

Challenge Instructions

Sustainability Intelligence Platform Challenge

Overview

To help slow global warming and meet the IPCC's 1.5°C target, the world must reach net zero by 2050. The electricity and heat sector is responsible for 38% of global CO₂ emissions, making rapid decarbonization essential. This hackathon, hosted by Wärtsilä's WISE ecosystem, challenges participants to design a tool that integrates all required sustainability metrics for reporting in the power sector. The goal: develop innovative solutions that improve sustainability practices and regulatory compliance.

Task Objective

Develop a tool (concept, prototype, or visualization) that integrates sustainability metrics for the power sector, enhancing reporting and analysis of energy output, efficiency, fuel consumption, and emissions.

- Solutions should be original, actionable, and scalable.
- Compliance with US and EU standards is required.
- Leverage the EU Data Act for data management and sharing.

Wärtsilä retains ownership of the proposed solutions and reserves the right to implement them.

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Track Instructions

Technical Track

Objective:

Build a robust tool or prototype for sustainability reporting in electricity and heat generation.

Key Features:

- **Data Integration:** Aggregate data from multiple sources (energy output, efficiency, fuel consumption, emissions).
- **Metric Calculation:** Accurately compute and present sustainability indicators.
- **Compliance:** Ensure alignment with US and EU standards, and EU Data Act principles.
- **Visualization:** Create clear dashboards and reports for intuitive analysis.
- **Scalability:** Design for future development and expansion.

Deliverables:

- Working prototype, demo, or high-fidelity concept with architecture documentation.
- Sample data and integration outlines.
- Brief technical description of compliance, data handling, and reporting.
- Optional: API documentation or data flow diagrams.

Innovation:

Show originality with advanced analytics, automation, data-sharing, or unique features.

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Track Instructions

Business Track

Objective:

Develop a business case, go-to-market strategy, or impact assessment for your tool.

Key Features:

- **Customer Value:** Explain how your solution benefits power sector companies (compliance, cost savings, transparency, competitive edge).
- **Market Fit:** Analyze market needs and regulatory trends.
- **Regulatory Alignment:** Address US/EU standards and the EU Data Act.
- **Business Model:** Propose revenue streams, customer segments, partnerships.
- **Scalability:** Plan for post-challenge growth.
- **Impact Assessment:** Evaluate improvements in sustainability and compliance.

Deliverables:

- Business case, presentation, or executive summary.
- Market analysis and competitor benchmarking.
- Roadmap for further development.
- Optional: Visual materials (slides, infographics).

Innovation:

Present forward-thinking ideas with tangible impact and differentiation.

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Reference: EU Emission Reporting Standards (2025)

1. Corporate Sustainability Reporting Directive (CSRD)

- Applies to large EU companies, listed SMEs, and non-EU companies with EU operations.
- Requires ESG reporting using European Sustainability Reporting Standards (ESRS).
- Emphasizes double materiality (impact on and by the company).

2. European Sustainability Reporting Standards (ESRS)

- Technical standards under CSRD.
- Includes climate, social, and governance topics.
- Voluntary SME standard (VSME) introduced in 2025.

3. EU Emissions Trading System (EU ETS) & MRV Regulations

- Cap-and-trade for GHG emissions in power, industry, aviation, maritime, buildings, and transport.
- Mandatory Monitoring, Reporting, and Verification (MRV).
- Governed by Monitoring and Reporting Regulation (MRR) and Accreditation and Verification Regulation (AVR).

4. Climate Monitoring Mechanism & UNFCCC Reporting

- Annual GHG inventories and biennial reports to UNFCCC.
- Governed by Regulation (EU) 525/2013 and Energy Union Regulation.

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General Guidelines

- Teams or individuals may join either or both tracks; collaboration is encouraged.
- All solutions must address the core challenge: integrating and reporting sustainability metrics for the power sector in compliance with regulations.
- Be ready to present your solution and answer questions from judges.
- Focus on original, scalable ideas for further development.
- Consider national regulation differences and agile scaling strategies.

Tips for Success

- Collaborate: Mix technical and business expertise for holistic solutions.
- Innovate: Go beyond current market offerings.
- Document: Clearly outline your approach, compliance, and impact.
- Prepare: Be ready to present and defend your solution.
- Scale: Think about how your idea can grow after the hackathon.

Good luck! We look forward to your creative, impactful solutions.