2021
Sustainability Report

ALPIQ

Sustainability Report

Introduction	3
General disclosures	8
GRI Index	29
Economic dimension	33
Environmental dimension	41
Social dimension	53
Further topics	70

Introduction

The COVID-19 pandemic dominated society and the economy also in 2021. In addition to this epochal challenge for all of humanity, two other topics have remained relevant: Climate protection and security of supply. Both topics are also an integral part of Alpiq's purpose. We are committed to acting on this. Consequently, Alpiq is placing greater focus on the topic of sustainability.

Thanks to our environmentally friendly power production in Switzerland, we started the transformation into a company that contributes to a better climate and strengthens the security of supply with its sustainable energy business from a good starting position. Defining our purpose in 2020, refining it and publishing a first overview on the topic of sustainability in 2021 were important first steps. Further highlights from the reporting year are included in 'Industry-specific disclosures'.

The universally recognised Sustainable Development Goals (SDGs) of the United Nations are a central guide on the path to a sustainable company. The 17 SDGs are already used by numerous companies, non-governmental organisations and governments. They have established themselves as the standard more than ever and are recognised at a global level as an important call to action.

In internal workshops held during the reporting year, we selected five goals from the 17 SDGs on which we can have the most influence based on our company's defined purpose. And which are also most relevant for us with regard to our stakeholders. Because 2021 was not just another year of COVID-19, but also a year in which there was increasing talk of an energy crisis as gas and electricity prices continued to hit new highs and concerns grew about access to affordable energy in many parts of Europe. It was also the year in which the discussion about security of supply, especially in winter, came into focus in Switzerland due to the lack of an electricity accord. Or in which we were contacted by many companies who want to use 100 % renewable energy to achieve their climate targets. And last but not least, it was also the year in which pressure from investors, who want to invest exclusively in green energy, increased considerably.

SDG 7
Ensuring access to affordable, reliable, sustainable and modern energy for everyone

Meaning for Alpiq
- We promote power production from renewable energy (water, wind and solar) and invest in storage solutions.
- We focus on alternative energy technologies, e.g. for the production of green hydrogen.
- We use gas-fired and nuclear power plants to strengthen the security of supply and as bridging technology to support the energy transition.
- We prefer to work with business partners (suppliers, customers) who support our renewable energy goals.

SDG 8
Promoting durable, widely effective and sustainable economic growth, productive full employment and humane work for all

Meaning for Alpiq
- We offer our employees secure jobs and good employment contracts with suitable conditions.
- We implement diversity and inclusion policies together with our employees.
- We optimise the efficient and careful use of resources along the entire value chain and thus promote the circular economy.
- We pay interest to our lenders and, whenever possible, dividends to our shareholders.
- We pay taxes and duties to the public sector and to concessionaires.
- We indirectly create economic growth in the rural areas in which we operate.

SDG 9
Building a resilient infrastructure, promoting widely effective and sustainable industrialisation and supporting innovation

Meaning for Alpiq
- We build, use and supply energy infrastructures and in doing so, strengthen the security of supply.
- We support our industrial customers by supplying them with renewable energy and innovative products (e.g. hydrogen for heavy goods transport).
- Our trading teams offer various products on the long-term, spot and ancillary services markets and thus contribute to security of supply on an international, national and regional level.
- We work on projects in a timely, transparent and engaged manner with a wide range of stakeholders.

SDG 13
Taking immediate action to combat climate change and its impacts

Meaning for Alpiq
- We contribute to the reduction of greenhouse gas emissions by driving forward the electrification and decarbonisation of energy provision.
- We are changing our mobility concept (firstly, by reducing the number of flights taken; secondly, by offsetting greenhouse gases from business travel and promoting e-mobility).

SDG 15
Protecting, restoring and supporting sustainable use of land ecosystems, sustainably managing forests, combating desertification, putting an end to and reversing soil degradation and putting an end to the loss of biodiversity

Meaning for Alpiq

- We focus on the sustainable use of water in our reservoirs and through the run-of-river hydropower plants.
- At the run-of-river hydropower plants, we ensure that fish migration is as easy and barrier-free as possible with the help of fish ladders.
- We support local and regional re-naturalisation measures in the catchment area of our hydropower plants and wind farms.

Even in the past, Alpiq largely conducted its business in compliance with ESG standards (E stands for environmental, S for social and G for governance). This ESG strategy is to be further refined so that the aim of Alpiq's existing and future operations will be to create the greatest possible sustainable value for its stakeholders – employees, investors and financial service providers, business partners and the general public.

The five defined SDGs will form the cornerstones of our ESG strategy in the future. Alpiq is one of the biggest energy companies in Switzerland and is active in numerous European countries. In the fight against the COVID-19 pandemic, we fulfilled our corporate responsibility; and as part of comprehensive business continuity management activities, we were quick to introduce measures to prevent the spread of the virus in the company, to protect employees and their relatives, and to maintain the operating business at all times – including with a view to our contribution to maintaining security of supply. Alpiq therefore also supported employees if they wanted to be vaccinated or tested.

We equally have a corporate responsibility to integrate clear sustainability goals into our strategy and to define and implement measures. We have already begun committing ourselves to this task, which is derived from the five SDGs, in the reporting year. From now on, it will gain in importance and become a major focus for us.

Alpiq is preparing its Sustainability Report for the reporting year in accordance with the Core option of the Global Reporting Initiative (GRI) and the GRI standard for the first time. Another new feature is that, although the report is published at the same time as the Alpiq Holding Ltd. Annual Report, it is a separate publication.

As in 2020, the report is also limited to the fully consolidated units of the Alpiq Group for 2021. The exception is the topic of nuclear energy. Alpiq holds direct shareholdings in Swiss nuclear power plant companies and indirect shareholdings in international nuclear power plant companies that are not fully consolidated. However, because this topic is of great importance to the Alpiq Group, the issue of nuclear power plants is covered again.

General disclosures

GRI 102

Organisation profile

GRI 102-1

Name of organisation

The publisher of this Sustainability Report is Alpiq Holding Ltd.

GRI 102-2

Activities, brands, products and services

Alpiq is a leading Swiss energy company that is active in various countries and markets throughout Europe. Our energy business contributes to a better climate and improves the security of supply in Switzerland and for our customers on the European markets. We pursue a sustainable, financially sound and risk-adjusted business model.

Alpiq's core business is the production of electricity from flexible CO_2-free hydropower and nuclear power in Switzerland as well as from wind power and photovoltaics in several European countries. In addition, we operate modern and flexible gas-fired combined-cycle power plants in Italy, Spain and Hungary. By producing green hydrogen, we are pioneers in contributing to CO_2-free heavy-duty traffic and are continuously expanding our competence.

Our core business also comprises energy trading. We sell production from our own plants as well as third-party plants on our modern and efficient trading platform. Alpiq trades with electricity, gas and other energy products in many European countries. A sustainable and cost-effective energy procurement strategy is an important aspect of any business. Our Sales & Origination team supports industrial and business customers with sustainable energy management as well as a wide range of energy solutions and services.

GRI 102-3

Organisation head office

The head office of Alpiq Holding Ltd. is located in Lausanne.

The exact address is: Chemin de Mornex 10, 1003 Lausanne, Switzerland

GRI 102-4

Operating sites

Alpiq's roots are in Switzerland. The head office of the parent company Alpiq Holding Ltd. is in Lausanne; other key locations in Switzerland are Olten and Sion. Alpiq operates its own power plants in Switzerland, Italy, France, Spain, Hungary and Bulgaria.

You will find an overview of the countries in which Alpiq is active in the section 'About us' in the Alpiq Holding Ltd. Annual Report 2021.

GRI 102-5

Ownership structure and legal form

The ownership structure of the parent company Alpiq Holding Ltd., with registered office in Lausanne, is shown in the Alpiq Holding Ltd. Annual Report 2021 in the Corporate Governance section under 'Group and shareholder structure'.

GRI 102-6

Markets supplied

Alpiq operates in energy trading and sales as well as energy services in many European countries through a subsidiary – and offers its products and services largely to industrial and corporate customers. In France, Alpiq has also been active in retail business for electricity customers since 2021.

You will find an overview of the supplied markets (countries) in the Alpiq Holding Ltd. Annual Report 2021 in the Annual Review section under 'About us'.

GRI 102-7

Size of the organisation

Current figures on the number of employees, turnover and balance sheet for the year 2021 (as at 31 December 2021) are shown in detail in the Alpiq Holding Ltd. Annual Report 2021 in the Annual Review section under 'Key Financial Figures'.

GRI 102-8

Information on employees and other staff

As at 31 December 2021, Alpiq employs 1,265.6 people (calculated in full-time equivalents, FTE, and including apprentices) on a permanent basis. These full-time positions were shared by 1,331 people or 361 women and 970 men. Alpiq employs 746 people in Switzerland and 576 people abroad.

