

2020

Sustainability Report

ALPIQ





# Sustainability Report

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# Introduction

With the Paris Climate Agreement, most countries in the world have set ambitious targets to reduce greenhouse gas emissions to help slow down climate change. By 2050, Europe is expected to become the first continent to only emit unavoidable greenhouse gases and fully compensate this low level of emissions. Switzerland has also set itself the target of net zero greenhouse gas emissions by 2050.

Energy consumption and power production are key factors in achieving the global climate targets. The only way to successfully tackle climate change is with a decarbonised energy supply.

In 2020, humanity faced a monumental challenge in the COVID-19 pandemic. All levels of society and business were affected. At the end of November 2020, the Federal Office for Civil Protection defined the two greatest risks in the third edition of its national risk analysis “Katastrophen und Notlagen Schweiz” (Disasters and Emergencies in Switzerland): power shortage and pandemic. The potential economic and social losses in both scenarios are high, and both have a relatively high probability of occurrence. As one of the largest electricity producers in Switzerland, Alpiq is well aware of its responsibility for security of supply. As part of its comprehensive business continuity management activities, Alpiq was quick to introduce measures to prevent the spread of the virus in the company, to protect employees and relatives and to maintain the operating business at all times – including with a view to its contribution to maintaining security of supply. Alpiq has managed the challenges posed by the COVID-19 pandemic well to date.

Climate protection and security of supply are an integral part of Alpiq’s purpose. In 2020, the Board of Directors and Executive Board jointly refined the purpose and both are committed to implementing it in practice: **Alpiq’s sustainable energy business contributes to a better climate and improves the security of supply.** In 2020, the Board of Directors and Executive Board reviewed the corporate strategy based on this purpose.

## Alpiq is a European company with Swiss roots

Alpiq pursues a sustainable, financially sound and risk-adjusted business model and has a solid foundation. The robust business model is based on operating and selling highly flexible Swiss hydropower, Swiss nuclear energy, flexible gas-fired combined-cycle power plants in Italy, Spain and Hungary, as well as wind power plants and photovoltaic systems in multiple European countries. Alpiq uses this ideal foundation and its energy expertise to optimise its business by operating third-party plants and marketing the electricity produced there through its European energy trading business as well as the direct sale of energy to business customers across Europe.

Alpiq will continue to expand its energy trading activities and energy sales to business customers based on its successful core business and in order to optimise the risk-bearing capacity and profitability of its portfolio. In addition, it invests specifically in increasing the flexibility of existing electricity production plants, and it will increasingly operate third-party plants and sell their electricity, in particular in the field of new renewable

energies. The development and expansion of digital competences and applications is a high priority in this regard.

The refinement of the Alpiq purpose in 2020 has placed greater focus on the topic of sustainability. Even in the past, Alpiq largely transacted business in compliance with ESG standards (E stands for environmental, S for social and G for governance). The aim of Alpiq's existing and future transactions will be to create the greatest possible sustainable value for its stakeholders. For the very first time, Alpiq will provide an overview of the economic, ecological and social values the company is sustainably creating for its stakeholders.

This initial overview on the topic of sustainability is partly based on the standard set down by the Global Reporting Initiative (GRI). Alpiq refers to the GRI standards based on the GRI index at the very end of this document. A project team with experts from across the Alpiq Group defined the internal and external stakeholders and, from a long list, chose the topics that qualified as important to both Alpiq and the relevant stakeholders.

In future, Alpiq will prepare a sustainability report in compliance with the Core option of the GRI standard. In doing so, Alpiq will report on additional important topics and GRI standards, expand the contents of the disclosure and enter into dialogue with the defined stakeholders.

In principle, the scope of this overview is limited to the fully consolidated entities of the Alpiq Group. Alpiq holds direct participations in nuclear power plant companies in Switzerland and indirect participations in such companies internationally, but these are not fully consolidated. However, because this topic is of great importance to the Alpiq Group, the issue of nuclear power plants is also covered.

This overview on the topic of sustainability is an integral part of the Alpiq Holding Ltd. Annual Report.

# GRI 102: General disclosures

## GRI 102-18: Governance structure

The governance structure of the organisation (including the committees of the highest governing body) and the committees responsible for decision-making with respect to economic, ecological and social topics are described in the Alpiq Holding Ltd. Annual Report 2020 under the Corporate Governance section.

## GRI 102-47: List of material topics

A project team composed of experts from across the Alpiq Group has been set-up in order to define the content of the sustainability report.

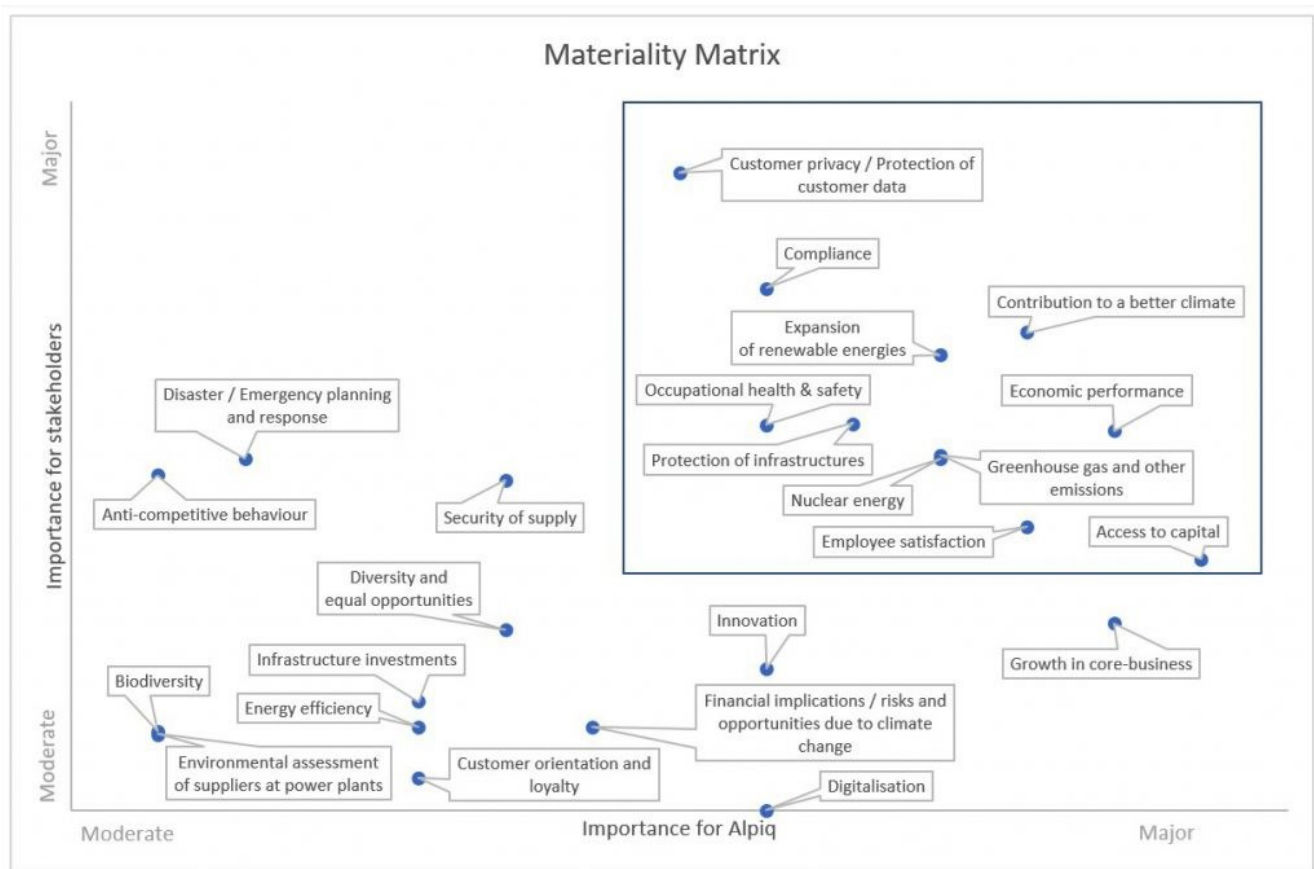
In a first step, the expert team defined the internal and external stakeholders. The most relevant stakeholders have been selected based on an assessment of the influence of the stakeholders on Alpiq and on the significance of the impact of Alpiq's activities on these stakeholders. A process of stakeholder engagement or dialogue was not performed for this first sustainability report but will be part of the sustainability report 2021.

