

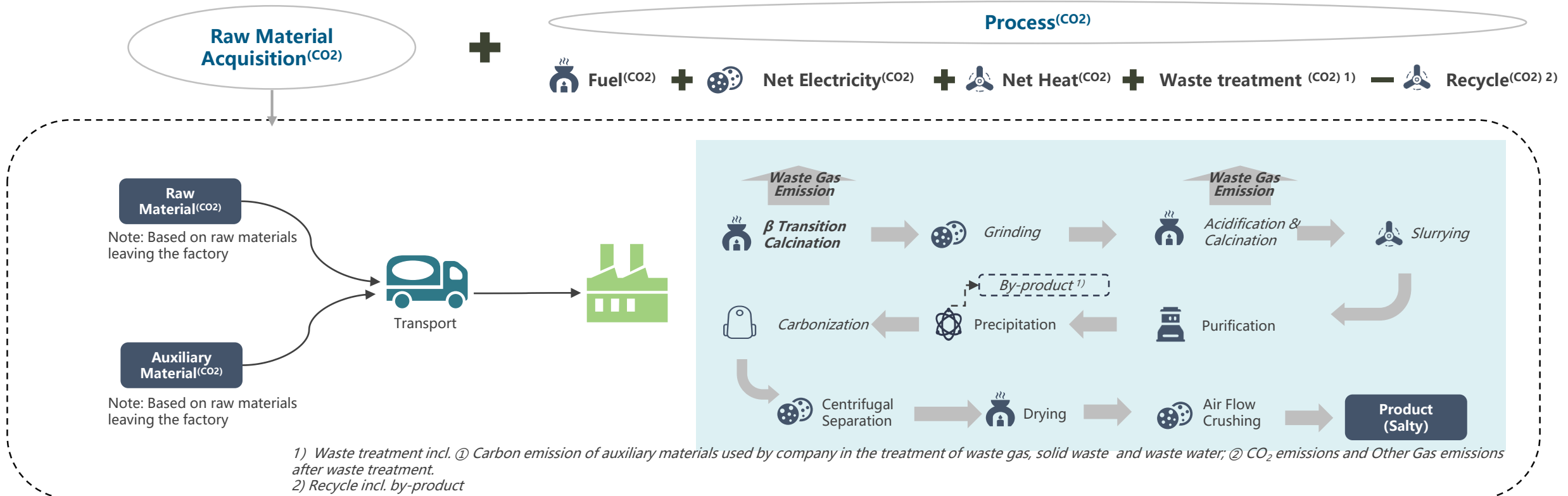
Lithium Carbon Footprint Study

Carbon Emission Calculation Methodology – Based LCA (1/2)

