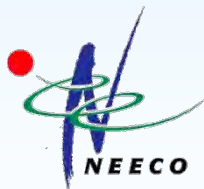


For  
UN-HABITAT  
Expert Group Meeting 2010

# **Poultry Litter Power Generation Project as an Environment-conscious Business**

September 30<sup>th</sup> 2010



**Nishinippon Environmental Energy Co., Inc.**

# Outline of NEECO

## Kyushu Electric Power Co., Inc.

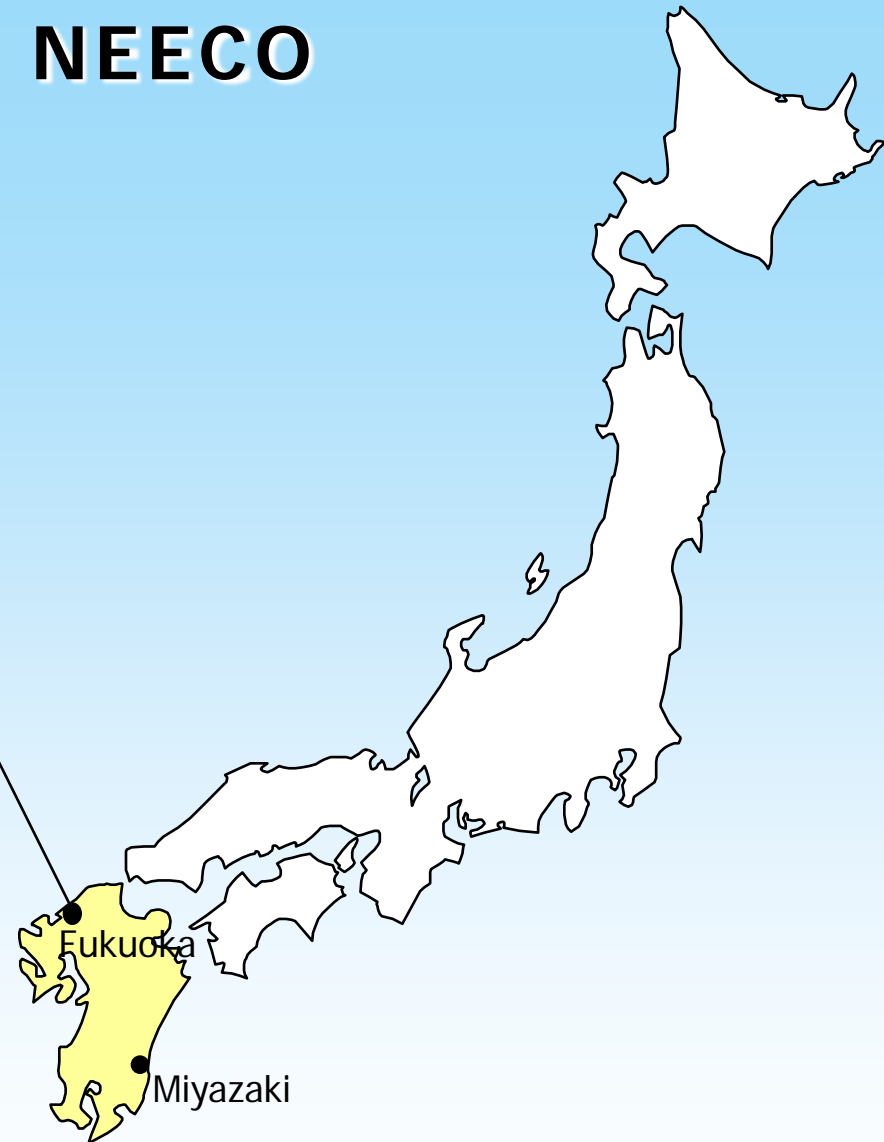
Established	May 1951
Paid-in Capital	237.3 billion JPY
Employees	12,465
Power Supplying Facilities	22,943 MW Thermal: 10; Nuclear: 2 Hydro: 139; Geothermal: 6 etc.



