Institute for Global Environmental Strategies

Japan 2050 Low Carbon Navigator

Japanese version of the UK 2050 Pathways Calculator

JAPAN 2050
Low Carbon
Navigator

23 July 2014

Xin Zhou, Leader of Green Economy Area

Institute for Global Environmental Strategies (IGES)

ISAP 2014 International Forum for Sustainable Asia and the Pacific

What is the Japan 2050 Low Carbon Navigator?

JAPAN 2050
Low Carbon
Navigator

- Japanese version of the UK 2050 Pathways Calculator;
- Simulation model for energy system and emissions;
- An interactive simple to communicate tool that allows:
  - *To answer the fundamental questions of how far we can reduce emissions and meet energy needs;*
  - *To develop your own combination of change in different technologies and sectors up to 2050;*
  - *To outline, in minutes, the results of energy and emissions in a transparent and evidence-based way.*

Why have we developed it?

JAPAN 2050 Low Carbon Navigator

- Japan is committed to reduce its greenhouse gas emissions by 80% by 2050.
- After Fukushima accident in 2011, Japan is placed at the crossroads for deciding on its future energy structure.
- Japan will set post-2020 national mitigation target for the 2015 international agreement.

We believe that the Low Carbon Navigator can be used as a handy tool for engaging domestic policy dialogues and for education purposes.

How was the Low Carbon Navigator developed?

JAPAN 2050 Low Carbon Navigator

- Developed jointly by IGES and NIES during May 2013 – July 2014;
- Received various support from Japanese experts, the UK DECC, British Embassy Tokyo and MOEJ.
- Built on the UK 2050 Calculator with Japanese ingredients:
  - *Japan-specific data on scenario setting, technology specifications, and social and economic indicators;*
  - *Uniqueness in setting 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.*

Questions can be addressed

JAPAN 2050
Low Carbon
Navigator

- *How much energy can we supply from different energy technologies?*
- *How much energy do different sectors use and how can we change this?*
- *Which sectors are the one we should focus on? Which are less important?*
- *What could happen to our energy dependency and security?*
- *Without nuclear, what will be the energy mix for Japan to achieve the 80% emissions target by 2050?*
- *How much CO2 reduction can be achieved using the most ambitious renewable energy scenarios? At what cost?*
- *What is the full potential of CO2 reductions in Japan? At what cost? What does the low-carbon pathway look like?*

What does the Low Carbon Navigator look like?

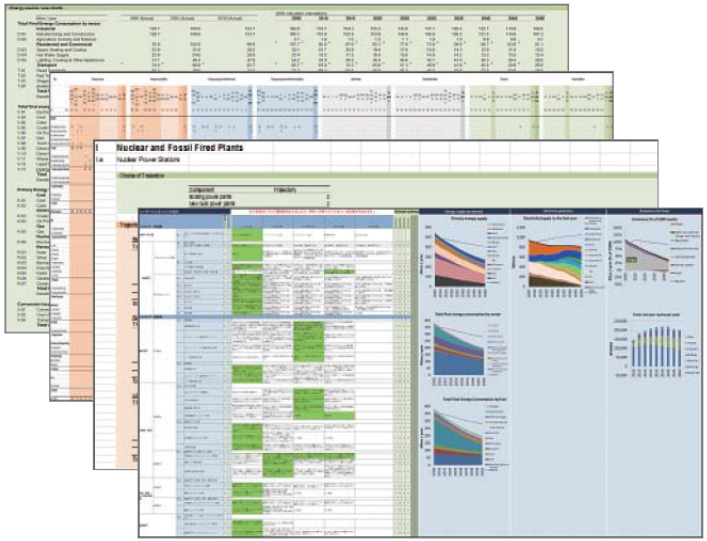
JAPAN 2050 Low Carbon Navigator

- Two versions: the Excel version and the Web Tool.

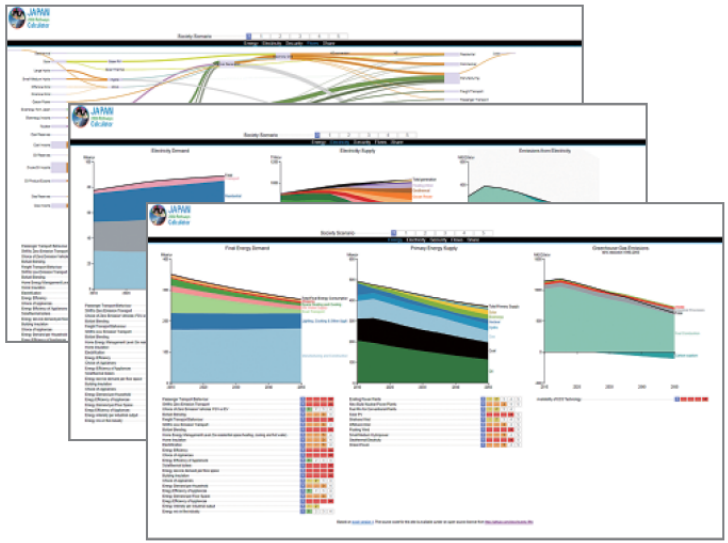
Excel model: *http://www.en-2050-low-carbon-navi.jp/*

http://www.2050-low-carbon-navi.jp/

Web Tool: *http://www.2050-low-carbon-navi.jp/web/en/*



Excel Spreadsheet



Web Tool

How does it work?

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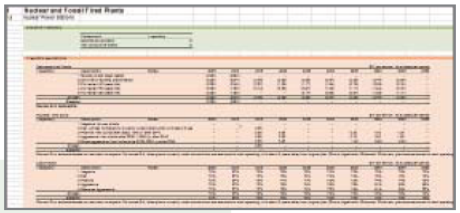
Low Carbon
Navigator

