

**adani**

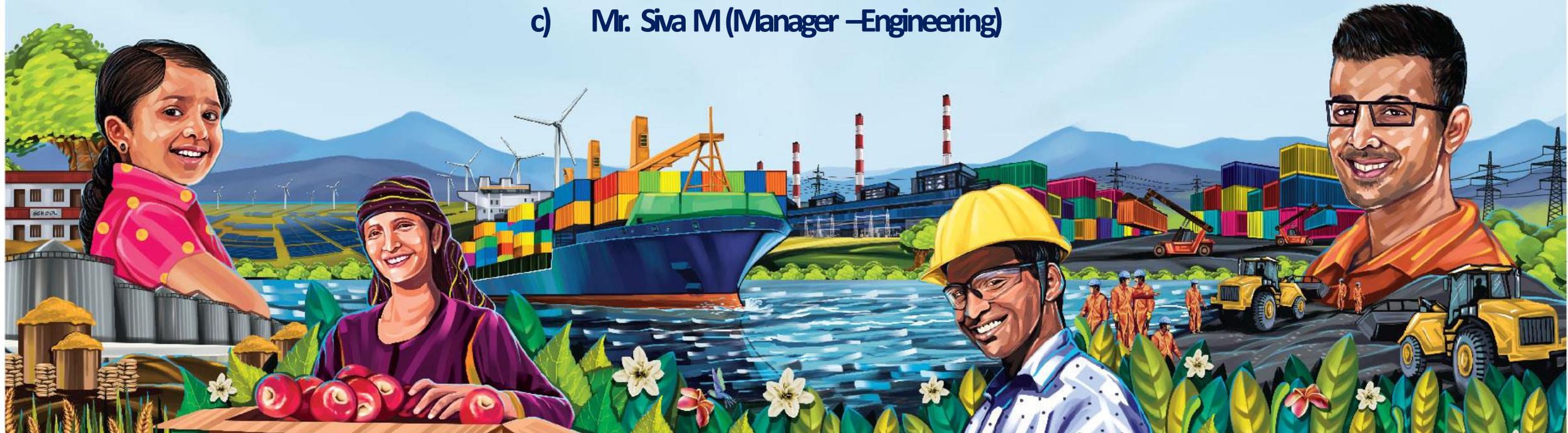
Ports and  
Logistics

# CII –National Award for Environment Best Practices 2024 – MIDPL, APSEZ

Date:

Presented By:

- a) Mr. Premnath R (Head –Environment)
- b) Mr. Alok Sharma (Senior Manager – Strategy & BD)
- c) Mr. Siva M (Manager –Engineering)



# Uplifting lives in more ways than one. Adani Group Portfolio

## Adani Group

**adani**

**Adani Enterprises Ltd.**  
Solar  
Airports  
Adani Wilmar  
Mining Services  
Defence and Aerospace  
Agri Fresh  
Integrated Resources Management  
AdaniConneX Data Centers  
Road, Metro & Rail  
Water  
Bravus Mining & Resources  
North Queensland Export Terminal

