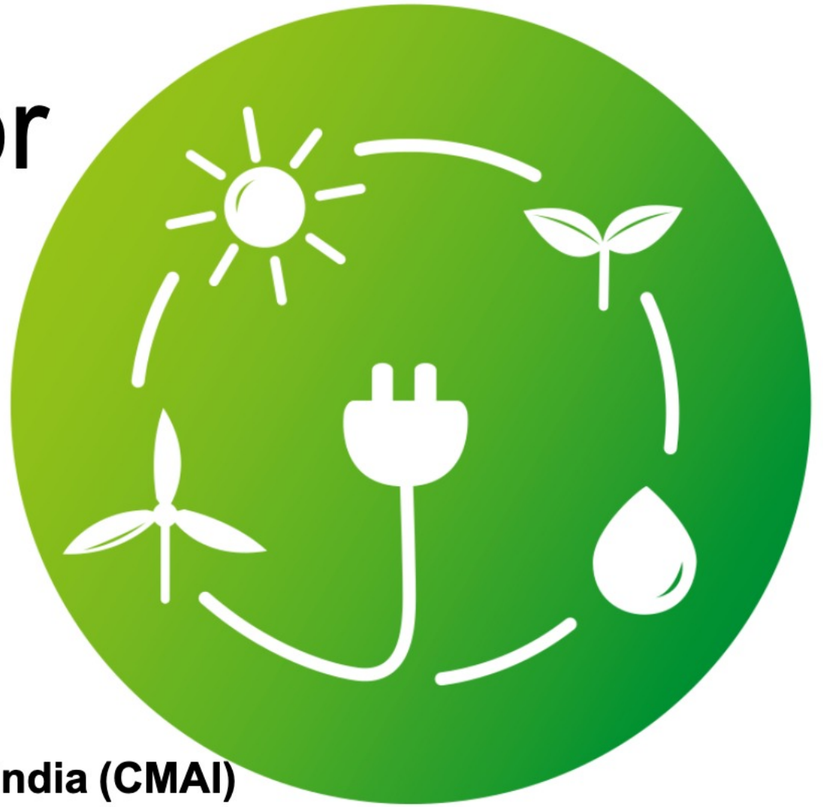
CMAI
Carbon Markets Association of India

Ministry of Environment, Forest and Climate Change
Government of India

JCM THE JOINT CREDITING MECHANISM

Carbon Credits : CBG Sector



23rd September 25

Rohit Kumar
Secretary General
Carbon Markets Association of India (CMAI)

Manish Dabkara
President
Carbon Markets Association of India (CMAI)

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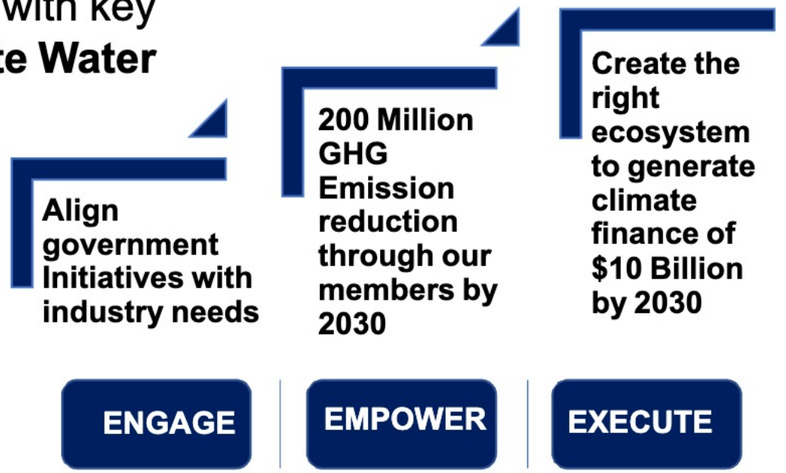
Carbon Markets Association of India

- **CMAI is an industry association** which is dedicated to working towards enabling India in its journey towards a net-zero future.
- We represent industry voice in multiple **stakeholder consulting committees** with key ministries - **MOEFCC, MOP, MNRE, BEE, MoA and Indian Railway and State Water and Sanitation Mission** for generating environmental credits.
- CMAI is technical committee member of :

❖ **Green Credit Programme (GCP)**
❖ Extended Producer Responsibility (EPR)
❖ Ecomark Rules for product labelling
❖ Wetland Committee
❖ **MOU with AREAS (MNRE Initiative)**
❖ **Carbon Capture Utilization and Storage (CCUS)** in NITI Aayog
❖ **Bureau Of Indian Standards' (BIS)** Environmental Management Committee

- **Sustainable Aviation Fuel (SAF) Association is another industry body focus on decarbonization of aviation sector.**
- **India Clean Cooking Alliance, and Climate Law Association (ANT and EPR Alliance) are** strategic initiative promote circularity.
- We have done MoU with the **WEC India, IIT Bombay, IIT Kharagpur, IICA, GDP and VCMI** – for capacity enhancement and development of carbon finance.

