1. Fiscal 2020 First-Half Progress and Second-Half Initiatives

2. Medium-term Initiatives
1. Fiscal 2020 First-Half Progress and Second-Half Initiatives

2. Medium-term Initiatives

### FY2020 Full-Year Forecast Revision

<table>
<thead>
<tr>
<th>Sales (yen: billions)</th>
<th>1H results vs. FY19</th>
<th>2H forecast vs. FY19</th>
<th>Full-year forecast (as of Oct 31) vs. FY19</th>
<th>vs. initial forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>747.2</td>
<td>762.8</td>
<td>1,510.0</td>
<td>-13.2</td>
</tr>
<tr>
<td>Adjusted operating profit (Adjusted OPM)</td>
<td>-22.4 (-3.0%)</td>
<td>-13.6 (-2.2%)</td>
<td>-14.1 (-2.6%)</td>
<td>-27.7 (-20.0%)</td>
</tr>
<tr>
<td>Other income/loss</td>
<td>-0.3</td>
<td>-0.5</td>
<td>-4.2 (-2.7%)</td>
<td>-4.5 (-2.7%)</td>
</tr>
<tr>
<td>Operating profit (OPM)</td>
<td>-22.7 (-3.0%)</td>
<td>-14.1 (-2.2%)</td>
<td>-17.8 (-2.9%)</td>
<td>-44.0 (-29.0%)</td>
</tr>
<tr>
<td>Investment</td>
<td>57.3</td>
<td>+10.8</td>
<td>+21.4 (+37.2%)</td>
<td>+32.2</td>
</tr>
</tbody>
</table>

Sales (yen: billions):
- Automotive Solutions: 1,577.0
- Automotive Batteries: 1,510.0
- Others*: Sales of other Divisional Company products, etc.

Operating profit (yen: billions):
- Initial forecast (As of May 9): 1,510.0
- Revised forecast (As of October 31): 1,470.0

**Initiatives after FY20 2HF**
- Efforts to strengthen the management structure
- Minimize the impact of worsening earnings on European subjects
- Stabilize productivity improvements by increasing support to North American factory
- Further improvement of productivity and profitability through labor saving (mid-long term)
1. Fiscal 2020 First-Half Progress and Second-Half Initiatives

2. Medium-term Initiatives

Summary of Automotive Business Growth Strategy
Positioning of Our Automotive Business

- As a once every 100 years car revolution has arrived, expand the area in which the company can contribute to the automobile industry. Panasonic focuses on automotive business

**Comfort**
- The car and network are connected

**Safety**
- From driving assistance to autonomous driving

**Environment**
- Eco-conscious vehicles demand grow for environmental reasons

- Focus on the development of cockpit products (IVI, HUD) using digital AV technologies and software platform design capabilities
- Focus on ADAS using sensing devices / image processing technologies
- Focus on expanding battery / electrification business by leveraging years of automotive batteries performance and power electronics technologies

Contribute to the evolution of cars by concentrating our group technologies in the automotive business

*IVI : In Vehicle Infotainment  HUD : Head-Up Display  ADAS : Advanced Driving Assistance System*

Growth Trends in Our Automotive Business

- Target of “automotive business sales 2 trillion yen” almost achieved in FY2019
- Although sales expansion was realized, issues became apparent with rapid expansion

**Achievement**
- Expanded business scale in order to position ourselves to become one of the top 10 automotive solutions suppliers
- Grew into a leading player in the infotainment/automotive batteries field
- Created new businesses such as ADAS
- Established global development/production/sales system that faces customers

**Issues needing clarification**
- Insufficient management of received orders and projects
- Individually optimized global supply chain
- Poor development management and efficiency loss due to insufficient judgment of customer requests

*Automotive batteries and cross cell are not included in Automotive Solutions.*

[Prismatic cell] Deficient resources for timely response to expanding demand
⇒ Acquire responsiveness through joint venture with Toyota Motor Corporation

[Cylindrical cell] Delay in productivity improvement at North America factory

* Automotive batteries and cross cell are not included in Automotive Solutions.
**Roadmap for Initiatives in the Automotive Business**

**Automotive Solutions**

- **By FY22**, we will carry out management reforms and promote the preparation in areas where competitiveness can be utilized, enhance partnership as a foundation for future.

**Automotive Batteries**

Move to recovery phase due to steady start-up, improved operation and battery evolution.

### FY20

1. **Thorough enhancement of management structure**
   - Improve profitability of orders received, etc.