In a second step, the expert team defined a long list of material topics that must fulfil the following conditions:

- The topics reflect significant economic, environmental and social impacts of Alpiq's business activity and reflect Alpiq's purpose and strategy.
- The topics substantially influence the assessments and decisions of the relevant stakeholders.

Finally, those material topics, that were qualified with major importance as well for Alpiq as for its stakeholders, were selected as relevant material topics. The content of the sustainability report is based on these material topics. Both the list of stakeholders and of material topics have been reviewed, completed and approved by a Steering Committee composed of Executive Board Members and Functional Leaders of the Alpiq Group.

The following chart shows the assessment of the material topics based on their significance for Alpiq and on their influence on the assessments and decisions of stakeholders, according to the importance "moderate" and "major". Important material topics in both dimensions are considered relevant for reporting purposes.



# GRI Index

GRI standard	Title	Year
GRI 102	General disclosure	2016
GRI 102-18	Governance structure	
GRI 102-47	List of material topics	

## Economic dimension

GRI standard	Title	Year
GRI 201	Economic performance	2016
GRI 103	Management approach	2016
GRI 201-1	Direct economic value generated and distributed	
GRI 201-3	Defined benefit plan obligations and other retirement plans	
GRI 201-4	Financial assistance received from government	
GRI 205	Anti-corruption	
GRI 103	Management approach	2016
GRI 205-2	Communication and training about anti-corruption policies and procedures	
GRI 205-3	Confirmed incidents of corruption and actions taken	
GRI 206	Anti-competitive behaviour	2016
GRI 103	Management approach	2016
GRI 206-1	Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	
	Compliance	
GRI 103	Management approach	2016
	Access to capital	
GRI 103	Management approach	2016

## Environmental dimension

GRI standard	Title	Year
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GRI 305	Emissions	2016
GRI 103	Management approach	2016
GRI 305-1	Direct (Scope 1) GHG emissions	
GRI 305-2	Indirect (Scope 2) GHG emissions	
GRI 305-3	Other indirect (Scope 3) GHG emissions	
GRI 305-7	Nitrogen oxides	
GRI 307	Environmental compliance	2016
GRI 103	Management approach	2016
GRI 307-1	Non-compliance with environmental laws and regulations	
G4	Industry-specific disclosures	
EU1	Installed capacity	
EU2	Net energy production	

## Social dimension

GRI standard	Title	Year
GRI 403	Occupational health and safety	2018
GRI 103	Management approach	2016
GRI 403-3	Occupational health services	
GRI 403-9	Work-related injuries	
GRI 418	Customer privacy	2016
GRI 103	Management approach	2016
GRI 418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	
GRI 419	Socioeconomic compliance	2016
GRI 103	Management approach	2016
GRI 419-1	Non-compliance with laws and regulations in the social and economic area	
G4	Disaster and contingency planning	
	Cyber-security	
GRI 103	Management approach	2016
	Employee satisfaction	
GRI 103	Management approach	2016



## Nuclear energy

GRI standard	Title	Year
	Fuel preparation (front end) and power production	
GRI 103	Management approach	2016
	Waste management, interim and final storage (back end)	
GRI 103	Management approach	2016
	Decommissioning and dismantling of nuclear power plants	
GRI 103	Management approach	2016
	Security of infrastructure (physical and cyber-attacks)	
GRI 103	Management approach	2016
	Health and occupational safety	
GRI 103	Management approach	2016

# Economic dimension

# GRI 201: Economic performance

## GRI 103: Management approach (103-1, 103-2, 103-3)

### Relevance

An integral part of Alpiq's corporate purpose is to contribute to a better climate and to strengthening the security of supply in Switzerland and in the European markets by pursuing a sustainable, financially sound and risk-adjusted energy business based on a clear strategy. Securing long-term economic success is an essential prerequisite for this goal.

### Management approach

The pillars of the business activities are Swiss power production from highly flexible hydropower and nuclear energy as well as European power production from renewable energy sources, consisting of wind turbines and photovoltaic systems as well as small-scale hydroelectric complexes, supplemented by highly flexible gas-fired combined-cycle power plants in Italy, Hungary and Spain. Alpiq's core business also includes power plant management, marketing the power produced from in-house and third-party plants, direct marketing of energy to business customers and international energy trading.

Alpiq invests in the expansion of energy trading, in increasing the flexibility of existing production facilities as well as in marketing third-party portfolios of renewable energy sources. In addition, targeted investments in digitising the core business are intended to improve competitiveness and efficiency.

### Assessment

The key developments in the 2020 reporting year can be found in the Alpiq Holding Ltd. Annual Report 2020.

## GRI 201-1: Direct economic value generated and distributed

Mio. CHF	Economic value generated and distributed	
	2020	2019
<b>Economic value generated<sup>1</sup></b>	<b>4,026</b>	<b>4,437</b>
Net revenue from energy transactions and related services	3,911	4,098
Other operating income	65	47
Income from associated companies and financial investments	25	24
Income from sale of assets and subsidiaries	25	268
<b>Economic value distributed<sup>2</sup></b>	<b>3,896</b>	<b>4,116</b>
to supplies opex	3,460	3,680
to supplies capex	66	71
to employees	186	190
to capital providers	41	48
to government	141	127
to community	1	1
<b>Economic value retained<sup>3</sup></b>	<b>130</b>	<b>320</b>

1 Net revenue from energy transactions and associated services as well as other operating income are presented on an accrual basis. Income from associated companies and financial investments as well as income from sale of assets and subsidiaries represent payments received during this reporting period.

2 The economic value that is distributed to suppliers (operating expenses), to employees and to government represents costs incurred in the reporting period and is presented on an accrual basis. The other items merely include payments that were transacted during the reporting period and are therefore not reported on an accrual basis.

3 Only continuing operations

These key financial figures are based on the scope of consolidation of Alpiq Holding Ltd., which can be found in [note 5.4](#) of the 2020 consolidated financial statements of Alpiq Holding Ltd. The “economic value distributed to government” line also contains the taxes paid, fees and water taxes of the associated Swiss partner power plants, as they account for a significant part of the price paid for the purchased energy. The “Economic value retained” cannot be compared directly with the earnings after tax from continuing operations of the consolidated financial statements of Alpiq Holding Ltd., as some items only contain the part of the transactions with an impact on cash flows, meaning that certain non-cash income and expenses, such as deferred taxes or the results of associated companies are not included.

## GRI 201-3: Defined benefit plan obligations and other retirement plans

The group has various employee pension schemes in line with the statutory provisions in the respective country. The group companies in Switzerland are members of the legally independent pension fund PKE Vorsorgestiftung Energie, which is a joint institution of the energy sector. All staff employed in Switzerland are insured in a defined contribution



scheme, where Alpiq as the employer covers more than 60 % of the contribution payments. As of 30 September 2020, PKE has a positive coverage ratio of 106.3 % (31 December 2019: 109.2 %). Further details can be found in [note 6.3](#) of the 2020 consolidated financial statements of Alpiq Holding Ltd.

