

Progress of Mid-term Management Plan

— FY2018 —

TOTOKU
東京特殊電線株式会社
丸子事業所

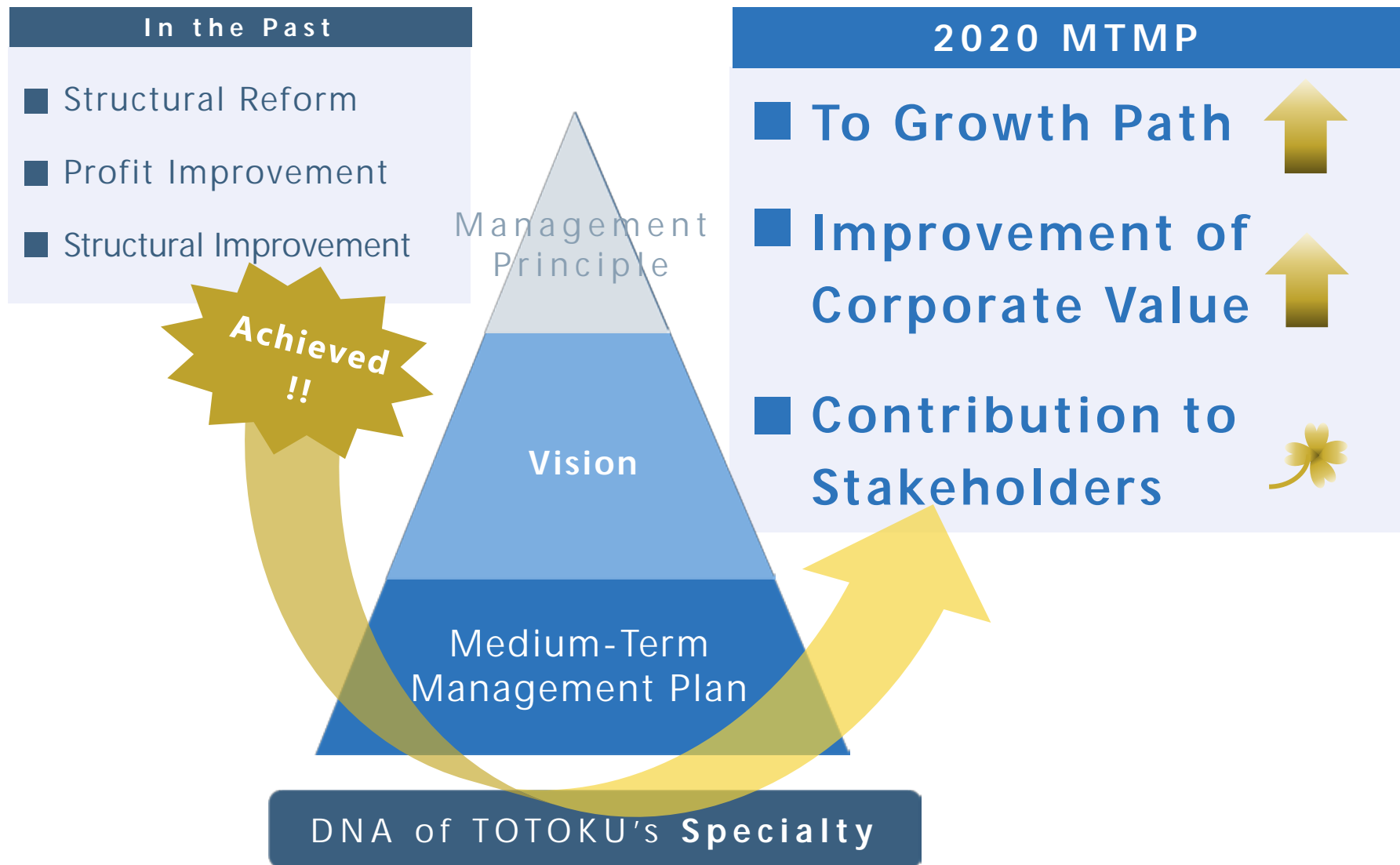
June 7, 2019

TOTOKU ELECTRIC CO.,LTD

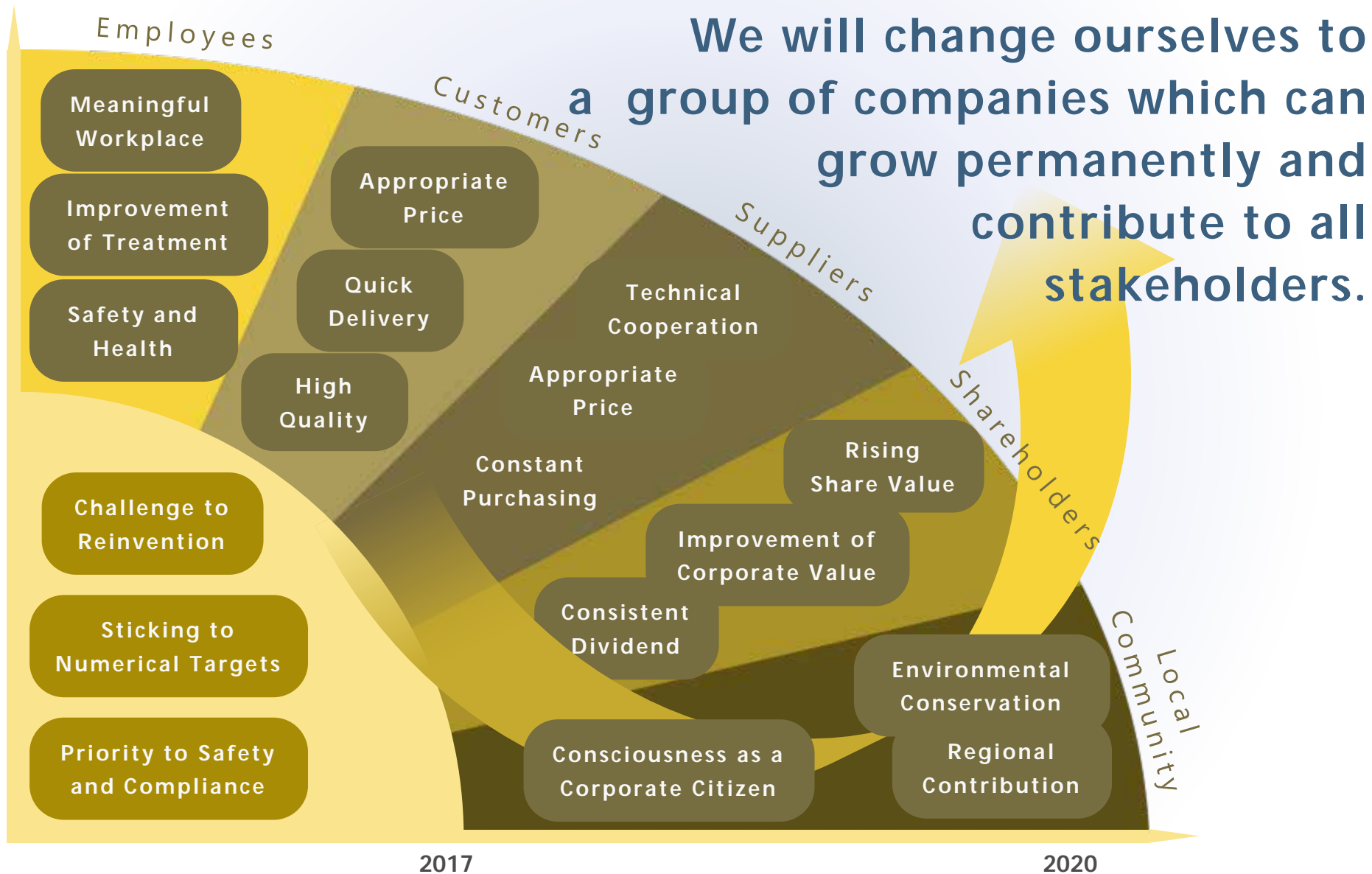
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2. Performance of FY2018
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5. Marketing Strategy of Important Products
6. Introduction of New Products

From Structural Reform to Growth Path



Management Road Map



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1. Position of 2020 Mid-term Management Plan
- 2. Performance of FY2018**
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Consolidated Sales and Operating Income

(Million yen • %)	2018		2019	2020
	Plan	Actual Performance (vs. the Plan)	Plan	Plan
Consolidated Sales	18,500	18,786 (+286)	19,000	21,000
Consolidated Operating Income	2,300	2,113 (186)	2,300	3,000
Operating Income Ratio	12.4	11.2 (1.2)	12.1	14.3

- In FY2018, the consolidated sales has increased 1.5% and the consolidated operating income has decreased 8.1% vs. the plan.
- We will expand the important products of which characteristics are **high speed, high frequency, energy-saving and space-saving**.

