

日本の再生エネルギーポテンシャルとRE証書 Renewable Energy Potential in Japan and RE Certificates

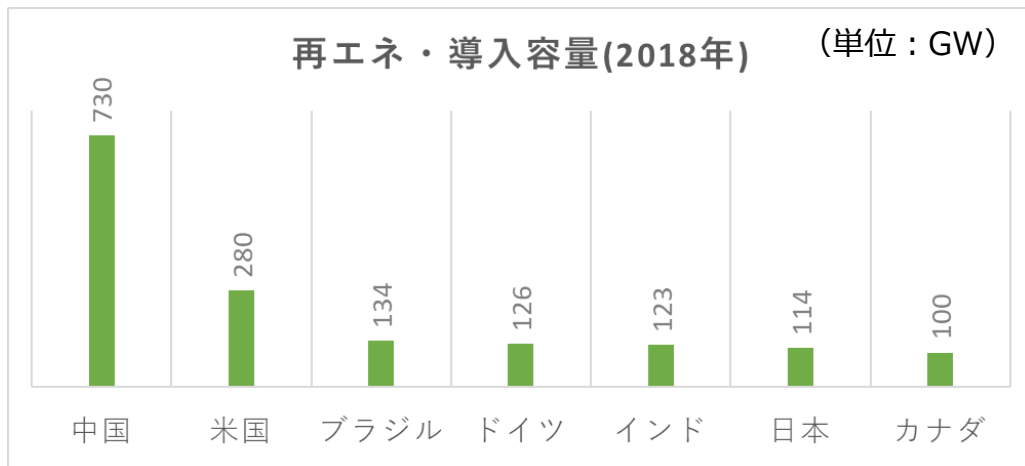
国際環境経済研究所主席研究員

International Environment and Economy Institute

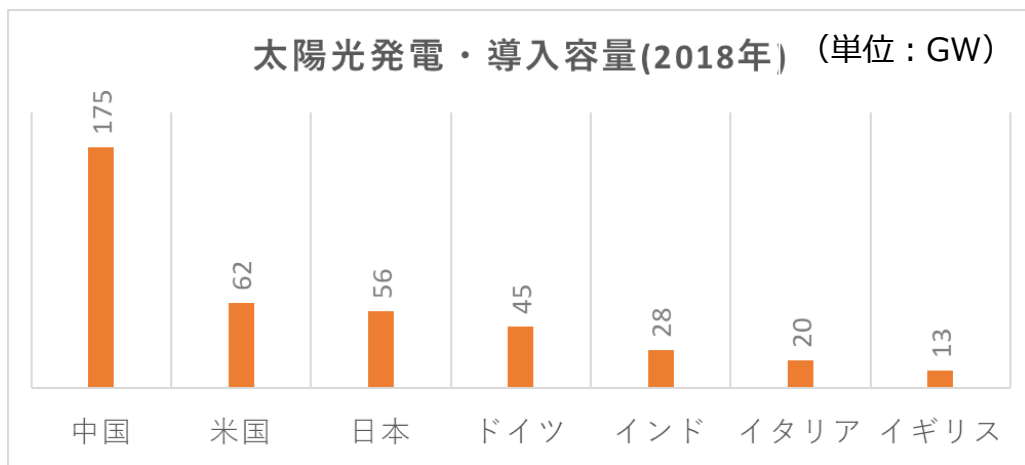
中島 みき Miki NAKAJIMA

再エネ導入実績と発電電力量 Deployment of Renewable Energy

• 再エネ導入容量：Renewable Capacity



• 太陽光導入容量：Solar Capacity