**adani**

Ports and  
Logistics

**Adani Ports and Special  
Economic Zone Ltd.**  
Ports  
Logistics  
Agri Logistics  
SEZ

**adani**

Power

**Adani Power Ltd.**

**adani**

Transmission

**Adani Transmission Ltd.**  
Adani Electricity

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Renewables

**Adani Green Energy Ltd.**

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Gas

**Adani Total Gas Ltd.**

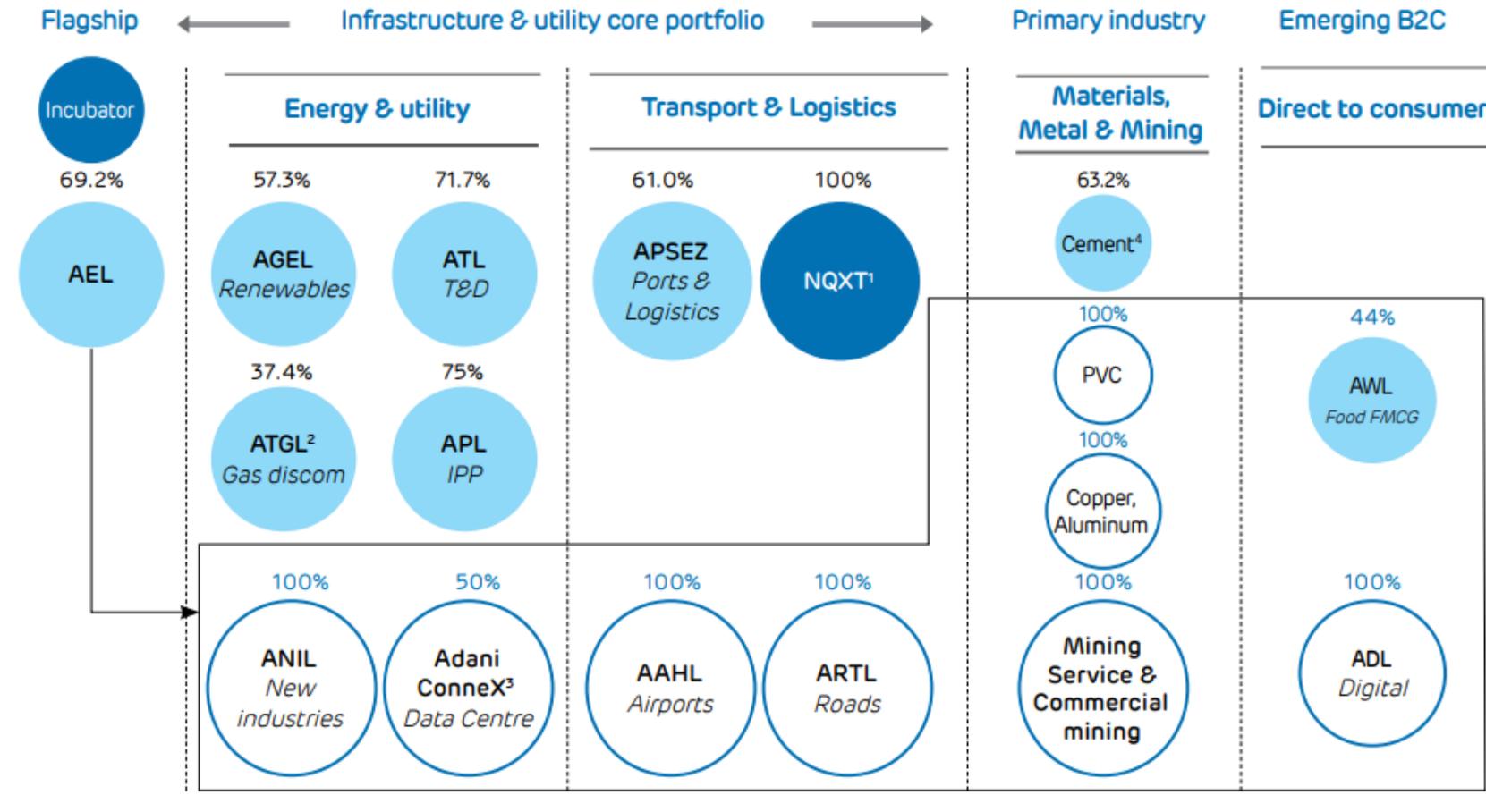
## Other Business

Realty  
Capital  
Housing Finance  
Adani Institute of Infrastructure  
Adani Institute of Digital Technology Management

