Global Energy Policy Research | GEPR

GEPR??
????http://agorajp.com/??
???

??????????????????

?? ?? · Wednesday, July 1st, 2026

hrui/iStock

??????????????????????????????????CO2??????????????????????CO2????????????????????????????
??????????????CO2??

??????????????????????????????CO2??
??

項目	主計算の値
土地利用密度	2.5ha/MW（=0.40MW/ha）
設備利用率	18.3%
過積載率	130%
メガソーラーの発電コスト	10.9 円/kWh
系統電力の排出係数	0.250kg-CO2/kWh

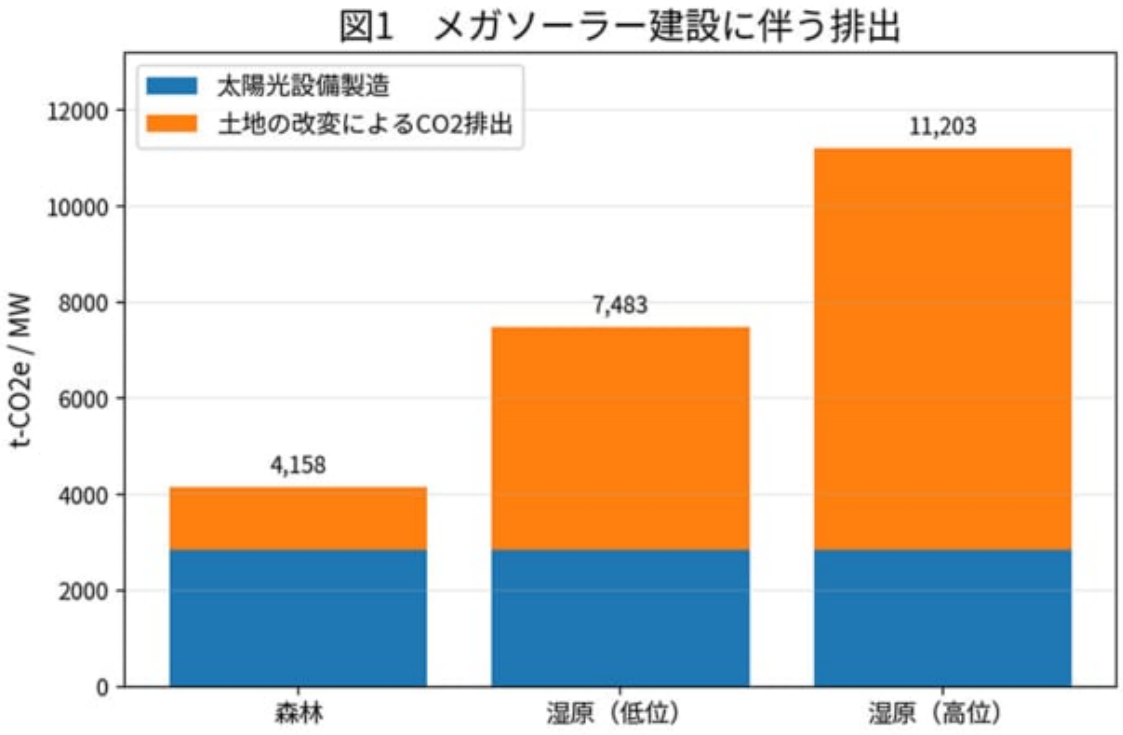
?1???????????

??????1?????????????????????2.5ha/MW?????1ha???0.40MW??????????????????18.3%??????130%??

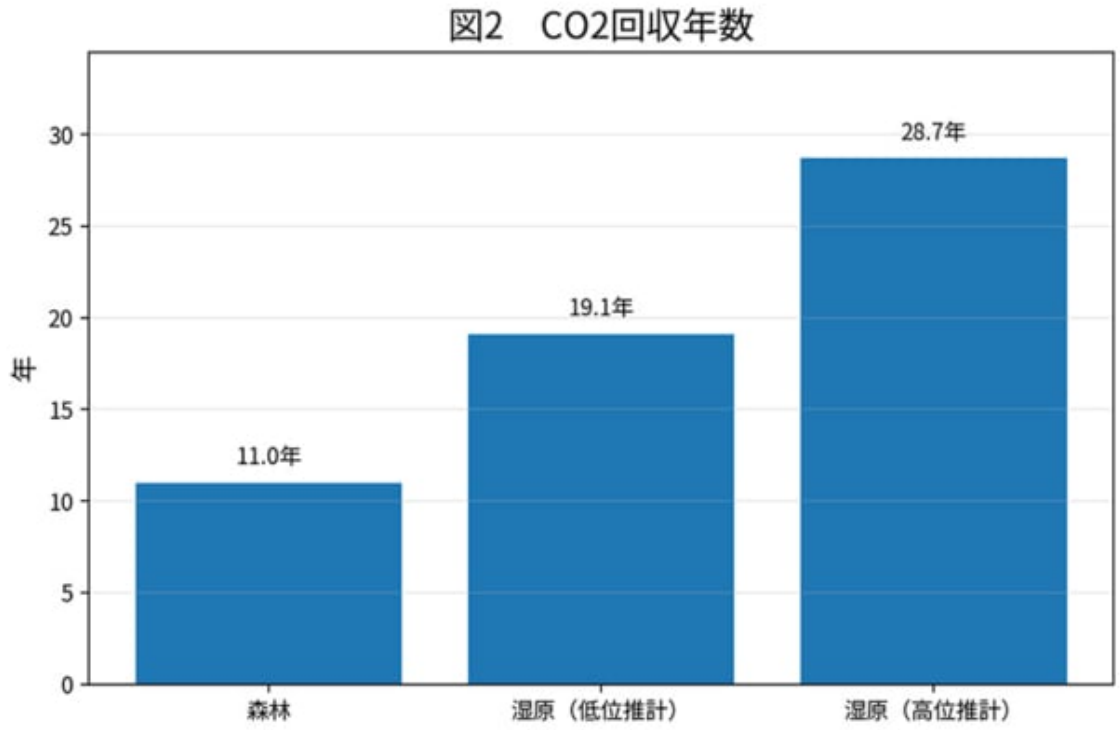
??CO2?????????????????????1MW???2,845??CO2??

??1,313??CO2????????????????????????????4,158??CO2????

??1MW???4,638?8,358??CO2????????????????????????????????7,483?1?1,203??CO2????



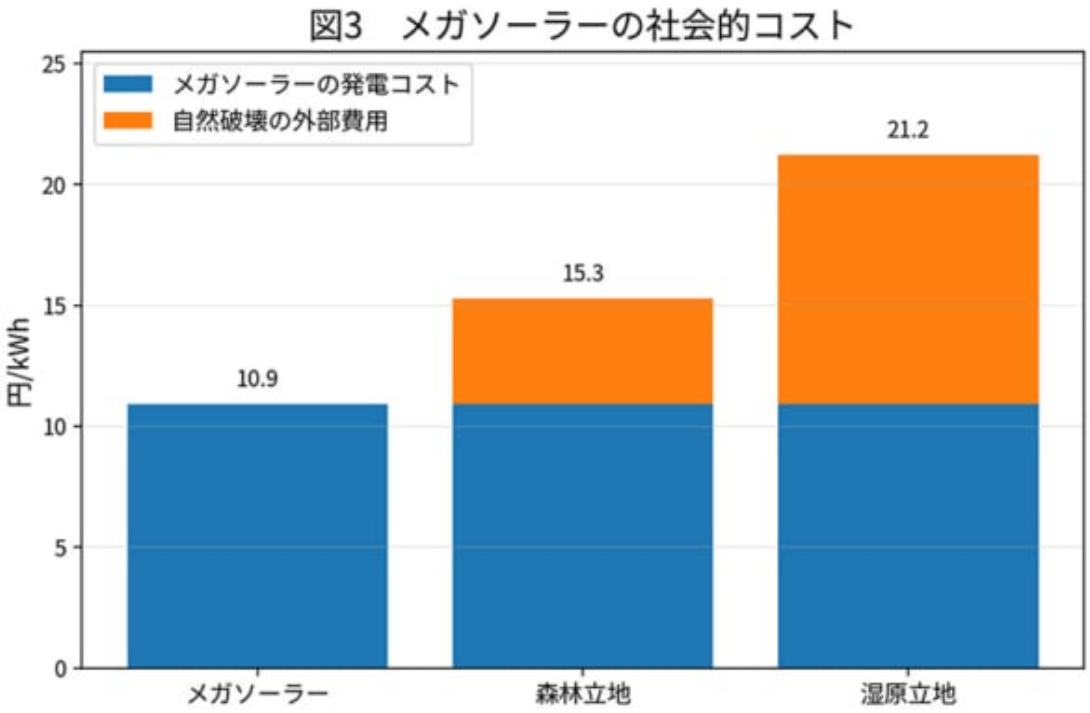
??????????????????????????CO2????????????????????????CO2?????????????2????????????2030??????????????????11??????19?29??????



??????????????????????????????????280.8??/ha/????????ha?????????????????????4.38?/kWh???
??????????????????????????????661.8??/ha/???????????ha???????????????????10.32?/kWh????

?????????????10.9?/kWh??????????????????????????????????15.3?/kWh???????21.2?/kWh????

??4?????????????????



??CO2??
?????????

??????????????????????????????CO2??
????????????????

???????

1. ?????2026?????????????????????? CIGS Working Paper Series No. 26-006J???2026?5?29????2026?6?29??
2. ?????2026?????????????????????? CIGS Working Paper Series No. 26-009J???2026?6?23????2026?6?29??
3. ?????2026????????????????????????CO2??? CIGS Working Paper Series No. 26-0010J???2026?6?15????2026?6?29??
4. ?????2026????????????????????????CO2??? CIGS Working Paper Series No. 26-0011J???2026?6?15????2026?6?29??

?

??????????????????

Posted in ???????????, ???, ????? | No Comments »

??????????????????????

??? ?? · Monday, June 29th, 2026

??????????????????????????????2026?4?9??????????????“?????????”?2025?4?28????????????????????
??

A big fat energy zero

https://www.netzerowatch.com/all-news/spanish-blackout-transcripts

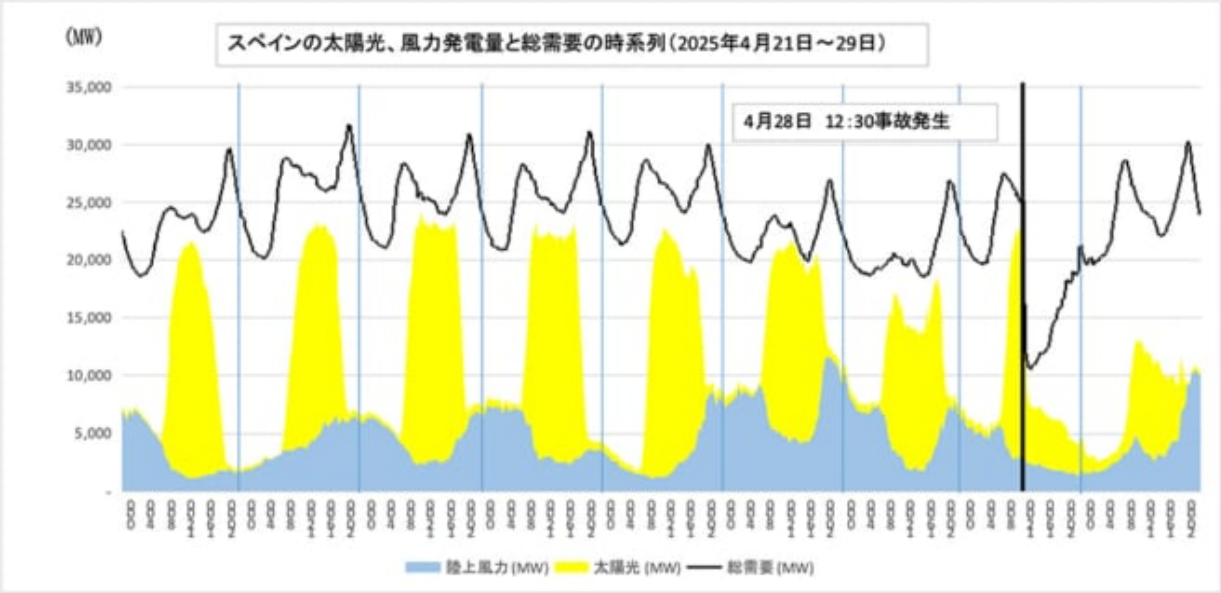
??

??????????????

2025?4?28??????????????????1??

