

## 04: Risk review

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### QUICK OVERVIEW

Hydro faces many risks and uncertainties within its worldwide business operations and the global marketplace. We are exposed to changing economic and market conditions and price volatility can have a significant impact on Hydro's reported and operating results. Repositioning and restructuring activities are important in determining the viability of our future aluminium operations.

Our primary smelting operations are highly dependent on securing substantial amounts of energy at competitive prices. We are exposed to increasingly onerous legislation on CO<sub>2</sub> emissions that impact Hydro directly, relating to aluminium production, and indirectly, through higher power prices.

Risk management in Hydro is based on the principle that risk evaluation is an integral part of all business activities. Hydro's main strategy for mitigating risk related to volatility in cash flow is to maintain a solid financial position and strong credit worthiness. Hydro is also taking proactive measures to reduce credit risk, improve its financial position and further adjust the cost of its smelter operations.



### Indicative price and currency sensitivities +10% <sup>1)</sup>

NOK million	EBIT	Financial items	Income before tax	Net income
LME	2 700	-	-	2 000
USD	2 100	(700)	1 400	1 000
BRL	(850)	650	(200)	(100)
EUR	(150)	(1 400)	(1 550)	(1 100)

<sup>1)</sup> Assumptions: Annual sensitivities based on expected business volumes for 2013, LME USD 2,000, NOK/USD 5.80, NOK/BRL 2.80 and NOK/EUR 7.40. Aluminium price sensitivity is net of aluminium price indexed costs and excluding unrealized effects related to operational hedging. Currency sensitivities relating to financial items includes effects from intercompany positions.

## Risk factors

Below is a description of certain risks that may affect our business, financial condition and the results of operations from time to time and, hence, our share price. All of the information in this report should be carefully considered, in particular, the risks described below.

### *Continued uncertainty and volatility in global economic and market conditions could have an adverse effect on our operating results and liquidity*

Weak global economic conditions have contributed to low and volatile aluminium prices. Economic developments for Hydro's core European markets, in particular, have resulted in weaker downstream demand. These developments have had a significant negative influence on Hydro's underlying EBIT for the year 2012.

Future economic developments remain uncertain. Europe, in particular, continues to be impacted by the ongoing economic crisis. It remains to be seen whether initiatives implemented in the national states and the European Union (EU) will be sufficient to adequately address the underlying fiscal and economic problems in Europe. Although considered remote, there is a risk of failure within the currency union and the political union as a whole. A failure of the Euro or European Union would have far reaching consequences for both Europe and the world economy. In addition to the indirect effects of a severe general macroeconomic downturn, Hydro's counterparty risk towards key customers or groups of customers in weak and deteriorating economies could increase significantly. See also risk factor "Hydro faces the risk of counterparty default" below.

Based on operating revenues, around 45 percent of Hydro's business is generated within the EU and about 61 percent in Europe in total. Of this amount, Southern Europe represents about 10 percent of the total operating revenues. These amounts exclude Extruded Products which is reported as discontinued operations.

Since 2008 the global production of primary aluminium, excluding China, has exceeded market demand despite significant curtailments of production capacity, and inventories have remained at high levels. New curtailments, together with production disruptions contributed to a relatively balanced market in 2012. Although the market is expected to remain balanced in the coming year, expected growth in demand is uncertain.

### *We may be unable to reduce operating costs sufficiently to compensate for an extended period of weak demand and low aluminium prices*

The majority of Hydro's upstream capacity is located in countries experiencing strong currencies and/or inflationary pressures such as Norway, Australia, Brazil, Qatar and Canada. These factors increase our operating costs and weaken our competitive position globally. In 2012, Hydro decided to close production at its Kurri Kurri plant in Australia due to the weak economic environment, low metal prices together with the effects of the strong Australian dollar.

In the last several years, the aluminium industry cost curve has increased on average about USD 300 per mt mainly due to higher costs for key raw materials driven by strong demand in emerging economies and in China in particular.

New initiatives have been implemented targeting significant cost savings and improvements for our operating segments while programs initiated earlier are ongoing. We may not succeed in making the cost reductions and improvements necessary on a timely basis, or they may be insufficient to achieve a sustainable level of profitability for our business operations in the event of an extended period of low aluminium prices, relatively high costs for key raw materials or weak market demand.