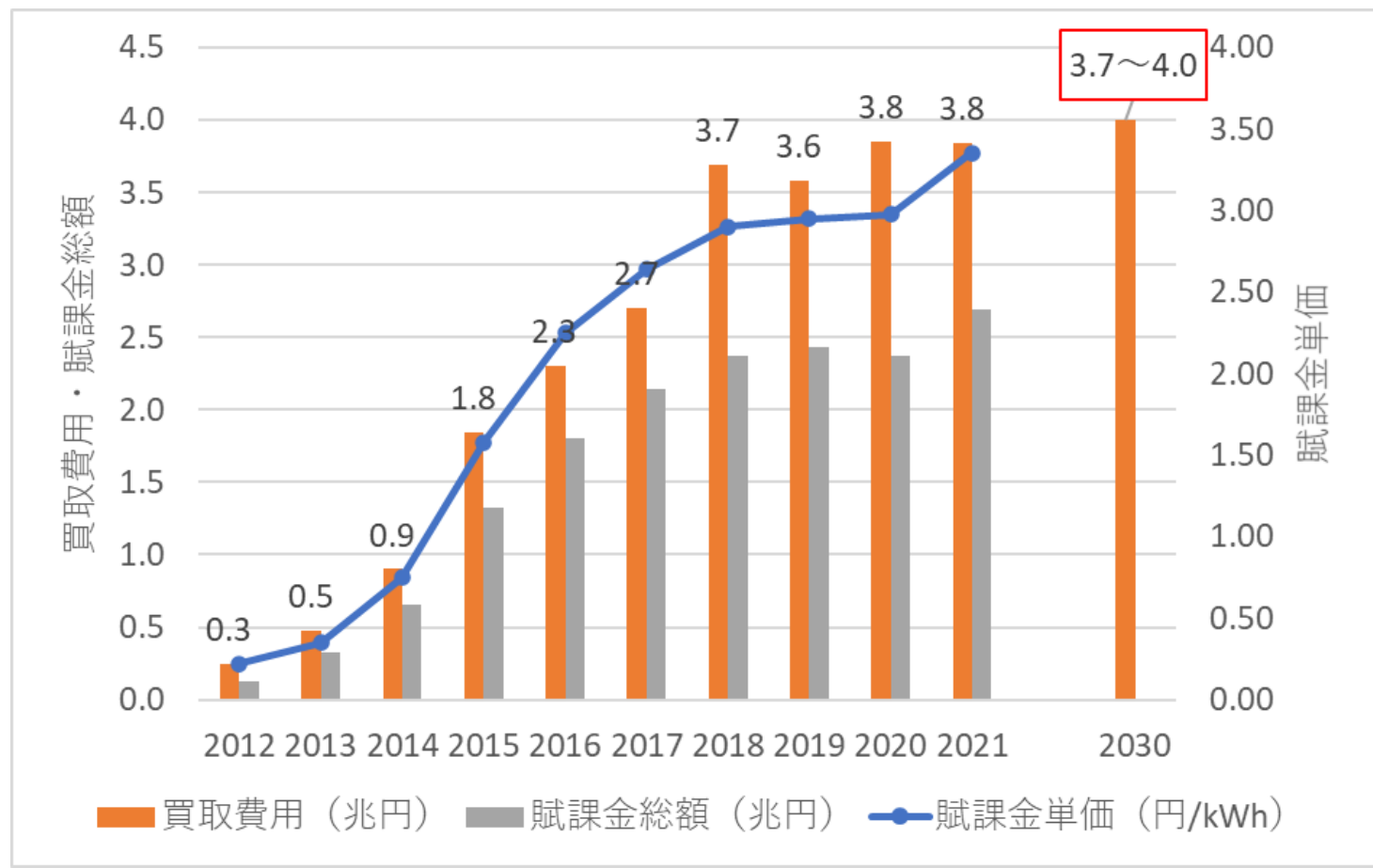
• 発電電力量の国際比較 (水力除く) Renewable Generation (excl. Hydropower)

(単位：億kWh)

| | 2012年 | | 2018年 |
|--------------|--------|--------------|--------|
| 日本 Japan | 309 | 3.1倍 3.1x | 963 |
| 欧州 EU | 4,319 | 1.6倍 1.6x | 7,035 |
| 世界 Global | 10,693 | 2.3倍 2.3x | 24,862 |

(出典：IEA, 資源エネルギー庁より作成)

