Global Energy Policy Research | GEPR

GEPR???
????http://agorajp.com/???
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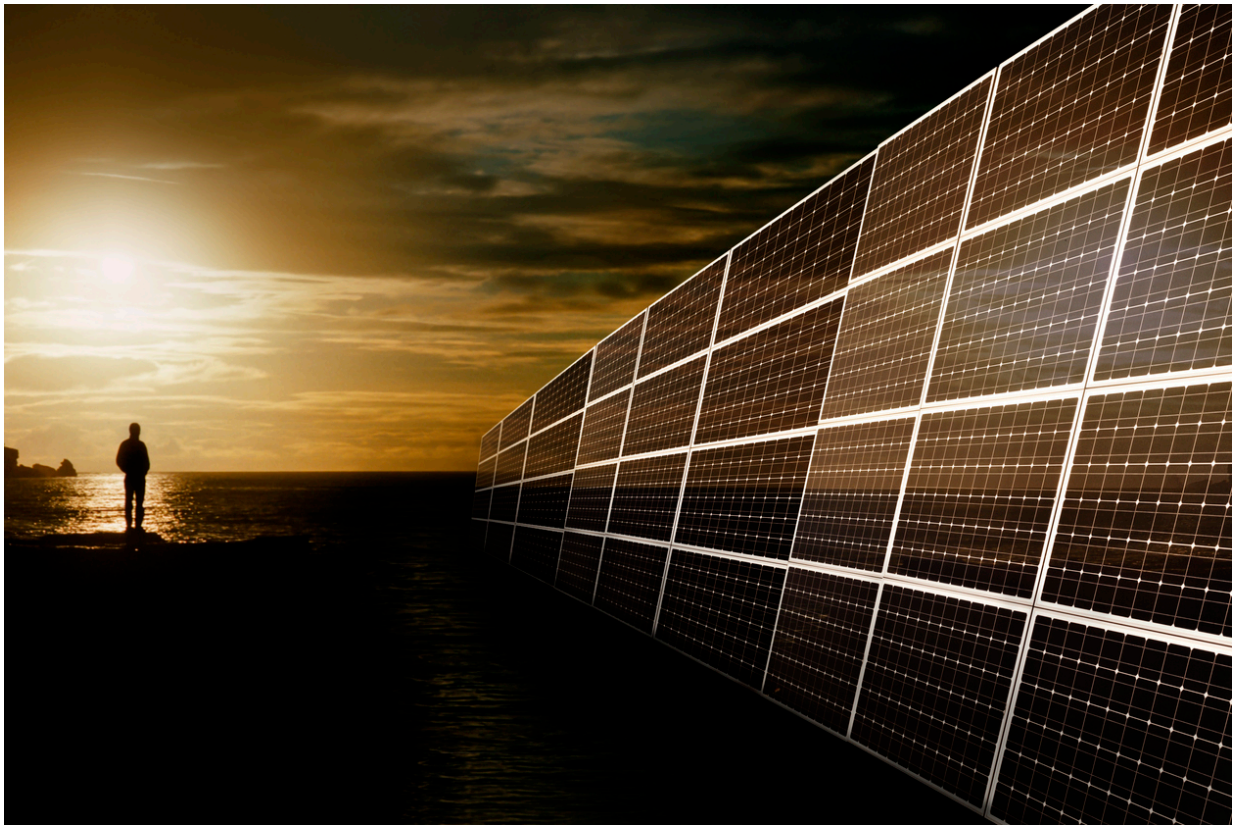
?? ?? · Tuesday, January 10th, 2023



HadelProductions/iStock

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2021?6??G7?????????10??G7??????????????????????????????????2022?6??????????????????
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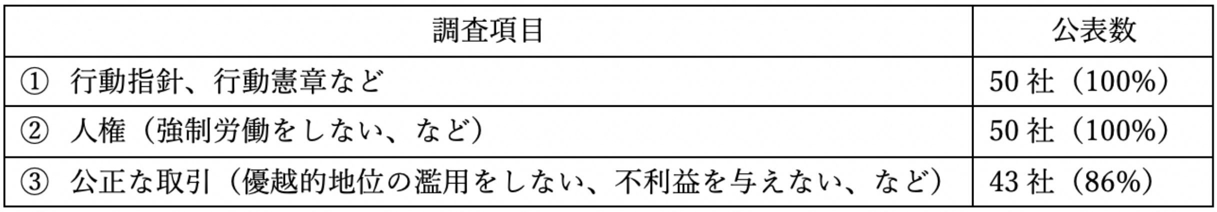

調査項目	公表数
① 行動指針、行動憲章など	50 社（100%）
② 人権（強制労働をしない、など）	50 社（100%）
③ 公正な取引（優越的地位の濫用をしない、不利益を与えない、など）	43 社（86%）

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Posted in ???, ????? | No Comments »

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?? ?? · Monday, January 9th, 2023

NicoElNino/iStock

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2050?????2030?CO2??????????????????????2022?2????????????????40????????????????????????7??
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Posted in ???, ????? | No Comments »

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

?? ?? · Monday, January 9th, 2023

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H M Shahidul Islam/iStock

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

Sky New??

BBC??

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??80???????????75????10??????????????????18???????1988??????75???????

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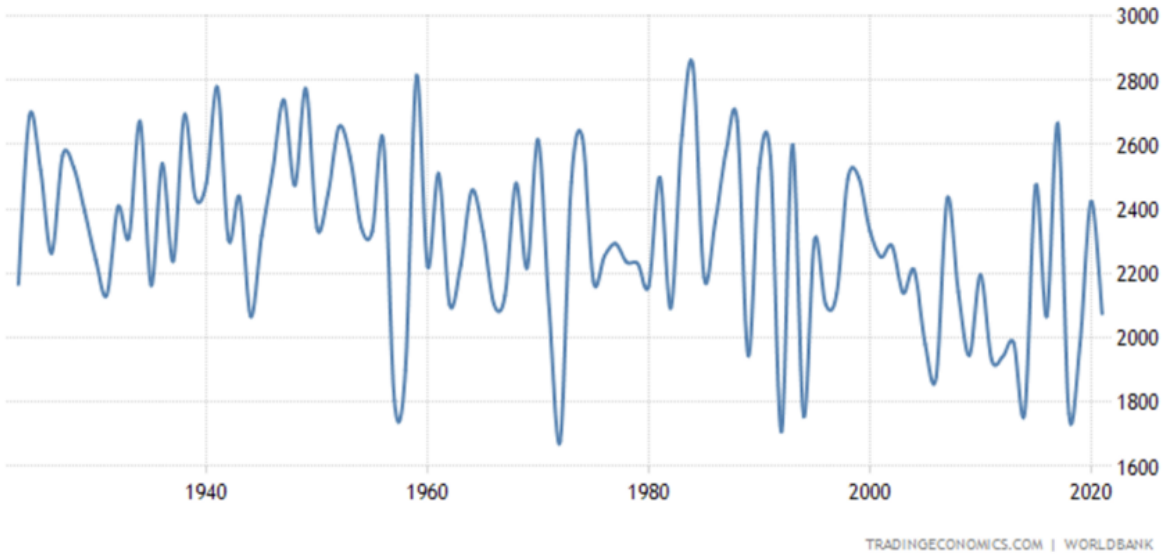
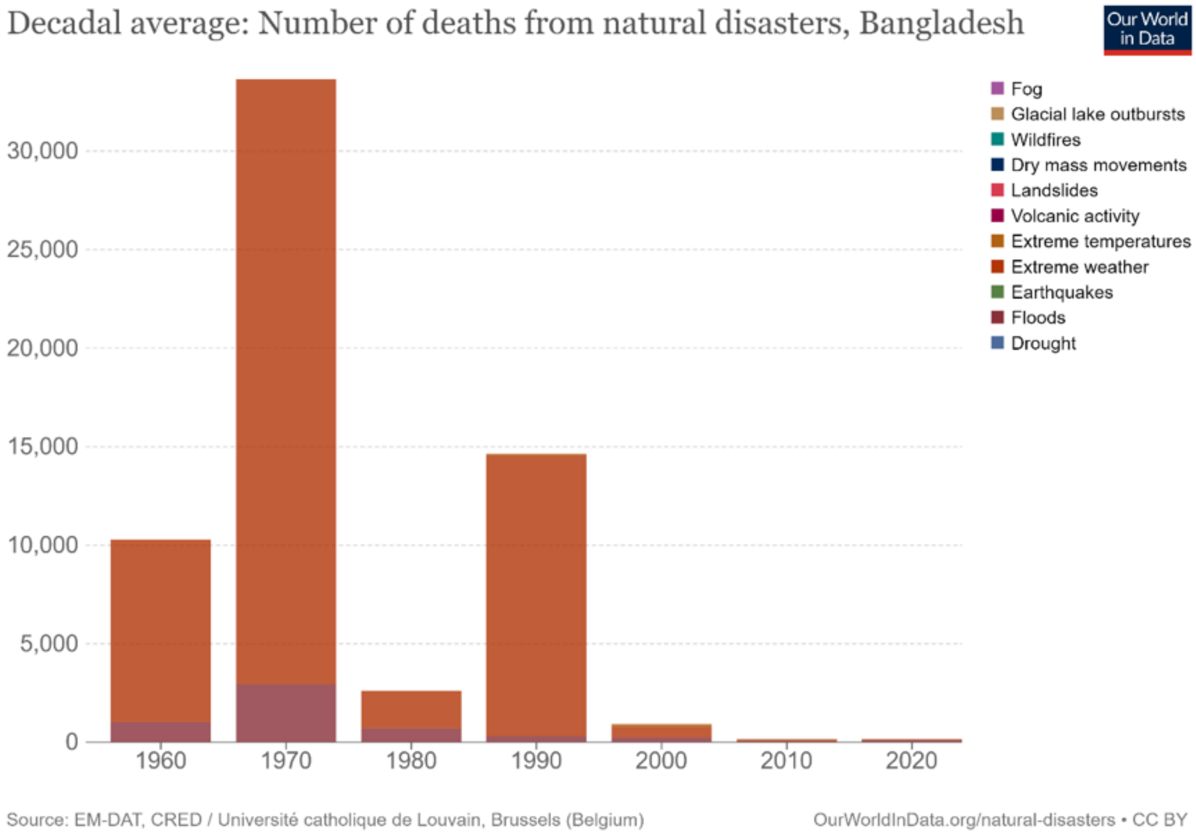


??19???6??20????18????????????????????????????????????

??????????????????????????10???????????1970?????1970???1979??10??????????????extreme weather ?floods????????????????????????



Source: EM-DAT, CRED / Université catholique de Louvain, Brussels (Belgium) OurWorldInData.org/natural-disasters • CC BY

??????????????????1970???????????????????20????50??????????????????

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Posted in ???, ????? | No Comments »

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?? ?? · Sunday, January 8th, 2023

?GDP?2?????????????????????????3???
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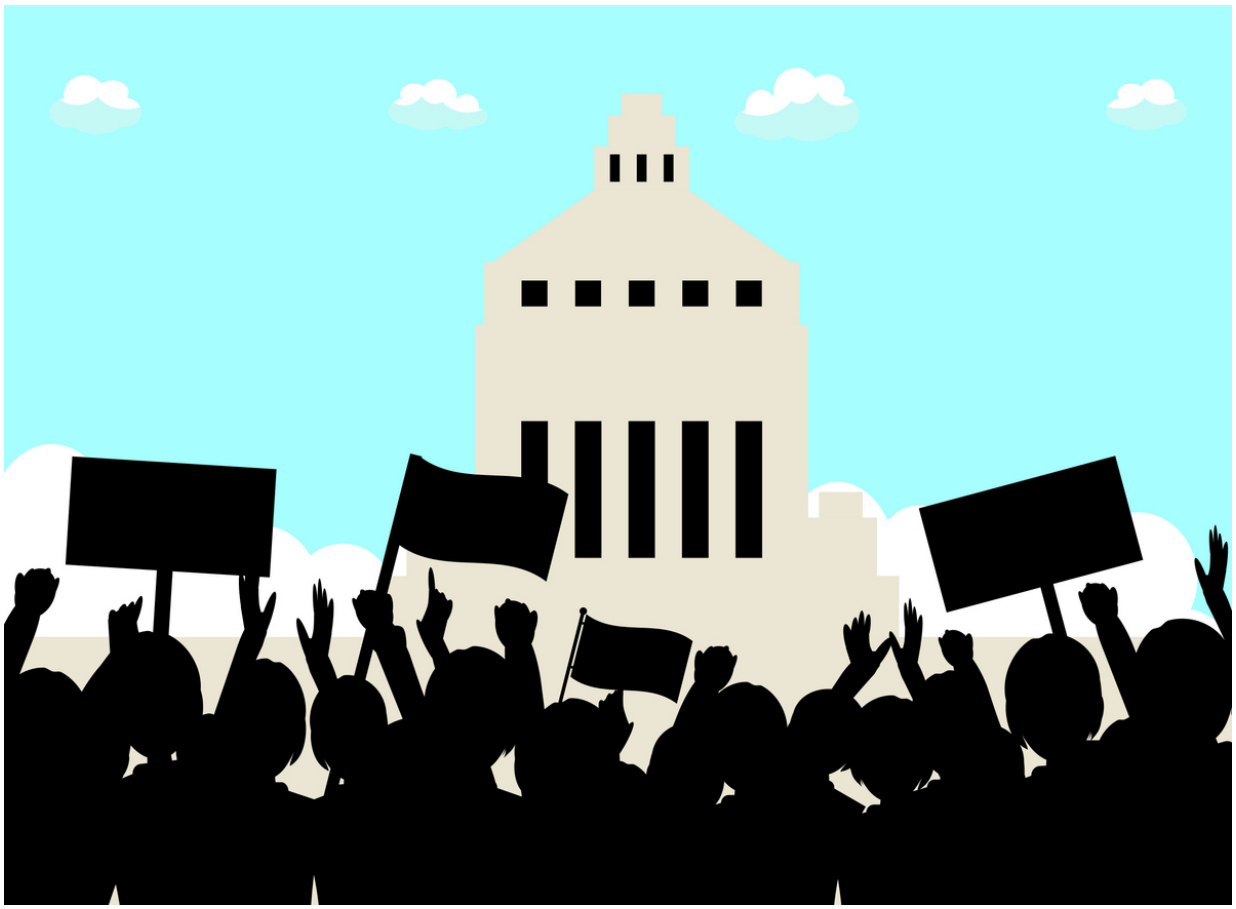

kid-a/iStock

GX???????????

