

# Full of energy for great ideas

### In Switzerland and in Europe

### Axpo. Reliable. Sustainable. Innovative.

The Axpo Group produces, trades and distributes energy reliably to more than 3 million people and several thousand companies in Switzerland and over 30 countries throughout Europe. Over 4,000 employees combine the expertise from 100 years of climatefriendly power production with innovative strength for a sustainable energy future. Axpo is an international leader in energy trading and the development of tailor-made energy solutions for its customers.

The Axpo Group comprises Axpo Holding AG with headquarters in Baden and its subsidiaries Axpo Power AG, Axpo Trading AG, Avectris AG and Centralschweizerische Kraftwerke AG. Axpo is wholly owned by the cantons of Northeastern Switzerland.

### Your partner for all things energy

Whether as electricity, fuel or heat: our day-to-day lives rely on energy in all its forms. It sets the pace for progress, prosperity and a competitive national economy. Ever more so as time goes on.

As energy supply becomes increasingly complex, having a competent and reliable partner in all things energy is as important for corporations as it is for SMEs, and for domestic customers in the open market. By combining energy production with transmission, trading and tailored energy solutions in Switzerland and Europe, Axpo offers its customers the ultimate in know-how, quality and flexibility.

The world of energy is undergoing a radical transformation. Climate change is driving the move away from traditional energy sources: oil, gas and coal. Renewable energies are intended to take their place. Traditionally, Axpo is the largest producer of renewable energies in Switzerland and, thanks to its commitment to producing wind energy on-shore and off-shore in Europe as well, it has established a strong foundation in the field of renewables. Axpo's electricity mix is largely CO<sub>2</sub>-free, making it very environmentally friendly.

Nevertheless, our energy future also demands a keen eye for new trends, as well as the ability to recognise new opportunities in good time and the power to capture them. As a result, Axpo sets great store by innovative thinking and efficient innovation management. Strong ideas are currency. We are on our way into the energy future.

#### Reliable. Sustainable. Innovative.

These values have underpinned our success for more than 100 years. Expertise from a century of sustainable energy production and supply is our foundation. Yet it is the combination of this expertise with an ability to identify innovative new opportunities that allows us to occupy a leading position in the international energy market, as well as to grow our portfolio of products and services for our customers in more than 30 European countries.

At Axpo, reliability also means safety. This applies to the supply to our customers. Safety is also the top priority in our production facilities: at our dam facilities up in the mountains and the nuclear power plants in Switzerland, in the operation of our wind farms in Europe and the construction of power plants, grids and pipelines. We have committed to a safety charter that underlines our high safety standards.

#### Finding solutions, together

Collaborating with partners is absolutely key for us - with our customers, owners, authorities, politicians, and above all with those people who need our electricity in their everyday lives.

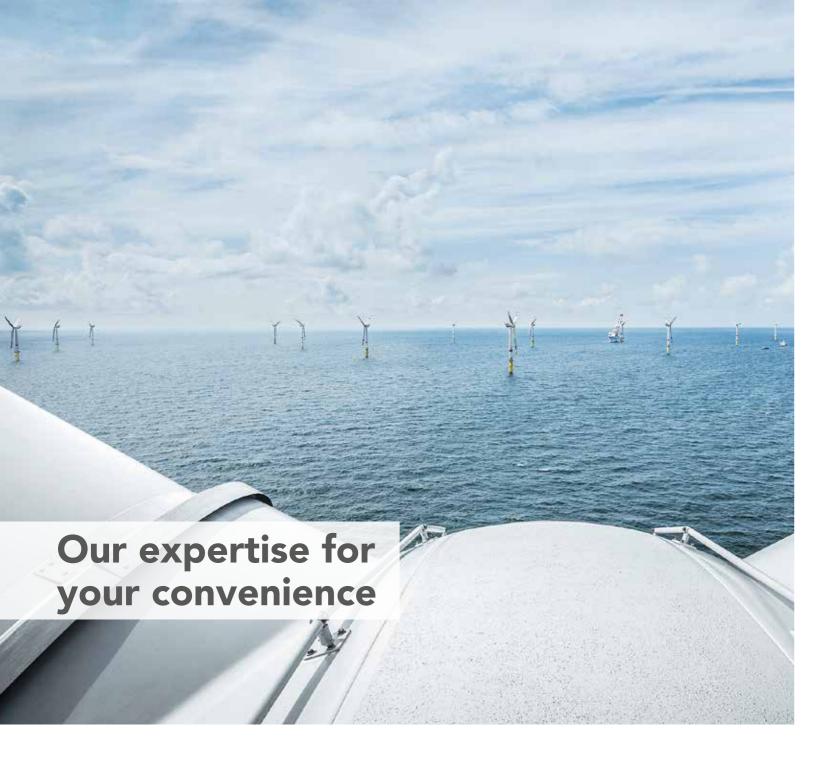
Expanding the energy infrastructure requires negotiating a fine line between the economy, the environment and society. Preserving nature, securing a reliable supply, cutting emissions, paying financial compensation to cantons and local authorities, creating jobs and meeting tourism-related needs often are diametrically opposing interests.

