

Conserving biodiversity by utilizing wood thinned from forests as biomass fuel for power generation



Nobeoka city

Asahi Kasei Corporation

Location of Nobeoka city and Gokase River

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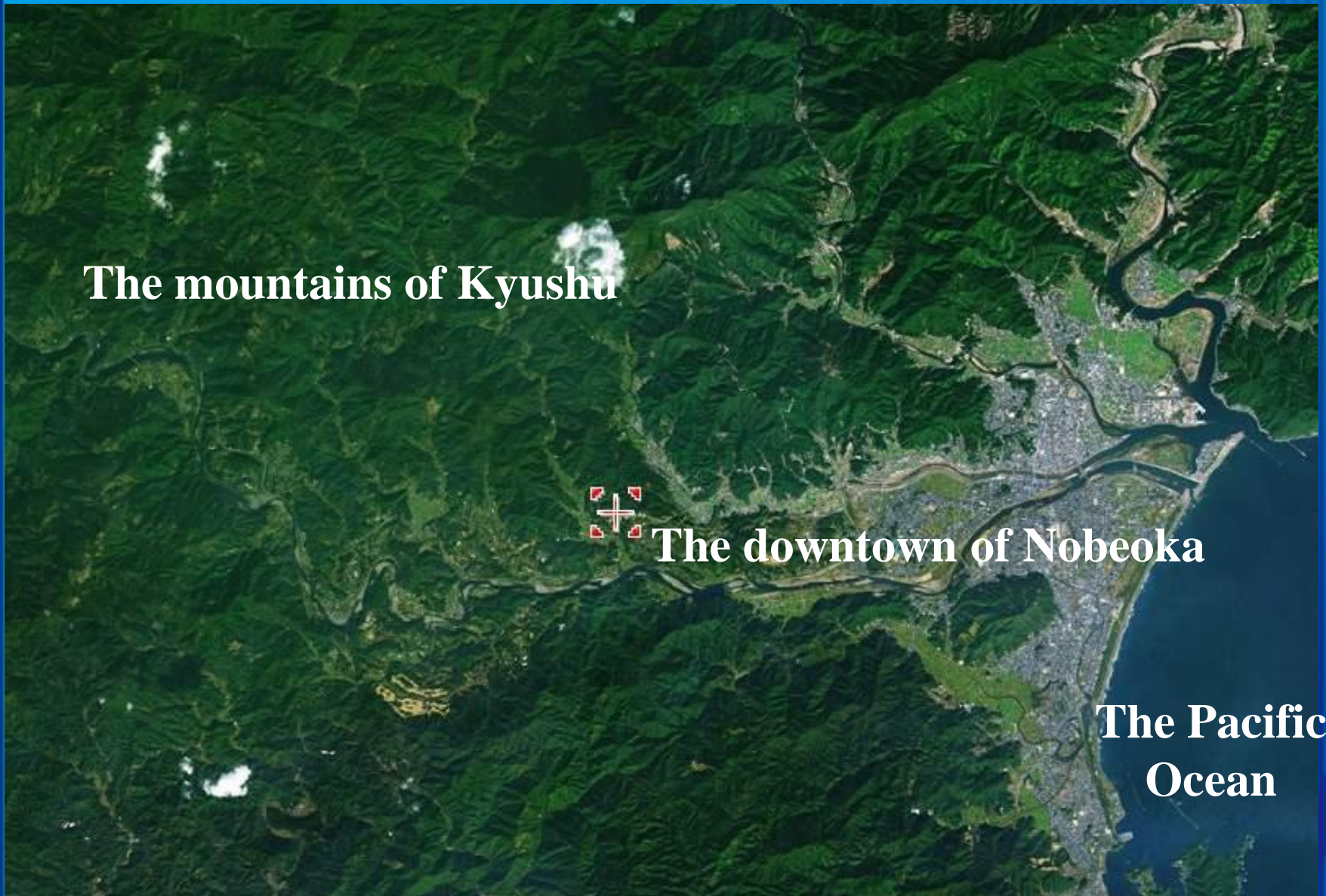
Location of Nobeoka city