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そのため、化石エネルギーへの過度な依存からの脱却を目指し、需要サイドにおける徹底した省エネルギー、製造業の燃料転換などを進めるとともに、供給サイドにおいては、足元の危機を乗り切るためにも再生可能エネルギー、原子力などエネルギー安全保障に寄与し、脱炭素効果の高い電源を最大限活用する。

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安定的で安価なエネルギー供給は、国民生活、社会・経済活動の根幹であり、我が国の最優先課題である。今後 GX を推進していく上でも、エネルギー安定供給の確保は大前提であると同時に、GX を推進することそのものが、エネルギー安定供給の確保につながる。

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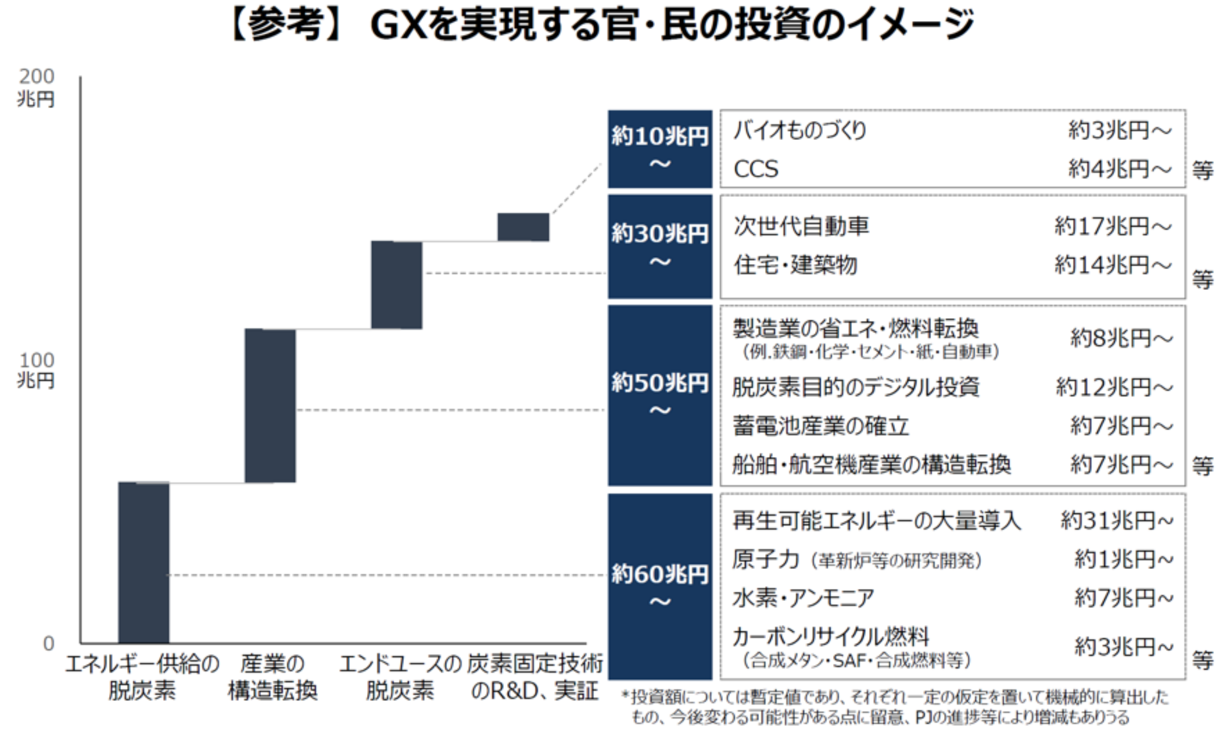

??GX?????4?????

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GX????????????????

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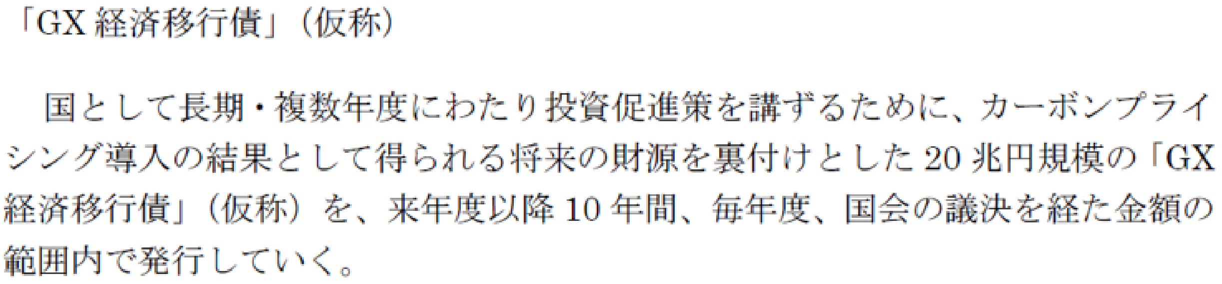
?10???150??????GX????????????20???GX?????????????????



「GX 経済移行債」（仮称）

国として長期・複数年度にわたり投資促進策を講ずるために、カーボンプライシング導入の結果として得られる将来の財源を裏付けとした 20 兆円規模の「GX 経済移行債」（仮称）を、来年度以降 10 年間、毎年度、国会の議決を経た金額の範囲内で発行していく。

GX??????????????????????????????

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??GX?????????????????????

④ カーボンプライシングの実施等を担う「GX 経済移行推進機構」（仮称）の創設

排出量取引制度の運営や負担金・賦課金の徴収等（先行投資支援の一部を含む）に係る業務を実施する機関として、「GX 経済移行推進機構」（仮称）を創設する。排出量取引制度と炭素に対する賦課金制度との「ハイブリッド型」のカーボンプライシングを導入するため、両制度に関する調整・管理及び徴収業務を、本機構が一体的に実施する。また、2026 年度の「排出量取引制度」本格稼働に向けて、本制度に係る各種実務を円滑に進め、中長期にわたり産業競争力強化と効率的かつ効果的な排出削減の両立が可能な形で制度を安定的に運営するため、排出実績や取引実績の管理、有償オークションの実施、取引価格安定化に向けた監視等を実施する。

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??GX??

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?????????GX?????????????10???150??????GX??

今後 10 年間で 150 兆円を超える GX 投資を官民協調で実現していくためには、国として長期・複数年度にわたり支援策を講じ、民間事業者の予見可能性を高めていく必要がある。そのため、新たに「GX 経済移行債」（仮称）を創設し、これを活用することで、国として 20 兆円規模の大胆な先行投資支援を実行する。その投資促進策は、新たな市場・需要の創出に効果的につながるよう、規制・制度的措置と一体的に講じていく。

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??????????????150???20??

10???150????????15?????GDP?3%????????2%????????????????????**????????????????????????**????????????

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したがって、支援分野の優先順位付け、支援対象事業の選定等においては、技術や市場の見通し、事業の効果などの要素を検討するとともに、定期的に支援事業の進捗評価・分析を行い、支援継続の要否などを確認するためのチェック機能を設ける。支援対象については、こうした機能を通じて柔軟に見直しを行う。

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世界規模で異常気象が発生し、大規模な自然災害が増加するなど、気候変動問題への対応は今や人類共通の課題となっている。カーボンニュートラル目標を表明する国・地

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

2022????????????100????98?????

?? ?? · Saturday, January 7th, 2023

Devrimb/iStock

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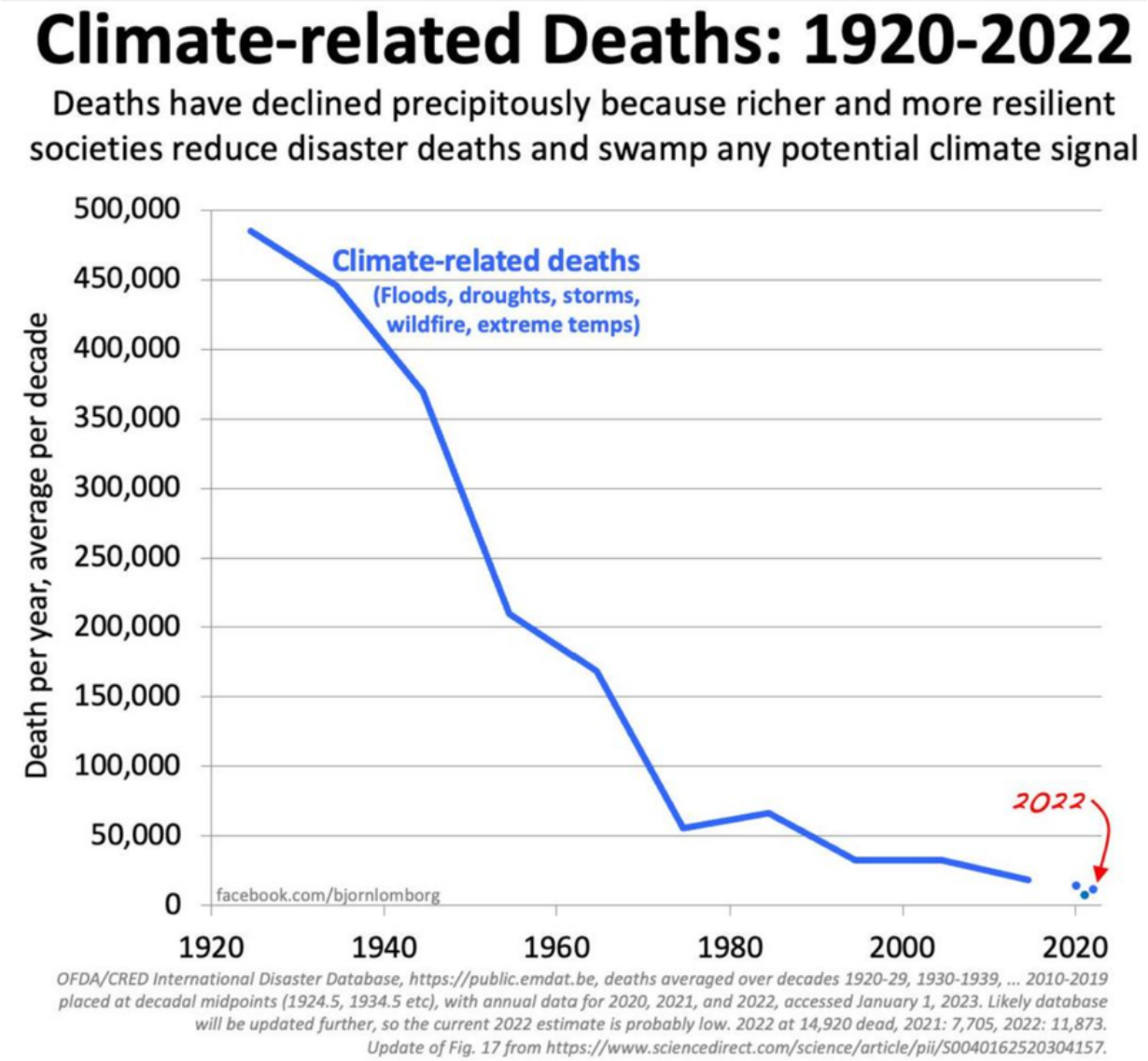
??????????????????1920???29????????????2010???2019????????????????????3????????????



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2022??2022??????????????????????????????????
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?? ? · Saturday, January 7th, 2023

Natali_Mis/iStock

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2.3.???

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????Typhoon??????????????21t???4t????????????????????49MWh????????????????????????????????????180Wh/kg????????????????13???272

t????????49×10^6Wh/180×10^3Wh/t?272.2t??????????????

????????TV??70??=272/4??

????????????6.2m×?2.5m???4667kg?300??????????????S???????????2100kg?100kWh??????300?????????????????

??????????2.2?????????????220kWh??1m^2??150W??????6.2m×?2.5m????????????????????95??????220kWh/(0.15kW/m^2 × 6.2m × 2.5m)?94.6h???????????95??????????????1????????????????????????????????

??3.1. ???????

2.4.????????????????

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2.5.???????????????????????????

??????????????????????489.7EJ??60??=293.8EJ???CO2????????????????????????9320GW???????????40??????????????23300GW????????????????????????28???????????????????????????????????????

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???2022?3????8.6%???7?7720????????????????2022????????????????????????????????

? ????2022??????????????1.2%??????80???????????????????????????????2??????3????4???????

??????????????????2021??3.54EJ?2019??2.27EJ??56????????????????????????8.47%????????????????????24????????????????2.4%???

??2050?????2070????????????????????????????2050???

3??????????

???????????????????????????????????????99.7%??????ICE?internal combustion engine?????????????????95???????????????????

???????????????????????????????????BEVs?battery electric vehicles????????????????????????????????????PHEVs?Plug-in hybrid electric vehicles?????????????????????????????HEVs?hybrid electric vehicles?????????????????????????

? ????????PHEV?HEV??????????????????????????????????

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?????????????BEVs??FCV???????????????????????????????????????1100???????????????????????????????????????

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???BEVs?????????????????????????LDVs?light duty vehicles?????????????????????45???

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??????13???LDVs???????2040?????17?19????????????????????3600???LDVs??????2021?????BEVs?36????1%?????????????????LDVs?????????????????100????????????LDVs???

2021??????????1250???(???)BEVs???????70??

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Posted in ???, ????? | No Comments »

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?? ?? · Friday, January 6th, 2023

runeer/iStock

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> *Our climate is heating rapidly. Floods, droughts, heatwaves, extreme storms and wildfires are going from bad to worse, breaking records with ever alarming frequency. Heatwaves in Europe. Colossal floods in Pakistan. Prolonged and severe droughts in China, the Horn of Africa and the United States.*
>
> *There is nothing natural about the new scale of these disasters. They are the price of humanity's fossil fuel addiction. The number of weather, climate and water-related disasters has increased by a factor of five over the past 50 years.*

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Wikipedia??

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> ??WMO??????????????????IPCC??????????

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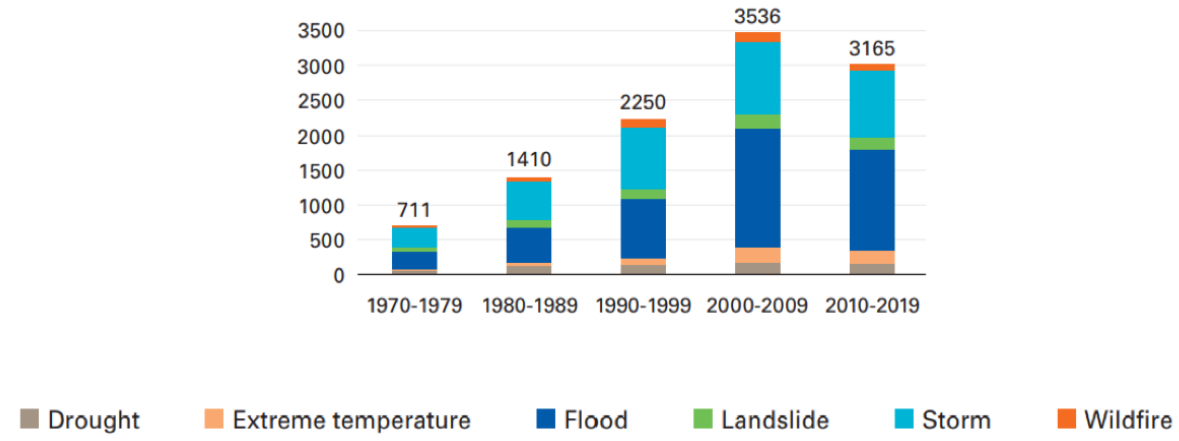
(a) Number of reported disasters
Total = 11 072 disasters



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Posted in ???, ????? | No Comments »

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?? ?? · Tuesday, January 3rd, 2023

gyro/iStock

2022?11?7?????????????????????1.4
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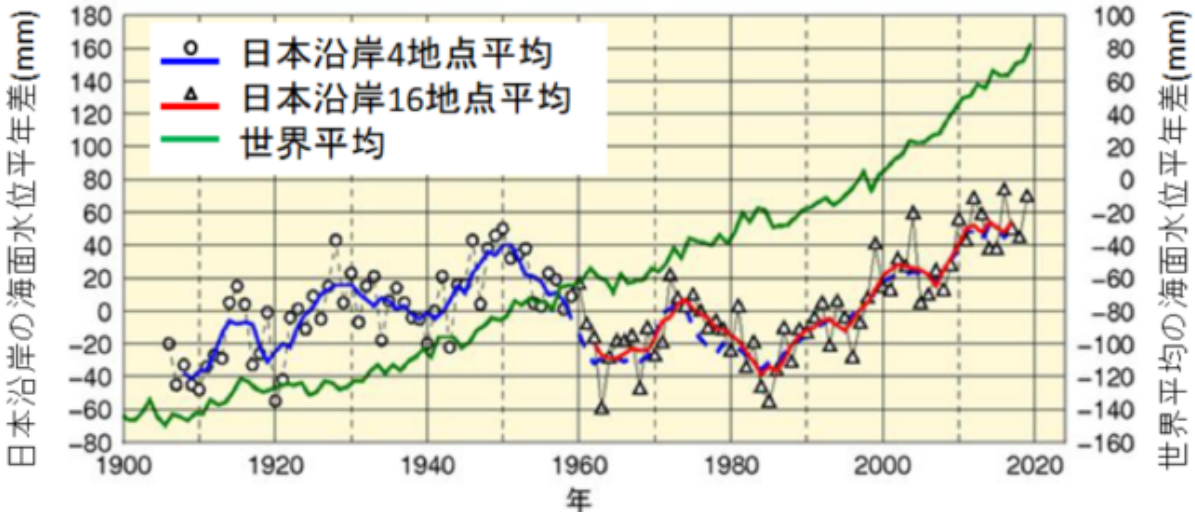

?1 1906??2019????????????????????????????2020???