## GRI 201-4: Financial assistance received from government

In 2020, as in 2019 and 2018, Alpiq received a market premium for large-scale hydropower plants in Switzerland. Further details are provided in [note 2.3](#) of the 2020 consolidated financial statements of Alpiq Holding Ltd. In addition, Alpiq was able to benefit from contributions from funding programmes for power generation from renewable energy sources in Switzerland and internationally. The rules for the awarding of funds are the same for all market participants.

# GRI 205: Anti-corruption

## GRI 103: Management approach (103-1, 103-2, 103-3)

Details on the management approach are provided under section Compliance.

## GRI 205-2: Communication and training about anti-corruption policies and procedures

In addition to new employees, in 2020 the entire workforce, including the Executive Board, completed a mandatory e-learning training session on the code of conduct, which includes anti-corruption measures.

## GRI 205-3: Confirmed incidents of corruption and actions taken

Alpiq did not record any relevant cases of corruption in the reporting year.

# GRI 206: Anti-competitive behaviour

## GRI 103: Management approach (103-1, 103-2, 103-3)

Details on the management approach are provided under section Compliance.

## GRI 206-1: Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices

No new, relevant legal proceedings on anti-competitive behaviour or breaches of anti-trust and monopoly law were brought against Alpiq in the reporting year.

On 31 December 2020 two legal proceedings were still pending against Alpiq based on alleged anti-competitive behaviour. In 2012, the Romanian competition authority launched investigations on the energy market. These investigations resulted in legal cases against two Romanian subsidiaries of Alpiq. The two subsidiaries are accused of breaching Romanian competition law together with nine other traders / suppliers (horizontal agreement by agreeing to certain aspects in long-term contracts and vertical foreclosure of the market via the existence of 11 long-term contracts). At the start of January 2016, the plenum of the competition authority imposed a fine totalling RON 21,815,847 (approx. CHF 4.8 million) on the two Romanian subsidiaries of Alpiq. Alpiq denies any breach of Romanian competition law in both proceedings.

# Compliance

## GRI 103: Management approach (103-1, 103-2, 103-3)

### Relevance

Compliance means compliance with the statutory provisions and internal regulations by companies. Infringements can lead to reputational damage. Alpiq recognised this long-term significance of compliance at an early stage. The Compliance department was established to execute the compliance tasks on 1 January 2010. Thanks to this function, Alpiq ensures that infringements of prevailing law are prevented internally and punished accordingly. Today it reports to the CEO as part of the Legal & Compliance functional unit and has a direct reporting line to the Chairman of the Board of Directors.

Alpiq constantly strives to comply with statutory and regulatory provisions, internal instructions and guidelines as well as with accepted market standards. In doing so, Alpiq understands that, while compliance with internal and external requirements is necessary, it is not a sufficient condition for ethically responsible action.

### Management approach

The Alpiq Board of Directors and Management are jointly committed to strong compliance and therefore emphasize its importance to the sustainable success of the Alpiq Group. The internal compliance management system (CMS) is the foundation for ensuring legal compliance and is an integral part of good and prudent corporate management. The Alpiq CMS contains the actual compliance programme as well as compliance goals, the aspects of the corporate culture, the compliance organisation, compliance monitoring and the improvement of the CMS.

Within the CMS, Alpiq has defined an internal code of conduct, which provides a binding definition of the most important rules of conduct for all employees. All employees receive the code of conduct when first starting their job and complete an associated e-learning training session as part of the onboarding programme. The code of conduct is supplemented by various internal and external requirements. In areas not covered by the code of conduct or other internal or external requirements, employees are guided by the principles of honesty, integrity and open communication. Compliance with these principles allows Alpiq to meet its high standards.

Regular employee training sessions on various compliance topics are a key part of the implementation of the Alpiq CMS. The newly introduced learning management system supports and facilitates the execution of electronic compliance training sessions.

At Alpiq, employees are personally responsible for understanding and complying with all the relevant regulations. Alpiq supports employees with appropriate training activities. On the other hand, a project to simplify the existing regulations is currently in progress, which aims to ensure that employees can fulfil their requirements even more efficiently.

Alpiq continuously monitors compliance with internal and external requirements. Suspected cases are investigated by independent bodies and infringements are corrected



or punished based on the options afforded under employment law as applicable. In addition, employees with a bonus component in their employment contracts may be required to pay a financial penalty in case of compliance infringements.

Alpiq also directs its compliance efforts outwards. Know your customer (KYC) describes a part of the due diligence that serves to identify and screen Alpiq customers and business partners. In 2020, these KYC checks were centralised in Compliance within the entire Alpiq Group and they were simultaneously intensified and professionalised.

### **Assessment**

Alpiq regularly checks the functionality of the CMS. An annual compliance risk analysis is conducted and the CMS is also regularly inspected by Internal Audit. These activities serve to specify the compliance focus areas for the following year and define the actions to be taken.

Alpiq has a great interest in immediate notification if compliance with laws or regulations in its area of responsibility is not ensured. As a result, Alpiq has set up a compliance reporting office and encourages employees as well as third parties to report observed misconduct or suspected cases. Alpiq introduced a new electronic reporting system in the reporting year and promoted its use.

# Access to capital

## GRI 103: Management approach (103-1, 103-2, 103-3)

### Relevance

Alpiq's power plants, purchase contracts and trading activities are capital-intensive and have a long-term nature. This makes access to capital to secure the company's refinancing capability an important pillar of Alpiq's business model. The ability to ensure access to capital at all times and ensure the company's ability to operate in the capital market is extremely important to Alpiq.

### Management approach

As a result of this capital dependence, Alpiq promptly defined a financial strategy that reduces the financing risk on the liabilities side. The associated methods include the diversification of the financing sources, regarding the markets, instruments, counterparties and maturities. The financial policy aims to keep Alpiq's credit rating in the investment grade range. Further information on capital management is provided in [section 3.1](#) of the 2020 consolidated financial statements of Alpiq Holding Ltd.

In addition to classic financial policy measures, ESG criteria are becoming increasingly important in the financial markets. Alpiq recognises the importance of ESG ratings. They create opportunities and potential that Alpiq will look to exploit. In future financing activities, Alpiq intends to make use of ESG criteria to expand the investor base as well as to reach favourable pricing arrangements. Financial counterparties and service providers will also be assessed from ESG perspectives in future.

### Assessment

Over the past few years, Alpiq has gone through a comprehensive restructuring process that has resulted in a substantial reduction in gross debt. The implementation of the financial policy measures ensured that Alpiq's capacity to refinance was never at risk. From today's perspective, a sustainable financial strategy goes one step further and considers the economic as well as the environmental, social and governance dimension. Alpiq's aim is to continue focussing on the financial credit assessment in future and also successfully participate in a sustainability impact assessment under the ESG criteria.

Alpiq is currently assessed by the following sustainability agencies: MSCI, Inrate and CDP.

Alpiq was not involved in preparing the assessment reports of these rating agencies.

# Environmental dimension

# GRI 305: Emissions

## GRI 103: Management approach (103-1, 103-2, 103-3)

### Relevance

As part of the Paris Climate Agreement, the international community agreed to completely eliminate the use of fossil fuels in power production by 2050. Alpiq will contribute to the achievement of this goal, because protecting the climate is an integral part of the company's purpose. Therefore Alpiq is extensively turning to environmentally sound energy generation, including CO<sub>2</sub>-free and climate-friendly power production in Switzerland. Environmental protection and air pollution control play a crucial role in the construction of our power plants, as Alpiq is taking effective measures to reduce emissions in every project.

Alpiq is aware that flexibility is becoming ever more important as the market penetration of new renewable power production continues to improve. As a result, efficient and highly flexible gas-fired combined-cycle power plants are required to maintain security of supply wherever there is a lack of hydro storage power plants – which is currently the case in most European countries. Alpiq operates these kinds of power plants. The associated emissions are duly reported.

