



JXTG Group ESG Management

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0. Our Envisioned Scenario in 2040



Low-carbon, recycling-oriented society



Mass introduction of **renewable energy**

EV, used for **car sharing** and **energy storage**, replaces gasoline and diesel cars

Distributed energy resources with **energy storage**

Recycling technology and infrastructure for metals and plastic in place

Various service providers help people enjoy a more comfortable life

An aerial night view of a city, likely Tokyo, with a dense grid of illuminated buildings. The sky is a mix of deep blue and purple, with a thin crescent moon visible. The image is overlaid with large, semi-transparent geometric shapes: a dark blue triangle on the left, a light blue triangle on the right, and a teal triangle at the bottom right. The text '01 Creating New Value' is centered in white.

01 Creating New Value

1-1. JXTG Group Philosophy

JXTG Group Philosophy

Mission

Harnessing the Earth's power for the common good and for the day-to-day life of each individual, we will contribute to the development of our communities and help to ensure a vibrant future through creation and innovation in energy, resources, and materials.

Our Five Core Values

As a member of the community

High ethical standards

Based on our core principles of integrity and fairness, we conduct all of our business activities in accordance with our high ethical standards.

Health, safety and environment

We give the highest priority to health, safety and environmental initiatives, which are vital to the well-being of all living things.

Supporting day-to-day life

Focus on customers

We strive to meet the expectations and evolving needs of our valued customers and of society as a whole through the stable provision of products and services while creating new value as only we can.

For a vibrant future

Taking on challenges

Taking changes in stride, we rise to the challenge of creating new value while seeking innovative solutions for today and tomorrow.

Moving forward

Looking to the future, we continue to grow, both as individuals and as a company, through the personal and professional development of each and every employee.

1-2. Our Businesses and Strengths, Our Relationship with Society

Our businesses and strengths

Diverse, global value chain

Refining, production and supply network

Innovative technology

Exploration, development and production in 10 countries around the world

Equity-entitled crude oil and natural gas production volume
110,000 bbl/day
 (Natural gas sales ratio 63%)



Natural resource development

Efficient mining operations for stable extraction of natural resources
 Equity-entitled copper mine production volume
200,000 tons/year



Stable and efficient oil transport



Transport

Reducing environmental impacts using copper concentrate and sulfuric acid carriers
40% reduction in exhaust gas (vs. bulk carriers)



Functional materials

Delivering solutions with high performance materials



Responding to society's energy needs

Power generation capacity

1.55 million kW
 (Renewable energy: 50,000 kW)

Largest oil refining capacity in Japan
 Crude oil processing capacity

1.93 million bbl/day



Refining and smelting

Copper ingot production capacity
 Among highest in world (Approx. **920,000** tons/yr)



Electricity retailing contracts

Approx. **520,000**

Market share of fuel oil sales in Japan

Approx. **50%**
 (No.1 in Japan)

Market share of service stations in Japan

43% (No.1 in Japan)



Manufacturing, sales and recycling

Paraxylene supply capacity
No.1 in Asia
 (3.62 million tons/yr [direct sales basis])



Advanced materials supporting information society

Product lineup with **No.1** market share worldwide



Supply of lubricants to Japan and overseas markets

Overseas locations: **31**

Response to demand for new energy
 Share of hydrogen stations in Japan

Approx. **40%** (41 locations)



Propylene supply capacity

No.1 in Asia
 (1.7 million tons/year [direct sales basis])