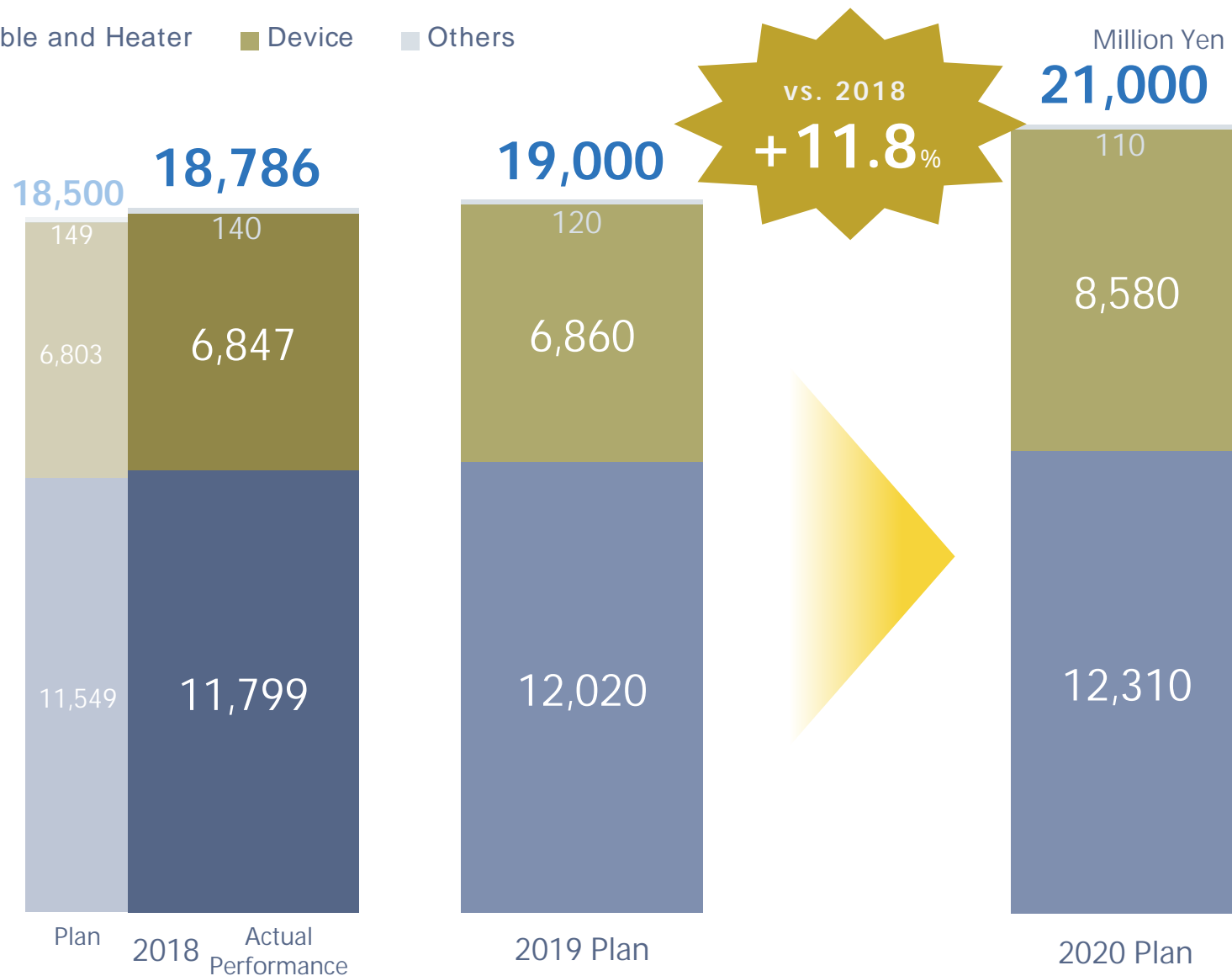
Financial Targets

(Million yen • %)	2018		2019	2020
	Plan	Actual Performance (vs. the Plan)	Plan	Plan
Consolidated Total Assets	21,300	21,984 (+684)	23,300	25,400
Consolidated Interest-bearing Liabilities	2,400	2,508 (+108)	2,200	2,000
Shareholder's Equity Ratio	60.5	57.2 (- 3.3)	61.7	68.1
Consolidated D/E Ratio	0.19	0.20 (+0.01)	0.15	0.12

- The shareholder's equity ratio is 3.3% vs. the plan, and +4.3% vs. FY2017.
- Our target of consolidated ROE in FY2020 is 10%.

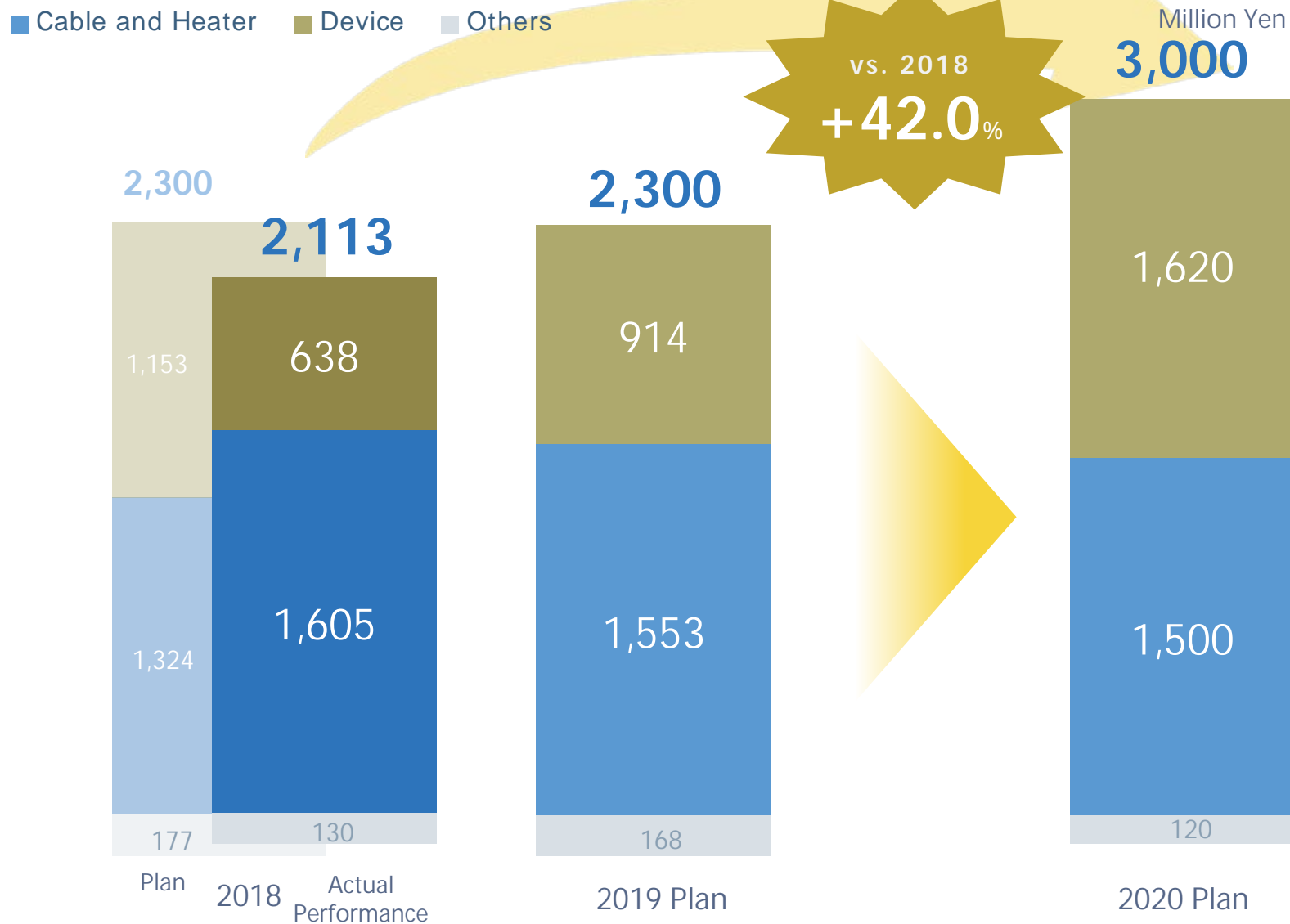
Consolidated Sales of Each Business Field