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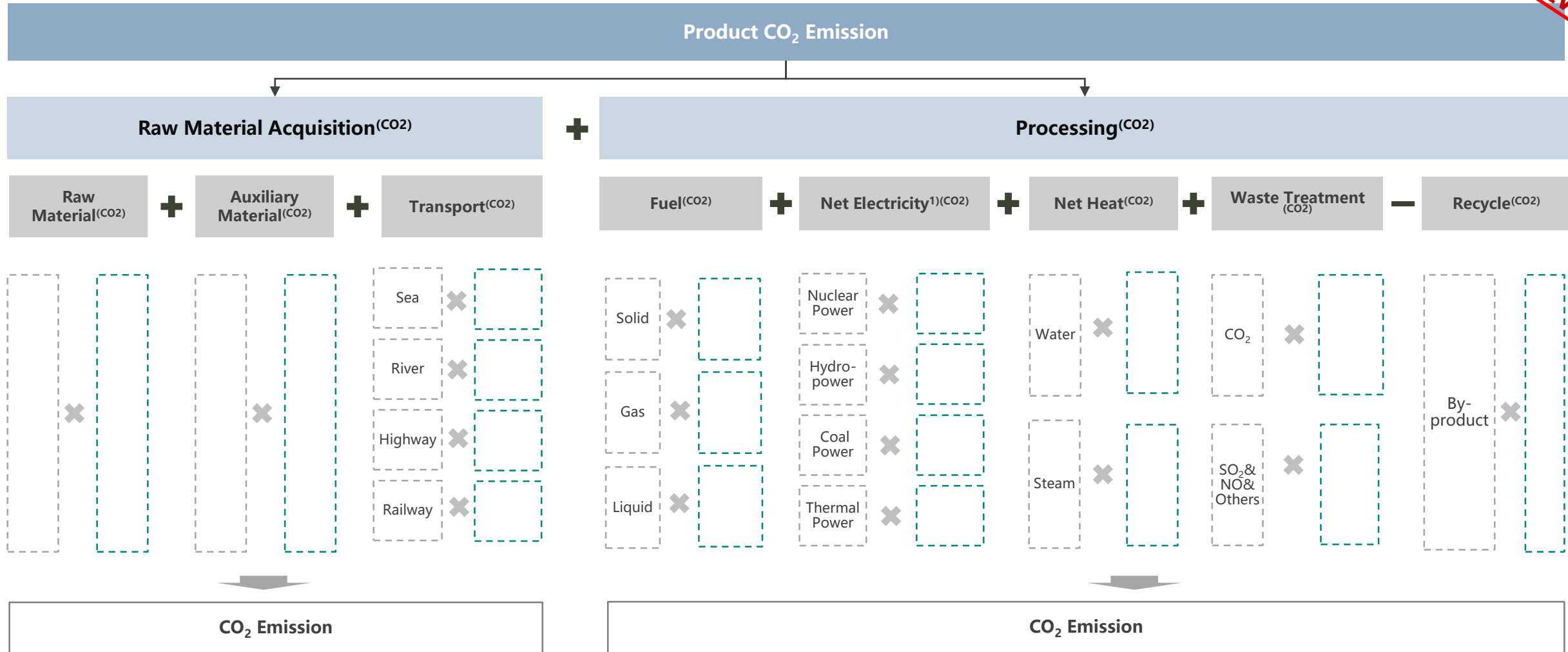
Basis of Product Carbon Boundary Calculation

- According to <ISO 14040>, <ISO 14067> and <Guidelines on Accounting Methods and Reporting of Greenhouse Gas Emissions of Mining Enterprises>, this project adopts the **product life cycle assessment (LCA)** method to calculate CO₂ emissions of products
- The product carbon emission boundary includes: raw material acquisition (incl. auxiliary materials), and the accounting boundary from production and packaging to factory delivery of products.



Carbon Emission Calculation Methodology (2/2)

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[Dashed Box] Unit consumption [Dotted Box] CO₂ emission coefficient

Note: 1) Represents the type of carbon emission of purchased power from the grid. If it is a self-owned power plant, the statistics are carried out according to the power generation method

Lithium Salt Supply Overview

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Lithium Salt Product	Company Name	Ore Grade (Li ₂ O)	Concentrate Grade (Li ₂ O)	Key Process Influencing Carbon Emission		
				β Transition Calcination	Acidizing Calcination	Others
LiOH (Li: 16.5%)	 赣锋锂业 GanfengLithium	xx% (Mt.Marion)	xx%	<ul style="list-style-type: none"> Coal: Heating Electricity: Rotary kiln Temperature: 1,200-1,400°C 	<ul style="list-style-type: none"> Coal: Heating Electricity: Acidizing kiln Temperature: 300-400°C 	Steam (Coal preparation): xx
	 天齐锂业 TIANQI LITHIUM	xx% (Greenbushes)	xx%	<ul style="list-style-type: none"> Natural gas: xx Electricity: xx Temperature: xx°C 	<ul style="list-style-type: none"> Natural gas: xx Electricity: xx Temperature: xx°C 	Steam (Natural gas preparation): xx
	 TJeeLi	xx% (Pilbara)	xx%	<ul style="list-style-type: none"> Natural gas: xx Electricity: xx Temperature: xx°C 	<ul style="list-style-type: none"> Natural gas: xx Electricity: xx Temperature: xx 	Steam: xx
Li ₂ CO ₃ (Li: 18.8%)	 赣锋锂业 GanfengLithium	xx% (Mt.Marion)	xx%	<ul style="list-style-type: none"> Coal: xx Electricity: xx Temperature: xx°C 	<ul style="list-style-type: none"> Natural gas: xx Electricity: xx Temperature: xx 	Steam (Coal preparation): xx
	 天齐锂业 TIANQI LITHIUM	Li ₂ O: xx% (Greenbushes)	xx%	<ul style="list-style-type: none"> Natural gas: xx Electricity: xx Temperature: xx°C 	<ul style="list-style-type: none"> Natural gas: xx Electricity: xx Temperature: xx°C 	Steam (Natural gas preparation): xx
	 致远锂业 ZHIYUAN LITHIUM	Li ₂ O: xx% (Mt Cattlin)	xx%	<ul style="list-style-type: none"> Natural gas: xx Electricity: xx Temperature: xx°C 	<ul style="list-style-type: none"> Natural gas: xx Electricity: xx Temperature: xx°C 	Steam (Natural gas preparation): xx

