

Contribution to Stable Coal Supply ~ by using Coal Center ~

5th September 2025
Idemitsu Kosan Co.,Ltd.

Agenda

1. Overview of Idemitsu Kosan and Coal Business
2. About Idemitsu Bulk Terminal (Coal Center)
3. Overview of Coal Business harmonized with environment
4. Summary

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Idemitsu Kosan -Company Profile-



Date of establishment March 30, 1940
(Founded on June 20, 1911)

Consolidated number of employees 14,000 people

Net sales 9.2 trillion yen

Capital 168.3 billion yen

As of the end of March 2025



The Origin of Management

Having respect for human beings



Ningen-Soncho (Having respect for human beings)
Written by Sazo Idemitsu

These are the words of the founder, Sazo Idemitsu, in his own handwriting. We intend to communicate to the world the importance of "Ningen-Soncho (Having respect for human beings)," a key tenet of our history for over a century, and unassailable ideals we continue to pass down.

Petroleum

Crude oil processing capacity
825,000 barrels/day^{*1,2}

Fuel oil sales volume in Japan
34 million kl/year^{*3}

Number of service stations
Approx. **6,000**

Basic chemicals

Ethylene production capacity
1 million tons/year^{*2}

Paraxylene production capacity
840,000 tons/year^{*2}

Mixed xylene production capacity
690,000 tons/year^{*2}

Styrene monomer production capacity
790,000 tons/year^{*2}

Functional materials

Lubricant sales volume
1.1 million kl/year

Engineering plastic sales volume
200,000 tons/year

OLED material production capacity
26 tons/year

Power and renewable energy

Power generation capacity
1.68 million kW

– of which, renewable energy
820,000 kW

Resources

Crude oil and gas production volume
26,000 BOE^{*4}/day

Coal production volume
5.79 million tons/year

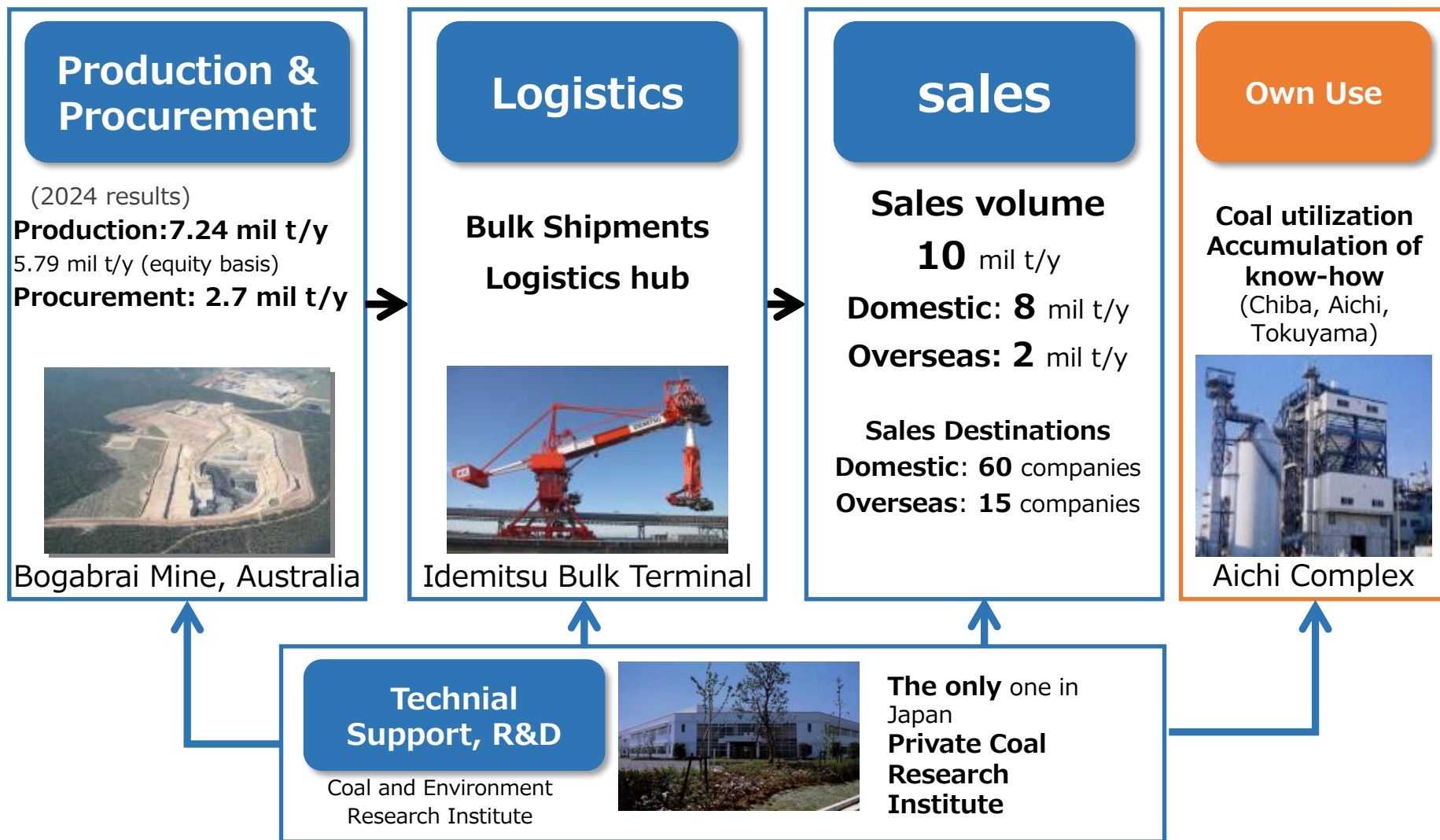
^{*1}. As of July 2024. Including the refining capacity of Fuji Oil Company, Ltd. under petroleum product trading contract, the total is 968,000 barrels/day