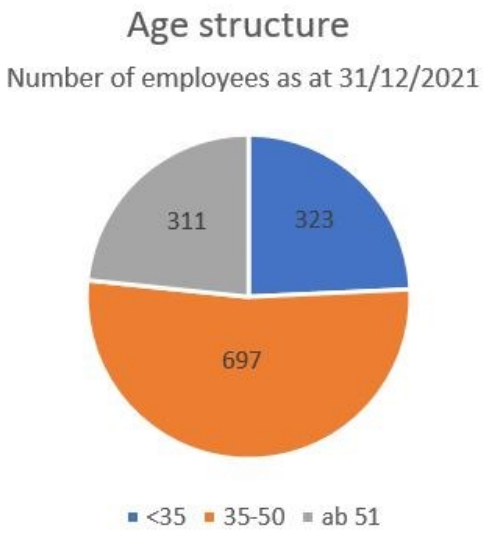
Number of employees with permanent employment status by gender and year in Switzerland and abroad:

	Group		Switzerland		Foreign	
Number of full-time employees	2020	2021	2020	2021	2020	2021
Women						
Part-time	78.2	71.3	61.2	56.1	17.0	15.2
Full-time	235.0	245.4	108.0	109.7	127.0	135.7
Men						
Part-time	40.2	40.7	36.0	36.6	4.2	4.1
Full-time	905.2	908.2	499.0	498.3	406.0	409.9
Total	**1,258.4**	**1,265.6**	**704.2**	**700.7**	**554.2**	**564.9**

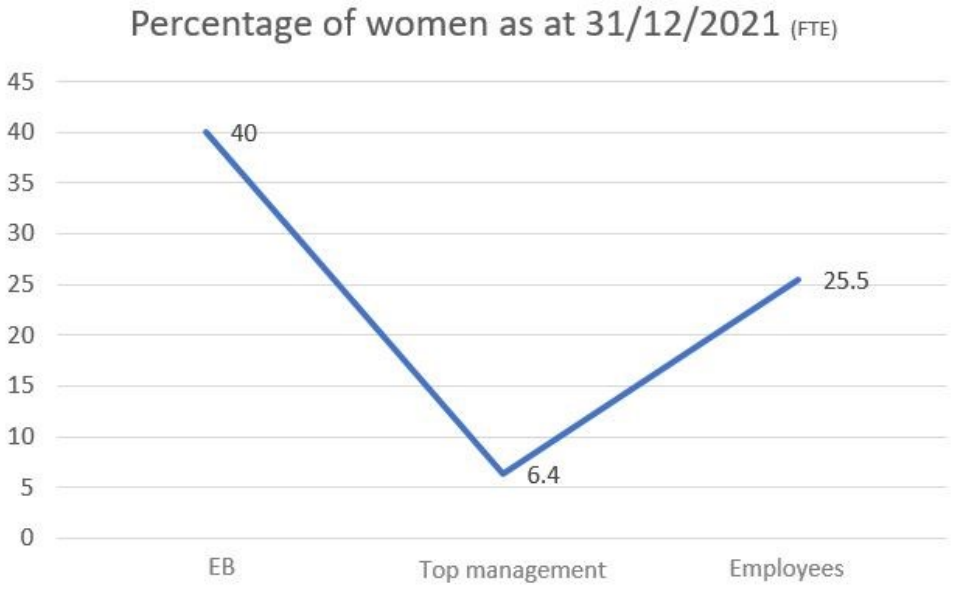
Full-time >= 90 %
Part-time <90 %

The data refer to employees, including apprentices, of the entire Alpiq Group. Employees without an Alpiq employment contract are not listed. Information on this personnel data for the entire Alpiq Group is managed centrally in the personnel system and is available at all times.

As at 31 December 2021, Alpiq employed people from 54 different nations (previous year: 51 nations). The age structure is balanced: 52 % of employees are aged between 35 and 50; 24 % are younger than 35; and 24 % are older than 51. In the previous year, 53 % were between 35 and 50 years old; 26 % under 35; and 21 % older than 51.



The proportion of women in the company at the end of 2021 was as follows: 40 % were members of the Executive Board (2020: 0 %); 6.4 % were in top management (directly subordinate to the Executive Board; 2020: 3.8 %); and 25.5 % were employees (2020: 25.4 %).



The topic of diversity and inclusion will be addressed in a focused and holistic manner in 2022. In this respect, Alpiq will not only focus on gender distribution, but will also take age, nationality, etc. into account. Existing initiatives will be attached to an overarching

narrative developed with our employees. These workshops with employees will also provide an unobstructed view of the organisation: What are the issues around diversity and inclusion that employees generally feel are important? Where is action needed? What measures would be useful? And what are the expectations in the first place? The answers will provide possible ways in which to take further action.

GRI 102-9

Supply chain

The general terms and conditions per business unit as well as the code of conduct for suppliers are described on the Alpiq website.

GRI 102-10

Significant changes in the organisation and its supply chains

Changes to the organisation are presented in the Notes to the Financial Report in the Alpiq Holding Ltd. Annual Report 2021.

There were no significant changes to the supply chain disclosures (GRI 102-9) in the reporting year.

GRI 102-11

Precautionary approach or precautionary principle

Alpiq takes a preventive approach in its activities to protect people and the environment.

As shareholder of nuclear power plants in Switzerland, Alpiq must comply with the regulations of the Swiss Federal Nuclear Safety Inspectorate (Eidgenössisches Nuklearsicherheitsinspektorat – ENSI). In addition, compliance with the safety standards of the International Atomic Energy Agency (IAEA) is ensured and a peer review by the World Association of Nuclear Operators (WANO) takes place regularly.

Alpiq has a share in numerous hydropower plants in Switzerland, particularly storage power plants. Strict monitoring of the associated dams and clear processes ensure the safety of people and goods. Regular checks are carried out to determine whether the dams can withstand earthquakes and floods with a likelihood of occurrence of more than once every 10,000 years. This is in accordance with the Swiss Law on the Supervision and Safety of Water Retaining Facilities (WRFA); tasks and findings of the various stakeholders are subject to strict supervision by the Swiss Federal Office of Energy (SFOE).

As a company operating throughout Europe, Alpiq complies with locally applicable regulations and laws in all countries to ensure the health and well-being of people and to protect the environment.

Detailed information on Alpiq's precautionary measures can be found in the sections Environmental compliance, Occupational health and safety and Nuclear energy of this

Sustainability Report. An overview of Alpiq's other risk management activities is included in section 3.1. Financial Risk Management of the Alpiq Holding Ltd. Annual Report 2021.

GRI 102-12

External initiatives

Alpiq places great importance on certifications at power plant, country and group level, thereby ensuring that certain management system standards are met. Within the Alpiq Group, ISO 9001 (Quality), ISO 14001 (Environment), ISO 27001 (Information Security) and ISO 45001 Occupational Safety) certifications have been obtained.

Alpiq was the first electricity producer in Europe to receive ISO 55001 (Asset Management) certification. All large hydropower plants are certified according to ISO 14001; they produce electricity from 100 % renewable sources.

In addition to the certifications, Alpiq applies the International Financial Reporting Standard (IFRS).

GRI 102-13

Membership in associations and interest groups

Alpiq's most important memberships in associations and interest groups that are relevant to the business include:

Association	Nature of the membership	Country
Economiesuisse	Management board, membership	CH
Energy Certificate System (ECS)	Co-presidency and member of working groups	CH
Nuclear Forum	Management board, membership	CH
Suisse Eole	Management board, membership	CH
Swiss Small Hydro	Membership	CH
Swisscleantech	Membership	CH
Swissnuclear	Management Board, Membership	CH
Swisssolar	Membership	CH
Swiss Water Management Association (SWV)	Membership	CH
Association of Swiss Electricity Companies (VSE)	Management board, membership, working groups; the President of the association, Michael Wider, is a member of the Alpiq Executive Board	CH
Association for Environmentally Sound Energy (VUE)	Membership	CH
WeAdvance	Membership	CH
Eurelectric	Swiss membership via the VSE, working groups	EU
European Energy Certificate System (EECS)	Membership of Switzerland via Pronovo AG	EU
European Federation of Energy Traders (EFET)	Membership, working groups	EU
RECS International	Membership	EU
Bundesverband der Energie- und Wasserwirtschaft (BDEW)	Membership, working groups	DE
France Energie Eolienne (FEE)	Membership	FR
France Hydrogène	Membership	FR
Associazione Italiana di Grossisti di Energia e Trader (AIGET)	Membership	IT
Associazione Nazionale Energia del Vento (ANEV)	Membership	IT
Elettricità Futura	Membership	IT
energia libera	Membership	IT

Strategy

GRI 102-14

Statement by the highest decision-maker

Antje Kanngiesser
CEO Alpiq Holding Ltd.

'For Alpiq, conducting business in accordance with the ESG standards for the environment, social affairs and good corporate governance is essential. We want to create sustainable value for our stakeholders.

To improve our impact, we have adopted a strategic approach. We want to align our business specifically with ESG standards, set corresponding ambitious targets and measure our progress against these targets. For this purpose, we selected five goals from the 17 United Nations Sustainable Development Goals (SDGs) in internal workshops:

These are the goals that are most relevant to us, on which we as a company can have the most influence and according to which we align our strategy, objectives and measures.'

Ethics and Integrity

GRI 102-16

Values, principles, standards and norms of conduct

Alpiq's values foundation is part of the corporate culture and should at all times form the basis for all decisions and activities with stakeholders such as employees, business partners, investors, financial service providers and the public at all times.

To this end, the Alpiq Code of Conduct issued by the Board of Directors supports the corporate culture as a binding guideline for ethical behaviour with integrity and in compliance with the law. They are part of the employment contract and apply to all Alpiq Holding Ltd. employees, including managers, and the directly or indirectly controlled Group Companies in Switzerland and abroad. They are available in nine languages. All new employees are invited to internal training on the contents of the Code of Conduct when they start work.

Integrity requirements and compliance with the law are important when selecting our business partners. In order to ensure compliance with minimum standards here as well, a code of conduct for suppliers was drawn up in the reporting year. It is an integral contractual component for future supplier relationships.

Compliance Management

Values, ethics and integrity are the foundation of Alpiq's corporate culture and thus an important part of the comprehensive compliance programme when it comes to complying with laws and internal rules in order to avoid legal and reputational risks.

Alpiq maintains its Compliance Management System (hereinafter 'CMS') based on the traditional pillars of prevention, risk identification and response. Alpiq is guided by various recommendations such as the OECD Guidelines for Responsible Business Conduct, the Swiss Code of Best Practice and the UN Guiding Principles on Business and Human Rights.

