

Draft application for The BOLD Award

Category: Boldest Sustainability

TCS Intelligent Urban Exchange™ leverages AI/ML-powered Sustainability Data Spine for a global luxury automotive manufacturer to drive their sustainability initiative of achieving Net Zero Goals

TCS partners with a large luxury automotive manufacturer to achieve key long-term sustainability goals, which include slashing greenhouse emissions by 54-percent across its entire supply chain and operations by 2030 compared to 2019 levels, transforming its vehicle lineup to electric power, and achieving carbon net zero by 2039. The customer has successfully deployed TCS Intelligent Urban Exchange™ solution, to achieve their sustainability goals with real time, real world, consistent and accurate data to inform its decision making, reporting and supply chain management. The solution:

- Helps execute and simplify net-zero journey by proactively managing emission targets.
- Takes advantage of data across an organization and its ecosystems, providing intelligent, data-driven insights across multiple domains.
- Automates greenhouse gas emission accounting and reporting of key metrics
- Incorporates digital twin technology to help spur innovation and optimize emission planning.

A large luxury automotive manufacturer reprioritized and revised its operations strategy by positioning sustainability as a top KPI. It also made sustainability and carbon neutrality key components of its corporate brand and vision.

Meeting these objectives requires the organization find ways to address several complex challenges including consolidating fragmented and widely distributed sustainability data, over-reliance on manual data summarization and reporting, and ineffective decision support analytics. In addition, the company wanted a product that could incorporate client-specific use-cases into their sustainability journey.

After an exhaustive search they selected TCS Intelligent Urban Exchange™. This decision was driven by TCS Intelligent Urban Exchange's™ unique and market-leading capabilities designed to accelerate and manage enterprise-wide sustainability goals and targets. These features include a Digital Spine that automatically collects relevant sustainability data from multiple disparate sources across the enterprise and its partner ecosystem that enable timely, accurate and comprehensive climate action processes and procedures. Also, TCS Intelligent Urban Exchange's™ Emission Cockpit empowers the organization to assess the top emission drivers across processes, departments, and geographies. The product is also used to automate Environmental, Social and Governance metrics and bring them into compliance with industry standards and requirements. In addition, the product's powerful decarbonization capabilities provide accurate simulation, forecasting, benchmarking, and sustainability project evaluation analytics. Finally, TCS Intelligent Urban Exchange's™ Sustainability Twin features help the enterprise develop an emission profile for its entire value chain.

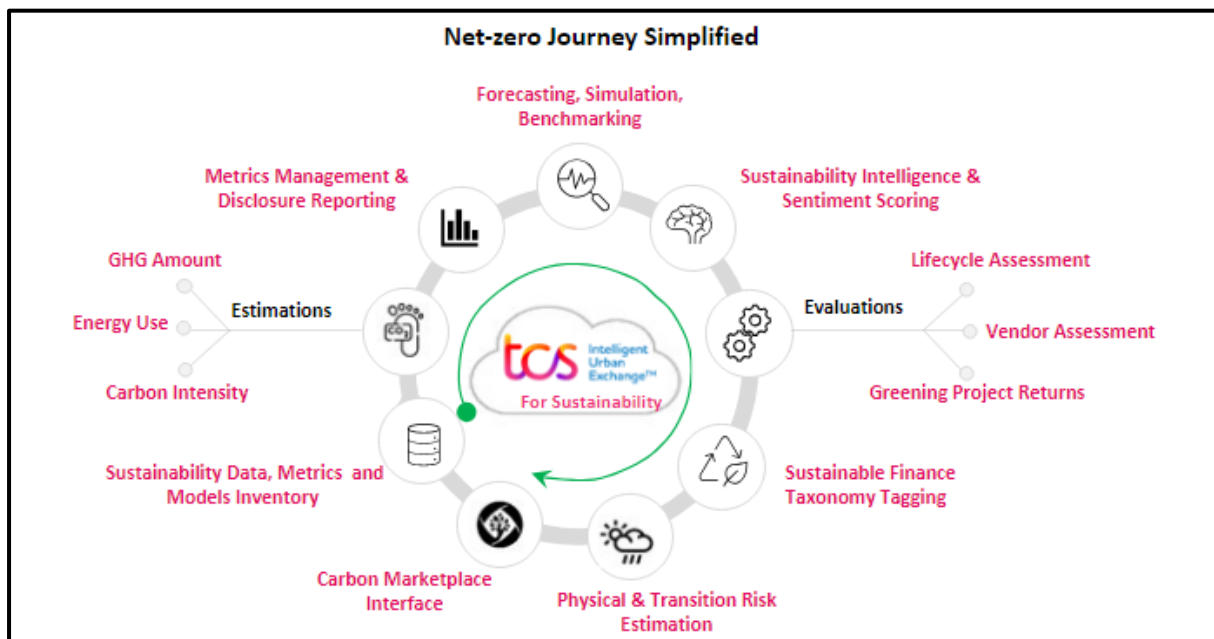
The results of implementing TCS Intelligent Urban Exchange™ enabled the automotive manufacturer to address its sustainability journey challenges and quickly realize multiple further benefits that include:

