



Ports and
Logistics

Adoption of latest Pollution Control Measures
at
Adani Murmugao Port Terminal Private Limited, Goa
for
CII National Award for Environmental Best Practices 2025



Confederation of Indian Industry



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Project Details

- **Adani Murmugao Port Terminal Private Ltd. (AMPTPL)** proudly contributes to Goa's economic development with its strategically located, sustainable port handling facilities.
- Our dedication to environmental excellence shines through with the development of Berth No. 7, significantly reducing pollution in the area. Since 2013, we have been on a sustainable growth journey, operating a fully mechanized Cargo Handling Terminal under a 30-year concession.

CURRENT PROJECTS

1. **Improving Air Quality with adoption of Advanced Pollution Control Measures**
2. **Realtime Dust Suppression System based on Ambient Air Quality**
3. **Pollution Control, Waste Management and Recycling Efforts**



Measures taken during Cargo Unloading



Covered Conveyor Belts



Foggers at Conveyor Belts



Water Jet Sprays - Mobile Hopper



Yard Stacks Covered With Tarpaulin



**360 deg. Yard Sprinkling System
(DSS)**



Retaining Walls Along Stack Yards

Measures taken during Cargo dispatch by Road



The port has 2 Nos. Truck loading station of capacity 250 Mt. each totally mechanized for loading trucks with improved turnaround times

Dry Fog Dust Suppression (DFDS) System is installed at Truck Loading System.



Automatic Truck Wheel Washing System (Video)



Dedicated structure and manpower for 100% covering of Trucks with Tarpaulin.

Measures taken during Cargo dispatch by Rail



**Automatic Wagon Loading System with In-Motion
Wagon Tarpaulin Covering**



DFDS at Wagon Loading System (Video)

Other Best practices

**15 meters
height
Wind
Screens
along the
periphery
with 33%
Green Belt**



**Concrete
internal Roads
ensuring**



**2 Portable
Water
Sprinkling
System (Fixed
and movable
type)**

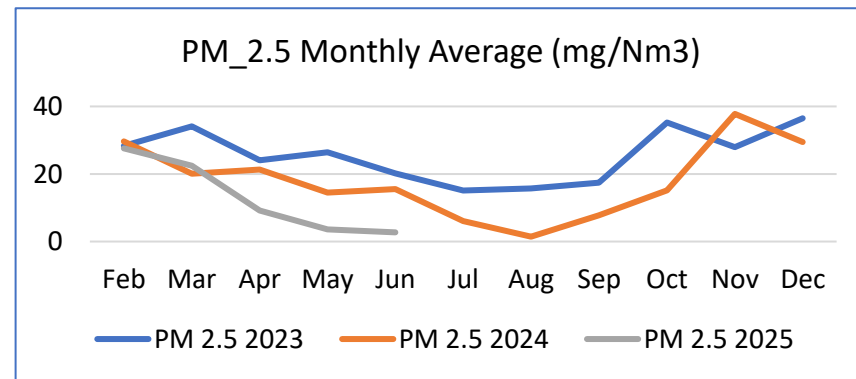
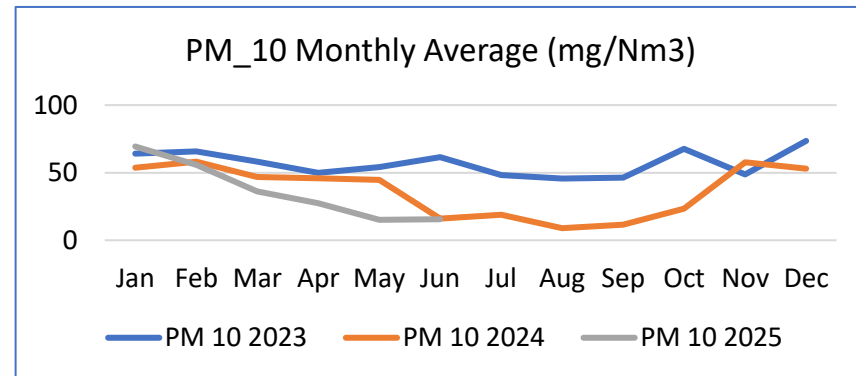
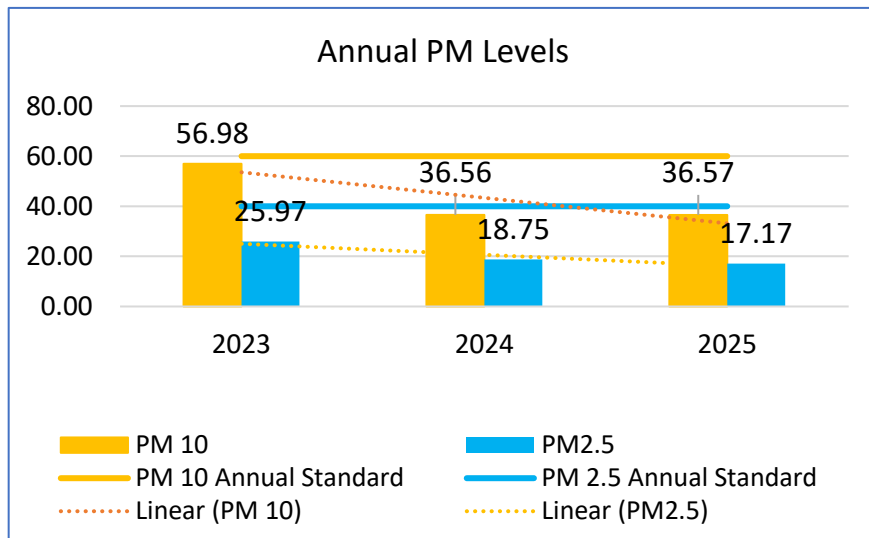


