

— The 13th Environment Congress for Asia and the Pacific —

Cutting carbon dioxide with biomass boilers

NAGOYA PULP CORPORATION

エリエール



Company Overview

Established	: April 10 th , 1956
Capitalization	: ¥300 million
Sales	: ¥62.3 billion
No. of employees	: 560
Production volume	: 400,000 tons of bleached pulp and 330,000 tons of paper/year
Address	: Dota 500, Kani-shi, Gifu Prefecture, Japan



NAGOYA PULP CORPORATION

Paper manufacturers that utilize wood materials and recycled paper to make pulp and paper



エリエール®

Elleair tissues and toilet paper

エリエール



Information-related paper (including copy paper)

エリエール



Special-use paper for foodstuffs, etc.

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Environmental Management Initiatives

Our objective

Cut carbon dioxide emissions in order to combat global warming from our stance as a corporation committed to ensuring a better environment

- ① Making effective use of recycled paper
- ② Extension of afforestation area and protection of forests
- ③ Making effective use of energy
- ④ Acceleration on Zero-Emission

The Kyoto Protocol

Effective February 16th, 2005

— Japan's obligation —

Cut greenhouse gasses including carbon dioxide by 6% over the period of 2008-2012 (on 1990 levels)

Making effective use of energy

Carbon dioxide emissions cut by 36% with biomass boilers

Impact of biomass boiler operations launch as of May 2004

Carbon dioxide: 36% reduction on 1990 levels,
or 74,000 tons in one year

Crude oil equivalent: 28,000 kl reduction in one year

Biomass boiler fuel



Scrap wood/disassembled waste materials: 13,100 tons/month (calorie basis 75%)