■ Cable and Heater
 ■ Device
 ■ Others



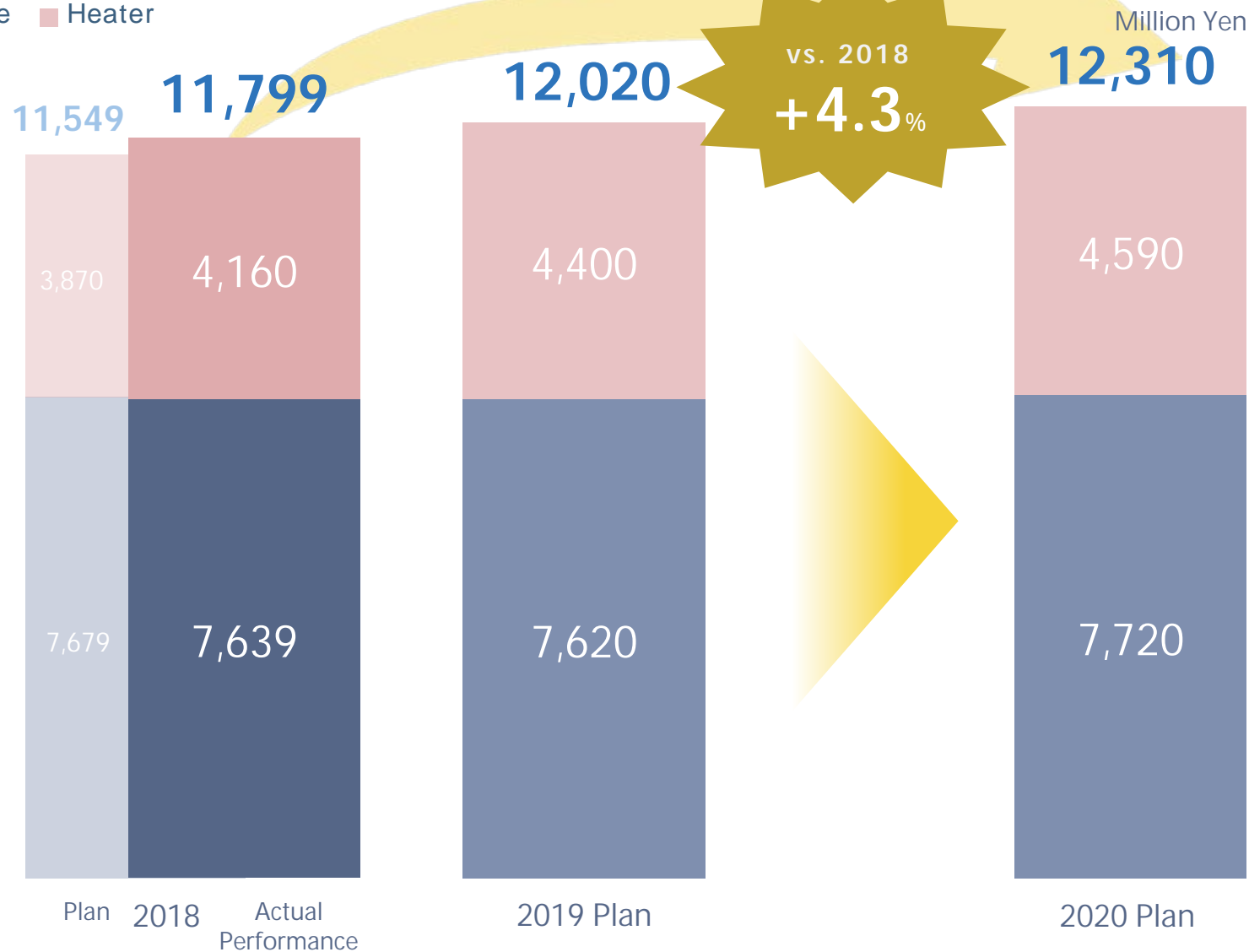
2. Performance of FY2018

Consolidated Operating Income of Each Business Filed



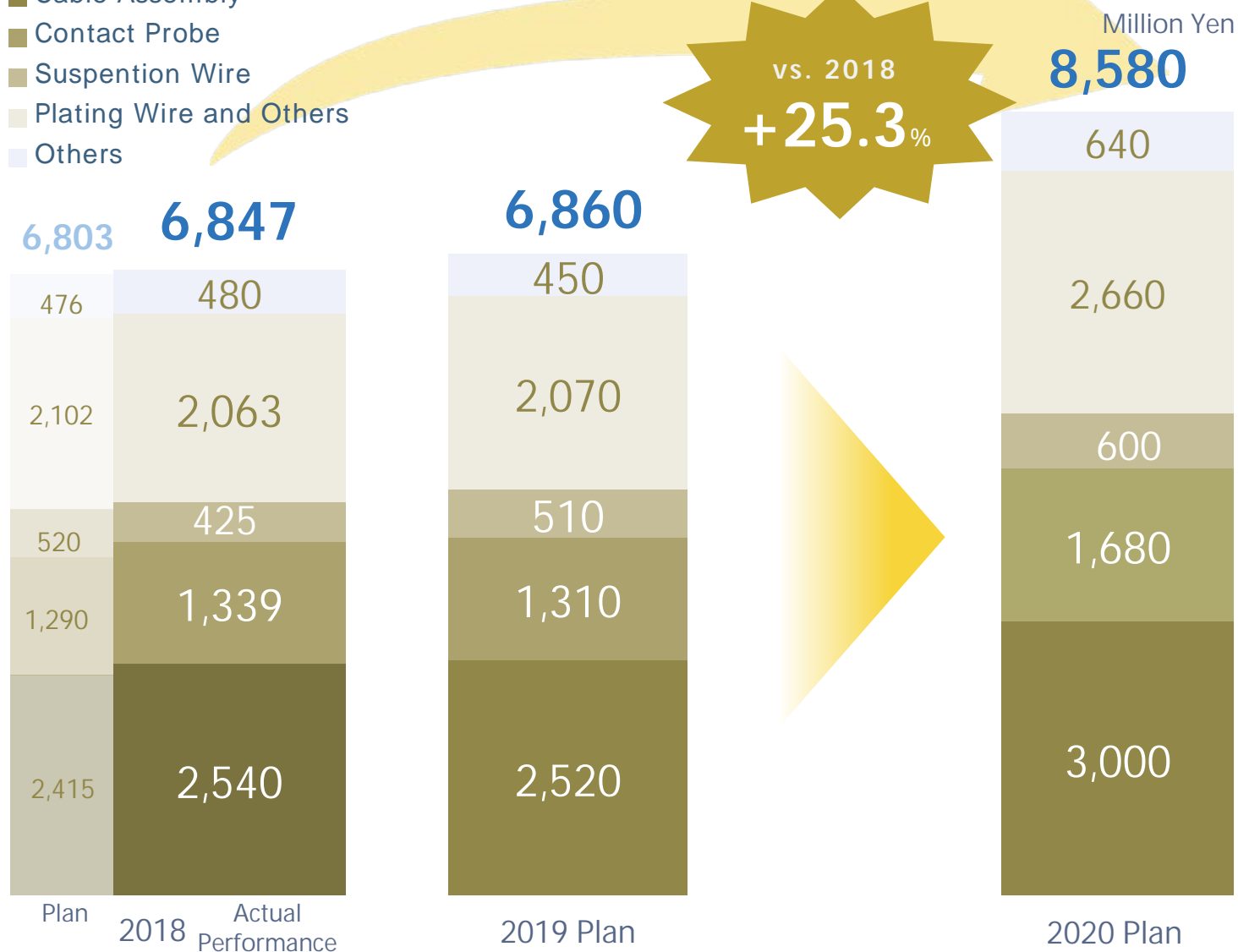
Cable and Heater: Consolidated Sales

■ Cable ■ Heater



Devise: Consolidated Sales

- Cable Assembly
- Contact Probe
- Suspension Wire
- Plating Wire and Others
- Others



Overall Business



n In 2018, the sales has increased and the operating income has decreased vs. the forecast.

- At the end of the 1st half, it could be thought to reach the forecast, however, the situation has deteriorated in 4Q, the profit was lower than the forecast.

n Up and downs of products in FY2018

- Regarding the sales, sales expansion of High Performance Coaxial Cable delayed, Suspension Wire was weak and Magnet Wire decreased. On the other hand, Heater Wire for Seat and Contact Probe has increased.
- Regarding the operating income, Cable and Heater Field was good and exceeded the plan, however, Device Field was lower than the plan because of loss by the trouble of newly introduced equipment and production decrease of Contact Probe in 4Q, as well as delay of establishment of the new factory in the Philippines.

Cable and Heater

n **Bad situation of High Performance Coaxial Cable and good situation of Communication Cable**

- Sales expansion of **RUOTA**, the new product, has been delaying. The sales for semi-conductor inspection equipment has decreased, but we are continuing sales expansion activity for new inquiries.

n **Slight decrease of TIW**

- At the beginning of FY2018, we has invested for production increase and this product is now a base of sales and profit of our company. But the sales has decreased in 4Q and is slightly lower than the plan.

n **Good situation of Heater Wire for Seat**

- The situation has been good for all over the year, and we have invested for additional equipment in this fiscal year.

Device - 1 -

n Sales increase of Contact Probe



- As a fiscal year, we have received many orders and the sales has increased with the effect of equipment investment. And we are planning equipment investment for production efficiency.
- The profit is lower than the plan because we have faced loss by the trouble of newly introduced production equipment at the introduction stage and sales of the profitable products has decreased more than we thought.

Device - 2 -

n Profit decrease of Suspension Wire



- The sales has decreased because of inventory adjustment of our customer and the profit was lower than the plan.

n Profit decrease of Plated Wires and others



- The profit ratio of Magnet Wire has decreased because of change of production mix and increase of labor cost in a subsidiary in China. It is one of the causes of lower profit in Device Field.

n Delay of establishment of a new factory in the Philippines



- We are planning immediate establishment, however, actual establishment was gradual. This is a negative factor for the profit vs. the plan.