**Availability of
dedicated
Road
Sweeper &
Bobcat for
micro
cleaning**



Environmental Performance

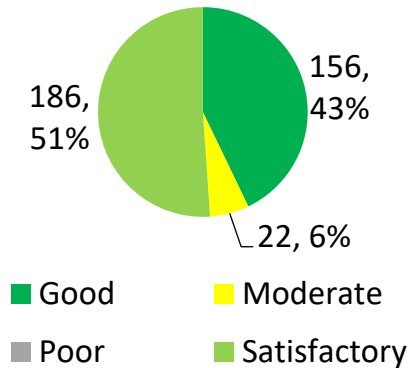
- It is seen that annual as well as monthly PM10 & PM 2.5 levels are well below the NAAQS limits and has decreased significantly over the years.



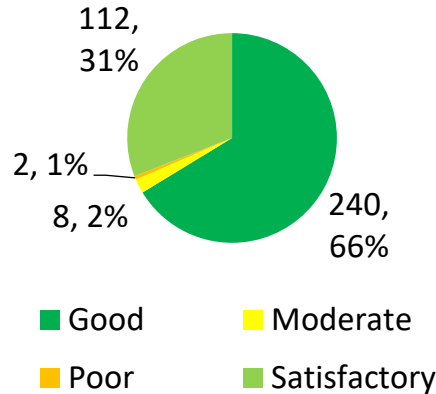
Air Quality

As per the **AQI** data of last 3 years, it has been seen that Number of times the AQI is Good + Satisfactory out of all samples has increased to almost 94% in the year 2023 from 98% in the year 2025.

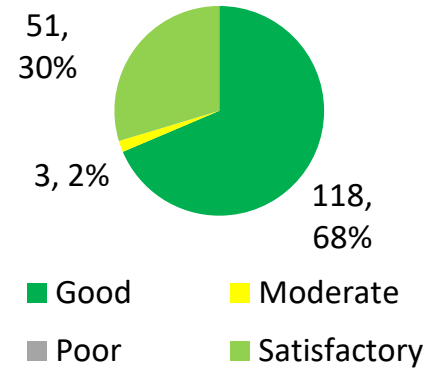
2023 (Jan-Dec)



2024 (Jan-Dec)



2025 (Jan-June)



Other Benefits: (Tangible & Intangible)

Project 1

Benefits: 17% exceedance reduction,
36% ambient PM levels reduction;
Cost: ~Rs 6.25 lakhs; Overall Savings: Rs 8.6 Lakhs;
Payback: Nil