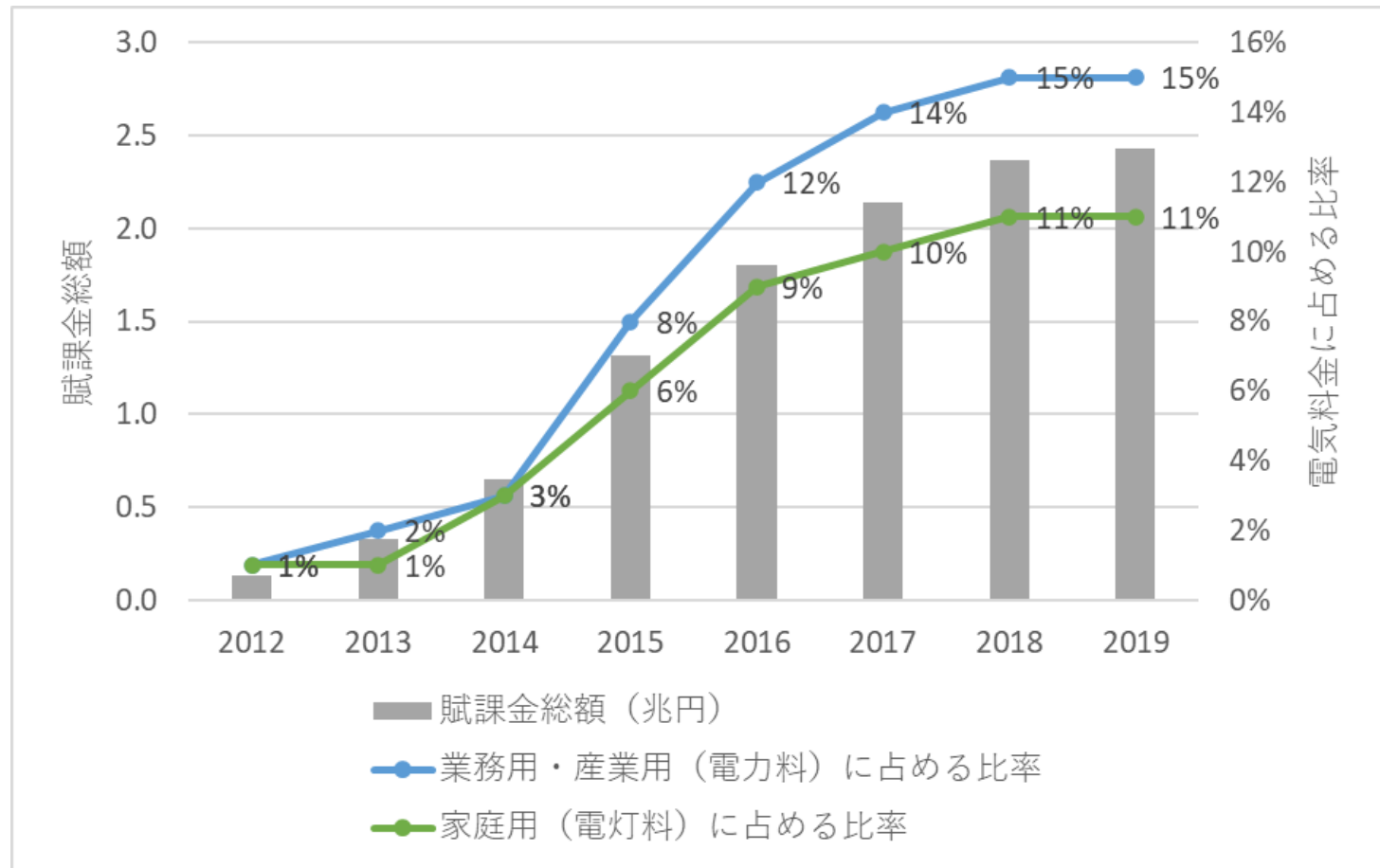
日本のFIT国民負担・賦課金総額 Social burden under the FIT scheme in Japan



(出典：資源エネルギー庁より作成)

