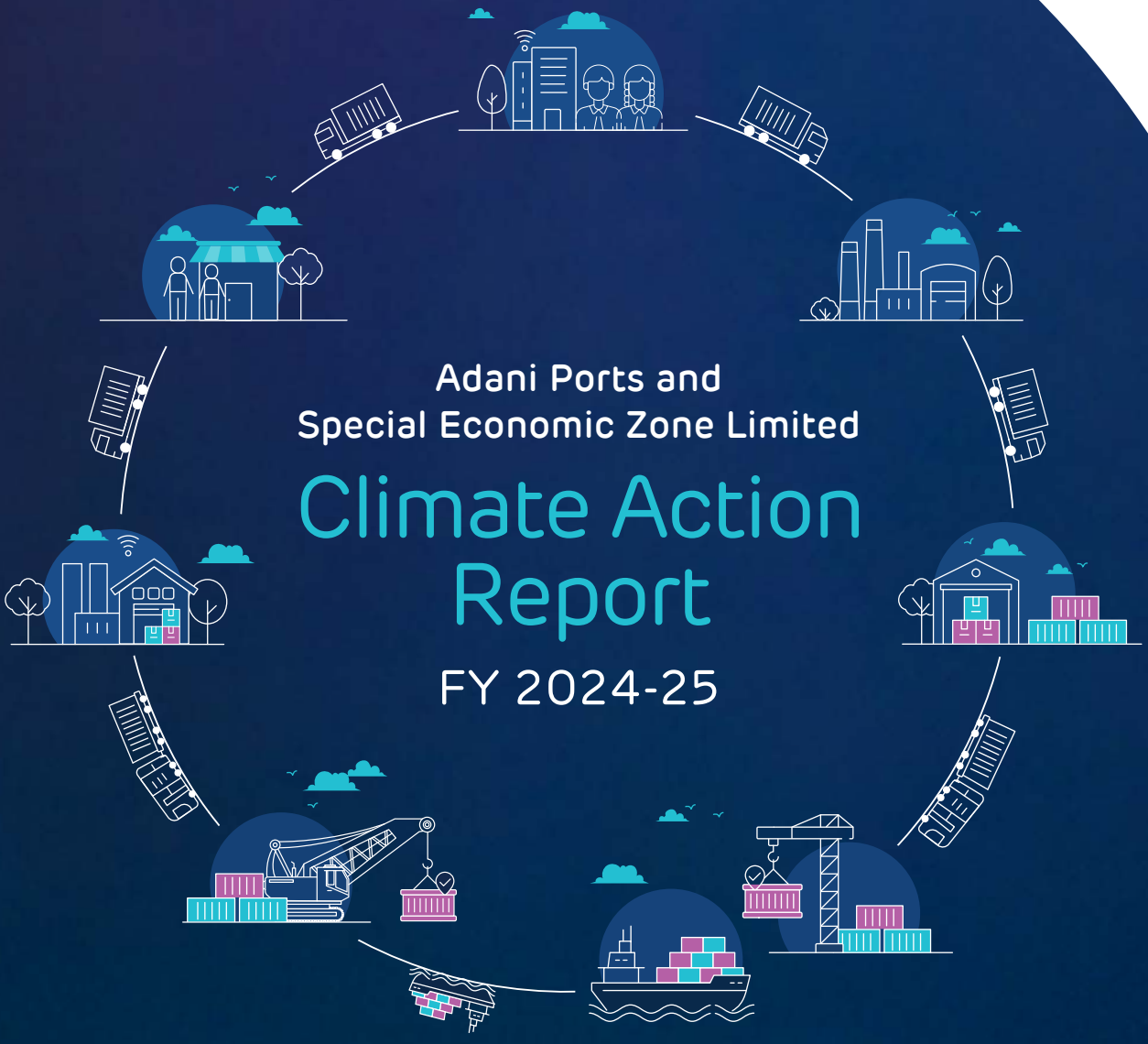
adani

Ports and Logistics



Adani Ports and Special Economic Zone Limited

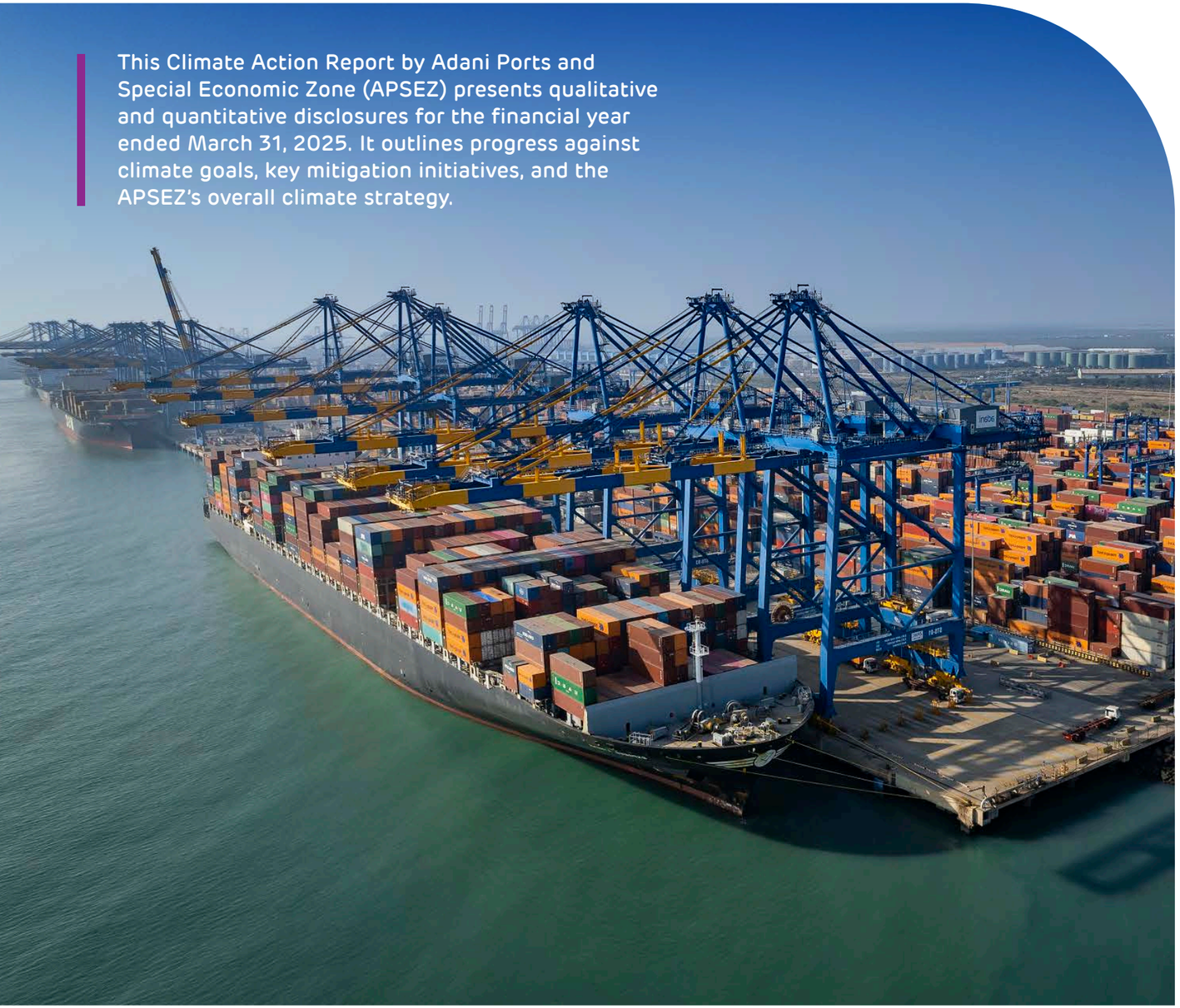
Climate Action Report

FY 2024-25

Contents

About the **Report**

This Climate Action Report by Adani Ports and Special Economic Zone (APSEZ) presents qualitative and quantitative disclosures for the financial year ended March 31, 2025. It outlines progress against climate goals, key mitigation initiatives, and the APSEZ's overall climate strategy.

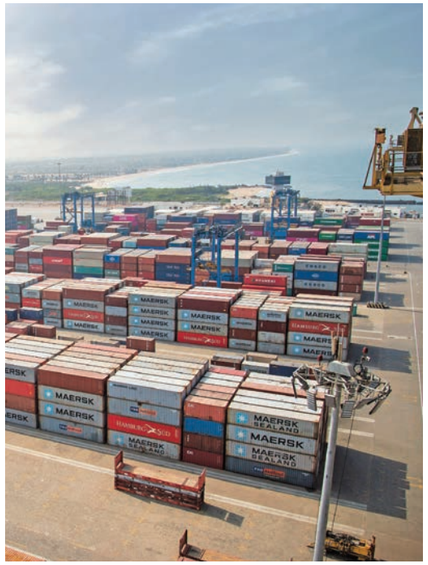


Reporting Boundary

This Climate Action Report is aligned with our strategy-STRENGTH WITH RESILIENCE and the global frameworks- TCFD framework, IFRS S2 Climate-related Disclosures issued by the ISSB, and applicable ISO standards. It consolidates qualitative and quantitative data from all operational ports including terminals international and corporate offices, providing focused, comparable insights into climate-related risks, opportunities, and responses. Broader ESG disclosures are addressed in APSEZ's Integrated Report for FY 2024–25, while this Report provides a deep dive into the company's climate strategy and actions.

External Assurance

The content has been independently assured by TUV India Pvt. Ltd. in accordance with AA1000 Assurance Standard V3 - 'Type 2, moderate level' and ISAE 3000 (Revised) - 'reasonable level' ensuring accuracy and reliability.



It consolidates qualitative and quantitative data from all

operational ports

Including terminals international and corporate offices, providing focused, comparable insights into climate-related risks, opportunities, and responses.

Key **Highlights**

Where we are in FY 2024-25

1,50,398 tCO_2e
Scope 1 emissions

3,23,098 tCO_2e
Scope 2 emissions

20,05,650 tCO_2e
Scope 3 emissions

16%
share of renewable electricity

Achievement in FY 2024-25

12%
Reduction in GHG emission intensity from FY2023-24

4%
Reduction in total energy intensity from FY2023-24

7%
Energy sourced from renewable sources

INR 934 Crore
Invested in environmental initiatives

277 MW
200 MW of solar, 52 MW of Wind and 25 MW of hybrid capacity commissioned

4,240 Ha
mangrove plantation

1,267 Ha
terrestrial plantation

A- (2024)
CDP Climate Change score

Our Targets

60%
Emission Intensity reduction by 2025 (baseline: 2016)

50%
Energy Intensity reduction by 2025 (baseline: 2016)

Become
Carbon neutral
by 2025

12
ports certified to Zero Waste to Landfill

100%*
Renewable share in the total electricity by 2025

1,200 Ha
terrestrial plantation

*Including Renewable Energy offset Certificate (REC)

Message from **Our Leadership**

Foreword from Wholetime Director & CEO

At APSEZ, sustainability is integral to our business strategy and long-term value creation. As we reflect on a year of transformative growth and operational excellence, we reaffirm our commitment to climate action as a strategic imperative.

Our climate strategy is embedded in every aspect of our operations. It spans transitioning to low-carbon energy and electrifying equipment to investing in renewable infrastructure and nature-based solutions. These efforts not only reduce emissions but also enhance operational efficiency, resilience, and stakeholder trust.

We are shaping the future of port, logistics and marine operations through integrated, tech-enabled platforms that deliver cleaner, smarter, and more cost-effective transport solutions. Our infrastructure is designed to support India's economic ambitions while we remain committed to our goal of achieving Net Zero emissions across operations by 2040.

As policy landscapes evolve, we remain ahead of the curve by investing in innovation, decarbonization, and climate adaptation. Our leadership in sustainability has earned global recognition and reinforces our role as a responsible Integrated Transport Utility player.

Looking ahead, we will continue to accelerate our transition to low-carbon operations, deepen our climate resilience, and contribute meaningfully to India's sustainable future. At APSEZ, we believe that climate leadership is business leadership.

Yours sincerely,
Ashwani Gupta
Wholetime Director & CEO
Adani Ports and Special Economic Zone (APSEZ)

> At APSEZ, our commitment to climate leadership is shaping a sustainable future as we emerge as a leading Integrated Transport Utility.

Message from ESG Head

> This year has been pivotal, with key measures advancing emission reduction, low-carbon transition, and climate resilience across our ports and logistics operations.

Delivering on Climate Ambition through Action

Dear Stakeholders,

As Head of ESG at APSEZ, I am pleased to share our progress in climate strategy and TCFD-aligned disclosure for FY2025. This year has been pivotal, with key measures advancing emission reduction, low-carbon transition, and climate resilience across our ports and logistics operations. Our guiding principles—Mitigate, Adapt, and Transition—remain central to our Net Zero by 2040 commitment and reinforce our leadership in sustainable infrastructure development and operation.

Decarbonising Operations

We are rapidly electrifying our operations and expanding renewable energy adoption across all sites. We have introduced electric internal transfer vehicles, battery-powered reach stackers, and electric empty container handlers. Cranes and small vehicles now operate on electricity, and bulk cargo handling has shifted to mechanized conveyor systems—reducing fossil fuel use and enhancing efficiency. Through these efforts, emission intensity has been reduced by 29% over the past five years, including a 12% decrease in the most recent year alone.

To meet the growing demand for clean power, we are integrating renewable energy supply and developing charging infrastructure for electric equipment. Our 11 kVA shore power systems at Mundra now supply auxiliary power to docked tugboats, cutting diesel consumption and emissions.

Promoting Circular Economy

Promoting circularity remains a cornerstone of our sustainability agenda. In FY2025, we reused and recycled 42% of our total waste, with an additional 33% successfully recovered and processed. Notably, twelve of our domestic ports have now attained 'Zero Waste to Landfill' certification.

We operate composting facilities at every site, support co-firing of residual fuels in other industries, and apply the 5R strategy to manage non-degradable waste. In a standout demonstration of our commitment to the circular economy, we developed India's first steel slag-based road at Adani Hazira Port, providing enhanced load-bearing capacity and longevity, while reducing construction costs and environmental impact.

Mundra Cluster: A Future Clean Energy Hub

Our collaboration with the World Economic Forum's Transitioning Industrial Clusters initiative is a testament to our commitment to collective climate action. The Adani Mundra Cluster, encompassing operations across APSEZ, Adani Enterprises, and Ambuja Cement, is poised to become one of the world's largest green hydrogen hubs—targeting 1 MMTPA by 2030 and 3 MMTPA by 2040.

This ecosystem will include 10 GW of solar, 5 GW of wind, 5 GW of electrolyser manufacturing, and supporting port infrastructure—placing APSEZ at the centre of India's clean energy value chain.

Climate Risk Management and Resilience

Our Enterprise Risk Management (ERM) framework now fully integrates climate risks. We have conducted vulnerability assessments across all ports and terminals, using advanced modeling to guide climate-resilient infrastructure planning. This ensures our assets are prepared for extreme weather, sea-level rise, and other climate hazards—safeguarding the interests of all stakeholders, including local communities.

Global Recognition and Forward Momentum

Our efforts have earned global recognition. APSEZ was ranked among the Top - 10 in the sector by S&P Global CSA and was listed among the Top - 10 global marine ports for low-carbon transition by Sustainalytics. We hold 'Prime' ESG status from ISS ESG and are part of the Nifty 100 ESG Index.

