

# 2040 Vision

May 12, 2021

JGC Holdings Corporation

## Executive Summary

### Purpose

## Enhancing planetary health

### 2040 Vision

A corporate group that contributes to enhancing planetary health in **five business areas**

Energy transition  
Healthcare / Life sciences  
High-performance functional materials  
Circular economy  
Industrial & Urban infrastructure

### Background of 2040 Vision

Responding to a rapidly changing business environment    Achieving long-term growth with a grasp of social changes

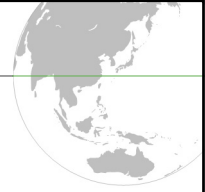
### Three aspects of transformation supporting the 2040 vision

<b>Business areas</b>	Focused on Oil & Gas	> Responding to the energy transition, expanding our business areas
<b>Business models</b>	Focused on EPC and manufacturing models	> Transformation of EPC business model, diversifying to non-EPC models
<b>Organization</b>	Managed mainly from Japan; organization designed for execution of Mega-sized EPC projects	> Strengthening our regional management framework and fostering a culture of innovation

### Target

FY2040 operating income\* **¥150–200 billion**

\* Adjusted Operating Income: Operating income plus interest income, dividend income and share of profit of entities accounted for using equity method earned in each business area



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## Purpose of the JGC Group



## Purpose of the JGC Group

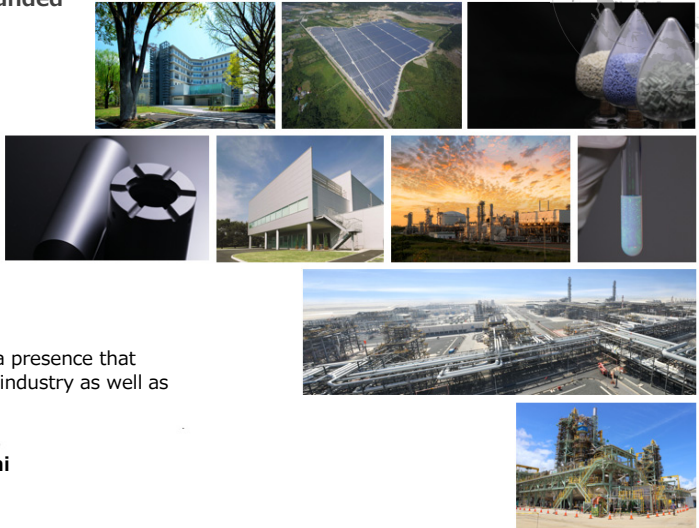
### Historical roles since the company was founded

Supporting the foundations of industry and society at large,  
at the crossroads of challenges in  
**balancing energy and environmental needs**



I want the company to be a presence that  
supports the foundation of industry as well as  
society regardless of era

**Founder Masao Saneyoshi**



## Purpose of the JGC Group

### Purpose of the JGC Group **Enhancing planetary health**

We remain committed to our traditional mission of creating a more prosperous future, which has been  
redefined to reflect our purpose of enhancing the intertwined health of humans and the Earth.

## Social issues that JGC Group will focus on

### Social issues that JGC Group will focus on

#### Pursuing both a stable energy supply and decarbonization



Global primary energy demand by 2040:  
17.1 billion toe\*

Greater energy demand is expected, driven by a swelling global population and economic growth.



A critical stage in climate change measures

Limiting the increase in average temperature relative to pre-industrial levels to 1.5°C will require reducing CO<sub>2</sub> emissions effectively to zero by 2050.



Renewable power by 2040:  
3.3 billion toe\*

A growing awareness of climate change issues is behind the global trend toward less carbon and even net-zero carbon.

\*toe: ton of oil equivalent  
Source: IEA World Energy Outlook 2020

Social issues that JGC Group will focus on

Reducing the environmental impact of resource consumption



Higher CO<sub>2</sub> emissions from manufacturing processes

Greater consumption associated with global economic growth will exacerbate the impact of CO<sub>2</sub> emissions throughout manufacturing processes.



Global waste by 2050: 3.4 billion tons/year

Rising consumption also continues to generate more waste.



Adverse effects from pollution on ecosystems and human health

Non-biodegradable plastics in particular raise concerns for ecosystems and human health. Resources with a lighter environmental footprint that limit the generation of new waste must be used.

