



??12?10????????????  
??

??12?29??31??????3????????????31????????????????  
1????????????3????????80?100???????

??40??  
??

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

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

??

????????????????2??5?1??  
??

????????22??23??  
??

????????????????????????3????????????????????????3??  
??145??18????????????????41??????

??2????????????CDU????????  
????????????

??5000??1?  
4 ?  
“?”??6600??????????????

??  
??  
??

? ? ? ? ? ? “ ? ? ? ? ” ? ? ? ? ? ? ? ?

????????????????????????390????????754??  
??30??  
????????????????????5000??

??  
????????????27????????????????????97????????????????????

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

????????????????10?1??  
??  
??

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

??

??

Posted in ???, ?? | No Comments »

??

?? ?? · Sunday, December 31st, 2023



shotbydave/iStock



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

???1973????????????????????????????????

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

??

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

??

??

??

??

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

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

??

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

??ITER????????2????????????????????

????2??

??

????????50??OPEC????????????????

??OPEC????????????????

????????????????OPEC????????????

????G7????CO2??

????????

??

????????

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

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

?



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

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

?? ?? · Saturday, December 30th, 2023



CampPhoto/iStock

????????

????????27??  
????????????????????????????????

21?4????????????????????????????????????2?8????????????????????????????????????6?7????????????????  
????????????????



????????????  
????????????????????????????????????2016?6?21?

?????????K??

??

??  
??

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

??

??  
??

??

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

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



A.  
2020?9? ??????B? ? ? ID?????????????????A? ? ? ID????????????????????  
????????????????????

B.  
2021?3?16? ???  
?????????????HD????????????????2021?4?14? ??????????????HD????????????  
??  
?????????

?Wikipedia???

??A? ?????????????????????????????????????2015?7?27?8? ?????????????  
????????????????????

??B? ???  
??

??

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

??

??——????

???

?????—??????????????

????????67??

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

????????????????????????27??

??  
???????

??



????????

Wikipedia??

??

??——????????

Posted in [???????????](#), [???](#), [?????????](#) | [No Comments](#) »

## COP28???????

?? ? · Tuesday, December 26th, 2023





Heiness/iStock

12????????COP28????????????????????????????????COP?????

??NDC??  
????????????????????????????

???????????

????1.5????2050????????????????????IPCC?6????????????????2025????????2030??43????2035?  
??6??1.5????????????????????????????????????  
??????????????

??????<sup>12</sup>??1.5????????????2025????????2035????60????????????????26?27????2025????????  
?NDC?????1.5????????????????????????47??

????????????1.5????????????????????IPCC????????2025????????2035??60????????????????  
????????????????????????????recognize????????????2025????????????????????????????  
??

??NDC??2025????????20  
35??60????????????????????????????????????2025????????2035??60????????????????????  
??

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

COP28????????????????????????????????1.5????????????????????????????????????  
????????????????????????CO2????????????????????????????????

????????????28????1.5??  
????????????????????????????????????8????????????????????????????2050??  
????????????10??transition away from fossil  
fuels)????????

2030 3 2 CCS 29

COP CCS

???????

3

COP28 OPEC

12 UAE

NGO COP

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

2030 5.8 5.9 67 2050 2030 4 3,000 2050 75 68 69

1.5 1000

1.5?????

1.5

2021 1.5 2030 2010 45 2021 2022 2023 3

1.5 COP

1?https://unfccc.int/sites/default/files/resource/cma2023\_L17E.pdf

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

# ????????SINO?Science in name only?

?? ?? · Saturday, December 23rd, 2023



metamorworks/iStock

## 1. COP28???

11?30????2??UAE????????COP28??90,000????????????????????

11?21?????She Changes  
Climate????????COP28????????????????????1.5°C????????????????????  
??  
??????????????

??

????????????????B.Sc????????????????PhD????????????????MBA????????????????  
??

??2  
8??

### COP28 ??????????????????????

COP28????????????NHK????????????? “?????”????????????? ?????? ??????????????  
????????????????????????NHK????????????????1.5????????????????

????????2050????????????5???Doomsday?????  
????????????????????

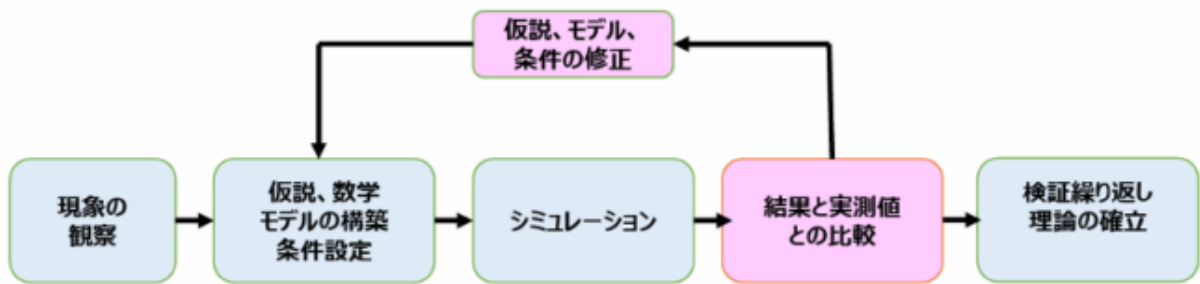
2. ?????????????5????

??5????????????????????????????????????IPCC??

??20  
09??Climategate??

