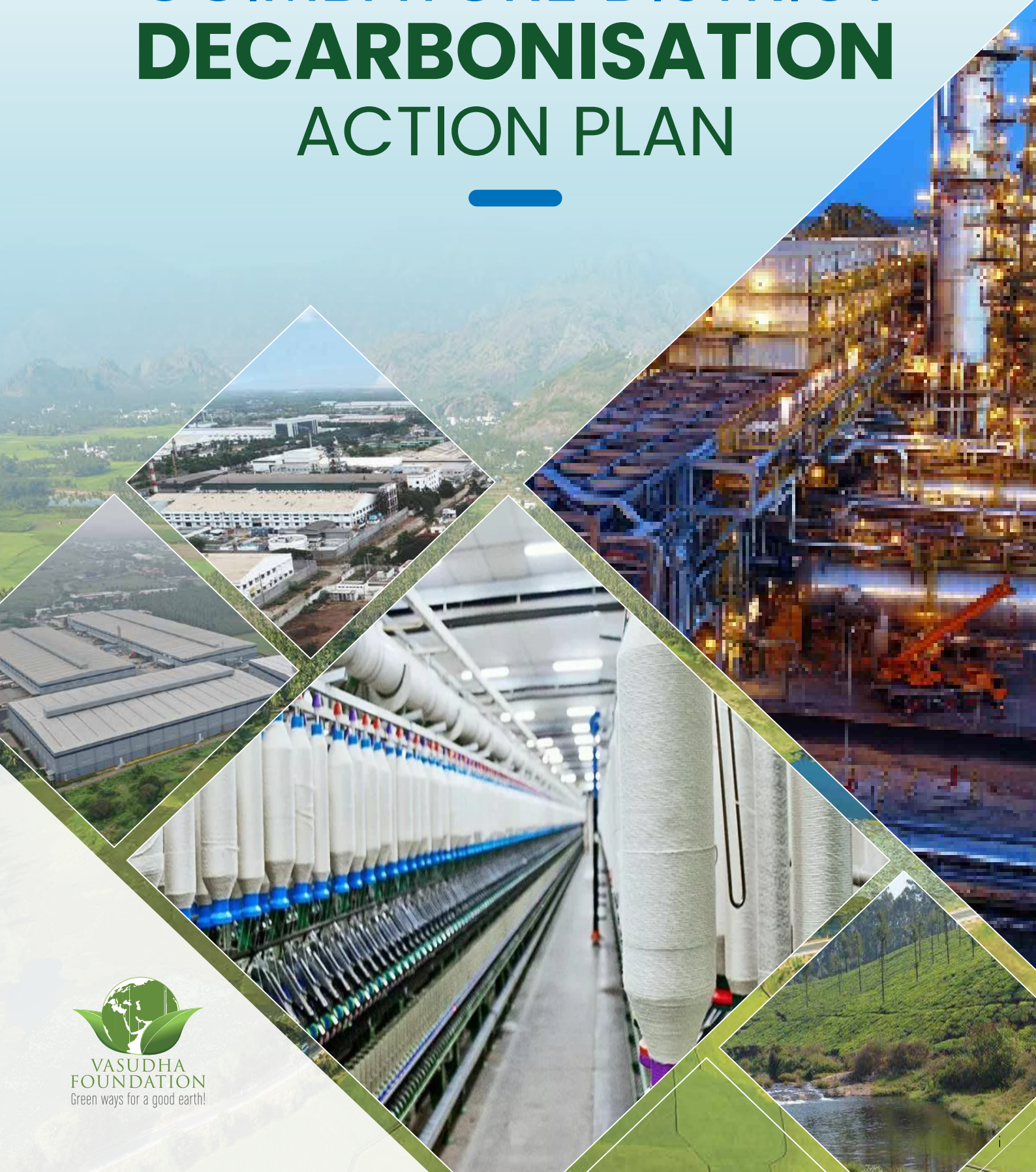




COIMBATORE DISTRICT **DECARBONISATION** ACTION PLAN



Credits

Guidance

Ms. Supriya Sahu, IAS, Additional Chief Secretary, Environment, Climate Change and Forest Department, Government of Tamil Nadu

Mr. A.R. Rahul Nadh, IAS, Director, Department of Environment and Climate Change/Managing Director, Tamil Nadu Green Climate Company

Mr. Pavankumar G Giriappanavar, IAS, District Collector, Coimbatore

Mr. Srinivas Krishnaswamy, CEO, Vasudha Foundation

Mr. N. Jeyaraj, IFS, Coimbatore Forest Division

Core Team (Vasudha Foundation)

Low Carbon Pathways & Modelling

Mr. Gajendra Singh Negi, Ms. Saundharaya Khanna, Mr. Raghav Pachouri, and Mr. Vikas Kumar

Climate Policy

Mr. Bala Ganesh, Ms. Aleena Thomas, Ms. Fathima Saila, Ms. Vrinda Vijayan, Ms. Rini Dutt and Dr. Tejaswini Eregowda

Geospatial Analysis

Mr. Suman Kumar and Mr. Amit Yadav

Editorial

Mr. Rohin Kumar

Cover and Layout Design

Mr. Santosh Kumar Singh

TNGCC

Dr. S. Viswanathan, CEO, TNGCC

Dr. Sridevi Karpagavalli M, TO, TNGCC

Ms. Sri Priya, MIS Analyst

Dr. Prasanna Venkatesh, Climate Change Expert, TNGCC

Dr. P. Thiru Murugan, Wetland and Biodiversity Expert, TNGCC

TNCCM

Mr. Palwe Girish Haribhahu, IFS, Assistant Mission Director, TNCCM

Dr. Ezra John, Project Associate, TNCCM

Ms. Vasuki M, Green Fellow, Coimbatore

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D-2, 2nd Floor, Southern Park, Saket District Centre, New Delhi-110 017, India

For more information, visit www.vasudha-foundation.org



“Tamil Nadu has always led the nation in showing how growth and responsibility can go hand in hand. We are steadily building on our actions toward becoming a Net-Zero economy well before 2070. These District Decarbonisation Action Plans take this commitment deeper by bringing climate action closer to the people, to our villages, towns, and industries. When every district and every citizen joins hands, Tamil Nadu will demonstrate how sustainability can take root in local action and collective responsibility. ”

Thiru M.K.Stalin

Honourable Chief Minister of Tamil Nadu



“ For Tamil Nadu, economic progress and environmental care go hand in hand and they are central to how we plan and govern. These District Decarbonisation Action Plans reflect our commitment to ensuring that development also builds climate resilience. They will guide each district to grow responsibly, aligning prosperity with the health of our land, air, and water. This is how we see the future of Tamil Nadu where fiscal discipline, environmental stewardship, and people’s well-being move forward together. ”

Thiru Thangam Thennarsu

**Honourable Minister for Finance,
Environment and Climate Change, Tamil Nadu**



“ The District Decarbonisation Action Plans strengthen Tamil Nadu’s commitment to integrating climate priorities into development planning. They bring together policy, people, and business to act on shared goals of resilience and sustainability. This approach reflects our focus on turning data and collaboration into practical outcomes that safeguard our environment and support inclusive growth. This is where the strength of Tamil Nadu truly lies, in turning science and policy into action that uplifts people and protects nature. ”

Tmt. Supriya Sahu, I.A.S.

**Additional Chief Secretary to Government, Environment,
Climate Change & Forest Department, Tamil Nadu**



“ The District Decarbonisation Action Plans reflect Tamil Nadu’s participatory and bottom-up approach to climate action. They combine data, local experience, and cross-sector coordination to help districts plan and act with clarity. Through collaboration between departments, industries, and communities, TNGCC is working to ensure that every local effort contributes meaningfully to the state’s long-term climate goals. ”

Thiru A.R. Rahul Nadh, I.A.S.

**Director, Department of Environment and
Climate Change, Tamil Nadu**

Preamble

The Action Plan for Decarbonisation Pathways in Coimbatore outlines a roadmap for transforming the district into a climate-resilient, energy-efficient, and economically inclusive region. As an industrial hub with a thriving textile, engineering, and MSME base—alongside rich forest and wetland ecosystems—Coimbatore faces the dual challenge of sustaining economic growth while managing rising climate risks such as heatwaves, erratic rainfall, and declining forest carbon stock.

Grounded in scientific assessments, historical emissions analysis, and stakeholder consultations, the plan presents actionable strategies across key sectors through 2050. These are aligned with state and national climate targets and modelled across Business-as-Usual (BAU), Moderate Effort (MES), and Aggressive Effort (AES) scenarios.

While the transition will require upfront investments and policy shifts—particularly in energy, transport, and industry—it promises substantial long-term benefits including reduced emissions, improved air quality, new livelihood opportunities, and enhanced public health. Industrial decarbonisation, electrification of transport, and energy-efficient buildings are central to this transformation.

Complementing these efforts, the plan emphasises nature-based solutions to enhance carbon sinks. Strategic afforestation, agroforestry, and forest restoration will play a key role in reversing carbon stock losses and strengthening the district's overall climate resilience.

By integrating emission reduction with ecological regeneration and inclusive development, this Action Plan positions Coimbatore to lead by example on Tamil Nadu's path to a low-carbon and sustainable future.

This brief provides a snapshot of the decarbonisation and climate action plan of Coimbatore, including infographics on the need for climate resilience and decarbonisation in the district in an easy-to-understand manner. It also includes ready to implement projects for near term, sectoral interventions elaborated in a decadal plan.

Executive Summary

Coimbatore is a prominent district in western Tamil Nadu with a diverse landscape, stretching from the Western Ghats in the west to the plains in the east. It sustains a rich natural ecosystem, thriving industries, extensive land and air connectivity, flourishing agriculture, together building a vibrant economy and expanding its urban ecosystem, reflecting its growing regional importance. The district covers an area of 4723 sq. km, with a forest cover of 1953.18 sq. km (~41.3% of the district geographical area) and a population of approximately 34.6 lakh. Coimbatore district is the second major industrial and economic hub of Tamil Nadu, driven by textile and engineering base, complemented by rapidly growing sectors such as wet grinder and electric pump manufacturing, automobile, information technology, electronics, hardware and logistics.

