New Medium-Term Business Plan (FY2016-20)
“Beyond the Horizon”
- 1st Stage of Growth Strategy for Realization of Corporate Vision

JGC Corporation

JGC Corporation has prepared its “Beyond the Horizon” Medium-Term Business Plan for the JGC Group covering a five-year period from FY2016 to FY2020.

Section 1: Overview of the Previous Medium-Term Business Plan “NEW HORIZON 2015”

In the “NEW HORIZON 2015” previous Medium-Term Business Plan, the JGC Group presented a vision of transformation into a new corporate format of “Program Management Contractor & Investment Partner”. This goes beyond the framework of a conventional engineering contractor and set numerical goals for FY2015 (March 2016 period) of ¥50 billion in consolidated net profit and at least 10% ROE. The JGC Group enlisted its full capabilities toward realization of the plan goals.

The JGC Group expanded orders value and sales during these years, taking advantage of opportunities from steeper-than-expected advances by the hydrocarbons market, including sustained high crude-oil prices supported by economic growth in emerging countries and a rise in LNG projects. All of this was against the backdrop of rapid advances in the development of shale gas, and the Group reported over ¥45 billion in net profit in FY2012 and FY2013, achieving 11.6% average ROE for the five years covering FY2011-15.
Additionally, efforts to develop New EPC as a new business area in the business strategy resulted in new entries into F-LNG and non-ferrous metal areas. However, JGC believes that it is still midway along the path to the goal of transformation into a new corporate format of “Program Management Contractor & Investment Partner” for the JGC Group from an overall perspective, including the requirement for profit creation from business investments in order to supplement EPC business.

Section 2: Positioning and Composition of the New Medium-Term Business Plan

The “Beyond the Horizon” new medium-term business plan is a first-half five-year growth strategy that clarifies the direction and business areas of the corporate group over the 10 years from now (to 2025) aimed at realization of the corporate vision “Program Management Contractor & Investment Partner” targeted by the JGC Group and seeks to expand sales, net profit, and other business indicators, as well as achieve further reforms. The New Medium-Term Business Plan consists of the following content. Please refer to Section 3 and thereafter for plan details.

Composition of the New Medium-Term Business Plan

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“NEW HORIZON 2015”

Section 2: Positioning and Composition of the New Medium-Term Business Plan

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Section 3: Assumptions for Plan (Core Competence and Market Environment)

Through to the present time, the JGC Group has mainly operated EPC business for downstream hydrocarbon energy plants, but believes it is vital to broaden business scope, similarly to global top contractors such as Bechtel, Fluor, and Technip, in order to achieve further growth and expansion.

1. JGC Group's core competences
   To broaden business scope, the JGC Group must expand to areas where it can maximally utilize its strengths and advantages (core competences) with continuity and pursue steady profit creation. The JGC Group possesses the following core competences:

1) Top global results and performance based on delivery capabilities for completing complex, advanced projects in difficult conditions as an
EPC contractor in the hydrocarbon downstream field.

2) Highly talented human-resource group with robust technology and management capabilities that can integrate people, goods, and information on a global scale as well as expand EPC business scope and pursue new business areas.

3) Understanding and knowhow as a business operating firm accumulated through 10 years of business investment experience.

4) Sturdy financial base and robust capital resources that enable further growth strategy investments.

2. Changes in the market environment

Besides core competence, JGC needs to identify changes in the plant market and utilize these developments as opportunities for steady additions to its business areas.

The plant market currently continues to confront very difficult conditions because of the sharp decline in crude oil prices since two years ago and the resulting cutbacks of capital investments by major oil firms and oil-producing countries.

However, the expansion trend for hydrocarbon energy demand driven by growing populations and economic advancement in emerging countries has not changed from a longer-term perspective. JGC expects a return of full-fledged capital investment in light of tighter supply-demand conditions for crude oil, LNG, and other energy and recovery by the plant market from the latter half of the new medium-term plan period, on track with forecasts from major oil firms (as shown below).