Source: World Bank, A Global Snapshot of Solid Waste Management to 2050

Social issues that JGC Group will focus on

Building and maintaining vital infrastructure and services



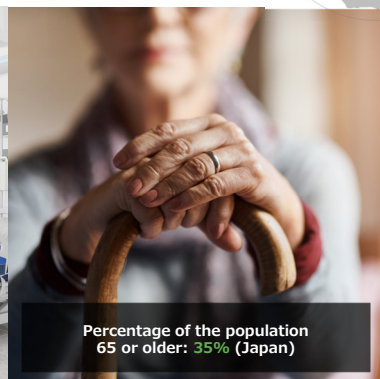
Urbanization in Asia, Africa: 66% of the population

Asia, Africa, and other emerging regions will see an accelerated urban influx as their economies grow, which will drive demand for industrial and urban infrastructure.



Greater medical capacity, especially in emerging economies

Development of medical infrastructure and better healthcare will be in higher demand, especially in emerging markets with growing economies.

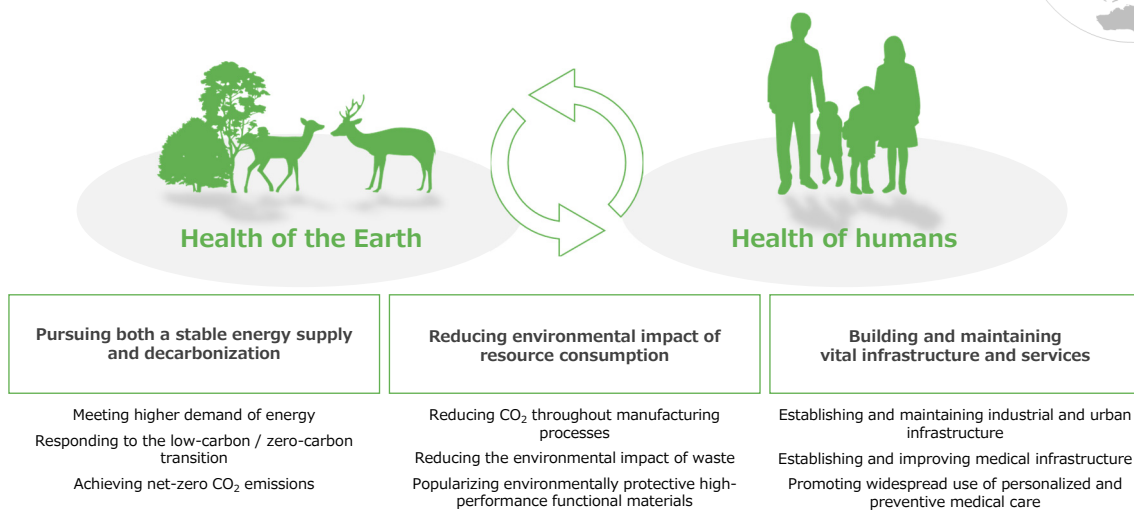


Percentage of the population 65 or older: 35% (Japan)

Needs for personalized and preventive medicine will increase in Japan and other developed economies as birthrates decline and populations age.

Source: United Nations, World Urbanization Prospects  
National Institute of Population and Social Security Research "Japan's Future Population Estimate"

**Social issues that JGC Group will focus on**



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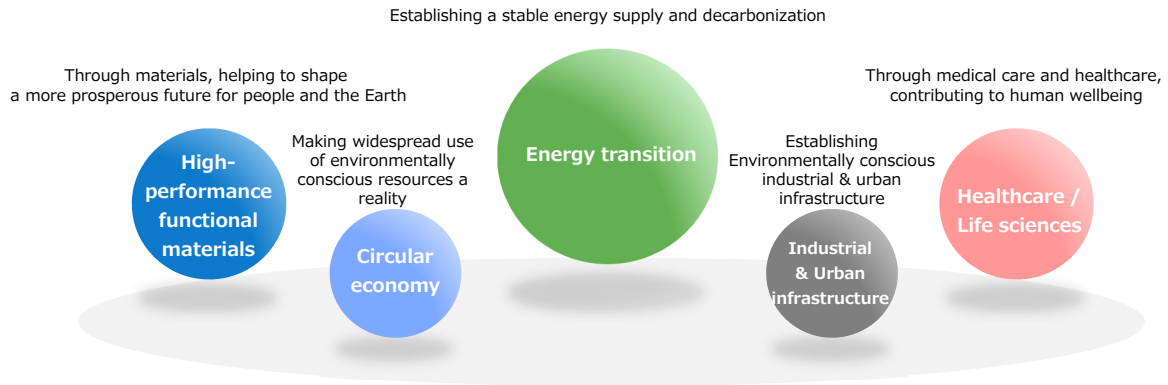
## 2040 vision of the JGC Group

