

# 2030

# VISION



**LIVING IN SAFETY AND COMFORT ON OUR GREEN PLANET**

Relentlessly challenging ourselves to use Technology for Good

**Connect with Innovation**

# Glorious Excellent Company

Introducing the Sumitomo Electric Group (SEG) Long-Term Vision for 2030 – which provides a clear direction for the Group in a world facing transformational change.

From FY2023, SEG will use its “2030 Vision” to develop a medium-term business plan every three years to navigate through these unprecedented times.

Working with all our stakeholders, SEG will strive to increase its corporate value and become a **Glorious Excellent Company**.



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# 1



## Management Policy

- **Corporate Philosophy**
- **Top Technology**
- **Global Presence**
- **Diversity & Inclusion**
- **Sustainability**
- **Purpose**



# Corporate Philosophy

Honoring both the tradition of the **Sumitomo Spirit** and the **Sumitomo Electric Group Corporate Principles**, SEG has always prioritized its contribution to society.

We manage the Group based on the spirit of **“contributing to the public benefit through business”** while striving to ensure **mutual prosperity with our stakeholders**.

## Sumitomo Spirit

- | *Banji-nissei* | “Do your sincere best, not only in business, but also in every aspect of your life.”
- | *Shinyo-kakujitsu* | “Place importance on integrity and sound management.”
- | *Fusu-furi* | “Do not act rashly or carelessly in pursuit of immoral business.”

## Principles inherited over generations in Sumitomo

**“Attaching importance to technology,” “Respect for human resources,” “Long-range planning,” and “Mutual prosperity, respect for the public good”**

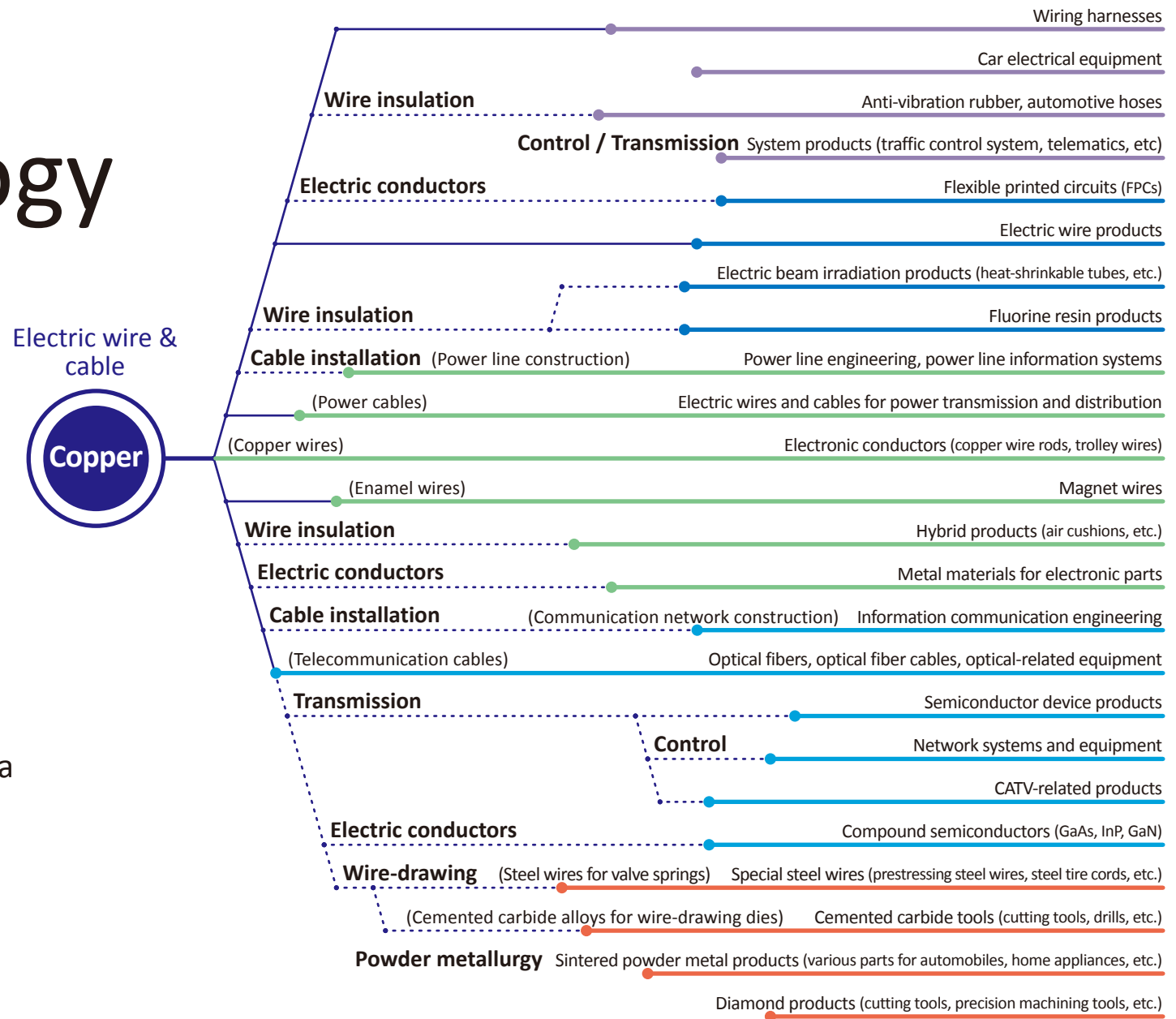
## Sumitomo Electric Group Corporate Principles

- Each company of SEG shall:
- Offer the very best goods and services to satisfy customer needs.
  - Build technical expertise, realize changes, and strive for consistent growth.
  - Contribute to creating a better society and environment, with firm awareness of our social responsibility.
  - Maintain high corporate ethics and strive to become a company worthy of society's trust.
  - Nurture a lively corporate culture that enables employee self-improvement.

# Top Technology

Founded as a copper wire and cable business, SEG has evolved an entire Genealogy of Technology, like a family tree, that combines materials technology and precision manufacturing.

SEG will continue to pursue **Top Technology** that connects and supports society; and use the Group's **integrated power** and **innovation** to contribute on a global scale.



Create new value through technology

# Global Presence

Meeting the needs of the global market by creating new value through **Top Technology**.

**SEG's global business initiatives** will continue to contribute to the development of infrastructure and industries **around the world**.



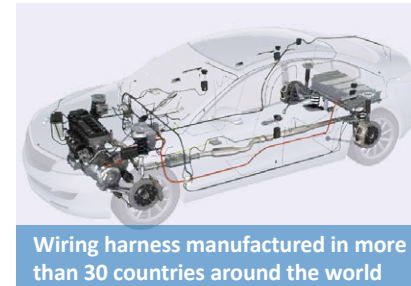
Submarine cable between the United Kingdom and Belgium



Optical fiber installed in Singapore



Traffic control system in Phnom Penh, Cambodia



Wiring harness manufactured in more than 30 countries around the world



PC steel wires for bridge in Vietnam



Trolley wire for a railway in India



Large-scale Redox flow battery system in Japan



# Diversity & Inclusion

Our global activities are supported by 280,000 employees at over 400 group companies across many countries and regions (as of the end of March 2022).

SEG will maximize **the Group's energy and competitiveness** and foster Top Technology through leveraging the **quality** and **capabilities** of its **diverse talents**.

