

**Annual Report 2015 | 16**

Axpo Holding AG



# Axpo increases the value added by the customer business and renewables

In a difficult market environment, Axpo posted an encouraging operating result before depreciation and exceptionals of CHF 637 million (normalised EBITDA, previous year: CHF 834 million) for the 2015/16 financial year that ended on 30 September 2016. The strategic focus fell on the international customer business and the efforts to improve the income earned from investments in renewable energies and other fields of business that are not dependent on the electricity price. The result was negative with a loss of CHF 1.25 billion (previous year: CHF 990 million) due to high impairments.

## Dear Readers,

The 2016 calendar year kicked off with a massive decline in the already very low wholesale electricity prices of around 30 per cent, a blow from which the market only recovered slightly right at the end of the 2015/16 financial year. As price expectations for the next few years remain muted, Axpo was forced once again to substantially impair the value of its power plant fleet and energy supply contracts by around CHF 1.6 billion net. This includes a massive impairment on the new Limmern pumped-storage power plant triggered by the fact that the difference between the prices for base-load and peak-load energy is very small.

In reality, run-of-river hydro power and nuclear energy still have the lowest production costs (less than 5 cents/kWh) in Switzerland. Switzerland promotes wind energy (14 - 20 cents/kWh) and solar power (18 - 24 cents/kWh) with a remuneration for feed-in to the electricity grid (CFR). In Germany in particular, the production of these renewable energies

**In an undistorted market, run-of-river hydro power and nuclear energy would still be the cheapest.**

has been boosted to such an extent in the past few years that the electricity market is flooded by this 'free electricity' when weather conditions are good. In addition, low coal and CO<sub>2</sub> prices mean that the energy generated by coal-fired

power plants – the actual backup for wind and solar energy – determines the prices for electricity.

The result is that wholesale electricity prices have dropped massively in the past few years. In 2016 these prices were substantially lower than the production costs of the Swiss power plants, and prices are expected to be even lower in 2019. This means that all unsubsidised forms of production do not cover their costs, not even the cheapest production methods, i.e. hydro power

and nuclear power. As Axpo is the biggest producer of these two energies in Switzerland, it is quite badly affected by these market distortions. This burdens not only the operating result for the 2015/16 financial year, but also the value of the power plants and energy supply contracts.

## Import strategy harbours risks for Switzerland

The fact that the Swiss economy is benefiting from cheap European wholesale prices is a positive effect of the current market distortions for Switzerland. However, as ever cheaper electricity can be imported, Swiss producers and suppliers are losing interest as well as the financial ability to invest in the expansion of national power plant infrastructure. On the one hand, the Swiss nuclear power plants will shut down in the foreseeable future and for political reasons they will not be replaced by new nuclear plants. And on the other, Swiss producers have to consider whether it still makes financial sense to invest in the maintenance and renovation of many of the older hydro power plants. Politicians would be well advised to implement the measures needed to ensure that Switzerland can hold on to its hydro power fleet. Hydro power is and will remain the most reliable, cheapest and cleanest renewable energy of all.

In contrast to consumer goods such as cars, where Switzerland really does not need to produce its own, national electricity production continues to be a matter of extreme strategic importance. Specifically in times when electricity is scarce, it is impossible for technical and political reasons to guarantee that Switzerland will always be able to import sufficient electricity from abroad. To uphold our high standards when it comes to the security of electricity supply – Switzerland is the leader at 99.99 per cent – it is crucial for our country to maintain

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Thomas Sieber, Chairman of the Board of Directors



Andrew Walo, CEO

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a healthy capacity for domestic electricity production. The Federal Office for Civil Protection already classifies lack of independence and limited capacity in Europe as the biggest risks for the Swiss economy and society.

### **Axpo's aim is to generate more added value from renewable energies**

Axpo adjusted its strategy in good time to actively combat the market distortions. It has already saved annual costs of CHF 167 million on the 2012/13 result and plans to save another CHF 40 million in costs by the end of the next financial year. It has also reduced its investments and optimised its core business.

A key element of the implementation of the new strategy is the exploration of new business areas. In this regard, Axpo has identified clear growth potential for renewable energies. As Axpo has long been the biggest

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Swiss producer of renewable energies and has also invested in renewable production in Europe at an early stage, it has a strong starting

position. The income earned in this area is continuously growing.

In the 2015/16 financial year, Axpo not only finalised its takeover of the German wind farm builder and developer Volkswind, but has already sold four new wind farms developed by Volkswind for EUR 120 million. To sell wind farms built and developed by the company itself is part of Axpo's strategy of generating more added value from its wind power plant business and establishing itself in a new market in which it did not operate previously.