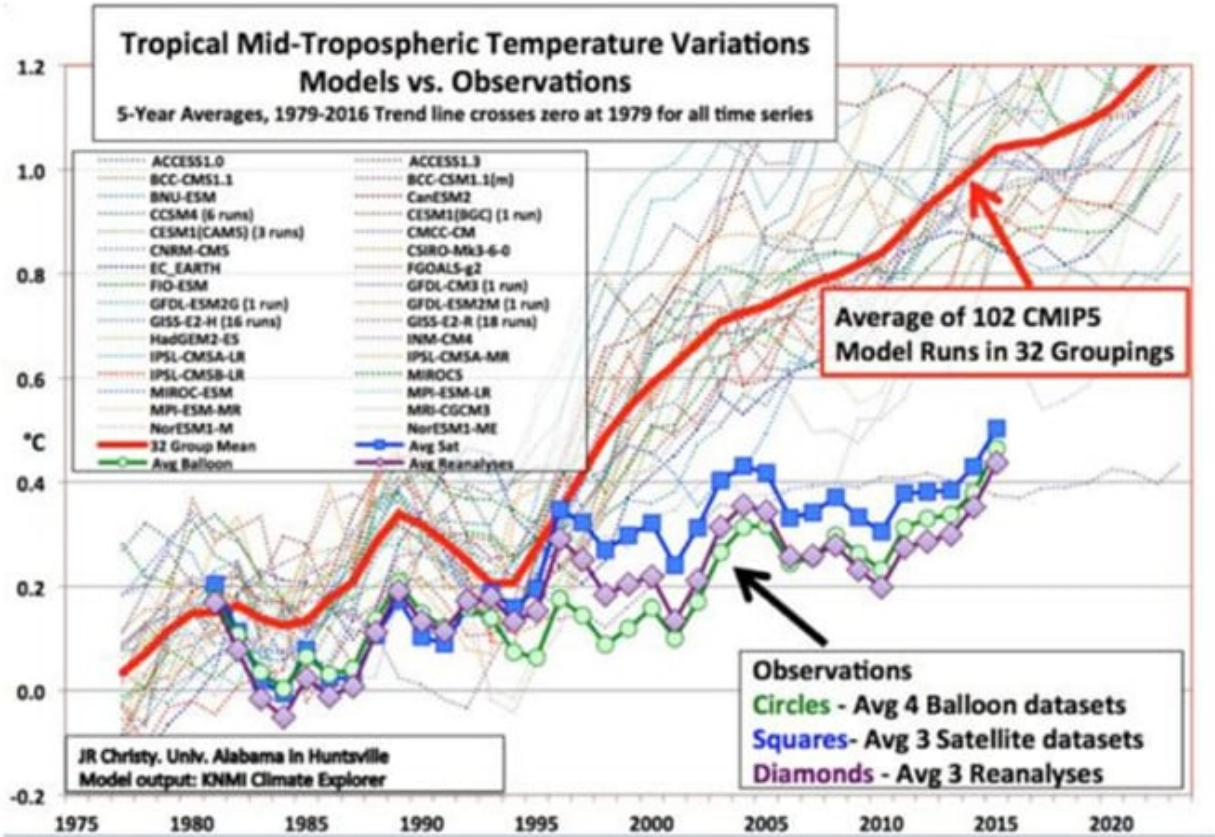
??  
????????????????????????

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



????/??X-??1975????????Y-????????????

??1990????????0.3?  
????????1.2????4????????????????2050????????????5????????



??

??

1995????????????????????2015??????0.5??0.6??1995????Tippin  
g Point??

3. Science in name only

??  
??

??2050????????????????????????????1????????????????????????

??  
?

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

??

??30??2050??  
??

4. ???

EU?????Science in name only??  
??

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

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

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

?? ?? · Friday, December 22nd, 2023

????????COP28????????COP????????????????????????????????????

????????(phase out)????????????????????????????????????(phase down)????????(transition away)????????????????????

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

COP????????????????????????????????????(UNFCCC)????????1994????????1997COP3????????

????6????????1????????????

????2015????????NDC????????2????????1.5????????2016????????

????COP????1.5????EU????????2021COP 26????????

????COP????COP27????????1.5????????

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

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

????COP????1????????UAE????????11????

????1.5????EU????????CO????????







?????????? “?? “???”2050???????????? “???”????????????”??????  
“??“???? “??”??????????????

??  
??  
???

????12?19????????????????????

**COP28 ??????????????????**

NHK????????COP28????????????????????

????????????????????????????????COP28????????????????????????????????

????????????????COP28??

??NHK????????????COP28????????????????????

DeepL?NHK????????transition away????????????

??Google????????????????????????????

????????COP28??  
????????????????????????

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

??  
??  
???

????????????????????????DeepL?Google????????????????????????????????  
????????????????????????

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

- ?????????????COP28?12?13????
- ?????????10????COP28?12?13????
- 10????????COP28????12?13????
- ?????????COP28????12?13????
- ???COP28????????12?17????
- COP28????????1????12?13????
- COP28????????12?13????
- COP28????????????????12?14??BBC????

COP28????12?18??

(7) 公正な移行

COP27 で決定された「公正な移行に関する作業計画 (JTWP)」について、雇用、エネルギー、社会経済等の要素を含むこと、作業を 2026 年まで継続し、その時点で効果や効率性について評価を行い、継続を検討すること等が決定された。

????????28????COP28????  
?????

??  
??

??

??

?



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

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

????????????????????????EV????????????

?? ??? ?? · Thursday, December 21st, 2023



Ignatiev/iStock

**EV??????...???????**

12?17???7????????????EV????????????????????5?????

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

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

??

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

????????????????????????????GDP?0.35%????????????????

????????????????????????????600????????????????  
????????????????????????????11?15????????????????600????????  
????????????????

??  
????????????????????1949????????????????

**??????3?????????**

????????????????23????????2????????????1????????

????????????40????????????????????

????????????12????????3????33????14????15??

??4??

??  
????????

??  
??

??  
??

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

????????????4????12?13????????????????????????3????????????????????????????

??  
??

??30????45????50????????????1????  
??

??7.5????????3.5????????????????????????????  
?3.5??

??  
????

EU??  
??

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

??16??17??no farmer, no food, no future??

??17??

????????????????????????EV????????????????????????????????????

????????????1400????????????????????11????????????????????????

??  
?  
5????????????????????????3????????????????????????5????????????????????????????  
???

??  
????????????????????????EV????????????????????????????????????

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



????????????????????COP28????????????????????

????????????????COP28????????????????????

??NHK????????COP28????????????????

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

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

28. Further recognizes the need for deep, rapid and sustained reductions in greenhouse gas emissions in line with 1.5 °C pathways and calls on Parties to contribute to the following global efforts, in a nationally determined manner, taking into account the Paris Agreement and their different national circumstances, pathways and approaches:

- (a) Tripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030;
- (b) Accelerating efforts towards the phase-down of unabated coal power;
- (c) Accelerating efforts globally towards net zero emission energy systems, utilizing zero- and low-carbon fuels well before or by around mid-century;
- (d) Transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science;

Draft decision -/CMA.5?Outcome of the first global stocktake

??????

- calls on Parties ??COP????????????????
- contribute to the following global efforts ?????????????????????
- in a nationally determined manner ?????????????????????
- different national circumstances,..., in a just, orderly and equitable manner ?  
????????????????????
- accelerating action in this critical decade??????2020????????????????