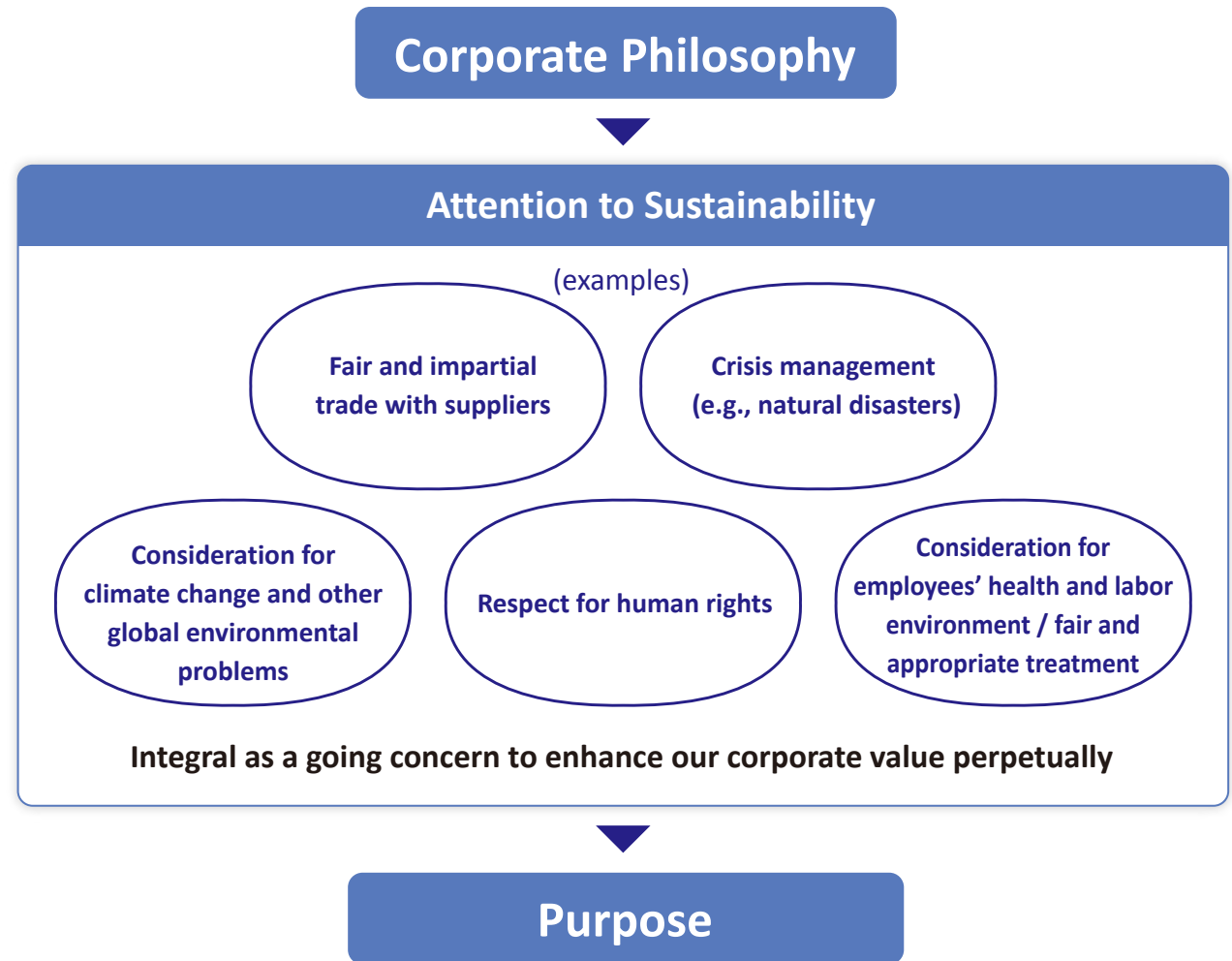


# Sustainability

Pandemics, natural disasters and global instabilities such as trade wars are risks that can threaten our global activities and supply chains.

While **managing such risks appropriately**, SEG will strive to keep **growing its corporate value** through **respecting the global environment and human rights**, **caring for employees** and **conducting fair and impartial trade**.

## Fundamental Policy for Sustainability Management (Established in April 2022)



# Purpose

Based on the spirit of “contributing to the public benefit through business while striving to ensure mutual prosperity with our stakeholders,”

“

**Contribute to building a better society by pursuing Top Technology and innovation on a global scale, using the integrated capabilities of Sumitomo Electric Group.**

”

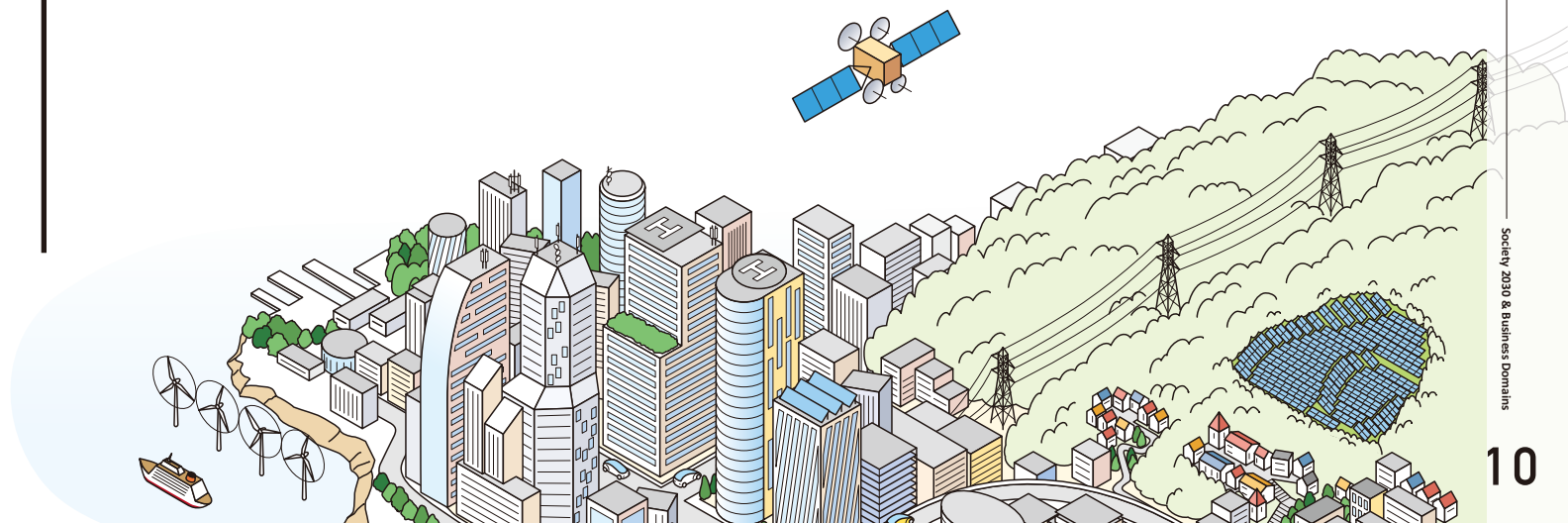
SEG is committed to this group purpose

# 2



## Society 2030 & Business Domains

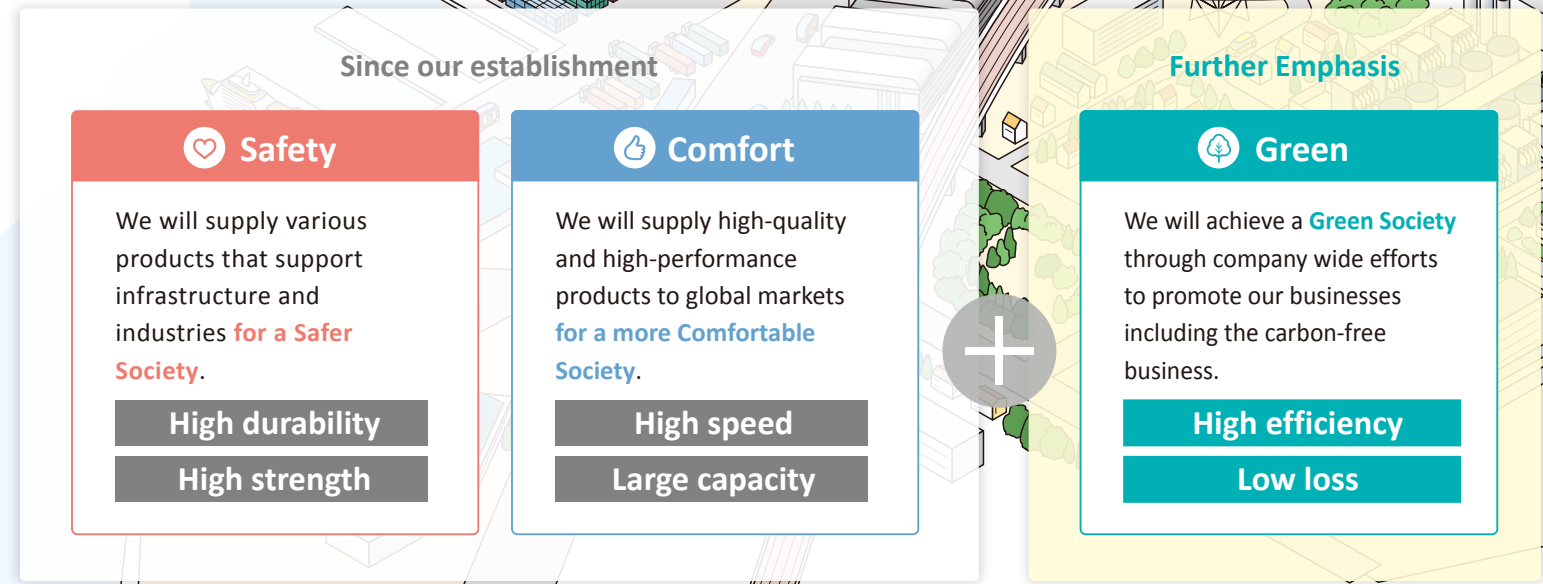
- Society 2030 & Aspirations
- Business Domains – Key Areas





# Society 2030 & Aspiration

Looking ahead to 2030, it is increasingly important to achieve sustainability for our planet. SEG will unleash all of its capabilities to contribute to the evolution of a **Safer and more Comfortable** society that is also **Green** and environmentally friendly.



→ We will focus on realizing a **“Green”** society that is both **Safer**, more **Comfortable** and sustainable.

