Nissan’s Environmental Initiatives

- Progress achieved in the Nissan Green Program 2016 (NGP2016) -

Toshiyuki Shiga, COO
December 12th, 2012
Nissan Green Program (NGP) evolution

'02 Jan. NGP2005

Improving the environment of cities and local inhabitants

'06 Dec. NGP2010

Keep the "impact" within the Earth’s natural limit to absorb.

'11 Oct. NGP2016

Keep "impact" & "dependence" within the Earth’s natural limits of resource use and ability to absorb.

Reduce and clean emissions

Reduce CO₂ and waste

Recycle resources
NGP2016

– Action plans

1. Zero-emission vehicle penetration
2. Fuel efficient vehicle expansion
3. Corporate carbon footprint minimization
4. New natural resource use minimization

– Foundation

Environmental Management Promotion
NGP2016
– Action plans

1. Zero-emission vehicle penetration
1. Zero-emission vehicle penetration

- 1.5 million cumulative EV sales under the Alliance with Renault
- Taking initiative on creating a zero-emission society

Secondary-use batteries (4R*)

Support smart communities

EV & FCEV launches

EV Batteries

*Reuse, Resell, Recycle, Refabricate
1. Zero-emission vehicle penetration

The Nissan LEAF is the No.1 selling EV in the world. Cumulative sales exceed 46,000 units.

Global cumulative sales of EVs

- '09 Jul-'12 Oct Share
- Nissan LEAF: 51%
- Cumulative sales exceeding 46,000 units
- Launched Dec. 2010

Nissan LEAF

Cumulative sales exceed 46,000 units

NISSAN
1. Zero-emission vehicle penetration

e-NV200 and Infiniti EV planned for 2014

- Introduced in Dec. 2010
  - Nissan LEAF

- Coming in 2014
  - e-NV200

- Coming in 2014
  - Infiniti EV

- Coming by 2016
1. Zero-emission vehicle penetration

More than 100 partnerships globally

- Oregon (US)
- Fleet Forum (SW, IT, GB)
- EV demonstration program
- Tohoku region (JPN)
- Mobility ‘Project Zero’
- Yokohama (JPN)
- Aguascalientes (MEX)
- Zero emission project
- Sao Paulo (BRA)
- Guangzhou (CHN)
- Singapore
1. Zero-emission vehicle penetration

EVs are green and have further CO₂ reduction potential

<table>
<thead>
<tr>
<th>CO₂ emissions per vehicle (lifecycle, JPN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
</tr>
<tr>
<td>80%</td>
</tr>
<tr>
<td>60%</td>
</tr>
<tr>
<td>40%</td>
</tr>
<tr>
<td>20%</td>
</tr>
<tr>
<td>0%</td>
</tr>
</tbody>
</table>

- Same-class -gas vehicle
- Nissan LEAF

Fuel consumption
- Transport, maintenance, disposal

Fuel production, electricity generation
- Production of material, parts, vehicle

Electricity efficiency
Solar Wind
Material Process

Total CO₂ reduction in society

Smart House
Smart Grid

NISSAN

www.nissan-global.com
NGP2016

– Action plans

1. Zero-emission vehicle penetration

2. Fuel efficient vehicle expansion
2. Fuel efficient vehicle expansion

CAFE* improvements are on track

Five models including Altima achieved best-in-class in FY2012

*Corporate average fuel economy (CAFE) in Japan, China, Europe and U.S.
2. Fuel efficient vehicle expansion

Introduce HEV on 15 models* by FY2016

3 core technologies

CVT

1 motor + 2 clutches

Li-ion Battery

P-HEV

FF-HEV

FR-HEV

*models include updated models as well as all new-models
2. Fuel efficient vehicle expansion

Cumulative global sales of CVTs reached 12.2 million units by 1H 2012
NGP2016
– Action plans

1. Zero-emission vehicle penetration
2. Fuel efficient vehicle expansion
3. Corporate carbon footprint minimization
3. Corporate carbon footprint minimization

Corporate CO₂ reduction is on track

Material | Parts | Production | Logistics | Office | Dealer | Vehicle Usage | Recycle

100%

CO₂ emission/unit (Production, Logistics, Offices, Dealers)

Forecast 15%

20%

80%

2005 2012 2016 2050
3. Corporate carbon footprint minimization

Nissan achieved minimum CO₂ emissions per vehicle during production.

NISSAN achieved minimum CO₂ emissions per vehicle during production.