????????????????300????????????????6????????????

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

????????????NHK????????????????

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

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

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

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





deepblue4you/iStock

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

?? ??

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

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

????????????????????VRE??VR  
E????????????????GHG????????????

?23??-

??EU-28??10??

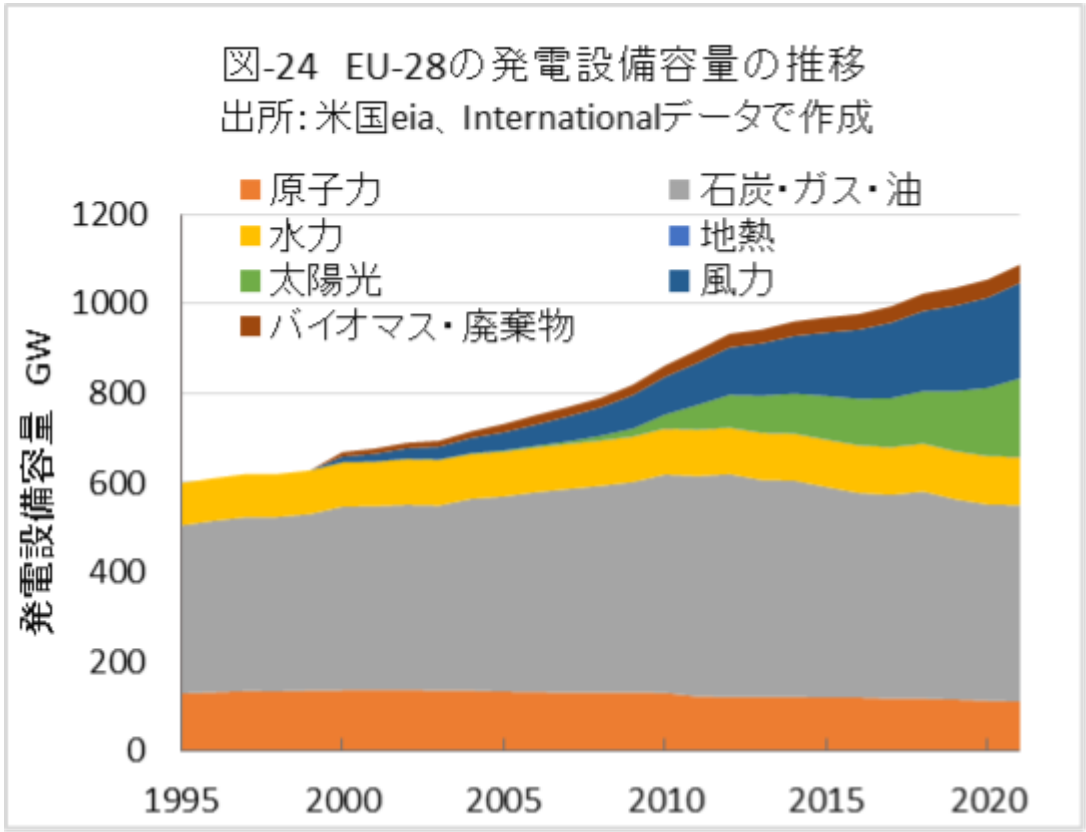




GHG????????????????????????EV??VR  
E????????????????????

**EU??VRE???**

??24??EU-28??2000????????VRE????????2010????????????????  
????23????????????????????2010????????????????????



VRE????????????????GHG????????????????????VRE????????????????????????????????CO2????????  
??????

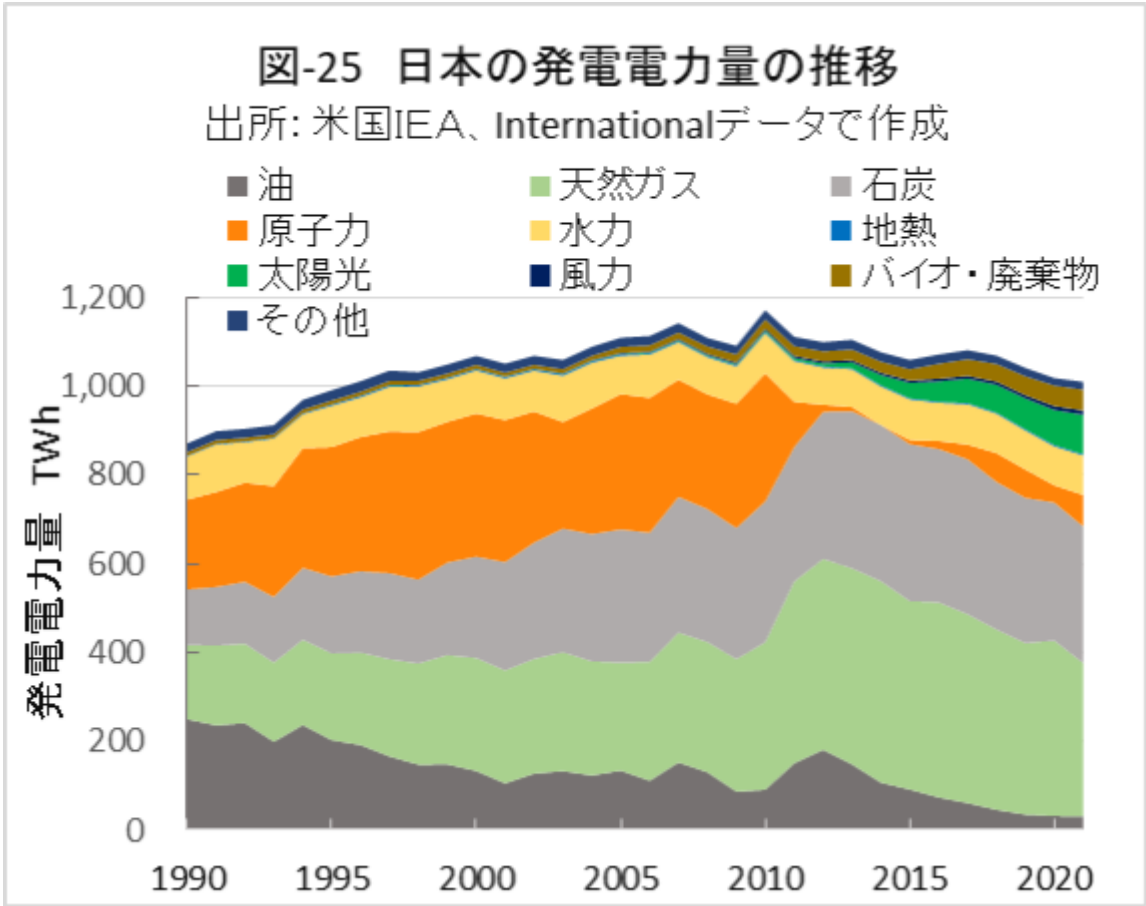
VRE??

