Enviromental, social and governance (ESG) risks

In line with the commitments expressed in the Sustainability Policy, ethical and responsible conduct for sustainable growth cannot disregard the assessment of relevant impacts in relation to risks and opportunities related to material topics for Iren Group.

To this end, the environmental, social and governance (ESG) impacts are assessed for each risk category envisaged in the Group's risk model, as shown in the following map. A comprehensive, detailed and integrated risk register is also produced, which also considers ESG impacts on the mapped risk categories. For each risk category, the operational, contractual and insurance mitigation measures implemented, in progress and to be implemented to reduce the risk level are identified. By way of non-exhaustive example, the main risk categories with social impacts are: supply chain, consumer behaviour, technological innovation, service quality, infrastructure and systems; those with environmental impacts are: legislative and regulatory changes, natural and accidental events, climate change, infrastructures and plants, while those with an impact on governance are relations with institutional bodies, relations with regulatory bodies, legal/litigation, internal and external compliance and adequacy of processes. This last aspect is fundamental to guarantee the resilience of the business even in the face of unforeseen events, ensuring the continuity of critical processes. Precisely for this reason, the Group has formalised and implemented a **Business Continuity Management model** with the organisational and technological safeguards to ensure the continuity of processes, as well as a proactive and structured response to emergency or crisis events. In 2022, the BoD approved a "Crisis simulation and ordinary test plan" - spread over a three-year period, with approximately four crisis and ordinary tests per year - which has the objective of actively exercising the Group's response capacity to all scenarios of interruption of the processes tested and verifying the appropriate implementation of the defined continuity strategies and identifying further ones, finally defining an action plan.

EXTERNAL RISK

SOCIAL AND ECONOMIC CONTEXT RISKS	REGULATORY RISKS
Competitors	Normative and regulatory changes
Financial and capital markets	Authorisation processes
Macroeconomic / Politic	Relations with Regulatory Bodies
Supply Chain	**RISKS FROM EXTERNAL EVENTS**
Consumer behaviour	Natural/accidental events
Relations with Institutional Bodies	Anthropic events
Technological innovation	Climate change
	Illegal acts of third parties

INTERNAL RISK

FINANCIAL RISKS	STRATEGIC RISKS	OPERATIONAL RISKS
Interest rate	Model and business sectors	Process adequacy
Credit	Capital allocation	Infrastructures and plants
Liquidity	M&A	Environment
Exchange rate	Reputation	Human Resources
Commodities	Governance	ICT
LEGAL AND COMPLIANCE RISKS		Quality of service
Financial and non-financial information	Legal/ litigation	Health and Safety
Internal and external compliance		Purchase planning