^{*2}. Capacity excludes that of Nghi Son Refinery

^{*3}. Bonded jet fuel and bonded C fuel oil are counted as export fuel and are not included in domestic fuel oil sales volume

^{*4}. BOE: Barrels of Oil Equivalent

Overview of our coal business



In the coal business, we build a supply chain from production to sales. In addition, we are developing our business with a system that uses our own business and provides technical support for the entire company.

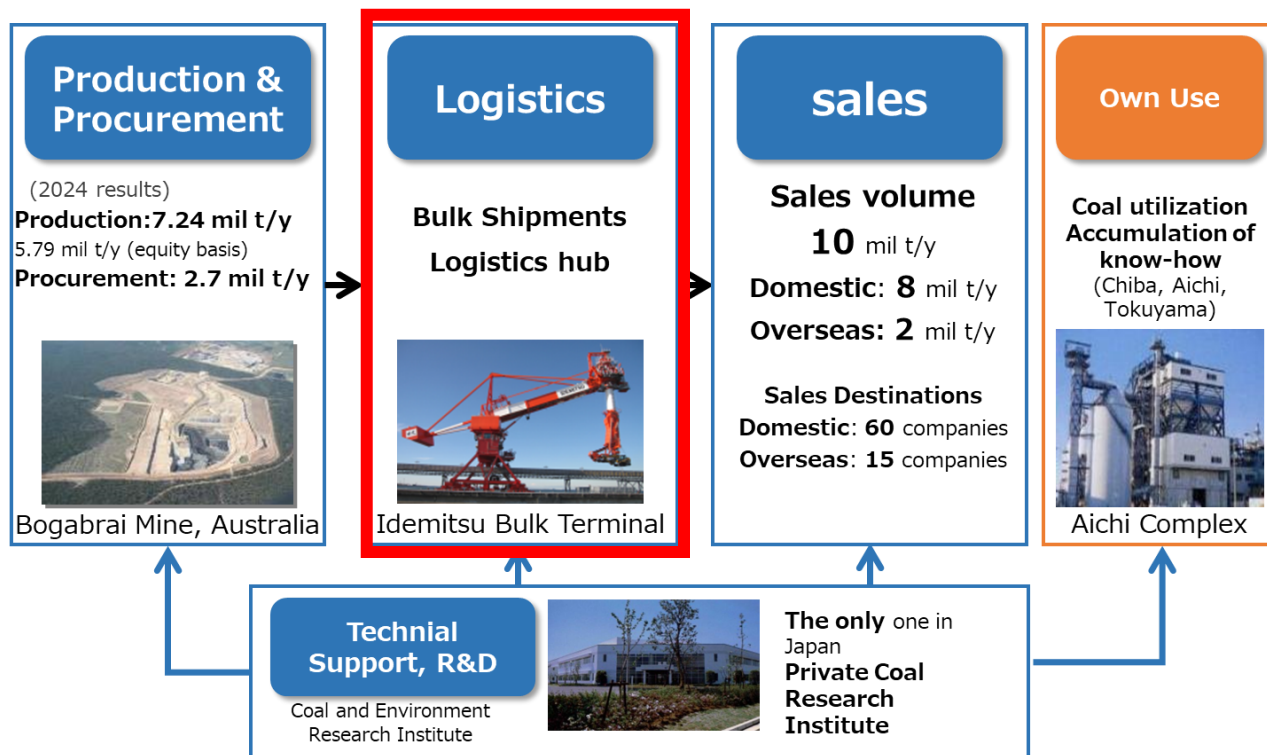
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Idemitsu Bulk Terminal Overview

