

CHAPTER

19



Task Force on Climate Related Financial Disclosures



The following section addresses Zain’s response to the Task Force on Climate-Related Financial Disclosures (TCFD) in alignment with the guidance of the framework. The section represents a detailed response on Zain’s approach towards TCFD’s recommendations. The information covers the period January to December 2023.

Zain’s Climate Action Journey



GOVERNANCE

A. Describe the Board's oversight of climate-related risks and opportunities

The Vice-Chairman of Zain Group's Board of Directors (BOD), who is also the CEO of the company, is responsible for setting up the strategic direction for the Company. He is also responsible for the implementation of the company's strategy, which includes climate change-related adaptation and mitigation plans. Zain performs an annual review of its five-year business plan to align future investments with its strategic direction set by the Board. The revised five-year business plans and the annual budgets are consolidated and submitted to the Board for approval at the end of each year. These plans and budgets include capex requirements for the implementation of energy- saving initiatives that would help achieve the company emissions' targets.

The Board reviews and approves the business plans and budgets, which become the reference for the execution of the company's strategy. The Board, through the Group CEO, monitors the implementation of all initiatives including those related to climate change mitigation and adaptation. The Group CEO has given the responsibility of management of the day-to-day climate-related issues to the Group Chief Sustainability (CSO) and Group Chief Technology Officers (CTO) who co-chair the Climate Action Committee (CAC), and whose role is to make sure that the approved climate change mitigation and adaptation initiatives are properly implemented. The CSO & CTO report directly to the Vice-Chairman and Group CEO.

The CAC is a cross-functional committee appointed following an internal consultation process, with the purpose of providing the Board with oversight on climate-related matters. Through the CSO and CTO, the CAC provides recommendations to the

Board on how to manage climate-related risks and opportunities. The Board reviews and approves the recommendations from the CAC, and these approvals are reflected by the CAC in the company strategy for identifying, assessing, and managing climate-related risks and opportunities.

The CAC meets quarterly to discuss climate-related risks and opportunities that are immediately reported to the Board through the Group CEO, who provides recommendations and guidance. The reports to the Board by the CAC are done during regular quarterly Board meetings whereby all management issues are also discussed. Board decisions on reported climate-related issues are made as frequently as needed, with the quarterly reviews focusing on ensuring that the company is meeting its climate specific key performance indicators (KPIs) in terms of greenhouse gas (GHG) emission levels, fuel and electricity consumption, waste management, and public awareness on climate change. By monitoring such KPIs on a quarterly basis, the Board can assess, evaluate, and support the company's performance with regards to climate change-related issues. In addition, the Board has a clearer viewpoint of the progress the company is making in this regard.

B. Describe management's role in assessing and managing climate-related risks and opportunities.

The Board, through the Group CEO, sets the direction that shapes the strategy of the company for addressing climate change. All management issues including climate-related matters such as the company's CO₂ emission reduction targets status, risks associated with ambient temperature increase, the possible changes in precipitation pattern, as well as the transition to new technologies due to climate

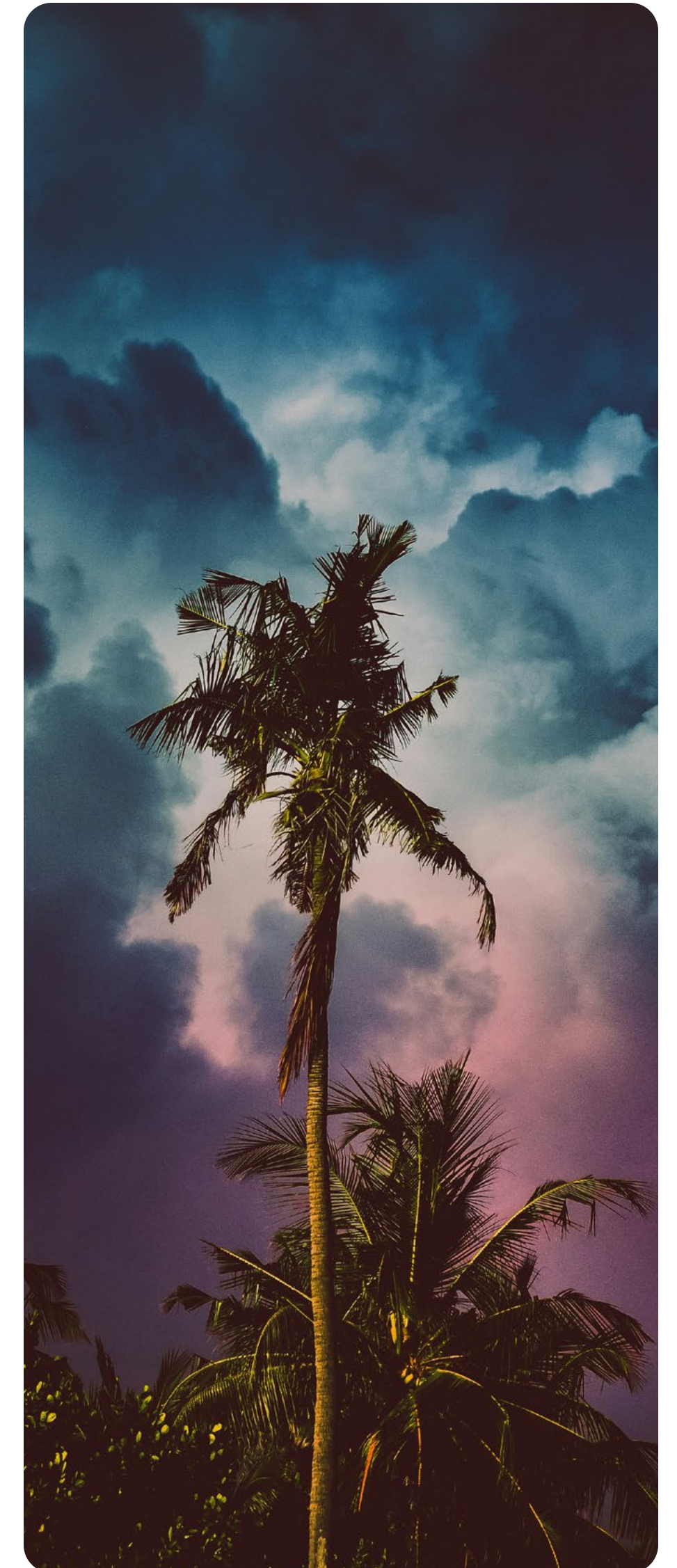
change, are the responsibility of the Group CEO, who delegates the day-to-day operations and control of climate-related issues to the CAC co-chaired by the CSO and the CTO.