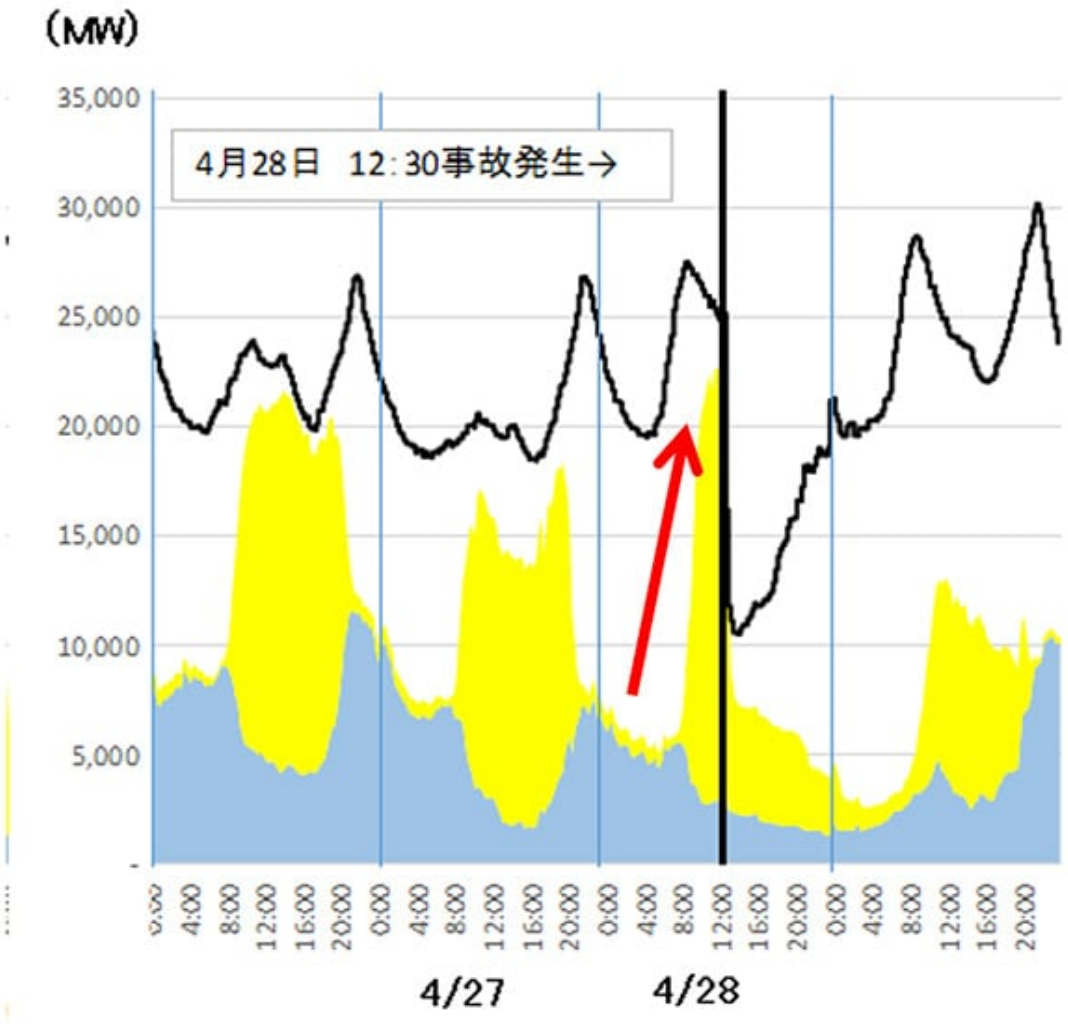
- **????????????????????????????**
- **??????????????????????**
- **??**

??????????????????1??????????????????1??


(MW)
スペインの太陽光、風力発電量と総需要の時系列（2025年4月21日～29日）
4月28日 12:30事故発生
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
陸上風力 (MW)
太陽光 (MW)
総需要 (MW)

?1????????????????????????????

????????????????????????????



?2??1?4/28????????????????????????

?2???1????????????????????4?28??????????????4?28??
??

??
????????????????????????????????

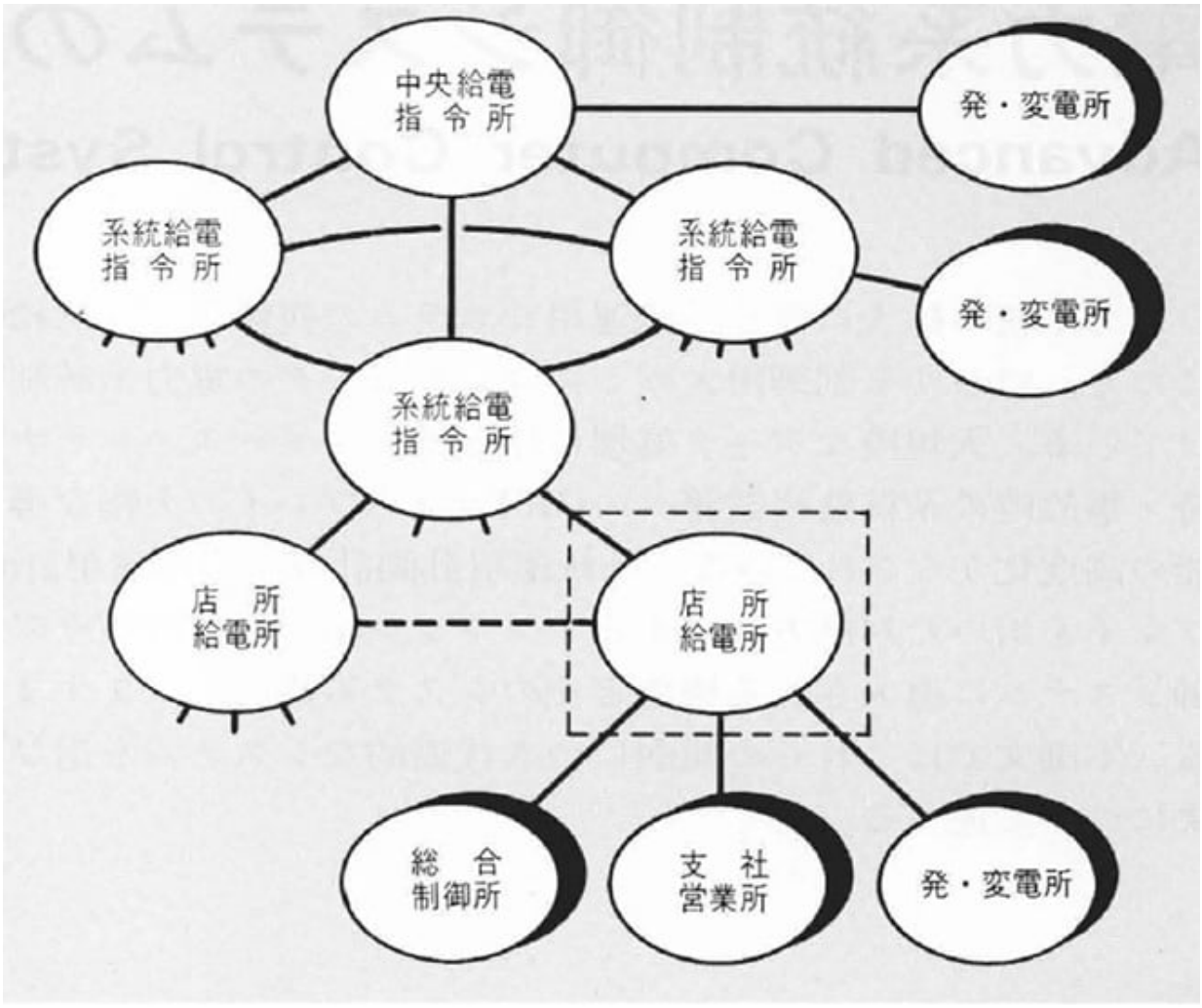
??????????????????

??

?3???PG???????
??PG web?????

?3????PG??
??

??1?????????????????????????


中央給電
指令所
発・変電所
系統給電
指令所
系統給電
指令所
発・変電所
系統給電
指令所
店所
給電所
店所
給電所
総合
制御所
支社
営業所
発・変電所

?4????????????
1982????????

?4????????????

?1??3??????1??????

??

????????????????????????????REE??2??

??

??

??

??1??

????????

????????????????????????????????????2025?1?31??????3???????????[22]?Endesa????REE????????????????????????????????

?2??

????????????????????????????1,000MW????????????????????????????????????REE??

??

??**????????????????????????????????????**????????

????????????

???????????3????4?7??REE??

??

??……??REE????????????????????????????????????

????????????????????

??

??

??

??????????????

lixu/iStock

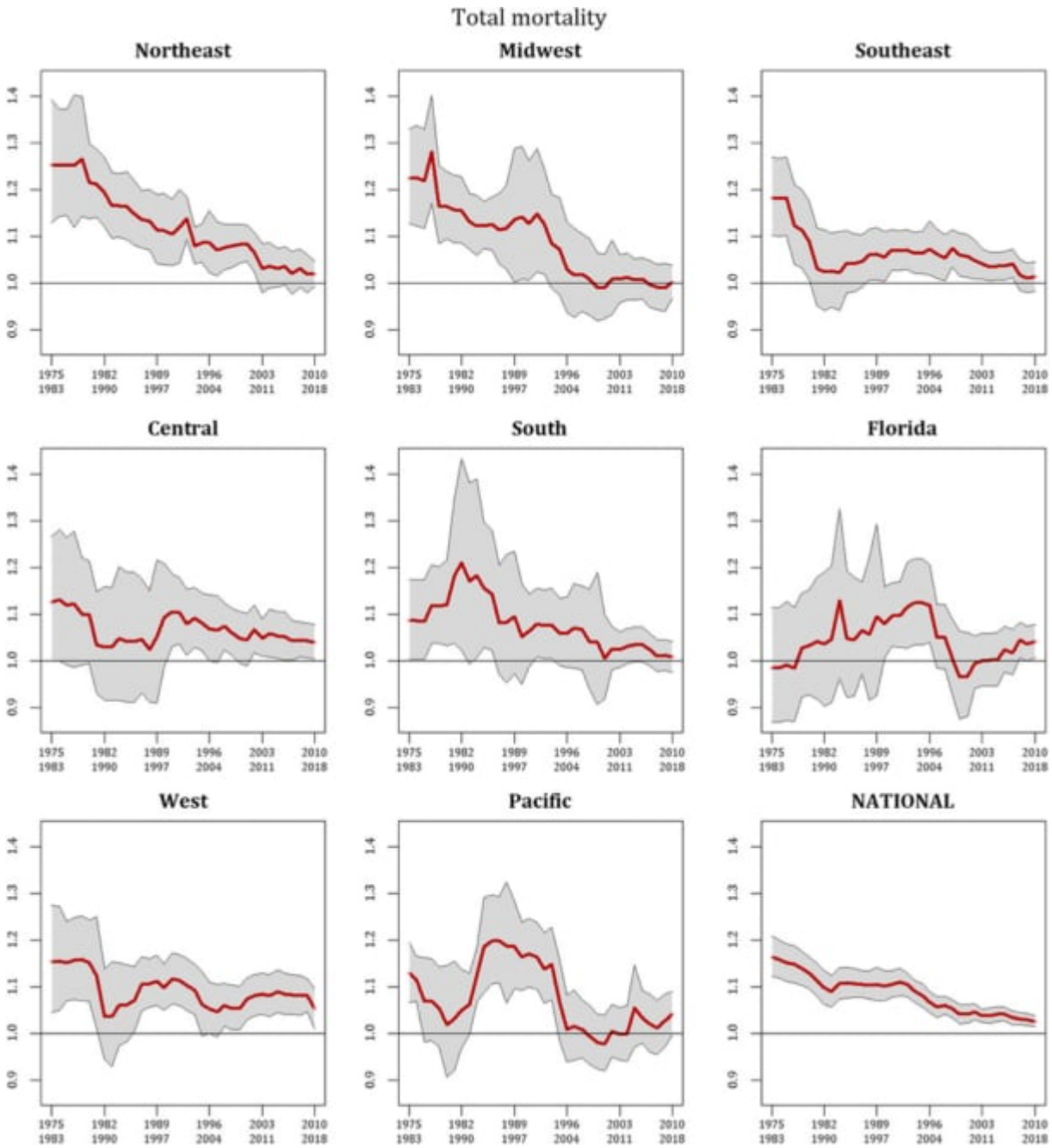
??

??????????????????????????2024?5?9??????????????97,578???2008????????????????????????????
????2024????????????2,160??????????65????1,835???????[?1???2?]?

??
??
??????????????????????

??????????????????2021??
??????????????[?3?]?

??
????????????????????????????1?[?4??5?]?



?1????????????????????????????????????
???Sheridan et al. 2021; Pielke Jr. 2023 ????

?1??????????????????????????????1.0????????????????????????????1.3????????????????????3?????
???????????1970????????????????????????2010????????????????????????????????

????Sheridan et al. 2021 ??1975?2018????107??????????????10????????????????????[?6?]?

??????????????????????????????????????Barreca et al. 2016 ??20????????????????????????????????80°F???27????????????????75????????????????1960????????????

??[???]?

??100????1.38???????????????2025???1898????

????????????????????????????[?8?]?

??????????2023?????1951?2020??????????????????1?????????????????????????????5??1??10??1?????
??1950????1980??????

