

Toward 150 GW PV by 2030

– Future PV Deployment in Japan –

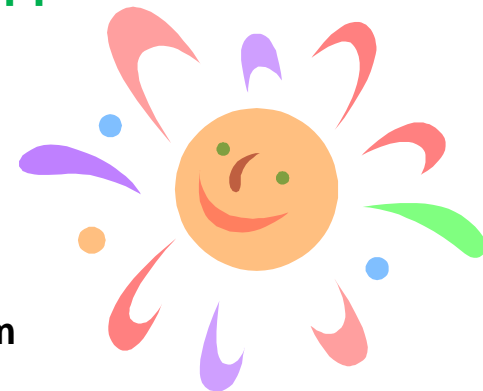
1. Future PV dissemination and deployment from the viewpoint of global trends
2. Start of great transition in approaches related to PV power generation
3. Steps and immediate challenges toward making PV a mainstream energy source in Japan
4. Fields of electricity demand where PV should play a role
5. Potential of the current Japanese PV market and its future prospects
6. Expected development of Japan's PV industry
7. Target PV installed capacity expected for 2030 through approaches toward unrestricted expansion of PV applications
8. Future structure of PV deployment

REvision2018 (Renewable Energy Institute)

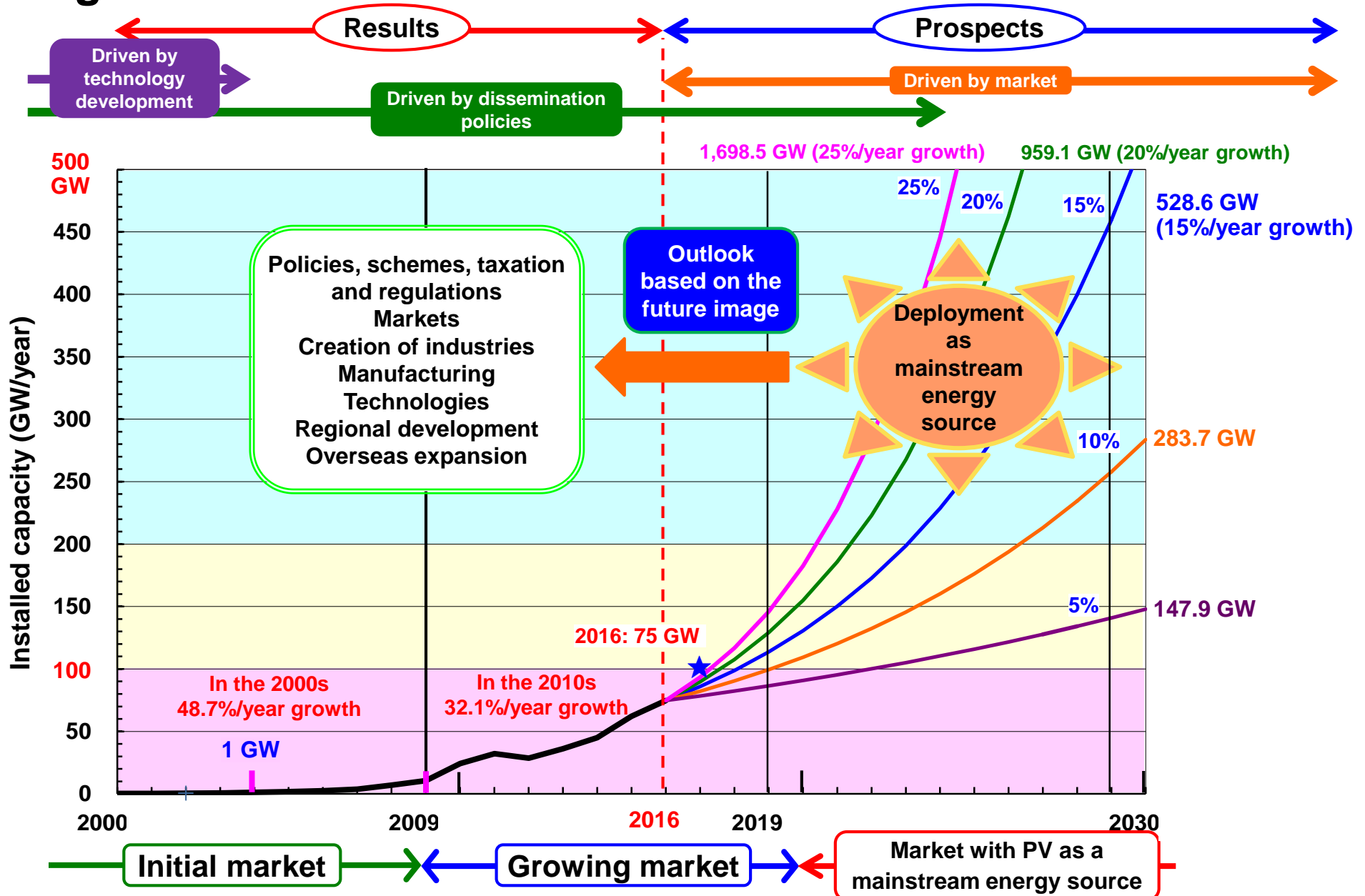
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1. Future PV dissemination and deployment from the viewpoint of global trends