Below is a summary of the roles and responsibilities of each major management function within the CAC:

- i. CFO: Reviews climate-related initiatives business cases and approves budgets. Reviews decisions about investments in new technology such as the use of renewable energy and the deployment of energy efficient solutions.
- ii. CTO: Oversees the selection, testing, and implementation of new technologies within the company. To ensure that transition risks and opportunities such as the deployment of energy efficient solutions are properly managed, the CTO's contribution is key. He is responsible for energy efficiency improvements and energy use. He also measures and reports energy use against targets. The CTO sets emissions-related KPIs and monitors the implementation of low emissions solutions. The CTO co-chairs the CAC with the CSO. Both CTO and CSO provide an oversight to the Board for climate-related issues and ensure that recommendations from the Board are considered in the company's strategy for addressing climate-related issues.
- iii. CSO: This executive has a central position with respect to Zain's climate agenda. The CSO strategically drives the company's net-zero ambition by ensuring that all value chain emissions are properly addressed through a framework that run from the emissions boundary to the scopes; the timeline; and the engagement with suppliers and local authorities. The CSO has a day-to-day

responsibility for the implementation and reporting of all climate-related issues within the company. She provides guidance and recommendations for climate change and sustainability strategy, monitors climate-related KPIs (emissions, renewable energy objectives, climate awareness and engagement), and climate-related incentives. The CSO co-chairs the CAC with the CTO. Both CSO and CTO provide an oversight to the Board for climate-related issues and ensure that recommendations from the Board are considered in the company's strategy for addressing climate-related issues.

- iv. Chief Risks Officer (CRO): The CRO integrates climate-related risks and opportunities into a Group-wide risks & opportunities identification and management process to ensure that climate-related risks and opportunities are properly managed.
- The CRO identifies and quantifies climate change risks and opportunities, performs scenario analysis, prepares mitigation plans for the identified climate change risks, monitors those risks, and ensures proper response whenever the risks materialize.
- The CRO ranks the risks on an annual basis to prioritize them and provides recommendations for mitigation and adaptation.
- On a quarterly basis, the CRO reports the status of all the identified risks, including climate change-related risks to the Board Risk Committee (BRC).
- The BRC reviews the risks and sets priorities for mitigation and adaptation when required.
- Those priorities are part of the recommendations that the Board provides to the CAC through the Vice-Chairman and Group CEO.



STRATEGY

The information included below reflects figures and analysis for the year 2023.

A. Describe the climate-related risks and opportunities the organization has identified over the short-, medium-, and long-term.

	From (years)	To (years)	Comment
Short-term	1	3	This definition follows our business planning process. Our short-term business plan considers this period for the operational risks arising due to climate change events that need to be addressed to enhance our services to remain competitive in our markets. The normal lifetime of some of our assets such as diesel generators used on off -grid sites is approximately three years. Hence, we consider three years to be a reasonable period for assessing the impact of physical risks on such assets. From a financial and strategic perspective, our short-term horizon is focused on development and achievement of revenue forecasts, cost targets, and profitability targets based on the existing consumer and enterprise business portfolio.
Medium-term	3	5	Our medium-term business planning process uses a five-year horizon for the operational risks arising due to climate change events. This period is also in line with the lifetime of other assets such as deep cycling batteries, which are used to mitigate the risks associated with some of the physical and transition risks. Our five-year business plan is prepared every year while monitoring the progress of the previous year's five-year plan. The business plan is updated with actuals of the first year and revised forecast for four years, subsequently an incremental year is added.
Long-term	5	15	Our long-term business financial planning process is planned over five and 15 years to align with our climate change goals. This is the time frame that gathers a big portion of the company assets such as the cooling systems, the DC power systems, the radio systems, and other active equipment in transmission and core sections. The impact of physical risks on such assets is evaluated and mitigated to ensure that the company remains competitive in its markets of operation. From a strategic perspective, our business plan entails the long-term horizon and is focused on forecast of cashflows and revenue potential from the initiatives that we identify as part of our organizational strategy.

