addition to the expected inflow against expected outflow for the following year is positive and it is expected to remain so for the next three years.

## Foreign exchange cash flows



### 5.2.2 Aluminium price risk

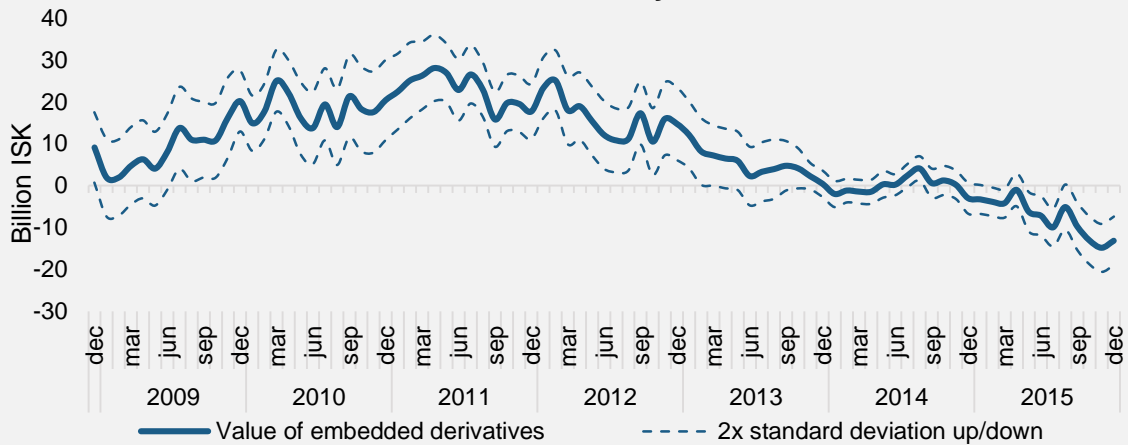
Around 15.8% of OR’s revenue is linked to the price of aluminium. The revenue stems from long term contracts on delivery of electricity. These contracts are assessed at fair value and are accounted for on the balance sheet. OR also holds a bond which is partially linked to aluminium prices. When negotiating the contract for electricity delivery to heavy industry OR became exposed to fluctuations in aluminium prices even though prices of commodities have little effect on operations of power plants. On the other hand OR’s counterparty in this contract became more reliable due to lower production costs when aluminium prices are low, reducing OR’s counterparty risk.

### Economic risk – aluminium prices

Due to the linkage of aluminium prices in the long term electricity sales contracts, an embedded derivative is accounted for on the balance sheet. Its value can fluctuate drastically. The value of the derivative is the difference between present values of expected future cash flow, calculated according to forward aluminium prices on the settlement day, versus forward aluminium prices on the contract day. Thus the price of aluminium, interest rate changes and FX changes all affect the value of the derivative. It is very difficult to hedge against this risk as hedging contracts for aluminium prices are limited to a few years where as the embedded derivatives in electricity sales contracts is calculated for the lifespan of these contracts. The longest contract today matures at yearend 2036. In light of several contracts on electricity delivery maturing in the next few years, both the value and the fluctuations of the embedded derivatives are expected to diminish as the contract period progresses.

The graph below shows that the value of the embedded derivatives from year-end 2008 (continuous line) has fluctuated considerably over the period leading up to year 2015. The broken lines show 12 months moving standard deviation for the value of the embedded derivative both up and down. The narrowing between the lines indicates that fluctuations of value have diminished. Factors that affect value are the contractual obligation to deliver electricity, the price of aluminium, interest rates and the exchange rate of USD against the ISK.

**Value of embedded derivatives in electricity contracts**



The table to the right shows how the value of the embedded derivatives changes when aluminium prices fluctuate by 10% up and down while the interest rates applied in the pricing are moved 1% up and down. It is apparent that the effect of the interest changes are insignificant compared to the effect of changes of aluminium prices. The sensitivity analysis is based on the value of the embedded derivatives on Dec. 31st 2015.

		Aluminium price		
		-10%	0%	10%
Interest	-1%	-5.902	-512	4.878
	0%	-5.093	0	5.093
	+1%	-4.341	482	5.306

**Cash flow risk – aluminium prices**

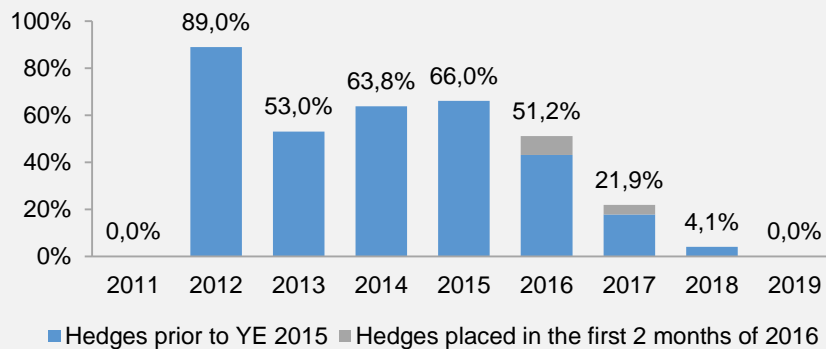
Approximately 15.8% of OR’s revenue is linked to the price of aluminium. In order to reduce effects of fluctuating aluminium prices on its revenue OR has entered into hedging contracts with foreign banks. Finding counterparties has been successful and OR now has the opportunity to hedge against aluminium price fluctuations for up to five years into the future. OR’s risk committee has adopted criteria for upper and lower boundaries of hedging ratio for aluminium prices going forward.