Source: 2011 per unit CO₂ emissions of auto OEMs disclosed in sustainability reports of each automaker.
3. Corporate carbon footprint minimization

Expand renewable energy introduction and penetration

- **Sunderland (UK)**
  - Wind: 6,500 kW

- **Barcelona & Avila (Spain)**
  - Photovoltaic: 200 kW

- **Smyrna & Franklin (US)**
  - Photovoltaic+Bat: 60 kW

- **Aguascalientes (MEX)**
  - Biogas: 1,400 kW
  - **Start: Jan 2012**

- **Oppama (JPN)**
  - Photovoltaic, Wind: 11 kW

- **Zama (JPN)**
  - Photovoltaic+Bat: 10 kW

- **Yokohama GHQ (JPN)**
  - Photovoltaic+Bat: 40 kW

- **Oita (JPN)**
  - Photovoltaic: 26,500 kW
  - **Start: May 2013**

- **Atsugi NATC (JPN)**
  - Photovoltaic: 31 kW

Start: Jan 2012
Start: May 2013
3. Corporate carbon footprint minimization

Renewable Energy Promotion
– Mega solar farm in Oita

Name: Nissan Green Energy Farm in Oita
Place: Oita Coastal Industrial Areas #6
Area space: 350,000 m²
Electric-generating capacity: 26.5MW (the largest in Japan)
Operation: will start in May 2013

Equivalent to annual consumption of 9,000 households

Collaboration with Nikki Co.

...enough to power 23,000 LEAFs
NGP2016

– Action plans

1. Zero-emission vehicle penetration

2. Fuel efficient vehicle expansion

3. Corporate carbon footprint minimization

4. New natural resource use minimization
4. New natural resource use minimization

Increase recycled material use ratio to 25%

Comprehensive closed loop recycling includes not only plastics, but also adoption of steel and aluminum.

Maintain at same level
4. **New natural resource use minimization**

Promote application of recycled plastic in Nissan LEAF

Received
- 3Rs (Reduce, Reuse, Recycle) award for 2012
- Minister of Economy Trade and Industry Prize

**Recycled Materials Used in Nissan LEAF**

- Plastics recycled from end-of-life vehicle parts
- Plastics recycled from end-of-life home appliances
- Plastics recycled from paint removed bumpers
- Other recycled plastics
- Plastics recycled from painted bumpers
- Bio PET fabric
- Other recycled fabric
- Vibration damper with wood powder
4. New natural resource use minimization

Reduction plan compared to “business as usual” basis on key rare earth elements by FY2016

Rare Earth reduction plan*

(Annual use)

<table>
<thead>
<tr>
<th></th>
<th>BAU* 2016</th>
<th>Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dy Reduction plan</td>
<td>100%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Dy Reduction plan

(Annual use)

<table>
<thead>
<tr>
<th></th>
<th>BAU Plan 2016</th>
<th>Reduction technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction in FY12 on EV motors by 40% per vehicle</td>
<td>60%</td>
<td></td>
</tr>
</tbody>
</table>

* Dy: dysprosium, Nd: neodymium, Ce: cerium, La: lanthanum**”Business as usual” based on no change from 2011.
NGP2016

- Action plans
  1. Zero-emission vehicle penetration
  2. Fuel efficient vehicle expansion
  3. Corporate carbon footprint minimization
  4. New natural resource use minimization

- Foundation
  Environmental Management Promotion
1. Enhance environmental management with partners

Collaboration with suppliers to reduce impact

Include environment as one of the supplier selection criteria

1. Environmental management
   - Compliance
   - Data Disclosure (CO$_2$, Energy, Waste, Water)
2. Chemical substance management
3. Resource recycling
4. LCA management

Nissan Green Purchasing Guidelines

- On November 30, 2012, briefing for Japan-based suppliers
- After December 2012, global suppliers to be briefed
2. Enhance information disclosure

Disclose key environmental data on websites

Environmental Fact Book 2012

1. Corporate activities
   - Energy use
   - CO₂ emission
   - Water use
   - Waste
   - Other emissions

2. Products
   - Fuel economy / CO₂
   - Emission compliance
   - Noise emission
Long term value of NGP activities
Long term value of NGP activities

- Carbon footprint peak-out in 2020s
- Keep flat newly mined natural resource usage

### Carbon footprint in the value chain

- **2011-2016**
  - 267Mt-\text{CO}_2\text{ reduction (forecast)**}

### New natural resource use

- **2011-2016**
  - 4.7Mt reduction (forecast)**}

---

shown in the diagram.
Blue Citizenship