Compliance management is an integral component of the comprehensive internal company risk analysis and assessment, which is carried out annually. Relevant fields of action for the compliance programme for the following year are derived from this, and necessary measures to be introduced are defined and/or adjusted. Alpiq's compliance programme includes, among other things, the following fields of action: anti-corruption, fair competition, prevention of money laundering, counterparty audits, data protection, avoidance of conflicts of interest, and protection of people and the environment.

The Alpiq Board of Directors and the Executive Board are jointly and regularly committed to strong compliance ('tone at the top') and therefore emphasize its importance to the sustainable success of the Alpiq Group.

In addition, all managers are responsible for implementation of the Code of Conduct in the Alpiq Group Companies and always set a good example ('tone at the middle'). The Code of Conduct is supplemented by topic-specific internal regulations.

Employee training sessions on various compliance fields of action are, along with the internal regulations, a key part of the implementation and assurance of the Alpiq CMS. Training content generally covers the defined fields of action and is appropriate for the target group. An electronic learning platform greatly supports and facilitates the execution and monitoring of training sessions.

Alpiq also applies its holistic compliance management approach when dealing with customers and business partners. The internal company process 'Know your customer' describes a part of the due diligence that serves to identify and screen Alpiq customers and business partners. Screening is carried out according to an individual risk-based model taking into account sanctions, embargoes, negative news, identification of politically exposed persons and the perception of corruption in certain countries or industries, etc. Using the database of a leading provider, Alpiq can assess the reputational risk associated with a counterparty or identify potential conflicts of interest. Information on convictions, economic beneficiaries or entanglements with other companies, among other things, are available. Audited counterparties are monitored by the system for material changes.

Alpiq conducts a personal security check on potential employees when recruiting for risk-sensitive or leading positions. The check is repeated every five years for the employees in question. The personal security check is particularly intended to protect Alpiq from fraud, corruption, money laundering or misappropriation of assets. As part of the audit, Alpiq obtains relevant official documents. Alpiq takes local laws and customs into account here.

In the reporting year, Alpiq commissioned an accredited auditing firm to conduct an independent maturity measurement to assess the Alpiq compliance programme. The result shows that Alpiq can rely on a solid and functioning CMS. Suggestions for improvement from this maturity measurement will be incorporated into the continuous improvement and further development of the CMS.

GRI 102-17

Procedure for consultation and concerns regarding ethics

Employees at all levels can seek advice on specific compliance topics at any time. The internal team of compliance experts and local compliance partners in the respective countries in which Alpiq has employees are available for this purpose.

Alpiq has a great interest in immediate notification if compliance with ethical and lawful conduct in its area of responsibility is not ensured. The compliance reporting office is an essential element for identifying and clarifying misconduct and addressing weaknesses. Alpiq provides various reporting channels for this purpose. In addition to a telephone number and email address set up specifically for this purpose, the compliance reporting office can also be contacted via an online form. The contact details are published in the Alpiq Code of Conduct, on the Alpiq Intranet and on the official Alpiq website. The compliance reporting office is mainly aimed at employees, but is generally open to everyone. Alpiq also welcomes reports from former employees, service providers, customers or third parties.

The online form enables the whistleblower to send a message without disclosing their identity. This online form is available in nine languages. Data entry and processing take place entirely outside the Alpiq IT infrastructure. This ensures that tracing is impossible. Anonymous reports are examined just as carefully as those that are not submitted anonymously. Alpiq ensures that employees who submit a report in good faith do not suffer any disadvantages as a result.

Alpiq is guided by the requirements of the 'EU DIRECTIVE (EU) 2019/1937 on the protection of persons who report breaches of European Union law'. Alpiq has created the same conditions for all Alpiq Group employees – and also third parties – when it comes to reporting concerns, regardless of whether or not the EU Directive applies in that country. The compliance department confirms receipt of the report within seven days and gives the whistleblower feedback within a maximum of three months. The whistleblower will be informed of the consequences of their report after the investigation has been completed unless personal rights of data subjects or company interests oppose this action.

Suspected cases are investigated by the compliance experts and/or local compliance partners. Where the scope and/or complexity of an investigation exceeds the capacity of the compliance department, the investigation may be delegated to the internal audit department or a specialised external service provider. Infringements are corrected or punished based on the options afforded under labour or contractual law as applicable.

Corporate Governance

GRI 102-18

Governance structure

The governance structure of Alpiq Holding Ltd. (including the committees of the Board of Directors as the highest governance body) and the committees responsible for decision-making with respect to economic, ecological and social topics can be found in the Corporate Governance section of the Alpiq Holding Ltd. Annual Report 2021.

Involvement of stakeholders

GRI 102-40

List of stakeholder groups

Alpiq has divided the stakeholders identified in an evaluation in accordance with GRI 102-42 into four groups:

GRI 102-41

Collective bargaining

In Switzerland, no employees are covered by collective bargaining. On the other hand, collective bargaining exists in Italy, affecting 3 % of employees at the Alpiq Group.

GRI 102-42

Stakeholder identification and selection

In the previous year, the internal and external stakeholders were defined in a workshop consisting of a team of experts from the whole Alpiq Group. In a first step, the significance of the impact of Alpiq's activities on stakeholders and their influence on the Group were determined. This assessment formed the basis for the selection of the most relevant stakeholder groups. These individual stakeholders were reviewed in the reporting year 2021 and classified into the four groups according to GRI 102-40 for this Sustainability Report.

GRI 102-43

Approach to the involvement of stakeholders

Alpiq is in direct exchange with the various stakeholders. The regularity of these dialogues as well as the channels used for them vary depending on the stakeholder group. There are various channels and platforms for informal and formal direct dialogue with and amongst employees. A dialogue is maintained with the shareholders via the General Secretariat and the Annual General Assembly or through contact with the Board of Directors. Exchange with the other stakeholder groups takes place with varying intensity and is highly dependent on the situation; it is particularly ensured via the specialist departments in the business units, Public Relations or Investor Relations.

GRI 102-44

Key issues and concerns raised

Alpiq started its journey to becoming a more sustainable company in 2020. As a first step, Alpiq defined and sharpened its corporate purpose: 'With our sustainable energy business, we contribute to a better climate and greater security of supply.' Then Alpiq identified five goals from the United Nations Sustainable Development Goals that are relevant to the company. Starting in Switzerland, the Group-wide implementation is now underway with the development of the ESG strategy, including specific tasks and target values (KPIs) for the coming years. At the same time, Alpiq is implementing short-term measures such as reducing disposable items, increasing waste separation and recycling, as well as optimising heating and air-conditioning in its office buildings.

In the reporting year, Alpiq had itself assessed for sustainability by an independent rating agency. This cooperation and the associated exchange revealed a need for action in two

areas in particular: Documentation of Alpiq's commitment to sustainability and communication of sustainability activities. An international team of Alpiq employees analyses the rating results in detail and develops appropriate measures. These measures are based on the ESG framework set by Alpiq and ultimately aim to improve the points mentioned above. The sustainability report reflects the current status in each case.

On its journey of sustainability described above, Alpiq is supported by several associations, for example by Swisscleantech and Advance. Alpiq also plays a constructive role in shaping federal energy policy, for example by supporting the CO_2 Act in the reporting year.

Employees significantly contribute to the success of Alpiq, which is why Alpiq takes their concerns seriously and allows different opinions to be taken into account when making corporate decisions. For example, concerns from the 2020 employee survey were addressed in the reporting year and implemented through an action plan. Further information on this is provided under 'Corporate culture'.

On the customer side, there is a growing demand and need for sustainable services and products in the areas of electricity procurement and energy marketing. With the supply of climate-friendly electricity from carbon-free Swiss hydropower or wind farms and photovoltaic installations in various European countries, Alpiq supports customers in achieving the set climate goals (e.g. carbon neutrality or reduction in the share of fossil fuels) and supports them during the switchover process.

Procedures and reporting

GRI 102-45

Entities included in the consolidated financial statements

The Sustainability Report generally refers to the entire Alpiq Group and includes the fully consolidated companies for all disclosures. Any reporting that deviates from this in exceptional cases is marked at the respective point and explained accordingly.

The scope of consolidation of Alpiq Holding Ltd. can be found in Note 5.2 (Significant Group Companies and Shareholdings) of the 2021 consolidated (annual) financial statements of Alpiq Holding Ltd.

GRI 102-46

Procedure for determining the content of the report and the delimitation of topics

Determining the content of the report and the delimitation of topics was carried out in accordance with the materiality matrix in GRI 102-47: List of material topics.

GRI 102-47

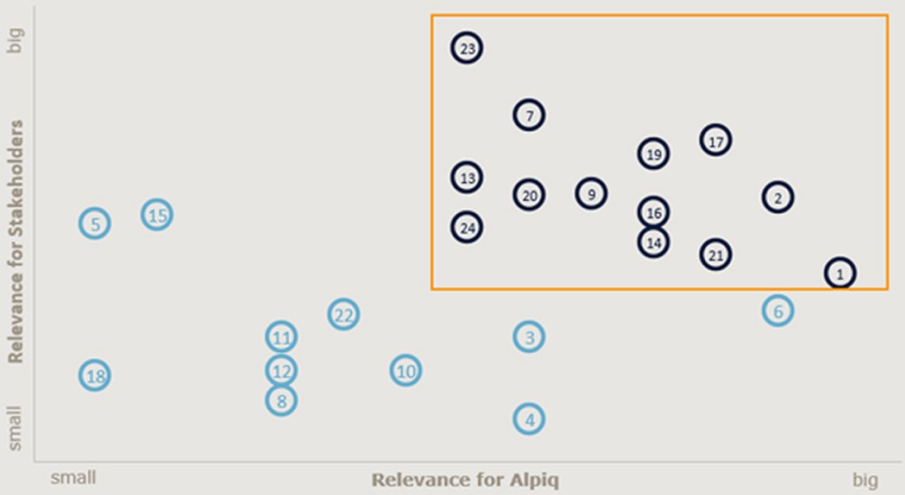
List of material topics

In 2020, a team of experts from the whole Alpiq Group defined a list of the material topics in workshops. These topics reflect significant economic, environmental and social impacts of Alpiq's business activities and reflect Alpiq's purpose and strategy. In addition, the topics substantially influence the assessments and decisions of the relevant stakeholders.