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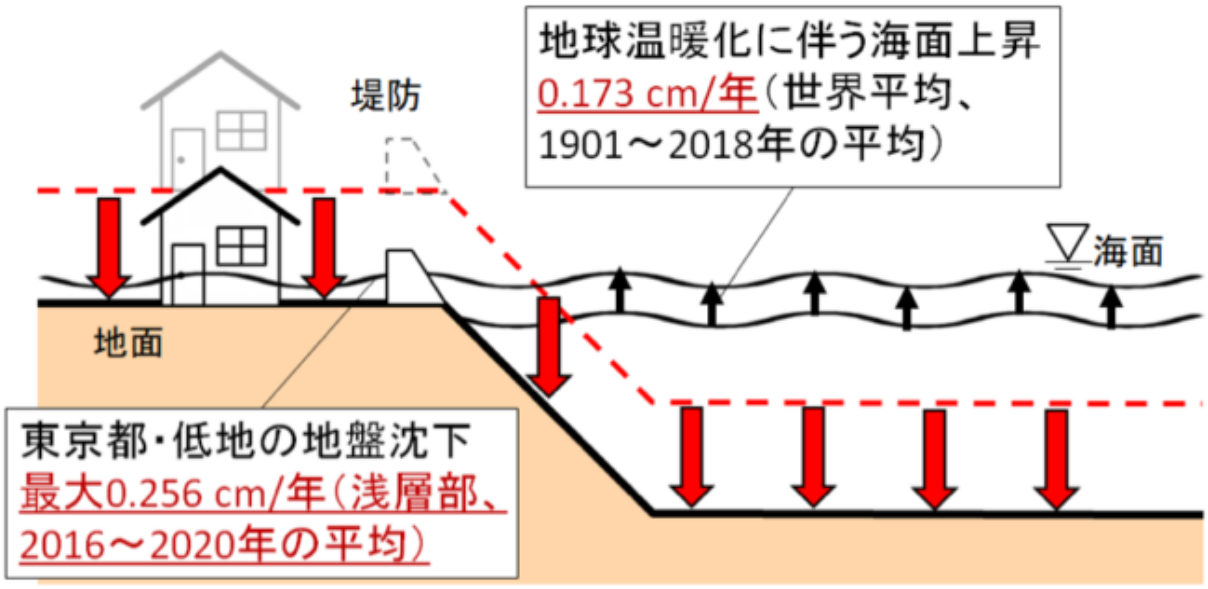

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?????????????????????????2022?????????????4???1???????????????????????????????????IPCC ??6???????1????????

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Posted in ???, ????? | No Comments »

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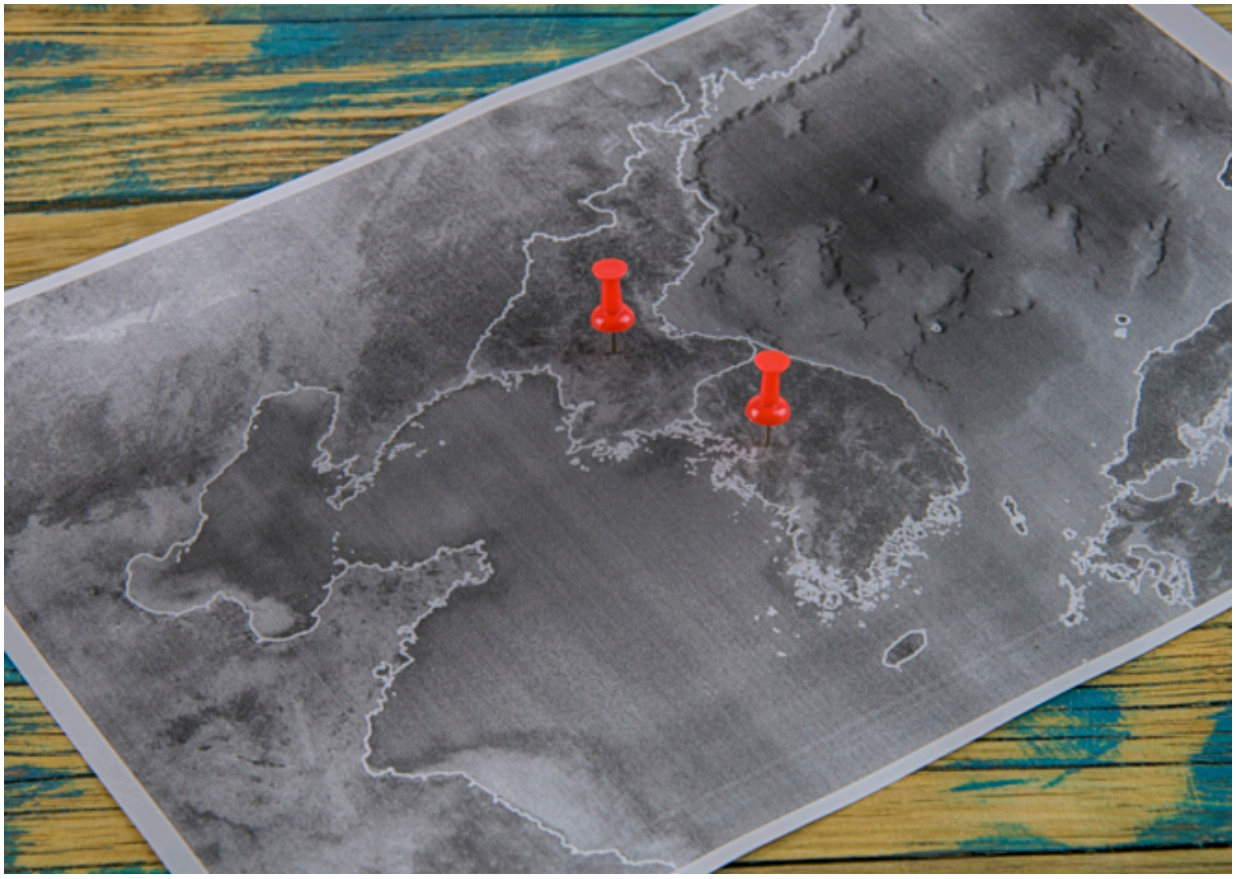
?? ?? · Wednesday, December 28th, 2022



Perytskyy/iStock

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dzika_mrowka/iStock

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

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?? ?? · Sunday, December 25th, 2022

gremlin/iStock

WEF??????????????????????????????????????2050???????????????????????????

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

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?? ?? · Saturday, December 24th, 2022

EU??????????????12?18???????EU??EU??????????????????????????????

????E U ? C O 2 ? ? ? ? ? ? ? 4 ? ? ? ? E U - ETS??????????????????2030???????????43???62??2026????????????????????????

????26??2.5????????27?5.0??28?10??29?22.5??30?48.5???????????2034???100????????????????????????????????????

Galeanu Mihai/iStock

??EU????????????CO2??EU????????????????????????????

??EU????????????????????????????????CBAM??????????????????????

CBAM??EU??CO2????EU???ETS??????????????

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??WTO????????????????????
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??EU??2026????EU????????????????????????

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

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?? ? · Friday, December 23rd, 2022

Artur Nichiporenko/iStock

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2.1. ??????????????

???????1???????489.7 EJ??60??CO2??????????????????????????????????

Table 1. Primary energy and electricity sources in exajoules, EJ (10^{18} joules) and installed wind and solar capacity in GW for 2021 [7]. Electricity generation converted to EJ from TWh. 1 EJ= 277.8 TWh.

Country	World	China	U.S.A	India	UK
Oil, EJ	184.21	30.6	35.33	9.41	2.5
Natural Gas, EJ	145.35	13.63	29.76	2.24	2.77
Coal, EJ	160.1	86.7	10.57	20.09	0.21
Total fossil fuel, EJ	**489.66**	**130.93**	**75.66**	**31.74**	**5.48**
Actual delivered Wind, EJ	6.7	2.36	1.38	0.245	0.232
Actual delivered Solar, EJ	3.72	1.177	0.594	0.246	0.045
Nuclear, EJ	25.31	3.68	7.4	0.4	0.41
Hydro, EJ	40.26	12.25	2.43	1.51	0.06
Other, EJ	29.5	7.253	5.306	1.289	0.953
Total Primary Energy, EJ	**595.15**	**157.65**	**92.97**	**35.43**	**7.18**
Electricity Generation					
Installed wind capacity, GW	824.9	329	132.7	40.1	27.1
Installed Solar Capacity, GW	843.1	306.4	93.7	49.3	13.7
Total electricity generated, EJ	102.47	30.72	15.86	6.173	1.116

Other includes bioenergy, geothermal etc.

?1

??????????????????????????????????????1EJ=277.8TWh???1kWh=860.6kcal=3597kJ??

????????1kWh=2074kcal=8669kJ?????????????MJ??????kJ??????????????????????????

?????????860.6 kcal??????1kWh???????????1kWh???????????2074kcal??????????????????????????????????????1kWh=860.6kcal????????????????????2.4??2?????????17%?34%??

??2?3??

?????????489.7EJ??60??=293.8EJ???CO2????????????????????????????????????60??CO2?????
???????????40??CO2????????????????????????????
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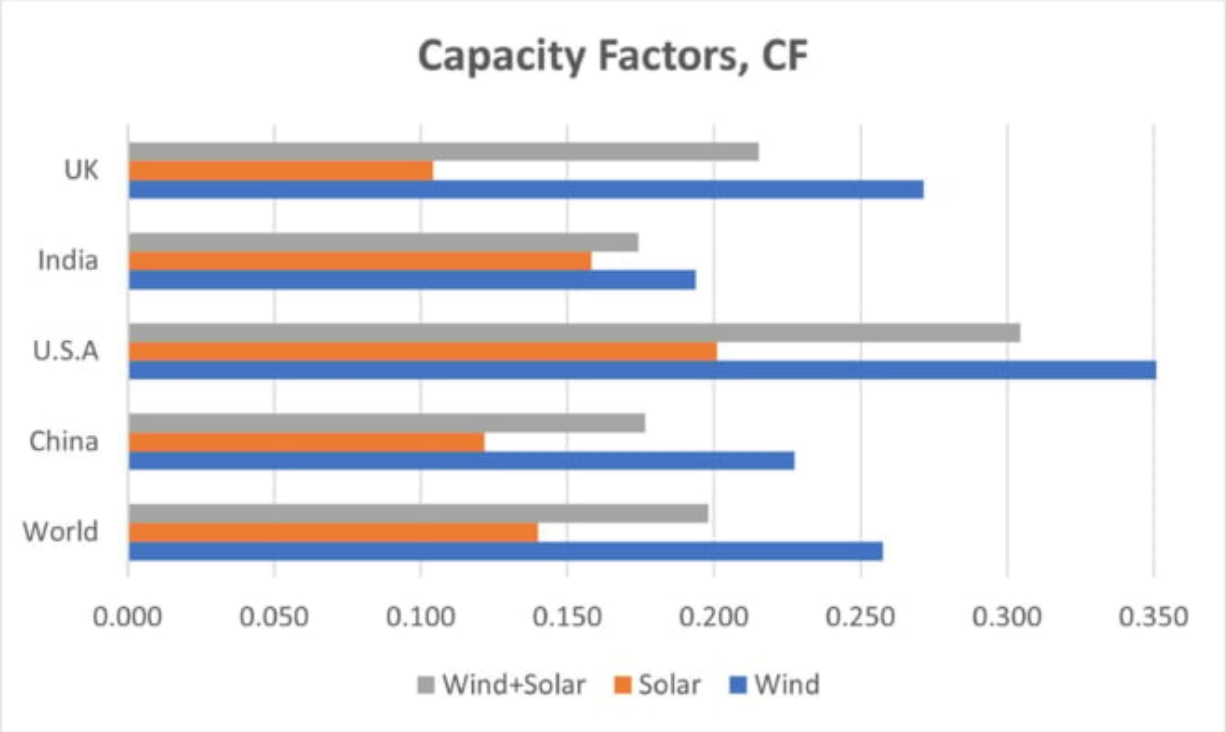
?????293.8EJ?????????????????????????9320GW????????????????????????????????1?????????
??????????824.9
GW????843.1GW??????1668GW??102.47EJ???????????????????1668GW/102.47EJ ×
293.8EJ?4782GW???2???????????2??????????1/2???????
?????????????

????????9320GW??3GW???3110???????????GW?100?kW?????????100?kW?????3?????????311
0?????????????????2021???????????????????436???????396GW????????????????????????

??????????????????????4?????Capacity
Factors??????????????????25??????????????????40???????????9320/0.4?23300
GW?????????????????????????824.9 GW??28?????



?4

????????????????????????60??

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?????????????4000?6000??/kW??????4000???/kW??????279GW??????????????????1?????????????
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??????????640MWh?????2?????????????????????????????8GW?5????????????????????????????????
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2.2. ??????????????????????

??????????????23300GW??????????????????????????????????????

- ??25????2500×10^6 tons?
- ???????120????12000×10^6 tons?
- ??0.7????70×10^6 tons?? 2021?????????0.21???
- ?????????1.63????163×10^6 tons?
- ??????????????2.20????220×10^6 tons?

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????????????????????????23300GW??????????????????????60%??????????????????????????????? ????????????CO2??CO2????????? ?????????????????????

????20?25?? ????????????????????

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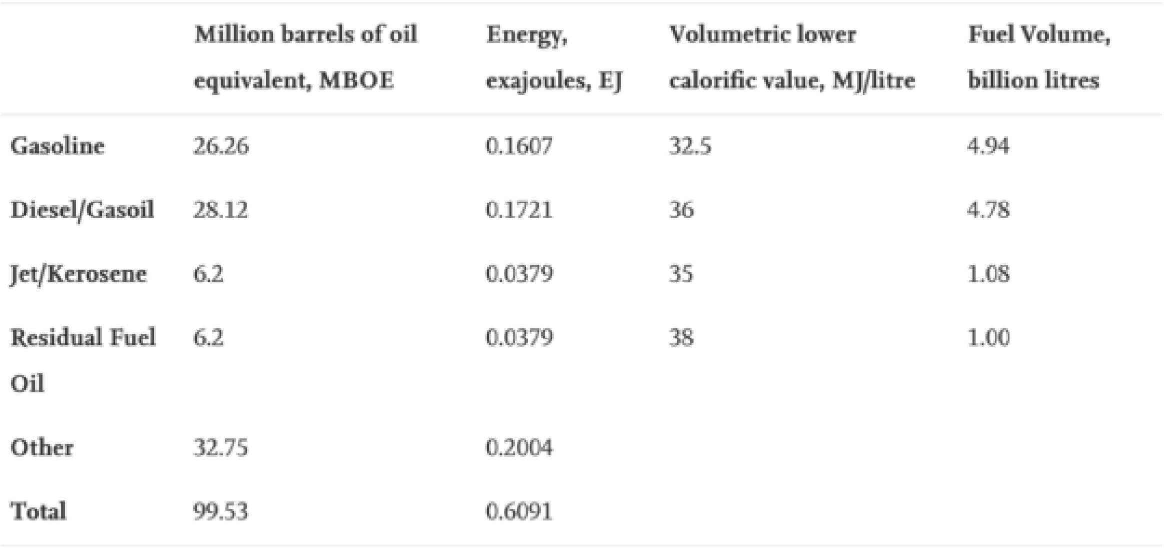
2.3. ??????????????????????????????????????

