HCLTech | Supercharging Progress™

Net Zero Intelligent Operations (NIO)

Keeping the promise of a brighter future with IoT-powered intelligence

Overview

A study by the International Energy Agency (IEA) underlines exactly what is required to stay on the net-zero pathway by 2030:

4x

Increase in solar and wind power generation capacity additions

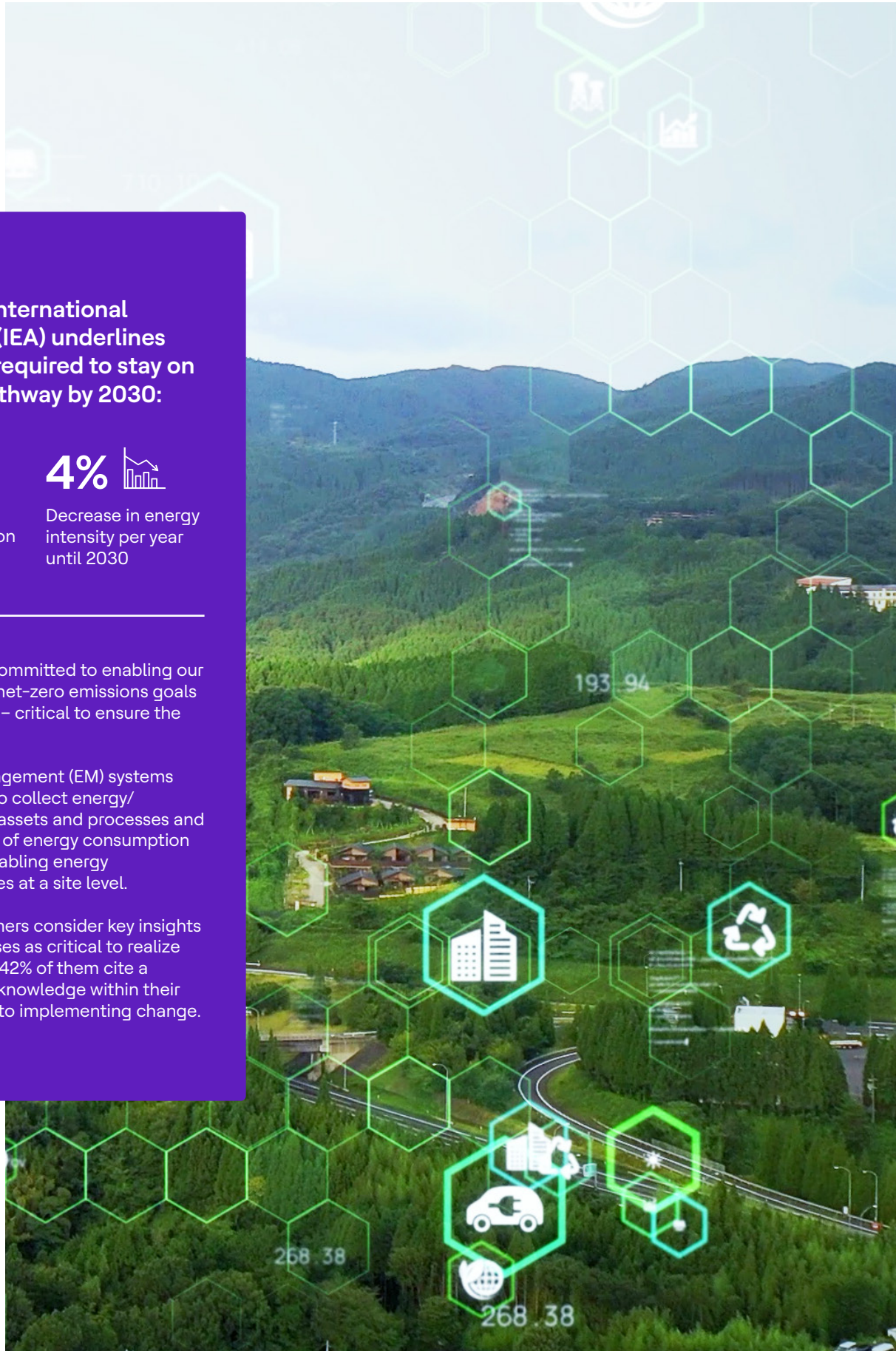
4%

Decrease in energy intensity per year until 2030

At HCLTech, we are committed to enabling our clients achieve their net-zero emissions goals by 2030 and beyond – critical to ensure the future of the planet.