RISKS IDENTIFIED

TRANSITION RISKS:
INCREASE IN ENERGY TARIFFS

Energy costs represent 30-40% of our sites' total operating costs. In 2023 the energy cost for offices, data centers, and base station sites amounted to USD 180.5 million, decreased by 12% year-on-year, which amounted to USD 198.7 million in 2022.

The consumption data, namely fuel and electricity volumes, and the associated per unit costs are sourced from Zain operations across its footprint (opcos). Further, we synchronize with opcos in the design and implementation of green power solutions as a mitigation effort to identified risks.

Our total energy consumption in 2023 was 1.157 million MWh and 128.15 million liters of diesel, down from 142.92 million liters consumed in 2022.

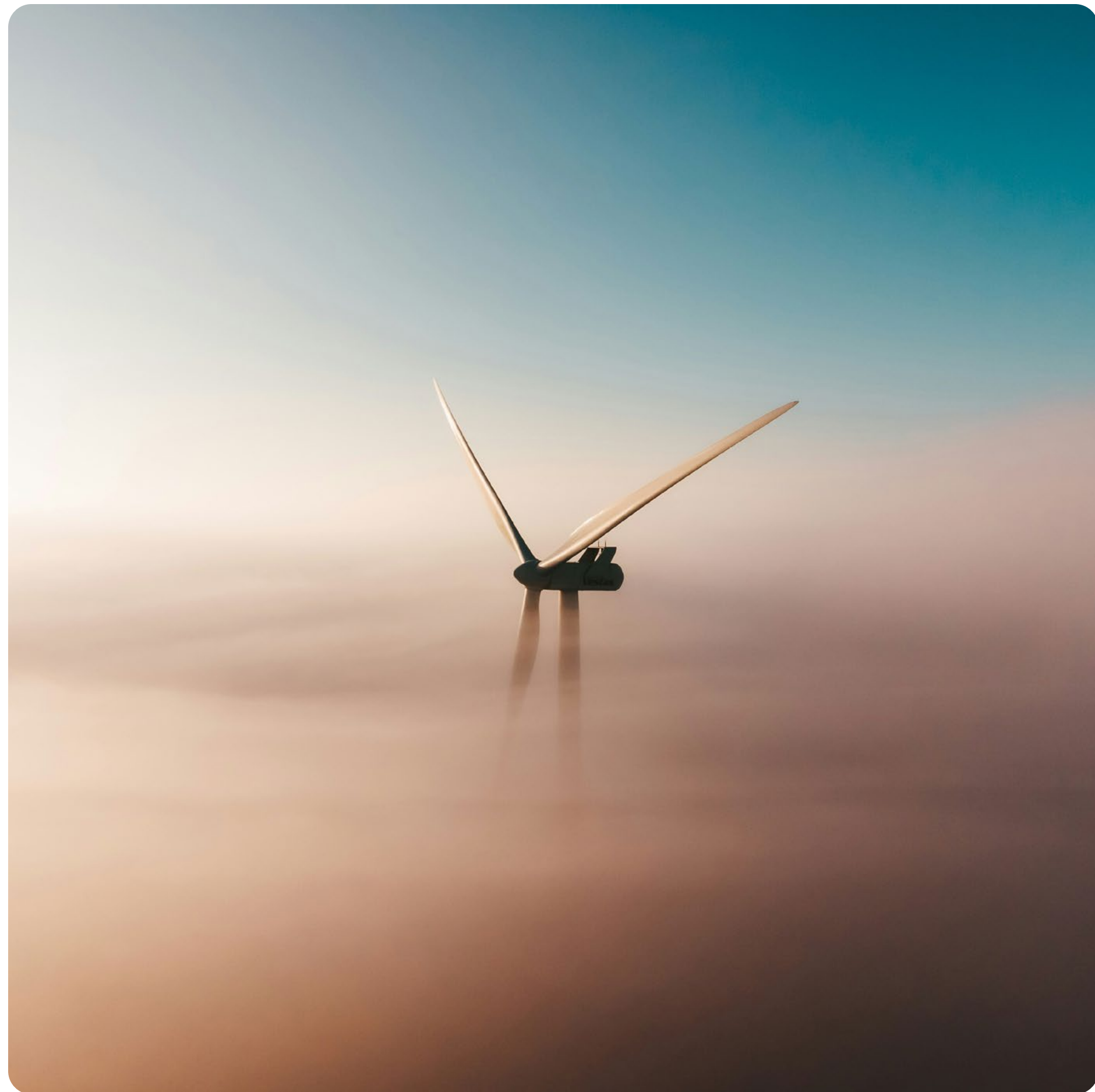
With our long-range planning process of 15 years, we estimated that energy operating costs could increase by over 72% to USD 310.18 million as per SSP2 4.5 scenario for 2039 and by 251% to USD 454.08 million as per SSP 5 8.5 scenario. The estimated figures factor in the underlying per unit grid power and diesel fuel hikes as per macroeconomic indicators.

