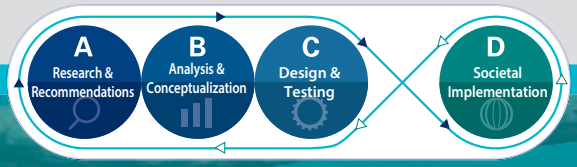

From Research & Recommendations through Societal Implementation

Moving beyond support to leadership and in-house implementation for resolving societal issues —Initiatives in Energy—

A distinctive MRI Group characteristic is our ability to provide end-to-end services in the value-creation process from A: Research & Recommendations through D: Societal Implementation. For example, we have the following initiatives in the energy field.

⑤ Energy

Societal Issue

Amid a global trend toward decarbonization, Japan is under pressure to reduce greenhouse gas emissions by 80% by 2050. Decarbonization requires renewable energy as the main source of power and a means to balance supply and demand fluctuations smoothly. Further, initiatives should take into account Japan's "3E+S" perspective on energy policy, emphasizing the importance of energy security, economic efficiency, environment, and safety.

Solution

A Research & Recommendations

Energy Vision Proposal

MRI has put forward a proposal, the *Energy Vision*, from a long-term perspective to achieve the 3Es+S and a decarbonized society. The vision offers an outline of the steps forward based on evaluation of innovative technologies for a decarbonized society and analysis of energy supply and demand using our in-house developed MARKAL-JAPAN-MRI energy model.

B Analysis & Conceptualization

Policy Support for Reforming Energy Supply Structure

We support the development of policies to make renewables the key source of power, including those regarding post-FIT*1 arrangements and the balancing market. We advise customers entering the renewable generation business with our business feasibility studies. Furthermore, we provide support for new inspection systems aimed at safe nuclear power generation and are investigating concepts on coexisting with nuclear power in areas where such plants are located.

C Design & Testing

Testing for Next-Generation Supply & Demand Adjustment Systems

Increasingly flexible mechanisms for adjusting supply and demand are required for the widespread adoption of renewables, and we are testing VPP*2 as one such promising mechanism. We are also looking into the proper configuration for an electricity network that would use renewables as the main power source, thus supporting responses to societal changes and resolving issues.

D Societal Implementation

Societal Implementation Business for Reforming Energy Supply Structure

MRI itself is running a renewable power generation business as well as providing asset management services for other renewable generation businesses. In order to stimulate wholesale electricity trading, MRI also publishes the MRI Power Price Index, or MPX*3, providing information on price metrics to support decision-making in trading.

Value Provided

In addition to our Energy Vision proposal to achieve the 3Es+S and a decarbonized society, MRI offers end-to-end services from roadmap formulation to implementation, thus resolving societal issues and helping to establish a decarbonized society.

*1 Post-FIT arrangements: In 2009 a fixed price trading mechanism, or FIT, for renewable power generation was launched ahead of the spread of renewable power generation. Once the system ends, policies to promote autonomous growth for power companies in the renewable energy market are necessary.

*2 VPP (Virtual Power Plant): A system that functions as a single power plant by linking up numerous small-scale plants and power demand control systems.

*3 MPX (MRI Power Price Index): Information service that supports decision-making in wholesale power markets. Estimates the theoretical market price of power at a particular time by simulating operating conditions for individual power sources. Developed in-house by MRI, the service was launched in 2016.

https://www.mpx-web.jp/index/e