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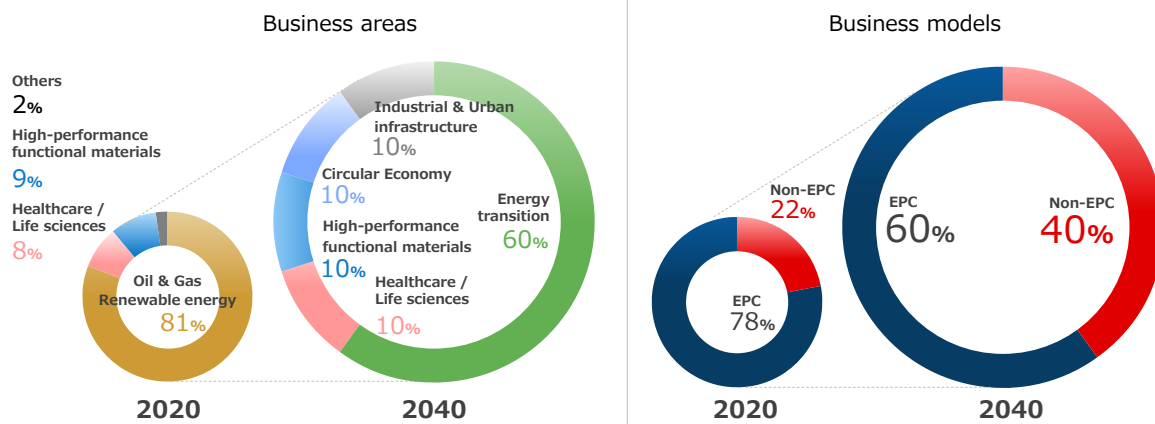


## A corporate group that contributes to enhancing planetary health in five (5) business areas

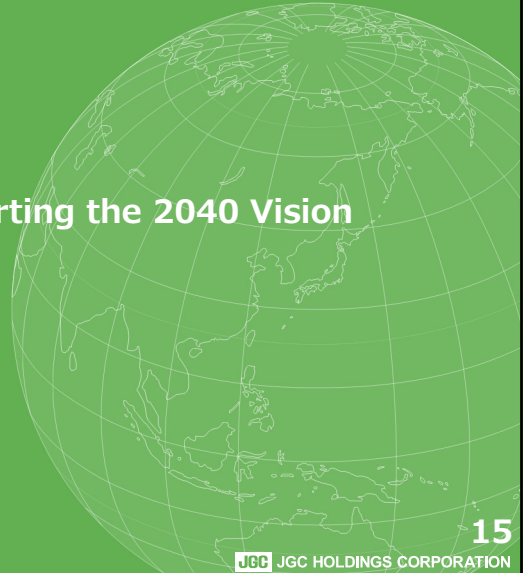


## Sales contribution by business areas and models

Taking on social issues through a variety of business models in more diverse business areas



## Overview of transformation supporting the 2040 Vision

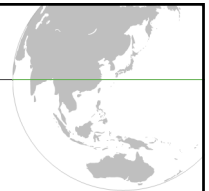


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### Overview of transformation supporting the 2040 Vision

#### Three aspects of transformation supporting the 2040 vision



#### Business Areas

Focused on Oil & Gas



**Responding to the energy transition, expanding our business areas**

#### Business Models

Focused on EPC and manufacturing models



**Transformation of EPC business model, diversifying to non-EPC models**

#### Organization

Managed mainly from Japan; organization designed for execution of mega-sized EPC projects



**Strengthening our regional management framework, fostering a culture of innovation**

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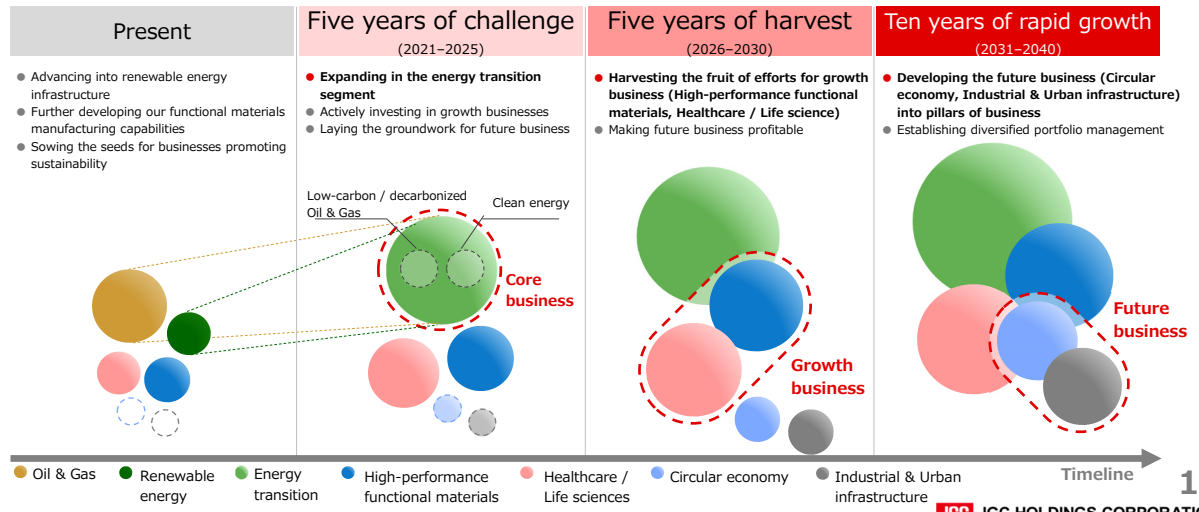
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## Overview of transformation supporting the 2040 Vision