Looking ahead, we will accelerate decarbonization—scaling renewable energy, electrifying transport and equipment, and further enhancing energy efficiency. At APSEZ, we view the low-carbon transition not as a compliance requirement but as a strategic opportunity—to drive innovation, reduce systemic risk, and catalyze industry-wide transformation. Through strong governance, targeted investments, and a science-aligned approach, we are building a sustainable and resilient future for India and the world.

Warm regards,
Rahul Agarwal
ESG Head

Our Climate **Journey**

- Climate risk assessment conducted for all operational ports/terminals
- APSEZ Scored A- for Climate Change
- Total 277 MW captive capacity and 21.80 MW of PPAs signed with IIPs for renewable electricity supply.

2025

- Achieve Carbon Neutrality of port business
- Reduce energy intensity of revenue by 50% from 2016 baseline
- Attain 100% renewable electricity share (incl. offset with retained RECs)
- Reduce water intensity of revenue by 60% from 2016 baseline

2035

- Switch from fossil fuel to electricity or green hydrogen or ammonia

2040

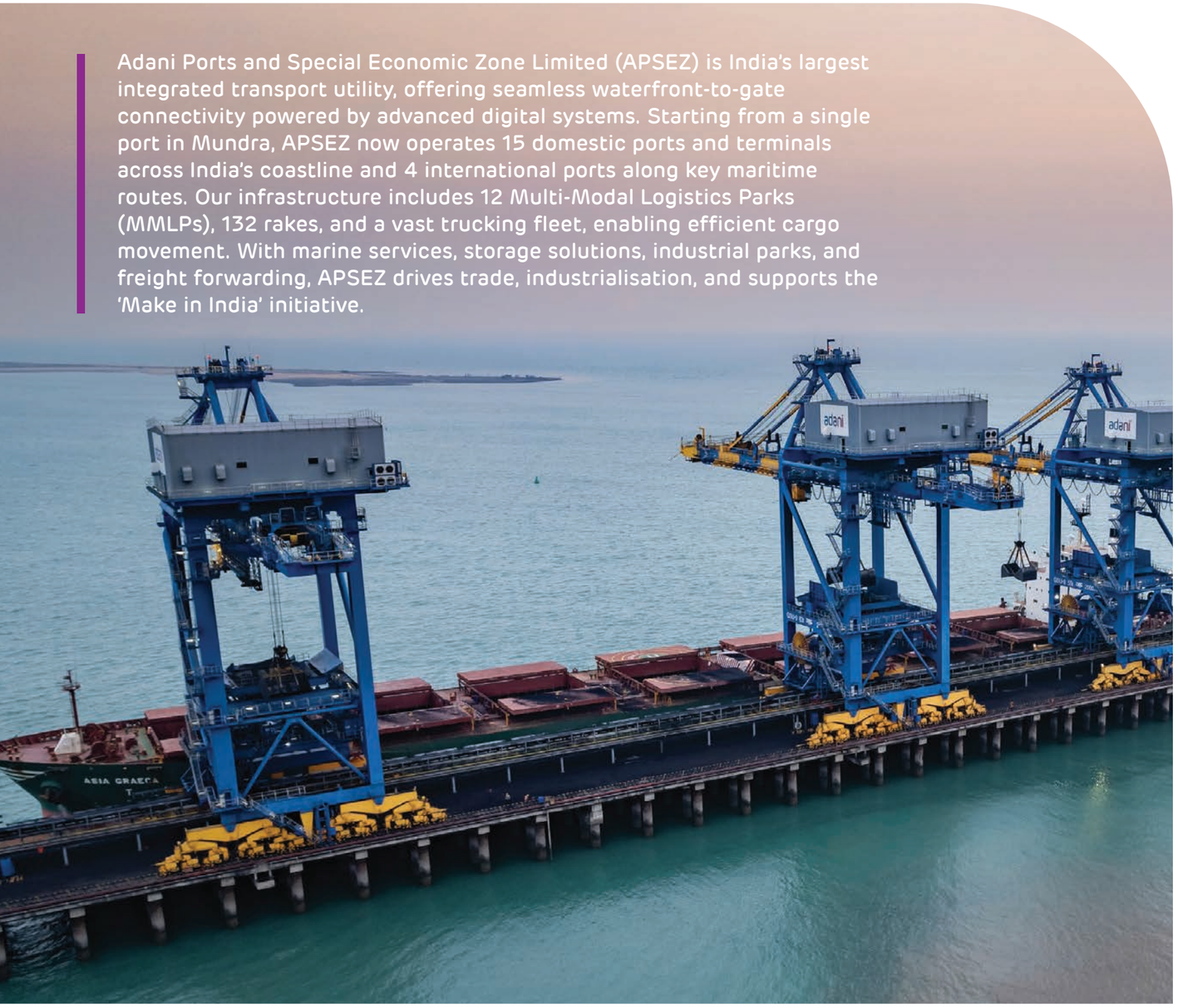
- Achieve Net-Zero across its business
- Efforts include installation of 1,000 MW renewable capacity and electrification of equipment

2050

- Attain a Net Positive Impact (NPI) on biodiversity by 2050
- No Net Deforestation by 2050 in the areas of our operation

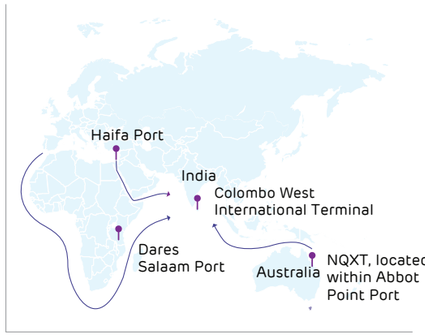
APSEZ at a **Glance**

Adani Ports and Special Economic Zone Limited (APSEZ) is India's largest integrated transport utility, offering seamless waterfront-to-gate connectivity powered by advanced digital systems. Starting from a single port in Mundra, APSEZ now operates 15 domestic ports and terminals across India's coastline and 4 international ports along key maritime routes. Our infrastructure includes 12 Multi-Modal Logistics Parks (MMLPs), 132 rakes, and a vast trucking fleet, enabling efficient cargo movement. With marine services, storage solutions, industrial parks, and freight forwarding, APSEZ drives trade, industrialisation, and supports the 'Make in India' initiative.



With 27% share in India's cargo movement, the company anchors a robust logistics and marine network spanning MEASA (Middle East, Africa, South Asia). Its pan-India footprint includes multimodal logistics parks, warehouses, agri-silos, rakes and trucks, enabling smooth inland connectivity. Ports across India's coastline and key global hubs act as critical trade gateways. A versatile fleet of tugs, dredgers and offshore support vessels delivers a full range of marine services, while SEZ land banks fuel industrial growth. Unified through advanced digital platforms, this integrated ecosystem delivers seamless, efficient and cost-effective transport solutions—boosting India's competitiveness in manufacturing, trade and exports on its path to a USD 5 trillion economy. We have made significant progress in advancing our ESG commitments, earning a place among the Top - 10 global transport infrastructure companies in S&P Global's Corporate Sustainability Assessment, attaining ISS ESG's "Prime" rating, and setting an ambitious target of achieving Net Zero emissions by 2040, supported by a planned 1,000 MW of renewable electricity capacity. Our ports have also been recognized with distinguished honors such as the Blue Planet and Golden Peacock awards for excellence in environmental and safety standards.

Our Global Network



Map not to scale and used for representation only.

Governance

Governance is a foundational element of APSEZ's climate risk management framework, ensuring compliance with applicable regulations and a clearly defined structure of roles, responsibilities, and decision-making across the organization. It reflects our leadership's commitment, particularly the Board and Management, in identifying, assessing, and managing climate-related risks and opportunities

At APSEZ, climate change is integrated into our overall sustainability strategy. Guided by our Sustainability Charter, we have established robust systems for Board oversight, risk management, climate reporting, stakeholder engagement, and process audits.

Board of Directors

Board Engagement and Climate Oversight

The Board holds primary accountability for overseeing climate-related issues, ensuring that climate commitments are effectively integrated into the organization's strategic and operational priorities. Oversight is exercised through four dedicated Board-level committees: the Corporate Responsibility Committee (CRC), Corporate Social Responsibility Committee (CSRC), Stakeholder Relationship Committee (SRC), and Risk Management Committee (RMC). These committees collectively provide a structured governance framework to guide climate-related decision-making.

- The **Corporate Responsibility Committee (CRC)** serves as the lead body for climate change oversight. The committee convenes on a quarterly basis to evaluate progress against established climate targets and to ensure continued alignment with long-term sustainability and decarbonization objectives.

- The **Corporate Social Responsibility Committee (CSRC)** and the **Stakeholder Relationship Committee (SRC)** focus on aligning climate actions with stakeholder expectations and community priorities, ensuring that environmental initiatives remain inclusive and socially responsive.

- The **Risk Management Committee (RMC)** provides strategic insight into emerging regulatory developments and climate-related risks across operating geographies, enabling proactive risk mitigation and scenario planning.

On a quarterly basis, the full Board reviews climate-related matters, including decarbonization progress, renewable energy investments, and the integration of climate risks and opportunities into strategic and financial decision-making. Climate considerations are embedded into core processes such as policy formulation, annual budgeting, and major capital allocation decisions. Regular updates are provided to the Board on performance against climate transition targets to ensure continuous alignment with corporate sustainability commitments.

Strategic Direction from Executive Leadership and Management

The CEO leads the execution of our climate strategy, embedding it in daily operations and chairing our cross-functional Sustainability Leadership Committee (SLC) to steer priorities and update the Board. At the management level, the ESG Head (Chief Risk Officer) oversees climate-related business risks and reports directly to the CEO for functional independence, while Site Heads lead on-ground implementation through Sustainability Steering Committees (SSC). The Corporate ESG Team bridges strategy and delivery, guiding sites, tracking performance, and tailoring actions to local contexts—all while ensuring alignment with our climate goals.

Committee	Primary Role	Focus Areas	Meeting Cadence
CRC	• Strategic ESG Oversight	• ESG alignment, climate targets	• Quarterly
CSRC	• Social Accountability	• Human rights, CSR activities and policies	
SRC	• Stakeholder Alignment	• ESG materiality, engagement	
RMC	• Risk Governance	• Regulatory & reputational climate risks	

Climate-related Competencies of the Board

At APSEZ, climate competence is embedded at the Board level through a proactive and structured approach. An internal expert group briefs the Board annually on emerging climate issues, while external engagements ensure diverse perspectives are integrated into strategic discussions. Climate expertise is factored into the Board nomination process, and directors undergo annual training on key topics such as climate regulations, regulatory developments, decarbonization pathways and industry best practices. At least one Board member brings senior-level experience in climate or sustainability, reinforcing informed oversight and strong climate governance.

Climate-related Incentive

At APSEZ, we believe accountability and encouragement go hand in hand. Our climate governance framework integrates performance incentives as a deliberate mechanism to drive progress, reward initiative, and align individual action with organisational priorities. The Board, through its oversight structures, ensures that both short- and long-term incentive plans are linked to climate and ESG outcomes, not just for senior leadership, but across business units and employees.

Role

- **Employees**
- **Business Units Manager**
- **CEO**

Incentive Plan

- MADHYAM innovation programme, Spot recognition, technical project awards
- ESG scorecards at divisional & site level
- Variable pay tied to ESG and financial KPIs

Climate-Related KPIs

- Emissions reduction, energy savings, water use efficiency, renewable initiatives
- Site-specific emissions, energy intensity, performance against ESG benchmarks
- GHG and water intensity, energy efficiency, zero waste, afforestation progress
- 10% of pay linked to ESG and organisational performance

Policy Advocacy

Our commitment to being at the forefront of the transition towards sustainable and low-carbon economy aligned with the Paris Agreement (2015), extends to international principles, where we are proud members/signatory to the following initiatives:

United Nations Global Compact (UNGC)

Upholding principles of Human Rights, environment and ethical business on a global scale.

India Business & Biodiversity Initiative (IBBI)

Aligning business operations with biodiversity conservation and ecosystem services.

IUCN - Leaders for Nature (LfN), India

Collaborating with conservation leaders to integrate biodiversity into business strategies.

Policy Engagement on Climate Issues in FY 2024-25

Led by our unwavering commitment to the global climate movement, we take concerted steps to further the objectives set by the Paris Agreement. We consciously align our actions with India's national climate commitments, striving to exceed these goals well before the deadlines of the country's Nationally Determined Contributions (NDC).

Our Involvement with Trade Associations

APSEZ engages with national and international platforms to advance collective climate action. As a signatory to the CEO Water Mandate, TCFD, and UN Global Compact, the company demonstrates its commitment to global sustainability standards.

In FY 2024–25: APSEZ partnered with the World Economic Forum on the 'Transitioning Industrial Clusters' initiative, aligning with its Net-Zero climate goal. The company also participates in government-led industry consultations to support the development of climate policies. These efforts reinforce APSEZ's leadership in promoting environmental sustainability across the maritime and blue economy sectors.

Industry Associations

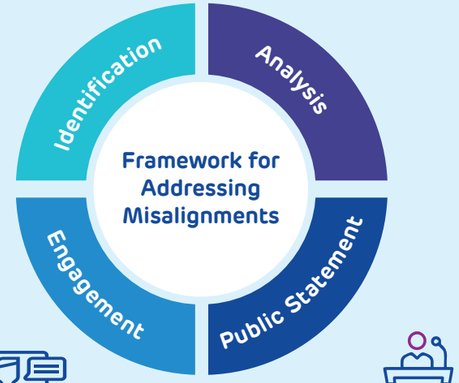
- Indian Maritime Centre (IMC)
- World Economic Forum (WEF)
- Federation of Indian Chambers of Commerce and Industry (FICCI)
- Quality Circle Forum Of India (QCFI)
- The Associated Chambers of Commerce and Industry of India (ASSOCHAM)
- Federation of Indian Export Organisations (FIEO)
- Confederation of Indian Industry (CII)
- Federation of Kutch Industries (FOKIA)
- Hazira Area Industries Association (HAIA)
- Southern Gujarat Chamber of Commerce & Industries (SGCCI)
- National Safety Council – Mumbai (NSC)
- Industrial Waste Management Association, Chennai (IWMA)

Trade Association Assessment Framework

To ensure consistency between external advocacy and internal climate commitments, APSEZ has established a structured mechanism for evaluating its trade association engagements. The Corporate Responsibility Committee conducts quarterly reviews of all advocacy-related activities, ensuring transparency and accountability in policy interactions. These reviews are supported by the Head of ESG who systematically identifies any misalignment between the climate positions of trade associations and APSEZ's commitment to the Paris Agreement.

Continuously monitor trade association activities and their position on the Paris Agreement.

Evaluate the degree of misalignment and its potential impact on APSEZ's climate commitments.



Initiate direct dialogues with trade associations to discuss concerns and emphasise the need for alignment with our climate goals. Partners with trade associations to address any misalignments within a clear timeline. If these efforts fail, consider disassociating from the trade associations.

Clarify the company's position, and distance APSEZ from any misalignment with the Paris Agreement.

Climate **Strategy**

As climate change accelerates, evidenced by rising global temperatures and the growing depletion of natural resources, the need for collective, multi-level action has never been more urgent.

APSEZ has committed to achieving Net Zero emissions by 2040, with an ambitious interim target to make its port operations carbon neutral by 2025. The strategy hinges on the gradual scaling of low-carbon technologies like green hydrogen, battery storage, and electrification.

Scope 1 reduction strategy

Transitioning from fossil fuels to electric-powered equipment and exploring the use of green ammonia for port operations and cargo handling systems.

Scope 2 reduction strategy

Decarbonizing purchased electricity through captive renewable energy, With 200 MW of solar, 52 MW of Wind and 25 MW of hybrid capacity already commissioned. The full 1,000 MW capacity is expected to be fully commissioned by next year.