**Goal:**  
Keep hedge ratios at every point in time within approved upper and lower limits.

Thus an explicit strategy is in place regarding hedging against aluminium price fluctuations in accordance with general risk policy however the purpose of hedging against risk is e.g. to reduce fluctuations of and improve the predictability of OR’s cash flow.

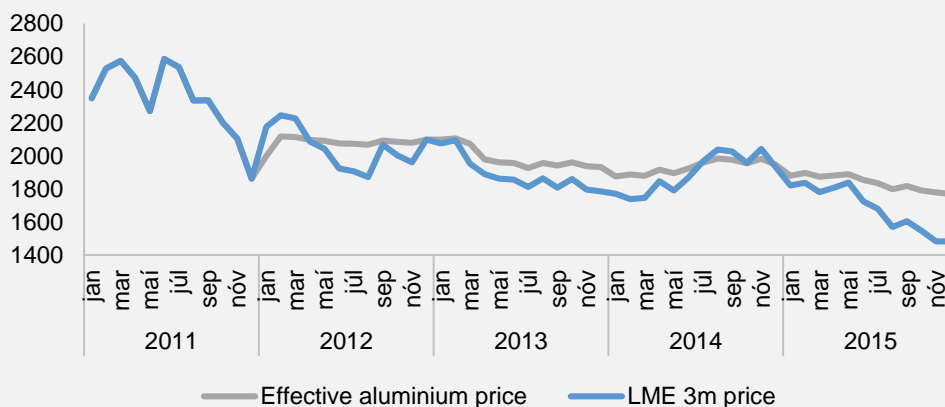
In 2012 OR began hedging against aluminium price fluctuations. Initially contracts were only for one year but gradually the length of hedges have increased as is shown in the graph below.

### Aluminum hedge ratio



The graph below illustrates the effect of hedging against changing aluminium prices since the beginning of active hedging. The blue line shows the market price and the grey line the effective price for OR, taking into account hedge ratios and levels. The graph clearly shows the decline in the market price for aluminium from the beginning of 2011. Due to hedging the effective aluminium price has neither fluctuated as much nor decreased as much as market prices.

### Effective aluminium price vs. LME price



### Developments and prospects

Aluminium prices have dropped during the last 4-5 years ever since the maximum price of 2,800 \$/mt. was reached in May 2011. Prices dropped to 1,500 \$/mt. in February 2015. In the beginning of 2014 and during the first half of 2015 a period of price hikes looked likely but price increases from these periods have now reversed and prices have only been lower during the first months of 2009.



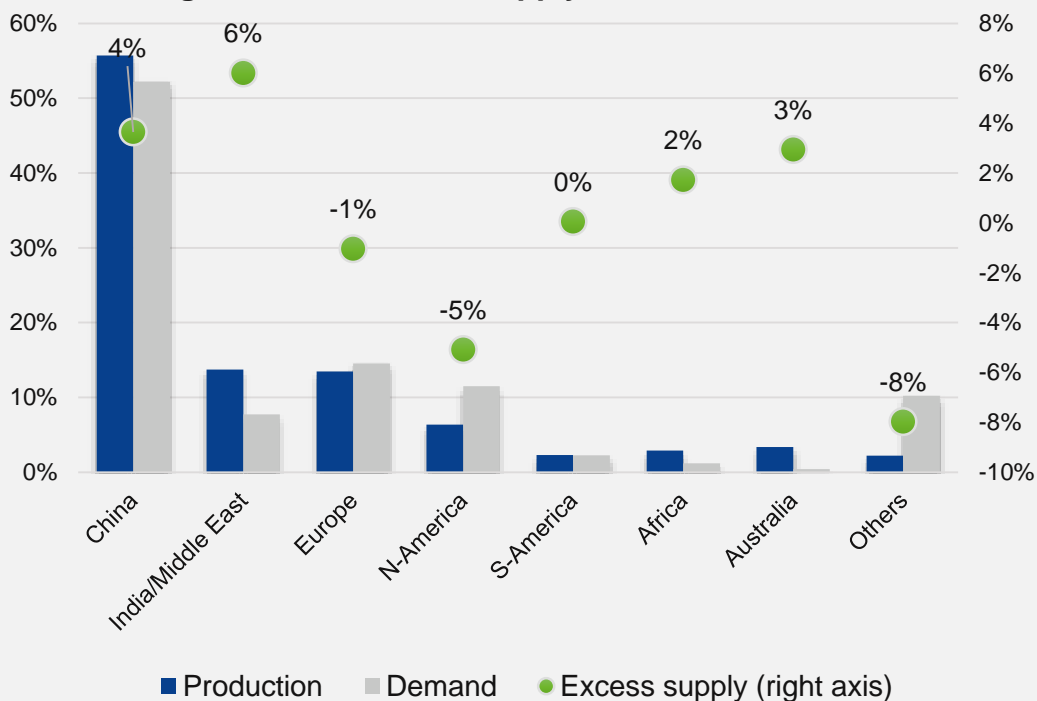
### LME aluminum prices and trailing averages



