

Medium-term Management Plan Revision (FY2020-2022)

May 11, 2021

Idemitsu Kosan Co., Ltd.

Securities code: 5019

Environmental changes following announcement of the medium-term management plan in 2019

Reduced demand for core products and lifestyle changes due to COVID

Accelerated decarbonization following the 2050 carbon neutral declaration

Increased resource price volatility amid capital excess

Need to reformulate medium-to-long-term strategy and accelerate initiatives

Steps for medium-term management plan revision



Anticipated long-term business environment



Reconfirm corporate purpose and establish a corporate vision for 2030



Basic strategy and management objectives towards 2030

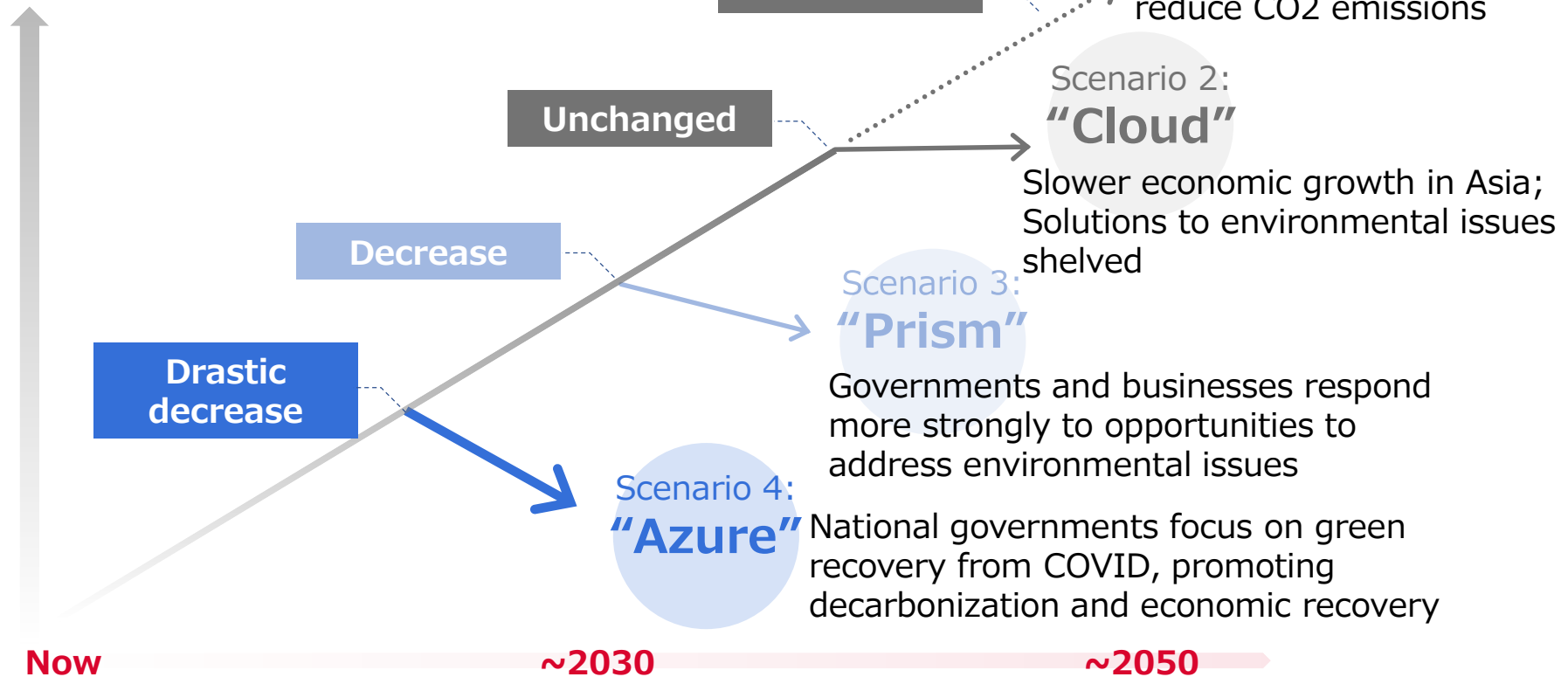


Revision of medium-term management plan (2020-2022)

Long-term energy business environment scenarios towards 2050

Azure scenario is becoming more plausible with recent acceleration in decarbonization

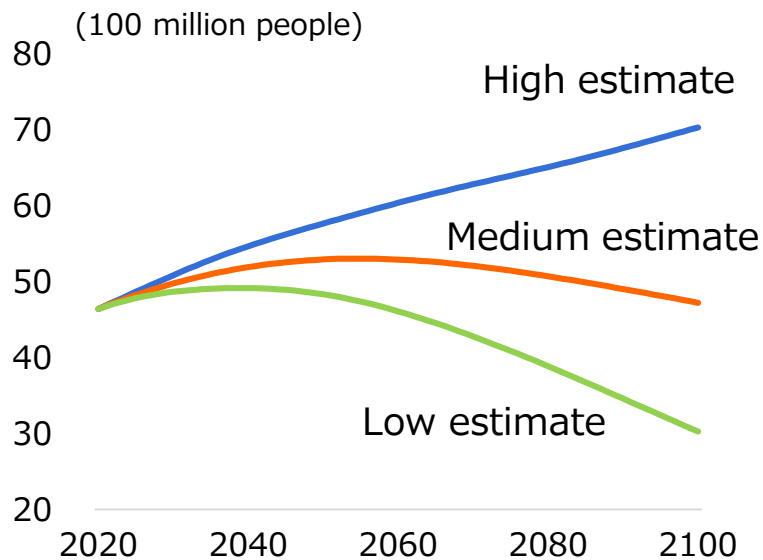
Asia-Pacific
Petroleum Demand



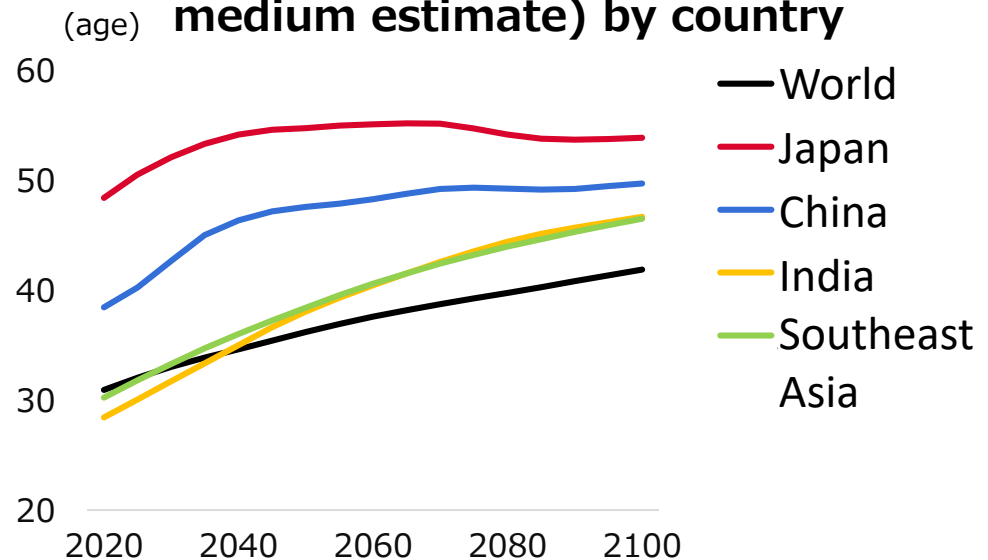
Anticipated long-term business environment

Many variables make the future business environment extremely uncertain, but **decarbonization and aging are very likely to become global trends**

Asian population forecasts



Median age forecasts (based on medium estimate) by country



It will become necessary to enhance our resilience while engaging in steady efforts towards the resolution of future social challenges

Steps for medium-term plan revision



Anticipated long-term business environment



Reconfirm corporate purpose and establish a corporate vision for 2030



Basic strategy and management objectives towards 2030



Revision of medium-term management plan (2020-2022)

Idemitsu's history and key values

At the root of both companies' histories before the merger, there was a shared value of **"nurturing people through our work, contributing to society by showing infinite possibility."** We have reconfirmed this to be our key purpose

Autonomous thinking and actions



Channel expansion for kerosene /candles



Launch of "Formula Shell Super X"

Independence & autonomy

Nissho Maru Incident

Entry into CIS solar PV business

Commercialization of organic EL materials



Pioneer/innovator

Participation in the Nghi Son Refinery Project



Seek to take the difficult path

Truly inspired

How often do we consider the countries and communities we touch,
and how much empathy do we have for the people living there?
Are we contemplating what's best for them and then doing our
utmost to act in their interests?

Each day, we must reflect on our actions; we must strive to do better
not only for ourselves, but also for others.
We make the impossible possible.

With integrity, solidarity, and determination, we will overcome any
challenge we face.

The starting point for our operations

人間尊重

Corporate vision for 2030

We believe it is our responsibility to contribute to social challenges in addition to providing stable energy supply.

Our corporate vision for 2030 is to become

Your Reliable Partner for Brighter Future

and will fulfill three responsibilities through our business activities:

- Responsibility to protect the environment and lifestyles:

- Energy/material transition to a carbon-neutral/circulatory society

- Responsibility to support regional communities:

- Next-generation mobility & community for an aging society

- Responsibility to provide for society with technological capabilities:

