LEGISLATIVE ANALYST REPORT

To: Members of the Board of Supervisors
From: Gabe Cabrera with Fan-Wa Wong, Office of the Legislative Analyst
Date: January 25, 2008
Re: **J-Power EPDC and J-Power USA** (BOS File No. 071587) (OLA No. 046-07)

SUMMARY OF REQUESTED ACTION

The Board of Supervisors approved a motion introduced by Supervisor Alioto-Pier requesting the Office of the Legislative Analyst (OLA) research J-Power USA Development Co., Ltd. ("J-Power USA") and its parent company, J-Power Electric Power Development Co., Ltd. ("J-Power EPDC").

EXECUTIVE SUMMARY

As a publicly traded company listed on the Tokyo Stock Exchange, J-Power EPDC (the "Company") develops and operates power generation projects. Domestically, it supplies wholesale electricity to Japan's major electric power companies and maintains a nationwide network of transmission lines. Overseas, it invests in independent power producer ("IPP") projects or privately owned power plants. The Company through its subsidiary J-Power USA is currently invested in 3 natural gas-fired IPP projects in the United States: Tenaska (Texas), Elwood (Illinois) and Green Country (Oklahoma). Its plans for a fourth IPP in Northern San Diego County are currently under review by the California Energy Commission. These projects are discussed in this report. In October 2007, the San Francisco Public Utilities Commission ("SFPUC") adopted a resolution authorizing the SFPUC General Manager to negotiate and execute agreements relating to the development and operation of 2 gas-fired IPP projects in San Francisco: one is to be located in the City's Potrero neighborhood, the other at the San Francisco International Airport. The description of the proposed transaction endorsed by the SFPUC resolution set parameters for potential transaction structures to be pursued on a collaborative basis with J-Power USA. The San Francisco Board of Supervisors subsequently passed a resolution (File No. 071058) essentially endorsing the transaction as described in the SFPUC resolution. The Board's resolution urges the SFPUC to finalize documents and agreements relating to the projects and to forward them to the Board for consideration.

Despite our efforts, we uncovered virtually no information on J-Power EPDC's or its subsidiaries' environmental record. However, the Company invests in coal mines and procures nearly 20 million tons of coal annually (mainly from Australia) to fuel its coal-fired plants.[1] Also it imports coal to sell to others. When burned, coal is the dirtiest fossil fuel, producing large amounts of carbon dioxide (CO_2), the major greenhouse gas considered a chief cause of climate change. Most of its overseas power plants are natural gas-fired. However, in the mid- and long-term, the Company plans to develop coal-fired projects, which are its core competency in power

[1] J-Power EPDC, 2007 Annual Report, p. 21.

generation.[2] If unmitigated, these projects may have a significant adverse impact on the environment. Whether San Francisco wishes to do business with J-Power USA and its parent company is a policy decision. Factors include the City's particular energy needs, values and desire to address the global warming issue.

FINDINGS

Background. J-Power EPDC was established in 1952 through a government initiative to increase the supply of electricity in Japan. The Company is headquartered in Tokyo, Japan and has approximately 6,500 employees (consolidated). In October 2004, it was privatized and listed publicly on the Tokyo Stock Exchange. The Company has a total of 59 subsidiaries and 48 affiliated companies. Its business is organized into three broad categories, as follows.

- Electric power business – Through its hydroelectric, coal-fired and other types of power plants, the Company supplies wholesale electricity to Japan's 10 major electric power companies ("EPCOs") and maintains a nationwide network of transmission lines. For a list EPCOs that the Company sells power to, see the Appendix section of this report.

- Electric power-related businesses - To support its electric power business, the Company designs, constructs, inspects, maintains and repairs power plants. Also, it procures coal from overseas to fuel its coal-fired plants and to sell to others. For additional information on the Company's coal business, see Page 8 of this report.

- Other businesses – Since 1960, the Company has provided overseas electric power-related consulting services. In recent years, it started to invest in overseas independent power producer ("IPP") projects or privately owned power plants. It is currently invested in 16 IPP projects overseas. Of these, the majority is in Southeast Asia (especially Thailand). Three are in the United States: 1) the Tenaska power plant located near Houston, Texas, 2) the Elwood power plant located near Chicago, Illinois and 3) the Green Country power plant located near Tulsa, Oklahoma. For a complete list of the Company's IPP projects by country, see the Appendix to this report.