The graph above shows the daily quotes for three months forwards, moving 100 weeks average aluminium prices and 30 weeks moving average. The declining trend of the 30 weeks seems to have stopped according to the six week period at the beginning of 2016 when observing data from December 2014 to February 2016. The trend for the 100 weeks graph has on the other hand continued its declining path over the 13 months period from the beginning of 2015.

The graph below displays the world’s production and consumption of aluminium. China (56%), India (4%) and The Middle East (10%) together stand for 70% of the production but only consume 60%. Declining economic growth along with greatly increased production capacity in China in recent years has created excess supply in aluminium markets which combined with low growth in the worldwide economy has contributed to one of the lowest yearly averages in aluminium prices in historical context.

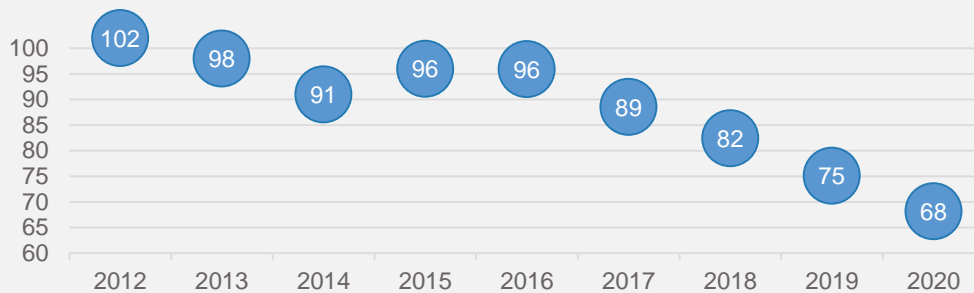
### Aluminium global demand and supply 2016



Source CRU

The CRU consulting group estimates that while average price of aluminium continues to hover around 1,500 \$/mt. between 40-60% of producers worldwide will operate at a loss. The expected losses are in spite of lower prices for production resources such as alumina and electrodes which together stand for between 40-50% of the production cost. The outlook is that the price of aluminium will therefore fluctuate from 1,450-1,550 \$/mt. for 2016 due to overcapacity in China and slow economic growth worldwide. Global aluminium stocks being twice as much as needed (see the graph below) also reduce the probability of an aluminium price hike in the next few quarters.

### Global aluminum stock represented in days of demand



Source: CRU

### 5.2.3 Interest rate risk

Most of OR's foreign loans have a floating rate with various benchmarks i.e. LIBOR, STIBOR, EURIBOR and REIBOR. For the purpose of hedging interest rate risk and favourable market conditions OR has swapped a considerable part of its loan portfolio for fixed interest rates with interest rate and currency swap contracts. Interest rates also affect the estimates of some of OR's assets and liabilities accounted for at fair value according to IFRS.

#### Economic risk - interest

Economic risk related to interest rates consists of the effect interest rates have on fair value of OR's financial assets and obligations. Securities, hedging contracts and embedded derivatives of electricity sales contracts are examples of items accounted for at fair value. These may be assessed to have either positive or negative value. The table below shows the effect of 1% nominal interest rate changes on fair value of OR's assets/obligations in ISK millions.

Sensitivity of financial assets at fair value in OR's balance sheet. 31.12.2015 m.ISK.

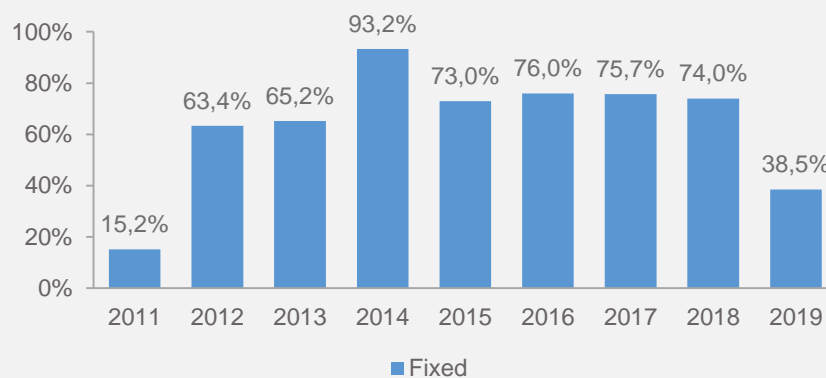
	Interest increase +1%	Interest decrease -1%
Embedded derivatives	482.165	-511.678
Other financial assets	-76.748	78.157
Hedge contracts	2.025.290	-2.105.676
<b>Total</b>	<b>2.430.707</b>	<b>-2.539.197</b>