- New materials to make it possible to overcome such challenges

Steps for medium-term plan revision



Anticipated long-term business environment



Reconfirm corporate purpose and establish a corporate vision for 2030



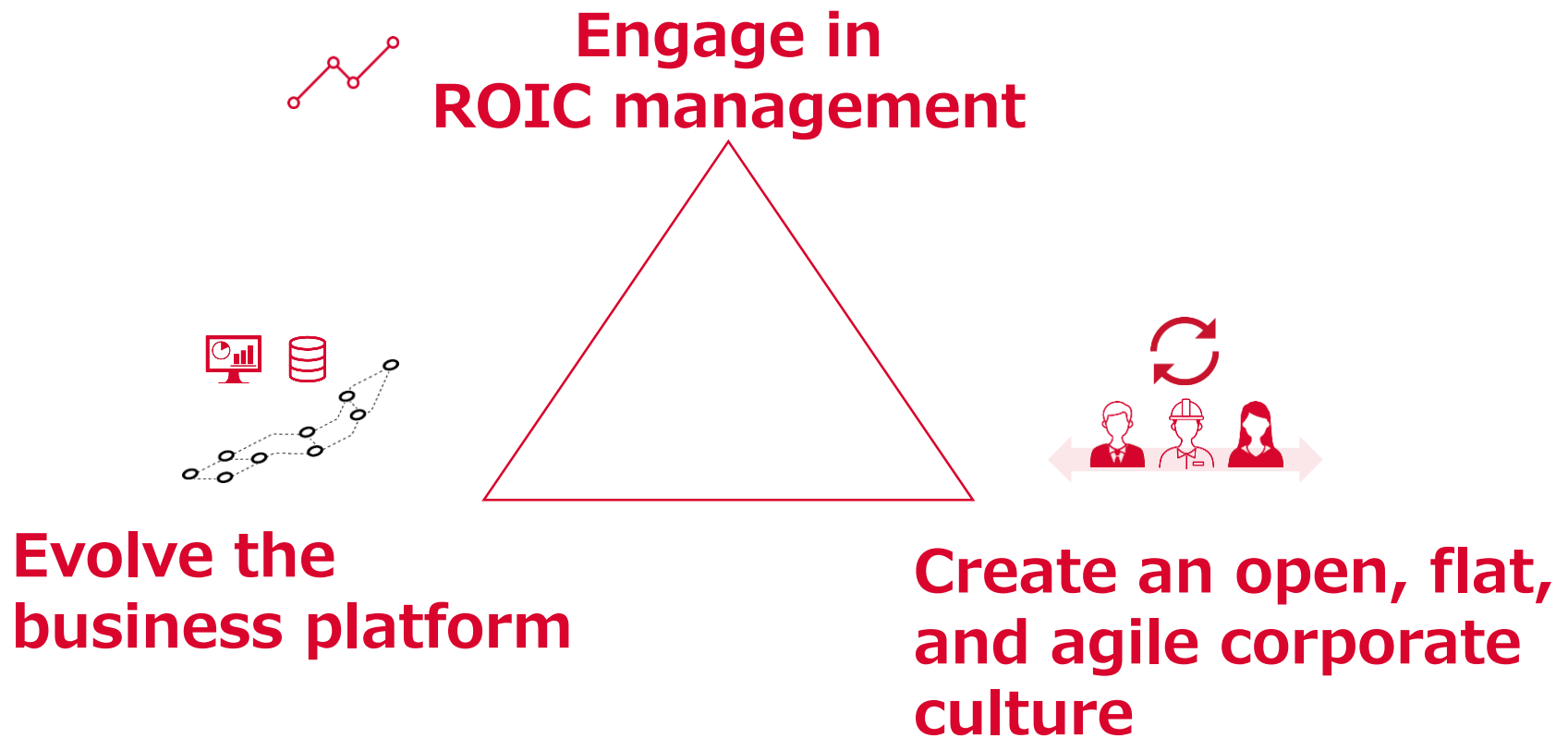
Basic strategy and management objectives towards 2030



Revision of medium-term management plan (2020-2022)

Basic strategy towards 2030

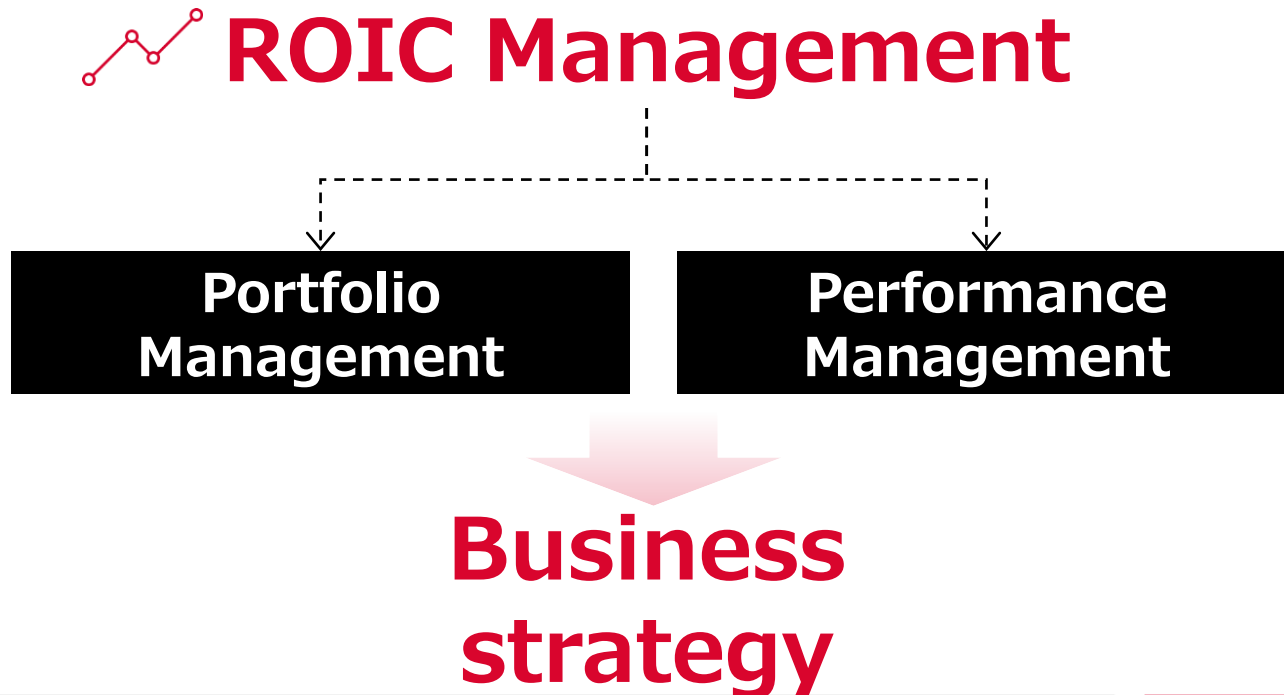
Aim to become a **resilient company** which can adapt flexibly to any environmental changes, amid extreme uncertainties in the long-term operating environment



Basic strategy towards 2030

By engaging in ROIC Management

- Enhance capital efficiency and create a strong corporate structure to increase risk tolerance
- In addition to managing our portfolio, apply ROIC management methodology to accurately measure performance results of each business domain.
- Use of ICP (internal carbon pricing) for investment decisions



Basic strategy towards 2030

Business strategy

-
- | | |
|--|--|
| Petroleum
Basic
Chemicals | <ul style="list-style-type: none">■ Turn apollostation into a “Smart Yorozyua (One-stop shop)”■ Review refinery/complex structure and establish a “CNX* Center”■ Reduce fixed costs ahead of decrease in demand■ Deepen integration between refining and petrochemical production■ Enabling profit contribution from Nghi Son Refinery |
|--|--|
-

- | | |
|---------------------------------|---|
| Functional
Materials | <ul style="list-style-type: none">■ Commercialize lithium solid electrolytes■ Accelerate development of advanced materials (e.g. electronic materials, performance chemicals, lubricants, grease, functional paving materials, agri-bio) |
|---------------------------------|---|
-

- | | |
|---|---|
| Power and
Renewable
Energy | <ul style="list-style-type: none">■ Expand development of renewable energy sources (solar/wind/biomass)■ Develop distributed energy business centered around renewable energy■ Convert Solar Frontier’s module sales business into a system integrator business |
|---|---|
-

- | | |
|------------------|--|
| Resources | <ul style="list-style-type: none">■ Oil E&P: Shift to Southeast Asian gas development, CCS initiatives using developed technologies■ Coal: Reduce mine production, shift to low-carbon solutions business (black pellets, ammonia)■ Expand domestic and overseas geothermal business |
|------------------|--|
-

Basic strategy towards 2030



Evolve the business platform

Accelerate DX

- Shift from Digital “for Idemitsu” (operational reforms) to “for Customer”/“for Ecosystem” (provide customer/network value)
*Achieved DX certification on 4/1/2021 (DX-Ready)

Enhance corporate governance

- Smaller board with members suited to resolving existing management challenges to engage in active discussions
- Further improve the deliberation process for fair and transparent nominations and compensation, led by external directors
- Enhance group internal control, including local entities located overseas

Basic strategy towards 2030



Create an open, flat, and agile corporate culture

Internal dissemination of the corporate mission and vision

- Engage in internal branding efforts to establish a shared sentiment towards overcoming social challenges
- Establish a linchpin to adapt rapidly and flexibly to environmental changes

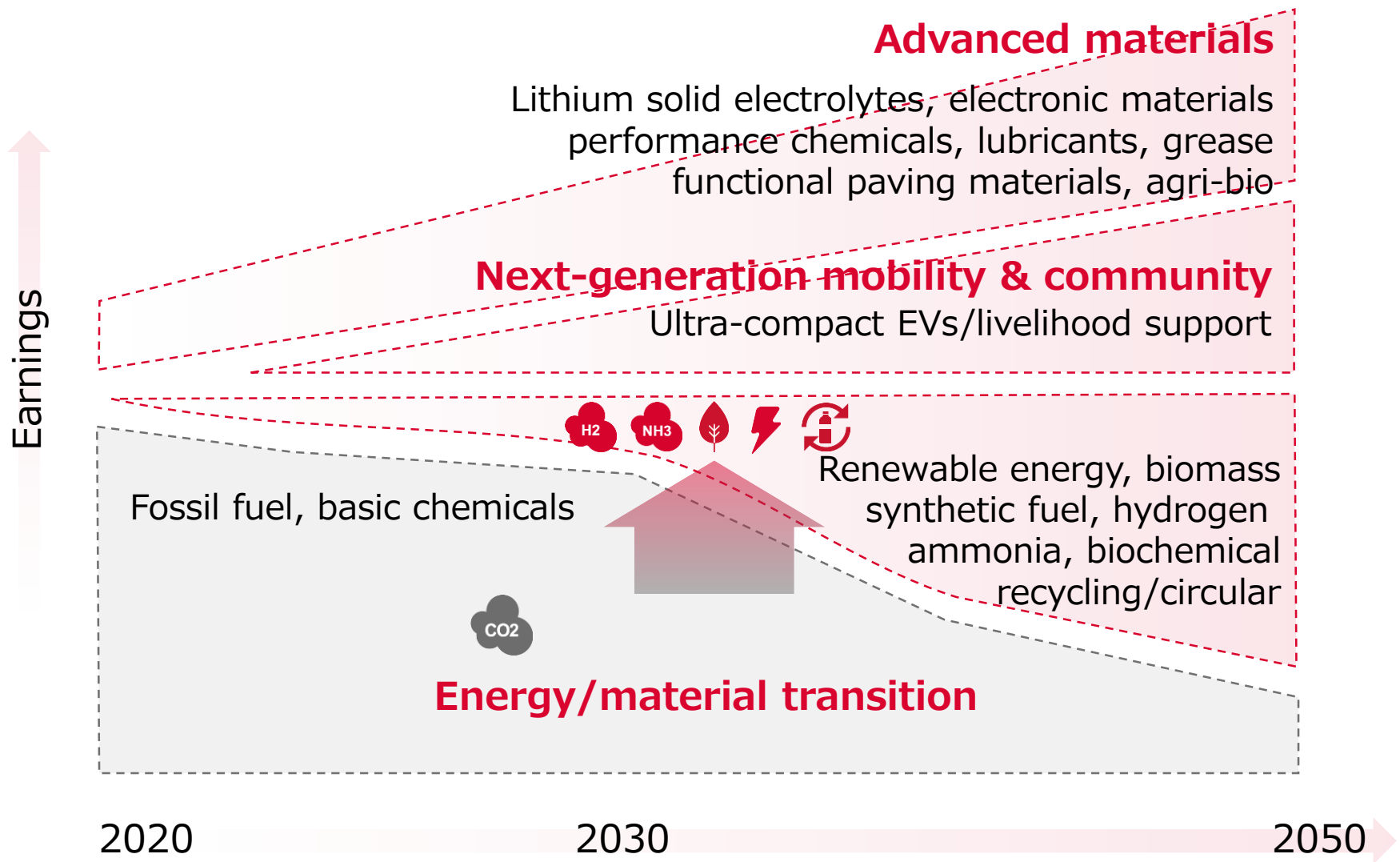
Organizational reforms

- Simplify hierarchy to accelerated decision-making; enhance productivity by streamlining administrative divisions
- Increase in growth opportunities through proactive delegation
- Enhance quality of management by optimizing span of control

