Buzz on Earth
India Hackathon
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GREENHOUSE GAS EMISSION TRACKER

TEAM NAME: SPRT

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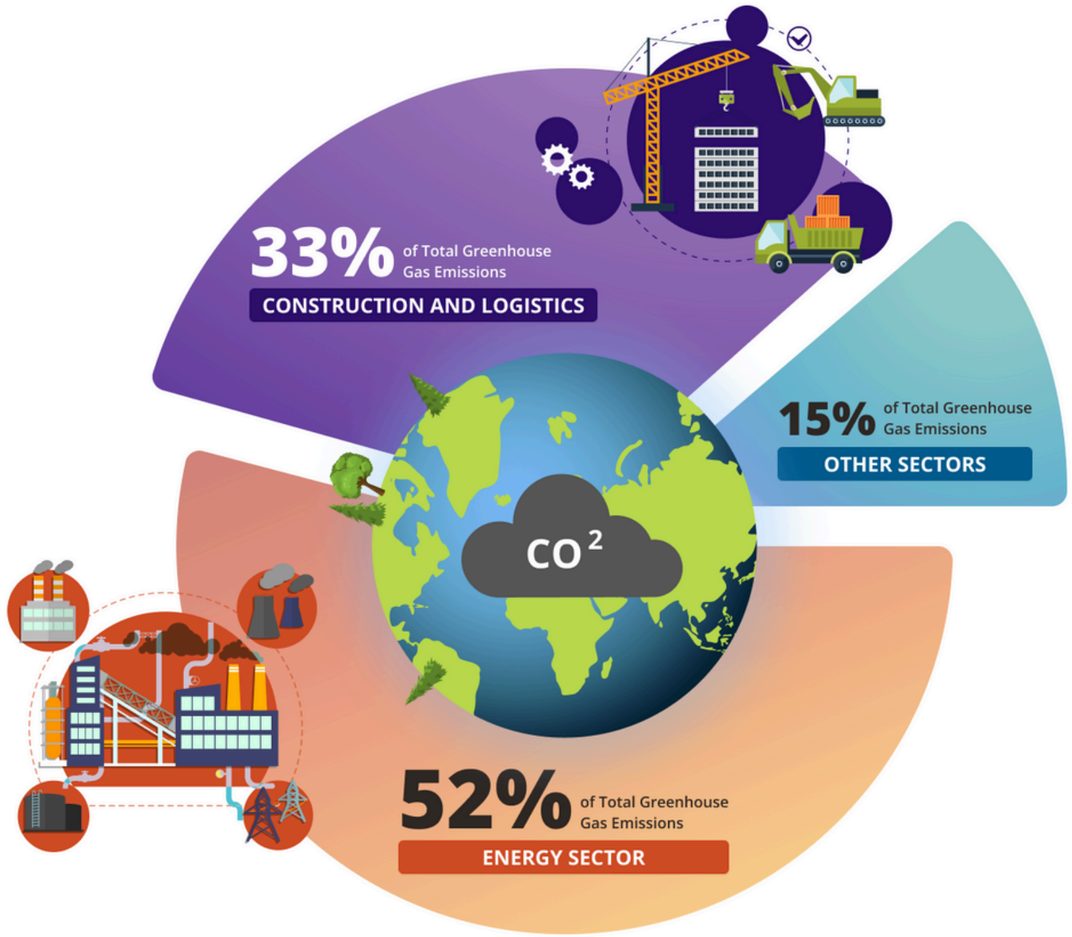


Introduction To Problem Statement

- **What is Greenhouse Gas Emission Tracking?**
  - Monitoring and quantifying emissions of gases like CO_2, CH_4, N_2O, etc.
  - Critical for climate change mitigation and regulatory compliance.

- **Why it matters:**
  - Global Warming: Increased greenhouse gases lead to climate change.
  - Sustainability: Tracking emissions helps in reducing carbon footprints.
  - Regulatory Requirements: Companies and countries must meet emissions targets.