and Gokase River watershed area **AsahiKASEI**



Location of Nobeoka city

and Gokase River watershed area Asahi**KASEI**



The downtown of Nobeoka city

Asahi**KASEI**



Nobeoka district consists of twenty five plants **AsahiKASEI**

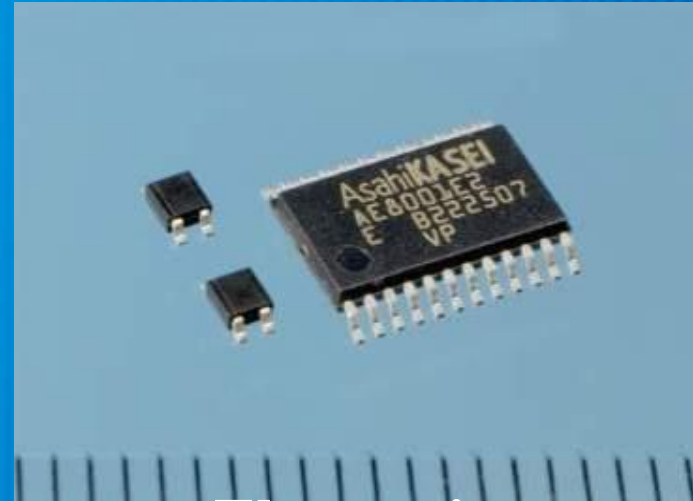


Major products manufactured in Nobeoka city by Asahi Kasei

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Chemicals



Electronics



Health Care



Fibers

Power plants of Asahi Kasei

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Four thermal power plants



Nine hydro power plants

**Capacity : 180,000 kW
electricity at maximum**

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Construction of the second wood biomass power plant

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Generating electricity using woodchips and coal



**Wood biomass,
100,000 tons per year**



Coal, 20,000 tons per year

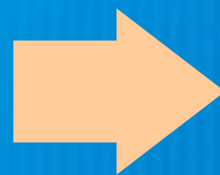
Scheduled start-up: July 2012

Fuel composition*: Wood biomass, 60%
Coal, 40%

* by energy content

Major raw materials for woodchips

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**Wood material from
construction waste**

Woodchips

**100,000 tons of woodchips will cut CO2
emissions from fossil fuel by 170,000 tons per
year**

Forests in Gokase River watershed area

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**Artificial forests
account for 60% of
all the forests**



Forestry and lumber production are major industries in Nobeoka city

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Declining



The issues that forestry and artificial forests in Gokase River watershed area have.

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- 1. Regeneration of old artificial forests doesn't progress**
- 2. Declining of the local communities in the mountainous area**
- 3. Impairing biological diversity because the surface doesn't get enough sun**





Study of procuring and combusting woodchips

Regeneration of old artificial forests doesn't progress

Help to solve

Declining of local communities in the mountainous area

Impairing biological diversity in the old artificial forests

The members of the procurement and combustion study **AsahiKASEI**



**The agriculture and forestry
department of Nobeoka city**



Nobeoka forestry association



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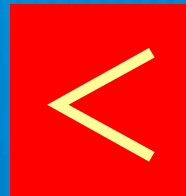
A issue for sustainable utilization of forest woodchips

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the selling price of woodchips is higher than that of coal by calorie basis



Logs for woodchips



Coal

Lowering the price of woodchips from the forests is a big challenge.

Procurement and combustion study at the existing power plant to develop a system for supplying low-priced woodchips AsahiKASEI



Cutting and carrying out logs

shipment



Chipping logs

shipment

The issues we want to identify :

Cost

Quality

Distribution



Combustion woodchips

Creating a system to enable woodchips from artificial forest to be utilized at cost competitive with coal



Coal



Logs from artificial forests

1. Promoting to regenerate old artificial forests
2. Stimulating forestry and local communities by contributing to the increase of employment opportunity
3. Restoring biodiversity in old artificial forests



Research of biodiversity change in artificial forests **AsahiKASEI**



**Underbrush and shrubs
among trunks of cedar**



Insects



Mammals



Birds

Thank you very much



Regeneration of old artificial forests doesn't progress



Old artificial forests, more than forty years old



Collection by clear cutting or thinning



Young trees



Afforestation, replanting ²³

local communities in the mountainous area

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A village with terraced rice fields



A small town in mountainous area



Terraced rice fields after harvesting



Kagura festival

Impairing biological diversity because the surface doesn't get enough sun

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**Present status,
Artificial forests with a little
light at the surface**



Ideal condition, thinning in row



Ideal condition, clear cutting and afforestation

A

Cost difference among the cutting and pulling out methods

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High cost



Logs discarded in forests



Pulling out logs while impeded by standing trees on steep slope

Low cost



Cutting over all the trees



Pulling out all the trees cut at the same time

Content of my presentation today

1. Nobeoka city and Gokase River watershed area.
2. The power plants we own now and the new wood biomass power plant being constructed.
3. The issues that forestry and artificial forests in Gokase River watershed area have.
4. Feasibility study of procuring and combusting woodchips from the artificial forests.
5. Expected benefits to forestry, local communities and biodiversity by the sustainable use of woodchips from the artificial forests.
6. Planned research for change in biodiversity by thinning, clear cutting and afforestation in the artificial forests