

Institute for Global Environmental Strategies

Japan 2050 Low Carbon Navigator Japanese version of the UK 2050 Pathways Calculator



JAPAN 2050
Low Carbon
Navigator

10 February 2015

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INTERNATIONAL CONFERENCE ON 2050 CALCULATOR
TAIPEI, TAIWAN
FEBRUARY 2015

DATE
10 - 12
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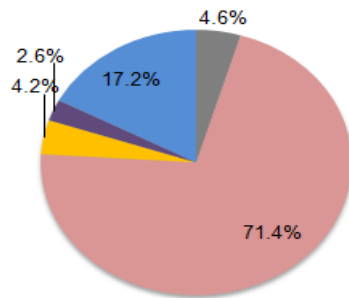
Outline

- ❖ Background on energy situation and climate policy;
- ❖ How was the tool developed;
- ❖ Model framework and data;
- ❖ Scenarios setting;
- ❖ Major differences from the UK 2050 Calculator;
- ❖ Launch of Japan 2050 Low Carbon Navigator;
- ❖ Application and outreach;
- ❖ Major results;
- ❖ Challenges and way forward.

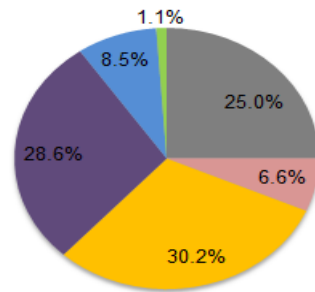


Background: Energy situation

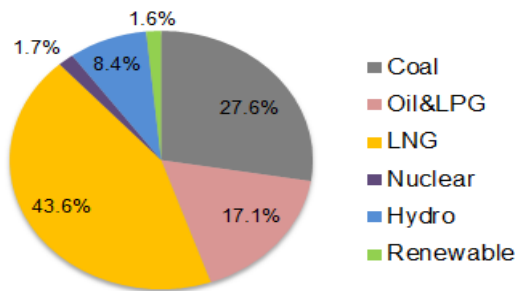
FY1973 (Oil crisis, 76%)



FY2010 (Before the Great Earthquake, 61%)

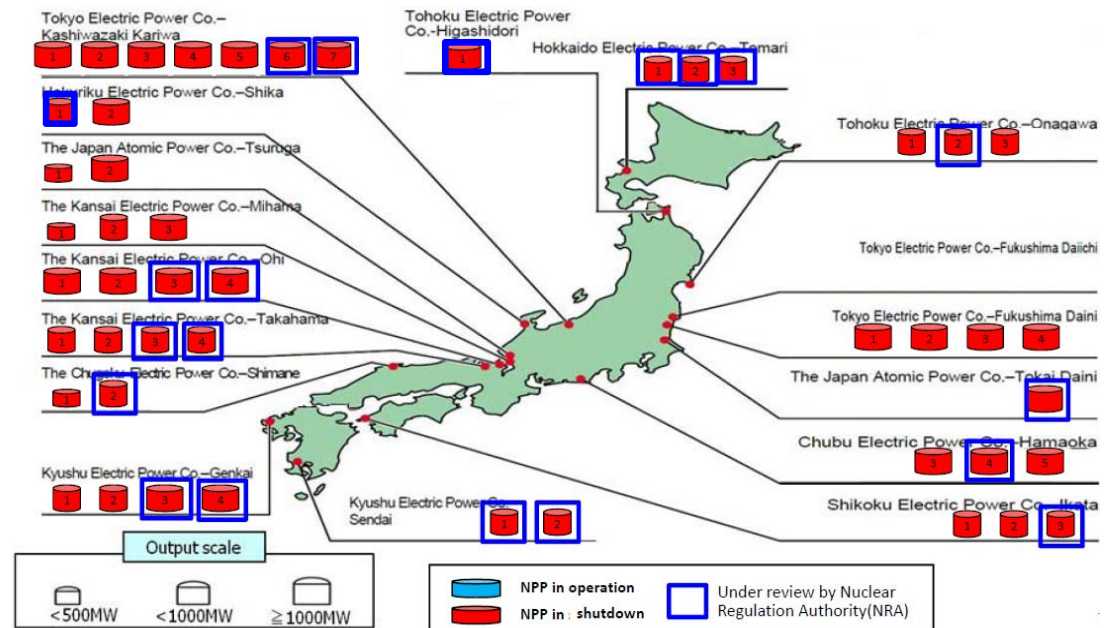


FY2012 (Latest available data, 88%)