Of the Company's above-noted subsidiaries, 4 currently operate in the United States. These include:

1. J-Power USA Development Co., Ltd. ("J-Power USA")
2. J-Power USA Investment Co., Ltd.
3. J-Power USA Generation GP, LLC
4. J-Power North America Holdings Co., Ltd.

By way of background, the Company established J-Power USA in February 2005 to enter into the United States' wholesale electricity market. J-Power USA, headquartered in Schaumburg, Illinois, has a mandate to develop and operate wholesale power generation projects in the United States.

[2] Ibid., p. 18.

In May 2007, the Company entered into a limited partnership agreement with John Hancock Life Insurance Company ("John Hancock"), headquartered in Boston, Massachusetts, to establish a 50/50 limited partnership J-Power USA Generation, LP ("Generation") for the purpose of promoting IPP business in the United States.[3] The Company owns 50% interest in Generation through its three other U.S. subsidiaries: 1) J-Power USA Investment Co., Ltd. ("I-Co"), 2) J-Power USA Generation GP, LLC and 3) J-Power North America Holdings Co., Ltd. The 62% interest in Tenaska Frontier Partners, Ltd. and 49.9% interest in Elwood Energy LLC, which the Company had held through I-Co, were then transferred to Generation. As a result, the Company holds 31% and 24.95% interest in these companies respectively.

In September 2007, Generation, the 50/50 limited partnership between the Company and John Hancock, purchased 100% interest in Green Country Holdings, LLC, which owns the Green Country power plant.

Key Executives. The Company has 13 directors, including a president. Their specific names are listed in the Appendix to this report.

No information is available on J-Power USA's executives, except that the Company through a February 2005 press release named Mr. John W. Salyer, Jr. president and chief executive officer of J-Power USA.[4] As a wholly owned subsidiary of its parent company, J-Power USA has neither publicly traded shares nor requirements to publicly disclose much.

Key Relationships. In Japan, the Company's most important business relationship appears to be with the 10 major electric power companies that it supplies electricity to.

Outside of Japan, its most important market is in Southeast Asia (namely Thailand) and its most important business relationship in Thailand is with Electricity Generating Public Co. Ltd. Together they have developed several IPP projects.[5] In the United States, its most important business relationship appears to be with John Hancock Life Insurance Company. As previously noted, together they formed a 50/50 limited partnership to promote IPP business in the United States.

J-Power USA's most important business relationship appears to be with its partners in the Tenaska and Elwood Power Plants. In Tenaska, these include Tenaska Energy and Diamond Generating. In Elwood, these include Dominion Elwood, Inc. and Peoples Elwood, Inc. These are subsidiaries of Dominion Resources, Inc. and Peoples Energy Corporation respectively.

Stated Goals. In its 2007 Annual Report to its shareholders, the Company states that business opportunities are limited in Japan's electricity market, as demand for electricity is expected to

[3] John Hancock is a wholly owned subsidiary of Manulife Financial Corporation ("MFC"), a Canadian-based company. Through John Hancock, MFC is a leading investor in the U.S. power industry, with a $7 billion power industry portfolio spread across more than 200 U.S. power companies.

[4] Press release, J-Power EPDC, *"J-Power Announces Expansion into North American Wholesale Power Market"*, 2/14/2005. Note - As a wholly owned subsidiary of J-Power EPDC, J-Power USA has neither publicly traded shares nor requirements to publicly disclose much.

[5] 2007 Annual Report, p. 19.

increase by only 1% annually. Within this context, it has identified the following 5 approaches for achieving growth.

- First, it intends to expand its mainstay domestic electric power capacity by completing two projects: the Isogo New No. 2 Thermal Power Plant, currently under construction, and the Ohma Nuclear Power Plant, its first nuclear power project, undergoing preparation for construction.

- Second, it plans to develop and apply oxygen-blown coal gasification technology[6] to its coal-fired projects, working towards zero CO_2 emissions. The Company states that in May 2007, it successfully test-piloted coal gasification through its EAGLE (Coal Energy Application for Gas, Liquid & Electricity) Project. According to the Company, its next challenge is to develop the oxygen-blown method.