## CSR

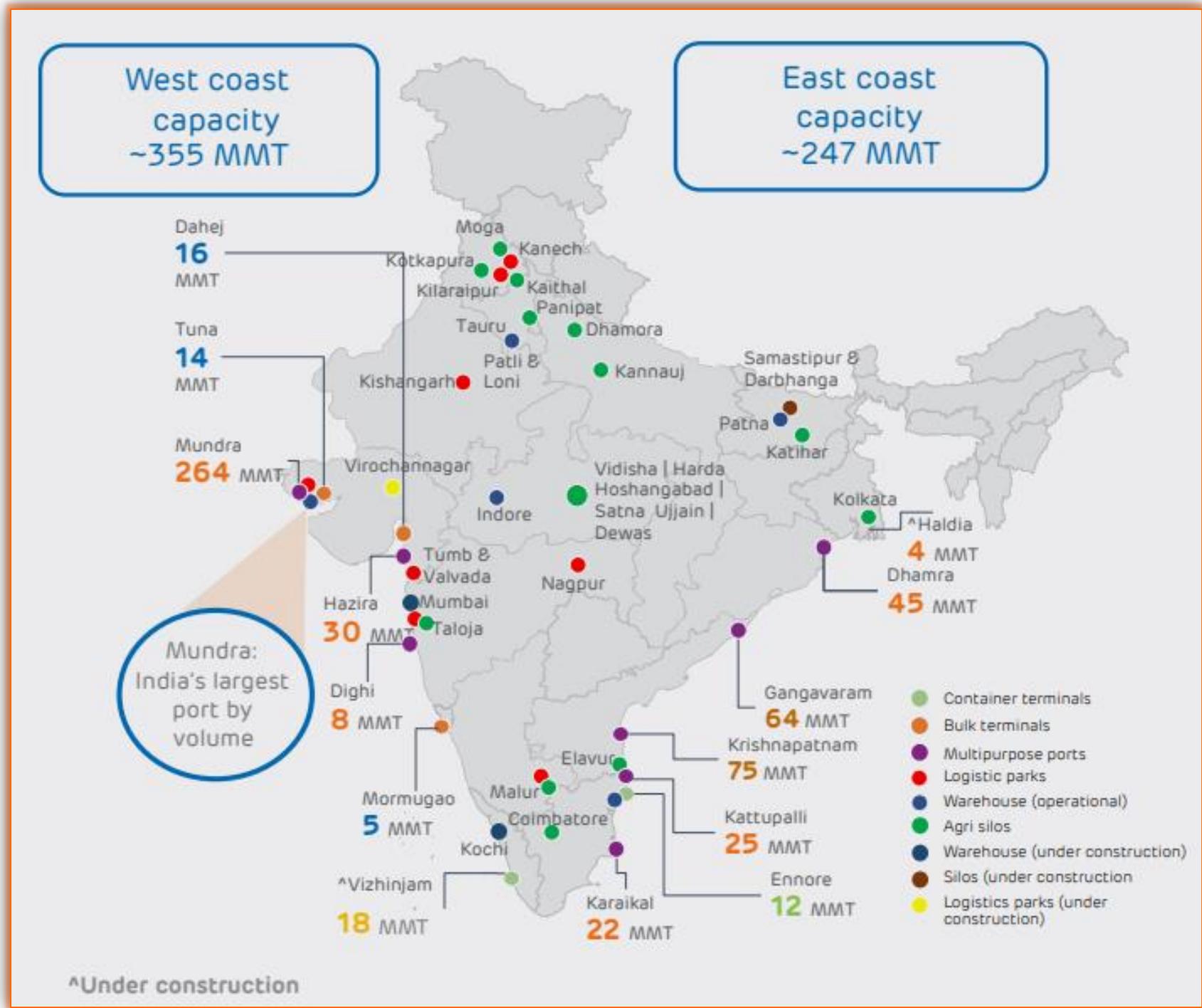
Adani Foundation  
Adani Skill Development  
Gujarat Adani Institute of Medical Sciences

# The Adani Group— A world class Infrastructure & Utility Portfolio



1 NQXT: North Queensland Export Terminal | 2 ATGL: Adani Total Gas Limited, JV with Total Energies | 3 Data center, JV with Edge Connex | 4 Cement business includes 63.15% stake in Ambuja Cements Limited which in turn owns 50.05% in ACC Limited. Adani directly owns 6.64% stake in ACC Limited AEL: Adani Enterprises Limited; APSEZ: Adani Ports and Special Economic Zone Limited; ATL: Adani Transmission Limited; T&D: Transmission & Distribution; APL: Adani Power Limited; AGEL: Adani Green Energy Limited; AAHL: Adani Airport Holdings Limited; ARTL: Adani Roads Transport Limited; ANIL: Adani New Industries Limited; AWL: Adani Wilmar Limited; ADL: Adani Digital Limited; IPP: Independent Power Producer

# APSEZ PORT CAPACITY





# Vision 2030: Our blueprint



## Environment-Social-Governance

- Deepen our governance commitment through strategic transparency

1 • Become a carbon-neutral company by 2025

2 • 100% cargo management using renewable energy

- Mangrove afforestation and focus on green belt development in and around ports
- Alignment with the Adani Group's vision of 100 million trees plantation by 2030: APSEZ to plant around 48 million trees