????????50%????????????????????????10%??  
??

????EU-28??VRE????????????????????GHG????????VRE????????????????????GHG????  
??VRE????????????????????????????????

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

????????????????????????????????????25????????????????????????????1990????1?kWh????  
????????????????????????????????????2009????????????????????????????



2011年3月、福島第一原子力発電所事故の影響で、原子力発電の稼働率が大幅に低下し、火力発電（石炭、天然ガス、LNG）の稼働率が急増した。

2012年7月、FIT（固定価格買取制度）の導入により、再生エネルギー（太陽光、風力）の発電量が急増した。2017年には、再生エネルギーの発電量が全体の約25%に達した。

**再生可能エネルギー（VRE）**

VRE（再生可能エネルギー）は、GHG（温室効果ガス）排出量が極めて少ないエネルギーである。

VREは、エネルギーセキュリティの観点から、重要な役割を果たす。また、環境負荷の低減にも貢献する。

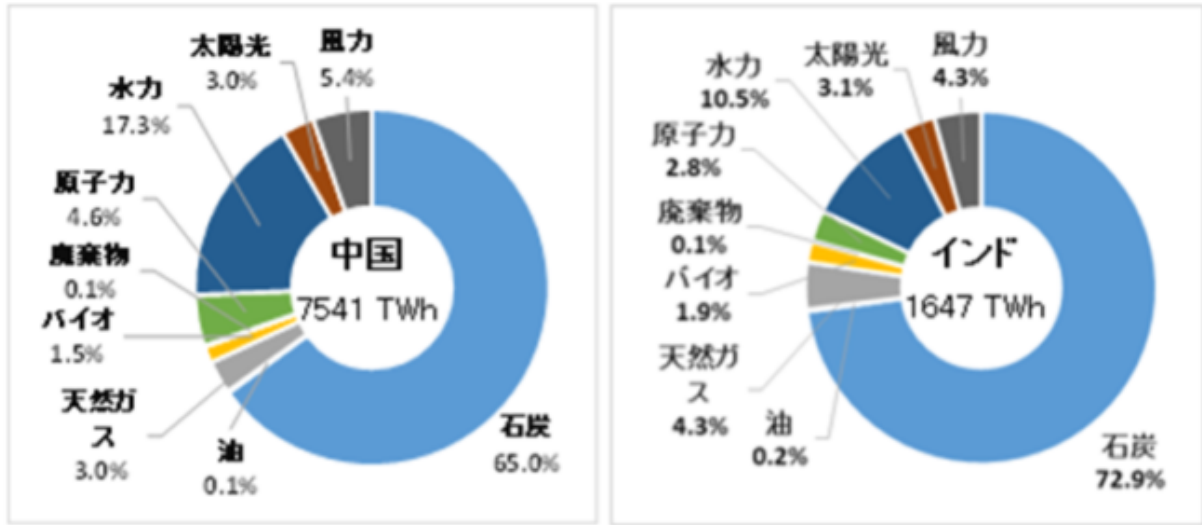
VREは、GHG排出量を削減するための重要な手段である。VREの導入を促進することは、VREの普及につながる。

GHG排出量の削減は、2/3に削減する必要がある。GHG排出量の削減は、再生可能エネルギーの導入による。

26%の削減は、再生可能エネルギーの導入による。2/3の削減は、再生可能エネルギーの導入による。

図-26 中国とインドの電源構成 (2019年)

出所:IEA データで作成



??????

????GHG????2/3????????????????????2050?GHG????????????????????GHG????????????????

??

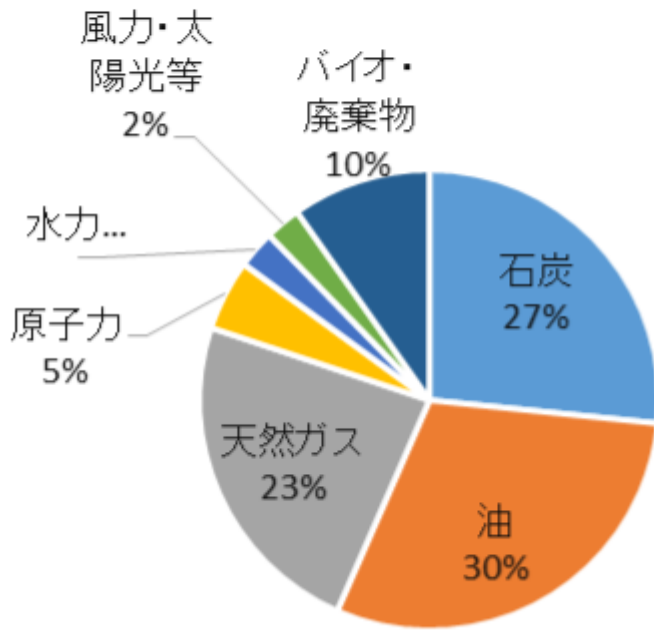
????????

2050?GHG??GHG????????????????

????????GHG??VRE????????????????27????

????????TES????????????????27%????????

図-27 世界の一次エネルギー供給量  
(2020年) 出所: IEAデータ



28??29??7????????????CO2??????????