### *Price volatility can impact our operating costs and can also have a substantial effect on our reported operating results*

Commodity price volatility in general has increased significantly in recent years and can have significant impact on our operating results. Commodity price volatility, including raw material commodities such as fuel oil, petroleum coke and coal, can significantly impact our operating costs directly and can also have a substantial effect on our reported operating results due to realized and unrealized gains and losses on derivative instruments. Underlying results for our trading and hedging operations are subject to substantial variations in periods of significant fluctuations of spot and forward prices for aluminium.

*A deterioration of our financial position or a downgrade of our ratings by credit rating agencies could increase our borrowing cost and cost of capital and have an adverse effect on our business relationships*

It is important for Hydro to maintain its investment grade credit rating for competitive access to capital and to support its business relationship with customers, suppliers and other counterparties. Our credit rating is also an important factor in making Hydro attractive as a joint venture partner for new growth initiatives. Any deterioration of our financial position or downgrade of our credit rating could increase our borrowing costs and have an adverse effect on our business relationships and attractiveness for major projects, contracts and other agreements.

*Hydro's reported results and competitive position are exposed to changes in currency exchange rates*

Hydro has a substantial portion of its primary metal capacity based in Norway and its accounting and reporting currency is the Norwegian krone. Primary aluminium prices and a major part of the raw materials for producing aluminium are denominated in US dollars. Following the completion of the Vale aluminium acquisition, roughly half of Hydro's capital employed is located in Brazil. Much of Hydro's downstream business is based in Europe and a large portion of the production is sold in Euro while export sales are typically denominated in US dollars. As a result of these exposures, the relative value of the US dollar, Brazilian Real and Euro are of high importance to Hydro's operating results. Changes in the value of these currencies can be significant and volatile.

Periodic revaluation of foreign-denominated balances can have a significant impact on earnings. Revaluation upon realization of such balances can have a significant effect on both earnings and cash. The value of investments committed in foreign currencies is sensitive to currency movements.

*Hydro may not realize the benefits expected from the planned Sapa joint venture*

The planned Sapa joint venture is expected to provide a platform for improved profitability and potential for future growth for Hydro's extrusion business. Potential synergies are expected to contribute to meeting the challenging market situation which is expected to continue in 2013. The necessary approvals from the relevant competition authorities in order to proceed with the transaction may not be granted. If the transaction is approved, the joint venture may fail to achieve a successful integration of the business operations and may not achieve the synergies expected.

*Hydro may not realize the benefits expected from the acquisition of the Vale aluminium business*

Hydro cannot be certain that it will realize the expected benefits from the acquisition of the Vale aluminium business or that such results can be achieved in the time frame expected. Weak economic and market conditions had a substantial negative influence on Hydro's bauxite and alumina business in 2012.

Costs associated with operating a mine may increase rapidly as a result of, among others, production interruptions or delays, increased or new license requirements and fees, new or increased royalties and/or indirect taxes, changes or variations in geologic conditions, environmental hazards and weather and other natural phenomena, mining and processing equipment failures and unexpected maintenance problems and interruptions due to transportation delays.

The acquisition of title to mineral concessions in Brazil is a detailed and time-consuming process. Failure to comply with the requirements of the Brazilian Department of Mines with respect to exploration permits and mining concessions may result in a loss of title. Third parties (including, but not limited to, indigenous persons) may dispute title to mineral concessions or the right to conduct mining or exploration activities. In addition, such properties may be subject to undetected or undisclosed defects.

The bauxite reserves acquired in the Vale transaction and the estimated quantities of bauxite that Hydro expects can be economically mined and processed are subject to material uncertainties.

*Business development has occurred and is more likely to occur in emerging and transitioning markets*

Following the acquisition of the Vale aluminium business and the completion of the Qatalum smelter, the geographic distribution of Hydro's business has changed significantly. New primary smelter, alumina and bauxite capacity is expected to be mainly located in countries characterized by emerging and transitioning markets.

Investing in emerging and transitioning markets is demanding in terms of organizational capacity, effort, knowledge and experience and Hydro may not be capable of succeeding in expanding its business in such markets.

Investments in emerging and transitioning markets may create exposure to economic structures that are generally less diverse and mature and may involve increased risks of severe inflation, fluctuation in currency rates, changing laws and judicial interpretations, disputes over ownership of land and other property and diverging financial, commercial or disclosure practices. Legal, fiscal and regulatory systems in emerging and transitioning markets may be less stable and have a lower degree of transparency and predictability, making investment evaluation and any eventual implementation more difficult. Lower transparency may also create exposure to actual or perceived corruption increasing the risk to the reputation of companies operating in such markets.