### Management approach and assessment

Monitoring and reducing the ecological effects of energy generation in thermal power plants are a top priority for Alpiq. In light of the increasingly decarbonised and decentralised energy world, in August 2019 Alpiq resolved to sell its coal-fired power plants in Czechia (Kladno and Zlín), which enabled Alpiq to reduce the CO<sub>2</sub> emissions of its power plant portfolio by more than 60 %. Alpiq has since no longer operated any coal-fired power plants.

One of the system tools that Alpiq introduced to monitor and reduce the ecological effects of its thermal power plants is a management system based on the standard ISO 14001, which is in addition complemented by the EMAS environmental management certification in some cases. All Alpiq's gas-fired combined-cycle power plants are certified in line with ISO 14001.

Both ISO 14001 and EMAS are focused on monitoring environmental indicators to assess the ecological performance and on conducting audits to check the conformity and improvement of ecological processes. Both programmes strive to continuously reduce pollution.



## GRI 305-1: Direct (Scope 1) GHG emissions

## GRI 305-2: Energy indirect (Scope 2) GHG emissions

## GRI 305-3: Other indirect (Scope 3) GHG emissions

in tons of CO <sub>2</sub> -equivalents	2020	2019
<b>Scope 1: Direct greenhouse gas emissions</b>		
Gas-fired combined-cycle power plants	1,361,195	1,744,507
Coal-fired power plants	0	1,373,889
Administrative buildings in Switzerland owned by Alpiq <sup>1</sup>	359	429
<b>Total Scope 1</b>	<b>1,361,554</b>	<b>3,118,825</b>
<b>Scope 2: Indirect greenhouse gas emissions</b>		
Energy procurement for standby operation of gas-fired combined-cycle power plants <sup>2</sup>	6,337	10,647
Pump energy for pumped storage power plants (partner power plants) <sup>2,3,4</sup>	3,564	4,340
Power consumption by the administrative buildings in Switzerland owned by Alpiq	0.14	0.16
<b>Total Scope 2</b>	<b>9,901</b>	<b>14,987</b>
<b>Scope 3: Indirect greenhouse gas emissions</b>		
Pump energy for pumped storage power plants <sup>2,3,5</sup>	3,335	3,334
<b>Total Scope 3</b>	<b>3,335</b>	<b>3,334</b>
<b>Total</b>	<b>1,374,790</b>	<b>3,137,146</b>

1 Oil and gas heaters

2 Calculations based on country-specific supplier mix

3 The values are based on the procurement of energy by Alpiq

4 Partner power plants with majority shareholdings

5 Partner power plants with minority shareholdings

## GRI 305-7: Nitrogen oxides

The nitrogen oxide emissions (NOx) are measured online in all gas-fired combined-cycle power plants. Emissions primarily depend on the production of electricity and steam, which can fluctuate depending on market conditions or customer requirements. Alpiq is continuously upgrading its power plants. In doing so, the company makes use of the best available technology, including dry-low NOx installations in order to reduce NOx emissions and thus protect the environment. Alpiq meets or surpasses all European and local environmental requirements for gas-fired combined-cycle power plants.

NOx in tons	2020	2019
Gas-fired combined-cycle power plants	720	734

# GRI 307: Environmental compliance

## GRI 103: Management approach (103-1, 103-2, 103-3)

Details on the management approach are provided under section Compliance.

## GRI 307-1: Non-compliance with environmental laws and regulations

No relevant fines and no non-monetary sanctions were imposed on Alpiq due to non-compliance with environmental laws and regulations in the reporting year.

# G4: Industry-specific disclosures

## EU1: Installed capacity

An overview of the installed capacities per technology can be found in the Annual Review section of the Alpiq Holding Ltd. Annual Report 2020.

## EU2: Net energy production

An overview of the net energy production per technology can be found in the Annual Review section of the Alpiq Holding Ltd. Annual Report 2020.

## Renewable energy sources

Alpiq has a diverse international generation portfolio of renewable energy sources. To support the energy transition that is currently underway, Alpiq intends to continue developing its portfolio of renewable energy sources throughout Europe. Several associated initiatives have been launched in the past few years.

### Development of wind power projects in Switzerland

Despite the complex environment for the development of wind energy in Switzerland, Alpiq is resolutely committed to this energy. It offers a specific solution for local energy supply, particularly in winter. The most advanced project is the Bel Coster wind farm, which is located on the ridge of Mt Le Suchet in the canton of Vaud. With its nine wind turbines, this plant will produce around 80 GWh of power per year. Other projects that are not yet as far advanced, also in the canton of Vaud, are currently in the analysis stage.

### Construction of a wind farm in Sweden

Alpiq will also continue to develop its portfolio of new renewable energies at an international level. The erection of the Tormoseröd wind farm in south-west Sweden will start in 2021. The wind farm is expected to be operational in 2022. With eleven turbines, each rated at 6.6 MW of power, and a total installed capacity of 72.6 MW, this wind farm will be able to generate around 210 GWh of renewable energy each year. During the construction phase, Alpiq will be responsible for the project management activities and, during operation, for the technical and commercial asset management. Tormoseröd is an important project for Alpiq with regard to project development, financing model and risk management. The 'asset light' approach includes an important co-investment partner for projects in the area of renewable energies, where Alpiq undertakes the development of the plants in order to offer its customers high-quality service.

### Repowering an existing wind farm in France

Alpiq operates the Gravières wind farm in Roussas in the French department of Drôme. To increase the power generated by the wind farm, Alpiq has decided to completely re-power

the plant, which was commissioned in 2006. The aim is to replace all wind turbines and increase annual power production by around 30 %. There is no plan to change the current setup and number of turbines. However the complete repowering will increase total power production from 25 GWh to roughly 32 GWh per year. The repowering project will extend the useful life of the Gravières wind farm by another 30 years.

### **Construction of a new small-scale hydropower plant in Switzerland**

Alpiq is continuing to expand its portfolio of small-scale hydropower plants. To construct the Hüscherabach power plant, Alpiq has once again joined forces with the Rheinwald municipality (canton of Grisons). The construction activities started in May 2020 and the new ultra-modern power plant will replace the old plant from the 1930s, which is owned by the Rheinwald municipality. Production will grow from 1.1 GWh per year to about 6.1 GWh.

### **Refurbishment of the Tannuwald power plant**

The Tannuwald power station was commissioned in 1981, belongs to the Energie Electrique du Simplon SA hydropower complex and is located in the Zwischbergental valley. The power plant was flooded during the flood in October 2000 and was then hastily repaired with seven used pumps, which were operated as turbines. During the complete refurbishment between the summer of 2019 and the summer of 2020, the seven turbine pumps were replaced by two vertical machine groups. In addition, the pressure line was re-laid and the building renovated. The installed power at the Tannuwald power station rose from 1.4 MW to 6.8 MW and annual power production grew from 17 GWh to 24 GWh.

### **New concession for the Gösgen hydropower plant**

Alpiq's Gösgen hydropower plant has received a new concession for 70 years. The new concession was signed on 23 September 2020 and entered into force retrospectively from 1 January 2020. In the coming years, Alpiq Hydro Aare AG will invest in climate-friendly power production from hydropower with the largest hydropower plant on the Aare. This includes a total of 21 environmental compensation measures.

### **Hydrospider operates a unique hydrogen ecosystem for emission-free mobility**

Hydrospider, Hyundai Hydrogen Mobility and the H2 Mobility Switzerland Association, at the initiative of hydrogen pioneer H2 Energy, are currently establishing a business model for emission-free mobility that is unique in Europe. By 2025, some 1,600 fuel-cell electric heavy goods vehicles from Hyundai will be travelling on Switzerland's roads. Members of the H2 Mobility Switzerland Association will use the lorries in day-to-day operations and ensure the establishment of a national refuelling infrastructure. Hydrospider supplies the green hydrogen from its 2 MW electrolysis plant, which is connected directly to Alpiq's Gösgen hydropower plant to ensure emission-free and climate-friendly production. Alpiq holds a 45 % stake in Hydrospider.