?????????????????????CO2????????????????????CO2????????e-fuel??????????????????????????????????44?????????????????????????????????????44??????????? ???????????????????????????

??2?Jet/Kerosene?????????????????1???0.0379EJ?????1???????14EJ?????????44??e-fuel??????????????????14/0.44?31.8?32EJ?????????1000GW???????????????0.4??????????2500 GW?????



	Million barrels of oil equivalent, MBOE	Energy, exajoules, EJ	Volumetric lower calorific value, MJ/litre	Fuel Volume, billion litres
Gasoline	26.26	0.1607	32.5	4.94
Diesel/Gasoil	28.12	0.1721	36	4.78
Jet/Kerosene	6.2	0.0379	35	1.08
Residual Fuel Oil	6.2	0.0379	38	1.00
Other	32.75	0.2004		
Total	99.53	0.6091		

?2

?????????????????1???????1668GW?102.47EJ?????????????32EJ?????1668/102.47×32?520.9 GW???????????????2????????????????????????????

??????????????????????????e-fuel??????????????????????????

????????????e-fuel????????????????????????CO2???e-fuel????????????????????????????????

?????????????????????????????????e-fuel???

?????????????????????e-fuel???e-fuel???

???????????????????????????????????1??3???CO2???????192?????0.12ha????????????????????????36?40?????????1 ha?????CO2??8.8??????????0.12ha???3???1ha???25????????????3??????????????????????????

?????????2????????1???6.2 MBOE?????2263 MBOE???????CO2?????9.90????990×10^6 tons????????????????????????

0.12 ha × 990×10^6 t/? ÷ 3 t/?? 39.6×10^6 ha

?????????????(489.66 EJ)????**2.8%**??????????????????????????**??**????(35.7×10^6 ha)???3???????????????

??

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

?? ?? · Wednesday, December 21st, 2022

??????????????????????CO2????10?????????????????CO2??????????????CO2?????????10????????????????2030??CO2???????????????

?????????????????????????CO2????7.1????????????????????????????????????

??????????????HTT???????????????HTT??

??????????????????5kW?PV?????????4kWh????????????????

	導入コスト	自家消費	年間メリット	試算諸元	回収年
PVシステム	150万円（5kW） 家庭用のPVシステム導入費30万円/kW、出力5kWと仮定。[1]	30% 現在の住宅用太陽光発電の平均的な自家消費率実績[2]	FIT期間中 12万円/年 FIT以降 6万円/年	資源エネルギー庁「地域活用要件について」(R1)に準じて試算 出力5kW×8,760h/年×設備利用率14%[2]＝発電6,132kWh/年 ①自家消費分のメリット 6,132kWh×30%×系統単価24.76円/kWh[3]＝45,548円/年 ②売電分のメリット（FIT期間中：～10年） 6,132kWh×70%×FIT単価（R1）21円/kWh＝90,140円/年 ③売電分のメリット（FIT終了後、電力会社と個別に契約） 6,132kWh×70%×想定買取価格8円/kWh[3]＝34,339円/年 ④運転維持費（定期点検・パワコン交換1回） ▲3,490円/年・kW[3]×5kW＝▲17,450円/年	15年
+蓄電池	75万円（4kWh） システム導入費18.7万円/kWh[4]	+20%[5]	3万円/年	①追加の自家消費分のメリット（充放電効率は90%と仮定[6]） 発電電力量6,132kWh/年×充放電効率90%×自家消費20%×系統単価24.76円/kWh＝27,329円/年 ②ピークカット＋調整力運用のマルチユースを行った場合のメリット想定：2,400円/年（600円/年・kWhと仮定[7]） ※夜間へのピークシフト運用は併用が難しいとして考慮せず	25年

???????????

???????????CO2?????1kWh????177kg-CO2????????Kawamoto????3??

???5kW?????????CO2?????

177×5=885kg

??????????????CO2??????????????????????????2.19kgCO2/Wp????5kW?????????

2.19×5=10.95tCO2

????

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

0.885/10.95=8.08%

????

CO2?????????8.08%???????

???????????CO2??????????7.1???????

7.1×(1+8.08%)=7.7

????**??????????????????????????CO2??????????7.7?**????

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

??CO2????????
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Posted in ???????????, ??? | No Comments »

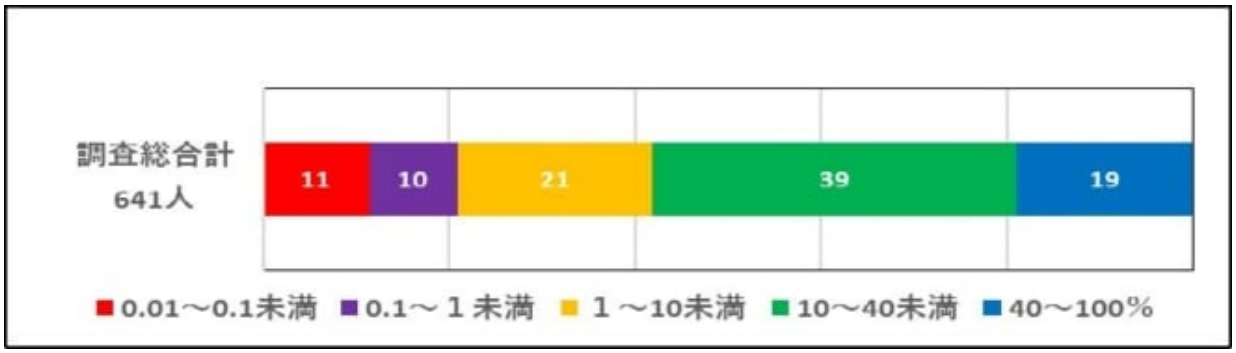
????CO2???????10??????

?? ?? · Tuesday, December 20th, 2022

artisteer/iStock

CO_2??????????10????????10???????????

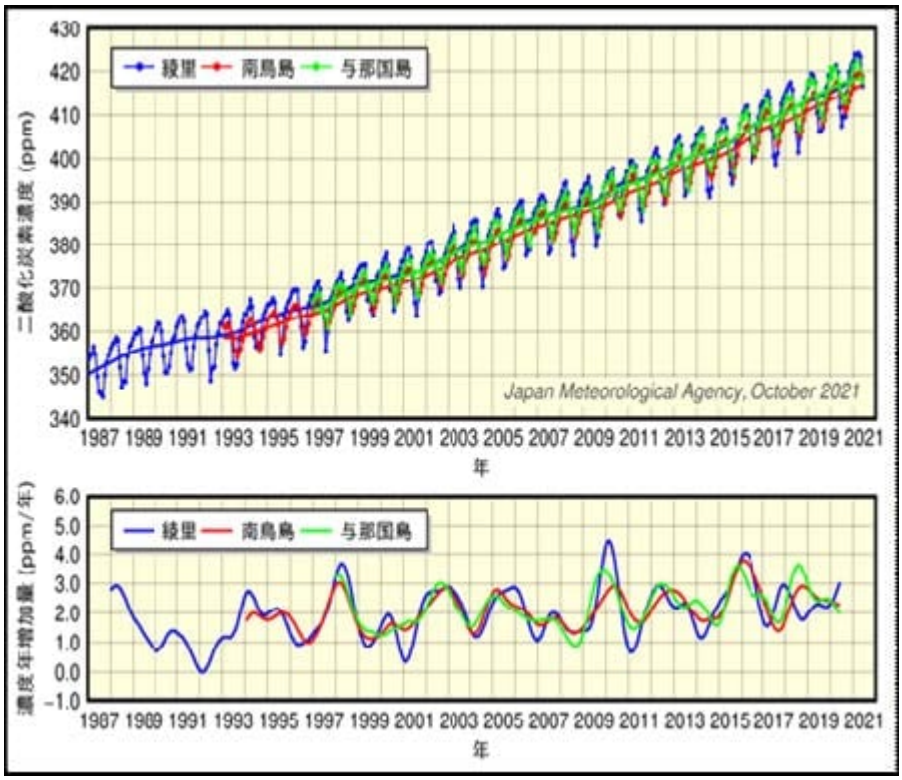
2021?22??????????222?????????????**?641?**??????????????????????????????11??0.1??????????????????**CO_2???10????????????58???????????**



???????????80???????20????????????????????????????????????6????????????????????????????78????21??$CO_2$1?????0.04??????

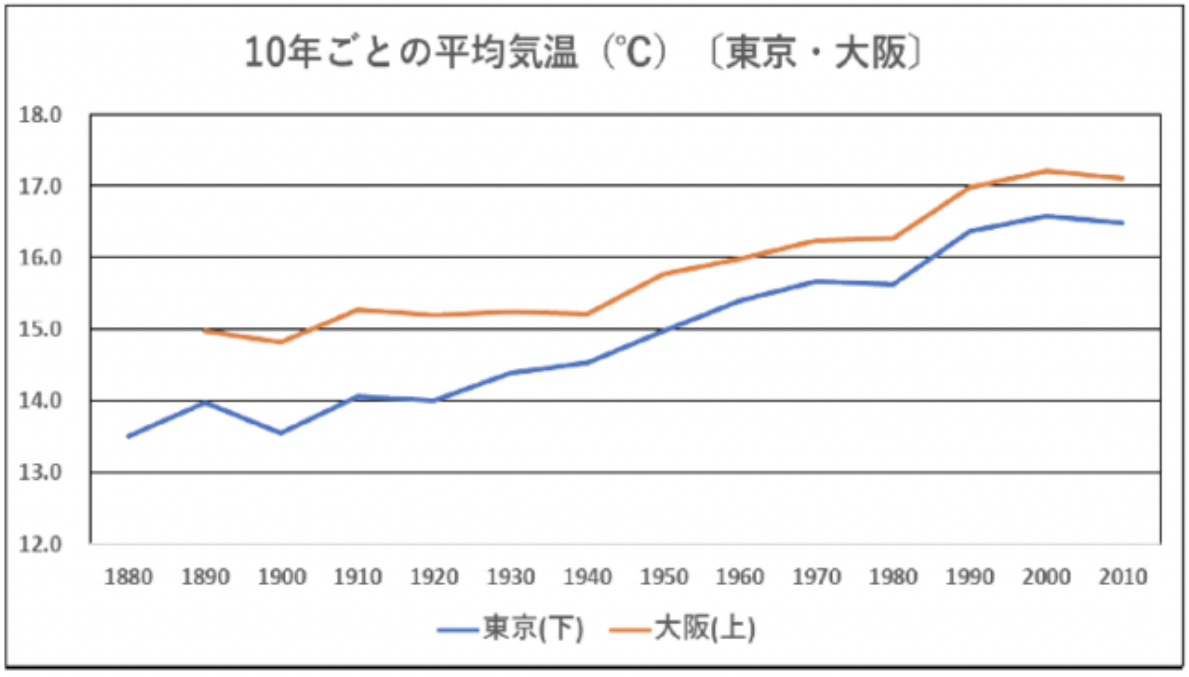
??CO_2????????????????????????????

2000????CO_2????????????????????????



????JMA?HP????????3????????????????????CO_2???1987????????????????????????????????????
????1958???????????????63???1958?2021???99ppm?316?415ppm??????????????????1.57ppm/?
??????????????????30???**CO_2??????????????????**

????????????????????????HP???????????>??????????>????????????????????????????????10????
00?09????????????????????????????



?????1940??2000?????????1980??1990??????????????????????**?2000????????????????????????**
?????5????????????????????????????????

??????**??????CO_2????????????????????**??????????????????????????CO_2????????????????????
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?????????Spiral of Silence????
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???????????1980????????????????????????????????????OPEC????????????????????????????????
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2000??????IPCC????????????????????????????COP??
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?? ? · Monday, December 19th, 2022

????????COP????????NGO????????????????????????COP????????????????????????????????

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COP25??
??????????????????????????1??????????????????NGO??NGO????????????????????????????????????

??2??
????????????????????????NGO????????????????????????????????

COP27?????11?9??
??NHK????????????????????????????

NHK??

https://www3.nhk.or.jp/news/html/20221110/k10013886821000.html

COP27????????????????????????????????????

- 11?9??
- 11?10??
- 11?11??UAE/????????????????GECF????????????????Energy Transition Accelerator??????????????????????????????????????
- 11?12???????????????
- 11?14?????????????????????2024?????????????
- 11?15??????2030?BAU????????????????30??????
- 11?16??????1???????????????
- 11?17???????????????????????????????
- 11?18???????????EU????????????????????????Colossal Fossil??????

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???NGO????????????????????COP26????????????????????

??G7?????????????NDC??????????????????
????????????????????COP27??

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

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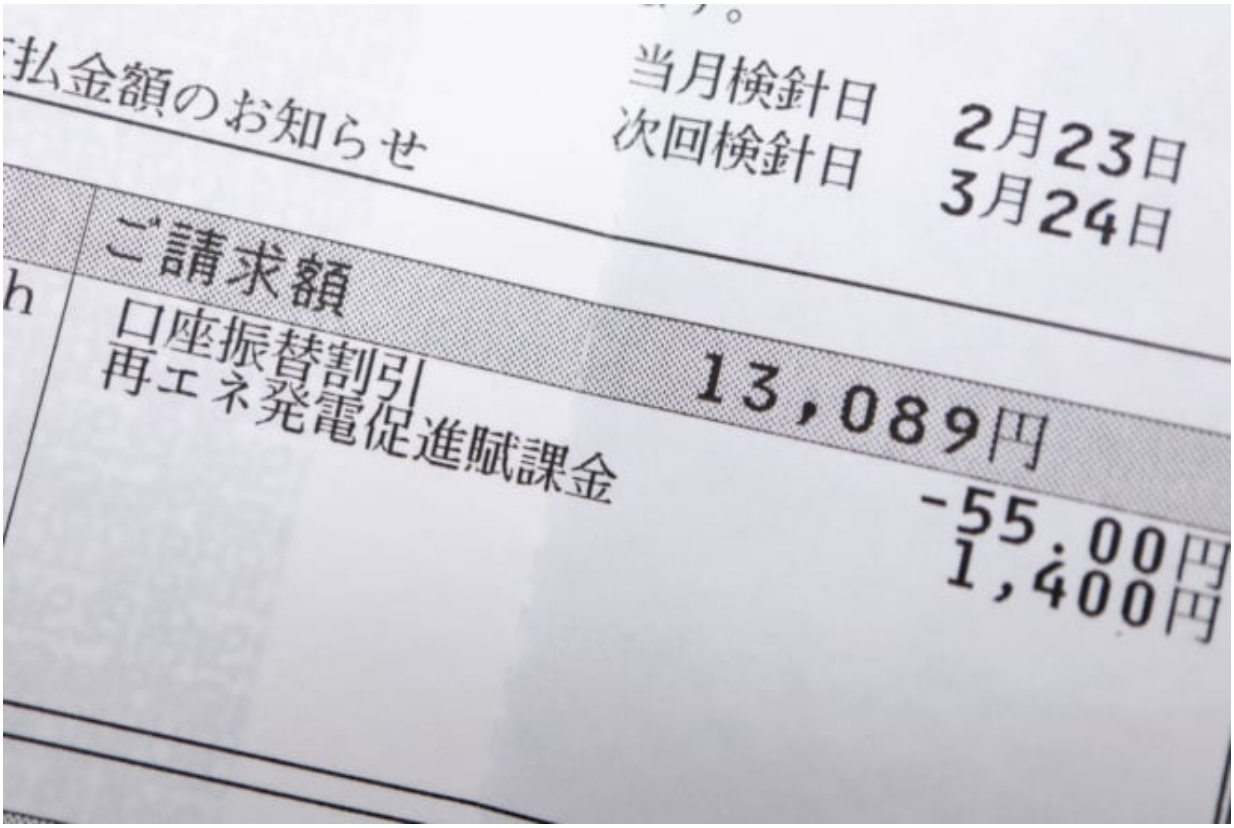
?? ??? · Thursday, December 15th, 2022