- 20-25% emissions savings
- 200+ staff hours saved per year through automating SBTi reporting
- 1,000+ staff hours saved per year through automating data processing activities
- Robust regulation compliance, investor confidence and ongoing net-zero innovation

How TCS Intelligent Urban Exchange™ is enabling the sustainability journey:

Organizations today can understand and reduce their emissions and carbon footprint but are often hampered by limited visibility across entity-wide functions including facilities, operations, fleet services, suppliers, partners, and up/downstream value & supply chains. These constituent entities comprise a complex patchwork of GHG emitters that enterprises cannot afford to miss during total emission calculation, net-zero planning, and climate risk assessment. This wide spectrum of CO₂ emission sources presents an array of disparate data silos preventing holistic, system-wide visibility. This gap hinders organizational systems from tracking end-to-end emissions, meeting emerging regulatory requirements and compliance targets, and gaining insights needed to proactively plan and implement effective emission reductions initiatives.

TCS Intelligent Urban Exchange™ for sustainability is a purpose-built decision-intelligence product that offers prebuilt tools to simplify and accomplish net-zero journeys and proactive emission management targets. It combines Artificial Intelligence (AI) and Machine Learning (ML)-powered decision-orchestration with an easy-to-use, low code platform. It enables organizations to meet sustainability goals through end-to-end emission visibility, monitoring optimization and reporting. It empowers operations that connect the entire business ecosystem, spanning devices, departments, people, systems, and processes, in order to generate actionable, data-driven climate action insights, predictions, and recommendations.



Sustainability Journey with TCS Intelligent Urban Exchange™

The Business Problem/Opportunity/Challenge

Key pain-points our customers and prospects face include:

1. **Comprehensive coverage extending to Scope 3:** Inability to view emissions across the organizational value chain to identify and make recommendations for reducing emission hotspots.
2. **Mature from sustainability reporting to Sustainability Decisioning:** current sustainability reporting solutions used by organizations don't provide insights into actions needed to meet net zero goals. The close loop from sustainability reporting to identification of green projects, optimizing initiatives and finally tracking improvements is still a gap that many enterprises are facing
3. **Evolving Regulatory needs and standards:** Enterprises must comply with regulations to reduce emissions, protect natural resources, promote sustainable practices, or face legal and financial consequences.
4. **Data Governance and data assurance:** Lack of a robust data governance and federation of data from disparate systems with full traceability for emission calculations.
5. **Inclusion of Climate Risk under sustainability decision:** assess physical and transition risk to operations or calculate the impact of climate change on an organization.
6. **Consumer education and involvement:** Consumers are increasingly demanding companies take sustainability seriously.
7. **Investor interests in ESG:** Investors insist on companies' ESG performance and the use of ESG metrics to inform investment decisions.

