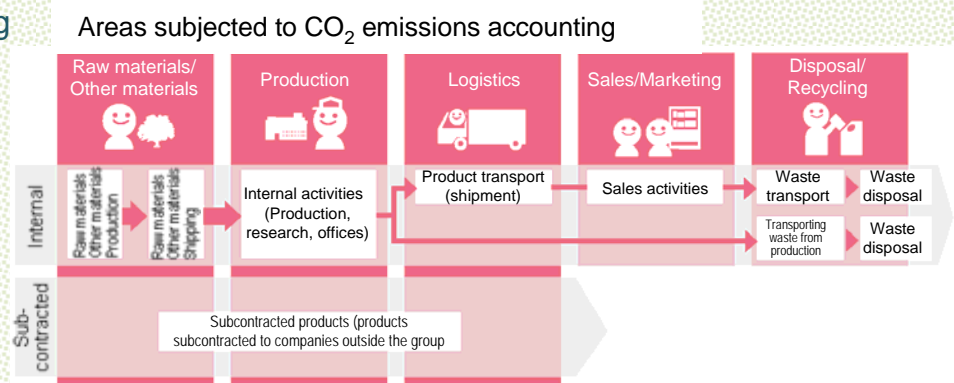


## Company thinking

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>Background and purpose for accounting</li> </ul> | <ul style="list-style-type: none"> <li>The Kirin Group has established a long-term environmental vision and is aiming for the "realization of a 100% resource recycling society" that balances the loads and makes it possible for the earth to handle the environmental loads generated by the value chain.</li> <li>Preventing "global climate change" is one of the four themes in our long-term environmental vision that also includes "water resources," "biological resources" and "containers and packaging." Our final goal is to reduce CO<sub>2</sub> emissions from the value chain to a level that can be absorbed by the earth by the year 2050.</li> </ul> |
| <ul style="list-style-type: none"> <li>Utilization of accounting results</li> </ul>     | <ul style="list-style-type: none"> <li>We will publicize our accounting results in CDP and on our web site.</li> <li>The accounting results will be used to confirm the effectiveness of our reduction of emissions and to study ways to reduce emissions.</li> </ul>   |
| <ul style="list-style-type: none"> <li>Advantages of accounting</li> </ul>              | <ul style="list-style-type: none"> <li>We were able to confirm that our emissions were high for the raw material procurement and sales stages. One of the major findings was that there are areas in which we can cope with the problems by ourselves and other areas in which we will require the cooperation of other companies.</li> <li>By proclaiming an emissions goal for the entire group, we were able to get the entire company on the same page in coming to grips with the problem.</li> </ul>  |
| <ul style="list-style-type: none"> <li>Internal accounting organization</li> </ul>      | <ul style="list-style-type: none"> <li>The data required for accounting is being collected from the various group companies by using a specified format.</li> <li>We are also receiving cooperation from an external consulting firm concerning data collection and emissions accounting.</li> </ul>  |



## Company thinking

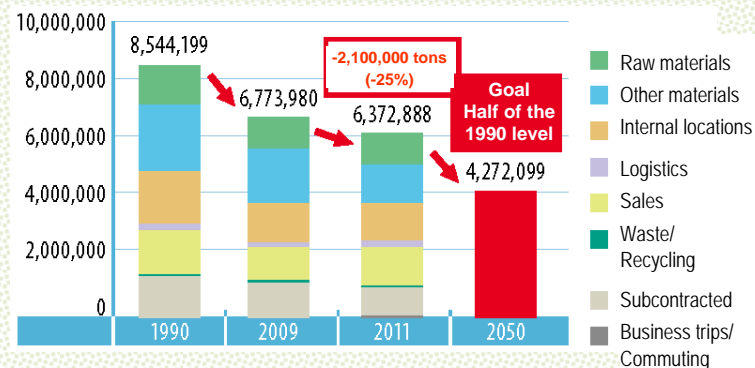
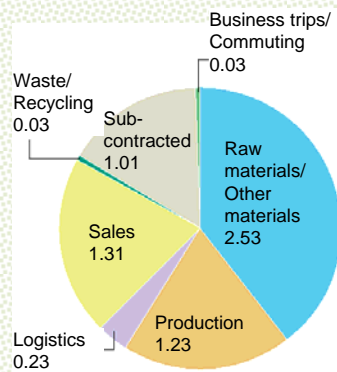
### □ To reduce supply chain emissions

- In 2009 the Kirin Group established the goal to reduce emissions from the entire supply chain to half of the 1990 level by the year 2050.
- In 2010 we created the "Value Chain CO<sub>2</sub> Accounting Standards" that are based on the "Scope 3 Standards" of the "GHG Protocol," and now understand the CO<sub>2</sub> emissions from our entire value chain.
- In 2012 we calculated the CO<sub>2</sub> emissions from our entire value chain in 2011 and confirmed that they were about 25 percent lower than the 1990 level.

Accounting results

Unit: million tons

	1990	2009	2011
Raw materials/ Other materials	3.61	2.91	2.53
Production	1.72	1.30	1.23
Logistics	0.26	0.20	0.23
Sales	1.48	1.12	1.31
Waste/Recycling	0.06	0.05	0.03
Subcontracted	1.40	1.20	1.01
Business trips/ Commuting	-	-	0.03
Total	8.54	6.77	6.37



[http://www.kirinholdings.co.jp/csr/report/pdf/report2013/environmental2013\\_2-04.pdf](http://www.kirinholdings.co.jp/csr/report/pdf/report2013/environmental2013_2-04.pdf)

### □ Tasks to account for supply chain emissions

- Because we have established a gross target, we must reconsider our thinking because emissions will increase when business is expanded and emission factors fluctuate.
- Accounting work must be made more efficient because data collection and accounting is labor intensive.

### □ For those starting to account for supply chain emissions

- Cooperation between the various departments is indispensable for accounting, so that it is necessary to reach an internal consensus before going forward.
- The awareness of the entire group can be improved in approaching this problem if a specific reduction goal is established.

Category	Accounting methods	
	Activity data	Emission factor
Category 1: Purchased goods and services	<ul style="list-style-type: none"> <li>Procurement quantities for each type of raw material and other material</li> </ul>	<ul style="list-style-type: none"> <li>Emission factor per raw material and other material type</li> </ul>
Category 4: Transportation and delivery (upstream)	<ul style="list-style-type: none"> <li>Fuel usage, logistics quantities (ton-km, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Emission factor per fuel usage and logistics quantities</li> </ul>
Category 5: Waste generated in operations	<ul style="list-style-type: none"> <li>Emissions by waste type</li> </ul>	<ul style="list-style-type: none"> <li>Emission factor per waste type (Scenarios set up)</li> </ul>
Category 6: Business travel	<ul style="list-style-type: none"> <li>Number of employees</li> </ul>	<ul style="list-style-type: none"> <li>Emission factor per employee (Scenarios set up)</li> </ul>
Category 7: Employee commuting	<ul style="list-style-type: none"> <li>Number of employees</li> </ul>	<ul style="list-style-type: none"> <li>Emission factor per employee (Scenarios set up)</li> </ul>
Category 9: Transportation and delivery (downstream)	<ul style="list-style-type: none"> <li>Sales by product category type</li> </ul>	<ul style="list-style-type: none"> <li>Emission factor per product category</li> </ul>
Category 12: End-of-life treatment of sold products	<ul style="list-style-type: none"> <li>Emissions by type of containers/packaging (Calculated for items subjected to the Container Recycling Act)</li> </ul>	<ul style="list-style-type: none"> <li>Emission factor per container/packaging type</li> </ul>