In FY 2024-25, the Company reinforced its leadership in sustainability by spending INR 934 crore to key ESG initiatives. These investments targeted critical areas such as electrification, energy efficiency, emission reduction, water management, and climate change adaptation. Significant measures included replacing high-pressure sodium vapor lamps with energy-efficient LEDs, transitioning to battery-operated forklifts, and expanding renewable energy sourcing, highlighted by the development of captive renewable capacity.

APSEZ is a member of the Climate Ambition Alliance, committed to **net zero emissions** by 2040

- APSEZ's Commitment to Climate Action: Partnering with WEF for a Sustainable Future

Adani Mundra Cluster – Accelerating Industrial Decarbonization

Three Adani portfolio companies-**Adani Enterprises Ltd**, **Adani Ports and Special Economic Zone Ltd (APSEZ)**, and **Ambuja Cements Ltd**-have formed the **Adani Mundra Cluster** under the **World Economic Forum's 'Transitioning Industrial Clusters' initiative**. This collaborative platform aims to accelerate **net-zero transformation**, economic growth, and job creation.

Cluster Highlights

Mundra Port, India's largest commercial port, has evolved into a multi-sector industrial hub with a growing focus on sustainability.

APSEZ is targeting 100% renewable electricity use across port operations by 2025 and net-zero emissions by 2040, supported by the adoption of electrified cranes, energy-efficient equipment, and green belt development.

Ambuja Cements is establishing a new facility at Mundra, designed to be one of the lowest emission-intensity cement production units globally, aligned with its net-zero by 2050 roadmap.

The cluster will also house one of the world's largest green hydrogen hubs, aiming to produce 1 million metric tonnes per annum (MMTPA) of green hydrogen by 2030, scaling up to 3 MMTPA by 2040.

This will be backed by:

- 10 GW of solar module manufacturing
- 5 GW of wind turbine and electrolyser production
- Dedicated port and export infrastructure

Strategic Value

Through this initiative, the Adani Mundra Cluster showcases how industrial synergy, infrastructure integration, and stakeholder collaboration—enabled by the World Economic Forum—can drive scalable and impactful decarbonisation in hard-to-abate sectors.

Decarbonization Journey

As a leading port infrastructure company, we recognize our responsibility to lead the transition toward a low-carbon economy. We have adopted a science-aligned, forward-looking climate action strategy that integrates both near-term goals and long-term commitments.

This strategy ensures:

- Alignment with global climate science and regulatory expectations,
- Responsiveness to stakeholder demands
- Resilience in a world increasingly shaped by climate-related disruptions.

Our approach is dynamic. We continually monitor the evolution of low-carbon technologies such as green hydrogen, battery energy storage, and electric mobility and recalibrate our climate action plan to integrate viable innovations.

Our long-term aspiration is to achieve Net Zero across all businesses by 2040, with a clear near-term milestone:

Achieve Carbon Neutrality across all port operations by 2025.

This makes APSEZ one of the few global port operators with such an ambitious and time-bound commitment.

Key Initiatives Under the Carbon Neutrality Plan

To meet our 2025 Carbon Neutrality goal, our action plan focuses on decarbonizing Scope 1 and 2 emissions from our port operations:

Energy Efficiency & Intensity Reduction

- Reduce energy intensity per unit revenue by 50% from the 2016 baseline, through system upgrades, process optimization, and smart operations.

Electrification of Port Equipment

- Transition from diesel-based to electric-powered equipment:
  - Rubber-Tyred Gantry (RTG) Cranes
  - Mobile Harbour Cranes (MHCs)
  - Internal Terminal Vehicles (ITVs) and support vehicles

Renewable Energy Sourcing

- Maximize electricity consumption from renewable sources, ensuring clean energy powers port operations.
- Develop and operationalize 1,000 MW renewable energy capacity with associated carbon credits used to offset remaining Scope 1 and 2 emissions.

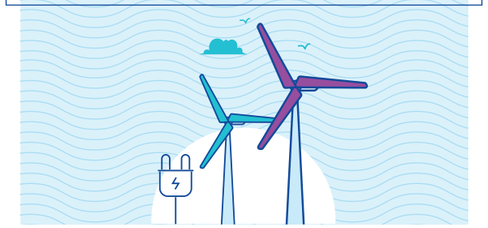
Carbon Offsetting through Nature-Based Solutions

- Implement large-scale mangrove afforestation and coastal ecosystem restoration projects leveraging mangroves as natural carbon sinks to offset residual emissions.

Our Emissions Reduction Journey till Now

Electrification and Energy Efficiency Measures

- Around 338 electric ITVs deployed across various port locations.
- 9 Tata Nexon EVs introduced for employee transport.
- 9 diesel cranes electrified, enabling near-complete transition to electric cranes.
- Cargo shift from road to rail in Morbi, Gujarat to reduce 50,000 tons of GHG emissions by 2025, equivalent to taking 20,000 cars off the road.
- Adipur–Mundra rail line electrification, replacing diesel locos and enabling annual 6 million tons CO_2e reduction.
- LED retrofits in RTG cranes resulted in 47,815kg CO_2e annual emission reduction.
- **Additional measures:**
  - Replacing 40W fluorescent tubes with 20W LEDs (~3,212 kWh conserved)
  - Replacing 84 low-efficiency ACs with inverter models (~6,048 kWh conserved/year)
  - Motion-sensor LED lighting in dining areas
  - Replacement of inefficient pumps with energy-saving alternatives

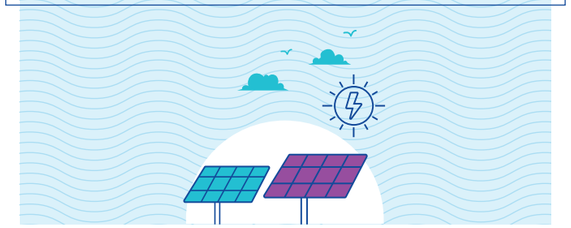


Renewable Energy and Hybrid Solutions

- While renewable from Khavda will meet a portion of internal demand, surplus will be:
  - Sold as brown power, with carbon credits retained to offset residual emissions.
- Hybrid renewable systems (solar + wind) are being developed alongside battery storage, targeting a 60–70% plant load factor (PLF) and enhanced supply reliability.

Conservation and Technology Absorption

- LED retrofitting in substations based on lux-level analysis.
- SMART energy meters installed at SEZ Samudra Township for real-time energy monitoring.
- Ongoing shift from mechanical to electromagnetic water meters, enabling online flow monitoring, leak detection, and energy savings.
- LED conversion in GSU and substations based on illumination audits.
- Energy-efficient replacements of pumps, air conditioners, and lighting systems to lower operational energy use.
- Motion-sensor LEDs installed in selective areas to prevent unnecessary power consumption.



Fuel Switch and Low-Carbon Technology Pilots

- Battery-operated tugs and reach stackers
- Electric shunters
- Collaborative pilots with OEMs on early-stage, low-emission solutions
- First-mover engagement to procure newly launched low-carbon equipment in India

Nature based solutions for emissions offset

We have implemented 4,240 hectares of mangrove afforestation, alongside 1,267 hectares of restoration and 3,042 hectares of conservation. Mangroves are highly effective carbon sinks, with a sequestration potential of 20–30 tCO_2 per hectare annually, contributing significantly to our emissions offset strategy.

Emissions Reduction Strategy

To achieve our Net Zero ambition by 2040, APSEZ has implemented a robust, forward-looking decarbonization strategy centred on integrating low-carbon technologies across its service offerings. Our core operations including handling of bulk, breakbulk, containerized, and liquid cargo are energy-intensive and rely on a wide range of diesel-based cargo-handling equipment. Recognizing this, we have undertaken a systematic transition from fossil fuel-based to electric-powered equipment, significantly reducing direct emissions across operations. This transition is guided by a comprehensive, scope-wise emissions reduction roadmap that outlines targeted interventions across Scope 1, 2, and 3 emission categories.

Emission Scope	Emission Reduction Coverage & Focus
Scope 1 Direct emissions	Fuel use in cranes, forklifts, excavators, DG sets, harbour , dredging and logistics operations
Scope 2 Indirect emissions	Purchased electricity for the port operations
Scope 3 Value chain emissions	Supply chain, business travel, upstream/downstream logistics (reduction measures in place, but no target for 2025)

Our analysis indicates that the majority of Scope 1 emissions originate from diesel consumption in cargo-handling, dredging, tugboats and other marine operations. Acknowledging current technological maturity, infrastructure readiness, and commercial feasibility, we have developed a phased low-carbon transition roadmap. This plan is designed to address approximately 75% of the projected 2040 Scope 1 emissions through the deployment of electric and alternative fuel technologies. The remaining 25% of residual emissions will be addressed with carbon credits, primarily sourced from nature-based solutions and renewable energy projects.

In the Indian context, carbon markets are evolving rapidly, with the Carbon Credit Trading Scheme (CCTS) introduced under the Energy Conservation (Amendment) Act, 2022, enabling the creation of a formal domestic compliance market. APSEZ is actively monitoring developments in this regulatory landscape to ensure alignment with future compliance obligations and to support the procurement or generation of eligible carbon credits. Our focus is on credits that adhere to globally recognized standards and contribute meaningfully to both environmental integrity and community co-benefits. For Scope 2 emissions, we have already committed to establishing 1,000 MW of renewable energy capacity—a mix of solar and wind—dedicated to powering port operations and enabling a long-term shift toward clean energy consumption

APSEZ has committed to achieving

net-zero emissions

by 2040, targeting a 100% absolute reduction in Scope 1 and 2 emissions from its 2016 baseline

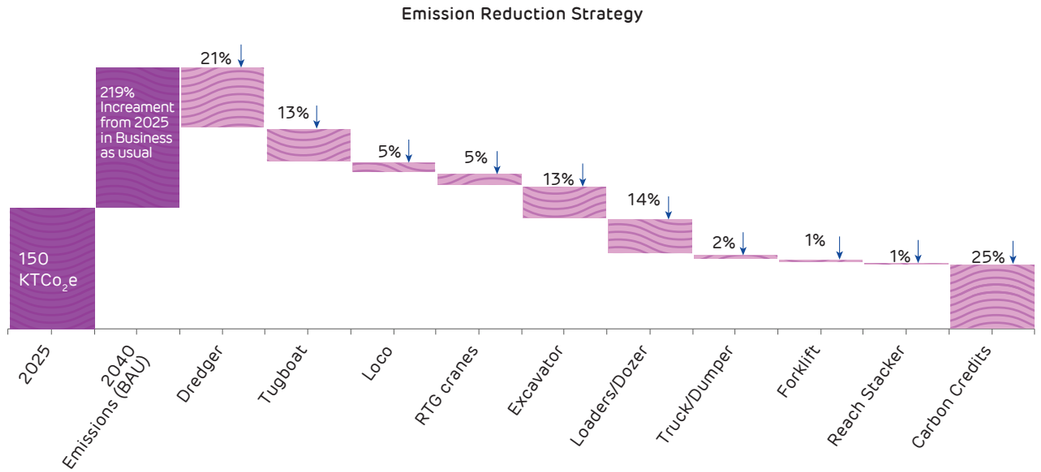
Low Carbon Technologies

Equipment	Low Carbon Technology	Implementation Feasibility	Piloting Phase	Start of Deployment
Dredger	Dredger with Biofuel	Low	2026 – 2028	2030 - 2032
Tugboats	Hybrid Tugboats	Medium	2025 – 2027	2029
Loco	Electric Loco with Renewables	Medium	2026 – 2028	2030
RTG Cranes	Electric RTG Cranes	High	2021 – 2022	2026 (all sites)
Excavator	Electric Excavator	High	2026 – 2028	2030
Loaders/Dozer	Electric Loaders	High	2026 – 2028	2030
Truck/Dumper	BEV Truck	Low	2027 – 2029	2030
Forklift	Battery-based Forklift	High	2026 – 2027	2028
Reach Stacker	Electric Reach Stacker	High	2027 – 2029	2030
ITV	Electric Internal Terminal Vehicle	High	2025 - 2026	2028

* Implementation timelines are subject to change based on technological advancements and the availability of updated information.

Assumptions: All equipment electrification initiatives are assumed to be powered by renewable energy sources. Projected emissions for 2040 have been estimated using a compound annual growth rate (CAGR) derived from historical emission trends.

Projected scope 1 emissions in 2040 & abatement potential of lever



Reduction in Scope 2 emissions will be primarily achieved through the strategic procurement and integration of renewable energy sources, including on-site solar installations and off-site renewable power purchase agreements, in alignment with the company's decarbonization objectives.

Technology Partnerships for a Greener Port Ecosystem

To achieve these transformational shifts, we are partnering with global Original Equipment Manufacturers (OEMs) and solution providers. Together, we are:

- Co-developing electrified port machinery,
- Evaluating charging infrastructure for heavy-duty equipment,
- Digitalizing operations to optimize energy use and emissions monitoring.

APSEZ has developed Scope 3 emissions reduction plan, with several initiatives already in implementation. We offer a 50% concession on port fees for vessels using LNG as marine fuel and are currently piloting shore power supply sourced from renewable energy for ships at berth—both aimed at reducing emissions from upstream transportation.

We apply the operational control approach to account for GHG emissions, including those where APSEZ can influence emission outcomes through procurement, supply chain partnerships, and investment decisions. Our strategy emphasizes engagement with suppliers, adoption of low-carbon alternatives, and integration of life-cycle emissions into procurement and capital planning.

APSEZ has identified key Scope 3 emission categories and corresponding decarbonization levers -

- Purchased Goods & Services: Enhance procurement practices by integrating life-cycle emission criteria, improving productivity.
- Capital Goods: Reduce carbon intensity through efficient capital allocation, embedding emission performance in purchase decisions.
- Fuel- and Energy-related Activities: Increase the share of renewable electricity across operations to reduce upstream energy-related emissions.
- Upstream Transportation & Distribution: Implement renewable shore power solutions for ships at berth to reduce marine auxiliary emissions.
- Waste Generated in Operations: Advance circular economy practices through recycling, reuse, and zero-waste-to-landfill programs.
- Business Travel: Minimize emissions through digital alternatives such as virtual meetings and virtual site tours.
- Employee Commuting: Encourage EV adoption and install charging infrastructure to reduce commuting emissions.
- Downstream Transportation & Distribution: Facilitate electrification and low-carbon fuel-switching for rail and road logistics.
- Downstream Leased Assets: Transition to renewable electricity and enhance energy efficiency across leased offices and operational assets.
- Investments: Promote electrification of equipment and renewable energy usage across joint ventures and portfolio companies

Internal Carbon Pricing

Internal Carbon Pricing (ICP) serves as a strategic tool at APSEZ to drive decarbonization and align with emerging regulatory and stakeholder expectations. It is applicable across all business decision-making processes and helps the organization reduce GHG emissions, encourage low-carbon investments, improve energy efficiency, and engage suppliers to lower supply chain emissions. ICP also supports internal behavioural change and strengthens resilience against current and future GHG regulations by stress-testing investment decisions.

APSEZ has implemented an internal carbon price of INR 1,710 (USD 20) per metric ton of CO_2 equivalent (tCO_2e) for all Scope 1 and Scope 2 emissions across its operations. We have set aside an equivalent cumulative amount for investment in renewable projects and energy efficiency measures. As a result, in the FY 2024-25, APSEZ generated a fund of INR 81 crore (USD 9.5 million) through this carbon pricing measure.