Workstyle reforms

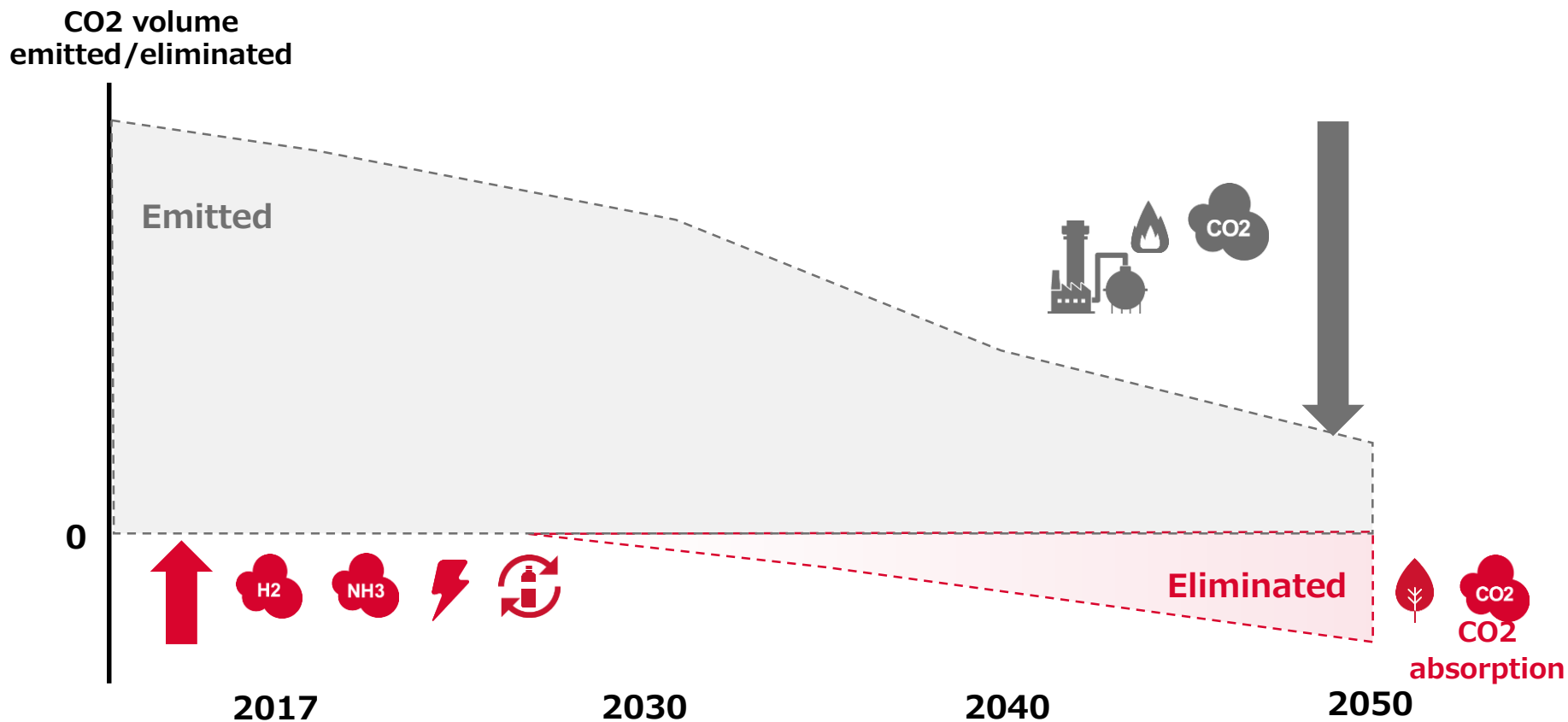
- Revamp the working environment to suit various value sets and lifestyles, providing equal opportunities for all
- Promote search for knowledge through reforms of existing operations; shift to high value-added operations
- Improve operational speed and quality by eliminating perfectionism and promote co-creation

Portfolio evolution for the future



Pursuing carbon neutrality by 2050

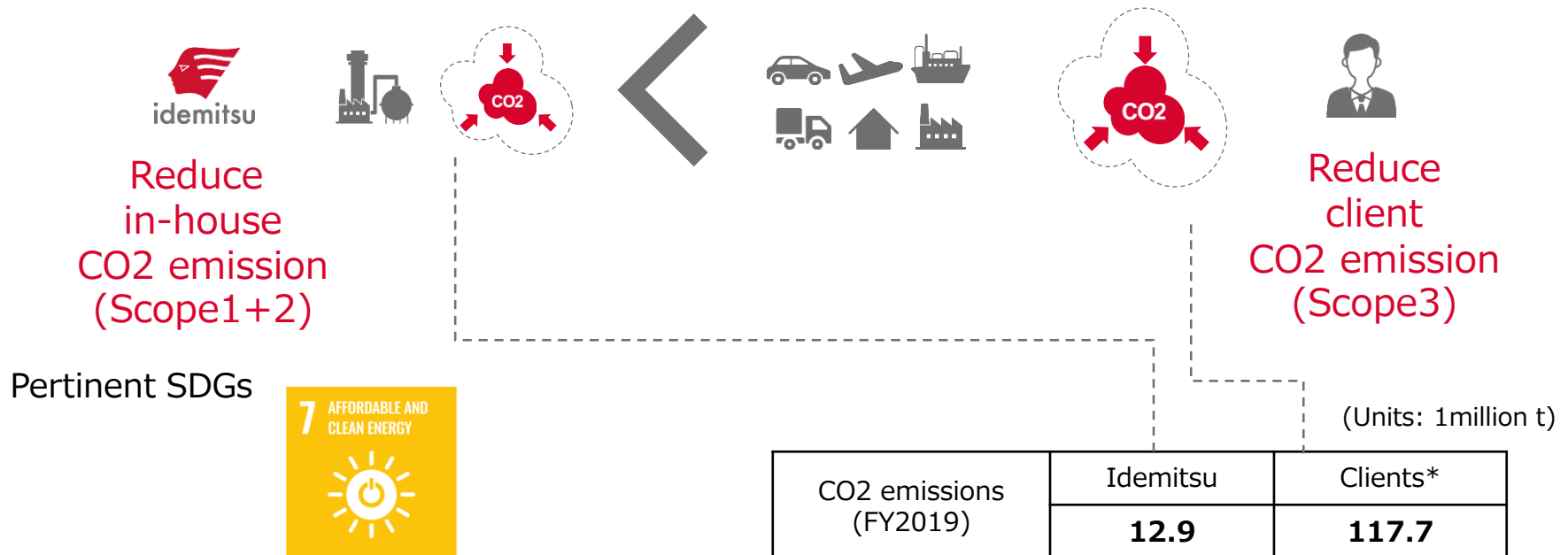
We aim to achieve carbon neutrality (net zero CO2 emission) from in-house operations (Scope1+2) by 2050



Reduction of CO2 emissions across the entire value chain

We will not only **promote reduction of in-house CO2 emissions**, but also **contribute to reducing client CO2 emissions** by providing energy/materials which support the realization of a carbon-neutral, circulatory society

Features of CO2 emissions throughout our value chain



*Associated with use of Idemitsu products

FY2030 Management Targets

FY2020

FY2030

**Operating+
equity income
(excl. inventory
impact)**

¥92.8 bn



¥250 bn

ROIC

3 %



7 %

**CO2 reduction
(Scope1+2)**

—



-4 million t

*vs. FY2017; includes group refineries

*FY2020Act : Calculating

Steps for medium-term plan revision



Anticipated long-term business environment



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Basic strategy and management objectives towards 2030



Revision of medium-term management plan (2020-2022)

Management plan

Net income
(excl. inventory
impact)

(3-year
cumulative)

¥220 bn

**Operating+
Equity income**
(excl. inventory
impact)

(3-year
cumulative)

¥410 bn

ROE

(FYE 2022)

