CLIMATE CHANGE ADAPTATION PLAN

2024

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1. INTRODUCTION

By recognizing the urgency of the climate crisis, Cemig places adjustments to climate change as a fundamental pillar of its strategy. Through the construction of a comprehensive and innovative Adaptation Plan, the Company seeks to develop the necessary resilience to face climate issues, allowing the company to adapt to market changes and new customer demands.

The plan details strategic initiatives by business segment, with in-depth impact analyses and effective measures to mitigate them. It also defines new actions to be implemented by 2025.

Facing Climate Challenges in Each Segment:

- **Power Generation:** Hydroelectric generation faces specific challenges related to precipitation extremes. Prolonged droughts can reduce generation capacity, while intense rains can lead to spillage of plants, reducing water use or putting assets and human lives at risk. Wind and solar generation may suffer interruptions in operation or damage to infrastructure due to changes in rain patterns, storms or other extreme events.

- **Transmission and Distribution**: Transmission and Distribution (T&D) networks can also be affected by these events, in addition to high temperatures that reduce transmission capacity, increase electrical losses and shorten the useful life of equipment. Strong winds and electrical discharges can break cables or knock down towers and poles, interrupting the power supply. Even a prolonged drought can affect the electrical system, increasing the deposition of particles in the lines and the risk of short circuits.

In this context, Cemig stands out for its preventive approach, prioritizing the assessment and management of climate risks, and seeks to develop innovative solutions to face the challenges of climate change. The Climate Change Adaptation Plan is based on four strategic pillars: risk assessment and management, investments in research, development and innovation (RD&I), engagement and communication, and definition of adaptation actions.

2. RISK ASSESSMENT AND MANAGEMENT

- **Vulnerability Identification:** Cemig maps in detail the climate risks that may affect its operations and infrastructure, such as extreme events. This comprehensive assessment considers different future climate scenarios, ensuring a robust and proactive view.
- **Impact Analysis:** The company performs detailed analyzes to understand the potential impacts of climate change on its assets, services and commu-

nities served. This crucial step allows for the quantification of risks and the prioritization of effective adaptation measures.

- **Development of Action Plans:** Based on risk assessment and analysis, Cemig prepares specific and targeted action plans to mitigate the negative impacts of climate change. These plans include measures such as the diversification of the energy matrix, the modernization of infrastructure, investments in new technologies, analysis of climate scenarios, and improvements in the monitoring system, issuing alerts and weather forecasting.

3. INVESTMENT IN RESEARCH, DEVELOPMENT AND INNOVATION (RD&I)

- **Search for Technological Solutions:** Cemig actively combats the challenges of climate adaptation through investments in Research, Development and Innovation (RD&I). This initiative generates solutions that guarantee the efficient management of water resources, the resilience of the electrical grid and the development of innovative energy storage solutions, such as the battery energy storage system (Bess Móvel).
- **Strategic Partnerships:** The company collaborates with universities, research centers and other companies to expand knowledge about climate change and develop joint solutions.
- **Knowledge Sharing:** Cemig promotes exchange of knowledge and good practices with other companies and stakeholders, disseminating valuable information about climate adaptation and contributing to collective advancement in the area.

4. ENGAGEMENT AND COMMUNICATION

- **Dialogue with Stakeholders:** Cemig maintains an open and transparent dialogue with its stakeholders, including local communities, government bodies, NGOs and civil society in general. This dialogue is essential to understand the needs and expectations of different audiences and ensure that climate adaptation actions are socially fair and equitable.
- **Awareness Campaigns:** The company carries out awareness campaigns to inform the public about the risks and impacts of climate change, in addition to promoting the adoption of sustainable practices in everyday life.
- **Environmental Education:** Cemig invests in environmental education programs to raise awareness among the internal and external public about the importance of environmental preservation and adaptation to climate change.

5. RESILIENCE TO EXTREME WEATHER EVENTS

Cemig has a robust weather forecast system, which aims to increase the operational efficiency of several activities of the company. This system uses data from several sources, both internal, such as data from the meteorological monitoring system, and external, from observational data to meteorological models representing the state of the art in numerical weather prediction.

To maintain this system, Cemig has its own meteorology team, which uses, in addition to the tools already mentioned, Brazilian, European and American meteorological models in order to generate predicted meteorological scenarios for several activities of the company, with each product created to meet the needs of each department of the company.

a) Meteorological Monitoring System

Cemig has a meteorological monitoring system made up of several stations for automatic data collection (Figure 1), its own atmospheric electrical discharge detection network (Figure 2), a satellite image reception station and a C-band weather radar (

), strategically installed in the center of the state, being the only company in the electrical industry to have such equipment.

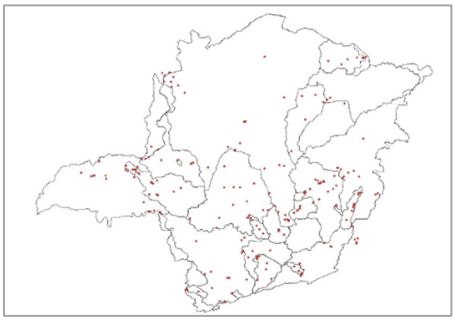


Figure 1 - Hydrometeorological Stations Network of Cemig in 2023. Source: Cemig

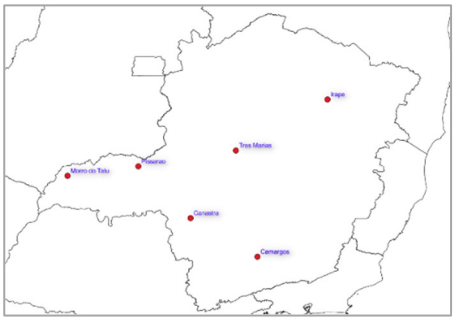


Figure 2 - Lightning Detection of Cemig in 2023. Source: Cemig

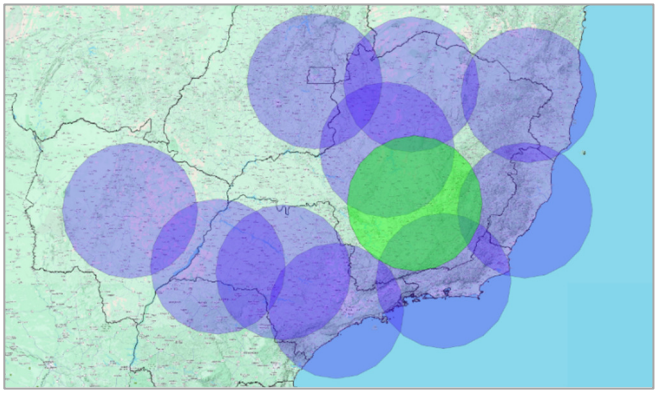


Figure 3 - Network of radars used in meteorological monitoring in 2023, with emphasis on the one belonging to Cemig, in green: Source: Cemig

b) Weather Alert System

The increase in storms was also identified by the meteorology department of Cemig, responsible for issuing meteorological storm warnings for the entire concession area of Cemig.