Objectives of internal carbon price

- Navigate regulations
- Drive energy efficiency
- Drive low-carbon investment
- Conduct cost-benefit analysis
- Reduce upstream value chain emissions
- Influence strategy and/or financial planning
- Setting and/or achieving of climate-related policies and targets
- Incentivize consideration of climate-related issues in decision making
- Incentivize consideration of climate-related issues in risk assessment

During FY 2024-25, we have invested 100% of our carbon price for our environmental initiatives.

Prior to project implementation, a comprehensive financial evaluation is conducted for all initiatives with potential GHG impacts. Projects with high projected emissions undergo additional scrutiny, with a focus on identifying and adopting cleaner, more efficient technologies. This ensures that all projects deliver both financial returns and environmental benefits, reinforcing our commitment to sustainable growth.

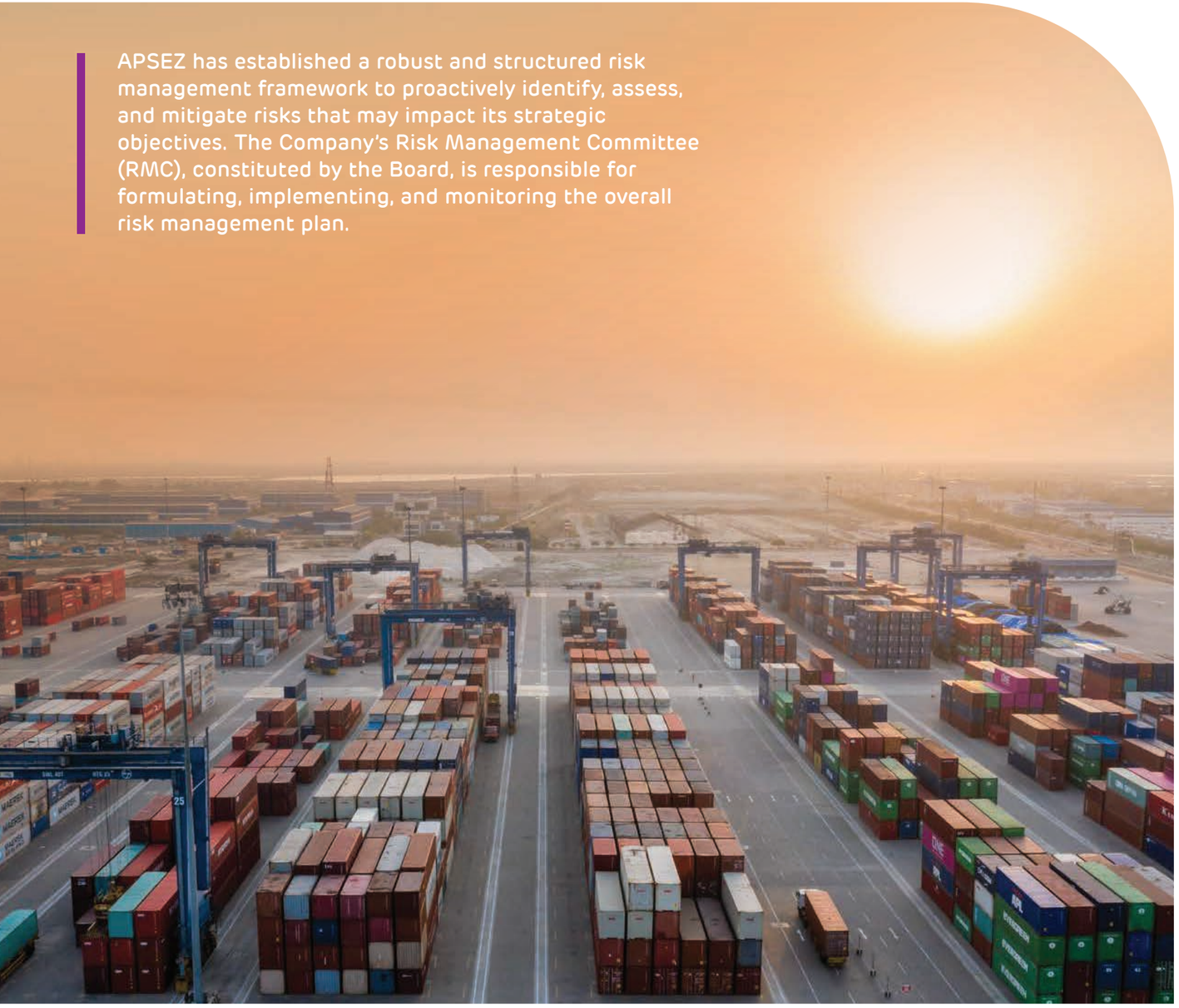
Climate Investments and Financial Planning

Climate-related risks and opportunities are actively shaping APSEZ's strategic priorities, particularly in capital allocation, operational planning, and business expansion. In FY 2024-25, we invested INR 1,664 crore through internal accruals and debt towards climate-related initiatives such as electrification of equipment, procurement of low emission cranes, enhancement of rail infrastructure, environment protection, improvements in energy and water efficiency, waste treatment, and adaptation to climate change. This includes INR 7.65 crore for electric powered cargo handling equipment, expected to save 120 kilolitres of diesel annually. To strengthen climate resilience, we have embedded climate considerations into our ERM and financial planning processes, with a dedicated budget and Board approved investment roadmap. Over INR 1,500 crore has been earmarked for future decarbonization projects, including renewable energy and green port development. Our internal carbon pricing mechanism further integrates the cost of emissions into investment decisions, allowing us to prioritise low carbon solutions that support long-term sustainability and value creation.

11% of CAPEX
spent on climate transition

Enterprise **Risk Management**

APSEZ has established a robust and structured risk management framework to proactively identify, assess, and mitigate risks that may impact its strategic objectives. The Company's Risk Management Committee (RMC), constituted by the Board, is responsible for formulating, implementing, and monitoring the overall risk management plan.



Risk Governance Structure

The Committee, comprising three non-executive directors, meets quarterly to review the Company's risk exposure and mitigation strategies on behalf of the Board.

At the executive level, the Head of ESG (Chief Risk Officer) leads business risk management and reports directly to the CEO, ensuring independence. Operational risk monitoring is conducted by the Management Audit & Assurance Services (MA&AS) team, which reports to the Chairman and conducts audits across ESG and business functions, supplemented by external reviews.

Enterprise Risk Management Tools and Practices

During FY 2024–25, the Risk Management Committee met four times to review the risk landscape. The Company operates under a Board-approved Risk Management Policy, which outlines material risks and the respective mitigation strategies. The framework is built to minimize the adverse impacts of risks on business objectives while also enabling APSEZ to capitalize on potential opportunities.

The Enterprise Risk Management (ERM) model integrates both quantitative and qualitative data to assess risks and supports decision-making during project conceptualization, implementation, and post-commissioning stages. The Company has also defined a risk appetite framework, an approved benchmark of acceptable risk levels, used for regular risk reviews and performance tracking. Any deviation from acceptable thresholds is reported to the management and escalated to the Risk Committee for resolution.

In our ERM process, we recognize that certain positive risks can present significant opportunities for our operations. When these opportunities have the potential to improve our EBITDA by 1% or more, we classify them as strategic opportunities.

Key Features of the Risk Assessment Dashboard

Comprehensive Dashboard View
Offers consolidated insights at both location-specific and company-wide levels.

Category-Wise Risk Visualization
Displays risks by category, along with their associated impacts.

Heat Map Generation
Creates customized risk heat maps by user, function, and severity (High–Medium–Low).

Risk Trends and Severity Charts
Tracks risk trends over time and maps overall severity levels for monitoring.

Location-Based Risk Analysis
Provides severity assessments by location for targeted mitigation.

Interactive Bubble Charts
Visualizes likelihood vs. impact of risks on a quarterly basis.

Colour-Coded Risk Registers
Risk severity is highlighted using a color-coded system for clarity.

User Access Controls
Management users can access dashboards relevant to specific sites and central functions.

Audit Trail Functionality
Maintains a detailed audit trail for all updates and design modifications.

Automated Alerts
Sends scheduled notifications to risk owners and the Chief Risk Officer, ensuring timely action on risk items.

Climatic **Risk Assessment**

APSEZ employs a thorough climate risk assessment methodology to identify and assessment of physical (acute and chronical) and transitional climate-related financial risks (current regulation, emerging regulation, technology, legal, market, reputational) covering our own operations, upstream and downstream operation over short, medium and long terms. Also, the potential impact on our business. Our strategy encompasses the management of immediate, medium-term, and long-term risks, ensuring a comprehensive risk oversight that includes the evolving challenge of climate change.

In FY 2024–25, APSEZ conducted a climate scenario analysis across its all operational ports and terminals including international and associated upstream and downstream operations to assess climate-related financial and business risks. Aligned with IPCC guidelines and using a CMIP6-based climate hazard database as per global best practices, the phased assessment covered both physical and transition risks. Physical risk assessments were conducted using SSP1/RCP2.6, SSP2/RCP4.5, and SSP5/RCP8.5 scenarios based on CMIP6 models, while transition risks were evaluated using the STEPS and NZE 2050 scenarios (based on IEA frameworks) across multiple timeframes.

Leveraging data from NASA, the World Bank Open Database License (ODbL), and WRI Aqueduct 4.0, and applying a structured risk framework, APSEZ assessed vulnerabilities and adaptation needs.

Key indicators such as climatic hazards, water and energy use, emissions, and regulatory costs were integrated into the company's risk management system to support targeted mitigation efforts and enhance long-term climate resilience.

To proactively address climate-related risks and opportunities, we have introduced a dedicated budget and refined financial cost estimates, both approved by the Board. This enables a focused investment roadmap targeting low-carbon technologies, renewable energy, and green port development.

Demonstrating its commitment to climate action, APSEZ has committed over 1,350 crores for decarbonization initiatives and technology adoption in FY 2025-26. As part of its capital strategy, APSEZ has also adopted an internal carbon pricing mechanism, assigning a monetary value to emissions across its operations and products.

These carbon costs are integrated into investment decisions, allowing for more informed prioritisation of low-carbon and renewable energy projects.

Demonstrating its commitment to climate action, APSEZ has committed over INR

1,500

crores for decarbonization initiatives in the coming years.

Highlights

None of our sites
are vulnerable to Extreme heat hazard

25%
of our sites are vulnerable to Extreme precipitation hazard

75%
of our sites are vulnerable to Water stress hazard

50%
of our sites are vulnerable to Cyclone hazard

13%
of our sites are vulnerable to Coastal flood hazard

19%
of our sites are vulnerable to of Riverine flood hazard

Physical Risk Assessment

We have undertaken a comprehensive physical climate risk analysis across all operational ports and terminals in our portfolio. Of these, four ports are in gujarat, 3ports/terminals in Tamilnadu, two each in Andhra pradesh, Odisha, one each in Goa, Kerala, Maharashtra. Beyond India, we operate 3 internation ports, one in Haifa, Israel; one in Dar es Salaam, Sourth Africa; one in Colombo, Sri Lanka's western province.

To assess the physical climate risks (chronic and acute risks across) this diverse portfolio, APSEZ has adopted a scenario-based approach aligned with the Coupled Model Intercomparison Project Phase 6 (CMIP6). Using baseline historical (baseline) hazard profiles and forward-looking projections under three emissions scenarios — SSP1/RCP2.6 (low-emissions, sustainability-driven), SSP2/RCP4.5 (intermediate-emissions), and SSP5/RCP8.5 (high-emissions, fossil-fuel dependent) — we have evaluated potential climate impacts across three temporal horizons: near-term (2030), mid-term (2050), and long-term (2100). These timeframes are consistent with the Intergovernmental Panel on Climate Change (IPCC) guidance, allowing us to systematically identify and plan for location-specific vulnerabilities and resilience needs.

Assumptions

- Global CMIP6 hazard layers (50 km resolution) used to assess climate risks.
- Cyclonic hazard is classified by wind speed, though speed-specific operations are not differentiated. Downtime and TAT post-cyclone are estimated using average historical impacts.
- Average cargo value per ton has been derived from total cargo volume and revenue across all cargo types.
- Cyclone-related physical damage is estimated using speed and region-specific damage functions.
- Flood-related damage is assessed based on flood depth and occurrence using similar functions.

A comprehensive climate risk analysis across all 16 ports in our portfolio. Of these, four ports are in gujarat, 3ports/terminals in Tamilnadu, two each in Andhra pradesh, Odisha, one each in Goa, Kerala, Maharashtra. Beyond India, we operate 3 internation ports, one in Haifa, Israel; one in Dar es Salaam, Sourth Africa; one in Colombo, Sri Lanka's western province.

Climatic Hazard Severity in Port Locations

Climate Hazards Materiality Assessment in Ports

Conducting a climate materiality assessment is a critical first step for ports before engaging in hazard severity analysis, as it enables the identification and prioritization of climate-related risks that have the most significant impact on port operations, infrastructure, and long-term viability. Ports, being inherently exposed to coastal and weather-related influences, face both acute events such as cyclones, storm surges, and flooding and chronic stressors like sea level rise, extreme heat, and water scarcity. A materiality assessment helps distinguish which hazards are most relevant based on the port's geographic location, operational profile, supply chain dependencies, and stakeholder sensitivities. This ensures that subsequent hazard severity analyses are focused, resource-efficient, and aligned with strategic risk management priorities. By filtering through a lens of materiality, ports can avoid generic, low-impact considerations and instead develop tailored adaptation pathways and investment strategies that safeguard both economic performance and climate resilience.

Table 1: Climatic hazard impact on ports

Climate Hazard	Impact on Port Infrastructure and Operations
Extreme heat / Heat wave / Heat stress	- Deterioration of asphalt surfaces, cranes, and machinery due to thermal expansion and material fatigue. - Reduced workforce productivity and increased health risks.
Extreme precipitation / Urban flooding	- Disruption of transport connectivity due to waterlogging in access roads. - Drainage system overload causing facility damage. - Cargo handling delays.
Coastal flooding	- Inundation of port terminals and storage areas. - Damage to electrical systems and corrosion of metal structures. - Disruption of customs and cargo clearance operations.
Riverine flooding	- Silting and sedimentation in river ports, affecting navigability. - Infrastructure submersion causing closures. - Risks to freshwater intake and wastewater systems.
Cyclones, hurricanes, typhoons	- Destruction of port buildings, container yards, cranes, and mooring systems. - Disruption of logistics chains and vessel traffic. - Risk to personnel safety and IT assets.
Water stress	- Operational constraints for water-intensive processes (e.g., cooling, cleaning). - Increased competition for freshwater affecting port-dependent industries.
Sea level rise	- Long-term submergence risk of low-lying port infrastructure. - Erosion and salinization of soils and groundwater. - Need for costly adaptive measures (e.g., elevation).