## Business mix

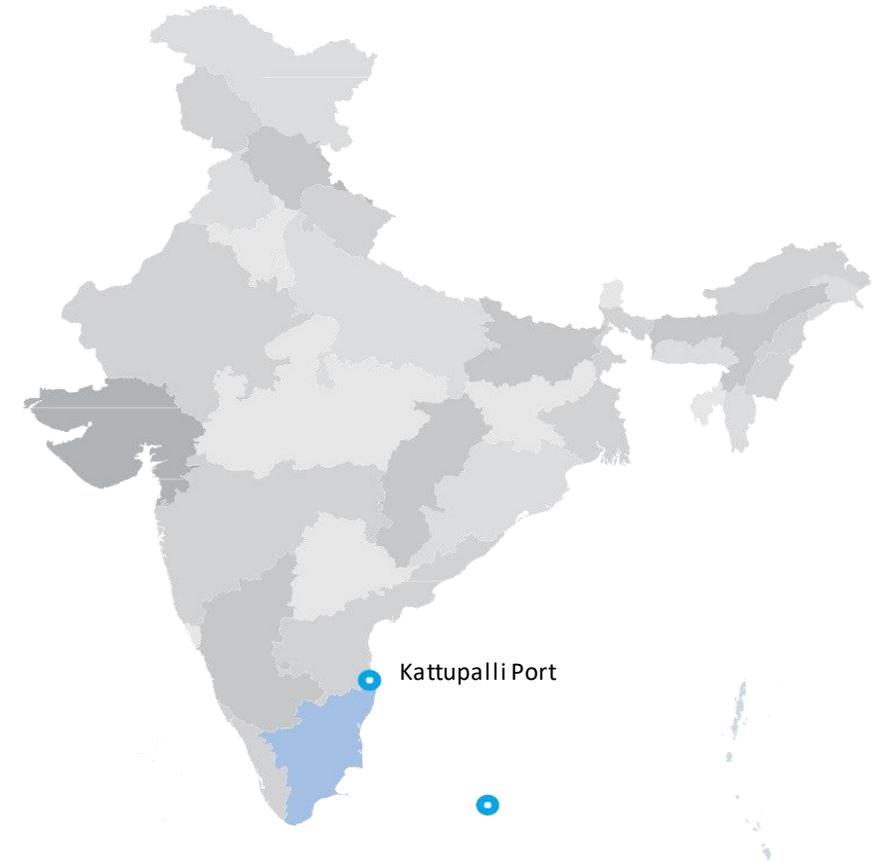
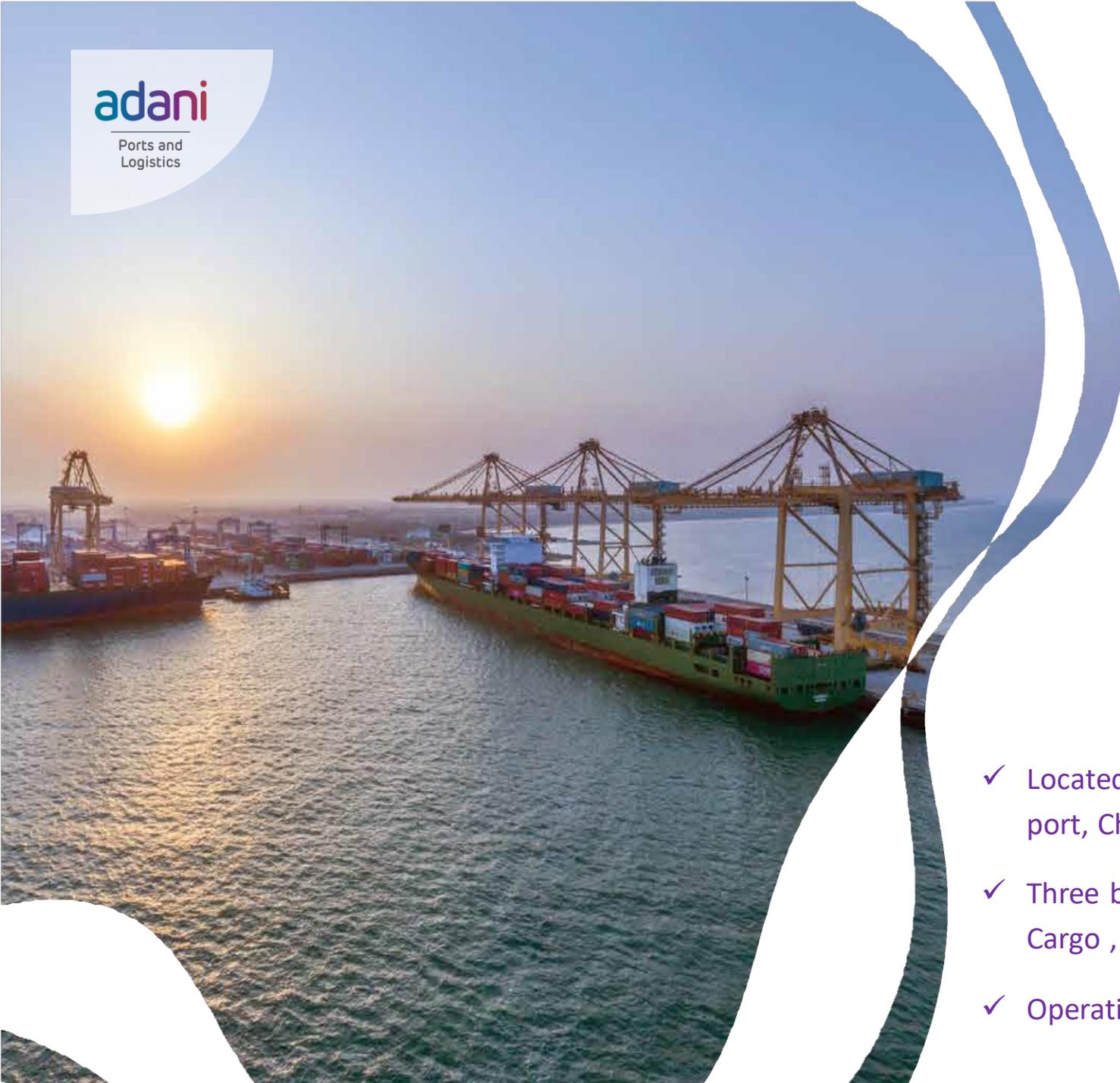
- Focus on RoCE-accretive initiatives and investments
- Increase the asset-light proportion of our revenues (logistics)
- Diversify our existing cargo mix
- Focus on new growth commodities like LPG, LNG etc.
- Focus on coastal volumes growth.