需要家の賦課金負担割合

Proportion of the burden borne by customers



日本の再エネを取り巻く環境①

Solar Potential in Japan

- 日射量 Global Horizontal Irradiation

SOLAR RESOURCE MAP

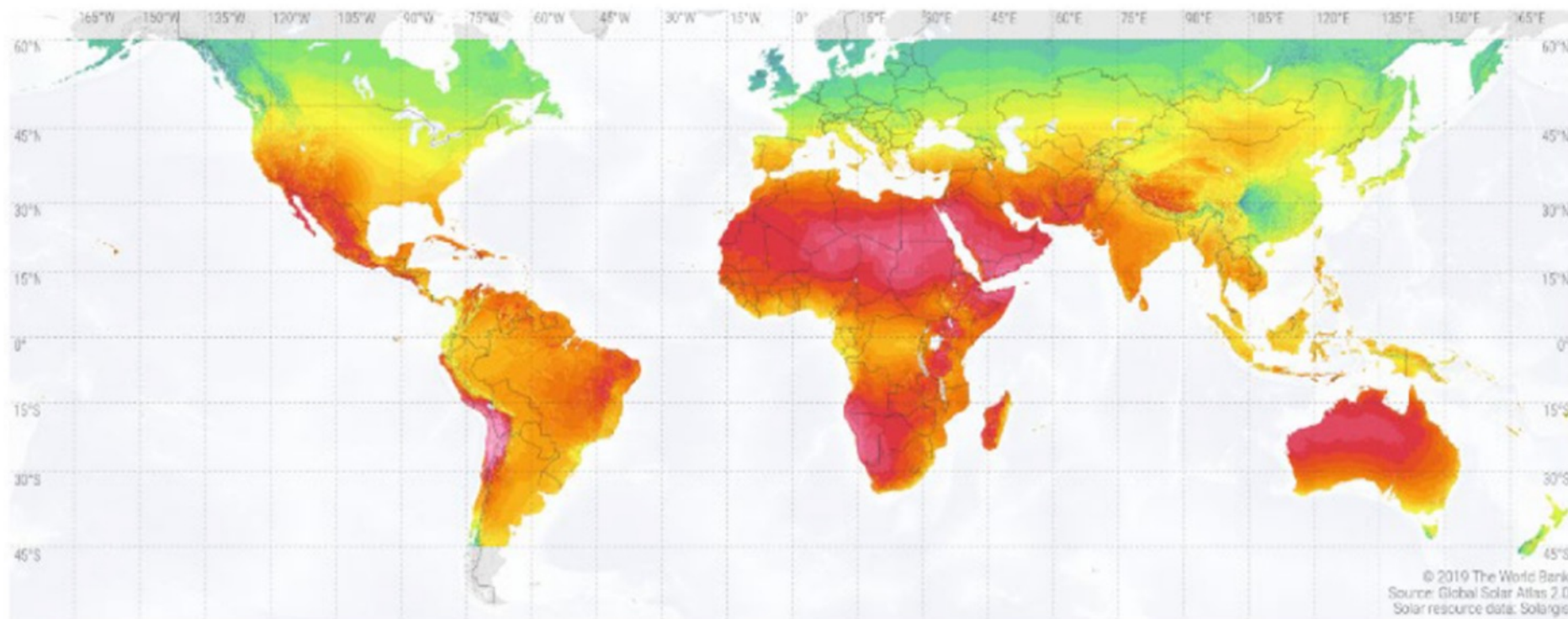
GLOBAL HORIZONTAL IRRADIATION



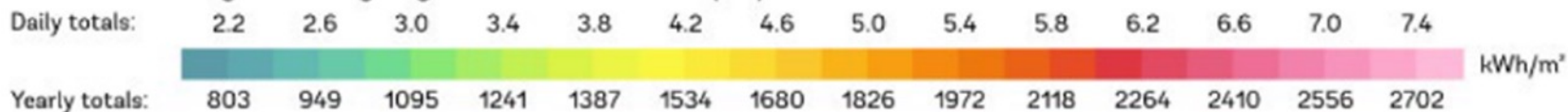
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SOLARGIS



Long-term average of global horizontal irradiation (GHI)