**100% Subsidiary Company**

## Nishinippon Environmental Energy Co., Inc.

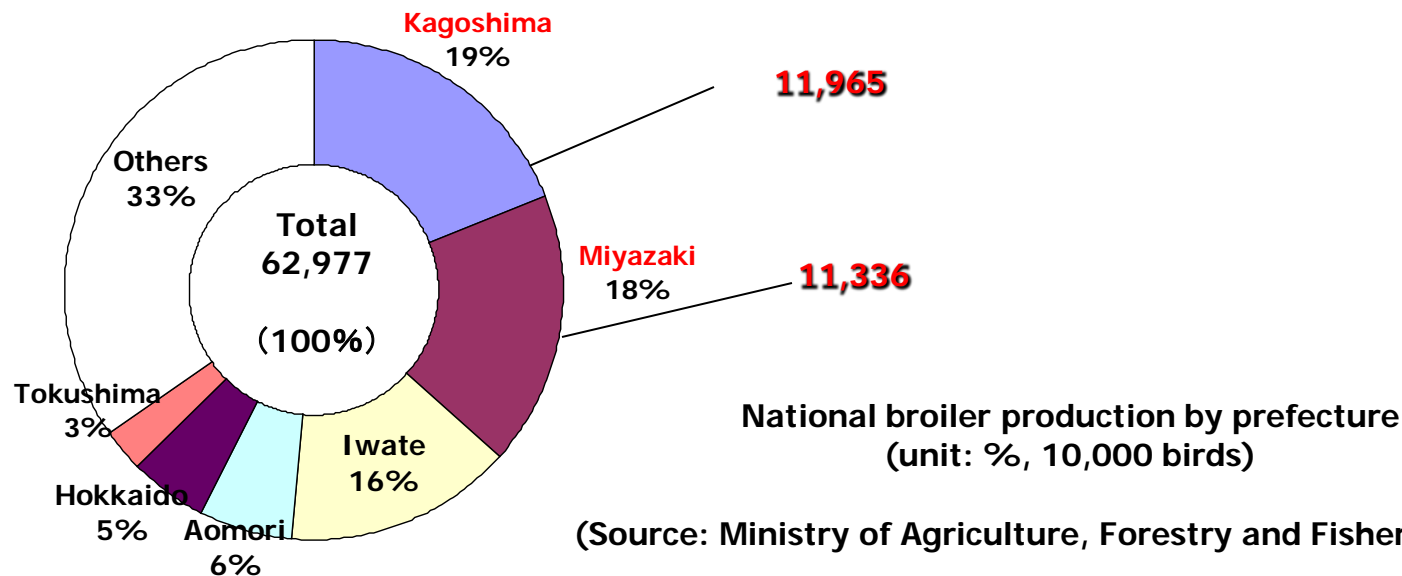
Established	Nov. 1990
Paid-in Capital	1,010 million JPY
Employees	72
Major Lines of Business	<ul style="list-style-type: none"><li>○ Environment/Energy businesses<ul style="list-style-type: none"><li>▪ New Energy Power Generation (→Poultry Litter Power Generation)</li><li>▪ Consulting business</li></ul></li><li>○ Energy Solution business (ESCO etc.)</li></ul>





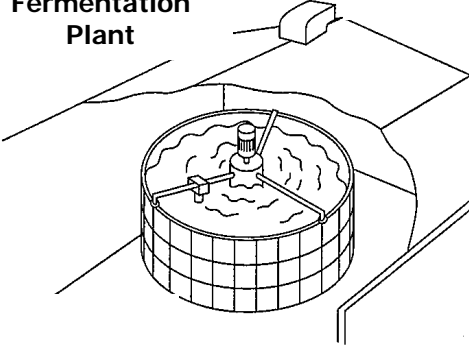
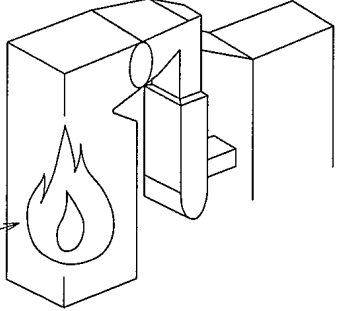
- Japan: Land area 378,000km<sup>2</sup>, Pop. 128 million