Current energy management (EM) systems allow organizations to collect energy/ efficiency data from assets and processes and deliver a unified view of energy consumption across the plant – enabling energy optimization measures at a site level.

Nearly 85% of customers consider key insights from across enterprises as critical to realize net-zero, but almost 42% of them cite a lack of data analysis knowledge within their business as a barrier to implementing change.



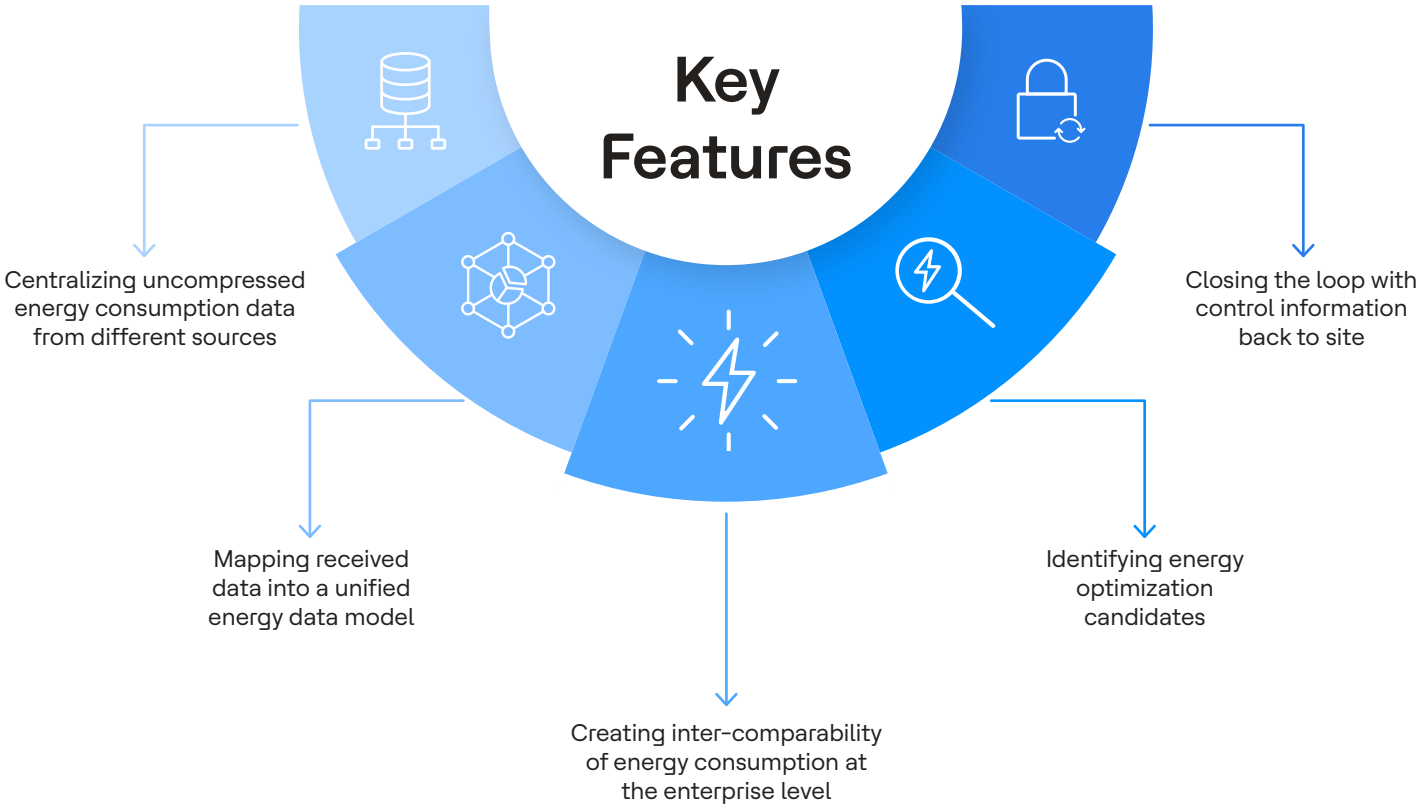
About our Solution

This is where Net Zero Intelligent Operations (NIO) by IoT WoRKS™ comes in. The solution enables clients to monitor, assess, and reduce enterprise energy consumption and carbon emissions through its unique inter-comparability and normalization approach across multiple equipment, processes, and facilities.