In [Legend: Alert R1; Wind: Below 30 km/h; Lightning: No occurrence; Rain: Occurrence of moderate rain, up to 10 mm/h. | Alert R2; Wind: Between 31 and 50 km/h; Lightning: stratified occurrence of lightning; Rain: Between 11 and 20 mm/h. | Alert R3; Wind: Between 51 and 70 km/h; Lightning: simultaneous occurrence in up to half of the cities in the region; Rain: Between 21 and 30 mm/h. | Alert R4; Wind: Above 71 km/h; Lightning: simultaneous occurrence in the entiree region; Rain: Above 31 mm/h.]
Figure 4 there is a brief summary of the thresholds used to issue these alerts, by variable, so that whenever the meteorologist responsible for monitoring identifies meteorological conditions that could lead to reaching some of these thresholds (Risk) the alert is issued for the Operation Centers of Cemig.

In Figure we have the alerts issued for two of these levels in the years 2022 and 2023:

- R2: Alerts related to storms with intense convective activity, with a significant chance of causing strong wind gusts and lightning
- R3: level attributed to storms with extreme convective activity, generally associated with multicellular systems and with the capacity to produce hail.

[Legend: Alert R1; Wind: Below 30 km/h; Lightning: No occurrence; Rain: Occurrence of moderate rain, up to 10 mm/h. | Alert R2; Wind: Between 31 and 50 km/h; Lightning: stratified occurrence of lightning; Rain: Between 11 and 20 mm/h. | Alert R3; Wind: Between 51 and 70 km/h; Lightning: simultaneous occurrence in up to half of the cities in the region; Rain: Between 21 and 30 mm/h. | Alert

R4; Wind: Above 71 km/h; Lightning: simultaneous occurrence in the entiree region; Rain: Above 31 mm/h.]

Figure 4 - Thresholds Used in Meteorological Alerts.
Source: Cemig

It was not prepared the R4 alert level chart because the predictability of these events is such that there were no records of alerts being issued at these levels, even though events of this magnitude have occurred in Minas Gerais.

In the chart of Figure , it is clear, when we compare the number of alerts issued for the same months of 2022 and 2023, that there was an alarming increase from one year to the next in practically all of them.

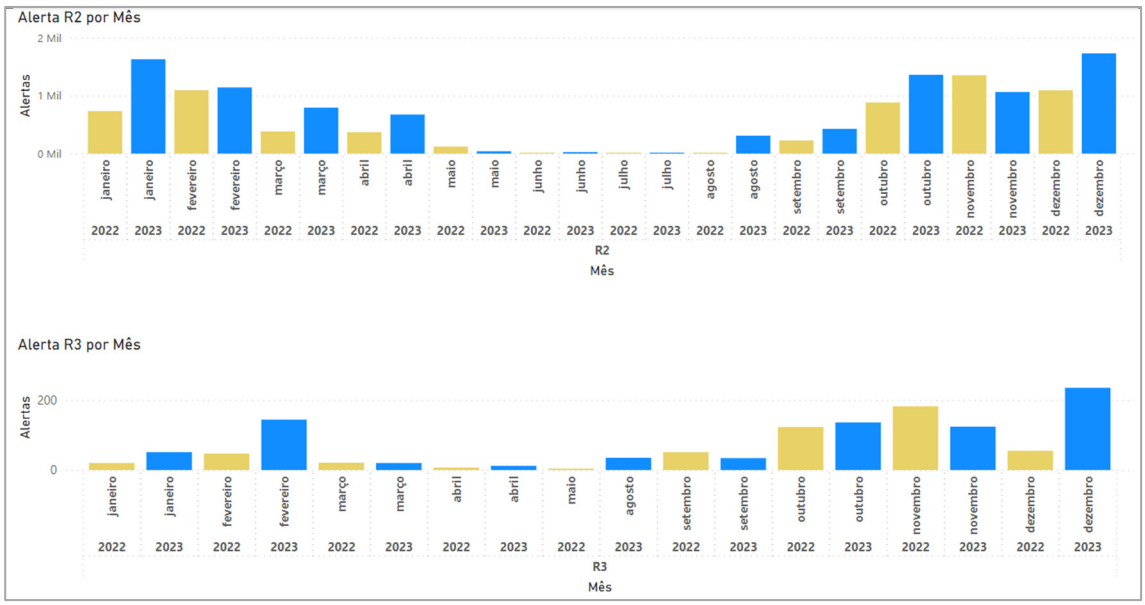


Figure 5 - Total weather alerts issued in 2022 and 2023.

c) Fire Monitoring and Alert System

With the systematic increase in the occurrence of fires in recent years, as well as the forecast of an increase in the coming decades, Cemig spares no effort to increase its resilience to this phenomenon.

It was then developed the Fire Monitoring, Analysis and Alert System of Cemig (Figure), consisting of tools and techniques that allow the company:

- To identify the regions affected by fires along their transmission and distribution lines. To allow more efficient shutdown analysis, optimization of right-of-way cleaning activities and environmental education for nearby communities.
- To monitor and issue alerts in real time, allowing field teams to be sent to assess the situation before reaching the lines.
- To compute the physical risk of fire ignition, enabling the appropriate dimensioning of field teams.

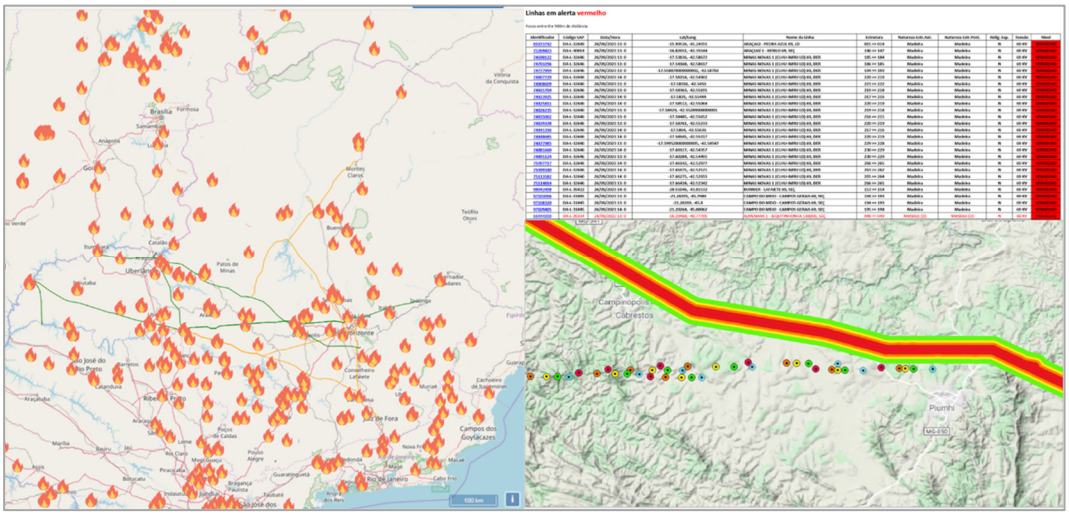


Figure 6 - Example of SMAQ. Source: Cemig.

In 2023, 10,284 fire alerts were issued for the energy transmission and distribution lines of Cemig (Figure 27).

