1 OBAYASHI CORPORATION

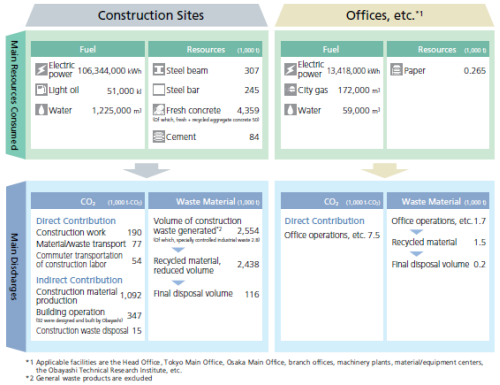
Companies' approach

☐ Background and purpose of accounting

- When the Kyoto Protocol became effective in 2005, we examined and publicized our emissions including part of our supply chain in order to determine the greenhouse gas emissions within our company and find what we needed to do.
- Since then, we have been accounting every year in order to check on the effectiveness of our measures.
- Understanding emissions helps to know our progress and to establish important sectors, so that establishing long-term goals is possible.

Source: Obayashi Corporate Report 2017

■ Material Flow for the Fiscal Year Ended March 31, 2017



☐ Utilization of accounting results

- The accounting results are used to determine which measures to emphasize and as material to discover priorities for the measures.
- With regard to external use, we are showing how much construction companies emit and describe the reasons for our measures.
- We also use the accounting results when environmental considerations are a requirement for bids. We use the results to show the types of measures we take and the reasons for them.

☐ Benefits of accounting

- In order to contribute to global climate change countermeasures, we can clarify what is important from the point of view of emissions and what we should do.

☐ Internal system for accounting

- The headquarters Environment Department collects overall data.
- With regard to materials, energy used by buildings based on design, energy used at work sites, waste, and labor related data, the data is collected by the various departments responsible for these areas.

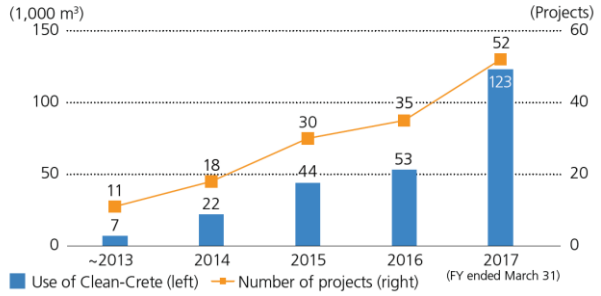
2 OBAYASHI CORPORATION

Companies' approach

☐ Efforts to reduce supply chain emissions

- Construction material production: Changing to an alternative to cement (development and use of a low-carbon concrete that reduces CO2 emissions during production by 80 percent), resource-saving design that reduces the use of materials.
- Construction: Energy-saving tower cranes and elevators, and reduced boring for civil engineering projects.
- Operation of customer buildings: Energy-saving design, etc.

Use of Clean-Crete (Cumulative)



Source: Cited from Obayashi Corporate Report 2017

☐ Issues in supply chain emissions accounting

- Primary subcontractors can provide data, but it is difficult for others.
- The accounting results show that 80 of calculations are estimates and only 20 are from actual results. We sometimes question if this is meaningful.
- Other than CO2, it is also necessary to examine the affects of resources, recycling and costs. Costs are especially important; otherwise, the results cannot be used as management criteria.
- It is necessary to make data collection as automatic as possible and with as little effort as possible. Basically, with respect to monetary data, collecting data from forms for checking is possible.
- When more accurate data is collected, there is a tendency for emissions to increase. Improving accounting methods leads to higher emissions, so it is difficult to assess the effectiveness of reduction measures.
- Our current mechanism does not allow for sufficient assessment, and we can only know the overall figures.