# Social dimension

# GRI 403: Occupational health and safety

## GRI 103: Management approach (103-1, 103-2, 103-3)

### Relevance

Alpiq considers occupational health and safety (OHS) as well as the protection of the physical and mental integrity of its employees and third parties to be values that must be protected at all costs. Alpiq therefore constantly strives to take all necessary measures to achieve this goal.

This report reflects the current status of OHS management, which is implemented at the local level for every location

### Management approach and assessment

A common management system for OHS currently does not exist at group level. However, the national companies that operate the gas-fired combined-cycle power plants in Italy, Spain and Hungary all have management systems that have been certified in line with OHSAS 18001 or ISO 45001.

Other power plant companies manage occupational health and safety concerns based on a non-certified management system.

As part of their general obligations, the employers in all countries in which Alpiq operates are required to conduct risk assessments on work safety and bear the overall responsibility for identifying, assessing and controlling risks. As a result, location- and technology-specific risk assessments have been prepared in accordance with the local regulations. Moreover, additional risk assessments are conducted with regard to interference risk with external companies as necessary.

The risk assessments are prepared by competent persons who employ external consultants if necessary. The documents are regularly revised when new equipment, machines or production materials are introduced, when work processes change that could lead to hazards or as a result of findings obtained from an accident or a near miss.

All locations report incidents and unsafe conditions in line with the local procedures, which are defined in the respective management system. The general goal is to improve the reporting culture across the entire Alpiq Group, including the reports by workers of external companies.

All incidents, including near misses, are investigated. The aim is to determine the underlying causes and take corresponding corrective actions in order to prevent a similar incident from occurring again. For Alpiq it is important to note that the investigation of an accident is not intended to apportion blame, rather it aims to identify failures in the safety process.

The year 2020 was primarily shaped by the COVID-19 pandemic. The protection of the health of employees was the absolute priority and all necessary protective measures were consistently implemented. Work at all power plants was carried out in line with the emergency plans and in compliance with the regulations enacted by the local authorities. Besides the usual hygiene regulations, additional measures were introduced where necessary: among other things, the strict separation of the teams, the mandatory use of protective masks with safety standard FFP2, the installation of devices for measuring body temperature or regular testing of the operating personnel. Most events were cancelled or replaced by online conferences. The measures taken kept employee infections within narrow limits and the vast majority of these occurred as a result of private contacts.

### GRI 403-3: Occupational health services

Health monitoring in the power plants is carried out by occupational health professionals in line with the national legislation. In addition, managers must ensure that the general physical condition of employees is monitored and considered suitable for performing the respective tasks at the power plants. For example, all affected Alpiq employees are required to undergo an occupational medical check-up for “Working at heights with risk of falls” to ascend a wind turbine, even where this is not required by law. In addition, Alpiq ensures that every employee receives adequate training on OHS topics.

A large number of workers who are not employed by Alpiq work at Alpiq operating sites. As a result, contractors are carefully selected in consideration of the occupational safety criteria and most of them have certified safety standards (e.g. HYDRO Exploitation, Vestas, Gamesa, etc.).

### GRI 403-9: Work-related injuries

No consolidated form of accident reporting has been introduced at the group level to date. The reports are submitted by the national organisations in line with the requirements of the relevant local accident insurance companies.

As a result, only absolute accident figures are reported for 2020. In addition, Alpiq is currently not able to collect official information on accident numbers for operating personnel of third-party companies. However, Alpiq is not aware of any major accidents with downtimes at Alpiq plants.

In 2020, there were 5 workplace accidents within the Alpiq Group. No serious workplace accidents were reported. This low number of workplace accidents reflects a high level of safety awareness. We will continue to strive to keep the number of workplace accidents at this low level.

# GRI 418: Customer privacy

## GRI 103: Management approach (103-1, 103-2, 103-3)

### Relevance

Since the entry into force of the General Data Protection Regulation (GDPR) in 2018, the processing of personal data has become even more important, both within the company as well as externally with regard to data flows.

As an international energy company, Alpiq operates in all important European markets, so the GDPR became a focus of our attention. Alpiq has introduced a data privacy management system and appointed a Data Privacy Officer (DPO) for the group. The Alpiq DPO is supported by local data privacy partners (coordinators), which ensures data privacy compliance in line with the GDPR and all other applicable local regulations. The data privacy expert community maintain a regular exchange and participate in further development activities. Due to its new strategic direction, Alpiq will primarily focus on B2B business activities.

### Management approach

Trust is a fundamental requirement for the sustainable success of the Alpiq Group. As a result, Alpiq is committed to handling personal data with the utmost care. All employees receive training in the respectful handling of personal data in accordance with the applicable rules and regulations. Alpiq considers privacy to be much more than a regulatory requirement, it is an integral part of its business practices, as evidenced by our “privacy by design” and “privacy by default” concept. To emphasise this approach, the procedures were anchored in the internal rules for data privacy, which were approved by the Executive Board (2018). The Alpiq Group Data Privacy Officer (DPO) manages the privacy management system together with the local data privacy partners (coordinators) in our operating jurisdictions. The DPO is part of the Alpiq Compliance Team, which ensures that this topic is given prominence and attention. Alpiq has introduced standard procedures for handling data subject requests and data breaches as well as for recording complaints. Transparency and data protection play a key role in the relationships that Alpiq has with its customers and partners, and Alpiq ensures that it collaborates closely with these parties. Alpiq has introduced a state-of-the-art privacy management tool for the uniform management of all aspects of personal data, such as requests of data subjects, cookies and the record of processing activities.

### Assessment

The DPO assessed the maturity of the data privacy programme at the start of 2020. The results were incorporated into the privacy roadmap. In addition, the implementation of the GDPR at the local level was externally assessed in the autumn of 2020. The results will have a significant influence on the further development of the data privacy management system.

## GRI 418-1: Substantiated complaints concerning breaches of customer privacy and losses of customer data

In 2020, Alpiq recorded one substantiated complaint by a regulatory authority as a result of a technical error that occurred while migrating a customer record. The personal data disclosed was minor in scope and the disclosure posed a very low risk for the individuals concerned. However, Alpiq considered it its duty to notify the competent data protection authority. Together with the authority, Alpiq published a corresponding online notice on the respective website.

# GRI 419: Socioeconomic compliance

## GRI 103 Management approach (103-1, 103-2, 103-3)

Details on the management approach are provided under section Compliance.

## GRI 419-1: Non-compliance with laws and regulations in the social and economic area

Alpiq did not record any relevant fines or non-monetary sanctions due to non-compliance with laws and / or regulations in the social and economic area in the reporting year.

# G4: Disaster and emergency planning

## Business-Continuity-Management

### Relevance

Alpiq is a leading Swiss electricity producer. It is present throughout Europe and is responsible for operating large plants that are often part of critical infrastructure, such as nuclear power, gas-fired and hydropower plants. Professional emergency and crisis management as part of business continuity management (BCM) is therefore extremely important for Alpiq.

### Management approach

#### Organisation, responsibility and training of emergency and disaster organisations

BCM is fundamentally a management task. Every process owner defines the measures that they need to prepare to maintain their process, even under difficult conditions. For particularly business-critical processes, process owners need to prepare a business continuity plan and maintain an emergency organisation for incident management.

The organisation for Management in Crisis Situations (MIC) is deployed in the event of an imminent threat to the entire company. It supports management, primarily the CEO, in this position. To do so, it prepares decision-making bases for the attention of the CEO and independently takes any necessary emergency actions.

To be able to effectively and autonomously perform this task, Chief of Staff of Crisis Management Organisation MIC reports directly to the CEO when MIC is engaged.

Emergency organisations and the MIC crisis organisation hold a training session to practice their deployment capability at least once a year. The team composition, assembly and activities are reviewed and tested based on real-life exercises.