The first year of operations for the offshore wind farm Global Tech I in the North Sea in which Axpo has

a stake of 24.1 per cent is over. This wind farm located 140 kilometres off the North German coast produces around 1.4 billion kilowatt hours of electricity per year.

The ceremonial groundbreaking for Axpo's new wood chip drying plant in Domat/Ems, a much smaller project, took place in January 2016. Axpo has been operating Switzerland's largest biomass power plant in this location for many years. The environmentally-friendly power plant processes waste wood from the forests, fields and gardens. In addition to electricity, the steam produced as process heat is used by the neighbouring industries. The new wood chip drying plant finished in October 2016 also uses the waste heat produced by the wood-fired power plant. The new plant produces Graubünden wood chips for the Swiss market. As the plant operates at eight times below the applicable environmental limits, it is the cleanest drying plant in Switzerland.

The Axpo subsidiary Centralschweizerische Kraftwerke AG (CKW) is also on the right path when it comes to innovation and renewable resources. This is quite literally true: CKW is betting on electromobility and has the largest e-mobile fleet in Switzerland with its 50 new electric cars. The cars are operated entirely with electricity from renewable sources.

In the reporting year, CKW opened two public solar power plants in Willisau and Schüpfheim in which the public could buy shares – the shares were sold out very quickly. With battery storage solutions for home solar plants and voltage regulators to ensure efficient operation, CKW offers its customers the chance to use solar power around the clock. Innovative products and advice on improving energy efficiency using devices such as voltage regulators for buildings complete the product range. CKW also reduced the rate for solar power by 5 cents per kilowatt hour and now provides the cheapest solar power in Switzerland. With these measures, it is CKW's intention to stimulate demand for solar power.

## **Axpo is still the world's number one in electricity trading – customer business expanded further**

For the second consecutive year, Axpo was crowned the best global energy trader by market players and customers in a survey run by trade magazines. The criteria used for the survey, in which Axpo has for years been the forerunner in several categories, included price, flexibility, market making, reliability, integrity and speed of execution.

But as even the best have to improve constantly, Axpo is expanding its international trading business with tailor-made customer solutions. This includes the procurement and marketing of electricity, gas and green certificates everywhere in Europe. For Axpo, there is much potential in the small and medium-sized customer business and in wind power.

As proximity to customers is important, Axpo operates in 36 countries in Europe. When you have a meal in the world's oldest restaurant, Botin in Madrid, your food was cooked using Axpo's green electricity. The famous cathedral in Mallorca is also lit by renewable Axpo energy. Large contracts for the management of electricity and gas deliveries with Germany's biggest aluminium mill and Swiss pharmaceutical and life

sciences companies confirm that Axpo's expertise is much in demand in the industry.

Axpo opened its first US office in New York in 2016. The business model that is so successful in Eu-

rope will be transplanted to the very similar US market. Axpo is hoping to benefit from the synergies created by its position in the European market and sees much potential for growth in the US.

## **Establishment of new business models in the grids business**

The grids business is also one of the profitable business areas. Axpo pushed ahead with another phase of converting the grid from 50 to 110 kV. Axpo developed a method to determine the quality of supply in a meshed grid and also markets this product to third parties under the brand name ERIS.

Axpo believes there is future potential in the business with third parties. Axpo is planning, building, operating and maintaining grid infrastructures and operational management systems for energy suppliers and industrial and railway customers. Examples of Axpo's activities in this area include the coordination of the construction of the new Vezia (TI) substation which is being built as part of the Gotthard base tunnel, the modernisation as part of a consortium of the extra-high voltage grid at La Punt-Filisur-Sils (GR) for Swisgrid, and the installation of gas-insulated (380 kV

and 220 kV) switchgear at the Châtelard substation for the Nant de Drance pumped-storage power plant on behalf of ABB.

Sales of data network services are also progressing well. Axpo uses its own high-performance fibre optic network and autonomous supply of electricity to offer reliable and highly available data links to government offices, energy suppliers and telecommunications providers.

## **Change in the Board of Directors – thank you to the employees**

The 2015/16 financial year was also a year of change for the Board of Directors of Axpo Holding AG. The 2016 Annual General Meeting elected Thomas Sieber to succeed Robert Lombardini, who retired as Chairman of the Board. Rudolf Hug was elected as the new Vice-Chairman, replacing Jakob Brunnschweiler who also resigned. At an Extraordinary General Meeting in January 2016, Carmen Walker Späh was elected to replace Martin Graf on the Board of Directors.