☐ Other

3 OBAYASHI CORPORATION

Category	Accounting methods	
	Activity data	Emission factor
Category 1: Purchased goods and services	<Construction material production> ● Procurement of major materials (collected by the head office, weight basis) <Construction> ● Diesel and electricity usage (sample about 40 percent of all construction sites to collect data and extrapolate)	<Construction material production> ● CO2 emission factor when producing materials (weight basis) ※1 <Construction> ● Emissions coefficient of greenhouse gas emissions calculations, reporting and publicizing system
Category 2: Capital goods	● Not calculated, because it is extremely microscopic	
Category 3: Fuel and energy related activities not included in Scope 1 or 2	● Amount of electricity used	● Emission factor per amount of electricity and heat used※2
Category 4: Transportation and delivery (upstream)	● Main material weight x Average transportation distance	● CO2 emission factor per ton-km※3
Category 5: Waste generated in operations	<Disposal > ● Waste disposal amount <Transport> ● Waste disposal amount x Average transportation distance	<Disposal> ● Processing and disposal CO2 emission factor※3 <Transport> ● CO2 emission factor per ton-km※3
Category 6: Business travel	● Not calculated, because it is extremely microscopic	
Category 7: Employee commuting	● Fuel usage when two employees use one vehicle for a round trip commute of 30 km ● Amount of transportation expenses paid	● Fuel consumption per fuel per maximum carrying capacity※2 ● Emission factor per amount of transportation expenses paid※2
Category 8: Leased assets (upstream)	● Not calculated, because it is extremely microscopic	
Category 9: Transportation and delivery (downstream)	● No relevant activities	
Category 10: Processing of sold products	● No relevant activities	
Category 11: Use of sold products	● Construction area by building type x Energy usage per area unit by building type	● Emission factor per amount of energy consumed (emission factor per area) ※4

4 OBAYASHI CORPORATION

Category	Accounting methods	
	Activity data	Emission factor
Category 12: End-of-life treatment of sold products	<Disposal > ● Waste dismantling amount <Transport> ● Waste treatment amount x Average transportation distance	<Disposal> ● Processing and disposal CO2 emission factor※3 <Transport> ● CO2 emission factor per ton-km※3
Category 13: Leased assets (downstream)	● Not calculated, because it is extremely microscopic	
Category 14: Franchises	● No relevant activities	
Category 15: Investments	● Not calculated because we are not relevant to the applied enterprise provided in the basic guideline	
Other	● Not calculated, because it is an option category	

	Source
※1	**LCA Guidelines for Building 2013 Input Output Table 2005**
※2	**Emission Factor Database on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain（ver.2.2）**
※3	**Emission factors based on our actual values**
※4	**An investigative report on the amount of energy consumed from buildings The Building-Energy Manager's Association of Japan 2013**

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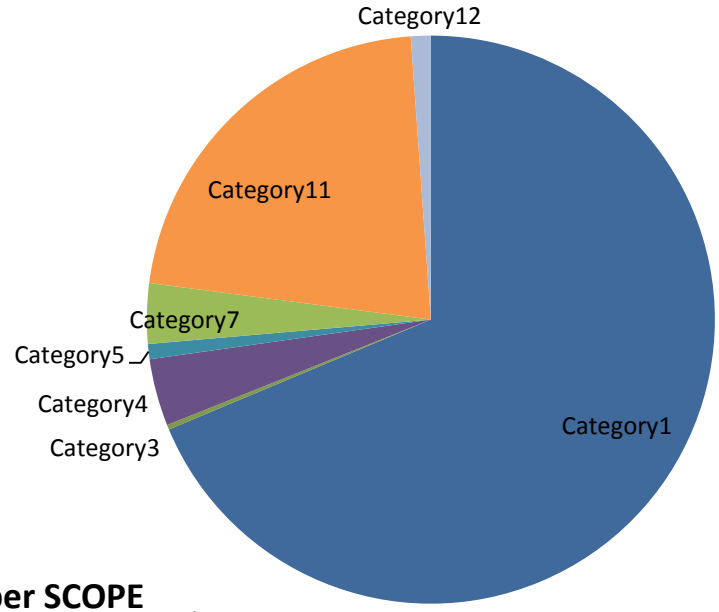
OBAYASHI CORPORATION

Accounting results

Scope 3 Emissions Ratio



Scope 3 Emissions Ratio

Category 1	Purchased goods and services	68.68%
Category 3	Fuel and energy related activities not included in Scope 1 or 2	0.27%
Category 4	Transportation and delivery (upstream)	3.82%
Category 5	Waste generated in operations	0.86%
Category 7	Employee commuting	3.43%
Category 11	Use of sold products	21.81%
Category 12	End-of-life treatment of sold products	1.13%

Ratio per SCOPE