As energy consumption features across multiple facilities (offices, stores, branches, technical sites), we are exploring opportunities to deploy green power solutions, smaller size shelters, outdoor cabinets, and use smaller diesel generators.

CHRONIC PHYSICAL:
RISE IN MEAN TEMPERATURE

In the MENA region, we experience extremely hot weather temperatures, which led to energy consumption increases in 2023. According to multiple studies, including the projections of the World Bank Group (WBG), the MENA region will continue to face increasingly high temperatures for longer periods under current scenarios (SSP2 4.5 - means business as usual).

As an example, in 2022, the cost for cooling sites, data centers, and office premises in KSA was USD 23.04 million, which rose 17.7% to USD 27.13 million in 2023 due to an increase in diesel prices by 90%. Although diesel rose by 90% per liter YoY, the rise was slightly offset by a decrease in consumption of diesel.



OPPORTUNITIES IDENTIFIED:

RETURNS ON INVESTMENT IN LOW EMISSION TECHNOLOGY

We noticed that we could achieve some savings in energy consumption by reducing our dependency on fossil fuels, which would lead to CO₂ emissions and OpEx reductions. The driver for this initiative was the erratic availability and pricing of diesel in our markets, especially in Sudan and South Sudan.

According to the report, Tracking SDG 7: The Energy Progress Report (2023), just 8% of the population in South Sudan has access to electricity. This indicates that more than 20 million people are not connected to the national electricity grid, hence the need to have continuous availability of diesel fuel at cell sites and data centers.

For South Sudan, as per IEEE spectrum, with an estimated only 1% of the country's 11.2 million population connected to the nation's electricity power grid (and most of those are in the capital, Juba and the two other main cities of Wau and Malakal), those who are lucky enough to have mains electricity have an infrequent service and forced power outages. The availability of a reliable universal grid supply is essential for economic growth and the alleviation of poverty. While the South Sudanese government's desire to modernize and extend on-grid coverage and introduce additional generation capacity is commendable, until such time as a stable political and conflict-free environment exists in the country, the current poor state of the nation's mains utility supply is likely to persist for the foreseeable future.

To capitalize on this, we deployed green power alternatives such as battery-hybrid solutions, solar

systems, outdoor equipment, connection of base station sites to the grid, and undertook site-sharing with other mobile network operators. The strategy followed by Zain is to transform the identified physical and transition risks into opportunities by responding in a way that helps reduce our operating costs with payback periods that do not exceed six years. The implementation of energy efficient solutions has led to a reduction of our opex of USD 1.8 million in 2023. The benefits of such initiatives will continue for at least five more years (during the lifetime of the equipment that was deployed). The initiatives have also helped Zain reduce its CO₂ emission by 11,107 metric tons in 2023.

The opportunity refers to Zain's broader operations. We highlighted Sudan and South Sudan as these opcos are the major beneficiaries of this opportunity due to grid availability and the high cost of diesel due to the devaluation of the local currencies.

B. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

The success of risk management will depend on the effectiveness of the management framework providing the foundations and arrangements that will embed it throughout the organization at all levels. Our risk management framework operates at varying levels and within specific contexts of the organization. The framework ensures that information is adequately reported and used as a basis for decision-making and accountability at all relevant organizational levels.

The Group Enterprise Risk Management team develops an annual risk calendar plan to include all Zain opcos for the purpose of scheduling periodic

risk assessment exercises. During the assessment for a particular opco, the leadership of commercial and corporate divisions, and technology, define their risk attitude, including climate-change risks, which may affect their businesses. Risk severity is reviewed to ensure alignment and acceptability.

As per our risk management methodology, our risk assessment impact matrix has a five-point scale based on financial indicators, namely revenue, capex intensity, and operational EBITDA margins. The highest impact grading is "extreme," which would be applicable for an event when its financial impact exceeds the most significant thresholds. For substantive financial impact, we identified thresholds to determine if a risk has the potential to significantly affect the company and needs to be reported.

Our risk management corporate policy defines an acceptable risk as the degree of exposure that the company is ready to accept in as much as it allows the creation of value, achieving the right balance between growth, performance, and risk. This threshold is considered when reviewing our strategy to ensure we operate within the established risk appetite.

The following are the thresholds for substantive or high financial impact as per our risk matrix:

Whenever there is a risk that results in an impact on our gross revenue of more than 4% of opco's annual revenue.

When capex intensity planned for the fiscal year exceeds 10% (where capex intensity is the ratio between capex to gross income).

When the impact of the risk event exceeds EBITDA margins of the opcos by more than 3%.



C. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.