The increasing urban sprawl poses significant challenges to essential services and resource systems—water, energy, transport, waste management. Coimbatore faces significant climate variability, with declining southwest monsoon rainfall and rainy days, alongside rising summer and winter temperatures. Projections under and high (RCP 8.5) emission scenarios indicate 8



percent to 32 percent increase in monsoon rainfall by 2090 and rising temperatures up to 3.5°C. Heatwaves are expected to intensify, and extreme rainfall events, such as 1-day and 5-day maximum precipitation, will increase significantly. These changes highlight the urgent need for adaptive measures to address heightened climate risks and ensure resilience.

The industrial economy is supported by over 3600 working factories and 1,10,000 Micro, Small, and Medium Enterprises (MSMEs), including 80,000+ manufacturing units and 30000+ service units and agro-based industries. This offers huge potential for decarbonisation through clean energy adoption and energy efficiency measures across the industrial operations and adjoining residential and commercial segments. The proposed expansion of the transport corridors—Coimbatore International Airport, road and rail networks—will offer more scope for sustainable mobility solutions such as electrification, modal shifts in the district. This blend of ecological richness, dynamic industries and strong regional connectivity positions Coimbatore as both an economic powerhouse and a key driver of sustainable, low-carbon growth in the region.



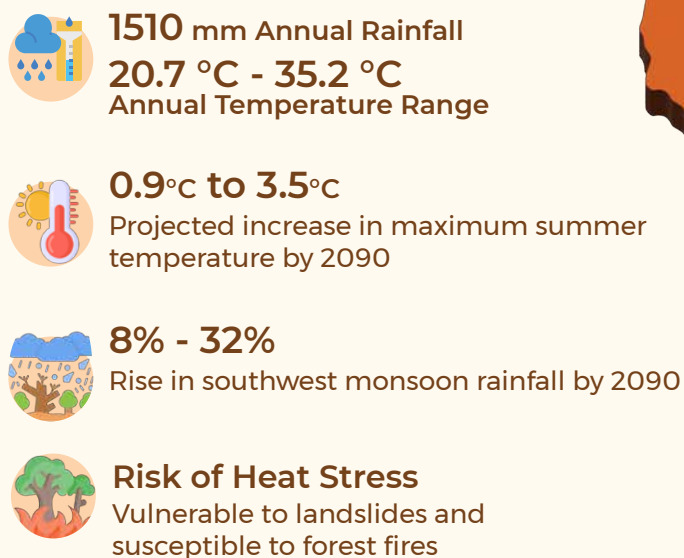
Why Should Coimbatore Transition Towards a Low-Carbon, Climate Resilient Future?



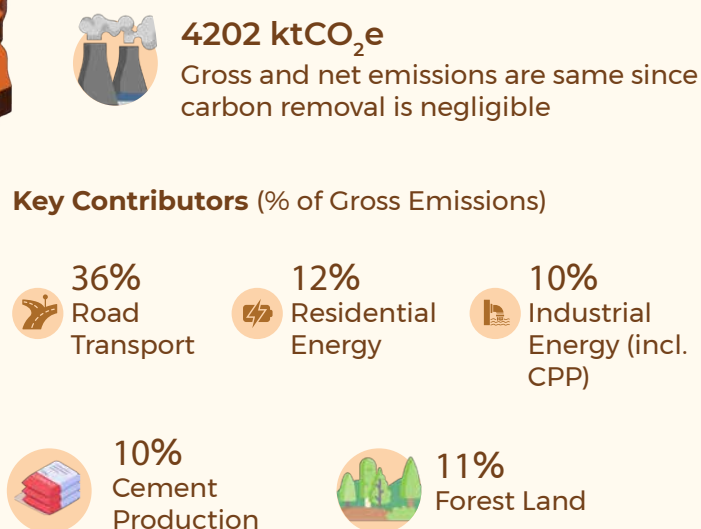
DISTRICT HIGHLIGHTS



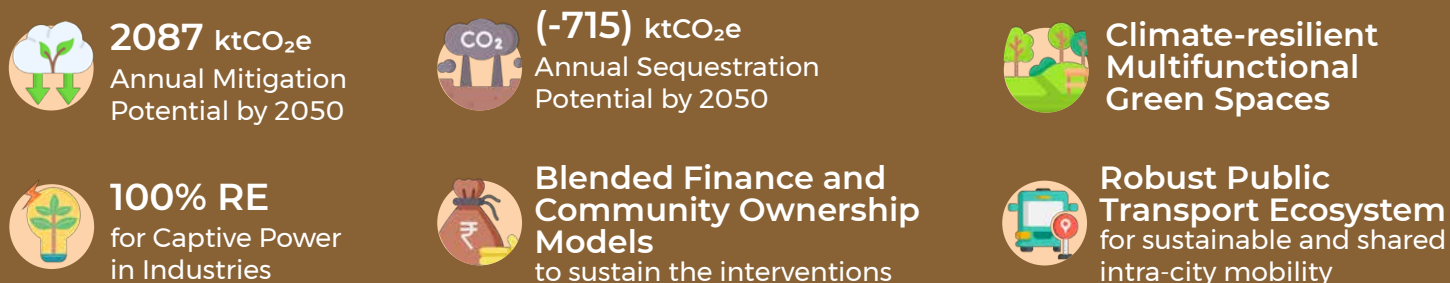
CLIMATE PROFILE



GHG Emissions (2022)



TRANSFORMATION POTENTIAL



Low-carbon Interventions and Ecosystem Livelihood Co-benefits



Blue-Green Ecosystem

-715* ktCO₂e

Intervention

- Enhance the carbon stock density of existing forest cover
- Agroforestry in waste/fallow lands

Resilience & Co-benefits

- Strengthens heat and disaster resilience
- Enhances water security and soil quality
- Supports biodiversity and climate-resilience with integrated nature-based green-blue infrastructure

Economic and Livelihood Improvement

- Promote eco-tourism and local entrepreneurship
- Support climate-resilient agriculture
- Create green jobs and expands diversified income



Industrial Decarbonisation

508* ktCO₂e

Economic and Livelihood Improvement

- Improve efficiency and operational performance
- Minimise/minimised supply chain disruptions
- Skilling and reskilling of workforce for RE based O&M

Resilience & Co-benefits

- Boosts energy access and health outcomes
- Improves air, water and soil

Intervention

- Replace all diesel and coal based captive power plants of 306 MW installed capacity, with an equivalent RE capacity of 153 MW by 2050
- Electrify all heating processes in Industries by 2050



Sustainable Public Transport

106* ktCO₂e

Intervention

- Addition of 2000 intra-city electric buses by 2030/2035
- Promotion of NMT Transport and Public Bicycle Sharing Infrastructure

Resilience & Co-benefits

- Resilient transport access
- Cooler cities and cleaner air

Economic and Livelihood Improvement

- Boosts sustainable mobility
- Green jobs, especially for women
- Better health, last-mile access

NMT: Non-motorised Transport

PBS: Public Bike Sharing

*Denotes mitigation potential

What Does Climate-Resilient Development Deliver?



Strengthened adaptive capacity of the community



Ecosystem restoration and nature based solutions reducing disaster risks from landslides and urban flooding



Improved thermal comfort and climate-resilient living conditions



Lowered human-wildlife conflict through habitat-sensitive planning



Institutional capacity and local governance for integrated climate resilience



Reduced health risks from heat, waterborne and vector diseases



Enhanced community disaster preparedness and response



Bankable Green Projects | Access to Global Climate Finance | Green Jobs | Livelihood Security

Low Carbon and Resilient Pathways for Coimbatore

As of 2022, the total GHG emissions of Coimbatore district stood at 4202 ktCO₂e, with the energy sector being the largest contributor (64%, 2,684 ktCO₂e), followed by agriculture and land use (19%, 785 ktCO₂e), industrial processes and product use (10%, 441 ktCO₂e), and waste (7%, 292 ktCO₂e). Within the energy sector, road transport accounted for 56% of emissions, followed by the building category, including the residential and commercial segments at 22% and the industries category, including captive power plants at 16%, while civil aviation contributed 3%.

Under the Business as Usual (BAU) scenario, Coimbatore's gross GHG emissions are projected to decline slightly from 4120 ktCO₂e in 2022 (excluding emissions from the civil aviation category)* to 3645 ktCO₂e by 2050. Energy emissions – which are projected to reduce from 2602 ktCO₂e to 2186 ktCO₂e due to current EV penetration driven by policy mandates and incentives – can be further curtailed by 81% through higher electrification of 4-wheelers and HGVs, phasing out of fossil based captive power, higher adoption of electric cookstoves and electric pumps and agromachinery. These interventions will also increase electricity demand by 2.5x – from 6456 GWh in 2022 to 16,403 GWh by 2050. In the AFOLU sector, emissions under the BAU scenario are projected to slightly decrease from 785 ktCO₂e to 764 ktCO₂e, due to decline in the agricultural activities and livestock population. Similarly, waste sector emissions are expected to drop from 292 ktCO₂e to 254 ktCO₂e, due to expanded coverage of treatment infrastructure. Targeted sectoral interventions could curtail 77% of projected emissions by 2050 under the AES scenario, over and above the decline in emissions in BAU 2050, in alignment with Tamil Nadu's net-zero ambitions well before 2070.

