

CO2 emissions from woody biomass combustion are higher than coal

Greenhouse gas emissions from wood combustion

	GHG emissions Unit: kg CO ₂ /TJ (1 TJ=278 MWh)				
	natural gas	bituminous coal	anthracite coal	lignite	wood
carbon dioxide CO ₂	56,100	94,600	98,300	101,000	112,000
Methane CH ₄	1	1	1	1	30
Nitrous oxide N ₂ O	0.1	1.5	1.5	1.5	4

Source: Chatham Houses, UK, 2017.

The National Institute for Environmental Studies also reports that the carbon emission coefficient of wood is greater than that of coal

Wood: 29.6 t-c/TJ Imported general charcoal: 24.3 t-c/TJ

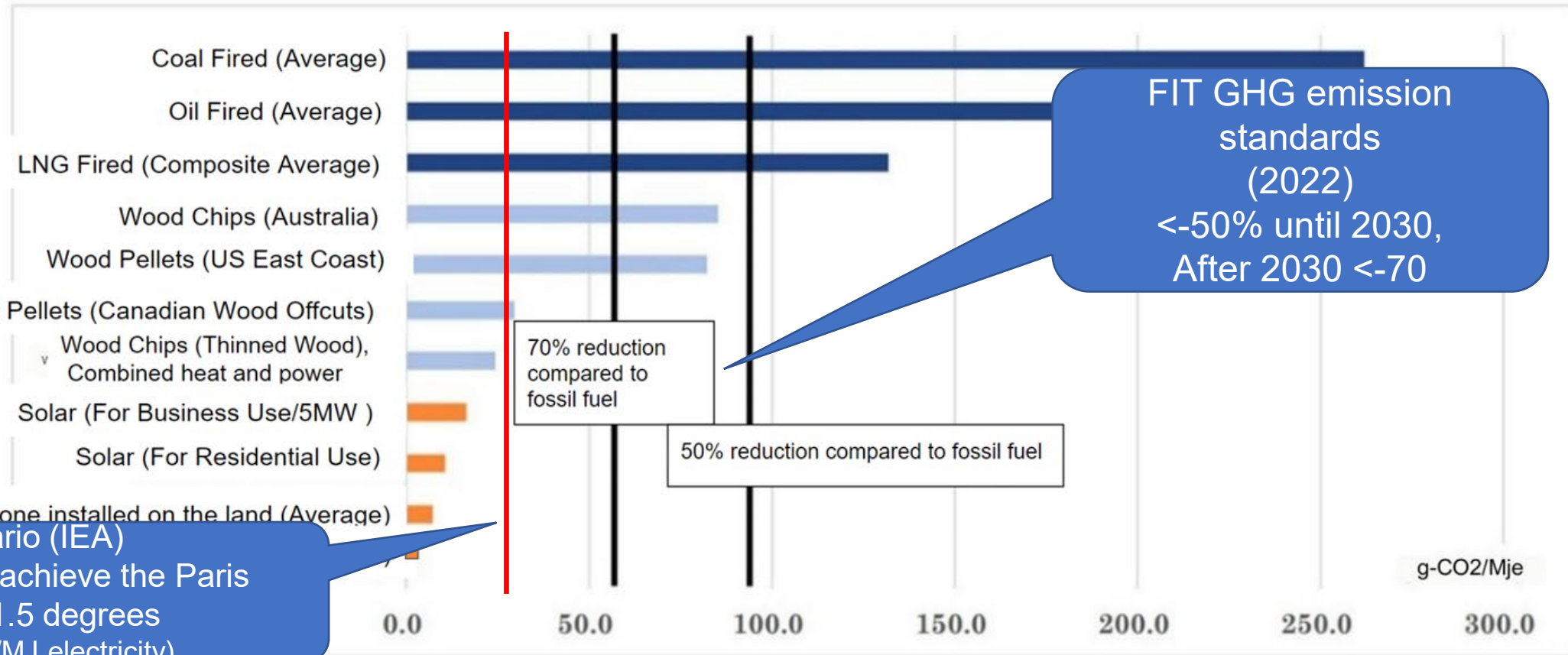
Japan Greenhouse Gas Inventory Report (2021), p3-16

http://www.nies.go.jp/gio/archive/nir/jqjm1000000x4g42-att/NIR-JPN-2021-v3.0_J_GIOweb.pdf