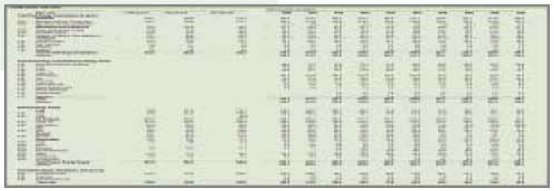
01 Select trajectories

02 Calculate the outputs of each sector based on trajectory options

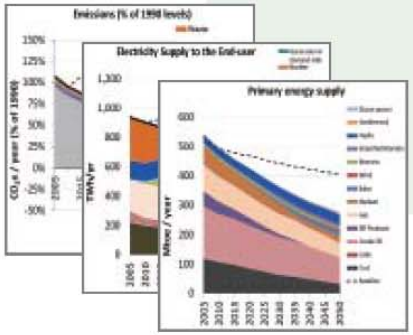


03 Generate the Energy Balance Table for each year

04 Compile the Intermediate Output Sheet by summarizing the Energy Balance Tables



05 Present the results



06 Rebuild of trajectories

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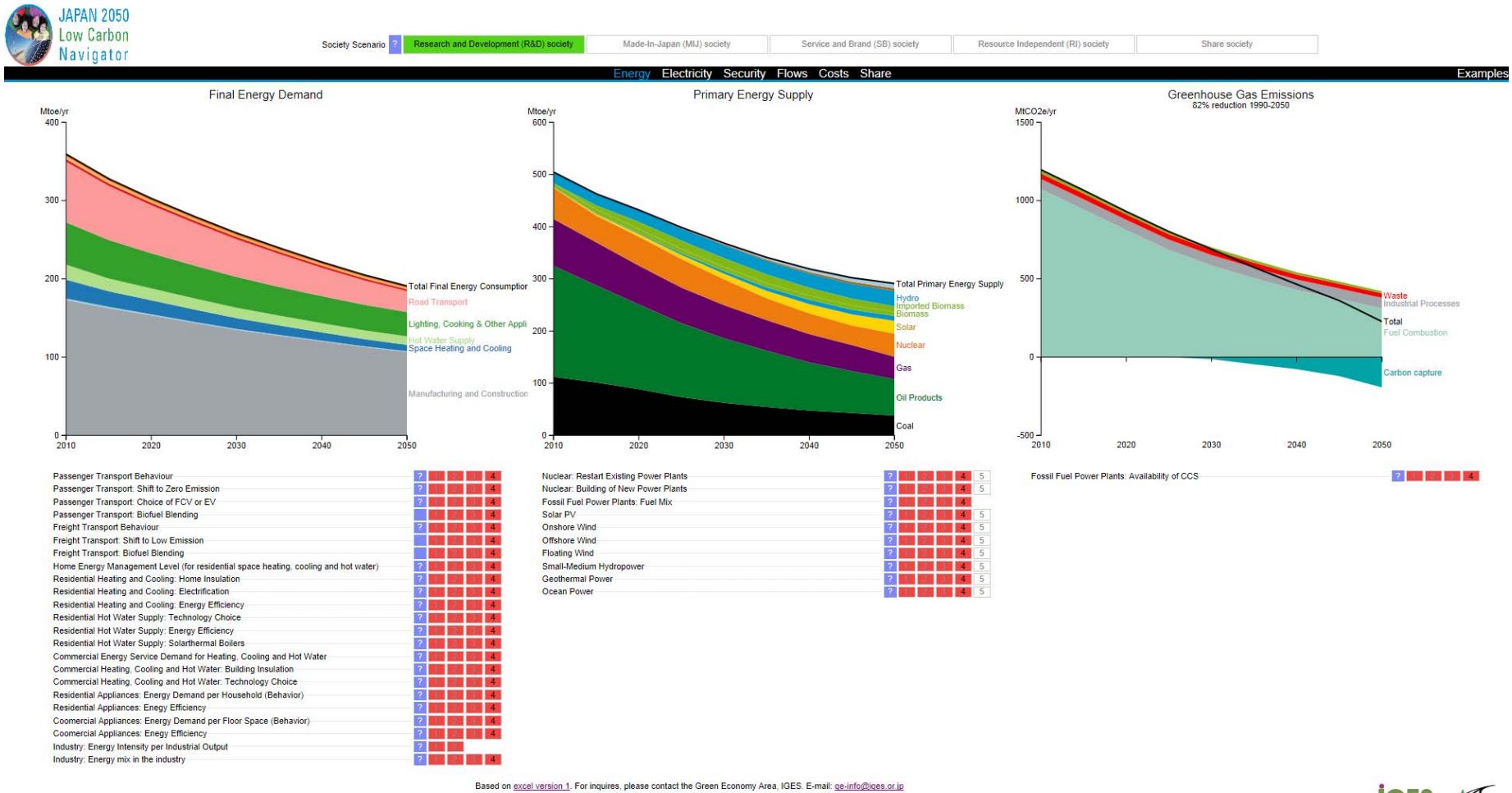
JAPAN 2050 Low Carbon Navigator



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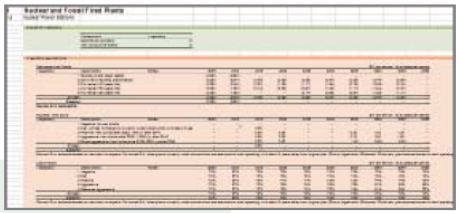

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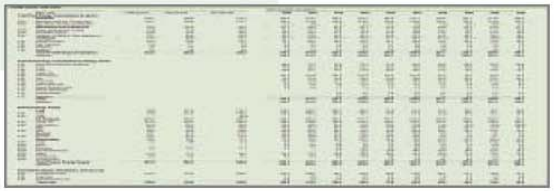

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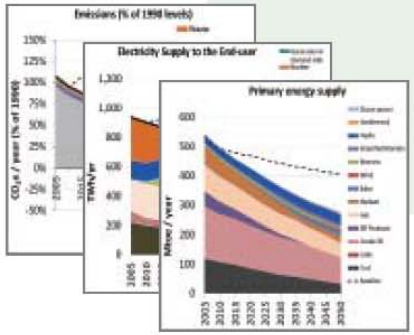

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Sectoral coverage

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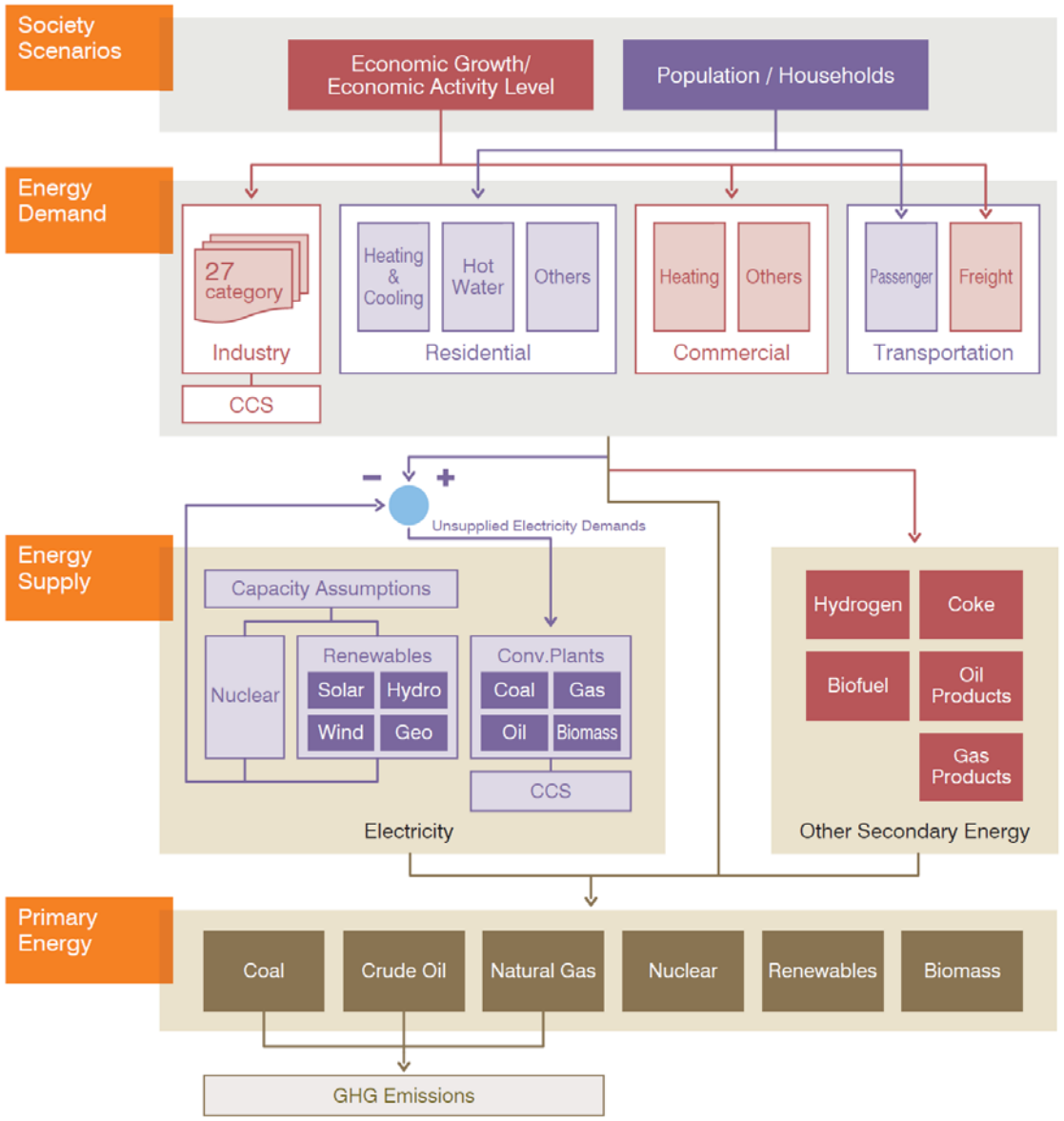