ESG categories: Governance risks · Environmental risks · Social risks

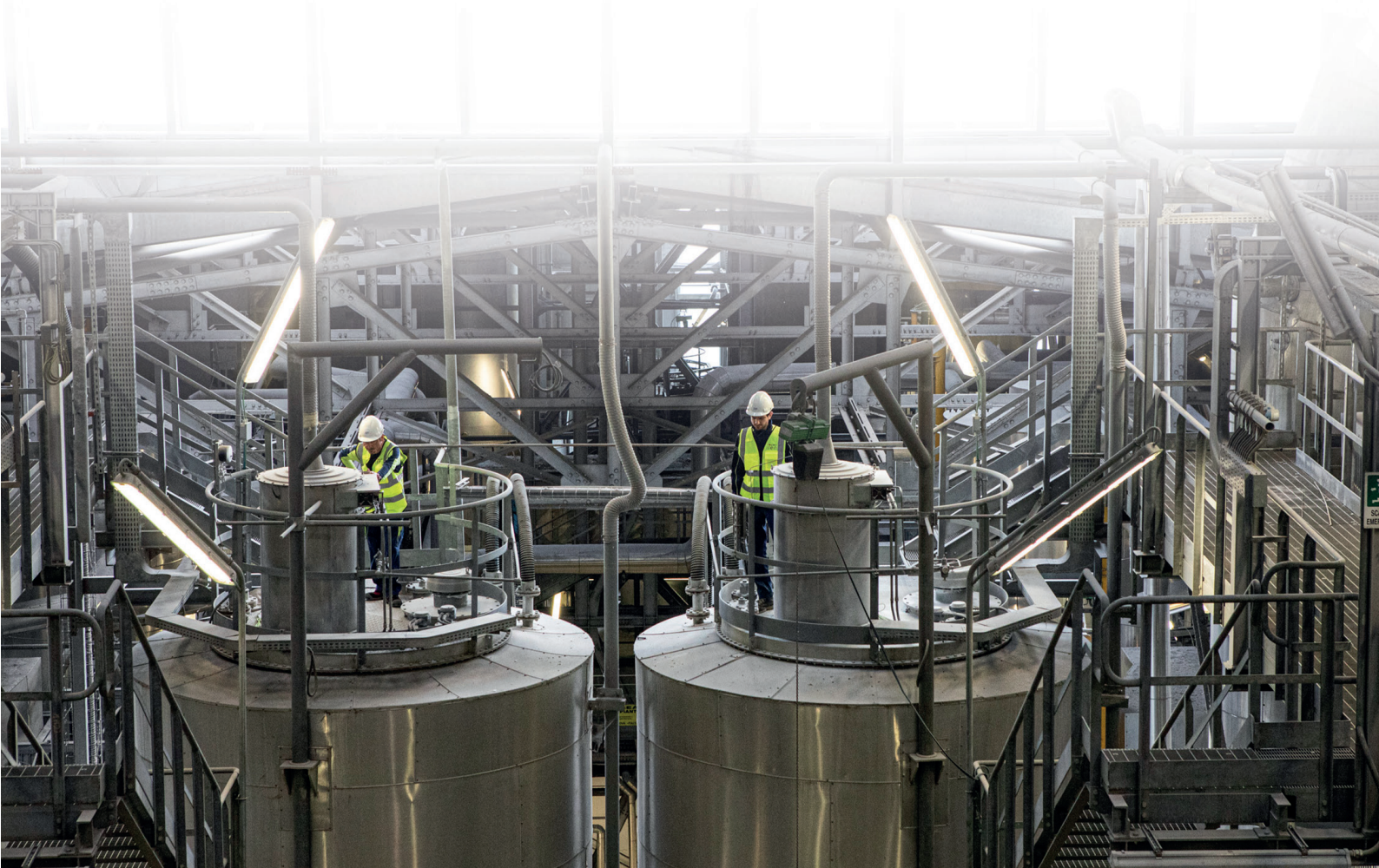
The analysis carried out, also with specific reference to the provisions of Legislative Decree 254/2016 (art. 3, paragraph 1, point c), shows how material topics are considered in the enterprise risk management model and how specific management methods are envisaged for each, as highlighted in the sections of this document in which the various issues are discussed in more detail.

Material topics	Related risk/ opportunity categories (*)	Management methods
Growth and value creation for the company and stakeholders	• Strategic • Social and economic context • Regulatory	page 138
Responsibility and quality in service delivery and customer orientation (value chain)	• Process adequacy • Quality of service • Legal/Litigation • Internal and external compliance • Reputation • Supply chain	page 250
Efficient, reliable and secure management of processes and infrastructure	• Operational • Legal/Litigation • Reputation	page 260
Circular economy and waste management	• Business model and sectors • Environment • Climate change • Quality of service • Supply chain • Internal and external compliance • Reputation	page 193
Solid, ethic and transparent governance for sustainable growth	• Governance • Legal/Litigation • Internal and external compliance • Reputation	page 40
Sustainable use of water resources	• Business model and sectors • Climate change • Process adequacy • Environment • Quality of service	page 183
Employment, development of human resources, welfare and industrial relations	• Human resources • Legal/Litigation • Reputation • Relations with Institutional Entities	page 288
Energy efficiency and renewable production to reduce environmental and economic impacts	• Social and economic context • Business model and sectors • Climate change • Natural/accidental events • Environment • Legal and regulatory changes • Reputation	page 176
Decarbonization and reduction of emissions	• Climate change • Process adequacy • Infrastructure and facilities • Environment • Supply chain • Internal and external compliance	page 165
Occupational health and safety	• Health and safety • Reputation • Legal/Litigation • Internal and external compliance	page 317
Effective and transparent dialogue and communication with stakeholders (value chain)	• Governance • Relations with Institutional Bodies • Financial and non-financial reporting • Internal and external compliance • Reputation	page 120
Protection of human rights (value chain)	• Human resources • Supply chain • Legal/Litigation • Reputation	page 80
Diversity and inclusion	• Human resources • Reputation	page 312