- ◆ Established in 1984 100% owned subsidiary of Idemitsu Kosan.
- ◆ Started operation since 1986 (38 years since the start of operation)
- ◆ Business Description

Landing, storage and shipment of imported coal and petroleum coke to customers
As a logistic hub connecting production areas and consumers, we support the value chain of Idemitsu and its users.

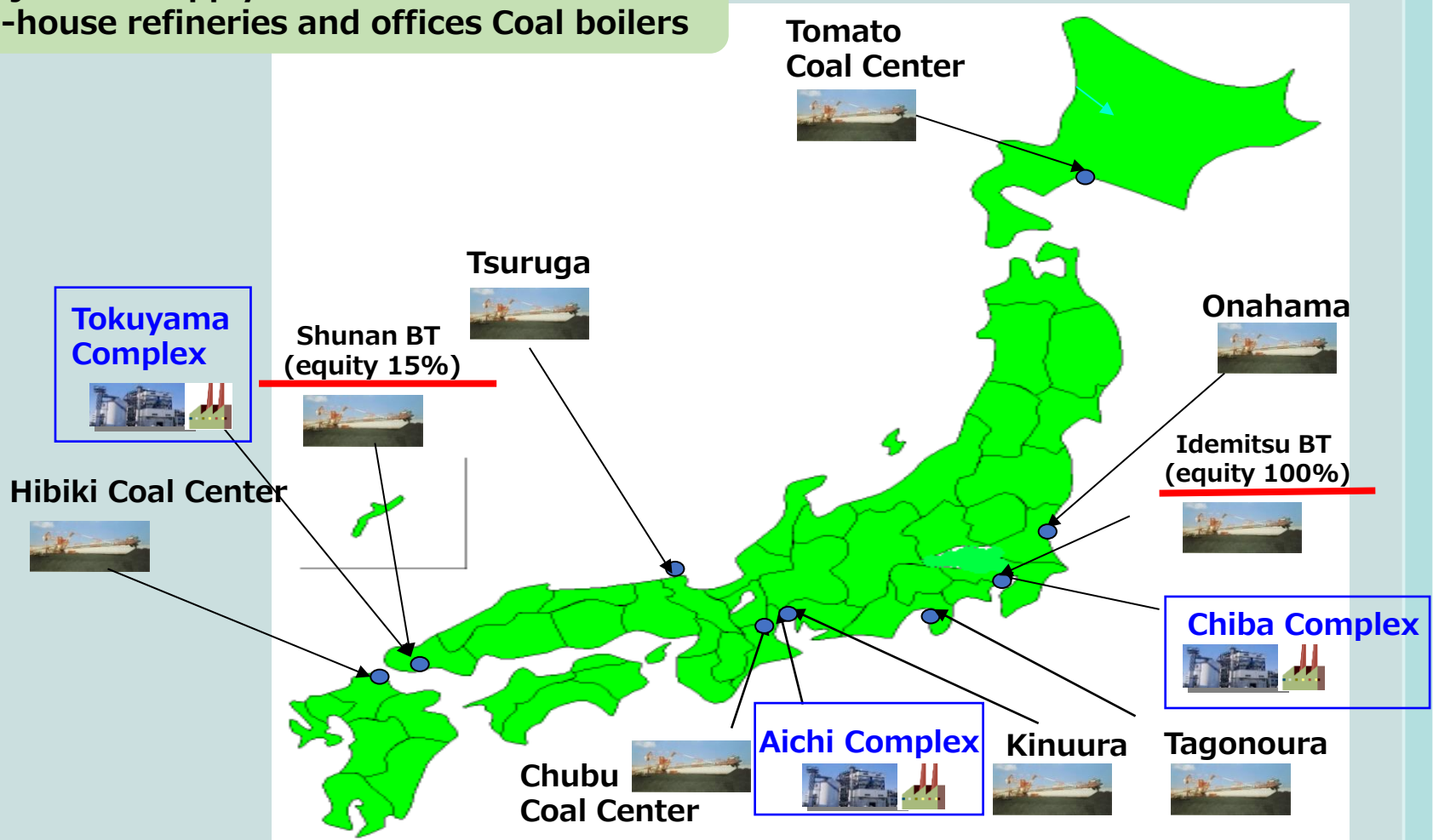


Idemitsu Bulk Terminal Full View



Domestic coal supply system

Major coal supply bases and
In-house refineries and offices Coal boilers



After signing contracts with other companies' Coal Centers, we established a coal supply system in each region.

About the coal supply chain

- The coal supply chain for imports links to end users from mines in coal-producing countries via rails, sea transports, trucks, export ports and domestic ports (including “Coal Centers”).
- A “Coal Center,” for example, is a transshipment facility that unloads coal from large vessels and reloads it onto coastal vessels or trucks for delivery to end users. Typically located adjacent to major ports, it comprises port infrastructure, receiving facilities, stockpiles, loading facilities, and other related installations. However, projected declines in coal demand and growing divestment from coal have made the uncertain outlook for demand at these “Coal Centers”.