## Footprint

- Widen and deepen our national footprint.
- Asset development across the logistics supply value chain
- Strengthen the sub-continental ports 'necklace' (organic/inorganic initiatives)
- Increase our market share of cargo growth
- Special focus on international opportunities with a focus on Asia and Africa

Trigger Point



- ✓ Located on the coromandel coast about 24km north of Chennai port, Chennai.
- ✓ Three berths equipped to handled containers, break bulk, General Cargo , project cargo and Liquid Cargo
- ✓ Operational efficiency and fast vessel turn around time

# Uniqueness of the Project Implemented



- ✓ In the History of India, first ever deployment of Electrical ITV's instead of Diesel ITV's
- ✓ In-house modification of RTG Cranes for auto transitioning to Electric from Diesel Mode
- ✓ Change in procurement pattern of Electricity coupled with Third Party Purchase Agreement of Green Energy and power trading with IEX (Indian Energy Exchange Platform)



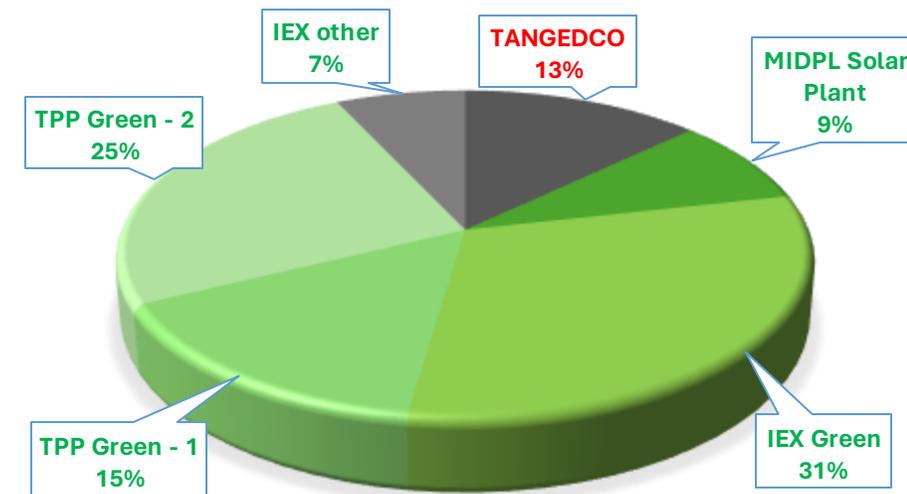
- ✓ Transition on novel Green alternatives for achieving Vision-2030 and long-term target.



**Existing Practice:** 2 kL / 40 ft Container  
QC Import/Export → Diesel ITV to-and-fro from Vessel → RTG Gantry → RTG Places the box in yard → Import/Export Receiving

**Current Practice:** 0.3 kL / 40 ft Container  
QC Import/Export → e-ITV to-and-fro from Vessel → RTG Modification → RTG Places the box in yard → Import/Export Receiving

MIDPL POWER CONSUMPTION



# TANGIBLE BENEFITS

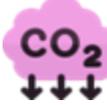
PROJECT	E-ITV TRANSITION PROJECT	RTG ELECTRIFICATION	SOLAR PANEL INSTALLMENT
Project cost (in INR)	55 crore	45 crore	10.7 crore
Existing Fuel Consumption	434 KL / Year	1.5Ltrs /Container	NA
Electrical Energy consumption	1.72 million units / Year	2.5 kwh /Container	NA
Fuel/Energy savings	434 KL / Year	Rs. 110/- (approx.)	1,740,000 kWh Units
Payback period	15- 20 years	5.68 years	6.15 Years
Cost savings (in INR annually)	43.35 Crores	7.92 Crores	1.74 Crores
Emission reduction	584 tCO2 / Annum	1,939 tCO2 / Annum	1,427 tco2/Annum

## OPEX BENEFIT OF e-ITV

RUNNING COSTS (per month per trip)	Diesel ITV		Electric ITV	
	Mileage	1.8 kmpl	Full Charge	255 kWh
	Trip Length	1.5 km	Distance	120 km
	Fuel Cost	Rs 96/L	Cost/Unit	Rs 9.8
	Cost/Trip	Rs 80	Cost/Trip	Rs 30

TOTAL AVERAGE TRIPS—60,000 TOTAL SAVINGS— 60,000 X 50 = Rs 30,00,000

## CUMULATIVE IMPACT

-  ✓ INR 53.01 Crores Saved
-  ✓ 1,226 kL fuel saved
-  ✓ 1,740,000 kWh Units Generated
-  ✓ 3,950 tCo2 Emission avoided annually

# INTANGIBLE BENEFITS



- ✓ This initiative has increased awareness to achieve its target of carbon neutrality.
- ✓ These initiatives helps organization in the reduction of Non-renewable energy and to become socially more responsible.



- ✓ Each electric ITV is expected to result in an annual reduction of approximately 8.6 metric tons of CO2 emissions and 487.7 gigajoules (GJ) in energy consumption. This reduction is significant in terms of environmental impact
- ✓ The transition to e-ITVs contributes significantly to lowering greenhouse gas emissions and promoting cleaner operations.

- ✓ Contributes to United Nations Sustainable Development Goals (UN SDG-7), which promulgates Affordable and Clean Energy, and (UN SDG -13), which advocates affirmative actions on Climate control



# REPLICATION POTENTIAL



## Within the Adani Ports

- ✓ The Kattupalli initiative was replicated across Adani Ports company where in the entire fleet of diesel ITVs were replaced with e-ITVs.
- ✓ Auto transition to electric setup was well awarded and replicated across all Adani Ports container terminals



## Within the Adani Group of Companies

The model of Third-Party Purchase and trading from IEX platform now includes a cross functional team from Adani Enterprise and is replicated across the Adani group of company wherever there is an arbitrage opportunity.