Climate-related Scenario	Scenario Analysis Coverage	Parameters, assumptions, analytical choices
Transition Scenario IEA 450	Company-wide	Temperature alignment: We explored changes in energy costs under one of the IEA scenarios namely the IEA 450, which is aligned with temperature increases to or below 2°C compared to pre-industrial levels. Parameters, assumptions, and analytical methods increases in energy tariffs will lead to an increase in energy costs for the operation of our telecom/IT sites. During the assessment of climate-related risks for our core site, offices, and base station sites, we identified that there could be an increase in opex due to tariff hikes for fuels and grid power units in our areas of operation. Energy prices are subsidized in our oil rich operations in Kuwait, Saudi Arabia, and Bahrain. Our biggest operating costs are energy-related to cater for cooling our telecom and IT systems, which require temperatures of 25°C, which is much lower than the average ambient temperatures in our markets. Our total energy consumption in 2023 was 1162 MWh, up 4% YoY. We consumed 133.4 million liters of diesel in 2022, down 4% YoY. Overall energy costs including diesel in 2023 was USD 180 million. With our long-range planning process of 15 years, we estimate that energy operating costs could increase by over 72% to USD 310 million. The estimated figures factor in the underlying per unit grid power and diesel fuel hikes as per macroeconomic indicators due to inflation and gradual reduction of subsidies. The estimates are based on consumption in 2022. The increase in costs is primarily due to two main variables: 1. A rise in energy tariffs due to inflation and reversal of subsidies in some operations, and 2. A rise in mean temperature. We aligned the estimated impact to our risk matrix to classify the risk profile. In 2022, EBITDA amounted to USD 2.209 billion, and as per our climate risk analysis, the delta increases due to SSP 2 4.5 2039 scenario for 2039 on account of increased grid and fuel costs is estimated at USD 129.6 million. We chose the RCP 8.5 scenario to estimate the likely outcome if the governments in our operating countries do not make concerted efforts to cut GHG emissions. We took the net present value with a discount rate of 4% to arrive at USD 69 million, which when compared to 2022 EBITDA will be graded in the high category due to a substantive financial impact of 3.1% to 2022 EBITDA figure.
Physical Climate Scenarios RCP 8.5	Company-wide	This business-as-usual scenario assumes temperature increases by 2°C by 2040 and 3°C by 2059 compared to pre-industrial level. Parameters, assumptions, and analytical methods: Zain relies on World Bank Group (WBG) forecasts, that use data from the CMIP5 models included in the IPCC - AR5 as a reference to help project climate change states for the entire company. Two-time horizons were considered: 2020 – 2039 and 2040 – 2059. These two horizons are the default horizons proposed by the WBG using the CMIP5 models for climate change projections. Within these horizons, and considering a linear progression, a 15-year climate change analysis from 2020 to 2035 (our main time horizon) was derived to align with our corporate risk management long-term timescale and the life cycle of our assets. We explore both physical and transition risks for our base stations, data centers, and office buildings. As per RCP 8.5 Ensemble, there will be an average temperature increase of 2°C by 2035. A vulnerability assessment of our operations revealed that some of our assets in our seven opcos will consume more power to maintain the same level of temperature because of the positive correlation between external temperatures and energy consumption. We estimate the rise in mean temperature will have an impact of adding USD 11.68 million on cooling energy costs, and an anticipated increase of 72% on energy costs, an impact of USD 310 million by SSP 2 4.5 2039. After mapping these costs to our corporate risk identification and management matrix, the rise in mean temperature was categorized as high risk for our business. We also found that there will be some changes in the precipitation pattern from 2022 to 2035 with some consequences felt in 2022. Our operations in Sudan and South Sudan have witnessed unprecedented flooding resulting in fiber cuts in Sudan and delayed service rollout in South Sudan. Using 2020 as a baseline, we established a relationship between the level of precipitation and revenue loss. Flooding was found to be a medium risk for our businesses in Sudan and South Sudan. Hence, the change in precipitation became one of our physical risks. To reduce the energy consumption due to increased cooling requirements, a set of initiatives have developed under one of our strategic pillars which is, “operational effectiveness.” These initiatives helped reduce 11,107 metric tons of CO₂ emission in 2023.
Physical Climate Scenarios RCP 1.9	Company-wide	Temperature alignment: Our ambition is to be net-zero by 2050. To understand the impact of such a move on our business, we looked to uncover associated costs. This analysis is based on RCP 1.9 pathway that limits the rise in mean temperature to 1.5°C compared to the pre-industrial era. Parameters, assumptions, and analytical methods: The parameters considered in this analysis are the number of sites, energy consumption per site, and the share of renewable power. We projected our energy consumption based on the number of sites in 2050. We then laid down a set of initiatives ranging from the deployment of hybrid battery solutions, outdoor cabinets, and solar power solutions. While we observed that our energy consumption is likely to increase, the fact that the share of solar-based power increases at a faster rate helps predict substantial reductions in CO₂ emissions. It is assumed that solar plants will be deployed in our operations in Bahrain, Sudan, South Sudan, Kuwait, and Jordan for us to be able to achieve 80 – 90% reduction of CO₂ emissions by 2050. The remaining 10 – 20% of the emissions will be offset through carbon sink and the implementation of carbon capture solutions.

RISK MANAGEMENT

A. Describe the organization's processes for identifying and assessing climate-related risks.

We recognize that climate change poses several physical and transition-related risks for our business.

We identified three risks in line with Task Force on Climate Related Financial Disclosures guidance. We quantified the business impacts of all climate-related risks under each scenario over different time horizons.

Key climate-related risks and opportunities arising include:

Long-term Physical Risk: Rise in mean temperatures that could negatively impact margins and operating costs.

Short-term Physical Risks: Increase in frequency and impact of extreme weather events to disrupt services.