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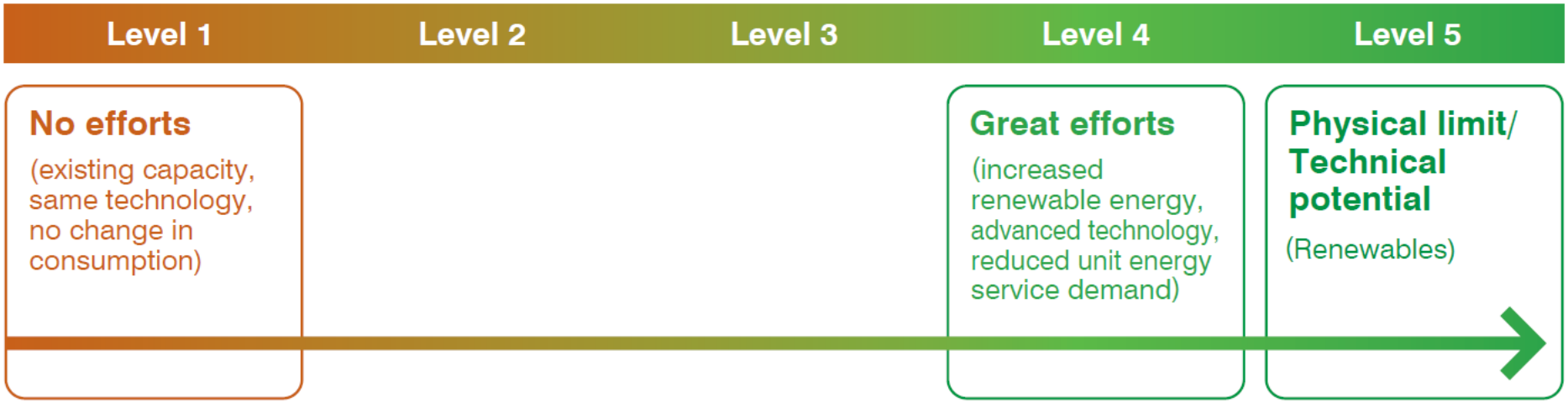
Level setting under the Low Carbon Navigator

JAPAN 2050 Low Carbon Navigator

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



Example pathway: Maximum efforts from supply side

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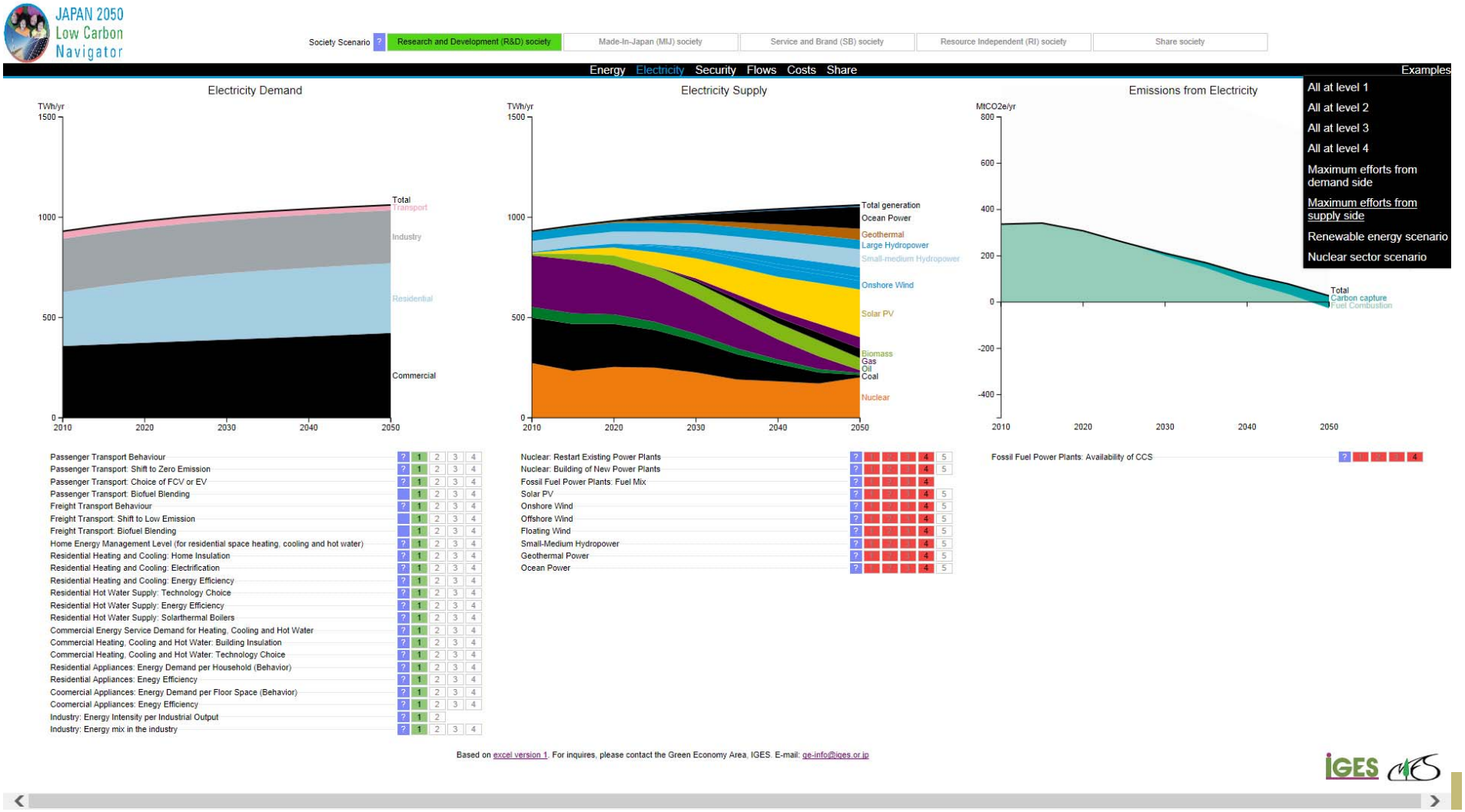

