

# Sustainability, ESG, GHG

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# Table of Contents

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SEGMENT	03
<b>Sustainability ESG, GHG</b>	
CASE STUDY 01	04
<b>ESG Ready Ecosystem</b>	
CASE STUDY 02	06
<b>NPRI Regulatory Reporting</b>	
CASE STUDY 03	08
<b>Insightful Data Reducing Carbon Footprint</b>	
CASE STUDY 04	10
<b>Net Metering</b>	
CONCLUSION	12
<b>Future, Faster, Together</b>	

# Segment:

## Sustainability, ESG, GHG

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AI is transforming the sustainability landscape by supporting environmental, social, and governance (ESG) solutions, integrating renewable energy and accelerating decarbonization efforts. Here's how AI plays a role in each of these areas:

### 1. ESG Solutions

AI enhances ESG initiatives by providing real-time monitoring, data analysis, and predictive capabilities to help organizations meet sustainability goals.

### 2. Renewable Energy Integration

Integrating renewable sources like solar and wind into the grid is challenging due to their variable nature. AI helps improve grid stability and energy distribution in such cases.

### 3. Decarbonization Strategies

AI is central to reducing carbon emissions by supporting innovations across industries.

### 4. Renewable Energy Production Forecasting

One of AI's key contributions is improving forecasts of renewable energy production, addressing the intermittency of sources like wind and solar.

### 5. Future Impact

AI's advancements in these areas will drive greater adoption of sustainable practices, enhance the reliability of renewable energy sources, and accelerate the transition toward a net-zero economy. As regulatory and consumer pressure for sustainability intensifies, AI's role in optimizing operations, mitigating risks, and reducing carbon emissions will become even more critical.

# Learn how LTIMindtree enabled a GBP 250B asset manager to cut ESG reporting time by 50%

with a future-ready data platform tailored for evolving regulatory demands.

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# Client

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The client is a UK-based global asset management firm. Its vision is to streamline the data integration of ESG factors, automate reporting across asset classes, reduce manual effort, and re-architect existing enterprise data infrastructure to create a strong foundation to realize future use cases and meet evolving regulatory requirements.

## Business Challenges

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Navigating the complex world of ESG in asset management comes with several challenges:

- **Data complexity:**  
Climate-related metrics such as carbon footprints, greenhouse gas emissions, and ESG factors need precise data integration while adhering to increasing regulatory requirements.
- **Evolving client expectations:**  
Growing investor preferences for sustainable investment options demanded quicker, data-driven insights.
- **Manual effort:**  
Existing data ingestion and ESG reporting processes were labor-intensive, leading to inefficiencies.
- **Infrastructure limitations:**  
Outdated enterprise data infrastructure lacked the robustness to support granular ESG analytics and new emerging use cases.
- **Privacy and security:**  
ESG data required rigorous data governance and security while integrating external vendor datasets.

The client required an end-to-end overhaul of their infrastructure to lay a strong data foundation and adapt to the fast-changing financial landscape in ESG.

## Our Work

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- LTIMindtree performed domain-led data consulting to assess ESG data (carbon footprint, greenhouse gas emission) modeling in the enterprise data lake.
- Outlined the integration of ESG factors across investment classes – equities/ fixed income/ alternatives.
- Re-architected the existing enterprise data infrastructure to model the ESG factors data set.
- Built an API framework for the end-user to generate analytics, sales, distribution, and other investments.
- Designed the architecture to master external (vendor) and strategic ESG datasets in the data lake, along with regular security information.
- Extended the existing data lake on Azure to create a central data hub.

## Business Benefits

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- Automated ESG reports for key clients worth GBP 250 billion.
- ESG data and climate scenario modeling tools were made available for 400+ users in equity, fixed income, and quantitative asset management teams.
- 50% reduction in time spent on ingestion and generation of reports.

# Discover how we reduced regulatory reporting time

by 60% for a Canadian Oil & Gas leader—ensuring compliance and operational efficiency in just weeks.



## Client

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The client, a Canadian Oil and Gas Company, owns facilities that need to report to the National Pollutant Release Inventory (NPRI) program.