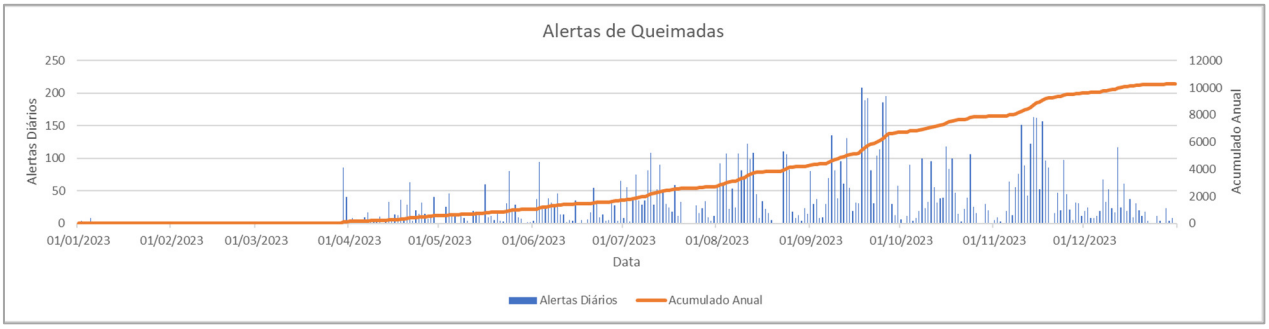


Figure 2 - Burn Alerts issued in 2023. Source: Cemig

d) Weather Forecast System

Cemig has a robust weather forecast system, which aims to increase the operational efficiency of several activities of the company. This system uses data from several sources, both internal, such as data from the meteorological monitoring system, and external, from observational data to meteorological models representing the state of the art in numerical weather prediction.

To maintain this system, Cemig has its own meteorology team, which uses, in addition to the tools already mentioned, Brazilian, European and American meteorological models in order to generate predicted meteorological scenarios for several activities of the company, with each product created to meet the needs of each department of the company.

Among the applications of this system, aimed at resilience and adaptability to climate change, we can mention:

- **Storm forecast**: Storm forecasts are made daily for the areas of interest of Cemig, in order to prepare the number of teams needed to deal with possible power outages caused by storms on the Cemig network.
- **Reservoir Operation Planning**: The precipitation forecast is prepared daily to ensure the most efficient and safe operation possible for reservoirs of Cemig, in order to anticipate possible risk situations and avoid or reduce risks to the population, the plant infrastructure and the environment.
- **Maintenance Activities**: To ensure an efficient allocation of teams and inputs, specific forecasts for maintenance activities are made available to the end areas in order to plan the appropriate time to carry them out safely and efficiently.
- **Power Generation**: All of the generation planning of the company is based on hydrometeorological forecasts, to ensure the best use of available resources.
- **Flood Management**: In periods of high rainfall, correct management of reservoirs can prevent the occurrence of damaging flood events, therefore in critical periods, forecasts are carried out in real time, using all monitoring and forecasting tools available in the company in order to guarantee maximum safety in the operation of plants.

e) Weather alerts for the state of Minas Gerais

Understanding the great impact of climate change on society, Cemig has had, since 2022, a technical cooperation agreement between the company, the Minas Gerais Water Management Institute (IGAM) and the State Civil Defense (CEDEC), signed with the Military Office of the Governor. In this agreement, it is up to Cemig and Igam, on predetermined days and times, to issue meteorological alerts to the state Civil Defense about storms that could have serious consequences for the population, allowing it to issue alerts to all cities in Minas Gerais.

5.1. Analysis of Extreme Weather Events

In this section, we analyze variables and phenomena related to extreme weather events in the state of Minas Gerais, focusing on temperature data, fires, lightning, gusts of wind and intense precipitation. We identify patterns that can help predict and mitigate the impacts of these events on the activities of the company. For comparison purposes, we also present data related to previous years.

By analyzing these variables and phenomena together, a more complete and accurate picture of extreme weather events can be obtained. In this study, we highlight intense and short-lived events.

Precipitation

In Figure 3 we have the total occurrences of accumulated precipitation in 24 hours, calculated from data from automatic meteorological stations from the National Institute of Meteorology (INMET) between 2021 and 2023. Each daily occurrence, from each station, is added together, according to its range.

As there was a decrease in accumulated rainfall in 2023, when compared to the historical average (**Erro! Fonte de referência não encontrada.**8), it was already expected that there would be a decrease in occurrences in 2023, especially due to the decrease in the number of South Atlantic Convergence Zone (ZCAS)[1].

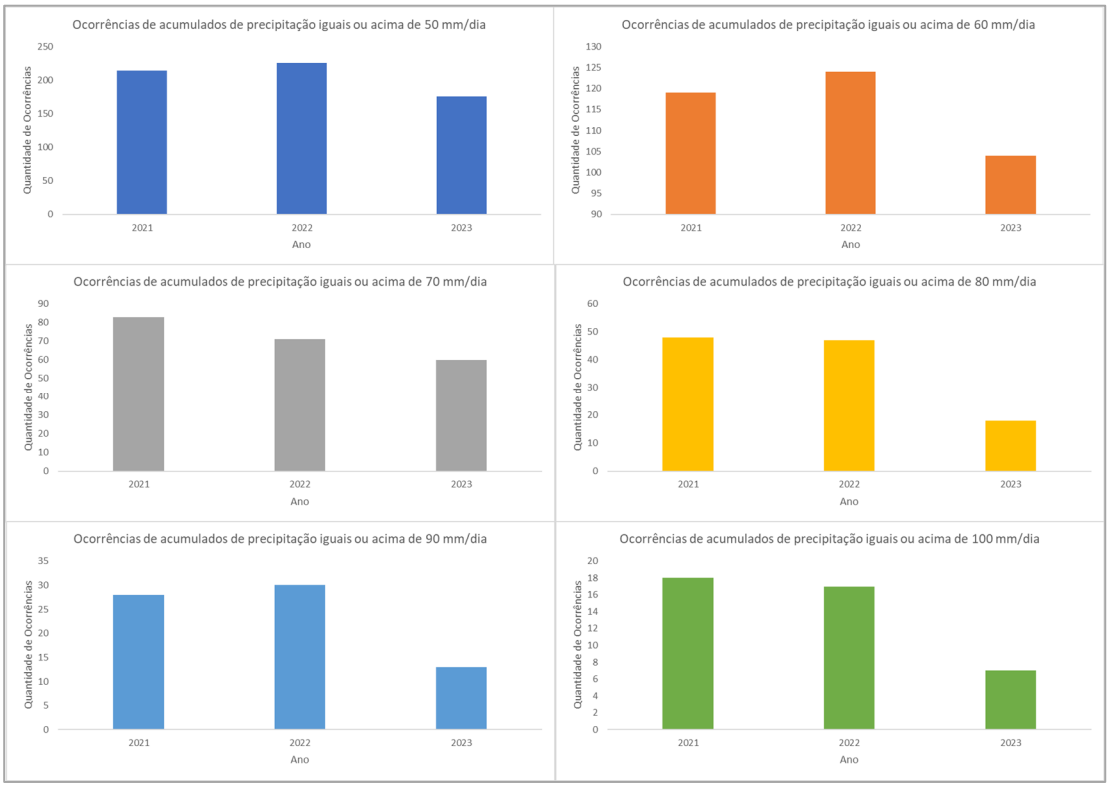


Figure 3 – Number of occurrences for different daily precipitation values.
Source: Adapted by Cemig from data of INMET.

