# Accelerating the Net Zero Transition

The Role of Standards & Certifications

*13 June 2025, GreenCo Summit 2025*

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## Net Zero Requires Systems Thinking....

**Net Zero:**

- ✕ **Target**
- ✕ **Isolated Actions**
- ✓ **Transformation**
- ✓ **Integrated Actions**

✓ **Demands systems-level transformation across resources**

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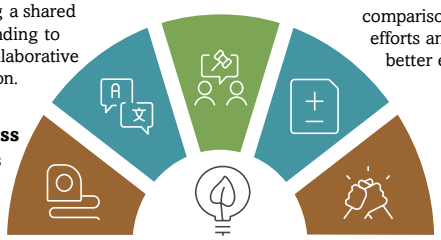
# The Role of Standards in Systems Transformation

**Common Language**
Establishing a shared understanding to facilitate collaborative action.

**Accountability**
Ensuring transparency and responsibility in actions and outcomes.

**Comparability**
Enabling the comparison of different efforts and results for better evaluation.

**Measurable Progress**
Translating intentions into tangible, quantifiable achievements.



**Credibility**
Building trust and reliability in the standards and their implementation.

✓ **GreenCo NZ standards – building blocks**

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# GreenCo Standards & Certifications Driving Real Net Zero Progress

**Phased Approach**
A gradual implementation with ongoing enhancements

**Industry-Wide Adoption**
Promoting widespread use and acceptance across sectors

**Encourage Transparency**
Promoting open communication and clear accountability

**Global Benchmarking**
Adapting international standards for Indian businesses

**Focus on outcomes**
Prioritizing results over mere procedural adherence

**Third-party validation**
Independent verification to ensure credibility and trust

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# CII GreenCo Net Zero Guidelines on Zero Waste to Landfill

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## Closing the Loop- Zero Waste to Landfill

**Goal** – certifies facilities based on landfill waste diversion, encouraging circular resource use

**Why does this standard matter?**

- Reduces waste from ending up in landfill
- Traces waste end to end, even recycler end
- Separate diversion rates for Hazardous and Non-Hazardous waste
- Promotes circular economy by encouraging upcycling

18 Units Certified

269,302 Tonnes of Hazardous Waste Diverted

1.43 Million Tonnes of Non-Hazardous Waste Diverted

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# Closing the Loop- Zero Waste to Landfill

- >99.7% of the waste should be diverted from landfill
- Scope & Boundary
  - ✓ Entire manufacturing process
  - ✓ Tier-1 recyclers
  - ✓ Outsourced intermediate processing
- Validity:
  - ✓ The validity of certification is 3 years
  - ✓ The annual diversion data for the period of validity of the certification should be submitted to CII

| |
|---|
| Reduction in waste generation |
| Reuse of generated waste |
| Recycling of generated waste |
| Upcycling of generated waste |
| Composting of waste |
| Anaerobic Digestion |
| Co-processing of hazardous waste as alternate fuel |
| Waste to energy for non-recyclable and non-compostable materials |

| |
|---|
| Composting of recyclable waste |
| Co-processing of recyclable waste |
| Waste to energy for recyclable and compostable materials |

| Level | Diversion rate |
|---|---|
| Zero waste to landfill | more than or equal to 99.7% |
| Approaching zero waste to landfill | ≥ 97.5% to less than 99.7% |
| Aspiring zero waste to landfill | ≥ 95% to less than 97.5% |

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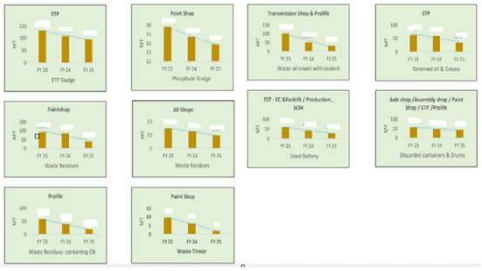
# Case Study – Tata Motors, Lucknow

- ✓ 99.81% Diversion Rate
- ✓ Reprocessing of paint sludge into secondary primer
- ✓ Recovering waste oil into secondary oil usage
- ✓ In house Bio-composter for manure which is used for plantation
- ✓ Individual specific inventory targets for hazardous and non-hazardous waste



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# Case Study – Godrej Interio, Shirwal

- ✓ 99.94% Diversion Rate
- ✓ 100% of Hazardous Waste is Disposed through MPCB Authorized Disposal Facility
- ✓ Good systems to audit recylers with questionnaire
- ✓ Target: Specific Mfg. waste generation (for each Hazardous & Non-hazardous) -25 % (MT/MVA) by 2031-32