![Graph of Liquids Demand by Sector](image1)

![Graph of Gas Supply by Source](image2)
In relation to the plant market environment, the JGC Group views changes as follows:

1) No change in the trend of growing demand for hydrocarbon energy mainly in emerging countries over the longer term
2) Realization of a new EPC market in light of political changes in Central Asia, Iran, Iraq, and other areas
3) Steady progress in utilization of renewable energy spurred by growing interest in global environment conservation
4) Accelerated urbanization worldwide and growing infrastructure (electricity, transportation) demand, fueled by population increases and economic advances in emerging countries
5) Expansion of drug and medical needs in China and Southeast Asian countries
6) Increasingly sophisticated requirements in resource development plans for project implementation capabilities in 3D (Difficult, Deep, Distance) areas
7) Industry revolution advances using IT technologies, such as IoT that leverages Big Data

Section 4: Targeted Direction and Business Areas

The JGC Group must respond with a multi-faceted approach in promoting the New Medium-Term Business Plan. One perspective is the necessity of overcoming the current headwinds and achieve transformation to a new corporate format. Another perspective is to not relax efforts for transformation into a new corporate format, despite such headwinds. The JGC Group must have an objective awareness of the current conditions it faces and also seek to achieve the new corporate format.

From this perspective and in light of the core competences and the changes in the market environment, the JGC Group is targeting the direction and business areas described below for the 10 years from now through to 2025.
Target Direction

Mainly oil & gas fields with expansion to infrastructure

Key points
1. Expand to upstream areas, in addition to downstream, for the EPC business in core oil & gas fields; enter O&M services business too
2. Expand EPC business to infrastructure areas, including energy infrastructure, industrial infrastructure, and social infrastructure, in addition to oil & gas
3. Place emphasis on infrastructure areas in business investments
4. Focus on technology development and overseas initiatives for manufacturing

The following serves to overview the business areas that the JGC Group covers.

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<th>EPC Business</th>
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<tbody>
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<td><strong>Oil &amp; Gas</strong></td>
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<td>Upstream</td>
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<tr>
<td>Crude oil/gas gathering</td>
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<td>Gas-oil separation, offshore</td>
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<td>Downstream</td>
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<td>LNG and gas processing</td>
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<tr>
<td>Oil refining, petrochemicals</td>
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<tr>
<td>LNG terminals</td>
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<tr>
<td><strong>Infrastructure</strong></td>
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<tr>
<td>Energy infrastructure</td>
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<tr>
<td>Power Generation (fossil fuels)</td>
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<tr>
<td>Nuclear power</td>
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<tr>
<td>Renewable Energy</td>
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<tr>
<td>Social infrastructure</td>
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<tr>
<td>Pharmaceutical</td>
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<tr>
<td>Medical</td>
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<tr>
<td>Airports</td>
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<tr>
<td>Industrial infrastructure</td>
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<td>Non-ferrous</td>
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<table>
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<tr>
<th>Business Investments</th>
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<tbody>
<tr>
<td>Integrated water and power (IWPP)</td>
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<tr>
<td>Environmental and new energy</td>
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<tr>
<td>Medical, Airports, etc.</td>
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<table>
<thead>
<tr>
<th>Manufacturing</th>
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<tr>
<td>Catalysts, fine chemicals</td>
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<td>Fine ceramics</td>
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Section 5: Numerical Goals

Sales levels of global top engineering contractors are: Bechtel at ¥4 trillion, Fluor at ¥2 trillion, and Technip, CBI, and Saipem each at ¥1.5 trillion. The JGC Group must pursue further expansion of sales, profits, and other business values in order to genuinely put itself on the same footing as these firms.

The New Medium-Term Business Plan calls for at least ¥1 trillion in sales, ¥60 billion in net profit in FY2020 and retains at least 10% ROE as numerical goals.
The plan envisions the following business area ratios (adjusted operating profit basis) in FY2020.