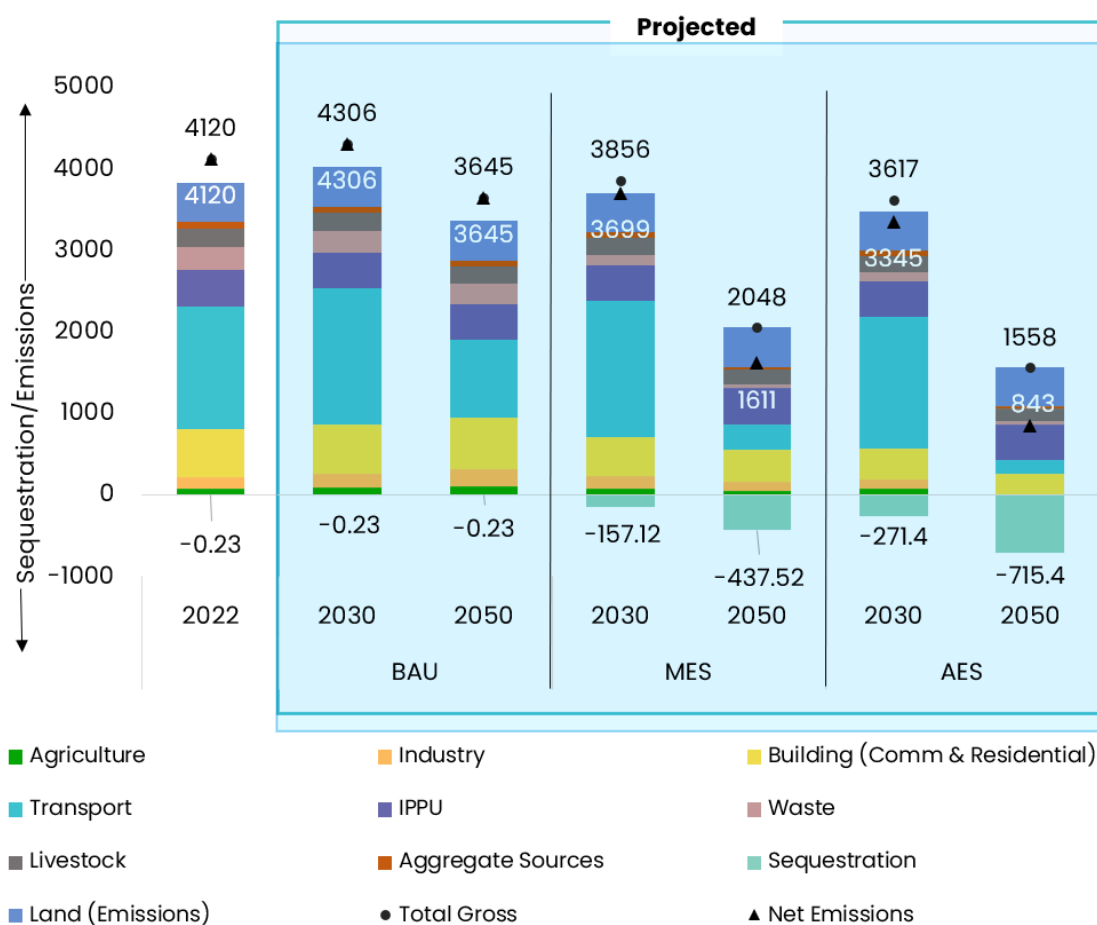


Figure ES1: GHG Emissions in Coimbatore: Actual (2022), Projected under BAU, MES and AES (2030 & 2050)

Note: Aggregate & Non-CO₂ represents aggregate sources and Non-CO₂ emission sources on land consisting of agriculture soil, rice cultivation and biomass burning in cropland

*Civil aviation, being outside the scope of state and district regulatory control, is excluded from the GHG emission projections and decarbonisation strategies, thereby ensuring that the plan focuses on actionable sources and interventions enabling meaningful tracking within the local governance framework.

Key Sectoral Insights

The developed pathways focus on key emitting categories, exploring a range of distinct interventions aimed at reducing emissions while ensuring that the transition aligns with ongoing programmes and schemes at both the state and central levels. The pathways explore three emission scenarios for Coimbatore through 2050: Business as Usual (BAU), Moderate Effort Scenario (MES), and Aggressive Effort Scenario (AES). (Fig ES2)

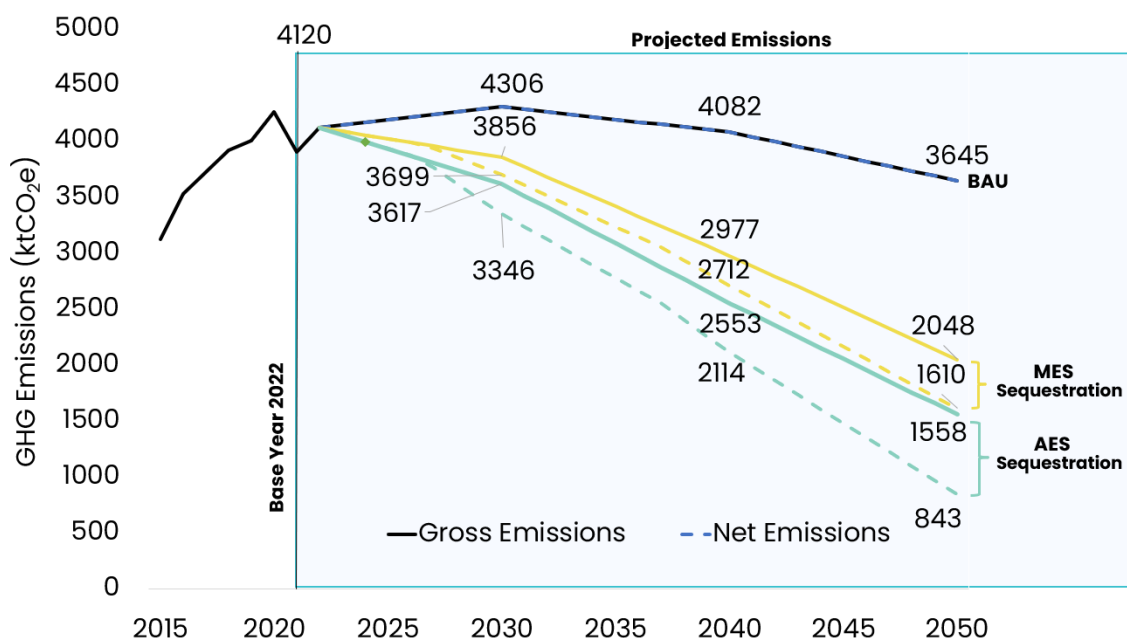


Fig ES2: Actual emissions till 2022 and projections by 2050 under BAU, MES and AES scenario, in Coimbatore, in ktCO₂e

Through this decarbonisation plan, emissions in Coimbatore could be reduced to 843 ktCO₂e. The key messages emerging from the plan are:

Transport emissions in Coimbatore are expected to decline in BAU 2050 due to an existing EV shifts, and can be further abated through promoting electrification of 4-wheelers and HGVs, and adoption of public transport.

Road transport is the highest GHG emitter in the energy sector, contributing 1503 ktCO₂e or 58% of energy related emissions in 2022. Higher EV penetration in new vehicle sales – especially of 2 wheelers and 3 wheelers owing to policy and market dynamics will marginally reduce sectoral emissions to 957 ktCO₂e by 2050 under business-as-usual scenarios. A further push towards achieving 100% penetration of EVs in new sales of four-wheelers and 80% penetration in heavy goods vehicles will abate ~78% of sectoral GHG emissions by 2050, with only 169 ktCO₂e remaining. Due to the fleet electrification, an additional 892 GWh of electricity will be required in BAU by 2050 and 1977 GWh of electricity in AES 2050 to power these vehicles.

Role of behavioral interventions in road transport: Non-motorised transport and smart traffic systems can further curtail emissions over and above the projected abatement. **Using public transport for inter-city and intra-regional movement** can result in 45% reduction in emissions in comparison to private vehicles in Coimbatore. Assuming that 10% commuters in Coimbatore shift from 4W cars to buses, this behavioral change could reduce GHG emissions by ~103 ktCO₂e by 2050. Such a shift could also avoid the need for around~ 47,000 four-wheelers on the road, replaced with an addition of ~2100 buses. Additionally, smart traffic systems can reduce 25% of signal emissions by reducing idle time at intersections.

Decarbonisation of hard-to-abate cement sector will play a crucial role in reducing emissions in the district

The GHG emissions from the industries in the district, including the captive power plant emissions and Industrial Processes and Product Use (IPPU) emissions, are expected to increase from 874 ktCO₂e in 2022 to 949 ktCO₂ in 2050 under BAU. The majority of these emissions are from cement production. At present, the cement production capacity in Coimbatore is 1.08 MTPA.

A 100% replacement of fossil fuels with clean fuels (such as green hydrogen for firing in Kiln) for heating, energy storage for power backups, electrification of heating processes, and replacing fossil fuel based CPPs with RE can fully decarbonise the industrial sector by abating 508 ktCO₂e of projected emissions in 2050.

Further, Carbon Capture and Utilisation (CCU), as the technology and market matures in the future, would enable the district to abate the process emissions in the cement sector, driving it closer to becoming carbon neutral.

Electrification and energy efficiency initiatives across end use sectors could reduce final energy consumption, making them key drivers of a sustainable energy future. Electricity demand will, however, increase in the district by 2.5 fold by 2050.

Coimbatore's energy demand is projected to rise from about 54 PJ in 2022 to around 81 PJ by 2050 under BAU. Through higher EV adoption in transport, phasing out of diesel based CPP with renewable energy in industries, fuel switching in cooking and agriculture sector, and improvement in the overall system efficiency, total energy demand can be reduced to roughly 69 PJ in the AES 2025 scenario—about a 17% drop compared to BAU 2050. Energy mix wise, the share of electricity in energy demand will rise – coinciding with reduction in share of diesel, gasoline and other fossil fuels. (Fig ES3)

Electrification across sectors, higher space cooling needs, and economic growth in the district are expected to increase the district's electricity demand from 6,456 GWh to 16,296 GWh by 2050. Electricity demand for space cooling will increase to 6569 GWh by 2050, almost 44% of the total electricity demand of the district. Industrial deep electrification would increase industrial electricity demand to 4376 GWh by 2050, almost 27% of the total electricity demand of the district. A drastic increase in electricity demand is projected in the transport sector due to higher EV adoption, increasing its share in total electricity mix from nil in 2022 to 12.1% in AES 2025. (Fig ES4)