High dependency on overseas fossil fuels for power supply

Nuclear power plants in Japan





Background: Energy policy

The 4th Strategic Energy Plan (April 11th, 2014)

- ⊕ Basic viewpoints of energy policy (3E + S);
- ⊕ Energy mix will be announced soon
 - ☞ *Nuclear as an important base-load power source, restart of NPPs;*
 - ☞ *Promotion of high efficient and low-carbon coal power generation;*
 - ☞ *Expansion of renewable energy (13.5% by 2020 and 20% by 2030).*
- ⊕ Electricity System Reform
- ⊕ Introduction of energy management system for energy conservation



Background: Climate policy

✦ Mitigation target setting

- ✦ *Kyoto target: 8.4% reduction from 1990 achieved against 6% target;*
- ✦ *2020 target: -3.8% from 2005 vs. -25% from 1990 (CPH pledge)*
- ✦ *Post 2020 target: Under discussion*
- ✦ *2050 target: 80% reduction from current levels (4th BEP)*

✦ Policy measures

- ✦ *FIT for renewable energy;*
- ✦ *Carbon tax;*
- ✦ *Tokyo emissions trading system*

✦ Building Low Carbon Society



Visions of Low Carbon Society 2050

Source: MOEJ

How was the tool developed: Initiation

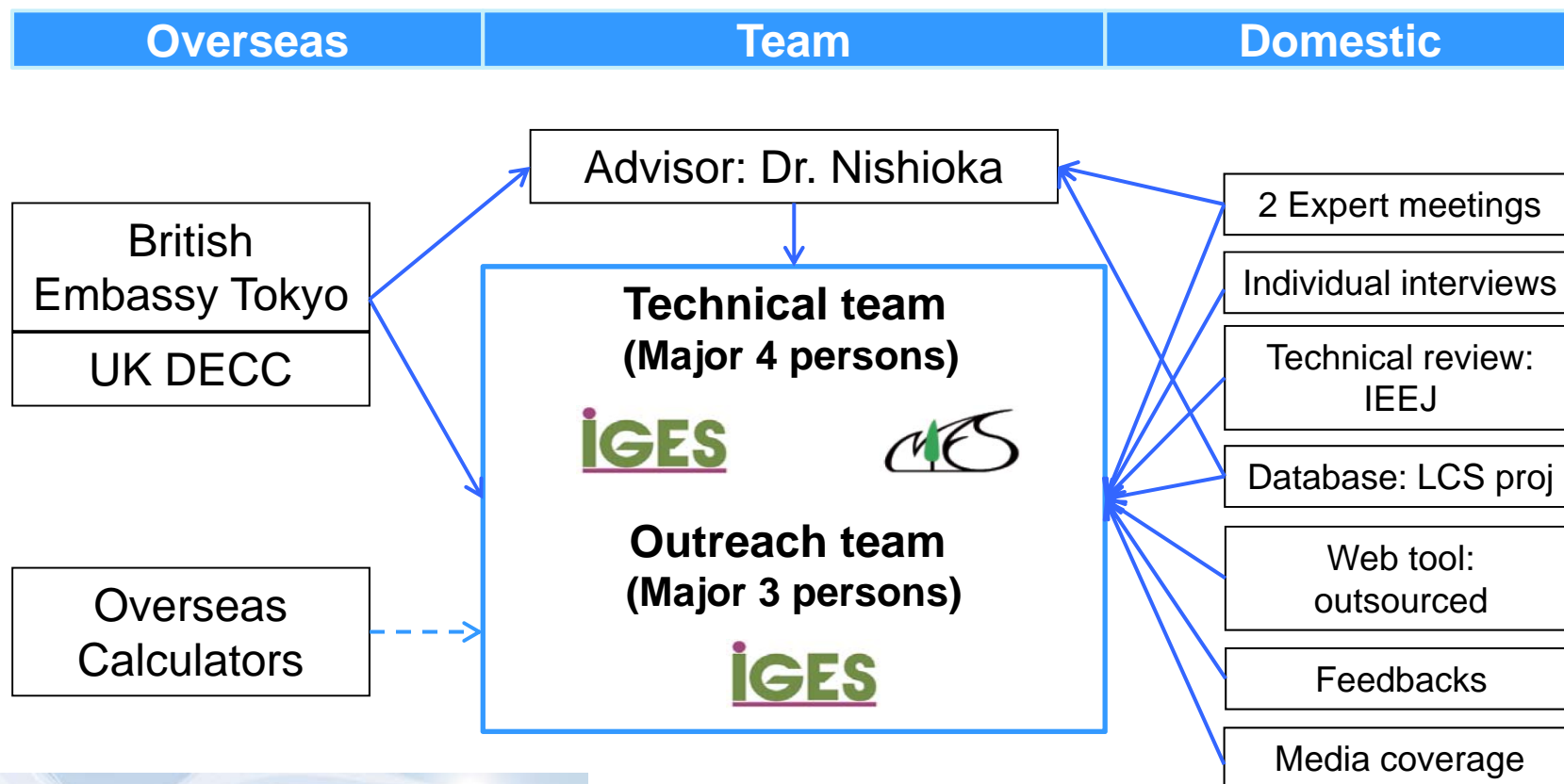


JAPAN 2050
Low Carbon
Navigator

- ✦ Initiated by IGES through Dr. Nishioka and IGES President Mr. Mori in early 2013;
- ✦ Started in May 2013;
- ✦ Jointly developed by IGES and NIES;
- ✦ Launched in July 2014;
- ✦ Facilitation by the British Embassy Tokyo and technical support from the UK DECC;
- ✦ Financial support from the Ministry of the Environment of Japan.



How was the tool developed: Team and working mechanism





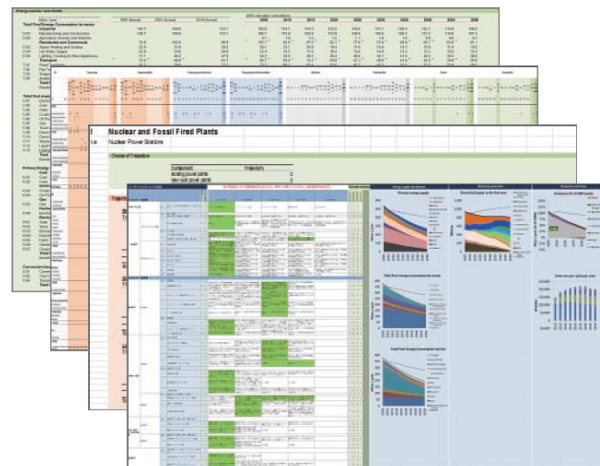
Japan Low Carbon Navigator

Two versions: the Excel model and the Web Tool.

Excel model: <http://www.2050-low-carbon-navi.jp/web/en/> (English version)

Web Tool: <http://www.2050-low-carbon-navi.jp/> (Japanese version)

<http://www.en-2050-low-carbon-navi.jp/> (English version)