From this list, topics were ultimately selected that were considered to be of major importance for Alpiq as well as for its stakeholders. The following content is based on these material topics. The 'Materiality Matrix' chart below shows the assessment ('moderate' or 'major') of the material topics based on their significance for Alpiq and their influence on the assessments and decisions of stakeholders. Material topics with a 'major significance' in both dimensions are considered relevant for reporting purposes and are outlined in blue in the following chart.

For this Sustainability Report, the material topics were reviewed and confirmed. In addition, they were supplemented by the two topics 'security of supply' and

‘biodiversity’ (see GRI 102-49). In this reporting year, the material topics were linked for the first time to the five SDGs selected by Alpiq (see "Introduction").



1	Access to capital	
2	Economic performance	
3	Innovation	
4	Digitalisation	
5	Anti-competitive behaviour	
6	Growth in core-business	
7	Compliance	
8	Customer orientation and loyalty	
9	Protection of infrastructures	
10	Financial implications / risks and opportunities	
11	Infrastructure investments	
12	Energy efficiency	
13	Biodiversity	
14	Nuclear energy	
15	Disaster / Emergency planning and response	
16	Greenhouse gas and other emissions	
17	Contribution to a better climate	
18	Environmental assessment of suppliers at power plants	
19	Expansion of renewable energies	
20	Occupational health and safety	
21	Corporate culture	
22	Diversity and equal opportunities	
23	Customer privacy / Protection of customer data	
24	Security of supply	

GRI 102-48

New presentation of information

GRI specifies the Greenhouse Gas Protocol (GHGP) as the accounting methodology for emissions. It distinguishes between the following emission categories, so-called scopes, along the value chain:

- Scope 1: All direct emissions from Alpiq operations (own assets)
- Scope 2: The indirect emissions of energy provision generated outside of Alpiq for Alpiq operations, e.g. electricity, district heating.
- Scope 3: Emission from upstream and downstream activities, divided into 15 categories.

In order to cover Scopes 1 and 2 more fully in this reporting year, Alpiq collected and evaluated additional data. For complete coverage of the two scopes, areas had to be accounted for again. For Scope 1, for example, the vehicle fleet owned by Alpiq and for Scope 2, for example, the electricity consumption of rented properties as well as electric vehicles owned by Alpiq. In this reporting year, the emissions from Scope 3 were reported with Alpiq's minority shareholdings, but otherwise excluded.

In addition, part of the reporting on nuclear power plants was integrated into the relevant topic sections in this reporting year for simplified readability.

GRI 102-49

Change in reporting

In the Sustainability Report 2021, Alpiq no longer reports – as in the previous year – merely based on the GRI standards, but in accordance with the GRI standards, 'Core' option. In addition, Alpiq has expanded the scope of the materiality matrix. Two new, reassessed topics were included that were not in the first report: 'Security of supply' and 'Biodiversity'. The justification for this is explained in the list of material topics. In the 2020 reporting year, we reported on the topic of 'Employee satisfaction'; in the future, this will be more broadly defined and reported as the key topic of 'Corporate culture'.

GRI 102-50

Reporting period

The Sustainability Report 2021 relates to the reporting year 2021 of Alpiq Holding Ltd.: 1 January 2021 to 31 December 2021.

GRI 102-51

Date of last report

The Sustainability Report 2020 for the reporting year 2020 of Alpiq Holding Ltd. was published on 25 February 2021.

GRI 102-52

Reporting cycle

The Sustainability Report of Alpiq Holding Ltd. is prepared annually.

GRI 102-53

Point of contact for questions on the report

If you have questions about this Sustainability Report, please contact Cornelia Wolf, Program Manager Sustainability (cornelia.wolf@alpiq.com; +41 62 286 77 16) or the Alpiq media office at media@alpiq.com or +41 62 286 71 10.

GRI 102-54

Declaration on reporting in accordance with the GRI standards

The Sustainability Report 2021 of Alpiq Holding Ltd. was prepared in accordance with the GRI standards, 'Core' option.

GRI 102-55

GRI content index

The content index can be found under 'GRI index'.

GRI 102-56

External audit

The Sustainability Report 2021 of Alpiq Holding Ltd. is not subject to an external audit.

GRI Index

GRI standard	Title	Year
GRI 102	General disclosure	2016
GRI 102-1	Name of organisation	
GRI 102-2	Activities, brands, products and services	
GRI 102-3	Organisation head office	
GRI 102-4	Operating sites	
GRI 102-5	Ownership structure and legal form	
GRI 102-6	Markets supplied	
GRI 102-7	Size of the organisation	
GRI 102-8	Information on employees and other staff	
GRI 102-9	Supply chain	
GRI 102-10	Significant changes in the organisation and its supply chains	
GRI 102-11	Precautionary approach or precautionary principle	
GRI 102-12	External initiatives	
GRI 102-13	Membership in associations and interest groups	
GRI 102-14	Statement by the highest decision-maker	
GRI 102-16	Values, principles, standards and conduct norms	
GRI 102-17	Procedure for consultation and concerns regarding ethics	
GRI 102-18	Governance structure	
GRI 102-40	List of stakeholder groups	
GRI 102-41	Collective bargaining	
GRI 102-42	Stakeholder identification and selection	
GRI 102-43	Approach to the involvement of stakeholders	
GRI 102-44	Key issues and concerns raised	
GRI 102-45	Entities included in the consolidated financial statements	
GRI 102-46	Procedure for determining the content of the report and the delimitation of topics	
GRI 102-47	List of material topics	
GRI 102-48	New presentation of information	

GRI 102-49	Change in reporting
GRI 102-50	Reporting period
GRI 102-51	Date of last report
GRI 102-52	Reporting cycle
GRI 102-53	Point of contact for questions on the report
GRI 102-54	Declaration on reporting in accordance with the GRI standards
GRI 102-55	GRI content index
GRI 102-56	External audit

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 on 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	
	Access to capital	
GRI 103	Management approach	2016

Environmental dimension

GRI standard	Title	Year

GRI 305	Emissions	2016
GRI 103	Management approach	2016
GRI 305-1	Direct GHG emissions (Scope 1)	
GRI 305-2	Energy indirect GHG emissions (Scope 2)	
GRI 305-3	Other indirect GHG emissions (Scope 3)	
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 403-1	Management system for occupational safety and health protection	
GRI 403-2	Hazard identification, risk assessment and incident investigation	
GRI 403-3	Occupational health services	
GRI 403-5	Employee training on occupational health and safety	
GRI 403-7	Prevention and mitigation of occupational safety implications directly related to business relationships	
GRI 403-8	Employees covered by a management system for occupational health and safety	
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	
	Business continuity management	
	Management approach	
	Cyber-security	
GRI 103	Management approach	2016
	Corporate culture	
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
	Environmental safety and monitoring	
GRI 103	Management approach	2016

Economic dimension

GRI 201

Economic performance

GRI 103
(103-1, 103-2, 103-3)

Management approach

Relevance

With the company's purpose, Alpiq is committed to contributing to a better climate and strengthening the security of supply in Switzerland and in the European markets. To this end, Alpiq pursues a sustainable, financially sound and risk-adjusted energy business model following a clear strategy. Securing long-term economic success is an essential prerequisite for this goal.

Based on the United Nations 2030 Agenda, Alpiq decided to focus on the five sustainability goals with the greatest impact over the next five years:

Management approach

The sustainability goals have been enshrined in Alpiq's current strategy. Management approach disclosures are included in 'Activities, brands, products and services' (GRI 102-2).

Assessment

The key developments in the 2021 reporting year can be found in the Alpiq Holding Ltd. Annual Report 2021.

GRI 201-1

Direct economic value generated and distributed

	Economic value generated and distributed	
Mio. CHF	2021	2020
Economic value generated[1]	**7,223**	**4,026**
Net revenue from energy transactions and related services	7,102	3,911
Other operating income	63	65
Income from associated companies and financial investments	36	25
Income from sale of assets and subsidiaries	22	25
Economic value distributed[2]	**7,489**	**3,925**
to supplies opex	6,960	3,460
to supplies capex	65	66
to employees	221	186
to capital providers	117	71
to government	125	141
to community	1	1
Economic value retained[3]	**– 266**	**101**

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

The aforementioned financial highlights are based on the scope of consolidation of Alpiq Holding Ltd., which can be found in Note 5.2 of the 2021 consolidated (annual) financial statements of Alpiq Holding Ltd. The ‘Duties paid to the state’ 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 reconciled directly with the earnings after taxes from continued operations of the consolidated (annual) 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 plan, where Alpiq as the employer takes over at least 60 % of the contribution payments. As at 31 December 2021, PKE has a positive coverage ratio of 125.2 % (31 December 2020: 112.5 %). Further details can be found in Note 6.3 of the 2021 consolidated (annual) financial statements of Alpiq Holding Ltd.

GRI 201-4

Financial assistance received from government

In 2021, as in the years 2018 to 2020, Alpiq received a market premium for large-scale hydropower plants in Switzerland. Further details can be found in Note 2.3 of the 2021 consolidated (annual) 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
(103-1, 103-2, 103-3)

Management approach

The management approach is explained in 'Ethics and integrity' (GRI 102).

