Initiatives to achieve carbon-neutral society
Isuzu Environmental Vision 2050 issued in March 2020

As climate change and other global environmental problems intensify, society today stands at an important crossroads. The Isuzu Group has formulated Isuzu Environmental Vision 2050 as a roadmap to minimizing our impacts on the global environment and creating a more prosperous and sustainable society.
Isuzu taking actions in achieving 5 aspirations

**Pursue a circular economy**
by minimizing resource use and maximizing resource efficiency

Reduce packing materials by using global standard returnable racks.

**ISUZU Environmental Vision**

**2050**

**Pursue decarbonization**
by minimizing emissions of greenhouse gases

Purchased 100% hydroelectric power supply as a part of power sources at Fujisawa and Tochigi Plants.

**Minimize environmental risks**
through rigorous preventive and responsive actions

21 Isuzu group companies in Thailand support in providing water purifying systems to schools with poor water environment.

**Harmonize with nature**
by promoting biodiversity conservation

Participating in biodiversity conservation activities at Watarase-yusuichi Retarding Basin near Tochigi Plant.
We will aim for zero greenhouse gas (GHG) emissions* across the entire life-cycle of Isuzu Group products by 2050

*Net zero balance of emissions and sequestration

Climate change measures
(Products and services)

- Develop and mainstream next-generation automobiles
  suited for local energy markets and customers' applications and needs

- Utilize decarbonized energy
  such as biofuels

- Streamline and improve transport efficiency
  through connectivity, automated platooning, and other technologies

We aim for decarbonized society by promoting minimization of greenhouse gas emissions.

Isuzu selected as an A List company, the highest rating from CDP in the climate change category.
Take a step-by-step approach to minimize emissions considering economic rationality, accessibility and energy security aiming for a carbon-neutral society by 2050.
Manufacturing and developing vehicles powered by various power sources

- **FCV**
  - 2020: Began joint research with Honda (Heavy-duty truck)

- **EV**
  - 2019: Began mobile monitoring (Light-duty truck)

- **LNGV**
  - 2018: Began mobile monitoring (Heavy-duty truck)

- **Bio-fuel**
  - 2014: DeuSEL® began mobile monitoring (Medium-duty transit bus)

- **HEV**
  - 2005: Start of sales (Light-duty truck)
  - 2012: Start of sales (Heavy-duty transit bus)

- **CNGV**
  - 1996: Start of sales (Light-duty truck)
  - 2015: Start of sales (Heavy-duty truck)

2005-2020
Japanese government’s movement toward carbon neutral society

The government declared a goal to achieve a carbon-neutral, decarbonized society by 2050, and unveiled a “Green Growth Strategy” formulated to turn the challenging goal into a positive cycle of economic growth and environmental protection.

Japanese government clarified the direction to accelerate actions towards realizing a carbon-neutral society.

Green Growth Strategy toward 2050 Carbon Neutrality

- The governments to provide full support to businesses with positive measures.
- It is also to implement economic instruments (ex. carbon pricing) with vigor.

### Stretch target
High goals set for 14 growing industry fields

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-power</th>
<th>Power</th>
<th>Carbon removal</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>1.06 billion tons</td>
<td>450 million tons</td>
<td>* Values shown as CO₂ emitted from energy use</td>
</tr>
<tr>
<td></td>
<td>Households: 110 million tons</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Industry: 300 million tons</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation: 200 million tons</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>2030 mix</td>
<td>Households: 90 million tons</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Industry: 330 million tons</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation: 150 million tons</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>2050</td>
<td>Essentially 0 ton by reducing &amp; absorbing</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrification</td>
<td>50-60%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hydrogen, methanation synthetic fuel, biomass</td>
<td>30-40%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fossil fuel</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decarbonized power</td>
<td>*DMCCS: Direct Air Capture with Carbon Storage</td>
<td></td>
</tr>
</tbody>
</table>

Reference: Images of the transformation to a carbon-neutral society

Energy strategy
2050 as a reference point for reasonable energy consumption

Urgently needs to address transportation of energy as transport sector


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Isuzu aims to provide carbon-neutral vehicles as early as possible with emphasis on practical use.

**Products**

<table>
<thead>
<tr>
<th>Products</th>
<th>Drive the efforts to develop and introduce carbon-neutral vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>EV · FCV · ICE (DE · HEV · CNG / LNG)</td>
<td>Economic rationality, ease-of-use, etc. addressed as a driving force for market acceptance</td>
</tr>
</tbody>
</table>

**Improve transportation efficiency & better ease-of-use**

<table>
<thead>
<tr>
<th>Improve transportation efficiency &amp; better ease-of-use</th>
<th>Provide safe and high efficient transportation services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advancements in driving &amp; uptime support like MIMAMORI and PREISM</td>
<td>Proven development by partnering with logistics &amp; IT companies</td>
</tr>
</tbody>
</table>

**Carbon-neutral energy**

<table>
<thead>
<tr>
<th>Carbon-neutral energy</th>
<th>Actively participate in supports for commercialization and market penetration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric, hydrogen, decarbonized-fuel</td>
<td>Supports evaluations for normalization, standardization, and practical-use</td>
</tr>
</tbody>
</table>
Heavy Gross Vehicle Weight

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Light Gross Vehicle Weight

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Short Travel distance per day

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Long Travel distance per day

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Transit bus | Tourist bus/Highway bus | Medium-duty truck | Heavy-duty truck

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Pickup truck | Light-duty truck

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High-efficient ICE including electrification technology

Carbon-neutral fuel

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Fully committed to advancing vehicle electrification

**EV light-duty truck**
In 2019, began mobile monitoring in areas of home delivery, convenience store distribution and garbage collection. Closely examining economic rationality and ease-of-use to fine-tune for serial production.

*Slated to launch serial production of vehicles in FY2022*

**FCV heavy-duty truck**
In 2020, began joint research with Honda.

*Slated to start mobile monitoring in FY2022*
We will actively collaborate across all industries and stakeholders to achieve a decarbonized society.

Isuzu ideal future society

Logistic engineering
Vehicle related hardware, service and management support solution

Social-infrastructure support
Participate in next generation traffic infrastructure operation to support smooth driving/getting-in/off/cargo handling

Energy management
Industrial solution with clean and safety power source
Trucks for life

ISUZU