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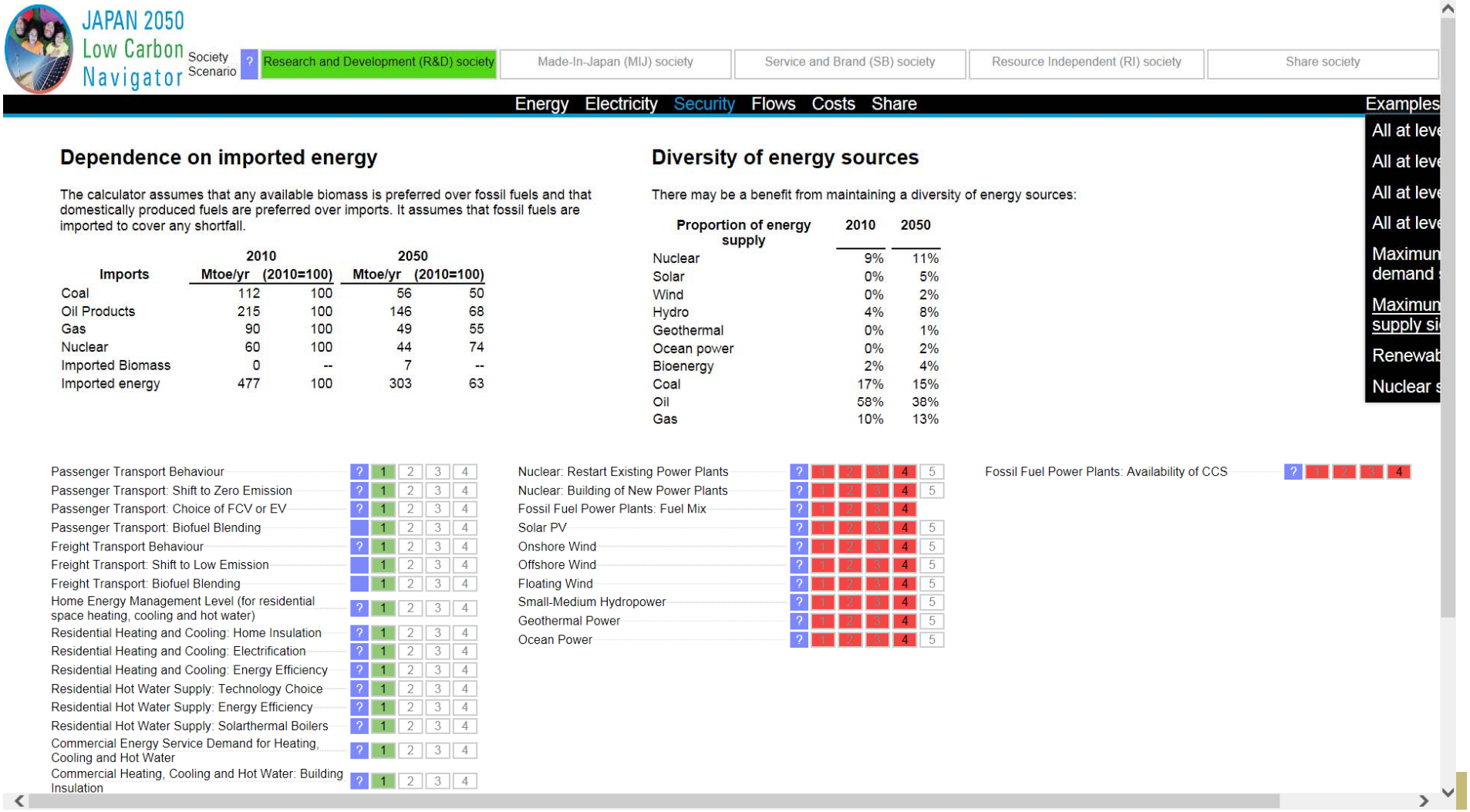

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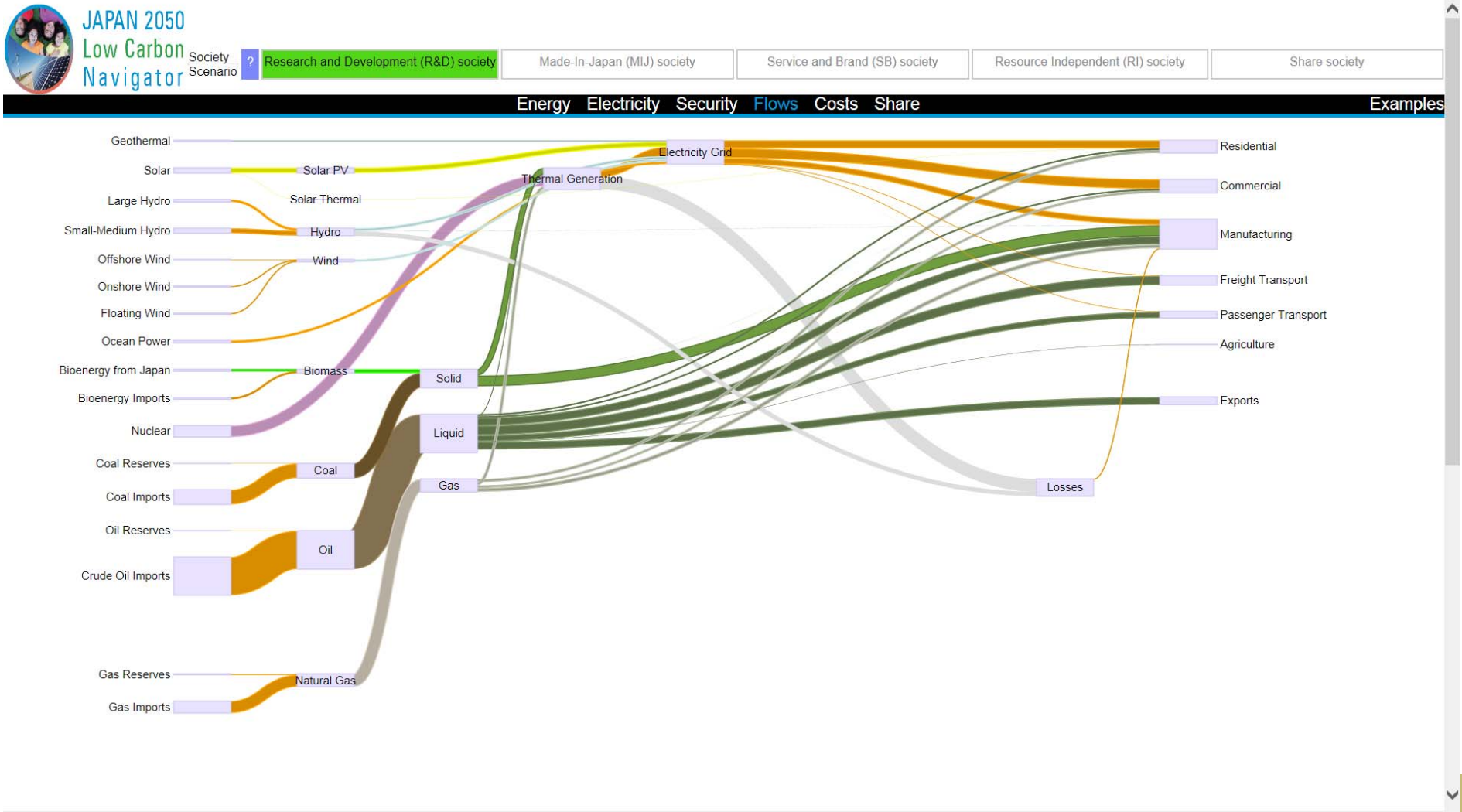