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Progress in Each Field

Amount of equipment investment in 2018

Investment in Cable and Heater 407 Million Yen

Investment in Device 708 Million Yen

Investment in R&D・Others 167 Million Yen

Total 1,282 Million Yen

2018-20
Total Amount
of
Equipment
Investment
(Consolidated)

4,200

Million Yen

2018

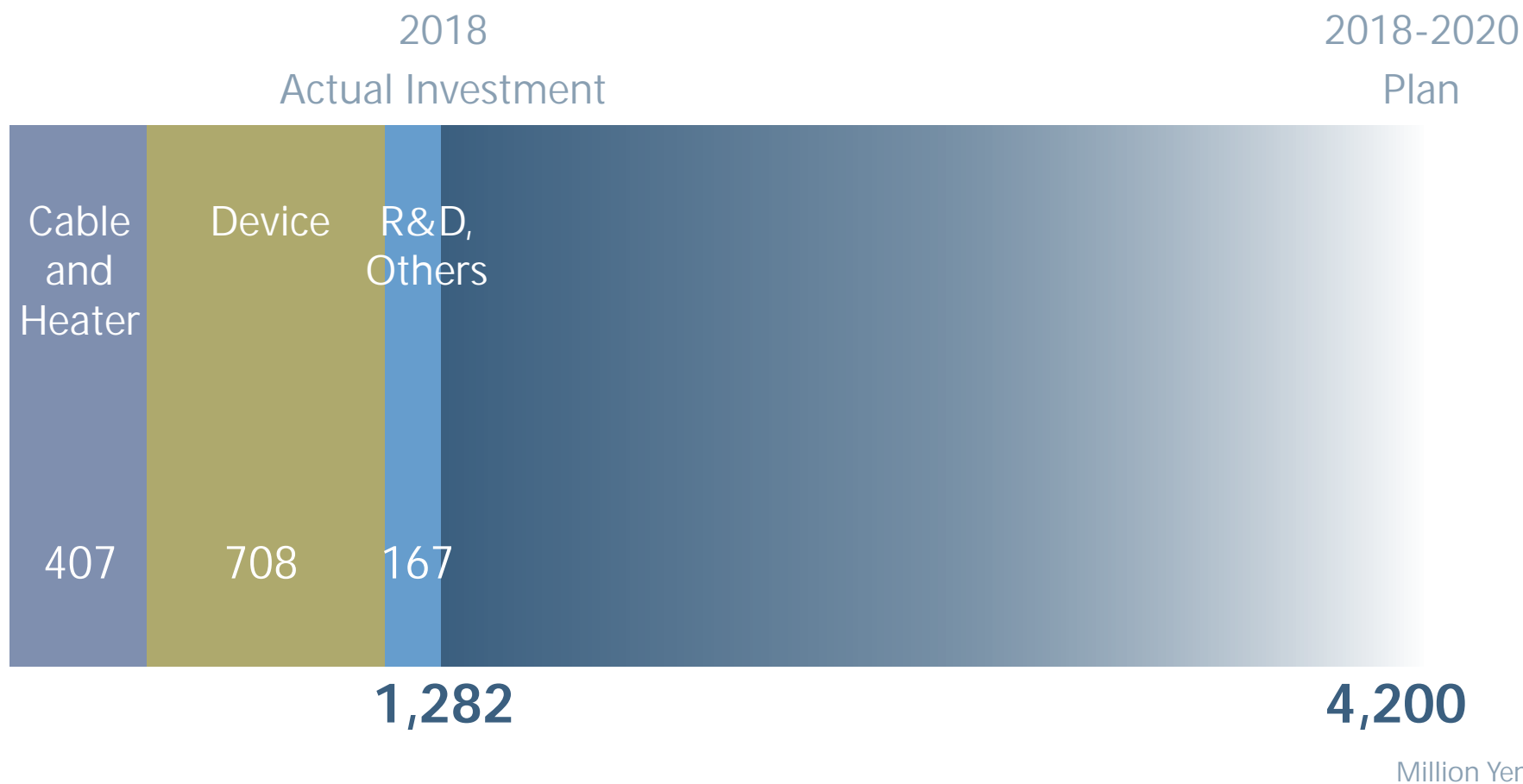
1,282

Million Yen



Progress in Each Field

To further growth with appropriate and timely equipment investment



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R&D Policy

With our original technologies, develop new products which "only TOTOKU can".

n Development of **inspection jig for narrow pitch semi-conductor**

n Development of **flexible flat cables for 8K TV and high heat resistance flexible flat cable for automobile**

n Development of **cooling technology for heat of electronic device**

n Development of **new materials for highly sensitive temperature sensor to prevent partial heating**

2018-20

R&D budget
(Consolidated)

730

Million Yen

2018

248

Million Yen



Progress of Each Theme

n Development of high frequency IC measuring jig

- We have started sales of measuring jig for **12.5GHz** semiconductor which is the fastest one in the world.
- We have started to develop measuring jig for **26GHz** semiconductor of the next generation.



n Development of flexible flat cable for 8K TV and high heat resistance flexible flat cable for automobile

- We have completed the development of the cable for 8K TV.
- We are developing flexible flat cable of heat resistance 125 °C · 150 °C .

Progress of Each Theme

n **Development of cooling technology**

- We have started to develop high heat conductivity board.

n **Development of inspection probe for narrow pitch semi-conductor**

- We are developing technology for contact probe which can inspect the next generation semi-conductor with extremely narrow pitch between electrodes.

n **Development of Copper Clad Laminate**



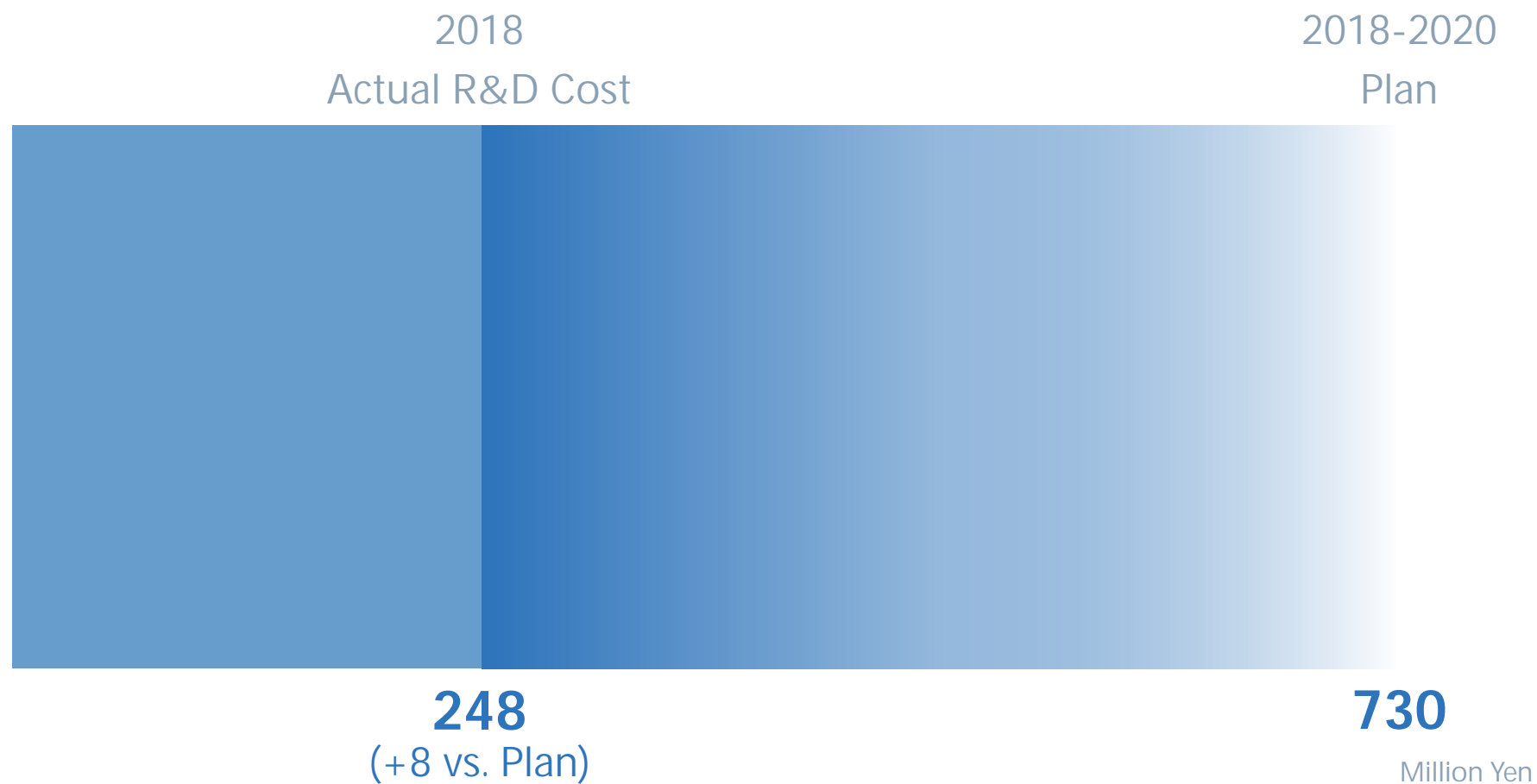
- For request from new customers, we are developing copper clad laminate of better characteristics.

n **Development of temperature sensor using new materials**

- Needs for safer products are rising, and we are developing new materials for high sensitivity temperature sensor to prevent partial heating.