払金額のお知らせ

当月検針日 2月23日
次回検針日 3月24日

ご請求額	13,089円
口座振替割引	-55.00円
再エネ発電促進賦課金	1,400円

Yusuke Ide/iStock

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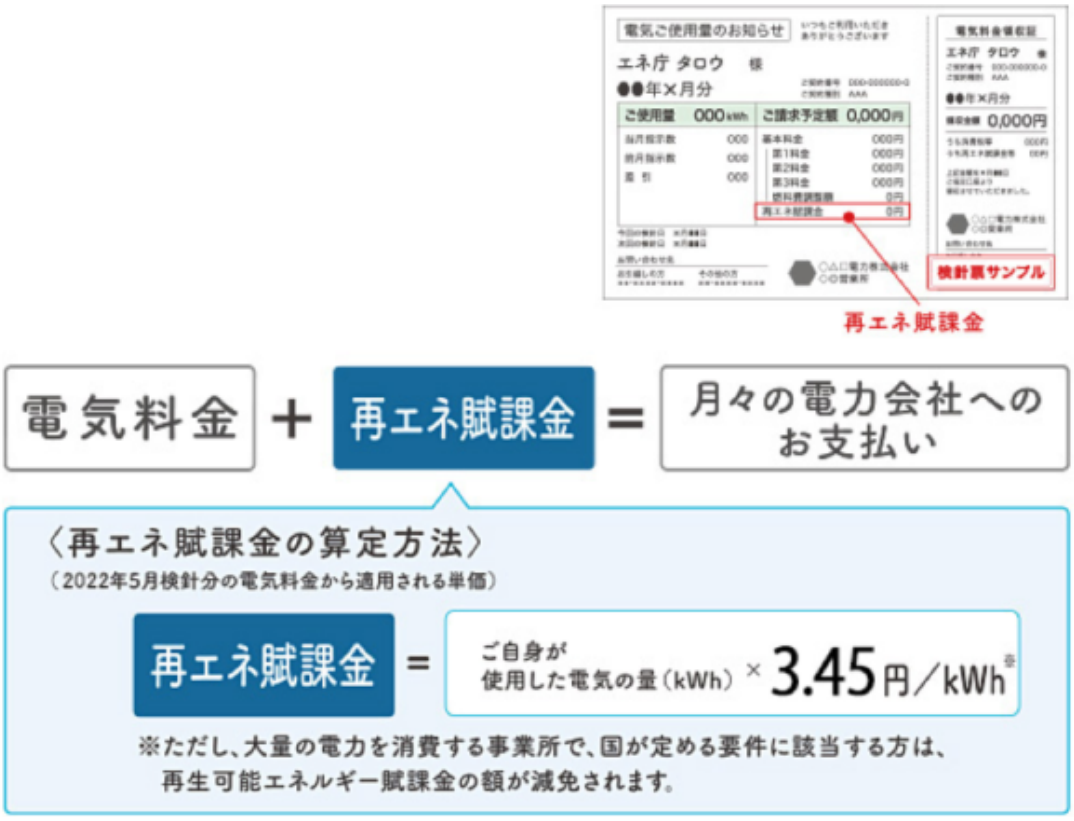
???CO2??????????????????????????????????????FIT????????????????????????????????2012???????????????????????????????????????2021????????????????16.3???????????????0?????????????13?????????????????

?FIT???



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??2021???????????6000?kW?????500?kW??????????????????????2?6000?kW??25??2021??10.2??????

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???????????FIT??????????????????????CO2??????????????????????COP26??????CO2??

????????CO2?????1990????????????????????????11?6000????2019??11?1000?????????????????4????????????

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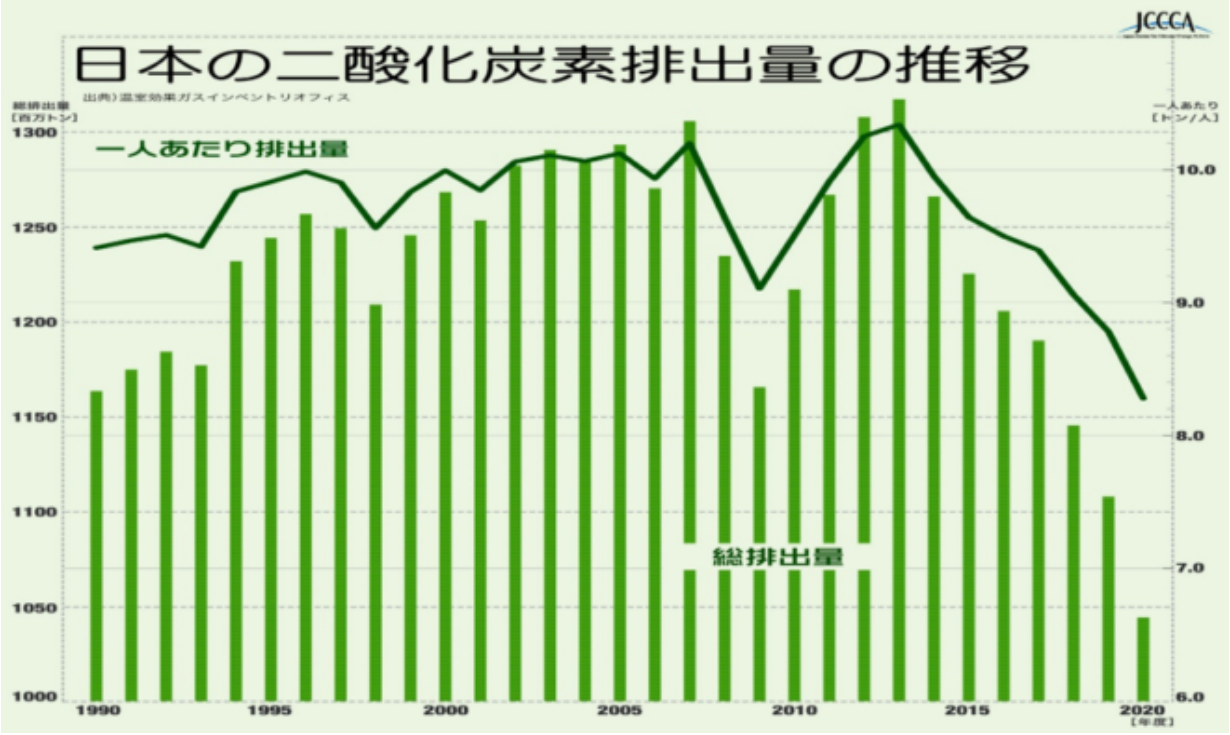

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???2020????????????????????????CO2???????????????????2019??????????

?????FIT???

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

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?? ? · Wednesday, December 14th, 2022

suken/iStock

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2. ??????????????????????????????????????
3. ??
4. ????????????????????????????????

??203?

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??112????????????????????????????????
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??:26????????????????????????????????

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????????????1988?6??

COP27??????????????????

??????2021??COP26????????????????????????????2050????????????????????????????????2060????
?????3????????????????????2070????????????????????????????????????

???2022??COP27???1865=1970:31?????????????????????????????????

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????????????????????????2022?12?1???2023?3?31??????????????????GDP?3???GX?????150?????????10?????????????????????????????????

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??1950=1995:130???2022???:110?????????

??18??19??????????????????????

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????????????2022?12?8???1751?????????????????100???

??16????????????????????????????[?2)]

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??1?2021?????????????????????????????????????1?????????????

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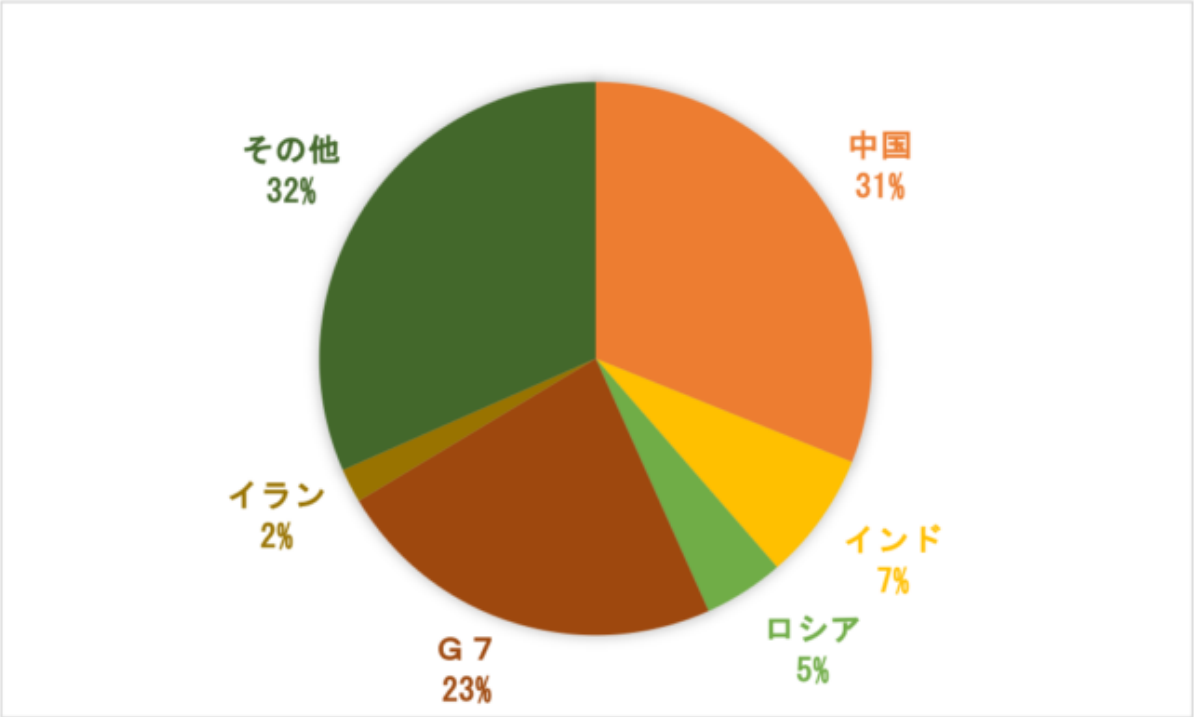

?1?2021?????????????BP???

???Global Note ?????????????

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

?1???G7???????????13.9?????3.1??????1.9??????1.6???????1.0???????0.9???????????0.8??????????
?23.2?????????????????43.3??????????????

?????????G7???3.1????????????????????3.0??2.8???????
????????????????????????????[?3)]?

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??????????????????universal?????????????????????(particular)???????????????????

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?2??COP27??
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?3??

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???????????????IPCC?COP??

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

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?5?????????????????????1???1???????31?????????
??????????????????????3?????????????????????32???????????????????

?6??
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?7????????????????????????????????????100???????????????????2022????????????????????????????
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?8??28???2050????????????????????????????????
???1????????????????????????????????????

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?9???????????????????????1?23.2????????G7???????43.3??

?10??????30?????????4?????560??????????????????????2022?????????25?????????????????????????????????[?4)]?????????????????

?11???50??10?????????????????????????1??????????????????????????????????G7???????????????????????????

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?12????1.5???????????????????……???????????????????????G7???????23??????20?????????77???????????10????????????????????????

?13???3??????????????

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?14??GN?GS????????????GS???

??????15??[?5)]?

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????16??

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?1???????????????3.11??2012)??????????????????????????????????

?2?????????6??100?????1????????????

?3?2010?????????????????????????????25??????????????????????2010?12?1???50???????????????????????????????????2012:91-93??

?4?????????????????2022??????

?5??

??????

- Bernard,C.,1865,*Introduction à l'étude de la médicine expérimentale* .(?1970,??????????????????).

- ???,2012,??????????????????.
- ???,2022,??????????????????????????????????11?24??.
- ???,2022,??????????????????????????12?8??.
- Shumpeter,L.A.,1950,*Capitalism,Socialism and Democracy*,3rd.??1977??.
- ????,2022,?COP27?????????14????????????????????????????11?23??.
- Urry,J.,2016,*What is the Future?* Polity Press Ltd.??2019????????????????????.
- ???,2022,???????????14????????.

Posted in ???, ????? | No Comments »

???????????SDGs?????????

?? ?? · Sunday, December 11th, 2022

smolaw11/iStock

????????????COP15???????: ??????

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CO2??
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???COP27??
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2010????????????10??????????????COP10??
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1. ??
2. ??????????????????????????????????????
3. ??

???3??
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10??1950?????????1960??????????

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????10?????????COP15??

??SDGs??????????????????

2010??COP10???

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???????????CSR???

??SDGs???

???15??????????????????????**?????**?????????????????????????????????NPO?????????????????????????????????????

??NPO?????????

???1?2??NPO??

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?SDGs????????

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

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?? ?? · Tuesday, December 6th, 2022

muhammet sager/iStock

??CO$_2$???

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?????????????????2030?????????????80%?????2045???

??????????????????20????????????????????114???????59,000??

???????????????????????????????????2002?????????2022???????????????????10?????50??????????????????????????

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??????????????????2001???2021????11,438???28,230??????????????????????57,000???????????20?????
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??10?????????????????????????20,000???203
0?????50,000??????????????????

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??SF6
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????????25?30???????????2012???????????????????FIT??2032????20????????????????????????????????????
??????????????????2015??2,351????2040??80??????????

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

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?? ?? · Monday, December 5th, 2022

Daniele Mezzadri/iStock

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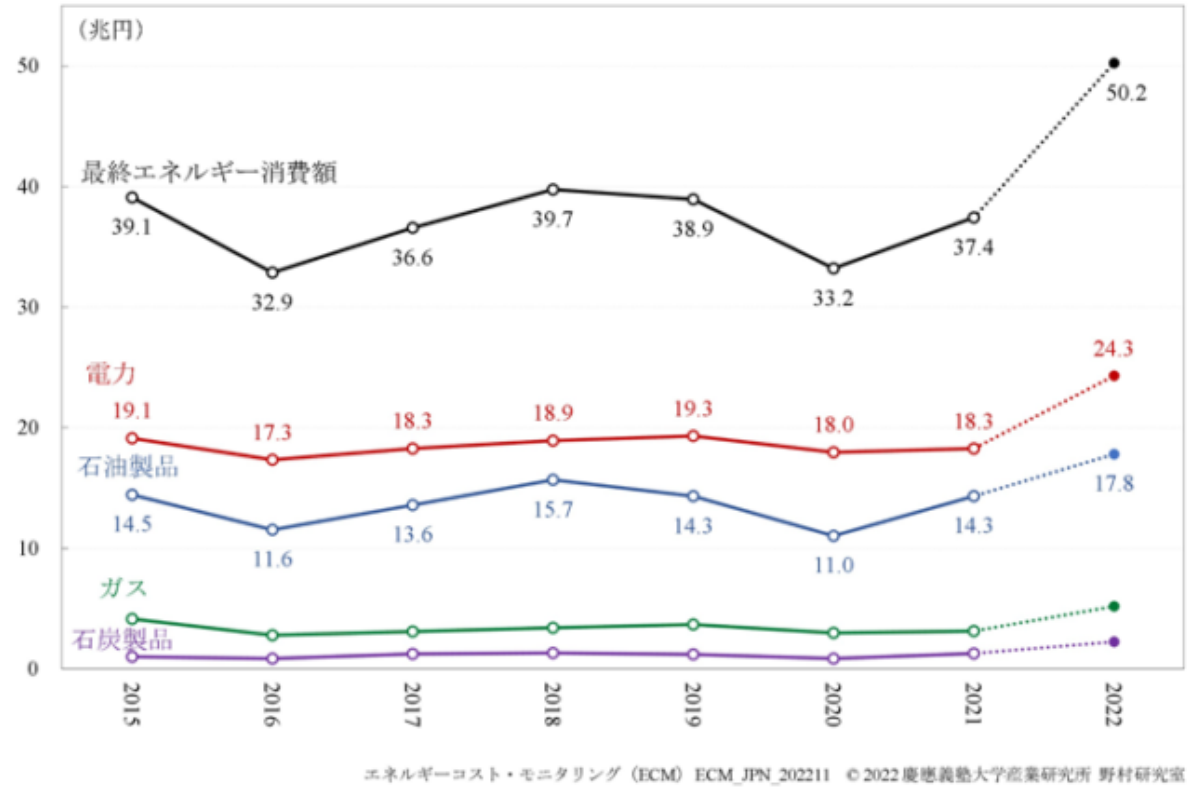
エネルギーコストの年次動向

- 2022暦年の最終エネルギー消費額（予測値）は50.2兆円、前年差で12.8兆円（前年比34.2%）の増加見込み。
- 2022暦年の電力消費額（予測値）は24.3兆円、前年差で6.0兆円（前年比33.1%）の増加見込み。



エネルギーコスト・モニタリング（ECM）ECM_JPN_202211 © 2022 慶應義塾大学産業研究所 野村研究室

単位：兆円。注：観測期間は2015年—2021年。2022年値は2022年10月値までを反映した予測値。

????????2022??????????????????????????2021??????6????????