GRI 205-2

Communication and training on anti-corruption policies and procedures

All new Alpiq employees completed in 2021 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
(103-1, 103-2, 103-3)

Management approach

The management approach is explained in 'Ethics and integrity' (GRI 102).

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 2021 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 compartmentalisation of the market via the existence of eleven 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. The proceedings are pending at the court of final appeal.

Access to capital

GRI 103
(103-1, 103-2, 103-3)

Management approach

Relevance

Alpiq's power plants, purchase contracts and trading activities are capital-intensive and long-term. The power plants are often part of the systemically important infrastructure of the Swiss and European economy. This makes access to capital to secure the company's refinancing capability an important pillar of the company's business model. The ability to ensure access to capital at all times 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 diversification of the financing sources, such as 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 Note 3.1 of the consolidated (annual) financial statements of Alpiq Holding Ltd.

In addition to traditional financial policy measures, ESG criteria (E stands for environment, S for social and G for governance) 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 addition to conventional financing instruments, financing products based on sustainability criteria are to be examined as alternatives for future financing. Furthermore, Alpiq intends to make use of ESG criteria to expand the investor base and to reach favourable pricing arrangements. Financial counterparties and service providers will also be assessed from ESG perspectives in future.

Assessment

In the reporting year, the topic of sustainability has gained further importance in the financial markets. Various financial counterparties regularly assess the company's business activities in terms of sustainability. However, there are no generally accepted standards yet. These are also applied differently. This makes the targeted preparation of information for the attention of interested stakeholders considerably more difficult.

Alpiq strives to continuously review its management approach to ensure access to capital and transparently adapt it to the latest developments.

In the reporting year, Alpiq underwent a sustainability review by the independent rating agency Sustainalytics. In its report, the agency identified, among other things, potential for improvement in general behaviour and communication of activities.Alpiq will use

these inputs to further develop the measures with regard to sustainability in the coming years and thus strengthen the external assessment as well as the reputation, and support access to the financial markets.

The rating agencies ISS ESG and Inrate assessed Alpiq for its sustainability performance.

Environmental dimension

GRI 305

Emissions

GRI 103
(103-1, 103-2, 103-3)

Management approach

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. The final declaration of the World Climate Conference in Glasgow (COP26) in November 2021 increased the pressure on industrialised countries to take and implement tough measures to protect the climate. In addition, the declaration cemented the phase-out of coal-fired power production.

Alpiq will contribute to achieving the goal of fossil-free power production by 2050. After all, contributing to climate protection is an integral part of Alpiq's purpose. This is why Alpiq is extensively turning to environmentally sound energy production, including CO_2-free and climate-friendly Swiss power production. Environmental protection and air pollution control play a crucial role in the construction of our power plants. 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 power production from new renewable energies continues to improve. As a result, efficient and extremely flexible gas-fired combined-cycle power plants are required to maintain security of supply wherever there is a lack of storage power plants (hydropower), 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

One of the system tools that Alpiq introduced to monitor and reduce the ecological impacts of its thermal power plants is a management system for its power plants based on the standard ISO 14001, which is certified in accordance with the EMAS environmental management system in some cases. All Alpiq 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 greenhouse gas emissions (GHG emissions) (Scope 1)

Scope 1 covers direct emissions from fossil fuels.

GRI 305-2

Energy indirect GHG emissions (Scope 2)

Scope 2 covers indirect emissions from electricity consumption and district heating.

GRI 305-3

Other indirect GHG emissions (Scope 3)

Scope 3 is limited to the presentation of indirect emissions from energy procurement from minority shareholdings.

This year, all buildings owned or leased by Alpiq were included for the first time in the calculation of GHG emissions in Scope 1 and 2. All vehicles owned or leased by Alpiq were also recorded for the first time.

This year, all types of power plants were included for the first time. During this analysis, it was determined that the pump energy is generated with electricity from nuclear energy and not with an average Swiss mix. This in turn has an impact on the balance sheet for GHG emissions in Scope 2 and Scope 3.

Scope 1 and Scope 2 were recorded in full. In Scope 3, only the energy procurement from minority shareholdings is reported.

in tons of CO_2-equivalents	2021	2020
Scope 1: Direct greenhouse gas emissions, gross		
Gas-fired combined-cycle power plants	1,410,656	1,361,195
Mobility in Europe (vehicle fleet owned or leased by Alpiq, fossil fuelled)[1]	286	-
Administrative building in Europe owned by Alpiq[2]	535	429
Total Scope 1, gross	**1,411,477**	**1,361,554**
Scope 2: Indirect greenhouse gas emissions, gross		
Energy procurement for standby operation of gas-fired combined-cycle power plants[3]	8,006	6,337
Energy procurement for hydro, PV and wind power plants with Alpiq ownership based on ownership share > 50 %[1]	1,718	-
Pump energy for pumped storage power plants (partner power plants) with ownership share > 50 %[3]	0	3,564
Mobility in Europe (vehicle fleet owned or leased by Alpiq, electrically driven)[1]	1	-
Electricity consumption of administrative building in Europe owned or rented by Alpiq[2]	72.00	0,14
Total Scope 2, gross	**9,797**	**9,901**
Scope 3: Indirect greenhouse gas emissions, gross		
Energy procurement for nuclear power and hydropower plants as well as hydrogen facilities with Alpiq ownership based on ownership share < 50 %[1]	11,418	-
Pump energy for pumped storage power plants (partner power plants) with ownership share < 50 %[3]	0	3,335
Total Scope 3, gross	**11,418**	**3,335**
Total	**1,432,692**	**1,374,790**

1 The value for the year 2020 was not determined
2 In 2020, only the values for administrative buildings in Switzerland were levied.
3 The calculations for 2020 are based on the respective country-specific supplier mix.

GRI 305-7

Nitrogen oxides

The nitrogen oxide emissions (NO_x) 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 constantly modernising its power plants. In doing so, the company makes use of the best available technology, including dry-low NO_x facilities in order to reduce NO_x 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	2021	2020
Gas-fired combined-cycle power plants	771	720

Nuclear: radiation exposure

At the nuclear power plants in which Alpiq holds shares, there were no radiation doses to environment above the legal limits in 2020 and 2021. Further information on radiation doses can be found in the ENSI Radiation Protection Report 2020 (ENSI-AN-11075) and 2021, to be published mid-2022.

GRI 307

Environmental compliance

GRI 103
(103-1, 103-2, 103-3)

Management approach

The management approach is explained in 'Ethics and integrity' (GRI 102).

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 2021.

EU2

Net energy production

An overview of the net energy production per technology is provided in the Annual Review section of the Alpiq Holding Ltd. Annual Report 2021.

Renewable energy sources and other important topics

With the sustainable energy business, Alpiq contributes to a better climate and strengthening of the security of supply.

Alpiq has a diverse international portfolio of facilities for energy production from renewable resources. To support the energy transition goals, Alpiq intends to continue developing this portfolio throughout Europe and to optimise the use of the facilities while keeping the impact on nature and the environment as low as possible.

Alpiq's services in many European countries support large and industrial customers in marketing electricity from renewable energy or in their efforts to sustainably reduce the environmental footprint of their own business activities.

Several associated initiatives have been launched in the past few years and continued in 2021; some initiatives or projects were newly initiated in 2021. A selection is given below.

Development of wind power projects in Switzerland

Despite the complex development environment for wind energy in Switzerland, Alpiq is resolutely committed to this energy. The use of wind energy offers a specific solution for local energy supply. In addition, it provides particularly valuable 'winter energy' for security of supply, as around two thirds of production is generated in the winter half-year. 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 new wind turbines, this facility will produce

around 80 GWh of power per annum. There are also two other projects in the canton of Vaud that Alpiq is planning to implement.

Construction of a wind farm in Sweden

Alpiq will also continue to develop its portfolio of new renewable energies at an international level. The construction work at the Tormoseröd wind farm in south-west Sweden began in 2021. With eleven turbines, each rated at 6.6 MW of power for 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 technical and commercial asset management.

Increase in efficiency at the hydropower plant with minimal impact on the environment

A certain amount of water must be returned to the river below hydropower plants. This is the intention of the Federal Law on the Protection of Water Bodies (Water Protection Act) in Switzerland. In order to still be able to harness the power of this minimum downstream flow quantity for climate-friendly power production, Alpiq uses small turbines at various locations. For example, in the canton of Valais at the Moiry dam, which is part of the power plant complex of the Forces Motrices de la Gougra (Alpiq share: 54 %). The turbine enables additional energy to be generated on the more than 100 m high gradient between the water level of the reservoir and the foot of the outer dam. The projected annual production of the 90 kW turbine, which was commissioned at the end of October 2021, is expected to be around 630 MWh per year, which corresponds to the average consumption of 180 Swiss households. This additional production will be achieved with practically no impact on the environment.

Inside the Moiry dam.

Commissioning of a new small-scale hydropower plant in Switzerland

Alpiq is also continuing to expand its portfolio of small-scale hydropower plants. In October 2021, the new Hüscherabach power plant (Alpiq share: 60 %) was inaugurated in the canton of Graubünden. The new modern power plant replaces the old facility from the 1930s. Production will grow from 1.1 GWh to about 6.1 GWh per year. During the new construction, which was guided by environmental specialists, several measures were taken to reduce the environmental impact of the power plant. In addition, Kraftwerk Hüscherabach AG is making a financial contribution to an ecological compensation programme for the revitalisation of the Hinterrhein.