Number of recycling collection sites

9 in Japan and abroad

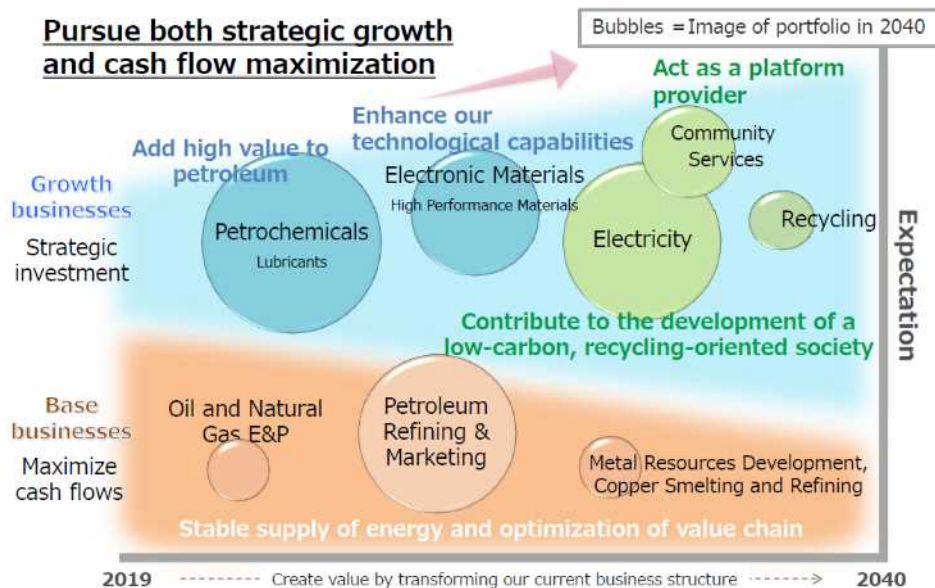


1-3. Overview of Long-Term Vision (Envisioned Goals)

Our Envisioned Goals

1. Become one of the most prominent and internationally competitive energy and materials company groups in Asia
2. Create value by transforming our current business structure
3. Contribute to the development of a low-carbon, recycling-oriented society

Transformation of the business structure



Contribution to SDGs

Through our business activities (five key items)



Through corporate activities (five key items)