8 %

FCF

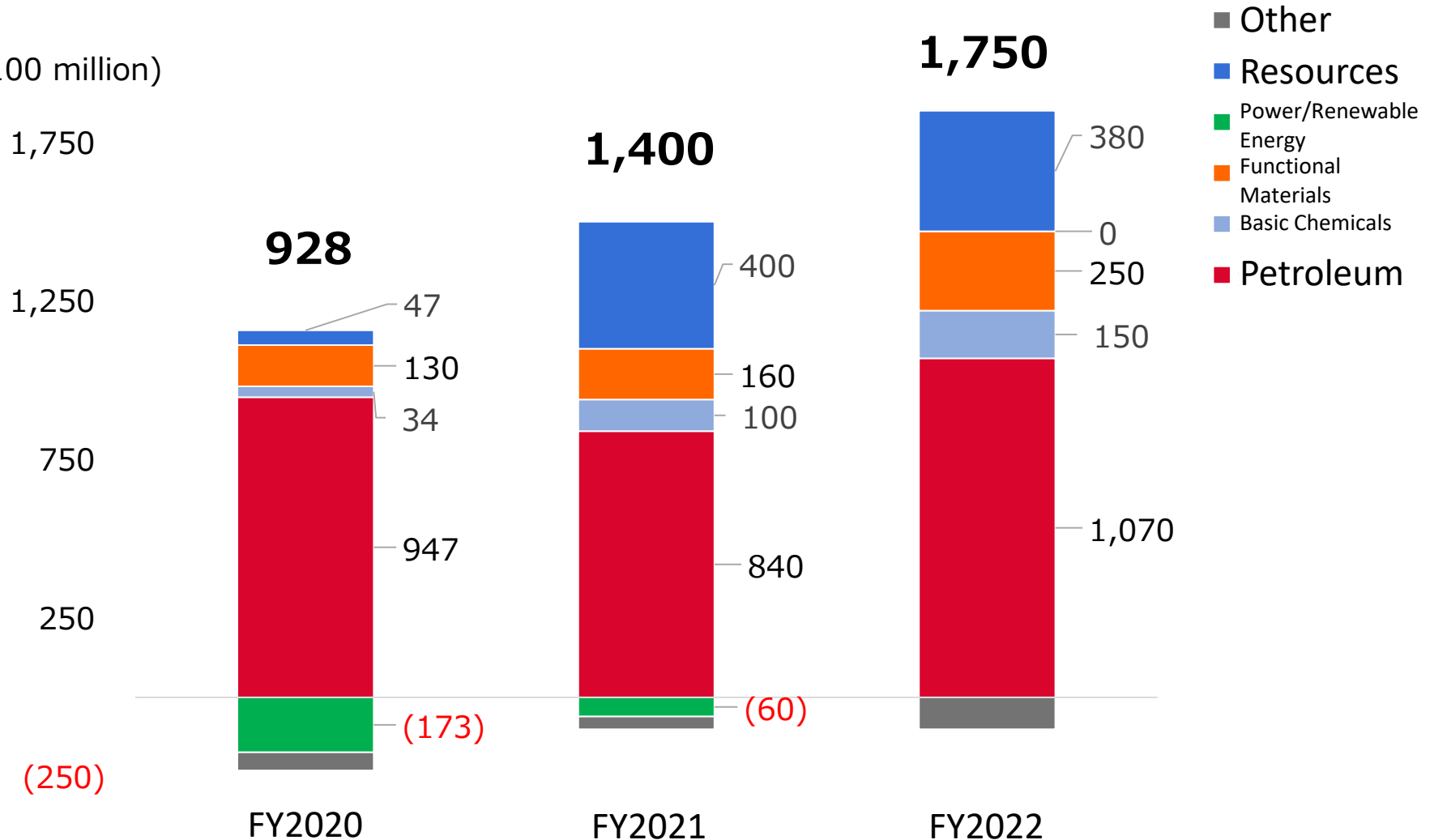
(3-year
cumulative)

¥230 bn

(Key assumptions)	Units	FY2021	FY2022
Crude oil <Dubai>	\$/BBL	60.0	
Naphtha <customs>	\$/t	560	
Coal <NEWC>	US\$/t	80.0	75.0
Foreign Exchange <USD>	¥/\$	105.0	

Segment operating + equity income (excluding inventory impact)

(¥100 million)



Cash balance

<u>Cash In</u>	<u>Cash Out</u>
Net income ¥220 bn	
Depreciation, etc. ¥480 bn	Investments ¥570 bn
Asset sales, etc. ¥100 bn	Free cash flows ¥230 bn

- Execute asset sales, etc. to secure a total of ¥800 billion in cash inflows over 3 years
- Free cash flows distribution strategy
 - Shareholder returns
 - Strategic investments for portfolio transformation
 - Strengthen financial position

Investment plan

Investment breakdown

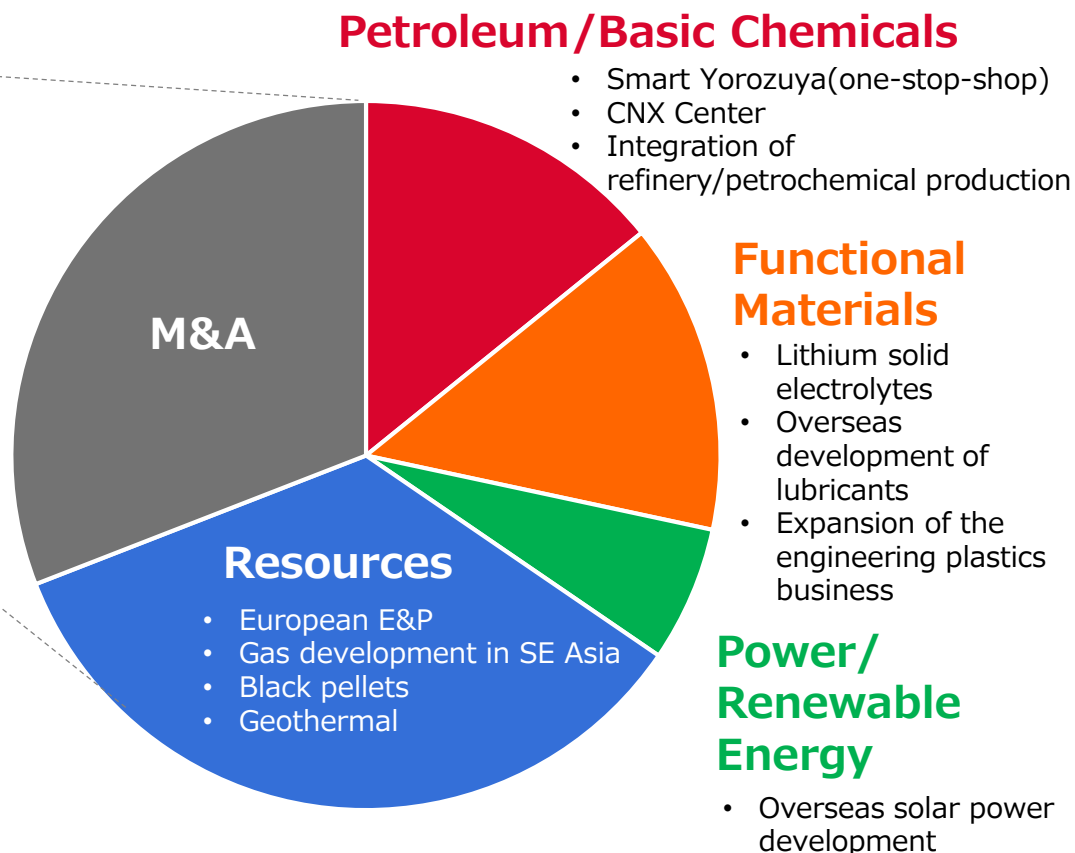
¥570 bn

**Strategic investments
¥270 bn**

Of which M&A:
¥100 bn

**Maintenance investments
¥300 bn**

Breakdown of strategic investments



Shareholder returns are positioned as a key management priority

- **Total payout ratio of over 50% on cumulative net income excluding inventory impact from FY2020–2022**
- **Stable dividends of ¥120/share**

Reference Materials

-
- ① Smart Yorozya (one-stop-shop) concept and initiatives**
 - ② CNX Center concept and initiatives**
 - ③ Progress since the 2019 medium-term management plan underlying assumptions, etc.**

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Smart Yorozya (one-stop-shop) concept

Evolve apollostation network into a next-generation “Yorozuya (one-stop-shop)” which enriches the lives of regional residents!

- Leverage network of **6,400** service stations nationwide
- Ecosystem which solves **region-specific challenges**
- Provide various services **at the appropriate time and place**
- Provide an **OMO* platform** that integrates “place” × “real contact” × “energy” × “digital”

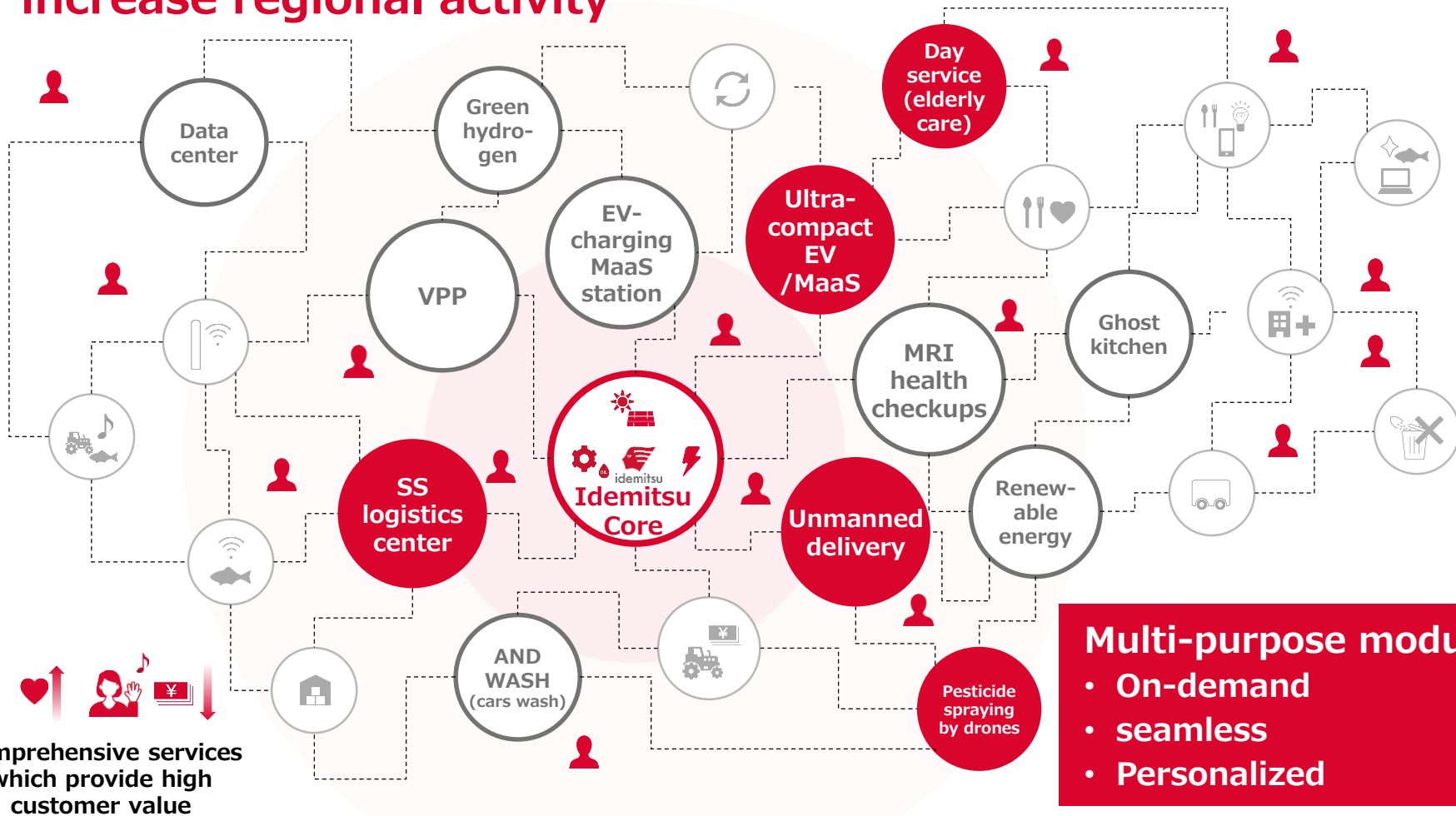
Apply domestic know-how to resolution of overseas social challenges