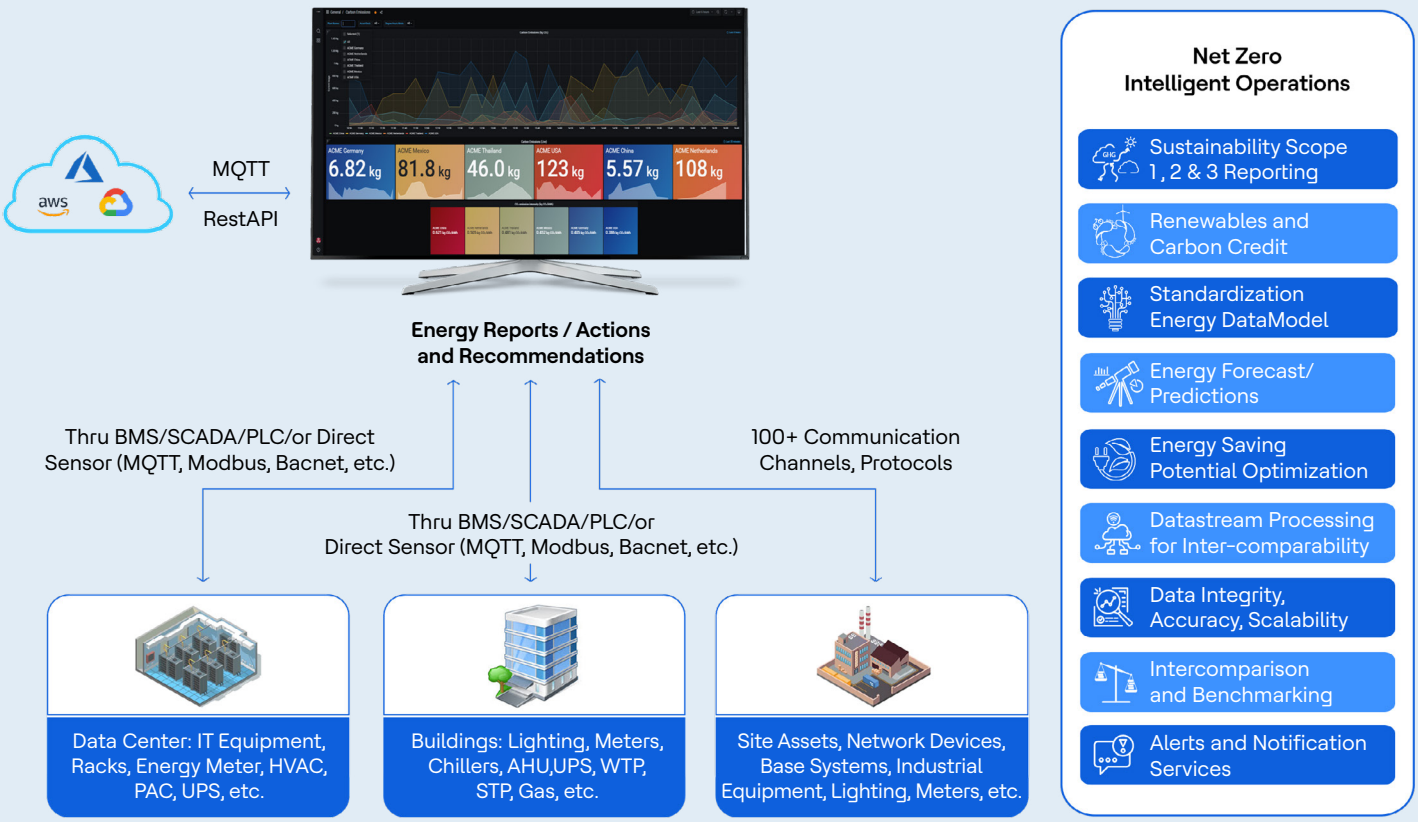
NIO taps into digital twin and AI to achieve this. It delivers a set of functionalities to optimize energy consumption at the enterprise level. NIO can help organizations reduce associated carbon emissions which contribute to net-zero goals.

