Socio-economic Research Center

Brief Overview

The task of the Socio-economic Research Center (SERC) is to contribute a better development of the electric power industries and the planning of energy and environmental policies. To this goal, the SERC evaluates and creates options and solutions to various issues of electric power industry and energy in general, such as climate change, regional economic development, and energy technology issues.

Achievements by Research Theme

Energy Utility Policy

【Objectives】

We explore issues and solutions on future electric power industry by examining changes of economic environment and social structure, which influences management of electric power industry, business environment, and trend of electricity demand.

【Principal Results】

- Based on the projections for the Japanese Economy, simulation analysis for policies until 2030, such as the rising consumption tax, influence on our economy, finances, and industries is done by using the macroeconomic-fiscal linked econometric model and input-output model Results clarifies that economic growth is important for reconstruction of public finance, and manufacturing sectors such as electronic and communication equipment etc. will become an engine for economic growth [Y09018].
- We surveyed issues concerning the revenue decoupling in the United States, which is a increasingly introduced electricity and gas tariff scheme. This scheme “decouples” the link between the sales and revenues of utilities, aiming to eliminate their disincentives for energy efficiency. We showed that, should it be adopted in Japan, it also eliminates electric utilities’ incentive to compete, reducing the merit to consumers. [Y09005].
- Customer attitudes and willingness to pay for low carbon power such as nuclear power and renewable energy are clarified through a customer questionnaire survey in order to propose for future low carbon measure and the way of its cost burden [Y09008].

Regional Policy

【Objectives】

Through quantitative and qualitative tools and methodologies, we aim to clarify how and to what magnitude those policy formation related to environmental issues, such as global warming and creation of low carbon society, influence on development of regional societal and economic systems, and vice versa. Also, we will examine how electric power companies can and should communicate with the public about risk issues in which their business is involved.

【Principal Results】

- To evaluate the impact of environmental policies on the regional economies, the energy consumption structure at the prefectural level and the sector level has been compatibly incorporated into the 47 prefecture multi-regional input-output system. A simple examination on the complied database verifies its effectiveness for analyzing the influence of spatial trade structure on the domestic energy usage and carbon emissions (Fig.1) [Y09024].
- In order to help develop effective ways to communicate with local communities on the uncertainty in health

risk, we conducted a web survey on lay-people's knowledge and judgment regarding experts' risk assessments and their uncertainties. As the result, we found that the public, despite their limited knowledge about risk assessment methodologies, well recognizes and are able to distinguish between the statements experts use in describing degrees of uncertainty [Y09004].

Energy Technology Policy

【Objectives】

Toward realization of low carbon society and ensuring energy security, we develop and advance the methods for analyzing increased complication of social movement, policy planning, and operation process in both domestic and overseas. As well as we establish foundation for corresponding promptly to the research needs which are caused by the changes of energy demand structure in the future.

【Principal Results】

- Reconfigured the concepts and interrelationship of Japanese nuclear "3S" (Safety, Security, Safeguards) initiative and presented issues, which nuclear power industry in Japan should overcome for international expansion, and solutions in the future.
- Under the latest circumstances, we presented the re-estimated result of life cycle CO_2 emissions by power plant type, based on the progress in power generation technology, improved plant design, and the data of CO_2 emission units of each material which is acquired in 2009 [Y09027].

Human Factors Research

【Objectives】

To reduce human errors reactively and proactively, we develop measures for improving faculty of analyzing human error events, individual hazard perception, team work skills and also develop measures to build a safer society.

【Principal Results】

- We defined several viewpoints to evaluate analysis faculty of human error events and also systematically organized the syllabus for human error analysis training.
- We developed a method to identify actual causes and conditions of safety rule deviations by analyzing events caused by the unsafe acts of workers [Y09017].
- We developed a measurement scale of individual hazard perception, based on the content, severity and latency of hazards [Y09011].

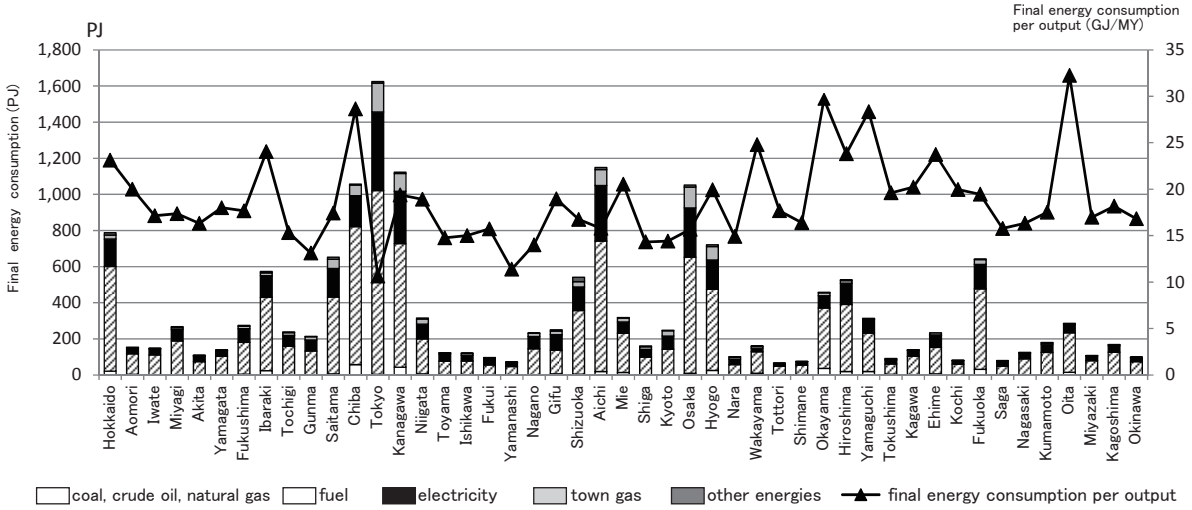

Fig.1 Prefectural Final Energy Consumption (on Classification of Energy Basis)