#### Business continuity plans

The following particularly business-critical areas, which are monitored at the group level, were identified as part of a business impact analysis:

- Digital & Commerce business division (energy trading)
- Power plant operation and management in the CEG-P in Lausanne (a single power plant is not particularly business-critical, but the operational readiness of the entire portfolio is; REMIT notifications)
- Treasury and Accounting (important payments, for example, for energy deliveries and auctions; interest payments and repayments of bonds; hedging foreign currency risks)



- Communications & Public Affairs (publication of ad hoc announcements; operation of the website for the publication of mandatory notifications, among other things)

The other business continuity plans are the responsibility of the process owners and are not centrally monitored by the crisis management team.

### **Assessment**

Prior to managing the current COVID-19 pandemic, the MIC organisation's last major deployment was in 2011 following the parcel bomb attack on swissnuclear in Olten. The emergency organisations have managed various less-critical incidents, such as IT failures, water penetration and fires.

Since the end of February 2020, the MIC crisis organisation has been tasked with the "Coordination of all Alpiq activities associated with COVID-19". This is an atypical incident management scenario for this organisation given the extremely long period of deployment. The MIC crisis organisation has been reinforced with business continuity coordinators from the operating business divisions. During the acute phase in the spring of 2020, a daily meeting was held between the Chief of Staff of Crisis Management Organisation MIC and the Executive Board to decide on individual measures. Currently, a management report is prepared for every Executive Board meeting, which contains requests for decisions where necessary.

### **Gas-fired combined-cycle power plants**

Alpiq is committed to protecting its plants. Most of the gas-fired combined-cycle power plants are part of the critical national infrastructure. Ensuring the provision of power and a stable supply to the national grids is absolutely essential. Alpiq applies processes and systems which guarantee secure operation. The main goal is to minimise unscheduled power plant downtimes. Alpiq has concluded insurance policies for the plants, which cover damages and potential effects of negative external factors. They protect Alpiq from the economic consequences of unforeseeable future incidents.

In line with the applicable national and local regulations, every power plant has an emergency plan. These emergency plans are adapted to the specific characteristics of every plant depending on the size and nature of the operation and are shared with the local authorities and fire brigades.

Physical access to the gas-fired-combined-cycle power plants operated by Alpiq is protected and monitored. The plants regularly host emergency exercises that are often focused on fire rescue, recovery of persons or a breach of physical security. The emergency plans and instructions are reviewed in line with the statutory provisions and ISO certifications.

### **Hydropower plants**

Emergency plans exist for every partner company. They particularly define the nature and severity of an incident for which a crisis team is deployed, its organisation, its interactions as well as the duties of its members. In line with standards ISO 55001 (Asset Management) and 9001 (Quality Management Systems), crisis exercises are held together with external

experts in a selected plant each year. These exercises enable us to gain valuable experience and continuously improve the emergency plans.

### **Wind power plants**

The wind farms operated by Alpiq are mostly located in remote, hard-to-reach places. For this reason, the emergency plans have been adapted in consideration of the longer reaction times of professional rescue organisations. The goal is coordination between the authorities and corresponding processes of the service providers working at Alpiq wind farms.

In order to make access easier, road signs have been installed at the wind farms to guide emergency vehicles and save time. A snowcat is available at the wind farm in the Bulgarian mountains for extreme weather conditions.

All the roles involved in the emergency planning are defined and the individuals are suitably trained. Emergency drills are performed on a regular basis in order to ensure that each person knows how to react and to detect any gaps in the reaction chain. If necessary, contractors and public emergency services are included in these drills. However, due to the COVID-19 pandemic, this drill had to be postponed at most of the wind farms in 2020.

# Cyber-security

## GRI 103: Management approach (103-1, 103-2, 103-3)

### Relevance

The global rise in cyberattacks and the professional nature of the hacks launched by cyber-criminal organisations are presenting enterprises with the challenge of developing, implementing and constantly reviewing security strategies. Operators of critical infrastructures need to implement a cybersecurity strategy that ensures comprehensive protection for their production facilities and critical IT systems. The great majority of Alpiq power plants play an important role in the reliable supply of electricity in the respective countries. Unfortunately, the constantly evolving cyber threats pose a real risk for all energy suppliers. Protection against specific cyber-attacks is therefore an important part of the security standards of our power plants.

### Management approach and assessment

Guidelines for management and the organisation of corporate security are developed within the company. Business continuity management (BCM) ensures that all critical business processes can be continued or promptly restored in case of internal or external incidents. The cyber-security of the power plants and critical IT systems is part of this BCM approach.

In case of significant cyber-security incidents, Alpiq is able to deploy emergency and crisis teams. The company takes all necessary organisational measures to ensure that all incidents that could have a negative impact on the IT environment are dealt with in a timely manner. Cybersecurity incidents are managed and documented according to precisely defined incident and response plans. Security monitoring takes place at various levels. For example, the implementation of business applications in the cloud is checked in terms of compliance with security architecture rules, and applications are subjected to active monitoring while they are running. Established vulnerability management ensures that, once identified, vulnerabilities are remedied swiftly and do not return. Efficient vulnerability management also includes ongoing updates with the latest security software for all critical IT systems at both server and user level.

Crisis management plans contain a minimum number of scenarios. For example, for hydropower plants, risk management guidelines are used to assess the cyber-security risks each year and take appropriate measures.

To maintain a high level of expertise, Alpiq holds regular training and simulation exercises that are based on realistic scenarios. The simulation exercises allow Alpiq to review its processes by deploying its emergency and crisis teams and activating the relevant systems for dealing with cyber-attacks in a real-life situation, for example, penetration tests or the failure of critical systems. Regular internal audits make it possible to determine the maturity of the security.

The maturity of the cyber-security guidelines is also periodically assessed based on the Swiss minimum standards in all areas of cyber-security.

As a member of the energy sector, Alpiq is informed of the latest threats to the energy industry by the National Cyber Security Centre of Switzerland. Alpiq implements the recommendations and is involved in various working groups.

# Employee satisfaction

## GRI 103: Management approach (103-1, 103-2, 103-3)

### Relevance

Employee satisfaction is very important to Alpiq. As a result, Alpiq enables employees to help shape their workplace through direct influence. The resulting findings are used for further development activities at Alpiq.

### Management approach

In 2020, Alpiq held the group-wide employee survey, “Alpiq Engagement Monitor”, together with an external partner. The survey was anonymous and voluntary with no possibility of identifying individual employees.

The survey consisted of various topics on the work situation and questions on current topics, such as the COVID-19 pandemic.

Alpiq intends to use the activities derived from the results of the survey to improve employee satisfaction and commitment.

### Assessment

The 2020 employee survey recorded a very high participation rate, which lent the results a high level of significance. The results are compared with a global energy benchmark and subsequent surveys will also be compared against the last survey.

The results of the 2020 employee survey were very positive and identify potential for further development. The main areas for action were identified by the Executive Board. The identification of specific measures and their implementation will commence in the first quarter of 2021.

# Technology

# Hydrogen – a CO<sub>2</sub>-free alternative energy carrier

In order to combat climate change, there is an urgent need for alternative energy carriers that can be generated and used without emitting CO<sub>2</sub>. Hydrogen is an optimal alternative to fossil fuels, such as petrol and diesel, and contributes to the decarbonisation of road transport and of the heavy industry. Provided that the energy-intensive production process based on electrolysis is carried out using carbon-neutral, renewable electricity.



Switzerland's first plant for the production of green hydrogen in commercial operation is located at the Alpiq Gösgen run-of-river power plant.

## Hydrogen production using renewable energy sources

As the leading source of renewable energy, hydropower is particularly well suited for hydrogen production. Thanks to their long operating hours, run-of-river power plants enable hydrogen production plants to run with a high degree of utilisation. An optimal balance between hydrogen and electricity generation is key to ensuring that production is economical and that sufficient electricity is available in the grid during critical periods.