NIO is our foremost sustainability-focused offering that aims to help our customers monitor, normalize, compare, and reduce energy consumption and GHG emissions in real-time. The solution helps clients reduce carbon emissions by optimizing the energy intensity of assets and processes. It also enables calculating, reporting, and identifying emission optimization potential for multiple sites at global level.

NIO gives unparalleled insights into organizations' energy consumption and carbon emission metrics, such as Energy Efficiency Ratio (EER), kilo watt per tonnage, and inter comparability between sites, which is its unique proposition. The solution can look at the total energy consumption across all the facilities and can highlight the plants as well as assets basis efficiency. It also identifies key influencing factors and compares efficiency insights to industry benchmarks, and recommends optimization measures that can be taken to improve them.



Solution Architecture



Solution Features

Collect

- Master data management
- 100+ protocol support
- Integration with third-party systems
- Include influencing variables such as weather, employee count, production, etc

Analyze and Optimize

- Intercompare between the sites or equipment
- Organization to equipment level visibility
- Identifying potential areas for optimization
- Detailed load and power quality analysis
- Sustainability scope 1, 2, and 3 needs
- Persona-based views
- Rule-based notification
- Integrate further with a third-party system for optimization

Measure

- Sustainability KPIs
- Energy consumption and carbon emission KPIs
- Industry-specific KPIs
- From accurate data

Others

- Vendor agnostic
  - On board on any cloud
  - Integrate any asset
- Highly scalable
- Fast deployment
- Robust and secure
- Unified Energy Data Model with the flexibility to accommodate new data and object types

Benefits

~7-10%
annualized energy savings with rapid shift in energy optimization measures

~8-10%
reduction in carbon footprint per year

~6-10%
optimization in annual operational costs

Significant Energy User's (SEU) identification

Ensure regulatory compliance for key standards like ISO 50001, etc

Real-time data to optimize enterprise processes

Case Study

The client is a major global automotive leader with 10 world-class automobile brands from multiple European countries. Our goal was to enable them to pinpoint, reduce, and monitor their energy-intensive operations, starting with their paint shop operations to dramatically reduce their greenhouse gas emissions and carbon footprint across this plant and multiple divisions of the company.

Customer's problem

- Energy Consumption is measured onsite per manufacturing entity (Lines, Assets, Machines) & aggregated Bottom Up without contextual information
- Workspace energy consumption is not correctly reported due to distributed assets
- Enterprise top-view reports identify site energy consumptions but lack comparability
- Optimization must happen in local, onsite environments without indications of any kind