??????????????V?????????????????????????????????[?9?]?

????????????????????????????Sera et al. 2020
??????????????????311????????????????????????????

????????????????????????3.57???1.10??20?
??

???[?10?]?

????????????????????Vicedo-Cabrera et al. 2018
??1985?2012??10??305??

??[?11?]?

??
??

??

??

??2025?3????????????????

?????100?????284.3??????????1????2.8??????????????????[?12?]?

??

??1970????????????????????????????
??

??????????????????????????????????????

?????????

?1???????6??5??9??????????????????2024?10?29??
https://www.fdma.go.jp/disaster/heatstroke/items/r6/heatstroke_nenpou_r6.pdf
?2???????????5????????????????????????????19????6????
?3?Fujibe, F. and Matsumoto, J. (2021). “Estimation of Excess Deaths during Hot Summers in Japan.” SOLA, 17, 220–223. DOI: 10.2151/sola.2021-038.
?4?Roger Pielke Jr. (2023). “Public Health and Climate Change.” The Honest Broker, April 24, 2023.
?5?Roger Pielke Jr. “Europe’s Deadly Aversion to Air Conditioning.” The Honest Broker.
?6?Sheridan, S. C., Dixon, P. G., Kalkstein, A. J., & Allen, M. J. (2021). “Recent Trends in Heat-Related Mortality in the United States: An Update Through 2018.” Weather, Climate, and Society, 13(1), 95–106. DOI: 10.1175/WCAS-D-20-0083.1.
??7?Barreca, A., Clay, K., Deschênes, O., Greenstone, M., & Shapiro, J. S. (2016). “Adapting to Climate Change: The Remarkable Decline in the U.S. Temperature-Mortality Relationship over the Twentieth Century.” Journal of Political Economy, 124(1), 105–159. DOI: 10.1086/684582.
?8???????????????
?9?Fujibe, F. and Matsumoto, J. (2023). “Long-Term Change in Heat-Related Excess Mortality in Japan.”

Geographical Review of Japan Series B, 96(2), 41–49. DOI: 10.4157/geogrevjapanb.96.41.
?10?Sera, F., Hashizume, M., Honda, Y., et al. (2020). “Air Conditioning and Heat-related Mortality: A Multi-country Longitudinal Study.” Epidemiology, 31(6), 779–787. DOI: 10.1097/EDE.0000000000001241.
?11?Vicedo-Cabrera, A. M., Sera, F., Guo, Y., et al. (2018). “A Multi-country Analysis on Potential Adaptive Mechanisms to Cold and Heat in a Changing Climate.” Environment International, 111, 239–246. DOI: 10.1016/j.envint.2017.11.006.
?12????????????????????????7?2025??3????????????

?

?????????????????????

Posted in ???, ????? | No Comments »

G7??????????????????????????????

?? ? · Saturday, June 27th, 2026

????HP??

23????????

6?17???52?G7???????????????

??????????????????2003?????????G8????????????????

????????

????????????

??

??
?EV??

G7??

Posted in ???????????, ??? | No Comments »

ESG??????SpaceX???????????IPO????

?? ?? · Thursday, June 25th, 2026

francescoch/IStock

SpaceX?????????????????

2026?6?11??????????????MSCI????????SpaceX????ESG???????CCC????????????????????????
?10????1???????????3.2??MSCI???????????ESG????????????????????????????

??????2022?????????????????????MSCI??
????????????????????????????????

??????????????????SpaceX??????????????6?12??750?????11?????????????IPO???????????19%??
????????????????????????2.4????????ESG????????????????????????????

??????????X????????????????????????????????????ESG??????????2022??????S&P500 ESG???????????????ESG????????????????????????????

4???????????

??????????????????????????????4???2022?9?????GEPR???21????????????ESG?????????????????? ?????

????????ESG????????????????????????????ESG??????????SDGs???????????????????????????? ??????????????????????

????????????????????????????????????8?16????21???????SEC???ESG???????????????8?23???? ????????????????????????ESG?????????8?24??

????????????????????ESG??? ????????????????????????????????????

??????????????????????21??

??2??????10???ESG?????????????????????????????

NZBA?????119???????19????????????????????????UBS?????????????1860??????????ESG?????? ????????????????????????JP??

?????????

????4??????????????????

???????2025?1????????????????????????????ESG????????????????????????????????SEC????????? ?????????2022??

???SpaceX????????????????????????ESG??????????????????750????????????????????????????? ???

????????????????????????ESG??ESG?????????????? ??????????????????SpaceX??????????????

ESG????????

SpaceX??????ESG?????????????????????

MSCI?SpaceX?????CCC??Starlink???????? ????????3????????????????????????????????????

????????????????????100??1????????????????????????????????ESG??????????????Starlink?????? ??

2 0 2 2 ? S & P 5 0 0 ESG????????????????????ESG??

????????——??????

4??

GPIF?ESG???????????GX??
??????ESG???????????????

ESG????????????????????????????????????4?????????????????????????NZBA????????????????
???????????ESG??????????????????

SpaceX????????????????????????????????????ESG?????????????????????

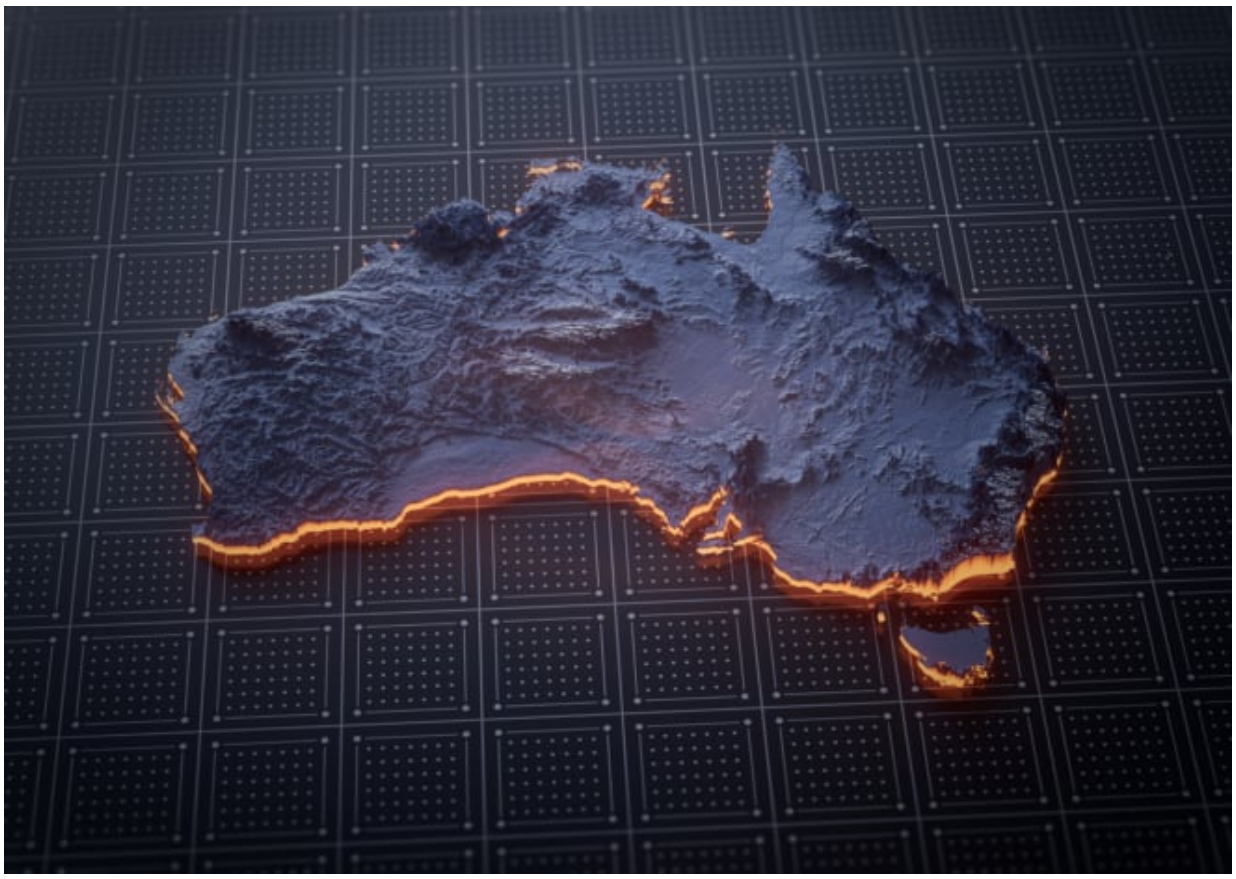
????????????ESG??
????????????????????????????ESG????????????????????????????????????

4????????????????????????????????????

Posted in ???, ????, ????? | No Comments »

??????????????????????????????

?? ?? · Wednesday, June 24th, 2026



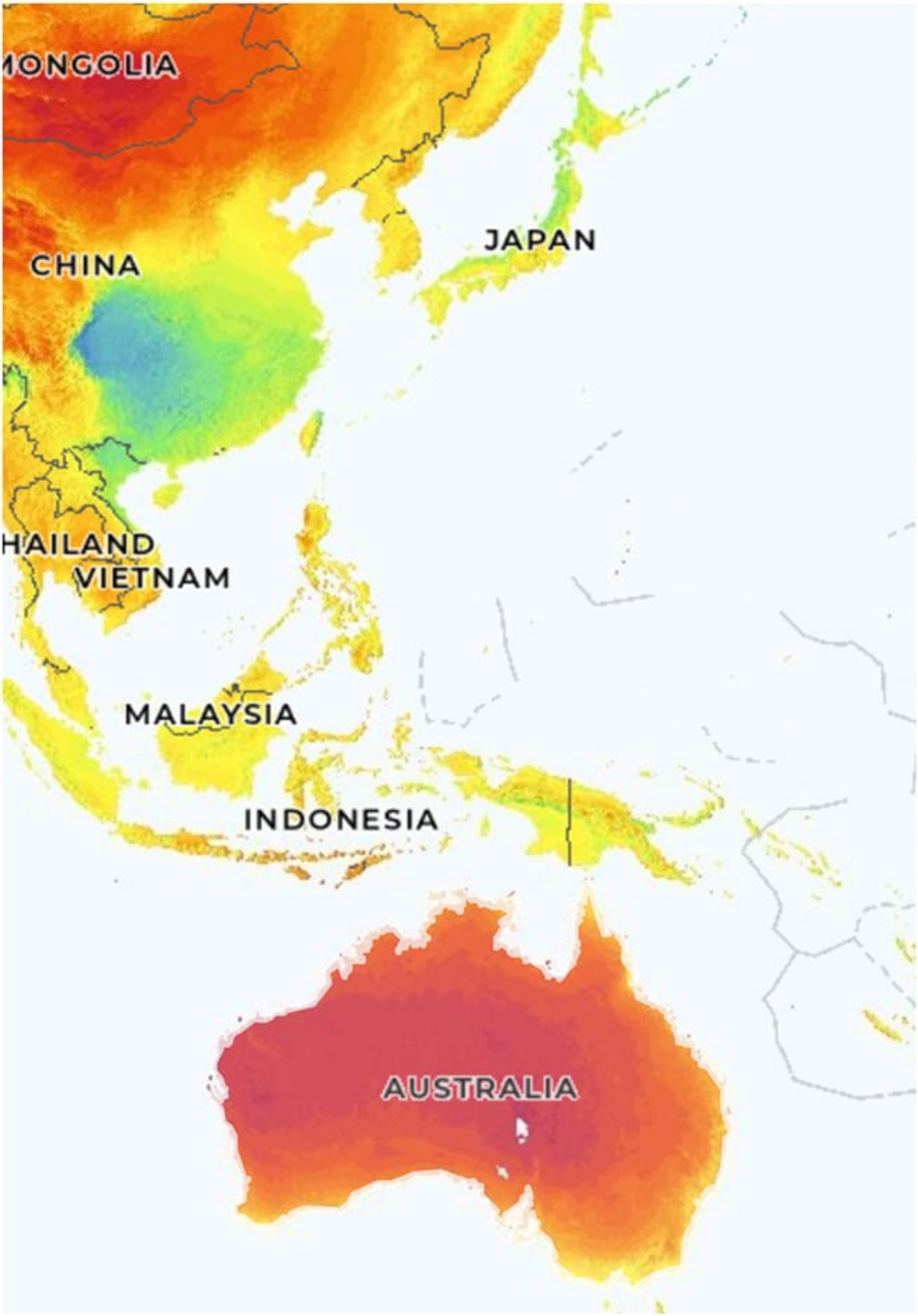
Hammad Khan/iStock

??7?????????????2040?????????????2013???73%??????
?????????40?50?????20????30?40??????????????????????????????

??????????????????????????

??????????????????????????????????????Global Solar Atlas??????????????????????????????1kW??3.60?5.32kWh/kWp???????????2.65?4.07kWh/kWp???????1??