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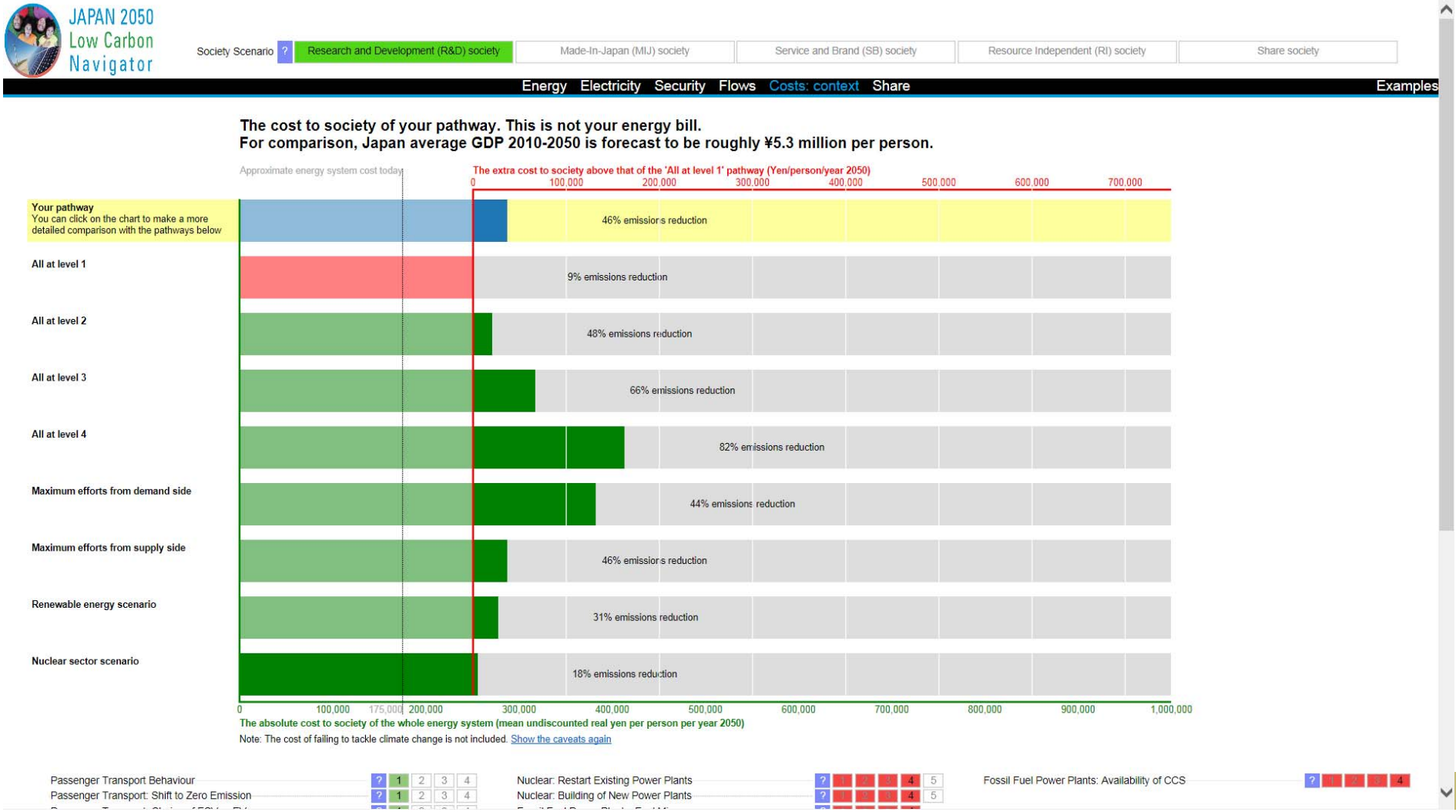

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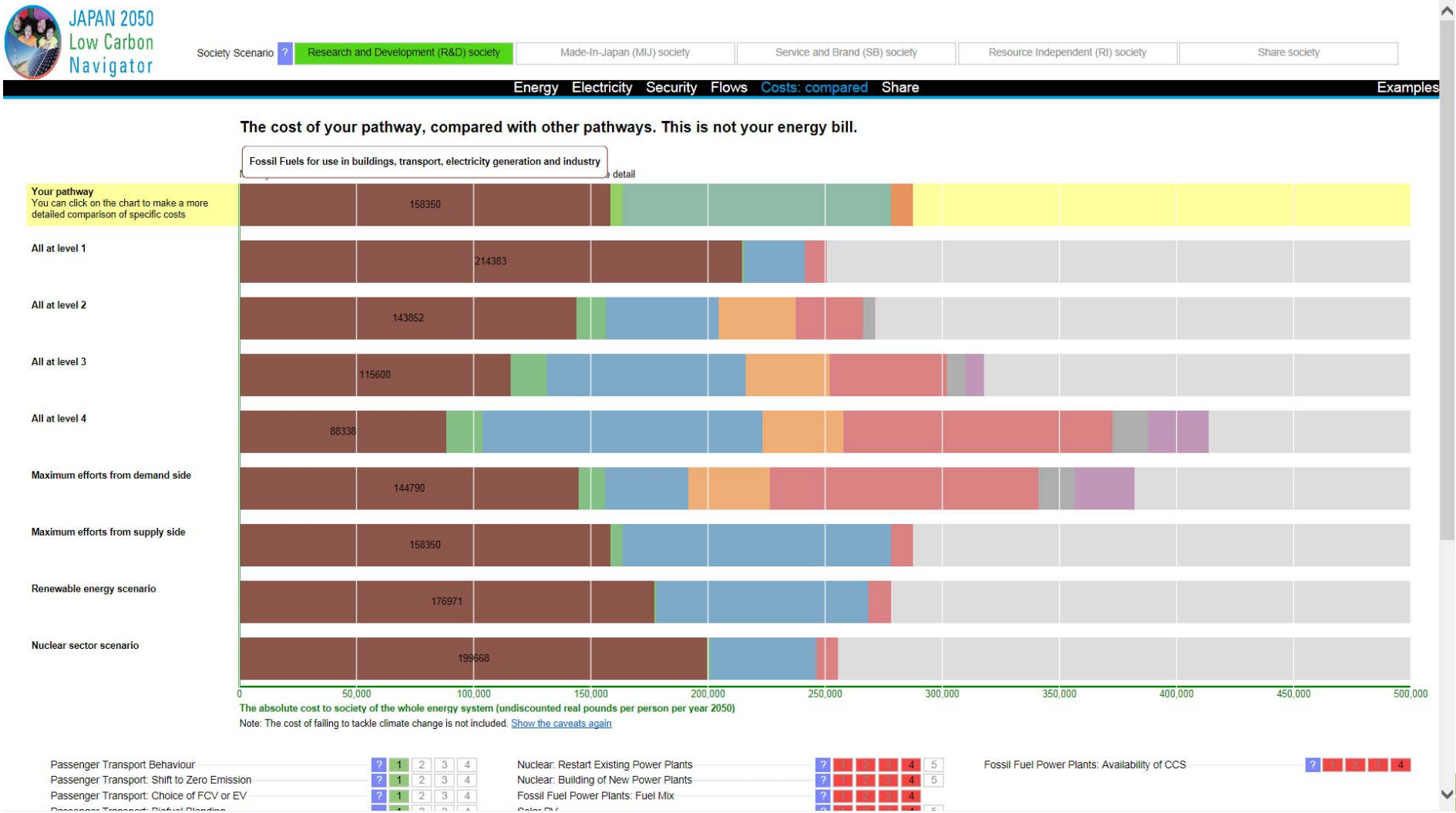