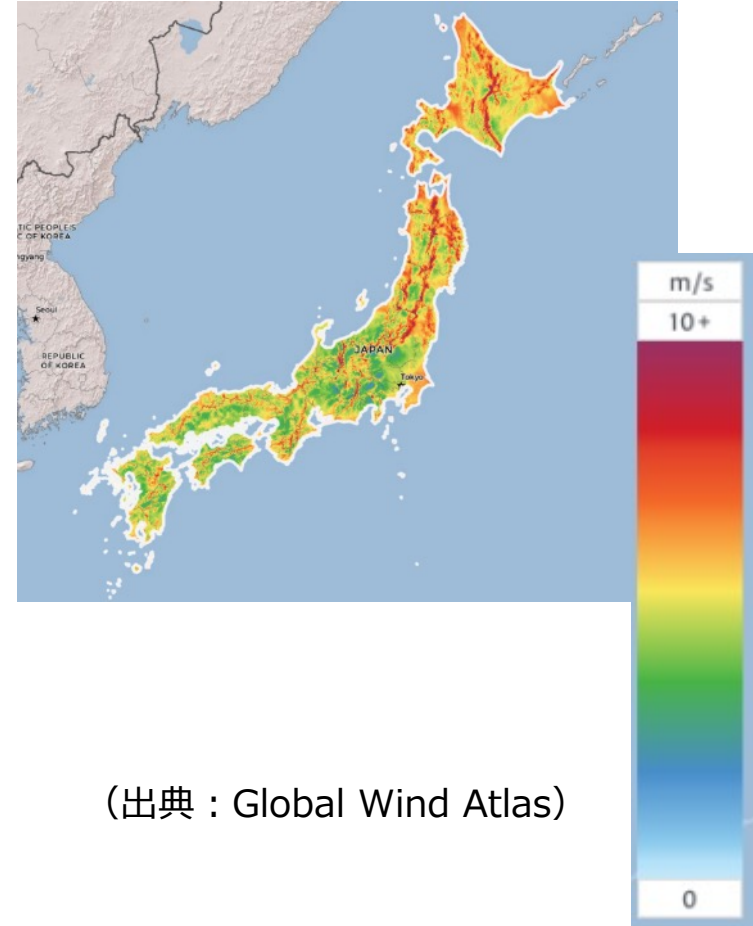
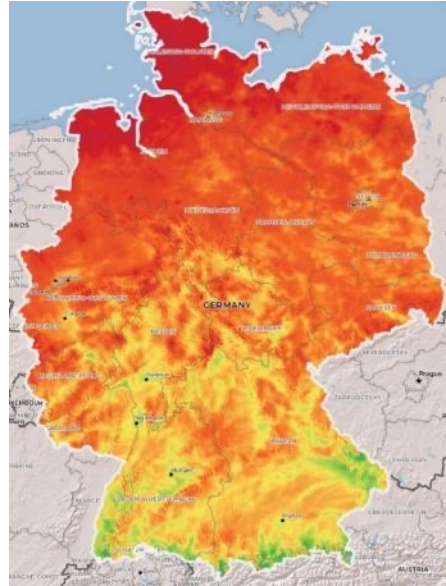
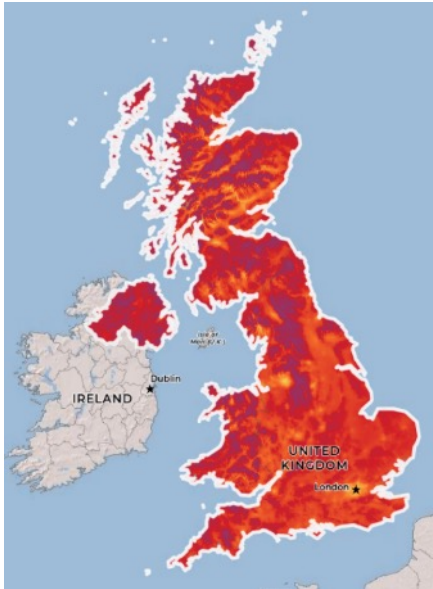
This map is published by the World Bank Group, funded by ESMAP, and prepared by Solargis. For more information and terms of use, please visit <http://globalsolaratlas.info>

(出典 : Global Solar Atlas)