Figure 1 illustrates the comparison of port infrastructure and cargo handling capacity between the Port of Kobe and the Port of Osaka. The diagram shows three stages of port development:

- Initial State:** The Port of Kobe (神戸港) has a capacity of 1,000 TEU. The Port of Osaka (大阪港) has a capacity of 1,000 TEU.
- Expansion:** The Port of Kobe (神戸港) has a capacity of 15,000 TEU. The Port of Osaka (大阪港) has a capacity of 15,000 TEU.
- Further Expansion:** The Port of Kobe (神戸港) has a capacity of 25,000 TEU. The Port of Osaka (大阪港) has a capacity of 25,000 TEU.

The map on the right shows the locations of the ports relative to Osaka and Kobe. The Port of Kobe is located approximately 140 km from Osaka, and the Port of Osaka is located approximately 140 km from Kobe.

	神戸港	大阪港
現在処理能力 (TEU)	15,000	15,000
将来処理能力 (TEU)	25,000	25,000
現在処理能力 (TEU)	15,000	15,000
将来処理能力 (TEU)	25,000	25,000

Source: 日本港湾協会 (Japan Port Association) 2010

The diagram shows the layout of the IGC power plant. Key components include:

- IGCC 専用 屋内の貯炭場** (IGCC dedicated indoor coal storage yard)
- タービン 建屋** (Turbine building)
- ガス精製 設備** (Gas purification equipment)
- ガス 凝集 設備** (Gas condensation equipment)
- ガス 化学 処理 設備** (Gas chemical treatment equipment)
- 排水処理設備** (Wastewater treatment equipment)
- 空気分離設備** (Air separation equipment)
- 煙肉 設備** (Chimney equipment)
- 燃料貯蔵 設備** (Fuel storage equipment)
- 運炭設備** (Coal transport equipment)