### Path to business area expansion

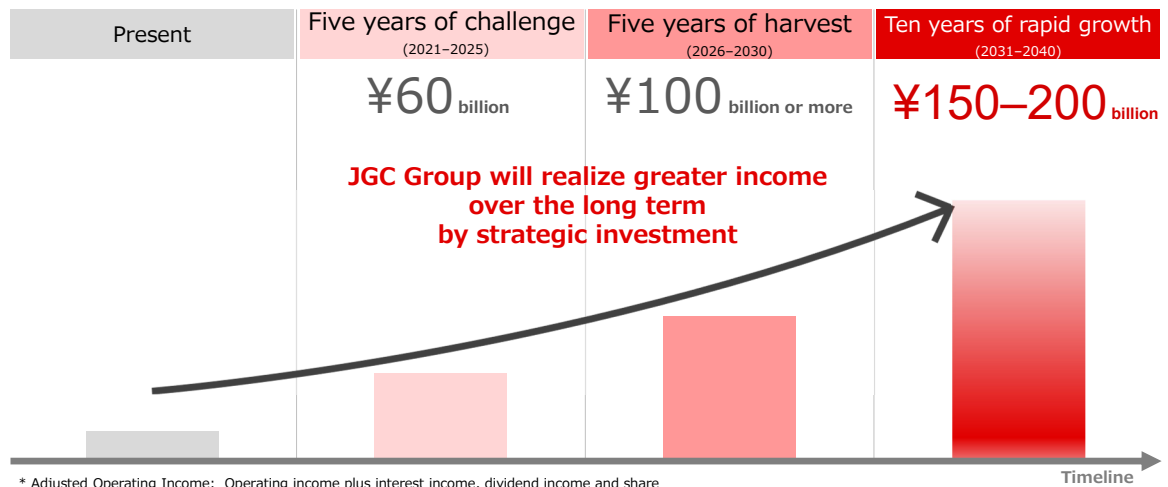
The Group will be expanding into five areas that include core business, growth business and future business which will be developed into pillars of business



## Overview of transformation supporting the 2040 Vision

### Target level of operating income\*

These three facets of transformation will support us in reaching ¥150-200 billion of income in 2040. Strategic investments to be made over the long term.



\* Adjusted Operating Income: Operating income plus interest income, dividend income and share of profit of entities accounted for using equity method earned in each business area

## Business area transformation

From a focus on Oil & Gas  
to responding to energy transition and expansion of business areas

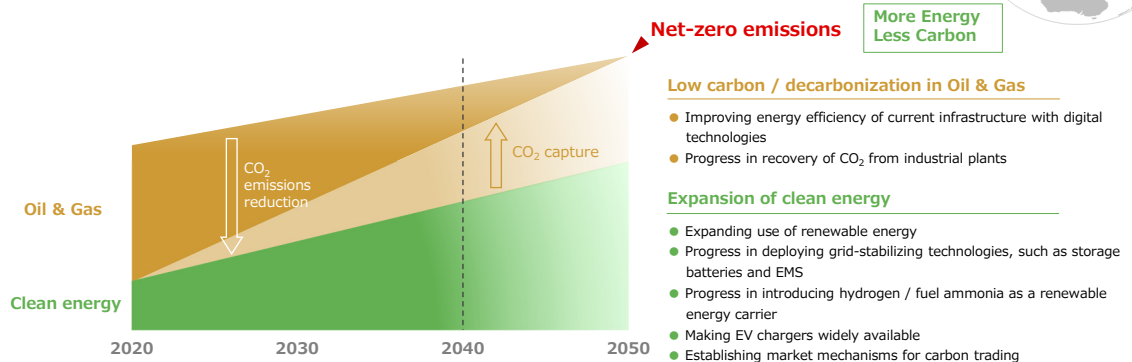
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### Business area transformation