Lithium Hydroxide CO₂ Emissions Assessments

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Core Fuel Effects Carbon Emission



Carbon Emission **decrease**
~ **x,xxx kg CO₂**

- Coal: x,xxx kg CO₂
- Natural Gas: x,xxx kg CO₂

Location Effects Power Structure












Jiangxi
(Thermal power)



Sichuan
(Hydropower)

Carbon Emission **decrease**
~ **x,xx kg CO₂**

- Thermal power¹⁾: x,xxx kg CO₂/kWh
- Hydropower²⁾: xx kg CO₂/kWh

Companies	Core CO ₂ Influencing Factors	E_{CO_2} (Core Process)	E_{CO_2} (Others ³⁾)
	<p>Location: Jiangxi (Thermal power xx%) Main Fuel Source: Coal</p>	<p>Unit: kg CO₂/LCE ton</p> 	<p>Unit: kg CO₂/LCE ton</p> 
	<p>Location: Sichuan (Hydropower xx%) Main Fuel Source: Natural gas Measures to reduce energy consumption: Recycle rotary kiln's tail gas</p>		
	<p>Location: Sichuan (Hydropower xx%) Main Fuel Source: Biomass steam + Natural gas</p>		

■ Grinding ■ Acidizing Calcination
■ β Transition Calcination

1) Power structure: 100% thermal power
 2) Power structure: 100% hydropower
 3) Including non-core processes and waste treatment; non-core processes including purification, freezing, evaporation crystallization, etc.

Lithium Carbonate CO₂ Emissions Assessments

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Core Fuel Effects Carbon Emission



Carbon Emission decrease
~**x,xxx** kg CO₂

- Coal: x,xxx kg CO₂
- Natural Gas: x,xxx kg CO₂

Location Effects Power Structure










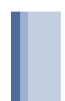

Jiangxi
(Thermal power)



Sichuan
(Hydropower)

