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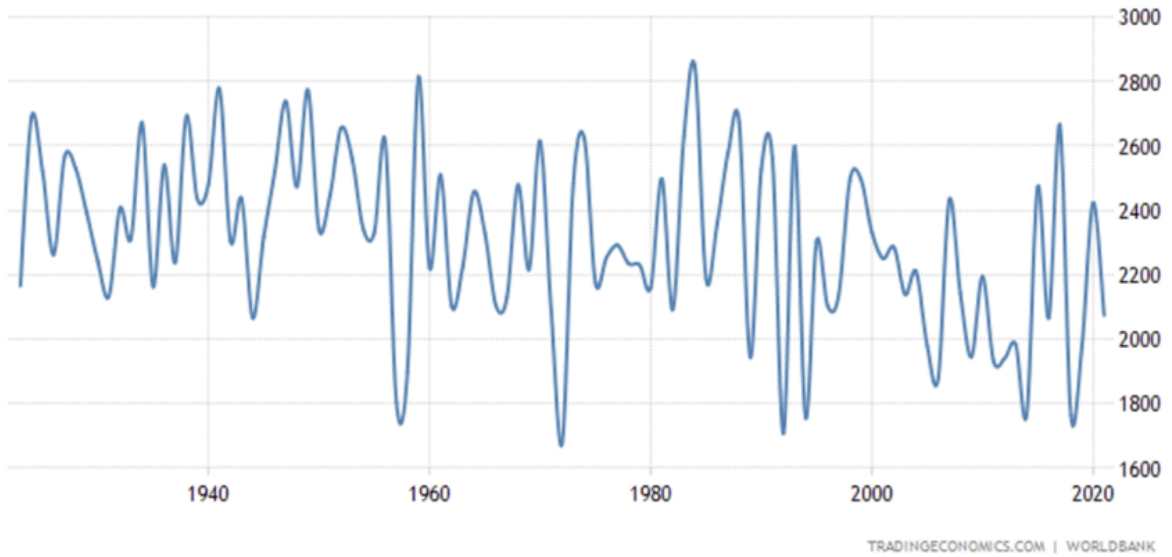
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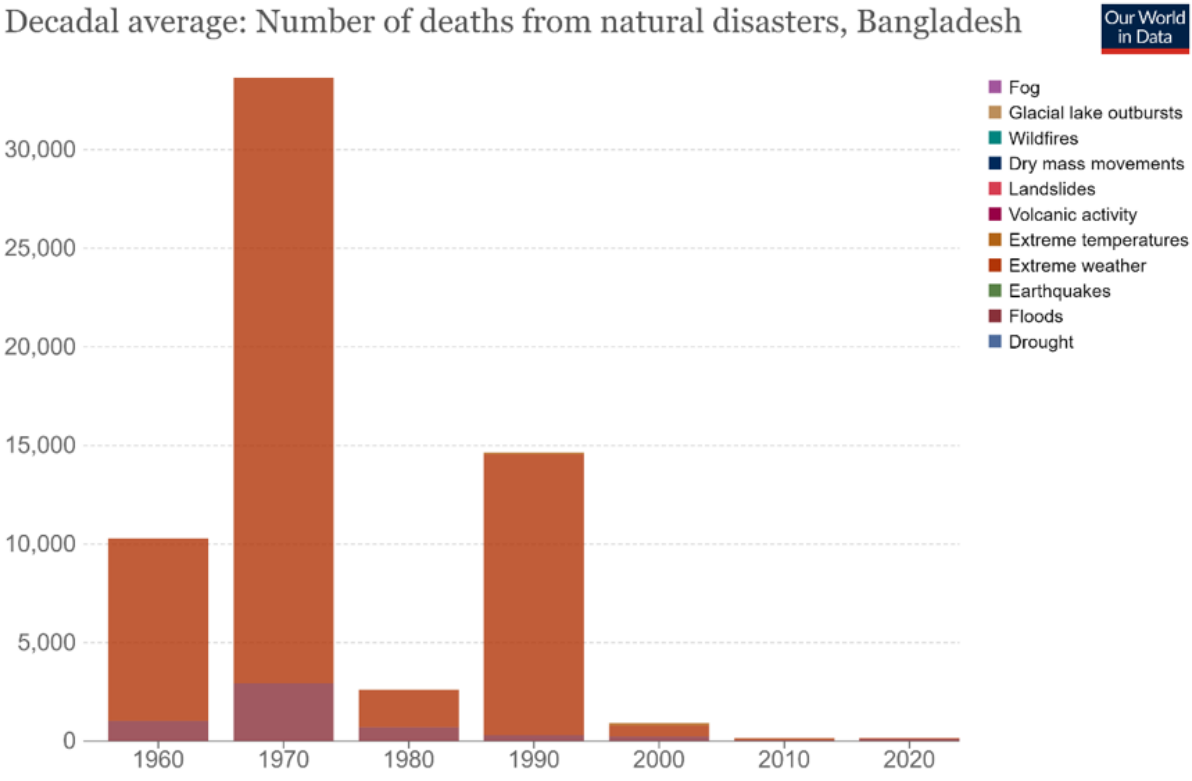
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Source: EM-DAT, CRED / Université catholique de Louvain, Brussels (Belgium) OurWorldInData.org/natural-disasters • CC BY

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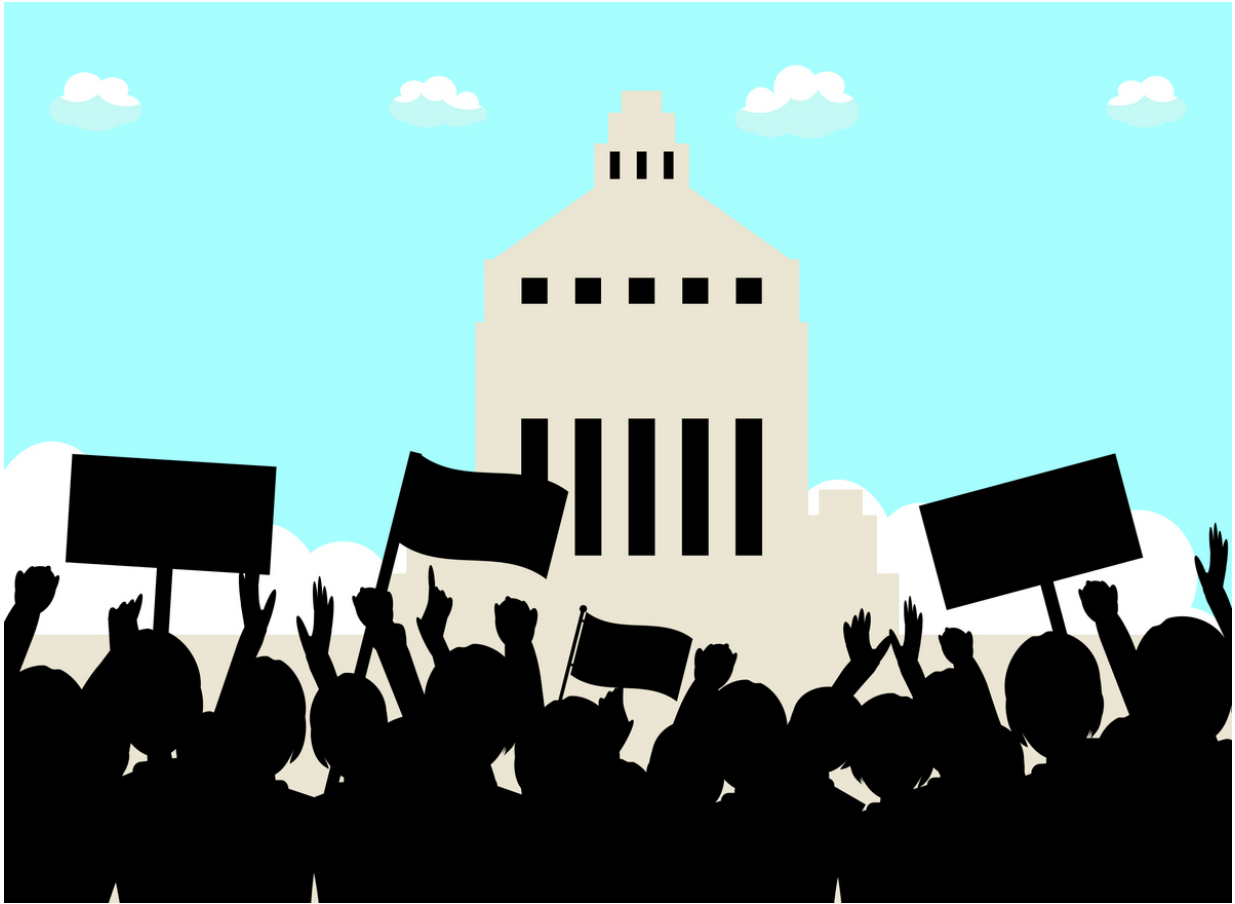
Posted in ???, ????? | No Comments »

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?? ?? · Sunday, January 8th, 2023