Wind Gusts

With the decrease in the number of ZCAS, it was also expected that the increase in temperature associated with the decrease in cloudiness would cause an increase in severe storms, as there would be greater availability of heat in the atmospheric layer. This effect becomes clear in the analysis of wind gusts and the number of atmospheric electrical discharges, which increased considerably and which will be presented below.

Figure 4 shows the same analysis carried out for precipitation, but now focusing on the bands of significant wind gust events. In this case, all days were counted on

[1] The South Atlantic Convergence Zone (ZCAS) is one of the main meteorological systems that cause rain in the Central-West and Southeast regions between the end of spring and summer. Source: National Institute of Meteorology (INMET)

which each of the meteorological stations recorded wind gusts above a certain value, in order to obtain information, both on the scope and extent of significant wind events in each year.

Since 2021, there has been a substantial increase in the frequency of occurrence of strong gusts of wind, which is evident in the graph in this figure, where there was an increase in all magnitude ranges of wind gusts analyzed, showing a challenging scenario for the coming years .

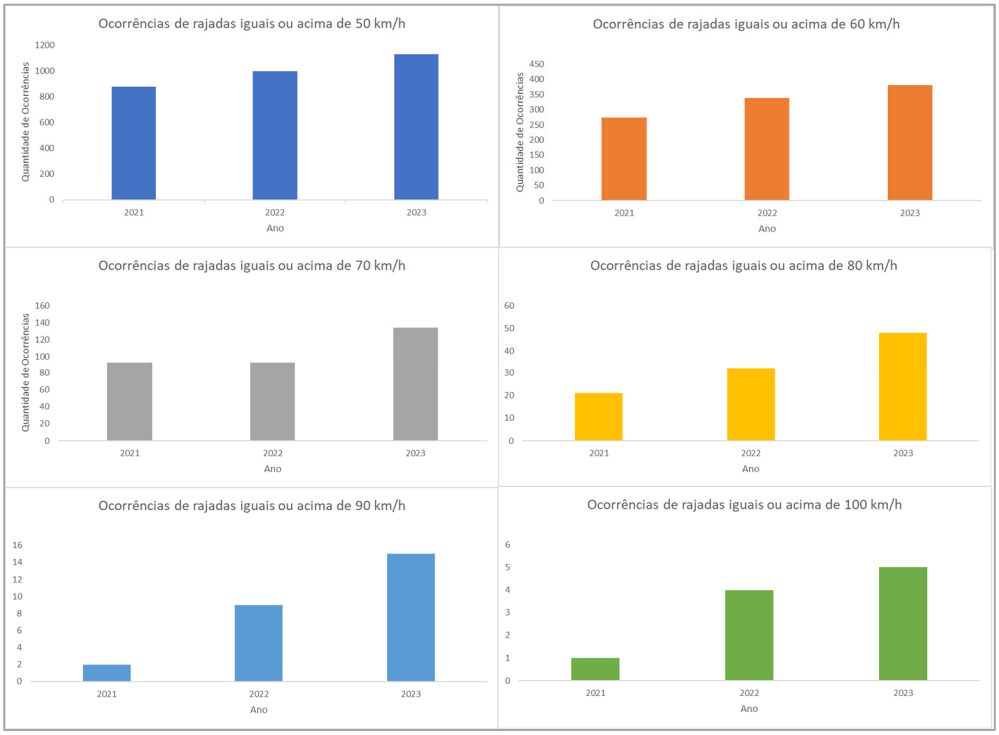
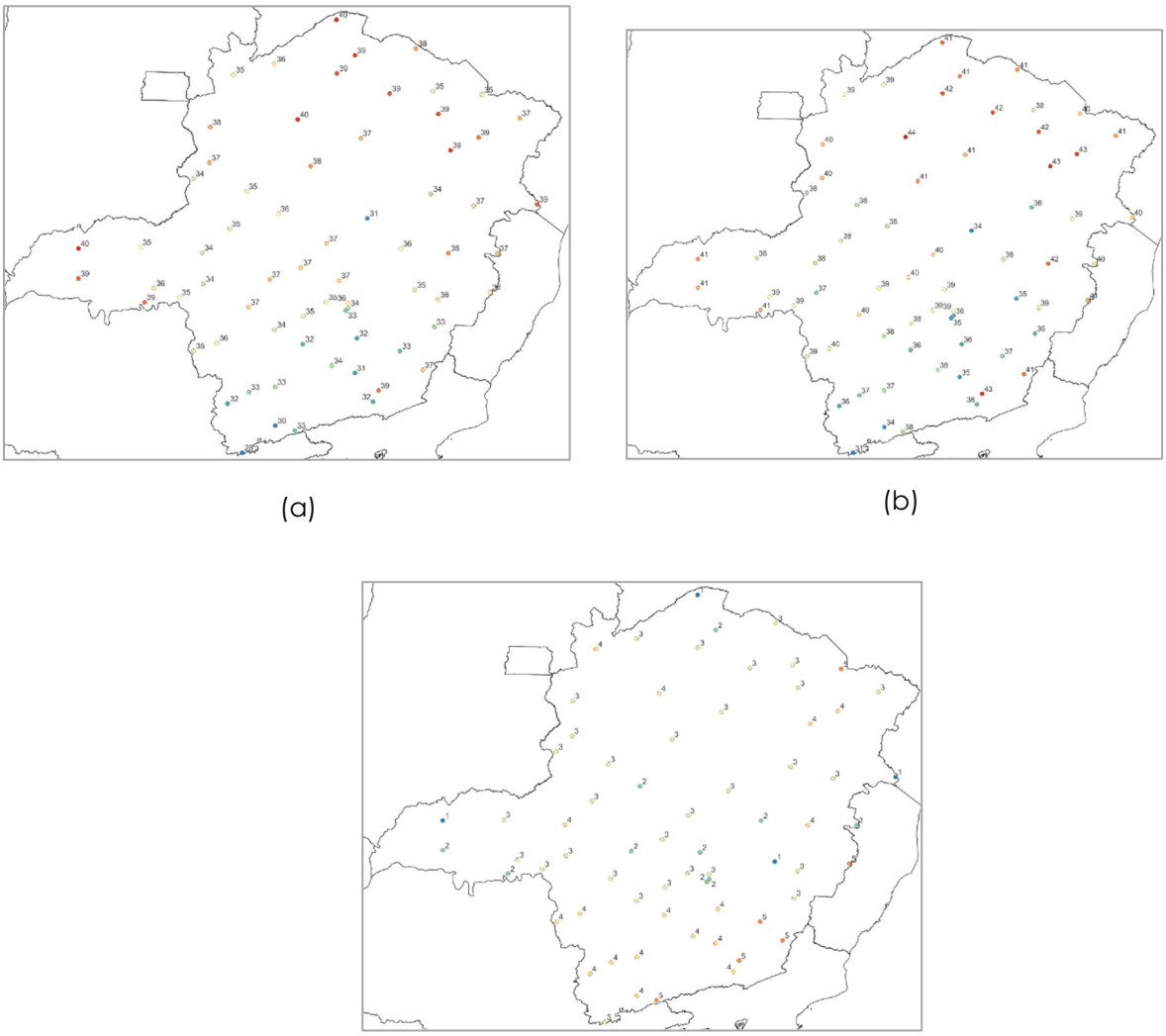


Figure 4 – Number of occurrences for different maximum daily gust values.
Source: Adapted by Cemig from data of INMET.