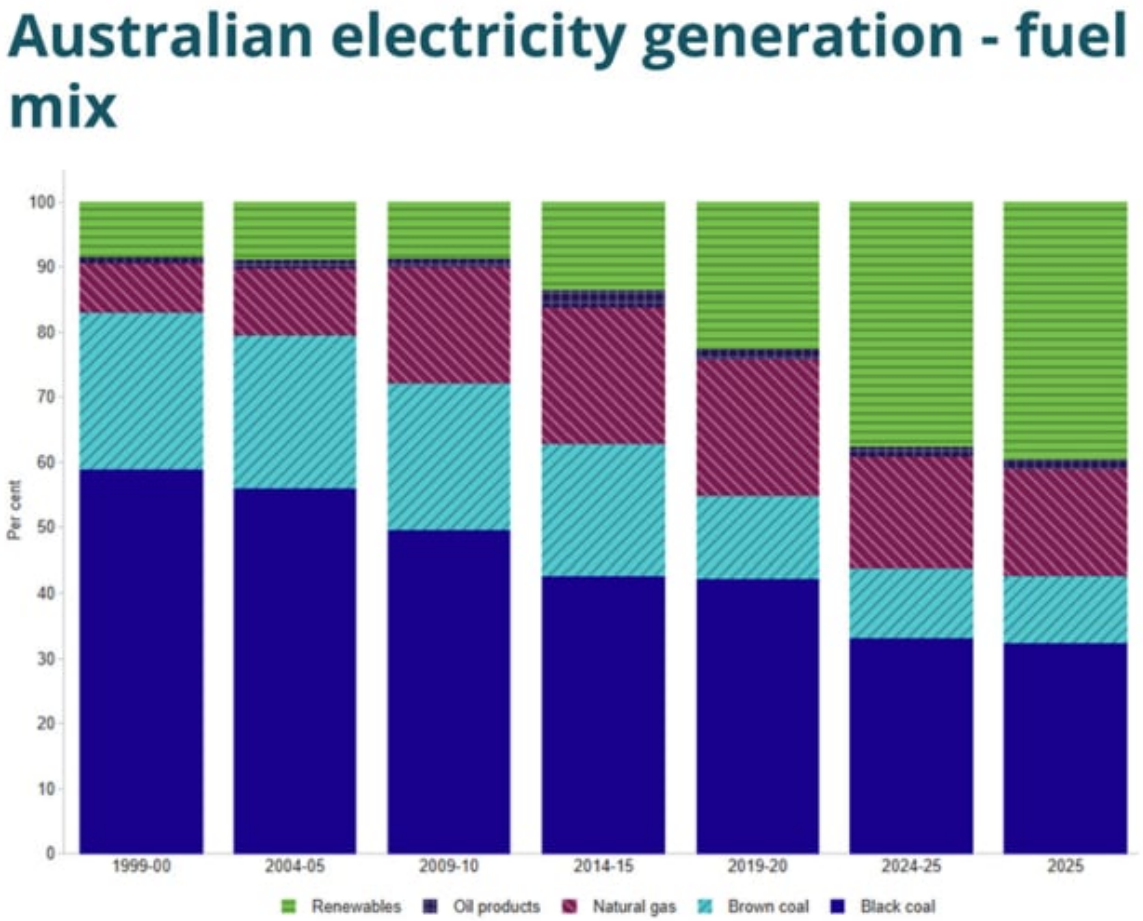
??



?1???????globalsolaratlas.info????????

??????????????

??????????????????????1999-2000???????black coal?59.0?????brown coal?23.9??????????82.9????????????8.5?????????????2025???????42.7???????????39.5????????2??



The figure shows Australian electricity generation fuel mix in shares from 1999-2000 to 2024-25 and calendar year 2025. Fossil fuels contributed 60.5% of total electricity generation in 2025, including coal (42.7%), gas (16.2%) and oil (1.7%). Coal's share of electricity generation continued its long-term decline while the share of gas-fired generation was lower due to increased generation from renewables. Renewables contributed 39.5% of total electricity generation in 2025.

??????????????????
?????????

??????????????????

??????????????????ACCC??????????????????NEM??????????????????????????????2007-08??10.7????/kWh???2018-19???17.2????/kWh?????????2020-21???15.1????/kWh????????????2007-08??????????

??	?????????
2007-08	10.7????/kWh
2018-19	17.2????/kWh
2020-21	15.1????/kWh

????????????????????????????????????Glencore?2025??Mount

Isa?????Townsville?????????????????????????????????2??
??????????????6???????????3???????????????

????????????

??
????????????

??????????????????AEMO??2024?????????????????????????????NEM????49GW?646GWh??????
???15GW???????????????1GW?100?????????????????????????

??
??????????????????AEMO?2050?????1?km???

??
?????????AEMO???

??24??
365??

????????????

???? ? ??????

?????

?????

???? ? ?????? ? ??? ? ??? ? ????

?????

??

???????????40?50??????????30?40???????????????

??

??

??

?

?????????????????????

Posted in ???????????, ????, ????? | No Comments »

S?P?ESG??????????

?? ?? · Wednesday, June 24th, 2026

?????23?????????3??????????ESG??????????????????????????????S&P????????ESG????????????????

ESG????????????????? | ??? ??????????

> ????
> ??????????????????S&P?ESG?????????28????????33??????41??CPC?46????????
> ?2026?6?7??????CPC??
> ??????????????

??????S&P????????ESG????????????????????????????????????ESG????????????????????????

??CPC???ESG??????????????????23????????????????

??????????????UFLPA??????????????????????????????????????70??

??????????????????????????????????(?????) | ?????? ? ????

> ??8?9????????????????
> ??3?????????????????????

LONGi Green Energy Technology Co., Ltd. ESG Score

The S&P Global ESG Score cannot be compared across industries. It measures a company's sustainability performance relative to peers within the same industry classification. Learn mor

Company	Industry	CSA Score	ESG Score	Score Under Review	Last Updated
LONGi Green Energy Technology Co., Ltd.	SEM Semiconductors & Semiconductor Equipment	72	72	NO	June 12, 2026

Jinko Solar Co., Ltd. ESG Score

The S&P Global ESG Score cannot be compared across industries. It measures a company's sustainability performance relative to peers within the same industry classification. Learn more

Company	Industry	CSA Score	ESG Score	Score Under Review	Last Updated
Jinko Solar Co., Ltd.	SEM Semiconductors & Semiconductor Equipment	78	78	NO	October 01, 2025

Trina Solar Co., Ltd. ESG Score

The S&P Global ESG Score cannot be compared across industries. It measures a company's sustainability performance relative to peers within the same industry classification. Learn more

Company	Industry	CSA Score	ESG Score	Score Under Review	Last Updated
Trina Solar Co., Ltd.	SEM Semiconductors & Semiconductor Equipment	64	64	NO	January 09, 2026

????72?
????78?
????64?

?????3???????????????Hoshine?Daqo??UFLPA?????????????????????????????????

?????????????????????? | ??????????????

> ??????????24????????????????????????????5????????????????????????????????
>
> ?????????
>
> Hoshine Silicon Industry?Shanshan?
> Xinjiang Daqo New Energy

> Xinjiang East Hope Nonferrous Metals
> Xinjiang GCL New Energy Material Technology
> XPCC?Xinjiang Production and Construction Corps?
>
> ??????Xinjiang???????????????????

UFLPA Entity List | Homeland Security

Hoshine Silicon Industry Co., Ltd. ESG Score

The S&P Global ESG Score cannot be compared across industries. It measures a company's sustainability performance relative to peers within the same industry classification. Learn mor

Company	Industry	CSA Score	ESG Score	Score Under Review	Last Updated
Hoshine Silicon Industry Co., Ltd.	CHM Chemicals	19	19	NO	June 12, 2026

Xinjiang Daqo New Energy Co.,Ltd. ESG Score

The S&P Global ESG Score cannot be compared across industries. It measures a company's sustainability performance relative to peers within the same industry classification. Learn more

Company	Industry	CSA Score	ESG Score	Score Under Review	Last Updated
Xinjiang Daqo New Energy Co.,Ltd.	SEM Semiconductors & Semiconductor Equipment	24	24	NO	June 15, 2026

GCL Energy Technology Co.,Ltd. ESG Score

The S&P Global ESG Score cannot be compared across industries. It measures a company's sustainability performance relative to peers within the same industry classification. Learn more

Company	Industry	CSA Score	ESG Score	Score Under Review	Last Updated
GCL Energy Technology Co.,Ltd.	ELC Electric Utilities	21	25	NO	February 11, 2026

??????19?
????24?
GCL?25?

??

??????????????????????????????44??????????????70??
23??????????????????????

First Solar, Inc. ESG Score

The S&P Global ESG Score cannot be compared across industries. It measures a company's sustainability performance relative to peers within the same industry classification. Learn more

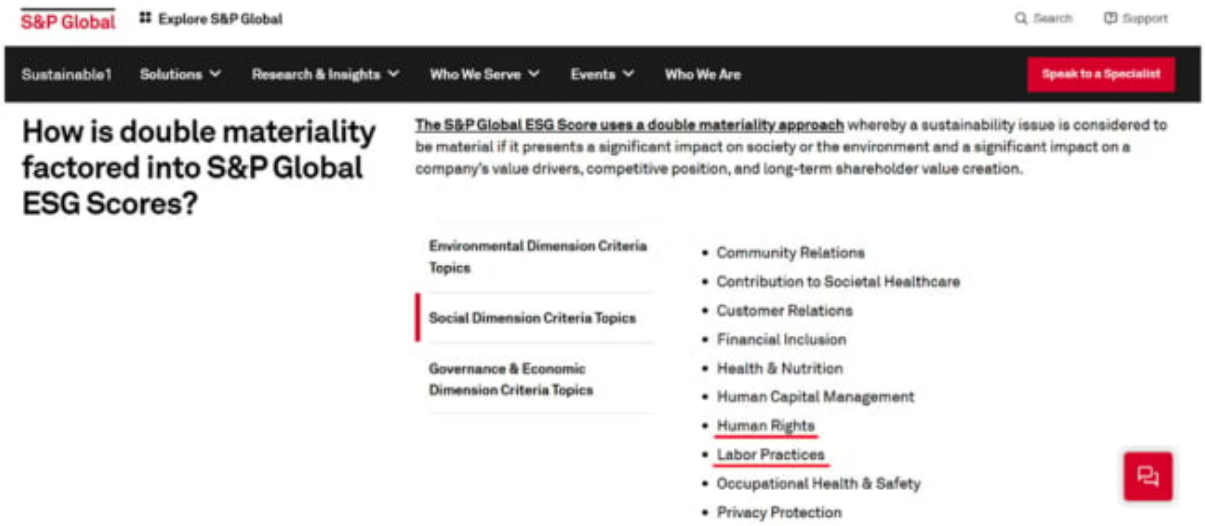
Company	Industry	CSA Score	ESG Score	Score Under Review	Last Updated
First Solar, Inc.	SEM Semiconductors & Semiconductor Equipment	38	44	NO	September 01, 2025

??????????44?

??????????????????????GAFAM????60???????

????52?
????55?
???46?
???????46?
?????54?
????47?
?????51?
?????60?
???33?
JFE?46?
Alphabet?32?
Apple?33?
Meta Platforms?24?
Amazon?22?
Microsoft?51?

S&P????????????????????????ESG?S??
??



???5???????????ESG??????????????????

- **????????????????ESG????? | ??? ??????????**
- **ESG??????????????????????? | ??? ??????????**
- **ESG?????????????CO2???? | ??? ??????????**
- **ESG?????????????STOPPING ESG???? | ??? ??????????**
- **ESG??????????? | ?? | ??????????????**

??????????????????????????????????????S&P??????ESG????????ESG??????????????????????????
???????????

?

Posted in ???, ????, ????? | No Comments »

??????????????????????????????????

?? ?? · Monday, June 22nd, 2026

koto_feja/iStock

??

??
??

??

??

???1?????????????Q?????????????Q??

Q?????1.0??????????????????????????????1.0??Q?????1.0??1.0????????

????????

??????1??

??

??——??

?????????????

??

??

??1??

??

??????????????????

??

???????2?????????????????????

1?????????????????1??

??

??

??????????????????

??1000??6000??
??

??

??
??

??
??

??

????????????????????????????

??

??
??

??
????????????????????????????????

????????????????????????????

??????????????????

??
??

??1000???1??
????????????????????

??1000???1????????

??

??
??

??

??????????????????????????????

??Q?????1.0????????????
??

??????????????70????????????????????????????????30????????????????????????????????30????????
????

??????????????70??

??

??——????????????????????????????????

Posted in ???, ????????? | No Comments »

??????????????????????????????????????

?? ?? · Monday, June 22nd, 2026

rudall30/iStock

??——????????????????????????????

????????????2020????2022??

??

??

??

????????3????UNGA Third Committee???????????UNHRC?????????????????????????????????2020??2021??2???2022??2023??2024??2025??7????????????????????????????????

2020?????????????????
2021???????????
2021???????????
2022???????????
2023???????????
2024??????????????????
2025??????????????????