2. Start of great transition in approaches related to PV power generation

[Global PV market in 2017]

- Cumulative installed capacity : 400 GW
- Annual installed capacity : 100 GW
- Price of PV module : 32 cents/W
- Power generation cost : 3 cents/kWh (Top runner value)

Until 2015	From 2016
<ul style="list-style-type: none">• Period for PV aiming to become a mainstream energy• Period to achieve low cost on a kW basis• Period depending on policy measures• Creation of market with the initiative of the national government• PV system as a source of power supply• Power supply by simple PV systems• Creation of market with the initiative of manufacturers• Creation of the PV industry consisting mainly of PV cells and modules	<ul style="list-style-type: none">• Period for PV to act as a mainstream energy• Period for PV to pursue becoming a stable power supply on a kWh basis• Period for PV to contribute to policy measures• Market expansion with the initiative of the industry• PV system to play a role in new social and economic infrastructure• Power supply by PV system network• Creation of market with the initiative of users• Creation of the PV industry consisting mainly of power generation

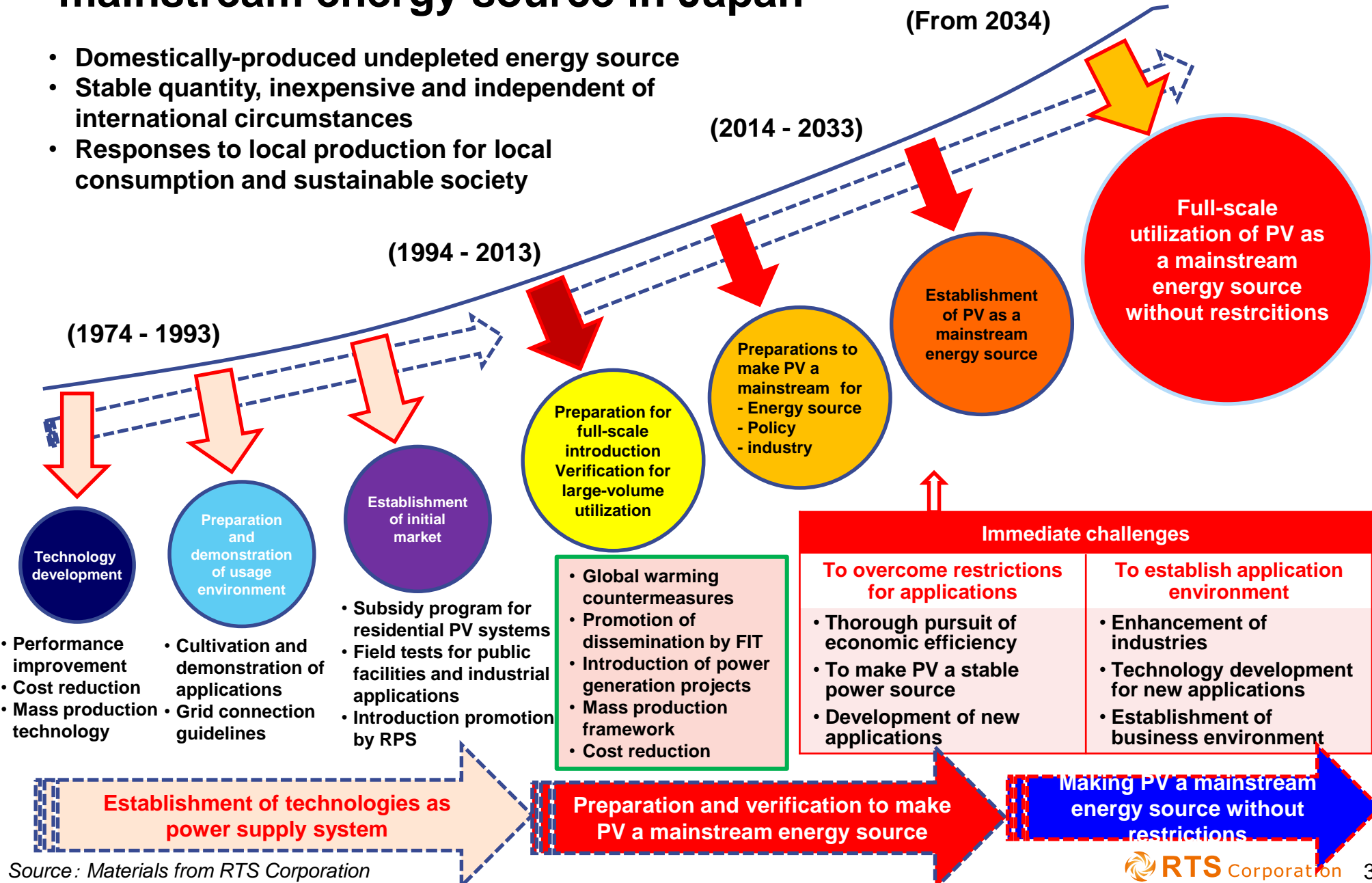
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3. Steps and immediate challenges toward making PV a mainstream energy source in Japan