Inauguration of the new hydropower plant Hüscherabach (from left): Xavier Sinnhuber (Chairman of the Board of Directors of Wasserkraftwerk Hüscherabach AG), Christian Simmen-Schumacher (President of the municipality of Rheinwald), Matthias Zwicky (Head of Generation International and Renewable Energies, Alpiq) and Thomas Schmid (Head of the Canton of Grisons Office for Energy and Transport). Photo: Mathias Kunfermann.

Implementation of environmental compensation measures at the pumped storage power plant

With its commercial commissioning, the Nant de Drance pumped storage power plant is accelerating the energy transition by enabling the integration of more new renewable energies into the electricity system. Nant de Drance also provides more grid stability and thus strengthens the security of supply. The Nant de Drance SA (Alpiq share: 39 %) implements 15 ecological compensation measures in collaboration with environmental associations and invests over CHF 22 million for this purpose. The ecological impact of the construction of the pumped storage power plant is thus minimised. The measures contribute to the conservation of biodiversity, the support of wet and dry habitats, the fight against invasive flora and fauna and to improving the landscape. Six of these

measures have already been realised; the rest are in the process of implementation or are currently awaiting approval from the relevant authorities.

The revitalisation of an old lateral branch of the Rhone has created a new wetland at the foot of the slope near Dorénaz.

Green hydrogen for emissionfree mobility

Green hydrogen is considered one of the keys to decarbonising mobility – particularly in heavy goods transport. Alpiq recognised this early on and promotes the production of green hydrogen using electricity from renewable energy as well as the development of new business models to develop the hydrogen economy.

Photo: Jean-Luc Grossmann

Example 1: Hydrospider
In 2021, the joint venture Hydrospider (Alpiq share: 45 %), together with Hyundai Hydrogen Mobility and the H2 Mobility Switzerland Association, further expanded the business model for emission-free mobility that is unique in Europe. As at the end of 2021, some 50 fuel-cell electric heavy goods vehicles from Hyundai were already on Switzerland's roads. The Hydrospider 2 MW electrolysis plant at the Gösgen hydropower plant is still the largest production facility in Switzerland for green hydrogen.

Photo: Jean-Luc Grossmann

Example 2: New project in Freienbach
At the end of July 2021, Alpiq, EW Höfe and SOCAR Energy Switzerland unveiled plans to build an electrolysis plant with a capacity of up to 10 MW for the production of green hydrogen. It is directly connected via a pipeline to the nearby motorway service station, where two hydrogen filling stations will be built. The waste heat is to be fed into the newly emerging regional district heating network, which will significantly increase the overall efficiency of the facility.

Commitment to the sustainable use of water – #prixalpiq

To protect the precious resource of water and to promote the sustainable use of it, Alpiq launched the #prixalpiq in 2021 together with the Association of Conceding Municipalities of the canton of Valais. This prize is awarded every year to a project that is carried out in collaboration with a Valais municipality and that aims to achieve more sustainable water management. The winning project receives financial support; Alpiq also undertakes to assist with the implementation of the winning project for one year. In addition to the winning project, a 'winner of hearts' was also chosen in 2021.

#prixalpiq: The winners 2021

The municipality of Salquenen, winner of the #prixalpiq 1st edition. From left to right: Amédée Murisier, Head of Hydropower Generation at Alpiq, Gilles Florey, President of the municipality of Salquenen, Yves Rey, Co-director at Cordonier & Rey, Harald Glenz in charge of water management for the municipality of Salquenen, Antje Kanngiesser, CEO of Alpiq. Photo: Gianluca Colla.

Proactive maintenance planning

In order to achieve the energy transition goals, not only do we need additional power plant facilities for the production of electricity from renewable energy and storage possibilities; it is also worth continually investing in existing facilities. Another important point is research and education to strengthen hydropower for its role in a decentralised and decarbonised world.

Example 1: For hydropower plants, maintenance planning is a complex task with many variables. Power plant managers must make decisions, taking into account forecasts on the development of electricity prices, inflows and the ageing of the facilities, in order to choose the right time for the appropriate investments. They are now supported in this process by the maintenance plan simulator MPsim, which was developed by an external agency with the help of Alpiq experts. It models power plant facilities, simulates different variants and compares the results. MPsim is currently used for the hydroelectric complex of the Alpiq portfolio but can also be extended to thermal and new renewable energies. The services and results are also available to external customers and for research purposes.

Example 2: Alpiq, HYDRO Exploitation, Forces Motrices Valaisannes (FMV) and the School of Engineering of the HES-SO Valais-Wallis joined forces in 2021 to jointly develop industrial expertise in the field of power production from hydropower – particularly in the area of digitalisation. For this purpose, they created the 'Hydro Alps Lab' for application-oriented research and development.

Supporting customers in achieving their sustainability goals

Alpiq manages wind power and biogas facilities as well as PV plants for its customers and partners across Europe, with over 3,000 MW total power in Germany alone. In this way, electricity from renewable sources is marketed efficiently, and Alpiq directly contributes to the efficiency of facilities and thus to further expansion as well as to improved grid stability through high forecast quality.

Furthermore, Alpiq collaborates with various partners and companies to support the procurement of renewable energy as an important part of a sustainability strategy and towards emission-free energy provision. Among other things, Alpiq also provides its customers so-called Power Purchase Agreements (PPAs) in various forms and financing of new construction projects or secures the continued operation of old wind and PV plants by purchasing production volumes from renewable sources at fixed prices.

- **Example 1** – Aquila Capital and Alpiq sign a 5-year power purchase agreement (PPA) for a 50 MW solar plant in Almeria
- **Example 2** – Alpiq, aventron and Chiesi sign PPA for wind asset in Italy
- **Example 3** – Alpiq supplies Wienerberger with wind energy in real time
- **Example 4** – Fixed price for biogas electricity: ASL and Alpiq collaborate (german only)
- **Example 5** – Waste incineration plants and Alpiq extend partnership

Soziale Dimension

GRI 403

Occupational health and safety

GRI 103
(103-1, 103-2, 103-3)

Management approach

Relevance

Occupational health and safety (OHS) including the protection of the physical and mental integrity of both employees and third parties are, from Alpiq's point of view, values that must be protected at all costs. Alpiq therefore constantly strives to take all necessary measures to achieve this goal both for the Group's own companies and for the minority shareholdings.

Management approach and assessment

As the majority of Alpiq employees work primarily in the office, a common management system for OHS currently does not exist at Alpiq at group level. The country offices, or the power plants that are operated abroad by their own personnel, each have a local OHS management system.

For the future, the country offices and power plants are also expected to cooperate more on this point; at the same time, harmonisation of a mutual approach is sought. For this reason, an overarching 'Policy on occupational health and safety' (Health & Safety Policy) was drawn up in 2021. At the same time, this expressed the commitment of the Executive Board more clearly. The policy was signed by Antje Kanngiesser (CEO) and Sascha Lanig (Head of HR) on 8 September 2021. It sets out the key principles that will guide the work of the coming years.

Health & Safety Policy

GRI 403-1

Management system for occupational health and safety

All management systems for OHS of the country offices abroad are certified according to ISO 45001.

Alpiq Wind Services in Bulgaria received a new ISO 45001 certification in 2021. In Italy, the scope of certification, which previously only covered thermal power plants, was extended to include renewable energy in the reporting year.

Other Alpiq business divisions, whose personnel occasionally carry out inspections on energy production facilities, draw up the occupational health and safety measures based on a non-certified management system or in accordance with the EKAS (Swiss Federal Commission of Coordination for Occupational Safety). For further details, see 'Employees covered by a management system for occupational health and safety' (403-8)

A large part of Alpiq's operational management and maintenance is carried out by third-party companies. As explicitly mentioned in the OHS policy, their safety and integrity is a particular concern for Alpiq. For further details, see 'Prevention and mitigation of occupational health and safety implications directly related to business relationships' (GRI 403-7)

GRI 403-2

Hazard identification, risk assessment and incident investigation

As part of their general obligations, the employers in all countries in which Alpiq operates are required to conduct risk assessments regarding occupational 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 risks with external companies, if 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 dangerous situations in line with the local procedures, which are defined in the respective management system. The general goal is to improve and centralise 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 reporting year was affected by the COVID-19 pandemic again. Protection of the health of employees, in addition to maintaining the operational business, was always the absolute priority. All necessary protective measures were consistently implemented. Work at all power plants was carried out in line with the contingency 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. If the situation required it, events were cancelled or replaced by online conferences. For almost the entire first half year, employees throughout the Group who do not necessarily have to carry out their work at their actual place of work were required to work from home. This requirement to work from home was lifted during the summer months – but reintroduced at the end of the year in light of epidemiological developments.

The measures taken kept employee infections within narrow limits. The vast majority of infections were due to personal contacts outside of work.

GRI 403-3

Occupational health services

Health monitoring in Alpiq's power plants is carried out by occupational health professionals in line with 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 plant facilities. 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.

At the nuclear power plants in which Alpiq holds shares in Switzerland, the monitoring and recording of radiation doses to employees is supervised by ENSI and is defined by the guidelines ENSI-B09, ENSI-G12 and ENSI-G13.

GRI 403-5

Employee training on occupational health and safety

Alpiq ensures that all employees receive adequate training on OHS topics.

The respective training needs on OHS topics are determined according to the specific hazards to which employees are exposed while carrying out their tasks. Training schedules are prepared per calendar year and based on the annual training and refresher courses required by law.

Employees with access to areas with increased safety classification, such as controlled zones in nuclear power plants are educated and trained accordingly. Without this training, access to these zones is prohibited.

In its endeavour to continually improve its safety and safety culture, the Gösgen Nuclear Power Plant opened in 2021 a High Reliability Organisation (HRO) Centre for educational and training purposes. This HRO training is obligatory for all power plant personnel as well as employees of the Alpiq Business Unit Nuclear Power Generation.