Carbon Emission decrease
~ **x,xxx** kg CO₂

- Thermal power¹⁾: x,xxx kg CO₂/kWh
- Hydropower²⁾: xx kg CO₂/kWh

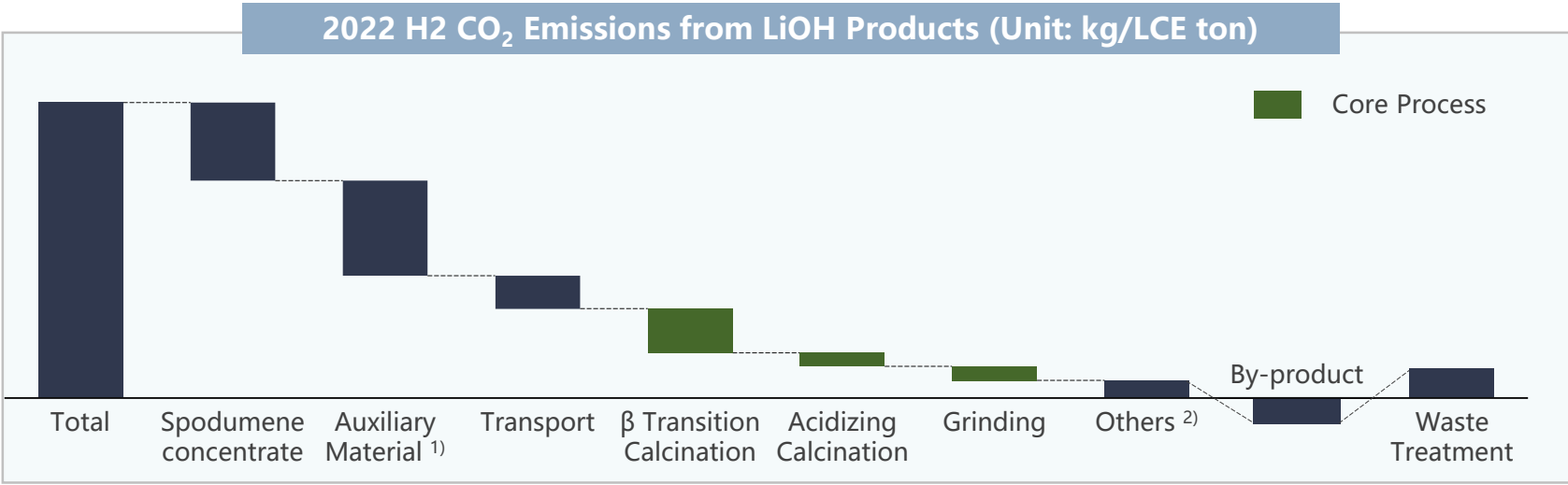
Companies	Core CO ₂ Influencing Factors	E_{CO_2} (Core Process)	E_{CO_2} (Others ³⁾)
	<p>Location: Jiangxi (Thermal power xx%) Main Fuel Source: Coal + Natural gas</p>	<p>Unit: kg CO₂/LCE ton</p> 	<p>Unit: kg CO₂/LCE ton</p> 
	<p>Location: Jiangsu (Thermal power xx%) Main Fuel Source: Natural gas Measures to reduce energy consumption: Recycle rotary kiln's tail gas</p>		
	<p>Location: Sichuan (Hydropower xx%) Main Fuel Source: Natural gas</p>		

■ Grinding ■ Acidizing Calcination
■ β Transition Calcination

1) Power structure: 100% thermal power
 2) Power structure: 100% hydropower
 3) Including non-core processes and waste treatment; non-core processes including purification, freezing, evaporation crystallization, etc.

Carbon Dioxide Emissions from Lithium Hydroxide Products – xxx

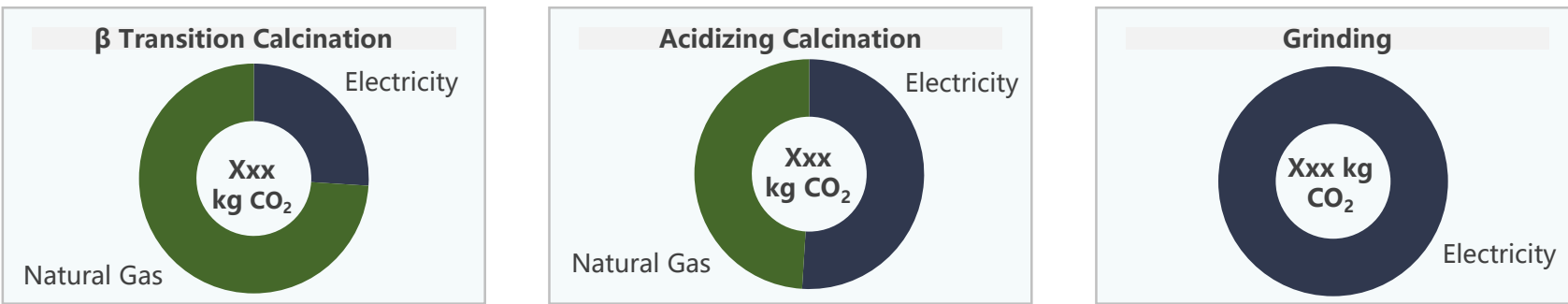
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SMM Comments

- **More auxiliary materials** was used, and the carbon emission of auxiliary materials accounts for a high proportion
- β transition calcination requires **high temperature** (~1,000 degrees), xxx
- xxx
- xxxx

CO₂ Emissions from Energy Consumption in Core Process



Notes:
 1) Auxiliary Material: refers to the auxiliary materials for the production of LiOH products, such as sulfuric acid, calcium carbonate, sodium hydroxide, etc. (excluding the chemical reagents added for waste gas treatment).
 2) Others: refers to CO₂ emissions from other production processes.