These key pain-points are making it difficult for our customers to track total emissions, monitor the progress of their net zero journeys, and meet regulatory requirements.

How we are catering to the above challenges:

As one of the early movers in the GHG emissions identification / tracking / reporting market, TCS developed Intelligent Urban Exchange™ for sustainability as a singular solution that combines industry-based data models, and AI & ML capabilities with contextualized big-data analytics to attain operational insights that span the entire business ecosystem including systems, devices, departments, people, and processes.

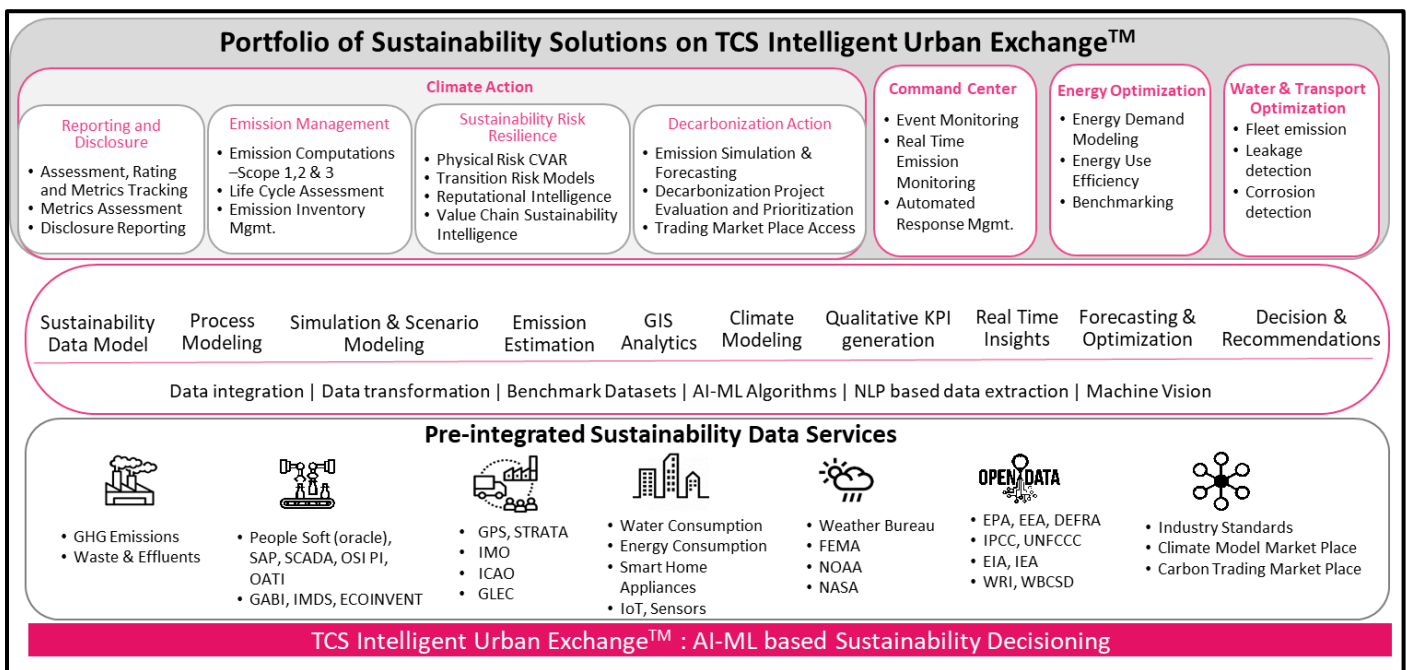
TCS Intelligent Urban Exchange™ helps organizations plan, implement, and simplify net-zero journeys and emission targets by:

- a) **Close loop sustainability decisioning:** Establishing an organization-wide, intelligent data platform based on TCS Intelligent Urban Exchange's™ Sustainability Data Spine's capabilities that leverages AI/ML and industry-based models to enhance data from multiple, diverse organizational sources by processing and prepping it for use in sustainability reporting, compliance, planning and decision-making.