????????????

発表日	参加国数	代表国	主な内容
2020 年 10 月 6 日	39 か国	ドイツ	・新疆ウイグル自治区での大規模拘禁への懸念 ・香港国家安全維持法による自由の制限への懸念 ・チベットへの自由なアクセス要求 ・国連人権高等弁務官の新疆訪問を要求
2021 年 6 月 22 日	44 か国	カナダ	・新疆での恣意的拘禁への懸念 ・監視社会化と宗教弾圧への懸念 ・香港における民主的自由の後退を批判 ・新疆への意味ある国際調査を要求
2021 年 10 月 21 日	43 か国	フランス	・新疆での大規模拘禁継続への懸念 ・香港国家安全維持法の運用拡大を批判 ・人権擁護者・ジャーナリストへの弾圧を批判
2022 年 6 月 14 日	47 か国	オランダ	・新疆における強制労働への懸念 ・家族分離や宗教的抑圧への懸念 ・女性への人権侵害や強制不妊の指摘 ・国連人権高等弁務官報告書公表を要求
2023 年 10 月 18 日	50 か国	英国	・新疆での「人道に対する罪の可能性」への言及 ・強制労働と文化的同化政策への懸念 ・中国政府に具体的改善措置を要求
2024 年 10 月 22 日	15 か国	豪州	・新疆・チベット・香港の人権問題を継続提起 ・宗教・文化・言論の自由の制限を批判 ・国際人権義務の履行を要求
2025 年 11 月 21 日	15 か国	共同代表	・新疆での強制労働と恣意的拘禁への懸念 ・チベットにおける宗教・文化弾圧を批判 ・香港の自由と法の支配の後退を批判 ・越境的弾圧（Transnational Repression）への懸念

??????????????????

参加回数	参加国
7回	オーストラリア、日本、リトアニア、英国、米国
6回	アルバニア、カナダ、デンマーク、エストニア、フィンランド、フランス、ドイツ、アイスランド、ラトビア、オランダ、ニュージーランド、ノルウェー、パラオ、スウェーデン
5回	オーストリア、ベルギー、ブルガリア、クロアチア、チェコ、アイルランド、イタリア、リヒテンシュタイン、ルクセンブルク、マーシャル諸島、モナコ、北マケドニア、ポルトガル、サンマリノ、スロバキア、スロベニア、スペイン

7?????????????????????5????????????????????????????????2024??

??

2024????2025??

??6????7??

???2022??????????????UFLPA??

???2024??EU???????????EUFLR???????2027?12??

??

??

????????2022????????????????????????

??

????????????????????????

??????????????????????????????????

??

?

Posted in ???????????, ???, ?? | No Comments »

??????????2????????????????

?? ?? · Friday, June 19th, 2026

TebNad/iStock

??????????????????6?14??????????????????????????????????4??????10?????1.9????????????????????
??

??????????????????

?????????????2??

2025?8?????????????????????1??????????????????2021?????11.99?16.49?/kWh??????????????????3???
??500????????????????????????

??????????????8???????????????????????????????????????GEPR??????

??2????????????????????
??????????

??????????????????

????????????????????????????????????

??????????????????2050??

??
???????????IPCC?WEF???????????????????????????????????????

??2050??????????????
??

??????????????

??????????????????????

??2023??AR5??5??????????£44/MWh??????????????????
??????????????????????????????2025????????????????????????????????

? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? W i n d
Drought??????????2021??????????????????60????????????????????????????????2020?9????????18%??
???????????2021?9??????2%???????

????????????????????????????????????2??????????????????????COP26??????????????????????????????
???????????2024??30%?????

??

??????4??????????????????

??????????????????????4????????????????????????**AR6??6????????????66%??????**??????????????
??????????????????????

??Ossian?3.6GW??????????????
??

??

????????

??BP??

???????4????????????????????????CfD????????????????????????????????????

AR5?2023??????£44/MWh????????????AR6?2024????66%??????£73/MWh??????????????????
??——?????????
????????????????????????????????????

??G7????????????47?/kWh?????CfD????????????????????????
??

??ESG????????????????????????????????
??????????Ossian???????????FID??????????1.9????????10????????????????????

0.006?????????????

???????????????

??????????????????????IPCC?????????????????????????2050??CO????????????????????????0.006?
??

0.006??????GX????10??150????????????????????2??

??

??????????????

????????????????????????????????????JBIC????????????????????????????????????2?7,564???GX???????
??CfD????????????????????????GX
??????????

????????????????????????????????2????????????????????????????????GX????????????????????????????
??

??

????

?2050??

??
??????????

????????????????????????????????????

Posted in ???????????, ???, ????? | No Comments »

????ESG??????????????????????????????

?? ?? · Thursday, June 18th, 2026

RapidEye/iStock

??2026?4?22??????????????????????????????23?????????????????????S&P????????3?????????ESG????????????????????????????????

??????????????????????????ESG????????? |??????????????????

??????
?ESG????????????
?ESG??????????????????

??????????3????????????????????????

??????????????45??8?????????????????????ESG???

?????ESG?????????????????ESG??

?????????

1??

2??
????????

a. ??

??????????????

b. ??S&P??IEA??????????????????2050???????????2040????????????????????????

c. ??S&P??????????????????????EV??????????????????????????????

d. S&P?S&P?????????ESG??ESG??????????????????????????????

3??

1. ?????ESG??
2. ????????ESG???
3. S&P????????S&P??

4?S&P?????????????????ESG??ESG??ESG?????????????????

5????????15???NRSRO??NRSRO??????????????????E S G ??????????????????U N PRI?????????????????????????????NZFSPA??

6?????E S G ??U N PRI?????ESG?????????????????????????ESG??

7????????S&P?????NZFSPA??2050??

8?S&P?S&P??

9??

10????UN PRI????????????????????????????????????

11????????S&P????NZFSPA????????????????????????????????????

1 2 ? ? ? ? U N PRI????????NZFSPA??

13??

1. ???UN PRI????ESG????????????????????????????????????
2. ???????S&P????NZFSPA??

????????

3. ??
4. S&P?S&P??
5. ??????????????????S&P???ESG??
   ?????????????????????????ESG??????????????????????
6. ???ESG?????????????????????????????ESG????????????????????????????????????
   ?

14??????S&P?ESG??
??????

15??
??????????????????????

16??????????????????ESG??

17????????2024??Nature???????Kotz?Levermann?Wenz????????????????????????????
??
??????????????????

18??
??
?????????????

1. ??
2. ??IEA????????????????????????????
   2050??????????????????
3. S&P??????S&P??
4. S&P?S&P??

19??

1. ?????ESG??
2. ????????ESG????????????????????????????????????
3. S&P??

20??IEA?
?????????????2050?????????????2040?????????????????????????

21?S&P?S&P??S&P???
????????????????????????????????????S&P????????????????????????????????????
??????????????????????

22?S&P?S&P??
??????????????????

23?????/S&P??
??

24??

> ??????????????
>
> 25???2050?????
> ??
>
> 1. ??
>
>   i.??????????????NRSRO????6??????????????????????
>
> 26????ESG??
> ???????????????EBITDA??
> ??
>
> 27??????????ESG????????????????????????UN
> PRI???????????????ESG????????????????????????????????

??????????S&P??
??

??ESG??

??????ESG??ESG????????
??????????????????

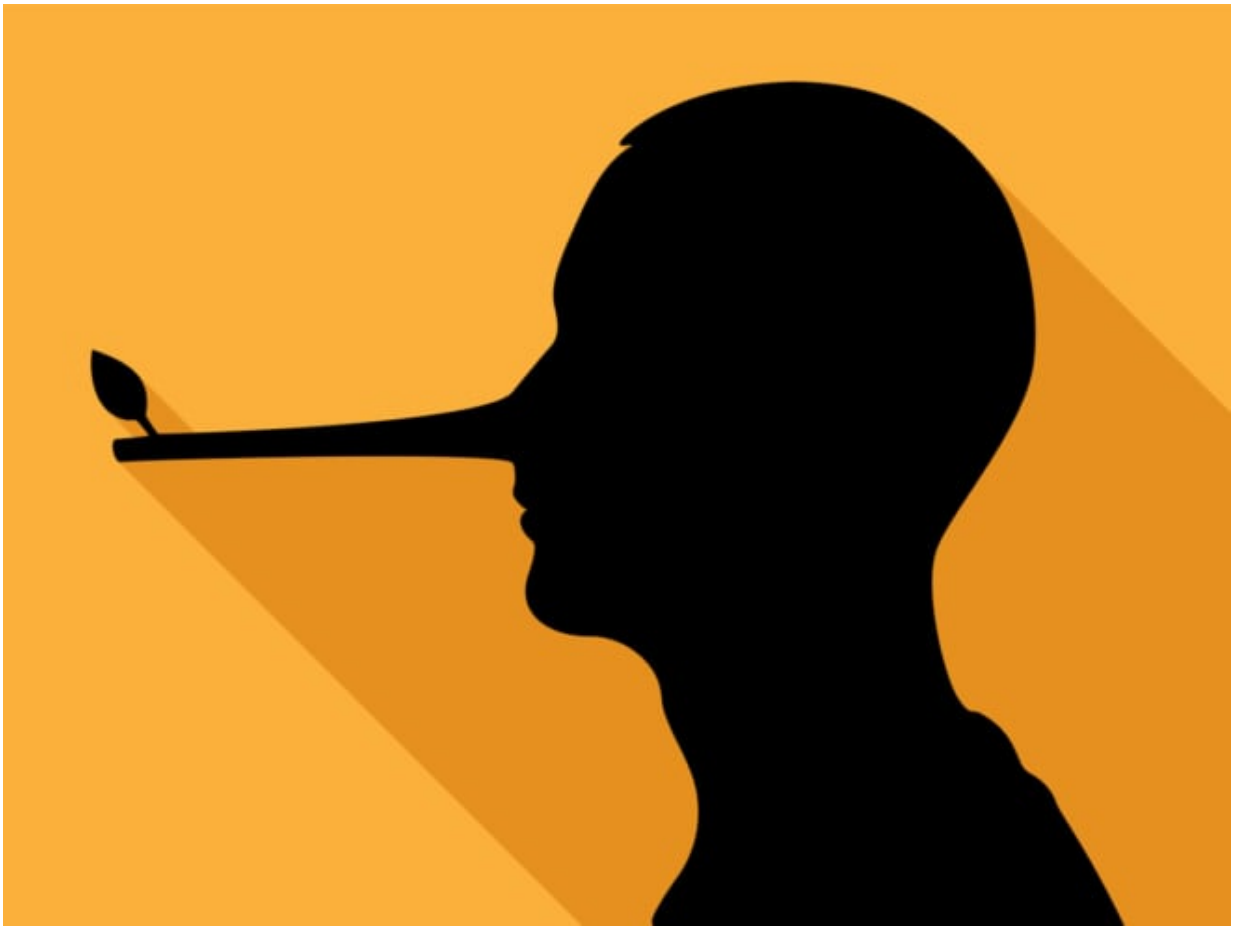
??

?

Posted in ???, ????, ????? | No Comments »

??????????????????????????????

?? ?? · Tuesday, June 16th, 2026



A Mokhtari/iStock

??????????????

??????????????????????????????????CO2??????????????????CO2????

??????????????????????????????????10??20?????????????

??

??

????CO2??????????????????????CO2??????????????????CO2??????????????????????

??

??

??????????????????CO2??

??

1. ???

??	??CO2??	????
?????U.S. Steel	?7,000??9,000???	????????????????????????????
??????????????????	?1.5??2???	??????????????????CO2????
??????????????????	?3.0??3.6???	??CO2?

2. ??????

??	?
??	??????AI?????????????????????9.2GW????NextEra?????????????????????????10GW?????19GW????
????	????????0.435kg-CO2/kWh?
???	??GW × 8.76TWh/GW? × ??? × 0.435Mt-CO2/TWh?

2-1. ????????????

???	??CO2??
60%	?4,400???
80%	?5,900???
90%	?6,600???

??????????????6,000?????????

3. U.S. Steel

??	CO2??	????
??U.S. Steel Scope 1+2	?2,560???/?	2024??Scope 1?2,283????Scope 2?278??????2,561???CO2e?
??????????	?100??600???/???	????????????????????????????????

????????????????????????????????????2,560???/?????

4. ???????

??	?????	??CO2??
JERA Haynesville	0.5?1.0Bcf/?	?1,000??2,000???
???? Aethon	2.1?2.6Bcf/?	?4,200??5,200???
????? ?????	1.2?1.4Bcf/?	?2,400??2,800???
JAPEX DJ Basin	5?boe/???	?500??800???
??	—	?8,000??1.1???

??????????1Bcf/?????????2,000???CO2??????????

5. ????????

??	?
??	Texas GulfLink??????????????????100??????????????????
??????	?0.43??CO2/????
???	100????/? × 365? × 0.43??CO2/????
??CO2??	?1.57???CO2/??
??	????????????????????????????????CO2?