Temperature

Figure 10 shows the absolute maximum temperature values recorded in 2022 and 2023, as well as the difference between them, obtained from data from stations of INMET. In these records it is possible to see that several stations, especially in the North and Triângulo Mineiro, presented values above 40°C, and that a considerable number of the others approached this value. Another point of note is that several stations recorded an increase of 4 to 5 degrees between 2022 and 2023.



(a) (b)

(c)

Figure 10 - Absolute maximum temperature (°C) recorded in 2022 (a), 2023 (b) and the difference between the two years (c).Source: INMET

Lightning

Another indicator of the increase in extreme meteorological events is the large increase in lightning detected by the National Integrated Atmospheric Discharge Network (RINDAT), which can be seen by comparing the data in

and **Erro! Fonte de referência não encontrada.**2. On this map, it is possible to see a substantial increase in all regions, but with emphasis on the Triângulo Mineiro, Zona da Mata, Central and Northwest regions of Minas, regions that concentrate the majority of the population of Minas.

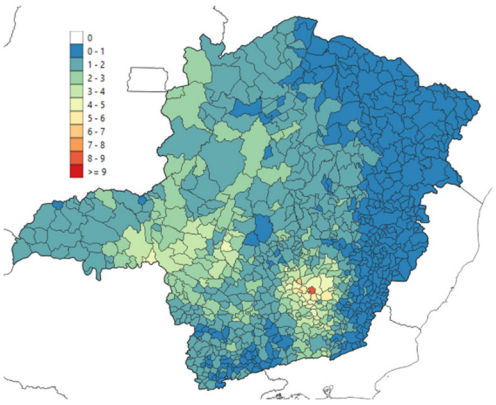


Figure 11 – Discharge density (Radius/km2) by municipality in 2022. Source: RINDAT.

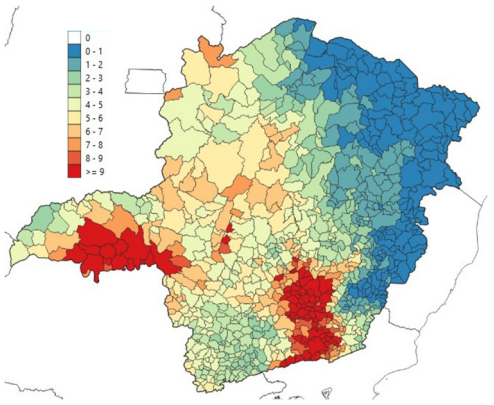


Figure 52 – Discharge density (Radius/km2) by municipality in 2023.

Source: RINDAT

Fires

To analyze the fires that occurred in the state, two sources of data were used, the first being the data made available by the Fire Information for Resource Management System (FIRMS), which is a system developed by NASA that provides data on hot spots obtained by radiometers at onboard satellites, enabling the identification and location of possible fires. The second source refers to data on fire outbreaks detected for Brazil (INPE, 2019).

The year 2023, despite temperature records, including in Minas Gerais, presented a total number of fire outbreaks for the state below the average, which is 9845. According to data from the National Institute for Space Research (INPE), 6502 fires were identified in 2023. Figure 63 shows the annual totals of fire outbreaks detected in Minas Gerais, according to INPE, highlighting the minimum (green bar) and maximum (red bar) already recorded in Minas.

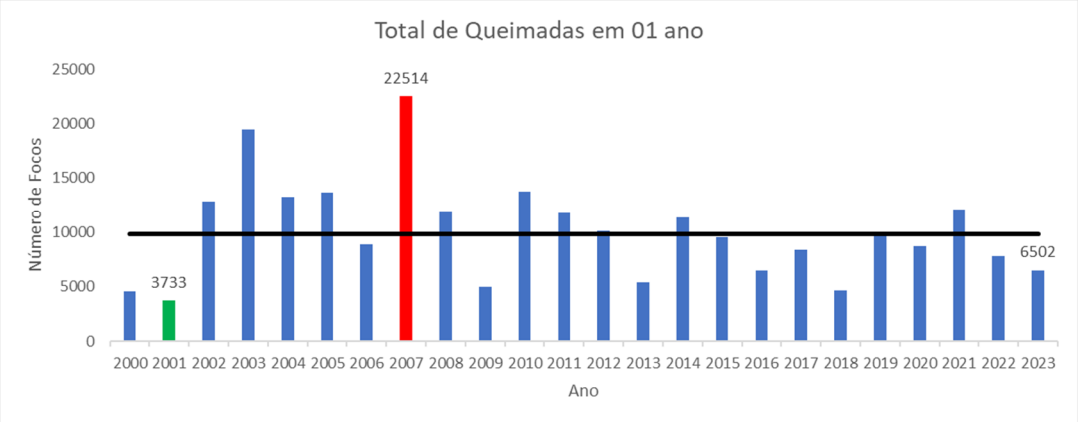


Figure 63 - Total Annual Fires in Minas Gerais. SOURCE: INPE

Figure 14 shows the heat sources detected up to 500 meters from the main transmission and distribution lines of Cemig, totaling 5,770. It is worth noting that these

outbreaks are all those detected by satellites, without distinction of reference to specific fires, that is, the same fire may have been detected by more than one satellite.

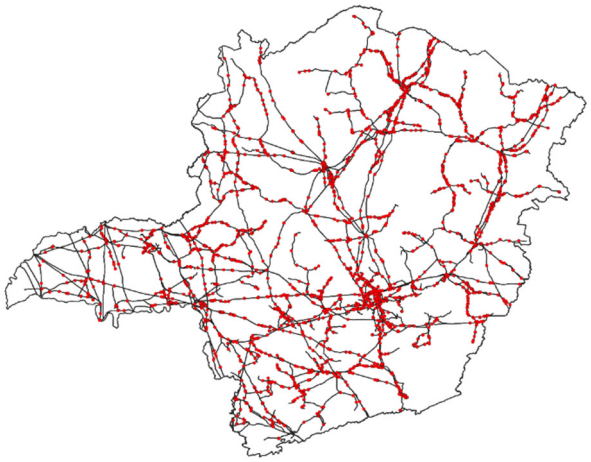


Figure 14 - Hot Spots Detected up to 500 meters from the main Lines of Cemig in 2023.
SOURCE: *NASA*, adapted by Cemig

5.2. Improvement of the Weather Forecast Service

The actions listed in the following items are in the implementation phase, having started in 2023 and expected to be completed between 2024 and 2025.

a) Expansion of the Electrical Discharge detection network

Cemig is part of *Rede Integrada Nacional de Detecção de Descargas Atmosféricas* [National Integrated Discharge Detection Network (RINDAT)], which is a network of specialized sensors and processing centers that allow the detection, in real time, of atmospheric discharges in part of the Brazilian territory. Currently, RINDAT is made up of the following institutions: CEMIG, FURNAS and SIMEPAR.

