1 Kajima Corporation

	Companies' approach
☐ **Background and purpose of accounting**	• To take action to tackle global warming, we realize the importance of understanding our overall environmental impacts, including both upstream and downstream activities. • Underlying this awareness are the following reasons: ○ The construction industry involves, as its products, buildings and other structures, which are social infrastructures intended for long-term use. => What matters environmentally is the environmental impacts buildings will have while they are in service. ○ The construction industry is a representative resource-intensive industry. => What also matters is the environmental impacts arising from the production, transfer, handling and disposal of building materials.
☐ **Utilization of accounting results**	• Identify and focus on priority issues to be addressed. • Evaluate the results of our efforts and activities. • Disclosing information to stakeholders.
☐ **Benefits of accounting**	• Enabled to evaluate the relevant environmental aspects quantitatively. • We can confirm the things that we should approach on, and it is also efficient for internal unity.
☐ **Internal system for accounting**	• The Environmental Management Committee, a subcommittee of the Corporate Environmental Committee, deals with and organizes the task of supply chain emissions accounting.

2 Kajima Corporation

	Companies' approach
☐ **Efforts to reduce supply chain emissions**	• Continuously improve the energy-saving performance of buildings designed by us. ⇒We account for, and draw on, CO2 emissions of created and constructed buildings while they are in service as one of the indicators to evaluate the results of our efforts. • Promote the utilization of recycled materials as building materials. ⇒We account for, and draw on reductions of CO2 emissions arising from the production of key materials as one of the indicators to measure the implications of the use of recycled materials. • Promote an effective use of construction sludge. => We account for and draw on those CO2 emissions data for waste disposal as one of the indicators to measure the importance of construction sludge in waste disposal.
☐ **Issues in supply chain emissions accounting**	• Validity of emission factors used, periodic review or revision of emission factors, social authorization of emission factors. • We use emission factors for the calculations, so it is difficult to visualize the evaluations of the results of our efforts for CO2 reduction. • Because the construction industry is based on orders received, the related supply chains differ by orders, covering a broad range. Therefore, the calculation of CO2 emissions without using emission factors is very hard work. • When it comes to the construction industry, a wide variety of materials are used at ever-moving, transient construction or production sites. In this context, we need to compromise to some extent in the accuracy or details, while ensuring a certain level of validity, when we undertake the task of supply chain emissions accounting.
☐ **Other**	• One of the huge roles the construction industry plays, towards realizing a low carbon society, is to provide highly energy saving buildings. • The amount of CO2 avoided emissions in the use stage of buildings designed and constructed by Kajima Corporation in FY2016 (equivalent to the amount of emission reduction for 30 years from the baseline of Act on the Rational Use of Energy) was 1,290,000 tCO2.

3 Kajima Corporation

Category	Accounting methods	
	Activity data	**Emission factor**
Category 1: Purchased goods and services	• The procured amount of crusher-run stone, asphalt, cement, and ready mixed concrete, which are the core materials in the construction industry, are subjected for accounting. • The procured amount is aggregated by using our internal development system. • Kajima Corporation's domestic activities are only subjected for accounting.	• Architectural Institute of Japan "LCA Guidelines 2006" • CO2 emission factors during the processing of each material are used
Category 2: Capital goods	• Amount of capital investment. • Kajima Corporation's domestic activities are only subjected for accounting	• Accounting is conducted based on the "Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.2) (March 2015) " published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry • Emission factors per price of capital goods are used
Category 3: Fuel and energy related activities not included in Scope 1 or 2	• Amount of energy consumed by electricity and steam • Kajima Corporation's domestic activities are only subjected for accounting	• Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.2) (March 2015) • Emission factors during the procurement of fuel are used
Category 4: Transportation and delivery (upstream)	• The procured amount of crusher-run stone, asphalt, cement, and ready mixed concrete, which are the core materials in the construction industry, are accounted by using our internal development system • The number of vehicles is accounted based on the procured amount of each material • The average transport distance by materials specified in BCS's (Japan Federation of Construction Contractor) "FY2007 survey results for grasping the environmental impact of buildings" is used for transport distance. • Kajima Corporation's domestic activities are only subjected for accounting	• The values specified in Japan Federation of Construction Contractors' "FY2011 CO2 emissions research manual", are used for fuel consumption of trucks

4 Kajima Corporation

Category	Accounting methods	
	Activity data	Emission factor
Category 5: Waste generated in operations	• Construction waste is subjected. Emissions and the amount of waste disposed are aggregated by using our internal development system • Among building constructions, CO2 emissions from construction waste emitted from demolition work, are excluded from this category because it is accounted in category 12 • Kajima Corporation's domestic activities are only subjected for accounting	• CO2 emission factors are set based on the results of our original research
Category 6: Business travel	• The number of employees • Kajima Corporation's domestic activities are only subjected for accounting	• Accounting is conducted based on the "Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.2) (March 2015) " published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry • Emission factor per number of employees is used
Category 7: Employee commuting	• Commuter expenses paid per vehicle type is aggregated • The amount paid are exchanged to the distance traveled for private cars • Kajima Corporation's domestic activities are only subjected for accounting	• Accounting is conducted based on the "Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.2) (March 2015) " published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry • Emission factor per travel expenses and emission factor per passenger･km is used
Category 8: Leased assets (upstream)	• Emissions from the office building which we moved-in as a tenant is included in the Scope 1 and Scope 2 emissions calculations	
Category 9: Transportation and delivery (downstream)	• Emissions from transportation of construction waste is accounted in Category 5 • Emissions from surplus soil generated from construction, which were carried out of the yard , are included in Scope 1 emissions calculations based on Japan Federation of Construction Contractors' accounting manual	

