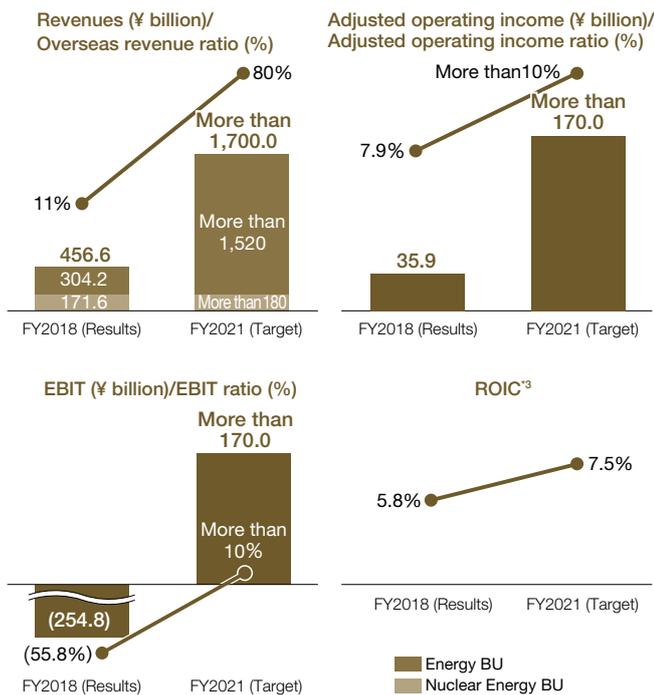


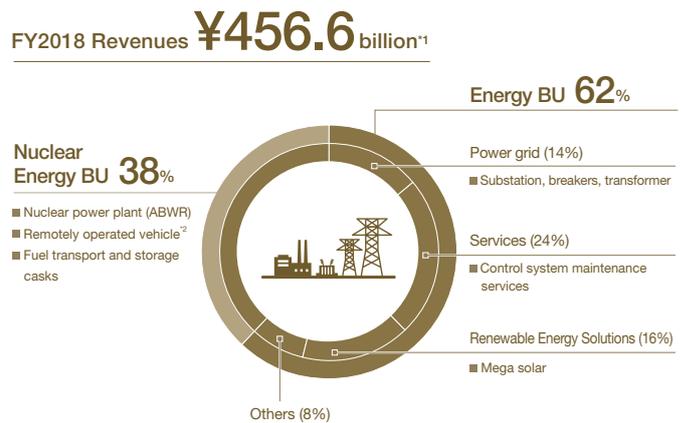
Story of Value Creation in the Energy Sector

The world's energy demand continues to expand against a backdrop of population growth and economic development, as well as social innovation such as the recent expansion in the scale of data centers and the spread of electric vehicles. On the other hand, serious power shortages in developing countries remain a problem and one billion or more people are forced to live without electricity. Furthermore, movements to reduce CO₂ emissions and decarbonize are picking up speed throughout the world in the midst of response to global climate change. Hitachi will respond to these issues with energy solutions that leverage the strengths of "OT x IT x Products" in business fields such as renewable energy and power grids.

Results and Targets



Principal Products and Services



^{*1} Includes the control systems business, which is posted in IT Sector
^{*2} Developed as operations of International Research Institute for Nuclear Decommissioning. This development was conducted using business expense subsidies provided by the Agency for Natural Resources and Energy in connection with decommissioning efforts and water pollution countermeasures.
^{*3} FY2018 figures except one-time expenses.

Vision and Targets under the 2021 Mid-term Management Plan

Providing energy solutions that contribute to a stable energy supply and efficient facility management

The energy business forms the core of the Social Innovation Business and contributes to the achievement of the SDGs. In the Energy Sector, we will provide energy solutions that make use of the strengths of "OT x IT x Products," such as nuclear power generation systems, renewable power generation systems, power grid systems for receiving and transforming, transmitting and distributing electricity, predictive diagnostics for equipment and remote monitoring services. Providing these solutions will enable us to contribute to a stable energy supply for customers, efficient facility management and the cutting of CO₂ emissions, as we work toward a low carbon or decarbonized society.