In this respect, only active, open dialogue can result in solutions that are accepted by all parties. This is another Axpo priority. Dialogue builds mutual trust, allows for compromise and helps communicate technically complex topics in a way that is both understandable and factually correct. We are proud to have completed construction on our centenary project - the expansion of the Limmern pumped storage plant located in the Glarus Alps - by mutual agreement with local residents and environmental organisations, and without one single objection.

This partnership-based approach is something we also pursue with our customers. We consult with customers to understand their needs and tailor our services accordingly. We are on-hand to support our customers locally, and we know what matters to them. In this complex business, Axpo manages energy solutions, minimises risks and highlights innovative solutions on behalf of its customers. That is what makes us the preferred partner to many customers today.

#### **Key figures**

The latest key figures are available online: www.axpo.com/keyfigures



Switch on a light. Send a message on your smartphone. Sit down to work at a computer. You rely on a supply of electricity. And thus on Axpo, too. The International Energy Agency (IEA) expects global demand for primary energy to rise by almost 40 per cent by 2040. By that time, demand for electricity is likely to be 80 per cent higher than it is today. These figures plainly show that a secure and reliable supply of energy to business and society is one of the most urgent issues facing the next few generations. They also make clear the importance of energy efficiency: we are using more and more energy so we need to be increasingly careful with resources.

As much as we take for granted that electricity is immediately available from every socket, the underlying system is incredibly complex. After all, the power plants have to produce exactly the amount of electricity being used in the respective power grid at any given time. Otherwise the system collapses. Power cuts lasting mere milliseconds can cause millions of francs' worth of damage in industries where processes are highly sensitive. Not only does Axpo produce the necessary electricity, we also manage the supply. In the morning, as we all start our day, Axpo's network control centre switches on additional power plants. Furthermore, if the Champions League match goes into extra time that evening, we keep a few more plants running so that no-one misses that all-important winning goal. To do this we need power plants that can constantly feed into the grid and those where the output can be guickly adjusted. Given the fluctuations in solar and wind energy input in particular, today more than ever we need plants that are flexible and can be used in tandem.

That is what Axpo offers. Our storage plants are able to produce large amounts of electricity in just a few minutes, or to absorb occasional surpluses and store them for use at a later date. Run-of-river, biomass and nuclear power plants deliver energy around the clock. Grid infrastructure and grid operations are equally important. Axpo's grid is continuously being overhauled and expanded in line with requirements.

#### Eco-friendly leader in renewable energies

Axpo and its partners operate more than 100 power plants. Our climate-friendly Swiss electricity mix consists of hydroelectric power, biomass and nuclear energy, and boasts a very low CO<sub>2</sub> value. As the largest producer of hydroelectric power, and thanks to our investments in biomass and fermentation plants as well as small-scale hydropower plants, Axpo is by far the largest producer of renewable energies in Switzerland. At international level, Axpo is increa-

- singly focusing on wind energy and investing accordingly in locations that are technically and financially viable for this purpose. Our wind farm portfolio includes facilities in France, Spain, Italy and
- Northern Europe. Axpo also holds an interest in the Global Tech I offshore wind farm in the North Sea off the coast of Germany. In the summer of 2015, Axpo announced the acquisition of Volkswind GmbH. Axpo is now in a position to leverage its expertise in the planning, project planning and construction of wind farms.

#### Improved security of supply with natural gas

Thanks to our interest in the Trans Adriatic Pipeline (TAP), Axpo is contributing to the security of supply with natural gas in Europe and Switzerland. This holding reinforces the company's position in the European natural gas sector. Axpo will be able to supply the European market as well as Swiss industrial customers and public utilities. The pipeline runs from Turkey's western border through Greece and Albania, then across the Adriatic to Italy.