- Domestically-produced undepleted energy source
- Stable quantity, inexpensive and independent of international circumstances
- Responses to local production for local consumption and sustainable society



4. Fields of electricity demand where PV should play a role

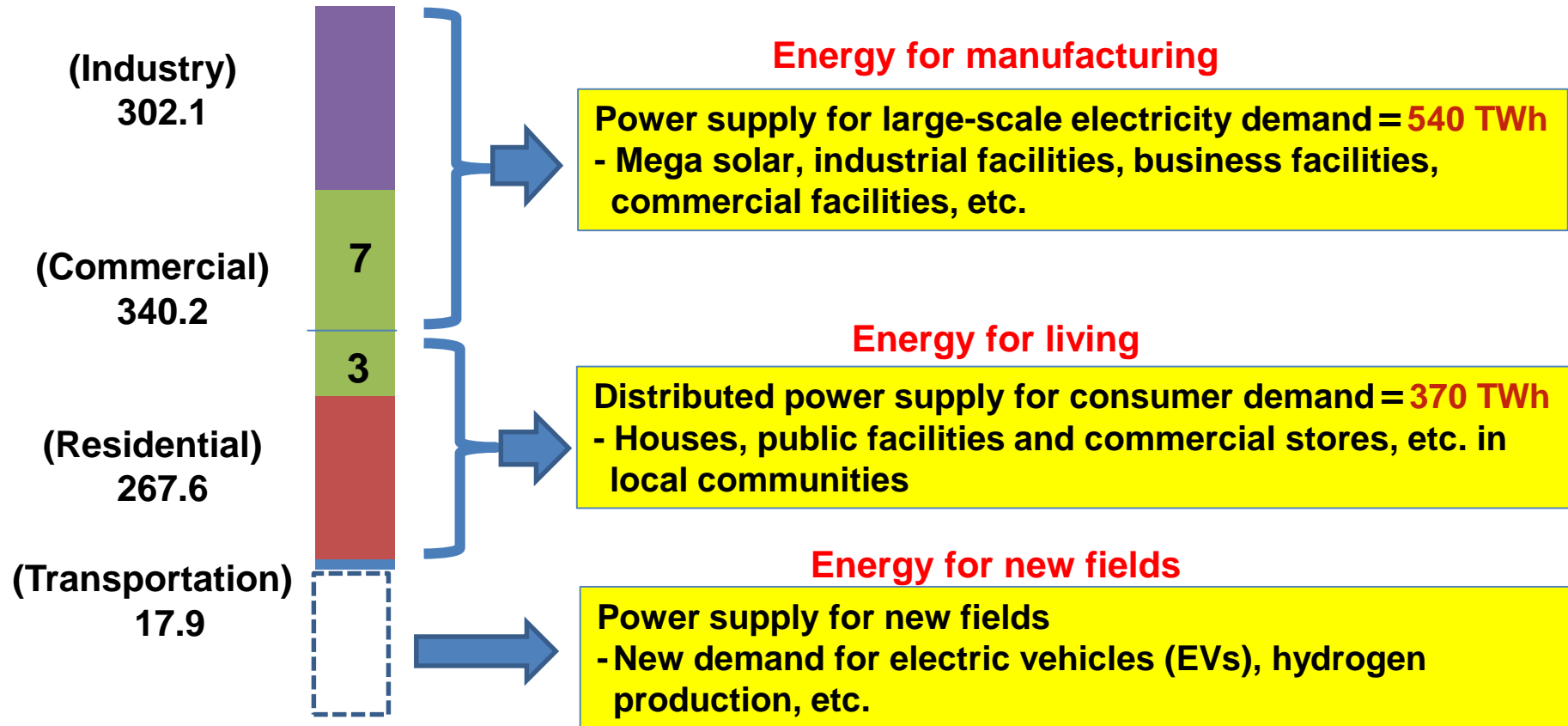
● PV applications in response to characteristics of electricity demand