R & D Cost

With original technologies, develop new products which *only TOTOKU can*.

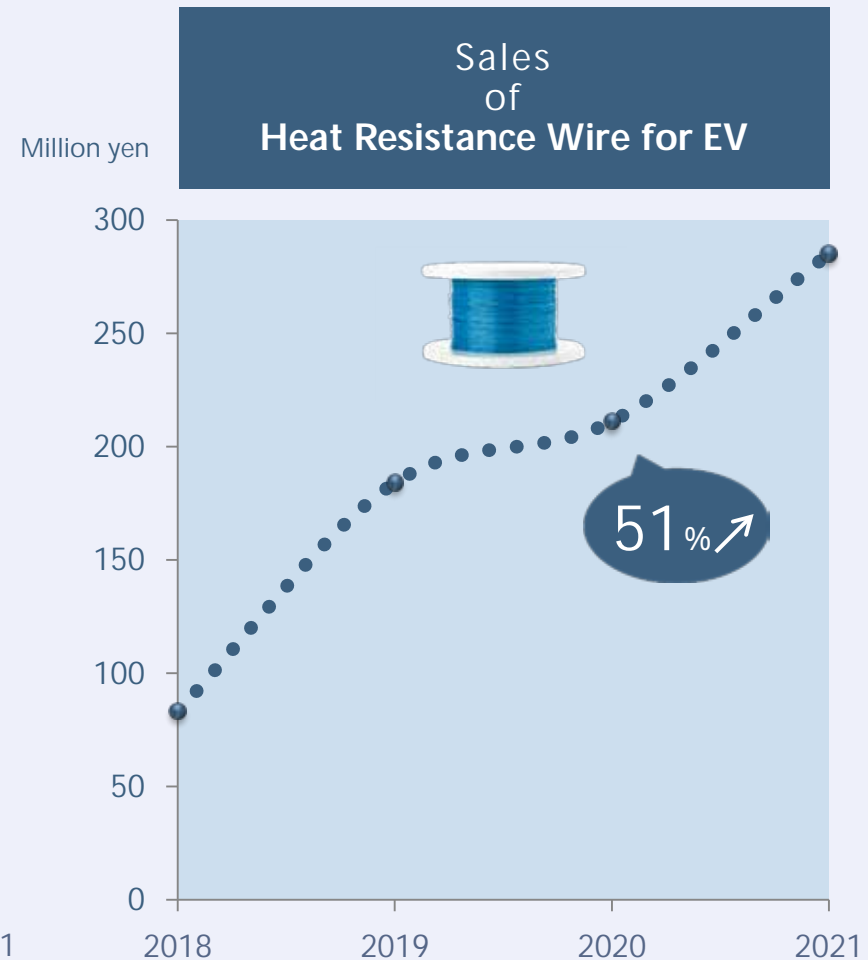
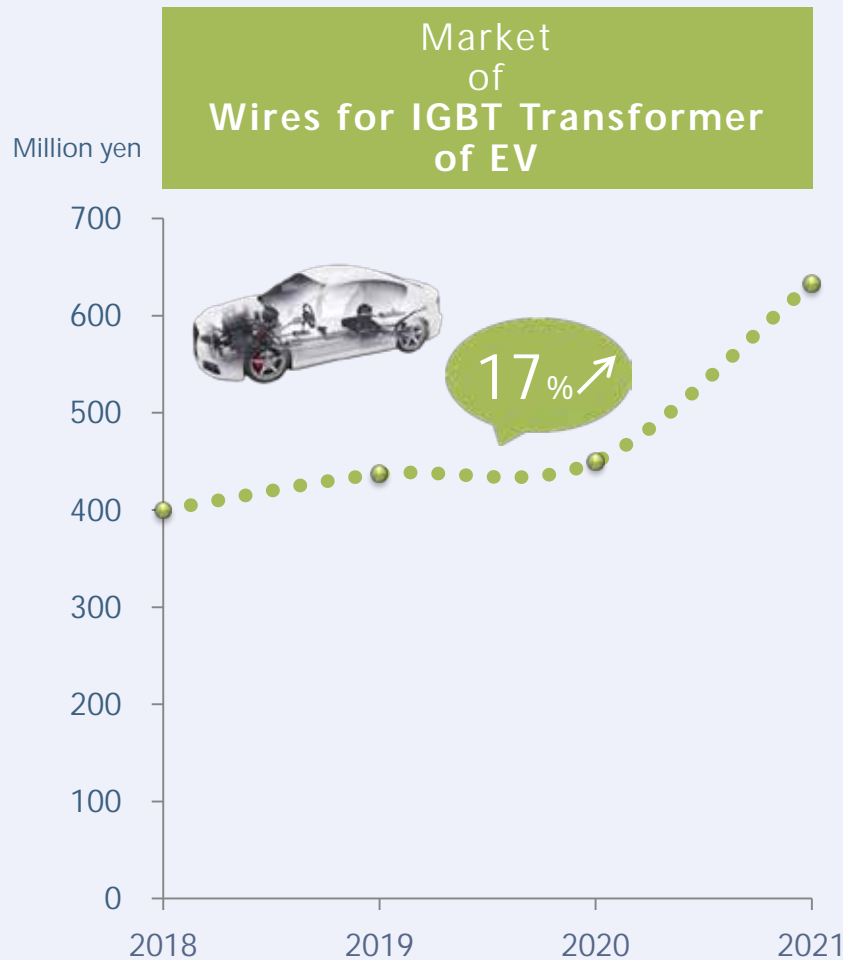


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Heat Resistance Wire for Electric Vehicle

Refer to the 6th chapter



Forecast based on our research

Heat Resistance Wire for Electric Vehicle



n Target Market

IGBT transformer for motor inverter of EV (electric vehicles and hybrid cars)

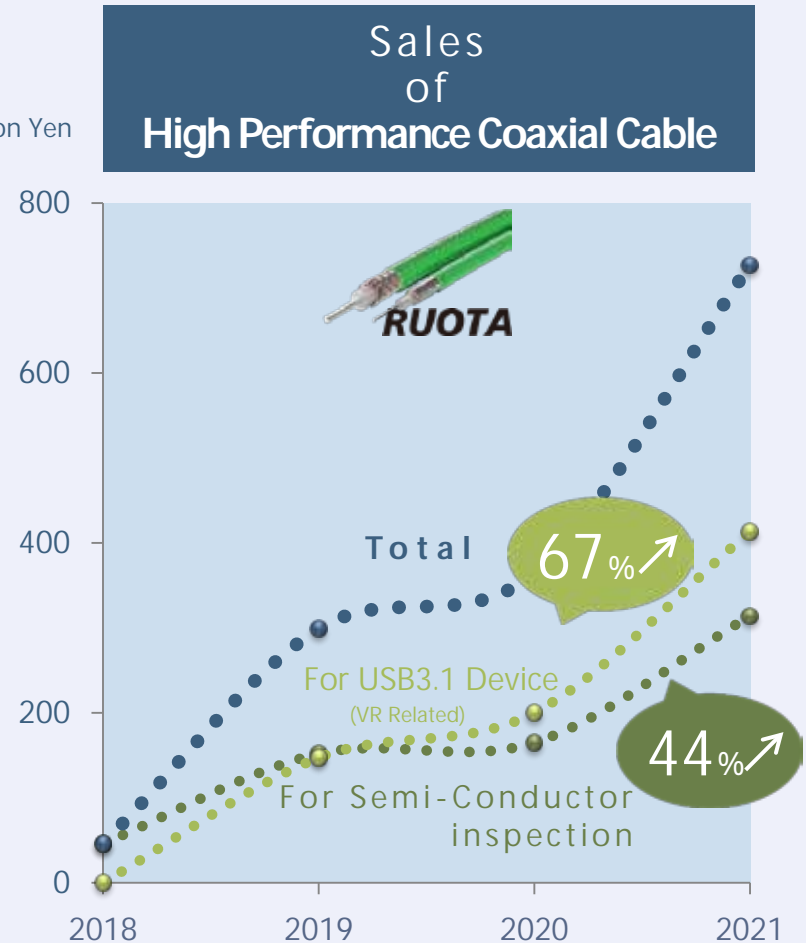
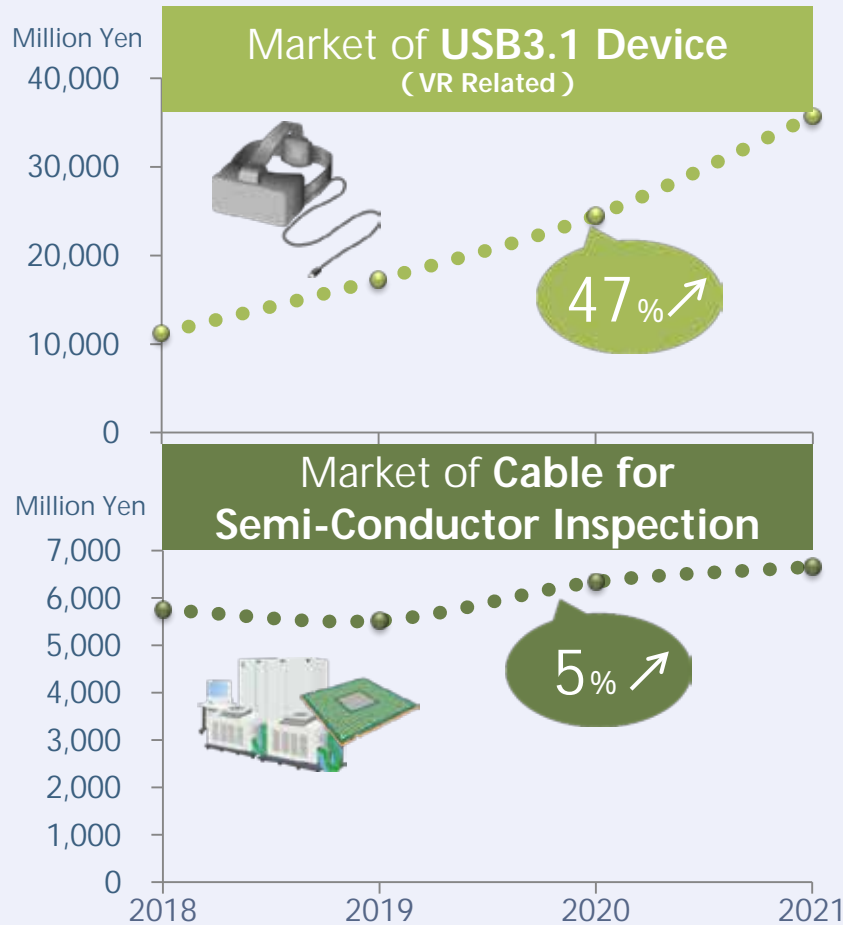
n Market Forecast