- Third, to address the aging of its facilities in Japan, the Company proposes to make capital investments to reduce their operating and maintenance costs. For instance, it proposes to replace the turbine rotor at its Takehara Thermal Power Plant Unit 3, to make comprehensive upgrades of major equipment at its Tagokura and Nukabira Power Plants and to replace control equipment at its Kitahon Linkage Facilities.

- Fourth, in light of limited business opportunities in Japan's electricity market, the Company states that it is looking overseas for new business. As previously noted, it is currently invested in 16 IPP projects overseas. According to the Company, most of its overseas power plants are gas-fired for now. However, in the mid- and long-term, it plans to develop coal-fired projects, which are its core competency in power generation.[7]

- Lastly, it plans to diversify its business. Under the theme of "harmonization of energy and the environment", it proposes to continue to develop renewable energy sources, such as wind and biomass projects. Also, it proposes to acquire CO_2 credits by using Kyoto mechanisms, such as the Clean Development Mechanism ("CDM"), established as a means for countries to achieve their CO_2 reduction commitments stipulated in the Kyoto Protocol. Under CDM, developed and developing countries undertake joint projects to reduce or absorb greenhouse gases. Developed countries gain credits from these reduced or absorbed emissions. According to the Company, it has been involved in the development of 12 CDM projects, primarily in Central and South America.

No information is available on J-Power USA's stated goals, except that in the previously mentioned 2005 press release, Mr. Salyer states:

> *"Our North American strategy of growing through the acquisition of good quality assets with long term off-take agreements is consistent with our parent company's*

[6] Coal gasification breaks down the coal into its component parts, usually by subjecting it to high temperature and pressure, using steam and measured amounts of oxygen. This leads to the production of syngas, a mixture mainly consisting of carbon monoxide (CO) and hydrogen (H_2). In the oxygen-blown method, through a shift reaction ($CO_2+H_20 \rightarrow CO_2+H_2$), CO is converted into the higher concentration CO_2, which is relatively easy to capture, as compared with other coal gasification methods.

[7] 2007 Annual Report, p. 18.

strategy, which is focused on consistent earnings growth with upside coming from sound operating strategies."

Environmental Record. J-Power EPDC - To help us identify the Company's environmental record, the OLA contacted several environmental organizations that preserve, analyze or monitor the environment.[8] Notwithstanding our efforts, we uncovered only limited information about its environmental record.

According to a recent report, the Company published an Environmental Product Declaration ("EPD") as part of the Japan Environmental Management Association for Industry's ("JEMAI") Type III environmental labeling program called Eco-Leaf.[9] An EPD provides quantified environmental data for a product based upon International Organization for Standardization 14040 series of standards. However, we reviewed JEMAI's Web pages but did not find any reference to the Company or its EPD. Nor did we find any evidence to suggest that JEMAI has granted it an Eco-Leaf label. In the energy sector in Japan, Eco-Leaf labels are usually used in connection with the sale of "green electricity" (i.e., electricity generated from renewable energy sources).

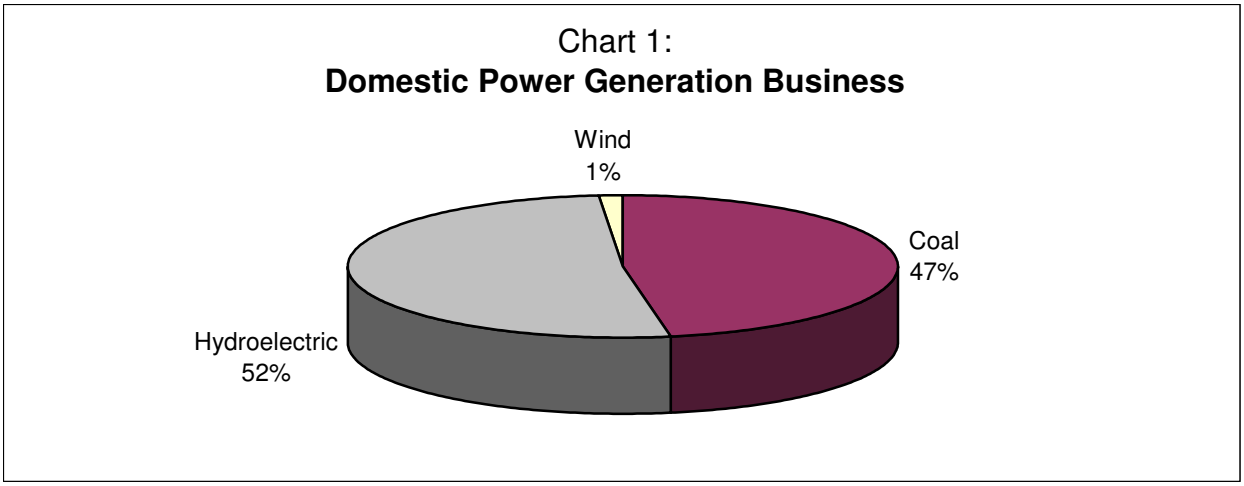
No information is available on J-Power USA's environmental record. However, we uncovered environmental information on some of its business partners in the Tenaska and Elwood power plants. For instance:

- In Tenaska, Tenaska Energy was listed by the Natural Resources Defense Council ("NRDC") in 2004 benchmarking studies as having the best record among companies in the United States who generate power from fossil fuel for controlling emissions of nitrogen oxide (NO_X) and carbon dioxide (CO_2), and the 4th best record for controlling sulfur dioxide (SO_2).[10]

- In Elwood, Dominion Resources, Inc. was ranked 19th in 2002 on a list of the 100 top corporate air polluters in the United States.[11]

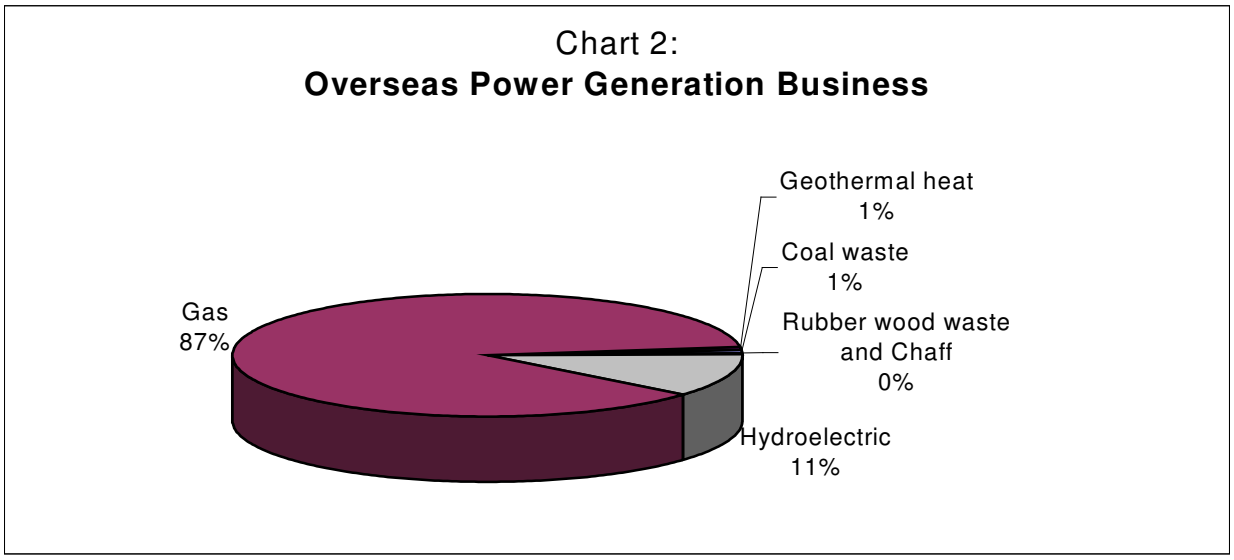
Power Generation Business. As of March 2007, the Company operates power generation projects throughout Japan, with a total capacity of over 16,500 megawatts ("MW"), comprising 7% of Japan's total electric power capacity.[12] As illustrated in Chart 1 on the following page, a slight majority - 8,556 MW (52%) - is generated from hydroelectric power plants, followed by 7,812 MW (47%) from coal-fired plants and 211 MW (1%) from wind farms.