– PV applications are classified into three main pillars

〈Suppliers' viewpoints〉

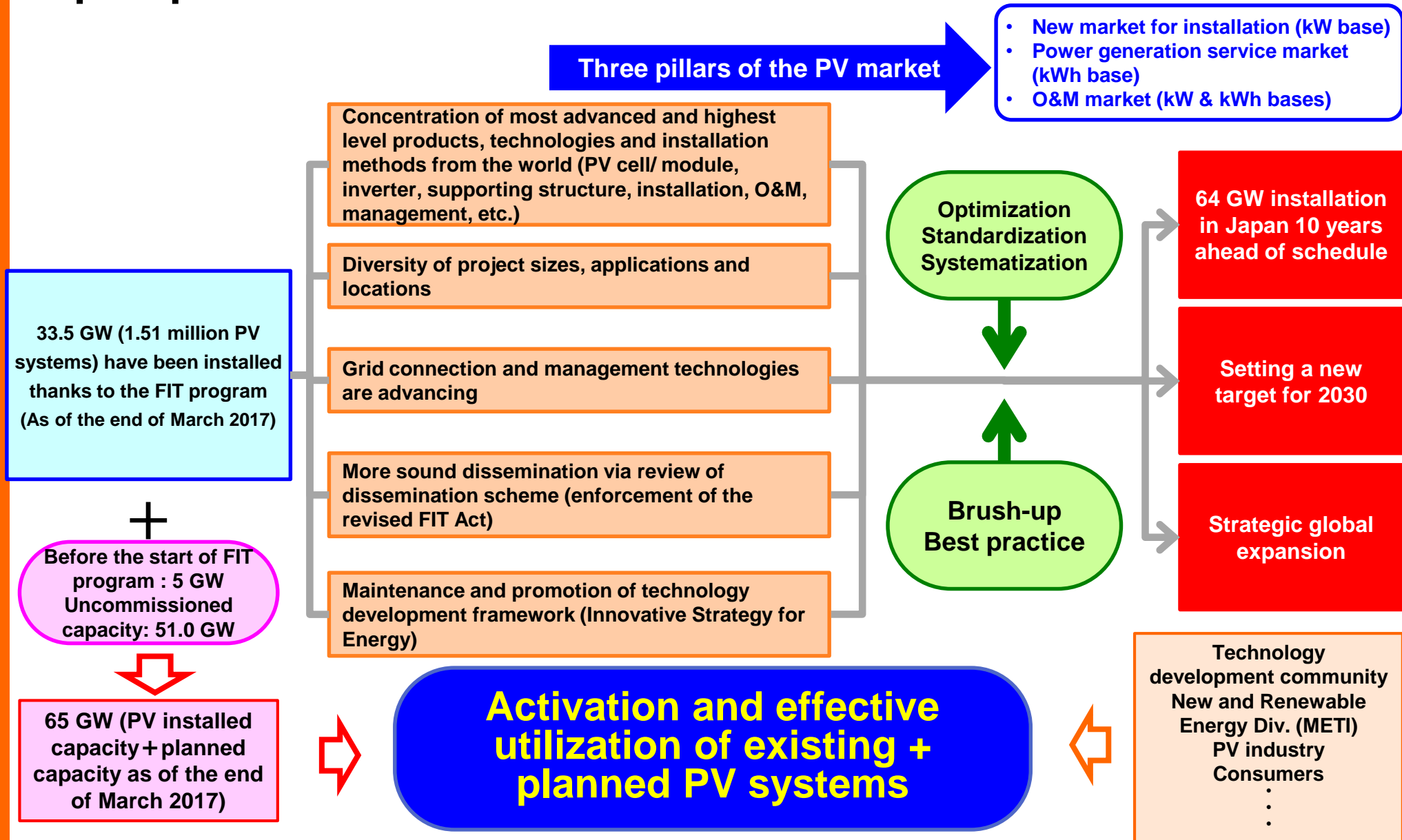
〈Consumers' viewpoints〉

(Electricity demand) Total : 927.8 TWh

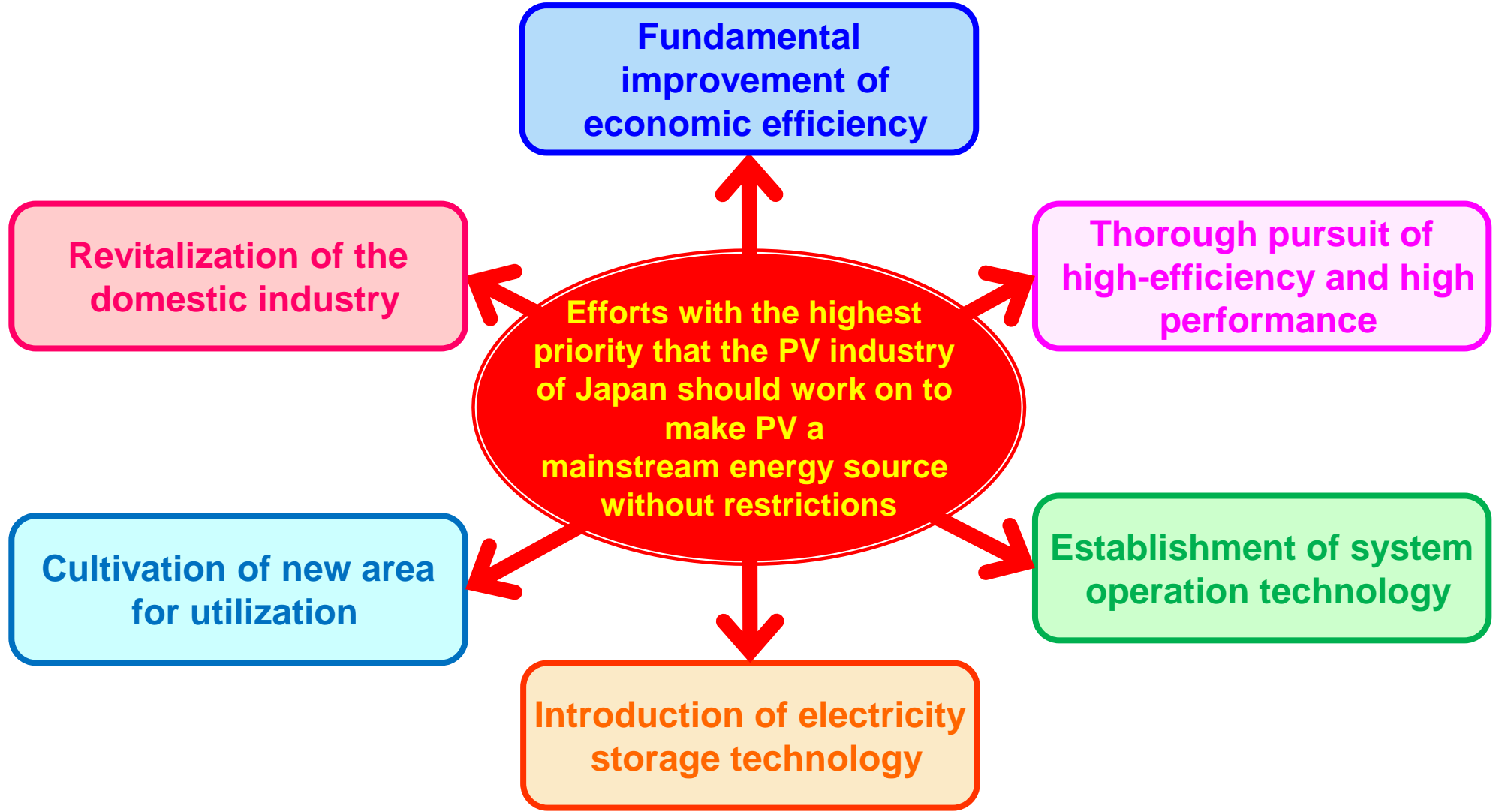