Intel Optimisation and performance development

Intel pledged to achieve net-zero greenhouse gas emissions in its global operations by 2040, to increase the energy efficiency and to lower the carbon footprint of Intel products and platforms with specific goals, and to collaborate to create solutions that lower the greenhouse gas footprint of the entire technology ecosystem.

01

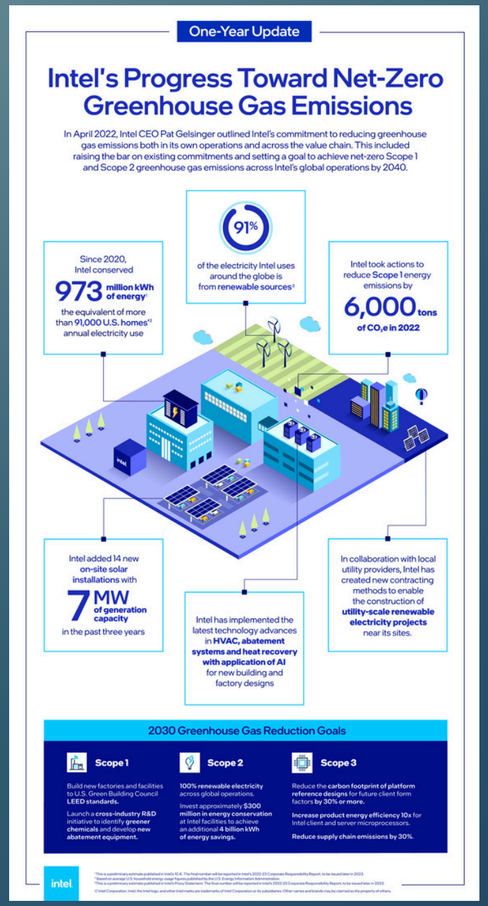
Efficient Algorithms

- Implement more efficient algorithms for data analysis, such as using advanced statistical methods or machine learning models optimized for performance.

02

Intel Architecture in Cloud Solution

- Utilize cloud platforms powered by Intel architecture for scalable computing resources. This can be particularly useful for handling large volumes of data from various sources.



Technical Architecture

01

IoT Sensors:

For real-time data collection in industrial plants, transportation, etc.

02

Satellite Data/ GPS

Monitoring large geographical regions, especially for deforestation, agriculture

03

Data Analytics Platforms

To analyze trends, anomalies, and predict emissions.