#### Limmern pumped storage plant

Kraftwerke Linth-Limmern AG (KLL), in which Axpo holds an 85-per-cent share and the canton of Glarus holds 15 per cent, has spent CHF 2.1 billion building an additional, underground pumped storage plant in the Glarus Alps. This expansion was one of the most challenging large-scale projects in Europe and has been realised without any significant delays. The new plant has a capacity of 1,000 megawatts (MW), increasing the existing KLL output threefold from 480 to 1,480 MW. As a highly flexible battery, this pumped storage plant will play an important role in the future security of supply and stabilisation of the power grid.

#### Global Tech I – a giant in the North Sea

The Global Tech I offshore wind farm is located around 180 km from Bremerhaven off the coast of Germany. Covering an area of 41 km<sup>2</sup>, this farm comprises 80 turbines each with a capacity of 5 MW. The total installed capacity of 400 MW delivers up to 1.4 billion kilowatt hours of eco-friendly electricity every year. The blades are set 92 m (hub height) above sea level. Each triple-bladed rotor has a diameter of 116 m, giving a rotor area of more than 10,000 m<sup>2</sup>. Each turbine is set around 40 m deep in the water on a tripod steel structure weighing in at 900 tonnes. Axpo holds a 24.1-per-cent interest in GT I.



## **Energy solutions for customers throughout Europe**

Axpo is one of the world's leading energy traders. Our Swiss roots and qualities are highly rated by our international business partners. That said, our key competitive advantages are deep risk management expertise and proximity to our customers in more than 30 European countries. The business of tailor-made energy solutions for customers opens up a world of opportunity for Axpo. Which is why we will continue to grow our local presence. Axpo is an established name in European energy trading and is a leading energy company. Other market players regularly honour us with the highest scores when it comes to rankings. These are produced by counterparties based on criteria such as price, flexibility, market-making, reliability, integrity and speed of processing.

Axpo trades in energy volumes and financial products on around 30 energy exchanges, via numerous broker platforms and direct with counterparties (over-thecounter or OTC). We trade in electricity, crude oil, coal and biomass, as well as in diverse certificates such as CO<sub>2</sub> certificates and green certificates for energy from renewable sources. We cover the entire timescale, from intraday trades to multi-year contracts.

#### Axpo speaks the customer's language

Axpo was also an early entrant into the growth market of wind farm management. With great success. Axpo is number one amongst independent buyers and sellers of wind energy in various countries. To survive in this competitive market, wind farm operators have to become more efficient. So Axpo has come up with a number of innovative responses. For example, the company has developed a special software for the monitoring and efficient operation of wind turbines, which has been a major success with customers.

In the origination business, Axpo is a preferred provider in European countries. The term "origination" refers to energy solutions that are tailored to the customer's individual requirements. With more than 30 locations across Europe, Axpo is always nearby, speaks the customer's language, understands the local culture, laws and regulations, and knows the mechanisms inherent in the respective markets, the capacities of the various energy sources as well as local climate conditions. In this way, Axpo can always put together the optimum package for each individual customer.

#### The network makes the difference

Axpo bundles its specialists' expertise and exchanges knowledge between locations by way of an internal, international platform. Italy, Norway, Spain or Poland – everyone benefits from the knowledge pool and adapts the relevant insights to their local customers, quickly and professionally. Our in-house competency centre for market analysis also leverages a number of quantitative models and tracks developments in the energy markets. These findings are published on a company-wide information platform where they are vital in the success of our trading efforts and the optimum operation of our own power plants.

Axpo draws on a pool of more than 4,000 energy specialists from at least 30 different countries. Their professional backgrounds are as diverse as their origins. Engineers and technicians work alongside finance experts, economists and mathematicians, as well as meteorologists and life scientists. They develop strategies for today and for the months and years to come. They review countless pieces of data, model calculations and information. The real task lies in analysing all of this and filtering out what is relevant, then interpreting the data and assessing risks correctly to ensure that trading is profitable. And that requires smart people with strong ideas.

#### Getting the weather forecast right is crucial

Today more than ever, the quality of weather forecasts can mean the difference between success and failure in energy trading. For years, Axpo has relied on in-house expertise when it comes to the weather. This pays off for us and for our customers, particularly as regards the expansion of new energies such as wind and solar. Wholesale electricity prices can soar or plummet within the space of just a few minutes depending on wind speeds and the intensity of the sun. Thanks to the in-house meteorologists, our energy traders always know whether the signs point to 'buy' or 'sell'. To this end they analyse an incredible amount of data and use a variety of forecasting tools from every region across Europe and beyond, and not only for the next few hours but for the next few weeks.