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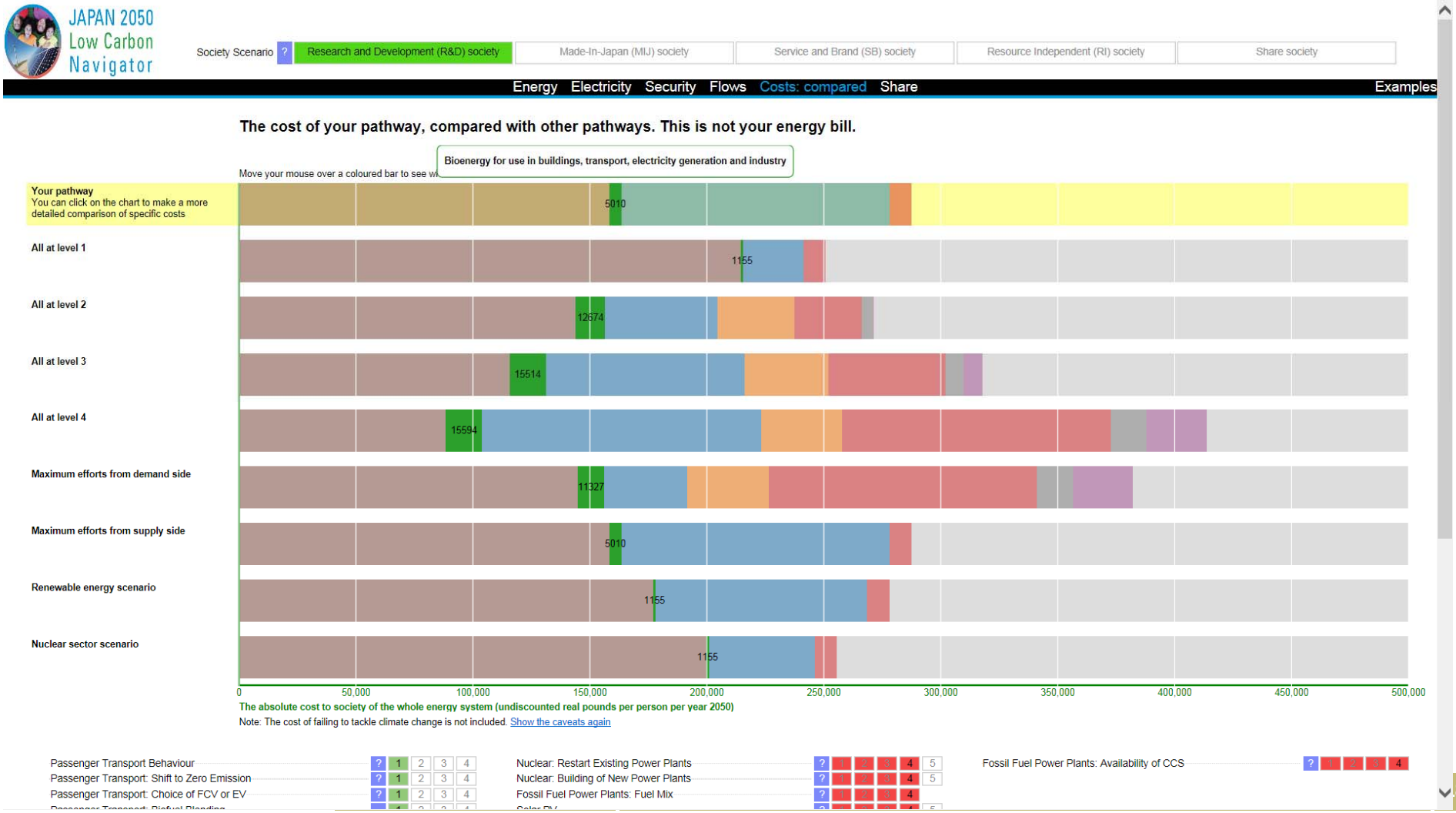