??????????????????????????????????????2023????????????????????????????????

> ????9????????????????????????2.5????????????????????
>
> ??????10????????????????????????????????2016??????????????10???????????
>
> ????????????????????????????30????????????????????

????????10??????20?????**?????10????????????5%???????**??????????????????????

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

GX??????????????????

?? ?? · Thursday, December 1st, 2022

y-studio/iStock

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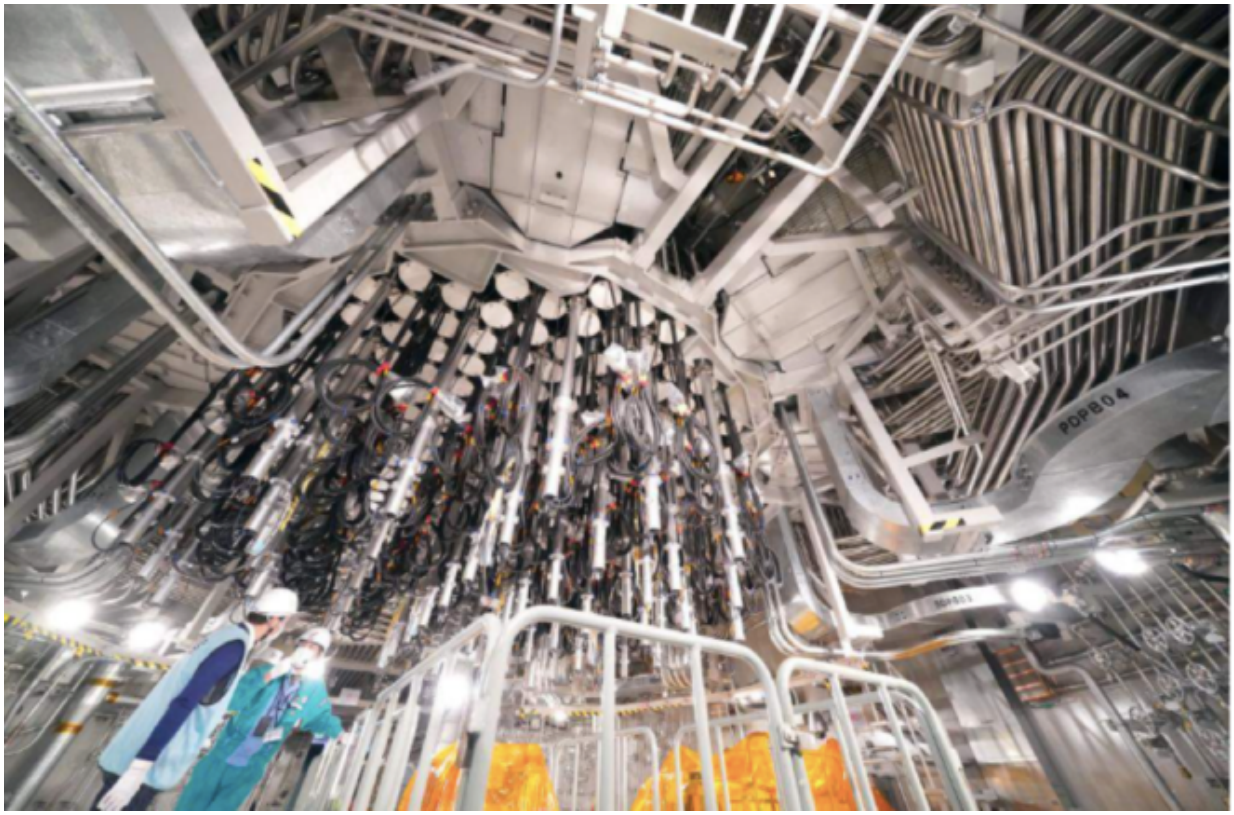

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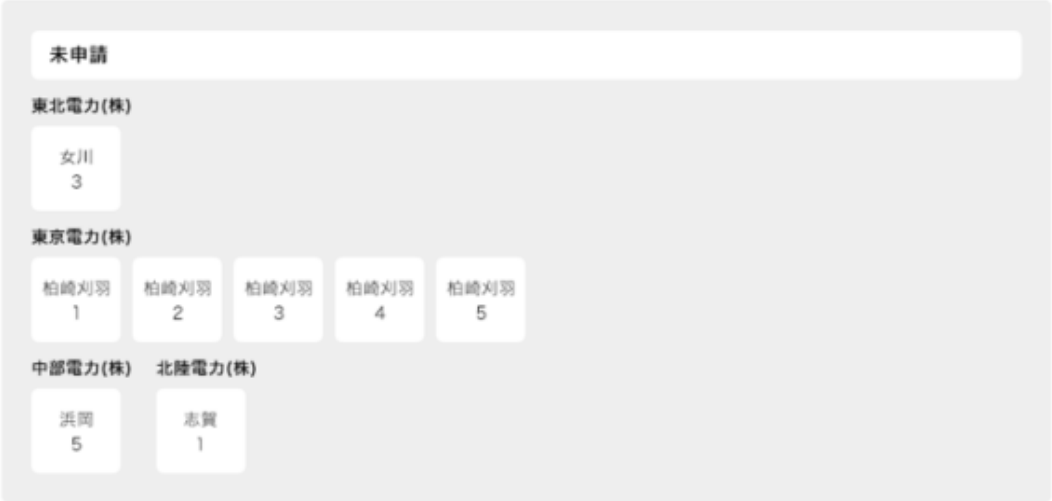
国内の原子力発電所の新規制基準適合性審査等の対応状況



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

????COP??????

?? ?? · Tuesday, November 29th, 2022

COP27????????????1??COP???????????????????COP??COP?????????????????????????????

dinn/iStock

COP27???

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Posted in ???, ????? | No Comments »

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

?? ?? · Monday, November 28th, 2022

Michael Piepgras/iStock

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

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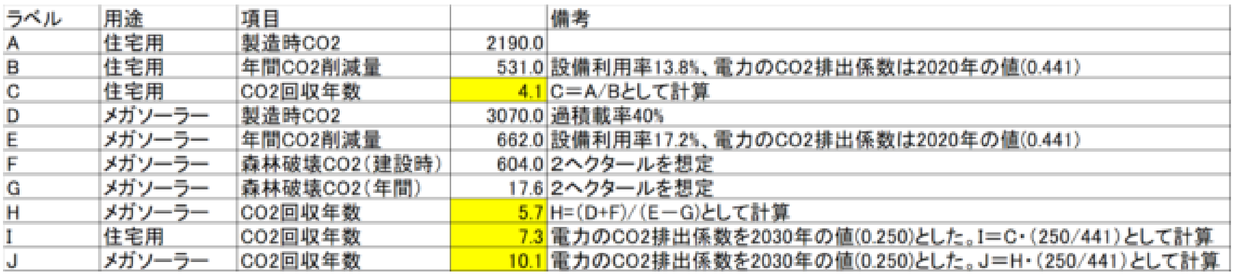

ラベル	用途	項目		備考
A	住宅用	製造時CO2	2190.0	
B	住宅用	年間CO2削減量	531.0	設備利用率13.8%、電力のCO2排出係数は2020年の値(0.441)
C	住宅用	CO2回収年数	4.1	C＝A/Bとして計算
D	メガソーラー	製造時CO2	3070.0	過積載率40%
E	メガソーラー	年間CO2削減量	662.0	設備利用率17.2%、電力のCO2排出係数は2020年の値(0.441)
F	メガソーラー	森林破壊CO2（建設時）	604.0	2ヘクタールを想定
G	メガソーラー	森林破壊CO2（年間）	17.6	2ヘクタールを想定
H	メガソーラー	CO2回収年数	5.7	H=（D+F）/（E－G)として計算
I	住宅用	CO2回収年数	7.3	電力のCO2排出係数を2030年の値(0.250)とした。I＝C・（250/441）として計算
J	メガソーラー	CO2回収年数	10.1	電力のCO2排出係数を2030年の値(0.250)とした。J＝H・（250/441）として計算

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- ？？？？？？？？？？？２０２０？？？？？？？？？？？？２０３０？？？？？？？？？？？？？？？？？？？？？２５０ｋｇ-CO2/kWh??????????**CO2?????????????????7.3??????????10.1????**?

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

???????????COP27

?? ? · Monday, November 28th, 2022

ricochet64/iStock

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Posted in ???, ????? | No Comments »

COP27??????????????????????

?? ?? · Friday, November 25th, 2022

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COP27??
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Posted in ???, ????? | No Comments »

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?? ? · Thursday, November 24th, 2022

metamorworks/iStock

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	2020年	2030年(1)	設備稼働年数	設備利用率	2030年(2)
原子力	11.5円	11.7円	40年	70%	14.4円
太陽光（事業用）	12.9円	8.2～11.8円	25年	17.2%	18.9円
太陽光（住宅用）	17.7円	8.7～14.9円	25年	13.8%	
陸上風力	19.8円	9.9～17.2円	25年	25.4%	18.5円
洋上風力	30.3円	26.1円	25年	30%(33.2%)	
石炭火力	12.5円	13.6～22.4円	40年	70%	13.9円
LNG火力	10.7円	10.7～14.3円	40年	70%	11.2円

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	原子力発電	石炭火力発電	LNG火力発電
CO_2対策費	0	3.9	1.8
社会的費用	1.9		
（事故リスク対応費用）	0.6		
（政策経費）	1.3		
発電原価	9.6		
（燃料費）	1.7	4.2	6.4
（追加的安全対策費）	1.3		
（運転維持費）	3.3	2.3	1.2
（資本費）	3.3	2.0	1.3
合　　計	11.5円kWh	12.5円kWh	10.7円kWh

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- Harvey,D,2014.*Seventeen Contradictions and the End of Capitalism*,?Profile Books.(?2017????????????????????).
- ???,2009,?????????????
- ???,2012,???????????????????.
- ???,2022a,??????????????????????????????????8??????????????:17-53?
- ???,2022b,???????????????????22?????.
- Livingston,J.A.,1973,*One Cosmic Instant?Man's Fleeting Supremacy?*,Houghton Mifflin Company.(?1992??????????????????????????????????).
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- Mosher,S & Fuller,T.,2010,*Climategate-CRUtape Letters*,Createspace.(?2010 ???????????????????????.
- Parsons,T.,1951,*The?Social?System*,The?Free?Press.??1974????????????????
- ????,2022,???11?8??
- ????,2022a,??????????????????????????.
- ????,2022b,???11?19??
- ???,2022,???????????14????????

Posted in ???, ????? | No Comments »

COP27??????????14????????

?? ?? · Wednesday, November 23rd, 2022

imagedepotpro/iStock

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COP27?? “?????” ????????????????NHK?

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COP27??

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??4?6??
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The cover decision, known as the Sharm el-Sheikh Implementation Plan, highlights that a global transformation to a low-carbon economy is expected to require investments of at least USD 4–6 trillion a year. Delivering such funding will require a swift and comprehensive transformation of

??4?6??????????GDP??

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22. *Notes with grave concern*, according to information in the contributions of Working Groups II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, the growing gravity, scope and frequency in all regions of loss and damage associated with the adverse effects of climate change, resulting in devastating economic and non-economic losses, including forced displacement and impacts on cultural heritage, human mobility and the lives and livelihoods of local communities, and *underlines* the importance of an adequate and effective response to loss and damage;

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and *also welcomes* the adoption of decisions -/CP.27[12] and -/CMA.4,[13] on matters relating to funding arrangements responding to loss and damage associated with the adverse effects of climate change;

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30. *Highlights* that about USD 4 trillion per year needs to be invested in renewable energy up until 2030 to be able to reach net zero emissions by 2050,[18] and that, furthermore, a global transformation to a low-carbon economy is expected to require investment of at least USD 4–6 trillion per year;[19]

????????????????????????2030????5.8??5.9???????????

32. *Notes with concern* the growing gap between the needs of developing country Parties, in particular those due to the increasing impacts of climate change and their increased indebtedness, and the support provided and mobilized for their efforts to implement their nationally determined contributions, highlighting that such needs are currently estimated at USD 5.8–5.9 trillion[20] for the pre-2030 period;

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2030????????6??????????????2024???2029??6??????????????1????????????

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7. *Decide* to establish new funding arrangements for assisting developing countries that are particularly vulnerable to the adverse effects of climate change, in responding to loss and damage, including with a focus on addressing loss and damage by providing and assisting in mobilizing new and additional resources, and that these new arrangements complement and include sources, funds, processes and initiatives under and outside the Convention and the Paris Agreement;

8. *Also decide*, in the context of establishing the new funding arrangements referred to in paragraph 2 above, to establish a fund for responding to loss and damage whose mandate includes a focus on addressing loss and damage;

??????????????????Transitional Committee?????????COP28??????????????????????????????????10????????14????????

III. Composition

4. The Transitional Committee shall have 24 members, to be nominated no later than 15 December 2022, comprising 10 members from developed country Parties and 14 members from developing country Parties, with geographical representation as follows:

a) Three members from Africa, including a representative of the President of COP 27;

b) Three members from Asia and the Pacific, including a representative of the incoming President of COP 28;

c) Three members from Latin America and the Caribbean;

d) Two members from small island developing States;

e) Two members from the least developed countries;

f) One member from a developing country Party not included in the categories listed above.

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COP21 in 2015 in Paris. The $1 trillion per year is a very different concept – it is a requirement based on an analysis of the investment and actions necessary and the domestic finance potentially available, for an internationally agreed and vital purpose. The $1 trillion is not the new $100 billion. The latter was negotiated, not deduced from analyses of what is necessary for a purpose.