A thank you is due to everybody who dedicated their energy to Axpo in the past financial year. Much is expected from the employees at all levels and the operational and strategic management teams in this time of company renewal. It has been extraordinary to see the great commitment and drive at all levels with which the change at Axpo has been met. Alongside a clearly formulated strategy, this determination is the most important quality for a successful future – full of energy.

In the profitable grid business, Axpo sees potential in providing services to third-party customers.

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**Thomas Sieber**  
Chairman of the Board of Directors



**Andrew Walo**  
CEO

# Limmern: supply trump card

With regard to its large power plants, Axpo reached important milestones for the Beznau nuclear power plant and Limmern pumped-storage power plant in the reporting year. While the investments in safety on the Beznau island could be finalised at the end of 2015, the dam wall at Lake Mutt in the Glarus Alps was inaugurated in September 2016.

The formal ceremony at the dam wall on the Muttentalp was one of the highlights for Axpo in the 2015/16 financial year. With a length of 1,054 metres, the dam wall is the longest in Switzerland and at 2,500 metres above sea level, also the highest dam wall in Europe. Machine groups 1 and 2 of the Limmern pumped-storage power plant were successfully synchronised with the grid in the course of the financial year, and by mid-2017, all four machine groups will be connected to the grid. This epic power plant is thus nearing its successful completion. The work to clear the construction site is already well advanced. Fortunately, all cost and time constraints could be met.

But while the magnificent structure in the Glarus Alps is a masterpiece of planning and engineering, the current market situation where there is only a small difference between the prices of base-load and peak-load energy does not favour such plants. The result of these price expectations due to market distortions is that Axpo already had to substantially impair the value of this plant, which only just came on line, in the 2015/16 financial statements.

However, developments on the European energy market seem to promise opportunities for a state-of-the-art pumped-storage plant with flexible machines that can be switched from pump mode to turbine mode very quickly. As the increase in irregular wind and solar energy is likely to cause growing grid instability, controllable output which is available at the push of a button to stabilise grid fluctuations will continue to gain importance in Switzerland and in Europe. With the Limmern pumped-storage plant, Axpo will thus be able in future to offer CO<sub>2</sub>-free grid and output reserves on the market for balancing energy and system services.

And this is not the only area of application for the new power plant. The electricity generated by the Limmern pumped-storage power plant will also be offered in options trading and sold on the spot market (intraday) where highly flexible plants are in much demand in a market where prices change every fifteen minutes. Axpo is therefore convinced that the Limmern pumped-storage plant will be an important trump card for its electricity supply business in the long term. Not only in Switzerland, but also in Southern Germany, where the shutdown

of power plants and lack of a powerful grid connection to the windy north of Germany mean that the need for flexible energy will also increase.

## Beznau nuclear power plant equipped to operate safely far beyond 2020

During the regular overhaul of both blocks of the Beznau nuclear power plant in 2015, a new emergency power supply and a new plant information system were installed. As a preventive measure, the two reactor pressure vessel closure heads were also replaced. Now that this maintenance work has been finished, the Beznau nuclear power plant can be safely operated well beyond 2020. The nuclear plant is objectively safer than when it was commissioned in 1969/1972 thanks to retrofitting and investments in new security measures for over CHF 2.5 billion.

The irregularities found during ultrasound scans of the reactor pressure vessel of Block 1 of the Beznau nuclear plant were identified in 2016 after extensive tests were carried out. These seem to be aluminium oxide inclusions, which typically occur during the forging of large steel vessels. Axpo made a replica of the affected part of the reactor pressure vessel to prove that these inclusions were in fact formed during the forging process rather than during the past 47 years of operations. Investigations have also confirmed that these aluminium oxide inclusions do not have any impact on the strength of the steel. This means that they do not affect the risk of the reactor pressure vessel developing any cracks and therefore do not stand in the way of the continued safe operation of the power plant.

Based on these results, Axpo submitted the safety case to ENSI, the Swiss supervisory authority for nuclear plants, in November 2016. The supervisory authority will now examine the results of the investigation to make sure that they can be replicated and take a decision on restarting Beznau 1.

Highly flexible plants such as the Limmern pumped-storage plant are popular in a volatile electricity market, not only in Switzerland.

# Combining the proven and the new

With its new strategy to combat the market distortions in Europe, Axpo took early steps to set the company on a secure future course. Not only is much effort invested in opening up new areas of business, but the company is also adapting its classic electricity production to the new realities of the market.