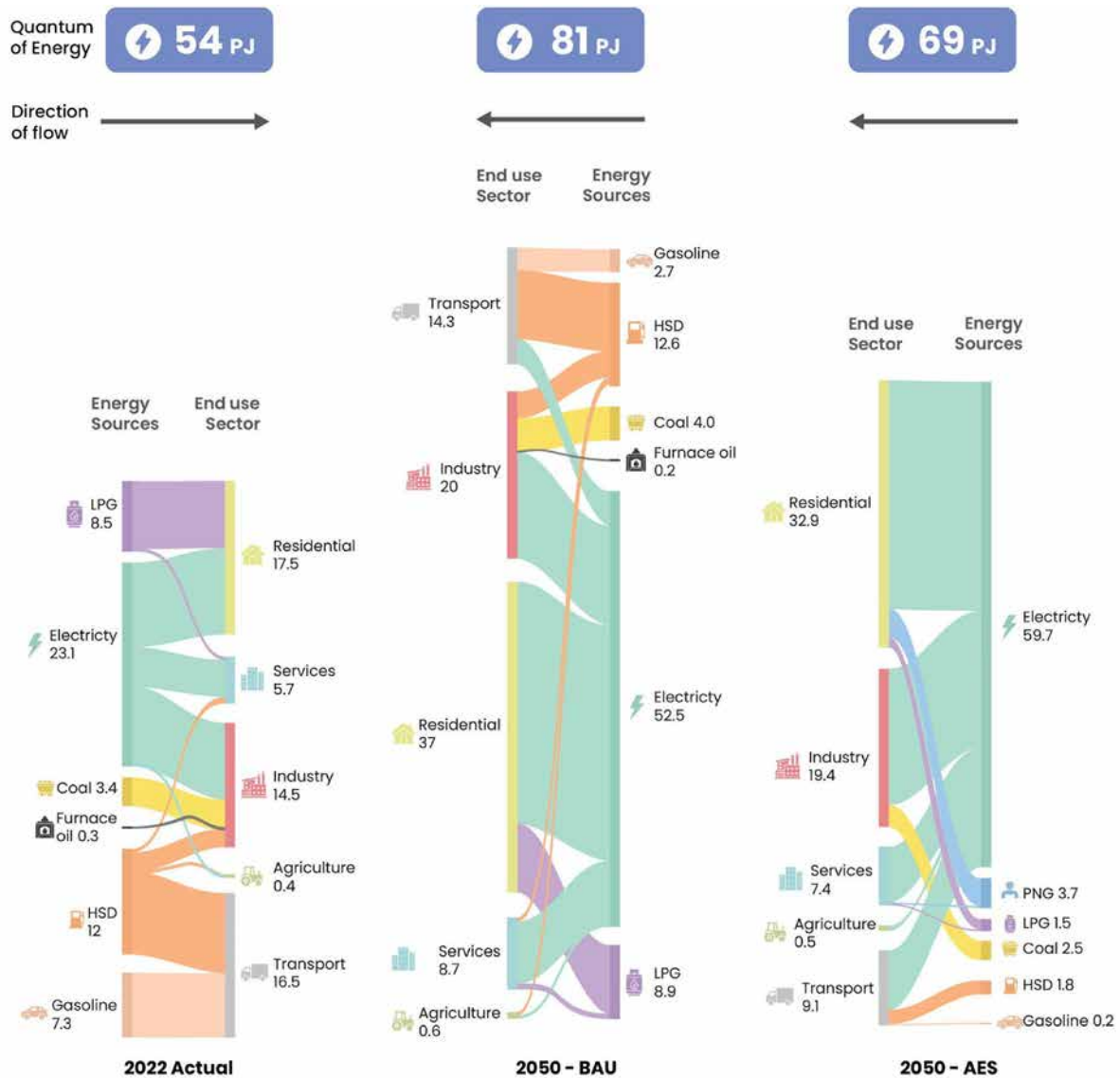


Fig ES3: Energy sources and respective End use sectors flow diagram in Coimbatore across 2022 actual and 2050 both BAU and AES scenario

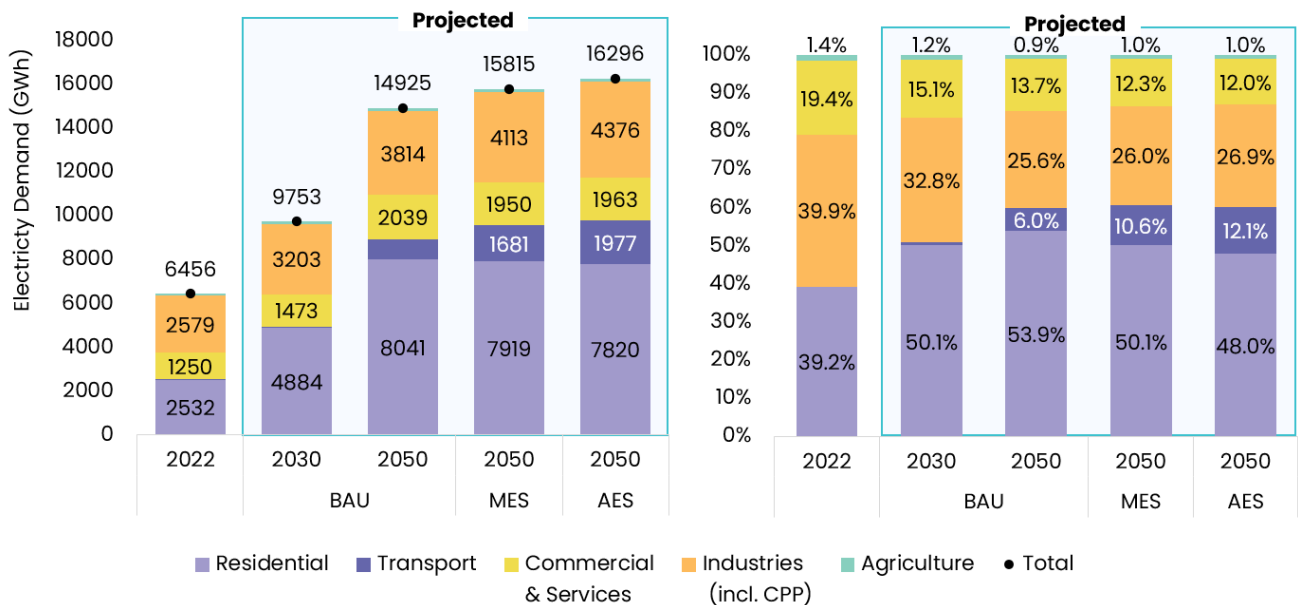


Fig ES4 Electricity demand in energy sector in Coimbatore, in GWh, across scenarios

Decarbonising electricity sector would require holistic assessment and implementation of various renewable energy sources

Over and above the Scope 1 GHG emissions, which have been analysed in the plan, the electricity consumption related GHG emissions (Scope 2 emissions) contribute to almost 3556 ktCO₂e in 2022 and could increase to 9352 ktCO₂e by 2050 in absence of decarbonisation measures. To meet this demand of 16,403 GWh from renewable sources, an additional equivalent capacity of 6 GW (in addition to 0.73 GW renewable capacity) is required. Therefore, there is a need for exhaustive and holistic assessment of various solar energy sources such as utility scale PV plants, rooftop solar, floating solar, and agri-photovoltaic solar, etc, bio energy, and wind energy in the district.

One third of projected non-energy emissions in 2050 can be abated by targeted interventions in the waste sector and improved livestock management—balanced rationing and feed additives to control methanogens, manure management.

In AES, efficient waste management through centralized treatment for urban, septic tanks for rural and fecal sludge treatment plants at Firka level, 100% collection and segregation of municipal solid waste, effluent treatment plants with continuous monitoring systems for industrial wastewater, zero liquid discharge, composting organic waste, reuse etc. can abate 211 ktCO₂e by 2050 from the largely static waste sector. Similarly, through introduction of balanced rationing (90% of livestock), improved feed supplements, methanogen inhibiting substitutes (75% of livestock), and manure management practices, 60 ktCO₂e of emissions from livestock category can be abated by 2050.

Around 75% of the projected emissions from Aggregate Sources and Non-CO₂ emission sources from land can be abated by adoption of sustainable agriculture practices

Replacing synthetic fertilisers and urea with organic fertiliser and nano urea and increasing the percentage of multiple aeration in the rice cultivated area would help to reduce the emissions from the agriculture sector. Under AES, transitioning 75% of agriculture area to organic fertiliser will reduce 51 ktCO₂e of emissions by 2050.

Additionally, carbon sequestration can be scaled up through agro and social forestry, increasing carbon stock density and green space restoration

Promoting social and agroforestry in 35% of land classified as barren or fallow, put to non-agricultural uses or cultivable waste, along with other afforestation projects to increase carbon stock density by 5%, could boost carbon sequestration by 715 ktCO₂e/year by 2050. Active community involvement, technology-driven monitoring, and targeted policies will be critical for maximizing Coimbatore’s carbon sequestration potential. (Fig ES5)

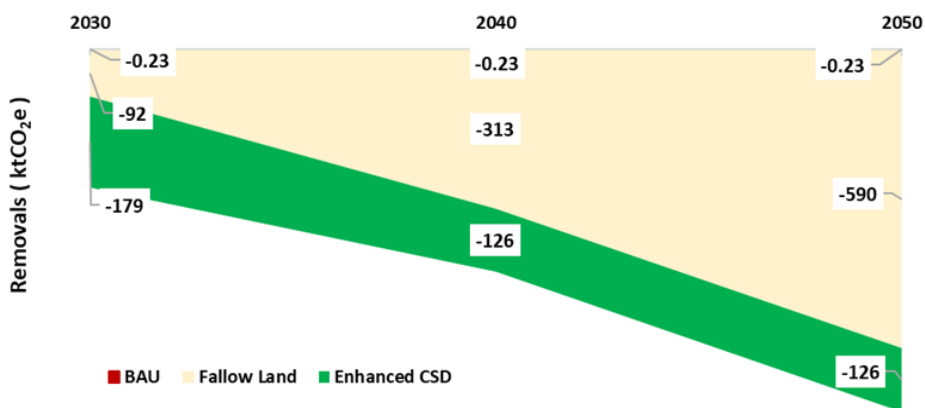


Fig ES5: Carbon sequestration potential in the district (Source: Author's analysis)



COIMBATORE DECARBONISATION ACTION PLAN

Coimbatore can reduce up to 74% of its projected 2050 (3645 ktCO₂e) emissions through deep electrification, fuel switching, and targeted non-energy interventions including enhancing sequestration and waste management.



