

31 May 2006

### **Chugoku Electric, J-POWER to Cooperate on Setouchi Project**

The Chugoku Electric Power Co., Inc. and Electric Power Development Co., Ltd. (J-POWER) have agreed to collaborate on the establishment of a new electricity company and conduct a joint study on oxygen-blown coal gasification technology under the name 'Setouchi Project', combining their business resources and know-how in the electricity business.

#### 1. Establishment of New Company

As one of their initiatives to establish a new business model that can remain flexible in response to the changing electric utilities market, Chugoku Electric and J-POWER will each contribute an equal amount of capital to set up a new company, tentatively called Setouchi Power Co. Ltd., to supply electricity.

In the future, the new company will have its own power source, transferred from Chugoku Electric, and will sell electric power, but until it can provide its own electricity, electric power will be provided by Chugoku Electric and J-POWER. Chugoku Electric and J-POWER will decide over the next year which power source will be transferred.

Once preparations are complete, the new company will start selling electricity on the wholesale market. At this point, the new company has plans to trade on the Japan Electric Power Exchange (JEPX), and according to its performance on that exchange, it is possible that the company will utilize bulletin boards and negotiate transactions with PPS (Power Producers and Suppliers). In addition, the new company will explore future possibilities regarding trading in the retail market.

Company Name	Setouchi Power Co. Ltd. (tentative)
Head Office	Hiroshima, Japan
Date of Establishment	August 2006 (tentative) (The Company hopes to start selling electricity in the wholesale market by the end of the year.)
President	Undecided
Capital	100 million yen
Contribution Ratio	Chugoku Electric: 50%, J-POWER: 50%
Primary Business	Electricity supply

## Study on the Feasibility of a Test of Oxygen-blown Coal Gasification Technology

Chugoku Electric and J-POWER will jointly evaluate the necessity of implementing a large-scale test of oxygen-blown coal gasification technology.

Coal is an excellent source of fuel in terms of availability and cost effectiveness, but it has negative impacts on the environment; specifically, it contributes to global warming. Oxygen-blown coal gasification technology has the potential not only to significantly improve the efficiency of power generation when combined with fuel cells, gas turbines and steam turbines, but has numerous other applications for the capture of CO<sub>2</sub> and production of hydrogen, and as an alternative to oil, making it an appealing fuel source.

The joint study was inspired by the companies' mutual concerns regarding the effective utilization of coal as a preventive measure against global warming, and to encourage the use of coal as an energy source.

The two companies will conduct the study for approximately two years and make a decision regarding the necessity of a large-scale test by March 31, 2008.

Attachment: Potential Applications of Oxygen-blown Coal Gasification

## Attachment

### Potential Applications of Oxygen-blown Coal Gasification

Coal gasification is a process that converts coal into a synthesis gas, or 'syngas', consisting primarily of carbon monoxide (CO) and hydrogen (H<sub>2</sub>). Syngas produced by oxygen-blown coal gasification has applications as:

1. A solution to global warming

Reducing CO<sub>2</sub> through higher generating efficiency

As cleaned-up syngas can be used in fuel cells, it is possible to have triple combined cycle called IGFC (Integrated coal Gasification Fuel Cell combined cycle), which involves power generation from fuel cells, gas turbines and steam turbines. This technology would enable higher efficiency (approx. 55%, net and HHV base) than that of existing coal-fired power plants, approx. 40%. With this technology, it is expected that CO<sub>2</sub> emission levels will decrease by 30%.

Ease of capturing CO<sub>2</sub>

As it is possible to produce a high concentration of CO<sub>2</sub>, oxygen-blown coal gasification makes it easier to capture CO<sub>2</sub> compared to other methods. This technology is thus suitable in the pursuit of zero emissions as a solution to global warming.

2. A technology to realize hydrogen-energy economy

Hydrogen is produced when CO<sub>2</sub> is separated from the syngas. CO<sub>2</sub> zero emission technology can pave the way for large-scale, economical H<sub>2</sub> production from coal.

3. An alternative to oil, and in the production of chemical raw materials

CO<sub>2</sub> and H<sub>2</sub> can be used to produce synthetic fuel and chemical raw materials.

In light of the above, it is clear that oxygen-blown coal gasification has many possibilities and is an important technology that can contribute to reduction of CO<sub>2</sub> emissions and to the stability of energy supply.

Currently, J-POWER's efforts toward the development of oxygen-blown coal gasification technology include its operation of an EAGLE (Coal Energy Application for Gas, Liquid and Electricity) pilot plant within the premise of the Company's Wakamatsu Research Institute in Kitakyushu City, Fukuoka.