Material topics	Related risk/ opportunity categories (*)	Management methods
Sustainable management of the supply chain (value chain)	• Supply chain • Process adequacy • Environment • Health and Safety • Reputation	page 333
Sustainable development of the local areas and communities (value chain)	• Business model and sectors • Reputation • Relations with Institutional Bodies • Technological innovation	page 222
Biodiversity	• Natural/accidental events • Climate change • Process adequacy • Environment • Internal and external compliance	page 213
Innovation, digital transformation and smart cities	• Strategic • Technological innovation	page 345

(*) Specific risks/opportunities identified for each material topic are given in the discussion of management methods.

The Group Risk Management Department, which reports to the Deputy Chairperson, is responsible, among other things, for the integrated management of the Group's Enterprise Risk Management system, in terms of methodological setting, definition of risk policies and monitoring of the system and the management of insurance policies. A periodic assessment process is also in place with regard to adverse events in the various sectors and across all Group's areas in order to describe in detail their causes and implement the most suitable methods for preventing and/or limiting the impacts of the events.



Climate risks

The Climate Change Risk Policy of Iren Group carefully analyses and regulates the risk factors, both physical and transitional, the strategies towards these factors (exclusion, acceptance and management) and the guidelines for reporting, aimed at guaranteeing information transparency to all stakeholders.

The Climate Change Risk Commission - made up of the Director of Risk Management, the Director of CSR and Local Committees, the CFO and the Business Unit Directors - periodically examines the Group's risk profile, defining and proposing to the CEO the updating of the management strategies of the risk classes and reporting to the Delegated Bodies any emerging criticalities.
The Risk Management Department considers these risks in its insurance programme.
Among the effects of climate change, account is taken of extremes of atmospheric phenomena (**acute physical risks**) that can generate events such as droughts and fires, heat waves, cyclones, landslides, water bombs, floods; these events produce impacts on the hydrology of hydroelectric and aqueduct plants, with the related economic implications and are aspects of attention for the consequences they produce on the property assets (e.g. failures in the district heating network) and on margins (reduction due to damage to production facilities).
These events also have an impact on the scheduling of the availability of thermoelectric generating units and the related scheduled maintenance.
Furthermore, climate change trends determine progressive changes in climatic variables (**chronic physical risks**) such as, for example, temperature, which mainly impacts on the dynamics of consumption of heat for district heating, gas, water and electricity or rainfall, with impacts on the production of hydroelectric plants and on the scarcity of water resources for distribution.
Financial implications for the Group, in relation to climate change, also arise from possible political, market, technological and regulatory developments (**transition risks**) that may produce risks and/or opportunities for the Group, such as costs associated with the Emission Trading System and their variation.
In the model of assessment of risks from climate change implemented by Iren Group, the analysis is based on the definition of some **time horizons** (2030, 2040, 2050), identified in line with the objectives of the Strategic and Sustainability Plan, and on the use of **climate and socio-economic data** series necessary to define scenarios of evolution of the main quantities underlying the analysis.