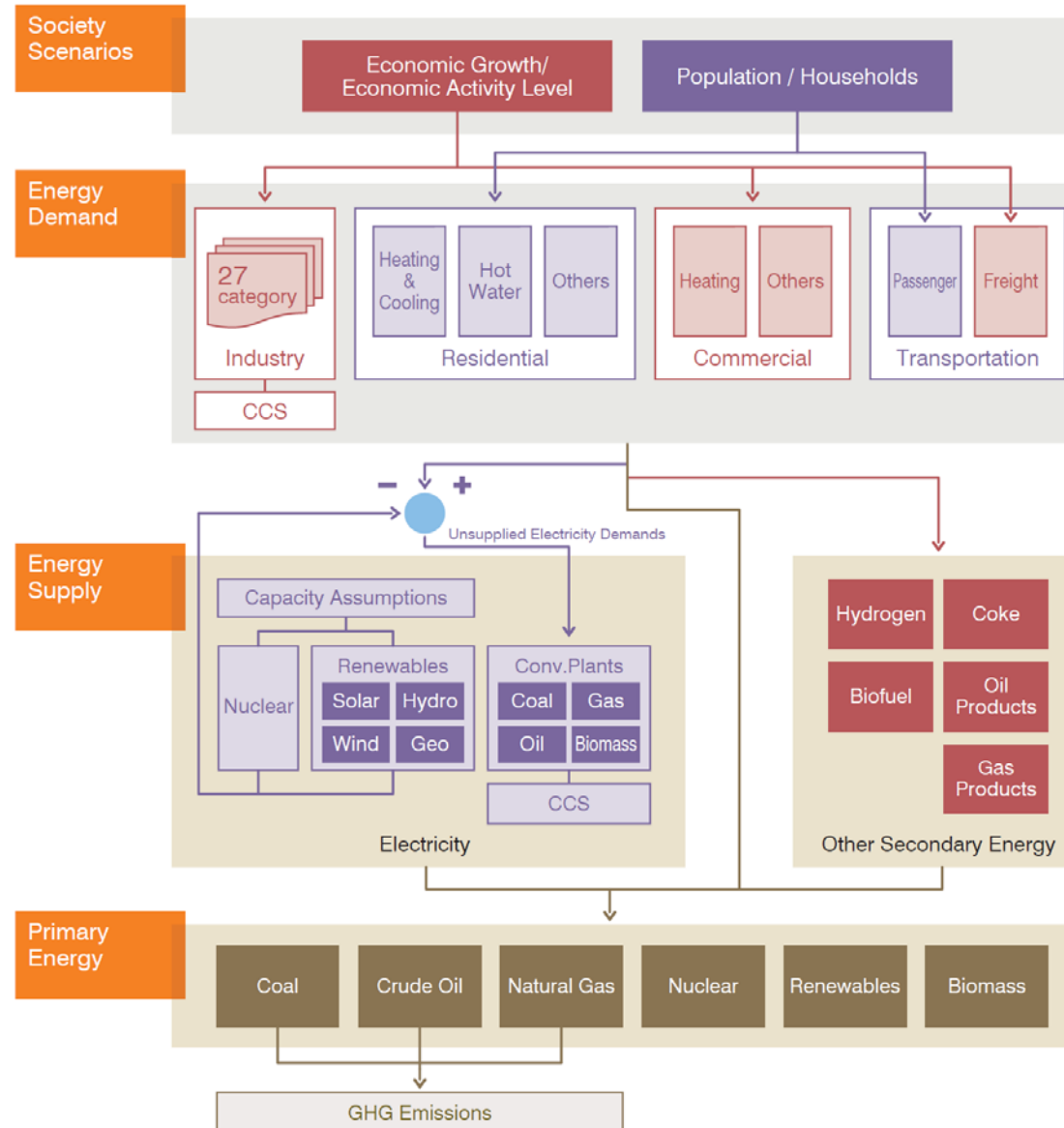


Excel Spreadsheet



Web Tool

Model Framework



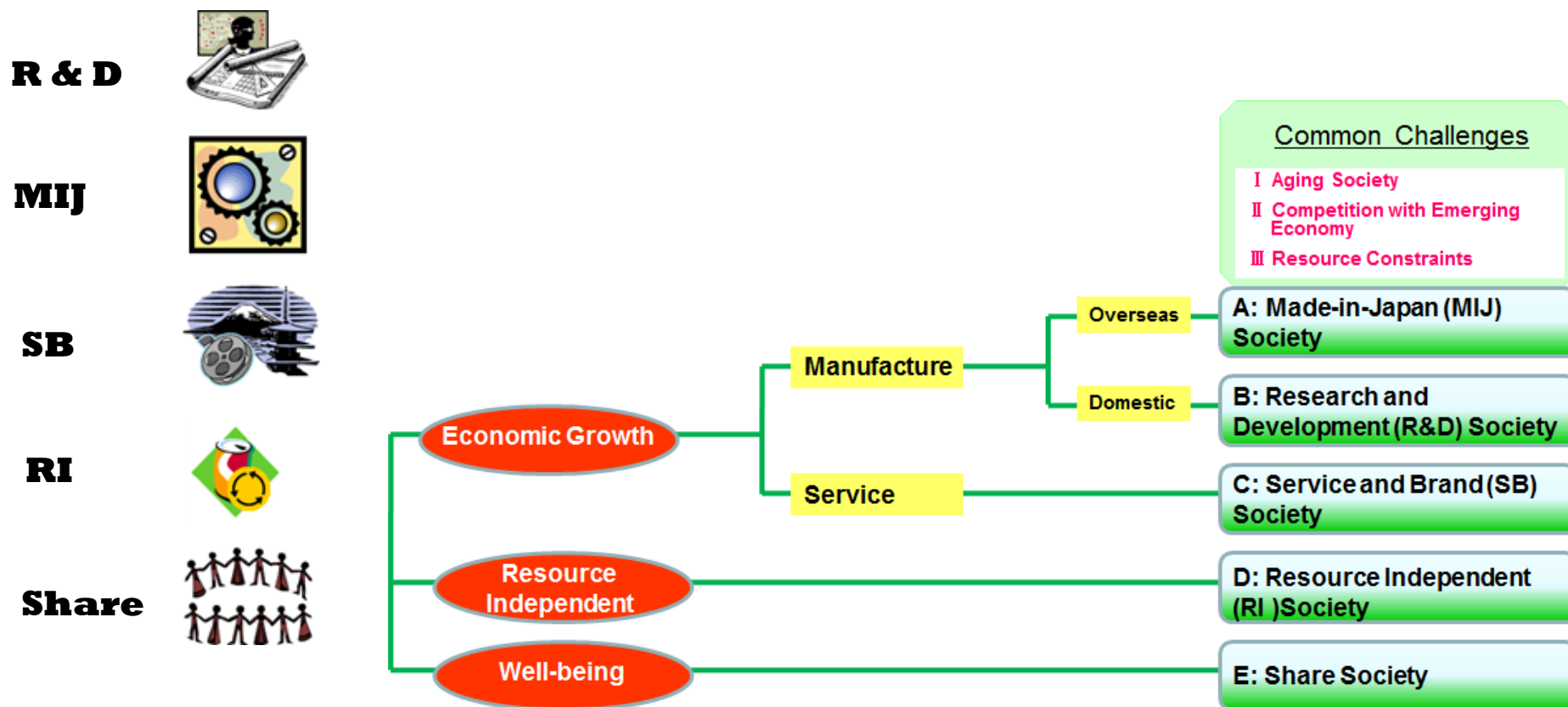


Data sources

- ✦ Japan Low Carbon Society 2050 project;
- ✦ Energy Cost Committee Report/Energy and Environment Council;
- ✦ Post-2013 Mitigation Policy and Countermeasure Committee (2011-2012)/MOEJ;
- ✦ Other organizations (METI, WWF Japan, Kiko Network, etc.)
- ✦ Other sources (IEEJ, internet, etc.)