# Business Domains

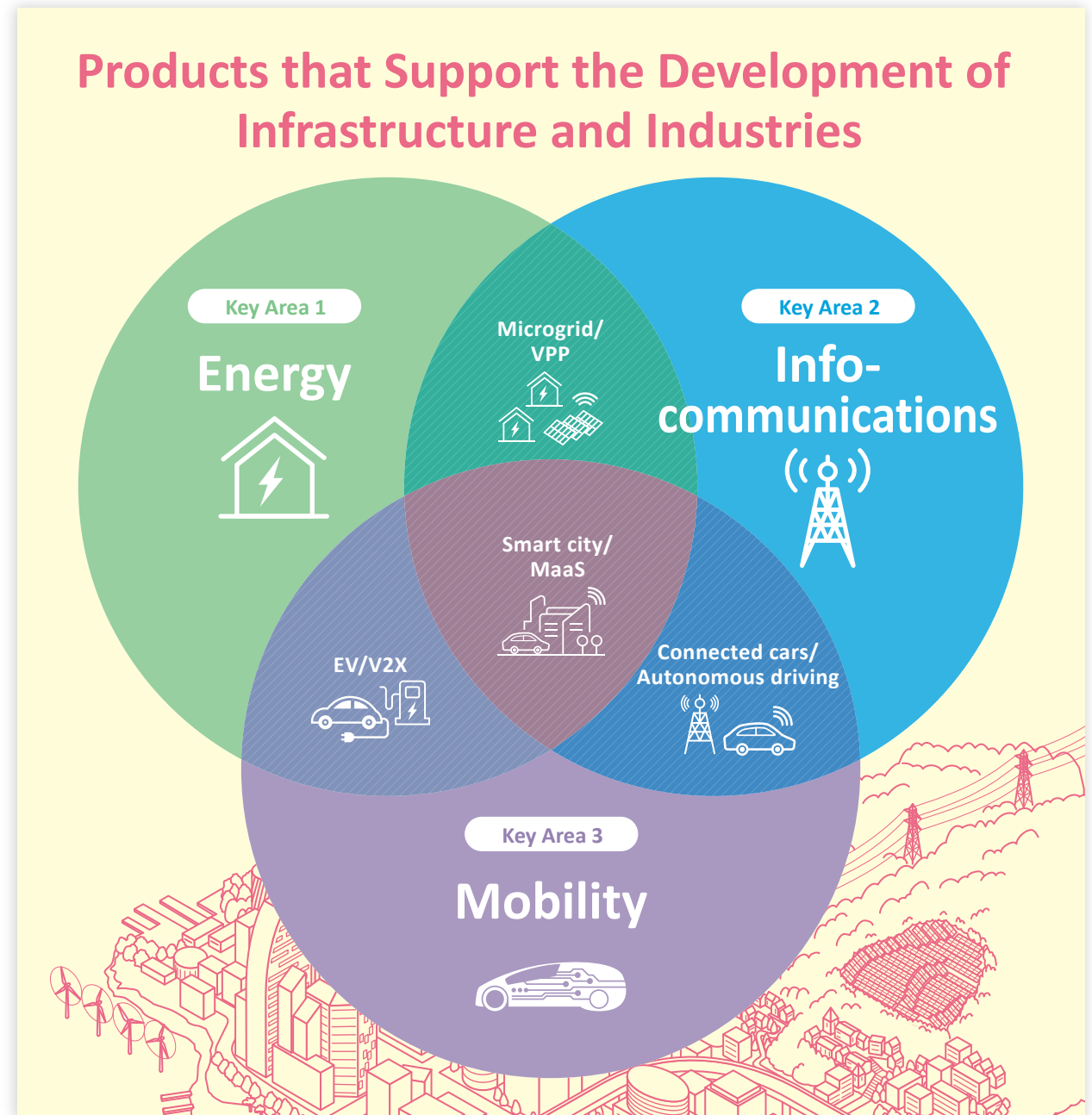
## – Key Areas

To realize our “2030 Vision”, we will continue to provide an extensive range of **products and services for the development of infrastructure and industries**.

We will focus on three key areas: **energy**, **info-communications**, and **mobility**.

SEG will utilize its technological expertise and its ability to integrate technology to make inroads into these areas, particularly where they overlap.

We will identify new demands generated by social changes, such as GX, DX and CASE, and respond to evolving market needs.



# 3



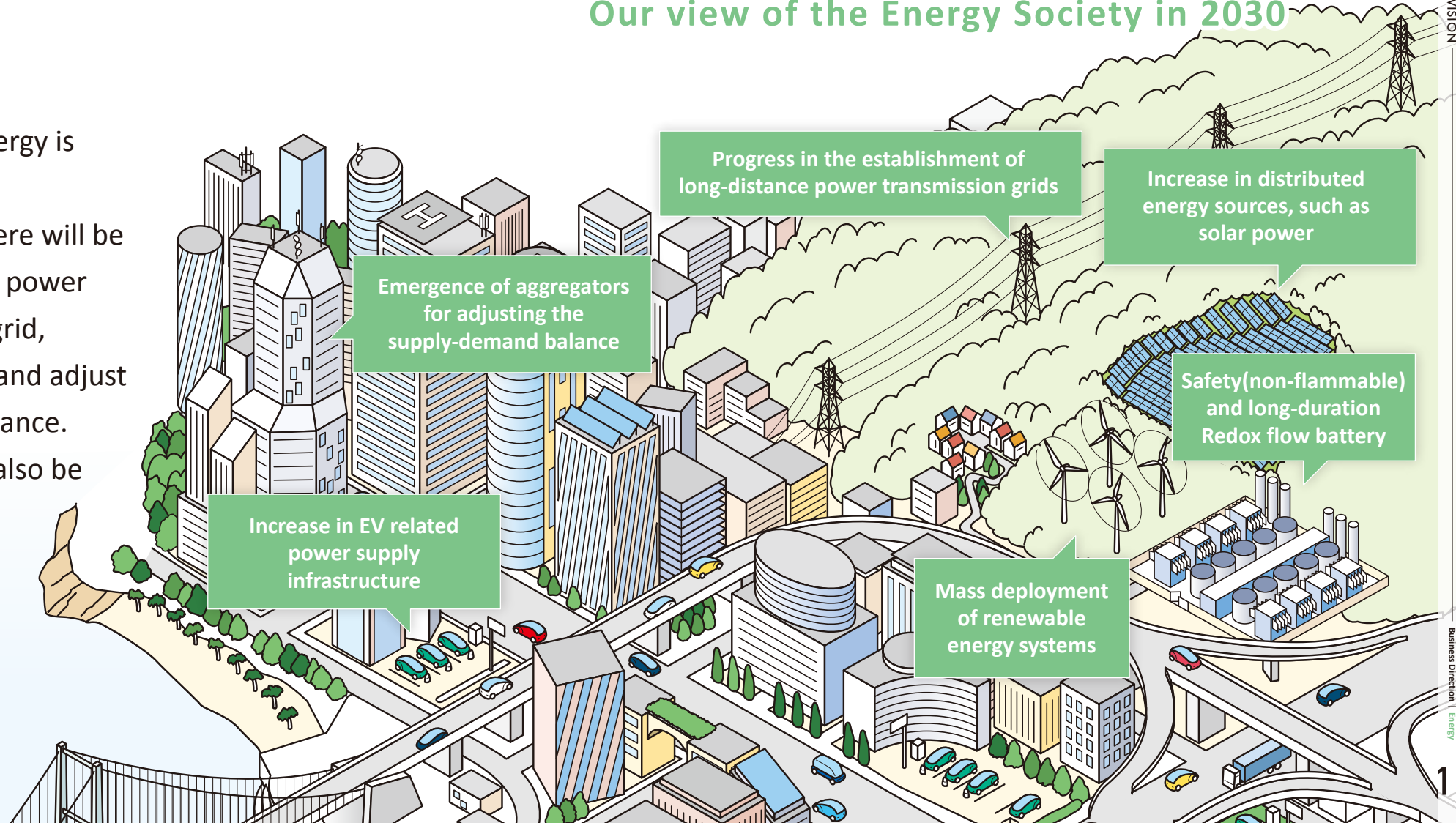
## Business Direction

- Energy
- Info-communications
- Mobility
- High-Performance Products & Materials for the 3 Key Areas
- Contributing to a Green Society

# Energy

As more renewable energy is introduced to realize a carbon-free society, there will be a need to reinforce the power lines of the electricity grid, enhance its efficiency, and adjust the supply-demand balance. New technologies will also be required.

## Our view of the Energy Society in 2030



## Future Business Environment

### Mass deployment of renewable energy systems

Rapid increase in the adoption of solar and wind power is anticipated.

- **Increased distances between power generation and power consumption sites**

→ As more renewable energy sites come online that are located far away from where the demand is, the development of more efficient, long-distance, direct-current transmission grids will be required.

- **Unstable output**

→ Given the intermittency issues of renewable energy sources, there will be a growing need for efficient storage technologies, including rechargeable batteries, to balance the electricity grid.

### Mass deployment of distributed power sources

Due to the increase of distributed energy sources, such as solar power, rechargeable batteries, and EVs, progress in handling two-way and complex flows of electricity is anticipated.

- **Microgrids**

→ The growing use of distributed power sources, such as solar power, rechargeable batteries, and EVs will spur the development of microgrids.

- **Net Zero factories**

→ Energy saving measures and carbon-free power sources at manufacturing sites will rapidly become standard.

- **VPP\*/Demand response**

→ Aggregators will emerge that integrate and control distributed energy sources and channel their demands into the grid.