Climate data are based on three International Panel on Climate Change (IPCC) scenarios: CPR 2.6, CPR 4.5 and CPR 8.5. The model also uses socio-economic data as inputs that are primarily based on scenarios published annually by the International Energy Agency (IEA) in the World Energy Outlook (WEO)
» SEE PAGE 100.
From a methodological point of view, the analysis carried out starts from the results of the implementation of specific models for the Group's key assets, in particular those that would potentially be more exposed to risks from climate change, and which make it possible to carry out a medium- and long-term scenario analysis, quantifying the change in economic and financial variables related to the operation of the assets taken into consideration.
The first phase of analysis concerns the association of each risk factor, identified within the scope of the Group's Climate Change Risk Policy, with possible risks/opportunities mapped for the various Group businesses. KPIs, obtained from the simulations, are then analysed, providing a quantification of the impact of risk within the simulation model.

Application of the model shows that actions introduced as part of the Business Plan to 2030, which also outlines asset-specific investments, have a mitigating effect on the impacts of climate change. Mitigation actions of a strategic nature, linked to investments, are flanked by others of an operational and insurance nature.

The table below provides a summary of the analysis carried out and shows the main risks identified for each business area with the relative quantification and the most significant mitigation actions implemented or planned by 2030.

RISK ANALYSIS

Risk/scope/ time horizon [1]	Impact [2]	Mitigation actions and their effectiveness
ACUTE PHYSICAL RISKS		
Drought Reduction in hydroelectric production due to changes in water resource availability. **Scope Impacted:** Hydroelectric plants **Horizon:** S M L	Reduced marginality relative to hydroelectric production due to drought resulting from increased temperatures (evapo-transpiration from reservoirs) and precipitation regime. **Level:** [3] 	Analysis of the change in water source availability (primary energy) as well as hydraulic turbine efficiency. Careful management of storage tanks, where present, to ensure the availability of the water resource. Monitoring the ratio of installed power to producible power that varies depending on the availability of the water source. If the ratio is slightly less than 1, the hydraulic turbine can be revamped to increase its efficiency. **Efficacy:** low.[3]
Extreme events (floods, landslides, storm surges, water bombs, snowstorms...) Damage to the infrastructures of the Group and its partners due to the occurrence of extreme weather events **Scope Impacted:** Group. **Horizon:** S M L	Direct and indirect damage to the Group with potential business interruption, consequent decrease in turnover and increased costs to carry out repair work. **Level:** [4] 	Implementation of asset-specific analysis and risk assessment to analyse the vulnerability of buildings, machinery, goods, and supply chains to catastrophic natural events. Statistical monitoring of past events and conducting Business Impact Analysis. Some specific mitigation actions at the plant level are, for example, formalised emergency and evacuation plans with assignment of roles and responsibilities and the performance of periodic tests, maintaining distance from waterways, the implementation of earthquake-resistant infrastructure, the definition of a business continuity management plan, and the compartmentalisation of premises. Analysis, for all assets, of insurance strategy to verify adequacy of coverage. **Efficacy:** high.
CHRONIC PHYSICAL RISKS		
Temperature increase Inability to meet drinking water demand due to water stress situations **Scope Impacted:** Aqueducts. **Horizon:** S M L	Decrease in the margin of the aqueduct network due to the inability to meet the demand for drinking water in the areas served due to lack of availability of water resources in the supply sources, caused by changes in temperature and precipitation. **Level:** 	Analysis of water source availability, district subdivision and routine maintenance of networks to reduce resource waste (water network losses at 20% by 2030 compared to the current value of 30.4% in historical territories). Implementation of Water Safety Plans. The Strategic Plan foresees investments for the maintenance of the water network and the consequent efficiency with the reduction of losses equal to about 600 million Euro. **Efficacy:** average.
Increase in temperature Increase in the volumes of water to be treated at the plant inlet related to the increase in drinking water demand influenced by the increase in temperature. **Scope Impacted:** Wastewater treatment plants. **Horizon:** S M	Increased wastewater treatment costs due to the increase in the volume of incoming wastewater caused by the change in drinking water demand closely linked to rising temperatures, as well as demographic variables. For mixed network wastewater treatment plants, to which rainwater therefore also flows, the impact also takes into account the variability of rainfall. **Level:** [3] 	The Strategic Plan includes investments for the maintenance of the sewer networks and the renewal and expansion of the wastewater treatment system amounting to approximately 600 million Euro. **Efficacy:** low.[3]