**Section 6: Basic Policies**

To achieve further growth, the JGC Group must expand EPC business in mainstay oil & gas areas, broaden EPC business to infrastructure areas, and generate steady profit from business investments and other non-EPC businesses.

These initiatives require allocation of cash reserves based on a quantitative standard in order to implement growth strategy investments. The JGC Group recognizes the need to pursue even higher capital efficiency than in the past, and from this perspective it has defined the following basic policies for the New Medium-Term Business Plan.
Basic Policy 1: Expand EPC business (expand the oil & gas area and broaden to infrastructure)

Basic Policy 2: Expand profit from non-EPC businesses (business investments, manufacturing)

Basic Policy 3: Promote financial strategy to realize basic policies 1 and 2

Section 7: Strategies for the Basic Policies

The JGC Group has devised the following individual business strategies for these basic policies.

Basic Policy 1: Expand EPC business (expand the oil & gas area and broaden to infrastructure)

The expansion of oil & gas areas (oil refining, gas processing, LNG, petrochemicals, etc.) in the JGC Group’s mainstay EPC business merits the greatest attention because profits from these areas currently account for a sizable portion of overall earnings. This is an inevitable direction in the context of overcoming the near-term market environment and being prepared for the subsequent arrival of an improved market environment. The JGC Group also plans to enter the O&M services business for oil & gas areas.

Furthermore, the JGC Group intends to expand to the infrastructure area for its EPC business and become an engineering contractor that covers oil & gas and infrastructure.

Specific business strategies are described in the below:

Strategy 1: Expand the market

It is difficult to expand in oil & gas areas on the basis of existing markets alone (Japan, Southeast Asia, the Middle East, North Africa, etc.) where the JGC Group already has extensive results. The JGC Group aims to expand the market to North America and Russia it has entered in recent years as well as Central Asia (Turkmenistan, Azerbaijan, etc.), East Africa, Iran, and Iraq and to pursue higher sales and profits.
Strategy 2: **Strengthen project implementation capabilities**

The EPC business in the oil & gas areas requires not only development of new markets, but also strengthening of project implementation capabilities. The JGC Group is promoting the following strategies:

(1) **Domestic and overseas EPC-capable JGC Group companies strategy**

EPC-capable Group companies located in Japan, Asia, the Middle East, and North Africa (besides JGC Philippines) have worked to expand the track record of smaller-scale local projects. The new medium-term business plan envisions a group company management strategy led by JGC headquarters in accordance with the following policies:

- Strengthen control exercised by JGC headquarters over domestic and overseas EPC group companies, and have it serve as the command center for orders and project implementation.
- Bolster and expand functions taking into account the characteristics of individual EPC-capable Group companies.
- Promote collaboration among individual EPC-capable Group companies in accordance with project characteristics.
(2) **Promote collaboration with a wide range of joint-venture partners**

The JGC Group believes it is vital to expand collaboration with external resources in order to strengthen project implementation capabilities, in addition to the key matter of increasing sales and profits at domestic and overseas EPC-capable Group companies.

The JGC Group intends to actively promote a wide range of collaboration with Bechtel, Fluor, Technip, KBR, GS, SK, and domestic engineering companies that have joint-venture experience for EPC implementation as well as engineering contractors in the US and Europe, Korea, China, and other countries.

(3) **Create a European site for global operations with three main centers**

The JGC Group considers it needs an engineering site in Europe to address markets in the Middle East, North Africa, and Russia as it promotes the market expansion strategy. It intends to create a new engineering site in Europe, in addition to the existing Japan headquarters in Yokohama and JGC America in the United States, for the establishment of operations at three sites worldwide covering a wide range of markets.

The JGC Group plans to approach implementation of this strategy from multiple perspectives, including acquisitions of, or investments in, US and European engineering contractors and organic growth.

(4) **Create Group companies to deal with emerging countries**

The JGC Group plans to review setting up Group companies as new EPC business implementation sites in emerging countries with considerable potential
as future markets. It intends to utilize these group companies as EPC sites and also have them serve as centers for business investments. For the time being, the focus will be on China, Myanmar, and other Asian countries.

