Second Bilateral Business Matchmaking Event for The Joint Crediting Mechanism

Nissan Motor Corporation
Overseas Division
Sasaki DGM
2019.10.3
Four issues for sustainable development

- Energy problems
- Global warming
- Traffic jam
- Traffic accident

出典: NASA earth observatory
(http://www.nasa.gov/vision/earth/environment/arcticice_decline.html)
NISSAN INTELLIGENT MOBILITY

Nissan Intelligent Mobility transforms your car into a more exciting partner by redefining how your car is driven, powered and integrated into society.

Intelligent Driving

More Confident
through increased safety, control and comfort for all on board.

Intelligent Power

More Excited
through driving pleasure that is also clean and efficient.

Intelligent Integration

More Connected
by conveniently linking our cars and the wider society.
NISSAN INTELLIGENT MOBILITY

Expressway same lane Automated driving technology

2016

Expansion of driving scene to change to multiple lanes (Driver main)

2019

More advanced automated driving

ProPILOT
NISSAN INTELLIGENT MOBILITY

Estimated global sales volume

- gasoline Non-turbo
- gasoline Downsizing Turbo
- e-POWER

Volume

- 2015
- 2020
- 2025
- 2030

NISSAN MOTOR CORPORATION
Nissan Electrified Products

LEAF

SYLPHY
Zero Emission

<BEV: Battery Engine vehicle>

e-NV200

e-NT400
(Performing demonstration tests)

New Mobility Concept

<Range Extender>

NOTE e-POWER

SERENA e-POWER
Nissan EV sales volume

Nissan EV Total includes: LEAF, eNV200, Venucia e30, DFAC and ZNA's Dongfeng brand EV

560k units (by Aug. end 2019)

Critical Battery failure incidents
0 cases
NISSAN INTELLIGENT MOBILITY

インテリジェント ドライビング
インテリジェント パワー
Intelligent Integration

Nissan Connect
Easy Ride
LEAF to Home
Utilization of diverse energy and efficient supply and demand

- Energy can be used efficiently by using electric vehicles as storage batteries.
- EV can also be a supplemental power supplier replacing main electrical power source.

- Oil
- Biomass
- coal
- Natural gas
- Nuclear power
- Wind power, solar power

- Charging
- Battery
- EV
- Power supply
- Home: 4~6 days/unit
- Nissan HQ Building: 1 day/400 units
- Charge at low demand
- Feed at high demand
- Possibility as Virtual Power Plant
LEAF to Home

World’s first V2H (Vehicle to Home) System
Realizing a smart house by interactively managing the electrical energy of the vehicle and home

PCS (Power Control System) Sales result: over 9,000 units

- Reduce electricity bill
- Peak cut
- Emergency Backup
- Renewable energy (PV utilization)

Charge at night and discharge during the day
Used as a storage battery

Power consumption

<table>
<thead>
<tr>
<th>Time (h)</th>
<th>0</th>
<th>6</th>
<th>12</th>
<th>18</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LEAF to HOME takes role to supply electricity during the black out by natural disasters

万一の際にも、大活躍する日産リーフ

例えば、地震や台風などの自然災害による停電。外部からの電気供給がない緊急事態のときでも、日産リーフなら貴重なエネルギー源として家庭や職場へ電気の供給が行えます。

近年頻発している自然災害の事例

2018年の主な災害

- 大阪府北部地震 (6/18, M6.1)
  - 停電、断水、ガス停止等が発生
- 北海道胆振東部地震 (9/6, M6.7)
  - 大規模停止、断水等が発生
- 台風21号 (9/4-5)
  - 広域で停電、関空閉鎖等が発生
- 台風24号 (9/29-10/1)
  - 広域で停電発生 (特に静岡で100万戸超)
- 平成30年7月豪雨 (6/28-7/8)
  - 河川氾濫、停電、断水等が発生

南海トラフ地震では、最大2,710万軒が停電すると想定。
近年、地球環境が変わったと言われ、今後も同様の災害が発生することが予想されます。
### PCS (Power Control System)

<table>
<thead>
<tr>
<th></th>
<th>Fixed type</th>
<th>Handy type</th>
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</thead>
<tbody>
<tr>
<td><strong>メーカー</strong></td>
<td>ニチコン</td>
<td>AESC</td>
</tr>
<tr>
<td><strong>製品名称</strong></td>
<td>LEAF to Home</td>
<td>LEAF to 100V</td>
</tr>
<tr>
<td><strong>出力</strong></td>
<td>6kw</td>
<td>1.5kw</td>
</tr>
<tr>
<td><strong>特徴</strong></td>
<td>もっとも普及している機器 EVへの充電可能（6kw）</td>
<td>系統（電力会社）、太陽光発電設置と連携 EVへの充電も可能（6kw）</td>
</tr>
<tr>
<td><strong>単価（税抜）</strong></td>
<td>580千円〜（発売中）</td>
<td>298千円*5</td>
</tr>
<tr>
<td><strong>工事費</strong></td>
<td>別途</td>
<td>不要</td>
</tr>
</tbody>
</table>

**Example of electricity consumption / day = 10Kwh**

- 冷蔵庫*1
  - 24時間/日
- タレビ
  - 3時間/日
- 照明
  - 5時間/日
- スマートフォン充電
  - 4台×2/日
- 昼食
  - 1回×3/日
- 電気ケトル
  - 3回×4/日
- 扇風機
  - 6時間/日