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# CII GreenCo Net Zero Guidelines on Water Neutrality

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# Balancing Water Footprints - Water Neutrality

- **Goal** – certification recognizes facilities that balance water use with augmentation. Based on Net Water Ratio
- **Why does this standard matter?**
  - Addresses water scarcity
  - Site resilience and water risk
  - Community impact and scale

15 Units Certified

4.6 million kilolitres of water augmented

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# Balancing Water Footprints - Water Neutrality

**TOTAL WATER CONSUMED**

- Water withdrawn from ground water sources, within and beyond the facility
- Water withdrawn from open lakes, ponds, rainwater harvested tanks, ponds etc., within and beyond the facility
- Water consumed from other external sources such as piped water supply, tankers, municipal sources, etc.
- Water obtained from a municipal wastewater treatment facility / CETP after treatment, In-house treated water
- Wastewater obtained from other external sources, treated in house, and used

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# Balancing Water Footprints - Water Neutrality

## TOTAL WATER AUGMENTED

- Rainwater harvested and used as a substitute to process water or other purposes
- Rainwater recharged into the ground within the facility
- Scientifically constructed rainwater harvesting structures and / or recharge structures outside the facility (within the watershed of consumption)
- Water supplied to other units through wastewater treatment done within the unit or in facilities operated or owned by the company
- Increase in water augmentation due to de siltation of an existing natural body to enhance the water holding capacity of tanks / ponds beyond the fence

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# CII GreenCo Water Neutrality Certification

**Net Water Ratio (WR) – Water Augmentation / Water Consumption**

| $W_R$ | Certification Level |
|---|---|
| > 1.2 | Water Positive |
| 1 to 1.2 | Water Neutral |
| 0.90 to 0.99 | Approaching Water Neutral |
| 0.75 to 0.90 | Aspiring Water Neutral |
| < 0.75 or systems not complying with mandatory requirements of the guidelines | Not eligible for water neutral certificate |

*Facilitation activities to achieve water neutrality status*

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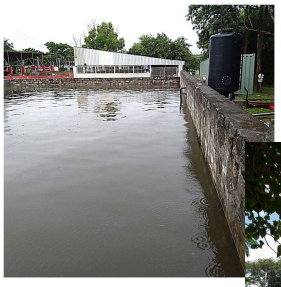
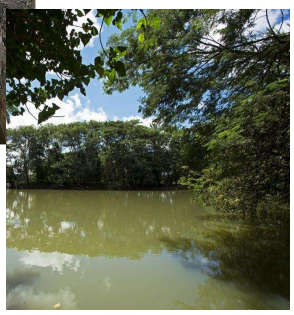
# Case Study - TVS Motor Company

- ✓ All TVS Motor Indian sites are Water Positive – Hosur, Mysore & Nalagar
- ✓ Water Ratio
  - Hosur Site: 1.21
  - Mysuru Site: 1.24
  - Nalagarh Site: 1.49
- ✓ 1,69,155 KL - water recycled/reused, equivalent to access to water for ~1,000
- ✓ The Hosur plant recharges 4,901 $m^3$ of groundwater annually



RWH collection pond



Recharging Pond

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# Case Study - Honda Motorcycle & Scooter India Limited (Tapukara)

- ✓ Net water ratio – 1:1.14
- ✓ Developed good tracker systems pre and post monsoon
- ✓ Inhouse ZLD
- ✓ Recycle water content – >42%
- ✓ Total Water Recharging capacity inside plant is 970198 m3 / year
- ✓ 4 beyond the fence projects

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# Net Zero Operational Carbon Guidelines

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## From Measuring to Mitigating - Net Zero Operational Carbon

**Goal** – Certification is awarded to facilities achieving zero Scope 1 and 2 emissions

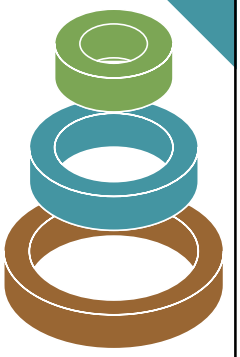
**Why does this standard matter?**

- Net zero is the goal, NZOC is an interim target
  - ✓ Progressive approach
  - ✓ Facility-wise – Holistic progress
  - ✓ Scope 3 – Screening and Inventorization