Total Emissions (2022): 4,202 ktCO₂e
Gross Emissions (BAU 2050): 3,645 ktCO₂e

- Annual Growth in Emissions (2005 to 2022) : 1.8%
- Per Capita Emissions (2022): 1.06 tonnes CO₂e per capita
- Emission Intensity Reduction in 2022 w.r.t 2005: 76%



Electrification of Industrial Heating Processes

Replace furnace oil (FO), petcoke, and coal with industrial electric heating like green hydrogen plasma generators could cut 215 ktCO₂e emissions in the district by 2050. **AMP: 215 ktCO₂e**



RE-based Captive Power Generation

Shift from the current ~306 MW fossil-based captive power generation to an equivalent ~153 MW renewable energy capacity by 2040. **AMP: 293 ktCO₂e**



Abating IPPU Emissions

- With time, process emissions in the cement sector can be reduced with material substitution (such as limestone calcined clay cement (LC3) and fly ash)
- Technological solutions for carbon capture utilisation (CCU) system



Efficiency & Conservation in Space Cooling

Adopt ~36.2 lakh 3-5 star ACs, primarily by 2040, and inculcate behavioural change (temperature control settings starting at 26°C) would **save 11-12% of electricity demand. AMP: 365 ktCO₂e (Scope 2)**



Electrification & Fuel Switching

Adopt 60 lakh LED bulbs, 42 lakh BLDC fans, and other 3-5 star appliances by 2030, along with 100% electrification of the service sector and phasing out HSD in DG sets by 2050. **AMP 229 ktCO₂e (Scope 2)**



Clean Cooking Fuel

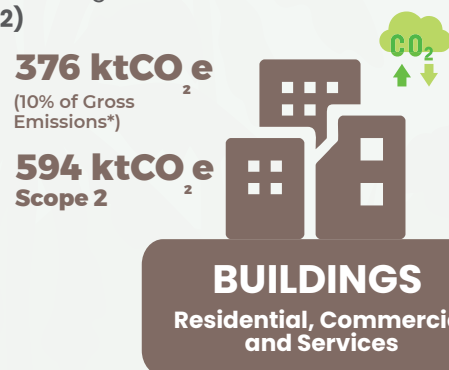
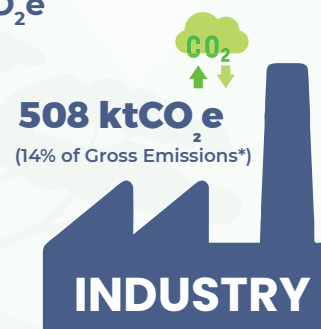
Transition from LPG to PNG, with gradual adoption of ~4.5 lakh electric cook stoves could save 58% emissions in the residential sector by 2050.

AMP: 376 ktCO₂e



Green Building Practices

Heat mitigation measures—such as urban green cover, reflective roofing, and cool surfaces—can reduce ambient temperatures by 1-2°C and lower cooling energy demand by 5-15%



Electrification of Fleet

100% penetration of electric vehicles in 2W, 3W, 4W and buses, and 80% penetration of Heavy Goods Vehicles (trucks, trolleys) in new sales by 2050.



Clean Mobility Infrastructure

Installation of ~525 charging stations and development of other allied clean mobility infrastructure will support the electrification of the fleet in Coimbatore by 2050



Two Wheelers
~20 lakh



Three Wheelers
27,000



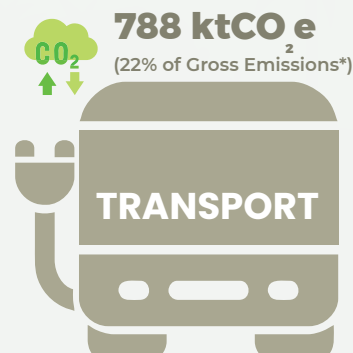
Four-Wheelers
6.5 lakh



Buses
11,000



Heavy Goods Vehicles
29,000



CARBON SEQUESTRATION



Repurposing of 66,996 ha to horticulture, agro/social forestry

ASP: 590 ktCO₂e/yr by 2050



Enhancing of carbon stock density by ~5.5% from current 82.25 t/ha to 86.76 t/ha through reforestation and sustainable forest management

ASP: 126 ktCO₂e/yr by 2050



Increasing green spaces through climate-resilient bioparks, urban forests, and floating gardens can reduce heat stress



ASP: 716 ktCO₂e

(20% of Gross Emissions*)²



9,325 ktCO₂e

Scope 2



Electricity demand stood at **6,456 GWh in 2022**, led primarily by the industrial sector, including CPP (40%), residential sector (39%) and service sector (19%)



Electricity consumption is expected to increase almost three-fold owing to electrification and other deep decarbonisation efforts under AES 2050



To decarbonise the electricity sector, an additional ~6 GW of RE capacity (solar rooftop, utility-scale, wind, agro-PV, etc.) should be assessed and installed between 2040 and 2050

ELECTRICITY



Sustainable Agriculture and Livestock Practices

Replace existing ~4820 diesel pumps with off-grid solar pumps for irrigation by 2030, and electrifying ~7500 tractors and tillers by 2050 | **AMP: 93 ktCO₂e**



Capacity building to promote sustainable modernisation of agriculture



Replace synthetic nitrogen fertiliser and urea use with 75% organic fertiliser and 25% nano-urea | **AMP: 51 ktCO₂e**



90% balanced rationing and 75% methanogen-inhibiting feed additives for livestock by 2050 | **AMP: 60 ktCO₂e**



38 mini weather monitoring stations (rainfall and temperature)



204 ktCO₂e

(6% of Gross Emissions*)



AGRICULTURE



Domestic Wastewater

Improved wastewater treatment by 2040 **AMP: 166 ktCO₂e**

- Urban: 201 MLD centralised sewage treatment and 100% UGD connection
- Rural: Twin pit septic tanks for 1.7 lakh households, 38 FSTPs at the Firka level and advanced DEWATS for campuses >2500 m², resorts, restaurants etc



Industrial Wastewater

ETPs and a continuous treated effluent monitoring system for 20 MLD industrial wastewater by 2050 and strict adherence to zero liquid discharge **AMP: 28 ktCO₂e**



Municipal Solid Waste

100% segregation at source and processing of municipal solid waste with zero landfilling through 38 rural and 32 urban recycling centres and 32 urban composting units **AMP: 16 ktCO₂e**

WASTE

Scope 2 denotes indirect greenhouse gas emissions that relate to purchase of electricity, steam, heat or cooling.

Implementable Projects in Near Term

Implementing this decarbonisation plan calls for a phased approach, prioritising high-impact and readily implementable projects in the short to medium term, particularly those that can be advanced by 2030. These initiatives are high-priority actions that are well-suited for near-term implementation, deliver developmental co-benefits alongside decarbonisation, and serve as foundational steps in advancing the district's transition toward a low-carbon future. Details on each project, including specific targets, implementation costs, and associated mitigation potential are as below:

- **Electrification of Public Buses:** Coimbatore's vehicle stock of 20.46 lakh 2-wheelers, ~0.12 lakh 3-wheelers, ~4 lakh 4-wheelers, ~2850 buses, and ~29,400 heavy-good vehicles (trucks, trolleys) relies significantly on fossil fuels (diesel, petrol, natural gas), with less than 0.5 percent of the total vehicle stock comprising of electric vehicles in 2022. As the economy grows, mobility needs and resulting emissions are expected to rise. Electric buses can curb these emissions by a two-pronged approach of reducing diesel consumption in the transport sector, and replacing private vehicles as a mode of transport.

By adding 500 intra-city electric buses by 2030, out of a total 2000 additional buses by 2050, as many as ~38 ktCO₂e can be abated yearly by 2030 (~1% of gross GHG emissions).

Interventions	Departments	Expected Cost (Rs. Crores)	Available Finance
Electrification of 500 intra-city buses (15% of current bus fleet) by 2030	Tamil Nadu State Transport Corporation (TNSTC) and State Transport Department	900 ¹	Rs. ~140 Crore is available under PM E-DRIVE ² with a supplementing Rs. 50 Crore under TN EV Policy 2023 ³ Furthermore, the Rs. 70 Crore allocation made by SPCB to TN Transport Corporation ⁴ can be explored.

- **Integration of Renewable Energy:** The decarbonisation of Coimbatore hinges on the district's capacity to transition from fossil based to renewable energy grid. The agriculture sector of Coimbatore, where emissions arise on account of diesel pumpsets, tractors and tillers, represents one of the immediate entry points for integration of renewable energy. By converting 4820 diesel pumpsets to solar pumps by 2035, with 40% of the target achieved before 2030 under PM KUSUM, as much as **52 ktCO₂e** can be abated annually with 20 ktCO₂e abated yearly in a short term (~1% of gross emissions of 2030).

By integrating an additional RE capacity of 6 GW in addition to the existing 0.7 GW RE capacity, about **9352 ktCO₂e** of Scope 2 emissions could be abated by 2050. A potential assessment would be required to assess the precise scope and develop strategies for integration of rooftop solar, utility scale, wind, floating solar and other technologies.

Similarly, renewable energy could replace diesel and coal for captive power generation in the industrial sector of Coimbatore.

Interventions	Departments	Expected Cost (Rs. Crores)	Available Finance
Potential assessment and installation of rooftop solar, prioritising all the government buildings, institutional and educational set-ups, and residential buildings by 2030–35	Tamil Nadu Green Energy Corporation Limited (TNGECL) and State Energy Department	Subjective to assessment	Partial coverages under different RE schemes/policies such as PM Surya Ghar Muft Bijli Yojana, TN Policy)
Replacing ~2000 diesel pump with solar/electric pumps by 2030	Department of Agriculture	16	Rs. 2 Crore available under PM KUSUM ⁵ , at the rate of Rs. 3,14,088 per 5HP pump

■ **Phasing Out of Fossil Fuel based Captive Power Plants and Electrifying Industrial Heating:**

Emissions in Coimbatore's industrial sector arise predominantly on account of use of fossil fuels (coal/firewood/diesel) for power backup, and heat generation in industries. By replacing all diesel and coal based CPPs (305.6 MW of installed capacity) with equivalent RE capacity of 153 MW – supported by shift from DG sets to battery based power backup (BESS), 100 percent of CPP led emissions (**293** ktCO₂e) can be abated. Furthermore, electrification of heating processes in industries can abate **215** ktCO₂e by 2050, over and above abatement from shift to RE based captive power plants.