# Number of Broiler Produced (Japan)

- Annual broilers production: Approx. 630 million birds
- Southern Kyushu is a leading broiler production region
- Miyazaki Pref. is the second leading broiler producing prefecture in the country.  
(⇒ Approx. 250,000 tons/year of poultry litter is generated)



# Methods of processing Poultry Litter

	Direct Recycle to Farmland	Compost	Incineration
	<p><b>Return to soil as manure</b></p>  <p><b>Stacking in open space</b></p> 	<p><b>Fermentation Plant</b></p> 	<p><b>Incineration Plant (Boiler)</b></p> 
<b>Characteristics</b>	<ul style="list-style-type: none"> <li>- Widely used (conventional) method</li> <li>- Not require large-scale facilities</li> </ul>		<ul style="list-style-type: none"> <li>- Requires various facilities (such as furnace and boiler)</li> <li>- Capable of generating electricity (large-scale facility)</li> </ul>
<b>Environmental Effect</b>	<ul style="list-style-type: none"> <li>- Bad odor,</li> <li>- Excessive nitrogen in soil</li> </ul>	<p>Bad odor (fermentation process)</p>	<p>Capable of thermal cracking of odor-generating substances and reducing volume of litter ( to 1/10)</p>
<b>Future</b>	<p>Inappropriate disposal and storage of poultry litter is prohibited by law (since Nov.2004)</p>	<p>Excessive manure and shortage of application are issues in area where poultry industry is prosperous</p>	<p>Drawing attention for its favorable environmental characteristics</p>

# Values of Poultry Litter Power Generation Business

## **Reduction of Environmental Impact**

- Thermal cracking of bad odor substances
- Reduction of volume of waste  
by Incineration of poultry litter

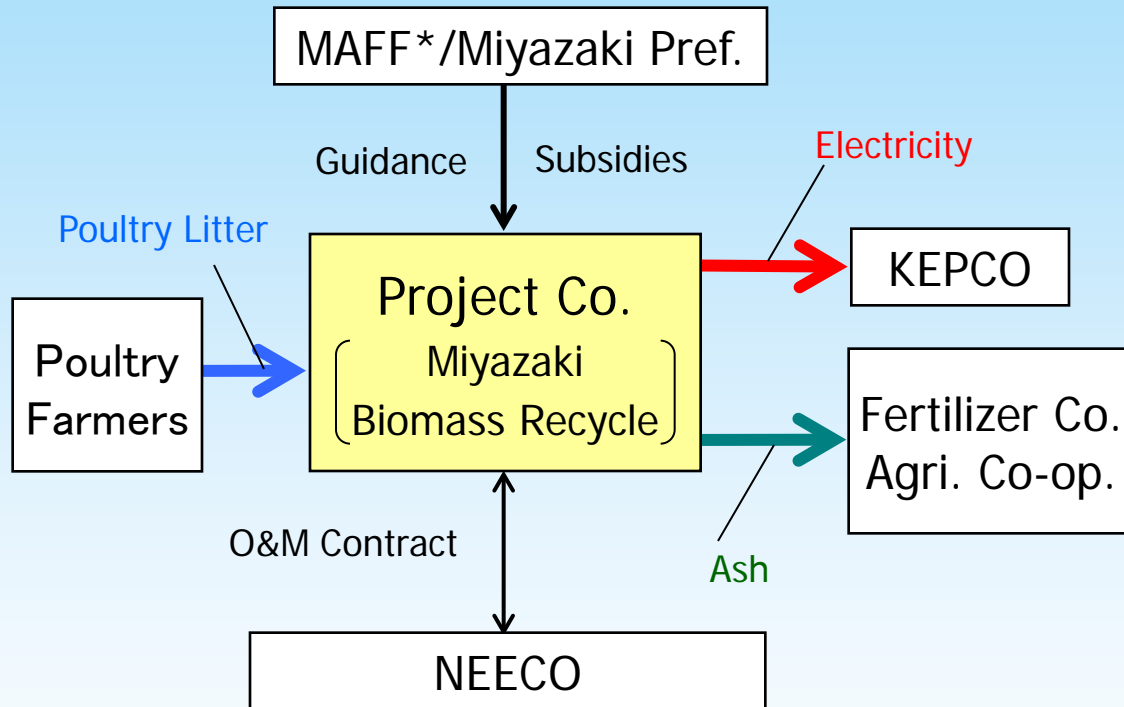
## **Contribution to global environmental preservation**