1-3. Positioning of Long-Term Vision and Medium-Term Management Plan

Scenario
in 2040

Focus on a constantly
changing future

Create a vision
for the future

Formulate and implement
management strategy
based on this vision

Fiscal 2020-2022
Second
Medium-Term
Management Plan

JXTG Group
Long-Term Vision
to 2040

Realize Long-Term Vision
through strategy implementation

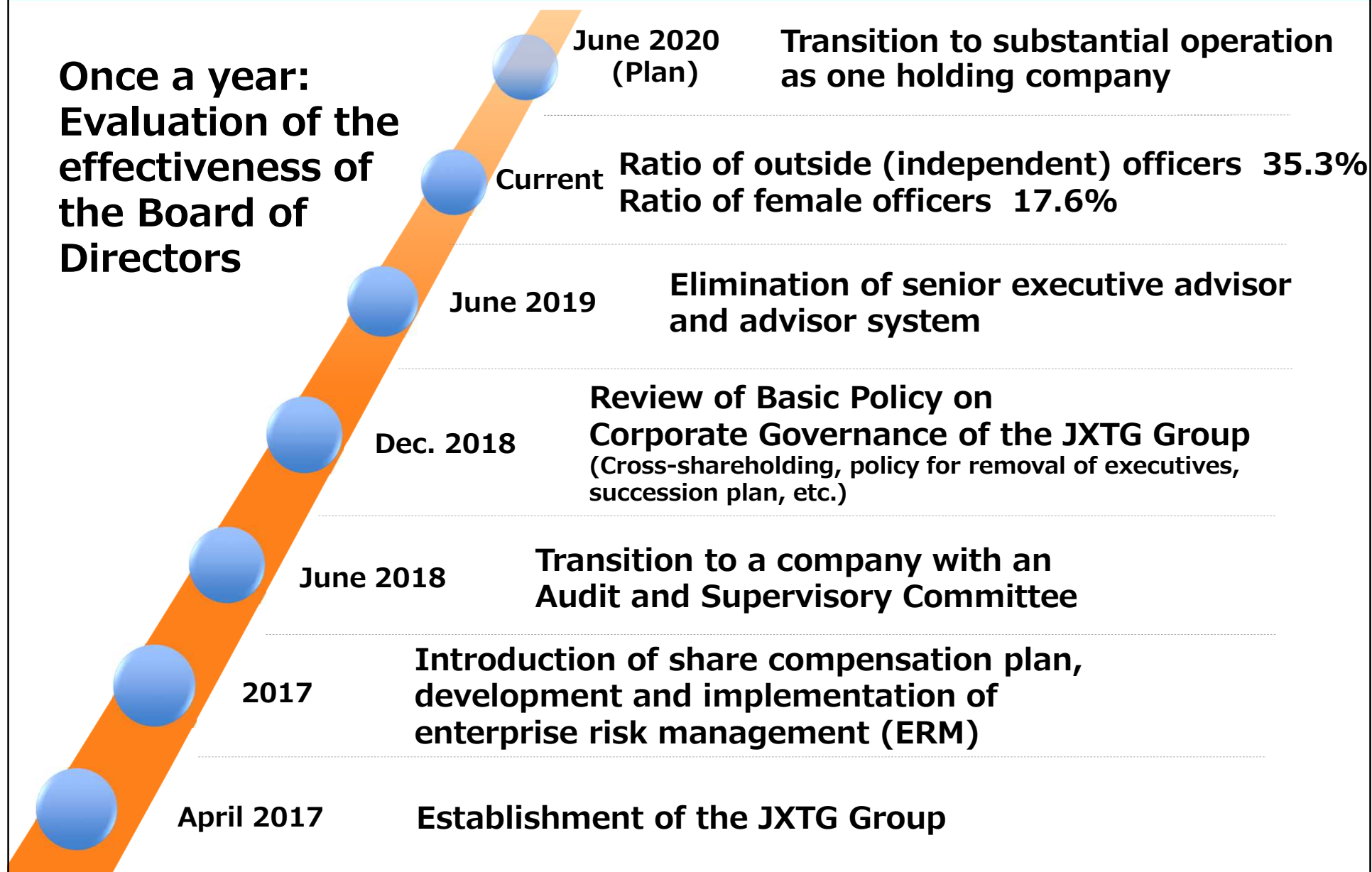


02

Business Foundation for Our Envisioned Goals