6. ???????

??	??
??????????	??
????????	??
????????	??
?????	??????????????????????????????????????

?

?????????????????????

Posted in ???????????, ??? | No Comments »

ESG??????????????????

?? ?? · Tuesday, June 16th, 2026

gorodenkoff/iStock

??2026?4?22??????????????????????????????23?????????????????????S&P????????3?????????ESG????????????????????????????????????

??????????????????????????ESG????????? |??????????????????

??????ESG??????????????????4??

??????ESG????????????

??????????ESG??ESG???

????????????????????????????????SEC??ESG????????????????????????????????

ESG????????

?????3?????????????PRI?????????????????????????NZFSPA???????????ESG?????????????????????????????NZFSPA??

??

ESG????ESG??????????????????

??????????????????ESG??ESG?????????????????????????????ESG??SEC??????????????????OCR??ESG??????????????????????????????

???????????

????????????????????????????S&P????????????????????????????????Tree Energy Solutions?CEO??LLP?PwC??????????????????

????????ESG??ESG???NZAM??

??

?????????????

?????????

3?????????????????????????????????????PRI?NZFSPA?????????????????ESG?????????????????????????
??????????1?????????????????????????????PRI?NZFSPA?????????????????????????ESG??????????????
??????????????95??

??
??????????????????????2026?2???2,950????????PRI??
?????ESG?????????????????????????????????????

???????UDAP???????

??ESG????????????????????????????????????UDAP?????
??MBS??
???????????ESG???????????????????

?????????????????????????ESG???

????????S&P????????ESG????????UDAP?????????????S&P?ESG????????????????????????????????
??S&P?????????????????????CPC????????????????
??????ESG???

????
??????????????????????S&P?ESG?????????????28???????33??????41??CPC?46?????????2026?6?7?????CPC????????????
??

??

??????????????????ESG??SEC?????????
??
????23??

?????????????

23???????????????????

1. 90????ESG??????????????????????????ESG??????????????????
2. 60??????PRI????????????????????????????????
3. ??????????????ESG???????????????3?5????????????????????????
4. ESG?????????ESG????????????????????????????????
5. ESG??

??????

?

????ESG??????????????????????23??

??

??????

- ??????ESG???????????????? ??
- ESG???????????????????????????????? ??
- 2026??????????? ? 2027???????????????? ??
- Amazon?Apple?GM???????????????????????? ??
- 2026???????????????? ??

?

Posted in ???, ????, ????? | No Comments »

CO????????????????????????

?? ?? · Monday, June 15th, 2026

Narongrit Doungmanee/iStock

????????CO?????

2026?5?26???
??

?????????CO???
??

??????CO???CO?????????????????????????????
??

CO?????????????????

??????????????????CO???

???Ca: ?430ppm?

? ? ?????????????

? ? ??????????????????

?????Ci?

? ? ??????????

? ? ???????

???????

? ? ????????????

????????

????????????????????????1???

$N_1 = ?D_{12} \ dc / dx$
N?????????????????????? [mol/(m² · s)]
D?????2???1?????????????? [m²/s]
dc/dx????? [(mol/m³)/m]

?????CO??????????????????

??????**????????????????**?????????????????????CO???Ca???
CO???????????????Ci?????Ca???????????Ca?Ci?????????????????Ca?????????????????????????

??????CO?????430ppm?????????????????????????1,000?1,500ppm?CO?????????????????????????
????????????430ppm?????????????????????????????????

?????????????????????

????????????CO?????????????????????????????????????CO?????????????????????????????

??????????????????????????????????**??????????????????**????

????CO??????????????????????????????CO??????????????????????????CO????????????????????
??????????????????????

???????????WUE: Water Use Efficiency?——??????????1??????????????——??????CO??????????????????????????????????
?**?????**??????

??????????????CO??
??????????????????????????

??????????????

??????????????????????????NASA??
??

???????????CO??WUE??????????????????????

???????CO??????????????????????????????????CO????????????????????????????????????

????430ppm??????????

CO?????????????????????????

????????????
????Ca??????????????????????Ca?Ci??????????????????CO?????????????????????1,000?1,500ppm??
??????????????????

?????????????
CO??????????????????????????????????WUE??

???430ppm??????????????????????????CO????????????????????????????????????

??????????????????CO??
??????????????????????????

????
??????????????????????2??????????????????????????????????2024?10?31??????????????????????

Posted in ???, ????? | No Comments »

??????ESG???????????

?? ?? · Sunday, June 14th, 2026

??????HP??

??2026?4?22??????????????????????????????????23????????????????????????S&P????????3?????????
?ESG????????????????????????????????????

????????????????????????????ESG????????? |??????????????????

2024????????????????????????????ESG????????????????????????

??????

- ????????????????????????????? | ??? ??????????
- ??23??SBTi?????????????????? | ??? ??????????
- ??11???????????????????? | ??? ??????????
- ??????CDP?SBTi????????????????? | ??? ??????????

?????????GFANZ?NZBA????????????????????????????????SBTi?CDP????????????????????????????
??3????????????????????????

????????3??ESG??
??

????????????ESG????????????????????

> a. **??????????????????**
> b. **????????????????????????????????????**
> c. **??????????????????????**
> d. **ESG??????????**

???4?????????

??????????????????????????

a. **????????ESG??????????????**
b. **??**
c. **??**
d. **????????????????ESG???????????????**

??

a. ????????ESG?????????????

- ??????ESG??
- ??????????????????????18%????????????3????????Climate Action Tracker(CAT)??????????????????????????????
- ??
- ??
- ????????????????????EPA??
- ??

d. ?ESG?????????????

- S&P?2021?????NZAM???????????????1?????????????????????????????????????NZAM???NZBA???????2025?1??????????????????NZIA???
- ??????????????????????????????????S&P?2021???49%??????? ????????????????????????????????15%????? ????????????????
- ????ESG??????????????????????????????????840??????????????????????????????3?????????????????

?????23???

??????????SEC???

?

Posted in ???, ????, ????? | No Comments »

??????????????????????

?? ??? ?? · Friday, June 12th, 2026

Marcus Millo/iStock

RAF??????????????????1??????2??

1960??????????????1970????????????????????????????PFLP????????????????????????????????????
????????????????????????????20????????????????????

??????????RAF???

??1970?????RAF????????2??
??

??

1977?9??
????????????????????????????????????1??????????????????SP???2????????????????????????????
????????????????????????????

????????????????????????????????????T??1?
???????11??
??????

??4????????????????
??GSG-9?
??????????????????????

??3??
??????????????????????RAF????????????????????????????

????????3???????

????????????????????????????????RAF??????????????????2??????????????????1998??RAF??????????????
??????????3??
?????320?????????????5.9????????????????????

?????RAF??3????????????????????3????????????????????????????2024?2????????1????????????67????
????????????????????????????15????????????????????????????????????

??

????????????????????????????????20??
????????????????????????????????Facebook??

????????????????????????????????????20????????1.2kg????????????????????????????????1??????1?????1
?????2????????????????????????????????40??
??

???????????

????????????????????5?28??3??
??
????????????????????

???????????13??????????RAF???
?

??
????????????????????????????

??

?????????????

RAF??
??

??9???????
??????????9??

????????2000??????????????55??????????????2022??
??????????????????

????1??
??

Posted in ???, ?? | No Comments »

CO2?????????????????????????

?? ?? · Friday, June 12th, 2026

nicolas_/iStock

?????????????CO2??????????????????????????????CO2???

CO2??IPCC?5??????????????2??????????????????????0.2???2.0??????????????????

??

??????????????CO2??

?????CO2???????????????????1.93????2024????GDP???1.73??????????????????????

????CO2?????=CO2????????????????????????????????GDP??0.49????????????????????????????????????1.16?????

CO2??????????????????CO2??CO2????????????????????????CO2??????????????????

??

??????CO2????????????????????????????????????1???????????GDP?1.7??2????????????GDP?0.2%??2%????????????????????

CO2??
??????????????????????????

??????????????????????????????????

?

?????????????????????

Posted in ???, ????? | No Comments »

?????????IPCC???????????????

?? ?? · Thursday, June 11th, 2026

2026?5?26???

??

??????2050??????????????????0.006??????????????IPCC?????????CO??????????????TCRE?????

????????????????????????????[??]????IPCC??

??IPCC??

IPCC?????????????????????

???????IPCC????——CO??——??

??

? Coalition??????????????CLINTEL???IPCC????????????????????????

????IPCC??????ECS??CO????????????
????????????????????????????????

???IPCC??

??????????????????????????

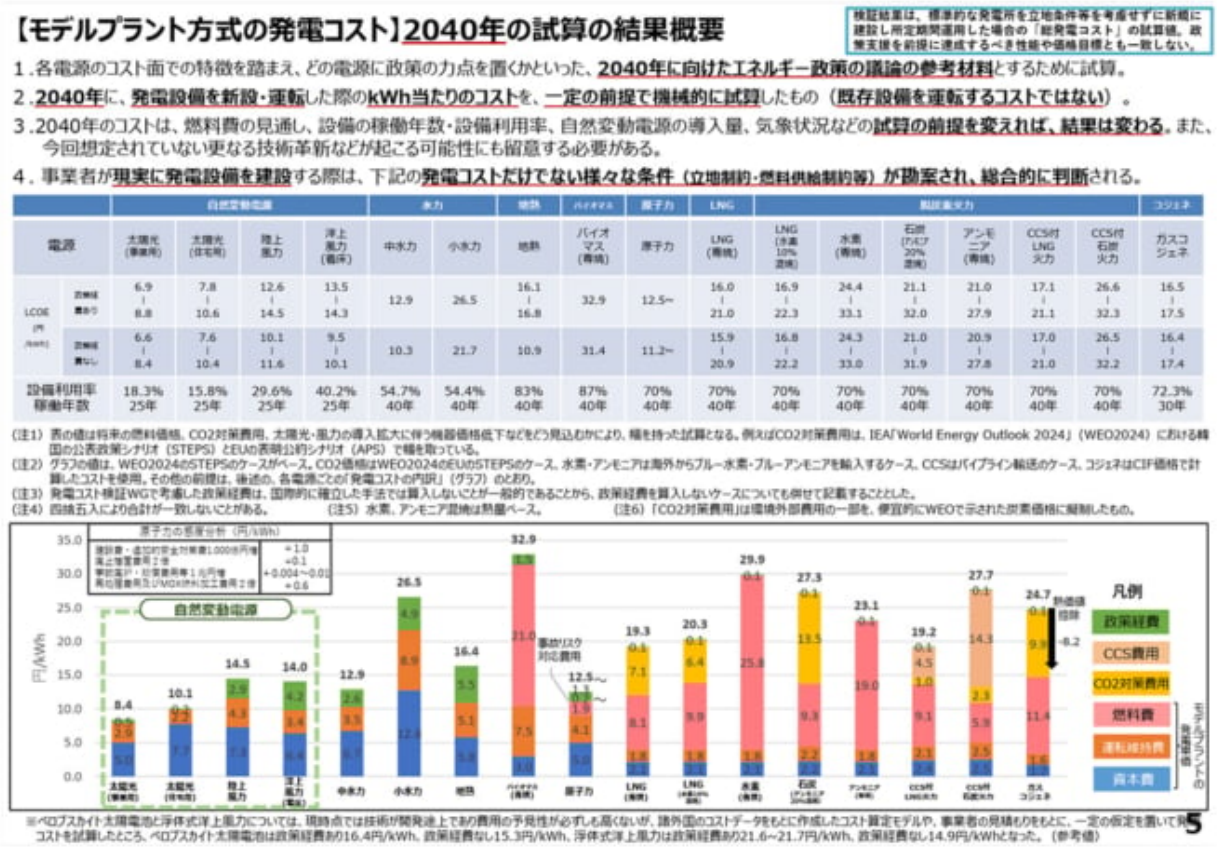
????????????????????????

??devil’s advocate??

??

Osamu Ito/iStock

??????????????2040???2040?????????[21?]?



?1??????????????2040?????????????
????????????????????

??

??

