

# FUNDING PROGRAM FOR NEXT GENERATION WORLD-LEADING RESEARCHERS

**Project Title:** Quantitative Analysis on the Diffusion of Renewable Energy Sources

**Name:** Hiroshi OHASHI

**Institution:** The University of Tokyo

## 1. Background of research

Global warming has become one of the most pressing issues in our modern society. Most of the recent temperature increase attributes to the concentration of greenhouse gases, resulting from human activity such as the burning of fossil fuels and deforestation. Renewable energy sources, including solar, wind and hydraulic power, offer clean alternatives to the conventional energy sources, and produce little greenhouse gas without risk of depletion. Led by China and the U.S., many nations are spending significant amounts of public money on programs that promote the use of renewable energy. However, compared to the size of the governmental supports and emphasis on renewable energy, empirical research that evaluates in quantitative terms the economic benefits and costs of such governmental subsidies on renewable energy is modest.

## 2. Research objectives

The purpose of the research project is to construct the data pertaining to renewable energy sources, including solar photovoltaic in Japan, and investigates the effects of governmental subsidies on the diffusion of the technology and on the eventual economic welfare associated with the policy. In response to the aftermath of the Tohoku earthquake, this project also extends the scope of the research to the energy saving technologies, and assesses the economic driving forces behind the diffusion of such technologies.

## 3. Research characteristics (incl. originality and creativity)

With the scarcity of natural conventional energy sources and the need to address global environmental problems, such as reducing greenhouse gases emissions, Japan has spared substantial resources on research and development of renewable energy since the 1970s. To encourage the adoption of PV system, Japanese government introduced consumer subsidies in the 1990s. However, there is a severer lack of empirical research that identifies the existence of and measure the magnitude of the impacts of consumer subsidies on environmental externalities and resulting economic welfare. Such empirical research would aid in evaluating the validity of such subsidies policies on renewable energy sources.

## 4. Anticipated effects and future applications of research

**This research would provide an important attempt to evaluate policies based on cost-benefit analysis, which hopefully would help the government employ for formulating future policies.**