Initiatives for Achieving Sustainability Goals

To achieve the “Three goals,” Yokogawa’s sustainability goals, and thus contribute to the accomplishment of the SDGs, Yokogawa has set concrete medium-term sustainability targets to be achieved in its three business focus areas.

In the period up to 2020, for value creation themes, which are consistent with our TF2020 mid-term business plan, we will execute a PDCA (Plan-Do-Check-Action) cycle using key performance indicators (KPIs) such as the number of projects and net sales.

### Vision toward 2050 (Three goals)

<table>
<thead>
<tr>
<th>Environmental</th>
<th>Social</th>
<th>Economic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achieve net-zero emissions</td>
<td>Ensure well-being</td>
<td>Make transition to circular economy</td>
</tr>
</tbody>
</table>

#### Stopping climate change

- **Net-zero Emissions**

- **Avoided CO₂ emissions:**
  - 1 billion tons
  - (Cumulative from FY2018 to 2030)

- **Renewable and low-carbon energy**
  - Contribute to avoid CO₂ emissions through offering of renewable energy and LNG solutions

#### Mid-term targets for 2030

- Business focus areas and overview of value creation stories
  - **Renewable energy**
  - **Low-carbon energy**

#### 2020

- Mid-term targets comply with the TF2020 business plan
- Value creation themes
- KPI
- Avoided CO₂ emissions (cumulative from FY2018)
  - **60 million tons**

#### 2018 Review

- FY2018 results
  - **23.98 million tons**
**Quality life for all**

- **Well-being**
  - Safety and health value creation:
    - 1 trillion yen (FY2030)
  - Life innovation and safety
    - Support people's health and prosperity through provision of life-innovation solutions assurance of safe and comfortable workplaces

**Circulation of resources and efficiency**

- **Circular Economy**
  - Resource efficiency improvement:
    - 1 trillion yen (FY2030)
  - Energy saving and resources
    - Contribute to sustainability and economic growth through stable and efficient operation and resource regeneration

<table>
<thead>
<tr>
<th>KPI</th>
<th>Avoided CO2 emissions (cumulative from FY2018)</th>
<th>Amount of productivity improvement of pharmaceuticals and food customers (compared to FY2017)</th>
<th>Number of provided drug discovery systems (compared to FY2017)</th>
<th>Number of shipped safety instrumented system controller units</th>
<th>Number of provided on-site maintenance solutions</th>
<th>Number of provided water environment improvement solutions</th>
<th>Amount of improvement effect proposed to customers (compared to FY2017)</th>
<th>Maintenance service sales amount (compared to FY2017)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018 Results</td>
<td>23.98 million tons</td>
<td>1.6 times</td>
<td>1.7 times</td>
<td>850</td>
<td>190</td>
<td>2 times</td>
<td>1.3 times</td>
<td></td>
</tr>
<tr>
<td>FY2020 Targets</td>
<td>60 million tons</td>
<td>2 times</td>
<td>20 times</td>
<td>3,200 systems</td>
<td>The same level</td>
<td>1.7 times</td>
<td>1.1 times</td>
<td></td>
</tr>
<tr>
<td>FY2030 Targets</td>
<td>1 billion tons</td>
<td>1.3 times</td>
<td>339</td>
<td>190</td>
<td>1.1 times</td>
<td>2 times</td>
<td>1.3 times</td>
<td>1.1 times</td>
</tr>
</tbody>
</table>

**Net-zero Emissions**

- Avoided CO2 emissions
  - 1 billion tons from FY2018 to 2030

**Well-being**

- Safety and health value creation
  - 1 trillion yen (FY2030)

**Circular Economy**

- Resource efficiency improvement
  - 1 trillion yen (FY2030)

**Relevance to SDGs**

- Contribution to society
- Long-term stable operation of plant
- Advanced solutions
- Consulting to improve productivity
- Renewable energy
- Co-creation environment

**Business focus areas and value creation themes**

- **Renewable and low-carbon energy**
  - Contribute to avoid CO2 emissions through offering of renewable energy and LNG solutions

- **Life innovation and safety**
  - Support people's health and prosperity through provision of life-innovation solutions assurance of safe and comfortable workplaces

- **Energy saving and resources**
  - Contribute to sustainability and economic growth through stable and efficient operation and resource regeneration