[8] These include Environmental Defense (formerly the Environmental Defense Fund), Greenpeace International, International Transparency, the United Nations Environment Programme and Worldwatch Institute.
[9] Paolo Frankl et al, Ministry of Environment and Housing of the Catalan Government, *"Communication of Life Cycle Information in the Building and Energy Sectors"*, July 2007.
[10] NRDC, < http://www.nrdc.org/air/pollution/benchmarking/db/rank.asp?t=r&s=12&d=0>
[11] Political Economic Research Institute (PERI), University of Massachusetts, *"The Toxic 100"*, <http://www.peri.umass.edu/Toxic-100-Table.265.0.html>
[12] 2007 Annual Report, p. 29.



Note: Includes the facilities of its subsidiaries and associates but not those operated as IPPs and for PPSs (power producers and suppliers)
Source: J-Power EPDC, 2007 Annual Report

To date, the Company is invested in 16 IPP projects overseas, with a total capacity of approximately 6,500 MW. As illustrated in Chart 2 below, the vast majority – 5,668 MW (87%) - is generated from gas-fired power plants.[13] The other 857 MW is generated from a mix of different sources, the largest of which is from hydroelectric power plants.



Source: J-Power EPDC, 2007 Fact Book

As previously mentioned, 3 of the Company's 16 overseas IPP projects are located in the United States. It is proposing to build a fourth gas-fired plant in Northern San Diego County. Previously, it decided not to build a similar gas-fired plant in Klamath County, Oregon located near the California-Oregon border. These projects are discussed on the following page.

[13] J-Power EPDC, 2007 Fact Book, p. 12.

Orange Grove Project. J-Power USA through Orange Grove Energy, LP ("OGE") proposes to construct and operate the Orange Grove Project, a gas-fired power plant and ancillary facilities in Northern San Diego County, with a total capacity of 96 MW.

In July 2007, OGE submitted a Small Power Plant Exemption ("SPPE") application to the California Energy Commission ("CEC"), pursuant to Section 1936 of the California Code of Regulations. Under the SPPE process, the CEC may exempt thermal power plants with a generating capacity not exceeding 100 MW from traditional CEC facility licensing procedures[14] if the project has no substantial adverse impact on the environment or energy resources. A committee of two CEC Commissioners (the "Committee") is currently reviewing the project and will decide to approve or deny the exemption.

CEC staff has prepared a preliminary report[15] for the project identifying potential issues that they believe will require careful attention and consideration by the Committee.

- First, according to staff, the applicant has not proposed any mitigation measures for the project's construction and operating emissions. It is staff's position that all "nonattainment" pollutants (i.e., those for which the State has failed to attain the air quality standards established by the federal Environmental Protection Agency) and their precursors need to be mitigated at a minimum ratio of 1:1.

- Second, the applicant has not provided sufficient information as to the exact location of the project in relation to cultural resources (e.g., archeological sites). Therefore, staff cannot determine whether these cultural resources will be impacted by the project.

- Finally, in order to assess options for the project's water supply and wastewater management, staff is preparing both economic and environmental assessments of these elements while awaiting receipt of the applicant's responses to data requests.

While a number of local residents are supportive of the project, as expressed during public comment at the last Committee hearing, other residents and some public interest groups, such as River Watch, have expressed concerns about the project. According to a member of River Watch, "We have infrastructure problems here. We have environmental concerns. The 76 corridor [the proposed site] is one of the most environmentally sensitive areas in San Diego County".[16]

COB Energy Facility. In November 2004, the Oregon Department of Energy approved a site certificate for COB Energy Facility, LLC ("COB") to construct and operate COB Energy Facility, a 1,150 MW gas-fired power plant in Klamath County, Oregon located near the California-Oregon border. J-Power USA then purchased the site certificate from COB and its parent company but decided not to pursue construction of the facility due to unresolved technical

[14] California Public Resources Code, Section 25500-25543.
[15] CEC, *"Issues Identification Report for the Orange Grove Power Plant Project – Small Power Plant Exemption (07-SPPE-2)"*, 9/10/2007.
[16] Public comment, CEC, *"Informational Hearing and Site Visit before the California Energy Resources Conservation and Development"*, 9/24/2007.

questions about the geology of the proposed site that repeatedly arose during the siting process.[17] In May 2007, the Department of Energy terminated the site certificate for the COB Energy Facility.