GRI 403-7

Prevention and mitigation of occupational health and safety implications directly related to business relationships

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 strict occupational safety criteria. Most have certified management systems for OHS. Where this is not possible, the activities under the aspect of OHS are particularly monitored.

In the reporting year, a workshop on the topic of OHS was held with several external workers who work at various Alpiq small-scale hydropower plants in Switzerland. The one-day event with a theoretical and a practical section aimed to sensitise the staff of third-party companies to OHS issues and to teach them the Alpiq standards.

At the nuclear power plants, the same SUVA (Swiss National Accident Insurance Fund) and ENSI safety regulations apply to contractors as to the power plant's own employees. SUVA and ENSI are responsible for compliance and monitoring.

GRI 403-8

Employees covered by a management system for occupational health and safety

83 % of all Alpiq employees carry out office-related tasks (e.g. trading, finance, HR, law, communication). They mainly work in Switzerland, but also throughout the rest of Europe. These employees are not covered by a certified management system for OHS.

In Europe, 95 % of Alpiq employees involved in the operation of power plant facilities work in accordance with a management system certified in line with ISO 45001.

In Switzerland, operational staff in power plants are protected in accordance with the system of the Swiss Federal Commission of Coordination for Occupational Safety, EKAS.

GRI 403-9

Work-related incidents

In the reporting year, five workplace accidents were reported within the Alpiq Group. The reports are submitted by the national organisations in line with the requirements of the relevant local accident insurance companies.

An employee abroad was moderately injured in an accident on his commute that was not his fault. Due to the COVID-19 pandemic, medical treatment was delayed, resulting in 100 days of sick leave. Otherwise, there were no serious work-related incidents in the reporting year.

Alpiq is currently not able to collect detailed information on accident numbers for operating personnel of third-party companies. However, Alpiq is not aware of any serious accidents at Alpiq facilities in the reporting year. In isolated cases, Alpiq is only aware of minor work-related incidents without any downtime.

This low number of workplace accidents reflects a high level of safety awareness. Alpiq continues to strive to keep the number of workplace accidents at least as low as this.

At the nuclear power plants in which Alpiq holds shares, there were no radiation doses to employees above the legal limits in 2020 and 2021. Further information on radiation doses can be found in the ENSI Radiation Protection Report 2020 (ENSI-AN-11075) and 2021, to be published mid-2022.

GRI 418

Customer privacy

GRI 103
(103-1, 103-2, 103-3)

Management approach

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 major European markets, which is why the GDPR is of key importance to Alpiq. Alpiq runs a data protection management system and has appointed a Data Privacy Officer (DPO) for the Group. Alpiq's DPO is supported by local data protection partners (coordinators) who ensure data privacy compliance in accordance with the GDPR and all other applicable local regulations. The data privacy experts maintain a regular exchange and participates in further development activities. Alpiq’s strategic focus lies primarily on B2B business.

Management approach

Trust is a fundamental prerequisite for Alpiq’s sustainable success. Alpiq is therefore committed to handling personal data with the utmost care. All employees are trained in the respectful handling of personal data in accordance with the applicable rules and regulations. Alpiq considers data privacy to be more than a legal requirement; it is an integral part of business practices, as demonstrated by the "Privacy by Design" and "Privacy by Default" concepts that have been introduced. To underline this approach, the procedures were anchored in the internal rules for data privacy, which were approved by the Executive Board in 2018.

Alpiq’s DPO manages the privacy management system together with the local privacy partners (coordinators) in all operating jurisdictions. The DPO is part of Alpiq’s compliance team and ensures that this matter is given the importance and attention it requires.. Alpiq has standard procedures for handling data subject requests and data breaches, as well as for recording complaints. Transparency and data privacy play a central role in Alpiq’s relationships with its customers and partners. Alpiq operates a state-of-the-art privacy management tool for the uniform management of all aspects of personal data.

GRI 418-1

Substantiated complaints concerning breaches of customer privacy and losses of customer data

Alpiq recorded one substantiated complaint by a regulatory authority during the reporting year as a result of a technical error. Email addresses were automatically and erroneously placed in emails to other customers.

The malfunctioning automatism was immediately eliminated and an improvement in the process was initiated. Alpiq expressed its regret about this incident in writing to those affected. The concerned authority has issued a caution.

GRI 419

Socioeconomic compliance

GRI 103
(103-1, 103-2, 103-3)

Management approach

The management approach disclosure is explained in ‘Ethics and integrity’ (GRI 102).

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 contingency planning

Business continuity management

GRI 103
(103-1, 103-2, 103-3)

Management approach

Relevance

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

Management approachOrganisation, responsibility and training of emergency and disaster organisations

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

The crisis organisation ‘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 tools for the CEO and independently takes any necessary emergency actions.

To be able to effectively and autonomously perform this task, the Head of MIC reports directly to the CEO if the MIC is engaged.

Emergency organisations and the MIC crisis team hold a training session to practise their deployment capability at least once a year. The team composition, assembly and activities are reviewed and tested based on real-life exercises. The last exercise took place at the end of October 2021. In addition to the points mentioned above, the focus was on the

cooperation between the crisis team and the emergency organisations involved in the exercise. Another important objective of the exercise was to practise cooperating with an external partner – specifically, with Swissgrid's crisis team. A detailed evaluation of the exercise was carried out afterwards. It provided important insights, especially with regard to the set-up required for a given situation and improving the flow of information to management. It also revealed that there was a need for professional skills training for staff as well as enhanced IT training. The potential for improvement and a specific implementation plan for the next two years were recorded in a separate final report.

The respective nuclear power plant companies are directly responsible for safeguarding the nuclear power plants in which Alpiq holds shares. The concept of safeguarding the Swiss nuclear power plants is supervised by ENSI, which checks it periodically for its effectiveness.

Business continuity plans

The following services, which are particularly critical for operations and are monitored at the group level, were identified as part of a business impact analysis:

- Energy trading and supporting processes
- Central power plant control
- Making urgent payments
- Publication of critical information (e.g. to meet regulatory requirements)

The other business continuity plans are the responsibility of the person responsible for a process and are not monitored at group level.

Assessment

Prior to managing the current COVID-19 pandemic, the MIC crisis team'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 team 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 team 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 Head of MIC and the Executive Board to decide on individual measures. Depending on the situation, a management report is prepared for Executive Board meetings, which contains requests for decisions where necessary.

Gas-fired combined-cycle power plants

Alpiq is committed to protecting its facilities. Most gas-fired combined-cycle power plants are part of the national critical infrastructure. Ensuring the provision of power and a stable supply to the national grids is absolutely essential. Alpiq uses systems and mechanisms that guarantee secure operation. The main goal is to minimise unscheduled power plant downtimes. Alpiq has concluded insurance policies for the facilities, which cover damages and potential impacts 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 a contingency plan. These contingency plans are adapted to the specific characteristics of every facility (size and type of operation) and 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. They regularly host emergency drills that are often focused on fire rescue, recovery of persons or work-related incidents. The contingency plans and instructions are reviewed in line with the statutory provisions and ISO certifications.

Hydropower plants

Contingency plans exist for every partner power plant 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 member specifications. In line with standards ISO 55001 (Asset Management) and ISO 9001 (Quality Management Systems), crisis drills are held together with external experts in a selected facility each year. These drills enable the operators to gain valuable experience and continuously improve the contingency plans.

Wind farms

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 by the professional rescue organisations. The goal is coordination between the authorities and the corresponding processes of the service providers working at Alpiq wind farms.

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

All the roles involved in emergency planning are defined and the people 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.

After almost all emergency drills at the wind farms were cancelled in 2020 due to the COVID-19 pandemic, the operators were able to make up for most of them in the reporting year. Rescue scenarios were practised at a wind energy facility, in the warehouse and in the offices at the Vetrocom wind farm (Bulgaria). In Sicily (Italy), a joint rescue exercise was conducted with the height rescue service of the Agrigento Provincial Fire Department in addition to the annual internal emergency simulations.

Nuclear power plants

Large-scale emergency drills in nuclear power plants, i.e. comprehensive emergency drills that include cantonal services and federal authorities, generally take place every two years at one of three nuclear power plant sites. The last drill took place in 2019 at Beznau nuclear power plant. Therefore, a comprehensive emergency drill should have taken place in the reporting year. However, this comprehensive emergency drill was postponed until 2022 due to the COVID-19 pandemic.

Cybersecurity

GRI 103
(103-1, 103-2, 103-3)

Management approach

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 of 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 at both the Group companies and the power plants in which Alpiq holds shares.

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 cybersecurity of the power plants and critical IT systems is part of this BCM approach.

In case of significant cybersecurity 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 cybersecurity 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 cyberattacks 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. Moreover, the business units D&C Technology (Business IT) and Intraday Trading are certified according to ISO 27001. This certification, which is reviewed annually, ensures that business processes are safeguarded by an established security organisation.

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

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 participates in various working groups.

Corporate culture

GRI 103
(103-1, 103-2, 103-3)

Management approach

Relevance

Employees significantly contribute to the success of Alpiq. For a long-term, successful position in the market, innovate solutions, technical expertise and values are key. Alpiq sees the diversity and equality of the people who work together to identify and develop customer-oriented needs as an opportunity to achieve positive results with the help of different mindsets.

Management approach and assessment

Alpiq supports the personal development of employees. The company offers a wide range of internal training courses and supports individual training and further education. High employee satisfaction is also very important for Alpiq, as this is an important driver of innovation, commitment and good performance.

Alpiq is a new member of Advance. Advance is the leading trade association for gender equality in Switzerland. The network comprises more than 120 Swiss companies that are committed to increasing the proportion of women in management positions. A workplace with gender equality is a win-win situation for everyone: men, women, companies and society.