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kid-a/iStock

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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、足元の危機を乗り越え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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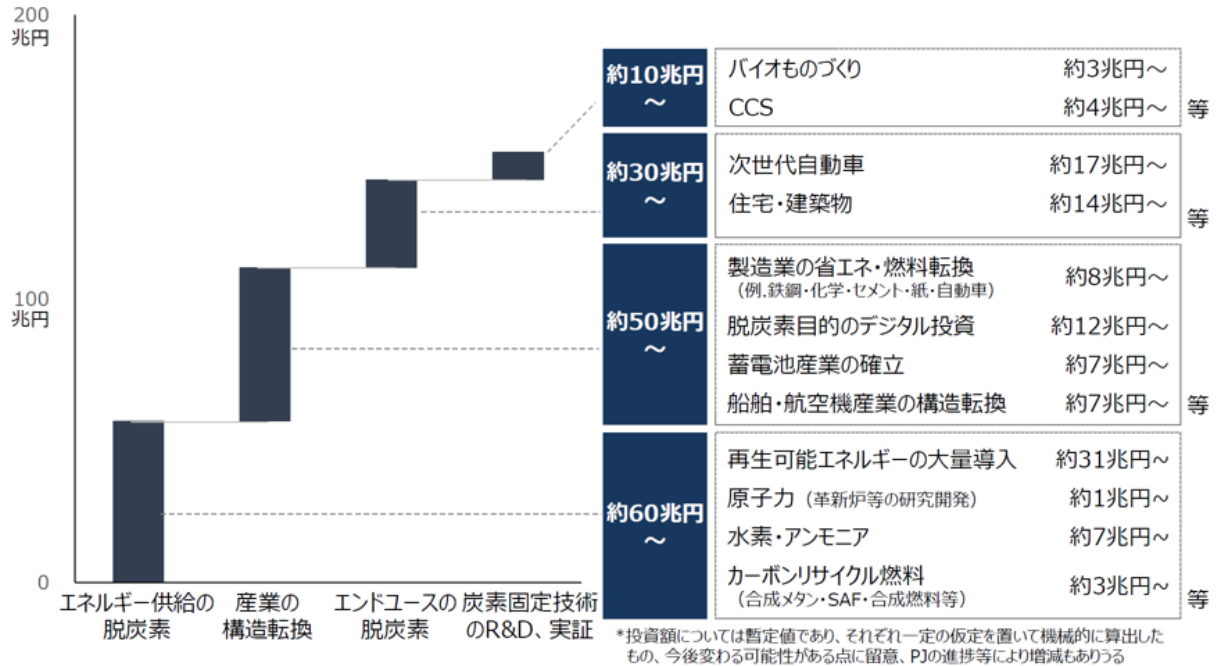
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### 【参考】GXを実現する官・民の投資のイメージ



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GDP????????????????????RITE????p8?

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「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。

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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  
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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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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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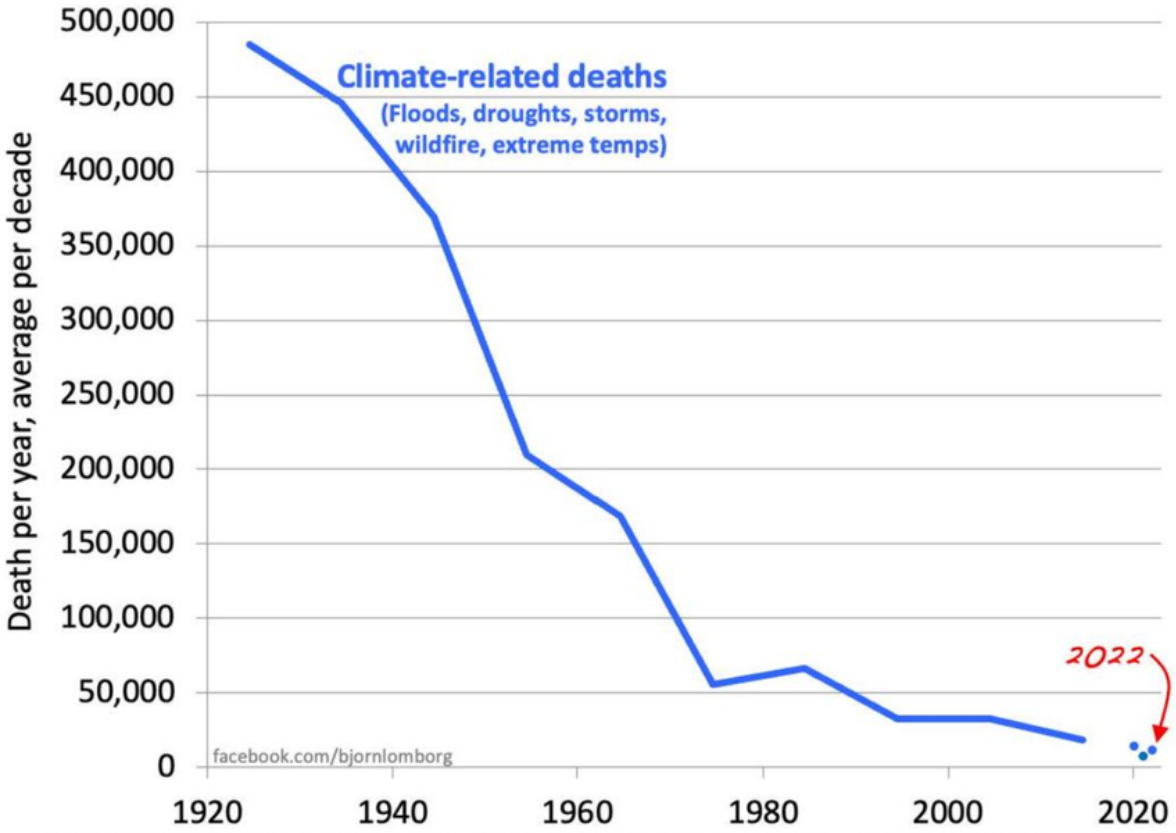
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# Climate-related Deaths: 1920-2022

Deaths have declined precipitously because richer and more resilient societies reduce disaster deaths and swamp any potential climate signal



facebook.com/bjornlomborg  
 OFDA/CRED International Disaster Database, <https://public.emdat.be>, deaths averaged over decades 1920-29, 1930-1939, ... 2010-2019 placed at decadal midpoints (1924.5, 1934.5 etc), with annual data for 2020, 2021, and 2022, accessed January 1, 2023. Likely database will be updated further, so the current 2022 estimate is probably low. 2022 at 14,920 dead, 2021: 7,705, 2022: 11,873. Update of Fig. 17 from <https://www.sciencedirect.com/science/article/pii/S0040162520304157>.

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Posted in ???, ????? | No Comments »

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?? ? · Saturday, January 7th, 2023



Natali\_Mis/iStock

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????Typhoon????????????21t??4t????????????????49MWh????????????????????????????????  
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70??=272/4????????????????????????????????????????????????????????????????????????????????????  
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50W??????6.2m×2.5m????????????????95??????220kWh/(0.15kW/m<sup>2</sup> × 6.2m × 2.5m)?94.6  
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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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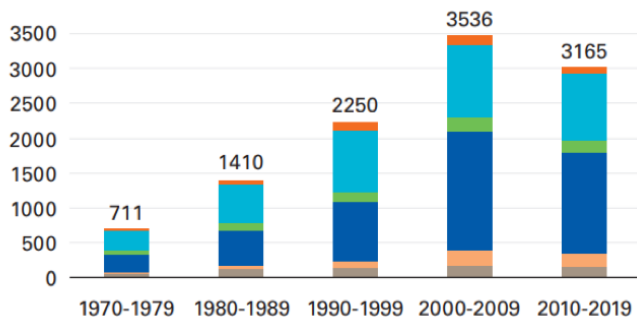




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(a) Number of reported disasters  
 Total = 11 072 disasters



■ Drought    ■ Extreme temperature    ■ Flood    ■ Landslide    ■ Storm    ■ Wildfire

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?? ?? · Tuesday, January 3rd, 2023



gyro/iStock

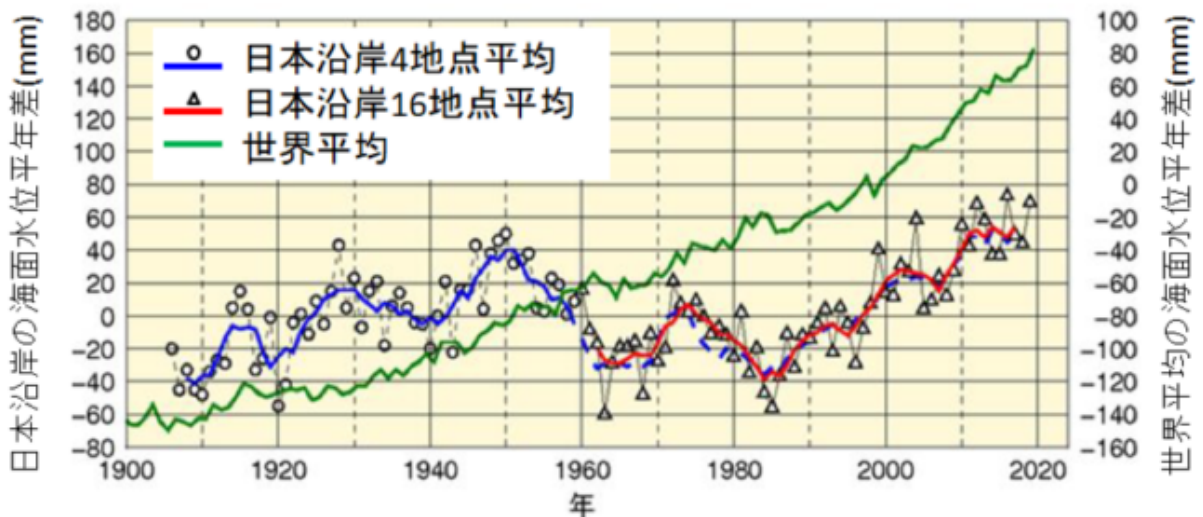
2022年11月7日現在の平均海面水位年差は1.4

mmと推定されている。これは、1993年から2022年までの観測データに基づいて算出されたものである。

この値は、日本沿岸4地点平均、日本沿岸16地点平均、および世界平均のいずれよりも高い水準を示している。

1906年から1970年代前半までは、日本沿岸の海面水位年差は概して-10mmから+10mmの範囲にあり、世界平均よりも低かった。しかし、1970年代後半以降、日本沿岸の海面水位年差は急激に増加し、2022年には1.4mmに達した。これは、世界平均の+0.5mmよりも約3倍高い水準である。