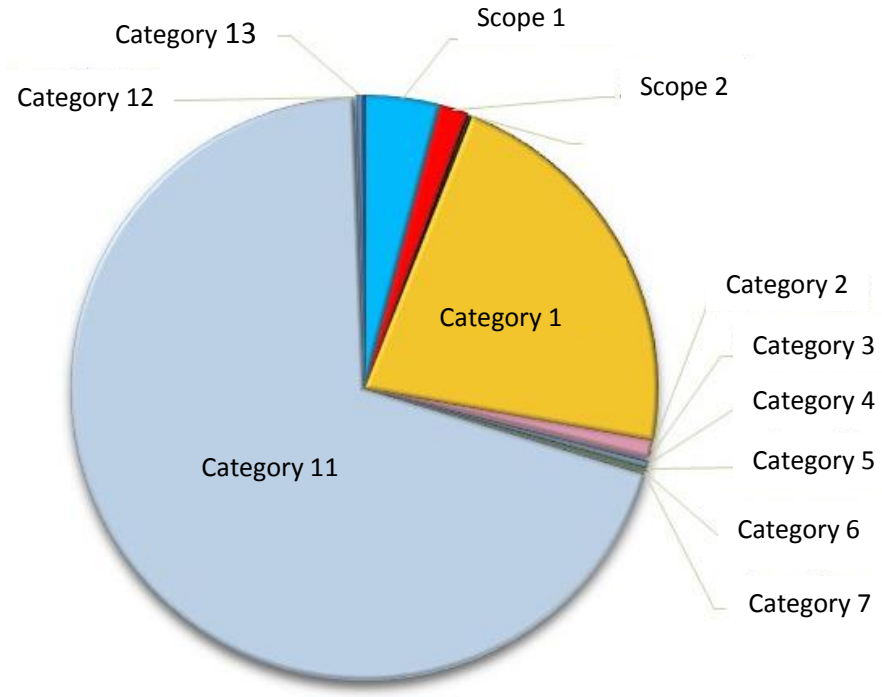
5 Kajima Corporation

Category	Accounting methods	
	Activity data	Emission factor
Category 10: Processing of sold products	• Not applicable, because our principal business is construction, not processing and sales of intermediate products, and its impacts are very small	
Category 11: Use of sold products	• The amount of energy consumed are accounted based on the energy plans created for each buildings • Consumption rates for each energy type set for each building usage are exchanged to CO2 emissions and are aggregated • The accounting method was changed in FY 2016. The amount of CO2 emissions of the buildings from the use stage to the end of lifetime includes in the accounting in the year which the building was designed and built.	• Accounting is conducted based on the “Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.2) (March 2015) ” published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry
Category 12: End-of-life treatment of sold products	• Among building constructions, CO2 emissions from construction waste emitted from demolition work is accounted. • Emissions and the amount of waste disposed are aggregated by using our internal development system	• CO2 emission factors are set based on the results of our original research
Category 13: Leased assets (downstream)	• The core building that we own for lease business are subjected for accounting • The amount of energy consumed are accounted based on the energy plans created for each buildings	• Accounting is conducted based on the “Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.2) (March 2015) ” published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry
Category 14: Franchises	• Not applicable because we don’t have any franchise company.	
Category 15: Investments	• Not applicable because investments from construction companies makes little sense as a business	
Other	• Activities could not be specified	

6 Kajima Corporation

Accounting results

FY2016 Emissions Ratio Per Scope



Accounting targets		Ratio (%)	Emissions (10,000t-CO2)
Scope 1	Direct emissions Construction	4.1	18.4
	Direct emissions Office	0.01	0.05
Scope 2	Indirect emissions originating from energies Construction	1.6	7.0
	Indirect emissions originating from energies Office	0.3	1.4
Scope 3	Indirect emissions other than Scope 1 and Scope 2	94.0	422.3
Category 1	Purchased goods and services	21.9	98.2
Category 2	Capital goods	1.0	4.6
Category 3	Fuel and energy related activities not included in Scope 1 or 2	0.1	0.6
Category 4	Transportation and delivery (upstream)	0.4	1.6
Category 5	Waste generated in operations	0.3	1.3
Category 6	Business travel	0.02	0.1
Category 7	Employee commuting	0.1	0.4
Category 8	Leased assets (upstream)	-	-
Category 9	Transportation and delivery (downstream)	-	-
Category 10	Processing of sold products	-	-
Category 11	Use of sold products	69.7	313.0
Category 12	End-of-life treatment of sold products	0.1	0.5
Category 13	Leased assets (downstream)	0.5	2.1
Category 14	Franchises	-	-
Category 15	Investments	-	-

※Category 11 “Use of sold products” of Scope3
The accounting method was changed in FY 2016
(Annual CO2 emissions in the use stage × Building lifetime)