#### Core business area: Overview of energy transition

Adopting low-carbon / decarbonization practices in Oil & Gas and expanding clean energy, for a net-zero society



Business to engage in

Low-carbon / decarbonized Oil & Gas

Clean energy

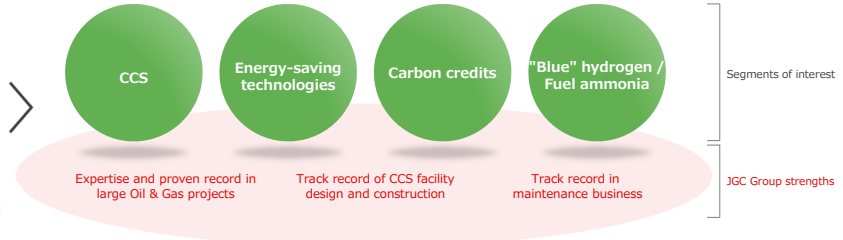
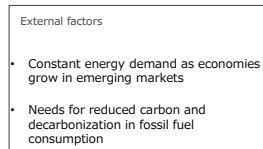
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## Business area transformation

### Core business area: Energy transition – low-carbon / decarbonized Oil & Gas

Contributing to carbon reduction / decarbonization in the global Oil & Gas industry



#### Contributing to carbon reduction / decarbonization in Oil & Gas through carbon management

The Group will build on expertise and experience from past CCS facilities at LNG plants and the Tomakomai CCS demonstration project to contribute to carbon reduction / decarbonization. The Group will provide solutions from the planning stage and also participate in business that generate carbon credits.

#### Helping facilities scale up for blue hydrogen / fuel ammonia market growth through our technologies

In production of blue hydrogen / fuel ammonia (CO<sub>2</sub>-free energy derived from fossil resources), the Group will apply expertise and risk management capabilities from plant expansion in LNG operations. The Group will also invest in technology development and promote strategic partnerships.

Businesses  
Development

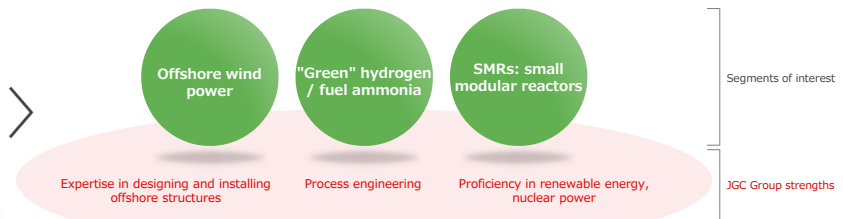
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## Business area transformation

### Core business area: Energy transition – clean energy

Supporting decarbonization in Japan and overseas, starting with clean energy technologies



#### Entering offshore wind power, starting in Japan and building on expertise in construction management

Through alliances, the Group will accumulate expertise, initially in Japan. Besides EPC, the Group will fund special purpose companies in offshore wind power generation.

#### Demonstrating technologies supporting green hydrogen / fuel ammonia from renewable energy

The Group will promote green hydrogen / fuel ammonia pilot programs demonstrating feasibility in society, which link renewable energy production areas with areas where there is demand. The Group will also participate in new value chains.

#### Making advance investments in the potential of SMRs

Accumulating achievements and technical expertise outside of Japan, the Group will aim at practical adoption of SMRs.

Businesses  
Development

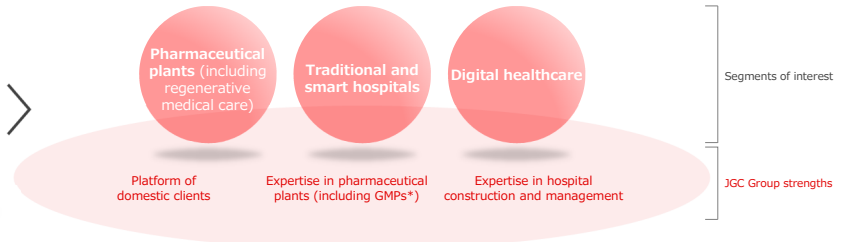
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## Business area transformation

### Growth business area: Healthcare / Life sciences

Developing pharmaceutical / hospital-related business domestically and in emerging economies, promoting health through medical care



#### Expanding domestic and overseas pharmaceutical plant EPC operations, including regenerative medicine

The Group will expand operations and strategic partnerships to meet growing domestic and international pharmaceutical needs, including global vaccine demand. Production technology will be developed for pharmaceutical plants (including those serving new modalities).