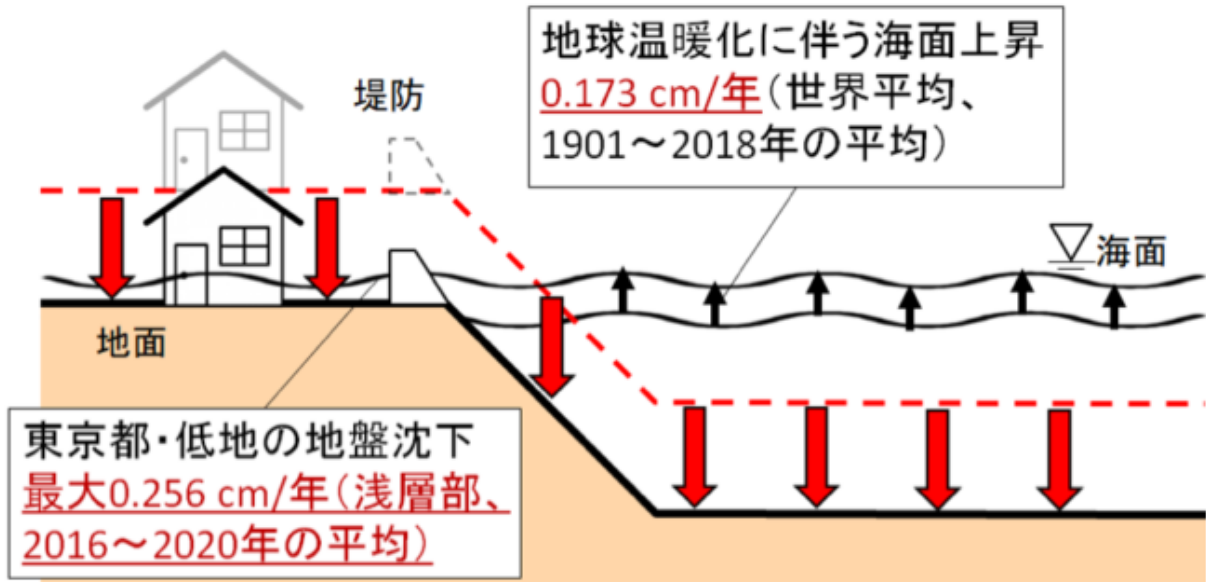
この急激な増加は、気候変動による海面上昇の顕著な証拠と見られる。特に、日本沿岸は、世界平均よりも著しく高い海面上昇率を示している。これは、日本沿岸の地形や気候条件、および海洋環境の変化による影響が大きいと考えられる。



1906~2019年間の平均値は0.173cm/年、2020年までの平均値は0.173cm/年

東京の地盤沈下は、浅層部で最大0.256cm/年(2016~2020年の平均)

地球温暖化に伴う海面上昇は、世界平均で0.173cm/年(1901~2018年の平均)



2

2022年までの平均値は0.173cm/年、2020年までの平均値は0.173cm/年 IPCC 2016年報告書

1901~2018年の平均値は0.173cm/年、2016~2020年の平均値は0.256cm/年

東京の地盤沈下は、浅層部で最大0.256cm/年(2016~2020年の平均)

地球温暖化に伴う海面上昇は、世界平均で0.173cm/年(1901~2018年の平均)

東京の地盤沈下は、浅層部で最大0.256cm/年(2016~2020年の平均)

地球温暖化に伴う海面上昇は、世界平均で0.173cm/年(1901~2018年の平均)

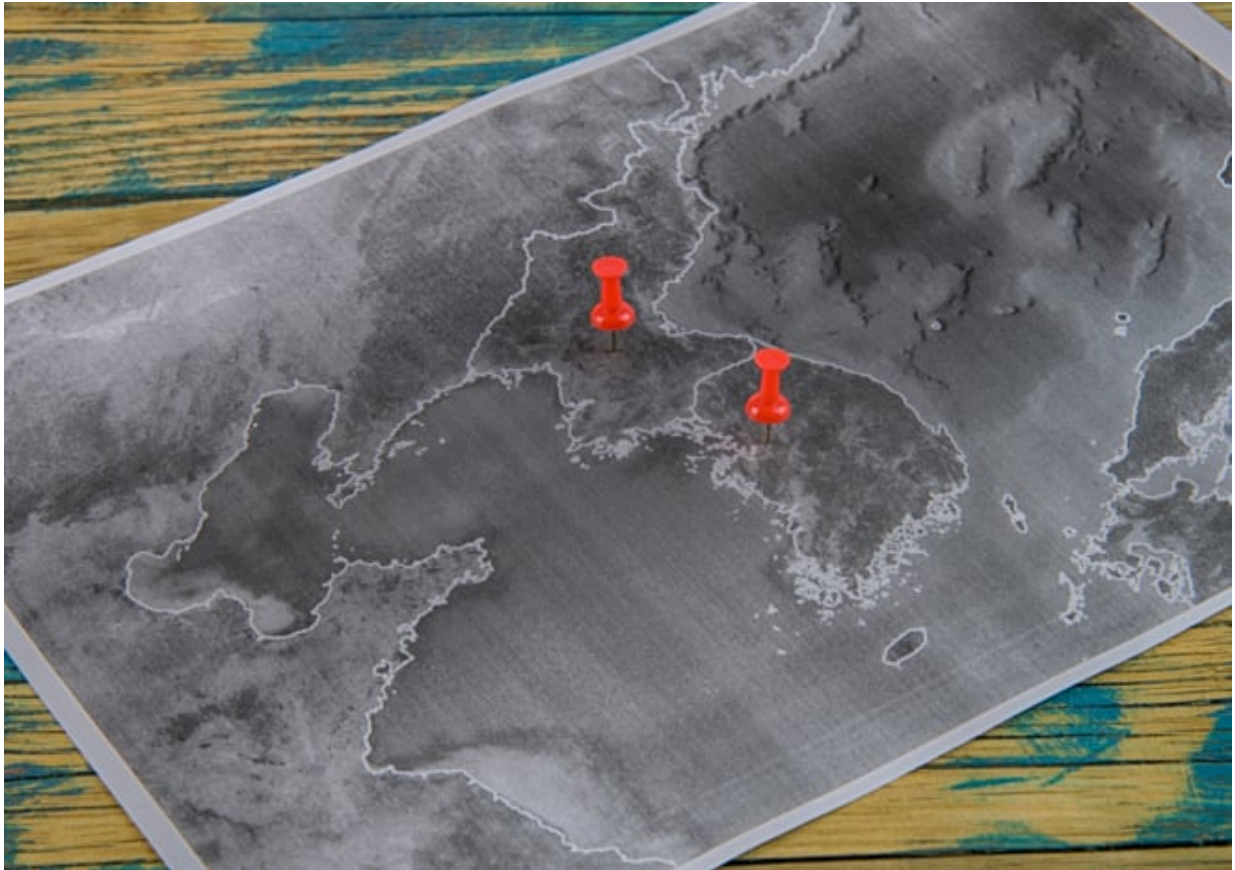
1891~1970年の平均値は4.5m、1970~2020年の平均値は4.5m

Posted in 2023, 09 | No Comments »



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



Perytskyy/iStock

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dzika\_mrowka/iStock

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### ????????????????????ESG??

?? ?? · Sunday, December 25th, 2022



gremlin/iStock

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?? ?? · Saturday, December 24th, 2022

EU????????????12?18?????EU????????????????????????????????????EU????????????????  
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ETS????????????????2030????????????43??62????????????????????????????????????  
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Galeanu Mihai/iStock

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CBAM??EU????????????????????????????????????????????????????????CO<sub>2</sub>????EU??ETS????????????

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????????????2023?10????25????15????????????????????????????????????????????????????????????????202  
6????????????????????????EU????26????????????????????????????????????????????????????????????  
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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<sup>18</sup> 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
<b>Total fossil fuel, EJ</b>	<b>489.66</b>	<b>130.93</b>	<b>75.66</b>	<b>31.74</b>	<b>5.48</b>
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
<b>Total Primary Energy, EJ</b>	<b>595.15</b>	<b>157.65</b>	<b>92.97</b>	<b>35.43</b>	<b>7.18</b>
<b>Electricity Generation</b>					
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

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

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

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

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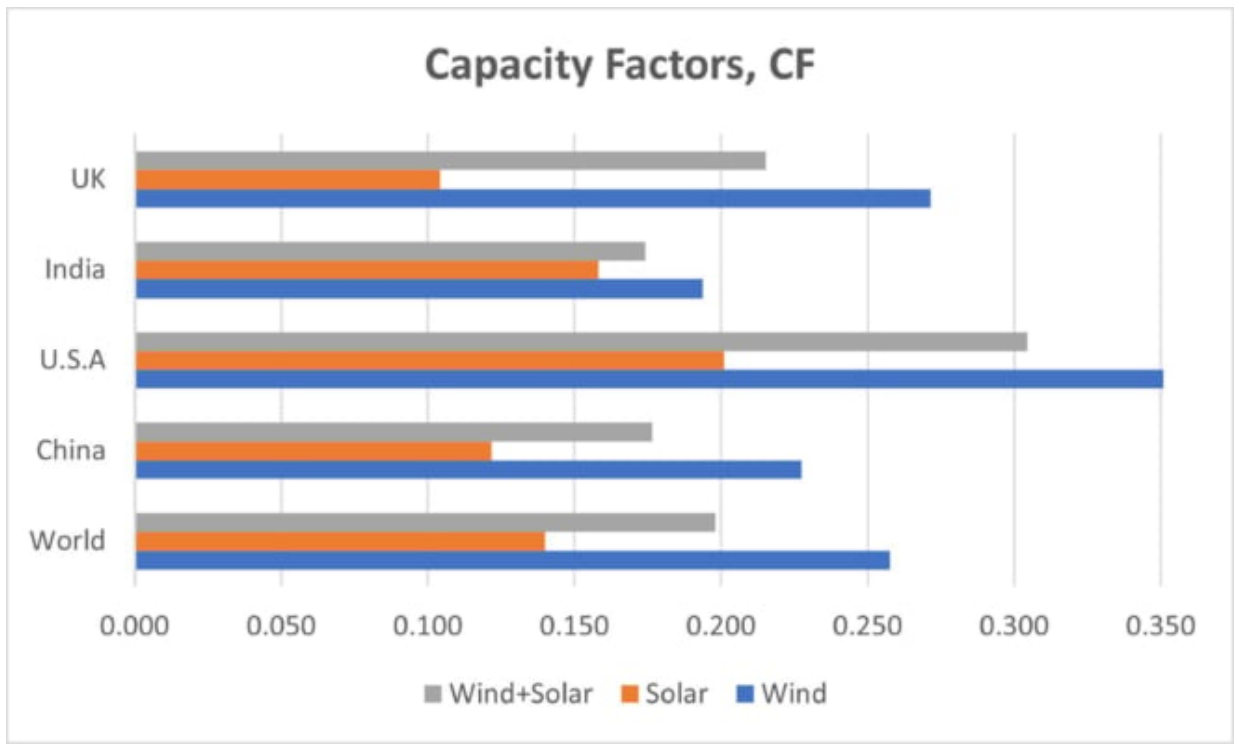
489.7EJ??60??=293.8EJ??CO2????????????????????????????????????????60??CO2????  
????????????40????????????????????????????????????????????????????????CO2????????????????????  
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293.8EJ????????????????????????9320GW????????????????????????????????????????1????????  
????????????824.9

GW????843.1GW????1668GW??102.47EJ????????????????????1668GW/102.47EJ ×  
293.8EJ?4782GW????????????????????????????????????????2????????????1/2????  
????????????