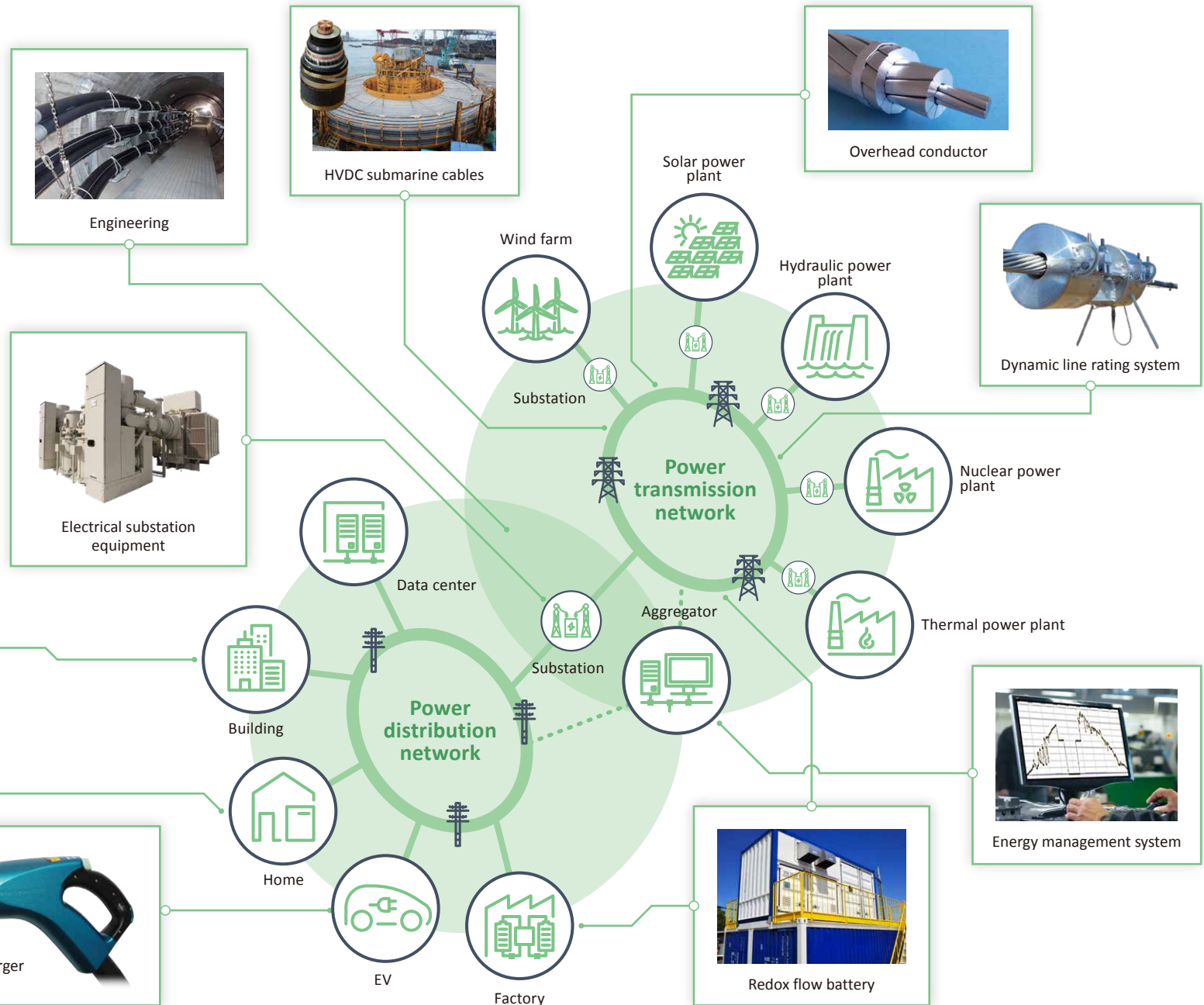
*\*VPP: Virtual power plant*

*The owner of a distributed power source or a third party controls the distributed power source, thereby providing a function equivalent to that of a power station.*



# Business Domains and Our Strengths

SEG will contribute to the development of next-generation energy infrastructure through its extensive portfolio of products and services, such as cables, electrical substation equipment, safety/long-duration batteries and engineering.

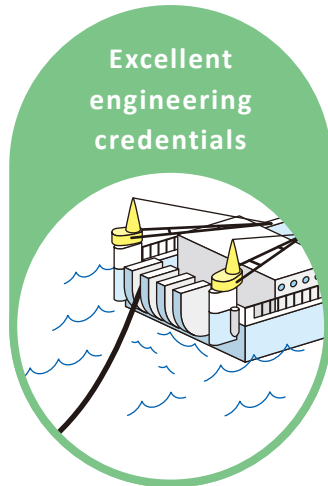


## Challenges toward 2030

We will further improve our power cable technology and take on challenges to reinforce power lines on a global basis and to provide solutions addressing the various needs of power users.

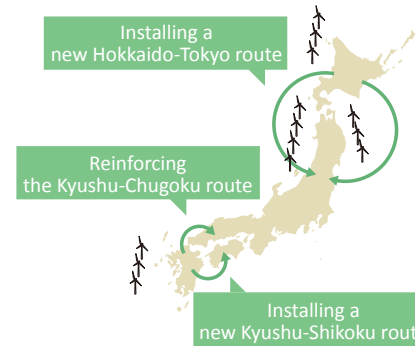
Interconnector in Europe

— Installed by 2019  
— Under planning



## Large-capacity, low-loss power transmission system

Utilizing our power cable technology, we will realize wide-area power interchange and efficient direct-current transmission.

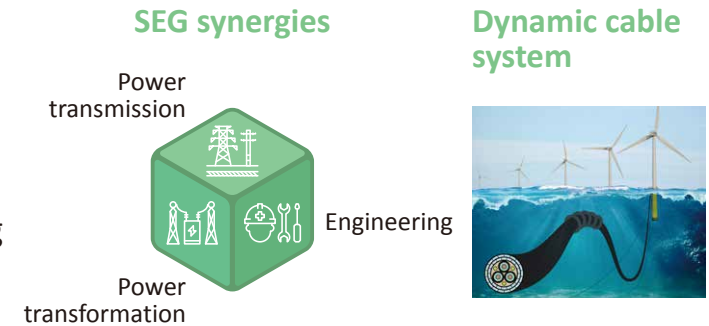


### Development of unique in-house insulation material

- Excellent DC properties
- Eco-friendly material
- High performance under high temperature operation
- Polarity reversal capabilities

## Essential system connection for large-scale wind farm

Working across the Group, SEG will develop solutions for wind farms, thereby contributing to the mass deployment of this key renewable energy source.



## Diversification of power supply and demand

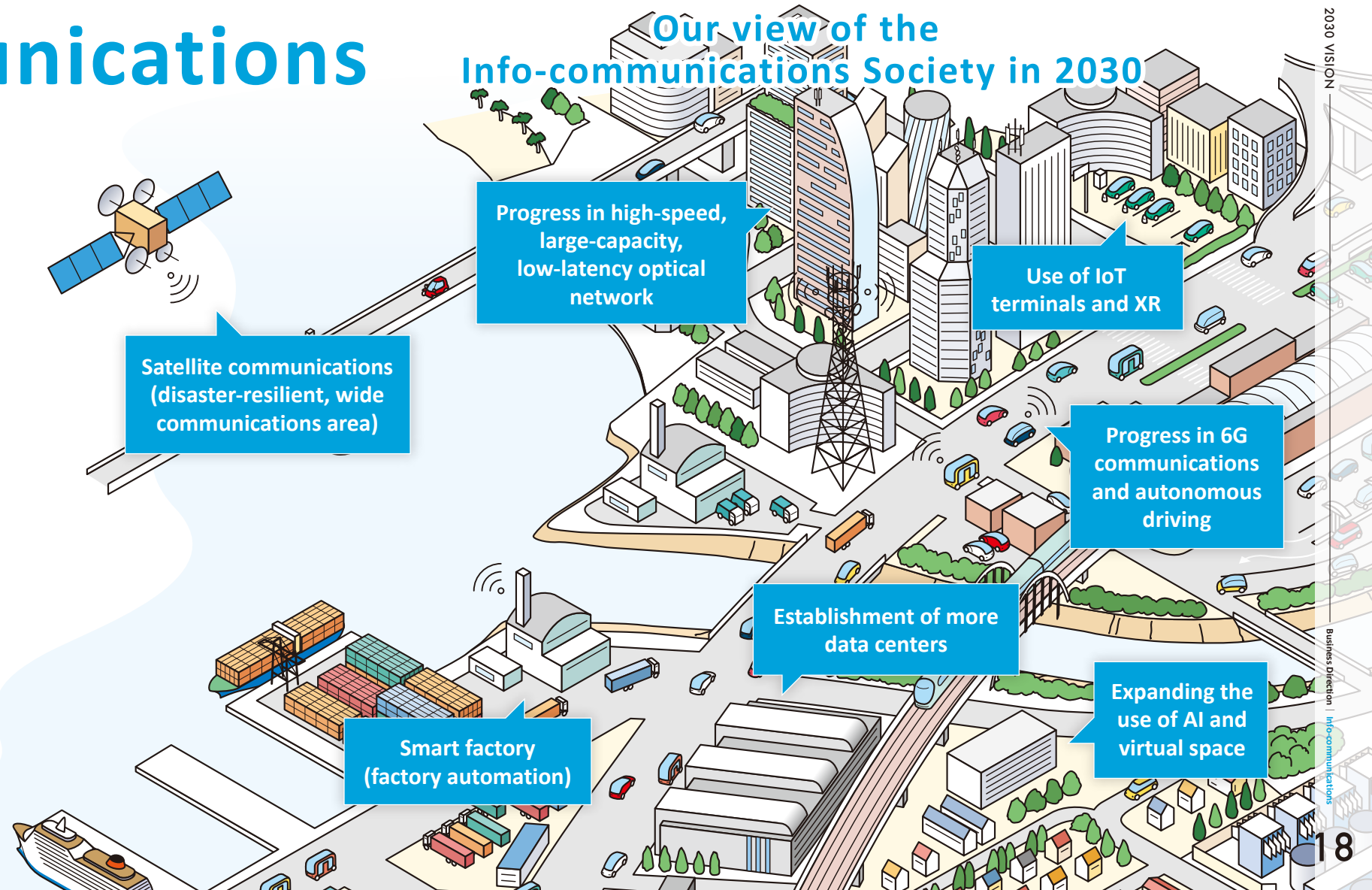
To address the diversification of power supply and demand resulting from the growing adoption of distributed energy sources like renewables, we will provide solutions by integrating our technologies from SEG's three key areas of business: energy, info-communications, and mobility.

- AI/IoT for adjusting the supply-demand balance and voltage fluctuations
- SEG's overall strength covering areas from materials to equipment systems



# Info-communications

Development of high-speed large-capacity data communications will drive the expansion of wireless and optical networks. It will also lead to the establishment of more data centers, leading to growing demands for reducing their power consumption.



## Future Business Environment

### Progress in high-speed, large-capacity communications while stabilizing quality

- **From 5G to 6G**

→ The maximum data speed will be up to 100 times faster.

- **Moving toward an All-Photonic Network**

→ Progress in optical networking at data centers and other equipment to reduce power consumption.