**NISSAN LEAF able to deliver 4 days (40Kwh) ~ 6 days (62Kwh) electricity**
NISSAN LEAF
## Basic information

<table>
<thead>
<tr>
<th>Item</th>
<th>Spec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery capacity</td>
<td>40kWh</td>
</tr>
<tr>
<td></td>
<td>62kWh</td>
</tr>
<tr>
<td>Motor</td>
<td>AC synchronous motor (交流モーター/交流同期電動機)</td>
</tr>
<tr>
<td></td>
<td>150Ps/320Nm</td>
</tr>
<tr>
<td></td>
<td>218Ps/340Nm</td>
</tr>
<tr>
<td>Type of battery</td>
<td>Lithium Ion Battery</td>
</tr>
<tr>
<td>Maximum torque of the motor</td>
<td>322Km(WLTC mode)</td>
</tr>
<tr>
<td></td>
<td>458Km(WLTC mode)</td>
</tr>
<tr>
<td>Charging time</td>
<td>• In case 40min by QC, 80% charge</td>
</tr>
<tr>
<td></td>
<td>• In case 8hour by NC, 100% charge</td>
</tr>
<tr>
<td></td>
<td>• In case 60min by QC, 80% charge</td>
</tr>
<tr>
<td></td>
<td>• In case 12.5hour by NC, 100% charge</td>
</tr>
<tr>
<td>Production Plant</td>
<td>Japan, U.S., United Kingdom</td>
</tr>
</tbody>
</table>
New Nissan LEAF Key Technology

Newly installed technology on LEAF

- Cross Traffic Alert
- Auto Hi/Lo Headlamp
- Forward Emergency Brake
- Traffic Sign Recognition
- Lane Departure Warning
- Blind Spot Warning

Focus technologies

- **e-Pedal**
  - Provide driving pleasure and comfortableness (City/Winding road)

- **ProPILOT Park**
  - Deliver driving experience for those who are not good at driving by decreasing hesitation of parking

- **Bigger Battery, More Power**
  - 40 kWh: 150 Ps/320 Nm
  - 62 kWh: 218 Ps/340 Nm

- **ProPILOT**
  - Lane Keep Assist (LKA)
  - Distance Keep Assist (DKA)
  - Traffic Jam Pilot (TJP)
Nissan LEAF Brand History

- LEAF is World’s No.1 EV model with over 430,000 sales.
- NISSAN brought LEAF as the World’s 1st globally mass-produced EV in 2010.
- LEAF is the icon of Nissan Intelligent Mobility, Nissan’s approach to aim Zero-Emission & Zero-Fatality Society.

1st Generation LEAF (2010-2017)

- Expanded 24 kWh battery range to 200 km (NEDC).
- 30 kWh battery added, expanded driving range to 250 km (NEDC).

2nd Generation LEAF (2017-)

- Launched 2nd generation with complete new-design, and new-technology. Became more powerful, useful, & comfortable.
- Battery: 30kWh → 40kWh → 62kWh
- Range: 250km → 322km → 458km (WLTC)

Critical EV Battery Incidents

- Over 50 EV Battery incidents are reported in world.
- Nissan EV: 0 incidents.
New Nissan LEAF Major Awards earned in World

**<Technology>**
- 2018 @CES* 
  World’s Best of Innovation
  *Consumer Electronics Show
- 2018 @UK
  Best Electric Car Award

**<Environment>**
- 2018 @New York Auto Show
  World Green Car Award
- 2019 @Canada
  Canadian Green Car of the year
- 2019 @Australia
  Green Innovation Award

**<Safety>**
- 2018 @EURO NCAP
  Earned full 5-star on Safety rating
- 2018 @JAPAN NCAP
  Earned full 5-star on Safety rating

**<Design>**
- 2019
  J.D. Power Engineering Award for Highest-Rated Vehicle Redesign

**<Sales>**
- 2018 @Norway
  Best Selling Car overall
- 2018 @Europe
  Best Selling EV across Europe

**<Ownership Cost>**
- 2018 @Chicago Motor Show
  5-Year Cost to Own Award
  (Lowest ownership costs)
SYLPHY Zero Emission
## Basic information

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<tr>
<th>Item</th>
<th>Spec</th>
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<tbody>
<tr>
<td>Motor</td>
<td>AC synchronous motor (交流モーター/交流同期電動機)</td>
</tr>
<tr>
<td></td>
<td>109Ps/254Nm</td>
</tr>
<tr>
<td>Battery capacity</td>
<td>38kWh</td>
</tr>
<tr>
<td>Type of battery</td>
<td>Thin-film high-efficiency lithium-ion battery</td>
</tr>
<tr>
<td>Maximum torque of the motor</td>
<td>338Km</td>
</tr>
<tr>
<td>Charging time</td>
<td>In case 45min by QC, 80% charge</td>
</tr>
<tr>
<td></td>
<td>In case 8hour by NC, 100% charge</td>
</tr>
<tr>
<td>Production Plant</td>
<td>P.R.C. (Dongfeng Nissan)</td>
</tr>
</tbody>
</table>
END