Note that debt is accounted for at amortized cost and not fair value. Therefore interest rate changes does not affect fair value of debt directly. On the other hand OR is obliged to account for hedging contracts at fair value resulting in risk being expressed on the balance sheet due to changes in their fair value. If debt would be accounted for at fair value the fair value changes of the hedging contracts would be offset by fair value changes of debt.

**Cash flow risk – interest**

A large part of OR’s loans carry floating interest rates. In order to reduce payment fluctuations and improve predictability of cash flow for the next few years OR has entered into SWAP agreements, exchanging floating interest rates for fixed interest rates. Many of these SWAP-contracts also include currency SWAPs in order to reduce the effect of OR’s currency imbalance on cash flow.

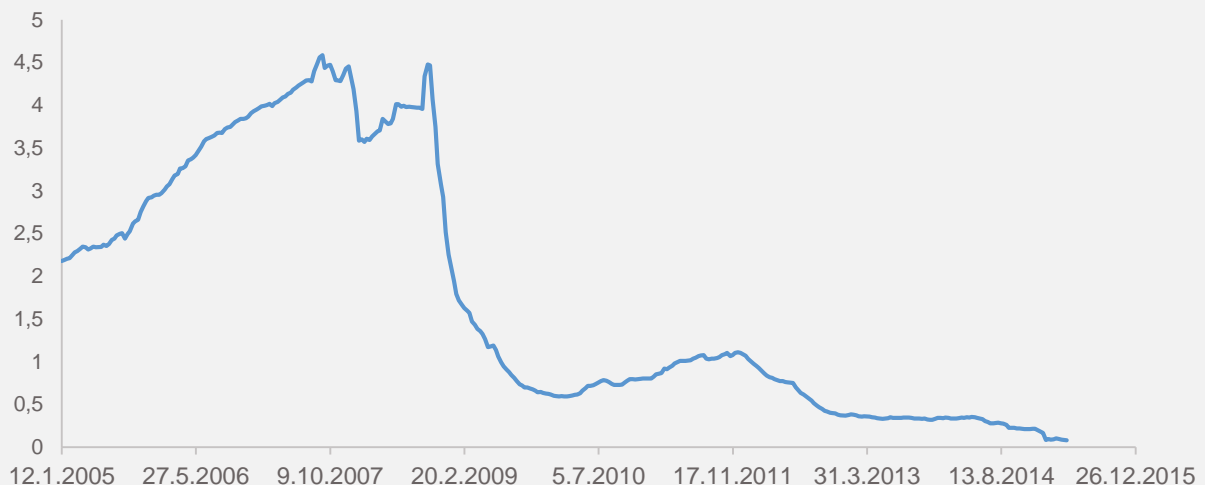
**Fixed interest rates ratio**



**Developments and prospects**

The graph below shows how interest rates in international financial markets have dropped considerably since the financial crash of 2008 i.e. due to interventions of the world’s central banks in their effort to improve economic growth. The graph shows the weighted average of floating benchmark rates for OR’s debt portfolio. As interest rates are at a historical low OR has seized the opportunity to lock in interest rates for the next four year period.

**Historical floating interest rates according to OR's debt portfolio**



### 5.2.4 Consumer price risk

Risk due to changes in the Consumer Price Index (CPI) stems from imbalance between CPI-indexed assets and obligations. The imbalance may give rise to negative effect of price increases on OR's operations and on its balance sheet. Part of OR's debt is CPI-indexed and thus price changes will affect debt servicing going forward. There is an offsetting effect from the indexation of a large part of OR's revenue.

#### Economic risk - indexation

Evaluating economic risk due to changes in the CPI to a substantial degree is quite difficult. Part of local debt is linked to CPI but evaluating assets is more difficult. Properties, plants and equipment are reassessed regularly and correlation with CPI is significant.

#### Cash flow risk - indexation

Evaluating effects of indexation on cash flow is easier than evaluating the effects on the balance sheet. Part of OR's tariffs are updated regularly taking into account changes in CPI and the cash flow for servicing index linked debt is strictly correlated to CPI. On the other hand the effect of price changes on OR's operating costs is not as evident.

### 5.2.5 Stocks and bonds risk

Risk due to the financial assets of bonds and securities on OR's Statement of Financial Position consists of a few assets of different sizes. The most significant concerning cash flow is a security which matures in December 2016. According to the budget for 2016 the expected payment is ISK 9 Billion. The security incorporates an intrinsic derivative linked to aluminium prices with a floor and ceiling values and collateralized with equity shares. The security is performing up to date and its collateral coverage is around 140%.