Long-term Transition Risks: Increase in unit economics of energy costs.

Our risk assessment process consists of four steps: Risk identification, analysis, evaluation and treatment: The scope of the risk assessment processes includes all people, processes, and technology within Zain Group and its operating countries.

Risk Identification: Risk owners and the risk management team review the risks specific to the division and identify any emerging issues based on changing market conditions and business dynamics.

Risk Analysis: For the identified risks, likelihood for each is based on the probability of occurrence and the impact severity of the identified consequences.

Risk Evaluation: For the identified risks, the management team assigns risk owners who perform detailed root

cause analysis of their respective risk, and take actionable steps considering the following risk mitigation strategies based on the risk management policy.

Risk Treatment: Mitigation plans are agreed between the opco risk manager and the risk owners. Opco risk managers present the status of current and proposed plans for the approval of opco CEO. Once the mitigation plans are approved by the respective CEOs, risk managers share the risk register with the Group risk management team.

Climate change risks are considered in Zain's risk universe as defined in our Risk Management Policy and included in the company's risk assessment.

RISKS & OPPORTUNITIES IDENTIFICATION & ASSESSMENT

The climate risks and opportunities identification process follow a bottom-up approach by advising opcos to analyze historical and projected data related to physical and transition risks and opportunities.

Risk assessment exercises are conducted annually, yet we identify risks across short-, medium-, and long-term timeframes. Risks arising from climate change impact on operations, and macroeconomic factors are some of the long-term risks in our register.

Risks are quantified based on the likelihood and impact as per the risk management criteria for revenue, EBITDA, and other metrics.

Physical risks: Increase in energy prices due to additional cooling caused by temperature increases.

Each opco monitors the pattern of fuel and electricity consumption and reports to the Group on a quarterly

basis. Fuel and electricity consumption patterns are analyzed to assess variations. In case the energy consumption increases more than 10% quarter-on-quarter, the concerned opcos are required to provide details and justifications for such.

We took the reference of Coupled Model Intercomparison Project, Phase 6 (CMIP6) models included in the IPCC's Fifth Assessment Report (AR5).

Global warming of 1.5°C relative to 1850–1900 would be exceeded during the 21st century under the intermediate, high, and very high GHG emissions scenarios considered in this report (SSP2-4.5, SSP3-7.0 and SSP5-8.5, respectively).

For our analysis, we selected the following SSP scenarios:

SSP2 – 4.5: Middle of the Road
SSP5 – 8.5: Fossil fuel development

We have the taken the following estimations per opco:

SSP5 8.5 2039 and 2050

Kuwait (1.06,2.33), Saudi Arabia (1.1, 2.41), Bahrain (0.99, 2.15), Iraq (1.18, 2.52), Jordan (1.06, 2.3), Sudan (0.9, 2.03), South Sudan (0.68, 1.59).

SSP2 4.5 2039 and 2050

Kuwait (0.98, 1.76), Saudi Arabia (1.02, 1.79), Bahrain (0.86, 1.55), Iraq (1.1, 1.86), Jordan (1.02, 1.71), Sudan (0.86, 1.54), South Sudan (0.65, 1.26).

For each of the above scenarios, we have summarized below the projected temperature increase for our 2039 long-term and 2050 net-zero goals.

Knowing the total cooling energy requirement for the previous year, we can estimate the total energy consumption increases that would result from the impact of that physical risk. When mapped to our risk criteria, this is minor as it is represents approximately 3.1% of our EBITDA.

The risk is said to manifest across all seven countries of our operation, as the underlying energy consumption data is an aggregate from operations.

For mitigation, we continue to deploy outdoor and DC cooling solutions that are more energy efficient than the conventional shelters and cooling solutions. Such energy efficient solutions are part of a list of initiatives developed and included in our company's operational strategy for managing climate issues.

Our guidelines for network deployments mandate that sharing our passive infrastructures with other operators is a first-course action.

To mitigate risks associated with additional energy costs, Zain developed a set of initiatives ranging from infrastructure sharing to the deployment of green power solutions, and the use of smaller size diesel generators.

TRANSITION RISKS: INCREASE IN ENERGY TARIFFS

Energy costs represent 30-40% of our sites' total operating costs. In 2023, the energy cost for offices, data centers and base station sites was USD 180 M, down by 12% compared to 2022.

The consumption data, namely fuel and electricity volumes, and the associated per unit costs are sourced

from the opcos. Further, we synchronize the design and implementation of green power solutions with opcos as mitigation to the identified risks.

Our total energy consumption in 2023 was 1.157 million MWh and 128.5 million liters of diesel, down from 142.9 million liters consumed in 2022.

With our long-range planning process of 15 years, we estimate that energy operating costs could increase by over 72% to USD 310 million as per SSP2 4.5 scenario 2039 and by 251% to USD 454 million as per SSP 5 8.5 scenario 2059. The estimated figures factor in the underlying per unit grid power and diesel fuel hikes as per macroeconomic indicators.

As energy consumption is across multiple facilities (offices, stores, branches, technical sites), we are exploring opportunities to deploy green power solutions, smaller size shelters, deploy outdoor cabinets, and use small size diesel generators.