日本の再エネを取り巻く環境②

Onshore Wind Potential in Japan

- 風況 Wind Speed

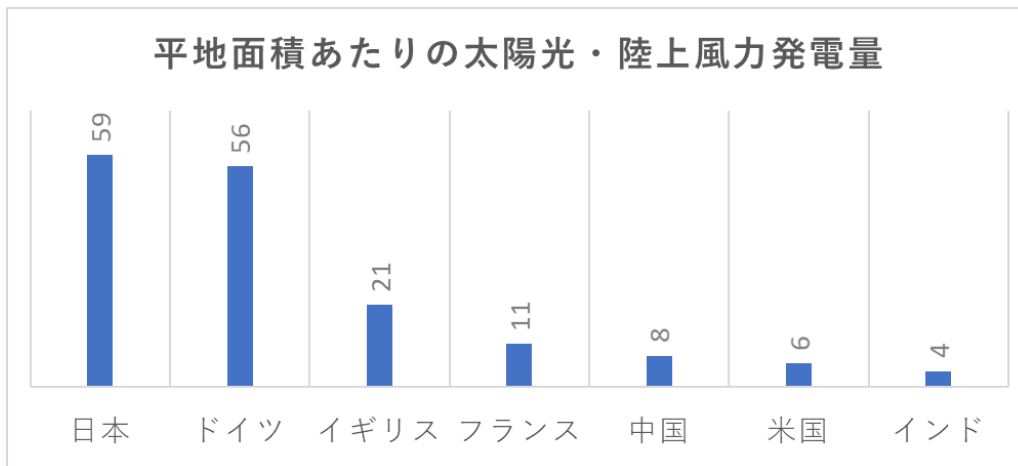


(出典 : Global Wind Atlas)