Our solution

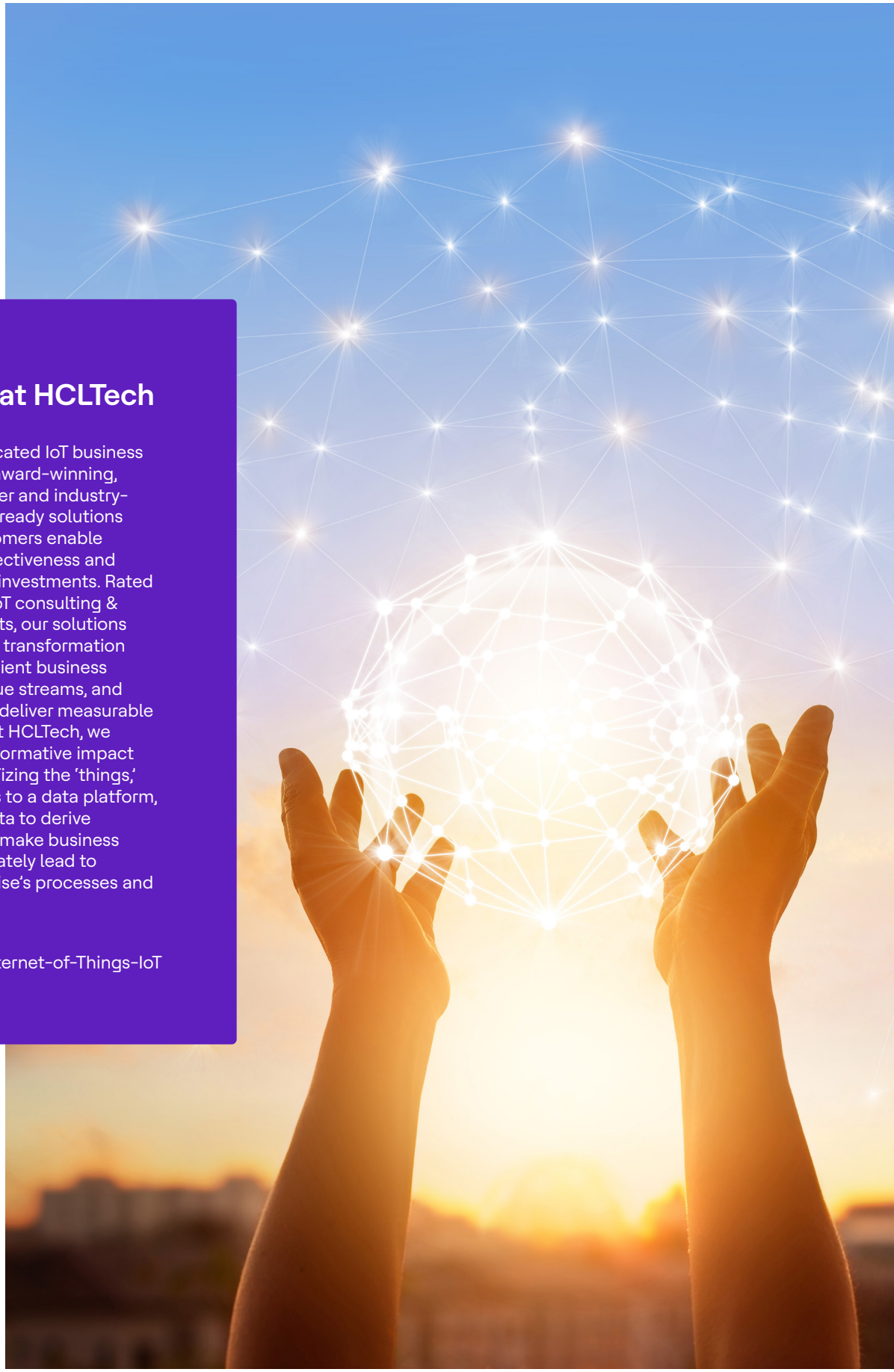
- NIO by HCLTech IoT WoRKS™ picks up raw, uncompressed energy and process data from local manufacturing (Lines, Assets, Machines) & diversified assets in workspaces
- NIO normalizes Energy Consumption in real-time and groups Significant Energy Consumers into comparable Energy Groups (same technology, same process, etc.)
- NIO brings inter-comparability to the connected manufacturing environment, enabling enterprises to identify energy optimization potentials top-down in newly created Energy Groups
- NIO enables enterprises to achieve ISO 50,001 certification

Client Speaks

"With the NIO approach, our company is able to precisely identify the energy optimization potential across all sites connected to the solution. In agreement with responsible site managers, we are able to reduce our internal energy cost by 7%+ in following years."

Project Manager Sustainability
Leading Automotive Manufacturer

About Us



IoT WoRKS™ at HCLTech

IoT WoRKS™ is a dedicated IoT business unit of HCLTech. Our award-winning, best-in-class, customer and industry-specific, deployment-ready solutions co-created with customers enable them to maximize effectiveness and returns on their asset investments. Rated as a global leader in IoT consulting & services by top analysts, our solutions allow IoT-led business transformation by creating more efficient business processes, new revenue streams, and business models that deliver measurable business outcomes. At HCLTech, we believe that the transformative impact of IoT is realized by IoTizing the 'things,' connecting the assets to a data platform, and then using the data to derive business insights and make business decisions which ultimately lead to change in the enterprise's processes and people practices.

hcltech.com/Internet-of-Things-IoT