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

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



24

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

- 2500×10<sup>6</sup> tons?
- 12000×10<sup>6</sup> tons?
- 70×10<sup>6</sup> tons?? 2021????????0.21??
- 1.63×10<sup>6</sup> tons?
- 2.20×10<sup>6</sup> tons?

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????????????????23300GW????????????????60% ?????????????????????  
????????????CO2????????????????????????????????????????CO2????????  
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2025????????????????????????????????????????????????????????????  
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2.3. ?????????????????????????????????

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

Jet/Kerosene????????10.0379EJ????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		



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

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

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

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fuel????????????????????????????????

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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<sup>6</sup>  
tons????????

0.12 ha × 990×10<sup>6</sup> t/? ÷ 3 t/? 39.6×10<sup>6</sup> ha

????????(489.66 EJ)????**2.8%**??????????(35.7×10<sup>6</sup>  
ha)????3????

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Posted in ???, ????? | No Comments »

### ????????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。 <sup>[1]</sup>	30% 現在の住宅用太陽光発電の平均的な自家消費率実績 <sup>[2]</sup>	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% <sup>[2]</sup> =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 <sup>[3]</sup> =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 <sup>[4]</sup> =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 <sup>[5]</sup> ×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 <sup>[6]</sup>	+20% <sup>[5]</sup>	3万円/年	①追加の自家消費分のメリット(充放電効率90%と仮定 <sup>[6]</sup> ) 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・kWと仮定 <sup>[7]</sup> ) ※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

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

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

177×5=885kg

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2.19×5=10.95tCO2

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0.885/10.95=8.08%

????

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

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

7.1×(1+8.08%)=7.7

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# CO2削減目標10%

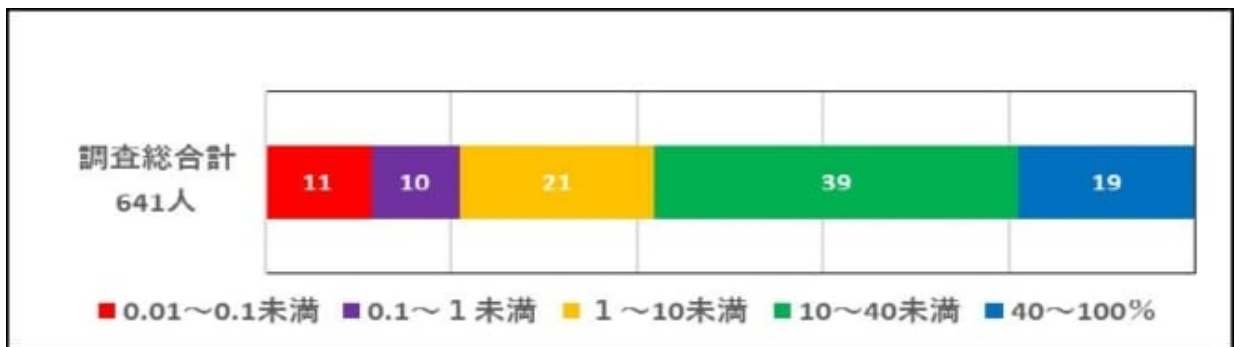
2022年12月20日、火曜日



artisteer/iStock

## CO2削減目標10%の達成状況

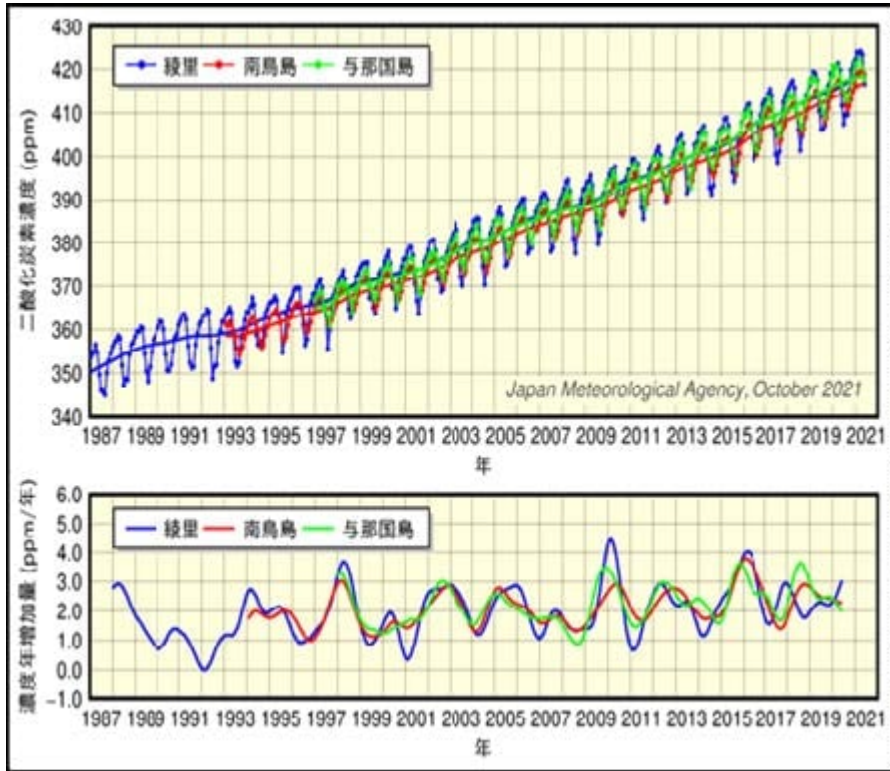
2021年22%削減目標を達成した企業は641社、削減率10%未満の企業は11社、削減率0.1%未満の企業は10社、削減率1%未満の企業は21社、削減率10%～40%未満の企業は39社、削減率40%～100%の企業は19社であった。



削減率80%以上の企業は20社、削減率60%以上の企業は6社、削減率78%以上の企業は21社、削減率1%未満の企業は10社であった。

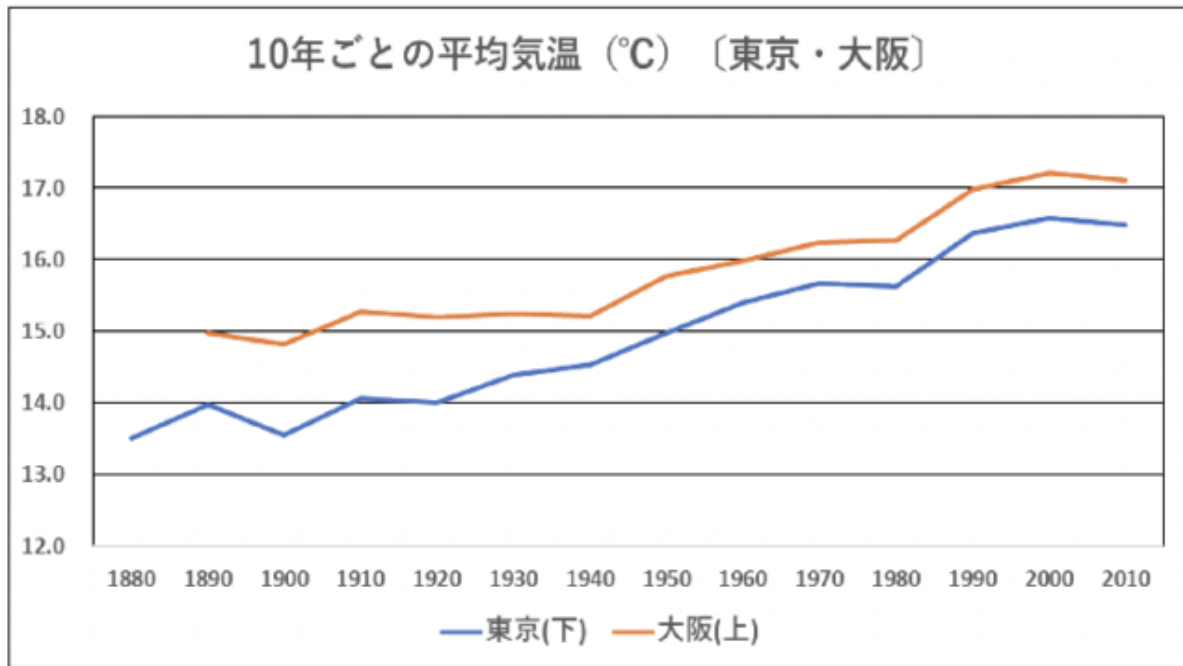
削減率10%未満の企業は11社、削減率0.1%未満の企業は10社、削減率1%未満の企業は21社、削減率10%～40%未満の企業は39社、削減率40%～100%の企業は19社であった。

2000????CO<sub>2</sub>????????????????????????????????