It has never been an option for Axpo to sit and wait until prices start rising again. Axpo therefore started diversifying its sources of income at an early stage, in particular by investing in renewable energies and growing its customer business. In addition to this growth business, which requires capital as well as dynamic management processes, Axpo also attaches great importance to qualities such as stability and safety, for example in the operation of its nuclear power plants and the achievement of operational excellence in a market shaped by low prices.

The operation of nuclear power plants across their entire lifecycle also demands a consistent focus on safety, including in times when these plants cannot cover their costs in full, but can only make a cost contribution. As the nuclear power plants are crucial to the security of supply in Switzerland, the focus also falls on reliability and stability to ensure high plant availability. As an operator, Axpo is therefore not only responsible for the safe operation of the nuclear power plants, but also for their decommissioning and the safe disposal of the nuclear waste. Axpo has assumed both responsibilities without reservation and has been carrying out these obligations commendably for 47 years.

## The new growth business requires capital and dynamic management processes.

When it comes to the expansion of renewable energies and tailor-made customer solutions in Switzerland and all of Europe, the focus has to fall on growth, innovation, diversification and agility. Here too, the demands of the very diverse markets in which Axpo operates play an important role.

Excellence is key to everything, from the operation of grids with a regulated cash flow to hydro power plants that offer opportunities for growing the cash flow. Even for these smaller investment volumes, quality standards remain high and the focus falls on highly efficient operations.

Management has to meet high demands in these very different fields of operation. Axpo is therefore challenged to support the combination of proven and new areas of business with suitable management skills and an organisation that has been geared to be successful.

## How is the result achieved?

Given the substantial impairments, the results for the past three years were negative. With a loss of CHF 1.25 billion, the result for the 2015/16 financial year is Axpo's weakest to date. But what about the operating performance in such a negative financial year, which was overshadowed by balance sheet losses? Axpo describes the normalised EBITDA of CHF 637 million as an 'encouraging operating result', even though the prior-year figure was higher by CHF 197 million. Can a financial year really be 'encouraging' if the profit is smaller?

Yes, it can. The negative difference is mostly derived from reduced sales revenues compared to the previous year. As the lion's share of electricity is usually sold three years in advance at a fixed price for the delivery date, the price-driven earnings are known before the beginning of a financial year. As a result, the only thing that can be done in those areas of value creation that depend on the electricity price is to cushion the contraction as much as possible. In the present phase of constantly falling prices, Axpo benefited from its forward-looking hedging strategy.

In this situation, the results for the areas of value creation that are not dependent on the electricity price play a key role: renewable energies, grids and the customer business, all of which did very well in the past financial year and still hold out much promise for the future.

The IT subsidiary Avectris is also doing well and its market customer base has grown substantially. Avectris won an important big contract to build up and operate the IT network and IT security for the Baden Cantonal Hospital in 2016. Avectris also launched innovative solutions on the market such as its Swiss Cloud for medium-sized companies and internet-of-things solutions for the supply sector (e.g. water, heat and electricity meters). The latter solution is optimally supported by the cooperation project with the Swiss Post Office to check the meters.

# Key figures

## Finances

	2015/16 in CHF million	2014/15 <sup>1)</sup> in CHF million	2013/14 in CHF million	2012/13 in CHF million	2011/12 in CHF million
<b>Total income</b>					
Total income	5 416	5 860	6 705	7 025	7 346
of which revenues from energy sales and grid usage	5 169	5 596	6 533	6 736	7 231
<b>EBIT</b>					
Earnings before interest and tax (EBIT)	-1 226	-867	-838	364	329
as % of total income	-22.6%	-14.8%	-12.5%	5.2%	4.5%
<b>Result for the period</b>					
Result for the period	-1 252	-990	-730	212	282
as % of total income	-23.1%	-16.9%	-10.9%	3.0%	3.8%
<b>Cash flow and investments</b>					
Cash flow from operating activities	361	461	765	876	749
Net investment in non-current assets (excl. loan receivables)	-890	-699	-779	-742	-465
Free cash flow	-529	-238	-14	134	284
<b>Balance sheet</b>					
Total assets	18 588	18 908	20 219	20 557	18 684
Equity incl. non-controlling interests	4 634	6 065	7 517	8 331	7 970
Equity ratio in %	24.9%	32.1%	37.2%	40.5%	42.7%
Net financial assets	93	476	935	961	2 047
<b>Employees (full-time equivalents)</b>					
Average number of employees	4 293	4 312	4 435	4 430	4 368
Number of employees at balance sheet date	4 294	4 284	4 477	4 509	4 376