- Conservation of fossil fuels
- Reduction of CO<sub>2</sub> emission  
by power generation using carbon neutral biomass

## **Contribution to further development of broiler industry**

by processing poultry litter in a stable and environment-conscious method.

# Outline of Miyazaki Project



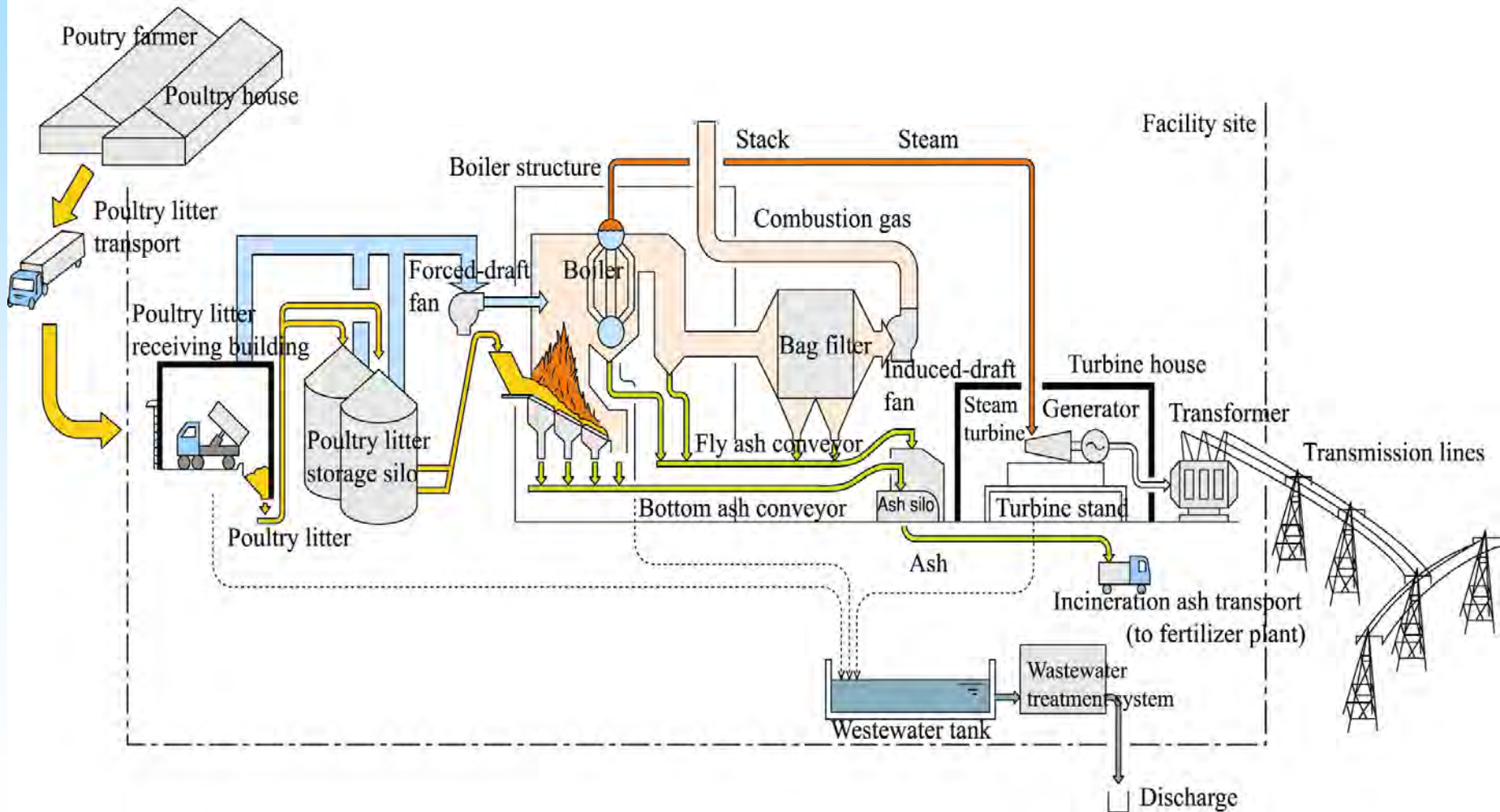
\* MAFF : Ministry of Agriculture, Forestry and Fisheries