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出典：総合資源エネルギー調査会 資源・燃料分科会 資源開発・燃料供給小委員会（第24回）資料

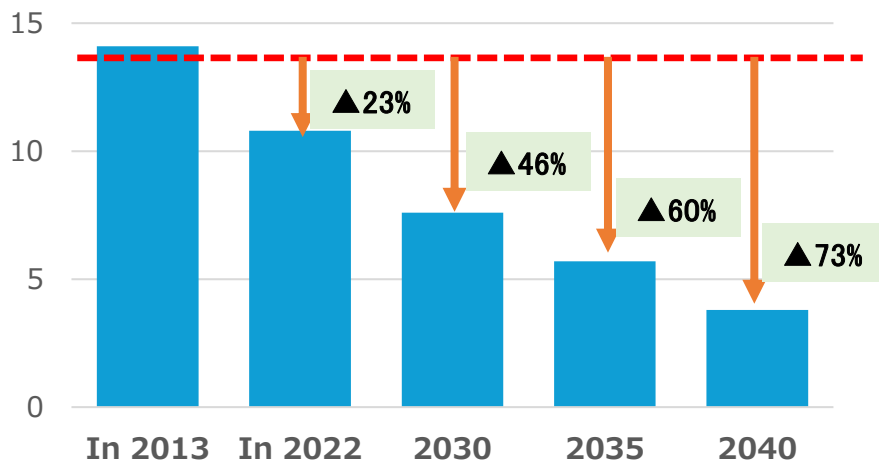
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Considerations from the 7th Strategic Energy Plan

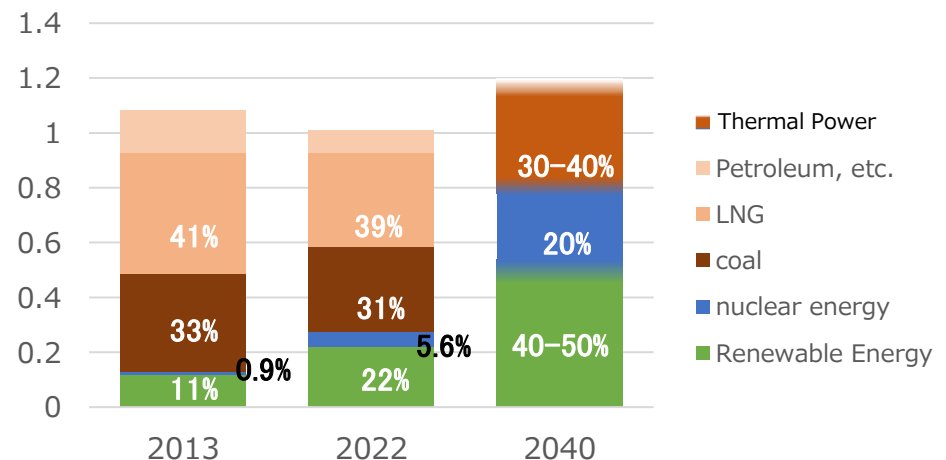
In February 2025, the Government of Japan formulated the 7th Strategic Energy Plan and submitted a "Nationally Determined Contribution (NDC)" as a CO2 emission reduction target based on the Paris Agreement.

The Government announced new climate change targets, aiming **to reduce greenhouse gas (GHG) emissions by 46% by 2030 compared to fiscal 2013 and 73% by 2040**

GHG Emissions Reduction Targets



Power Configuration Image



In response to the GHG emission reduction target, the demand for coal will decrease and the proportion of renewable energy will increase, while the role of thermal power (coal boilers, etc.) as a regulated power source will become important.