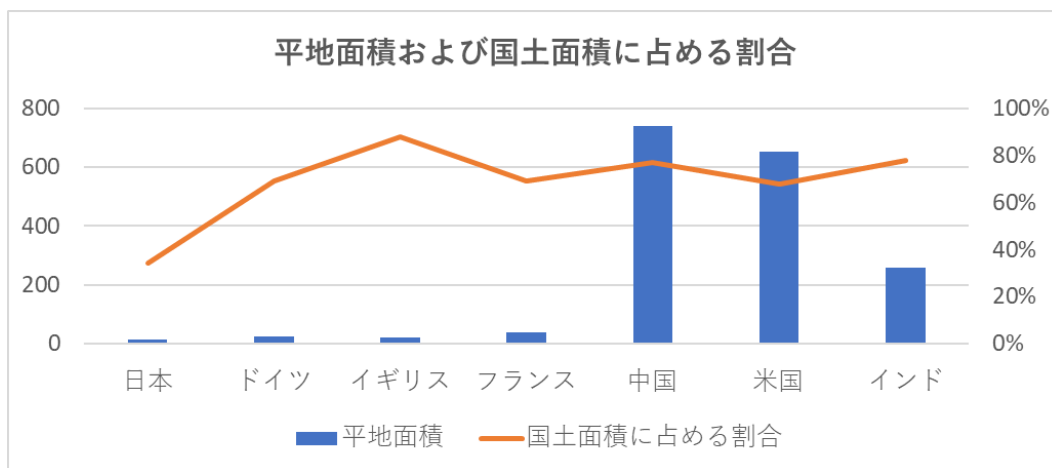
平地面積あたりの再エネ発電量

Renewable energy generation per plain land area

- Solar・Wind energy generation per plain land area

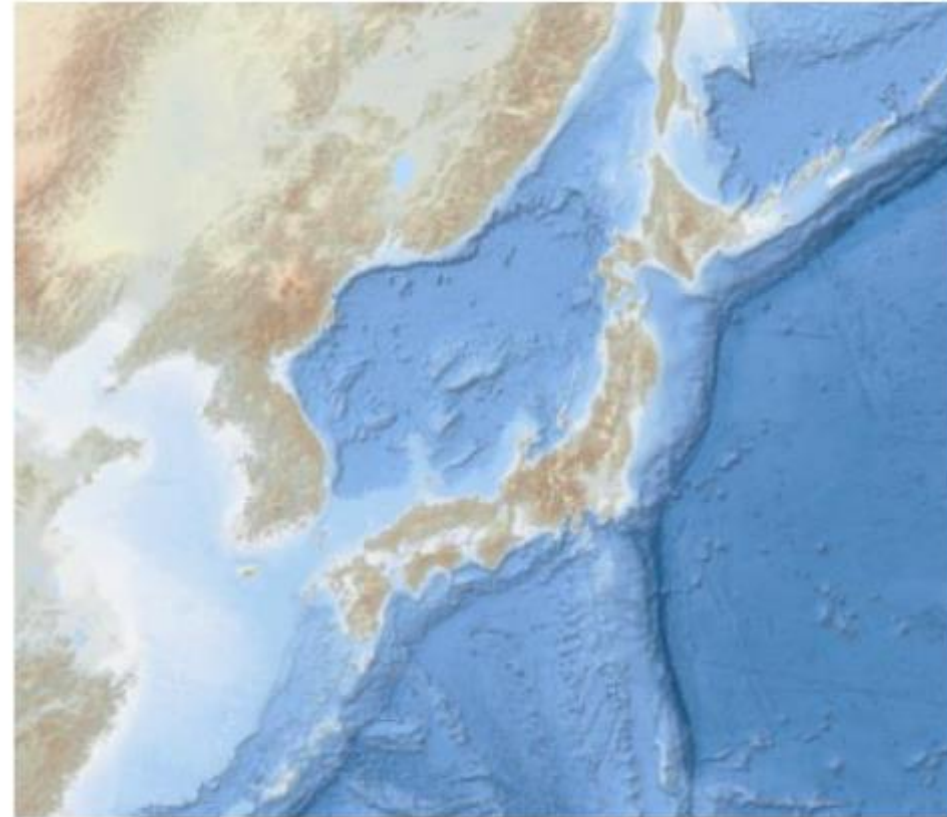


- Plain land area and proportion of land area



日本の再エネを取り巻く環境③ Offshore Wind Potential in Japan

- 海底地形(Sea Depth)



(出典 : European Atlas of the Seas)

企業の再エネ調達方法

Global corporate sourcing of renewable electricity

① RE証書(エネルギー属性証書)

Unbundled energy attribute certificates (EACs)

1

A company purchases attribute certificates of renewable energy separately “unbundled” from its electricity. Examples of certificate systems are guarantees of origin (GOs) and renewable energy certificates (RECs).



③ 小売事業者から購入 (再エネ料金メニュー)

Renewable energy offerings from utilities or electric suppliers

3

A company purchases renewable electricity from its utility either through green premium products or through a tailored renewable electricity contract, such as a green tariff programme.



② 電力購入契約(コポレートPPA)

Power Purchase Agreements (PPAs)

2

A company enters into a contract with an independent power producer, a utility or a financier and commits to purchasing a specific amount of renewable electricity, or the output from a specific asset, at an agreed price and for an agreed period of time.