Port specific Climatic Hazards Severity Assessment

The climatic hazards observed at port locations, along with their future projections, are presented below. Drawing from multiple literature sources, these hazards have been classified into six levels based on their severity

Very High Impact with Very high likelihood	High Impact with Likelihood	Moderate Impact with Possible Likelihood	Low impact with Very unlikely Likelihood	Very Low Impact with Very Unlikely Likelihoo

Table 2 Scenario specific hazards across short, medium and long term time horizons

Port Name	Extreme heat hazard			Extreme precipitation hazard			Wate stress hazard			Cyclone hazard			Coastal flood hazard			Riverine flood hazard			Sea level rise hazard		
	SSP1-2.6/RCP2.6 (Below 2°C Scenario)																				
	2030	2050	2100	2030	2050	2100	2030	2050	2100	2030	2050	2100	2030	2050	2100	2030	2050	2100	2030	2050	2100
Mundra																					
Tuna																					
Dahej																					
Hazira																					
Dighi																					
Mormugao																					
Vizhinjam																					
Karaikal																					
Kattupalli and Ennore Terminal																					
Krishnapatnam																					
Gangavaram																					
Dhamra																					
Gopalpur																					
Haifa																					
Dar es Salaam																					
Colombo West International Terminal																					

Port Name	Extreme heat hazard			Extreme precipitation hazard			Wate stress hazard			Cyclone hazard			Coastal flood hazard			Riverine flood hazard			Sea level rise hazard		
	SSP2-4.5/RCP4.5 (Above 2°C Scenario - ~2.0-2.7°C)																				
	2030	2050	2100	2030	2050	2100	2030	2050	2100	2030	2050	2100	2030	2050	2100	2030	2050	2100	2030	2050	2100
Mundra																					
Tuna																					
Dahej																					
Hazira																					
Dighi																					
Mormugao																					
Vizhinjam																					
Karaikal																					
Kattupalli and Ennore Terminal																					
Krishnapatnam																					
Gangavaram																					
Dhamra																					
Gopalpur																					
Haifa																					
Dar es Salaam																					
Colombo West International Terminal																					

Port Name	Extreme heat hazard			Extreme precipitation hazard			Wate stress hazard			Cyclone hazard			Coastal flood hazard			Riverine flood hazard			Sea level rise hazard		
	SSP5-8.5/RCP8.5 (Far Above 2°C Scenario - >4°C)																				
	2030	2050	2100	2030	2050	2100	2030	2050	2100	2030	2050	2100	2030	2050	2100	2030	2050	2100	2030	2050	2100
Mundra																					
Tuna																					
Dahej																					
Hazira																					
Dighi																					
Mormugao																					
Vizhinjam																					
Karaikal																					
Kattupalli and Ennore Terminal																					
Krishnapatnam																					
Gangavaram																					
Dhamra																					
Gopalpur																					
Haifa																					
Dar es Salaam																					
Colombo West International Terminal																					

Likelihood Classification of Climate Hazards

Likelihood Category	Definition
Very Likely	Event or hazard is expected to occur frequently or annually under current or projected climate conditions.
Likely	Event or hazard is expected to occur regularly, with high probability in the short to medium term.
Possible	Event or hazard may occur occasionally in the coming decades, based on observed or modelled trends.
Unlikely	Event or hazard is not expected frequently, but cannot be ruled out entirely.
Very Unlikely	Event or hazard is rare, with very low probability of occurrence in foreseeable future.

Hazard Impact Classification for Ports

Impact Category	Definition
Very High	Hazard intensity causes catastrophic disruption, long-term port closure, or structural failure of critical infrastructure.
High	Hazard leads to major disruption, repair needs, operational delays, or moderate infrastructure damage.
Moderate	Hazard causes occasional delays, damage to secondary infrastructure, or adaptive response needs.
Low	Hazard has limited operational impact, with short-term disruption but minimal structural damage.
Very Low	Hazard intensity is negligible, with no significant impact on port operations or infrastructure.

Port specific Climatic Risk Adaptation Strategy

Ports play a critical role in global trade and economic development, yet they are increasingly vulnerable to the impacts of climate change. Rising sea levels, extreme weather events, prolonged heatwaves, and water scarcity pose significant risks to port infrastructure, operations, and surrounding communities. A climate risk adaptation strategy for ports is therefore essential to ensure long-term resilience and continuity. At an introductory level, such a strategy involves identifying key climate-related threats, assessing their potential impact, and implementing measures to reduce vulnerability. This may include strengthening physical infrastructure, improving water and energy efficiency, enhancing emergency preparedness, and integrating climate considerations into future planning and investment decisions. By adopting a proactive and flexible approach, ports can better manage climate risks, protect asset value, and maintain their vital role in the global supply chain. The port specific detailed economic impact and corresponding adaptation strategy based on the most sever climatic hazard has been shown below-

Ports	Mitigation & Adaptation Plan		
	Short term	Medium term	Long term
Mundra	• Conduct annual vulnerability and flood risk assessments aligned with asset and infrastructure changes • Install temporary flood barriers and mobile pumps • Implement early warning systems and evacuation protocols • Update operations manuals for extreme weather events • Train staff and conduct cyclone/flood emergency drills • Audit critical infrastructure for climate vulnerabilities • Regularly test cyclone response protocols • Review insurance coverage for climate-related disruptions	• Retrofit key assets for flood resilience • Embed climate risk in asset management and investment planning • Diversify supply chains to reduce terminal dependency • Expand insurance and risk transfer tied to climate scenarios • Integrate cyclone risk in port planning and emergency systems • Institutionalize heatwave protocols, training, and health checks • Upgrade HVAC and use heat-resilient building materials • Deploy IoT-based temperature monitoring and climate dashboards • Create heat buffer zones with greenery and reflective surfaces • Update labor codes for heat exposure; collaborate on localized heat research	• Use predictive digital water systems and redesign port layouts for sea level rise • Invest in nature-based solutions (mangroves, wetlands) for surge buffering • Partner with governments on coastal resilience and managed retreat plans • Institutionalize climate scenario modelling and continuous monitoring • Build multi-hub logistics to reduce site dependency • Align maritime policies with climate-resilient development • Integrate health and heat adaptation in resilience planning • Scale remote operations and retrofit terminals for heat resilience • Promote passive cooling in buildings and support innovation in adaptive port design

Ports	Mitigation & Adaptation Plan		
	Short term	Medium term	Long term
Tuna	• Develop site-specific emergency plans (e.g., crane shutdowns in high wind) • Install early warning systems linked to IMD/NOAA for surge and rainfall • Rainproof fertilizer storage to prevent leaching • Elevate and seal substations and critical equipment • Use modular flood barriers around bulk cargo zones • Upgrade drainage near coal yards to prevent runoff and flooding • Implement heat protocols: rescheduling, hydration, shade, PPE • Explore parametric insurance for cyclone and rainfall events	• Elevate and reinforce jetties, conveyors, and roads for 100-year surge + SLR • Build climate-resilient cargo sheds • Use permeable pavements and rain gardens for runoff control • Explore low-emission equipment with climate subsidies • Deploy digital twins to simulate climate impacts and response	• Assess relocating key assets from high-risk erosion/inundation zones • Build climate-resilient, flexible-use berths for shifting cargo trends • Repurpose coal yards for green cargo amid energy transition • Restore mangroves and wetlands for natural flood defines • Establish eco-buffers around fertilizer zones to curb runoff
Dahej	• Deploy portable flood barriers at tank bunds and fertilizer warehouses • Integrate real-time cyclone alerts with automated response triggers • Set up cooling zones and shaded shelters for field teams in extreme heat	• Elevate berths, pipe racks, and access roads by 1.0–1.5m above HAT + SLR • Use marine-grade SS/FRP to replace corrosion-prone components • Retrofit firewater systems for flood-resilient operation • Redesign drainage with high-capacity pumps and anti-backflow valves	• Redesign jetties and breakwaters using sediment and SLR models • Restore mangroves and saline grasslands with GMB/local govt. for surge buffering • Add bio-swales and green berms for runoff filtration and soil stability • Install climate-triggered remote shut-off valves at liquid manifolds
	• Run safety drills for combined chemical leak and flood scenarios	• Install oil-water separators and neutralization pits in spill-prone zones • Deploy IoT sensors for micro-weather and soil salinity monitoring	• Design tank farms to handle low-carbon fuels like bioethanol and green methanol
Hazira	• Elevate critical facilities above 100-year surge + buffer • Conduct CRZ audit and restore mangroves per NGT mandates • Design automation with flood/heat-resistant systems and manual fallback • Align CSR with climate adaptation—support nurseries, eco-tourism, and resilient livelihoods	• Build reinforced coastal defenses, mangrove belts, and wetland buffers • Use digital twins for flood simulation and response planning • Develop on-site blue-green infrastructure for stormwater management • Set up community cyclone alerts, training, and climate awareness programs	• Establish amphibious evacuation and resilient inland links (e.g., Ghogha–Dahej) • Design terminals for flood-tolerant, modular recovery
Dighi	• Install real-time surge sensors and automated weather alerts • Build modular floodwalls around chemical zones, generators, and control rooms • Develop cyclone SOPs for vessel berthing, tank shutdowns, and evacuation • Add auto shut-off valves and leak detection in saltwater-exposed pipe racks	• Elevate jetties, roads (+1.5m) and tank bunds for 1-in-100-year flood + SLR • Retrofit berths with corrosion-resistant materials and wave-resilient mooring • Build stormwater network with detention basins and hydrocarbon interceptors • Use GIS hazard zoning to separate high-risk and water-sensitive assets	• Set back chemical/oil storage 100–150m from high tide line • Convert shoreline bulk yards to container storage • Create green buffers with salt-tolerant plants and mangroves • Add artificial wetlands for runoff treatment and flood control

Ports	Mitigation & Adaptation Plan		
	Short term	Medium term	Long term
	• Cover manifolds with spill shelters to prevent chemical runoff • Use covered conveyors, silos, and dust cannons in dry bulk zones • Elevate reefer plugs, waterproof ECR panels, and anchor containers for wind resilience		
Mormugao	• Upgrade drainage and detention systems for monsoon runoff • Use permeable pavements and bioswales to reduce flooding • Elevate critical assets; hold annual cyclone drills • Assess heat stress; install shade and misting in high-workload zones • Upgrade control rooms with climate-proof cooling and power backup • Create failover protocols for automation and logistics • Use topographic mapping and hazard models for elevation planning	• Install reflective/green roofs and vegetation to lower temperatures • Use smart scheduling for heat-sensitive tasks (e.g., night shifts) • Reinforce quay edges and revetments against erosion • Expand mangrove afforestation and coastal stabilization • Strengthen breakwaters and restore nearby mangroves for surge protection • Implement rainwater harvesting and underground storage • Use smart water-level sensors for real-time flood monitoring • Apply digital twins for cyclone planning and evacuation optimization	• Use modular, reconfigurable infrastructure for rapid recovery • Ensure alternate inland logistics routes for backup • Build submerged-proof docks and overflow-resistant terminals • Repurpose dredge material for erosion buffers and carbon sinks • Expand blue-green infrastructure for flood resilience and ecosystems
Vizhinjam	• Install smart metering and reuse systems in terminal plumbing • Elevate critical assets above 100-year surge + safety margin • Design new infrastructure for +1m SLR and surge • Upgrade automation hubs with heat insulation, cooling, and UPS	• Use digital twins and upgraded ICT for resilient operations • Install greywater plants for reuse; partner with Kerala Water Authority for municipal integration • Retrofit quay edges with seepage-resistant revetments • Expand mangrove afforestation for erosion control • Add reflective roofs, solar canopies, and green-blue façades • Automate daytime tasks and shift manual work to cooler hours	• Achieve >90% water reuse for self-sufficiency • Apply internal water pricing in CAPEX planning • Shift to AI-driven, climate-controlled automation zones
Karaikal	• Integrate real-time cyclone alerts via IMD Bay of Bengal feeds • Stock modular flood barriers for low-lying zones • Apply anti-corrosion coatings in drainage areas • Use rain shelters and tarpaulin tunnels for bulk cargo during monsoons • Cover fertilizer piles or use hygroscopic barriers • Add chemical-resistant bunds and saltwater-tolerant seals in liquid cargo zones • Secure wind-sensitive break bulk cargo with cyclone-ready anchoring systems	• Elevate berths and access ramps by 1.2–1.5m above MSL + SLR • Replace open yards with silos for cement and fertilizer • Automate dust suppression in coal and limestone areas • Floodproof reefer plug-ins and substations with raised MCC panels	• Designate climate buffer zones with zoning overlays (e.g., restrict liquid cargo near residential areas) • Build wetlands to treat stormwater, especially fertilizer runoff • Coordinate with CRZ and TN Disaster Mgmt for shared alerts and flood-resilient access routes

Ports	Mitigation & Adaptation Plan		
	Short term	Medium term	Long term
kattupalli and Ennore Terminal	• Implement rainwater harvesting and greywater reuse with smart metering • Elevate control rooms and substations above surge levels • Run annual cyclone drills with automation fallback protocols • Use coastal LiDAR to update elevation standards through 2100	• Set up central greywater treatment for reuse in ops and landscaping • Partner with Chennai Metrowater to supply reclaimed water and ease Minjur desal load • Reinforce shorelines and restore mangroves along Ennore and Pulicat as natural buffers • Use digital twin surge simulations for cyclone response planning • Retrofit quay edges with soft-engineering solutions and expand mangrove cover	• Run closed-loop water systems with >90% reuse for autonomous ops • Apply internal water scarcity pricing to drive efficiency • Use modular infrastructure for rapid post-event reconfiguration • Ensure inland rail/road connectivity for supply chain continuity • Install floating/hydraulic docks adaptable to sea-level changes
Krishnapatnam	• Pilot renewable-powered desalination • Expand rainwater harvesting and smart metering • Elevate critical infrastructure above 100-year surge levels • Conduct annual drills with disaster agencies, including automation failover • Use LiDAR and hazard models to guide elevation standards • Add shaded zones and evaporative cooling in manual areas	• Install greywater reuse systems for yard wetting, dust control, and landscaping • Partner with local authorities for water reuse in municipal systems • Reinforce quay walls, breakwaters, and vegetative buffers • Use digital twins for storm simulation and response planning • Retrofit quay edges with erosion-resistant revetments • Restore wetlands and mangroves to stabilize shorelines • Expand solar canopies and reflective/green roofs to cut heat	• Target >90% water self-sufficiency via reuse and desalination • Factor water-scarcity risk into CAPEX for efficiency • Use modular, mobile infrastructure for quick cyclone recovery • Install floating/hydraulic docks adaptable to sea-level changes • Shift to AI-driven, climate-controlled autonomous cargo zones

Ports	Mitigation & Adaptation Plan		
	Short term	Medium term	Long term
	• Upgrade control hubs with insulated cooling and power backup plans.	• Shift intense manual tasks to cooler night hours	
Gangavaram	• Integrate IMD/INCOIS data with real-time alerts in control centers • Elevate and waterproof key electrical and conveyor rooms near berths • Install wind barriers and runoff channels for coal/bulk minerals • Use rainproof loaders and dehumidified sheds for fertilizers and limestone	• Elevate jetties, mooring platforms, rail platforms, and conveyors by ≥1.0m • Retrofit berths with FRP or marine-grade SS to resist corrosion • Install retention ponds and interceptors for fertilizer and coal runoff • Zone hazardous cargo away from critical assets like IT centers and workshops	• Upgrade breakwaters using wave run-up models and cyclone projections • Create bioswales and wetlands for surge absorption and filtration • Reinforce dunes or build berms along vulnerable coastlines
Dhamra	• Elevate critical infrastructure above +7m surge levels • Align storm and traffic protocols with NDMA and state systems • Hold annual multi-agency drills using peer port models • Restore mangroves near Kanika and Gahirmatha for natural buffering • Engage coastal communities and fishers through seasonal forums	• Build climate-resilient quay walls, breakwaters, and buffer wetlands • Use digital twins for weather simulations and cargo rerouting • Set up early warning systems with community alerts and climate literacy • Embed adaptation in port master plan with regular third-party resilience reviews	• Maintain amphibious infrastructure for seasonal submersion • Set up inland transshipment hubs for backup during port downtime • Use modular systems for rapid recovery and operational flexibility • Form a community advisory board for joint coastal and biodiversity efforts