Short Term Interventions	Departments	Expected Cost (Rs. Crores)	Available Finance
Phasing out/replacement of ~306 MW fossil fuel based CPP to equivalent ~153 MW RE capacity by 2030–35	TN Energy Development Agency (TEDA), the Industries, the Investment Promotion & Commerce Department	765	Rs. 1.5 crore of capital subsidy and 0.1 crore of additional capital subsidy (up to 25% of plant or machinery value) under TN MSME Capital Subsidy Scheme
Electrification of Heating Processes in Industries by 2050, with a pilot by 2030–35		To be ascertained on case to case basis	

Both these interventions could abate 14% of total projected emissions in Coimbatore by 2050.

- **Promote Energy Savings in Buildings & Public Lighting:** About 89 percent of its energy needs for cooking in residential and commercial buildings in Coimbatore is met through LPG – a trend that is predicted to continue by 2050 with emissions rising from 511 ktCO₂e in 2022 to 541 ktCO₂e in 2050. Both these interventions could abate 14% of total projected emissions in Coimbatore by 2050. Further, by replacing 5 lakh streetlights with LED lights public lighting alone, as much as 114 GWh of electricity and 91 ktCO₂e of emissions can be saved.

Short Term Interventions	Departments	Expected Cost (Rs. Crores)	Available Finance
Adopting 1.4 lakh electric cookstoves (42% of the target) by 2030	Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO)	49	Potential of Rs. 2.5 lakh electric cookstoves under National Efficient Cooking Program (NECP) which provides cookstoves at a low cost (35% concession)
Replacing ~5 lakh street lights with LED lights by 2030	Commissionerate of Municipal Administration, Directorate of Town Panchayats	1000 ⁶	Some allocations may be available under Street Lighting National Programme, but major coverage would only be possible through municipal finance.

- **Social and Agro-forestry in ~16.5 thousand hectare of barren/fallow lands by 2030:** Coimbatore district has sizable stretches of fallow and underutilised lands around 1,91,616 Ha. These lands offer significant potential for agro and social forestry interventions. By implementing targeted programs of social forests, agro forests and horticulture plantations with native species, and enhancement of carbon stock density an annual carbon sequestration potential of 271 ktCO₂e can be leveraged by 2030, offsetting gross emissions by 6.30% apart from supporting soil conservation, rural livelihoods and improving overall biodiversity of the region. Such initiatives will contribute to improve the district's green cover, reduce heat stress, and create long-term climate resilience.

Short Term Interventions	Departments	Expected Cost (Rs. Crores)	Policies/Funding Schemes
Social and agro forestry in ~16.5 thousand ha of barren/fallow lands by 2030	Forest Department, Municipal Administration Department, Horticulture Department	237	Sub-Mission on Agro Forestry (SMAF), Green Tamil Nadu Mission, Green India Mission, State Compensatory Afforestation Fund Management and Planning Authority Fund (CAMPA), Trees Outside Forests in India initiative by MoEFCC and Government of Tamil Nadu
Enhancement of carbon stock density by ~1% from 82.25 t/ha to 83.25 t/ha			

Further, expanding agro/social forestry over an additional 50,247 ha and enhancing carbon stock density by ~5.5% from 82.25 t/ha to 86.76 t/ha has the potential to mitigate 715 ktCO₂e by 2050, offsetting gross emissions by 19.6%.

- **Enhancing Domestic Wastewater Treatment:** To overcome the risk of untreated discharge while also reducing the strain on existing infrastructure, the proposed intervention aims to achieve 100 percent treatment of domestic wastewater by 2040, thereby targeting a reduction in projected GHG emissions from 202 ktCO₂e under BAU to 36 ktCO₂e annually.

Emission Reduction Potential: **~166 ktCO₂e/year** by 2040, mitigating gross emissions by 4.07%

Short Term Interventions	Departments	Expected Cost (Rs. Crores)	Policies/Funding Schemes
Urban: increase centralised capacity to ~ 201 MLD Rural: 169751 households connected to septic-tank upgrades + 38 FSTPs. Advanced DEWATS for campuses > 2500 m², resorts, restaurants etc	Municipal Administration Department, Tamil Nadu Water Supply and Drainage Board, Rural Development and Panchayat Raj Department, Tamil Nadu Pollution Control Board	616	Government initiated with possibilities for gap funding through private, CSR, Swachh Bharat Mission, Tamil Nadu Urban Development Project, Namakku Namae Thittam, Kalaingar Nagarpura Mempoattu Thittam

- **Building Climate Resilient Bioparks:** To transform underutilised open spaces in Coimbatore into climate-resilient, multifunctional green zones serving as both ecological buffers and community-centric public spaces. By integrating blue-green infrastructure, nature-based solutions, and participatory planning, the initiative seeks to address urban challenges such as flooding, heat stress, loss of biodiversity, and lack of inclusive green spaces, while enhancing urban resilience and citizen well-being. In line with the three Eco parks proposed in the Coimbatore Local Planning Area Master Plan 2041—at Marudur, Thenkarai and Karamadai—similar suitable areas can be identified across other key urban and biodiversity hotspots across the district.

Short Term Interventions	Departments	Expected Cost (Rs. Crores)	Policies/Funding Schemes
Green Infrastructure: Native tree plantations, butterfly gardens, community gardens, pollinator habitats, avenue trees and bio-fences. Blue Infrastructure: Rain gardens, bioswales, biofiltration basins, stormwater detention areas, and aquifer recharge points. Social Infrastructure: Walkways, play areas, yoga decks, open-air theatres, sports courts, and shaded seating zones designed for inclusivity and multi-generational use.	Environment and Climate Change Department, Municipal Administration Department, Forest Department	To be assessed on case basis	AMRUT 2.0 (Atal Mission for Rejuvenation and Urban Transformation), National Mission on Sustainable Habitat (NMSH), Smart Cities Mission, Tamil Nadu Climate Change Mission (TNCCM)

Coimbatore Decarbonisation Plan

The decadal target and the activities along with their mitigation potential, cost estimate, and supporting policies are as detailed in the table below:

Key Short, Medium and Long Term Interventions and their Financial Estimates											
Sr. No.	Key Intervention	Activity/ Target	Description of financing the activity (to be read with color codes)	Short Term (till 2030)		Medium Term (2030-40)		Long Term (2040-50)		Policies / fiscal measures by State and Central Govt.	Departments
				Target	AMP-2030 (kt CO ₂ e /yr) * (Percentage to BAU gross emissions)	Target	AMP-2040 (kt CO ₂ e /yr) * (Percentage to BAU gross emissions)	Target	AMP-2050 (kt CO ₂ e /yr) * (Percentage to BAU gross emissions)		
A	Waste Management in the region										
A.1	Domestic Wastewater Management	Set up adequate centralised wastewater treatment plants for urban	Government initiated with possibilities for gap funding through private, CSR	Facility to treat 166 MLD of wastewater	143 (3.33%)	Facility to treat 35 MLD of wastewater	166 (4.07%)	Additional maintenance	166 (4.57%)	AMRUT 2.0, Tamil Nadu Urban Flagship Investment Project	Municipal Administration Department, Tamil Nadu Water Supply and Drainage Board, Tamil Nadu Pollution Control Board
A.2		Enhancing decentralised treatment	Market/ household driven with possibilities of Government subsidies	Retrofitting unsanitary septic tanks and unlined hole in the ground with leach pit or twin-pit septic tanks at household level for 1,44,288 households		Retrofitting unsanitary septic tanks and unlined hole in the ground with leach pit or twin-pit septic tanks at household level for 25,463 households		Additional maintenance			

Key Short, Medium and Long Term Interventions and their Financial Estimates											
Sr. No.	Key Intervention	Activity/ Target	Description of financing the activity (to be read with color codes)	Short Term (till 2030)		Medium Term (2030-40)		Long Term (2040-50)		Policies / fiscal measures by State and Central Govt.	Departments
				Target	AMP-2030 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target	AMP-2040 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target	AMP-2050 (kt CO ₂ e/yr)* (Percentage to BAU gross emissions)		
A.3		Setting up Fecal Sludge treatment plant (FSTP) at firka level	Government or private initiative	32 FSTPs for 32 firkas		6 FSTPs for remaining 6 firkas		Additional maintenance			
A.4		Increase household connections to underground drainage,	Government initiated and funded	60% Households to be connected with UGD		100% Households to be connected with UGD		Additional maintenance			
A.5	Industrial Wastewater Management	Setting up of Effluent Treatment Plants (ETP) and Contionous Effluent Treatment Plants (CETPs) along with continous treated effluent monitoring system	Market/ industry driven with possibilities of Government funds for industrial areas developed by the Government	Facility to treat 20 MLD	9 (0.20%)	Maintenance and additional facilities as per requirement	17 (0.43%)	Maintenance and additional facilities as per requirement	28 (0.77%)	Common Effluent Treatment Plants (CETPs) financial assistance scheme for MSMEs, Tamil Nadu Industrial Policy 2021	Environment and Climate Change Department, Tamil Nadu Pollution Control Board

Key Short, Medium and Long Term Interventions and their Financial Estimates											
Sr. No.	Key Intervention	Activity/Target	Description of financing the activity (to be read with color codes)	Short Term (till 2030)		Medium Term (2030-40)		Long Term (2040-50)		Policies / fiscal measures by State and Central Govt.	Departments
				Target	AMP-2030 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target	AMP-2040 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target	AMP-2050 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)		
A.6	Solid Waste Management	Dry waste recycling centre	Government or private initiative	1.32 recycling centres for 32 firkas at village level 2.1 recycling centre per 1 lakh population (total 20 recycling centres))	5 (0.12%)	1.6 recycling centres for 6 firkas at village level 2. Additional 12 recycling centre (total 32 recycling centres)	14 (0.34%)	Maintenace and additional facilities as per requirement	16 (0.44%)	Swachh Bharat Mission, Solid Waste Management Rules 2016	Municipal Administration department, Rural Development and Panchayat Raj department, Tamil Nadu Pollution Control Board
		Composting Centres	Government or private initiative	20 composting centre (1 per 1 lakh population)		12 additional composting centre (total 32)		Maintenace and additional facilities as per requirement			
A.8		Stakeholder capacity building and awareness generation for holistic and sustainable waste management	Government initiated with possibilities for gap funding through private, CSR	Ongoing initiative		Ongoing initiative		Ongoing initiative			
Total Mitigation Potential of Waste Management					157 (3.65%)		197.00 (4.84%)		210 (5.78%)		

