Securing reliable energy data for sustainable sites and buildings

Identify data discrepancies in building meter data, trace their origins, implement corrections or estimations

SIEMENS

Siemens, as well as other industrial players must track and report their energy and carbon footprint due to regulatory needs. With a typical share of 40 %, buildings are significantly contributing to a company's emission profile. Since more and more businesses are now committing to achieve carbon neutrality during the next decades, they are required to monitor the yearly trend of their carbon footprint. Precise decision-making relies on utilizing high-quality energy data, which is a real challenge in real world scenarios: Several issues, such as data gaps, spikes, manual errors, implausible extrapolations, lead to wrong data being collected. Between 5% and 10% of our current datasets are marked as having certain issues.

We are looking for a solution that identifies and fixes these errors to ensure good quality and accurate audit-proof data reporting helping Siemens and Siemens' customers to reach the goal of carbon neutrality and to prove this with actual accurate numbers.

Concretely we are seeking for a solution that:

1. Detects Data quality issues
2. Performs root cause analysis and action recommendation
3. Suggests & fixes data gaps to continue with alternative data once data is missing (e.g., extrapolation, calculations, etc.)

The respective data for analysis will be provided.

What is it all about?

Provided input data comprises of raw readings from meters of various media-types, which include gas, electricity, district heating and water. Additionally, current extrapolation mechanics and results will be used as input.

The datasets will be explained in details.

Promising results will be discussed with a team of energy data analysts, product owners responsible for reporting on energy consumption, decarbonization experts guiding us towards sustainable practices, and developers tasked with implementing the technical aspects of our solution.

Additionally, we'll collaborate with smart building experts to pass along selected outcomes and ideas to optimize energy efficiency and integrate data-driven strategies into building management.

The solution is supposed to be used for Siemens itself, but also to be populated via Siemens Sales to Smart Infrastructure customers globally – supported by proven success from applying it to Siemens as a reference.

If the challenge is solved, what difference will it make?

Data-Driven Decision-Making: Reliable energy data enables data-driven decision-making for resource allocation, budgeting, and strategic planning. It ensures that investments in energy efficiency and sustainability initiatives are based on accurate information.

Compliance and Reporting: Accurate energy data is required for regulatory compliance and reporting purposes. Solving this challenge will help avoiding penalties and ensure that legal obligations are met.

Potential Business Impact for Siemens

Cost Savings: Accurate energy metering allows Siemens to monitor and manage energy consumption more effectively across all locations. This can lead to substantial cost savings by identifying inefficiencies and opportunities for optimization of energy consumption patterns.

Competitive Advantage: Companies that efficiently manage their energy usage often have a competitive edge in terms of cost control, sustainability branding, and meeting the expectations of environmentally conscious consumers, investors and stakeholders.

Risk Mitigation energy supply: Accurate energy data can help identify potential risks related to energy supply disruptions or price fluctuations, allowing for proactive risk mitigation strategies.

Potential Sustainability Impact:

Reduced Carbon Footprint: Accurate energy metering allows us to reduce energy consumption, which, in turn, lowers greenhouse gas emissions. This is crucial for meeting sustainability goals and reducing Siemen’s carbon footprint.

Resource Conservation: Better energy management promotes the responsible use of natural resources, including fossil fuels and water, contributing to overall resource conservation efforts.

Sustainable Practices: Demonstrating a commitment to accurate energy metering aligns with sustainable business practices, which can attract environmentally conscious customers and partners solving this problem.

What impact can this have on the environment/society/world?

Global Energy Consumption Reduction: If more companies adopt accurate energy metering and the optimization benefits out of it, this can lead to a significant reduction in global energy consumption and greenhouse gas emissions.

Societal Awareness: Leading by example in energy efficiency can raise awareness and encourage other companies and individuals to adopt sustainable practices, promoting a culture of responsibility toward the environment.

Why are we seeking collaboration with you?

By collaborating with startups, universities, experts, etc. we are thriving for fresh ideas, cutting-edge technologies, speed, and the agility to implement innovative solutions swiftly.

Your solutions can help uncover hidden inefficiencies and optimize energy and water consumption on a global scale. We choose this way of open collaboration because diverse expertise and new perspectives will bring unknown or unexpected solutions with different vantage points.

Solving this challenge is purposeful because it aligns with global sustainability goals of many companies. By ensuring accurate energy metering, you contribute to reducing our environmental impact and promoting responsible resource use, making a positive difference for both your business and the planet.

Key anchor points for participants could include leveraging advanced data analytics, machine learning, and IoT technologies to develop robust data verification algorithms. Target markets could range from commercial real estate to industrial sectors where energy efficiency is paramount.

With your valuable contribution you will not only help us to enhance our Siemens infrastructure itself but also impact many Siemens customer’s building ecosystems: cross-company & globally.

Help us to solve this challenge to make buildings more sustainable!

Who are we?

Siemens Real Estate is responsible for the global Siemens real estate portfolio for over 25 years. We are responsible for 8.7 million m² of office and production space worldwide. We plan, build and design. We operate and offer the associated services.

Siemens Smart Infrastructure is shaping the market for intelligent, adaptive infrastructure for today and the future. We address the pressing challenges of urbanization and climate change by connecting energy systems, buildings and industries.

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Join the campaign and create impact on real problems together with go-getters and solution seekers of the world by submitting your ideas.
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