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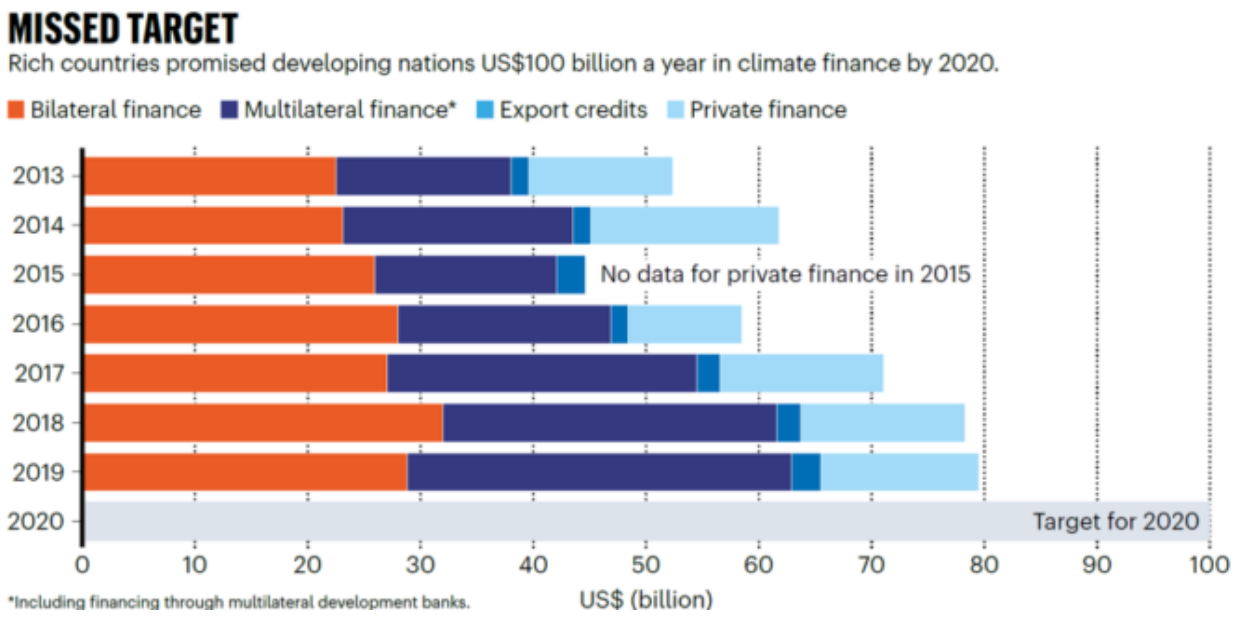

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Posted in ???, ????? | No Comments »

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?? ?? · Tuesday, November 22nd, 2022

Olga Burkova/iStock

???????????COP27????????????COP26??
??????????**?????**(loss and damage)?????????????????

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??**??**(adaptation)??????????????????????????

1997????????????????????????????????????**??**(mitigation)??
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COP26????????????????????????????????1??
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COP27???EU?1.5??
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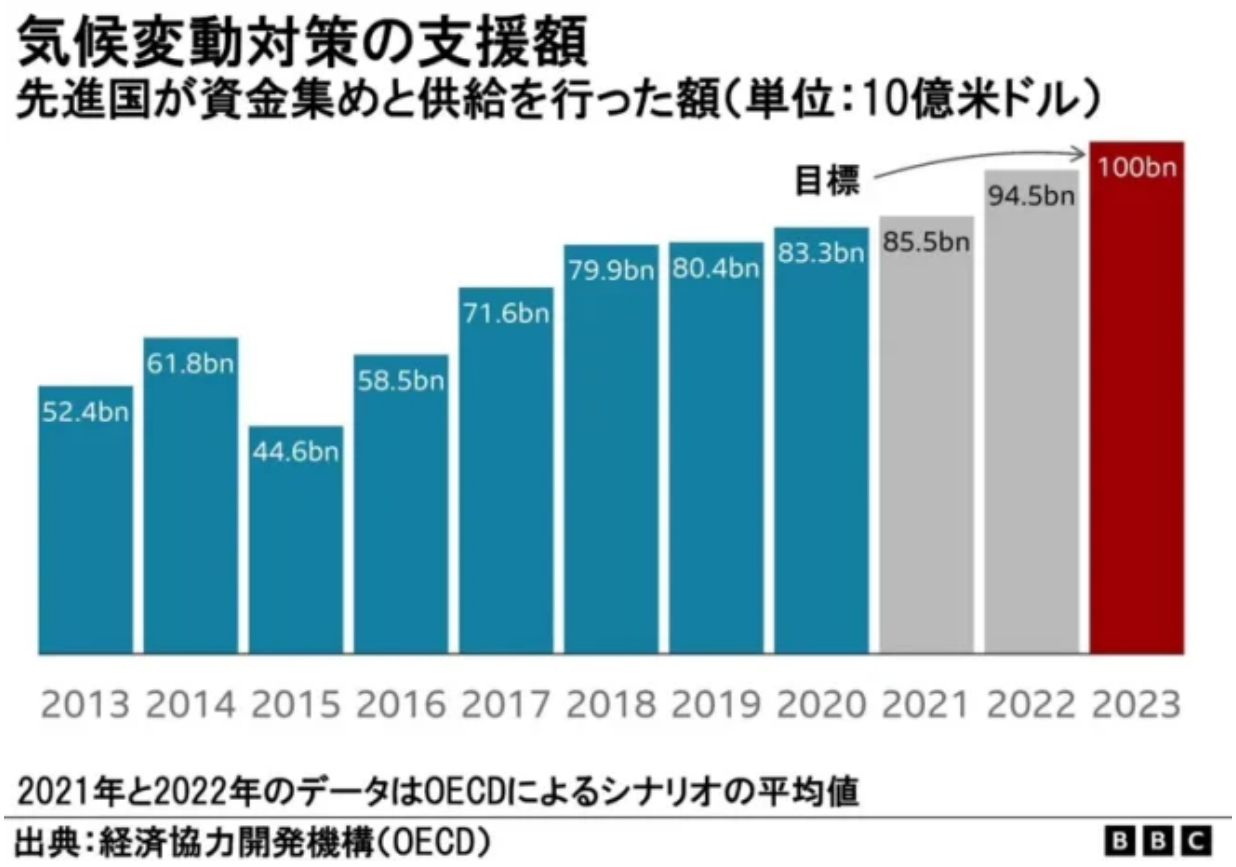

????IEA??????????????????????????4???????????????COP??

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COP27????????????????????????COP28?UAE??????????????????1.5??

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Posted in ???, ????? | No Comments »

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

?? ?? · Saturday, November 19th, 2022

chuyu/iStock

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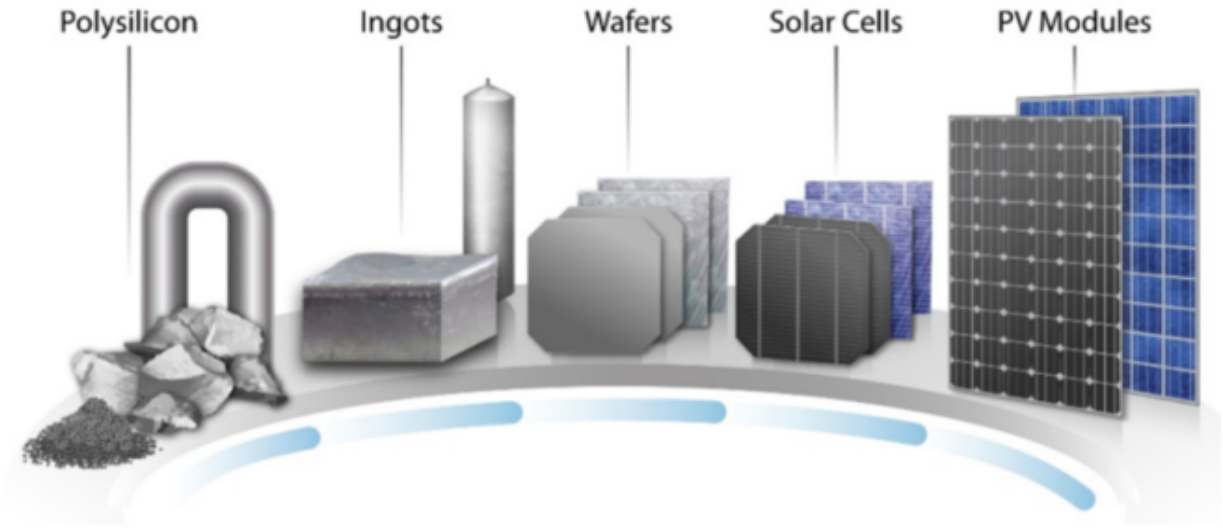
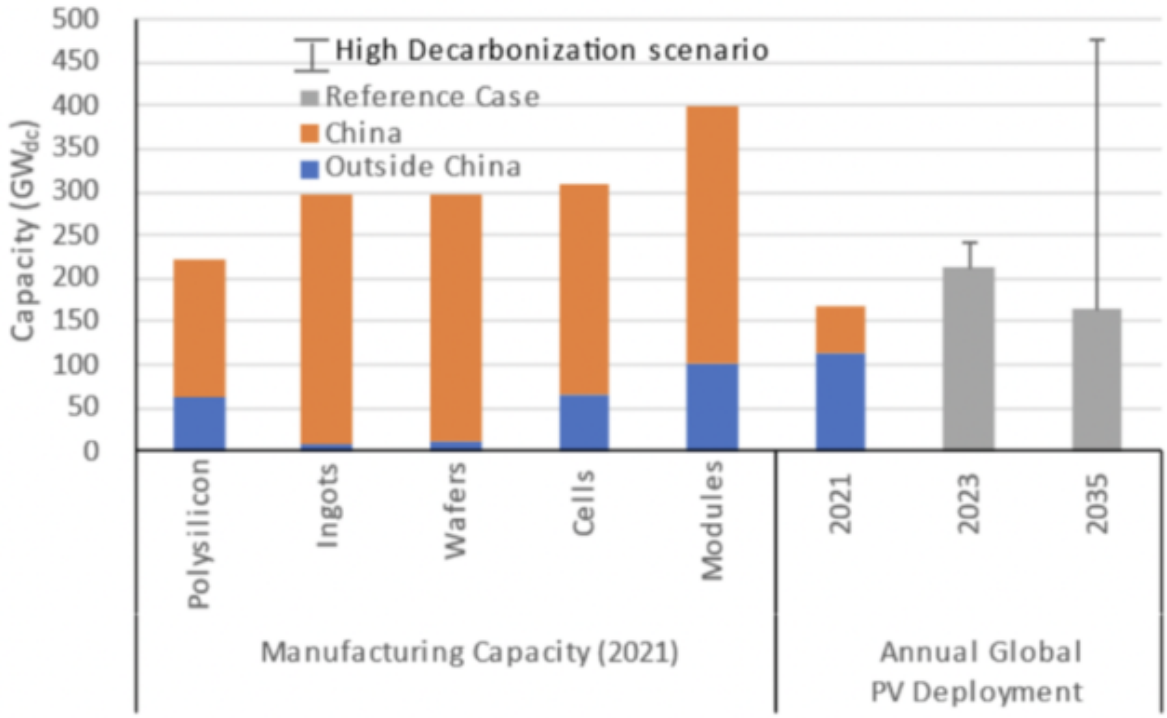


5??????????????2021????????????????????????????????????



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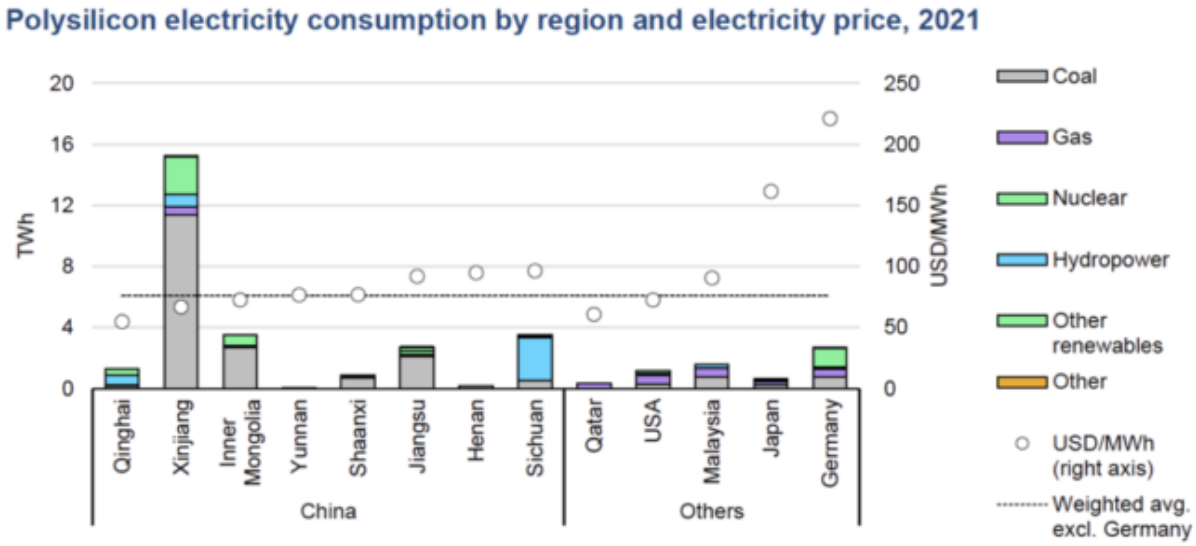

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??CO2????????9.8??

	CO_2 payback time for panel installed in California	CO_2 payback time for panel installed in China
High CO_2 intensity solar PV	9.8 years	3.2 years
Low CO_2 intensity solar PV	2.6 years	0.8 years

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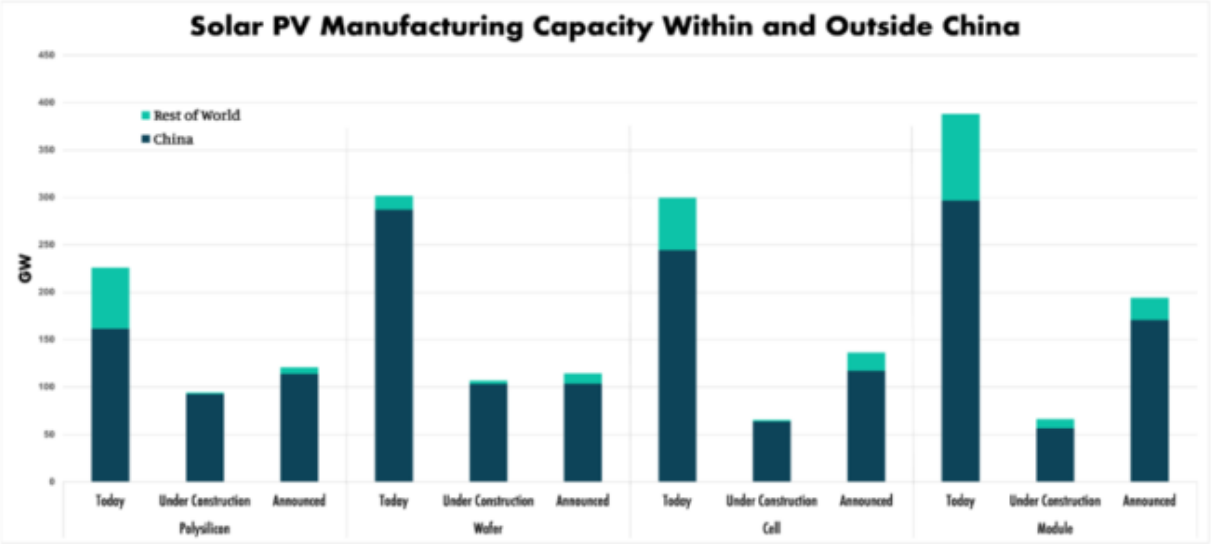
Solar PV Manufacturing Capacity Within and Outside China
Rest of World
China
GW
Today
Under Construction
Announced
Polysilicon
Wafer
Cell
Module

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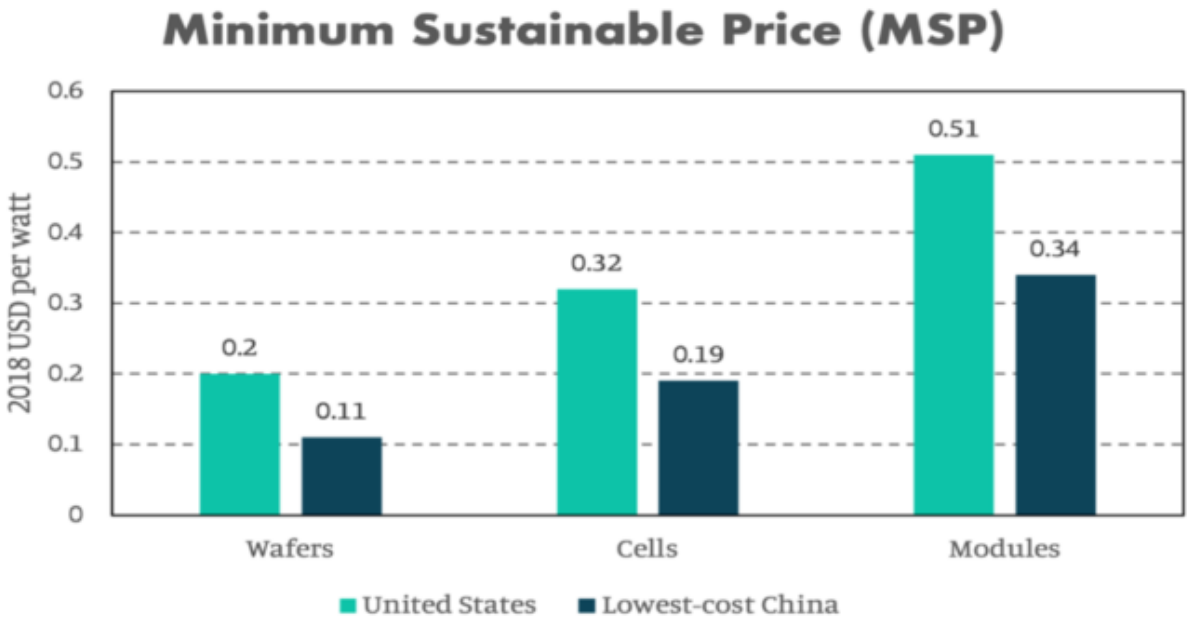
Minimum Sustainable Price (MSP)
2018 USD per watt
0.6
0.5
0.4
0.3
0.2
0.1
0
0.2
0.11
0.32
0.19
0.51
0.34
Wafers
Cells
Modules
United States
Lowest-cost China

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杉山大志
東京都太陽光パネル
義務付けの問題点

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?? ? · Saturday, November 19th, 2022

Nastco/iStock

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??Gautam Kalghatgi??