Currently, the lightning detection network owned by Cemig is made up of 6 sensors (**Erro! Fonte de referência não encontrada.**), but since 2023 it has been in the process of expansion, with the objective of reaching 10 sensors throughout 2024 and, in this way, improving efficiency in ray detection for the area of interest of Cemig. The Manga sensor has already been installed and the Pissarão sensor removed for allocation in Araguari, so the new network will have the distribution seen in Figure 5.

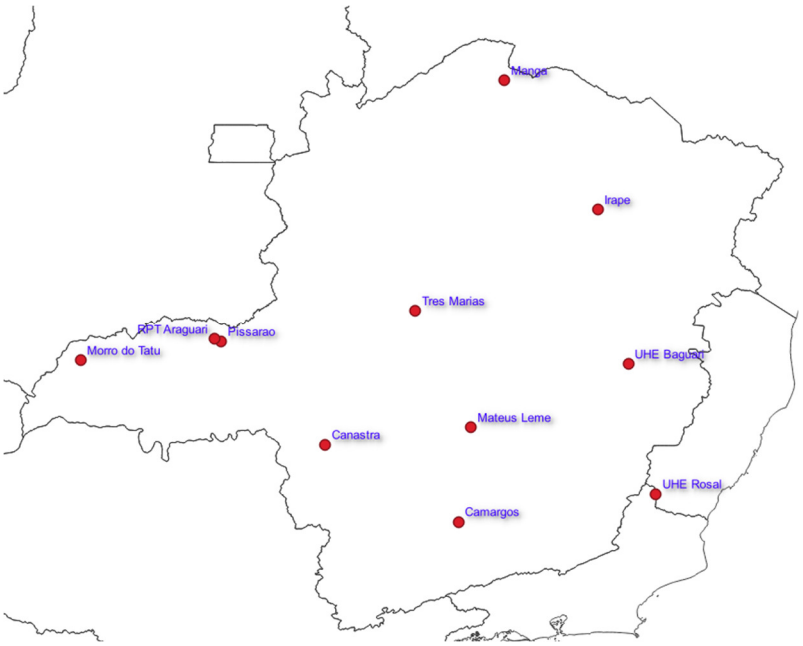


Figure 15 – New Lightning Detection Sensor Network of Cemig (under implementation).
Source: Cemig

b) Expansion of the Anemometric Network

Among the major challenges related to storms, one of them is the low density of meteorological data. As most phenomena related to storms occur between convective and mesoscale scales, public and private networks (including of Cemig) do not yet have the ideal quantity to efficiently monitor these phenomena. With this in mind, the company carried out a careful analysis of the location of all meteorological stations available in Minas Gerais and also the areas most susceptible to storms and decided to expand its anemometric network, acquiring 30 new stations to make up its network. They are currently in the purchasing process and will be distributed according to the map in Figure .

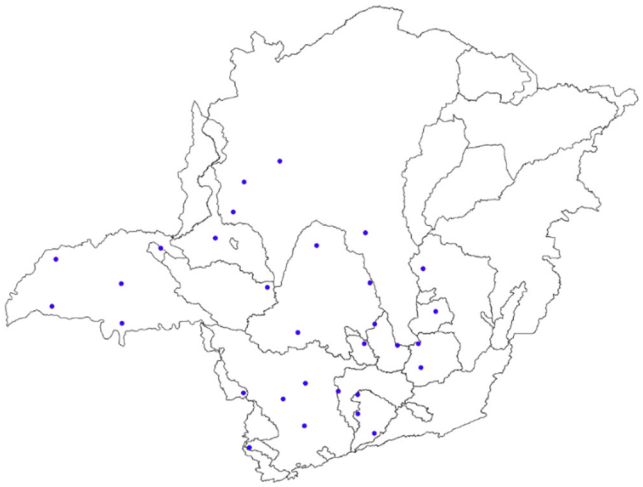


Figure 16 - Location of the 30 new Cemig stations.
Source: Cemig.

c) Sea level rise - Wind Power Plants in Ceará

In addition to atmospheric issues, there is growing concern about rising sea levels in the locations where wind farms of Cemig are installed. Initial analyzes indicate a gradual increase in the coming years, as can be seen in the graph in Figure 7.

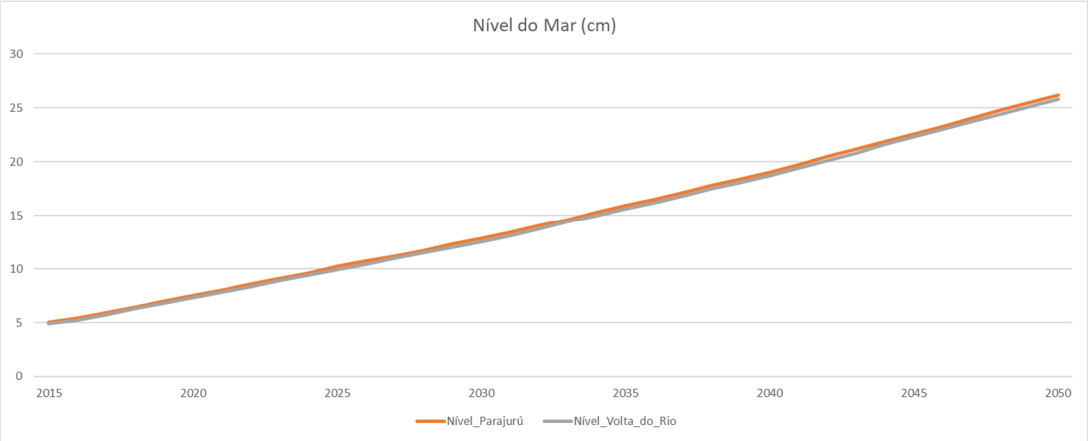


Figure 7 - Projection of average sea level in wind farms of Cemig.
Source: CMIP6

d) Weather Radar Upgrade

The weather radar was acquired in 2011 and provided greater security for the operation of hydroelectric projects and for society. The radar is also strategic for the control and operation of reservoirs of hydroelectric power plants. By anticipating information about the direction of travel and intensity of rainfall, it is possible to estimate the amount of water that will reach the reservoir and adjust its hydraulic operation to minimize the effects of floods on the population and the enterprise.

The radar is installed in Morro do Elefante, municipality of Mateus Leme, Minas Gerais. Its strategic location, at the top of a hill approximately 1270 meters high and with almost no barriers in its area of influence, allows for a wide sweep, leading to improved meteorological safety throughout the Metallurgical Zone and Campo das Vertentes, a good part of the Rio Doce Basin, Zona da Mata and Alto São Francisco. With this equipment it is possible to identify, monitor and estimate the occurrence of precipitation. It is also possible to monitor and identify the type of rain and the occurrence of hail, the intensity of the winds and the speed at which storms move.