#### Expanding business through early adoption of digital technologies at hospitals and clinics, expanding digital healthcare business

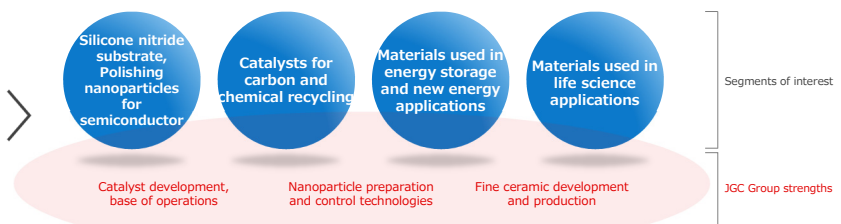
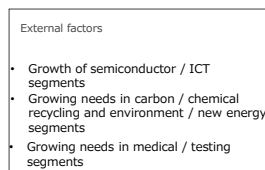
The Group will acquire smart medical technologies through open innovation. Advance investments will be made in digital technologies for hospitals and clinics, for expansion of smart hospital business. In overseas expansion, the Group will seek system-building and strategic partnerships rooted in local communities.

\*GMPs: Good Manufacturing Practices

## Business area transformation

### Growth business area: High-performance functional materials

Developing and producing unique high-performance functional materials in growth segments, applying the Group's core technologies



#### Strengthening frameworks to develop new products, accelerating this process

The Group will venture into new as well as related segments, applying core technologies and accelerate product development.

#### Improving production technologies and capacity

Manufacturing technologies for products such as high thermal conductivity silicon nitride substrates and polishing nanoparticles for semiconductor will be improved and capacity expanded.

#### Expanding sales and market share of existing products

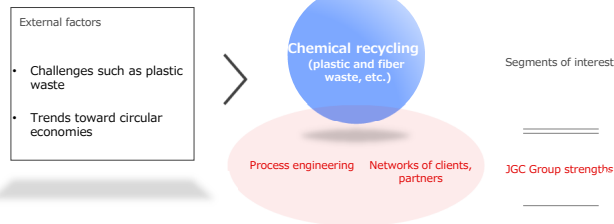
The Group will reinforce high-performance material supply chains in growth segments, capture a larger market share and expand overseas.

## Business area transformation

**Future business area: Circular economy, Industrial & Urban infrastructure**

### Circular economy

Showing leadership in market formation and ecosystem building to support a circular economy for sustainable society



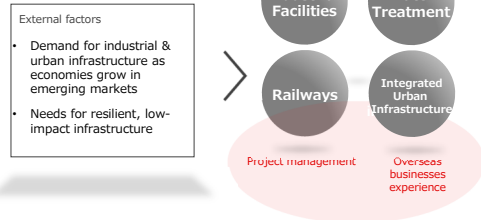
#### Creating recycling value chains through partnerships

Businesses  
Development

The Group will acquire chemical recycling technologies, such as for plastic and fiber waste, for widespread adoption in society. The Group will provide licensing as well as operational consulting applying operational expertise from commercial demonstrations.

### Industrial & Urban infrastructure

Providing environmentally conscious industrial & urban infrastructure integrating multiple systems



#### Becoming a major player in the Industrial & Urban infrastructure market, venturing into integrated infrastructure development

Businesses  
Development

The Group will construct industrial facilities, expanding its track record, while accumulating an array of technologies and a solid record in the Industrial & Urban infrastructure segment, such as for railways and water treatment. Services to be provided range from conceptual design to construction and operation of integrated infrastructure (as seen in industrial parks and urban development).

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## Business model transformation

From a focus on EPC / manufacturing models  
to transformation of EPC model and developing non-EPC models