## Business Scheme

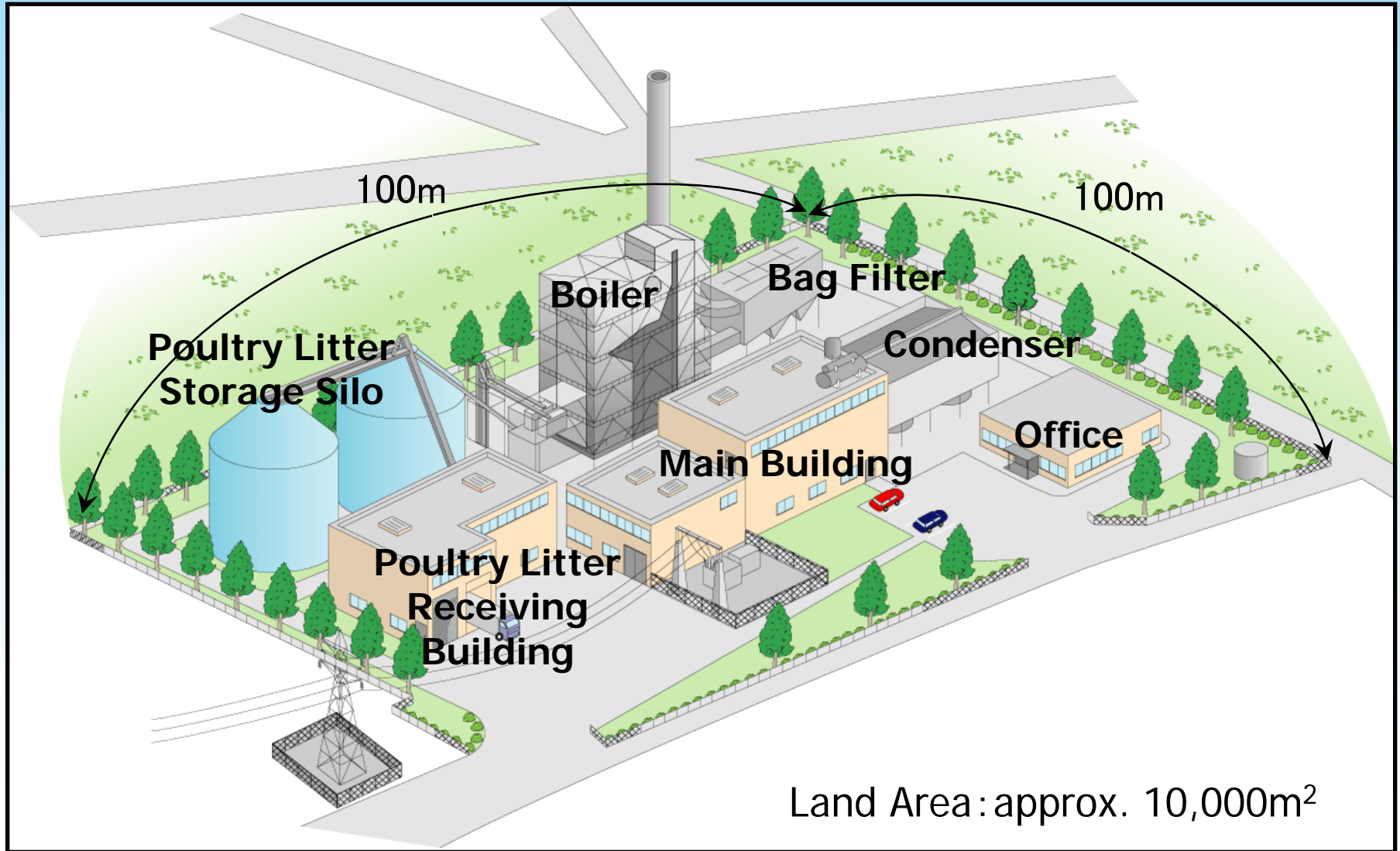
## Outline of MBR

Business Objectives	Sales of electricity and incinerated ash generated by poultry litter incineration	
Location	Kawaminami, Miyazaki, Japan	
President	Mr. Yoshiyuki BABA (president of NEECO)	
Paid-in Capital	100 million JPY	
Share holders	Farmers	54%
	Broiler Co.	4%
	NEECO	42%
Incineration Cap.	132,000 metric tons /year	
Generation Cap.	11,350kW	
Established	May 2003 (Started commercial operation in May 2005)	

# The System of Miyazaki Plant



# Bird's eye view of Miyazaki Plant





# Photo of Miyazaki Plant(1)



# Photo of Miyazaki Plant (2)





7ton-truck (with dumping unit)



25ton-truck (without dumping unit)



Poultry litter  
burning in the furnace

## Property of Poultry Litter

Ave. Heating Value:  
Approx. 2,000 kcal/kg (LHV)

Ave. Moisture Content  
Approx. 43%

\* Heating Value of Coal  
Approx. 6,200kcal/kg(LHV)

# Operating Conditions

## Operated 5 years without major problems

⇒ Availability: approx. 90% (including major maintenance period)

## Major Awards

- Excellent Biomass Utilization Awards (2005)
  - MAFF Rural Development Bureau Chief Award
- The 11th New Energy Awards (2006)
  - NEF Chairman Award
- The 5th Eco-Products Awards (2008)
  - Special Jury Award (Eco Service Category)
- The Best 100 New Energies(2009)
  - METI,NEDO Selected
- Kyushu Environment Business Awards(2009)
  - Excellent Award