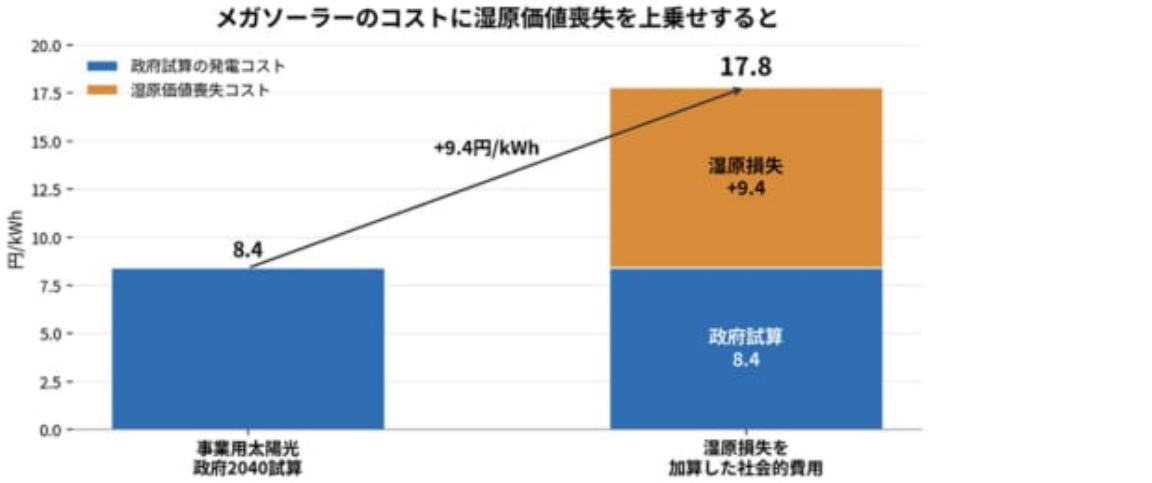
??CIGS??????????????????????????????[??]
????????????????????

??

???????????662??/ha/????[??]?

???1ha???0.67MW??????12????????????????????????70.4?kWh/ha/????????????????????????????
??????9.4?/kWh????

???2040??



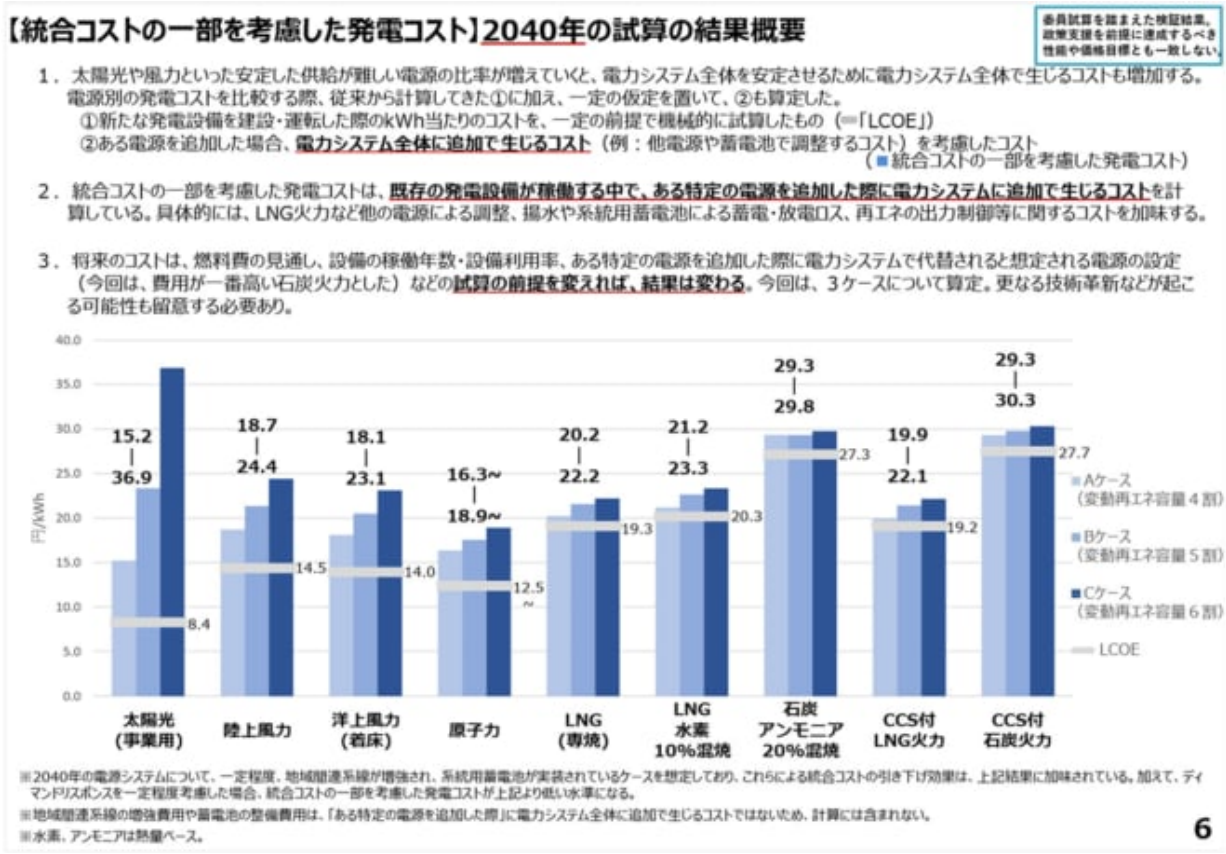
注：政府2040年モデルプラント方式の事業用太陽光8.4円/kWhに、環境省積上げケースの湿原価値喪失9.40円/kWhを加算。出所：発電コスト検証WG（2025）、環境省（2014）、杉山（2026）より作成。

?2????????????????????????
?????2040??9.4?/kWh????

??

??

??



?3??????????????????
??????????????????????

??????

- ?1?????????????????2025??????????????????????7?2?6??
- ?2???????2026??????????????????????CIGS Working Paper Series No. 26-006J?2026?5?29??
- ?3?????2014??????????????????????????

?

?????????????????????

Posted in ???????????, ???, ????? | No Comments »

??????????????????

?? ?? · Thursday, June 4th, 2026

Aree Sarak/iStock

??????????????????????????????????????2026?3?3????????????????????????????NUMO???5?20??????????????????

??

??????????[?1????]?

??

??

??

??
?

??NRC???
???????NRC????1986???[33]?

????????????????????????????????????9???????????2,000??
???????????

NRC???60?????????????100????????????????????????
??????????????????????[34][35]??

????????????????????????????2026?3??????????????????????????????1?7,120??U??????????????????2
?1,840??U???

??????????????????????2024?11???????????3,000??U??????5,000??U??????????????????6??

??6????????2.5?
?????10?15????????????????????????[77]?

??

??
??
?????????????????????????

????????????????????????2014??
????????????50??[78]?

??
????????[79]?

I A E A ???[710]?
??

??
????????????????????????????EPA??
????????????[711]?

??**????????????????????????**?????????????

??[712]?Jerry J.
Cohen??[713]?

??

??

??????????????????

??

? ? ?

Posted in ??????????, ???, ????????? | No Comments »

??????????????????

?? ?? · Wednesday, June 3rd, 2026

MicroPixieStock/iStock

??????????????????????????????????

??

??

??

??

??

??

??????????????????????????????

??

???????????

??

??
??????????????????????????????

????????????????????????????

??

??????????????????????????????????

??
??????????????????????

??
??

??????????????????????

??

??
??

??????????????????????????????????

??
????????????????????????????????????

??
????????????????????????????????

??????????????????????????????????

??
????????????????

??
??

??
??

??

??

??

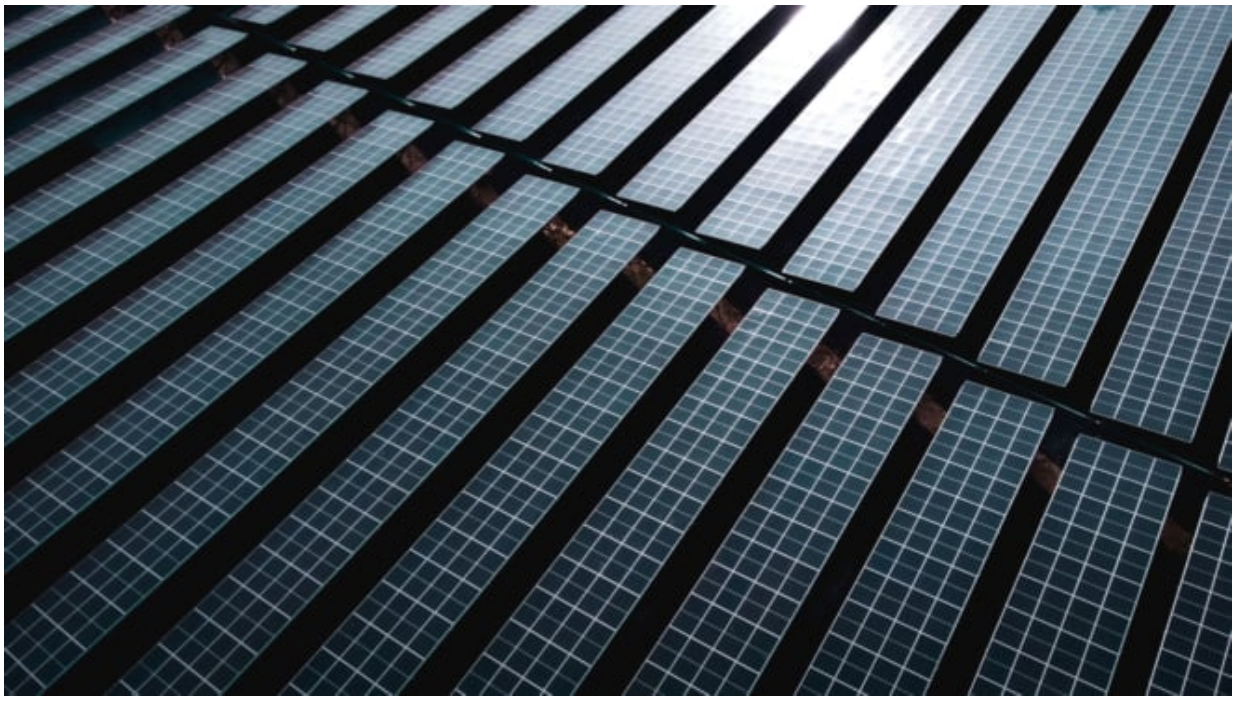
?

?????????????????????

Posted in ???, ?? | No Comments »

ESG??????????????????????????

?? ?? · Monday, June 1st, 2026



chayakorn lotongkum/iStock

????????????????

??????????????????????????**??????**??????????????????????????????PCB?????????????????????

??

??????????????????????????????

??????????????????????????????SPC??
???????

2022??2023??????
??

> ??
> ??????????????????????????

???2023??pp150

P C B
??**??????????**??????????
????????????????????**??**????????????????????????????
??????????

??????????????????????×??

????**????????????????????????**????????????????????????????????????**?????**?????????

??

??????????????????

??
????????????????????

??

- ??????????????????????????
- ????????????????????????????????

?????????

??
????????????????????????????????

??

??????????????????????????

??????????????2026?5?28????????????????3????????????????????????????

????????????????????????????????????

??

??

??

??
??

??????????????

??

??
?????????????

??
????

??FIT????????????????????????????????
??
??????????????????????

???????????ESG???????????????

??????????????????ESG?E??
??????????????????ESG?G??

????????????

????????????????????????????????SDGs??ESG??
??ESG?S????????????????????????SDGs?ESG??????????????????????????????????????

??

??????????????ESG??
??ESG?????????????????
?????????????

??
???

??????

?????2023??????????????????pp109-151

??????

??????2026??ESG?SDGs?????????????????????????NPO???????????
??????2026??????????????????NPO???????????

?

Posted in ???, ????, ????? | No Comments »

????????????ZEH?????????????

?? ?? · Sunday, May 31st, 2026

takasuu/iStock

????2030??????????????ZEH??????????????????

ZEH??
????????????????????????????????

??????????????????????ZEH????????????????????????

??

?????????????

????????ZEH??
??

????ZEH??????????????????

??

??????????????????

??????????????????

??????????????????????ZEH??40??70????????????????
???????ZEH??

?????????ZEH?????????????????????????23?????4.6??????????9.6?????????

????????????????????????????????????40??70???????23????4.6??????????????????9???15???????????
9.6?????????????4???7????????

??????????????????ZEH????????????????????????

??????????????

??

??

?????????????????????20???34?

??????????????CO2????????????????????????????????????

??5??????????????????????????27.8GJ????????????17.4??????????????????LP??????????????6.2
7?/MJ???????

??6.1GJ????1.3GJ????
8.9GJ?????????16.3GJ????

ZEH????????????????????????????????20%??6?ZEH?????
????BEI?0.8???????

??????20%??20%????????????????????????
????????????????????????????

????????ZEH????????????????????????????????20%????????????????????????????????????20%??
????????????????????????????

?????ZEH??20%??????????????????????????????3.26GJ?
??????????6.27?/MJ????????????????2.0??????????????

??????ZEH????????40??70????????????????????

??	???????????	20%?????????	40???????	70???????
????	16.3GJ/?	?2.0??/?	?20?	?34?

????????23?????????4.6??2????????

??

?????????50?????????

??????????????????

??????????????????????????20.7GJ?????????????11.1GJ??????????????????????????????????????

???????????????20%????????????????????????

???	??	??	??	??	20%?????????	40???????	70???????
??	8.9GJ	1.4GJ	10.4GJ	20.7GJ	?2.6??/?	?15?	?27?
??	2.9GJ	1.0GJ	7.2GJ	11.1GJ	?1.4??/?	?29?	?50?
??	6.1GJ	1.3GJ	8.9GJ	16.3GJ	?2.0??/?	?20?	?34?