- **Value creation themes**
  - Renewable energy
  - Low-carbon energy
  - Improved productivity in manufacturing/processing of pharmaceuticals/foods
  - Support development of drugs and biopharmaceuticals
  - Improvement of safety
  - On-site maintenance solutions
  - Improvement of water environment
  - Advanced solutions
  - Consulting to improve productivity
  - Long-term stable operation of plant
  - Co-creation environment

- **Customer economic value**
  - Business focus areas
  - Overview of value creation stories
### Joined Global 100 Most Sustainable Corporations in the World Index for the First Time

For the first time, Yokogawa was included in the 2019 Global 100 Most Sustainable Corporations in the World Index, which is one of the leading sustainability indexes of the world. The Global 100 is a list of the world’s most sustainable corporations selected from among approximately 7,500 large companies across the globe based on criteria such as ESG (environmental, social and governance) initiatives, diversity practices, and innovation capabilities. Eight Japanese companies, including Yokogawa, were listed in the Global 100.

**For further details, see the report by Corporate Knights (Canada):** https://www.corporateknights.com/reports/2019-global-100/2019-global-100-results-15481153/

### Yokogawa’s Contribution to Sustainability through Business Activities

#### Net-zero Emissions

**Stopping climate change**

The Shimokawa town, Hokkaido, where 88% of the total area is occupied by forest, is developing a forest-friendly community. Using energy resources derived from local forest resources, the town is pursuing initiatives to revitalize local economies and reduce CO₂ emissions. Due to its cold climate, Shimokawa has been dependent on fossil fuels, producing high levels of CO₂ emissions. Now, 70% of heating demand in its public facilities is met by boilers fueled by woody biomass, and Shimokawa is steadily shifting toward renewable energy using local natural resources. Yokogawa is supporting Shimokawa’s initiatives by providing an energy management solution for district heating using woody biomass boilers.

#### Well-being

**Quality life for all**

Yokogawa and research groups based in the University of Shizuoka established a Single Cellome* Co-innovators’ Consortium jointly with several universities, research institutions, and pharmaceutical companies. In the past, Yokogawa successfully conducted single-cell mass spectrometry by developing a device capable of automatically extracting the components of a target cell with high precision while observing the cell and retaining their positional information using a confocal scanner unit. Going forward, Yokogawa will endeavor to further advance this technology/equipment by contributing to research in the life-science field with the aim of delivering safer and more effective pharmaceuticals and medical technologies to patients and the healthcare industry as quickly as possible through R&D efforts in the consortium.

*Single cellome research: research conducted to gain a comprehensive understanding of molecular information of an organism in each cell

#### Circular Economy

**Circulation of resources and efficiency**

Yokogawa realized energy savings for an industrial wastewater treatment plant located in an industrial area in the northeastern region of China by installing its distributed control system (DCS). By using big data to determine process data characteristics of wastewater and the plant’s operational characteristics and constructing models based on the data to achieve complete automation, Yokogawa realized a sophisticated control system and an optimum treatment process. In addition to achieving an energy saving of 25%, Yokogawa helped create value for the customer by realizing consistency in treatment water quality, enhanced operational efficiency, and reduced operational costs.
### Contribution to local communities

#### Human resources development and job creation in Saudi Arabia

Yokogawa has signed a memorandum concerning human resources education with King Fahd University of Petroleum & Minerals and three other universities in Saudi Arabia to provide educational assistance primarily in the engineering field. Yokogawa’s local subsidiary employs many engineers, including women.

In March 2017, Japan and Saudi Arabia announced the Saudi-Japan Vision 2030, a guiding document for a new strategic partnership that will lay the foundation for the development of Saudi Arabia and Japan. In June 2019, the countries announced Saudi-Japan Vision 2030 2.0, which summarized collaborative projects which have achieved significant progress and expansion. Yokogawa’s initiatives are introduced under “2. Projects, 2. Competitive Industries.”

#### Changes in the number of participants in engineering and other educational programs in the Middle East and Africa*  
(unit: number of persons)

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<tbody>
<tr>
<td>Cumulative total</td>
<td>754</td>
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*Saudi Arabia, Bahrain, United Arab Emirates, Oman, South Africa, Nigeria, etc.

In 2009, Yokogawa approved and signed the United Nations Global Compact, an international initiative proposed by the United Nations, and has been endorsing and putting into practice its ten universal principles in the areas of human rights, labor, the environment, and anti-corruption. The Company is sharing these principles with its group companies and business partners worldwide.

We will continue to strive to fulfill our responsibilities as a global company that develops business worldwide.

**Hitoshi Nara**, President and CEO, Yokogawa Electric Corporation

#### Support for the United Nations Global Compact

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