- **Establishment of more compact data centers**

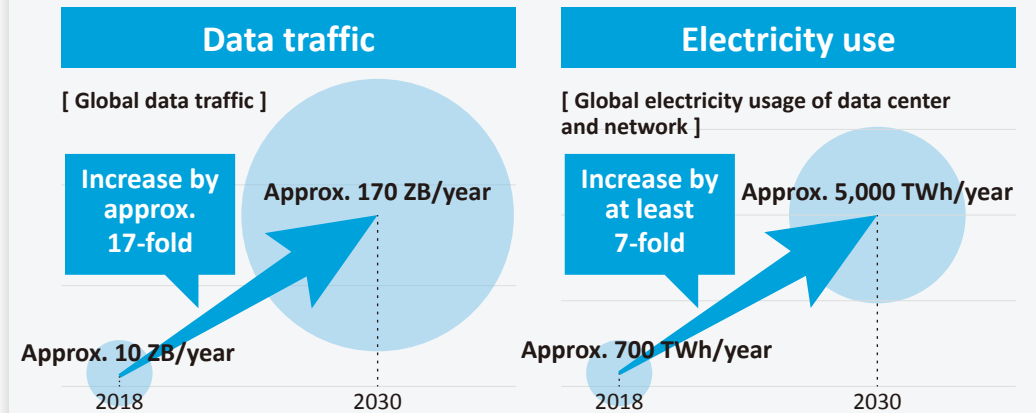
→ Many more compact data centers will need to be built to ease the network load.

- **Expansion into non-terrestrial areas**

→ Expand global networks using deep sea cables and satellites.

### Increase in power consumption due to an increase in global data traffic

An increase in data traffic will entail an increase in power consumption, leading to growth in the need to reduce power consumption.



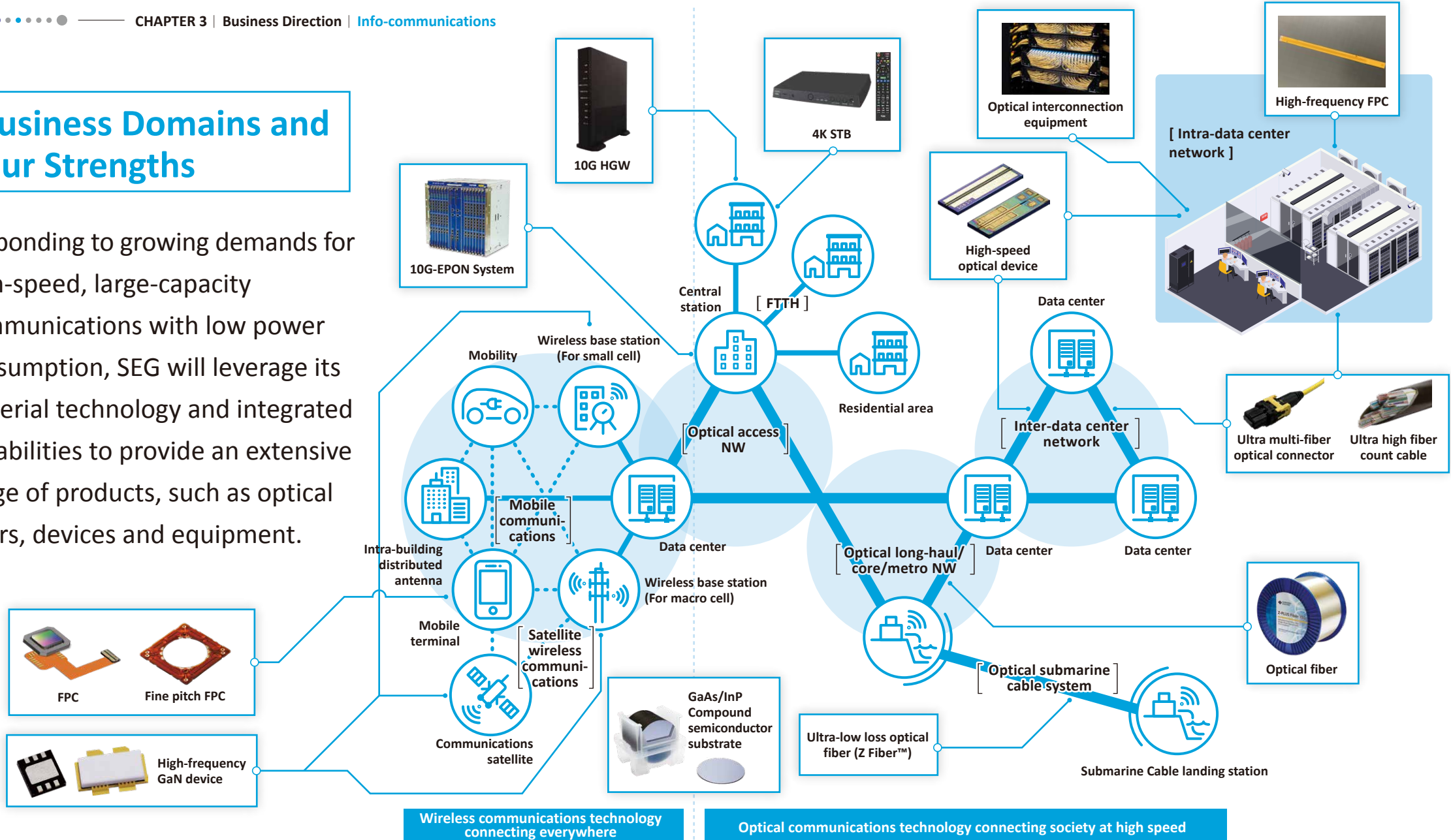
\*For the data traffic, IP traffic for data centers is referred to.

\*Assuming no technology innovation

Source: Impact of Progress of Information Society on Energy Consumption Vol. 3 (February 2021) and Vol. 4 (February 2022), Center for Low Carbon Society Strategy, Japan Science and Technology Agency

## Business Domains and Our Strengths

Responding to growing demands for high-speed, large-capacity communications with low power consumption, SEG will leverage its material technology and integrated capabilities to provide an extensive range of products, such as optical fibers, devices and equipment.



Wireless communications technology connecting everywhere

Optical communications technology connecting society at high speed

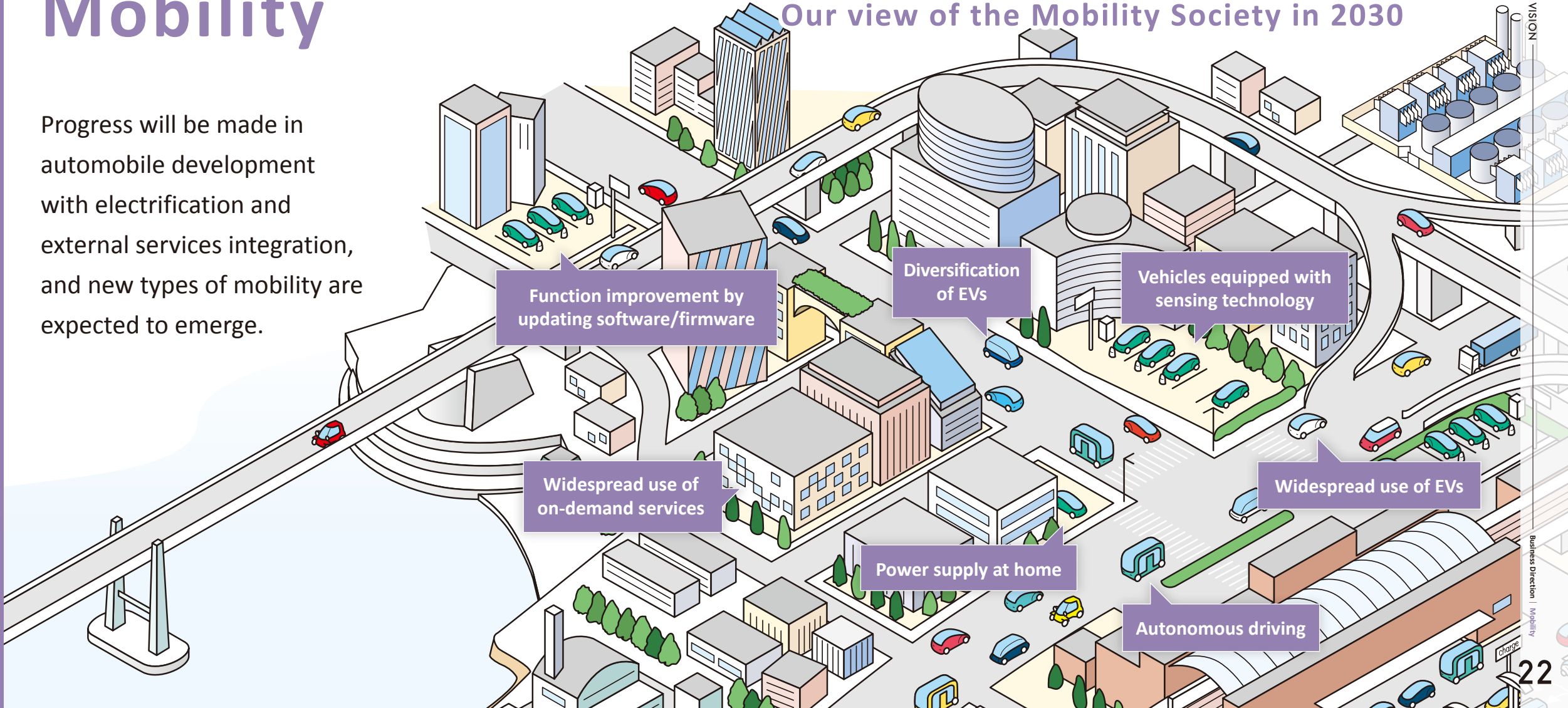




# Mobility

Progress will be made in automobile development with electrification and external services integration, and new types of mobility are expected to emerge.

## Our view of the Mobility Society in 2030



## Future Business Environment

### Progress in electronic control and emergence of new mobility

We anticipate progress with automobile electrification and accelerated efforts for next-generation mobility systems.