Our Goals



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CMAI's Commitment for Net Zero

50+ Capacity Building Programs

Organized more than 50 knowledge- sharing workshops, trainings, and dialogues across sectors to build readiness for carbon markets, ESG, and climate finance.

200+ Call on Meetings

Facilitated more than 200 call on meetings with policy makers, industry leaders, and experts, to ensure meaningful industry-government dialogue.

20+ Policy Representations

Submitted over 20 formal representations to various ministries and regulatory bodies—bringing industry insights to the forefront of climate and carbon policy.

Represented Industry at Global Platforms

Successfully represented Indian industry perspectives at the **UNFCCC COP** platform and contributed to global Article 6 dialogues.

KEY

Worked Closely with Ministries

Key ministries, including **MoEFCC, MNRE, MoP, MoF, MoA, BEE, Indian Railway and MOCI**—ensuring alignment between national policy and industry action.

Advocated for Inclusion of Clean Cooking Solutions under Article 6

Played a key role in advocating for the inclusion of clean cooking solutions under Article 6—a significant step toward equitable climate finance.

Flagship Event – India Climate Week

A landmark event focused on climate action, policy, and innovation— bringing together global experts, industry leaders, and policymakers.

Committee Members

CBG : Eligible Projects

- **Large-scale (centralized) biogas/CBG** plants fed with bulk feedstock (municipal solid waste, industrial organic waste, large dairies,etc.)
- Gas upgraded & injected into grid or supplied as CBG for transport/fuel substitution.
- High potential for carbon credits due to scale & measurable emission reductions

Tech : Carbon Credits from Biogas/CBG

Eligible Feedstock

- Agricultural residues (crop stubble, husk, press-mud,etc)
- Animal manure & dairy waste (cow dung, poultry litter)
- Municipal solid waste (organic fraction of MSW, food waste)
- Industrial organic waste (sugar mill effluent, distillery spent wash, paper mill sludge)
- Energy Farming - Napier Grass, Bamboo

Baseline Scenario

- Dumping of biomass/organic waste → uncontrolled methane emissions
- Open burning of crop residue → GHG emissions + local air pollution
- Use of fossil fuels (LPG, coal, diesel) for cooking, heating, or power generation
- Inefficient waste management with high methane release

Benefits

- **Climate:** Methane capture & avoidance → significant GHG reduction (carbon credits)
- **Energy:** Renewable, clean replacement of fossil fuels for cooking, electricity, transport (CBG for vehicles)
- **Health & Environment:** Reduced indoor air pollution, odor, vector-borne disease risk
- **Circular Economy:** Digestate as organic fertilizer → reduces chemical fertilizer use
- **Socio-economic:** Income from carbon credits, energy security, rural job creation

Why CBG projects need A6 credits ?

Feedstock Issues – Seasonal, inconsistent, poor quality, and high logistics cost.

High Costs – Expensive plant setup, long payback period, fluctuating feedstock costs.

Demand & Distribution – Limited pipeline/CNG station infrastructure and weak offtake assurance.

By-products – Fermented organic manure is hard to market and less valued than chemical fertilizers.