????JMA?HP??????3????????????????????????????????CO<sub>2</sub>??1987????????????????????????????????????????  
 ?????1958??????????????????63??1958?2021??99ppm?316?415ppm??????????????????????1.57ppm/?  
 ?????????????????30??CO<sub>2</sub>????????????????????????????????

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 00?09????????????????????????????????????



?????1940??2000????????????1980??1990????????????????????????????2000????????????????????????????????  
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**?????????Spiral** **of**  
**Silence?**????????????????????????????????????????????????????????????  
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2000?????IPCC????????????????????????????COP????????????????????  
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?? ? · Monday, December 19th, 2022

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

????????????6????????????????????????????????????????????????????  
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COP25????????????????????????????????????????????????????????????  
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GO????????????????????????????

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

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

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?NGO?????NGO?????????????????????????????????????????NGO????????????????????????????  
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電気ご使用量のお知らせ		いつもご利用いただきありがとうございます		電気料金領収証	
エネ庁 タロウ 様		ご契約番号 000-000000-0		エネ庁 タロウ 様	
●●年×月分		ご契約種別 AAA		ご契約番号 000-000000-0	
ご使用量 000 kWh		ご請求予定額 0,000円		ご契約種別 AAA	
前月指針数 000	基本料金 000円	検針月 0,000円		●●年×月分	
前月指針数 000	第1料金 000円	基本料金 0,000円		5/15迄経過分 000円	
差引 000	第2料金 000円	第1料金 000円		5/16迄経過分 000円	
	第3料金 000円	第2料金 000円		5/17迄経過分 000円	
	燃料費調整額 0円	第3料金 000円		5/18迄経過分 000円	
	再エネ賦課金 0円	燃料費調整額 0円		5/19迄経過分 000円	
		再エネ賦課金 0円		5/20迄経過分 000円	

再エネ賦課金

電気料金 + 再エネ賦課金 = 月々の電力会社へのお支払い

〈再エネ賦課金の算定方法〉  
 (2022年5月検針分の電気料金から適用される単価)

**再エネ賦課金** = ご自身が使用した電気の量 (kWh) × **3.45円/kWh**

※ただし、大量の電力を消費する事業所で、国が定める要件に該当する方は、再生可能エネルギー賦課金の額が減免されます。

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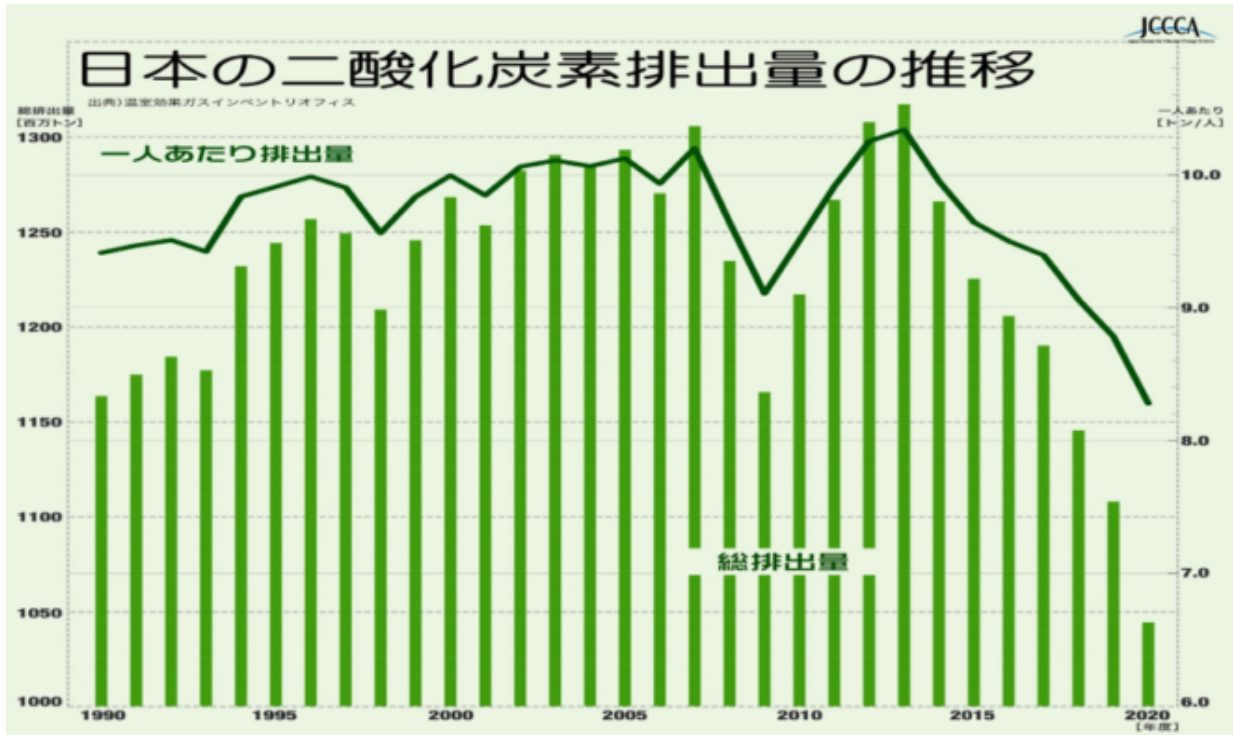
????????????????????????????????????????????????????????????2021????????????????6000?kW????500?kW????????????????????????????2?6000?kW??25????????????????????????????????????????????????????2021??10.2???????

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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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????????????????????4????????????????????2016=2019:201-202??

- 1. ?????????????????????????????????????????????????????
- 2. ?????????????????????????????????????????
- 3. ?????????????????????????????????????????????
- 4. ?????????????????????????????????

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??????????????<sup>21)</sup>?

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????????????????????????????????????????65????????????????????????????????????????????????????????????  
????????????????1988?6????????????????????????????????????????????????????????????

**COP27????????????????????**

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

2022 COP27 1865=1970:31

IPCC COP 105

2022 12 2023 3 31 GDP 3 GX 150 10

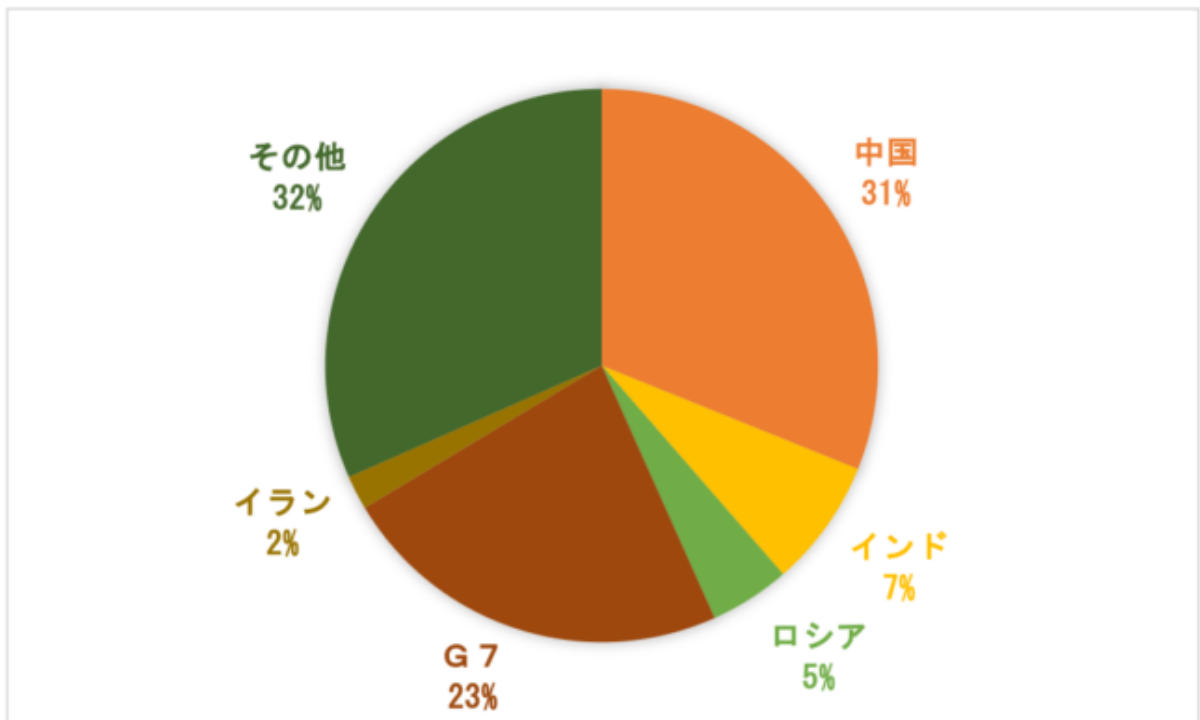
1950=1995:130 2022 110

18 19

2022 12 1751 10 0

16 2)

1 2021 1



2021 BP



Global Note

**G7**

13.9 23.1 1.9 1.6 1.0 0.9 0.8  
23.2 43.3

G7 3.1 3.0 2.8

**universal (particular)**

1

universal (particular)

COP27 GN GS

3

IPCC COP

4

5 1 1 31

6

7 100 2022

8 28 2050 1

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**????????????G7????**

?9????????????????????????1?23.2????????G7????????43.3????????????????????????????????  
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?10????????30????????4?????560????????????????????????2022?????????25????????????????  
????????????<sup>4)</sup>????????????????

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

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

?13????????????????????????????????????????????????????????????????????????????????3??  
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?14????????????????????????????????????????????????????????????????????????????GN?GS?????  
?????GS????????????????????????????????????????????????????????

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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????????????????????????????????????????????????????????????????????????  
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• Bernard,C.,1865,Introduction à l'étude de la médecine expérimentale .(?1970,????????????????).