Risk/scope/ time horizon [1]	Impact [2]	Mitigation actions and their effectiveness
CHRONIC PHYSICAL RISKS		
Increase in temperature Decrease in gas and thermal energy requirements for heating due to the increase in average temperatures, balanced by the increase in electrical consumption (use of air conditioning systems and greater spread of electric mobility) **Scope Impacted:** Market **Horizon:** M L	Decrease in EBITDA due to lower sales of natural gas for heating and heat for district heating, offset by increased EBITDA from higher sales of electricity. **Level:** 	Monitoring of the volumes of gas and heat sold and planning of a greater penetration of the cooling and electricity sales businesses both in terms of increased volumes and in terms of new customers acquired (especially in the household segment). **Efficacy:** high.
Temperature increase Decrease in thermal energy demand for heating due to increase in average temperatures. **Scope Impacted:** District heating network **Horizon:** M L	Reduction in the marginality of the district heating network related to the contraction of the demand for thermal energy per capita in correlation with the increase in average temperatures. **Level:** 	Annual monitoring of both the heating degree days (in the local areas served) and the thermal energy demand satisfied through the district heating network. Reductions in requirements can be offset by extensions of networks and district heating volumes. The Strategic Plan includes investments for the maintenance, development and extension of the district heating network and plants that feed it, with an increase in volumes (+20% to 2030 vs 2020) amounting to approximately 700 million Euro. **Efficacy:** average.
Temperature increase Damage to infrastructure caused by increased temperature, e.g. reduced expected life of transformers and stations, and overloading of electricity grids resulting in heatwave-related blackouts. **Scope Impacted:** Electricity network. **Horizon:** M L	Increased costs resulting from repairing damage to plant and infrastructure caused by the chronic rise in temperatures. Higher costs to replace damaged components and ARERA penalties resulting from the occurrence of blackouts on the electricity grid caused by heat waves in the summer period. **Level:** 	Construction and refurbishment of stations and network renewal. The Strategic Plan allocates investments of around 600 million Euro to the efficiency of electricity distribution networks and plants. **Efficacy:** high.
Temperature increase Change in electricity production as an effect of temperature increase and solar radiation variation. **Scope Impacted:** Photovoltaic. **Horizon:** S M	Change in production with consequent impact on unit margin. **Level:** [3] 	As the park is newly built and acquired, no investments are planned in the short to medium-term. **Efficacy:** low.[3]

Risk/scope/ time horizon [1]	Impact [2]	Mitigation actions and their effectiveness
TRANSITION RISKS		
Political and legal Tightening of the Emission Trading System Regulations. **Scope Impacted:** Thermoelectric power plants. **Horizon:** S M	Increased cost of emissions or extended applicability of a tightened ETS to new plants, resulting in decreased plant margins. Financial impacts, such as the increase in the levelised cost of energy, resulting from the possible transition to a carbon tax. **Level:** 	Monitoring of the CO_2 emissions of the assets and control of the evolution of the relevant environmental regulations. Evaluation of the introduction of technologies aimed at reducing CO_2 emissions into the atmosphere, as well as any revamping necessary to adapt assets to more stringent environmental regulations or the adoption of more sustainable technologies. Partial replacement of fuel gas with hydrogen blend. The Strategic Plan includes investments to improve the efficiency of thermoelectric power plants amounting to approximately 240 million Euro. **Efficacy:** high.
Political and legal Stricter environmental regulations on waste-to-energy plants. **Scope Impacted:** WTE. **Horizon:** S M	Costs for revamping and upgrading facilities to more stringent environmental regulations on WTE facilities, including with respect to the introduction of "zero-waste" policies and constraints on air emissions. Increased costs resulting from the introduction of taxation or inclusion of WTE in the ETS in the face of possible tightening of regulations on the subject of atmospheric emissions. **Level:** 	Monitoring of the CO_2 emissions of the assets and control of the evolution of the relevant environmental regulations. Assessment of the introduction of technologies to reduce CO_2 emissions, as well as any revamping required to bring assets into compliance with more stringent environmental regulations or adoption of more sustainable technologies, such as carbon capture & storage systems. In a context of technological evolution with regard to the stages of CO_2 capture and storage, the Strategic Plan provides for a share of investment that will be adjusted over time according to the availability of new technologies. **Efficacy:** average.