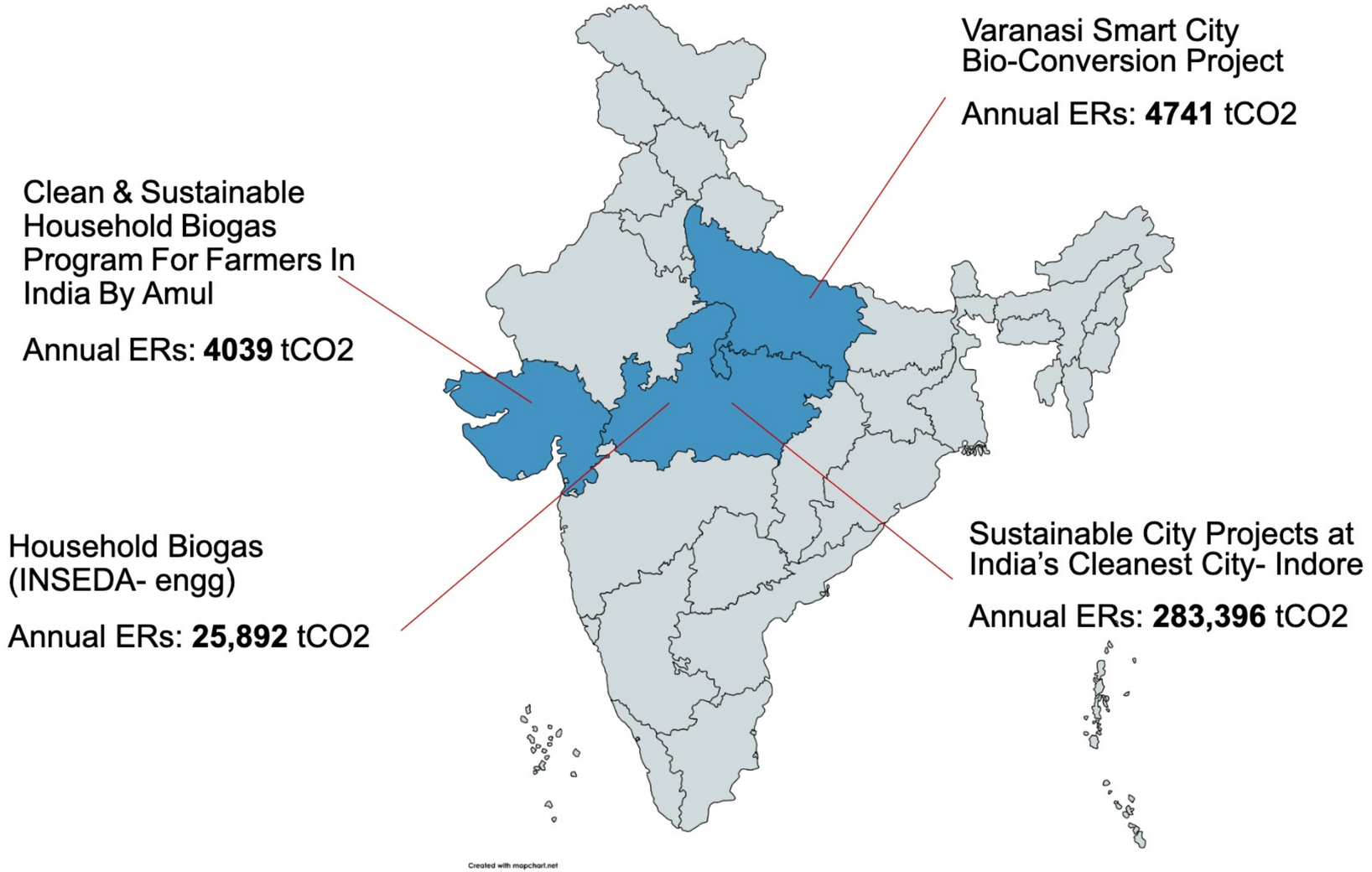
Technical Hurdles – Complex purification, variable efficiency, weak process monitoring.

Policy & Regulatory Concerns – Clearances, inconsistent state-level support, and slow implementation.

Community Acceptance – Land use conflicts, odor/health concerns, local resistance.

Data & Standards – Lack of transparent performance data and uneven safety/quality standards.

Registered Projects (in VCM) by CMAI Members/Associates - Aims to generate 5 million credits in bio energy space by 2030.



Potential applicable JCM Methodology: VN_AM004 (Vietnam)

- **Project Type**: Anaerobic digestion of wholesale market organic waste for biogas, replacing landfill and fossil fuel use.
- **GHG Reduction**: Reduces methane from landfill decay and CO_2 by replacing fossil fuels with biogas-generated heat.
- **Reference Emissions**:
  - Methane avoided via First-Order Decay (FOD) IPCC model.
  - CO_2 avoided by substituting biogas for fossil fuels, using NCV and emission factors.
- **Project Emissions**: CO_2 from electricity used by waste management facility.
- **Eligibility Criteria**: Continuous anaerobic digester, H_2S removal, airtightness test, residuals plan, annual checks.
- **Key Monitoring**:
  - Organic waste diverted from landfill
  - Biogas supplied for heat generation
- **GHG Calculation**: Net reductions = Reference Emissions – Project Emissions.
- **Parameters**: IPCC default values for methane, carbon content, decay rate, calorific value.

A6.2 Credits Pricing & Projections

- **Current Prices (2024-2025):**
  - Market signals show Article 6.2 credit prices ranging from **$15 to $41 per tCO_2** in Asia-Pacific regions, above voluntary market averages.
- **Medium-Term Outlook (by 2030):**
  - Prices expected to rise steadily as compliance markets expand and demand grows.
- **Long-Term Projection (to 2035):**
  - Forecasts indicate prices reaching **$30–$75+ per tCO_2**, depending on credit quality, project type, and regulatory developments.
- **Market Drivers:**
  - Increasing demand from national emissions trading systems and corporate net-zero commitments.
  - Compliance with CORSIA for international aviation offsets.
  - Enhanced credit quality standards and transparency under Article 6.2.
- **Market Growth:**
  - Carbon credit market size forecast to grow from to over **$88 billion** by **2035-50**.

Carbon Markets Association of India

Mr. Rohit Kumar

secretary@cma-india.in

+91 98117 79580

511, 5th floor, World Trade Centre,
Barakhamba Road, New Delhi -
110001

Thank You