## 5.3 Counterparty risk

Counterparty risk addresses the risk of delinquency on behalf of contractual party or ordinary consumers. OR's most significant counterparty is Nordural Grundartangi. Other counterparties are significantly smaller in comparison. In light of low aluminium prices The Department of Risk Management analysed Nordural's financial strength. The results point towards Nordural being among the most cost efficient aluminium producers internationally and financially strong in spite of low aluminium prices. From OR's perspective it is desirable to increase the number of counterparties and to diversify counterparty risk. An electricity sales contract was recently concluded and had a positive effect on counterparty risk.

#### Goal:

Reduce consumer's consolidation by reducing large customers and increase the number of smaller customers.

As stated in Chapter 5.2.5 OR holds a bond which is maturing in December 2016. The bond is a fully performing asset and is expected to be paid on time.

## 5.4 Liquidity

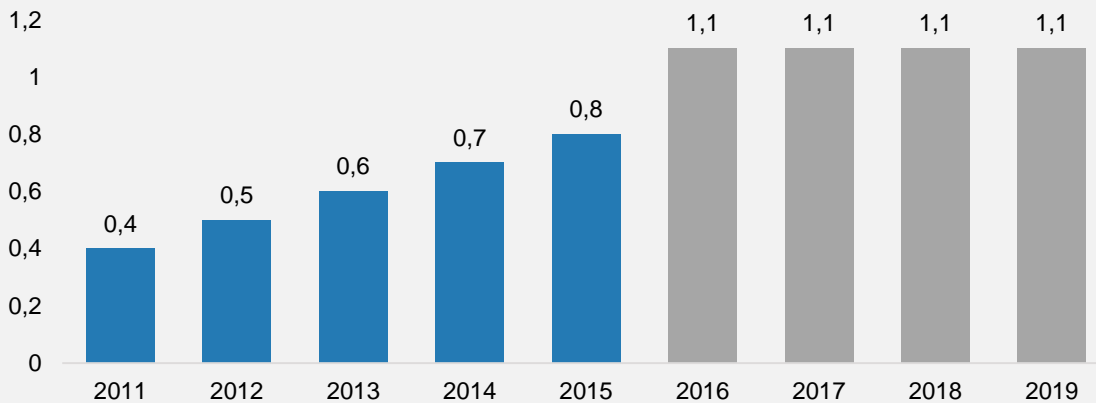
A strong liquidity position is the single best defence against adverse developments. Strong liquidity also improves access to financial markets, improves credit rating and rates. OR has in recent years and months greatly improved liquidity positions. Current ratio has been improving along with lighter payments for loan

#### Goal:

Current ratio >1. Cash ratio above 100% for all periods, from 1 moth to 3 years. Cash ratio above 100% after stress test for the following 12

servicing and better liquidity as can be seen in the graph below. It is preferable in any company's operations to keep current assets at a level able to service short term debt. Even though the cash flow is stable OR's aim is to keep current ratio above one at all times next year. Furthermore, OR is committed to keep cash ratio as defined in OR's Risk Policy<sup>1</sup> above 100% for all periods from one month up to three years and even above 100% after the stress test for the following 12 months. Expected cash ratios are closely monitored on a regular basis and published in the monthly risk report.

### Current ratio



The importance of a strong liquidity position is not to be underestimated in light of the cash flow risk described in previous chapters.

The significance of active liquidity management has increased along with improved liquidity. Making informed decisions based on the valuations of risk and returns is imperative especially regarding stocks and securities. To support these decisions a framework for investments has been adapted including investments in liquid assets. The framework also limits authority for investing in risky financial vehicles. A more detailed description on liquidity management is to be found in Chapter 3.

## 5.5 Core risk

Core risk is the risk related to OR's core activities. Core risk is shaped by OR's long term policy and outside the daily management of risk but is meaningful for policy making in the future.

<sup>1</sup>Ratio of cash is the sum of cash and budgeted revenue against expenses incl. installments and interest payments. The results are presented as ratios. Where 100% means that cash plus operating income is sufficient to meet all expenses for the designated period.