* Based on the actual energy supply and demand in 2015

5. Potential of the current Japanese PV market and its future prospects

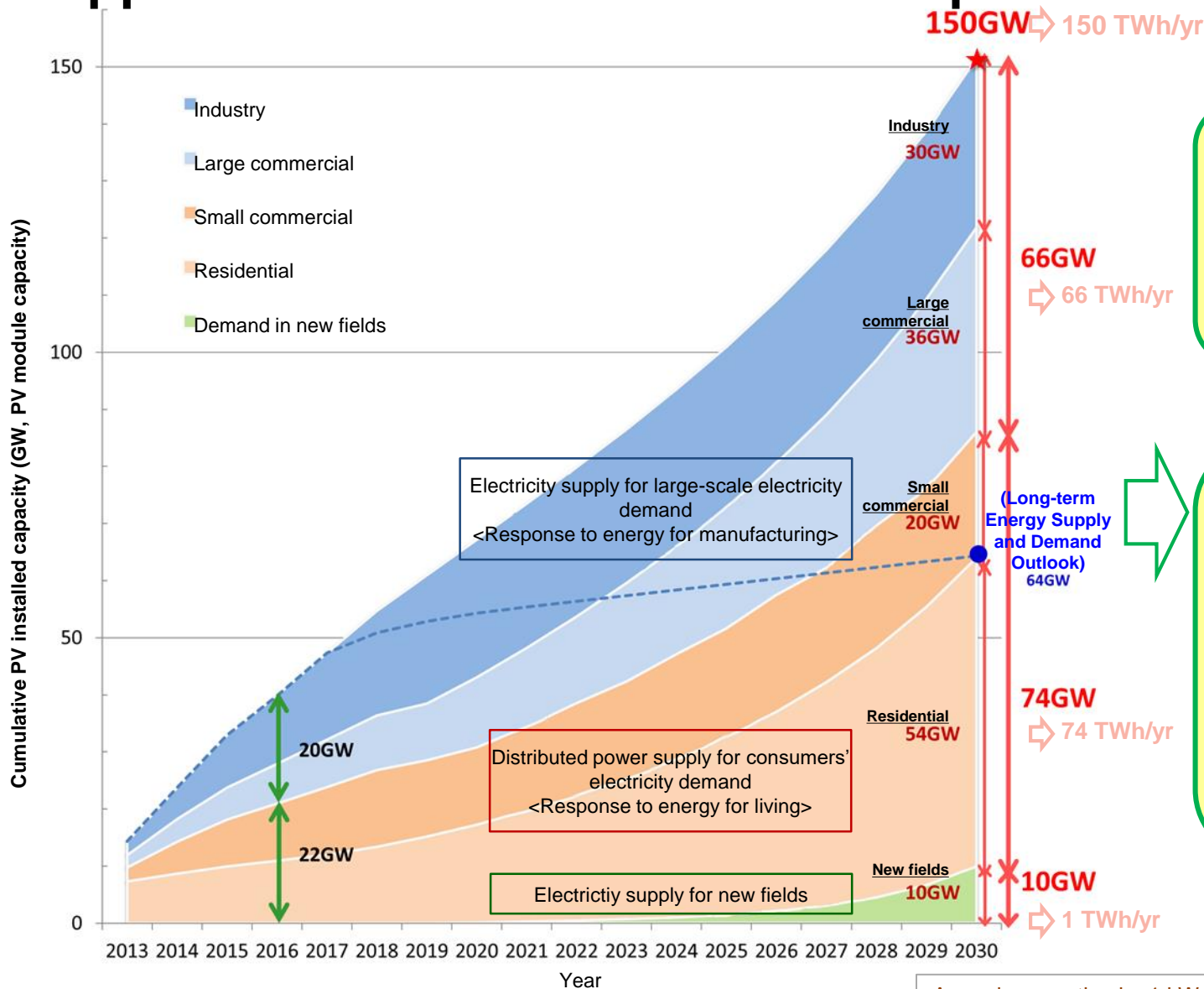


6. Expected development of Japan's PV industry



Source: "Recommendation for development of the PV industry (PV150) A standard-bearer 'PV power generation' in the era of great energy transition - Aiming to achieve 150 GW installation in Japan in 2030-" (Feb. 2018) and "PV Activities in Japan and Global PV Highlights" (Oct. 2017) published by RTS Corporation

