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Carbon Accounting

—Approach to the Climate Change Issue through Project Financing—

Carbon Accounting: An evaluation of business activities involving CO₂ focused on the amount of greenhouse gas emissions (GHG) related to CO₂ produced or reduced by business activities.

Mizuho Corporate Bank, Ltd., developed its own methodology, "Carbon Accounting", to evaluate "Environmental Burdens" and "Environmental Preservation Effects" in power plant projects it financed via project finance. Our evaluation approach is described and the results published since First half of FY 2006, as below.

Objective of Carbon Accounting

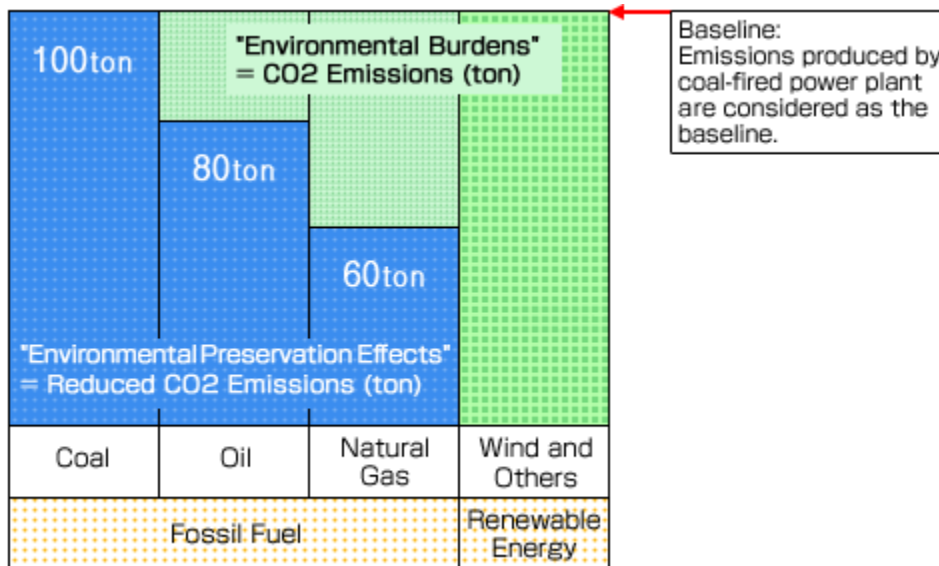
While climate change has become globally challenging issue, a variety of approaches including the Kyoto Mechanism have started to be implemented by governments, companies and environmental organizations at the global level. Some financial institutions have examined quantifying the amount of greenhouse gas (GHG) emissions from financed projects. For example, the International Finance Corporation has established a requirement for project companies to quantify the amount of GHG emissions from projects that are estimated to emit, annually, more than 100,000 tons CO₂. Some financial institutions have begun to quantify GHG emissions for projects borrowing over a predetermined amount of money and publishing the result. The importance of dealing with climate change is increasingly recognized as a social responsibility that financial institutions executing "responsible financing" should undertake. Reviewing these global trends, Mizuho Corporate Bank, Ltd., assessed the impact of its project finance projects on the environment and to what extent they contributed to environmental preservation using its own methodology. We are pleased to publish the result of that evaluation.

Outline of Carbon Accounting

Power Plant Projects (fossil fuels and renewable energy sources such as wind power) are target projects for Carbon Accounting applications. Mizuho Corporate Bank, Ltd., evaluates our indirect contribution to environmental improvement using two indexes: (1) Annual CO2 Emissions or "Environmental Burdens" and (2) Annual CO2 Emission Reductions, where the baseline assumed is determined by the amount of CO2 emitted from coal-fired power plants, referred to as "Environmental Preservation Effects".

There is no international standard method for quantifying the financial institution's contribution to CO2 emissions from projects that it financed. Our Carbon Accounting methodology is a step in that direction. Mizuho Corporate Bank will periodically review its methodology in an effort to improve the process of quantifying CO2 emissions. At the same time, it will review the scope of deals to which its Carbon Accounting can be applied.

[Conceptual Diagram of Mizuho Corporate Bank's Carbon Accounting]



(Legend)

- Blue Section: "Environmental Burdens" = CO2 Emissions (ton)
- Light Green and Green Section: "Environmental Preservation Effects" = Reduced CO2 Emissions (ton)
- The horizontal width stands for the amount of calorific value produced by each energy source.