Project 2

Energy Savings: 8332 kWh;
Water Savings: ~43% DSS usage;
Benefit: AQI improved 16.4%;
24x7 operational reliability;
Cost: 48.05 lakhs
Overall Savings: Rs 11.5 Lakh;
Payback: Nil

Project 3

Energy Savings: 117882 kWh;
Fuel Savings: ~180L petrol;
Water Savings: 20,450 kL;
Space Savings: 300m² ; Cost: ~Rs 24.3 Lakhs
Overall Savings: ~Rs 113.17 Lakhs;
Payback: 3.5 years

Realtime Dust monitoring and Auto Dust Suppression

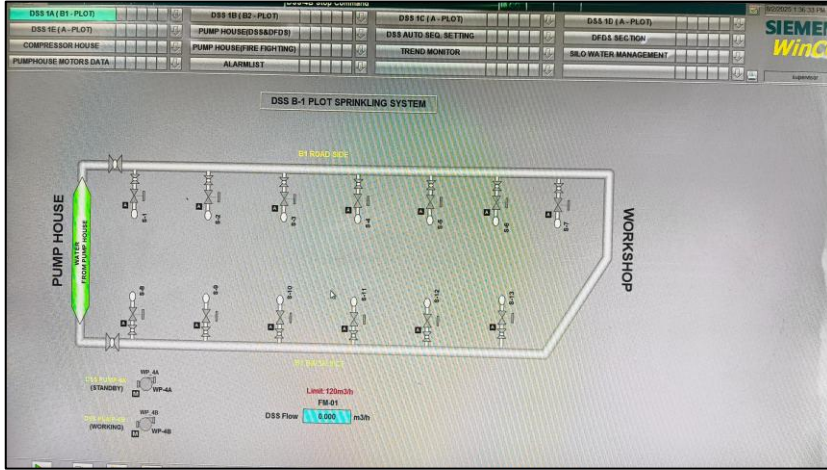
Sr. No.	Parameters	Technical Specifications
1	Type of technology	Real time light scattering laser Photometer.
2	Make	TSI Incorporated, USA.
3	Measurement range .	For Particles (PM2.5/PM10) : 0.001 to 150 mg/m3.
4	Monitoring & Controlling facility.	Alarms/ SMS/Email alerts facility available.
5	Operating Range	0 to 50 degC. Standard, extended temp. range capability of -20 to 50 degC. Available with optional enclosure heater ; 0 to 100% RH.
6	Sample flow Rate	3.0 L/min.
7	Gravimetric Sampling	Removable 37mm cartridge filter. (filter media not supplied).
8	Sample Inlet	Omni-directional inlet with Water trap.
9	Certified technology (MCERTS)	MCERTS for PM parameters, also approved by Goa State Pollution Control Board
10	Data Logging & Internet connectivity	Data logging system including a software for transfer of data to GSPCB server and notifications.
11	List of supplier of same technology in state of Goa.	List of Users in State of Goa with Similar technologies a. IIT-Goa, Mumbai b. NCPOR c. AMPTPL, Goa



Reference picture and actual site installed picture.