7. Target PV installed capacity expected for 2030 through approaches toward unrestricted expansion of PV applications



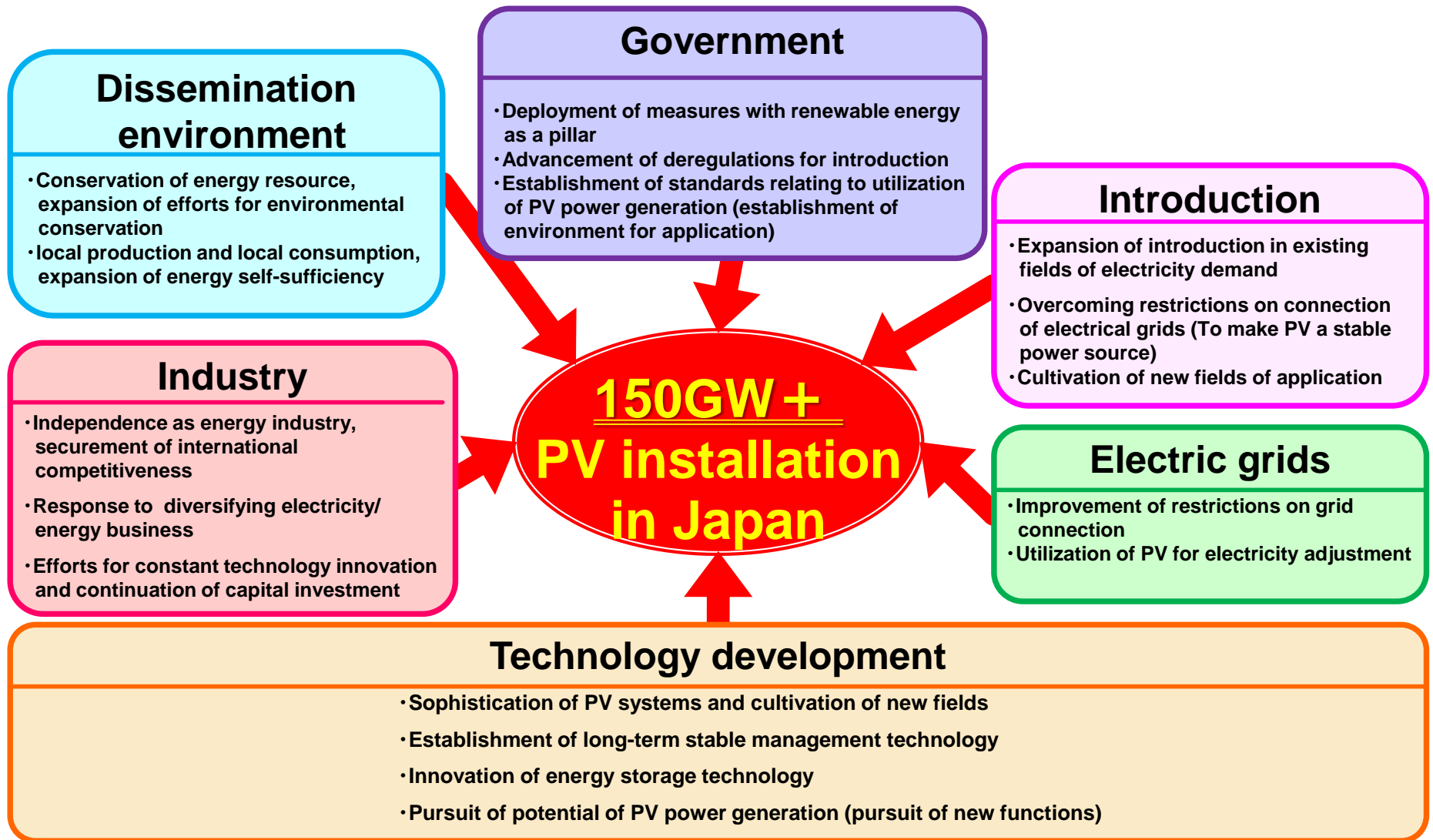
- Electricity supply of around 150 TWh/year accounting for 15% of Japan's total electricity demand
- PV can sufficiently play a role as a mainstream energy source

- Promoting transition of energy supply-demand structure
- Leading the world through the establishment of a decarbonized society
- Encouraging capital investment by private sector
- Improvement of international competitiveness of the PV industry

Annual generation by 1 kW of PV module is assumed to be 1,000 kWh.

Source: "Recommendation for development of the PV industry (PV150) A standard-bearer 'PV power generation' in the era of great energy transition - Aiming to achieve 150 GW installation in Japan in 2030-" (Feb. 2018) published by RTS Corporation