- ???,2012,????????????????????.
- ???,2022,????????????????????????????????????11?24??.
- ???,2022,????????????????????????12?8??.
- Shumpeter,L.A.,1950,*Capitalism,Socialism and Democracy*,3<sup>rd</sup>.??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

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

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?? ?? · Tuesday, December 6th, 2022



muhammet sager/iStock

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?? ?? · Monday, December 5th, 2022





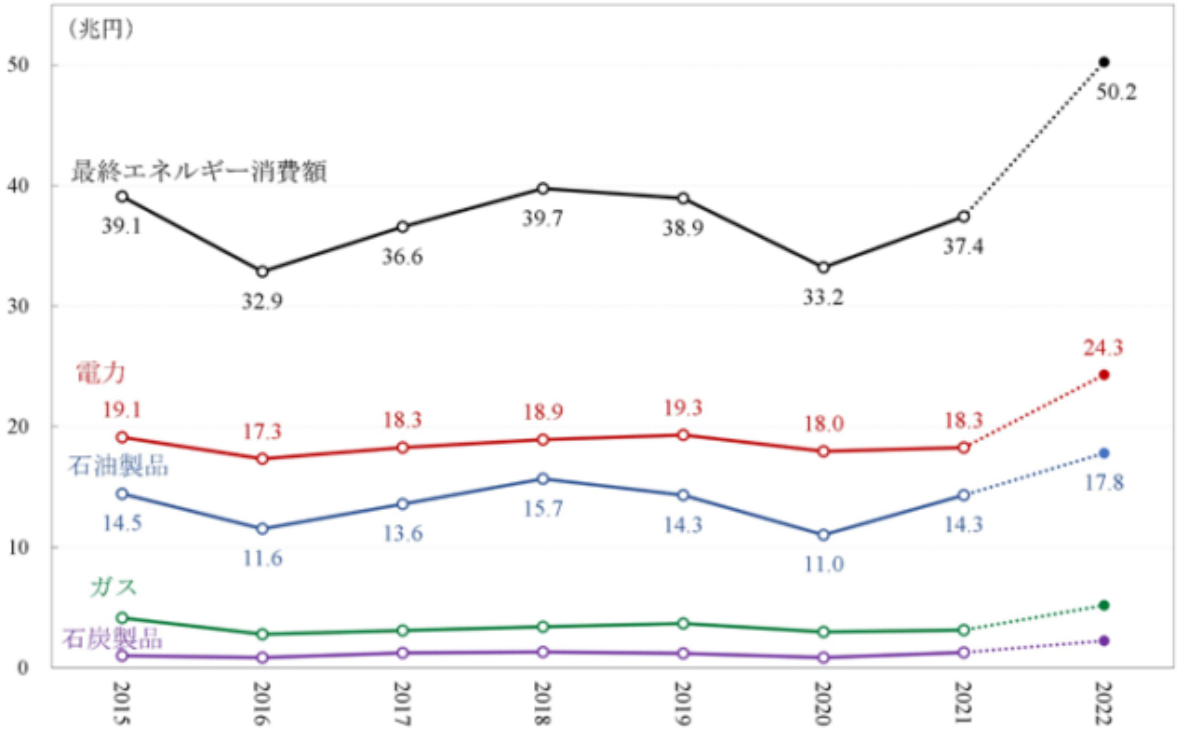
Daniele Mezzadri/iStock

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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。

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

**GX????????????????????**

?? ?? · Thursday, December 1st, 2022



y-studio/iStock

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1?????????????????2??BWR?82?kW????2021?9?????????????????1?????????????????  
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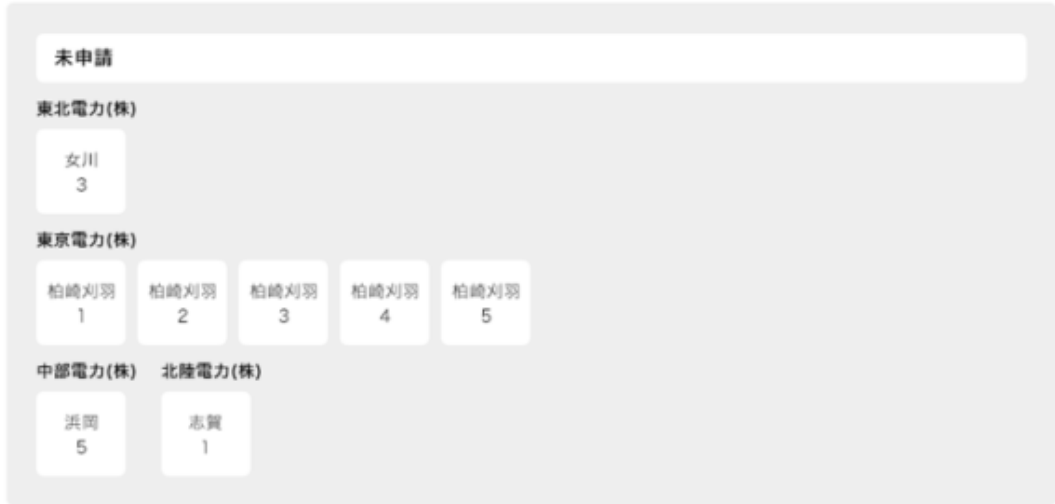
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Posted in ??????????, ??? | No Comments »

# ????COP??????

?? ?? · Tuesday, November 29th, 2022

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dinn/iStock

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Posted in ???, ????? | No Comments »

**COP27????????????????????**

?? ?? · Friday, November 25th, 2022

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1872-1875=1979:4-5

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1?1 kWh 2020?2030



	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

2020年2030年  
 2021年2022年  
 2023年2024年  
 2025年2026年  
 2027年2028年  
 2029年2030年

2030年

2030年2030年  
 2030年2030年

2030年2030年  
 2030年2030年

	原子力発電	石炭火力発電	LNG火力発電
CO <sub>2</sub> 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

2030年

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# COP27????????14????????

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



imagedepotpro/iStock

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## COP27? “????” ??????????NHK?

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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<sup>12</sup> and -/CMA.4,<sup>13</sup> 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,<sup>18</sup> 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;<sup>19</sup>

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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<sup>20</sup> 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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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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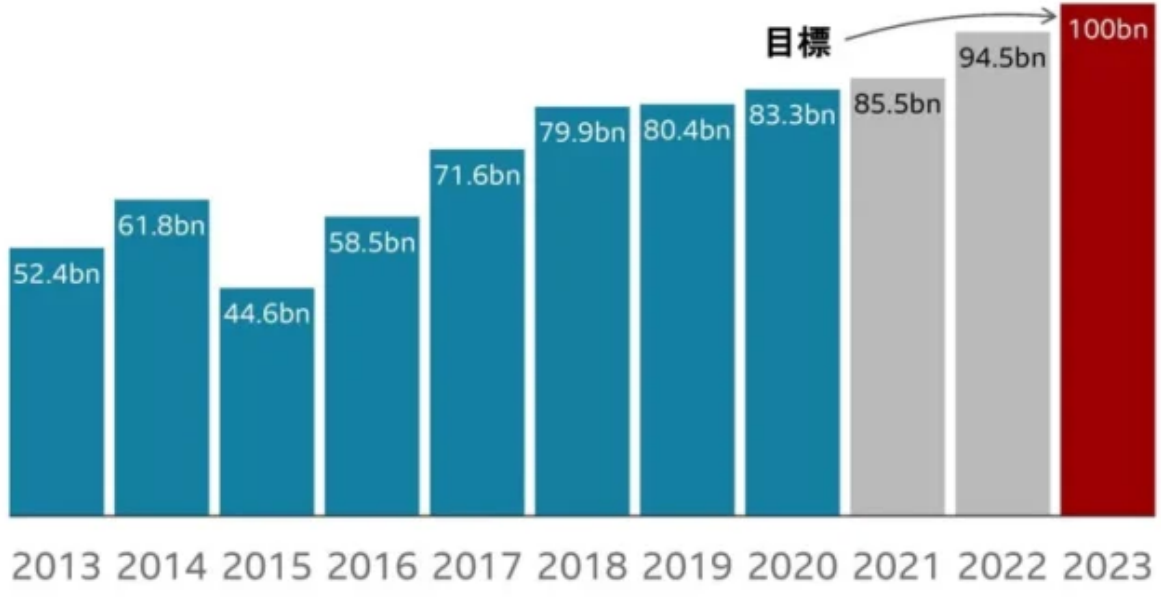
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### 気候変動対策の支援額 先進国が資金集めと供給を行った額(単位:10億米ドル)



2021年と2022年のデータはOECDによるシナリオの平均値

出典:経済協力開発機構(OECD)



????IEA????????????????4????????????????COP????????????????  
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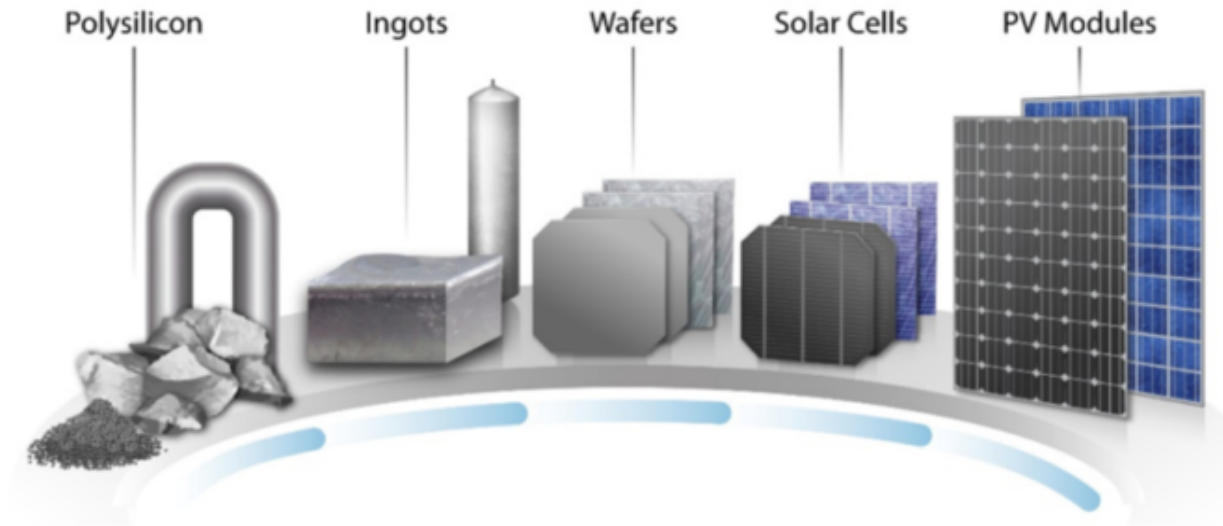
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COP27????????????COP28?UAE????????????1.5????????????