[1] Time Horizon: B=short-term, M=medium-term, L=long-term

[2] The rating scale refers to the impact on EBITDA expected in 2030 (downside for risks and upside for opportunities): low <1%, medium between 1 and 5%, high >5%

[3] Please note that the valuation is provided on a prudential basis, referring to a limited scope of assets:

- Hydroelectric plants: analysed assets representing 43% of hydroelectric production;
- Waste treatment plants: analysed assets representing 26% of treated water volumes;
- Photovoltaic systems: analysed assets representing 42% of photovoltaic production.

[4] The quantification is based on the impact of natural catastrophic events on the Group's main assets.

OPPORTUNITIES ANALYSIS

Opportunity/scope/ time horizon [1]	Impact [2]	Strategy to realise the opportunity
Products and services Dissemination of new integrated solutions, e.g. for production and energy efficiency. Market penetration with an energy offering more aligned with changing consumption by end users. **Scope Impacted:** Group. **Horizon:** S M	Increased revenues from: • favourable competitive positioning in the energy sector thanks to the dissemination and adoption of new technological solutions; • direct impact on the number of customers reached, thanks to the push towards electrification of consumption and the change in consumer preferences towards "green" energy; • increasing number of energy efficiency interventions on buildings. **Level:** 	Monitoring of the penetration rate of services offered and competitors' offerings. Expansion of the portfolio of integrated services provided. Increased offerings of electricity produced exclusively from renewable sources. Dedicated campaigns to respond to changes in consumer preference. The Strategic Plan provides for investments related to the deployment of new integrated solutions, such as the installation of public charging stations for electric vehicles, the development of energy communities, e-buses, energy efficiency products/services, new smart cities services amounting to approximately 1.3 billion Euro.
Market Access to finance through diversification of financial instruments **Scope Impacted:** Group. **Horizon:** S M L	Increased opportunities to access capital through sustainable finance instruments such as Green Bond, EIB loans, Sustainable Loan for Hydro, Sustainability linked revolving credit facility.	Strategic Plan with sustainability objectives and targets, also SBT. Publication of the Sustainable Finance Framework, establishment of the Sustainable Finance Committee, third-party reviews of projects financed with sustainable finance instruments, monitoring of regulations, relations with financial markets.
Resource efficiency Circular economy **Scope Impacted:** Impianti trattamento rifiuti. **Horizon:** S M L	Increase in revenue related to: • consolidation of regulatory frameworks that regulate and incentivise material recovery and the production of biogas and biomethane from waste; • increased volumes handled by current facilities; • acquisitions of companies in the sector; • development of plants and technologies for material recovery and production of biomethane, biogas. 	Monitoring of regulations and development of an investment plan mainly aimed at the development of plants for the recovery of waste materials. The Strategic Plan includes investments in the circular economy of approximately 1.6 billion Euro.

[1] Time Horizon: B=short-term, M=medium-term, L=long-term

[2] The rating scale refers to the impact on EBITDA expected in 2030 (downside for risks and upside for opportunities): low <1%, medium between 1 and 5%, high >5%