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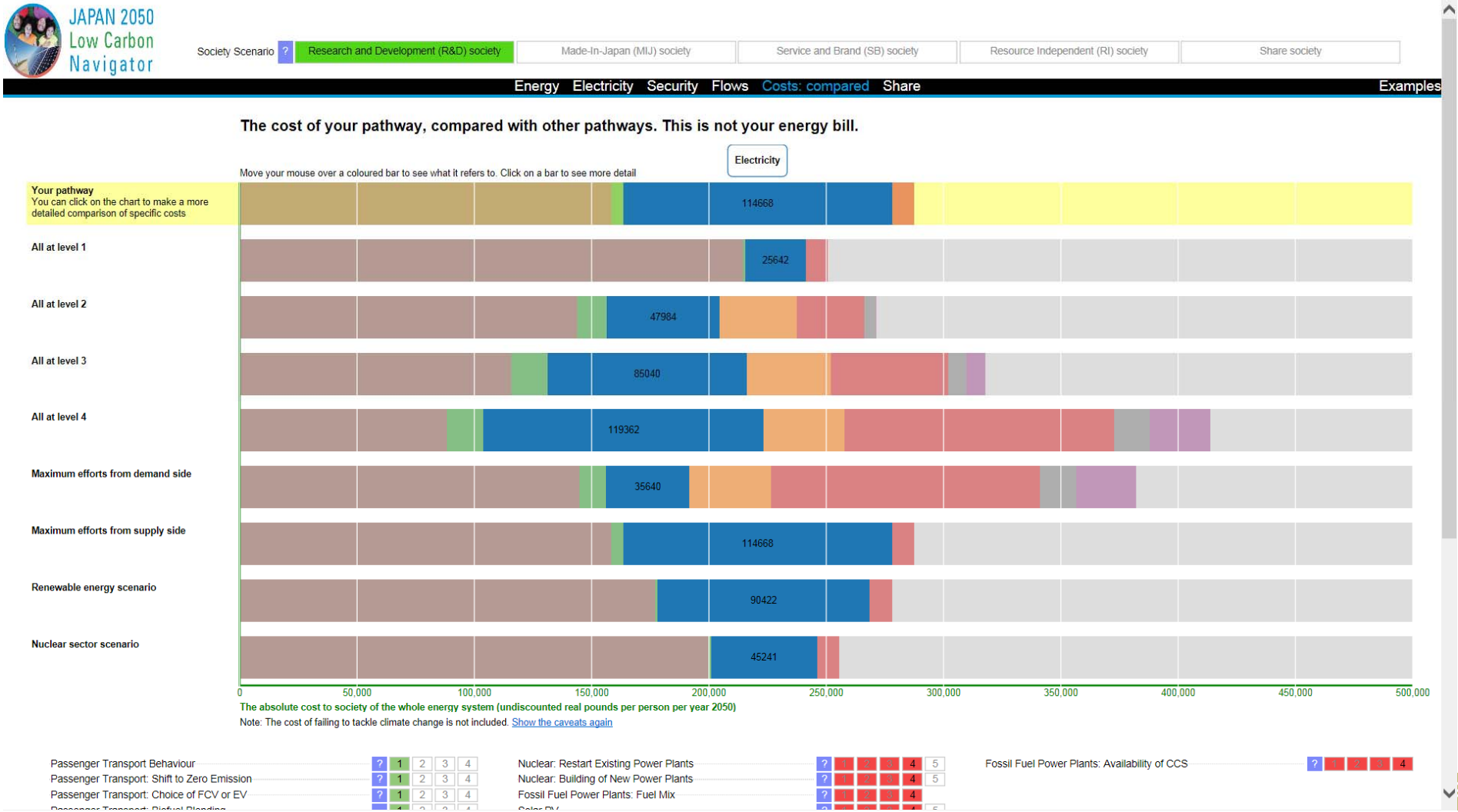

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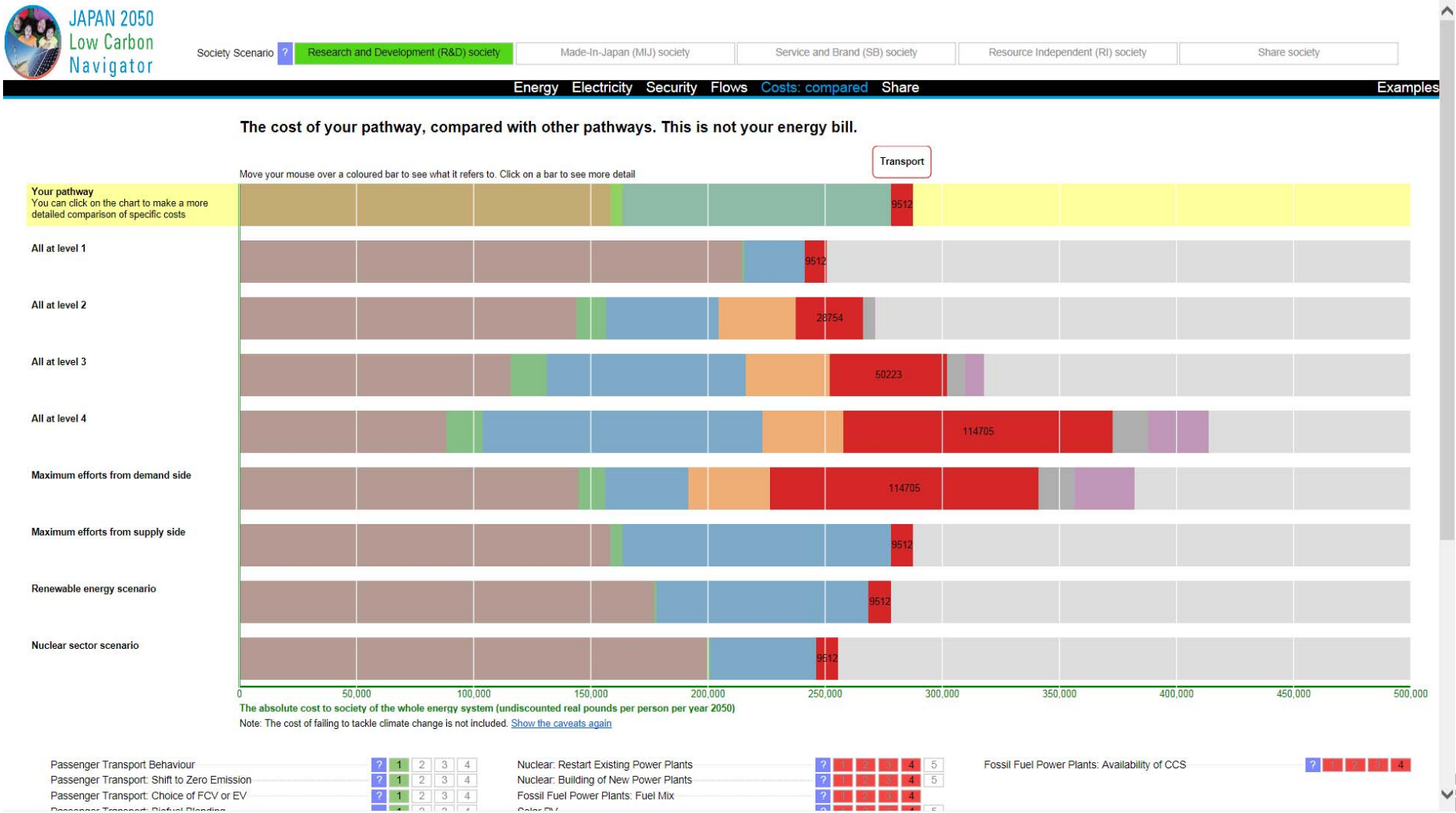