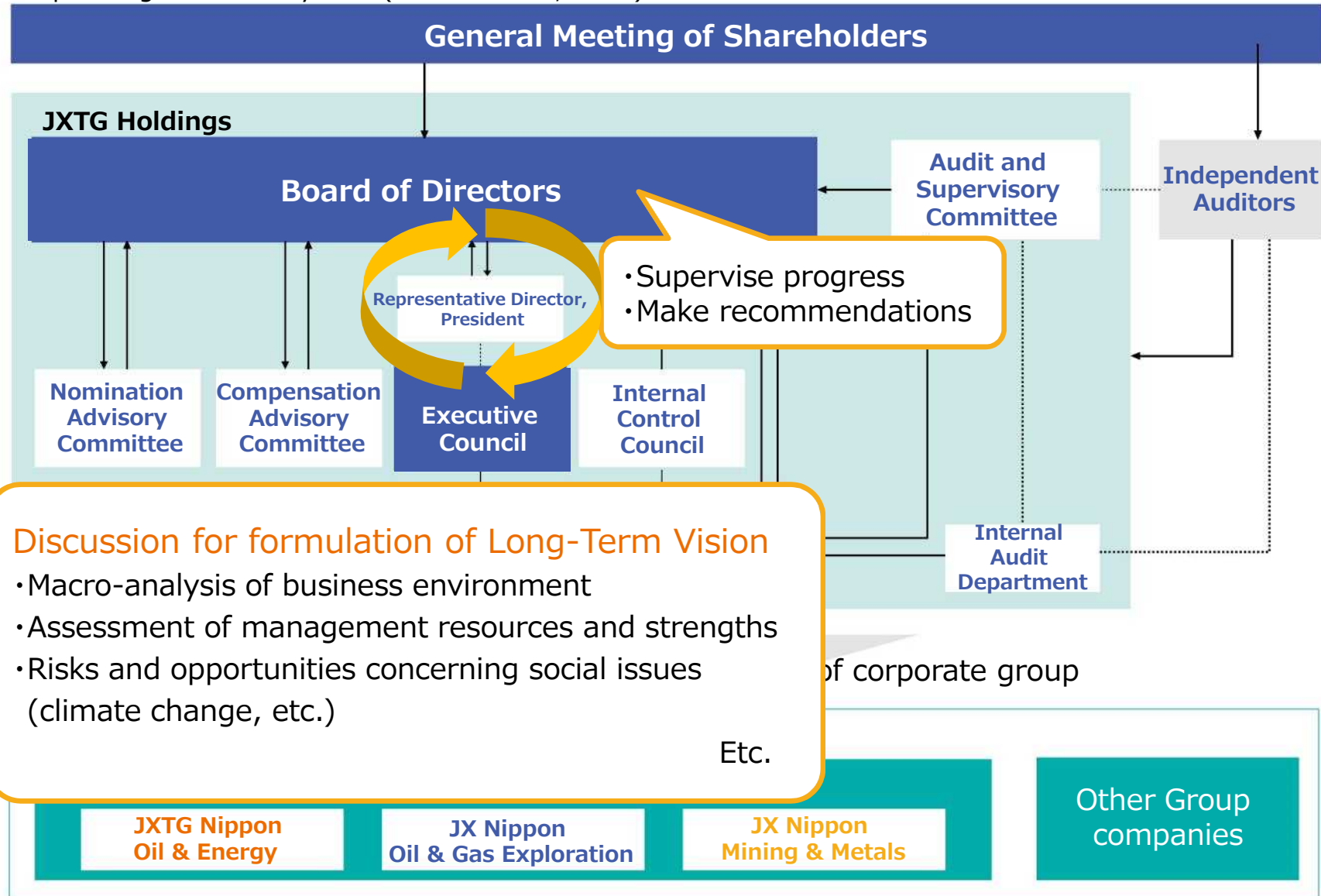
2-1. Initiatives for Strengthening Governance

**Once a year:
Evaluation of the
effectiveness of
the Board of
Directors**



2-2. Governance System Supporting ESG Management

Corporate governance system (as of June 26, 2019)



2-3. Addressing ESG Issues

Social value realized through our businesses

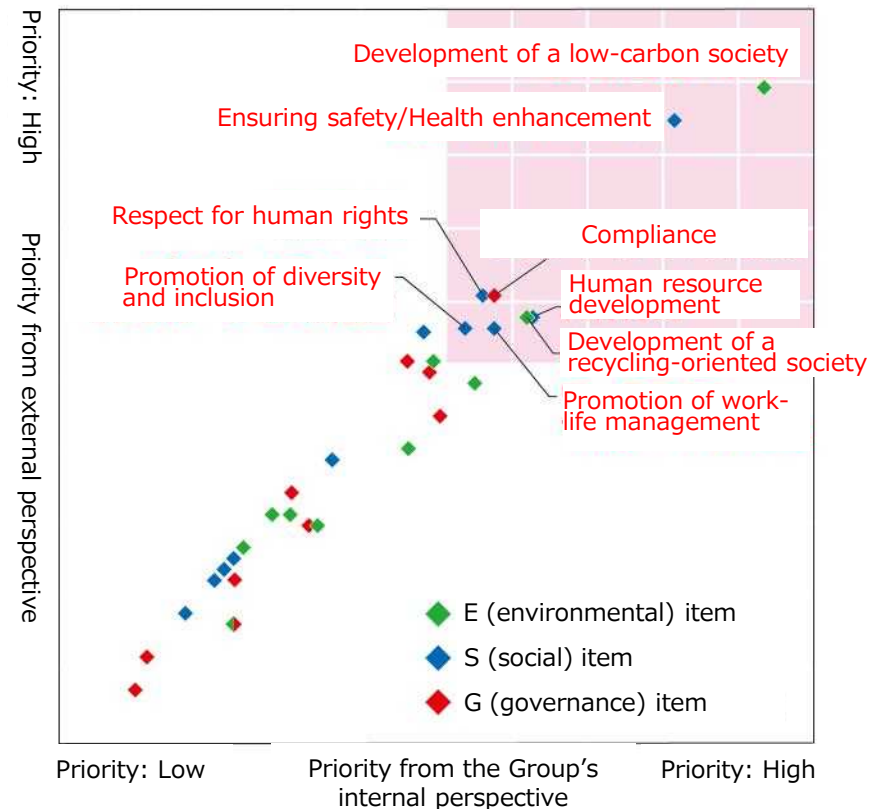
- Stable supply of energy, resources and materials
- Provision of convenience in daily life and high added value

