

TRANSACTION TAKEAWAY

Hokkaido Betsukai Biogas Power Generation

Project Name	Reasons for GB Involvement	Technologies	Project Cost
Hokkaido Betsukai Biogas Power Generation	Fist mover and demonstration effect, to spur more investment in rural biogas projects.	Biogas, 382 KW	1 Billion Yen
Developer(s)	Investment Area	Revenue Stream	Lessons for the Market
Kadokawa Construction Co., Ltd & Corns AG Corporation	70 Million Yen in Equity Financing (Preferred Stock)	20-year electricity offtake agreement with Hokkaido Electric Power Co., Ltd and fertilizer offtake agreement with KEH Bio Co., Ltd	Demonstration of using new technologies and feedstocks, including harnessing biomass energy through local Pasture Grass Silage. Demonstration that a locally-sourced biomass industry can support an environmentally friendly and disaster-resistant city.

Japan's Green Finance Organisation (GFO) recently invested 70 Million Yen in equity to the construction of the Hokkaido Betsukai biogas Power Generation facility. The transaction is notable as it marks the first time pasture grass silage will be used for biogas power generation in Japan. The construction commenced in August, 2017.

The 1 Billion Yen project, to be developed jointly by Kadokawa Construction Co., Ltd and Corns AG Corporation, will install a 382 kW biogas power plant in Betsukai Town of Hokkaido Prefecture. The facility is expected to reduce 1,643 tons of CO₂ every year. The feed that fuels the biogas facility – pasture grass silage – will be sourced from local dairy farms in the Hokkaido region.

The main revenue stream for this project will be the sale of electricity to Hokkaido Electric Power Co., Ltd., a regional electric utility via a 20-year offtake Power Purchase Agreement (PPA). Another revenue stream will be the sale

of fertilizer, a useful byproduct of the digester process, to agricultural companies such as KEH Bio Co., Ltd. That is, the project includes multiple revenue streams: both power and fertilizer. Sale of the fertilizer byproduct does not come with a long-term offtake agreement, and therefore this revenue streams comes with a different risk profile than a 20 year PPA.

Rural development and new technology

The biogas power generation facility in Betsukai exemplifies several goals of the GFO in its mission to stimulate green investment and assist in the development of rural areas of Japan. The Betsukai project serves as a demonstration of locally sourced biogas power generation. The prevalence of dairy farms in rural Japan means that this project can hopefully spur additional investment private in more small-scale biogas power plant can be built using locally-sourced feed.

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Additionally, the project represents an effort on the part of GFO to support “regional activation efforts” to stimulate rural economic development in Japan. The synergistic relationships among the biogas facility, the local dairy farms that supply the feed, the regional electric utility that purchases electricity, and the agricultural company that purchases fertilizer illustrate the “biomass industrial city” concept that is emerging across Japan. To increase energy resilience for local communities in Japan, that are prone to disasters such as earthquakes, the locally sourced biogas facility serves as a distributed energy resource for Betsukai and a buffer against grid disruptions. Additionally, the project is notable in its effects on local land use: nearby agricultural land that has previously laid fallow project is expected to be stimulated to begin productive use again, in part as a result of the project.

GFO finance to stimulate investment

The financing of this project showcases another successful example of the Green Bank model. With 70 Million Yen in Preferred Stock, GFO’s investment helps catalyze 750 Million Yen of debt financing by regional financial institutions. GFO’s equity purchase helps mitigate the investment risks for the regional financiers and bridges an important gap in the capital stack of the project.

A major issue that GFO faced in the beginning of the due diligence process was technology risk, and familiarity

with the underlying biogas technology. It was challenging to accurately predict the efficiency of gas generation from the novel use of pasture grass silage. GFO opted to retain a technical advisor to help monitor and quantify the technology risks involved. Additionally, the biogas facility will receive partial subsidies for the construction, which help offset some investment risks.

The strong commitment from the regional financial institutions aligns with GFO’s goal to attract more private investment into biomass energy development and reduce public spending. Also, the project will help activate local idle or fallow lands nearby the plants and stimulate job creation in the rural area.

The Hokkaido Betsukai Biogas Power Generation case offers the market a key insight: financing via the Green Bank model in biomass energy can catalyze the creation of a resilient economic ecosystem around a local energy producer. In Betsukai, an operational biogas facility will stimulate upstream demand from dairy farms and create a local supply channel to the regional electric utility and the local agricultural company. Furthermore, it leads to more efficiency in local land use and more local job opportunities. For the market, GFO’s case of investment presents a blueprint to developing biomass energy that systematically benefits stakeholders in rural areas.

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This Transaction Takeaway was made possible with the support and partnership of the ClimateWorks Foundation.