As far as we currently know, the market size of wires for IGBT transformer of EV is not so big, however, the market is surely growing. We are expecting market increase with average growth of 17% per year.

n Our Strategy

Size of orders are rapidly expanding. We are also expanding our production capacity to catch up with.

High Performance Coaxial Cable



Forecast based on our research

High Performance Coaxial Cable



n Target Market

Information equipment for USB3.1 standard, semi-conductor inspection equipment and others

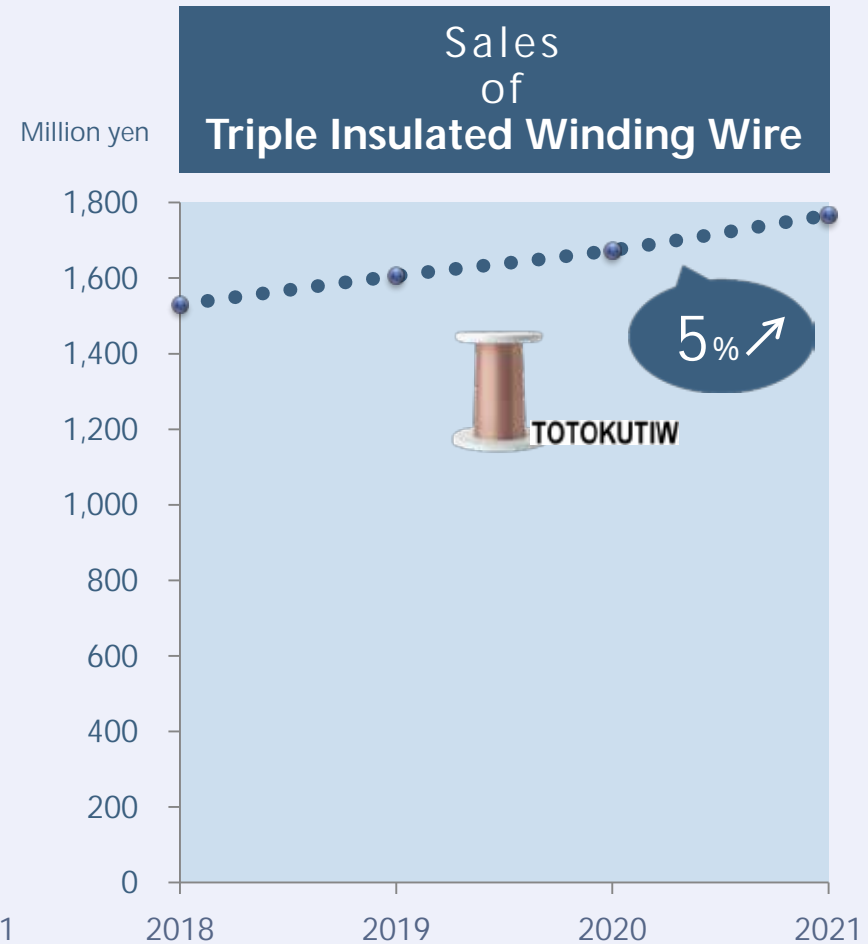
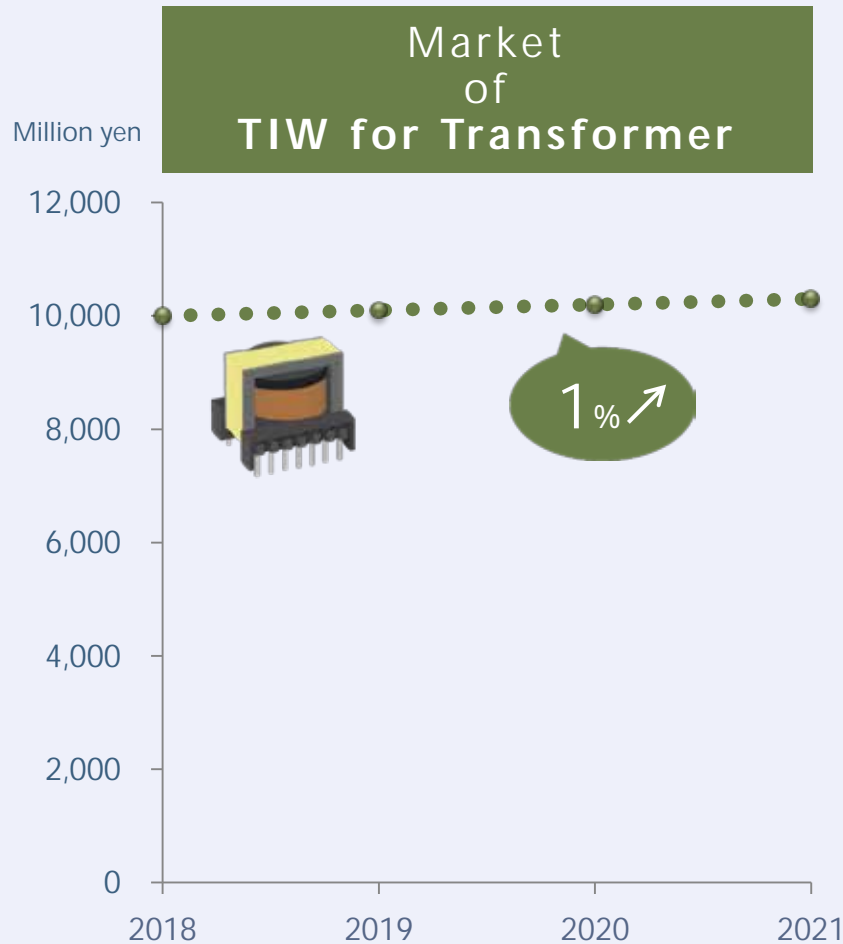
n Market Forecast

In semi-conductor inspection market, demand of cables is an adjustment phase in 2019, however, we expect that the growth will be 5% per year, and 47% per year in USB3.1 device (VR related field) in mid-term. The market is huge, so even small share has big meaning to us.

n Our Strategy

We are trying to find and capture niche markets in the huge market.