- Development of a low-carbon society
- Development of a recycling-oriented society

- Ensuring safety
- Respect for human rights
- Human resource development
- Diversity and inclusion
- Work-life management
- Health enhancement
- Compliance

Resolution of the JXTG Group's top CSR priorities (material issues)

Diagram of the Group's Top CSR Priorities



2-4. Developing Human Resources and Energizing Our Organization

Initiatives focused on continuous growth and development

1. Development of leaders (management resources)

2. Maximize the abilities of each employee

Managers' Declaration of Conduct for corporate transformation

Flexibility in place, time and attire

- Telework
- Flex-time without core time
- Casual 365



Systems for career continuity

- Job transfer deferment/Leave of absence to study abroad at own expense/Job transfer to accompany spouse
- Leave system to support career continuation



Fostering a corporate culture with motivation to take on challenges

- Company venture program "Challenge X"
- Long-Term Vision Formulation Taskforce (participation by young employees)



Note: Some initiatives differ by company.

Wakuwaku Council

Managers discuss challenges and measures for boosting "wakuwaku" (enthusiasm) of employees, based on the PDCA cycle.



03

Creating Business Opportunities to Achieve Our Envisioned Goals

3-1. Businesses That Contribute to the Resolution of Social Issues

Growth Businesses

Petrochemicals/Lubricants

- Refinery transformation to produce more chemical products
- Develop environmentally friendly products

Electronic Materials/ High Performance Materials

- Supply high performance materials
- **Product development – nutrition sector**

Community Services

- Act as a platform provider

Electricity

- Develop optimal power generation portfolio
- **Renewable energy**
- **Hydrogen**

Recycling

- **Metals recycling, waste plastics recycling**

Note: Businesses in blue are described in more detail on the following slides.

Base Businesses

Stable supply of energy and optimization of the value chain

Oil and Natural Gas E&P/Petroleum Refining & Marketing/ Metal Resources Development, Copper Smelting and Refining

- Increase efficiency in oil refining and copper smelting & refining processes
- CO2-EOR project



CO2-EOR project in Texas

3-2. Growth Businesses (Development of a Low-Carbon Society)

1. Renewable energy (Electricity) × Social value (relevant SDGs)



Kudamatsu Mega Solar Power Plant



A wind turbine



Offshore wind power project in Taiwan



Taiwan

Taipei

Taichung

Project site

Yunlin County

- Mega solar
- Biomass
- Hydropower, wind power, geothermal



Shimoda Onsen Binary Power Plant

3-2. Growth Businesses (Development of a Low-Carbon Society)

2. Hydrogen (Electricity, Community Services) × Social value (relevant SDGs)



Renewable energy

Challenges

Supply equalization

Securing large quantities

Economic feasibility

Hydrogen
Equalization possible through storage and transport

Manufacturing process for organic hydride required for hydrogen transport (methylcyclohexane [MCH])