**Strategy 3: Broaden business areas**

The JGC Group aims to broaden business areas to upstream areas with large market scale as opportunities for continuous expansion, leveraging the Group’s core competence. Planning is to cover EPC activities related to power generation for energy infrastructure and transportation infrastructure as well as other areas for social infrastructure in efforts to broaden business scope to infrastructure areas. Additional planning is to cover service businesses, and EPC activities, in the oil & gas areas and make a full-fledged entry into the overseas plant O&M services market.

(1) **Expand scope to upstream areas**

The JGC Group aims to enter the area of upstream facilities, such as onshore crude oil and gas gathering facilities as well as crude oil and gas separation facilities, in collaboration with overseas EPC group companies. Primary targets for the upstream field are Southeast Asia, the Middle East, and North Africa. In the offshore field, the JGC Group is interested in collaborating with engineering firms, ocean project specialty firms, and equipment manufacturers and plans to look at investments in, and acquisitions of, such firms.

Additionally, the JGC Group intends to pursue further enhancement of F-LNG technologies and project implementation capabilities. It will pursue FSRU (floating storage and re-gasification unit) projects in the near-shore area, power plants, and ocean-based wind power.

(2) **Energy infrastructure: Strengthen power generation (fossil fuels, nuclear power, renewable energy)**

The JGC Group aims to enter power generation as an EPC business that can be continuously expanded. Besides fossil fuel power plants, it plans to pursue EPC business for overseas nuclear power plants by leveraging related technologies accumulated in the processing and disposal of radioactive waste from domestic nuclear facilities as well as overseas project execution.
capabilities. In the renewable energy area, the JGC Group aims to focus on solar power and obtain EPC orders for overseas sites capitalizing on existing results.

(3) **Social infrastructure: Expand business scope to transportation infrastructure**

The JGC Group intends to enter the EPC business for airports from the present transportation infrastructure segment, as a way forward to broadening its scope. It also plans to pursue business investments in the transportation infrastructure field. The JGC is currently making efforts to obtain business rights to Myanmar Airport through a joint venture with an airport management specialty firm and others. The JGC Group aims to leverage knowhow related to airport facilities accumulated through this initiative in order to obtain EPC orders for overseas transportation infrastructure.

(4) **Social infrastructure – Promote overseas initiatives in pharmaceutical and medical areas**

The JGC Group aims to expand sales and profits in the pharmaceutical and medical EPC business, pursuing orders for overseas projects by leveraging extensive domestic successful project execution. For pharmaceuticals, it intends to assist overseas investments by Japanese firms and emerging country investments by mega-pharma companies. In the medical business area, it plans to seek overseas EPC orders and move forward with overseas business investments while leveraging experience from the planned hospital operation in Cambodia.

(5) **Oil & gas services business – Full-fledged entry into plant O&M services**

The JGC Group plans to provide O&M services that contribute to improved customer business value by raising plant certainty, availability, and quality through analysis and utilization of big data that integrates customer plant operating data and JGC’s design data to forecast future plants.

The JGC Group is considering O&M services business as a new business investment area.

The JGC Group is looking at the provision of conventional maintenance services
in overseas markets too and plans to review initiatives that involve collaboration between overseas EPC-capable Group companies and local maintenance companies. It also intends to review investments in, and acquisitions of, overseas plant maintenance companies.

Strategy 4: Bolster orders competitiveness by pursuing technology advantages
The JGC Group intends to pursue further enhancement of engineering and project management technologies it possesses and meet customer needs for business value improvement amid major changes taking place in the plant market, such as advances by project implementation technologies accompanying the 3D (Difficult, Deep, Distance) shift by resource development projects, changes driven by utilization of IoT and other IT technologies, and revolutions occurring in gene therapy, regenerative medicine, and other life science fields.

The JGC Group plans to implement the following measures.