04

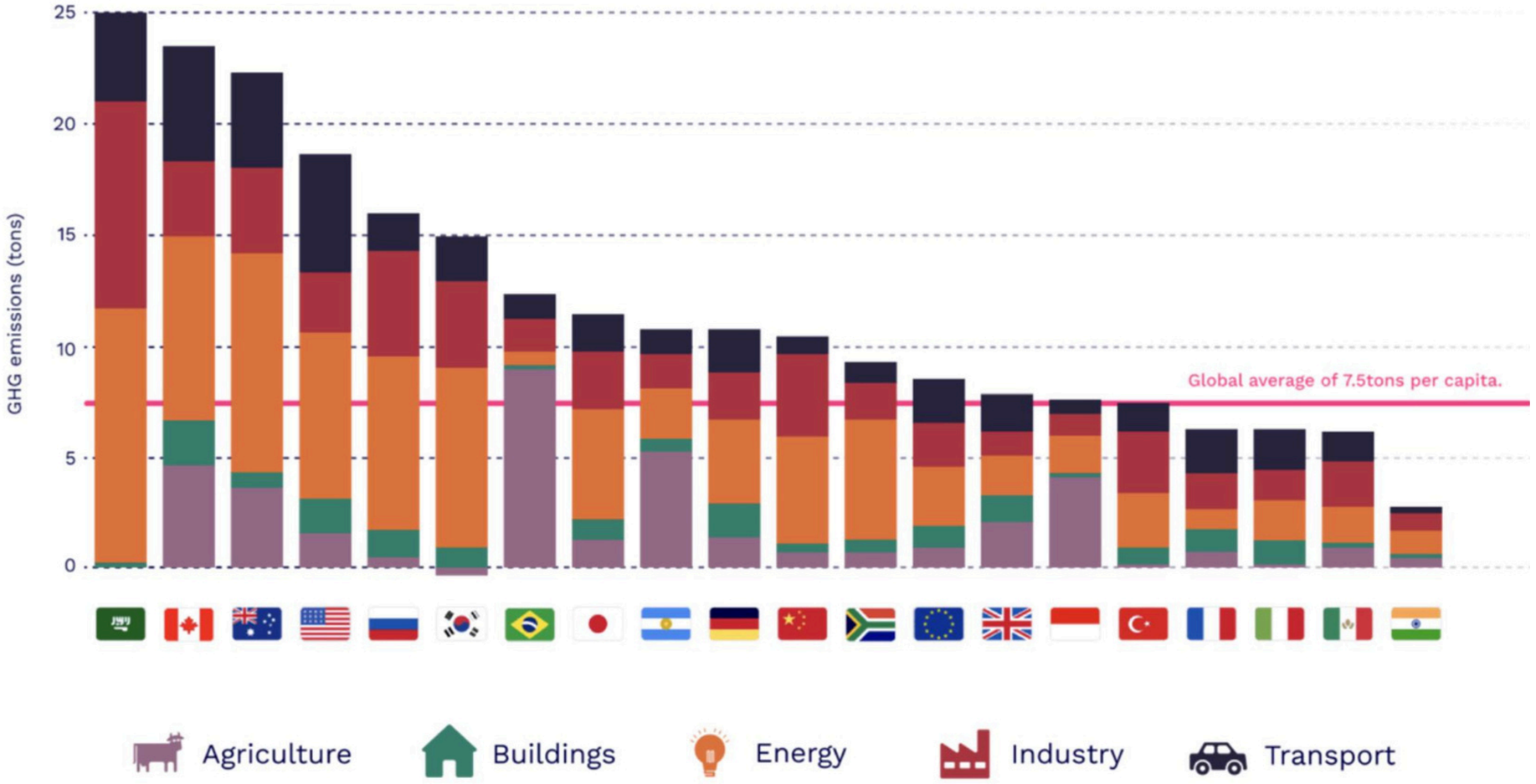
APIs

For integration with government databases and environmental organisations.

Solution Description

An AI-driven greenhouse gas emission tracker designed to monitor, analyze, and optimize carbon emissions in various sectors such as agriculture, industries, and transportation. the solution integrates IoT-based systems to collect real-time data on emissions while the AI algorithms process this data to detect patterns, forecast future events, and provide actionable insights.

Current Challenges in Emission Tracking



01 **Data Accuracy:** Limited reliable data from diverse sectors.

02 **Data Integration:** Varied sources (industrial, agricultural, energy sectors) are hard to consolidate.

03 **Cost of Implementation:** Deploying sensors and integrating complex data systems.

04 **Accuracy:** Ensuring real-time data quality and correcting for inaccuracies.

05 **User Adoption:** Convincing organizations to integrate the system into their operations.