Ports	Mitigation & Adaptation Plan		
	Short term	Medium term	Long term
Haifa	• Link real-time wave/tide/surge monitoring to IMS • Trigger automatic gate closures, crane shutdowns, and ship controls on surge alerts • Auto-lock STS/yard crane booms above 75 km/h and activate cyclone tie-down procedures	• Elevate berths, substations, and crossings by +0.8–1.2m for SLR • Raise fuel pumps and control panels at tank farms • Use permeable pavements, oil-water separators, and bioswales to manage runoff	• Avoid new berths/tank farms in 1m SLR zones; use elevated modular foundations • Partner with Haifa Municipality to restore coastal buffers (dunes, reefs) • Establish salt-tolerant vegetative belts around port edges
Dar es Salaam	• Install bunds and mobile flood barriers around substations, gatehouses, and pipeline entries • Set up heat shelters, shaded rest areas, and hydration units for yard workers • Ensure watertight conveyors and sheltered berths for grains and break bulk • Add moisture sensors in grain silos	• Elevate jetties, substations, and control centers by ≥ 1.0m above Highest Astronomical Tide (HAT) • Reinforce roads and railheads prone to rain-induced collapse • Add oil-water separators and spill catchment trenches in bulk zones	• Restrict new builds in SLR floodplains using DEM data • Use modular elevated foundations and storm-resistant cranes • Design flood-resilient offices and warehouses • Retrofit terminals for biofuels, SAF, and green ammonia/methanol • Upgrade cargo systems with corrosion-proof piping and separate fossil/non-fossil manifolds
Colombo West International Terminal	• Install flap valves/backflow preventers to block seawater intrusion • Elevate reefer points above 1-in-100-year flood line • Install anemometers with auto-lock cutoffs at 70–80 km/h wind speeds	• Elevate quay edges and aprons by +1.0m for 2100 sea-level rise • Regrade container zones and improve drainage to prevent pooling • Use permeable pavers on secondary roads for stormwater control • Install shore power for container vessels to cut emissions and heat stress	• Design new terminals with >2m elevation, smart drainage, and green buffers • Zone low-lying areas as retreat/reserve zones • Build wave-attenuating reefs and submerged breakwaters • Restore mangroves and dunes with Coast Conservation Department

Existing adaptation plan

We have implemented comprehensive adaptation measures across all our port operations. To mitigate water stress, we utilize desalination technology to ensure a reliable and sustainable freshwater supply, significantly reducing dependence on traditional water sources. For coastal flooding risks, we have adopted a nature-and-infrastructure-based approach, including mangrove afforestation and conservation, construction of coastal protection structures, regular dredging, improved drainage systems, and early warning systems, complemented by active community engagement. In response to extreme heat, worker safety remains a key focus, with protocols in place to provide shaded rest areas, hydration stations, and access to medical care. To manage cyclone-related risks, we maintain a robust Disaster Management Plan (DMP) that includes standard operating procedures for emergency preparedness, resource mobilization, communication protocols, and post-cyclone recovery. This is supported by early warning systems, Quick Response Teams, infrastructure resilience measures, and coordination with relevant authorities and stakeholders. These initiatives are part of our broader climate resilience strategy, aimed at ensuring business continuity, safeguarding communities, and supporting long-term sustainability in the face of climate change.

Transition Risk Assessment

One of the key impacts of climate change is the anticipated shift in national policies, regulatory requirements, market expectations, technological advancements, and reputational considerations. We have included current regulation, emerging regulation, technology, legal, market, and reputational risks in our transition risk assessment. Together, these transition risks have the potential to significantly disrupt our normal business operations, with the pace of change likely to align with the rate at which society begins to experience the effects of climate change.

APSEZ has undertaken a forward-looking transition risk analysis in alignment with the TCFD and IFRS S2 recommendations. This assessment identifies and evaluates the financial and strategic implications of potential regulatory, market, and technological shifts associated with the global transition to a low-carbon economy.

The assessment is based on two globally recognized climate scenarios developed by the International Energy Agency (IEA):

Base Case / Business-as-Usual (BAU):

Stated Policies Scenario (STEPS) – reflects the current policy trajectory without additional decarbonization commitments beyond those already implemented.

Low Carbon Scenario:

Net Zero Emissions by 2050 (NZE) – assumes aggressive global climate action to limit warming to 1.5°C, with widespread adoption of low-carbon technologies, shifting market preferences, and stricter climate regulations.

For APSEZ, transition risks may materialize through:

- Carbon pricing mechanisms, affecting operating costs,
- Changing customer preferences, favouring low-emission logistics,
- Underutilization of fossil-fuel-linked assets,
- Barriers to adoption of low-carbon technologies due to supply chain and cost constraints,
- Legal and reputational exposure due to ESG non-compliance,
- Challenges in accessing climate-aligned capital, and
- Failure to achieve stated decarbonization targets, impacting competitiveness and stakeholder trust.

Risks and opportunities have been evaluated over three timeframes: short-term (2030), medium-term (2040), and long-term (2050), in accordance with TCFD recommendations. This enables APSEZ to integrate climate considerations into strategic decision-making and long-term investment planning, particularly in the context of India's net-zero commitment by 2070.

Transition Risks and Mitigation Strategy

Opportunity / Risk score key

High Opportunity | Moderate Opportunity | Low Opportunity | Limited | Low Risk | Moderate Risk | High Risk

Current and Emerging Regulations

Transition Risks
CO_2 Price

Financial Drivers
Increased direct cost

Impact Level

Short-term	Medium-term	Long-term
Impact ■	Impact ■	Impact ■
• Continue to apply the internal carbon price to Scope 1 & 2 emissions • Integrate into investment decisions to prioritize low-carbon fleet and port capex • Increase internal shadow aligned with EU ETS	• Adopt green shore power, hybrid tugs, and electric logistics • Target net-zero Scope 1 & 2 with carbon credit trading • Extend carbon pricing to Scope 3 transport • Co-fund shore power with green vessel partners	• Participate in global carbon-negative trade • Develop internal carbon banking and cross-border carbon credits

Transition Risks
Finance Access Tied to Climate Alignment

Financial Drivers
Access to Capital

Impact Level

Short-term	Medium-term	Long-term
Impact ■	Impact ■	Impact ■
• Set defined KPIs for climate-aligned finance • Raise at least 40–50% of long-term debt • Continue to apply internal carbon pricing into capital budgeting	• Operationalise Net Zero Scope 1 and 2 targets • Extend ICP to vendor selection and debt planning • Create green infrastructure portfolios	• Achieve Net Zero across key Scope 3 categories • Climate screening for new investments, M&A, and Joint Ventures projects • Monetise verified carbon reductions

Legal

Transition Risks
Litigation-related costs due to climate non-compliance

Financial Drivers
Increased OPEX

Impact Level

Short-term	Medium-term	Long-term
Impact ■	Impact ■	Impact ■
• Conduct third-party ESG audits • Enhance disclosures aligned with EU Taxonomy • Verify supplier data accuracy	• Maintain climate liability insurance using verified emissions data and digital twins • Secure data provenance via blockchain smart contracts	• Participate in Global carbon-negative trade • Develop internal carbon banking and cross-border carbon credits

Market

Transition Risks
Clients transitioning to more sustainable and resilient supply chain models

Financial Drivers
Decreased revenues

Impact Level

Short-term	Medium-term	Long-term
Impact ■	Impact ■	Impact ■
• Increase green port services • Work with suppliers to increase green procurement	• Embed climate risk in end-to-end port & logistics services • Get the ports certified as 'Green Ports' Develop carbon-neutral	• Partner with shipping companies to offer an end-to-end low carbon services

Technology

Transition Risks
Asset underutilization from low-carbon transition

Financial Drivers
Reduced revenue and ROCe

Impact Level

Short-term	Medium-term	Long-term
Impact ■	Impact ■	Impact ■
• Increase availability of hydrogen/ ammonia bunkering terminals and battery recharging hubs	• Develop modular berths adaptable to cargo types and trade flows.	• Repurpose idle port areas into CCS sites, monetizing under future environmental credits

Transition Risks
Capital and Supply Chain Barriers to Low-Carbon Technology

Financial Drivers
Increased OPEX

Impact Level

Short-term	Medium-term	Long-term
Impact ■	Impact ■	Impact ■
• Set up innovation hubs for India-made hybrid cranes • Pursue JVs and green financing via sustainability-linked loans	• Use green leasing for capex-heavy assets • Develop local vendors for EVs, green hydrogen, and port electrification; provide technical training support	• Invest in R&D for DAC and industrial CCS with global green-tech co-funding

Transition Opportunity
Deployment of renewable technology

Financial Drivers
Reduced operating costs

Impact Level

Short-term	Medium-term	Long-term
Impact ■	Impact ■	Impact ■
• Accelerate electrification of port equipment, cranes, and internal logistics vehicle • Partner with Adani Green Energy • Advance water and waste reuse projects Establish pilot projects for green hydrogen-ready infrastructure	• Transition to 100% renewable energy consumption • Deploy energy storage systems to manage intermittent renewable generation. • Adopt green hydrogen technologies. • Introduce smart energy management systems • Implement low-carbon fuels and logistics Scale circular economy practices	• Build green hydrogen/ammonia bunkering terminals. • Transform ports into self-sustaining green energy hubs

Reputation

Transition Risks

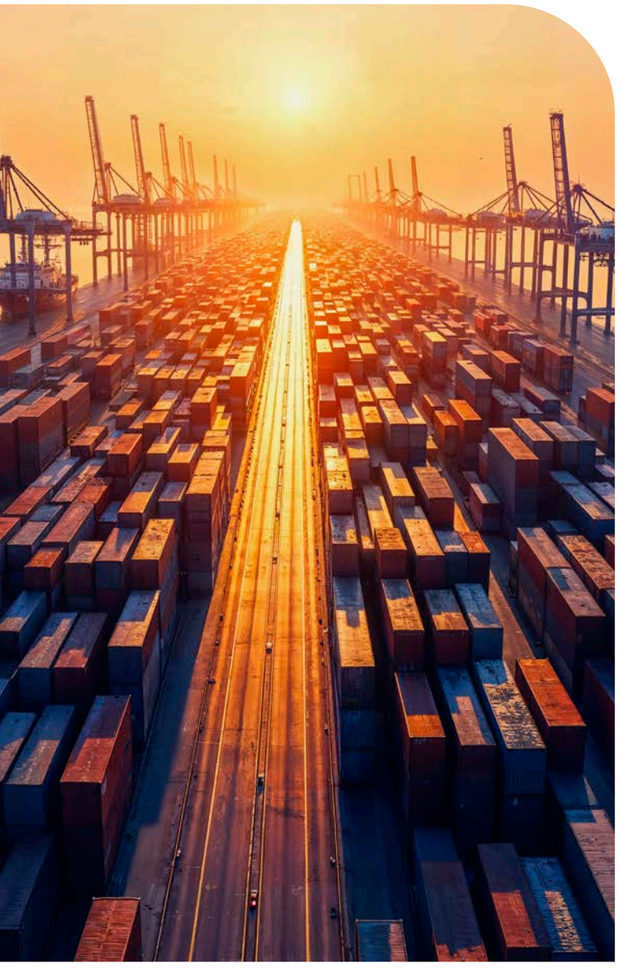
Failure to achieve decarbonization plan

Financial Drivers

Increased OPEX

Impact Level

Short-term	Medium-term	Long-term
Impact	Impact	Impact
• Expand off-site renewable PPAs or RECs to push renewables >30% • Set port wise GHG reduction KPIs and link with all employees' incentives	• Establish joint Scope 3 reduction plans with major suppliers and shipping lines	• Build on-site negative-emissi on technologies to ensure net-negative balance



Financial Implications of Climate-related Risks and Opportunities Identified

Details of risks and opportunities identified with the potential to have a substantive financial or strategic impact on our business.

Carbon Pricing Mechanism: Transitional Risk

As carbon pricing expands in India through state-level initiatives and increasing global pressure, APSEZ may face indirect costs through fuel, logistics, or charges passed on by shipping clients. Even if all operations achieve carbon neutrality by 2030 and the government sets Scope 1 emissions costs to zero, the financial impact remains significant.

Estimated EBITDA Impact:

Annual emissions under the scope 1 emissions x carbon price (INR/Tco2e) = 98750 x 455 = INR 4,49,31,250

An estimated carbon cost of INR 4.49 crore, based on Scope 1 emissions of 98,750 tCO_2e and a carbon price of INR 455 per tonne, is projected to reduce EBITDA every year.

Cost of Mitigation or Adaptation:
Transitioning to a low-carbon operational model to address this risk will require a one-time investment of approximately INR 21 crores.

By proactively investing in mitigation, APSEZ can reduce long-term exposure to carbon pricing volatility and align with evolving climate regulations.

Renewable electricity use: Opportunity

Use of renewable electricity presents an opportunity given the low cost of generation we have from the captive solar and hybrid capacity. We also gain from the vast experience of our group companies in large-scale installation renewable power projects and transmission of power. The zero-carbon electricity is used for our own operations and for providing auxiliary power (shore power) to the berthed vessels.

At our ports, ships currently rely on fossil fuels during berthing to meet their auxiliary power requirements. As zero-carbon technologies continue to advance, ships will increasingly depend on ports for green fuel refuelling, onshore renewable power supply, carbon capture and storage (CCS), and waste recycling and disposal. By timely adopting these technologies, APSEZ can benefit from the transitioning shipping sector. Conversely, if we fail to take action to meet the evolving demands, we risk losing customers to our competitors. Developing the necessary infrastructures for these services requires significant investment and a considerable construction period.
Therefore, a clear transition pathway and policy certainty are crucial for effective planning and long-term investment. We see a higher opportunity in the deeper decarbonization of the shipping sector with onshore power supplies to the ships presenting a key opportunity.

As APSEZ continues to electrify its operations with renewable energy, with further options of providing green onshore power to incoming ships, the demand for renewable electricity will grow.

This investment in low-emission technology has the potential to yield positive returns for the organization given the lower cost of generation.

Explanation of financial benefit derived:

1. Total power consumption from domestic operations = 389 GWh
2. The total installed renewable capacity (at 20% LF) required to meet the power demand = 222MW
3. Average cost savings/KWh= INR 6/KWh.

Hence, total potential opportunity per year = INR 6/KWh* 389 GWh= INR 233.4 crore.

Strategy to realize opportunity and explanation of cost calculation.

The power required to meet the demand with solar and wind will be 389 GWh. Load Factor which is the (Total energy output from solar panels) / (Maximum possible energy output from solar panels) has been assumed to be 20%.

We have calculated the 'Cost to realize opportunity' with the following approach:

a. Total installed capacity required to meet APSEZ's power requirement= (389 GWh * 1000)/ (365*24*20%) = 222 MW
b. Cost requires for installation per MW capacity =INR 6 crore
c. Cost required for establishment of total required capacity = 222*6 = INR 1,332 crore. Therefore, cost to realize opportunity= INR 1,332 crore.
d. Based on the above calculation, the pay-back period for the stated investment is (1332/ 233.4) = around 5.7 years.

Riverine Flood: Physical Risk

Riverine flooding poses a significant threat to APSEZ's operations by inundating critical port infrastructure, including docks, warehouses, and access roads, causing delays in cargo handling and vessel movements. Prolonged flooding can lead to structural damage, equipment loss, and supply chain disruptions, resulting in substantial economic losses and operational downtime. Dahej and Hazira Ports in Gujarat are anticipated to be particularly vulnerable to such impacts.