Conducting business in emerging and transitioning markets may be affected by political instability or unpredictability resulting from national or regional political transitions. Conducting business in emerging and transitioning markets may also be affected by government regulations with respect to restrictions on production, price controls, export controls, restrictions on repatriation of profits, payment of dividends, income taxes, expropriation of property, environmental legislation and mine safety. The Brazilian government has in the past intervened in the Brazilian economy and has occasionally made substantial changes in policy.

*Hydro could be adversely affected by disruptions of our operations and may not be able to maintain sufficient insurance to cover all risks related to its operations*

Hydro's business is subject to a number of risks and hazards which could result in damage to properties and production facilities, personal injury or death, environmental damages, monetary losses and possible legal liability. Breakdown of equipment, power failures or other events, including catastrophic events such as natural disasters and major military conflicts leading to production interruptions in our plants could have a material adverse effect on our financial results and cash flows. Although Hydro maintains insurance to protect against certain risks in such amounts as it considers reasonable, its insurance may not cover all the potential risks associated with Hydro's operations.

*Our downstream business is exposed to competition from China*

China has in recent years imposed duties designed to reduce the export of aluminium metal, while also encouraging domestic production of more labor intensive semi-fabricated and finished aluminium products. This development exposes our downstream business to lower-priced exports from China.

*Emerging or transitioning markets present a competitive threat to our business*

Emerging or transitioning markets in countries with abundant natural resources, low-cost labor and energy, and lower environmental and other standards, have posed and may continue to pose a significant competitive threat to our business. In 2007, the European Union (EU) reduced its duty on unalloyed aluminium. Any further reductions or cancellation of these duties could result in increased imports of primary aluminium to the EU market from sources such as Russia and the Middle East.

*Hydro is exposed to increasingly demanding legislation on reducing CO<sub>2</sub> emissions*

Hydro has substantial smelter operations located in Europe. Legislation regulating CO<sub>2</sub> emissions has resulted in higher power prices for our European operations but to a lesser extent for our Norwegian smelters in the short to medium term, since most of the electricity consumption in Norway is covered by our own equity production or through long-term supply contracts. The EU has enacted emissions regulations that apply directly to CO<sub>2</sub> emissions from our smelter operations in Norway and in the EU from 2013 onward. Although there will be some compensation available to aluminium producers, these regulations are more demanding than those being contemplated in most other regions of the world and could negatively impact our competitive position. See also the section in this report on Regulation and taxation for more information pertaining to climate gases.

*Our aluminium operations, and in particular our smelters, are dependent upon large volumes of energy*  
Our position could be materially affected by the inability to replace, on competitive terms, our long-term energy supply contracts when they expire, or our own equity production to the extent that concessions revert to the Norwegian state. See also the section in this report on Regulation and taxation for more information pertaining to the Norwegian regulatory system for hydroelectric production.

*Future acquisitions, mergers, or strategic alliances may adversely affect our financial condition*

Hydro may undertake additional acquisitions in the future and may not be able to realize benefits expected for such transactions. Acquisitions may contain significant unidentified liabilities which could have a material adverse effect on our financial position.

*Increasing investments in jointly owned entities reduces Hydro's ability to manage its business portfolio*

Investment as a minority partner in jointly owned entities and associates reduces Hydro's ability to manage and control this part of its portfolio. Investments in jointly owned entities, including those in which we hold a majority position also entail the risk of diverging interests between business partners, which could impede Hydro's ability to realize its objectives, repatriate funds from such entities and to achieve full compliance with its standards. At the end of 2012, around half of our smelter capacity was owned through interests in joint venture companies and we have an agreement for the establishment of a new joint venture for our extrusion operations.

*We may not be successful in attracting and retaining sufficient skilled employees.*

In order to safeguard our operations and achieve future growth, we must recruit and retain qualified professionals.

We are highly dependent on the continuous development and successful application of new technologies and require substantial capacity and competence in terms of complex management and critical business processes. We also emphasize diversity with regards to nationality, culture, gender and educational background in our recruiting practices and policies. Demand for personnel with the range of capabilities and experience required in our businesses is high and we may not succeed in attracting and retaining such employees. A subsequent decline in competitiveness could have a negative impact on our operating results and financial condition.