Conventional technology

Water electrolysis

Hydrogen tank

Toluene hydrogenation

Simplified from two processes to one, reducing facilities costs by around

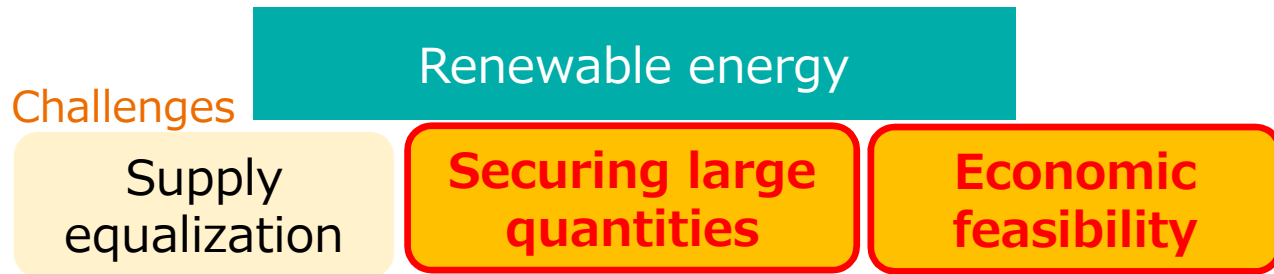
50%

Electrochemical synthesis of organic hydride

Toluene electrolytic reduction

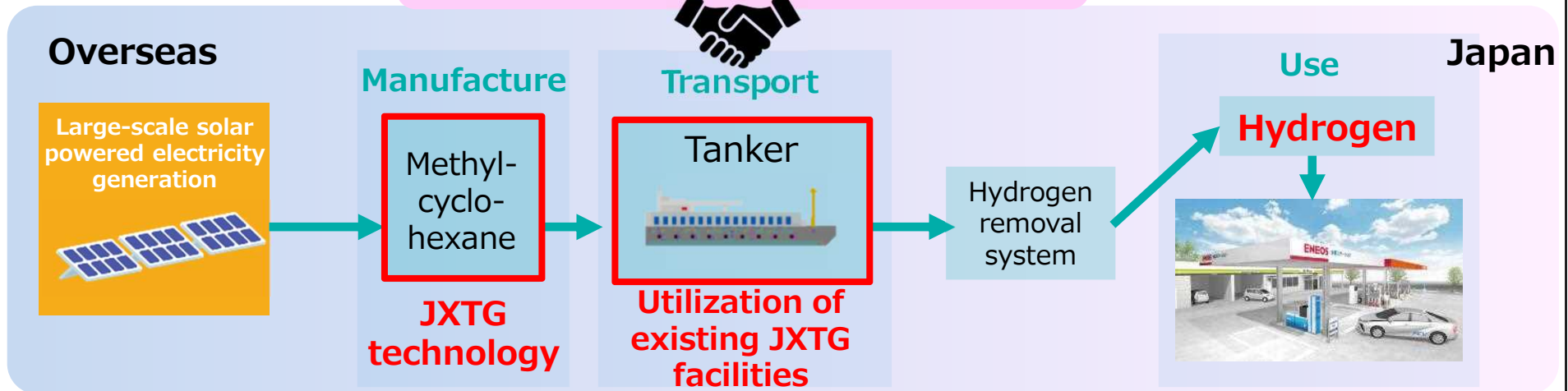
3-2. Growth Businesses (Development of a Low-Carbon Society)

2. Hydrogen (Electricity, Community Services) × Social value (relevant SDGs)



Importance of overseas partnerships

(Ex. Methylcyclohexane)