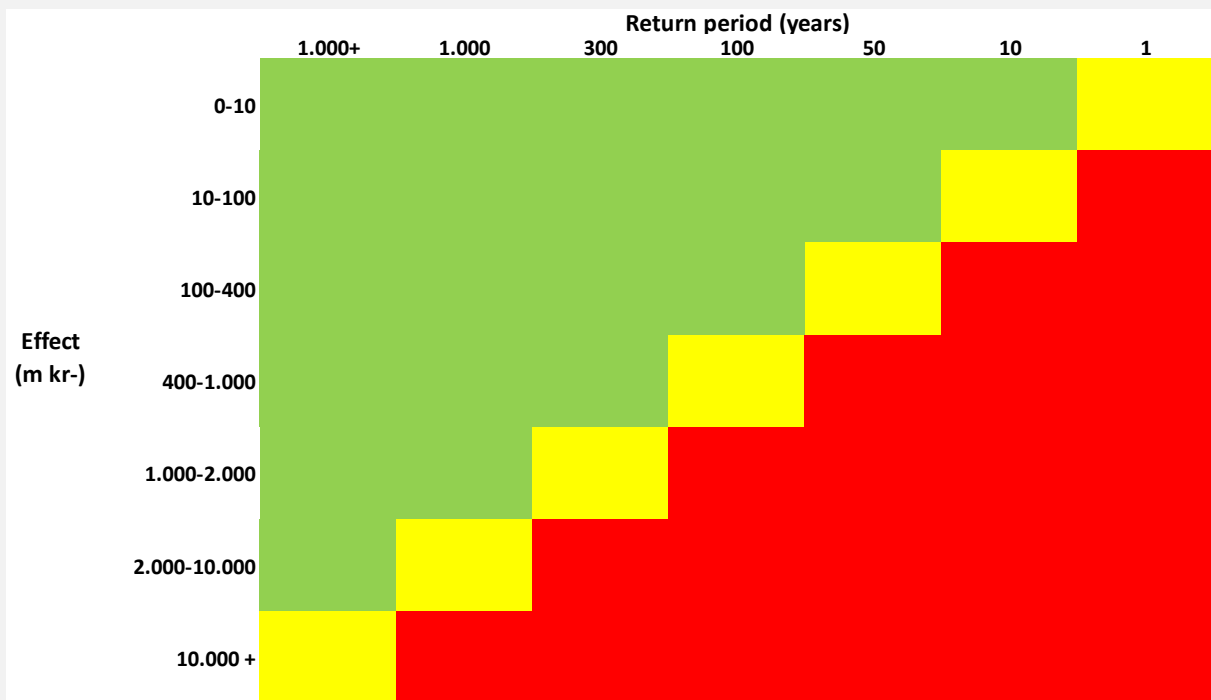
## 5.6 Operating risk

In 2015 the chief executive officers and management team of OR worked on the assessment and management of OR's operating risk. Managers of subsidiaries within the OR group are supervisors of their entity's risk and OR's CEO is responsible for managing operational risk of the parent company.

**Goal:**  
Reduce by a fourth the number of most significant frames in consolidated OR's risk matrix.

During 2015 efforts were made to address and reduce known operating risks. The Risk Committee decides at its meetings how to manage specific risk cases and whether a review of estimates thereof is needed. During 2015 meetings were held with e.g. ON's suppliers and partners regarding the most significant risk cases in ON's operations. The meetings of The Risk Committee usually addresses 2-4 risk cases, chosen according to their seriousness and frequency – red first as being the most significant, then yellow.

The operating risk is presented in a risk matrix for each entity within the group. Each case is ranked in accordance to the magnitude of financial impact and frequency of occurrence. The cases are placed within the risk matrix with regard to possible impact and the probability of occurrence. All risks are then consolidated into one matrix for the whole group. Below is the setup of OR's operational risk matrix.



## 5.7 Insurance

OR's insurance policies cover loss of plant and equipment along with liability claims against OR. ON's geothermal plants are insured with foreign re-insurers and the distribution system is insured with the Icelandic Catastrophe Insurance. OR's furnishings and equipment are insured with the local insurance company Sjóvá which is also the insurer of liability claims.

**Goal:**  
Lowering insurance cost by 10% without increasing the risk.

OR has until now not insured against loss of revenue. In 2016 the feasibility of such insurance for certain circumstances will be explored. The evaluation applies especially to certain risk cases with ON.

In 2015 a successful reduction in insurance premiums was achieved, the main steps were:

- *When renewing Insurance for power plants a general reduction of insurance premiums was achieved. The asset base of power plants increased in 2015 due to the expansion of steam supply of Hellisheiði power plant and a hydrogen-sulphur scrubbing plant.*
- 



### Goal for 2016:

- Lowering insurance cost by 10% without increasing risk.

## 6 Credit rating

Credit rating is important to companies doing business on international markets. Credit rating is acquired in order to give lenders an independent objective view of OR's financial position and its prospects. A solid credit rating improves OR's credibility, borrowing terms, interest rates in swaps, accessibility to capital and reputation.

### Goal:

Reach investment grade rating from Moody's and Fitch Ratings.  
 Increase Reitun's rating.

The following firms have expressed opinion on OR's credit rating:

- *Moody's ratings since 2007 - an official rating was presented in December 2015*
- *Fitch Ratings' ratings since December 2014 - an official rating was presented in December 2015*
- *Reitun's ratings since 2010 - an official rating for the Icelandic market was presented in May 2015.*

The rating of The Government of Iceland has significant effect on the ratings for Icelandic firms as their rating cannot be better than The Icelandic State's. Standard and Poor improved The Icelandic State's credit rating from BBB to BBB+ in January 2016. The credit rating of The City of Reykjavik and OR's connection to The City also affects OR's credit rating.

