

## Invisible Assets

# Digitalization and technology development capabilities (Innovation)

Contributing to the achievement of Sustainable Development Goals (SDGs)



In light of the recent rapid advance in technology innovation in the distributed energy system fields, including solar power, storage battery, and electric vehicles (EVs), we are shifting from our previous R&D focused on gas energy to an open innovation style of R&D focused on a broad range of innovative energy technologies. We will acquire distributed energy systems, AI, IoT and other digital technologies, and business models that make use of them to accelerate initiatives to create new energy businesses and new services. We will also use digital technologies to enhance convenience to our customers, promote efficiency and sophistication in operations and solve management issues.

### The history and future of our innovation

2017  
Commenced initiatives to develop new technologies

#### Tokyo Gas history of innovation

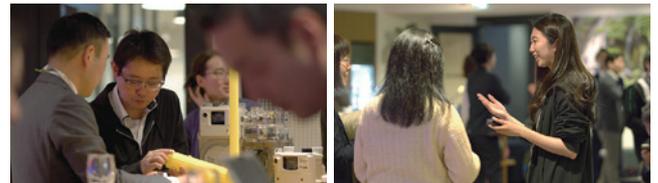


#### Applying and deploying advanced examples around the world in the Japanese market

Through information gathering on U.S. venture firms, and investment in and collaboration with energy-related venture capitals by Acario Ventures, which we established in Silicon Valley, we absorb new technologies and business models in the energy service business areas around the world to apply and deploy them in the Japanese market, while making smart use of our advantages.



#### Creating new businesses and services



#### Creating new energy businesses

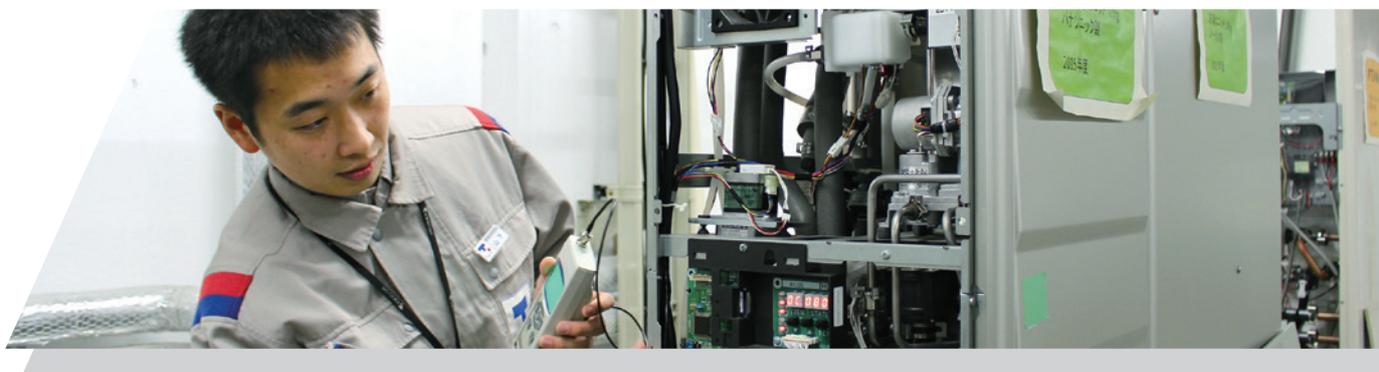
By combining energy-saving and eco-friendly gas cogeneration systems and storage cells, we will create new value, such as advanced energy management for customers and providing load adjustment capabilities required with the widespread use of renewable energy (participated in the verification tests in the UK).

#### Creating new services

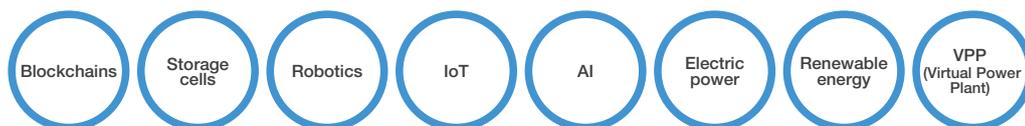
We will combine our service and energy capabilities in a specific market, such as sales and maintenance of gas equipment and energy, to create business and provide high added value to customers and society. We will create business on a broad front, eyeing possibilities, such as development of sub-brands.

The New Business Creation Project Department was established

To be spun off into a separate company within fiscal 2019



**Future innovation**



**Society in the future**

- Low-carbon society
- Hydrogen-oriented society
- Smart society
- Earthquake disaster prevention and stable supply
- Comfortable, convenient and secure living

**Use of data in solving management issues**



Through unified management of operation status data concerning equipment for gas production and power generation equipment, and information on demand, prices, and ship deployment, and by AI-enabled forecasting of equipment operation and sales planning, we work on solving management challenges, including optimization of equipment management and the entire value chain.



- Demand forecasting
- Optimizing deployment of ships and operation of terminals and power generation plants
- Price forecasting of crude oil, LNG and electricity
- Optimizing market trade

**Improving productivity through Business Process Reform (BPR), etc.**