From Service Station to Mobility & Community Station

Spread of the ecosystem

Solve all regional problems collectively by linking various internal and external business modules to **improve local resident's QoL** and **increase regional activity**



Providing a brand new category of mobility

Ultra-small
EV
/MaaS

Go beyond development/sales of ultra-compact EVs and engage in **development of new mobility and community services** which contribute to the resolution of regional challenges

April 2021

**Idemitsu
Tajima EV**
established

October 2021

**New vehicle
announced**

2022

**New vehicle
on sale**



SS network/
Materials
development
technology



Vehicle design
technology



Comprehensive coordination agreement with Ichihara, Chiba

Ultra-compact EV
/MaaS

Introduced **Autoshare**, a car-sharing service using ultra-compact EVs, in Ichihara city

Leveraging advanced technologies to support Ichihara city's sightseeing and global warming initiatives, to promote coordination in logistics and disaster prevention efforts, to contribute to the advancement of regional society, and to improve resident lifestyles

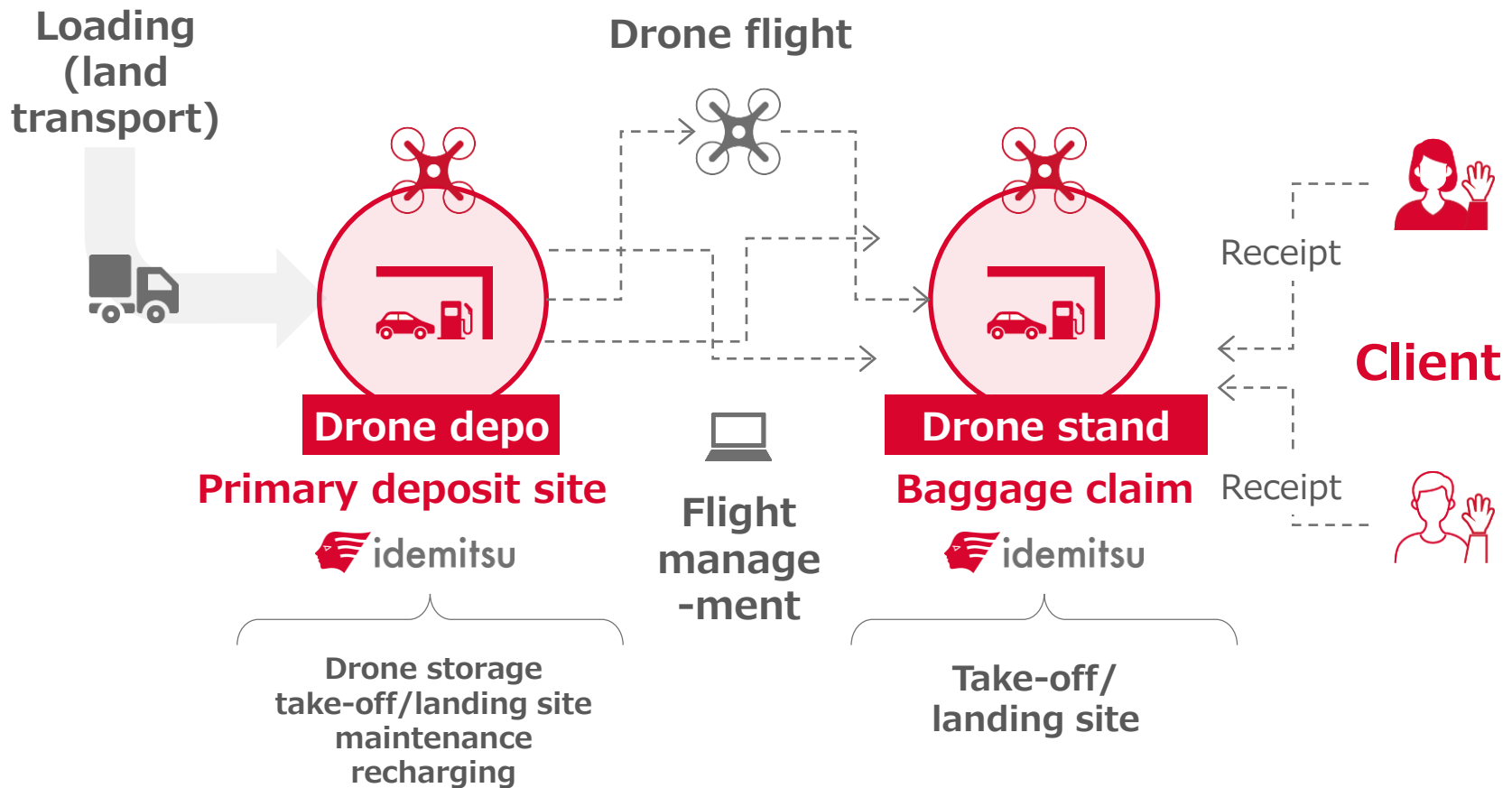
Placed 2 ultra-compact EVs in front of Kazusaushiku Station on the Kominato Line



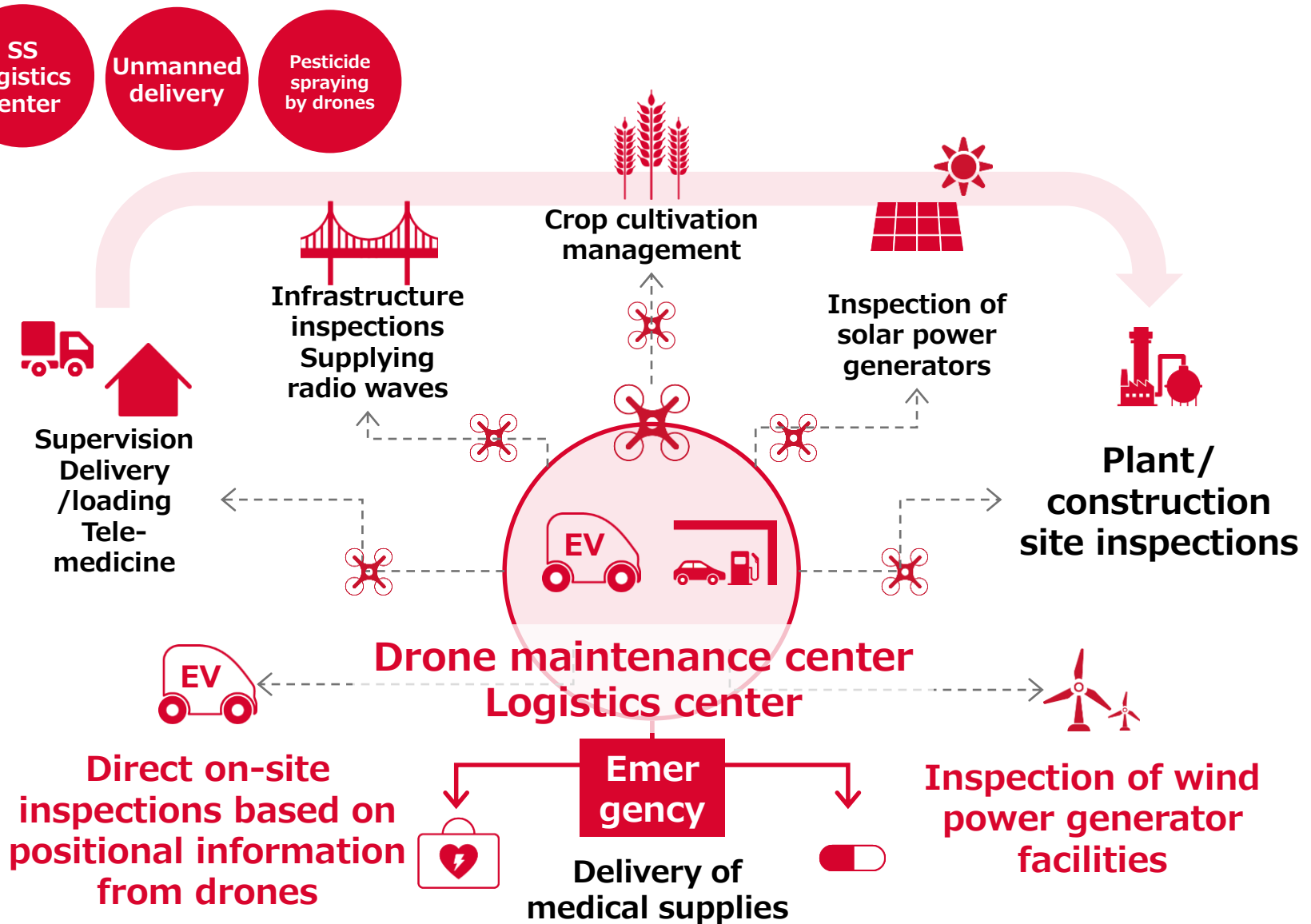
Last-mile logistics verification test

SS
logistics
center

Validated **potential of Service Station as a logistics center**
through last-mile verification test using drones



Future vision on the use of drones



Senior citizen healthcare business

Day
service
(Elderly
care)

Promoting development of directly-operated and franchised day service facilities to support autonomous lifestyles

Also **entering new businesses covered by nursing care insurance** and **developing services not covered by insurance**



March 2018

Capital/business agreement
with REHA CONTENTS



April 2021

Acquired all shares
in QLC PRODUCE



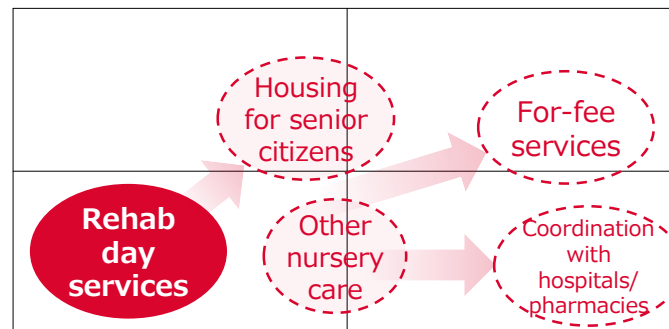
Establishing a comprehensive care system which allows senior citizens to **maintain their desired lifestyles**