However, there was a need to update some of the equipment and computer programs that make up the radar, so Cemig will make an investment of almost 2 million Reais in the modernization of this important monitoring tool throughout 2024.

5.3. Initiatives under Analysis

The following initiatives include ongoing feasibility analyses, with the aim of defining

the means and resources necessary for their implementation, if the analyzes indicate gains from their implementation.

a) New Weather Radar

Considering the importance of the information generated by a weather radar and taking into account the current distribution of data from these equipment in Minas Gerais (Figure 1), the company is considering the acquisition of another radar, to be installed in Triângulo Mineiro (Figure 3). Currently, financial and technical feasibility studies are being carried out to define the acquisition of the equipment (Figure 18).

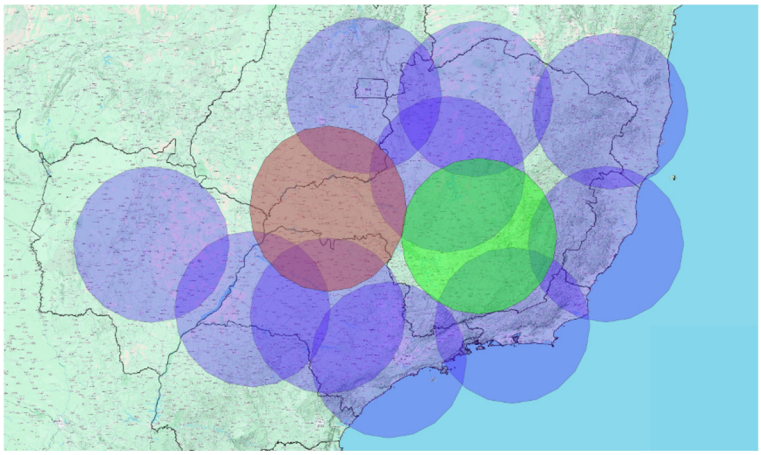


Figure 88 - Possible location of the new Weather radar of Cemig (red circle). Source: Cemig.

b) Artificial Intelligence Applied to Weather Forecasting

Cemig is carrying out a survey of the main initiatives in artificial intelligence applied to weather forecasting together with large companies that are already at the forefront of research in the area. Currently, the efforts of Nvidia, Google and Huawei are promising, and the possibility of acquiring or installing AI Meteorological Models by Cemig is being analyzed.

c) Studies on Monitoring and Predictability of Drought Events

Cemig is evaluating research with the aim of creating hydroclimatic indicators of drought events in the areas of interest of the company, with the aim of incorporating monitoring and forecasting techniques and tools for different time horizons.

d) Heat Waves

Considering the impact that the 2023 heat waves had on transmission and distribution equipment of Cemig, studies will be initiated related to the predictability and warning of events of this nature.

e) Nanosatellites

Cemig has a research project focused on the use of nanosatellites in its activities

and one of the aspects being carried out is its use in monitoring fires, in addition to the development of improvements to the current fire warning system of the company.

6. DEFINITION OF ADAPTATION ACTIONS

Cemig implements several measures to strengthen the resilience of the electricity distribution, transmission and generation system. The adaptation actions by business segment are presented below.

6.1. Adaptation Actions: Distribution

Adaptation actions in energy distribution involve investments to make the network more resilient, capable of resisting extreme weather events, through investments in modernizing infrastructure, implementing monitoring and protection systems against extreme weather events and structuring the coexistence program of trees and hammocks.

a. Network modernization and resilience

With the Distributor Development Plan (PDD), the company invests in the modernization and resilience of the network with a focus on improving the quality of supply, renewing assets, changing the technological level and expanding energy supply capacity, with new facilities and dual power supply circuits for municipal offices.

The project for greater network resilience is structured around three main pillars:

I. Improvement of the electrical system infrastructure through modernization, digitalization and expansion works.

II. Reduction in response time to severe weather events, correction of faults and execution of services, with structured actions for quick and efficient service, in addition to system automation.

III. Robust maintenance program with conservation initiatives for the entire electrical system and advanced predictive maintenance techniques, based on analytical studies and the life cycle of assets.

Among the aforementioned pillars, we highlight:

- **Reclosers:** Reclosers bring great benefits to the continuity of the energy supply, as they restore the electrical system automatically, in the shortest possible time, in the event of interruptions due to transient defects. The increase in the number of these devices installed in our distribution network makes the system safer and more reliable, with immediate effects for the entire population. It is planned to install around 5 thousand additional equipment in the system.

- **Smart Meters: Smart meters** allow you to automatically obtain real-time information about electricity consumption. For the concessionaire, they bring benefits such as remote reading and power outages. For the consumer, with these meters it is possible to know which equipment is consuming the most energy, what are the times of greatest consumption, among other information, allowing conscious energy consumption. It is planned to replace more than one million obsolete meters and install another 1.25 million smart meters, in addition to the necessary investments in telecommunications.
- **Team Preparation:** More teams to provide emergency assistance will allow Cemig to reduce the average recovery time in the event of failures in the electrical system or power outage.
- **Maintenance Resources:** Maintenance with a budget 15% higher than 2023 (almost 900 million), Cemig will carry out inspections on more than 140 thousand km of its energy network, checking operating and safety conditions, and will prune approximately 600 thousand trees in urban areas (increase of 6%) and will mow more than 36 thousand km of strips below its rural networks (increase of 21%) minimizing the possibility of problems with vegetation.
- **Double Feeding of Municipalities:** By 2027, it will be implemented dual power supply for all municipal offices in its concession area with alternative power supply options in the event of a failure that leads to the blockage of a circuit. In 2024, Cemig will guarantee double supply for another 15 municipalities, reaching 91% of cities in its concession area with at least two distinct sources of supply.

b. Urban Forestry

Structuring the Tree and Energy Networks Coexistence Program covering the following initiatives:

- Inspection of urban vegetation by arborists to diagnose tree health;
- Replacement of trees unsuitable for the network;
- Removal of trees at risk of falling;
- Appropriate disposal of waste (prioritization of agricultural use);
- Donation of seedlings/support for the development of nurseries;
- Preparing agreements with local authorities to formalize the carrying out of pruning and define the flow for replacing trees that pose a risk to the electrical power system (SEP);

c. Weather Forecast Tools used in distribution:

- Own meteorological station network;
- Dual polarization C-band weather radar;
- Network of sensors for detecting atmospheric electrical discharges;
- Satellite image reception station;

- System for issuing meteorological alerts;
- Fire monitoring, forecasting and warning system;
- Climate change monitoring system.

6.2. Adaptation Actions: Transmission

Transmission adaptation actions consist of updating contingency plans, constant training of operation and maintenance (O&M) teams, acquisition of emergency structures and optimization of service logistics for all teams, digitalization of airline assets in an environment geospatial, modernization of Line inspection equipment and tools.

a. Update of Contingency Plans:

Investments in modernizing these plans, incorporating new technologies such as:

- **Technology GIS:** It allows for a precise and detailed geospatial analysis of where our infrastructure is located, facilitating the identification of risk areas and strategic decision-making in emergencies.
- **Emergency Structures – triangular emergency towers (TET):** They provide quick and efficient solutions for the reconstruction of damaged transmission lines, ensuring the rapid resumption of energy supply.
- **Communication Systems for Broadband Internet:** They ensure uninterrupted communication during weather events, enabling remote monitoring of infrastructure, coordination of repair teams and fast and effective communication with customers.