Triple Insulated Winding Wire



Forecast based on our research

Triple Insulated Winding Wire



n Target Market

Power Transformer

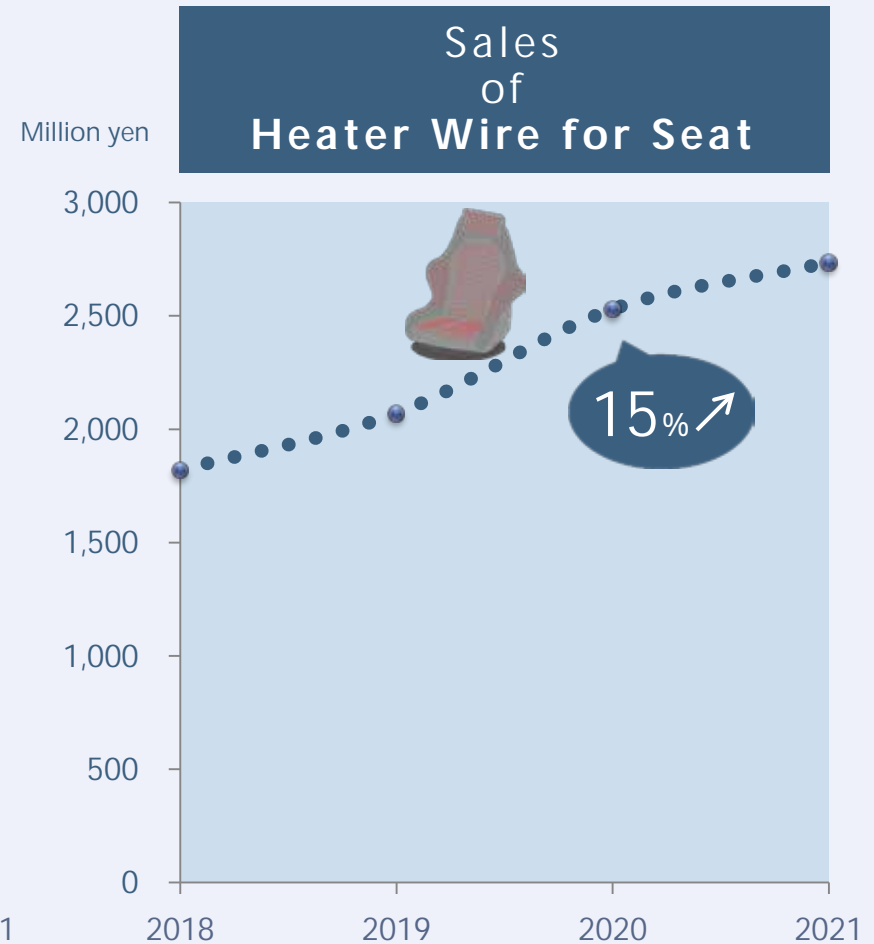
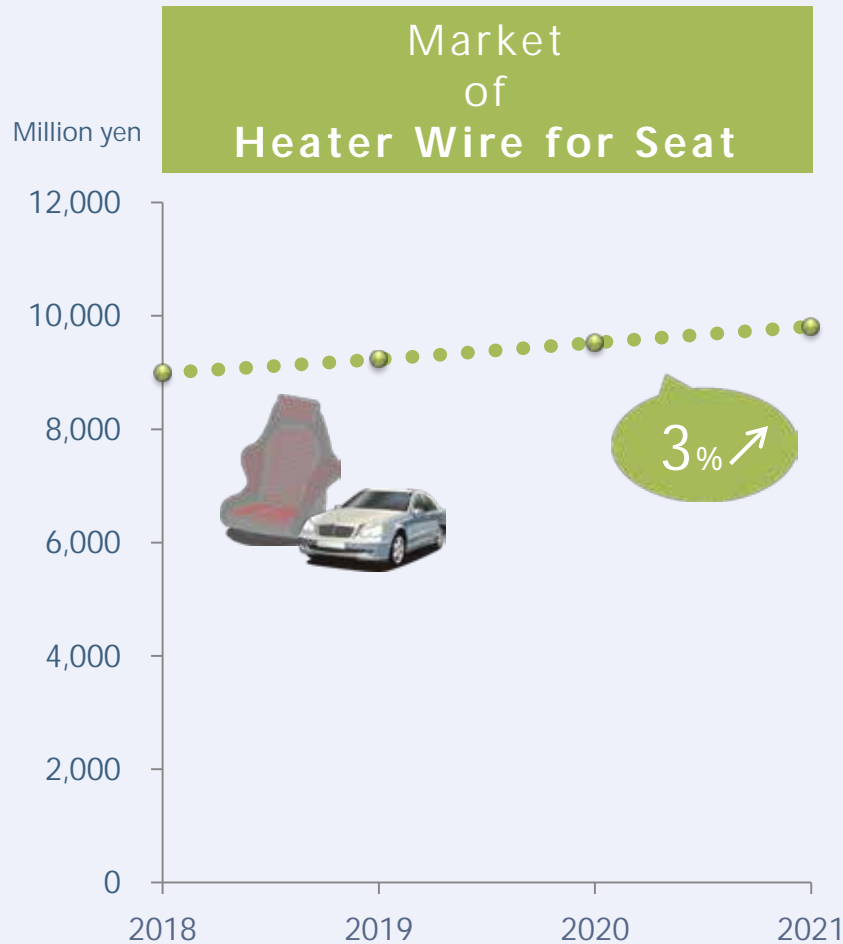
n Market Forecast

The growing rate of wire demand in the target market is low, but demand to our TIW is growing according to downsizing and higher performance of electronic device.

n Our Strategy

By using characteristics which are appropriate for downsizing, high speed, high frequency and lower loss, we are expecting bigger expansion of sales than the growth of the market. And we will try to enter EV market with TIW.

Heater Wire for Seat



Forecast based on our research

Heater Wire for Seat



n Target Market

Heater Wire for Seat

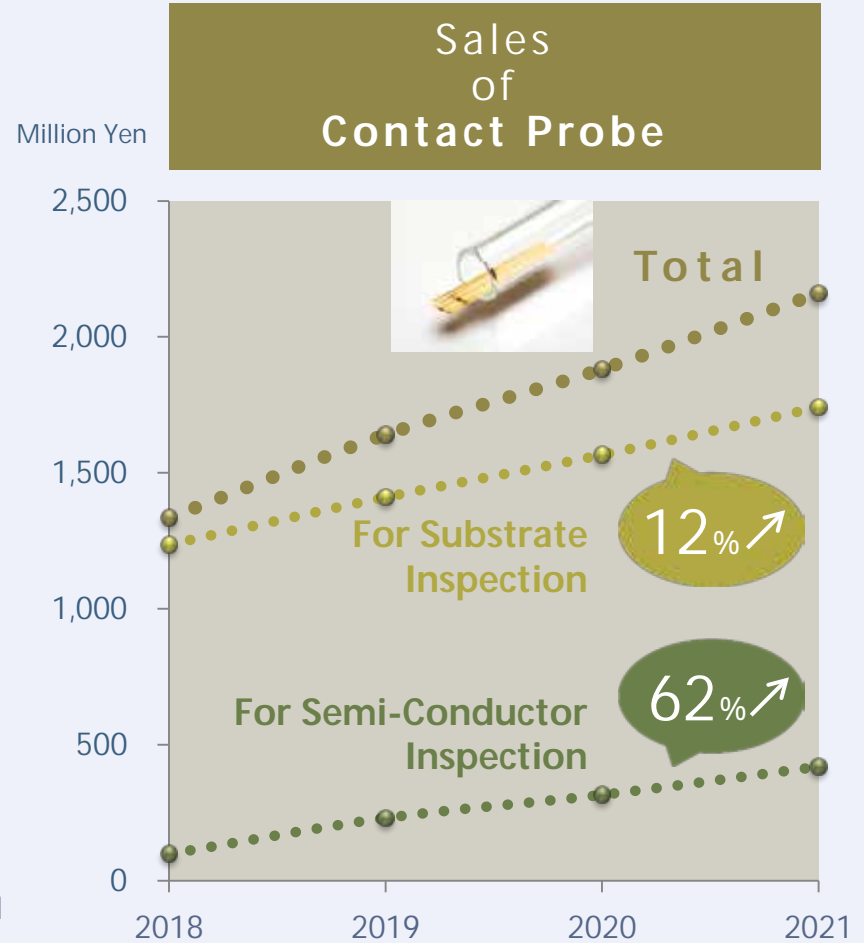
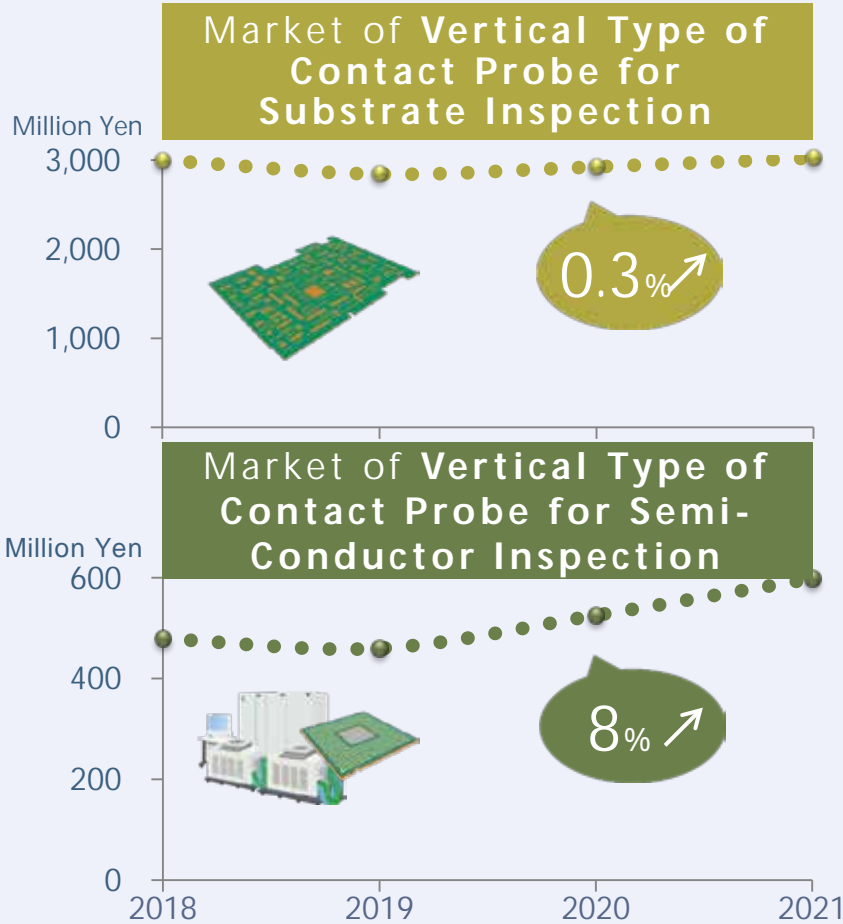
n Market Forecast

We forecast that the heater wire will increase with average growth of 3% per year. Change to EV can be following wind for the heater wire.

n Our Strategy

Keeping the good relationship with the current customer, we will expand our sales more than the market growth rate with further sales expansion activity. Production of our subsidiary in China can help us expand.