(1) Further enhancement of LNG technology capabilities
The JGC Group intends to achieve further enhancement of LNG technology capabilities and ensure differentiation of its technologies from competitors in the LNG field where it holds a world-leading position as an engineering contractor, including for its track record of achievements and its technology capabilities. Specifically, it intends to propose a compact LNG plant concept to meet the diverse needs of customers for LNG investments. It plans to actively promote the AIRLIZE LNG concept that facilitates efficient LNG production in varying weather conditions at construction sites.

(2) Further pursuit of advances in project implementation technology such as modular construction
The JGC Group plans to pursue further advances in plant construction technology using the modular construction method for the Ichthys LNG project in Australia and the Yamal LNG project in Russia, and reinforce its leading position based on this method as unmatched by other firms, including through the diffusion of the J-I-Module concept to realize cost savings and shorter delivery periods. At the same time, it intends to solidify advantages for F-LNG projects
that leverage offshore plant construction technologies accumulated through the implementation of the F-LNG project in Malaysia. It also aims to utilize knowledge accumulated from F-LNG projects to enter the offshore field.

(3) **Promote use of IoT to enhance plant business value**
The JGC Group intends to establish design technologies that ensure plant safety through the integration of wide-ranging and massive amounts of data accumulated from numerous projects handled in past years and data obtained from operating plants owned by customers. It also aims to make advanced technology proposals using IoT with the goal of enhancing plant productivity and other business value. It is considering promotion of these measures as the big data solutions business.

(4) **Enhance technology capabilities for advanced cutting-edge medical care to broaden business**
The JGC Group aims to develop close alliances with not only mega-pharma firms but also venture companies by leveraging its EPC track record for regenerative pharmaceutical facilities, and to expand pharma sales and earnings in the EPC business by pursuing enhancement of engineering technology capabilities at drug plants and promoting overseas activity.

**Basic Policy 2: Expand profit from non-EPC businesses (business investments and manufacturing)**

1) **Business investments**
The JGC Group started business investments from FY2005 with the goal of offsetting earnings fluctuation in the EPC business. Specific results thus far include establishing a position as a player in the integrated water and power production (IWPP) business, raising business potential using knowledge as an EPC contractor, and cultivating expert human resources and acquiring knowledge in various business fields. However, it missed the profit target (roughly ¥6 billion per year by FY3/16) and acknowledges the presence of issues that need to be resolved.

Policy for business investments in the new medium term business plan
Based on results from the past 10 years, the JGC Group intends to pursue the
following policy that clarifies numerical goals and investment criteria.

(1) Investment policy
Numerical goals
- Retaining the IRR goal of at least 12%

Clarification of investment criteria
- Promote business selectivity and focus and organize initiatives into three categories (expansion, status quo, and future)
- Clarify policies for each business area
- Aim for major shareholders
- Pursue multifaceted profits with EPC

(2) Strategies for the various business areas

Expansion areas: Continue to actively pursue from the existing businesses base
- Integrated water and power production (IWPP) business: Focus on Middle East, Africa, and United States; aim for major shareholders
- Environmental and new energy business: Focus on Middle East and Asia; mainly solar power and coal-to-liquids and aiming for multifaceted profit with EPC
- Medical (health care) business: Focus on Asia and Russia; promote hospital management

Status quo areas: Continue for the time being, but review future potential in light of market conditions and other factors
- Resource development business: Respond in light of changes to the market environment
- Water and sewage business: Focus on existing businesses for the time being
- Urban development business: Focus on existing businesses for the time being

Future areas: New areas to challenge taking into account the extent of future potential
- Airport operation business: Pursue business in the Asian region
- Agricultural business: Respond based on advances by the business achievement in Russia
- Chinese business: Assess business opportunities from a broad perspective including chemical, environmental, pharmaceutical and other perspectives
- Big data solutions business: Utilize IoT to contribute to enhancement of plant business value

2) Manufacturing
The JGC Group aims to expand sales and profit in manufacturing areas, such as catalysts, fine chemicals, and fine ceramics, through the promotion of technology developments that contribute to new product and new material developments targeting growing global demand, as well as overseas initiatives together with reviewing acquisition and alliance opportunities involving domestic and overseas companies in order to gain technologies.