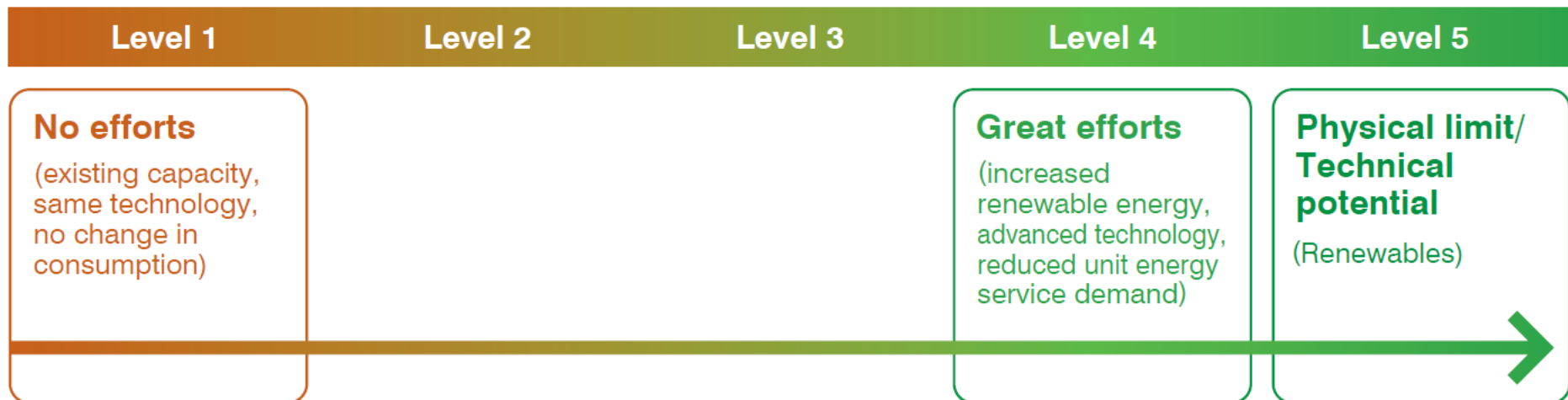
Scenario setting: Five society scenario





Scenarios setting: Level of efforts

The Low Carbon Navigator sets out four or five (renewable energy and nuclear power) trajectories reflecting the whole range of potential future scenarios.



Major differences from the UK 2050 Calculator?



JAPAN 2050
Low Carbon
Navigator

- ⊕ Initiated by IGES, a public interest corporation type of institute;
- ⊕ Named as Japan 2050 Low Carbon Navigator;
- ⊕ Japan's specific data on scenario setting and technology specifications;
- ⊕ Uniqueness in setting the five society scenarios for 2050 reflecting future social and economic development;
- ⊕ Level setting ranging from no efforts to high level of efforts (from L1 - L4) with an additional L5 for physical /technological limits;
- ⊕ Treatment of energy oversupply compared with demand levels;
- ⊕ Approach of expert meetings and individual interviews.



Launch events

Visit of Japan Prime Minister Abe to the UK, 1 May 2014



Joint Statement by the Governments of the United Kingdom and Japan on the occasion of the visit of Prime Minister Abe to the UK on 1 May 2014.

.....Related to the increase in the scope for further cooperation and information sharing on policies, *“the deployment of the 2050 Pathways*

Calculator (which) can be used to engage a range of audiences in discussion on the challenges and opportunities of the future energy system” was included.

Source: British Embassy Tokyo, GOV.UK



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Launch events

Pre-launch at the British Embassy Tokyo, 12 May 2014

- VIPs: Mr. Junichi Shiraishi, Vice-Minister for Global Environmental Affairs of MOEJ, Sir David King, UK Foreign Secretary's Special Representative for Climate and Mr. Richard Oppenheim, Head of Climate Change and Energy at the British Embassy Tokyo.
- 50 participants from governmental organizations, academia, NGOs, business sector, media and foreign embassies in Tokyo.
- Interactive trial workshop.





Launch events

Launch at 2014
International Forum for
Sustainable Asia and the
Pacific (ISAP), 23 July 2014



- ◆ Presentations
- ◆ Panel discussions
- ◆ Media interviews
- ◆ Demonstration corner
- ◆ More than 100 participants



Source: United Brain Networks, You Tube.



Key messages

- ⊕ Many chances exist to achieve the maximum reductions: 87% from 1990 levels under share society scenario;
- ⊕ CCS technologies: critical to achieve 80% reductions in 2050;
- ⊕ Without nuclear, 80% reductions can be achieved in 2050 if renewable energy fully expanded together with massive adoption of CCS;
- ⊕ Renewable energy: more expensive in the short run but not the case if oil price upsurge in the long run;
- ⊕ Keeping all at *L1s*, 9% reductions to be achieved due to population downward trend by 2050;
- ⊕ Shift to different types of society will substantially influence the emission levels, in particular the share society;
- ⊕ An economy-wide integrated approach is necessary to achieve the 80% long-term target.



Challenges and way forward

Challenges:

- ⊕ Limited workers with multiple tasks;
- ⊕ International team and barriers in Japanese communication;
- ⊕ Weak in outreach.

Way forward:

- ⊕ Strengthening outreach activities and grasp the chances of domestic INDC target setting;
- ⊕ Development of the simplified version (My 2050 Calculator) ;
- ⊕ City level low carbon navigator.

*Join us to explore your own pathways by
using the Low Carbon Navigator!*



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For information:

👉 Web Tool: <http://www.en-2050-low-carbon-navi.jp/>

Excel version: <http://www.2050-low-carbon-navi.jp/web/en/>

Contact us and share your opinions and ideas:

E-mail: ge-info@iges.or.jp