Contact Probe



Forecast based on our research

Contact Probe



n Target Market

Inspection for Substrate and Semi-Conductor

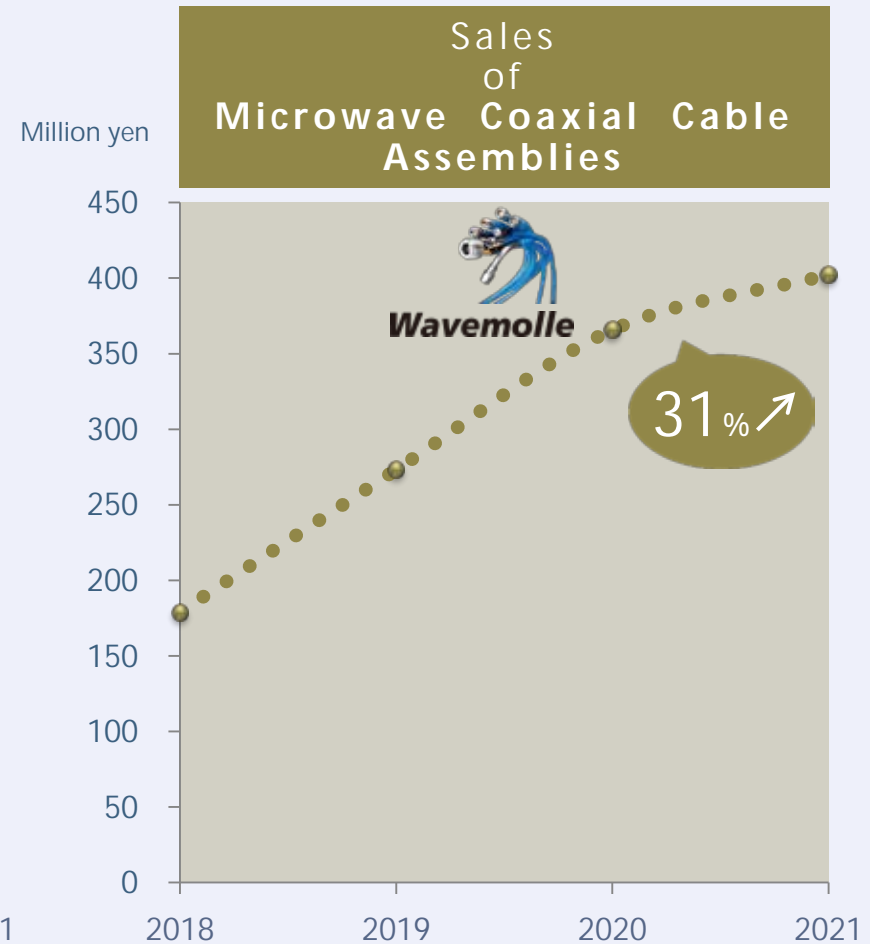
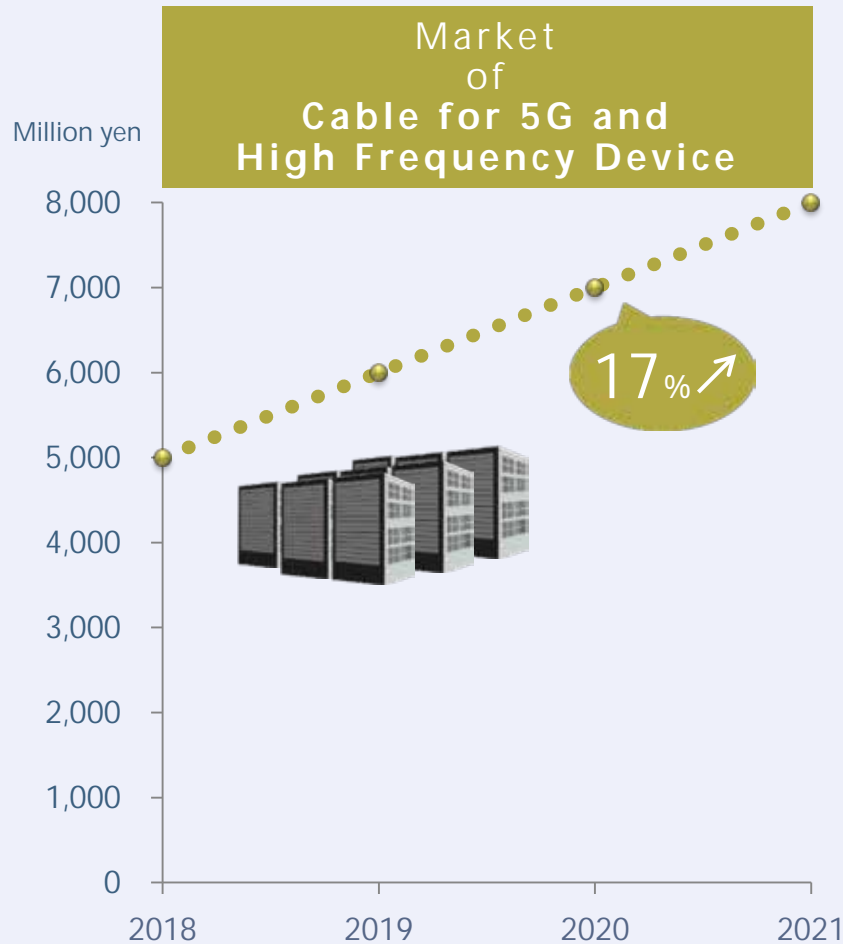
n Market Forecast

We forecast that demand of wire probe will increase slowly and steadily in substrate inspection market. In semi-conductor inspection market, demand is an adjustment phase in 2019, however, we expect that the growth will be 8% per year in mid-term. Further downsizing and higher performance of substrate are forecasted with automatic driving and technology development of AI.

n Our Strategy

With downsizing and higher performance of substrate, thinner and stronger probe will be required. Our excellent technology will help us develop new markets and expand our share and sales.

Microwave Coaxial Cable Assemblies



Forecast based on our research

Microwave Coaxial Cable Assemblies



n Target Market

5G • High Frequency Device

n Market Forecast

It is forecasted that demand of 5G related high frequency device and cables will expand according to big expansion of 5 G market. We are expecting that demand of the related cables will increase with the average growth of 15% per year.

n Our Strategy

In order to avoid losing the chance of expansion of 5 G related demand, we will focus on brand establishment, sales expansion activity, purchasing and process improvement.

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Heat Resistance Wire for Electric Vehicle



n Power Semi-Conductor *IGBT* which is inevitable for EV



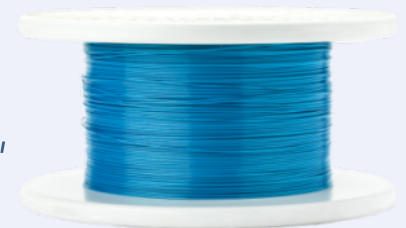
- Energy of EV • HEV is electric power. Therefore, battery for accumulating electric power, inverter for changing DC to AC and motor for changing electric power to driving power are required (DC is taken from battery, and inverter changes DC to AC which is usable for motor).
- Power semi-conductors *IGBT*, which can control big electric power and turn a switch on and off with ultra high speed, is set in inverter. It can change to AC of appropriate frequency and voltage according to the accelerated quantity and control revolving speed of motor.

Heat Resistance Wire for Electric Vehicle



n Wire which can be used under the situation of high heat resistance and high voltage

- Transformer, in which our heat resistance wire is used, can change the voltage to the required height on power circuit for driving the IGBT.
- With thick layer of fluorine resin, this wire has performance of high heat resistance and high voltage of 150 . On the other hand, its diameter is as fine as 0.2mm or lower, and it can be plated without peeling layer of the resin (Patented).
- Because performance of high heat resistance and high voltage is required to parts for inverter, we can expect further expansion.



TOTOKU

TOTOKU ELECTRIC CO., LTD.

Note

This document explains our management policy from 2018 to 2020.

Sales, profits and others on this document is based on information which we could acquire. The contents of this material have a possibility to change according to change of future business environment.