- For this given amount of electricity produced, if the CO2 emissions generated by a coal-fired power plant are 100 tons, then the CO2 emissions in the case of an oil-fired power plant would be about 80 tons and a natural gas-fired power plant would be about 60 tons.(*1)
- In principle, CO2 emissions by renewable sources such as wind power are zero.

(*1)

CO2 emission factor of each energy source

(Unit:KgCO2/MJ)

- —Coal :0.0946
- —Oil :0.0733
- —Natural Gas :0.0561

(Source:IPCC Guideline2006)

Based on the condition that the amount of calorific value produced by each energy source is equal, CO2 emissions by coal are counted as "100", those of oil and natural gas are regarded as "80" and "60" respectively.

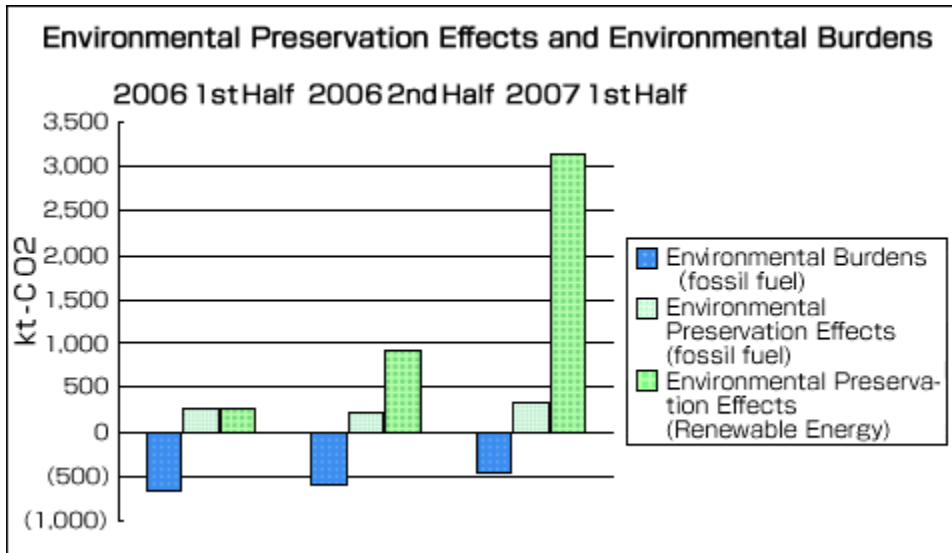
The Result of Evaluations of FY2007

The table below shows the result of power plant projects to which Carbon Accounting has been applied from 1st Half of FY2006 to 1st Half of FY2007. In 1st Half of FY2007, the total number of power plant projects is 7, including 4 fossil fuel-fired power plants and 3 renewable energy power plants.

(Unit: kt-CO2)

Source of Energy	Environmental Burdens (Mizuho's Contribution to CO2 Emissions *1)		Environmental Preservation Effects (Mizuho's Contribution to CO2 Emission Reductions *2)	
	FY2006	FY2007	FY2006	FY2007
Fossil Fuel-Fired Power Plant Project	1,282	953	491	654
Renewable Energy Power Plant Project	0	0	1,171	3,442
Total	1,282	953	1,662	4,096

1. *1:Equivalent to Blue Section in Conceptual Diagram.
2. *2:Equivalent to Light Green and Green Section in Conceptual Diagram.



How to Quantify Mizuho Corporate Bank's Contribution

*Hereinafter, Mizuho Corporate Bank is referred to as "MHCB".

<Target projects of MHCB's Carbon Accounting>

- Project financed power plant deals, either new projects or expansion of existing projects (hereafter, "Project A")

<How to Quantify MHCB's Contribution>

- MHCB's Contribution Ratio = Mizuho's Finance Amount / Project Total Cost : (a)%
- Annual CO2 Emissions by Project A: (b) ton (*3)
- Annual CO2 Emissions (if Project A had been coal-fired power plant) : (c) ton
- CO2 Emission Reductions by Project A : (c) - (b) = (d) ton
- MHCB's Contribution to CO2 Emissions : (b)×(a) ton
- MHCB's Contribution to CO2 Emission Reductions : (d)×(a) ton
- (*3)The calculation of annual CO2 emissions is below if Project A is a fossil fuel fired power plant project.

Annual CO2 Emissions = Annual Electricity Production × Heat Rate × CO2 Emission Factor

CO2 emission factors are adopted from IPCC Guideline. (IPCC: International Panel on Climate Change)