Spread of senior/healthcare businesses starting from rehabilitation day services

For **seniors with potential need of care**

For **seniors certified as being in need of care**



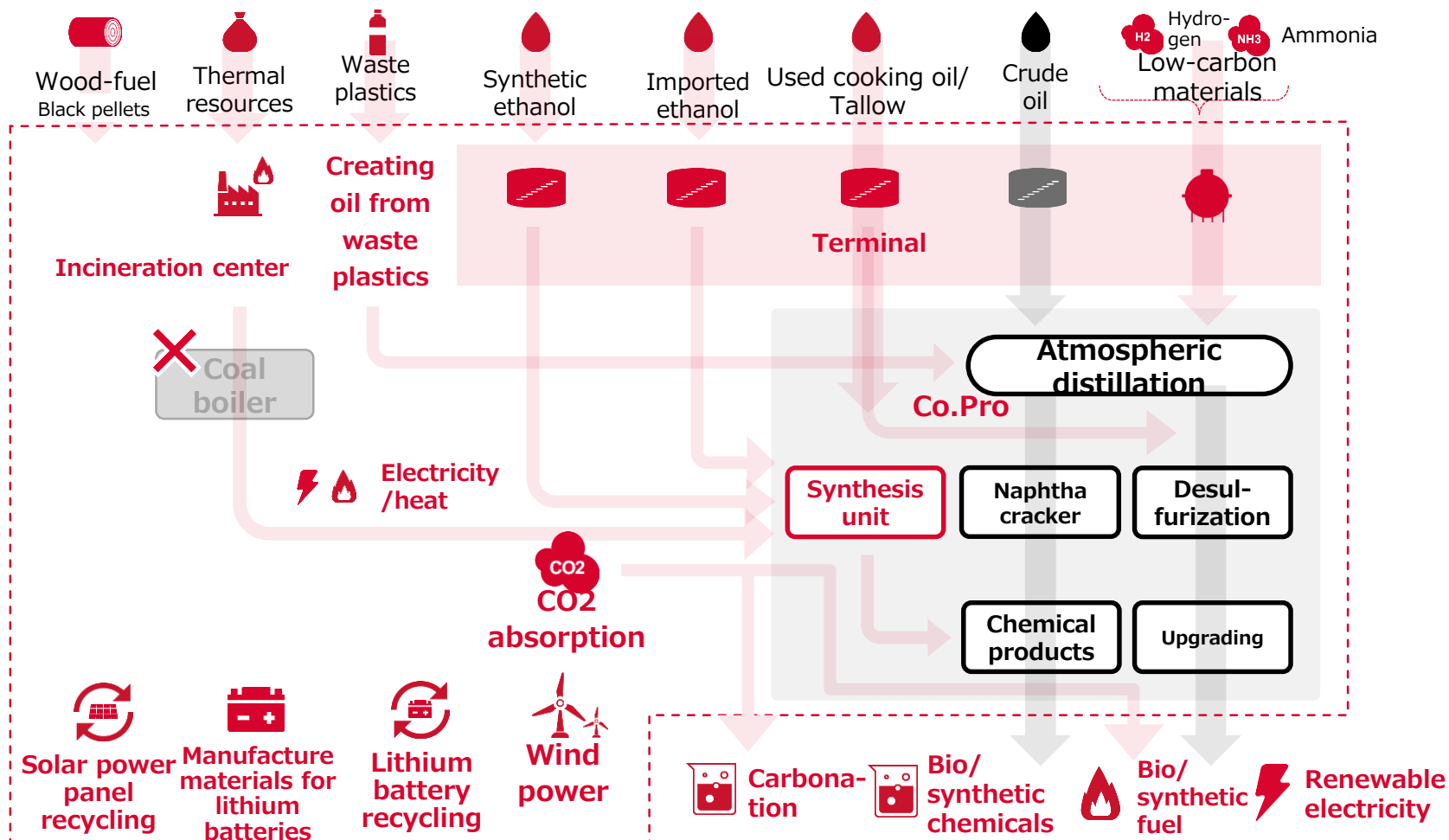
Covered by nursing care/medical **insurance**

Not covered by nursing care/medical **insurance**

-
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 - ② **CNX Center concept and initiatives**
 - ③ Progress since the 2019 medium-term management plan underlying assumptions, etc.

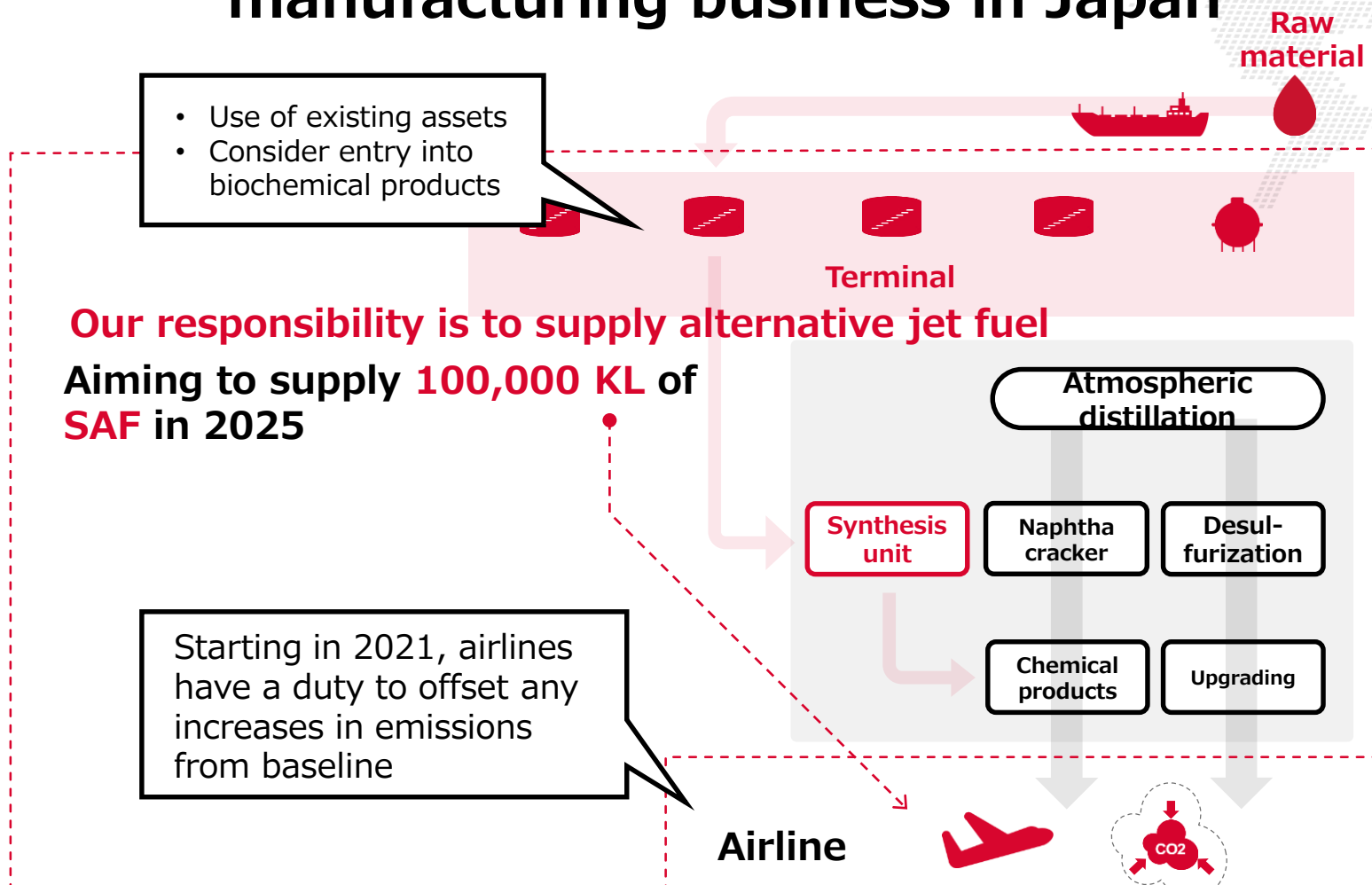
CNX Center concept

Establish the CNX Center model by 2030



Implementing the SAF business

Develop the first commercial-size SAF* manufacturing business in Japan



Implementing the waste plastic recycling business

Establish Japan's first waste plastics recycle chain (at Chiba complex)

- Car manufacturers
- Retail
- Home appliances

 **Waste plastic collecting company**

 **Waste plastics 15,000 t/year**

Creating oil from waste plastics

Invite Environment Energy Co., Ltd.

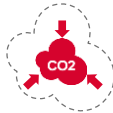


HiCOP technology*

*Catalytic degradation

Oil produced from waste plastics refined using existing facilities

 **Produced oil**



New recycling process are necessary, as less than 30% of the approx. 9 Mt of waste plastics are recycled (excluding thermal recovery)

Disintegration and synthesis at the molecular level to recycle into new resources and create high-quality chemical products