In future, hydrogen production will also play a decisive role for other renewable energy sources, such as wind and solar power. Since hydrogen production can take up excess



energy, it reduces the need for electricity grid expansions and contributes to the integration of new renewable energies into the energy system.

The advantage of the generated hydrogen is that it is transportable and can thus also be processed into methane or liquid fuels and combustibles regardless of location. Or it can be converted back into electricity and thus complement other storage solutions, such as stationary batteries.

## Alpiq and the production of hydrogen

With hydropower in our DNA, we have the best prerequisites for the carbon-neutral production of this alternative energy carrier. Our main focus is on the use of hydrogen for the road transport sector. With our commitment to hydrogen mobility, we are already making a decisive contribution to the evolution of mobility.

In cooperation with H2 Energy and Linde Gas, we also intend to establish hydrogen as an alternative energy carrier, focusing on heavy goods transport. For this purpose, we hold a 45 percent stake in Hydros spider AG. In a cost-efficient manner, the company guarantees hydrogen that fulfils the quality standards of the Society of Automotive Engineers. Hydros spider has completed a 2 MW electrolysis plant at the Gösgen run-of-river power station. This is the first plant of this size in Switzerland to produce hydrogen for commercial operation.

## Possible fields of application for hydrogen

In the **transport** sector, hydrogen is an alternative to fossil fuels. It can be used to power rockets and airplanes or in fuel cells for cars, trucks or ships that use electric propulsion. Its main advantages are its operating range and the fast conventional fuelling process as well as its low resource consumption and weight compared to a battery.

In the **industrial** sector, hydrogen is applied in various fields: from the long-term storage of large quantities of energy and for emergency power supplies to the synthesis of other energy carriers and fuels and in the refining processes of the chemical industry.

# Nuclear energy

Nuclear power plants generate vast amounts of base-load electricity. Around the clock. They are particularly important for Switzerland in the winter, when domestic hydropower plants do not generate sufficient electricity and the European countries have an increased demand for electricity. In Switzerland alone, 40 percent of the generated electricity comes from nuclear power plants. Alpiq itself does not operate any nuclear power plants, but holds a stake in the two nuclear power plants Gösgen (40 %) and Leibstadt (32.4 %). Alpiq also has a 33 % share in Kernkraftwerk-Beteiligungsgesellschaft AG (KBG), which owns energy drawing rights from the EDF French nuclear fleet.



The Gösgen nuclear power plant has a capacity of 1,060 MW.

# Fuel preparation (front end) and power production

## GRI 103 Management approach (103-1, 103-2, 103-3)

### Relevance

A key part of Alpiq's core business is power production from flexible climate-friendly Swiss hydropower and CO<sub>2</sub>-free nuclear energy.

In Switzerland, Alpiq has a 40 % share in Kernkraftwerk Gösgen-Däniken AG (KKG) and a 27.4 % share in Kernkraftwerk Leibstadt AG (KKL). Alpiq holds the executive management mandate for KKG. Both power plants are partner power plants. This means that the shareholders take over the entire energy production and reimburse the resulting annual costs in return.

Alpiq also has a 33 % share in Kernkraftwerk-Beteiligungsgesellschaft AG (KBG), which owns energy drawing rights from the EDF French nuclear fleet. Alpiq holds the executive management mandate for KBG. The French energy group EDF is the sole owner of its nuclear fleet and so is responsible for the operation and safety of the plants therein.

### Management approach

Alpiq has no fully consolidated participations in nuclear power plants. However, as Alpiq is very aware of its responsibility and obligation towards the environment and society, and as the GRI prescribes no specific standards in relation to nuclear power plants, the impact of the nuclear participations on sustainability is published in this specific chapter.

### Assessment

The nuclear power plants in which Alpiq holds shares were operated safely and reliably in 2019 and 2020. The production data for 2019 and for 2020 can be retrieved from the Alpiq Ltd. Annual Reports of 2019 & 2020. Besides electricity production KKG provides the nearby industry with climate friendly produced process steam.

The uranium used at KKG comes from Australia and Canada. When the nuclear fuel is procured, all suppliers are assessed with regard to their product quality, security of supply, environmental compatibility, transparency of the supply chain and economic efficiency. In 2019 nuclear fresh fuel of 24.8 tons has been inserted at KKG and 33.0 tons at KKL.

The Swiss Federal Nuclear Safety Inspectorate (ENSI) is the Swiss supervisory authority responsible for Swiss nuclear power plants. In the safety assessment published for 2019 (ENSI AN-10650), ENSI assesses KKG and KKL to be safe plants.

# Waste management, interim and final storage (back end)

## GRI 103: Management approach (103-1, 103-2, 103-3)

### Relevance

Power production from nuclear energy produces radioactive waste. As a shareholder in KKG and KKL, Alpiq takes on a part of the annual costs in proportion to its share; this obviously includes the costs of decommissioning and dismantling. At both plants, protecting the population, employees and environment from ionising radiation takes the highest priority. This includes the safe handling of radioactive waste.

### Management approach

When handling radioactive waste in nuclear power plants, a distinction is made between operational waste and spent fuel elements and waste from reprocessing. The safety and health of employees is ensured through the consistent implementation of the appropriate guidelines: Guideline ENSI-G15 defines the radiation protection limit values that apply in Switzerland to employees and to the population surrounding the nuclear power plant. These are monitored in accordance with guideline ENSI-B09 and reported to ENSI in accordance with guideline ENSI-B03.

### Operational waste (IAEA classification: low and intermediate-level waste, LLW and ILW):

Radioactive operational waste (raw waste) is generated in a nuclear power plant on a regular basis from the water cleaning systems and from exhaust air cleaning. Other waste comes from replacing components during maintenance, modification or retrofitting work and the consumables used in these processes.

The radioactive waste is collected, conditioned on a campaign basis and then placed into intermediate storage. The unconditioned waste present in a nuclear power plant is stored in specified rooms in the controlled zone.

The following conditioning processes are used at a nuclear power plant: Encapsulation of resins in polystyrene, cementing of sludge or bonding in bitumen. Combustible and fusible raw waste or exhaust air filters are provided for treatment in the plasma plant at the central intermediate storage facility (Zwilag) in Würenlingen. For all processes in Switzerland, the type approvals required in accordance with the Swiss Nuclear Energy Ordinance (KEV) and guideline ENSI-B05 are available. The conditioned waste containers are routinely placed into storage at the plant's own intermediate storage facility or at the Zwilag.

The radioactive waste from Swiss nuclear power plants is logged in an electronic accounting system used by all Swiss nuclear power plants, so that information about quantity, storage location and radiological properties is available at all times.

A key element in the minimization of radioactive waste is the inactive clearance measurement of materials from the controlled zone.

#### **Fuel elements and waste from reprocessing (IAEA classification: high-level waste, HLW):**

After final unloading from the reactor core, spent fuel elements are stored for several years in the plant's own wet storage pool to cool down. During this time, the thermal output subsides significantly, so that the fuel elements can subsequently be placed in optimal storage in intermediate storage containers. These storage containers are constructed according to international standards and licensed and stored in Switzerland in accordance with ENSI guidelines ENSI-G04 and -G05. The currently valid guideline HSK-R-29 will soon be replaced by the guideline ENSI-G04. The loaded containers are transported to the Zwiilag where they are placed into storage. In the reporting year, the following transportation took place from KKG and KKL to the Zwiilag.

Number of transportation operations of radioactive materials from the nuclear power plants to the Zwiilag.

Numer of transportation operations	LLW / ILW	HLW / fuel elements
Gösgen nuclear power plant	2	
Leibstadt nuclear power plant	9	3

The Swiss guidelines on the transportation of radioactive materials on road and rail are based, among others, on the international regulations on the carriage of dangerous goods by road (ADR) or by rail (COTIF). For all modes of transport, the IAEA recommendations for safe transport of radioactive material (IAEA SSR-6) apply.