	Orkuveita Reykjavíkur			The Republic of Iceland	
Rating agencies	Moody's	Fitch Ratings	Reitun	Moody's	Fitch Ratings
<b>Long term</b>	Ba3	BB-	iA1	Baa2	BBB+
<b>Short term</b>				P-2	F-2
<b>Prospects</b>	Stable	Stable	Positive	Stable	Stable
<b>Issue date</b>	Dec 2015	Dec 2015	May 2015	Jun 2015	Jan 2016

Comparison of the ratings of Moody's and Fitch Rating's, when taking into account the owners guarantee- observing the rating scale of each agency – shows that their basic rating for OR is even.

### Moody's credit rating

OR was in Moody's second category in 2007 but in the wake of the crash of the Icelandic banks in 2008 OR's rating went down first to A1 and to Ba1 in 2009. Because of heavy debt burden and lack of liquidity and also risk related to aluminium prices and currency fluctuations the rating was lowered to B1 in July 2011.

The progression of Moody's credit rating is as follows :

Date	Jan'07	Jul'08	Oct'08	Dec'08	Nov'09	Apr'10	Jul'11	Dec'13	Dec'14	Dec'15
<b>Rating</b>	AA2	AA2	A1	Baa1	Ba1	Ba1	B1	B1	B1	Ba3
<b>Prospects</b>	Stable	Negative	Stable	Negative	Stable	Negative	Negative	Stable	Positive	Positive

Due to less risk, better key values and a stronger financial position Moody's credit rating for OR improved from B1 to Ba3 and from positive prospects to stable in December 2015. Moody's praises OR for an improved financial position and improved tolerance for adverse developments in aluminium prices, foreign currency exchange rates and interest rates. OR's strong financial position is the result of effective execution of OR's five year plan. The Plan the Board adapted in March 2011. OR has achieved all its goals as a result of increased revenue, reduced cost and postponing particular investments. OR reached The Plan's aims a year ahead of schedule, planned for December 2016.

*Positive effects on credit rating:*

- *Icelandic economy grows stronger and an increase in GDP is to be expected*
- *OR continuous hedge against fluctuations in both commodity and financial markets*
- *OR keeps open access to financial markets, especially access to borrowing*
- *FFO/Debt continues to be over 10% going forward*
- *No change in owners guarantees (support).*

*Negative effects on credit rating:*

- *Liquidity or access to short term borrowing deteriorates*
- *OR ceases to have access to borrowing in domestic or international markets.*

### **Fitch Rating's credit rating**

Fitch Rating's first rating was presented in February 2015. Fitch's rating is the same as Moody's.

The progression of Fitch's rating is as follows:

<b>Date</b>	<b>Feb'15</b>	<b>Dec'15</b>
<b>Rating</b>	BB-	BB-
<b>Prospects</b>	Stable	Stable

*The rating is mainly based on:*

- *The operations being restricted to the Icelandic market*
- *Aluminium price risk resulting in price risk affecting EBITDA*
- *Effect of currency risk on cash flow*
- *Risk due to high indebtedness*
- *Secure revenue*
- *Scope for rates increase*
- *Strong FFO interest coverage*
- *Positive effects of The Plan*
- *Compared to other countries in Europe the regulatory framework for concessionary industry in Iceland is considered effective.*

*Positive effects on credit rating:*

- *Continued link with changes in price levels*
- *Continued results exceeding plans leading to FFO interest coverage above 5.7x*
- *Increased support from owners consisting in unconditional guarantees and postponement of dividends*
- *The financial conditions adapted by OR's Board which must be fulfilled before payment of dividends can take place*
- *Liquidity's continuous improvement.*

*Negative effects on credit rating:*

- *Restrictions on raising of tariffs, increased investment, OR does not receive payment from security resulting in Debt/ FFO goes above 7x and FFO interest coverage stays below 4x going forward*
- *A politically appointed board leading to adverse decisions on tariffs or investments thus ignoring the well-being of OR*
- *Decisions on tariffs and investment are not solely at the discretion of OR but are subject to actions of the government.*

## Reitun's credit rating

The progression of Reitun's credit rating is as follows:

Date	Nov'10	Nov'11	Jun'12	Oct'13	Dec'13	Jun'14	Jan'15	May'15
<b>Rating</b>	i.BBB1	i.BBB1	i.BBB1	i.BBB1	i.BBB1	i.A3	i.A3	i.A1
<b>Prospects</b>	<i>Stable</i>	<i>Stable</i>	<i>Stable</i>	<i>Positive</i>	<i>Positive</i>	<i>Stable</i>	<i>Positive</i>	<i>Stable</i>

Reitun is an Icelandic credit rating agency. Their rating's point of departure is the rating of the most secure domestic borrower and risk assessment as evaluated by local investors. The credit rating of the most secure domestic borrower is i.AAA for The Icelandic State.