Biomass boiler fuel



**Tire material: 1,700 tons/month
(calorie basis 20%)**

Biomass boiler fuel

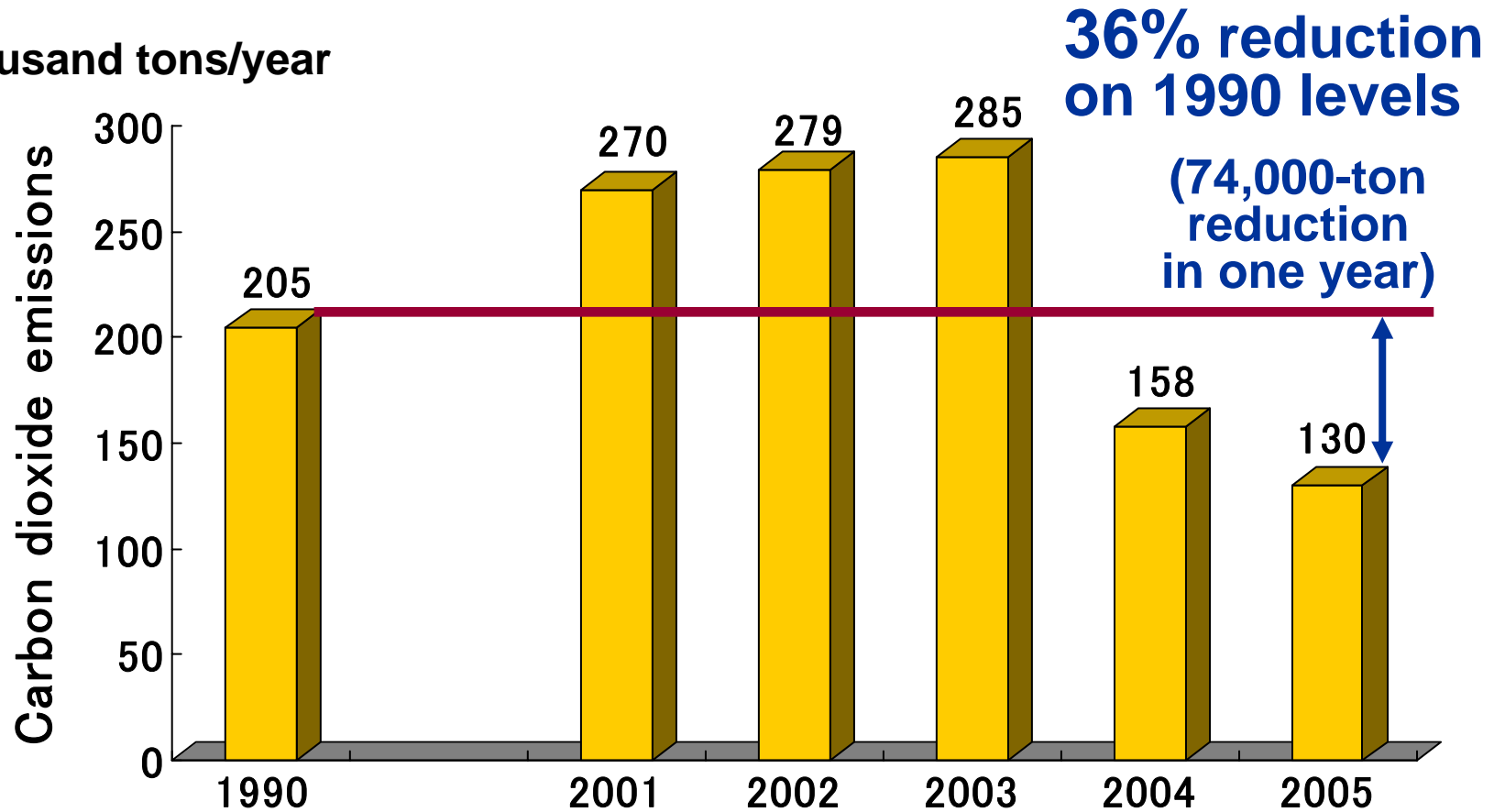


**Refuse Paper & Plastic Fuel:600 tons/month
(calorie basis 5%)**

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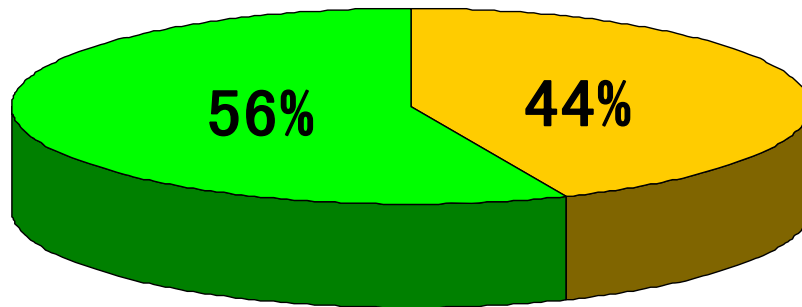
Trends in carbon dioxide emissions