## Business Challenges

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- Struggled with monitoring and reporting flaring, water, and air emissions to meet NPRI and partner requirements.
- Needed a system for water usage monitoring across facilities with real-time alerts.
- Required streamlined air quality and flaring data monitoring for natural gas production.
- Manual data collection was complex and time-consuming.
- Sought automated solutions for comprehensive monitoring and regulatory compliance.

## Our Work

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- **NPRI Reporting:**  
Automated data entry with Python scripts, created JSON files, and enabled bulk uploads.
- **Water Monitoring:**  
Implemented real-time alerts and detailed reporting for compliance.
- **Air Quality Monitoring:**  
Ensured QA/QC compliance, prepared regulatory forms, and minimized manual errors.
- **Flaring Emissions Reporting:**  
Collected and processed flaring data, detailed CO2 and carbon monoxide releases, and uploaded to the Enterprise Sustainability Management (ESM) too.

## Business Benefits

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- Reduced data entry time and ensured compliance with NPRI.
- Improved reporting accuracy and efficiency.
- Reduced non-compliance risk by avoiding fines and disruptions.

# Discover how LTIMindtree helped an oil and gas leader cut reporting time

by 50% and achieve 100% data accuracy for EPA compliance.

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## Client

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The client is a leading company specializing in upstream oil and gas.

## Business Challenges

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- A combination of manual and automated methods was used to obtain and manage emissions data, which was cumbersome.
- Multiple data sources in different formats from different locations needed to be reported.

## Our Work

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- Streamlined and automated data collection from the sources and vendors onto a single platform to compute greenhouse gas emissions.
- Prepared Scope 1 and 2 data that needs to be reported quarterly and annually to the United States Environmental Protection Agency (EPA) and the parent company.
- Ensuring consistency and completeness of emission data sets.
- Development of features for new data ingestion and reporting.

## Business Benefits

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- Reduced manual data collection efforts and transformation.
- On-demand automated reports.
- 100% validation and removal of duplicate data.
- Compliance with regulatory requirements as per EPA.

# Net metering

## to promote renewable energy usage

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## Client

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The client is an American Fortune 500 company and is one of the largest utility companies in the United States. It provides natural gas and electric services to millions of consumers.

## Business Challenges

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The client faced a significant operational challenge with its net metering program. This initiative aimed to install solar panels at consumer properties, enabling them to generate electricity and send surplus energy back to the grid. The goals of the program included promoting renewable energy usage, decreasing carbon emissions, and improving grid efficiency.

However, the onboarding process for the net metering program was complex and labor-intensive. Specific challenges included:

- Handling a growing volume of applications within strict regulatory timelines.
- Accurately assessing interconnection agreements, equipment specifications, and customer account details.
- Ensuring all documentation, such as site plans and inverter specs, adhered to regulatory and internal requirements.
- Coordinating inspections and witness tests for interconnection approval.

### Scope:

- Handle applications for net metering programs as per regulatory timelines
- Assess interconnection agreements, customer equipment, and account details
- Review interconnection requests, and get inspections and witness tests done
- Final processing for net metering customers

## Our Work

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- Enabled the process, from getting application requests from consumers to onboarding them on the net metering program.
- We utilized various applications to check applications and capture information like customer name, meter number, feeder/transformer information, etc.
- We verified all necessary documentation provided, like the site plan, inverter specifications, etc.
- We ensured that the interconnection agreement is available between our client and consumers.

## Business Benefits

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- More solar panel-enabled consumers led to reduced carbon emissions.
- Improved the efficiency of the grid network.
- Better power reliability.

## Conclusion

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The adoption of new energy sources presents a unique opportunity to establish a secure, reliable, and sustainable energy ecosystem. Coupled with the accelerated pace of disruptive technology, LTIMindtree's diverse offerings, built with our engineering DNA, can unlock quick wins and strategic transformation opportunities.

These case studies help spark innovation by building a digital foundation to deploy data, AI, and sustainability projects to propel your digital energy transition journey.

Ready to revolutionize your utility value chain with innovation and AI led transformation?  
Reach out to us at [eugene.comms@ltimindtree.com](mailto:eugene.comms@ltimindtree.com)

**Let's get to the future, faster together.**

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