COST OF RENEWABLE ENERGY

REvision 2013 – CREATING A NEW RENEWABLE ENERGY FUTURE, TOKYO

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26 FEBRUARY 2013
内容

1. 国内市場の状況  Japan market summary

2. コストの現状  Cost analysis

3. 日本の課題  Challenges Japan faces
Note: GoJ’s scenario as of 29 June 2012. A conservative scenario assuming nuclear supplies 15% of power as of 2030. Hydro includes 'pumped hydro'.

Source: National Policy Unit (NPU)
政府の電源別再生可能エネルギー導入シナリオ
2010年、2020年、2030年

再生可能エネルギーからの電力供給 (TWh)

再生可能エネルギー累計設置容量 (GW)

Source: NPU, Bloomberg New Energy Finance
Note: B&W=biomass and waste. 2010 B&W supply and capacity are adjusted based on Bloomberg New Energy Finance estimates. Hydro excludes ‘pumped hydro’.
日本の電力小売価格推移、1994-2011年度 (JPY/kWh)

<table>
<thead>
<tr>
<th>年度</th>
<th>住宅</th>
<th>商業と工業</th>
<th>加重平均</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>24.8</td>
<td>19.4</td>
<td>17.2</td>
</tr>
<tr>
<td>1996</td>
<td>22.0</td>
<td>18.0</td>
<td>16.2</td>
</tr>
<tr>
<td>1998</td>
<td>20.2</td>
<td>16.4</td>
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<tr>
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<td>18.8</td>
<td>14.6</td>
<td>13.8</td>
</tr>
<tr>
<td>2002</td>
<td>17.2</td>
<td>13.0</td>
<td>12.4</td>
</tr>
<tr>
<td>2004</td>
<td>15.6</td>
<td>11.8</td>
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<tr>
<td>2006</td>
<td>14.0</td>
<td>10.2</td>
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</tr>
<tr>
<td>2008</td>
<td>12.4</td>
<td>9.6</td>
<td>9.2</td>
</tr>
<tr>
<td>2010</td>
<td>10.8</td>
<td>8.4</td>
<td>8.0</td>
</tr>
</tbody>
</table>

1995: 批發市場自由化
2000: 零售市場自由化（最小2MW）
2005: 零售市場自由化（最小50kW）

注: 価格は消費税を含まない（2013年2月時点）

Source: Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry (ANRE/METI)
電源別主な買取価格と小売価格、回避可能原価 (JPY/kWh)

注意：消費税を含めない。地熱は15年間、他は20年間の供給料が適用されます。

Note: Consumption tax excluded. Tariffs apply for 15 years for geothermal, and 20 years for others.

Source: ANRE/METI
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Source: Bloomberg New Energy Finance. Note: Carbon forecasts from the Bloomberg New Energy Finance European Carbon Model with an average price to 2030 of $48/mt. Coal and natural gas prices from the US EIA and BNEF. Percentage change represents change from Q1 2012. 1USD=JPY 90

Source: Bloomberg New Energy Finance
Prices are in nominal dollars. 1USD=JPY 90.

Source: Bloomberg New Energy Finance
風力発電平準化発電コスト ($/MWh)

Prices are in nominal dollars. 1USD=JPY 90.

Source: Bloomberg New Energy Finance
Note: Solar grade polysilicon price. Dates represent first day of the week for which the price has been averaged, ie, 8 August represents quote for the week 8-14 August.

Source: Bloomberg New Energy Finance
Note: Dates represent first day of the week for which the price has been averaged, ie, 8 August represents quote for the week 8-14 August.
要素別発電事業規模太陽光発電設備コスト単価推移
2010年-2012年 ($/W)

2010年
- Module: 0.18
- EPC: 0.41
- BOP: 0.50
- Inverter: 0.30
- Other: 3.24

2011年
- Module: 0.21
- EPC: 0.41
- BOP: 0.50
- Inverter: 1.35
- Other: 2.65

2012年
- Module: 0.12
- EPC: 0.32
- BOP: 0.27
- Inverter: 0.73
- Other: 1.59

143千/kW

Note: 1USD=JPY 90

Source: Bloomberg New Energy Finance
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月別国内再生可能エネルギープロジェクト
発表日2011年1月-2013年1月 (MW, プロジェクト数)

Note: Data as of 12 February 2013. B&W=biomass and waste. Projects less than 1MW are not included. Projects without specific site information are not included.

Source: Bloomberg New Energy Finance
住宅用太陽光システム価格と補助金対象限度額(JPY/W)

Note: Red line represents system cost threshold for subsidy application. As of April 2012 national cash subsidy is JPY30/W for system up to JPY550/W. If the system cost is up to JPY475/W, extra JPY50/W shall be subsidised as well.

Source: J-PEC, ANRE/METI
Japanese residential system cost average
Average California residential system cost
Average sub-10kW German system cost
Chinese multicrystalline silicon module price

Source: BSW-Solar, California Solar Initiative filings, JPEA, Bloomberg New Energy Finance

Cost of Renewable Energy, 26 February 2013
太陽光認定設備規模別コスト推移、2012年第3・4四半期（JPY/W）

Assumption used for 2012 rate

Note: Cost of FiT approved projects, 3Q-4Q 2012. 4Q 2012 excludes December.

Source: 21 January 2013, METI
太陽光システム単価と買取価格推計 (JPY/kWh, JPY/W)

Note: Project IRR=6%. Bloomberg New Energy Finance has modeled tariff pricing based on assumptions the pricing committee uses.

Source: Bloomberg New Energy Finance
現行買取価格における太陽光システム単価・土地リース単価の変化とプロジェクトIRR (%, JPY/M2・YEAR)

Note: Bloomberg New Energy Finance has modeled tariff pricing based on assumptions the pricing committee uses. Vertical axis represents target project IRRs. Horizontal axis represents leasing cost per square meter.

Source: Bloomberg New Energy Finance
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Renewable Energy
Carbon Markets
Energy Smart Technologies
Renewable Energy Certificates
Carbon Capture & Storage
Power
Water
Nuclear

SERVICES
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