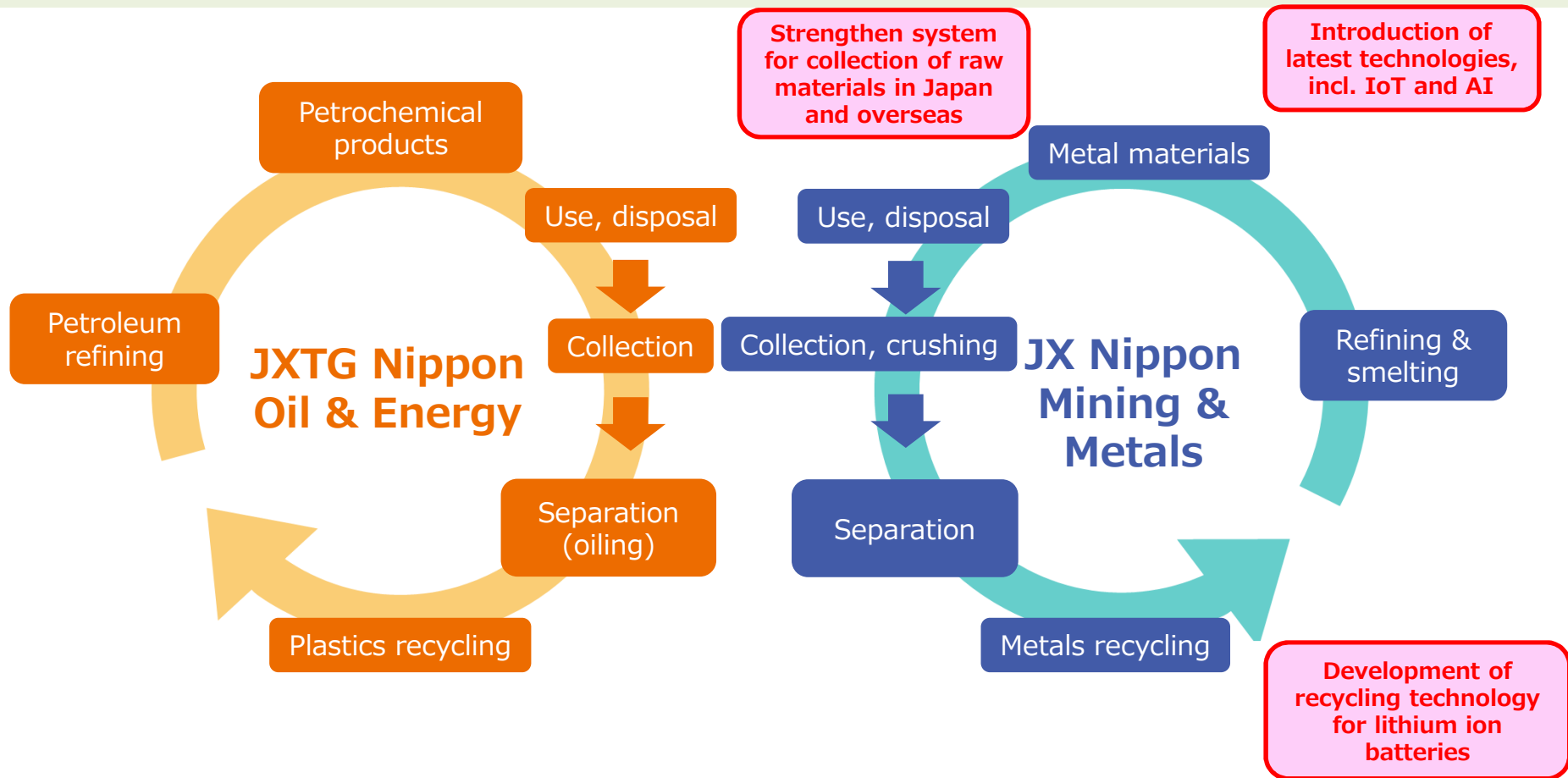


3-2. Growth Businesses (Development of a Recycling-Oriented Society)

3. Metals, Waste plastics (Recycling)



Social value (relevant SDGs)



3-2. Growth Businesses (Health)

**Product development –
Nutrition sector**
(High Performance Materials)



Social value
(relevant SDGs)



AdoniCare™ Carotenoid for Human Nutrition

Produced with a special
microorganism (marine bacteria)
and fermentation technology

We have succeeded in commercial production of this
product, which contains astaxanthin and rare carotenoids,
for applications in health foods and supplements.