④ 自家発自家消費

Production for self-consumption

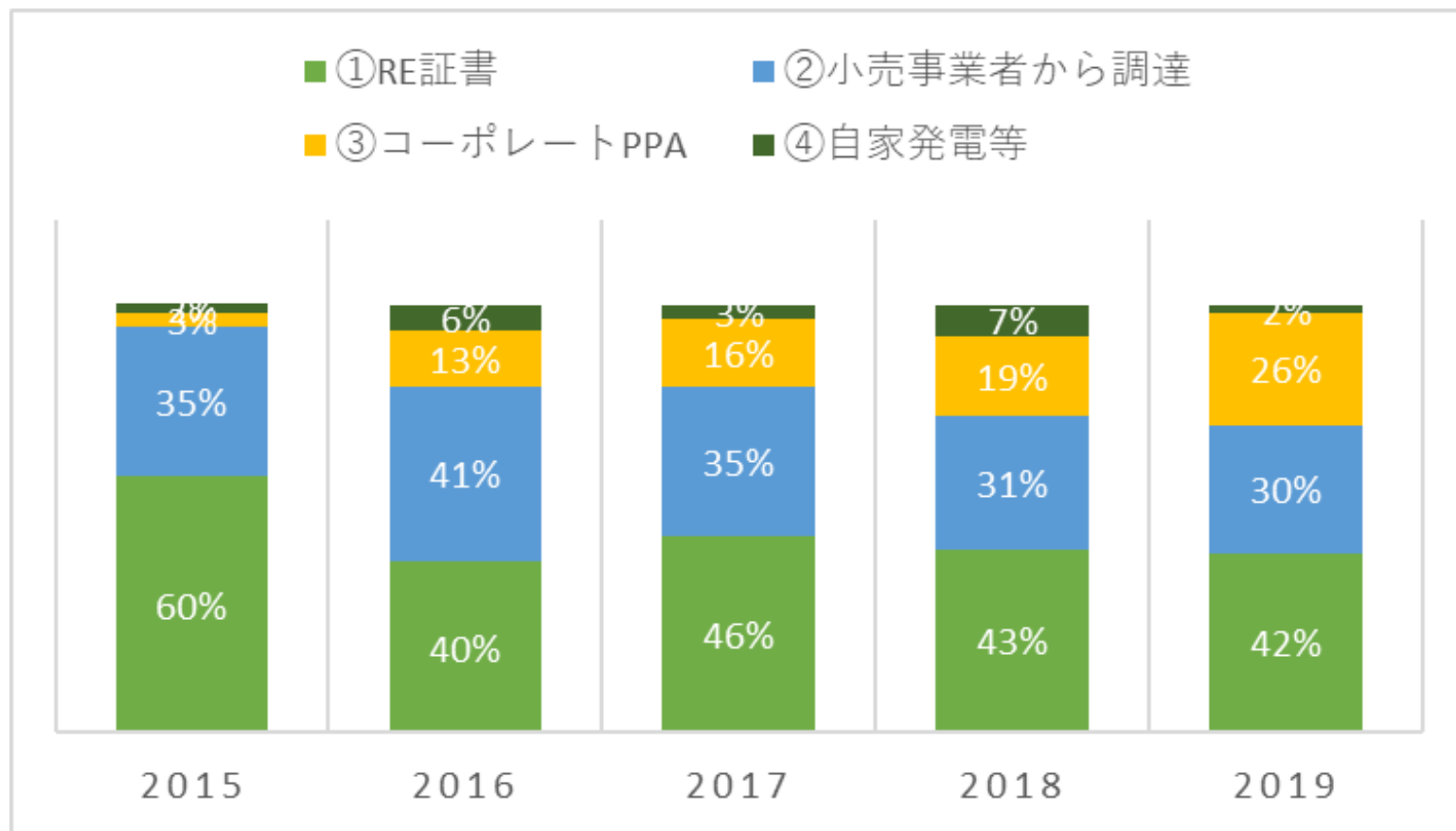
4

A company invests in its own renewable energy systems, on-site or off-site, to produce electricity primarily for self-consumption.



RE100会員各社の再エネ調達方法の推移

Evolution of Sourcing methods used by RE100 members



RE証書の論点－欧州・電源証明（GoO）のケース

Hot Topics – Guarantees of Origin in EU

1. 「追加性」を目的とした制度ではない

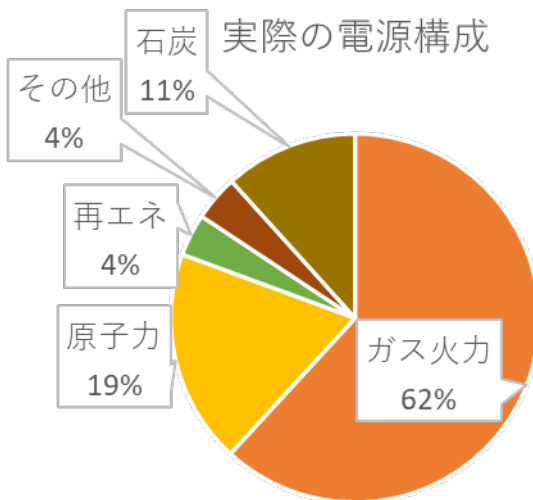
⇒再エネ拡大に寄与するか？（直接的な効果・間接的な効果）

GO systems and disclosure **do not aim to achieve additionality.**
GOs to encourage penetration of renewable energy ? (Direct effect / Indirect effect)

2. 「グリーンウォッシュ」との批判も

⇒実際の電源構成とはリンクしない点をどう捉えるか

Greenwashing is controversial: **GO systems create a market delinked from the “physical trading” of electricity.** Goodenergy calls on Ofgem to scrap the REGOs.



(出典 : Good energyより作成)

まとめ - Summary -

- FITによる再エネ、特に太陽光の大量導入実績（2012年～現在）
Rapid deployment of renewable energy under the FIT scheme
- メガソーラーポテンシャルの限界（現在～2030年目標に向け）
Land eligibility constraints of utility-scale solar energy in Japan
- FIT賦課金負担の抑制・コストダウンを実現し、再エネ拡大へ
To minimize social burden under the FIT scheme and to reduce system costs
- RE100企業の再エネ調達方法：RE証書購入からPPAへ
Evolution of Sourcing methods used by RE100 members: from RE certificates to PPA
- 論点提起：RE証書は再エネ拡大に寄与するか
A hot topic: RE certificate to encourage penetration of renewable energy or not (Direct effect/Indirect effect)