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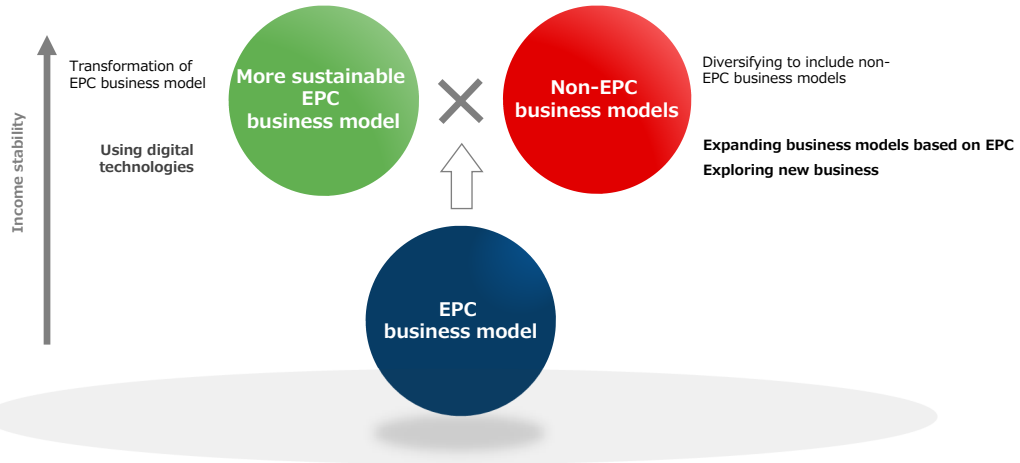
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## Business model transformation

### Toward a more sustainable EPC business model and diversification in non-EPC models

Transformation of EPC business model to stabilize income

Additionally, diversifying the revenue structure to include both non-EPC models based on EPC and new business models



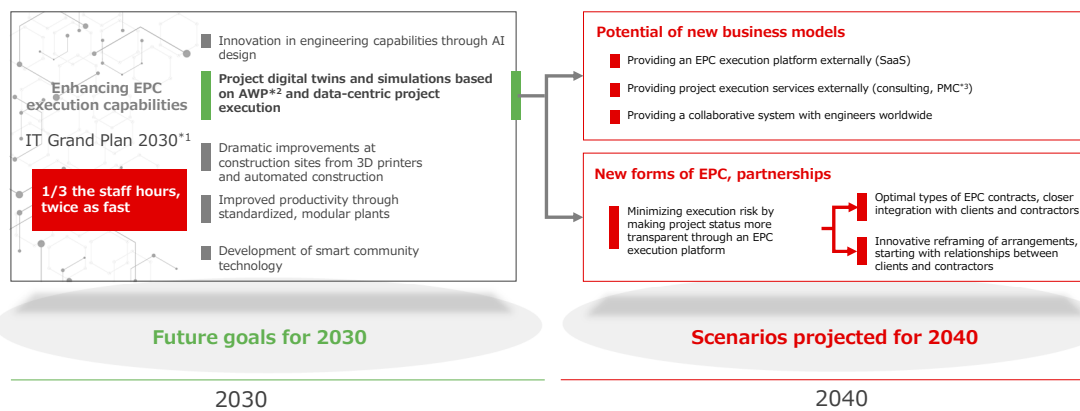
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## Business model transformation

### Measures for transformation of EPC business model: Initiatives using digital technologies

Strengthening EPC execution capabilities by promoting the IT Grand Plan 2030 and using digital technologies

Anticipating future digital technologies and transforming EPC business through advance investments



\*1 IT Grand Plan 2030: Long-term information strategy established in 2018.

\*2 AWP: Advanced Work Packaging

\*3 PMC: Project Management Consulting

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## Business model diversification

Expanding EPC-based business models upstream and downstream while venturing into new business models for diversification



Example of business	Non-EPC business model expansion based on EPC			Diversification into new business models	
	Licensing	Consulting / PMC	Maintenance, digital O&M	Digital Platform	Business Participation
Energy transition	<ul style="list-style-type: none"> <li>Hydrogen / fuel ammonia technologies</li> </ul>	<ul style="list-style-type: none"> <li>Low-carbon, decarbonization consulting</li> </ul>	<ul style="list-style-type: none"> <li>CO<sub>2</sub> emission optimization support</li> <li>Smart O&amp;M</li> </ul>	<ul style="list-style-type: none"> <li>Platform for generating and monitoring carbon credits</li> <li>Energy supply / demand optimization</li> </ul>	<ul style="list-style-type: none"> <li>CCS / CCUS business</li> <li>Offshore wind business</li> <li>Hydrogen / fuel ammonia business</li> </ul>
Healthcare / Life sciences	—	<ul style="list-style-type: none"> <li>Basic / master planning for hospitals</li> </ul>	<ul style="list-style-type: none"> <li>Smart hospital O&amp;M</li> </ul>	<ul style="list-style-type: none"> <li>Digital healthcare (medical information banks)</li> </ul>	<ul style="list-style-type: none"> <li>Hospital management</li> </ul>
Circular economy	<ul style="list-style-type: none"> <li>Chemical recycling technologies</li> </ul>	<ul style="list-style-type: none"> <li>Related technology consulting</li> </ul>	—	<ul style="list-style-type: none"> <li>Supply chain platforms</li> </ul>	<ul style="list-style-type: none"> <li>Commercial demonstrations of chemical recycling</li> </ul>
Industrial & Urban infrastructure	—	<ul style="list-style-type: none"> <li>PMC for urban development</li> </ul>	<ul style="list-style-type: none"> <li>Urban infrastructure O&amp;M</li> </ul>	—	—