2. **Concentrate on competitive areas**
   - Scale optimization

3. **Strengthen partnership for the future**
   - Accelerate realization of No.1 battery by strengthening competitiveness

4. **Establish joint venture for prismatic battery**

5. **Stabilize its production at North America factory for cylindrical cell**
   - Contribute to customers and the market with industry-leading high capacity and low cost cells

### FY22

- Thorough examination of profitability
- Optimize acquiring project scale
- Strengthen competitiveness by increasing development density

### FY26

- Pursue organizational ability to lead the contribution to CASE progress

**CASE**:
- general acronym for Connected, Autonomous, Sharing, Electric

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**Automotive Fiscal 2020 Second-half and Medium-term Initiatives**

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(1) Toward FY22: Strengthening Management Structure

**Issues**
- European projects (onboard charging systems)
- Strengthen management structure
- Improve profitability

**Measures**
- Concentrate on minimizing loss, leverage development and project management led by AM company HQ
- Reduction of fixed costs: review indirect operations and strengthen checks on managing development subcontractors
- Strengthen cost power through in-house production of source processes and enhance cost power by strengthening design capabilities
- Strengthen change response capabilities through further automation and labor saving

Convert early to a management structure in order to challenge again
Aim for an operating profit margin of over 5% in FY22

(2) Toward FY26: Portfolio Management Concept

**Focus area**
Concentrate on IVI, ADAS, HUD and cabin space

**Optimization area**
Display audio, etc.

*The size of the circle represents sales

IVI: In Vehicle Infotainment  ADAS: Advanced Driving Assistance System  HUD: Head-Up Display

*The size of the circle represents sales
(2) Focus Area (IVI/ADAS)

**IVI**
- Correspond to the progress of connectivity, leverage our own knowledge, and contribute to the improved comfort of the driver
- ADAS: Focus on areas where we can make use of our strengths and aim for niche top in the low-speed ADAS field

**Changes in the market**
- With the progress of connectivity
  - Increased amount of information handled in the car
  - Software development volume is rapidly expanding

**Our strengths and key technologies for contributing to car manufacturers**
- Improve driver comfort through user experience knowledge of digital AV and home appliances
- Efficiently fulfilling car manufacturer requests by leveraging platform development results

**Market environment**
- Driver assist function is the mainstream until CY30
- Growth of high-speed driving and parking support systems (predicted growth of 4 times from CY18 to CY25)

**Our strengths and key technologies for contributing to car manufacturers**
- Concentrate on "vehicle surroundings" systems such as emergency braking and parking assistance
- Realize high detection accuracy by combining image processing and communication technology with high-performance devices (camera and sonar)
- Deep learning network scale reduction by image processing (low cost/power saving)

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(2) Focus Area (HMI)

**HUD**
- Providing products that contribute to comfortable driving with our unique technologies
- Cabin space solutions: Creating new added value for mobile spaces in the age of autonomous driving

**Market environment**
- Advancement of large screen
- Market prediction – expand by 5 times (CY18→CY24)

**Our strengths and key technologies for contributing to car manufacturers**
- Utilizing optical technology and precision mold technology to achieve a compact but large screen and improved design flexibility

**Cabin Space Solutions**
- In autonomous driving, the driver is relieved of driving
- The ways to staying in the cars evolve with driving support functions

Aiming to become an innovator of “cabin space” by further evolving devices through “design thinking” cultivated in the “home appliances / living” business
(3) Target : FY26 and Beyond

- With the progress of CASE, further advanced and various technologies are required in automotive business
- Accelerate contribution to mobility evolution by strengthen partnerships with other companies

**[Changes in the market]**

<table>
<thead>
<tr>
<th>Connected</th>
<th>Autonomous</th>
<th>Electric</th>
</tr>
</thead>
</table>
| - Increase in data processing volume due to networking | - From driving assistance to autonomous driving  
- Cabin space changes-Changes in HMI | - The spread of eco conscious vehicles will accelerate for environmental reasons |

Further requests for eradication of traffic accidents, comfort in moving spaces, and reduction of environmental burdens will come.

How the cars should be, how the cars are used, the mobility accelerate changes.

**Contributing to society through the continuous evolution of convenience, safety and comfort in mobile spaces by strengthening partnerships with other companies**

**CASE : Connected, Autonomous, Sharing, Electric**
(4) Progress of Prismatic Batteries Business

- A joint venture will be established to accelerate the development of the industry’s No.1 batteries and put in place a stable supply system
  - Obtained competition law approval. Preparation underway with the aim of starting business as a joint venture in the spring of 2020
- Steadily expand capacity and aim for early profit contribution