Sequestrated CO2
495 tonnes of CO2

Avoided CO2
6186 tonnes of CO2

Certified Units
11 units



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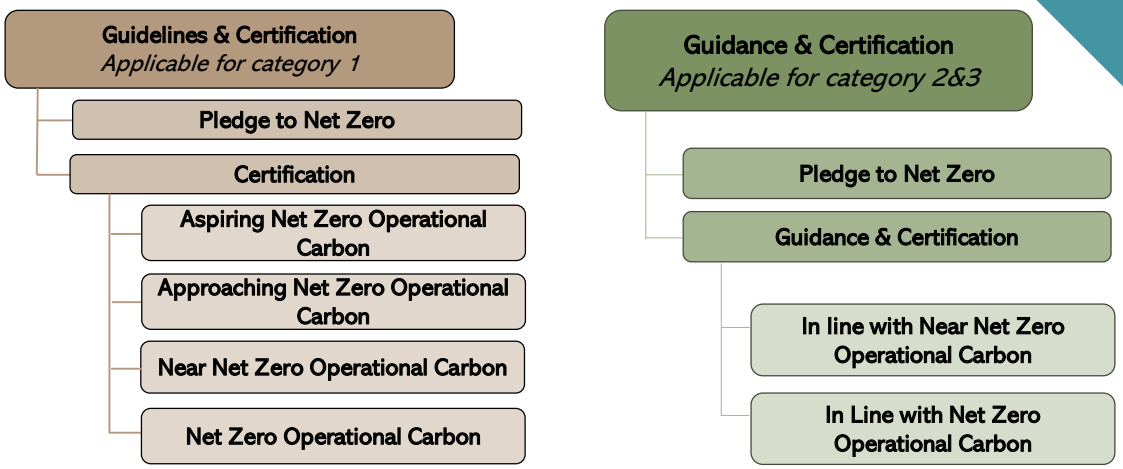
# Approach for Categories 1,2 & 3

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# Guidelines & Certification – Category 1

| Mandatory Requirement | Description |
|---|---|
| Policy and Commitment | Policy, leadership involvement, cross functional team |
| GHG Emission Inventory | Direct GHG emissions inventory - Scope 1,<br>Indirect GHG emissions inventory - Scope 2 |
| Targets and Action Plan | Individual targets for scope 1 and 2, supported with action plans |
| Reduction in GHG Emissions | % reduction in emissions – Targets vs achieved |
| GHG Emissions Mitigation | Reduction projects, mitigation projects |
| Sustenance | Demonstration of sustenance plans, tools & indicators |
| Scope 3 Emissions | Screening, inventory, targets, action plan |

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# CII GreenCo Net Zero Operational Carbon Certification

$$NZ_{OC} = \frac{\text{Avoided Emissions+Sequestration}}{\text{Total Emissions (Scope 1 \& 2+Avoided Emissions)}}$$

| $NZ_{OC}$ | Certification Level |
|---|---|
| > 0.99 | Net zero operational carbon |
| 0.95 to 0.99 | Near Net zero operational carbon |
| 0.85 to 0.95 | Approaching Net zero operational carbon |
| 0.75 to 0.85 | Aspiring Net Zero operational carbon |

*Facilitation activities to achieve Net Zero operational emissions*

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# Net Zero Operational Carbon Ratio (NZOC)

**Avoided Emissions:**

- Biomass and blended **Bio-fuels** used within the facility
- **Solar Thermal** Energy utilization, **Green Hydrogen** within the facility
- **On-site Renewable** energy sources like Solar PV, Wind power, etc.
- **Off-site Renewable** energy sources like Solar PV, Wind Power, Small Hydro power plant, through PPA, RESCO, Group Captive, Green tariff

**What is not accepted**

- **Energy Exchange Platform**: Very short-term contracts i.e., less than 12 months
- **Renewable Energy Certificates**
- **Green power** that is not wheeled directly for the unit's consumption

**Sequestration**

1. Recommend to focus on reducing scope 1 and scope 2 emissions before relying on sequestration
2. An **upper limit / cap of 20% of total emissions** for using carbon sequestration

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# What if an industry is progressing but not reaching Net Zero?

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## Net Zero Operational Carbon Guidance & Certification for Medium & Heavy Industries

| S No | Activity | Category 2<br>Alignment to Net Zero | Category3<br>Alignment to Near Net Zero |
|---|---|---|---|
| 1 | Classification | Moderate industries | Heavy industries |
| 2 | Enrollment | If $NZ_{OC}$ is < 0.75 | |
| 3 | Target | Medium term (3 – 10 years) | Long term (10 – 25 years) |
| 4 | Energy Mix | Both electrical and thermal energy | Major thermal energy |
| 5 | Innovation in Technology | Dependent | Highly dependent |
| 6 | Operation Scale | Large enterprises | Very large enterprises |
| 7 | Share of Scope 3 | High/Medium | Medium/Low |
| 8 | Carbon Offsetting | Moderate offsetting required | Significant offsetting required |