Key Short, Medium and Long Term Interventions and their Financial Estimates

Sr. No.	Key Intervention	Activity/Target	Description of financing the activity (to be read with color codes)	Short Term (till 2030)	Medium Term (2030-40)	Long Term (2040-50)	Policies / fiscal measures by State and Central Govt.	Departments
				Target AMP-2030 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target AMP-2040 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target AMP-2050 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)		
B	Green Spaces & Carbon Sequestration							
B.1	Restoration and conservation of existing forest area and tree cover	Maintaining the current carbon stock densities to ensure the carbon sequestration of ~170.8 kt CO ₂ e per year	Government initiated with possibilities for gap funding through private, CSR	Strengthening protection around existing reserved forest areas with additional measures of protection like: strengthening the fencing; eliminating encroachment; levying penalty on defaulters; etc.	Strengthening protection around existing reserved forest areas with additional measures of protection like: strengthening the fencing; eliminating encroachment; levying penalty on defaulters; etc.	Strengthening protection around existing reserved forest areas with additional measures of protection like: strengthening the fencing; eliminating encroachment; levying penalty on defaulters;etc.	Compensatory Afforestation Fund Management and Planning Authority Fund (CAMPA), Nagar Van Yojana, Rashtriya Krishi Vikas Yojana (RKVY), National Afforestation Programme, Sub-mission on Agroforestry (SMAF) – Har Medh Par Ped Scheme; National Agriculture Development Programme (NADP);	Forest Department, Environment and Climate Change Department, Municipal Administration Department

Key Short, Medium and Long Term Interventions and their Financial Estimates											
Sr. No.	Key Intervention	Activity/ Target	Description of financing the activity (to be read with color codes)	Short Term (till 2030)		Medium Term (2030-40)		Long Term (2040-50)		Policies / fiscal measures by State and Central Govt.	Departments
				Target	AMP-2030 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target	AMP-2040 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target	AMP-2050 (kt CO ₂ e/ yr)* (Percentage to BAU gross emissions)		
B.2	Promoting social and agroforestry in land classified as barren or fallow, land put to non-agricultural uses of cultivable waste land		Private driven for private lands and Government initiated for Government lands with possibilities for gap funding through private, CSR	Social and agroforestry in 16749 ha of land (~9% of 191615 ha) In the subsequent years, continuous monitoring and maintenance of the plantations need to be undertaken	92 (2.14%)	Social and agroforestry in 23448 ha of land (~12% of 191615 ha) In the subsequent years, continuous monitoring and maintenance of the plantations need to be undertaken	313 (7.67%)	Social and agroforestry in 26798 ha of land (~14% of 191615 ha) In the subsequent years, continuous monitoring and maintenance of the plantations need to be undertaken	590 (16.17%)	Tamil Nadu Climate Change Mission; Green India Mission; Green Tamil Nadu Mission; Trees Outside Forests in India' initiative by MoEFCC and Governemnt of Tamil Nadu	

Key Short, Medium and Long Term Interventions and their Financial Estimates											
Sr. No.	Key Intervention	Activity/ Target	Description of financing the activity (to be read with color codes)	Short Term (till 2030)		Medium Term (2030-40)		Long Term (2040-50)		Policies / fiscal measures by State and Central Govt.	Departments
				Target	AMP-2030 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target	AMP-2040 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target	AMP-2050 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)		
B.3		Enhancing Carbon stock density	Government initiated with possibilities for gap funding through private, CSR	Enhancement of carbon stock density by ~1% increase from 82.25 t/ha to 83.25 t/ha	179 (4.16%)	Enhancement of carbon stock density by ~3.35% increase from 82.25 t/ha to 85 t/ha	126 (3.08%)	Enhancement of carbon stock density by ~5.5% increase from 82.25 t/ha to 86.76 t/ha	126 (3.45%)		
	Total Sequestration Potential				271 (6.31%)		439 (10.76%)		716 (19.63%)		
C	Sustainable Agriculture Practices										
C.1	Promote modern cultivation techniques to optimise agricultural inputs and maximise outputs	Use of organic fertiliser and compost in place of urea in agricultural production	Farmer driven with possibilities of Government funds as subsidies under various listed schemes	15% agriculture area transitioned to organic fertiliser	11 (0.26%)	45% agriculture area transitioned to organic fertiliser	32 (0.79%)	75% agriculture area transitioned to organic fertiliser	51 (1.40%)	National Mission for Sustainable Agriculture, Chief Minister's Manniyur Kaathu Mannuyir Kappom Scheme (CM MKS), National Mission on Natural farming	Agriculture Department, Horticulture Department, Environment and Climate Change Department, Animal Husbandary Department

Key Short, Medium and Long Term Interventions and their Financial Estimates											
Sr. No.	Key Intervention	Activity/ Target	Description of financing the activity (to be read with color codes)	Short Term (till 2030)		Medium Term (2030-40)		Long Term (2040-50)		Policies / fiscal measures by State and Central Govt.	Departments
				Target	AMP-2030 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target	AMP-2040 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target	AMP-2050 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)		
C.2		Use of nano urea in place of urea in agricultural production	Farmer driven with possibilities of Government funds as subsidies under various kisted schemes	30% of urea requirement met through nano urea		55% of urea requirement met through nano urea		25% of urea requirement met through nano urea			
C.3		Capacity building programmes can be conducted through Krishi Vigyan Kendra for creating awareness on climate resilient practices	Government initiated with possibilities for gap funding through private, CSR	Can be an ongoing initiative	NA	Can be an ongoing initiative	NA	Can be an ongoing initiative	NA	National Innovations in Climate Resilient Agriculture (NICRA), Paramparik Krishi Vikas Yojana	

Key Short, Medium and Long Term Interventions and their Financial Estimates											
Sr. No.	Key Intervention	Activity/Target	Description of financing the activity (to be read with color codes)	Short Term (till 2030)		Medium Term (2030-40)		Long Term (2040-50)		Policies / fiscal measures by State and Central Govt.	Departments
				Target	AMP-2030 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target	AMP-2040 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target	AMP-2050 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)		
C.4		Establish local network of mini weather monitoring stations to monitor rainfall and temperature as well as to be able to forecast extreme weather conditions - this can help inform farmers of appropriate sowing, harvesting and irrigation timings	Government or private initiative	32 mini weather monitoring stations	NA	6 mini weather monitoring stations	NA	Additional maintenance	NA	Krishi Decision Support System, Agricultural Infrastructure Fund (AIF)	

Key Short, Medium and Long Term Interventions and their Financial Estimates

Sr. Key No.	Key Intervention	Activity/ Target	Description of financing the activity (to be read with color codes)	Short Term (till 2030)		Medium Term (2030-40)		Long Term (2040-50)		Policies / fiscal measures by State and Central Govt.	Departments
				Target	AMP-2030 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target	AMP-2040 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)	Target	AMP-2050 (kt CO ₂ e /yr)* (Percentage to BAU gross emissions)		
C.5	Livestock management	feed inputs for livestock - Tamarin plus and Harit Dhan and balanced rationing to reduce methane emissions from enteric fermentation. Implementation of GOBARdhan scheme for manure management	Farmer driven with possibilities of Government funds as subsidies under various schemes as listed	Balanced rationing introduced in 30% and improved feed supplements like Harit Dhan and Tamarin plus in 25% of livestock . 30% reduction in manure management emission through GOBAR dhan scheme	22 (0.51%)	Balanced rationing introduced in 60% and improved feed supplements like Harit Dhan and Tamarin plus in 50% of livestock . 60% reduction in manure management emission through GOBAR dhan scheme	42 (1.03%)	Balanced rationing introduced in 90% and improved feed supplements like Harit Dhan and Tamarin plus in 75% of livestock . 90% reduction in manure management emission through GOBAR dhan scheme	60 (1.65%)	Balanced Ration Programme (BRP) GOBAR dhan scheme	
	Total Mitigation Potential of Sustainable Agriculture Practices				33 (0.77%)		74 (1.82%)		111 (3.05%)		

* AMP = Annual Mitigation Potential

Note: Percentages denote AMP as a share of respective BAU emissions.



Sr No	Key Intervention	Activity/ Target	Short Term (till 2030)		Medium Term (2030-40)		Long Term (2040-50)		Incentive under Central/State Schemes and Policies
			Target	AMP-2030 (kt CO ₂ e /yr)*	Additional Target	Cumulative AMP-2040 (kt CO ₂ e /yr)*	Additional Target	Cumulative AMP-2050 (kt CO ₂ e /yr)*	
Interventions to Mitigate Scope 1 Emissions									
A	Decarbonising the Energy Sector								
A.1	Shift from Fossil-Fuel to RE based Captive Power Generation	Replacing/ tying up PPAs for ~306 MW (335 GWh generation) fossil-fuel based Captive Power Plants (CPPs) to equivalent renewable energy capacity of ~153 MW (solar, hydro and others) by 2050.	50% of the existing tied up capacity (equivalent RE capacity 75 MW)	145 (3.37%)	30% of the balance (equivalent RE capacity 50 MW)	228 (5.59%)	20% of the balance (equivalent RE capacity 30 MW)	293 (8.04%)	- 100% electricity tax exemption for 5 years on power generated and consumed from captive sources - Concessions on land purchase or lease through reduced stamp duty available under Tamil Nadu Industrial Policy 2021
A.2	Use of Electric Cookstove in Cooking	Adoption of ~3.2 lakh electric cookstoves in residential and commercial buildings by 2050	~1.4 Lakh (12% of the households)	200 (4.64%)	1 lakh	306 (7.5%)	0.8 lakh	312 (8.56%)	Potential of covering 1.4 lakh electric cookstoves (worth 26.6 crores) under National Efficient Cooking Program (NECP) which provides cookstoves at a low cost.

