

バイオマス発電設備への間伐材等の利用による 生物多様性の保全

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



旭化成株式会社

ASAHI KASEI CORPORATION

旭化成の事業 Operating configuration AsahiKASEI

4つの事業領域 Four business sectors



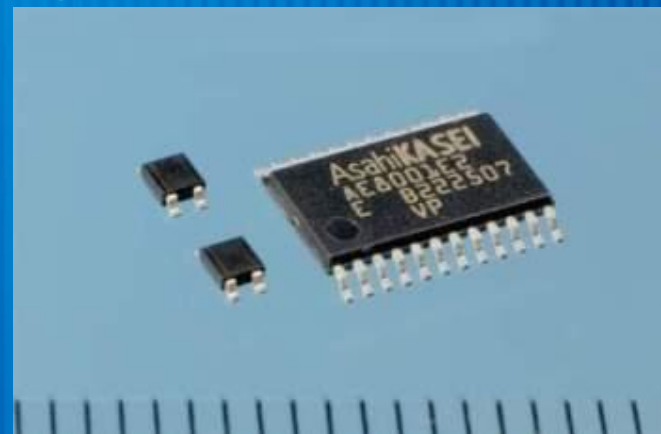
ケミカル・繊維
Chemicals & Fibers



住宅・建材 Homes &
Construction Materials



医薬・医療 Health Care



エレクトロニクス Electronics

五ヶ瀬川流域の位置

AsahiKASEI

Gokase River watershed area



出典: Yahoo Japan

五ヶ瀬川流域の位置

AsahiKASEI

Gokase River watershed area

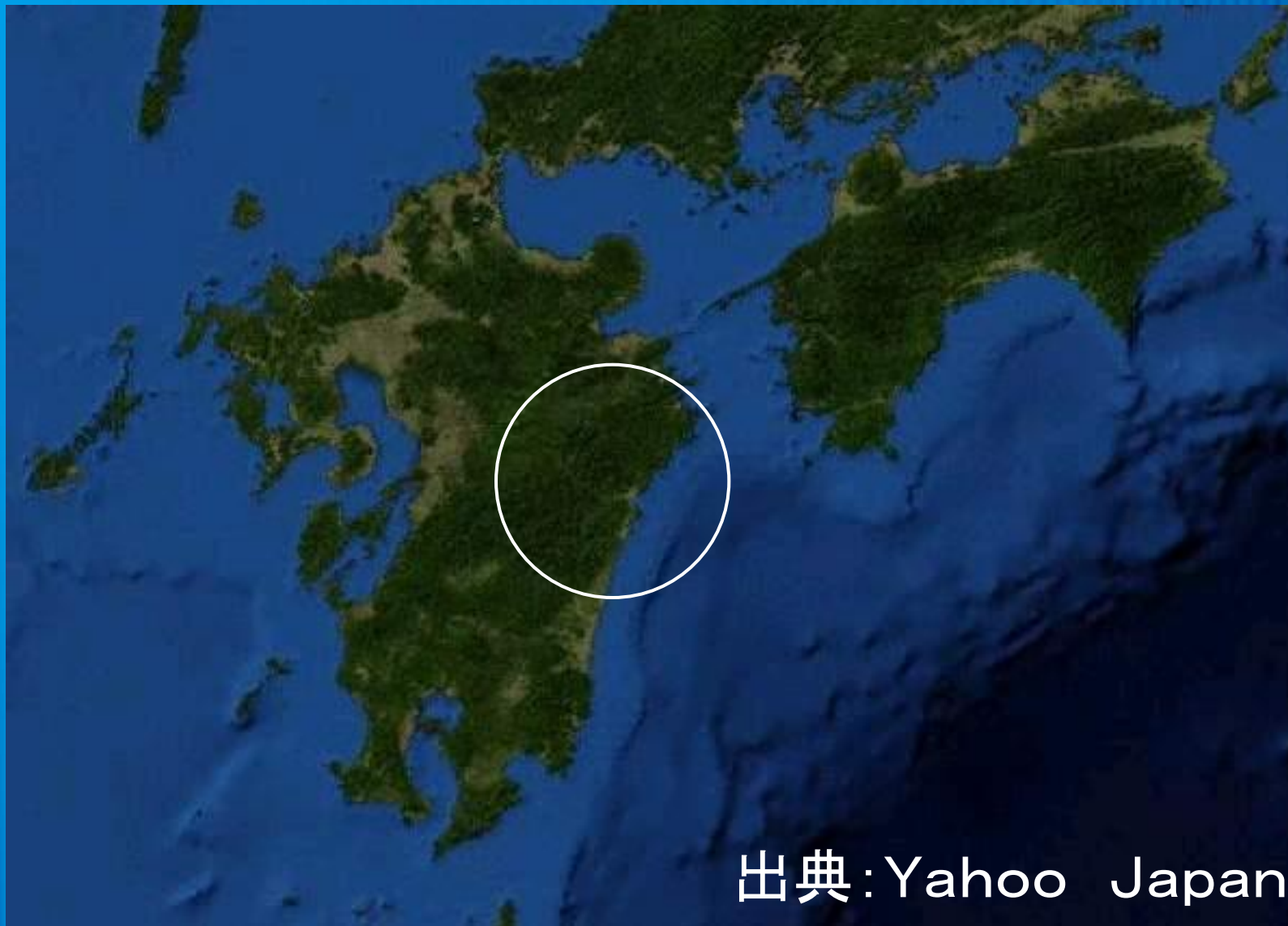


出典: Yahoo Japan

五ヶ瀬川流域の位置

AsahiKASEI

Gokase River watershed area



出典: Yahoo Japan

延岡市 Nobeoka city

AsahiKASEI



五ヶ瀬川流域の文化

Culture of the Gokase River watershed area

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花火大会
Fireworks



神楽
Kagura



商店街
Shopping arcade



鮎やな、鮎の塩焼き
Sweetfish weir, salt-roasted sweetfish



大師祭り
Odaisan festival



陸上大会
Track meet

バイオマス発電設備の建設

Construction of wood biomass power plant

AsahiKASEI



バイオマス発電設備の建設

Construction of wood biomass power plant AsahiKASEI

設備概要：蒸気80t/h、
電気---14,000kw

使用燃料：木質バイオマス60%、石炭40%

運転開始：2012年7月予定

Capacity: 80 tons/hour steam, 14,000 kW electricity

Scheduled start-up: July 2012

Fuel composition*: Wood biomass, more than 60%

Coal, around 40%

* by energy content

木質バイオマスと、石炭を混焼させて発電

Generating electricity using woodchips and coal

AsahiKASEI

再生可能エネルギーである木質バイオマスで発電
Generating electricity using woodchips, a renewable
source of energy, with coal.



石炭
Coal

+



木質バイオマス
Biomass fuel

主な木質バイオマスの原料

Major raw materials for woodchips

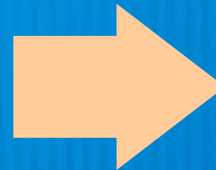
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未利用木材
Logs from forests



建築廃材
Wood material from construction waste



木材チップ
Woodchips

AsahiKASEI

AsahiKASEI

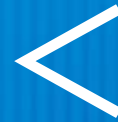
森林由来木質バイオマスを持続的に利用する上での課題
Issues for sustainable utilization of forest woodchips AsahiKASEI

未利用木材の木質チップは、エネルギー等価で、石炭よりも高い。

Woodchips from logs are more expensive than coal by energy content



石炭
Coal



未利用木材
Logs from forests

森林由来木質バイオマスが高い理由

Reasons for the high cost of logs

