The importance of international cooperation under disruptive change
Recommendations and lessons learnt from a fruitful German-Japanese dialogue on the energy transition

Monday, 10th September 2018
Institute of Energy Economics, Japan (IEEJ), Tokyo
Structure of the GJETC
German – Japanese Energy Transition Council

**JAPAN**
- **METI**
  - Chairman: Prof. Masakazu Toyoda
  - Organization & Scientific Secretariat: IEEJ

**GERMANY**
- **Financing**
  - DBU + Mercator + AA
    - Chairman: Prof. Peter Hennicke
    - Organization/Consulting: ECOS Consult
    - Scientific Secretariat: Wuppertal Institute

**Management**
- Miracle Schreurs
- Patrick Graichen
- Claudia Kemfert
- Felix C. Matthes
- Miranda Schreurs
- Stefan Thomas
- Eicke Weber
- Franzjosef Schafhausen
- Uwe Leprich

**Council Members**
- Jun Arima
- Yasumasa Fujii
- Toshiharu Ikaga
- Koji Nomura
- Junichi Ogasawara
- Tomihiro Taniguchi
- Mami Ito
- Hiroshi Okamoto
- Shinichi Sasayama

10 September 2018
Output and results (http://www.gjetc.org)

- 4 comprehensive German-Japanese studies (total of 800 pages)
- 10 Input and topical papers, technology overview
- 3 Stakeholder Dialogues (industry, decentralized and efficiency sector)
- Recommendations “Report 2018”
# 4 comprehensive studies

<table>
<thead>
<tr>
<th>Topic</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ST 1</strong>&lt;br&gt;Energy transition as a central building block of a future industrial policy - Comparison and analysis of long-term energy transition scenarios</td>
<td>Wuppertal Institut (DE)&lt;br&gt;DIW Econ (DE)&lt;br&gt;IEEJ (JP)</td>
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<tr>
<td><strong>ST 2</strong>&lt;br&gt;Strategic framework and <em>socio-cultural aspects</em> of the energy transition</td>
<td>IZES (DE)&lt;br&gt;Arepo Consult (DE)&lt;br&gt;IGES (JP)&lt;br&gt;Nagoya University (JP)</td>
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<tr>
<td><strong>ST 3</strong>&lt;br&gt;New allocation of roles and business segments of established and new participants in the energy sectors currently and within a future electricity market design</td>
<td>IZES (DE)&lt;br&gt;JEPI (JP)</td>
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<tr>
<td><strong>ST 4</strong>&lt;br&gt;Energy end-use efficiency potentials and policies and the development of energy service markets</td>
<td>Ecofys (DE)&lt;br&gt;IAE (JP)</td>
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</table>
Output and results
(http://www.gjetc.org)

GJETC Report 2018
Intensified German-Japanese Cooperation in Energy Research
Key Results and Policy Recommendations
Funding and supporting the GJETC

Organization

Funding

Support

Planned 2nd phase (2018-2020):
Up-scaling activities; financial support e.g. by foundations, ministries and renowned company partners
The history and the narratives

Narrative 1: Anti-Nuclear paradigm shift

I. Increasing environmental consciousness
II. Increasing need for social influence and participation
III. Change in risk perception

Narrative 2: Paradigm shift regarding the preference for a central or decentral power system

Narrative 3: Role of energy security

Social shifts underlying the "anti-nuclear-movement" narrative (Source: IZES/Arepo Consult/IGES/Nagoya University/NIES 2017)

Energy security (Source: IZES/Arepo Consult/IGES/Nagoya University/NIES 2017)

1945 ➔ 2025
Basic geographical frame conditions (J)

Ten electric utilities and their areas in Japan
(Source: IZES/JEPIC 2017)

Transfer Capacity and Maximum Electricity Demand Forecast in Japan
(Source: IZES/JEPIC 2017)
Basic geographical frame conditions (G)
### Comparing longterm perspectives