*We may not succeed in developing technological solutions to support our growth strategies*

Being at the forefront of technological development is important to remain competitive. Hydro is engaged in the development of new "next generation" cell and smelter technology together with key suppliers. We may fail to develop these technologies on a timely basis or they may not be commercially feasible, thereby resulting in a negative impact on our competitive position.

*Hydro faces the risk of counterparty default*

A significant downturn in the business or financial condition of a key customer or group of customers exposes us to the risk of default on contractual agreements and trade receivables, which would have a negative impact on our operational results. Weak and deteriorating economic conditions on a global, regional or industry sector level increases the risk of defaulting counterparties and may reduce or make prohibitively expensive credit insurance to cover such risk.

*Failure or delays in the execution of major projects could have a negative impact on our competitive position*

Hydro's strategy is to focus on business opportunities that enhance the cost position of its operations. We have several potential development projects which would require substantial funding. The execution of major investment projects is subject to the risk of delays, cost increases, availability of adequate funding and other complications. Failure or delays in the execution of major projects could result in additional costs and lost operating revenues in addition to weakening our competitive position, which would in turn have a negative impact on our future operating results.

*Major accidents could result in substantial claims, fines or significant damage to Hydro's reputation*

Some of our operations are located in close proximity to sizable communities. Major accidents due to human error, systems failures, deliberate sabotage, extreme weather or other natural disasters, could result in loss of life or extensive damage to the environment or communities. Such events could result in major claims, fines, penalties and significant damage to Hydro's reputation.

### *Hydro could be negatively affected by legal proceedings or investigations*

Hydro could be negatively affected by criminal or civil proceedings related to, but not limited to product liability, environment, health and safety, alleged breaches of anti-competitive, anti-corruption practices or other integrity legislation or commercial disputes. See also the section of this report on Viability for more information on issues relating to integrity and transparency, and Legal proceedings in this Risk review section for more information on these matters. Violation of applicable laws and regulations could result in substantial fines or penalties, costs of corrective works and, in rare instances, the suspension or shutdown of our operations and substantial damage to the company's reputation.

### *Hydro may be subject to unforeseen liabilities for environmental damage*

Environmental laws may impose cleanup liability on owners and occupiers of contaminated property, including past or divested properties, regardless of whether the owners and occupiers caused the contamination or whether the activity that caused the contamination was lawful at the time it was conducted. Many of our present and former operations are and were located on properties with a long history of industrial use. See also the section in this report on Regulation and taxation for more information pertaining to Environmental matters.

### *Hydro is subject to a broad range of laws and regulations*

Hydro is subject to a broad range of laws and regulations in the countries and legal jurisdictions in which we operate. These laws and regulations impose stringent standards and requirements and potential liabilities regarding accidents and injuries, the construction and operation of our plants and facilities, air and water pollutant emissions, the storage, treatment and discharge of waste waters, the use and handling of hazardous or toxic materials, waste disposal practices, and the remediation of environmental contamination, among other things. We believe we are in material compliance with currently applicable laws and regulations. However, these laws and regulations may change or new laws and regulations may be enacted requiring substantial costs for compliance, reducing profitability or having a negative impact on our competitive position.

### *Hydro may be subject to liabilities relating to businesses transferred to successor companies*

Hydro has certain joint liabilities under Norwegian statutory regulations following from demergers. Under the Norwegian public limited companies act section 14-11, Hydro and Statoil are jointly liable for liabilities accrued before the demerger date of October 1, 2007. This statutory liability is unlimited in time, but is limited in amount to the net value allocated to the non-defaulting party in the demerger. Similarly, Hydro and Yara International ASA are jointly liable for liabilities accrued before the demerger date of March 24, 2004, on the same conditions.

### *Rights and legal remedies may be limited for certain classes of shareholders*

The exercise of shareholder rights such as voting and preferential subscription rights may not be available to beneficial shareholders whose shares are registered in a nominee account, and not in the shareholders' own names with the Norwegian Central Securities Depository, *Verdipapirsentralen* (VPS). Hydro cannot guarantee that beneficial shareholders will receive the notice for a general meeting in time to instruct their nominees to affect a re-registration of their shares. Hydro is organized under the laws of the Kingdom of Norway. It may be difficult for investors to effect service of process outside Norway upon Hydro or its directors and executive officers, or to enforce against Hydro or its directors and executive officers judgments obtained in other jurisdictions. Norwegian courts are unlikely to apply other than Norwegian law when deciding on civil liability claims under securities laws.