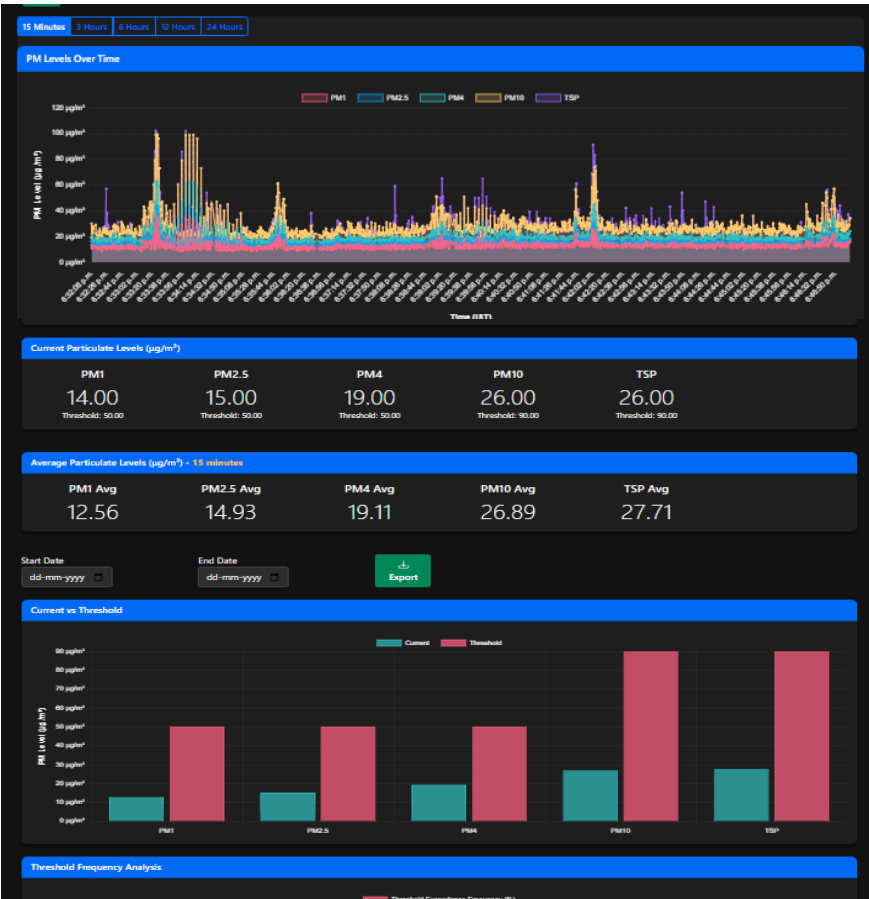
The device is fixed at approx. 15 m height near wind screen to monitor any dust passing the AMPTPL boundary.

Realtime Dust monitoring and Auto Dust Suppression



The Yard dust suppression system (left) is triggered through modem receiver (right) which activates once the threshold value is detected and transmitted to the system.

Realtime Dust monitoring and Auto Dust Suppression



Realtime Dust monitoring at the source and
Auto Dust Suppression based on PM levels in
the Ambient air

ANEMOMETER & WEATHER STATION TO CONTROL OPERATION DURING HIGH WIND



- Anemometer & Siren for detecting wind speed.
- Entire Vessel and rake operations are stopped during wind speed exceeding 25 kmph itself. (As per CTO condition "all operations should stop at a wind-speed of 30 km/hr.")



- Automatic Weather station installed & integrated with CAAQMS & GSPCB server at Sada village.

Nano particles Based Dust Immobilization System

- Adopted dust immobilization chemical mixed with water
- Achieved significant PM level reduction
- Polymer layer formed effective in windy conditions
- Non-toxic, non-inflammable chemical nature, safe for use
- Cleaner surroundings observed



Pollution Control, Waste Management and Recycling Efforts

- Maintaining green belt for dust and noise mitigation
- Using organic waste converter for making in-house compost for maintaining green belt
- Installation of roof top solar power plant
- Built baffle wall system for coal laden treatment
- Replaced traditional petrol vehicle with EV



- **5S Certified Port** - National Productivity Council and Adani Workplace Management Academy (AWMA)
- **Zero Waste to Landfill certified** – CII Delhi
- **Single Use Plastic (SUP) Free Certified Port** – CII ITC Centre of Excellence for Sustainable Development
- **Accolades Received :**
 - **"Diamond Award"** in Service Sector **for Sustainability** in 2024" by Apex India Foundation.
 - **WINNER of "Greentech PCWR Award 2024"** for outstanding achievement in PCWR (Pollution Control & Waste Management & Recycling) category.
 - **"Diamond Award"** in Service Sector for Outstanding Achievement in **Environmental Excellence 2023**" by Apex India Foundation.
 - **"Platinum Award"** in Service Sector for Outstanding Achievement in **Environmental Excellence 2022**" by Apex India Foundation.
 - **"Gold Award"** in services sector for outstanding achievement in **Environment preservation** in 10th Exceed Environment Award and Conference 2021.
 - **"Gold Award"** in services sector for outstanding achievement in **Energy Efficiency** 2021 by Apex India Foundation.



Growth
with
Goodness

Thank You