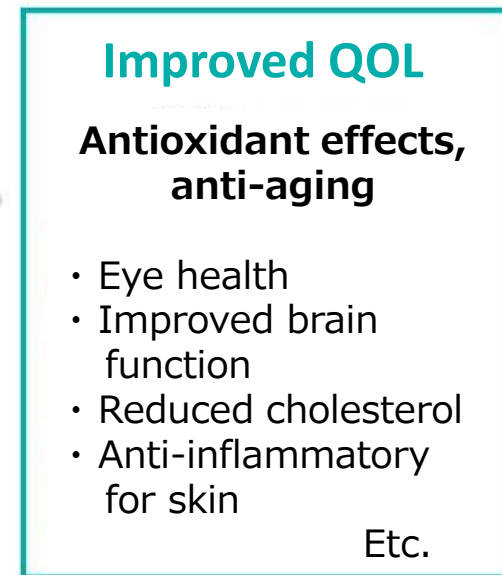
A product manufactured
by the JXTG Group



Applications



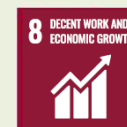
Anticipated effects





04
Planting Seeds for the Future
to Achieve Our Envisioned Goals

4-1. Development of New Materials Through Open Innovation



- Wealth of experimental data
- Molecular simulation technology

Innovation

Group of AI professionals



Tens of thousands of times



Scaling up and acceleration of molecular simulation

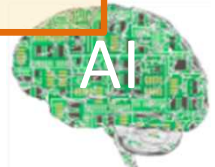
Diversification of raw materials and response in materials development

Development of human resources who can create added value

Materials informatics (MI)

Molecular simulation

Deep learning



Expanded possibilities

- Applicable fields
- Pharmaceuticals
 - Large rechargeable batteries (automobiles, power storage)
 - Biodegradable plastics
- Etc.



4-2. Development of New Materials Through Open Innovation



JX Nippon Mining & Metals

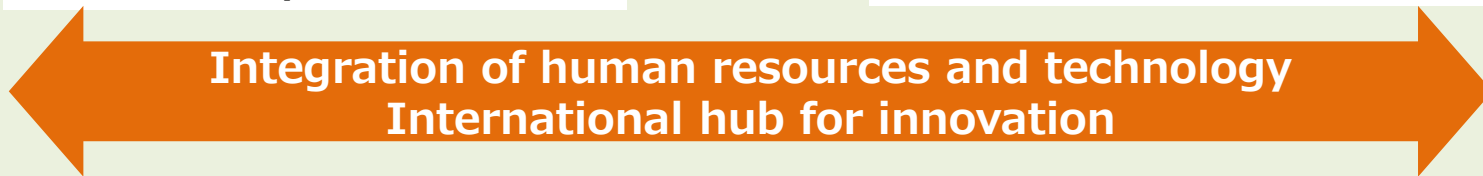


TOHOKU UNIVERSITY

- World-class technological capability
- Business expertise

Innovation

Excellent research capability



IoT, AI society/
Progress of fifth-generation
telecommunications (5G)

Size reduction of
electronic devices

High integration of
large-scale
integration (LSI)

Miniaturization of
integrated circuits

Currently
constraints on the
miniaturization of
wiring

Development of
next-generation
semiconductor
wiring material

Open innovation

Synergy effects

Foster human
resources who can
create added value

Thank you for your attention

Selection for inclusion in ESG-related investment indexes (as of September 2019)

- FTSE4Good Index Series
- FTSE Blossom Japan Index
- MSCI Japan ESG Select Leaders Index
- MSCI Japan Empowering Women Index (WIN)
- S&P/JPX Carbon Efficient Index
- SNAM Sustainability Index
- 2019 Health and Productivity Management
- Competitive IT Strategy Company 2019



Cautionary Statement Regarding Forward-Looking Statements

These materials contain certain forward-looking statements, however, actual results may differ materially from those reflected in any forward-looking statement, due to various factors, including but not limited to, the following:

- (1) macroeconomic conditions and changes in the competitive environment in the energy, resources and materials industries;
- (2) changes in laws and regulations; and
- (3) risks related to litigation and other legal proceedings.