- **Electrification**

→ By 2030, the number of ICE vehicles will have decreased, and EVs, including new variants such as HEVs and PHEVs, will constitute the majority of new vehicle sales.

- **Autonomous driving**

→ The 2030s will see widespread adoption of vehicle models with level 3 autonomous driving capabilities or higher.

- **New mobility**

→ Expected emergence of various forms of mobility, such as ultra-compact mobility and flying automobiles.

### Expansion of linkage with external services (connected mobility)

The expansion of connected mobility services, such as MaaS, and infrastructure connectivity with automobiles will accelerate.

- **Edge**

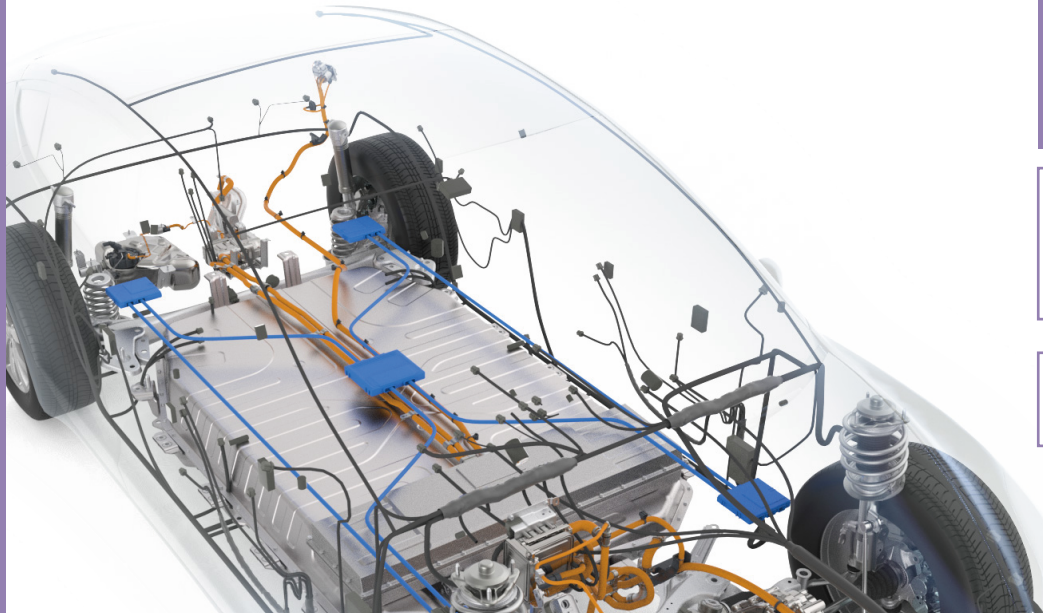
→ Expected progress in information technology in automobiles will become an edge in areas such as safety, maintenance and entertainment.

- **Cloud**

→ The expansion of new urban infrastructure and on-demand services will make an edge-cloud link ever more important.

## Business Domains and Our Strengths

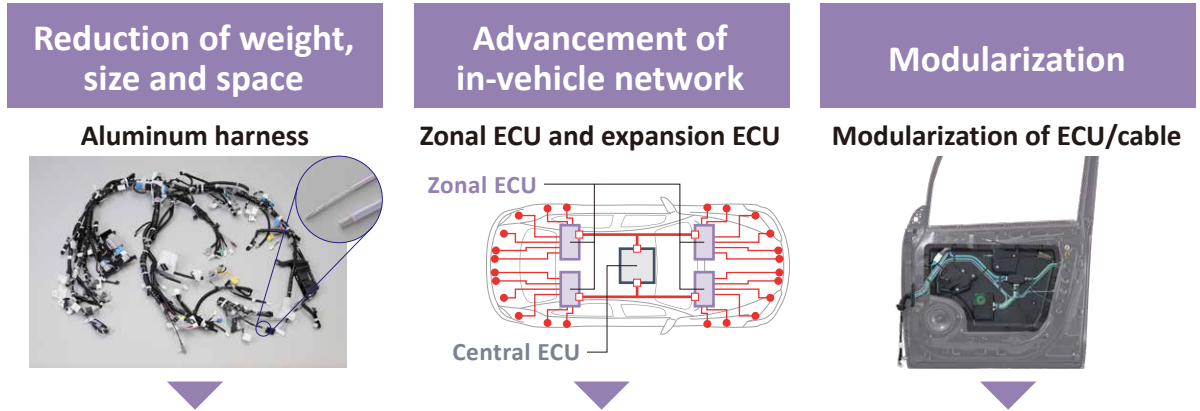
We will provide new value through the power of our global manufacturing quality, high-level technological engineers and skilled workers, with a focus on wiring harnesses as our core business.



Our technology innovation

Elemental technology	Material/Plating/Analysis technology
Design technology	Design in anticipating customer needs
Manufacturing technology	Automation/Environmentally friendly efforts, and global standardization

Evolution of wiring harnesses and Innovation of manufacturing



Provide high-value products to address the varied demands and information technology requirements for power trains and equipment – accomplish innovation as a partner who can realize connectivity.

Strengths	Globally consistent manufacturing capabilities	High-level technological engineers and skilled workers
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## Challenges Toward 2030

In addition to the evolution of existing products, like wire harnesses, SEG will endeavor to advance electrification and high-speed communications of automobiles, including architectural innovations, leveraging the integrated technologies of the Group, such as energy and info-communications.

	Electrification	Existing products	High-speed communications
<b>Wiring harness</b>	<ul style="list-style-type: none"> <li>High-voltage harness, battery harness</li> <li>Busbar module</li> </ul>	<ul style="list-style-type: none"> <li>Low-voltage harness</li> <li>Aluminum harness</li> </ul>	<ul style="list-style-type: none"> <li>High-speed communications harness</li> <li>Optical harness</li> </ul>
<b>Electric wire</b>	<ul style="list-style-type: none"> <li>High-voltage magnet wire for motor</li> <li>Leads for pouch Li-ion battery</li> <li>Module for interconnection in battery</li> </ul>	<ul style="list-style-type: none"> <li>Magnet wire</li> <li>Metal materials for spark plug electrodes</li> </ul>	<ul style="list-style-type: none"> <li>High-frequency FPC</li> </ul>
<b>Connector/terminal</b>	<ul style="list-style-type: none"> <li>High-current connector</li> <li>High-voltage JB</li> </ul>	<ul style="list-style-type: none"> <li>Connector</li> <li>Junction box (JB)</li> </ul>	<ul style="list-style-type: none"> <li>High-speed communication connector</li> </ul>
<b>ECU, G/W</b>		<ul style="list-style-type: none"> <li>ECU/Gateway (G/W)</li> </ul>	<ul style="list-style-type: none"> <li>Zonal ECU</li> </ul>
<b>Semi-conductor/device</b>	<ul style="list-style-type: none"> <li>SiC power device</li> </ul>		
<b>Functional material</b>	<ul style="list-style-type: none"> <li>Steel cords for EV tires</li> <li>Sinter brazed parts (for E-Axle)</li> <li>Oil pump rotors (for motor cooling)</li> <li>Porous metal</li> </ul>	<ul style="list-style-type: none"> <li>Steel cords</li> <li>Sinter brazed parts (for AT/CVT)</li> <li>Oil pump rotors (for lubrication of engine)</li> <li>Steel wires for springs</li> <li>Engine components</li> </ul>	<ul style="list-style-type: none"> <li>Sintered ZnS lenses</li> </ul>
<b>Resin, Rubber products, Sensor, etc.</b>	<ul style="list-style-type: none"> <li>Cooling hoses</li> <li>Motor mounts</li> <li>High heat insulation material for battery</li> <li>Cross-linked fluoro-resin</li> </ul>	<ul style="list-style-type: none"> <li>Hose for vehicles</li> <li>Anti-vibration rubber</li> <li>Heat shrink/resistant tubing</li> </ul>	<ul style="list-style-type: none"> <li>Steering touch sensor</li> <li>Driver monitoring system</li> </ul>
<b>Infrastructure Collaboration</b>	<ul style="list-style-type: none"> <li>Charging connector/inlet</li> <li>Rechargeable battery</li> </ul>	<ul style="list-style-type: none"> <li>Traffic control system</li> </ul>	<ul style="list-style-type: none"> <li>Expansion unit</li> </ul>

# High-Performance Products and Materials for the 3 Key Areas

Through the evolution of SEG's existing materials technology, we will support the development of infrastructure and industries related to energy, info-communications, and mobility.

## High-precision tools

Supporting various manufacturing businesses with our high-precision processing product line-up

Precision machining of exotic alloys and hardened steels

**(Cutting tools)**



High-precision processing of automobiles, semiconductors, etc.

**(Grinding wheels)**



High-precision wire drawing for automobiles, semiconductors, etc.

**(Diamond drawing dies)**



## High-strength materials

Supporting society and industry with our array of high-strength materials

Reinforcement for large-scale structures

**(PC steel wires)**



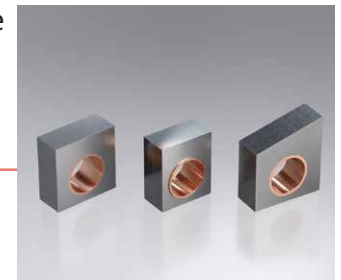
Complex and high-strength structural parts

**(Sintered metal components)**



Heat-resistance components for nuclear fusion reactors

**(Tungsten monoblocks)**



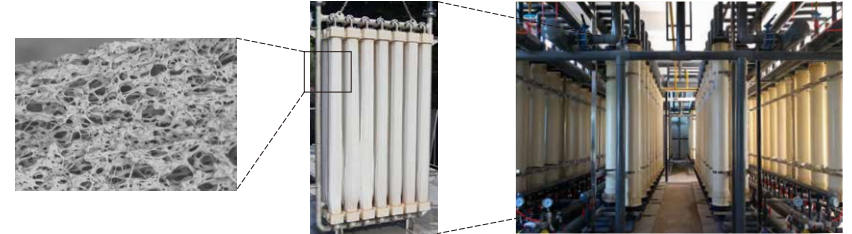
# Contributing to a Green Society

We will contribute toward realizing a Green society by providing excellent products and services, and by leveraging our technology to engage in a wide range of activities.