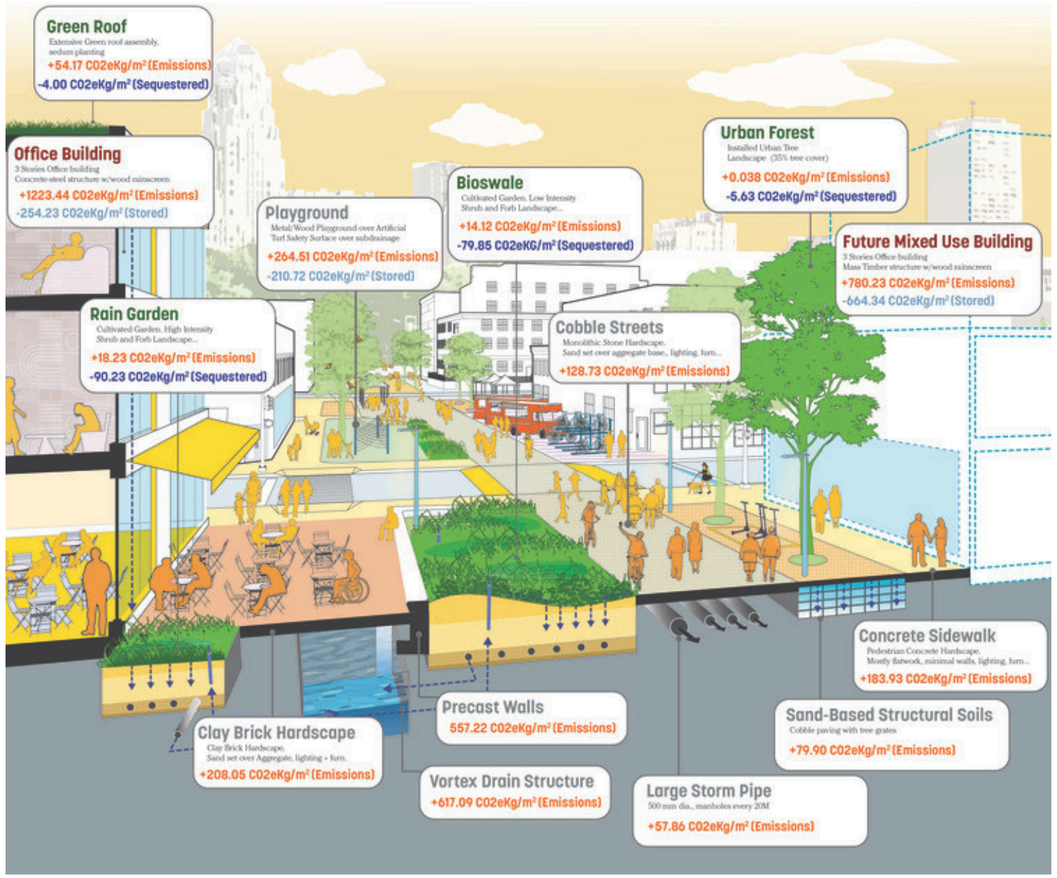
06 **Scalability:** Difficulty tracking emissions across large geographies.