Based on our climate modelling of the probability and depth of flood, the downtime impact factor of Dahej and Hazira Ports is 1.33 while their estimated downtime duration are 0.105 days and 0.206 days respectively. The FY 2024-25 operating revenue of Dahej and Hazira Ports are INR 612 crore and INR 1,897 crore respectively. Hence, expected annual loss from riverine flood downtime are:

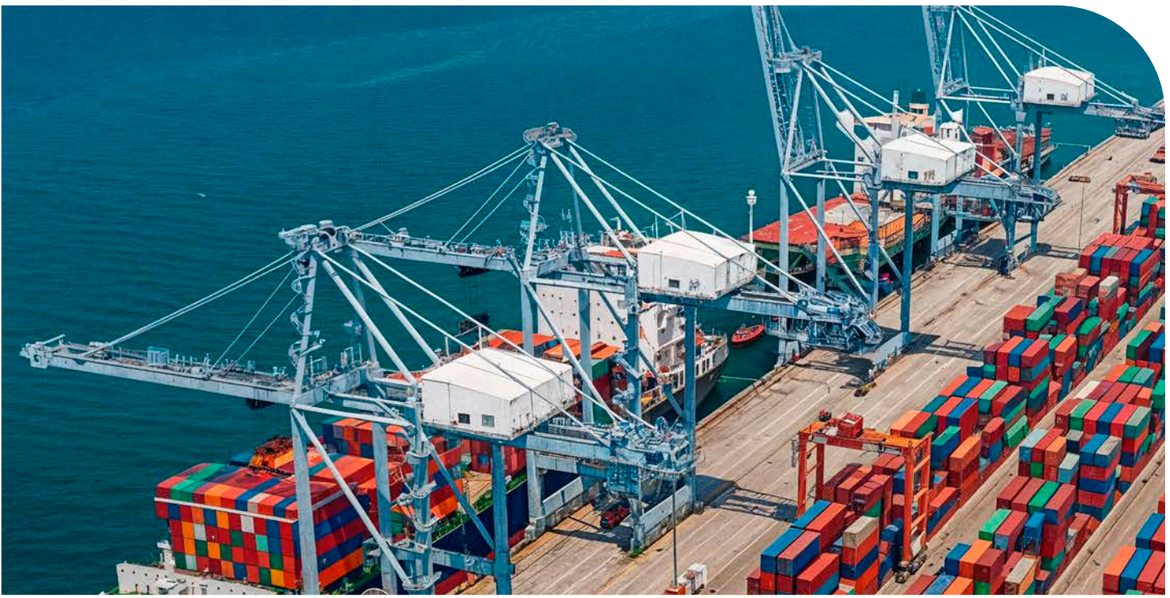
Dahej = (612/365)*0.105*1.33 = INR 0.23 crore

Hazira: (1,897/365)*0.206*1.33 = INR 1.42 crore

Total at the two sites = INR 1.65 crore

Cost of mitigation or adaptation

To adapt to this risk, we have identified measures like redesign of drainage, storm water discharge facility and installation of high-capacity pumps and anti-backflow valve. We invested INR 27.92 crores, last year, on drain construction and the implementation of robust flood risk management and adaptation measures across all ports. We estimate an investment of INR 2.44 crores at Dahej and Hazira ports to mitigate the riverine flood risk.



Exposure to tropical cyclones

The intensity, frequency and consequences of extreme cyclones vary depending on the geographic location of each port. Cyclones affects our operations by causing delays and temporary interruptions in cargo handling. Some specific impacts we anticipate include muddy conditions, operational delays, difficulty in carrying out cargo handling, congestion, limited access, compromised water quality, habitat damage from increased runoff, dredging requirements, and challenges related to disposal of dredged material. The identified risks have financial implications that include operational delays and stoppages, damage to infrastructure and components, leading to loss of revenues.

Estimated financial implication of the risk:

Minimum impact: Dighi being our smallest operation, face the lowest single site average loss of revenue from closure of the port of any of APSEZ's sites. The daily average loss at Dighi site is calculated at INR 6.96 lakhs. Operating revenue of Dighi Port in FY2024-25 = INR 25.39 crore. Revenue per day from Dighi Port= INR 25.39 crore / 365 days in a year = INR 6.96 lakhs per day.

Maximum impact: Cyclones affecting the western coast near Gujarat, Maharashtra, and Goa pose the greatest risk to our operations, since six of our ports and terminals- Mundra, Hazira, Dahej, Tuna, Dighi, and Mormugao- are located in this region. If all these ports close at once as a precaution or due to damage, it would result in the highest revenue loss.

Total operating revenue of Mundra, Hazira, Dahej, Tuna, Dighi and Mormugao in FY 2024-25 = INR 10,867 crore. Revenue per day from Mundra, Hazira, Dahej, Tuna, Dighi and Mormugao= INR 10,867 crore /365 days in a year= INR 29.77 crore per day.

Therefore, if a cyclone hits the entire west coast of India then APSEZ would have a revenue loss of INR 29.77 crore per day due to disruptions in operations at Mundra, Hazira, Dahej, Tuna, and Mormugao ports.

Cost of mitigation or adaptation

We have developed adaptation plan for the ports based on a comprehensive vulnerability assessment of the operations, assets and infrastructure. In line with the plan, we have invested to build port resilience to withstand or adapt to the extreme climate stressors and recover from any extreme climate events quickly and emerge stronger to cope up better in future. Building resilience involves all the stakeholders that are responsible for planning, financing, operation and maintenance of the port and the allied/ co-located infrastructure. As a result, a holistic approach has been taken that has helped us augment the resilience of the infrastructure to climate change. With our adaptation measures we have improved capacity of the port equipment and the allied infrastructure, like roads, rails, drainage systems, etc. to withstand extreme weather events. We have invested INR 127.2 crore on different adaptation measures till 2024 out of which INR 26.3 crore were invested in engineering measures, capacity building, like raising awareness, early warning systems, monitoring, etc. and ecosystem-based adaptation measures like mangrove plantation to reduce impacts of storm surge. An investment of INR 100.7 crore was made in operational measures which includes strengthening of standard operating measures, periodic maintenance, pre-post events monitoring check, etc. In 2025, we invested an additional INR 39.4 crore on construction of roads, drainage systems, environment monitoring and disaster management.

Additionally, we pay a premium of about INR 10 crore to have insurance against damage to various assets and disruption of operations. Cost of response to risk = Insurance premium cost+ other climate resilience measures including the OPEX required to maintain the port from extreme weather conditions (cyclones/storms) = INR 127.2 crore + INR 39.4 crore + INR 10 crore = INR 176.6 crore.

Climate-related **Metrics and Targets**

APSEZ uses defined metrics to monitor performance in relation to key climate- and nature-related risks and opportunities. For material issues, we also establish specific targets to track our actions—aiming to mitigate risks and capitalize on emerging opportunities.

	Target	Target Year	Progress during FY 2024-25	Baseline Year
Net Zero	Achieve Carbon neutrality of the Port Business	2025	Share of renewable electricity increased to 16% from 13% last year	2016
	Achieve Net Zero across APSEZ	2040	Acquired around 400 eITVs to achieve equipment electrification	2016
Energy	50% energy intensity reduction	2025	APSEZ overachieved the target by 3% by FY 2024-25 and achieved the target of 53%	2016
	100% renewable share in electricity	2025	16% renewable share in total electricity in FY 2024-25	2016
Emission Intensity	60% emission intensity reduction	2025	12% reduction in GHG emission intensity in FY 2024-25 vs FY 2023-24	2016

GHG Emissions: Scope 1, 2 and 3

We have successfully achieved emissions levels well below our targeted amounts for the FY 2024-25. We have reduced 32% Share of Scope 1 emissions in total Scope 1 + 2 emissions.

APSEZ adheres to the Greenhouse Gas Protocol's A Corporate Accounting and Reporting Standard (Revised Edition) for quantifying GHG emissions across our operations. The GHG emissions disclosed below are reported using the operational control approach.

Table 5: GHG Emission Calculation Table

	Scope 1	Scope 2	Scope 3
FY 2024-25 ($mtCO_2e$)	1,50,398	3,23,098	20,05,650
FY 2023-24 ($mtCO_2e$)	1,26,197	3,43,428	18,87,215
FY 2022-23 ($mtCO_2e$)	1,21,102	2,61,951	20,23,072
FY 2021-22 ($mtCO_2e$)	1,29,438	1,93,063	4,71,649

Table 6: Scope 3 Emissions Category Wise

Scope 3 Categories	FY 2024-25 (tCO_2e)
Category 1	3,13,802
Category 2	10,65,334
Category 3	70,128
Category 4	3,51,059
Category 5	311
Category 6	1,248
Category 7	1,438
Category 9	1,42,427
Category 13	12,517
Category 15	47,386
Total upstream	18,03,320
Total downstream	2,02,330
Total Scope 3 emissions	**20,05,650**

*Not Applicable Categories for APSEZ – Category 8,10,11,12 & 14

Energy Management

In FY 2024–25, we achieved 16% renewable energy consumption, marking a significant step toward our carbon reduction goals and reinforcing our commitment to sustainable operations.

At APSEZ, our Energy Management System (ISO 50001:2018) undergoes annual surveillance audits to assess progress, identify high-consumption areas, and uncover improvement opportunities. This system ensures data-driven monitoring of energy KPIs and continuous performance enhancement.

Our energy strategy focuses on:

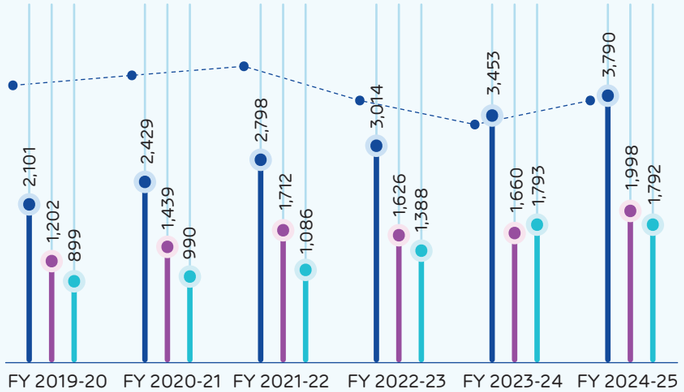
- Strengthening energy conservation across operations
- Expanding renewable energy integration
- Leveraging technology to improve efficiency
- Reducing operational costs through sustained energy optimisation

Operating ports and our two joint ventures (AICTPL and ACMTPL) certified with Energy Management System (ISO 50001:2018).

100% of total electricity consumption from renewable energy sources by 2025

Operational measures include the replacement of conventional lighting with energy-efficient LEDs across ports, enhancing visibility, safety, and energy savings while reducing emissions.

Total Energy Consumption (TJ)



Note: 100% data coverage

Our energy consumption increased marginally by 10% in FY 2024-25.

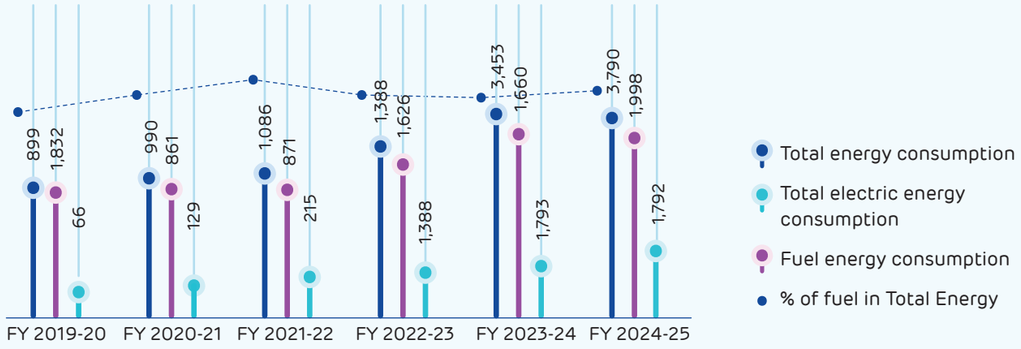
Note: Additional sites Vizhinjam, Gopalpur and Tanzania ports.

- Total energy consumption
- Total electric energy consumption
- Fuel energy consumption
- % of fuel in Total Energy

Material-Wise Energy Consumption (GJ)

19,97,731 Fuel Energy Total	2,027 Acetylene	29 Kerosene	14,99,826 Diesel
3,32,718 FO/HFO	1,10,133 Jet Kerosene	3,067 LPG Contract	43,831 LPG Own
8,275 Petrol	894 PNG Own		

Total Electricity Consumption (TJ)



BU-Wise Energy Consumption (TJ)

TJ Unit	Ports	Supporting Services	Harbour Services	Logistics	Hospital	Dredging	Agri Logistics
Total Energy (TE)	2497	119	535	113	2.4	512	11
Grid Energy (GE)	1481	1.6	0	16	2	0	9
Fuel Energy (FE)	736	117	535	95	0	512	2.3
Renewable Energy (RE)	280	0.2	0	2	0.3	0	0.3

Data **Annexure**

Generic Information

	Units	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Revenue from Operations	INR Cr.	12,550	17,119	20,852	26,711	30,475
Total Revenue	INR Cr.	14,520	19,343	22,405	28,210	32,383
Volume of Cargo Handled	MMT	247	312	339	420	450

Environment
Emissions

	Units	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Total direct GHG emissions (Scope 1)	tCo_2e	1,10,394	1,29,438	1,21,102	1,26,197	1,50,398
Total direct GHG emissions (Scope 2)	tCo_2e	1,96,160	1,93,062	2,61,951	3,43,428	3,23,098
Total Indirect GHG emissions (Scope 3)	tCo_2e	3,48,341	4,71,648	20,23,072	18,87,215	20,05,650
Category 1 – Purchased	tCo_2e	-	-	4,75,391	3,27,542	3,13,802
Category 2 – Capital goods	tCo_2e	-	-	8,48,219	9,81,553	10,65,334
Category 3 – Fuel- and energy-related activities	tCo_2e	51,465	49,103	1,32,022	64,025	70,128
Category 4 – Upstream transportation and distribution	tCo_2e	2,06,645	2,88,191	4,22,719	3,41,195	3,51,059
Category 5 – Waste generated in operations	tCo_2e	58	58	329	329	311
Category 6 – Business travel	tCo_2e	227	531	169	498	1,248
Category 7 – Employee commuting	tCo_2e	2,626	1,801	1,367	1,321	1,438
Category 8 – Upstream leased assets	tCo_2e	-	-	-	-	-
Category 9 – Downstream transportation and distribution	tCo_2e	47,213	69,097	97,653	1,12,876	1,42,427
Category 10 – Processing of sold products	tCo_2e	-	-	-	-	-
Category 11 – Use of sold products	tCo_2e	-	-	-	-	-
Category 12 – End-of-life treatment of sold products	tCo_2e	-	-	-	-	-
Category 13 – Downstream leased assets	tCo_2e	8,047	10,625	11,589	11,513	12,517
Category 14 – Franchises	tCo_2e	-	-	-	-	-
Category 15 – Investments	tCo_2e	32,061	52,242	33,614	46,362	47,386
Scope 1 + 2	tCo_2e	3,06,554	3,22,499	3,83,053	4,69,625	4,73,496
Scope 1 + 2 + 3	tCo_2e	6,54,895	7,94,148	24,06,125	23,56,840	24,79,146
CO_2e emissions intensity [(Scope1+ Scope2)/Revenue]	tCo_2e/Cr.	21.1	17.8	17.1	16.6	14.6

Financed Emissions

Energy
Consumption

	Units	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Total energy consumption	TJ	2,429	2,798	3,014	3,453	3,790
Total fuel consumption	TJ	1,439	1,712	1,626	1,660	1,998
Total electric energy consumption	TJ	990	1,086	1,388	1,793	1,792
Total non-renewable energy consumption	TJ	2,300	2,583	2,820	3,225	3,507
Total renewable energy consumption	TJ	129	215	194	228	283

	Units	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Target for total non-renewable energy consumption	TJ	-	-	-	3,297	3,627
Energy Intensity	GJ/Cr.	167	155	134	122	117