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日本の森林は急勾配であり、搬出が大変。
Very hard to cut and carry out wood from forests
because most of them are on steep slopes.



急勾配

Steep slope forests



重労働

Heavy labor

経済林の伐採が行われず、森林再生が進まない。

Regeneration of forests doesn't progress because commercial forest utilization is limited.

林業従事者数が減少傾向にある。

The number of forestry workers is decreasing.



山に捨て置かれた木材
Logs discarded in forests



伐採作業に従事する人々
Forestry workers

経済的に成り立つ森の循環利用システムの構築

Establishment of economic cycle of forest renewal AsahiKASEI

森林の循環利用 Sustainable cycle of forest use

雇用拡大 Employment opportunity

生物多様性の保全 Maintaining biodiversity



五ヶ瀬川流域の経済林

Gokase River watershed area forest economy

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森林組合、延岡市、旭化成で五ヶ瀬川水系からの木材調達試験を実施
Study of chip procurement with forestry assoc. & Nobeoka city **AsahiKASEI**



延岡市
Nobeoka city



延岡地区森林組合
Nobeoka forestry association



旭化成
Asahi Kasei

五ヶ瀬川水系から木材を調達し、チップ化して
既存の木質バイオマス発電所で燃焼させる

Combustion with woodchips at an existing power plant



運搬
shipment



運搬
shipment

五ヶ瀬川水系の木材を搬出
Cutting and carrying out wood

チップ化
Chipping

以下の視点で課題を抽出

Issues:

調達コスト	Cost
物流ルート	Delivery
品質レベル	Quality



木質チップを燃焼させる
Combustion with woodchips

石炭に近いコストで、森林由来の木質チップを利用できる仕組みづくりを目指す

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



石炭
Coal



未利用木材の木質チップ
Logs from forests

昔の森に戻す活動 Reviving the old forest AsahiKASEI



五ヶ瀬川流域の位置と気候

Location and climate of Gokase River watershed area

- Nobeoka is located between $131^{\circ}25'43''$ and $131^{\circ}53'09''$ east longitude and $32^{\circ}29'23''$ and $32^{\circ}50'19''$ north latitude.
- The Gokase River watershed area extends from Nobeoka westward and northward into the mountains of Kyushu. It is bordered on the east by a rias coastline on the Sea of Hyuga.
- The climate is warmed by the Kuroshio Current. Average annual temperature is around 16°C .
- It is a high rainfall, high humidity area, with annual precipitation exceeding 2,300 mm and average annual relative humidity of around 70%.
- Sunlight per year exceeds 2,100 hours.