Advance's mission is to achieve a sustainable proportion of women which amounts to at least 30 % at all management levels and in all member companies by 2030. Alpiq supports this goal, which is why it joined the association.

As a member, Alpiq benefits from a programme in four areas:

- Skill development workshops
- Cross-company mentoring
- Networking and further education
- Exchange of best practices

Alpiq cultivates work relationships based on trust and self-discipline. This also applies to flexible working models. Alpiq does not use People Analytics Tools and has no plans to introduce them in the future. People Analytics Tools are surveying technologies that could be used to identify, categorise and analyse employees and their social relationships.

Based on the Employee Survey 2020, an adapted partial survey was conducted again in the reporting year with an external partner. The findings from these two surveys serve as a

basis for identifying and subsequently implementing further measures. Periodic 'pulse checks' are planned for the future. Their results are easily and quickly available; measures can be taken even more efficiently and in a more targeted manner.

Alpiq conducted the pay equity analysis in Switzerland using the federal government's standard analysis tool (Logib) in the reporting year and had it audited by an independent statutory auditor. The analysis showed that there is no gender effect with regard to the person-related and job-related characteristics. Overall, Alpiq conducted equal pay analyses for 68 % of its employees during the reporting year.

In order to reinforce the employee culture and the health of the employees, as well as to make a contribution to the community and the environment, Alpiq launched the 'Alpiq Employee Challenge' in the reporting year. The initiative was a great success: From 13 September to 5 December 2021, a total of 300 employees from six different countries took part in the 'Alpiq Employee Challenge'. They gathered in teams, taking part in 2002 hours of sporting events and 280 hours of voluntary work to raise money for good causes. The result: Alpiq donated CHF 42,000 to ten environmental associations and charities throughout Europe. The initiative also helped to promote the international culture within the company. Participants established contacts and shared their experiences with colleagues abroad via specially organised online events.

Values as a basis for corporate culture

During the reporting year, Alpiq relaid the values foundation to further develop the culture and cooperation within the company. Alpiq opted for a collaborative approach. When actively shaping the corporate culture, the Alpiq Values were not defined for employees, but with employees. A rough framework of these values was developed by the Executive Board and has since been discussed and finalised with and among the employees in a large number of so-called values workshops at all hierarchy levels and across all locations in Europe. This process ultimately leads to the Alpiq Values, which are based on common ideas and ideals of our employees and with which they can identify.

As soon as the Alpiq values are defined, they are integrated in the company policies. A cyclical, iterative approach is chosen for this process. There are a variety of possible implementation topics for each value that are brought into the organisation in different iterations. The values become tangible and palpable in the organisation thanks to the various measures, and they can be experienced by the employees throughout their entire time at the company.

Further topics

Nuclear energy

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

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.

Fuel preparation (front end) and power production

GRI 103
(103-1, 103-2, 103-3)

Management approach

Relevance

A key part of Alpiq's core business is power production from flexible, climate-friendly Swiss hydropower and low-carbon nuclear energy.

In Switzerland, Alpiq has 40 % shares in Kernkraftwerk Gösgen-Däniken AG (KKG), 27.4 % in Kernkraftwerk Leibstadt AG (KKL) and 33 % in Kernkraftwerk-Beteiligungsgesellschaft AG (KBG). Alpiq holds the executive management mandate for KKG and KBG.

KKG and KKL are partner power plants. This means that the shareholders take over the entire energy production and reimburse the resulting annual costs in return. KBG has energy purchasing rights in the EDF French nuclear park. The French energy group EDF is the sole owner of its nuclear power plant and is thus solely responsible for the operation and safety of the facilities.

Management approach

Alpiq has no fully consolidated shareholdings in nuclear power plants. As Alpiq is, however, very aware of its responsibility and obligation towards the environment and society and GRI prescribes no specific standards in relation to nuclear power plants, the impact of nuclear energy on sustainability is published in this specific section.

Assessment

The nuclear power plants in which Alpiq holds shares were operated safely and reliably in 2020 and 2021. The production data for 2020 and 2021 can be found in the Alpiq Holding Ltd. Annual Reports for 2020 and 2021. (Hyperlink) In addition to power production, the KKG supplies the neighbouring industry with climate-friendly process steam. The indirect CO_2 emissions for 2020 and 2021 are listed in "Emissions" (GRI 305).

The uranium in the nuclear fuel used at KKG, for which Alpiq has the management mandate, 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 KKG 24.8 t of fresh fuel has inserted in 2020 and also in 2021, in KKL 39.1 t in 2020 and 24.4 t in 2021.

The Swiss Federal Nuclear Safety Inspectorate (ENSI) is the Swiss supervisory authority responsible for Swiss nuclear power plants. In the safety assessment published for 2020 (ENSI Oversight Report 2020, ENSI-AN-10960) and 2021, ENSI assessed KKG and KKL to be safe facilities. The ENSI Oversight Report 2021 will be published mid-2022.

Waste management, interim storage and final disposal

GRI 103
(103-1, 103-2, 103-3)

Management approach

Relevance

Power production from nuclear energy produces radioactive waste. For the nuclear power plant operators, protecting the population, employees and environment from ionising radiation takes the highest priority. This includes the safe handling of radioactive waste. As a shareholder in KKG and KKL, Alpiq pays the plants' annual costs in proportion to its share; this obviously includes the costs of financing decommissioning and waste disposal activities.

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 conditioning 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 radioactive 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 under optimal storage conditions 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-B17 and ENSI-G05. The loaded containers are transported to the Zwilag where they are placed into storage. In the reporting year, the following transportation took place from KKG and KKL to the Zwilag, see Table below.

The Swiss guidelines on the transportation of radioactive materials on road and rail are based, inter alia, 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 financing 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 (Stilllegungsfonds für Kernanlagen und Entsorgungsfonds für Kernkraftwerke – STENFO) on a continuous basis. The two funds are subject to federal supervision.

Assessment

To ensure consistency with the data in the ENSI Oversight Report 2020, the following data refers to the calendar year 2020. The data for the calendar year 2021 will not be published by ENSI until mid-2022.

In 2020 and 2021, 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. Nuclear data relating to the back end in 2020 (this data refers to the total quantity and is not scaled according to the Alpiq share proportion).

	LLW / ILW containers to Zwilag	LLW / ILW unconditioned in m3	LLW / ILW conditioned in m3	ILW in m3	HLW in m3	Unloaded fuel in t	Fuel transported to Zwilag in t
Gösgen nuclear power plant (KKG)	48	14	18	-	-	24,8	-
Leibstadt nuclear power plant (KKL)	105	62	6	-	-	39,1	-

Since 2020, 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 recovery of waste from reprocessing have been fulfilled.

The costs for the funding of the waste disposal are listed in ”Decommissioning and dismantling of nuclear power plants”.

Decommissioning and dismantling of nuclear power plants

GRI 103
(103-1, 103-2, 103-3)

Management approach

Relevance

Guaranteeing safe operation and handling of radioactive materials includes the entire value chain and the lifecycle of nuclear energy plants, from construction through to commissioning and decommissioning of the facilities as well as their dismantling. In accordance with the conditions 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 the Alpiq production portfolio for climate-friendly electricity.

Management approach

The financing for dismantling 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 (Stilllegungsfonds für Kernanlagen und 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 2020 and 2021, respectively, KKG paid CHF 34.1 million, while KKL paid CHF 43.2 million into the funds for decommissioning and waste disposal. As a shareholder in KKG and KKL, Alpiq pays part of the annual costs in proportion to its share; this obviously includes the costs of financing decommissioning and waste disposal activities.

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. At the end of 2021, an updated cost study was submitted in the form of Cost Study 21, which is now being reviewed and assessed by STENFO. For further information, see the Annual Reports of KKG AG and KKL AG.

Environmental safety and monitoring

GRI 103
(103-1, 103-2, 103-3)

Management approach

Relevance

The nuclear power plants in which Alpiq holds shares are obligated 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 must be done while taking into account ethical, economic and social principles as well as legal provisions. Both Alpiq and the operators of the nuclear power plants consider responsibility for people and the environment a central task. The focus is on the health and safety of the public, employees and third-party companies.

Management approach

Since 2010, the nuclear energy key performance indicators (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. The data for the calendar year 2021 will be published by ENSI in the Oversight Report 2021 in mid-2022.

Guideline ENSI-G15 defines the radiation protection limit values that apply in Switzerland to employees and to the population surrounding a nuclear power plant. These are monitored in accordance with guideline ENSI-B09 and reported to ENSI in accordance with guideline ENSI-B03.

Assessment

The nuclear power plants in Switzerland are subject to the strictest safety standards. Reportable events at nuclear power plants 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.

The number of events that were reported in accordance with guideline ENSI-B03 by KKG and KKL, respectively, in 2020 are listed in the following table.

Number of reportable events in 2020 in accordance with guideline ENSI-B03:

Number	INES 0[1]	INES 1[1]	INES 2[1]
Gösgen nuclear power plant (KKG)	6	0	0
Leibstadt nuclear power plant (KKL)	3	0	0

1 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 2020.

Handling water and waste water 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 2020 and 2021 is publicly available from ENSI (ANPA-EMI data).

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 a cooling tower and not by an adjacent river. The water in the cooling towers comes from the rivers; the reinjection of cooling water introduces some heat, but not in a significant way. In hot summer weather with very high river temperatures, nuclear power plants reduce their output to stay below the legal limits.

Publishing details

Published by
Alpiq Holding Ltd.
Chemin de Mornex 10
1003 Lausanne
Switzerland

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www.alpiq.com

The sustainability report 2021 is published in German, French and English. The German version has precedence.