Waste Generation

	Units	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
E-Waste	MT	17	51	111	82	58
Bio-medical Waste	MT	99	7	10	125	15
Battery Waste	MT	29	35	13	56	37
Radioactive Waste	MT	-	-	-	-	-
Construction and Demolition Waste	MT	-	-	-	-	165
Plastic Waste	MT	133	176	894	591	318
Non-Hazardous Waste	MT	9,351	11,674	13,792	10,073	5,777
Hazardous Waste	MT	776	1,052	1,324	2,307	5,975
Total Waste	MT	10,720	12,995	16,144	13,234	12,345
Total Waste Intensity	MT/Cr.	0.47	0.44	0.36	0.27	0.38

Waste Disposal

	Units	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Total waste recycled/reused	MT	9,785	10,468	11,108	10,390	9,657
Waste disposed through landfilling	MT	140	1,694	944	893	2,088
Waste disposed through incineration with energy recovery	MT	532	710	1,132	953	508
Waste disposed through incineration without energy recovery	MT	263	123	140	345	92
Total waste disposed	MT	935	2,527	2,216	2,191	2,688
Target for waste disposal	MT	-	-	-	2,327	2,742
Waste Intensity	MT/Cr.	0.47	0.44	0.36	0.27	0.38

Water Consumption & Withdrawal

	Units	FY 2020-21	FY 2021-22	FY 2023-24	FY 2023-24	FY 2024-25
Total Water Withdrawal	Mm3	4.4020	5.5015	6.2400	7.6980	7.7960
Water Withdrawal (excluding saltwater)	Mm3	1.8488	2.7432	3.6234	4.3011	4.6071
Waste Discharge (excluding saltwater)	Mm3	0	0	0	0	0
Total wastewater recycled	Mm3	0.65	0.74	1.02	1.16	1.13
Total Water Consumption	Mm3	4.1260	4.7311	5.5907	7.0367	7.6730
Total net freshwater consumption (excluding salt water)	Mm3	1.8488	2.7432	3.6234	4.3011	4.6071
Target total net fresh water consumption	Mm3	-	-	-	4.2581	4.8375
Total Water Consumption Intensity	ML/Cr.	0.28	0.26	0.25	0.25	0.24

Return on Environment Investments

	Units	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Environment- Capital Investments	INR Cr.	40.2	209.7	767.4	1493.0	934.0
Environment- Operating Expenses	INR Cr.	35.9	23.6	25.6	31.7	33.9
Environment Total Expenses	INR Cr.	76.2	233.2	793.0	1524.7	967.9
Environment- Savings, cost avoidance, income, tax incentives, etc	INR Cr.	3.5	7.7	36.0	95.3	33.1

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Governance	
TCFD Recommendation	**Document Page**
Describe the Board's oversight of climate-related risks and opportunities	18-19
Describe management's role in assessing and managing climate-related risks and opportunities	20-21

Strategy	
TCFD Recommendation	**Document Page**
Describe climate-related risks and opportunities identified over short, medium, and long term	36-41, 52,53
Describe impact of climate risks and opportunities on business, strategy, and financial planning	42-51, 54-57

Risk Management	
TCFD Recommendation	**Document Page**
Describe how the organisation identifies and assesses climate-related risks	34-35
Describe how risks are managed	43-51, 54-56
Describe how climate risk is integrated into the organisation's overall risk management	34-35

Metrics & Targets	
TCFD Recommendation	**Document Page**
Disclose metrics used to assess climate-related risks and opportunities	60-63
Disclose Scope 1, Scope 2, and Scope 3 GHG emissions	61
Describe climate-related targets and progress against them	61-63

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Governance	
A. The governance body(s) (which can include a board, committee or equivalent body charged with governance) or individual(s) responsible for oversight of climate-related risks and opportunities.	
i. How responsibilities for climate-related risks and opportunities are reflected in the terms of reference, mandates, role descriptions and other related policies applicable to that body(s) or individual(s);	18-21
ii. How the body(s) or individual(s) determines whether appropriate skills and competencies are available or will be developed to oversee strategies designed to respond to climate-related risks and opportunities;	20-21
iii. How and how often the body(s) or individual(s) is informed about climate-related risks and opportunities;	20
iv. How the body(s) or individual(s) takes into account climate-related risks and opportunities when overseeing the entity's strategy, its decisions on major transactions and its risk management processes and related policies, including whether the body(s) or individual(s) has considered trade-offs associated with those risks and opportunities; and	19-20
v. How the body(s) or individual(s) oversees the setting of targets related to climate-related risks and opportunities, and monitors progress towards those targets, including whether and how related performance metrics are included in remuneration policies.	20-21
B. Management's role in the governance processes, controls and procedures used to monitor, manage and oversee climate-related risks and opportunities	
i. Whether the role is delegated to a specific management-level position or management-level committee and how oversight is exercised over that position or committee; and	19
ii. Whether management uses controls and procedures to support the oversight of climate-related risks and opportunities and, if so, how these controls and procedures are integrated with other internal functions.	18-21, 34,35

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Strategy	
Climate-related risks and opportunities	
A. Describe climate-related risks and opportunities that could reasonably be expected to affect the entity's prospects.	36-39
B. Explain, for each climate-related risk the entity has identified, whether the entity considers the risk to be a climate-related physical risk or climate-related transition risk.	38-41
C. Specify, for each climate-related risk and opportunity the entity has identified, over which time horizons (short, medium, or long term) the effects of each climate-related risk and opportunity could reasonably be expected to occur.	40-41
D. Explain how the entity defines 'short term', 'medium term' and 'long term' and how these definitions are linked to the planning horizons used by the entity for strategic decision-making.	38, 43-56
Business model and value chain	
A. Description of the current and anticipated effects of climate-related risks and opportunities on the entity's business model and value chain	34-54
B. Description of where in the entity's business model and value chain climate-related risks and opportunities are concentrated	32, 33
Strategy and decision-making	
A. Information about how the entity has responded to, and plans to respond to, climate-related risks and opportunities in its strategy and decision-making, including how the entity plans to achieve any climate-related targets it has set and any targets it is required to meet by law or regulation. Specifically, the entity shall disclose information about:	
i. Current and anticipated changes to the entity's business model, including its resource allocation, to address climate-related risks and opportunities (for example, these changes could include plans to manage or decommission carbon-, energy- or water-intensive operations; resource allocations resulting from demand or supply-chain changes; resource allocations arising from business development through capital expenditure or additional expenditure on research and development; and acquisitions or divestments);	43-56
ii. Current and anticipated direct mitigation and adaptation efforts (for example, through changes in production processes or equipment, relocation of facilities, workforce adjustments, and changes in product specifications);	43-56
iii. Current and anticipated indirect mitigation and adaptation efforts (for example, through working with customers and supply chains);	43-56
iv. Any climate-related transition plan the entity has, including information about key assumptions used in developing its transition plan, and dependencies on which the entity's transition plan relies; and	22-31, 58-61
v. How the entity plans to achieve any climate-related targets, including any greenhouse gas emissions targets.	66-69
B. Information about how the entity is resourcing, and plans to resource, the activities disclosed in accordance with paragraph.	22-31, 58-61
Financial position, financial performance and cash flows	
A. Effects of climate-related risks and opportunities on the entity's financial position, financial performance and cash flows for the reporting period (current financial effects)	54-56
B. Anticipated effects of climate-related risks and opportunities on the entity's financial position, financial performance and cash flows over the short, medium and long term, taking into consideration how climate related risks and opportunities are included in the entity's financial planning.	54-56
Climate resilience	
A. Entity's assessment of its climate resilience as at the reporting date:	
i. The implications, if any, of the entity's assessment for its strategy and business model, including how the entity would need to respond to the effects identified in the climate-related scenario analysis	39-41
ii. The significant areas of uncertainty considered in the entity's assessment of its climate resilience	39-41
i. (iii) The entity's capacity to adjust or adapt its strategy and business model to climate change over the short, medium and long term, including. (1) The availability of, and flexibility in, the entity's existing financial resources to respond to the effects identified in the climate-related scenario analysis, including to address climate-related risks and to take advantage of climate-related opportunities. (2) The entity's ability to redeploy, repurpose, upgrade or decommission existing assets. (3) The effect of the entity's current and planned investments in climate-related mitigation, adaptation and opportunities for climate resilience.	39-41

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A. How and when the climate-related scenario analysis was carried out:	36-39, 58-65
i. Information about the inputs the entity used, including: (1) Which climate-related scenarios the entity used for the analysis and the sources of those scenarios (2) Whether the analysis included a diverse range of climate-related (3) Whether the climate-related scenarios used for the analysis are associated with climate-related transition risks or climate-related physical risks (4) Whether the entity used, among its scenarios, a climate-related scenario aligned with the latest international agreement on climate change (5) Why the entity decided that its chosen climate-related scenarios are relevant to assessing its resilience to climate-related changes, developments or uncertainties (6) The time horizons the entity used in the analysis (7) What scope of operations the entity used in the analysis (for example, the operating locations and business units used in the analysis)	37-55
ii. The key assumptions the entity made in the analysis, including assumptions about: (1) Climate-related policies in the jurisdictions in which the entity operates (2) Macroeconomic trends (3) National- or regional-level variables (for example, local weather patterns, demographics, land use, infrastructure and availability of natural resources) (4) Energy usage and mix (5) Developments in technology	37, 38, 53
iii. The reporting period in which the climate-related scenario analysis was carried out.	36, 37
Risk Management	
A. The processes and related policies the entity uses to identify, assess, prioritise and monitor climate-related risks, including information about:	34,35
i. The inputs and parameters the entity uses (for example, information about data sources and the scope of operations covered in the processes)	4,5, 34-37
ii. Whether and how the entity uses climate-related scenario analysis to inform its identification of climate related risks	36,37

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iii. How the entity assesses the nature, likelihood and magnitude of the effects of those risks	34,35,40-42
iv. Whether and how the entity prioritises climate-related risks relative to other types of risk	34,35
v. How the entity monitors climate-related risks	18-21, 36,37
vi. Whether and how the entity has changed the processes it uses compared with the previous reporting period	6,7
B. The processes the entity uses to identify, assess, prioritise and monitor climate-related opportunities, including information about whether and how the entity uses climate-related scenario analysis to inform its identification of climate-related opportunities	34-37
C. The extent to which, and how, the processes for identifying, assessing, prioritising and monitoring climate-related risks and opportunities are integrated into and inform the entity's overall risk management process.	34-37
Metric and Targets	
Climate-related metrics	
A. greenhouse gases—the entity shall:	
i. Disclose its absolute gross greenhouse gas emissions generated during the reporting period, expressed as metric tonnes of CO_2 equivalent, classified as: (1) Scope 1 greenhouse gas emissions (2) Scope 2 greenhouse gas emissions (3) Scope 3 greenhouse gas emissions	61
ii. Measure its greenhouse gas emissions in accordance with the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) unless required by a jurisdictional authority or an exchange on which the entity is listed to use a different method for measuring its greenhouse gas emissions	60,61
iii. Disclose the approach it uses to measure its greenhouse gas emissions including: (1) The measurement approach, inputs and assumptions the entity uses to measure its greenhouse gas emissions (2) The reason why the entity has chosen the measurement approach, inputs and assumptions it uses to measure its greenhouse gas emissions (3) Any changes the entity made to the measurement approach, inputs and assumptions during the reporting period and the reasons for those changes	4-5, 60,61

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iv. For Scope 1 and Scope 2 greenhouse gas emissions disclosed (disclose its absolute gross greenhouse gas emissions) disaggregate emissions between: (1) The consolidated accounting group (for example, for an entity applying IFRS Accounting Standards, this group would comprise the parent and its consolidated subsidiaries) (2) Other investees excluded, for an entity applying IFRS Accounting Standards, these investees would include associates, joint ventures and unconsolidated subsidiaries)	60,61
v. For Scope 2 greenhouse gas emissions disclosed in accordance with paragraph 29(a)(i)(2), disclose its location-based Scope 2 greenhouse gas emissions, and provide information about any contractual instruments that is necessary to inform users' understanding of the entity's Scope 2 greenhouse gas emissions	63
vi. For Scope 3 greenhouse gas emissions disclosed (1) The categories included within the entity's measure of Scope 3 greenhouse gas emissions, in accordance with the Scope 3 categories described in the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011) (2) Additional information about the entity's Category 15 greenhouse gas emissions or those associated with its investments (financed emissions), if the entity's activities include asset management, commercial banking or insurance	61
B. Climate-related transition risks—the amount and percentage of assets or business activities vulnerable to climate-related transition risks	56-59
C. Climate-related physical risks—the amount and percentage of assets or business activities vulnerable to climate-related physical risks	56-59
D. Climate-related opportunities—the amount and percentage of assets or business activities aligned with climate-related opportunities	56-59
E. Capital deployment—the amount of capital expenditure, financing or investment deployed towards climate-related risks and opportunities	56-58
F. Internal carbon prices—the entity shall disclose:	33
i. An explanation of whether and how the entity is applying a carbon price in decision-making (for example, investment decisions, transfer pricing and scenario analysis)	33
ii. The price for each metric tonne of greenhouse gas emissions the entity uses to assess the costs of its greenhouse gas emissions	33

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G. Remuneration—the entity shall disclose:	
i. A description of whether and how climate-related considerations are factored into executive remuneration (see also paragraph 6(a)(v))	20-21
ii. A description of whether and how climate-related considerations are factored into executive remuneration (see also paragraph 6(a)(v))	20,21
Climate-related targets	
Quantitative and qualitative climate-related targets	
A. The metric used to set the target	61-63
B. The objective of the target (for example, mitigation, adaptation or conformance with science-based initiatives)	24-33
C. The part of the entity to which the target applies (for example, whether the target applies to the entity	24-29, 60-63
D. The period over which the target applies	6,7,60-63
E. The base period from which progress is measured	6,7, 60-63
F. Any milestones and interim targets	60-63
G. If the target is quantitative, whether it is an absolute target or an intensity target	60-63
H. How the latest international agreement on climate change, including jurisdictional commitments that arise from that agreement, has informed the target.	60-63
Approach to setting and reviewing each target, and monitoring progress against each target	
A. Whether the target and the methodology for setting the target has been validated by a third party	5
B. The entity's processes for reviewing the target	18-21, 24
C. The metrics used to monitor progress towards reaching the target	60-63
D. Any revisions to the target and an explanation for those revisions	Not Applicable
Performance against each climate-related target and an analysis of trends or changes in the entity's performance	
A. Which greenhouse gases are covered by the target.	60,61

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B. Whether Scope 1, Scope 2 or Scope 3 greenhouse gas emissions are covered by the target	37-31, 60-63
C. Whether the target is a gross greenhouse gas emissions target or net greenhouse gas emissions target. If the entity discloses a net greenhouse gas emissions target, the entity is also required to separately disclose its associated gross greenhouse gas emissions target.	37-31, 60-63
D. Whether the target was derived using a sectoral decarbonization approach.	37-31
The entity's planned use of carbon credits to offset greenhouse gas emissions to achieve any net greenhouse gas emissions target. In explaining its planned use of carbon credits.	
i. The extent to which, and how, achieving any net greenhouse gas emissions target relies on the use of carbon credits	27,28
ii. Which third-party scheme(s) will verify or certify the carbon credits	Not Applicable
iii. The type of carbon credit, including whether the underlying offset will be nature-based or based on technological carbon removals, and whether the underlying offset is achieved through carbon reduction or removal	27,28
iv. Any other factors necessary for users of general purpose financial reports to understand the credibility and integrity of the carbon credits the entity plans to use (for example, assumptions regarding the permanence of the carbon offset).	Not Applicable

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