The process of handling water and wastewater is defined in specific terms for each nuclear power plant in rules of delivery that are checked and approved by ENSI. The delivery data for 2019 and 2020 is publicly available from ENSI (ANPA-EMI data).

#### **Assessment**

To ensure consistency with the data in the ENSI Oversight Report 2019, the following data refers to the calendar year 2019. The data for the calendar year 2020 will not be published by ENSI until mid-2021.

In 2019, all radiation protection limit values were observed, guaranteeing the safety and health of employees. The objective of safe handling of radioactive waste was achieved.

The waste generated in KKG and KKL is listed in the following table. In 2019, no long-lived intermediate-level waste (ILW) or high-level waste (HLW) from the reprocessing of spent fuel elements was transported back into Switzerland. All obligations relating to the return of waste from reprocessing have been fulfilled.

Nuclear data relating to the back end in 2019 (this data refers to the total quantity and is not scaled according to the share proportion).

	LLW / ILW unconditioned in m <sup>3</sup>	LLW / ILW conditioned in m <sup>3</sup>	ILW in m <sup>3</sup>	HLW in m <sup>3</sup>	Unloaded fuel in t	Fuel transported to Zwiilag in t
Gösgen nuclear power plant	17	10	-	-	24.8	-
Leibstadt nuclear power plant	55	11	-	-	33	63.2

No Swiss nuclear power plant in which Alpiq holds a share causes significant heating of a body of water. Both KKG and KKL are cooled by cooling towers and not by the adjacent rivers. The water in the cooling towers comes from the rivers and the reintroduction of cooling water does introduce some heat but not significantly. In periods of hot summer causing very high river temperatures, the nuclear power plants reduce their power to remain under the regulatory thresholds.

# Decommissioning and dismantling of nuclear power plants

## GRI 103: Management approach (103-1, 103-2, 103-3)

### Relevance

Guaranteeing safe operation and handling of radioactive materials includes the entire value chain and the lifecycle of nuclear power plants, from construction through to commissioning and decommissioning of the plants as well as their dismantling. In addition to the duties defined in the Nuclear Energy Act (KEG) and the Nuclear Energy Regulation (KEV), Alpiq is committed to its obligations, particularly as nuclear energy is an important pillar in Alpiq's production portfolio of climate-friendly electricity.

### Management approach

The financing for dismantling the nuclear power plants and for safe disposal of the radioactive waste is secured. To ensure the financial burden can be carried after the end of operations at a nuclear power plant, the nuclear power plant operators pay into the Decommissioning Fund for Nuclear Facilities and Waste Disposal Fund for Nuclear Power Plants (Stilllegungs fonds für Kernanlagen, Entsorgungsfonds für Kernkraftwerke – STENFO) on a continuous basis. The two funds are subject to federal supervision.

### Assessment

The money is paid into the funds by Kernkraftwerk Gösgen-Däniken AG and Kernkraftwerk Leibstadt AG. In 2019 and 2020, KKG paid CHF 25.1 million, while in 2019 KKL paid CHF 34.6 million into the funds for decommissioning and disposal. As a shareholder in KKG and KKL, Alpiq pays a part of the annual costs in proportion to its share; this obviously includes the costs of decommissioning and dismantling.

The payments made into the funds are calculated on the basis of cost estimates made every five years for decommissioning and dismantling nuclear power plants and for disposing of nuclear waste in accordance with the Swiss Ordinance on the Decommissioning and Disposal Funds for Nuclear Power Plants (Verordnung über den Stilllegungs- und den Entsorgungsfonds für Kernanlagen – SEFV).

The most recent cost study is from 2016. An updated cost study, the 2021 cost study, will be submitted at the end of 2021. For further information, see the Annual Reports of KKG AG and KKL AG.



# Security of infrastructure (physical and cyberattacks)

## GRI 103 Management approach (103-1, 103-2, 103-3)

### Relevance

The power supply is part of the critical infrastructure (CI). As a leading European electricity producer and operator of major nuclear, gas and hydropower plants, Alpiq is part of the CI. Critical infrastructure safeguards the supply of essential goods and services, such as energy, transport or communications. The overarching goal of critical infrastructure protection (CIP) is to guarantee as far as possible the continuous functioning of critical infrastructure, or minimum operation (continuity management) and a return to a normal state following an incident.

### Management approach

For critical infrastructure protection, the primary focus is on all of the fundamental processes and plants that are essential to securing the safe, reliable and efficient power supply. This includes the safe operation of the power plants and grids, system coordination, grid regulation, the black start and isolated operation capabilities of producers, voltage stability, etc.

The companies are directly responsible for safeguarding the nuclear power plants. The concept of safeguarding is supervised by ENSI, which checks it periodically for its effectiveness.

### Assessment

The systems fall under different classifications and are subject to different requirements depending on their relevance – the higher the classification, the more stringent the requirements.

The safety of the nuclear power plants is continuously monitored. This also includes emergency protection and planning (see guideline ENSI-B12). In addition, regular emergency exercises take place in which the materials, personnel and organisation are tested in the context of an emergency. These emergency exercises are subject to minimum requirements that are defined in guideline ENSI-B11. Large-scale emergency exercises, i.e. comprehensive emergency exercises that include cantonal services and federal authorities, generally take place every two years at one of the nuclear power plant sites. The last such exercise took place in 2019 at Beznau nuclear power plant. The next comprehensive emergency exercise will therefore take place in 2021.

# Health and occupational safety

## GRI 103 Management approach (103-1, 103-2, 103-3)

### Relevance

The nuclear power plants in which Alpiq holds shares have a particular obligation to take account of safety aspects in a comprehensive, consistent and efficient way as well as to take measures to ensure they are implemented. This is done while taking into account ethical, economic and social principles as well as legal provisions. Responsibility for people and the environment is seen by Alpiq and the operators of the nuclear power plants as a central task. The focus is on the health and safety of the public, employees and external contractors.

### Management approach

Occupational safety and protection of health are valued very highly in the power plants and are monitored and periodically inspected to identify and close any potential gaps. The overarching goals, rules of conduct and responsibilities for protecting people (public, employees and third parties) are specified in the code of conduct and the management and organisational manuals of the power plants in which Alpiq holds shares. The nuclear power plants in Switzerland are subject to the strictest safety standards.

### Assessment

Since 2010, the key nuclear energy figures (reportable events, energy availability, dose values) have been communicated by the operators of the nuclear power plants exclusively by calendar year to ensure they can be compared with the official reports from ENSI and WANO (World Association of Nuclear Operators). There is no additional conversion or communication for other periods of time (water year), as this prevents any contradictory data and misinterpretations when compared with the reports sent to ENSI and WANO.

Reportable events do not mean that measurable quantities of radioactive substances have been released. They simply indicate that there were irregularities in operation that needed to be observed and reported in accordance with guideline ENSI-B03. In the nuclear power plants in which Alpiq holds shares, there were no accidents with a measurable release of radioactive material in the reporting year.

Events that were reported in accordance with guideline ENSI-B03 in 2019 are listed in the following.

Reportable events in 2019 in accordance with guideline ENSI-B03

Number	INES 0 <sup>1</sup>	INES 1 <sup>1</sup>	INES 2 <sup>1</sup>
Gösgen nuclear power plant	7	1	0
Leibstadt nuclear power plant	11	0	0

<sup>1</sup> International Nuclear and Radiological Event Scale (INES) is a tool for communicating the safety significance of nuclear and radiological events to the public. 0 is the lowest and 7 is the highest level. For further information see the website of International Atomic Energy Agency (iaea.org).

For further information about these events, see the ENSI Oversight Report 2019 AN-10650.

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