Realistic solutions for decarbonization



**Large-scale deployment of solar and wind power requires a flexible regulated power supply
As a regulated power source, reducing the carbon content of existing coal-fired power plants is a realistic solution.**



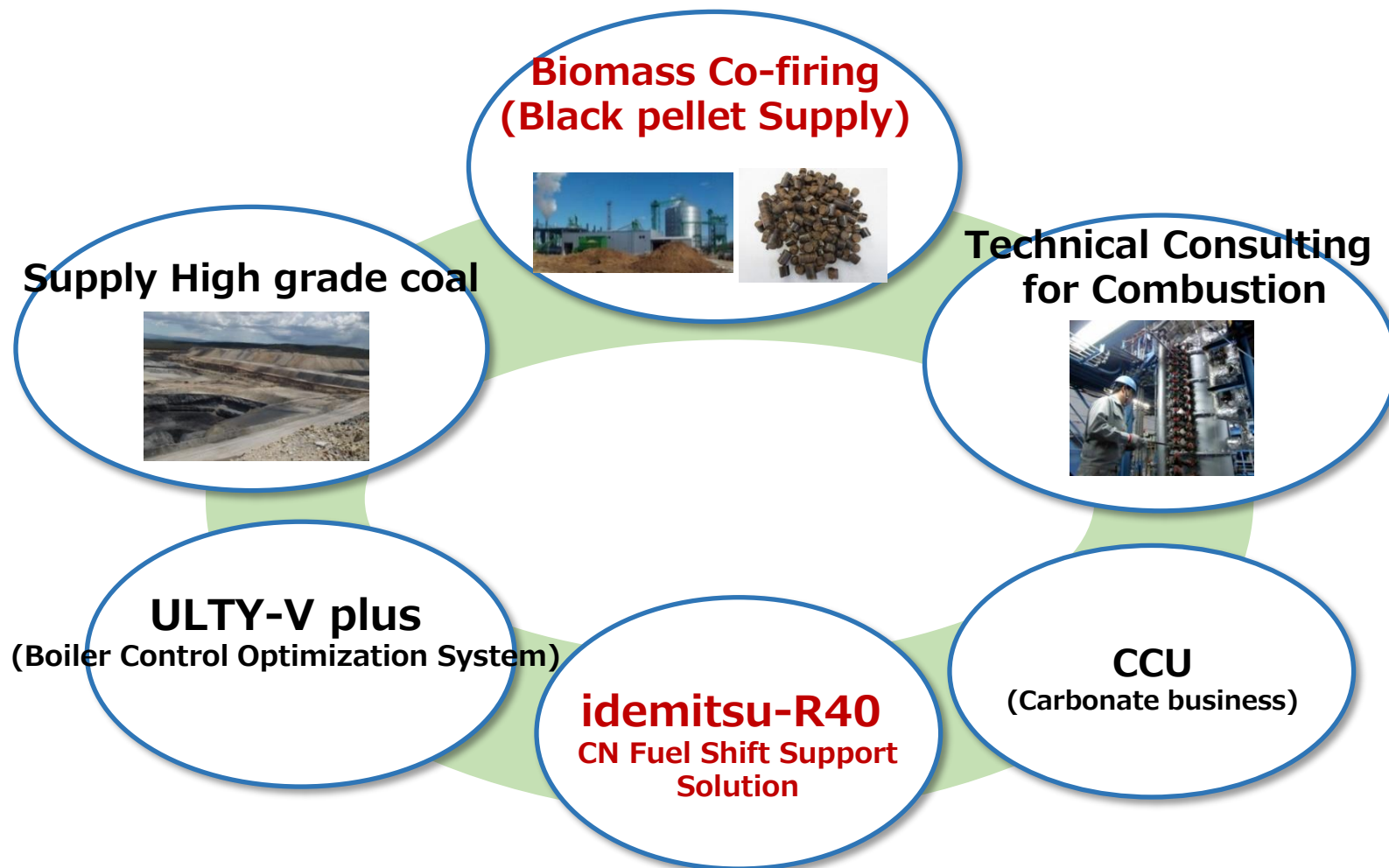
Combustion of existing coal-fired power plants into biomass (Black pellets) is effective.

Reducing coal and expanding renewable energy quickly and at low cost

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Idemitsu Coal Business harmonized with environment



In addition to stable energy supply to Asian countries including Japan, we provide various business harmonized with environment.