## Recycling water resources

Effective use of water resources and prevention of pollution through wastewater treatment, wastewater recycling and sea water desalination.

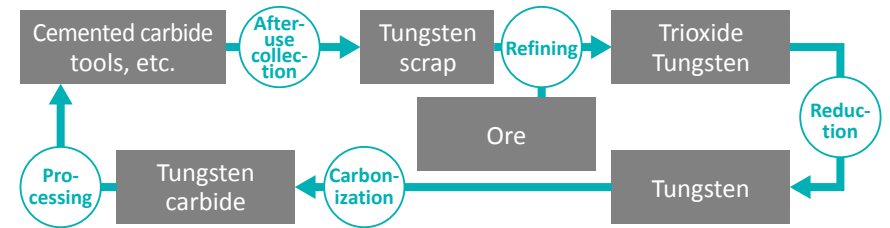
## Water treatment system/equipment using Poreflon™ and new materials



## Effective use of rare metals

Recycling rare metals and finite resources, such as tungsten.

## Recycling flow of tungsten



## Reduction of CO<sub>2</sub> emissions

Maximizing energy-saving efforts, creating energy mainly through solar power, and purchasing renewable energy to cover any short-fall.

## SEG's CO<sub>2</sub> emissions reduction targets

- Saving energy**
  - Reducing energy consumption per unit of sales
- Creating energy**
  - Introducing solar power
  - Making the most effective use of the power by leveraging rechargeable batteries
- Purchasing energy**
  - Purchasing renewable energy

The 2030 targets certified by the SBTi

**2018 → 2030**  
 Scope 1+2 Reduction by 30%  
 Scope 3 Reduction by 15%



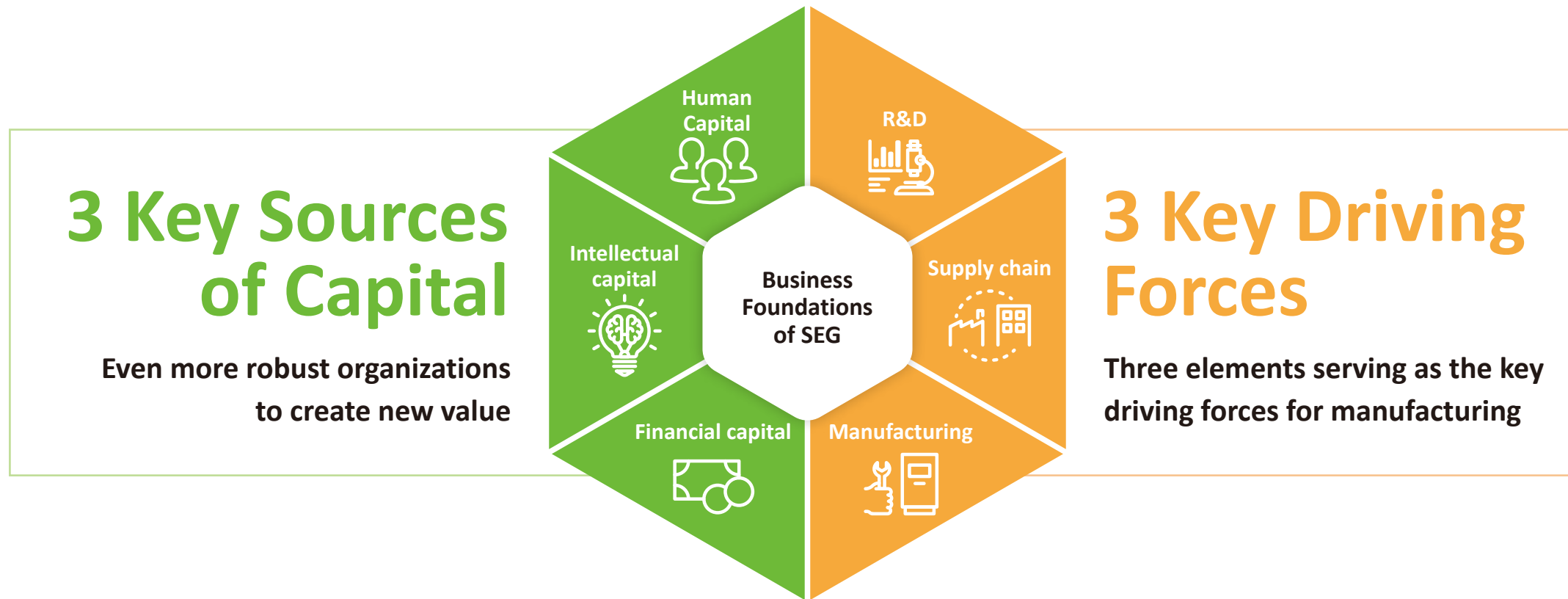
# 4



## Business Foundations & Targets

- **Business Foundations**
- **3 Key Sources of Capital**
- **3 Key Driving Forces**
- **Targets**

# Business Foundations for “2030 Vision”



In these uncertain and unprecedented times, SEG will continue to pursue its “2030 Vision” and strengthen the organization by being precise, prompt and flexible. By enhancing the 3 Key Sources of Capital and reinforcing the 3 Key Driving Forces, we will maximize synergies across the Group.

# 3 Key Sources of Capital

SEG will make our organization stronger and create new value during this time of rapid change by investing in Human Capital and Intellectual Capital, while increasing Financial Capital as the funding for further growth and distribution.

\*SEG's Human Resource Management Policy

## Human Capital

Anchored by SEG's **Global HRM Policy\***, we will evolve to become a Group where everyone can excel, grow and contribute to society.

- Diversity & inclusion
- Nurturing a corporate culture that values growth and challenges
- SEG's integrated power on a global scale

## Intellectual Capital

We will generate **long-term competitiveness** by generating intellectual capital from our core technologies and manage and utilize this capital on a global basis.

- Intellectual Property(IP) strategy for business competitiveness
- Global IP network
- Contribution to the establishment of global regulations

## Financial Capital

We will **generate cash** to maximize funds for growth and investment as well as distributions that optimize returns for our stakeholders.

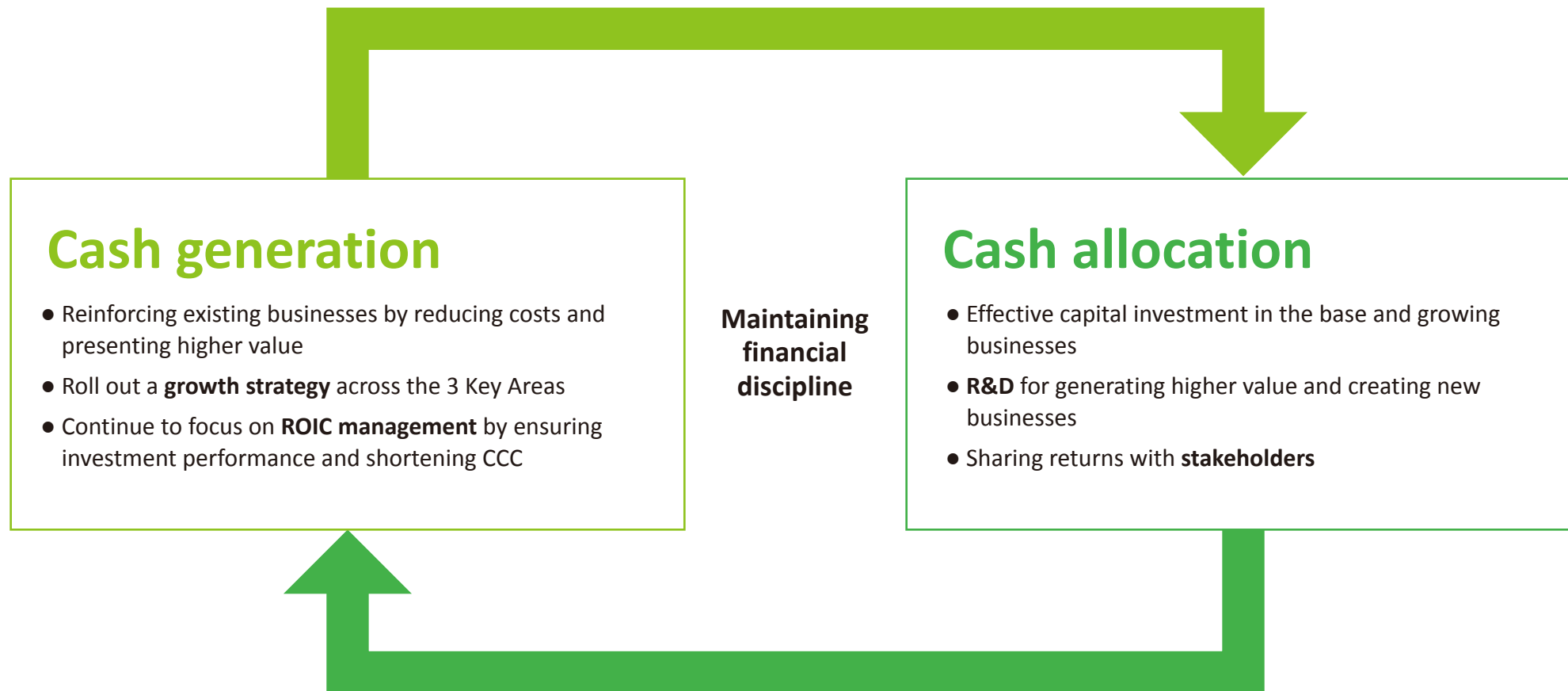
- Reinforcing operation, implementing growth strategy, and ROIC management
- Effective capital investment and R&D investment
- Sharing returns with stakeholders





# Financial Capital

Maximize cash flow for growth and distribution and allocate effectively







## R&D

Invigorate and accelerate R&D to generate returns.