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<thead>
<tr>
<th></th>
<th>GERMANY</th>
<th>JAPAN</th>
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<tbody>
<tr>
<td>Energy demand reductions</td>
<td></td>
<td></td>
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<tr>
<td>Final energy demand reductions through energy efficiency</td>
<td>Strong reductions</td>
<td>Strong reductions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Final energy demand reductions through behavioural changes</td>
<td>Not considered</td>
<td>Not considered</td>
</tr>
<tr>
<td>Changing the use of energy sources</td>
<td></td>
<td></td>
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<tr>
<td>Increased use of domestic renewable energy sources</td>
<td>Strong use</td>
<td>Strong use</td>
</tr>
<tr>
<td>Phasing out the use of nuclear power</td>
<td>Complete phase-out</td>
<td>Complete phase-out</td>
</tr>
<tr>
<td>Continuing the use of nuclear power</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Substitution of fossil fuels through electricity</td>
<td>Strong substitution</td>
<td>Very strong substitution</td>
</tr>
<tr>
<td>Use of renewable energy based H2 or synthetic fuels as final energy carriers</td>
<td>No use (until 2030)</td>
<td>No use (until 2030)</td>
</tr>
<tr>
<td>Importing low-carbon or carbon-free energy sources/carriers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net imports of electricity</td>
<td>No net imports</td>
<td>No net imports</td>
</tr>
<tr>
<td>Net Imports of bioenergy</td>
<td>No imports (until 2030)</td>
<td>No imports</td>
</tr>
<tr>
<td>Net imports of H2 or synthetic fuels</td>
<td>No imports</td>
<td>No imports</td>
</tr>
<tr>
<td>Using CCS</td>
<td></td>
<td></td>
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<tr>
<td>Use of CCS technology to reduce industrial GHG emissions</td>
<td>Not used</td>
<td>Not used</td>
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<tr>
<td>Use of CCS technology to reduce power sector GHG emissions</td>
<td>Not used</td>
<td>Not used</td>
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</table>
Starting as „best in class“ – more is possible

Germany and Japan on top of an efficiency rating
(Source: ACEEE 2017)
Closing the efficiency gap

Energy efficiency potentials per sector in Japan based on a comparison of policy scenarios: Potential = difference between Reference 2030 and Aggressive Conservation 2030 (Source: ecofys/IAE 2017)

Energy efficiency potentials per sector in Germany based on a comparison of policy scenarios: Potential = difference between Reference 2030 and Aggressive Conservation 2030 (Source: ecofys/IAE 2017)
## Key recommendations

<table>
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<tr>
<th>Joint effort to decarbonize the energy system</th>
<th>Efficiency and sufficiency</th>
<th>Joint scenario modeling</th>
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<tr>
<td>Robust and accountable target/goal, strategies, and the corresponding policy mix</td>
<td>Energy renovation of building</td>
<td>Continuous evaluation and involvement of all stakeholders</td>
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<tr>
<td>Restructuring the electricity and gas sector</td>
<td>Energy efficiency governance</td>
<td>Disseminating low-carbon technologies to other countries</td>
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<tr>
<td>Renewable energies and system integration</td>
<td>Integrate energy and resource efficiency policy</td>
<td>Bilateral agreement on an educational exchange program</td>
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<td>Centralized and decentralized energy system</td>
<td>Thorough analysis and periodical review</td>
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**German Japanese Energy Transition Council**
Value of GJETC

- Scientifically independent
- Continuity and depth of research
- Dialogue on controversial topics
- Dissemination for better informed decision-making
- Joint development and deployment of innovations
- Deepening of personal network
What next?

Continue and extend our beneficial joint activity!

<table>
<thead>
<tr>
<th>Benefit for Germany and Japan</th>
<th>Benefit for other countries</th>
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<tbody>
<tr>
<td>• Gain useful lessons from each other that enable and accelerate the energy transitions in both our countries.</td>
<td>• Establish GJETC as an international role model for bilateral cooperation.</td>
</tr>
</tbody>
</table>
Thank you very much for your attention!

http://www.gjetc.org/