図-28 グループ別 一次エネルギー供給量  
(2020年) 出所: 米国eia、Internationalデータ

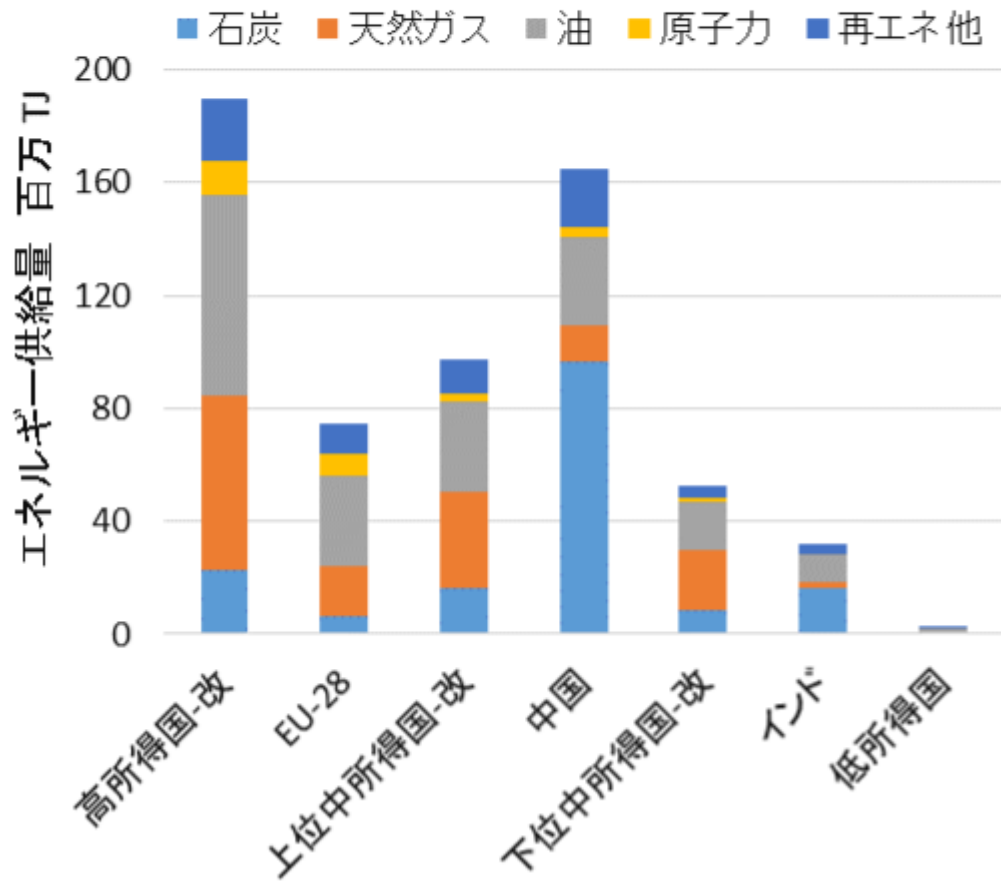
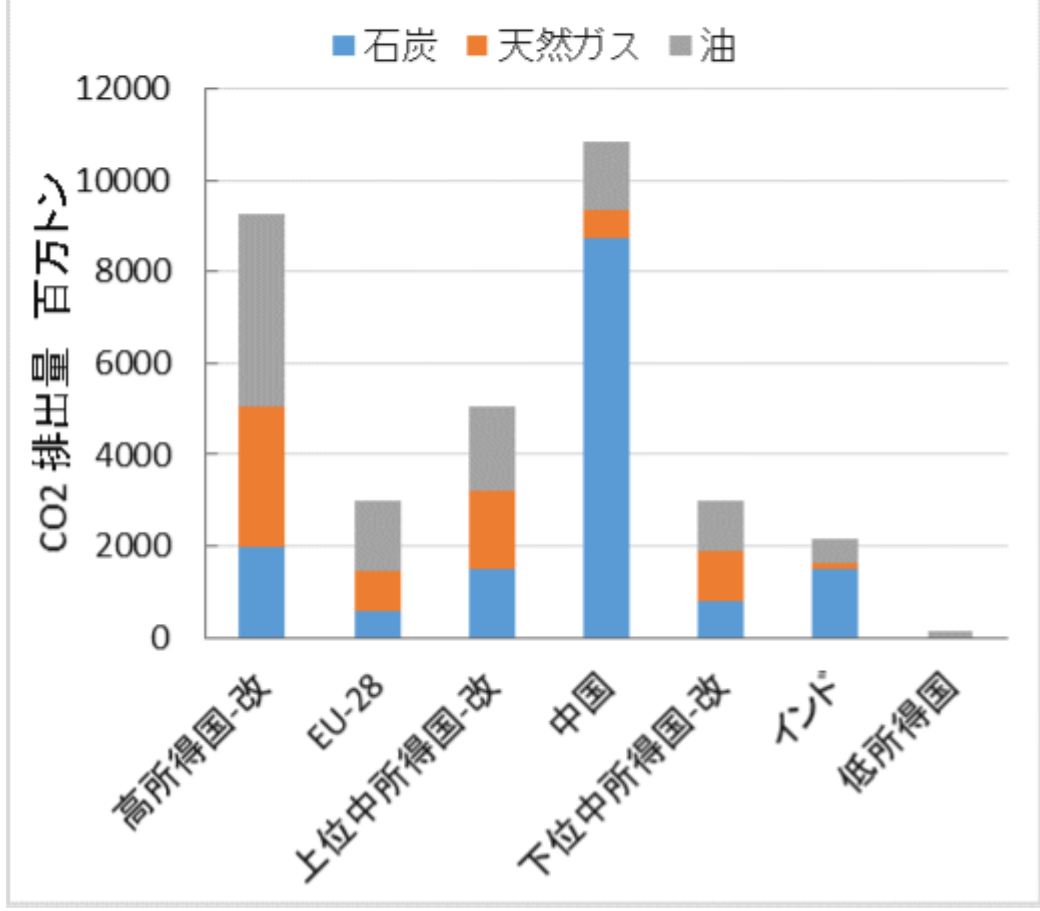


図-29 グループ別燃料燃焼CO2排出量 (2020年) 出所: 米国eia, Internationalデータ



2020年、世界のCO2排出量は52%増加し、16%減少した。2020年のCO2排出量は、

2019年と比較して、CO2排出量は0.56億トン減少した。

LCA（ライフサイクルアセスメント）は、LNG（液化天然ガス）のCO2排出量を0.6億トンから0.65億トンに増加させ、35%のCO2削減を実現した。

18%の削減を実現し、6億トンに減少した。IEA（国際エネルギー機関）は、2020年のGHG（温室効果ガス）排出量を1億トン削減し、1億GHG削減を実現した。

70%の削減を実現し、70%の削減を実現した。70%の削減を実現し、70%の削減を実現した。

70%の削減を実現し、70%の削減を実現した。

30%の削減を実現し、1970年と比較して、1970年と比較して、1970年と比較して、

2億トン削減し、1億トン削減を実現した。

??

????????????????????100??  
????????????????2050?GHG????????????????????????????????????