B. Describe the organization's processes for managing climate-related risks.

We are sharing a case study of a particular climate change risk, its impact, and the mitigation strategies.

RISK 1:

Transition Risk: Increases in energy tariff will lead to an increase of energy costs for the operation of our telecom/IT sites.

During the assessment of climate-related risks for our core site, offices, and base station facilities, we identified that there could be an increase in operational expenditure due to fuel tariff hikes and grid power units in our areas of operations.

Our biggest operating costs are energy-related to cater for cooling requirements for our telecom and IT systems that require temperatures of around 25°C for optimum performance, which is much lower than ambient temperatures in our operations. Our total energy consumption in 2023 was 1.157 million MWh and 128.15 million liters of diesel. The 2023 overall energy cost was USD 180 million.

For the SSP2 – 4.5 2039 scenario, we estimated that energy operating costs could increase by over 72% to USD 310 million. The estimated figures factor in the underlying per unit grid power and diesel fuel hikes as per macroeconomic indicators due to inflation and gradual reduction of subsidies.

The increase in costs is primarily due to:

1. Rise in energy tariffs due to inflation
2. Rise in mean temperatures

We estimate the increase in tariffs per liter of diesel and per kWh of grid power as per inflation rates in each of our seven operations due to varying macroeconomic profiles.

MITIGATION

Our guidelines for network deployment mandate that sharing our passive infrastructures with other operators is the first course action before exploring other options. Generally, site sharing results in savings in energy consumption because of the optimum utilization of power systems. At the same time, in countries such as Sudan and South Sudan where most of our base stations are running on diesel generators due to lack of stability of the grid, being able to reduce fuel consumption would have the double advantage

of reducing the energy cost and reducing emissions. Based on previous year electricity tariffs and fuel prices, and data analysis for our opcos, we have estimated that if the trends continue, the operating cost of our base stations will double by 2035. As an example, most of our sites in Sudan and South Sudan are powered by diesel generators. This means that if the fuel cost increases, our energy cost will increase as well. To mitigate this, we deployed 242 solar solutions and 96 battery hybrid power solutions in 2023. This represents approximately a 60% reduction in fuel consumption over a period of five years from year 2023. In 2023, the deployed energy saving solutions led to a reduction of 3,624 metric tons of CO₂, with the annual CO₂ reductions expected to be higher in the coming years.

To mitigate the risks associated with additional energy costs, Zain has developed a set of initiatives ranging from infrastructure sharing to the deployment of green power solutions, and the use of smaller size diesel generators.

We have instituted telecom site-sharing with other mobile network operators, which can lead to up to 40% energy saving on shared sites. In 2023, 14 sites were shared with other operators for a total cost of USD 178 thousand. The installation of 242 solar solutions and 96 hybrid battery power solutions cost USD 3.1 million. Furthermore, we deployed 13 smaller-size diesel generators to reduce fuel consumption at a cost of USD 61.2 thousand and installed 206 outdoor cabinets for a cost of USD 5.8 million, while the connection of 123 sites to the grid to reduce the dependency on diesel generators was undertaken at a cost of USD 0.79 million. The total cost of these initiatives amounted to USD 9.1 million, which led to an overall CO₂ saving of 11,107 metric tons of emissions.

While we strive to reduce dependence on fossil fuel sources, we must appreciate that part of the cost to realize this is indirect because it comes as a business necessity and opportunity, which means that it would have been spent regardless of the need to save on energy consumption.

C. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.

We recognize that climate change poses several physical and transition-related risks for our business.

We identified three risks in line with Task Force on Climate Related Financial Disclosures guidance. We quantified the business impacts of all climate-related risks under each scenario over different time horizons.

Key risk and opportunity areas arising from the scenario-based climate risk and opportunity assessment are as follows:

Long-term Physical Risk: Rise in mean temperatures that could negatively impact margins and operating costs.

Short-term Physical Risk: Increase in frequency and impact of extreme weather events to disrupt services.

Long-term Transition Risk: Increase in unit economics of energy costs.

Our risk assessment process consists of four steps: Risk identification, analysis, evaluation and treatment.

The scope of the risk assessment processes includes all people, processes, and technology within Zain Group and its operating countries.

RISK IDENTIFICATION

Risk owners and the risk management team review the risks specific to the division and identify any emerging risks based on changing market conditions and business dynamics.

RISK ANALYSIS

For the identified risks, likelihood for each risk based on the probability of occurrence and the impact severity based on the identified consequences are determined.

RISK EVALUATION

For the identified risks, the management team assigns risk owners that perform detailed root cause analysis, build actionable steps considering risk mitigation strategies that follow the risk management policy.

RISK TREATMENT

Mitigation plans are agreed between the opco risk manager and the risk owners. Opco risk managers present the status of current and proposed plans for the approval of opco CEOs. Once the mitigation plans are approved, opco risk managers share the register with the Group risk management team.

Climate change risks are considered in Zain's Risks Universe as defined in our Risk Management Policy and included in the company's risks assessment and evaluation. Our climate change risk process monitors both physical and transition risks.

RISKS AND OPPORTUNITIES IDENTIFICATION AND ASSESSMENT:

The climate risks and opportunities identification process follows a bottom-up approach by advising operations to analyze historical and projected data related to physical and transition risks and opportunities.