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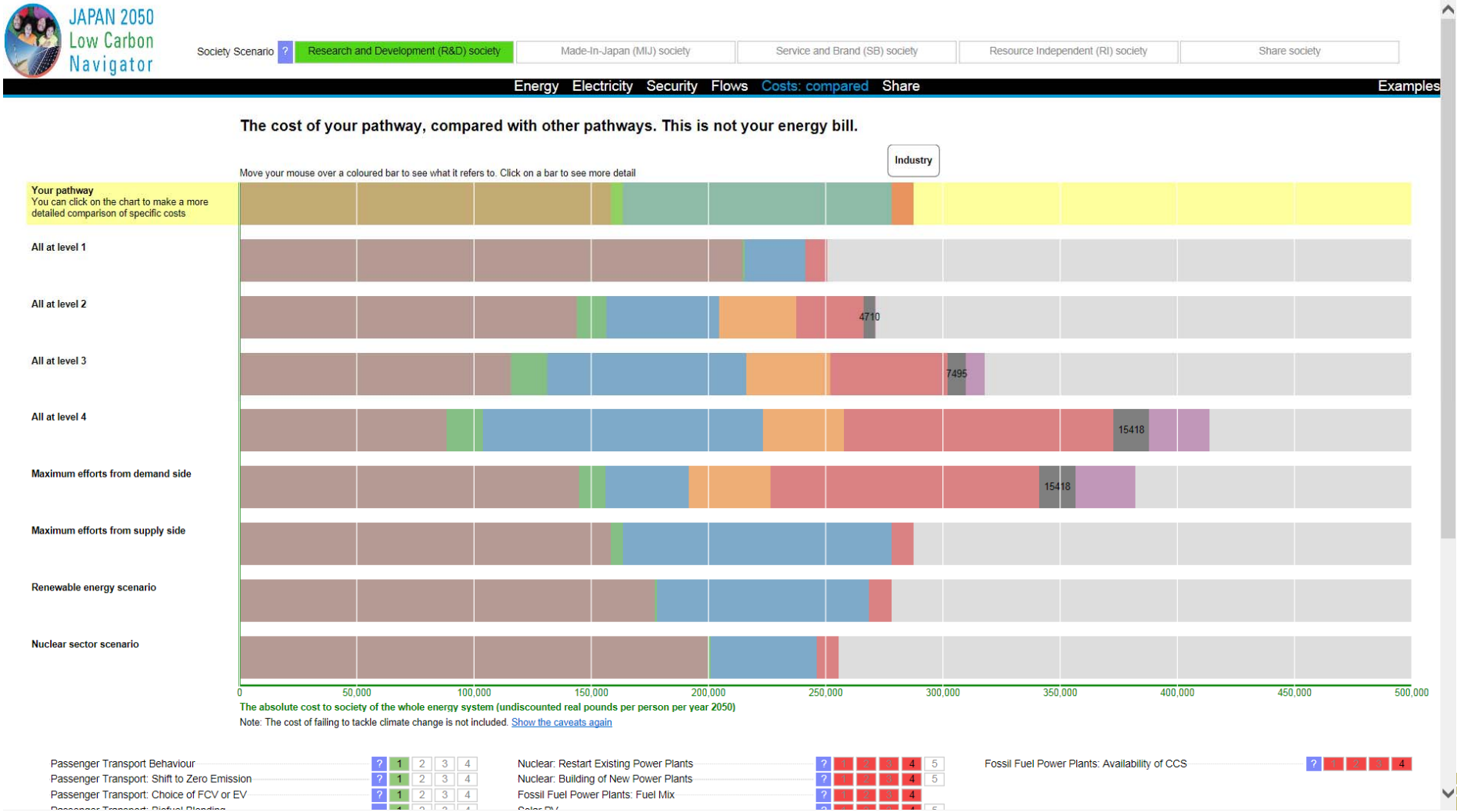

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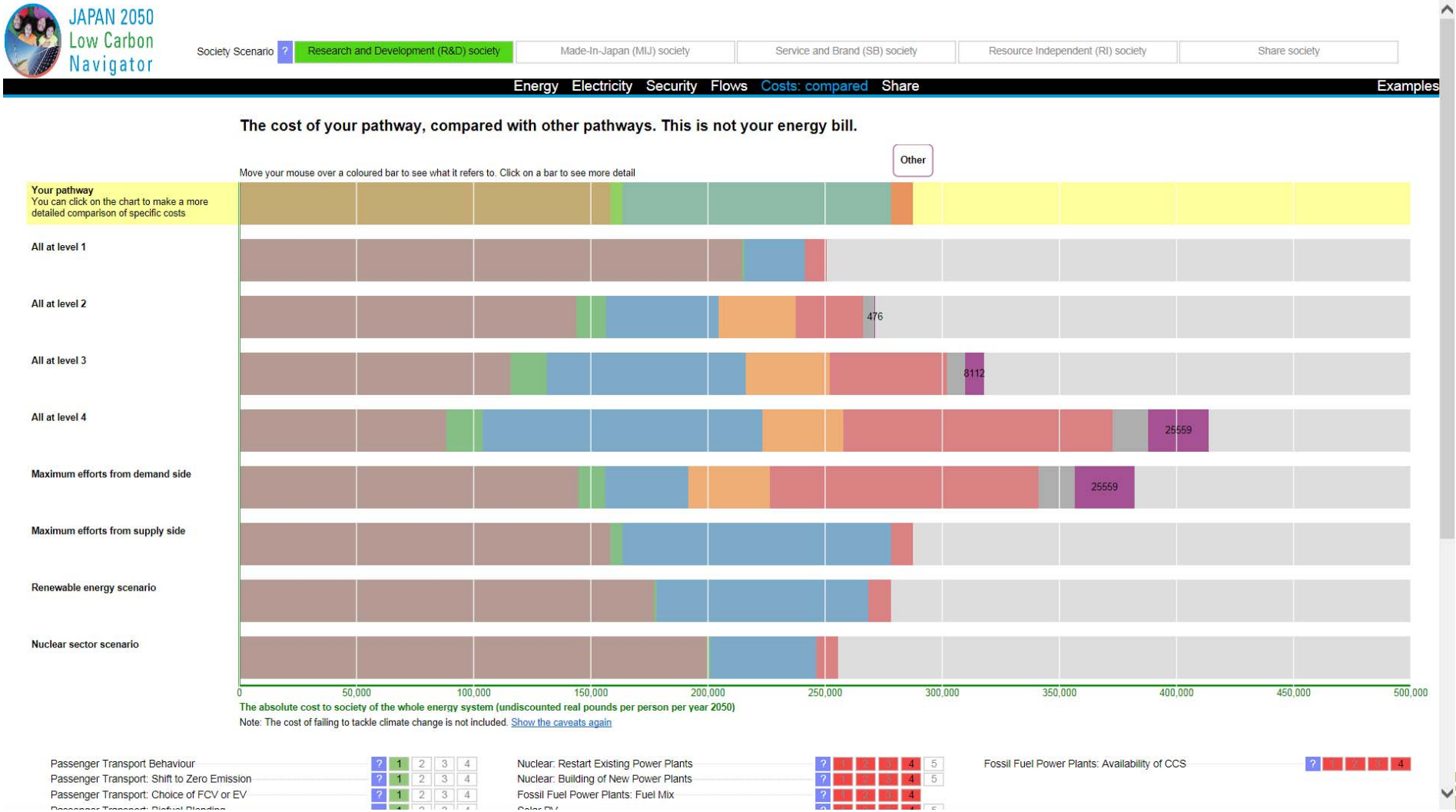

Join us to explore your own pathways by using the Low Carbon Navigator!

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For information:

☞ *Web Tool: http://www.en-2050-low-carbon-navi.jp/*

http://www.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