What is Black Pellet -Overview-

- Black pellets are decarbonized fuels with a quality similar to coal produced by heating biomass at a certain time at 200~320°C
- Compared to wood pellets (White pellets), it has a higher calorific value, water resistance and better grindability in fine mills, and can be used in almost the same way as coal by utilizing existing coal infrastructure
- In the demonstration stage, it was confirmed that the existing equipment can be used for co-firing without modification if the co-firing ratio is low, and it is expected that dedicated combustion can be carried out with minor modifications

Type	Picture	Calorific value	Character	Coal co-firing rate*	Suitability for Co-firing
Wood Chip		1,600 ~2,800 kcal/kg	 <ul style="list-style-type: none"> • Cheap • Outdoor storage  <ul style="list-style-type: none"> • High moisture • Low logistics efficiency 	Several %	
White pellet		3,600 ~4,000 kcal/kg	 <ul style="list-style-type: none"> • Middle logistics efficiency  <ul style="list-style-type: none"> • Indoor storage 	Several %	
Black pellet		4,300 ~5,500 kcal/kg	 <ul style="list-style-type: none"> • High logistics efficiency • Outdoor storage • Good grindability 	10~50%	
PKS (Palm Shell)		~4,500 kcal/kg	 <ul style="list-style-type: none"> • High logistics efficiency • Outdoor storage  <ul style="list-style-type: none"> • Poor grindability • Cheap but unstable quality 	0%	

*If it is not accompanied by equipment modification

What the Black Pellet Business Aims to Do

Feedstock



Manufacture



Logistics



Sales and use



Technical Support & R&D



Own use
Accumulation of
know-how

In the black pellet business, building a supply chain from upstream to downstream, similar to coal, will lead to the use of Coal Centers.

Status of the 1st Commercial plant



Producer: Idemitsu Green Energy Vietnam
Equipment scale: 120,000 tons per year



The 1st plant is making final preparations to start commercial operation.