The frequency of the risk assessment exercise is annual, yet we identify risks across short-, medium-, and long-term timeframes. Risks arising out of climate change and macroeconomic factors are some of the long-term risks in our register.

The risks are quantified based on the likelihood and impact as per the risk management criteria for revenue, EBITDA, and other metrics.

METRICS AND TARGETS

The information included below reflects figures and analysis for the years 2022 and 2023.

A. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.

Metrics used by Zain include emissions, energy consumption, capital deployment.

Metrics	Performance	
	2022	2023
Energy		
Diesel Fuel Consumption (Liters)	Diesel fuel consumption increased by an average of 15.42% across all operations YoY.	Diesel fuel consumption decreased by 10.3% YoY across all operations.
Grid Consumption (KWh)	The total electricity consumption increased by an average of 21.75% across Zain’s operations – excluding South Sudan.	The total electricity consumption increased by 3.6% across all operations
Average Fuel price per Liter	Kuwait – 0.4 KSA – 0.16 Bahrain – 0.52 Jordan – 1.03 Iraq – 0.5 Sudan – 0.9 South Sudan – 1.8	Kuwait – 0.4 KSA – 0.31 Bahrain – 0.52 Jordan – 1.19 Iraq – 0.5 Sudan – 1.6 South Sudan – 2.8
Average Grid unit price	Kuwait – 0.016 KSA – 0.08 Bahrain – 0.077 Jordan – 0.25 Iraq – 0.090 Sudan – 0.1 South Sudan – 5.5	Kuwait – 0.016 KSA – 0.08 Bahrain – 0.077 Jordan – 0.18 Iraq – 0.090 Sudan – 0.1 South Sudan – 0.44
Capital Deployment		
Investment in climate mitigation	USD 5.1 million across operations. 78 sites towards shared infrastructure, 383 outdoor cabinets for a cost of USD3.5 million, deployment of 283 smaller size generators, implementation of five solar hybrid solutions for USD120K, implementation of battery hybrid solutions for USD 1.3 million, as well as the connection of 18 sites to the commercial grid for USD 160K.	42 infrastructure sharing sites for USD 178 thousand, deployment of 206 outdoor cabinets for a cost of USD 4.9 million, the deployment of 13 smaller size diesel generators, the implementation of 242 solar hybrid solutions and 96 hybrid battery solutions, as well as the connection of 123 sites to commercial power for an estimated cost of USD 4.01 million.

B. Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 GHG emissions and the related risks.

The following tables summarize the GHG emissions and related risks for 2023 across Zain Group.

Scope of emission	Unit	Total
Scope 1 emissions	tCO ₂ e	359,283.84
Scope 2 emissions	tCO ₂ e	648,237.34
Total Scope 1 & 2 emissions	tCO ₂ e	1,007,521.18
Total Scope 3 emissions	tCO ₂ e	490,328.71

In Sudan, some of our base station sites were shut down due to the civil conflict, leading to a reduction in energy consumption across our network which resulted in lower emissions compared to the previous year.

EMISSIONS RISKS:

Scope	Related Risks	Summary
Scope 1 emissions	Increase in consumption of diesel.	Sporadic availability of grid across operations due to natural or man-made events may entail an increase in diesel consumption as a backup energy source. As 5G is launched across operations and coverage of 4G sites increases, there could be an increase due to the demand of fuel for the greenfield sites.
Scope 2 emissions	Increase in consumption of grid power.	As 5G is launched across the operations and coverage of 4G sites increases, the primary energy source is grid power, which could lead to further increase in consumption and incremental emissions.
Total Scope 3 emissions	N/A	As Scope 3 is not in the ambit of Zain’s initiatives for climate change, it would be difficult to quantify and articulate the risks from the value chain. As a general principle, we advise our suppliers to assist Zain through deployment of energy efficient solutions.

C. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Initiatives	Target	Narrative
Enhance share of renewable power source	2.5% increase per year.	The current energy source mix between fossil fuel and renewable sources is 98.7% and 1.3%. We intend to increase this mix by 2.5% annually to reduce Scope 1 and 2 emissions .
Scope 2 emissions	4.2% CO ₂ emission reduction per year.	As 5G is launched across operations and with the addition of 4G for enhancing cellular coverage, the primary energy source of grid power will witness additional demand, and this could lead to further increase in consumption and incremental emissions.
Virtualization of core network	75% in core.	Core network equipment such as CS Core, PS Core (2G,3G, 4G) and IMS for VoLTE require power on 24*7. The migration from legacy bare metal system design to virtualized core entails benefits of approximately 40% reduction in energy consumption as smaller equipment footprint translates to lower cooling and power consumption.
Digitalization	2.5% per year.	The current mix for prepaid recharges and postpaid payments between online and traditional channels is approx. 35:65. We want to enhance the online segment as this will entail a reduction of branch operation costs due to savings in energy costs at the branches for lighting and air-conditioning.

The data used to calculate energy consumption from renewable sources is based on actual data for Iraq, Jordan, Kuwait, and South Sudan. While the data for Sudan is based on 2022 actual data due to the conflict in Sudan.