## Organizational transformation

Strengthening our regional management framework and fostering a culture of innovation

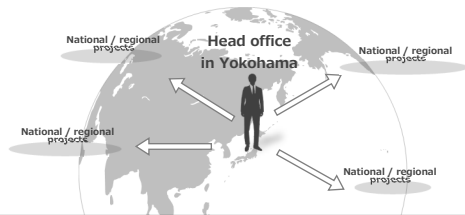


## Organizational transformation

### Stronger framework for regional management

Strengthening our regional management framework, with a focus on enhancing responsiveness to customers in growth markets by proposing and implementing local solutions in a timely manner.

Clients in various regions mainly approached from the head office in Japan



- Responding to client inquiries
- Focused on mega-sized projects
- Coordinated from head office

Focus on local projects by national workforce, for greater responsiveness



- Closely focused on clients, identifying needs and creating project opportunities
- Focused on medium or small-sized projects
- Promoting delegation of authority and more agile operations

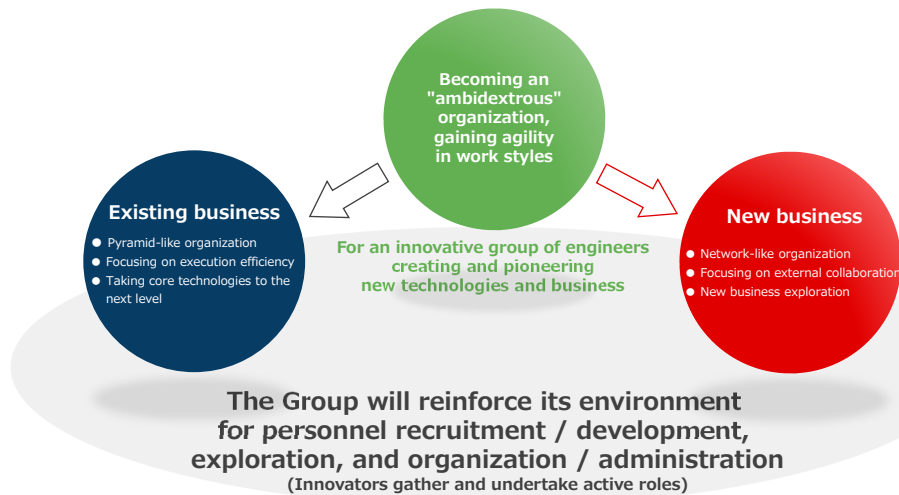
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## Organizational transformation

### More vibrant culture of innovation

Fostering a more vibrant culture of innovation required for technical commercialization and business model development to support transformation of business areas and models



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## Commitment to carbon neutrality by 2050

The JGC Group is committed to  
the ambitious target of reducing the Group's CO<sub>2</sub> emissions to net-zero by 2050, and  
helping our stakeholders reduce emissions to achieve global carbon neutrality,  
a key element of "Enhancing planetary health".

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## For all stakeholders

### Creating an environment of high-motivation

Three commitments are made to our stakeholders to achieve the JGC Group's vision in 20 years:

We will foster a culture  
that challenges  
the unknown and  
encourages innovation

We will work  
toward a shared vision  
and maintain a tradition  
of mutual respect

We will create  
an environment  
where exchanges of  
diverse ideas  
from a vibrant workforce  
results in positive  
outcomes and  
new values

Our goal is the satisfaction of all working for and with the JGC Group

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Such statements are based on currently available information and current assumptions of future events which may not prove to be accurate. Such statements are also subject to various risks and uncertainties that could cause actual results to differ materially from those forward-looking statements.

JGC Holdings Corporation undertakes no obligation to update any forward-looking statements after the date of this presentation. These potential risks and uncertainties include, but are not limited to:

- Changes in general economic conditions, including foreign currency exchange rates, interest rates and other factors that could affect our profitability
- Changes in government regulations or tax laws in jurisdictions where we conduct business

For questions concerning this material please contact :

**JGC HOLDINGS CORPORATION**

Group Management Development Department

Tel : 81-45-682-8026 Fax : 81-45-682-1112 E-mail : [ir@jgc.com](mailto:ir@jgc.com)