Atmospheric distillation

Synthesis unit

Naphtha cracker

Desulfurization

Chemical products

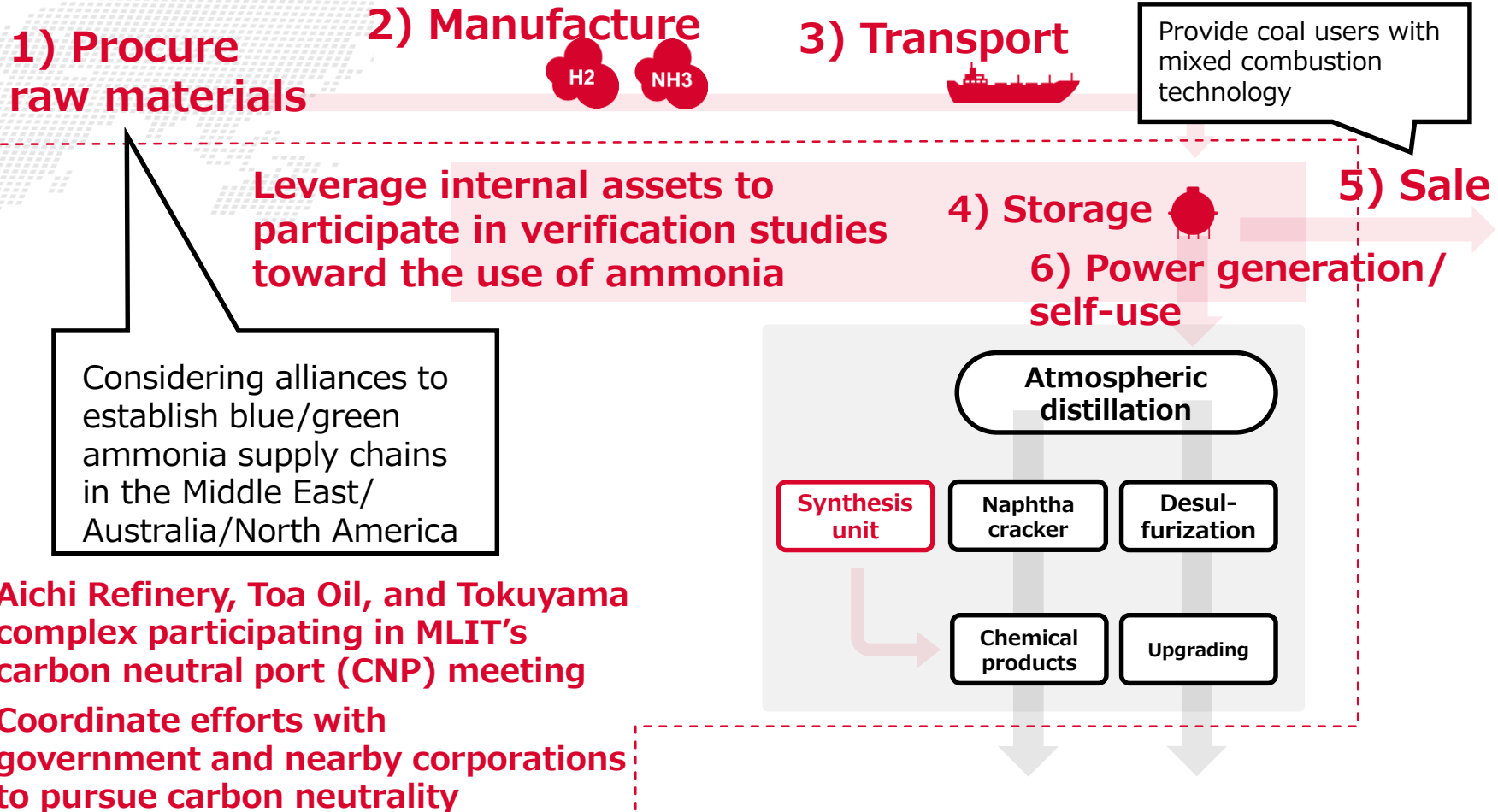
Upgrading

Recycled resources



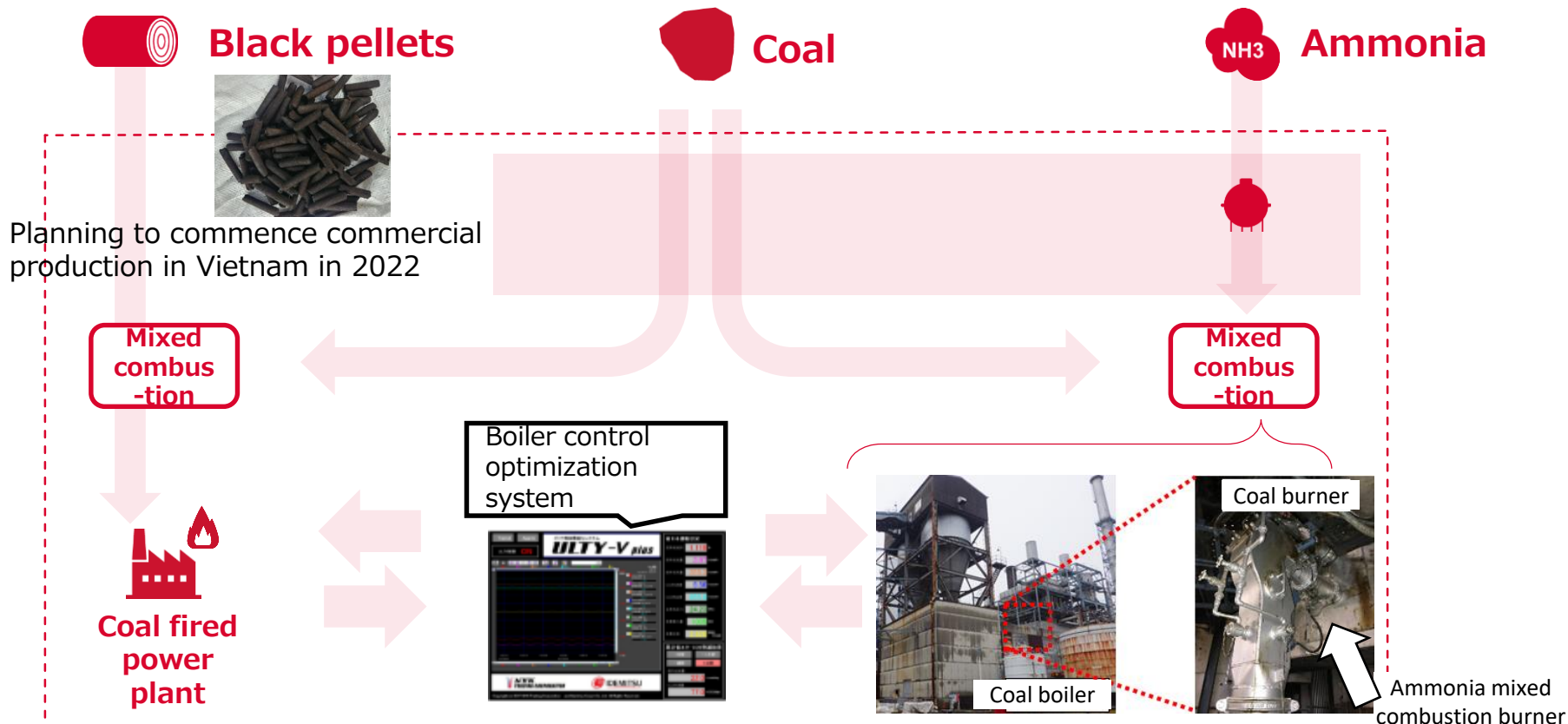
Ammonia and hydrogen-related efforts

Establish CO2-free ammonia supply chain for power/industrial divisions



Vision for the low-carbon solution business

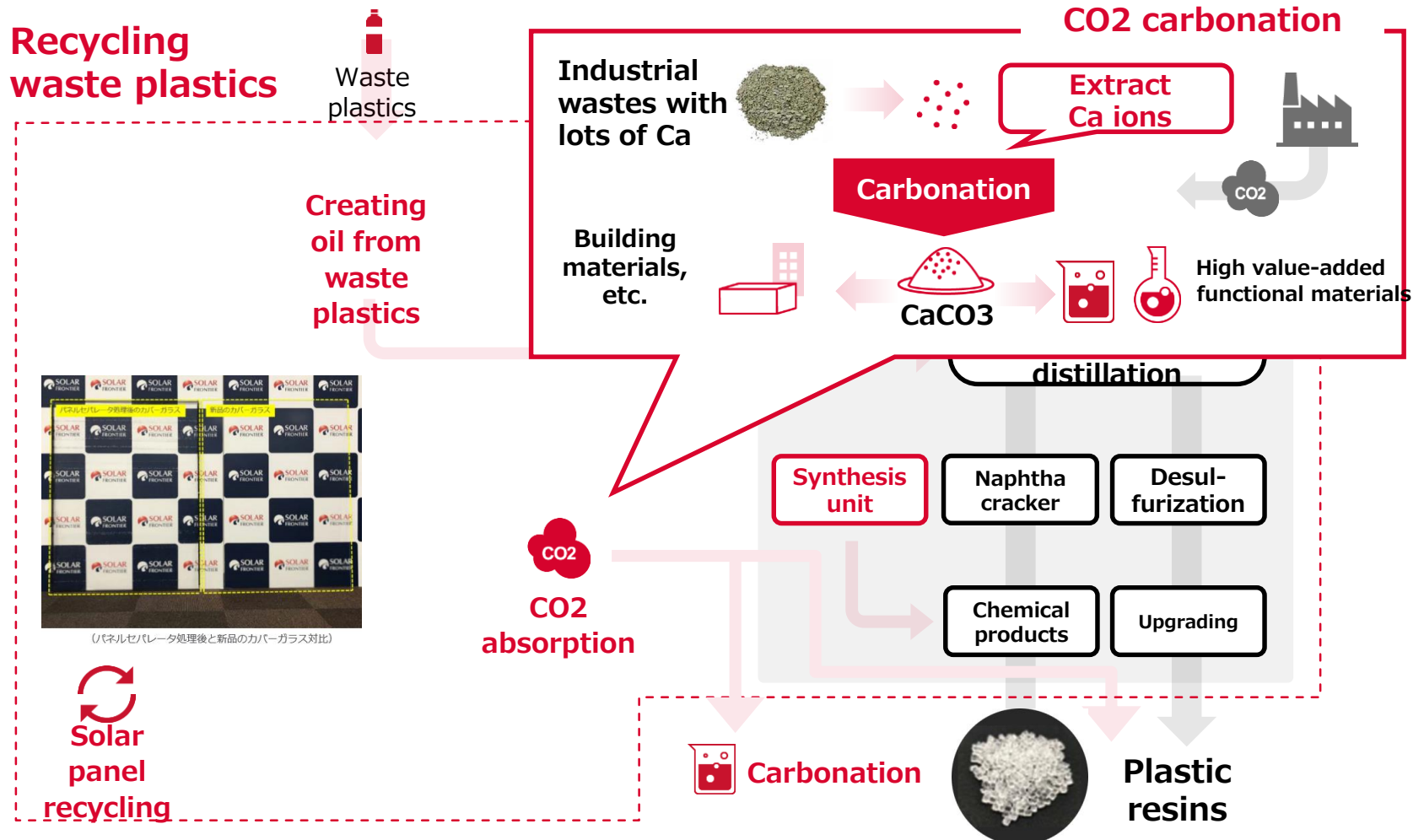
Provide low-carbon solutions for coal fired power generation



Establish black pellet/ammonia mixed combustion technology and obtain data

⇒ provide mixed combustion technology/know-how to coal users

Establishing a circular society



<Conceptual Diagram> CNX Center



<Conceptual Diagram> Smart Yorozyua (one-stop-shop)



-
- ① Smart Yorozuya (one-stop-shop) concept and initiatives
 - ② CNX Center concept and initiatives
 - ③ **Progress since the 2019 medium-term management plan underlying assumptions, etc.**

Progress on key challenges raised in the medium-term management plan announced in 2019