Axpo is committed to a sustainable energy future - for our customers, for our employees and for tomorrow's society. Our approach is solution-oriented and based on partnerships to ensure a successful transformation of the energy system.

We firmly believe that sustainability creates value not only for humankind, nature and the environment, Sustainability is a business model. Axpo supports but also for the company itself. Sustainability - financial, its customers in boosting their own energy efficiency, ecological and social – is an integral part of the saving energy, and reducing the share of energy corporate strategy. Sustainable development, such as produced from fossil fuels. For that reason we have that pursued by Axpo for more than 100 years, developed special products. creates the necessary stability that allows us to adapt flexibly and quickly to change. Sustainability When it comes to producing electricity, Axpo aspires to carries through our company along the entire value ecological sustainability. In Switzerland we produce chain. Today, Axpo is a leading energy company electricity that is almost CO<sub>2</sub>-free with hydropower, in the field of sustainability. nuclear energy and new energies. Axpo intends to solidify its position in hydropower and expand as This position is built on profitability and costregards new energies.

effectiveness. Axpo needs sufficient financial means and adequate scope to be able to invest in the energy future, drive innovation, meet the long-term needs of the environment and the climate, and to create and retain jobs.

Assuming responsibility also means providing transparent, comprehensive information. Axpo does this, for example, by issuing a sustainability report based on the guidelines set out by the Global Reporting Initiative (GRI). Axpo is the first energy supplier in Switzerland to be awarded the highest A+ level in the GRI rating.

Moreover, Axpo has produced environmental declarations for the different types of power plant. Each declaration analyses the entire lifecycle of the plants and technologies - from their construction, to operation, right through to dismantling.

#### Axpo makes customers more energy-efficient

Axpo is constantly improving its own greenhouse gas emissions. The most effective lever to reduce greenhouse gas emissions is the consistent use of CO<sub>2</sub>-free electricity to run our pumped storage plants. Additionally, Axpo is gradually increasing energy efficiency in its production facilities and infrastructure, and is converting its buildings to climate-friendly technologies.

Axpo's commitment also incorporates its business partners. Supply chains in this globalised world may be complex, and opportunities to influence subcontractors and their suppliers may be few and far between. Nevertheless, Axpo is increasing the binding involvement of its business partners for the purposes of sustainable corporate management. As a result, the company has introduced a code of conduct to govern business ethics and set out minimum ecological and social standards. The code of conduct is based around principles used by relevant international organisations.



### **Opportunities for smart** people with strong ideas

The energy future starts today. That is why Axpo is an active - constructive, but also critical - participant in the public debate about what a sustainable energy future should look like. It is an issue that we are also debating in-house together with our employees. Ultimately, strong ideas come from smart minds - and the future of Axpo lies in the minds of its employees.

We are confident that the market is the best pacesetter Full of energy for young people Sport brings out emotions, is great fun and is for steering investments in technological and financially viable projects and thus enabling innovation. a bonding experience. It requires the will to perform, And yet the market also imposes its own high to be reliable and to work in a team - all of standards that have to be met in order to be successful. which are values that Axpo embodies and promotes.

Breaking new ground, coming up with new business models, always striving for "better", taking pleasure in excellent performance and successes – Axpo employees must possess three essential qualities: talent, courage and commitment. The greatest strength of our workforce is its diversity. Axpo employs people from a wide variety of professional backgrounds, who speak very different languages, and who are based all over Europe and beyond.

Dedicated people who think innovatively and entrepreneurially are rewarded at Axpo with attractive benefits, an extensive range of training and development opportunities, as well as exciting career options and a corporate culture that encourages the enjoyment of joint achievements and offers scope to develop one's own capabilities.

- Consequently, Axpo has long-standing commitments in the world of football, in particular in the development of young talent. It is also a longstanding partner to PluSport, an organisation that promotes sport for individuals with disabilities.
- Axpo also directly fosters innovation. No other industry offers as many opportunities for brilliant ideas as the rapidly evolving energy sector. Therefore, Axpo recognises innovative ideas by young entrepreneurs with the Axpo Energy Award, awards prizes
- to students who come up with new solution approaches in energy topics, sponsors energy professorships and supports research into all matters of energy through the innovation park Innovaare.
- However the energy future turns out, it will be shaped by young people with strong ideas.

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