### Changes in production capacity (cell quantity)

<table>
<thead>
<tr>
<th>Year</th>
<th>Index with FY13 as 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY13</td>
<td>start production (Sumoto factory)</td>
</tr>
<tr>
<td>FY14</td>
<td></td>
</tr>
<tr>
<td>FY15</td>
<td></td>
</tr>
<tr>
<td>FY16</td>
<td></td>
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<tr>
<td>FY17</td>
<td></td>
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<tr>
<td>FY18</td>
<td></td>
</tr>
<tr>
<td>FY19</td>
<td></td>
</tr>
<tr>
<td>FY20</td>
<td></td>
</tr>
</tbody>
</table>

Dalian factory

- Started mass production of cells at 2nd plant (November 2019)

Himeji factory

- Started shipment of high capacity cells (November 2019)

Joint venture with Toyota Motor Corporation

- Preparation for establishment is progressing smoothly

(5) State of the Cylindrical Batteries Business and Initiatives for FY20 2-HF

- North America factory improved its profitability by stabilizing productivity
  - Aim to have sustainable profit, with additional fixed cost reduction and continuous development of our market-leading technologies

### Production Capacity Ramp-up

(For EV use, each quarter annualized)

*Index with FY18/1Q as 100

<table>
<thead>
<tr>
<th>Quarter</th>
<th>North America factory</th>
<th>Japan factories (in total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1Q FY18</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>2Q FY18</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>3Q FY18</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>4Q FY18</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>1Q FY19</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>2Q FY19</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>3Q FY19</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>4Q FY19</td>
<td>400</td>
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</tr>
<tr>
<td>1Q FY20</td>
<td>100</td>
<td>100</td>
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<td>2Q FY20</td>
<td>200</td>
<td>200</td>
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<tr>
<td>3Q FY20</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>4Q FY20</td>
<td>400</td>
<td>400</td>
</tr>
</tbody>
</table>

North America factory

- Expect to be profitable on a single month basis by stabilizing productivity
- Expect to be in full operation by the end of FY20
  ⇒ Steadily improve utilization rate aiming for profitability in 2-HF

Japan factories (Suminoe, Kaizuka)

- Profit dropped due to the sales decrease for non-North America customers
  ⇒ Review the capacity utilization, and reduce fixed cost

Technology R&D

- Lead the batteries industry with its high energy density and safety
  ⇒ Evolve further and maintain a lead with our outstanding high capacity and low cost cells
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Sales (yen : billions)

<table>
<thead>
<tr>
<th>FY19 1H Result</th>
<th>FY20 1H Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>725.8</td>
<td>747.2</td>
</tr>
<tr>
<td>+21.4</td>
<td></td>
</tr>
</tbody>
</table>

Operating profit (yen : billions)

<table>
<thead>
<tr>
<th>FY19 1H Result</th>
<th>FY20 1H Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>-8.6</td>
<td>-22.7</td>
</tr>
<tr>
<td>-14.1</td>
<td>-13.6</td>
</tr>
</tbody>
</table>

Modification factors

**Automotive Solutions**

- Sales
  - Decreased : expansion of growth-products (e.g. IVI) could not offset the impact of lower sales from deteriorating Chinese market situation and product cycle trend
  - IVI : In-Vehicle Infotainment
- Operating profit
  - Decreased due to significantly increased development expenses for orders received in Europe
  - Impact from lower sales due to product cycle trend

**Automotive Batteries**

- Sales
  - Prismatic : Increased with investment effect for production expansion at Dalian factory
  - Cylindrical : Increased with investment effect for production expansion at North America factory
- Operating profit
  - Prismatic : Improved with increased sales and decreased fixed costs
  - Cylindrical : Improved with increased sales in North America factory, offsetting impact of lower sales in Japan factory

Note: Grouping of Business whose sales are disclosed

(Automotive Solutions Business) Infotainment Systems, HMI Systems, Automotive Systems, Ficosa
(Automotive Batteries business) Automotive Energy, Tesla Energy

(Reference) Details of Each Business Whose Sales Are Disclosed

**Businesses whose sales are disclosed**

**Automotive Solutions**
- Infotainment Systems Business Division
  - IVI, CDA, car navigation systems
  - IVI : In-Vehicle Infotainment
  - CDA : Connected Display Audio
- HMI Systems Business Division
  - Switches, sound systems, HUD
  - HMI : Human Machine Interface
  - HUD : Head-Up Display
- Automotive Systems Business Division
  - Vehicle camera modules, sensors, onboard charging Systems, ADAS
  - ADAS : Advanced Driver Assistance System
  - ECU : Electronic Control Unit
- Ficosa International, S.A.
  - Mirrors, electronic mirrors, smart connectivity modules

**Automotive Batteries**
- Lithium-ion batteries for PHV/EV and HEV (Prismatic)
- Tesla Energy Business Division
  - US Company
  - Lithium-ion batteries for EV (Cylindrical)