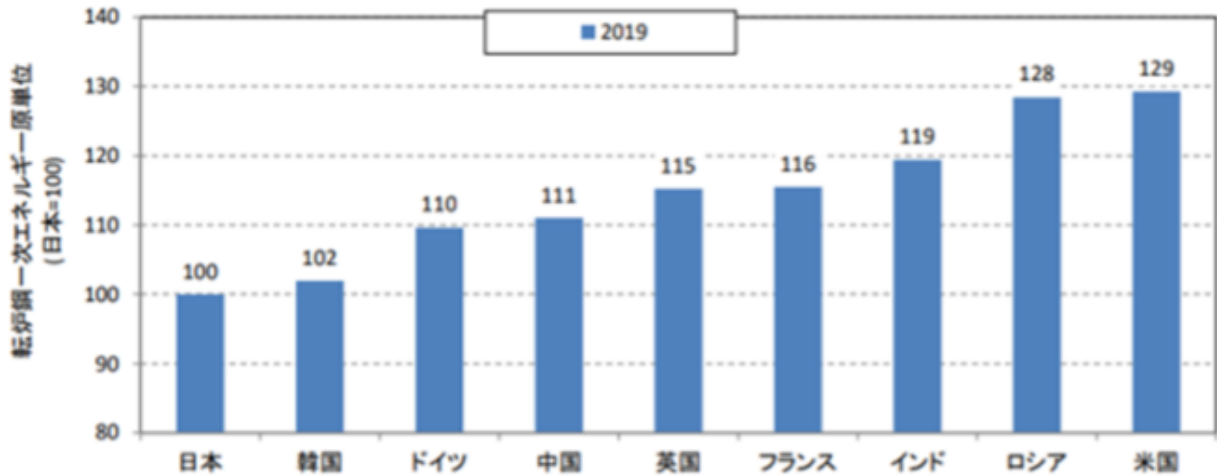
???????

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

????????????????????23????????475??  
??

??30????????????  
???-??

図-30 高炉-転炉鋼の一次エネルギー原単位 (2019年)  
出所：2019年時点のエネルギー原単位の推計(鉄鋼部門-  
転炉鋼)、RITEほか



??

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

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

?????

GHG????????????????????GHG????????????????????????2050????????????GHG????????????????  
?

GHG??EU????????GHG???60?70%????????????????????GHG?  
????????????????????????

?

?? ??

????????????1970??kindle????????????  
????????????????



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

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

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

GEPR??? · Monday, December 11th, 2023



deepblue4you/iStock

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

?? ??

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

???????

????????????????VRE??Energy-

Charts?????  
?????

?????2022?????  
??6%?????

VRE?????40%?????

?????  
?????

?????

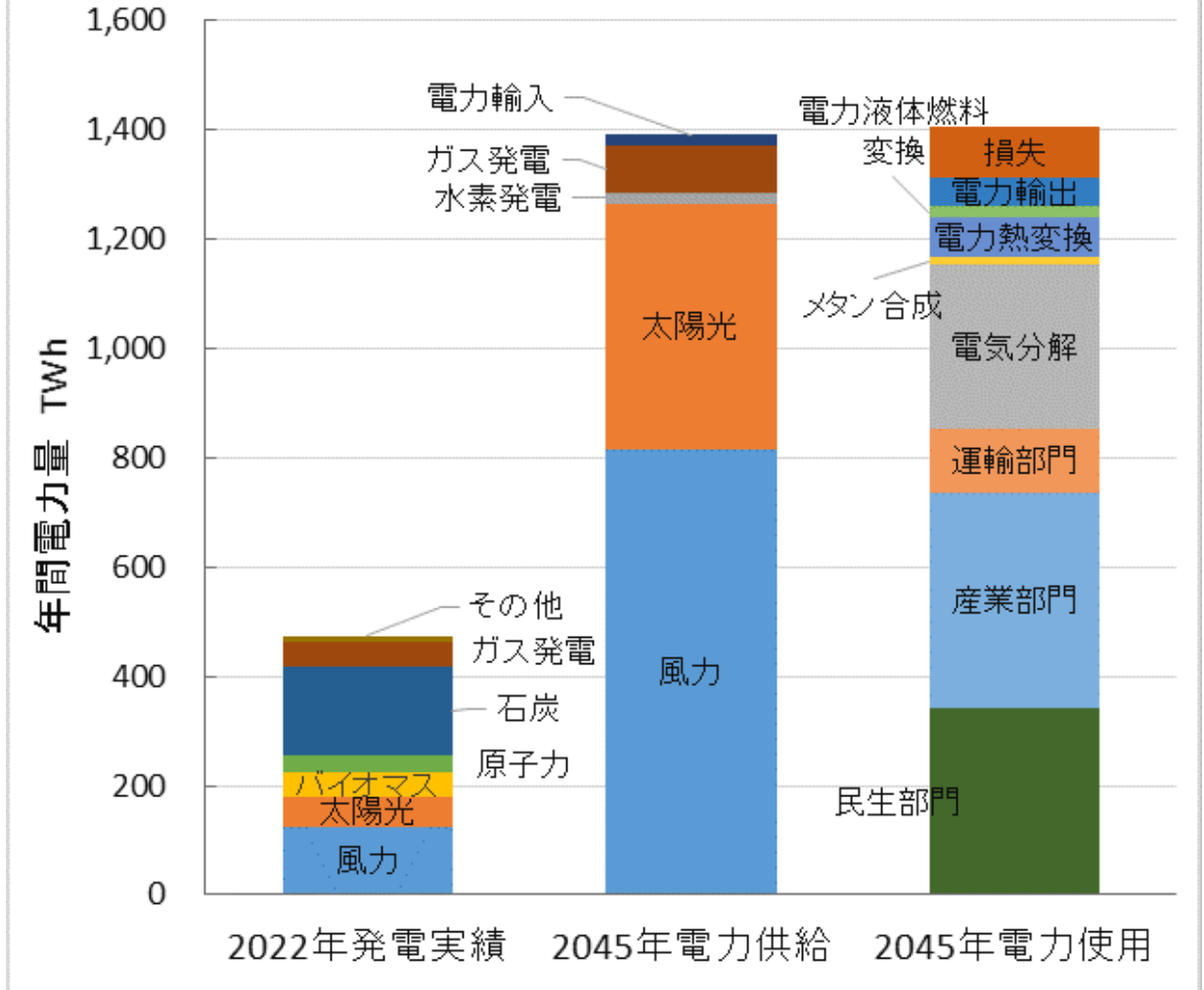
VRE?????