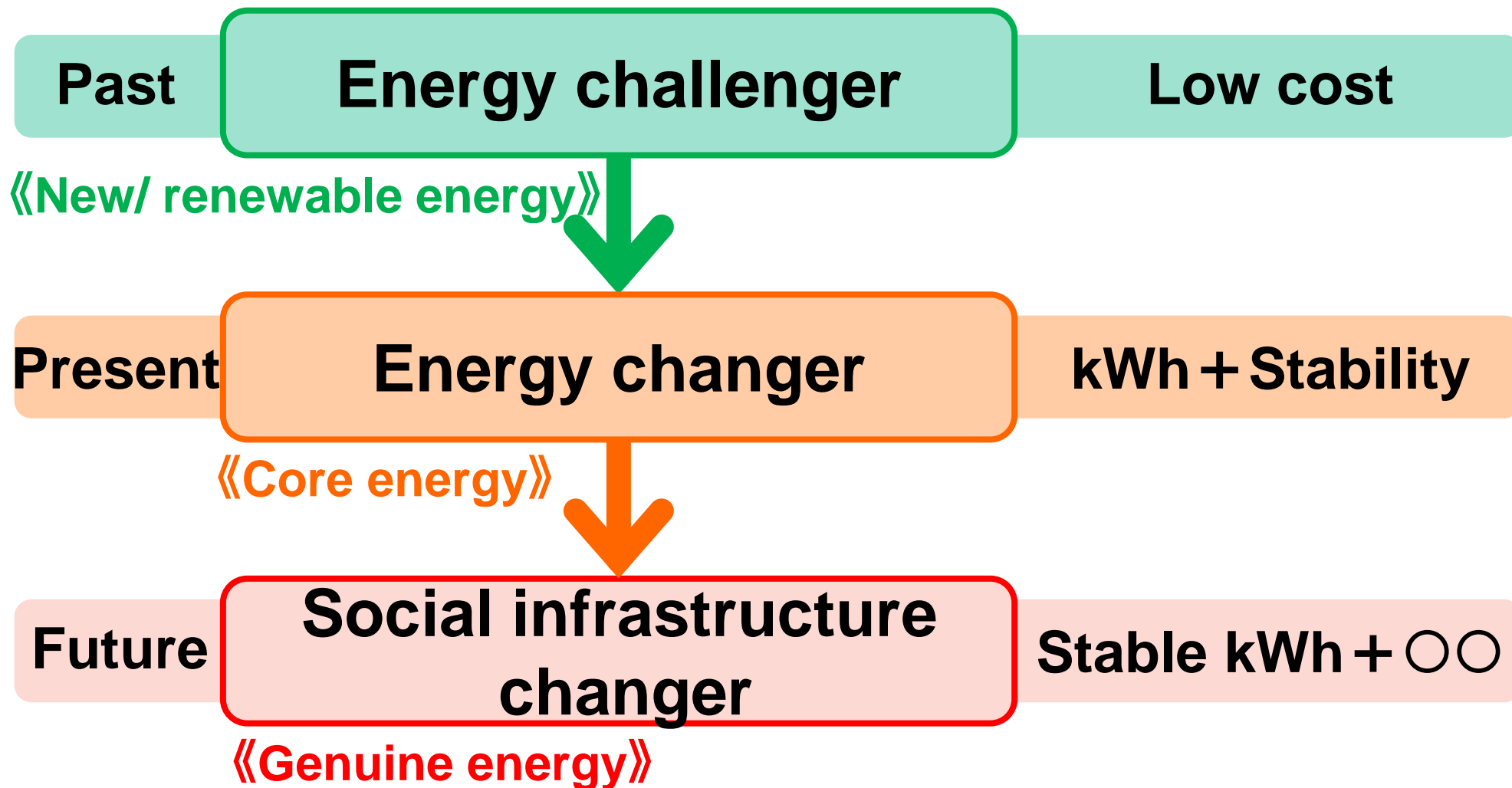
8. Future structure of PV deployment (1/2)



Government initiative → Role sharing between public and private sectors → Private sector initiative

Source: "Recommendation for development of the PV industry (PV150) A standard-bearer 'PV power generation' in the era of great energy transition - Aiming to achieve 150 GW installation in Japan in 2030-" (Feb. 2018) and "PV Activities in Japan and Global PV Highlights" (Nov. 2017) published by RTS Corporation

8. Future structure of PV deployment (2/2)



Thank you very much for your kind attention.

[This presentation is based on the following materials from RTS Corporation.]

- (1) Recommendation for development of the PV industry (PV150) A standard-bearer 'PV power generation' in the era of great energy transition - Aiming to achieve 150 GW installation in Japan in 2030-' (Feb. 2018)
- (2) Key Points of the New FIT Program (Apr. 2017)
- (3) *Taiyoko Hatsuden* (PV power generation) Market 2017 (Jun. 2017)
- (4) Guidebook for the PV Business (2017-2018 Edition)(Jun. 2017)
- (5) Global PV Markets Report 2017 Edition - Major Overseas Markets and Emerging Markets - (Jun. 2017)
- (6) Forecasting PV installed capacity in Japan toward FY 2020 and FY 2030 (Jun. 2017)
- (7) The Current Status and Prospects of Residential PV Market (2017 Edition) (Aug. 2017)
- (8) Global PV Manufacturers Profiles 2017 (Aug. 2017)
- (9) *Taiyoko Hatsuden Joho* (Information on PV power generation) (Monthly reports)
- (10) PV Activities in Japan and Global PV Highlights (Monthly reports in English)
- (11) A variety of consulting materials



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