The Sustainability Data spine also help organizations through:

1. Continuous automated emission data monitoring including, organizational, partner, supplier and value chain-wide views enabling proactive net zero actions
2. Generating recommendations and insights for emission hotspot reduction recommendations
3. Emission data traceability-transparency from multiple sources
4. Generating reports that comply with existing reporting standards, and the ability to scale as more reports become required

5. Sustainability decisioning through simulation tools which support what-if analysis to optimize operations
- b) **Robust Data Analytics:** The GIS and analytics capability of the TCS Intelligent Urban Exchange™ based Sustainability Data Spine executes the climate models and assesses climate risk (physical & transition risks) for the organization's operations.
 - c) **Sustainability Ecosystem through Add-ons:** TCS Intelligent Urban Exchange™ offers various add-on modules like LCA for providing life cycle emissions profiling at a product grain and deriving insights on how organizational emissions can be reduced by making changes in the product material composition.
 - d) **Extension to Smart Cities:** Out-of-the-box use cases extend sustainability to Smart Cities as well that include Intelligent Transport, Intelligent Energy, Intelligent Water, Enterprise Resilience and Command & Control Center. These use cases empower organizations to quickly get up and going to take positive environmental actions including tracking, reporting, managing GHG emissions, implementing green transportation / mobility, implementing optimal natural resource utilization and reducing waste.



TCS Intelligent Urban Exchange™ for Sustainability Overview

The product thus empowers organizations and government entities to:

- Optimize end-to-end visibility on emissions, with near-continuous proactive monitoring of emissions data, view emissions across the value chain, identify and obtain recommendations for reducing emission hotspots.
- Gain full traceability and increased transparency of data for emission calculations and target compliance assessment from multiple sources through Sustainability Data Spine.
- Provide advanced AI-ML capabilities for sustainability decisioning with the ability to model cradle to gate value chains to create emission twins that can then be used to simulate emission profiles based on changing demand linked product plan. Run what-if scenarios and optimization

algorithms to fine tune operational levers like source mix, process changes, technology optimization, etc. that can lead to lowering emission profiles.

- Recommend areas of carbon saving and help identify green projects for implementation along with continuous monitoring for carbon abatement
- Assess climate risks, including physical risks and transition risks, to an organization's operations from climate change and run standards-based reporting, including GRI, TCFD, SASB, CSRD and EU Taxonomy.

TCS Intelligent Urban Exchange™ for sustainability is an innovative operational sustainability planning, optimizing, managing, and reporting and enterprise. It provides an unprecedented view of emissions across the entire business ecosystem including devices, departments, partners, and value chains, and incorporates this diverse data through a digital sustainability spine into enterprise-wide dashboards that proactively provide data-driven insights to inform key operational decisions, environmental impact minimization, and regulatory compliance.

PROJECT IMAGE/LOGO



PROJECT/COMPANY URL

<https://www.tcs.com/what-we-do/products-platforms/tcs-intelligent-urban-exchange/solutions/intelligent-urban-exchange-ai-powered-sustainable-operations>

ANY ADDITIONAL SUPPORT MATERIAL

- 1) Brochure: <https://www.tcs.com/content/dam/global-tcs/en/pdfs/what-we-do/platforms/tcs-intelligent-urban-exchange/tcs-iux-sustainability.pdf>
- 2) Video: https://www.youtube.com/watch?v=9ZvcVdBT9Rs&list=PLB4eLBMqRCnNUiN-F8LwkDhd7_Mm8mGC-&index=2
- 3) Market Report: https://www.linkedin.com/posts/tcs-digital-software-%26-solutions-group_sp-global-market-intelligence-report-activity-7006904559566565376-W8zV?utm_source=share&utm_medium=member_desktop