GHG emission standards for FIT biomass power generation

Figure: GHG emissions of biomass-generated electricity for each power source and fuel type (excluding CO₂ emissions from biomass combustion)

Source: 12th Biomass Sustainability Working Group Source: Compiled by Tomari, Biomass Industrial Society Network, from Central Research Institute of Electric Power Industry (2016) Comprehensive Life Cycle CO₂ Emissions Assessment of Power Generation Technologies in Japan.



SD Scenario (IEA)
A value that could achieve the Paris Agreement 1.5 degrees
(27.154 g-CO₂/MJ electricity)

50% reduction in the ratio of fossil fuels by 2030 and 70% reduction after 2030 are required.

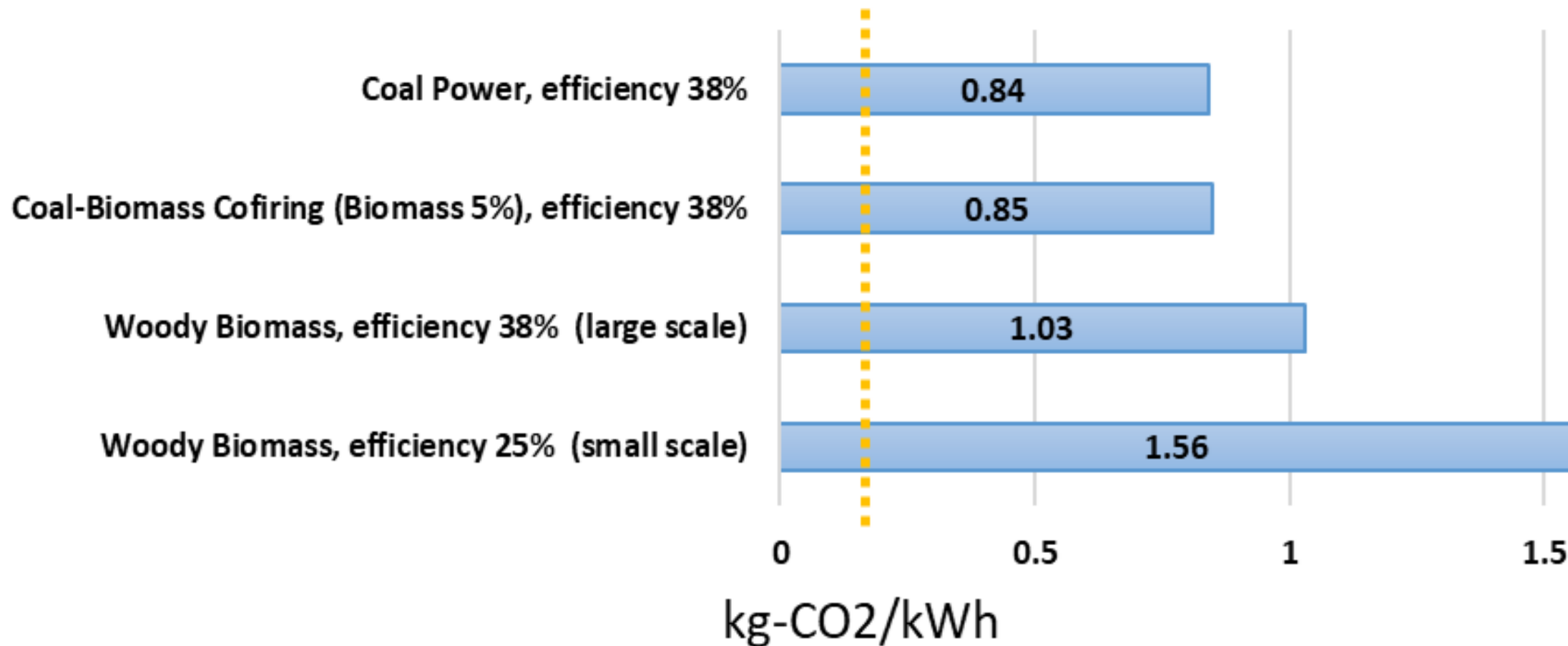
Does not include CO₂ emissions from combustion

GHG emission standards only apply to newly certified projects from 2022 onwards (almost none)

The number of already certified power plants (780) is not included in the scope of the project and only information is disclosed.