Expansion plan for the supply of black pellets

2025-2029

2030-2040

Consideration for the expansion

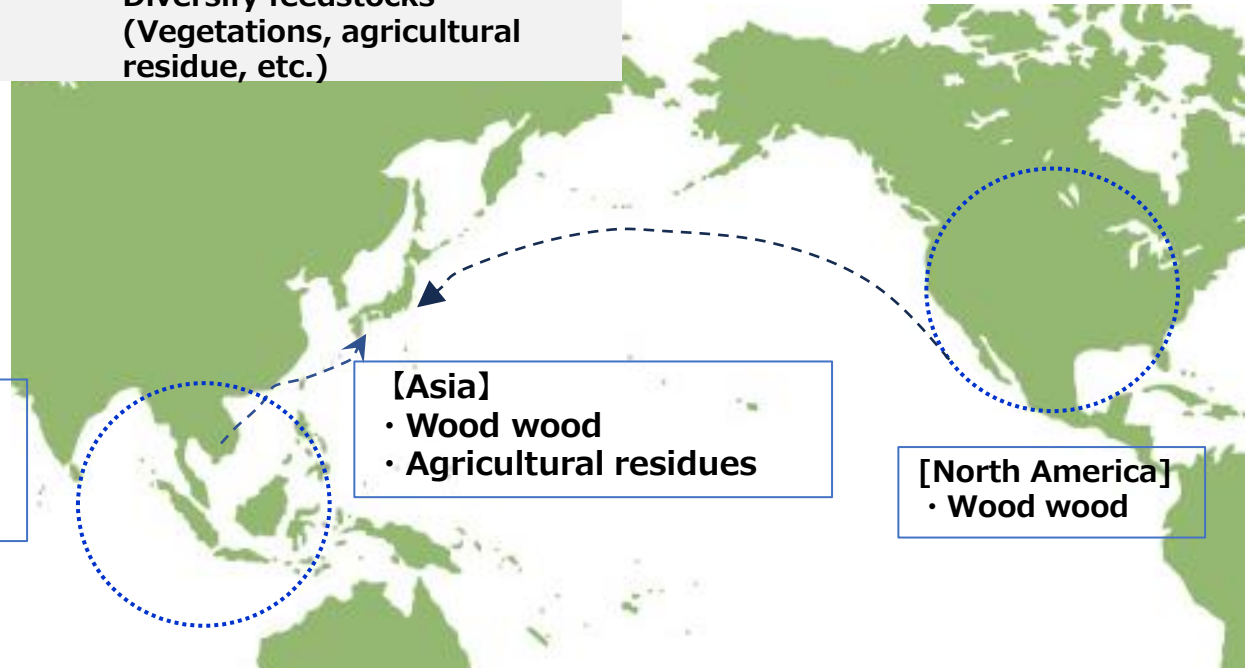
3 mil tons

Vietnam
Indonesia
Malisia
US

Expand hubs
(SE Asia, etc.)
Improve mfg. technology
(Scale and efficiency)
Diversify feedstocks
(Vegetations, agricultural
residue, etc.)



[Asia]
• Distance: Approximately 1 week
transportation to Japan
• Ship: Same bulk carrier as coal



[Asia]
• Wood wood
• Agricultural residues

[North America]
• Wood wood

After the launch of the first commercial plant (Vietnam), efforts are underway to expand the supply. We aim to build a supply capacity of 3 million tons in the 2030s.

About idemitsu-R40

【Background】

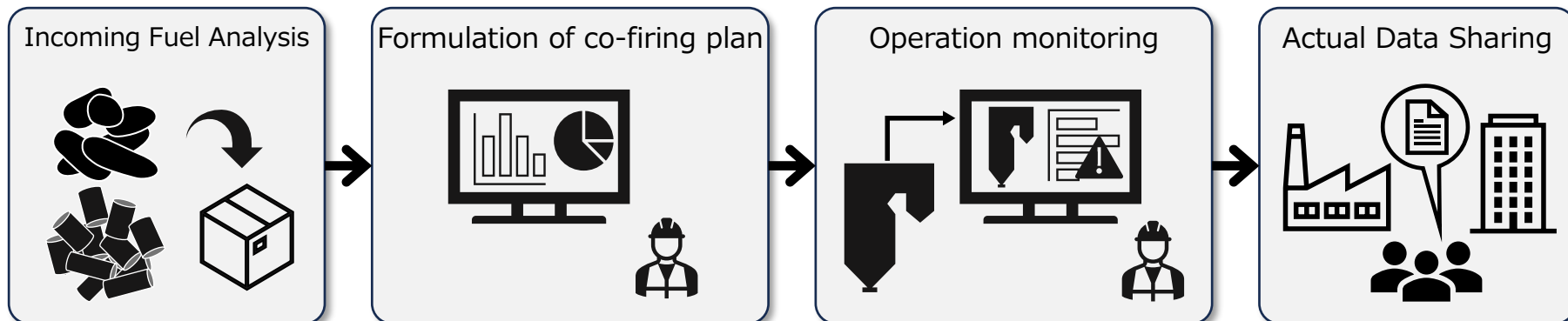
By co-firing or exclusively burning biomass and other carbon-neutral (CN) fuels in coal boilers, there is a potential to achieve carbon neutrality with minimal capital investment.



Technical consulting for improving the co-firing rate and specializing in black pellets, etc.

System Construction

Cloud-based digital solutions using DX



Launched idemitsu-R40, a solution business that pursues CO₂ emission reduction and economical boiler operation at the same time.

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Summary

- We have built a supply chain from production to sales in the coal business and have continued to operate for more than 40 years.
- As part of the supply chain, the Idemitsu Bulk Terminal (Coal Center) will be operated, and in the future, it will handle black pellets in addition to coal to make multifaceted use of the coal center.
- From the perspective of improving the efficiency of coal use and reducing environmental impact, we are developing low-carbon businesses (Black Pellets, idemitsu-R40, etc.).

Our responsibility is to contribute to the safe and stable supply of energy and to solving social issues.



Your Reliable Partner for a Brighter Future



Shaping Change



Thank you for your kind attention.