Social,Ecological and Economical Impact

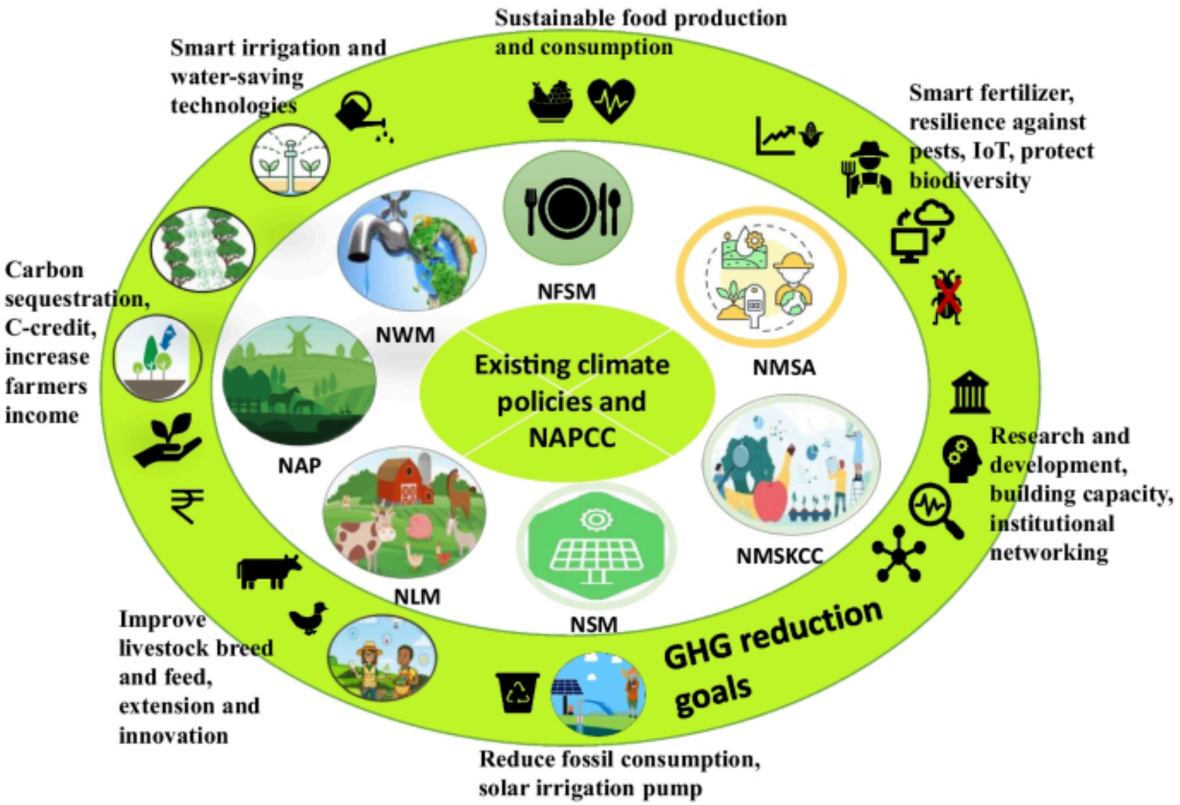
Social: Raises awareness, promotes community engagement, improves public health, and fosters equity.

Ecological: Protects biodiversity, mitigates climate change, supports sustainable resource management, and guides ecosystem restoration.

Economic: Reduces costs, ensures regulatory compliance, drives innovation, and creates new market opportunities. Together, these impacts enhance sustainability and support a healthier environment.



Integration with existing Ecosystems



There are several steps to integrate :

Define Objectives: Clarify goals and stakeholder needs.

Assess Current Ecosystem: Inventory existing systems and data sources.

Establish Data Standards: Standardize formats and units of measurement.

Choose Integration Method: Decide between API integration, batch processing, or middleware.

Implement Data Collection: Integrate IoT sensors and provide manual input options.

Develop Reporting: Create dashboards and analytics tools for insights.

Monitor and Optimize: Continuously track performance and gather user feedback.

Compliance and Security: Ensure data privacy and implement security measures.