Coal Business. The Company through its subsidiary J-Power Resources Co., Ltd. ("J-Power Resources") procures nearly 20 million tons of coal annually.[18] Of these, approximately 10 million tons come from Australia.[19]

All coal procured was previously consumed in the Company's coal-fired projects. However, in recent years, J-Power EPDC has imported coal to sell to others in Japan and overseas. We reviewed the Company's public records but did not find any information that discusses how much of its total coal procurement is used to fuel its power generation facilities and how much of it is sold to others.[20]

While procuring coal, the Company invested in three separate coal mines in Queensland, Australia. These include the Blair Athol and Ensham coal mines, currently in operation, and the Clermont coal mine, preparing to launch production in 2010, with a projected annual output of 12 million tons of coal. The Company also invested in 4 oceangoing ships that can carry coal from Australia to Japan and elsewhere.

CONCLUSION

Historically, J-Power EPDC's mainstay business has been supplying wholesale electricity to Japan's electric power companies. However, the demand for electricity in Japan is expected to increase by only 1% annually. Thus, the Company is looking overseas for new business. Most of its overseas power plants are currently natural gas-fired. However, in the mid- and long-term, the Company plans to develop coal-fired projects, which are its core competency in power generation. If unmitigated, these projects may have a significant adverse impact on the environment. Whether San Francisco wishes to do business with J-Power USA and its parent company is a policy decision. Factors include the City's particular energy needs, values and desire to address the global warming issue.

[17] Telephone interview with the Office of Senator Doug Whitsett, Oregon State Legislature, 12/10/2007.
[18] 2007 Annual Report, p. 21.
[19] J-Power Resources, <http://www.eoc.co.jp/english/overview.html>
[20] To obtain a sense of the size of its coal sales business, the Company's coal sales totaled approximately ¥3.6 billion Japanese Yen (or $30 million U.S. dollars) during the fiscal year ended March 2007.

APPENDIX

Japan's 10 major Electric Power Companies ("EPCOs")

1. Hokkaido Electric Power Co., Inc.
2. Tohoku Electric Power Co., Inc.
3. Tokyo Electric Power Co., Inc.
4. Chubu Electric Power Co., Inc.
5. Hokuriku Electric Power Co., Inc.
6. Kansai Electric Power Co., Inc.
7. Chugoku Electric Power Co., Inc.
8. Shikoku Electric Power Co., Inc.
9. Kyushu Electric Power Co., Inc.
10. Okinawa Electric Power Co., Inc.

Source: J-Power EPDC, 2001 Annual Report

J-Power EPDC's Independent Power Producer ("IPP") projects by country

Abbreviated Project Name	Electricity Generation Source
China	
Tianshi	Coal waste
Philippines	
Layte	Geothermal heat
CBK	Hydroelectric
Taiwan	
Chiahui	Gas CCGT (combined-cycle gas turbine)
Thailand	
Roi-Et	Chaff
Rayong	Gas CCGT
Thaioil Power	Gas CCGT
Independent Power	Gas CCGT
Gulf Generation (Kaeng Khoi)	Gas CCGT
Samutprakarn	Gas CCGT
Nong Khae	Gas CCGT
Yala	Rubber Wood waste
Kaeng Khoi #2	Gas CCGT
USA	
Tenaska (Texas)	Gas CCGT
Elwood (Illinois)	Gas simple-cycle
Green Country (Oklahoma)	Gas CCGT

Source: J-Power EPDC, 2007 Annual Report

J-Power EPDC's Key Executives

President (Representative Director)

1. Yoshihiko Nakagaki

Executive Vice Presidents (Representative Director)

2. Shinichiro Ota
3. Kiyoshi Sawabe
4. Masayoshi Kitamura
5. Masashi Hatano

Executive Managing Directors

6. Yasuo Maeda
7. Kanji Shimada
8. Yoshihiko Sakanashi
9. Minoru Hino

Executive Directors

10. Masaharu Fujitomi
11. Toshifumi Watanabe
12. Tomoo Kosugi
13. Koichi Tazawa

Source: J-Power EPDC, 2007 Annual Report