Thousand tons/year



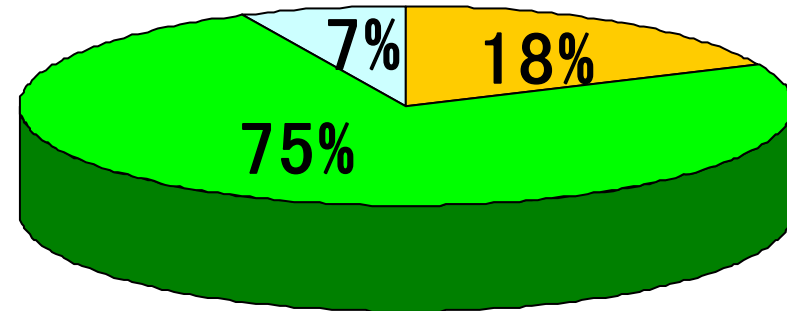
Breakdown by fuel type

1990



2005

Subsequent to biomass boiler launch



■ Fossil fuels

■ Biomass fuels

■ Tire, paper, and plastic fuels

Overview of biomass boiler electric power facilities

— Boiler equipment —

Steam evaporation: 117.5 tons/hour

Steam conditions: 12.65MPa × 541°C

Combustion type: Bubbling Fluidized Bed

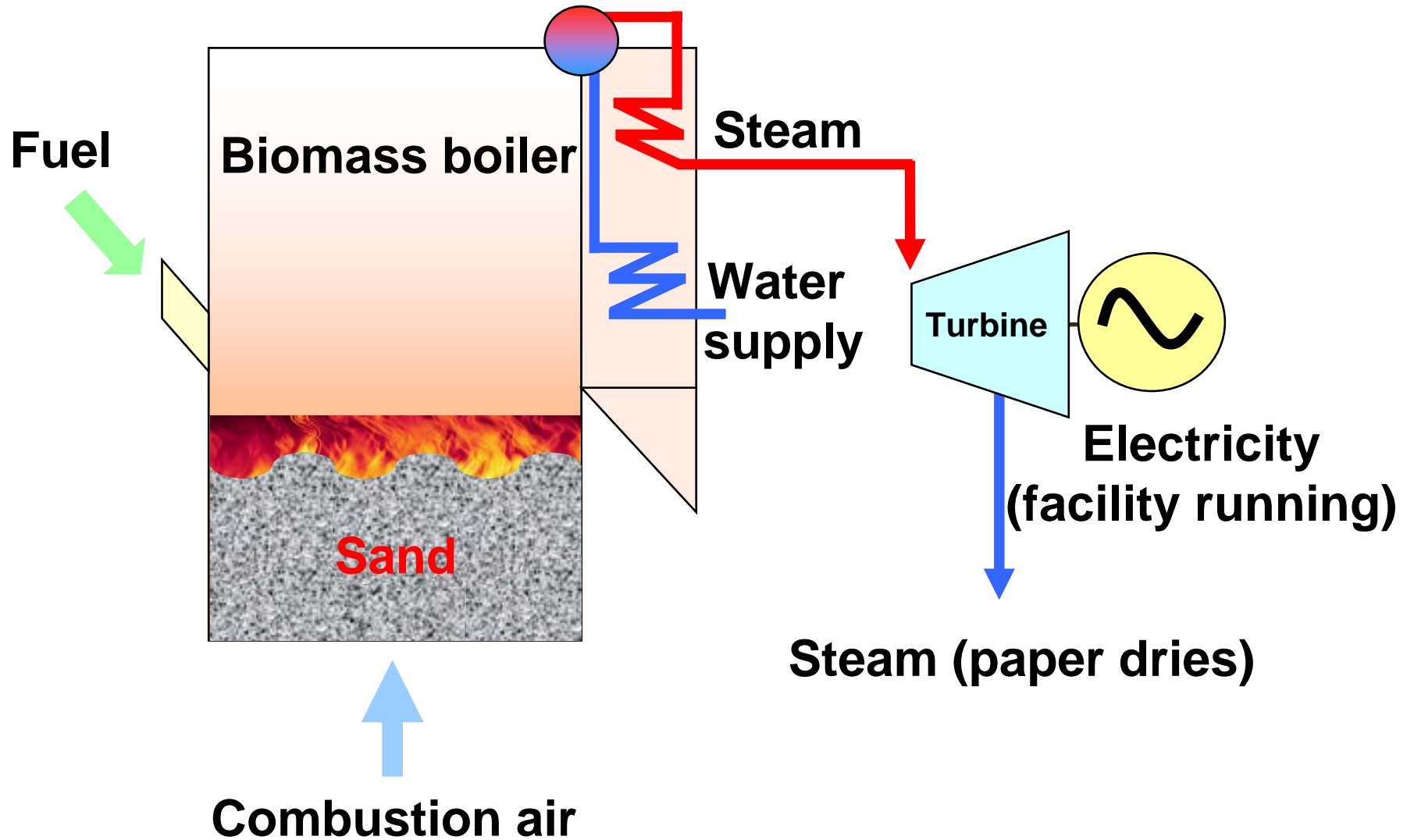
— Electric power facilities —

Output: 29,300 kw



**Height: 49 m
(approximately
the same as a
16-story
building)**

Biomass boiler flow



Background to the introduction of biomass boilers

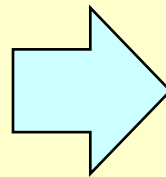
Background

- ① **Scrap wood easy to obtain due to close proximity to Nagoya and Gifu cities**
- ② **Fallen trees and thinned wood readily collectible due to close proximity to the Japan Alps**
- ③ **Solutions needed on issues of illegal dumping of waste tire material/disposal of scrap wood**

Impact

- ① Making positive contributions to local community/instituting thermal recycling
- ② Terminating the use of heavy oil boilers and substituting with four units using biomass fuel

Two heavy oil boilers
Two recovery boilers
One sludge boiler



One biomass boiler
Two recovery boilers
One sludge boiler

Meeting the challenge of further cuts in carbon dioxide emissions

Reducing carbon dioxide levels under the 2nd biomass boiler plan

Carbon dioxide: Cut by 83% on 1990 levels,
or 170,000 tons in one year

Crude oil equivalent: 65,000 kl reduction
in one year

Level of evaporation: 160 tons/hour

Electric power output: 43,000 kw