?????ISE?????

????2045?GHG?????4?????  
?????4???

??2???2022?????2045?????2045?????2022???3?  
???????58%?????32%?????90%?????2022?????37%?????  
?????6%?????4%???

図-22 ドイツ2022年実績と2045年「参照」シナリオ  
出所: Energy-Chartsと「参照」シナリオのデータで作成



2045??6??????4????????????????????????3?????  
??

??Power-to-  
X??CO2????????????????????????????????????3????????????

表-3 ドイツ2045年GHGネットゼロの風力・太陽光発電の変動対策

分類	技術名	電力不足時の対策	電力余剰時の対策
季節変動と発電ピークの抑制	風力と太陽光比率の適正化	風力発電と太陽光発電の季節変動を相殺	
	太陽光発電の抑制	ピーク発電量が大い太陽光発電比率を抑制	
電力貯蔵	定置バッテリー	高応答性の電力供給	余剰電力で充電
	移動(車載)バッテリー	同上	電力余剰時に充填負荷をソフト
	揚水発電	同上	余剰電力で揚水
余剰電力の燃料変換	電気分解H2製造		高応答性の電力利用、H2貯留可
	H2ベースのメタン合成		発電・加熱用燃料
	H2ベースの液体燃料合成		移動体燃料、貯留可
その他	メタン・水素複合サイクル発電	ディスパッチ可能電源	
	ヒートポンプ熱電併給複合地域暖房	熱電併給で暖房	ヒートポンプで暖房と蓄熱
	電気発熱体	常時使用だが、CO2フリーのボイラ等代替	
輸出入	電力輸出入	再エネ発電の地域差を利用して欧州電力網を強化して輸出入	
	合成燃料・バイオ燃料輸入	国内燃料変換生産の不足を補完	
考慮されていない技術	CCS	CCSが石炭火力の延命になるという環境団体の反対による	
	原子力	原発分だけ再エネを減らせるが、福島第一事故で脱原発を決定	

出所: ブラウンホールワーISE, 「気候中立的なエネルギーシステムへの道」, 2021年11月改訂の情報で作成

VRE??

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

??3???1?????????1/3?1/2?

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

??

??

??

??

??

??

??

??

??

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

??

EV????????????????????????????????????EV????????????????????????????????????

??

??

??

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

??

??

??

??

??30%????????????????

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

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

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

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

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

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

1990????????????????CO2????????CCS????????????????2010????????CCS????????????????2015????????????????CCS  
????????GHG????????????????????????????????

????????????????????CCS????????????????????CCS??CO2????  
????????????????CCS????????????????

????????CCS??  
????????????????????CCS????????????????????????????????

??VRE????????????????????????????????  
????????

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

VRE????????????????????VRE????????????????????????????????????

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

?

**?? ??**

????????????????1970??  
??kindle????????????????

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

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

# ??2050????????????????????????????????

?? ?? · Sunday, December 10th, 2023

????COP28??



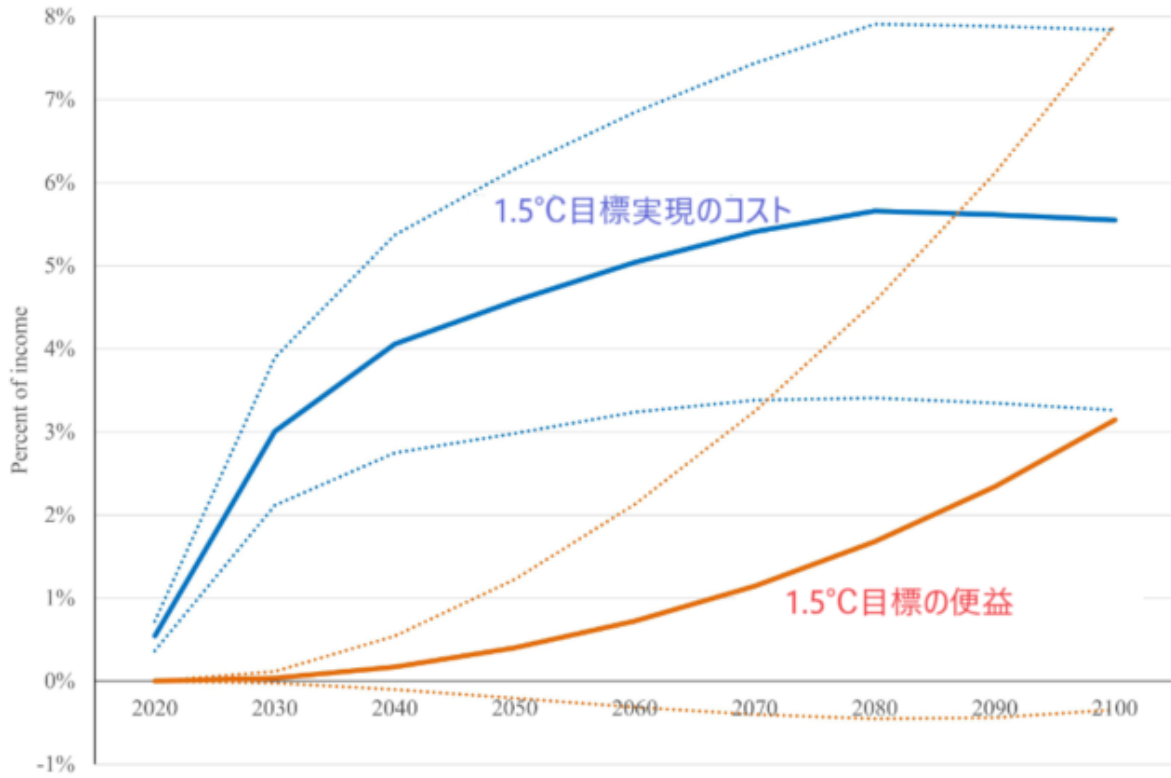
???????

??????100????????????????????100??  
?????????

## 1.5????????????2?10?

??Richard  
S.Tol????????????????????61????????39??

????????1????2050????1.5????????????????GDP????4.5????????????????0.5????2100????5.5???  
????????3.1?????