Basic Policy 3: Promotion of Financial Strategy to Realize Basic Policies 1 and 2

The JGC Group intends to implement a financial strategy that emphasizes capital efficiency and clarifies allocation of cash reserves in the New Medium-Term Business Plan.

1) Capital adequacy ratio
The JGC Group intends to maintain a robust financial base unaffected by financial market trends from the standpoint of retaining customer trust and the smooth implementation of large-scale projects. It will stably sustain the capital adequacy ratio at **50% or higher** to ensure that it has fund-raising leeway to dynamically make large investments.

2) Return on shareholder’s equity (ROE)
The JGC Group is aware of capital efficiency as an important issue from the standpoint of achieving sustainable improvement of enterprise value and continues to use the goal of **at least 10%** return on shareholder’s equity (ROE).
3) Allocation of cash reserves
The JGC Group prioritizes working capital for the EPC business, growth strategy investments targeting further growth and expansion, and shareholders’ return and intends to allocate cash reserves with the following targets in the New Medium-Term Business Plan.

<table>
<thead>
<tr>
<th>Target area</th>
<th>Target allocation ratio</th>
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<tbody>
<tr>
<td>· EPC business working capital</td>
<td>30%</td>
</tr>
<tr>
<td>· Growth strategy investments</td>
<td>30%</td>
</tr>
<tr>
<td>· Shareholder return</td>
<td>20%</td>
</tr>
<tr>
<td>· Business investments</td>
<td>10%</td>
</tr>
<tr>
<td>· Capital investments (building upkeep, group companies)</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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4) Growth strategy investments
The JGC Group aims to allocate 30% of cash reserves to the implementation of the below strategies, in line with its basic policies. It positions growth strategy investments as priority investments and plans to make these outlays separately from business investments.

Reinforcement of project implementation capabilities
1) Create an engineering center in Europe
2) Create new overseas group companies to deal with emerging countries

Expansion of business areas
3) Move into upstream areas
4) Full-fledged entry into the overseas plant O&M services business
5) Enter the transportation infrastructure (airport area) business

Strengthen orders competitiveness through pursuit of technology advantages
6) Promotion of big data solutions business and other measures
Section 8: Shareholders Return Policy

The JGC Group updated its shareholders return policy from the previous level (targeting 25% of consolidated net profit) to the policy described below.

1) Dividend policy
It intends to pay dividends at a ratio of 30% of consolidated net profit

Reference: Dividend results for the past five years (FY2011-15)

2) Share buybacks
The JGC Group intends to mainly compensate shareholders in the form of dividends but also considers implementation of share buybacks as necessary, in light of cash reserves holdings, the share-price trend, and other factors as its shareholders return policy for FY2016-20.

Section 9: Corporate Governance Responses

The JGC Group aims to enhance longer-term corporate value and realize its corporate ideal while also being keenly aware of the importance of corporate governance, having directors and employees share the value of promoting fair and transparent corporate activities with a high ethical view, and strongly understanding corporate social responsibility.

To achieve these goals, it intends to build positive relationships with
shareholders, investors, customers, business partners, regional societies, and other stakeholders, and to enhance corporate governance by quickly and accurately disclosing information and maintaining and strengthening the Board of Directors, Auditor Board, and other functions.

It reduced the number of directors from 15 to 10 directors and increased executive officers in June 2014 during the previous medium-term business plan in order to provide dynamic decisions and bolster implementation capabilities in response to changes in the business environment and expansion and diversification of business scope.

Furthermore, the JGC Group intends to increase the number of outside directors from one to two directors under the New Medium-Term Business Plan with the aims of obtaining suitable advice regarding group management and business implementation and realizing a supervisory function from an independent perspective.