??????????????????????????70????????????????27?????

???????40?????29??70?????50??

??????????70??????

??????????????????

????????????????????????????????7.6GJ????20%?????????????1.0????????

?????40??????????????42??70?????73?????

????	???????????	20%?????????	40???????	70???????
??????	7.6GJ/?	?1.0??/?	?42?	?73?
?????	9.8GJ/?	?1.2??/?	?33?	?57?
??????	16.7GJ/?	?2.1??/?	?19?	?33?
?????	18.9GJ/?	?2.4??/?	?17?	?30?
????????	22.2GJ/?	?2.8??/?	?14?	?25?
???	32.0GJ/?	?4.0??/?	?10?	?17?
????	16.3GJ/?	?2.0??/?	?20?	?34?

??70??????????17?????

????????????????????????????????40?????42??70?????73?????

??

???????????

????????

??33.8GJ????20%??????????????4.2??????

???????11.8GJ?????7.3GJ??????

??	???????????	20%?????????	40???????	70???????
???	33.8GJ/?	?4.2??/?	?9?	?17?

??	???????????	20%?????????	40???????	70???????
??	25.4GJ/?	?3.2??/?	?13?	?22?
????	14.9GJ/?	?1.9??/?	?21?	?37?
??	14.8GJ/?	?1.9??/?	?22?	?38?
??	11.8GJ/?	?1.5??/?	?27?	?47?
??	7.3GJ/?	?0.9??/?	?44?	?76?
????	16.3GJ/?	?2.0??/?	?20?	?34?

??????40?????9??70?????17????????????????????????????40?????27??70?????47???????????40???
??44??70?????76?????

??????????ZEH????????????????????????????????????

??????????????

????????????

????????????40??70??????????????????????ZEH????????????????????????????????????

????????????????????????????????5kW?140???????????

????????????????????????????????

??
??????????????????????

??
?????????????????????????

????????????ZEH???????????????????

??????????????????????

????????????????????????????ZEH?????????????????????????

??35??????????????????????

??

??

???????????

??

??

??

??

??

??????????????????????????????????

??????????????????

??

- ??????5?? ?????CO2???????? ??????????PDF??????????????????????????????????
- ?????????CO2???????????CO2????????CO2?????????
- e-Stat??????CO2???????? ??5??????7-1-1????????????????????????
- ? ? ? ? ? ? ? ? ??????????????????????????????????????7?2?6??PDF??
  ??

?

?????????????????????

Posted in ???????????, ???, ????? | No Comments »

2026??????????? ? 2027?????????????

?? ?? · Saturday, May 30th, 2026

RBFried/iStock

???3???

https://agora-web.jp/archives/260327143206.html

> ??CO2?1?????????????????
> ????????????????**?????**??
> ??

????4??????CO2?????????????????????????????????????CO2?????????????????????????????????
????????????

https://agora-web.jp/archives/260417210224.html

> ????CO2??JERA????
>
> ????
>
> ??CO2???
> ??????????????????????????????????

???????????????????????????CO2???
????????????

JERA?????????????????CO2???????? – ??????

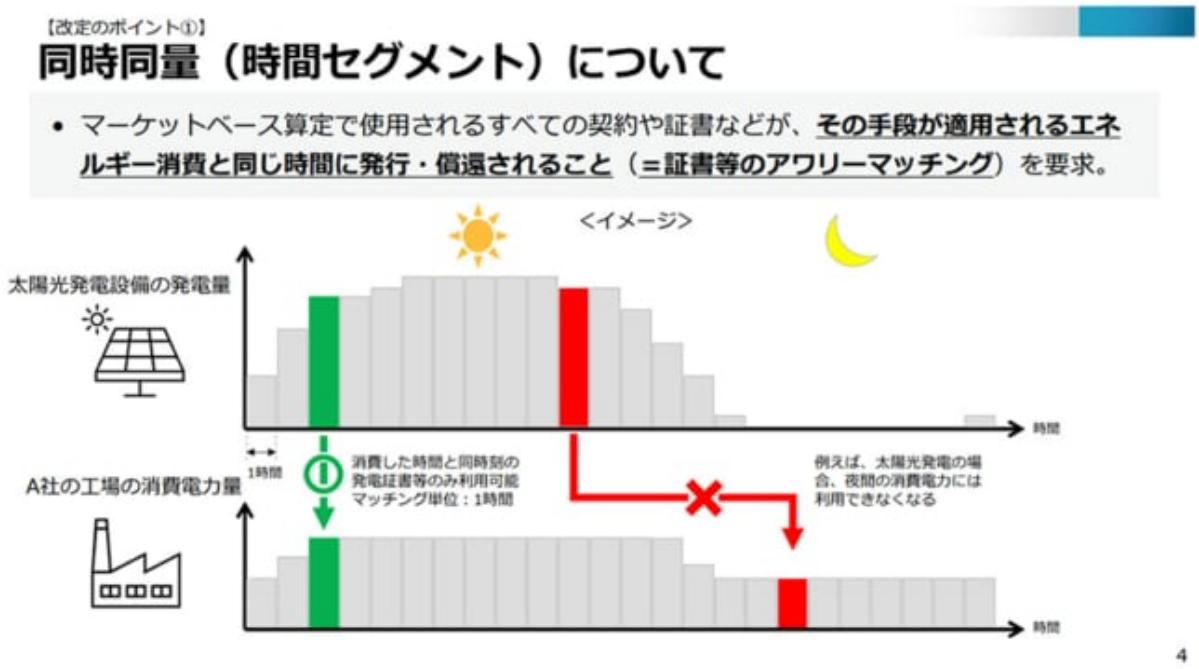
https://www.nikkei.com/article/DGXZQOFD226O10S6A520C2000000/

> JERA?22???
> ???????????CO2??????????????????????????????????10????CO2?????????1????????
> ???2000???????CO2???????

??

??????????????????????????????GHG???
?????????????**??????**???????????????

??…???????GHG?????????????????1?
??????????????????????????????1??



???????GHG Protocol?Scope2???????????????

GHG??1?????????????????
??1kWh???????????????????????

??GHG???????????????????????

GHG???????????2027??2027????????
????????????????? ?????????? ?????????

??????????????????????10???CO2?????????CO2???
?

?

Posted in ???, ????, ????? | No Comments »

??????????????????????????????

?? ?? · Friday, May 29th, 2026

Rawpixel/iStock

2026?5?1??????????????????????2030????????????????????????

> ??

????????30??????????????????

??

?????????

??——????????????????????????????
??????????????????????????????

??????????????

??????????????????

??????????????????

??

??

??LCOE??

??Carbon Symbiosis????????????????????????????????????

??

Posted in ???????????, ???, ????? | No Comments »

??????????????????????????????????11??

?? ?? · Friday, May 29th, 2026

bymuratdeniz/iStock

2024?2??290????????????????????????

????????? (??), ???? ???? ????? ????? ????? ????? ???? ???? ????? ????? ????? ????? ???? ?????

?????? ????? ????? ???????2026?. ?????????????????????7???5?.

???PDF?????????????????????

??
??

????????????????????????

> ??
> ??
> ??
>
> ??????????????????????????11????????????
>
> 1. ??
> 2. ?????????????????????50??????????????
> 3. ??????????CO2?????????
> 4. ???????????????
> 5. EV???????????????
> 6. ????????????????????????????????????
> 7. ?????????????
> 8. ???????????????
> 9. ??????????????????????
> 10. CO2????????????????????????????
> 11. ????????????????????????????
>
> ???????????????CO2????????????????????????????????????EV??????????????????????
> ??
> ???????????????CO2????????????????????????????????

?

?????????????????

Posted in ??????????, ??? | No Comments »

??????????????????????????????????

?? ?? · Thursday, May 28th, 2026

nzphotonz/iStock

5?26??????????????????????????????

??????????????????????????????

?????????2????

1. ??
2. ??

??????????????????????????

??????????????????????????????

??????????????????

> **??**
>
> ????????????

adventtr/iStock

???????????

???????????1????????2026?4?24??29????????????????????????????

2023??UAE??????????COP28????????????????????????????????????2025?11????????????COP30????????????????????85??????????????

????????????????????????????????????

- COP??
  ??????????????????

- ??
  ??86????????????????????
  ??

- ??44???????
  ??????????1997?????????1998????133??????47????????????????????????????????
  ??????????????????????????????

- ???????????IEA??
  ??

- ??2030????????2045???????
  ?2050??

- ??

- ?2????2027?2??
  ??3????????????

??

??????????????????

????????????????????????????

???3??????CERA??
?CERA????????????????????????????

2023??COP28?????????????????????GST????28??????????????????8????????????????????????
??

??8?
??

??5?18????????????????
??????????????????????The messy, chaotic and possibly quixotic quest to phase out fossil fuels??

- ??????????????????????????????3??
  ????????????????????????????

- ??
  ??CCS????LNG??????????????
  ????????????????????????????

- ??
  ??

- ??

> ??

- ??
  ??

??

??????????????????????PPCA??BOGA??
?????????

??

??
??3???????7?8?????????
???????

??

2023??????????????????????????????NDC??????2030?????6????2050??????????????????????4?5
??????????????????

??

??
?????????

??
??????????????????

??
?????????????

??
??

??
??

??

Posted in ???????????, ???, ????? | No Comments »

??????????????????????

?? ?? · Saturday, May 23rd, 2026

jxfzsy/iStock

??????????

???????

??

????????????????????????????9????????????????????????????
??????????????????????????????1???????????

??
???????1????????????????????????????????????5?????????
???????????

??
??
??????????????????????????????????????

2026?1??
?????????????

???????

???????1953???
Wikipedia??

??
???????????——??????????????——????????????????????
??????????????????

??
??

???????2026?1?16??????????????????

????????2018????????????????????2026?3?31????????????????????????????????2012???????100
??
??????????????????

?????3.11??

??31km????????????????8??????
????????????????????????????????????

?????????1??——??????????????????

??????????????????

??
??——???????????????????????

?????????2025?2?????????????????????????????????1???????????????????5??????????????12?
????????????????????????????????????——????????????????????????????????

??
??????????????????

??

??????????——??????

??

????????????????2????????????1????????????????????????????????1????????????????????????????
??

???2??
?

???????2016??
???????????????????

??——????????——??????
????????????????????????

??2016??????
??

??

30???????

??????????????????1????????

??????????????????????????SBO??——??????????????????——????????????????????????1993?
??SBO????????????????????????????

??
??????????????

??
??——??????????????????????????????????????

1993????????2026??????????????????30??
?

???????????

??????????????????????

??——??
???1??

??
????70??

??
??——??
??????????????????????

??????????????????????????????????????

??
??70????????????
??……?????????

?????????

??
??1????????????
??????????????????

????????????????????????????1??
????????????????????????????????????

??1??????????????
???????????70???????1??——????????????????????????
?????

??30????????????????
??????????????????????

??

????????????????????????????

Posted in ???, ???????? | No Comments »

??????????????????

?? ?? · Thursday, May 21st, 2026

mesh cube/iStock

??????????????????AEI?American Enterprise Institute??????????Roger Pielke Jr.????????”Renewables” are not Renewable???????????????3???

????????????**???

??????????????????????????????1GWh???????????7??????????????5????????????1.7????????
??1GWh????????2?????????????1.8????
??????

??????1GWh??????1.8????????0.8??????????????????0.3????????0.2??????????????????[??]?

????????????????????????????????1500??2000??

??
??????????????1GWh????0.43???????????????

????????10?13???????????25?30????????????????????????????2?2.5?????????????????????1
GWh???0.8?1.2??

??energy
intensive????????????????CO2????????hard to
abate??
??????????????????????

??
??CO2????????????????
??

??CO2????????????????
??????????????????????

?????????????CO2??

????Pielke??

??2000???2024??CO2????????????????????
??2000??400????????????????????CO2????2023?????4.7?????
???2024???5???????????????

?2025????????????3???
??????????????CO2??

?????????????CO2??????Pielke????IEA??
????????60????????????????????????????

??2010??
???????????6??
????????????????????????????????

??????????????????CO2????????????????????????CO2????????????????????2022?CO2????114????????????
????????????????????????????????CO2????????????????????????????????????

????????CO2??????????

??

???????

IEA?STEPS?????????????2050?????????????????????????????????????2030??2050?????????????????
??????????????????????CO2??????2030??8.7????2050???16?????????????10??????????????Pielk
e???????????

?????????????IEA?NZE????????2050??CO2????2030?????
?15.4????2050?????????????40????????????????????2?????????????CO2?????????????

??

???IEA?NZE??????????2030????????????????630GW???390GW????????????1200GW???????
??CO2???????????????

???**2030???4??????
??CO2????????????**??????

??——2050????——?????????????????
????????????????????????????????

??25?40???????????
??Pielke??????????

????????Pielke???

> ??
> ??????????????

??????

????????**??????CO2??**
“????????????????????????????CO2????????” ????????????????????????????????????

Posted in ???????????, ??? | No Comments »