??2050??

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??Abstract????????????????????????
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1. ??

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??CO2??
2??3??????????????

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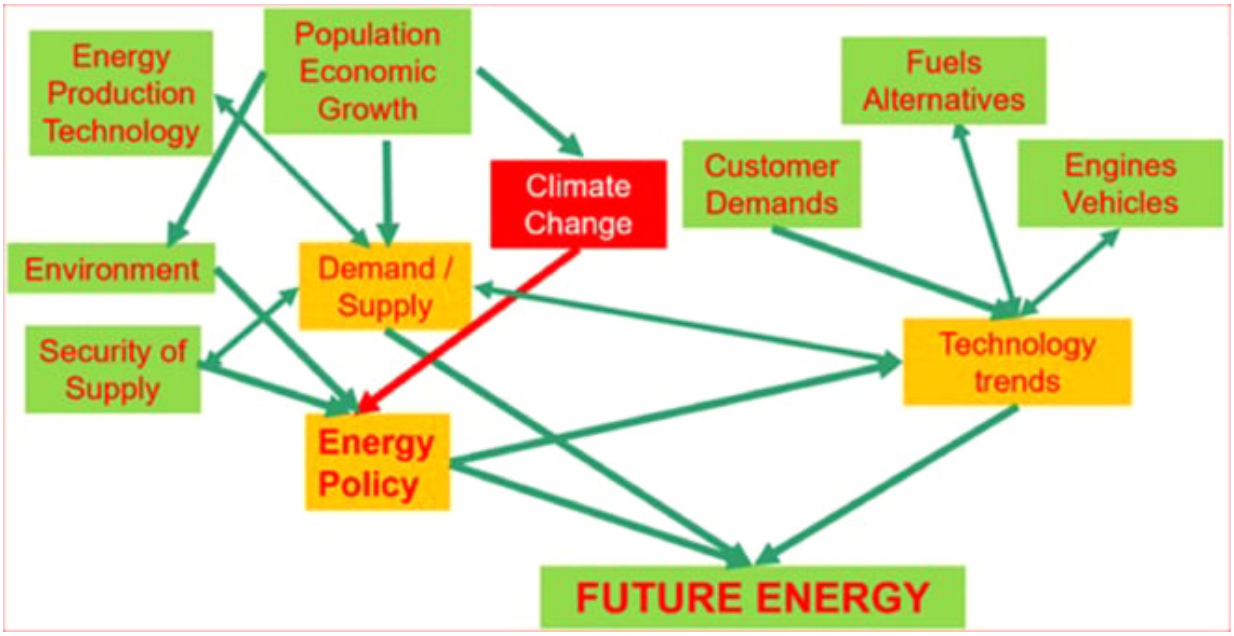

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?CO2???

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

?????1???2021??BP??????????????????????????????????82.3%????????????????489.66EJ/??595.15 EJ??????????????????1.75%?????????

Table 1. Primary energy and electricity sources in exajoules, EJ (10^{18} joules) and installed wind and solar capacity in GW for 2021 [7]. Electricity generation converted to EJ from TWh. 1 EJ= 277.8 TWh.

Country	World	China	U.S.A	India	UK
Oil, EJ	184.21	30.6	35.33	9.41	2.5
Natural Gas, EJ	145.35	13.63	29.76	2.24	2.77
Coal, EJ	160.1	86.7	10.57	20.09	0.21
Total fossil fuel, EJ	**489.66**	**130.93**	**75.66**	**31.74**	**5.48**
Actual delivered Wind, EJ	6.7	2.36	1.38	0.245	0.232
Actual delivered Solar, EJ	3.72	1.177	0.594	0.246	0.045
Nuclear, EJ	25.31	3.68	7.4	0.4	0.41
Hydro, EJ	40.26	12.25	2.43	1.51	0.06
Other, EJ	29.5	7.253	5.306	1.289	0.953
Total Primary Energy, EJ	**595.15**	**157.65**	**92.97**	**35.43**	**7.18**
Electricity Generation					
Installed wind capacity, GW	824.9	329	132.7	40.1	27.1
Installed Solar Capacity, GW	843.1	306.4	93.7	49.3	13.7
Total electricity generated, EJ	102.47	30.72	15.86	6.173	1.116

Other includes bioenergy, geothermal etc.

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???????????BP????IEA?????

?1???????????????EJ?10^{18}joules??????T?$10^{12?}$Wh??EJ?????1 EJ = 277.8TWh????????????????????????????????1J =

2.778×10^{-7}kWh???10^{18}??????????????????????????????

????????1kWh??????????????????????1kWh = 860.6kcal = 3.6kJ???????100??????????????????????????????????100??????????????????????????????40?????????????????????

???????1kWh????860.6kcal?????????????860.6kcal????1kWh??????????????????Wh?????????????????????J???cal????????????????????????????????????

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??Wh???????????J or cal??????????????????????????41.5%?????????????????IEA??????????????????10?????33?????????100?????????????????

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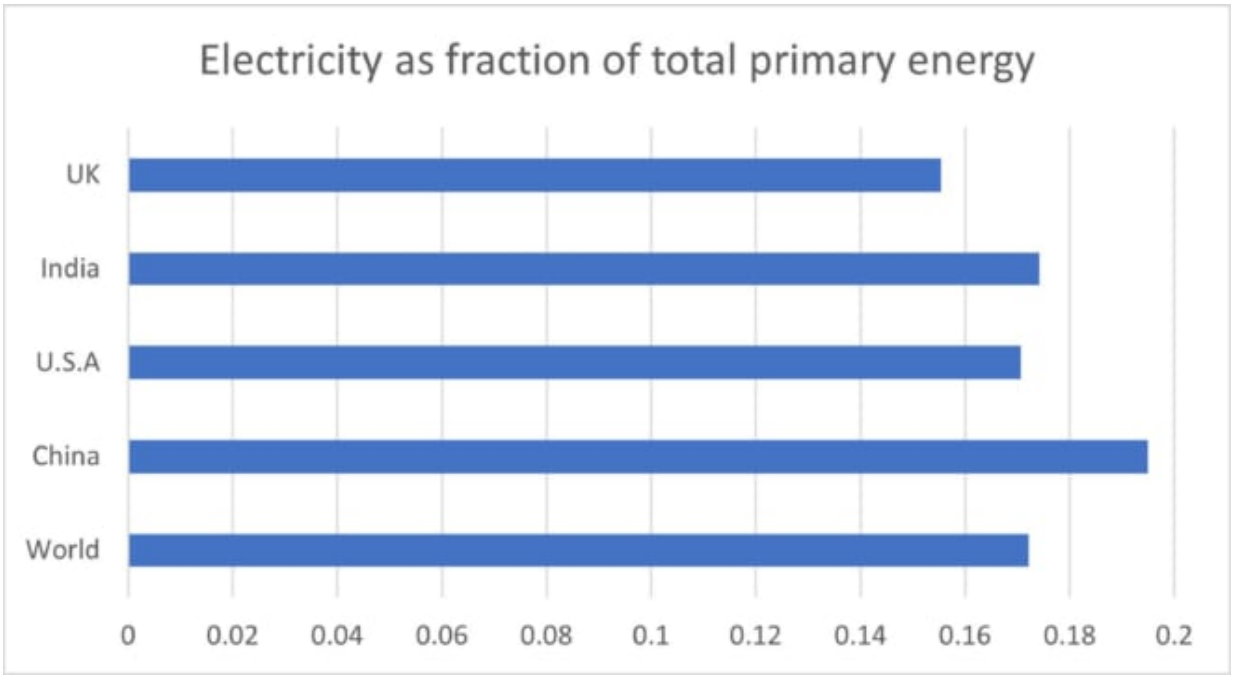
??1kWh???????????????0.1?0.33?1.0??

??????????1??489.66EJ???????????105.49EJ??254.19EJ?????0.415?????2.4?????????????595.15EJ??743.85EJ??????????????????????????????17.7%?=106.49/595.15??????????34.2%?=254.19/743.85??????

?2??10????????????????????????????????2??34.2%???????????????????40??????????????????



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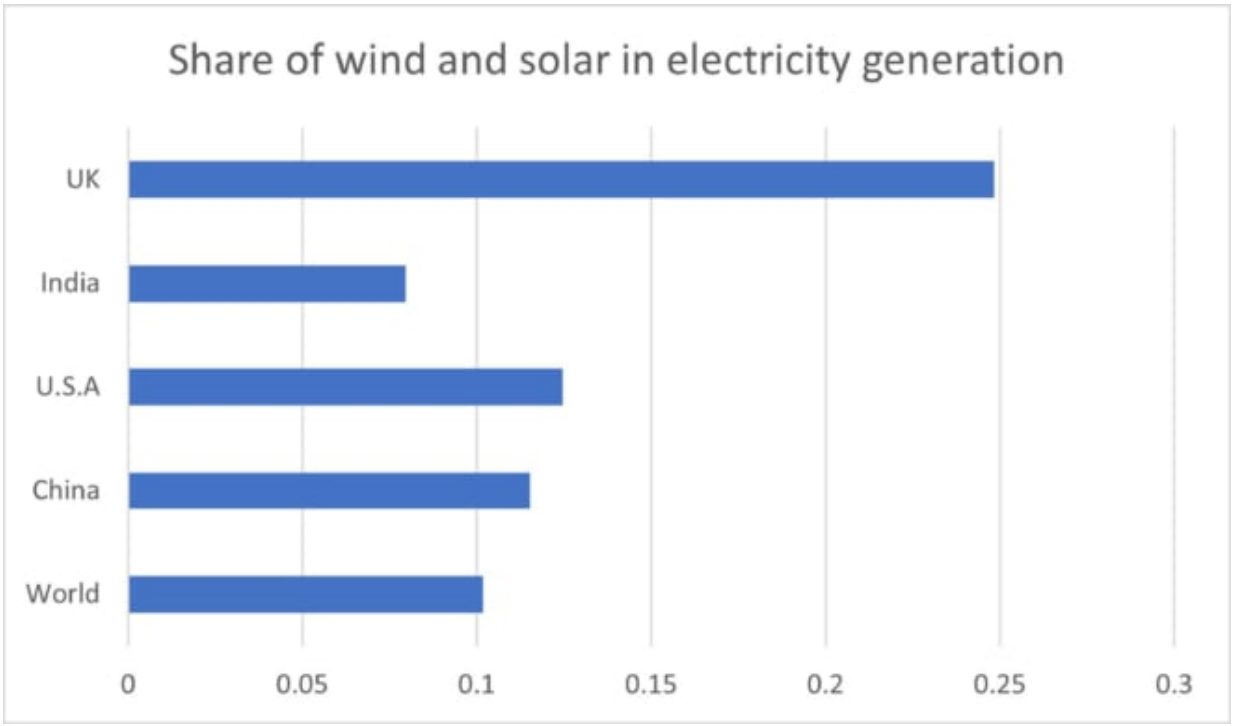
?3??????????????????????????????????25??????????????????10??????????????????CO2????????????????????????????????



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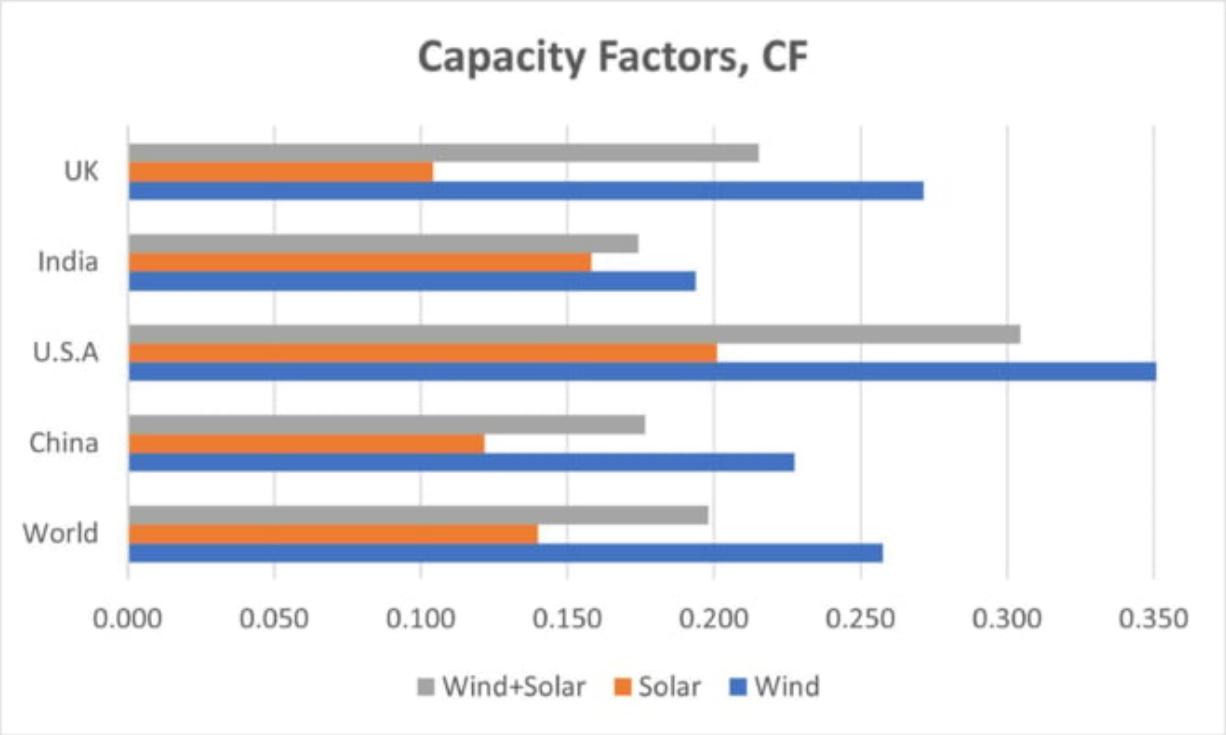
?4?????????Capacity Factors, CF???1??



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