- Backcasting from social issues
- More sophisticated and efficient processes
- Open innovation and cooperation with outside entities

## Supply chain

Reinforce BCP through building a **stable supply chain framework that is resilient to changes.**

- Fair and impartial trade, protection of the environment and human rights, and the BCPs
- Promotion of sales with a focus on presenting solutions
- Production at the most appropriate site and cooperation on a global scale
- Optimizing division of labor among operation sites and transportation means

## Manufacturing

Create resilient factories that can adapt to change.

- Saving, creating, and purchasing energy, along with eco-friendly activities
- Zero accidents in all the aspects of employees, materials and equipment
- Autonomous and continuous “maintenance and improvement”
- Vertical launch and simultaneous improvement of lead time and cost

# 3 Key Driving Forces

To create an organization resilient to change, SEG will further develop **S/E/Q/C/D/D\*** qualities. R&D, Supply Chain and Manufacturing – the 3 Key Driving Forces especially important to manufacturers - will be reinforced.

\* (S) Safety / (E) Environment / (Q) Quality / (C) Cost / (D) Delivery / (D) Development

R&D

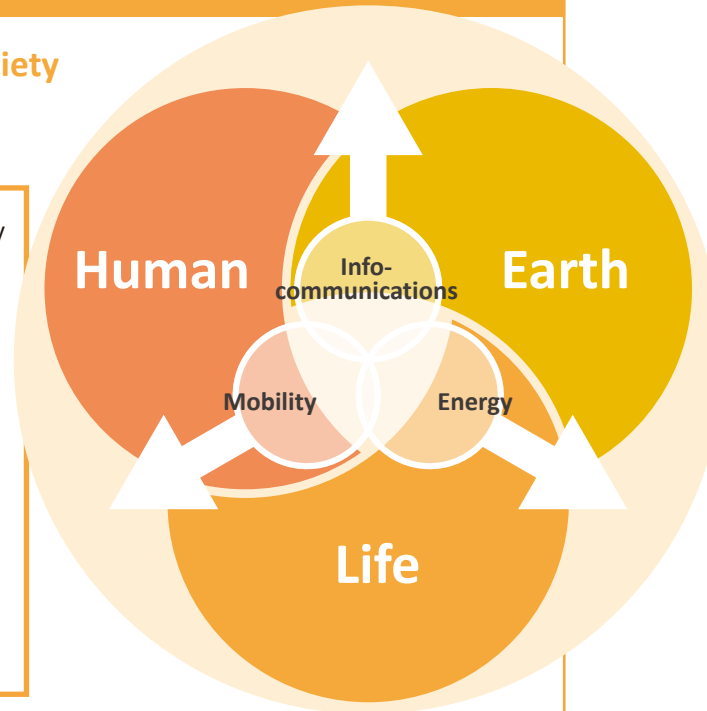
Invigorate and accelerate R&D as one of the key driving forces to create an extensive range of technologies

Needs-Driven

Driven by the demands of future society

Exploring themes derived from the backcasting of an ideal society and social challenges of 2050.

- Earth**
  - Infrastructure for a hydrogen society
  - CO<sub>2</sub> separation and capture
  - Application of superconductors
  - Recycling of materials
  - 3Rs of heat
  - New materials replacing metal – and more
- Human and life**
  - Use of virtual space
  - Quantum network
  - Next-generation mobility media
  - Mixed reality
  - Space communications/power generation and transmission grid
  - Human augmentation – and more



Speedy

Acceleration of the R&D process

Actively introduce materials informatics (MI), process informatics (PI), etc., thereby accelerating the development of materials and processing technologies, on which we pride ourselves, and enhance process efficiency in the form of automation, remote operation, etc.

International

Collaboration with overseas partners

- Global cooperation of SEG to share technology, know-how, ideas, etc
- Alliance with overseas companies, academic institutions, etc

# Targets

## Enhancing our medium- and long-term Corporate Value

With a corporate culture focusing on the environment, human capital and compliance, SEG will unlock its growth potential while also enhancing efficiency and striving to become a Glorious and Excellent Company.

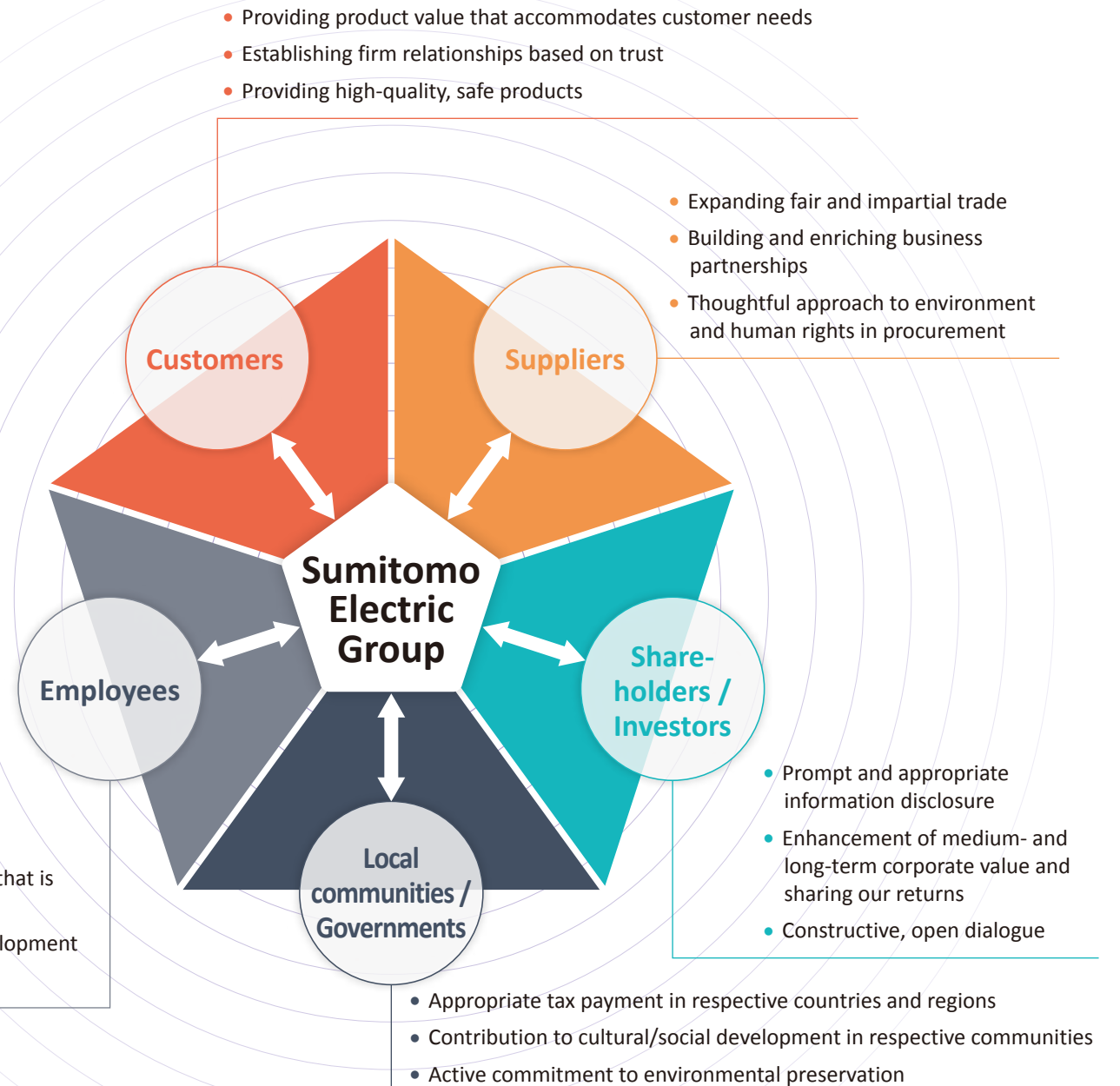
Glorious		
Non-financial	<b>E</b>	<b>Global environment</b> Various efforts as follows: CO <sub>2</sub> emissions reduction 2030 <Scope 1+2> 30%; <Scope 3> 15% (compared to FY 2018) 2050 <Scope 1+2> carbon neutrality
	<b>S</b>	<b>Diversity &amp; inclusion</b> Creation of new values through the integration of diverse perspectives, experiences and technologies
		<b>Engagement</b> Empathy with the creation of corporate value and actual feeling of contribution
	<b>G</b>	<b>Legal compliance</b> Compliance with laws, regulations, and corporate ethics throughout SEG, including its supply chain, on a global basis

Excellent		
Financial	<b>Growth</b>	Consolidated net sales: 5 trillion yen or more 1 trillion yen or more in growth from the key areas of energy, info-communications and mobility
	<b>Efficiency</b>	Before-tax ROIC: 10% or higher (Presentation of even higher value and improvement in the profit structure)

# Together with Our Stakeholders

SEG will pursue its ambition to achieve a “Green Planet” and a “Safer” and more “Comfortable” Society on a sustainable basis. We are committed to these values, which we hold in common with our stakeholders - and we will share our achievements with them.

- Respect for human rights and workplace environment that is healthy, safe, secure and comfortable
- Diversity & inclusion, and sustainable growth and development
- Sharing of purpose/sense of fulfillment





# **LIVING IN SAFETY AND COMFORT ON OUR GREEN PLANET**

**Relentlessly Challenging ourselves to use Technology for Good**







<https://sumitomoelectric.com/>