Challenges of renewable energy deployment in Japan
Agenda

• Basic info: RES policy and market reform
• Achievements in 5 years (2012-2016)
• Challenges
• Policy implications
Renewable Energy Policy in Japan

RE Generators

Electricity

TSOs

FIT

Retailers

Government

Surcharge

Consumers
Electricity Market Reform

**Produce**

It is expected that cooperation and competition at upstream market will lead to suppressed fuel supply costs and distinctive local initiatives such as promotion of local green power.

- Large-Scale Power Plants
- LNG Terminals
- Power generation that utilizes renewable energy and local resources

**Transport**

All businesses will have equal access to transmission/distribution networks and gas pipelines.

- Electricity Companies
- Gas Companies

**Retail**

All consumers get to be able to buy electricity and gas from any company, regardless of location.

- Mobile Phone Companies
- Internet Service Providers
- Housing Companies
- Mail Order Services
- Consumer Electronics Retailers
- Green Electricity Companies

It is expected that new rate plans, as well as package plans with electricity/gas supply and multiple services will be offered.

Source: METI
Achievements in 5 Years

Share of Non-hydro RES

- Geothermal
- Bioenergy
- Wind
- Solar PV

Source: METI/ANRE (2017)

Generation cost of RES

- Solar PV: commercial scale
- Solar PV: utility scale
- Bioenergy
- Onshore wind

3 Main Challenges

1. Rapidly increasing cost burden

2. Grid constraints

3. Unreasonable land use regulations
1. Increasing Cost Burden

**Amount of FiT surcharge**

<table>
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<tr>
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<th>Trillion JPY</th>
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<tr>
<td>FY2013</td>
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<td>FY2016</td>
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**Average unit cost of electricity in electric utilities**

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2. Grid constraints

Source: METI (2015) "Japan’s Electricity Market Deregulation"
3. Land Use Regulations
Addressing the Challenges

**Cost burden**
- Modifying poor administration rules
- Pricing to incentivize cost reduction

**Grid constraints**
- Modifying rules for using interconnectors
- Change purchase required entities from retailers to TSOs
Remaining Issues & Implications

• Remaining issues
  • Flexible tariffs based on volume
  • Unbundling generators and grid operators
  • Coordination with relevant regulations

• Policy implications
  • Elimination of market and regulation barriers
  • Strong but flexible incentive
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