## Energy business

	2015/16 in million kWh	2014/15 in million kWh	Year-on-year change in %
<b>Procurement</b>			
Nuclear power plants	18 346	21 305	-14
Hydro power plants <sup>2)</sup>	8 347	9 059	-8
Conventional thermal power plants	6 940	6 187	+12
New energies (incl. other associates)	1 050	489	+115
From third-party companies and trading	51 005	44 670	+14
Gas (excl. gas-based electricity generation)	15 373	18 911	-19
<b>Total</b>	<b>101 061</b>	<b>100 621</b>	
<b>Sales</b>			
Electricity sales	84 947	81 160	+5
Gas sales	15 373	18 911	-19
Losses/own use	224	230	-3
Direct sales from other associates	517	320	+62
<b>Total</b>	<b>101 061</b>	<b>100 621</b>	

1) The share of partner plants and other associated companies is now part of the operating result (EBIT). The Axpo Group changed the presentation in the 2015/16 financial year. The prior-year figures have been restated accordingly (the figures for 2011/12 to 2013/14 were not changed).

2) From the 2015/16 financial year, the production from small-scale hydro power plants is allocated to hydro power plants. The prior-year figures have been restated.

## Axpo is the biggest producer of renewable energies in Switzerland

- Hydro power plants (incl. small-scale hydro power plants)
- Biomass
- Wind power plants



**Small-scale hydro power plant, Moutier**

Commissioned	1942
Installed output (MW)	0,18



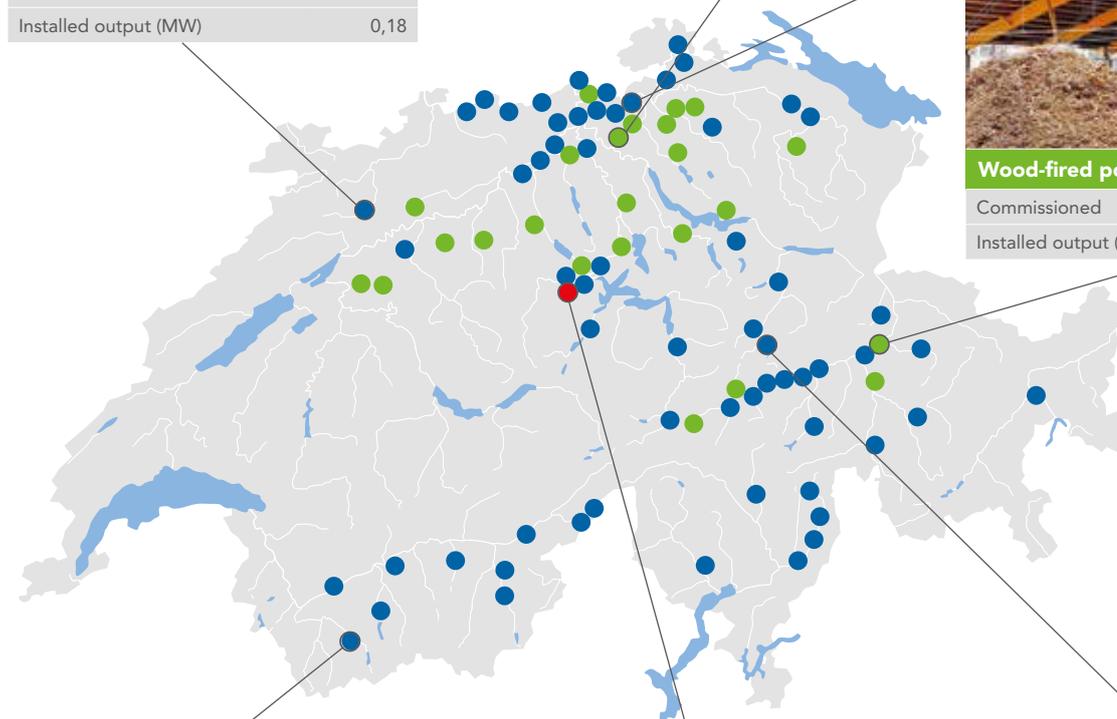
**Biomass power plant, Otelfingen**

Commissioned	1996
Installed output (MW)	0,33



**Run-of-river hydro power plant, Eglisau**

Commissioned	1920
Installed output (MW)	46,9



**Wood-fired power plant, Domat/Ems**

Commissioned	2009
Installed output (MW)	18



**Storage power plant, Mauvoisin**

Commissioned	1956
Installed output (MW)	422



**Wind power plant, Lutersarni**

Commissioned	2013
Installed output (MW)	2,3



**Pumped-storage power plant, Limmern**

Commissioned	2016/17
Installed output (MW)	1520

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