Sr No	Key Intervention	Activity/ Target	Short Term (till 2030)		Medium Term (2030-40)		Long Term (2040-50)		Incentive under Central/State Schemes and Policies
			Target	AMP-2030 (kt CO ₂ e /yr)*	Additional Target	Cumulative AMP-2040 (kt CO ₂ e /yr)*	Additional Target	Cumulative AMP-2050 (kt CO ₂ e /yr)*	
A.3	Use of Biogas in Residential Sector (Livestock waste, Food Scaps etc)	Installing a biogas plant of approx 30000 m3/day capacity (considering 50% realization of total potential of 60000 m3/day of the district)	20% of the target capacity	13 (0.30%)	30% of the remaining target capacity	32 (0.78%)	50% of the remaining target capacity	64 (1.76%)	Potential of coverage of 10 small biogas plants of 25 m3/day capacity (worth Rs. 0.07 crores) by 2026 under National Biogas Programme . Higher coverage subject to scheme extension.
A.4	Replacement of diesel pumps with solar pumps for irrigation	Conversion of 4820 diesel pumpsets to solar pumps by 2030	40% of the target	20 (0.46%)	60% of the target	52 (1.27%)	NA	52 (1.43%)	Potential of covering 50 solar pumps worth ~INR 2 crore (Rs. 314,088 per 5HP pump) under PM KUSUM (Component B)
A.5	Use of EV tractor and tillers for agriculture land preparation	Electrifying ~7500 tractors and tillers by 2050	375	1 (0.02%)	375	3 (0.07%)	6,750	41 (1.12%)	-
A.6	Replacement of DG set to renewable sourced power backup	Replacement of DG set to renewable sourced power backup	To be assessed						

Sr No	Key Intervention	Activity/ Target	Short Term (till 2030)		Medium Term (2030-40)		Long Term (2040-50)		Incentive under Central/State Schemes and Policies
			Target	AMP-2030 (kt CO ₂ e /yr)*	Additional Target	Cumulative AMP-2040 (kt CO ₂ e /yr)*	Additional Target	Cumulative AMP-2050 (kt CO ₂ e /yr)*	
B	Shift to Electric Mobility* *The target suggested in below mentioned interventions are over and above the stock in BAU scenario.								
B.1	Shift to EV 2 Wheeler	Replacing ~4 Lakh conventional 2W with EV by 2050	0.2 lakh	10 (0.23%)	New 2W addition by 2040: 3 lakh	132 (3.23%)	New 2W addition by 2050: 0.8 lakh	194 (5.32%)	The current market price of EV 2W are comparable with the ICE counterparts, hence market dynamics will decide the pace of 2W EV sales. However, a sum of Rs. 10.3 crore (Rs. 10 crore + Rs. 0.3 crore) is available under current center and state policies (PM E-DRIVE Scheme 2024 and TN EV Policy 2023) for 0.2 lakh 2W EVs. Higher coverage is possible subject to scheme extension.
B.2	Shift to EV 3 Wheeler	Replacing ~7000 3W ICE vehicle with EV by 2050	~1000	1 (0.02%)	New 3W addition by 2040: ~4000	7 (0.17%)	New 3W addition by 2050 : ~2000	11 (0.3%)	The current market price of EV 3W are comparable with the ICE counterparts, hence market dynamics will decide the pace of 3W EV sales. However, a sum of Rs. 3.8 crore (Rs. 0.8 crore + Rs. 3 crore) is available under current center and state policies (PM E-DRIVE Scheme 2024 and TN EV Policy 2023) for 1000 3W EVs.

Sr No	Key Intervention	Activity/ Target	Short Term (till 2030)		Medium Term (2030-40)		Long Term (2040-50)		Incentive under Central/State Schemes and Policies
			Target	AMP-2030 (kt CO ₂ e /yr)*	Additional Target	Cumulative AMP-2040 (kt CO ₂ e /yr)*	Additional Target	Cumulative AMP-2050 (kt CO ₂ e /yr)*	
B.3	Shift to EV 4 Wheeler	Replacement of ~2.1 lakh ICE commercial / private 4W with EV by 2050	~10,000	16 (0.37%)	New 4W addition by 2040: ~1 lakh	176 (4.31%)	New 4W addition by 2050 : ~1 lakh	352 (9.66%)	Maximum incentive of up to Rs. 1.5 lakh per 4W commercial vehicle is available under TN EV Policy 2023 for a maximum of 3000 vehicles per year.
B.4	Shift to EV Buses	Replacing ~2000 Intra district diesel buses (for schools, public transport and commercial mini buses) with EV by 2040	500	38 (0.88%)	1,500	166 (4.07%)	0	166 (4.55%)	The current market price of e-Buses are comparable with the ICE buses, hence market dynamics will decide the pace of e-Buses sales. However, a sum of Rs. ~190 crore (Rs. 140 crore + Rs. 50 crore) is available under current center and state policies (PM E-DRIVE Scheme 2024 and TN EV Policy 2023) for 500 e-Buses.
B.5	Shift to electric Heavy Goods Vehicles (HGVs)	Replacement of small ~1200 fleet trucks/lorries and other small goods vehicle with EV by 2050	100	5 (0.12%)	500	30 (0.73%)	600	65 (1.78%)	-
B.6	Creation of EV Charging infrastructure	Installation of ~550 public charging stations in total by 2050	50	NA	200	NA	300	NA	Incentives worth Rs. 1 lakh for slow charging and Rs. 10 lakh for fast charging stations are available under TN EV Policy 2023 and further coverage under PM E-DRIVE subject to scheme extension.

Sr No	Key Intervention	Activity/ Target	Short Term (till 2030)		Medium Term (2030–40)		Long Term (2040–50)		Incentive under Central/State Schemes and Policies
			Target	AMP-2030 (kt CO ₂ e /yr)*	Additional Target	Cumulative AMP-2040 (kt CO ₂ e /yr)*	Additional Target	Cumulative AMP-2050 (kt CO ₂ e /yr)*	
C	Decarbonisation of the Industry								
C.1	Deep electrification in Industries	Fully Electrified kiln via plasma generator for heating in industries incl. cement by 2050	25% of the target	49 (1.14%)	35% of the balance target	125 (3.06%)	40% of the balance target	215 (5.9%)	-
Total Scope 1 Mitigation Potential (ktCO₂e)			498.9 (12%)			1,258 (30.82%)			1,765 (48.42%)
Interventions to Mitigate Scope 2 Emissions (Electricity Sector)									
a.	Addition of Renewable Energy (RE) capacity to meet the domestic electricity demand at district level	- Additional RE capacity integration of ~6 GW (in addition to existing RE capacity of 0.7 GW) a. Potential Assessment b. Installation as per assessment	NA	0	2 GW of the RE capacity target	3,066	4 GW of remaining capacity	9,325	- Subsidy maximum up to Rs. 78,000 for rooftop system under PM Surya Ghar Muft Bijli Yojana

Sr No	Key Intervention	Activity/ Target	Short Term (till 2030)		Medium Term (2030–40)		Long Term (2040–50)		Incentive under Central/State Schemes and Policies
			Target	AMP-2030 (kt CO ₂ e /yr)*	Additional Target	Cumulative AMP-2040 (kt CO ₂ e /yr)*	Additional Target	Cumulative AMP-2050 (kt CO ₂ e /yr)*	
b.	Energy Efficiency (EE) improvements*	Installation of ~36.2 lakh 3/5 star EE ACs in residential spaces	13.78 lakh	138	18.71 lakh	327	3.76 lakh	365	-
		Installation of 3/5 star EE refrigeration units up to a total of 18.71 lakh by 2050	18.13 lakh	68	0.48lakh	70	0.097 lakh	70	
		Replacing existing ~60lakh incandescent bulbs and CFL bulbs	48.3 lakh	2	11.7 lakh	25	NA	25	
		Replacing ~5 lakh street lights with LED lights by 2030	100%	91	NA	91	NA	91	
		Adoption of ~42 lakh BLDC fan by 2050	39.74 lakh	3	2.44 lakh	4	0.36 lakh	43	
c.	Utilising biodegradable waste to generate electricity	Installation of waste to energy plant of 15 MW by 2030	100%	92	NA	92	NA	92	Potential for covering 3MW project worth INR. 6 crore (Rs. 2 crore/MW) under National Mission for Waste to Wealth (Policy for Promotion of City Composting)

Sr No	Key Intervention	Activity/ Target	Short Term (till 2030)		Medium Term (2030-40)		Long Term (2040-50)		Incentive under Central/State Schemes and Policies
			Target	AMP-2030 (kt CO ₂ e /yr)*	Additional Target	Cumulative AMP-2040 (kt CO ₂ e /yr)*	Additional Target	Cumulative AMP-2050 (kt CO ₂ e /yr)*	
Total Scope 2 Mitigation Potential (ktCO ₂ e)			302.1		3,582.6		9,919		
* AMP = Annual Mitigation Potential									
Note: Percentages denote AMP as a share of respective BAU emissions.									



Endnotes

- 1 Chennai recently deployed 120 electric buses under the MTC fleet with a total investment of Rs. 207.9 Crore. Since the cost of electric buses could vary by seating capacity and features, this investment is taken as a comparable figure for Coimbatore too. An average of Rs. 18 Crore is assumed per electric bus.
- 2 Scheme valid till March 2026, unless extended.
- 3 Scheme valid till December 2025, unless extended.
- 4 https://tnpcb.gov.in/PDF/About_Us/Announcements/GONo116_16625.pdf
- 5 Scheme valid till December 2026, unless extended.
- 6 The cost of LED streetlight system, excluding poles, civil works, wiring and installation, comes to Rs. ~9200 per unit as per the Greater Chennai Corporation tender (Ref E.L.D.C.No.SMII/P10/1713/2025). With installation costs, an average of Rs. 20,000 per unit of LED streetlight system is assumed.



Vasudha Foundation

D-2, 2nd Floor, Southern Park, Saket District Centre,
New Delhi-110 017, India

www.vasudha-foundation.org