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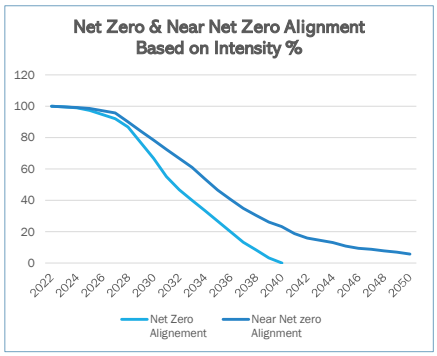
# Guidance Document - Framework

- Global target to limit climate change – 2050
- India's net zero target – 2070
  - **Indian** industries – aim to achieve much before 2070
  - **Net Zero operational carbon** by 2050 – an approachable target
- Foundational Framework
  - IEA's report on "Net Zero by 2050: A Roadmap for the Global Energy Sector"
- Two pathways –
  - Transition to net zero operational carbon by 2040 – moderate industries
  - Transition to net zero operational carbon by 2050 – heavy industries

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# Case Study - Hindustan Petroleum Corporation Limited

✓ HPCL - nine of its facilities into Net Zero Operational Certified (NZOC) units

✓ Initiatives:
- B100 Biodiesel in DG Sets
- Solar-DG Synchronization – Integrated solar with DG
- 100% Green Power Procurement
- On-Site Solar Plants
- In-House Afforestation
- External Carbon Offsetting

Environmental Benefits

**Avoided 5,186.57 T $CO_2$**

**Sequestered 356+ T $CO_2$**

**Reduced reliance on fossil fuels**

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# Case Study - Hindustan Petroleum Corporation Limited

✓ Secunderabad Terminal - Achieving Net Zero Operational Carbon – 100% RE

**Green Initiatives**

| | | |
|---|---|---|
| Vapour Recovery System | 75% - Green Power Procurement | Green Gantry |
| 25% power In-House Solar Plant | Biodiesel (B-100) for DG Sets | E-Vehicles & Green Belt |
| LEDs, Occupancy Sensors & Solar Lighting | Centralized Energy Monitoring | |

| | $CO_2$ Reduction |
|---|---|
| 252 KWp solar plant | 203.35 T $CO_2$ |
| 8.1 Lakhs units of green power purchase | 580.49 T $CO_2$ |
| 8.4 KL of biodiesel | 22.15 T $CO_2$ |
| 27,000 trees onsite | 356 T $CO_2$ |

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# Certification As A Bridge, Not A Badge

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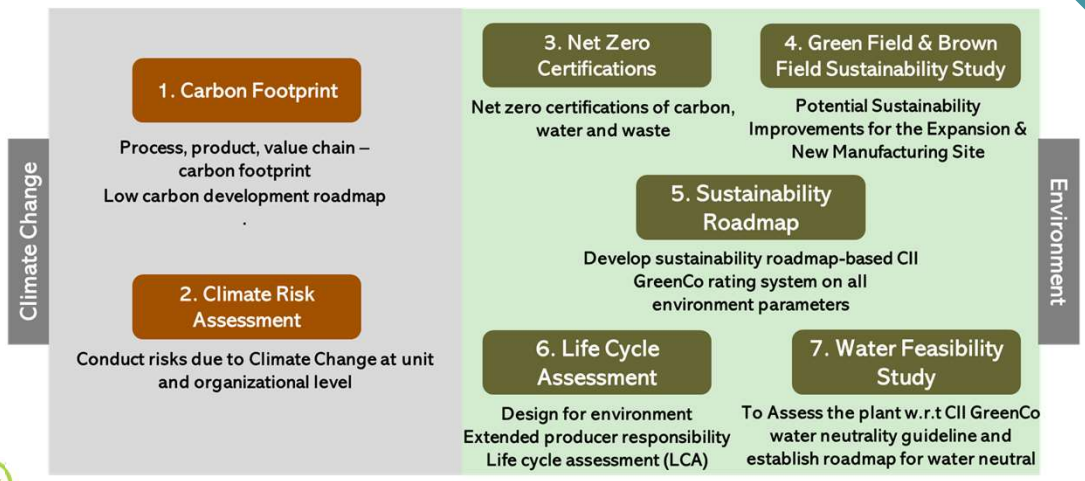
# Other Advisory & Consulting Services

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# Way Forward

- ✓ CII Certifications are tools to guide companies
- ✓ Excellent Benchmarking for Industries
- ✓ Revised versions for ZWTL, WN and NZOC
- ✓ Launch of the CII ZLD guidelines
- ✓ More sectors and companies to board on the journey

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# Thank you

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