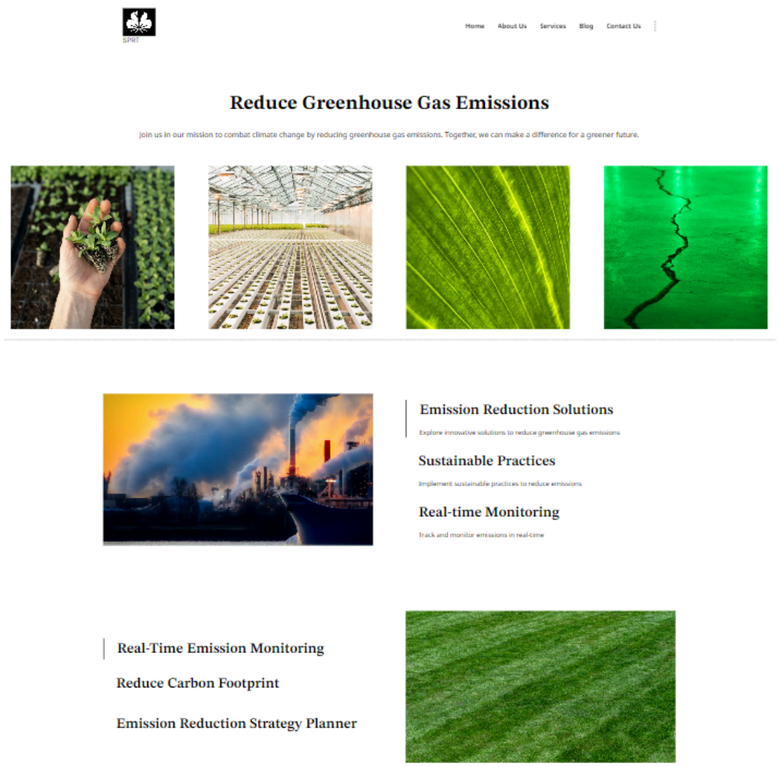
Future Potential and Scalability

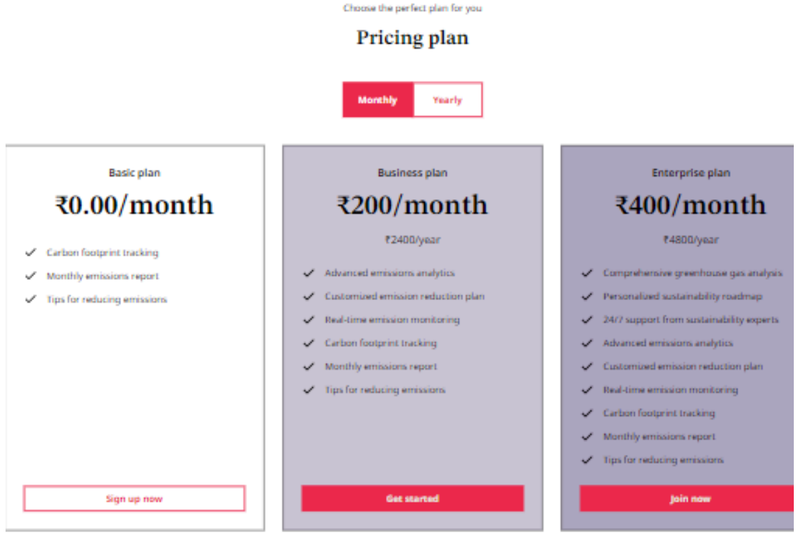
Greenhouse emission is a pressing issue and the need to have controlled emissions is a must. To make a sustainable environment and to track and reduce the emission, GREENHOUSE GAS will be in huge demand.

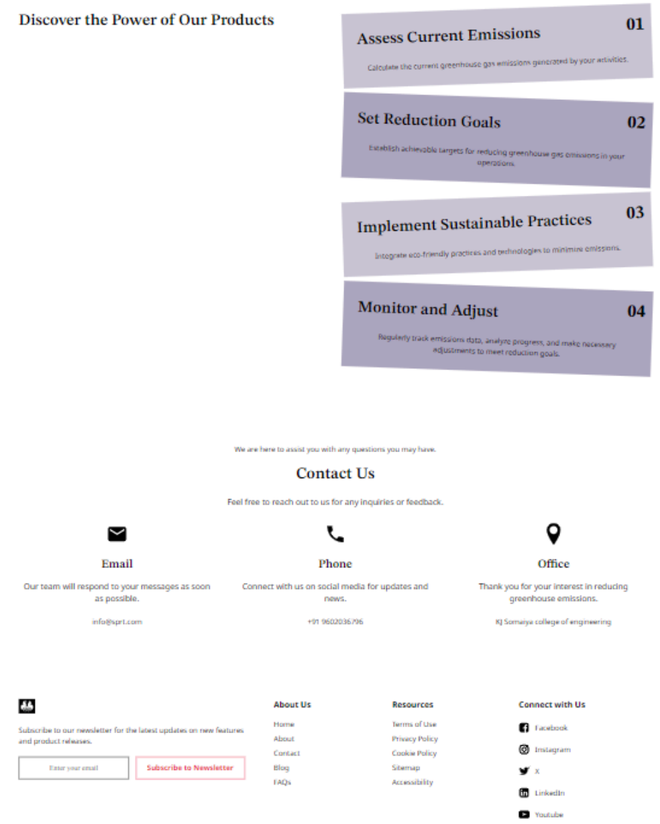
In smart cities like Singapore where
(Singapore uses advanced sensors and technologies to monitor air quality and track greenhouse gas emissions from transportation, industrial facilities, and buildings. This data is essential for meeting their sustainability targets and promoting cleaner air.)