*Prerogatives for improvement:*

- *Improved financial position*
- *Debt decreases improving debt ratio and diminishing risk*
- *Improved credit rating of The City of Reykjavik.*

*Prerogatives for deterioration:*

- *The Plan fails*
- *OR loses lines of credit*
- *Unexpected adverse incidences in general operations or considerable adverse changes in the economy/market.*

## Summary

There is considerable likelihood for improvement of OR's credit rating over the next quarters and years resulting from the success of The Plan, the splitting up of the company and increased hedging against OR's main risks. Already Moody's rating has improved from B1 to Ba3.

The credit rating agencies concur that OR has shown improved operations, improved liquidity and reduced financial risk.

OR's difficult financial position notwithstanding - the bank crash of 2008 doubling the foreign debt in ISK - OR has never been delinquent and has never had to result to the owner's guarantees.

## 7 Appendix A: Commercial banks benchmark ratios

The strength of commercial banks and counter party risk is valued according to the benchmarks below. The following evaluation of key ratios is based on OR's counter party financial reports.

	Landsbankinn	Íslandsbanki	Arion Banki	KVIKA
	2015 ISKm	2015 ISKm	2015 ISKm	2014 ISKm*
Equity ratio (CAR - Tier 1 ratio)	30,4%	30,1%	24,2%	17,4%
Ratio of risky assets, weighted (RWA)	77,0%	66,9%	79,9%	54,0%
Equity ratio	23,6%	28,3%	19,1%	11,3%
ROE	14,8%	10,8%	28,1%	6,0%
LCR (min 70%)	113,0%	143,0%	134%	133,0%
LCR - FX (min 100%)	360,0%	467,0%	218%	272,0%
Delinquent for more than 90 days	1,8%	2,2%	2,5%	0,9%
State ownership	98,2%	5,0%	13,0%	0,0%
Lending	832.340	701.245	767.841	43.748
Equity	264.531	202.227	201.894	5.597
Credit rating S&P	BBB-Positive	BBB-Positive	BBB-Positive	NA

\*Financial information for 2015 was not available.

A more detailed description of the key ratios is presented below:

Measures and ratios	Definitions
<b>Equity ratio (CAR - Tier 1 ratio)</b>	Measures a bank's equity ratio as a percentage of its risk weighted assets. (E. CAR = Capital Adequacy Ratio). The minimum by law is 8% but extra requirements are placed on each bank.
<b>Risk Weighted Assets (RWA)</b>	Risk weighted assets as a proportion of total assets. (E. RWA = Risk Weighted Assets).
<b>CAR (Capital Adequacy Ratio)</b>	Equity / Total Assets
<b>ROE</b>	Return On Equity (e. return on equity = net income/ equity)
<b>LCR (min 70%)</b>	Banks' high quality liquid assets in foreign currency denominations to meet adverse developments within 30 days (E. LCR = Liquidity Coverage Ratio).
<b>LCR - FX (min 100%)</b>	Banks' high quality cash or cash equivalents in foreign currency to meet current obligations in adverse situations within 30 days (E. LCR = Liquidity Coverage Ratio).
<b>Over 90 days delinquency</b>	More than 90 days past due. (E. > 90 days past due)
<b>The Icelandic State's Ownership</b>	The Icelandic State's ownership skews the picture.
<b>Loans</b>	Loans outstanding (E. assets).
<b>Equity</b>	Total Equity
<b>S&amp;P's Rating</b>	Standard and Poors' credit rating.



## 8 Appendix B: ratio

Below are detailed explanations of measures and ratios used to establish OR's financial strength and for bench marking with other firms in the energy sector.

Ratios	Goal 2016 - 2018	Goal 2019 >	Formula	Definitions
Current ratio	> 1,0	> 1,0	Current assets/ Short Term obligations	Indicates an entity's ability to service its obligations in the near future and liquidity for the next twelve months.
Equity ratio	> 35%	> 40%	Equity / (Equity + Debt)	An entity is in general stronger the higher this ratio is.
FFO interest coverage	> 3,5	> 3,5	(FFO + interest payments) / interest payments	An entity's ability to pay instalments. Moody's Measurement.
RCF / net debt	> 11%	> 13%	FFO - dividends/ net debt	Measures the debt ratio of an entity, measuring risk considering dividend payments. Moody's Measurement.
FFO / net debt	> 13%	> 17%	FFO/Net debt	Measures the debt ratio of an entity, measuring an entity's financial risk. Moody's Measurement.
Dividend ratio	≤ 50%	≤ 50%	Dividends/ Net earnings	Measures dividends proportion of earnings for the period.

### Definitions:

FFO = Funds from operations

Net debt = Interest bearing debt

EBITDA = Earnings before interest, taxes, depreciation and amortization

RCF = Funds from operations - dividends