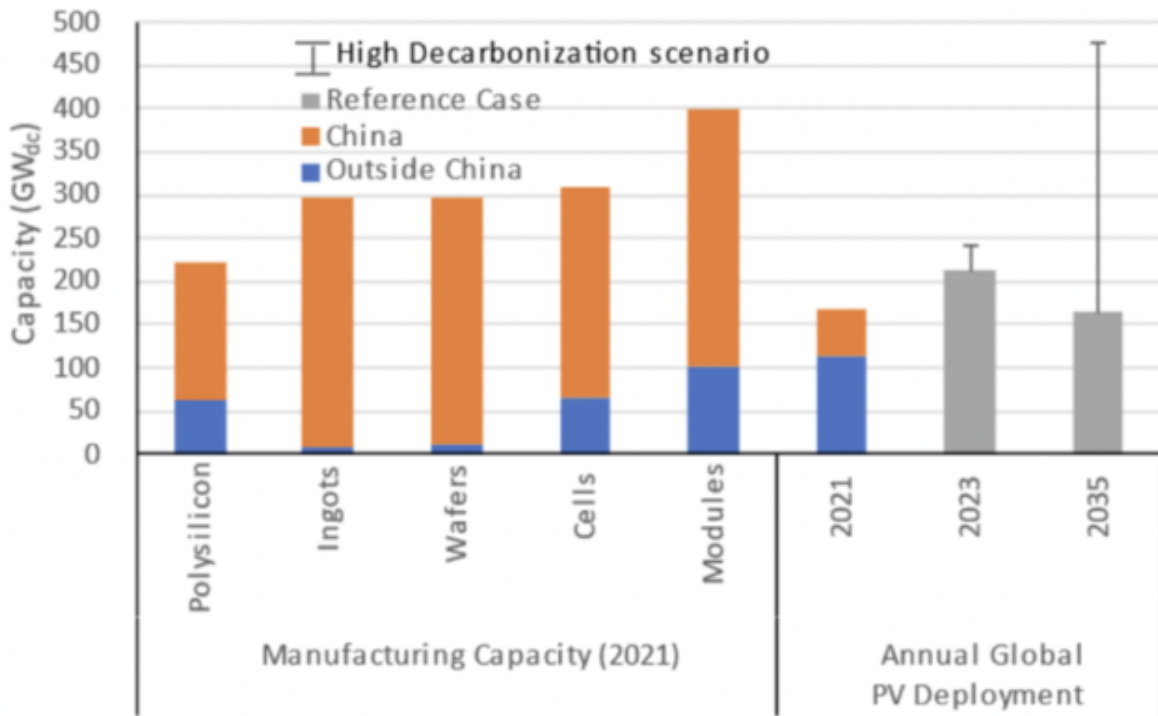
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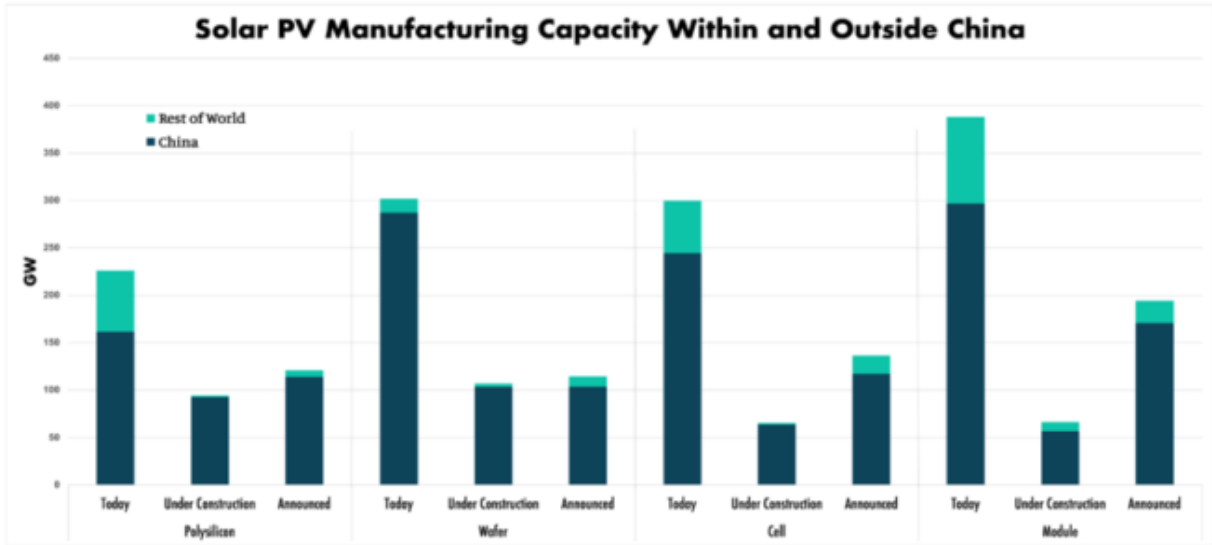
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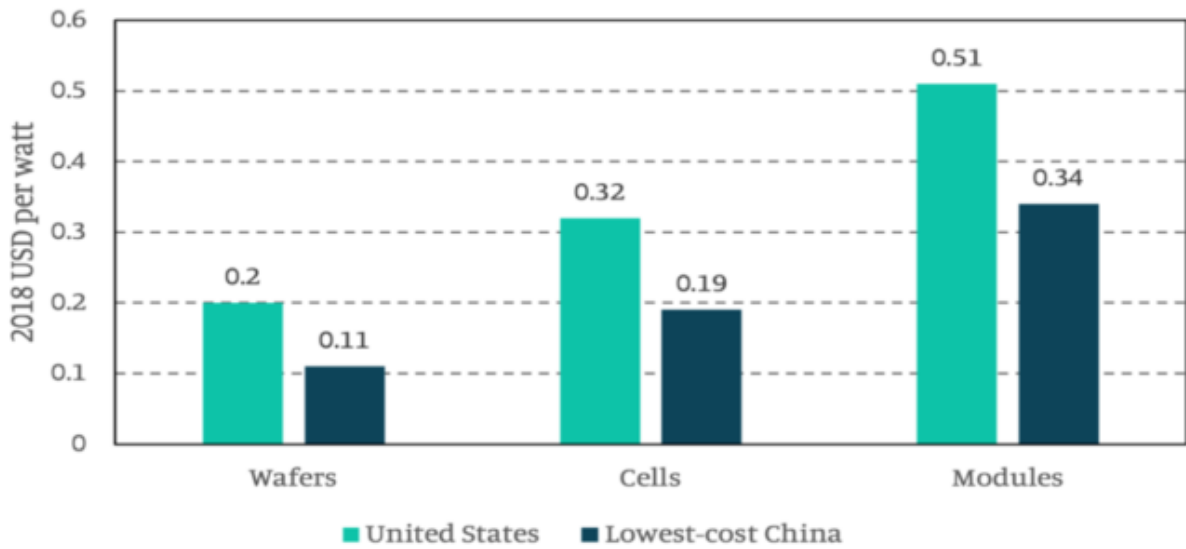






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### Minimum Sustainable Price (MSP)



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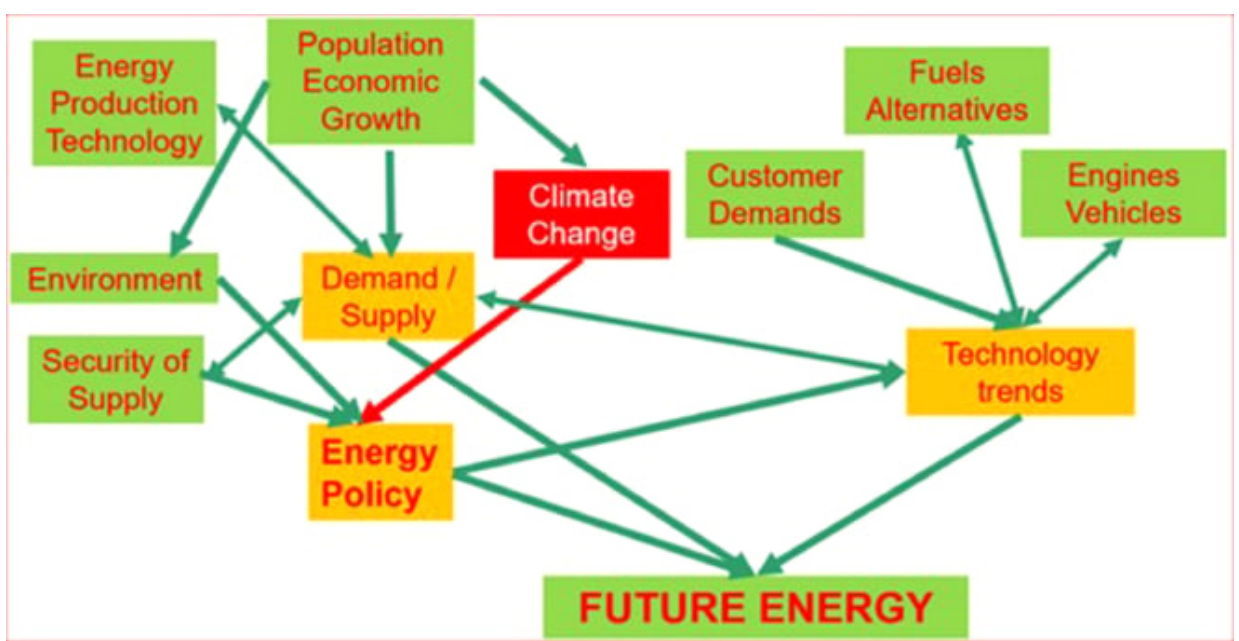
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CO2

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2021 BP 82.3% 489.66 EJ / 595.15 EJ 1.75%

Table 1. Primary energy and electricity sources in exajoules, EJ (10<sup>18</sup> 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
<b>Total fossil fuel, EJ</b>	<b>489.66</b>	<b>130.93</b>	<b>75.66</b>	<b>31.74</b>	<b>5.48</b>
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
<b>Total Primary Energy, EJ</b>	<b>595.15</b>	<b>157.65</b>	<b>92.97</b>	<b>35.43</b>	<b>7.18</b>
<b>Electricity Generation</b>					
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<sup>18</sup> joules = 10<sup>12</sup> Wh = 1 EJ = 277.8 TWh = 1 J

2.778x10<sup>-7</sup>kWh??10<sup>18</sup>????????????????????????????????