## Others

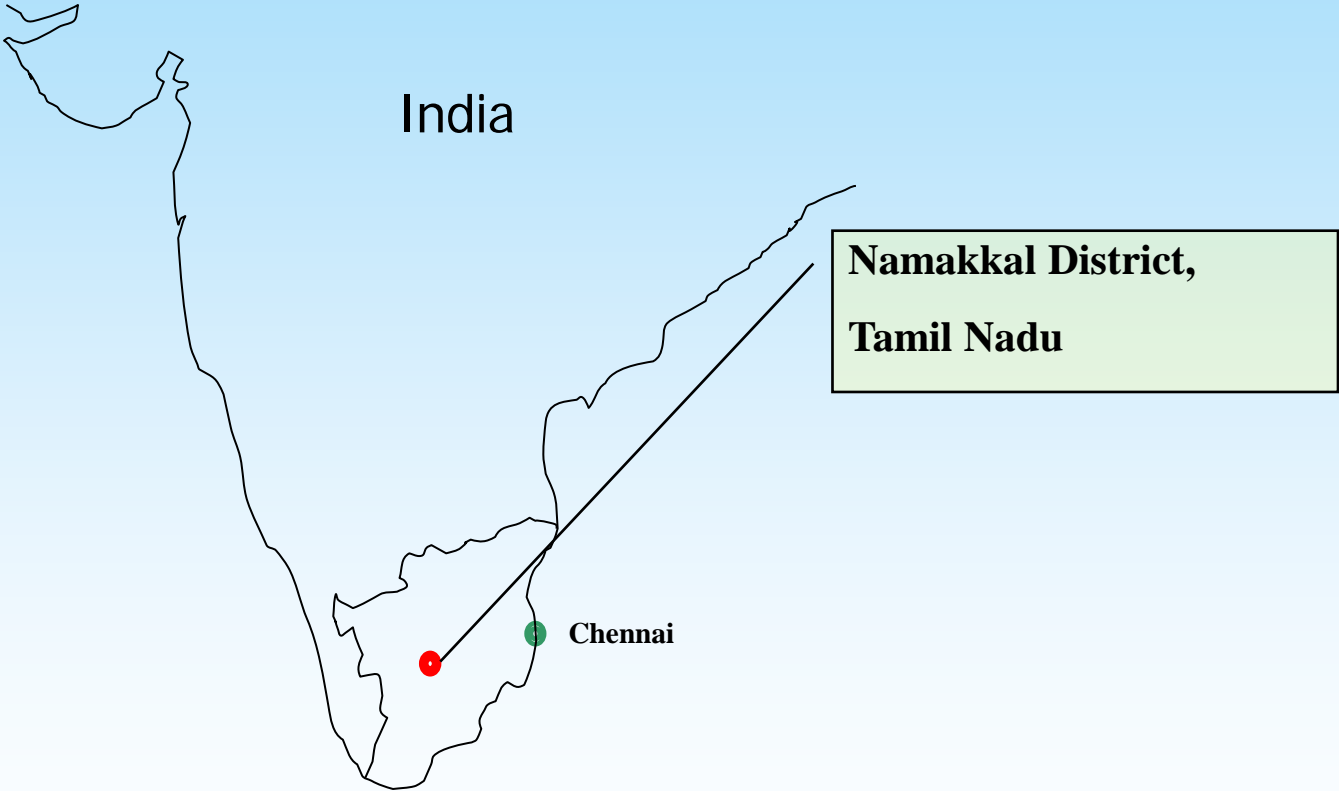
- Used as class material by local schools
- Visited by 3,880 people (until March 2010)

# Conclusions

Poultry power generation is . . .

- Drawing a lot of attention nationwide for its values including environmental preservation, contribution to development of broiler industry, etc.
- Very effective method for processing poultry litter in Japan where environmental problems (bad odor, Nitrogen contamination) are emerging.
- To be introduced to other countries or regions suffering from same kind of environmental problems.

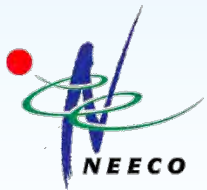
# Location



## Outline of Project

<b>Description of Business</b>	<b>Biomass power generation (fuel: poultry litter + wooden biomass) (IPP)</b>
<b>Project Company</b>	<b>Orient Eco Energy Limited</b> <b>Shareholders (Shareholding Ratio)</b> <b>Orient Green Power Company Limited (60%)</b> <b>Nishinippon Environmental Energy Co., Inc. (40%)</b>
<b>Location</b>	<b>Namakkal District, Tamil Nadu, India</b> <b>(380km Southwest of Chennai)</b>
<b>Power Output</b>	<b>7,500kW</b>
<b>Fuel</b>	<b>poultry litter + wooden biomass</b>
<b>Power Purchaser</b>	<b>Tamil Nadu Electricity Board (TNEB)</b> <b>/ other distribution companies</b>
<b>Scheduled Start of Commercial Operation</b>	<b>FY 2011</b>

**Thank you very much  
for your Attention!!**



**New Business Development Dept.**

**Nishinippon Environmental Energy Co., Inc.**