Remarks:
The same tools as in item "c" of section 5.4 apply to energy transmission.

6.3. Adaptation Actions: Generation

Faced with the challenges posed by climate change and the growing need to diversify the energy matrix, the company is intensifying its investments in solar and wind energy and implementing measures to mitigate the impacts of severe weather events.

a. Effective Management of Hydroelectric Reservoirs:

- **Reservoir monitoring:** The company rigorously monitors river levels and flows, allowing the early identification of risk situations and the taking of preventive measures to avoid flooding and other negative impacts. This practice guar-

antees the safety of dams, the protection of riverside communities and the optimization of hydroelectric energy generation.

- **Weather Forecast:** Cemig has a robust forecasting system using the most modern meteorological models in the world to guarantee the most efficient management of its reservoirs and maximize the hydroelectric generation of the company, with the lowest possible risk. Considering the safety of new enterprises of Cemig in wind and solar sources, and given the possible risks to infrastructure and personnel, Cemig is expanding the scope of weather and fire alerts to include these new assets, thus ensuring continuity and efficiency in generation power.

- **Hydrological Forecast:** To adapt to the climate change scenario, where extreme events (droughts and floods) are becoming more frequent and intense, Cemig has invested in tools that allow it to work with probabilistic forecasts, using various sources of observed precipitation and flow data. and meteorological forecast models to feed hydrological flow forecast models. With the integrative system FEWS-Cemig, we are able to work with a huge number of forecast scenarios and evaluate the consequences that these several scenarios can bring to downstream enterprises and communities. Thus, if events have changed the frequency of occurrence, we are able to apply statistical techniques to adopt in the analyses, the scenarios that best suit the new climate reality. In this regard, we minimize the risks for the businesses and the affected community, acting preventively in response to alerts.

b. Transparent Communication and Community Engagement:

- **Open dialogue:** Cemig maintains an open and transparent communication channel with communities affected by the operations of its reservoirs. The company provides up-to-date information on reservoir levels, river flows and safety measures in place, promoting community confidence and participation in the management of water resources.

- **Digital tools:** The company provides the Prox app, which allows the population to monitor information on the levels and flows of rivers and reservoirs in real time. This initiative facilitates access to information, enables the community to actively participate and promotes transparency in the management of water resources.

c. Strategic Partnerships:

- **Partnership with public authorities:** Cemig works together with civil defense authorities, the Fire Department, local authorities and other relevant bodies to ensure the safety of the population in risky situations caused by weather events. This partnership shows the commitment to public safety and protecting communities.

- **Participation in river basin committees:** Cemig actively works with river basin committees, contributing to the participatory management of water re-

sources and promoting sustainable development in the regions. This participation demonstrates the commitment of the company to socio-environmental responsibility and to building a more sustainable future for everyone.

d. Investments in Renewable Energy:

- **Expansion of solar and wind generation**: Cemig intensifies its investments in the construction of solar and wind plants, seeking to reduce its dependence on hydroelectric generation in the long term and make the most of the complementarity that exists in a portfolio of renewable sources.

6.4. Attachment: Table of Adaptation Actions

Table 1: Actions to adapt to physical risk by business activity				
Physical Risk	Business Activity	Potential impact on the business	Actions Implemented until 2023	Actions planned for the next 5 years
Temperature increase	Transmission/Distribution	- Increased stress on equipment, leading to damage and reduced useful life, such as transformers. - Increased evaporation and consequent decrease in water resources and increased probability of fires.	- Temperature monitoring at local and large scale. - Identification of areas with high observed risk. - Pilot Project in the Betim 6 system, 345 kV on the dynamic capacity of LTs through Digital Twins	- Improvements to the weather forecast system. - Modernization of distribution lines. - Improved heat wave forecasting.
Increase in wind speed	Transmission/Distribution	- Damage to structures supporting overhead power lines	- Monitoring weather events and using weather alerts as a way of preparing the operation team. - Training of Contingency Plan for teams with adjustments and improvements to the last review carried out in contingency plans.	- Technical training with the O&M teams to rebuild the Lines. - Acquisition of emergency structures and optimization of service logistics for all transmission teams. - Digitalization of Airline assets in a geospatial environment, modernization of Line inspection equipment and tools.

Table 1: Actions to adapt to physical risk by business activity				
Physical Risk	Business Activity	Potential impact on the business	Actions Implemented until 2023	Actions planned for the next 5 years
			- Technical meeting on practical applications of Contingency Plans with other companies in Brazil (CTEEP, TAESA).	- Development of Projects of R&D Aneel to measure the impact of climate change on airline assets. - Holding technical meetings on new technologies applicable to contingency plans in the energy transmission industry. - Development of new engineering solutions in the national and international market of the electrical industry. - Analyze wind maps from recent years to identify the locations with the highest incidence of critical winds that could compromise the Air Lines' structures.
Reduction in water availability	Hydroelectric generation	- Reduction in water generation	- Investments in new sources of energy generation (solar and wind)	- Investments in new sources of energy generation (solar and wind). - Identify areas most susceptible to reduced water availability through analysis of future climate scenarios.
Intense rains	Transmission/Distribution/Generation	- Discontinuity of electricity supply service. - Damage to reservoir structures, in-	- Modernization of distribution lines: automation of reclosers, digitalization and modernization of substations.	- Carry out constant technical training with the O&M teams to rebuild the Lines - Acquisition of emergency structures and optimization of service logistics for all transmission teams.

Table 1: Actions to adapt to physical risk by business activity				
Physical Risk	Business Activity	Potential impact on the business	Actions Implemented until 2023	Actions planned for the next 5 years
		cluding the risk of collapse.	- Training of Contingency Plan for teams - including adjustments and improvements identified in the last review of these plans. - Technical meeting on practical applications of Contingency Plans from other companies in Brazil (Cemig D, CTEEP, TAESA, Seccional and Imagem geosistemas). - Hydrometeorological Forecast System for all plants.	- Digitalization of Airline assets in a geospatial environment, modernization of Line inspection equipment and tools. - Development of Projects of R&D Aneel to measure the impact of climate change on airline assets. - Search for innovative engineering solutions available on the national and international market, which contribute to increasing the resilience of the electricity industry. - Holding new technical meetings on new technologies applicable to contingency plans in the energy transmission industry. - Implement new versions of meteorological models. In addition to the calibration/recalibration of hydrological flow forecast models.
Fires	Transmission/Distribution	- Damage to structures supporting overhead power lines	- Mechanized strip cleaning. - Development of the fire monitoring system, online platform	- Carry out mechanized strip cleaning, and improve the fire monitoring system, online platform www.apagaofogo.eco.br.

Table 1: Actions to adapt to physical risk by business activity				
Physical Risk	Business Activi-ty	Potential impact on the business	Actions Implemented until 2023	Actions planned for the next 5 years
			www.apagaofogo.eco.br.	