Segment/ Category	Key Challenges	Initiatives
Petroleum	■ Maximize integration synergies	<ul style="list-style-type: none"> ■ Achieved ¥48.8 bn (cumulative) in FY2020 ■ Forecasting ¥60 bn (cumulative) in FY2021
	■ Enhance international competitiveness of refineries	<ul style="list-style-type: none"> ■ Expanded capacity of RH unit at Chiba complex in 6/2020 ■ Started considering acquisition of ENEOS Chita PX manufacturing equipment (10/2020)
	■ Enabling profit contribution from Nghi Son Refinery	<ul style="list-style-type: none"> ■ Stable operations in FY20 ■ Earnings decrease due to time lags, etc. and weak product markets
Functional Materials	■ Commercialize lithium solid electrolytes	■ Finalized plans to install small volume production facilities within Chiba complex
Power and Renewable Energy	■ Development of renewable energy sources domestically and overseas	<ul style="list-style-type: none"> ■ Constructing Tokuyama biomass (50,000 kW) ■ US mega-solar development (Approx. 430,000 kW), etc.
	■ Transformation of domestic power/solar business	■ Commenced solar business transformation
Resources	■ Gas development in Southeast Asia	■ Commenced production at Vietnamese gas fields in 11/2020
	■ Development of renewable energy sources domestically and overseas	■ Completed geothermal/power generation/environmental assessment in Akita (Oyasu)
	■ Development of black pellets	<ul style="list-style-type: none"> ■ Started sorghum cultivation pilot experiment in Australia in 9/2020 ■ Started constructing black pellet production facility in Vietnam

Progress on key challenges raised in the medium-term management plan announced in 2019

Segment/ Category	Key Challenges	Initiatives
Harmony with the global environment and society	■ Set GHG reduction targets and taking action to meet them	■ Disclosed progress on GHG reduction in FY2020 integrated report
	■ Implement D&I initiatives/making work more rewarding for employees	■ Setting target for Women's Index ■ Conducted D&I unconscious bias training
	■ Continue to appoint at least 1/3 diverse, independent outside directors	■ 42% are independent external directors
Progress in governance	■ Further improvements to transparency of appointments and remuneration	■ Established the nomination and compensation advisory committee
Acceleration of digital transformation	■ Create and disclose skill matrices	■ Disclosed in the convocation notice for the 5/2020 AGM
	■ Digitalization of core business/Creating a customer value in existing business/Creating a completely new business	■ Established the DX Office in 1/2020

Enabling profit contribution from Nghi Son Refinery

- ❑ Pursue earnings improvement by continuing stable operations, streamlining of costs, and achieving a recovery in profit margins

Looking back on FY2020

- Stable operations have been maintained since maintenance efforts at the end of 2019, achieving almost full capacity utilization
- Earnings struggles due to the COVID pandemic:
 - Inventory impact resulting from the sharp fall in crude oil prices in March
 - Deterioration in Asian product markets

Initiatives in FY2021~

- Expecting resolution of inventory impact and some recovery in profit margins
- Planning to continue stable operations and to achieve cost cuts (maintenance costs/ headquarters overhead; internalization of production) to improve earnings



Initiative relating to lithium solid electrolytes

- ❑ We plan to accelerate efforts towards commercial production of solid electrolytes for all-solid-state lithium ion batteries, which holds promise as a next-generation battery

Current Positioning

- A leading developer of sulfide solid electrolytes, a key material for all-solid-state lithium ion batteries
- Owner of many related patents

Achievements in FY2020 and Future Initiatives

- Finalized decision in FY2020 to install new compact mass-production equipment for solid-state electrolytes within the Chiba complex
- Expected to begin operations at the above facility around summer of FY2021
- Accelerate development towards commercialization

All-solid-state lithium ion battery

- Next-generation batteries which will mainly be used in EVs, expected to have the following advantages over the current liquid lithium ion batteries:
 - increased energy density
 - faster recharging
 - enhanced safety



Renewable energy-relate initiatives

□ Expanding development capabilities for renewable energy sources (solar, geothermal, wind, biomass)

Region	Category	Capacity (share)	Comments / Progress
Japan	Biomass	50,000 kW	■ Under construction in Tokuyama, Yamaguchi; to be launched in FY2022
Japan	Geothermal	15,000 kW	■ Oyasu, Akita Environmental assessment process completed; currently evaluating capacity; investment decision-making expected during FY2021
Japan	Solar	78,000 kW	■ Akaiwa, Okayama PJ: completed ■ Hirono, Iwate PJ: under construction
North America	Solar (BOT* transaction)	430,000 kW	■ Mustang II, Centaral40: launched ■ Pioneer, Luciana: under construction
Philippines	Solar	32,000 kW	■ Power Source First Buracan Solar: under construction

*BOT : Build On Transfer

DX initiatives

Transform the entire business process with digital technology to
**Create new customer value and
to enhance the employee experience**

Digital for Ecosystem

Co-creation
with business
partners

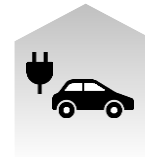
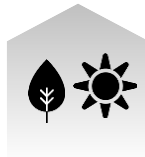


**Co-creation through
coordinated efforts**

Large corporations, startups,
open innovation, etc.

Digital for Customer

Co-creation
with
customers



**Provide new value
to customers**

Enhance services provided to
existing customers, obtain
new customers

Digital for Idemitsu

Co-creation
with
employees



**Create new employee
workstyles**

Overall optimization through
reforming cross-organizational
and operational processes

Assumptions

Item/ segment	Indicator	Units	Medium-term management plan announced in 2019			Actual	Revised forecast	
			FY2020	FY2021	FY2022	FY2020	FY2021	FY2022
Crude oil	Dubai	\$/BBL	60.0	60.0	60.0	44.5	60.0	60.0
	Brent	\$/BBL	61.5	61.5	61.5	41.7	61.0	61.0
Naphtha	Customs	\$/t	550	550	550	400	560	560
Coal	NEWC	\$/t	70.0	72.0	72.0	60.4	80.0	75.0
Exchange rate	USD	¥/\$	105.0	105.0	105.0	106.1	105.0	105.0
Basic chemicals (Asian market prices)	Paraxylene	\$/t	893	873	943	592	800	800
	Styrene monomers	\$/t	1,059	1,086	1,005	827	910	920
Performance chemicals	Poly- carbonates	\$/t	2,093	2,093	2,143	2,325	2,350	2,350

*Brent, NEWC based on calendar years

FY2022 segment profits (vs. FY2019 forecast)

Units: 100 million yen

	FY2022 (2019 forecast)	FY2022 (revised forecast)	Change	Reason for change
Petroleum	1,230	1,070	-160	Deterioration in overseas market conditions, etc. (decrease in profits from exports, equity-method investment income, etc.)
Basic chemicals	410	150	-260	Decrease in aroma product spreads, etc.
Functional materials	500	250	-250	Delays in earnings recovery for lubricant oils, performance chemicals, etc.
Power and renewable energy	140	0	-140	Delayed transformation of Solar Frontier, etc.
Resources	415	380	-35	Impact of AUD appreciation on the coal business, etc.
(Oil E&P)	234	320	86	Increase in IPN sales, etc.
(Coal)	176	60	-116	Impact of AUD appreciation on the coal business, etc.
Other	-90	-100	-10	
Operating (excl. inventory) + equity income	2,600	1,750	-850	
Net income (excl. inventory)	1,750	1,000	-750	

FY2022 segment profits (vs. FY2020 results)

Units: 100 million yen

	FY2020 actual	FY2022 (revised forecast)	Change	Reason for change
Petroleum	947	1,070	123	Integration synergies, improved equity-method investment income, increase in home fuel costs, etc.
Basic chemicals	34	150	116	Recovery in the aroma market, increase in sales volume (SDM-related), etc.
Functional materials	130	250	120	Recovery in lubricant earnings, etc.
Power and renewable energy	-173	0	173	Resolution of the impact of soaring wholesale markets seen in winter of 2020
Resources	47	380	333	Recovery in resources prices, etc.
(Oil E&P)	68	320	252	Commencement of production at Vietnamese gas fields, recovery in crude oil prices, etc.
(Coal)	-20	60	80	Recovery in the coal market, AUD appreciation, etc.
Other	-57	-100	-43	Increase in R&D expense, etc.
Operating (excl. inventory) + equity income	928	1,750	822	
Net income (excl. inventory)	297	1,000	703	

Sales volume

Units: 1,000 KL

	Plan Announced 11/2019			Current Revision		
	FY2020	FY2021	FY2022	FY2020	FY2021	FY2022
Gasoline	14,190	13,860	13,510	12,764	13,230	12,940
Kerosene	4,470	4,350	4,230	4,287	4,050	3,930
Diesel Oil	11,030	11,010	11,000	9,872	10,210	10,470
Heavy Fuel Oil A	3,520	3,390	3,290	3,316	3,250	3,140
4 core products subtotal	33,210	32,610	32,030	30,240	30,740	30,480
Jet fuel*	2,610	2,610	2,600	1,372	1,990	2,510
Other	2,760	2,680	2,540	2,433	2,210	2,310
Domestic fuel subtotal	38,581	37,900	37,170	34,045	34,940	35,300
Fuel exports	7,600	7,190	8,730	4,990	6,690	9,790
Total	46,181	45,090	45,900	39,035	41,630	45,090

*Domestic jet fuel only

Units: 1,000 t

Basic chemicals	4,120	4,300	4,350	3,607	4,090	4,200
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Production volume

Units: Thousand BOED

	Plan Announced 11/2019			Current Revision		
	FY2020	FY2021	FY2022	FY2020	FY2021	FY2022
Norway	22.7	23.6	23.3	23.1	25.1	27.5
Vietnam	6.1	17.2	16.8	0.9	14.5	13.9
Oil E&P Total	28.7	40.8	40.1	24.0	39.5	41.4

Units: Thousand t

Ensham	4,560	5,300	5,250	3,853	4,570	4,820
Muswellbrook	1,170	960	530	985	1,210	750
Boggabri	6,000	6,080	6,080	5,074	5,600	5,730
Australia subtotal	11,730	12,340	11,860	9,911	11,380	11,300
Malinau	1,200	1,200	1,200	1,203	1,050	1,050
Coal Total	12,930	13,540	13,060	11,115	12,430	12,350

Precaution Statement about Forecasts

Any information about forecasts for the Company's operating results, management strategy and management policy contained in this documents other than historical facts is prepared, according to judgments made by the top management of the Company based on information available as of the publication of the document.

Actual business environments contain potential risk factors and uncertainties including economic situations, crude oil prices, trends in petroleum products, market conditions, currency exchange rates and interest rates.

Consequently, actual operating results of the Company may substantially differ from forecasts due to changes in the important factors mentioned above.