## Exploring Opportunity across sectors

Preference given to existing vendors or customers opting for greener options like LNG operated trucks operated by CONCOR or differential berth hire charges for vessels operating on green energy sources

Also, battery operated mobility is rapidly deployed on all domains for eg— e-Kart for Intra mobility, Forklifts and vehicles.

# KEY CHALLENGES FACED



## Manpower Training

- ✓ E-ITVs in Operations need robust charging roster schedules for seamless equipment availability
- ✓ Drivers must be made acclimatized to new electric equipment



## OE Modification

- ✓ Weight and structural modification: Implementing electrification mechanisms (such as cable reels or conductor bars) adds significant weight to the RTGs.



## Adverse Weather

- ✓ Installing solar modules near a breakwater location posed several challenges due to the sea-shore environment.

# KEY TAKEAWAYS FROM THE PROJECT IMPLEMENTATION



Electric Trailers

- ✓ More than 40% reduction in OPEX is observed due to transition from Diesel ITVs to e-ITVs
- ✓ This initiative has increased awareness to achieve its target of carbon neutrality.
- ✓ These initiatives helps organization in the reduction of Non-renewable energy and to become socially more responsible.



Efficient Charging

- ✓ Charging Options: The batteries of these e-ITVs can be charged through the grid as well as renewable sources of energy. This flexibility allows the port to utilize clean energy for charging, further reducing their environmental impact.



Reduction of Spares

- ✓ Spares & Maintenance: e-ITVs are easier to maintain and requires less consumables in terms of spares vis-à-vis their diesel counterparts

# KEY TAKEAWAYS FROM THE PROJECT IMPLEMENTATION

## Electrification Process:

- ✓ Converting a conventional RTG into an E-RTG means shutting down the diesel genset and powering the RTG with electric power directly from the grid.
- ✓ The E-RTG conversion can be achieved using one of two unique electric power supply systems:

## Benefits of E-RTGs:

- ✓ **Environmental Impact:** E-RTGs are eco-friendly with low emissions. They significantly reduce greenhouse gas emissions compared to diesel-powered RTGs.
- ✓ **Economic Savings:** E-RTGs reduce fuel costs by up to 65% due to their lower energy consumption.
- ✓ **Efficiency:** Quick & easy to maintain, resulting in reduced downtimes and automated operations.



RTG Cranes



Solar Panels

Kattupalli port has taken an innovative step by utilizing its breakwater rock area for setting up a solar power plant. Kattupalli Port's rooftop solar project represents a positive shift toward sustainable energy practices within the port industry. By leveraging available space and adopting innovative technologies, the port contributes to a greener future while meeting its operational needs.

# APSEZ SECURES TOP POSITION FOR ITS CLIMATE AND ENVIRONMENTAL PERFORMANCE



**Secures Leadership band in CDP Climate Assessment 2023**

**Ranked 1st on the environmental dimension among 324 companies in the transport and transport infrastructure sector by S&P Global CSA 2023 (DJSI)**

**Secures the top rank in the marine ports sector on a low carbon transition rating by Sustainalytics**

**Receives the 'Advanced' rating in Moody's Energy Transition Rating and 1st ranking in the overall ESG Assessment and Strategy review in their last update**

# NATIONAL BENCHMARKS



TNPCC Green Award - 2018



Greentech Award 2020



EHS Award - 2018



Sustainability Development Council "Platinum" Award 2018, 2020 & 2021



Golden Peacock Environment Management Award 2021

# NATIONAL BENCHMARKS

## MIDPL –APEX INDIA Award (Year 2021)

Platinum Award given by APEX India

**Criteria:** Energy Efficiency



## MIDPL –APEX INDIA Award (Year 2022)

Platinum Award given by APEX India

**Criteria:** Energy Efficiency



## MIDPL –APEX INDIA Award (Year 2023)

Platinum Award given by Apex India

**Criteria:** Environment Excellence



## MIDPL –EKDKN Award (Year 2022)

Diamond Award given by EKDKN

**Criteria:** Energy Efficiency

## MIDPL-EKDKN Award (Year 2023)

Platinum Award given by EKDKN

**Criteria:** Energy Efficiency



Thank You