The Chugoku Electric Power Company, Inc.'s Shimane Nuclear Power Station Unit 3, under construction



Ultra-high voltage gas insulated switchgear (UHV GIS)

Growth Strategies under the 2021 Mid-term Management Plan

Previously, in the Energy Sector, we have been converting our business portfolio in response to changes in the market environment surrounding energy while promoting the launch of high-value-added service businesses and the enhancement of the solution business. In the future, the power transmission and distribution market is expected to expand significantly both in Japan and globally against a backdrop of the spread of renewable energy and the expansion of distributed power supply. In response to these projections, we plan to acquire ABB's power grid business during the first half of 2020. Digital technology is indispensable for the achievement of advanced energy management, and power grids are an area in which Hitachi can fully utilize its digital technology. Hitachi's energy business had been primarily concentrated in Japan. However, we will accelerate global business expansion by utilizing the expertise and resources of the power grid business of ABB which has the largest share of the global power grid market. At the same time, we will also focus on strengthening and expanding our solution and service businesses using Lumada. In addition, Hitachi will continue to engage in initiatives aimed at providing a stable energy source through its nuclear energy business while using its advanced technological capabilities and abundant knowledge to contribute to the decommissioning of the Fukushima Daiichi Nuclear Power Plant. Furthermore, we will use these same attributes to promote construction that is compliant with new regulatory standards and aims to support the early resumption of operations at domestic nuclear power plants.

■ Enhancement and Expansion of the Solution and Service Businesses Using Lumada

In the energy solution business, we received orders for a management platform for high-temperature parts for gas turbines used in privately owned industrial power generation equipment in 2019. This platform uses Lumada to improve the efficiency of inspection and maintenance work while raising the maintenance capabilities of operators. Following the acquisition of ABB's power grid business, we will aim to develop solutions on a global scale by utilizing its customer base, engineering, technologies and systems.

Service business

In 2017, we concluded contracts in the service business with customers. Through these agreements, we will provide solutions that combine power generation systems with integrated energy and equipment management services to provide total solutions for energy conservation issues. Moving forward, we will combine Lumada with our on-site capabilities and digital technologies to develop a variety of service solutions that improve the efficiency of inspection planning upgrade and accelerate maintenance and provide predictive diagnostics aimed at preventing failure, as well as remote monitoring.

In the renewable energy business, Hitachi will strengthen its partnership with Germany-based wind turbine manufacturer Enercon, combining its services and Enercon's wind turbines to develop wind power solution business, which will stabilize operation and reduce maintenance costs.

Power grid business

In the power grid business, we will promote the expansion of businesses in industrial fields, including the expanding data centers and electrification of factories and the provision of solutions related to electric vehicles. In the HVDC (High Voltage Direct Current) transmission business, we will conduct active development related to the offshore wind power market and interregional and international DC power transmission. In addition, we will work on the development and deployment of new solutions that fuse DC transmission and digital technologies.

■ Further Demonstration of Our Competitive Advantage

Taking advantage of its "OT × IT × Products" strengths, Hitachi will provide solutions, including power generation and power grid systems, to all customers involved in energy production, distribution and consumption. Furthermore, following the acquisition of ABB's power grid business, which has the largest share in the global market, we will accelerate new innovation by combining its products and software with Lumada.

Collaborative Creation of Value within the Energy Sector

Promotion of open innovation

Hitachi is promoting industry-academia collaboration in pursuit of new value creation in the Energy Sector. Targeting the realization of Society 5.0, we are working to create a new vision and produce new innovation at the "Hitachi the University of Tokyo Laboratory", which we established with the University of Tokyo in 2015. In the Energy Sector, we are building a platform with the goal of simulating long-term energy supply and demand. These simulations will allow different renewable energy implementation methods to be evaluated and verified, enabling authorities to determine which method is most effective in terms of achieving the goals of the Paris Agreement.

Hitachi will contribute to social, environmental and economic values by expanding its provision of energy solutions that utilize Lumada, including grid and renewable energy solutions, energy management solutions and energy conservation and decarbonization solutions. Furthermore, we will aim to contribute to the management of 25% of the world's substations and the supply of stable energy to about 1.8 billion people.