Even at -70%, the 1.5 degree target will not be achieved.

Biomass power generation and coal co-firing - if CO2 emissions from combustion are included?



Rules for Counting/Reporting of CO2 emissions from biomass combustion

IPCC National Greenhouse Gas Inventory Guidelines (2006)

When trees are harvested and removed, count emissions in the land use sector of the harvested areas, not in the energy sector.

【Reason】 To avoid double counting

However...

2019 Refinement to the 2006 IPCC Guidelines(12.5.1)

When using inventory estimates to assess CO2 emissions from energy use (including wood), relevant emissions estimated in the energy and land use sectors need to be considered

The misconception that "biomass is carbon neutral"

Reporting emissions from biomass combustion

Renewable Energy Feed-in Tariff (FIT)

Task Force on Climate-related financial disclosures (TCFD)

CO2 from biomass combustion is not counted.

Accounting of emissions from biogenic carbon is not specifically specified

GHG Protocol

Report CO2 emissions data from biomass/biofuel combustion separately from emissions from fossil fuels (Scope 1-3).

SBTi Corporate Net Zero Standard

Companies using bioenergy must report direct CO2 emissions from biomass combustion, processing, etc.

While the scientific fact that "CO2 emissions from combustion, Rules for accounting for CO2 emissions are in disarray."

Good Practices for Wood Biomass Power Generation by Financial Institutions

HSBC-HSBC Energy Policy (2022)

- Apply criteria such as "low life-cycle greenhouse gas emissions" and "minimising deforestation" to new financing and advisory services for power generation of 10 MW or more

Triodos Bank - Vision Paper on Energy and Climate (2019)

- use of biomass in power generation to reduce carbon emissions may contribute to loss of biodiversity. (•••) Burning of biomass for power production or application in mobility should be avoided.

Triodos Bank's answers to the NGO's questions (2021)

- In new financing deals, therefore, we no longer focus on biomass for power generation.

Good Practices for Wood Biomass Power Generation by Financial Institutions

AXA Investment Managers - "Looking for Green Assets" (2018)

- Biomass and biogas power are only eligible for investment if net emission reductions can be demonstrated with no deforestation.

Insight Investment - PUTTING PRINCIPLES INTO PRACTICE 2018 RESPONSIBLE INVESTMENT REPORT

- Burning wood pellets releases a material amount of CO2 and could accelerate deforestation if the technology is adopted on a large scale.

Rabo Bank Sustainability Policy Framework

The Bank expects its clients to

- Not to produce biofuels that contain raw material obtained from land with high carbon stock, such as HCV forests and peatlands;
- To produce biofuels that provide clear greenhouse gas emission benefits after considering the entire lifecycle of raw material compared to fossil fuels, where natural resources are used as efficiently as possible;
- To ensure that the biomass/feedstock used for the biofuels does when there are indications of local food insecurity.

Good Practices for Wood Biomass Power Generation by Financial Institutions

From the Sustainability Report of a major Japanese life insurance company

“In principle, we will not engage in investments or loans for coal-fired power generation projects that have a significant impact on climate change due to greenhouse gas emissions, new construction or renewal of coal-fired power generation facilities for companies, or new construction or renewal of biomass power plants that use palm oil (palm kernel shells) or imported wood chips as fuel.”

□ From the company's Sustainability Report

It is confirmed that this exclusion policy includes wood pellets

(**ShareAction, 2021.**)

Countdown to COP26 An analysis of the climate and biodiversity practices of Europe's largest banks.

Burning forests in the name of clean energy?

ShareAction, 2019. The Biomass Blind Spot.