It should be done in India also to meet the sustainability goals of viksitbharat@2047.

WEBSITE PROTOTYPE





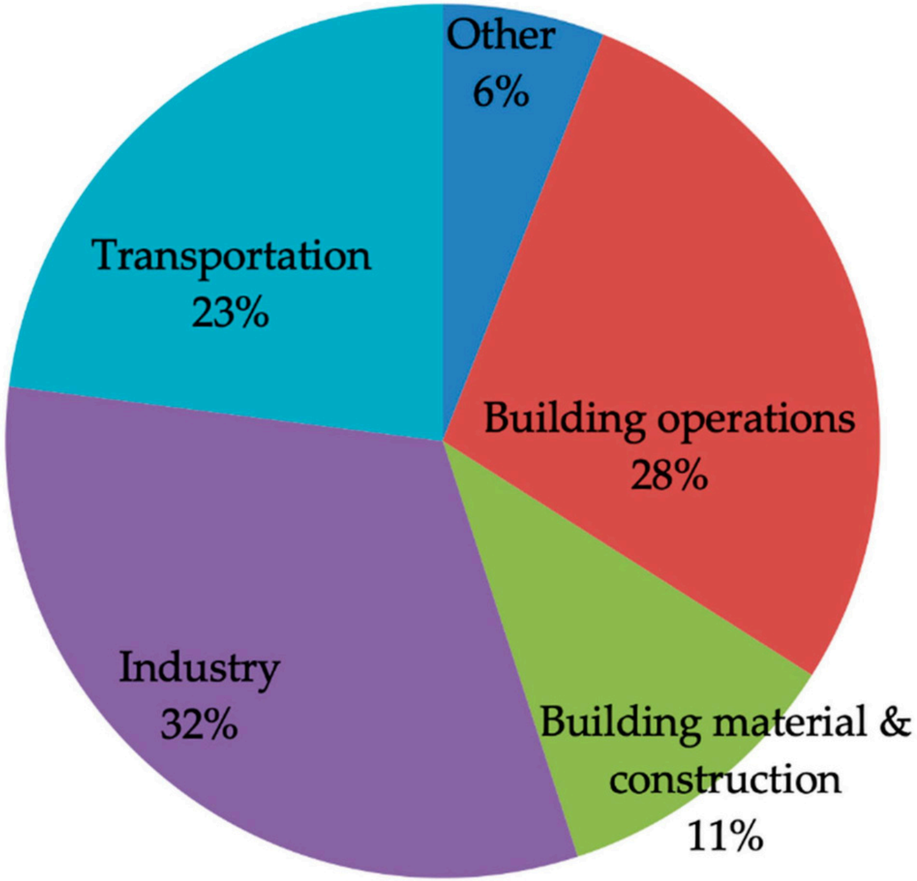


Strategy for commercialization

-To commercialize the product we can start by targeting smart cities/cities that aim to meet certain sustainability goals/ viksat bharat 2047.

-In factories/industries where there are several emission protocols that they have to follow. We can use the sensors to control the emissions.

-In villages we can collaborate with local govt. To provide emission trackers to farmers at low costs and improve quality of life.



CONCLUSION AND FUTURE SCOPE

The greenhouse effect makes the earth much warmer than without the atmosphere. In the form of heat, it consumes infrared radiation from the sun, which is lost to space after circulating in the atmosphere.