FOREWORD

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How can we build a sustainable society in harmony with the global environment, in which economic activity does not place an unacceptable load on the environment? This is a critical issue for humankind in the 21st century. In particular, it is necessary to implement effective solutions for environmental and energy problems, as these may have serious impacts not only on our own generation, but on generations to come.

As its Environmental Philosophy, the JFE Group has made the following commitment: "The JFE Group puts a top priority on protecting and enhancing the global environment to maintain its business in harmony with the environment, ultimately for the prosperity of society as a whole." (Environmental Sustainability Report, CSR Report 2013) To achieve this, we are working to prevent global warming and reduce environmental loads by reducing CO₂ emissions and wastes discharged as a result of our business activities. We are also contributing to preservation of the global environment through the developments of iron and steel Eco-Products that support the formation of a resource-circulation society, engineering for energy saving technologies, renewable energy projects, and recycling projects. From the viewpoint of "energy creation," we are promoting the development of global environmentfriendly energy by solar power (photovoltaic) projects and engineering for geothermal power generation, waste treatment power generation, etc. Our environmental technologies were also important and instrumental in the aftermath of the Great East Japan Earthquake, which generated an enormous amount of disaster waste. To treat this as quickly as possible, as an example, we constructed a specially-designed incinerator plant in Sendai City in a time of only 3 months immediately after the earthquake. During fiscal year 2012, this plant treated about 26 500 tons of waste.

For this edition of JFE Technical Report, we planned a special issue based on the keywords "Energy" and "Environment." In addition to introducing JFE Group's contributions to society by iron and steel eco-products and global warming prevention technologies by CO₂ emission reduction, this special issue also describes the development of renewable energy projects, which are now a focus of social attention, and a wide range of energy saving and

energy creation products and technologies. Various recycling projects and technology development that contribute to reducing environmental loads, and collaboration and cooperation efforts involving industry, government, and academia are also introduced.

These efforts and effects toward the creation of energy- and environment-related technologies, products, and projects were the creation through technical developments extending over many years, based on the JFE Group's Corporate Vision of "Contributing to society with the world's most innovative technology." In the future, we will continue to take on the challenges of building a sustainable society and creating a better global environment by providing solutions based on outstanding technological capabilities.