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

?????1kWh???860.6kcal????860.6kcal???1kWh????????????????Wh????????

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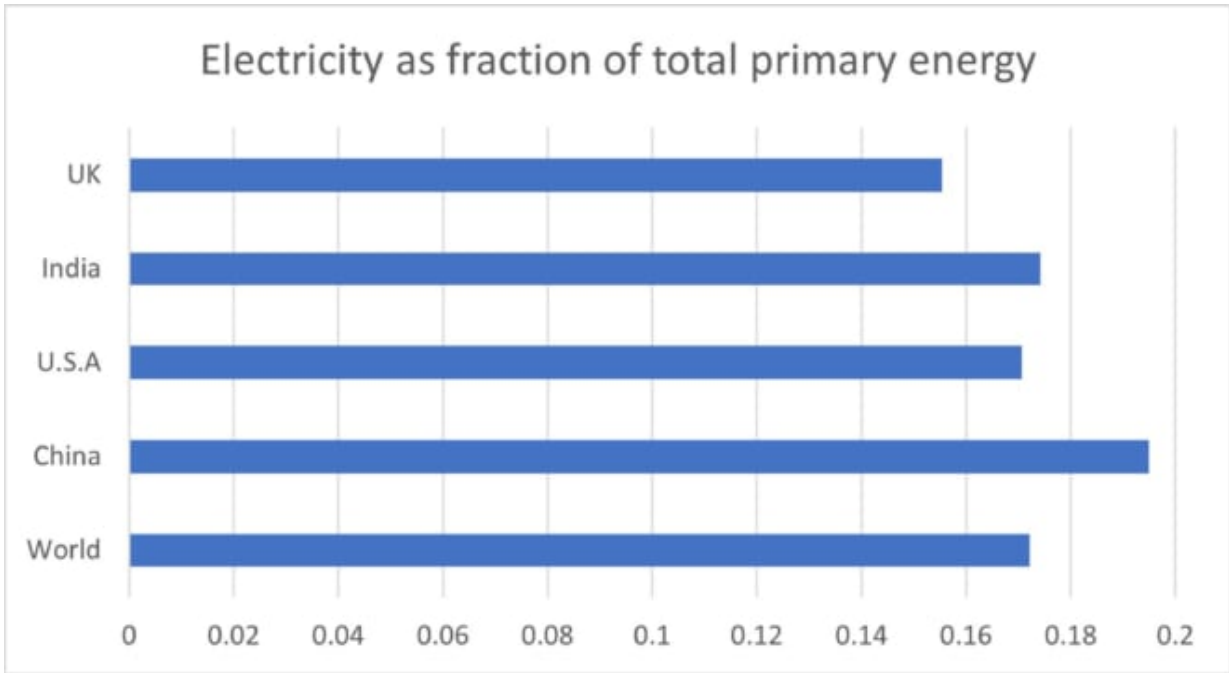
????????????BP????1kWh = 860.6kcal = 3.6kJ?IEA????????????41.5%????0.415???1kWh = 2074kcal = 8.67kJ????????0.415????????

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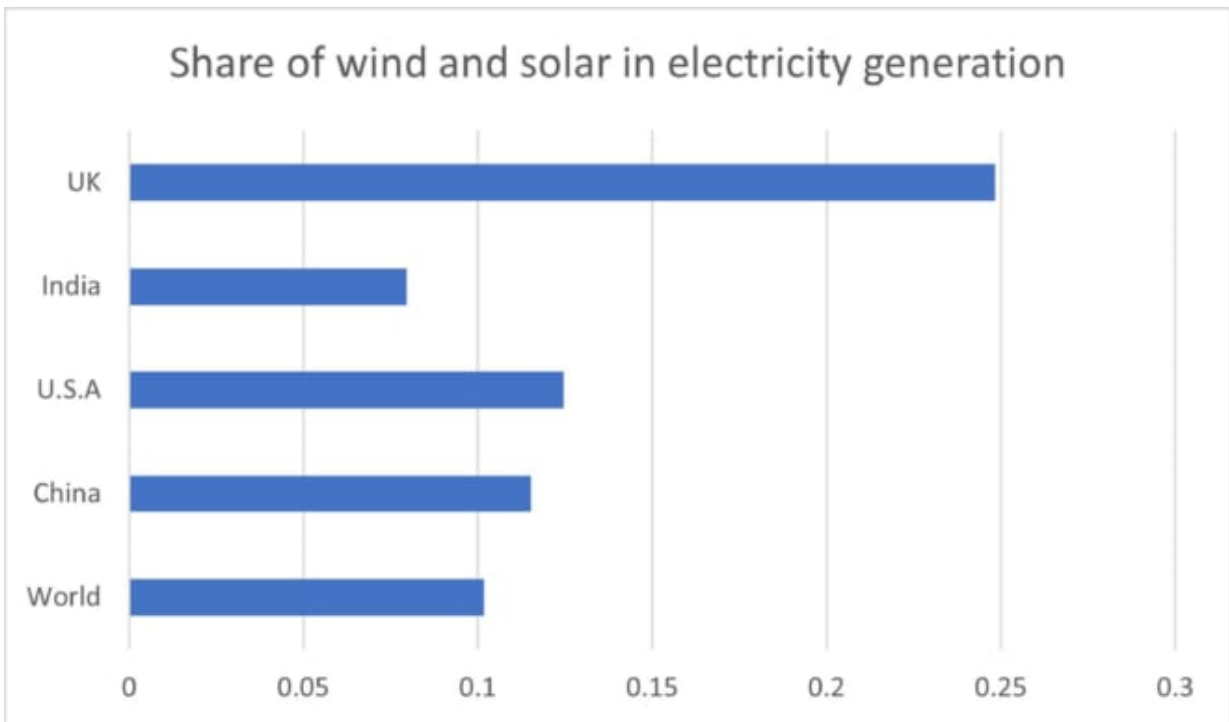
????????1????????489.66EJ????105.49EJ?254.19EJ????0.415????2.4????5 95.15EJ?743.85EJ????17.7%?=106.49/595.15????34.2%?=254.19 /743.85????

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



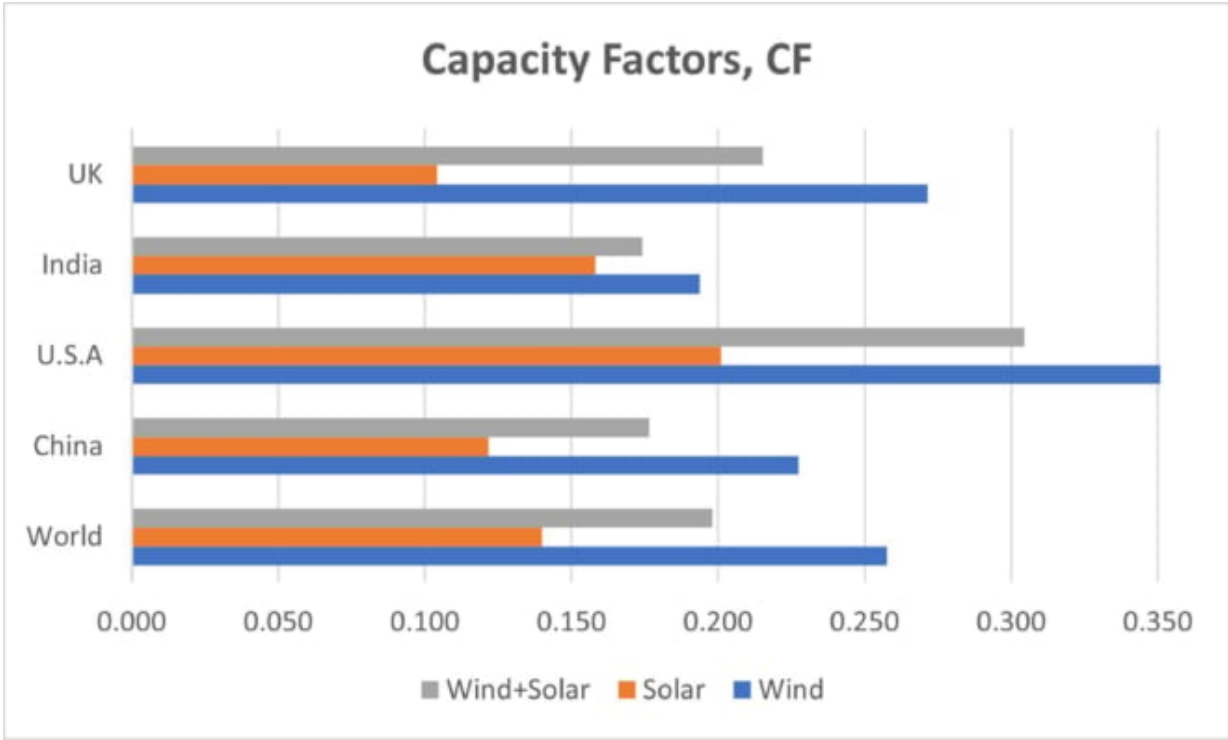
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**??140????????COP27??????????????**  
 ?? ?? · Wednesday, November 16th, 2022



fergregory/iStock

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