## Market and commercial risk

Risk management in Hydro is based on the principle that risk evaluation is an integral part of all business activities. Business areas have the main responsibility for relevant risk management within their area. Corporate staff units establish policies and procedures for managing risk and coordinate an overall enterprise risk assessment.

### *Financial position*

Hydro's main strategy for mitigating risk related to volatility in cash flow is to maintain a strong balance sheet. Specific key financial ratios and other metrics are targeted over the business cycle reflecting a solid financial position and strong credit worthiness. Examples include an adjusted net interest-bearing debt/equity ratio below 0.55 and a ratio of funds from operations to adjusted net interest-bearing debt above a level of 0.40. In addition, Hydro has established guidelines for liquidity reserves and for the profile of installment payments on debt in order to secure its financial position.

### Liquidity risk

Hydro's liquidity position at the end of 2012 is considered to be solid. An undrawn committed credit facility from banks amounting to USD 1.7 billion remained undrawn from the previous year. During 2012, Hydro issued a NOK 1.5 billion bond maturing in 2019. Hydro continues to focus on cash flow and credit risk throughout the organization. We take a proactive approach toward customers to reduce credit risk and also monitor the financial performance of key suppliers in order to reduce the risk of default on operations and key projects.

### Prices and currency

Hydro's operating results are primarily affected by price developments of its main products, aluminium and power, and of raw materials, in addition to fluctuations in the value of the Norwegian krone to the U.S. dollar and the Euro, and of the Brazilian Real to the U.S. dollar which are the most significant currencies for Hydro. Our main risk management strategy for upstream operations is to accept exposure to aluminium and energy price movements, while at the same time focusing on reducing the average cost position of our production assets. In certain circumstances, derivatives may be used to hedge certain revenue and cost exposures.

Downstream and other margin-based operations are to a certain extent hedged to protect processing and manufacturing margins against raw material price fluctuations. An operational hedging system has been established to protect commercial contracts from aluminium price fluctuations.

To mitigate the U.S. dollar exposure, Hydro's policy is to raise funding in U.S. dollars. To reduce the effects of fluctuations in the U.S. dollar and other exchange rates, Hydro has also used foreign currency swaps and forward currency contracts. Currently, there are no material amounts outstanding under such contracts.

An indication of the sensitivities regarding aluminium prices and foreign currency fluctuations for 2013 is provided in the table below. The table illustrates the sensitivity of earnings, before and after tax, to changes in these factors and is provided to supplement the sensitivity analysis required by IFRS, included in note 7 to the Consolidated Financial Statements.

Indicative price and currency sensitivities +10% <sup>1)</sup> NOK Million	EBIT	Financial items	Income before tax	Net income
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1) Assumptions: Annual sensitivities based on expected business volumes for 2013, LME USD 2,000, NOK/USD 5.80, NOK/BRL 2.80 and NOK/EUR 7.40. Aluminium price sensitivity is net of aluminium price indexed costs and excluding unrealized effects related to operational hedging. Currency sensitivities relating to financial items include effects from intercompany positions.

In addition to the above sensitivities, the revaluation of derivative instruments and contracts classified as derivatives may influence reported earnings. For accounting purposes, derivative financial and commodity instruments are recognized at fair value, with changes in fair value impacting earnings unless specific hedge criteria are met. This can result in volatility in earnings, since the associated gain or loss on the related physical transactions may be reported in earnings in different periods. Please see note 7 and 41 to the Consolidated Financial Statements for a detailed description of Hydro's commercial and financial risk exposures and hedging activities related to such exposures.

In accordance with IFRS requirements, Hydro has chosen to provide information about market risk and potential exposure to hypothetical loss from its use of derivative financial instruments and other financial instruments, and derivative commodity instruments through sensitivity analysis disclosures. Please see note 7 to the Consolidated Financial Statements for more information, and for additional information on these disclosures.

## Legal proceedings

Hydro is involved in or threatened with various legal and tax matters arising in the ordinary course of business. Hydro is of the opinion that resulting liabilities, if any, will not have a material adverse effect on its consolidated results of operations, liquidity or financial position.