1.5°C (Tol)

IPCC SSP5-8.5 2100

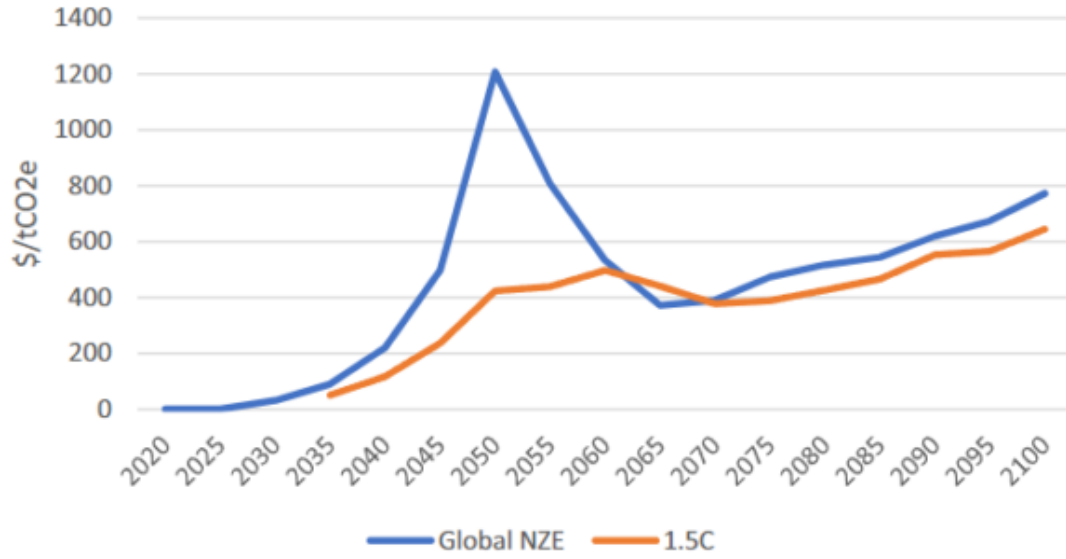
1.5°C

2100

1200

Jennifer Morris et al. 2050 CO2 1200

### Global Emissions Price



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

????????????????80????????????????18????????????GX????1????GX????????????  
????????????????

????????????????2050????????????????????????????1.5????????????????????500????????  
????????????????

????????400????????????????????70????????????????????

????????????????????????????????????COP28????????????????????????????1.  
5????2050????????????????????????????????????

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

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

?? ?? · Sunday, December 10th, 2023





wildpixel/iStock

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

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

??

??

??

??

**IPCC????????????????????????CO2????????????????????2100????????????????????????????????????**  
**????????????????????????????IPCC????????2050??**

??

??

??

??

??

??

??

?



Posted in ???, ????? | No Comments »

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

GEPR??? · Saturday, December 9th, 2023



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

?? ??

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

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

???????

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

2020????????????????????6%????????3%????????5????????????????????????????????  
 ?????????????????????????

14??15??7??  
 ?????????????????????????

EU-28????????????????????GHG??

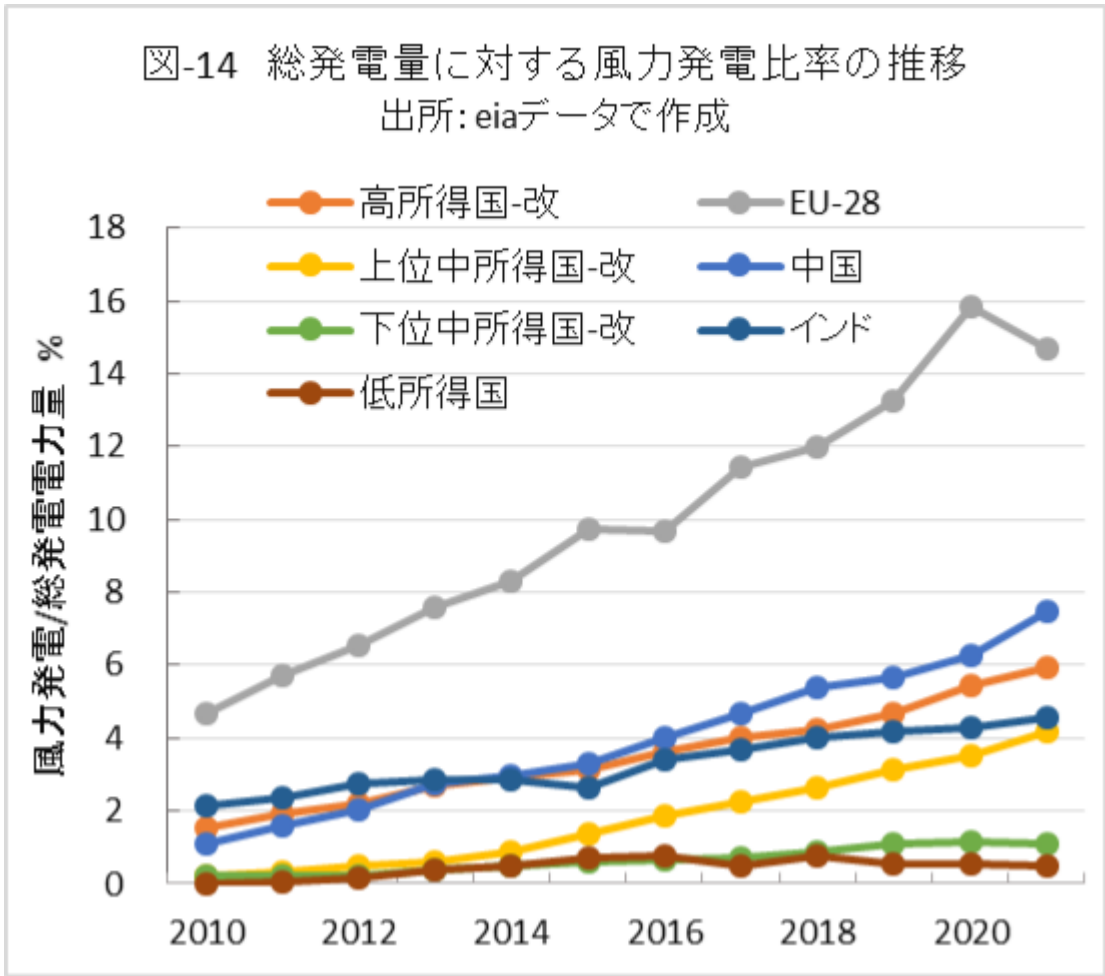
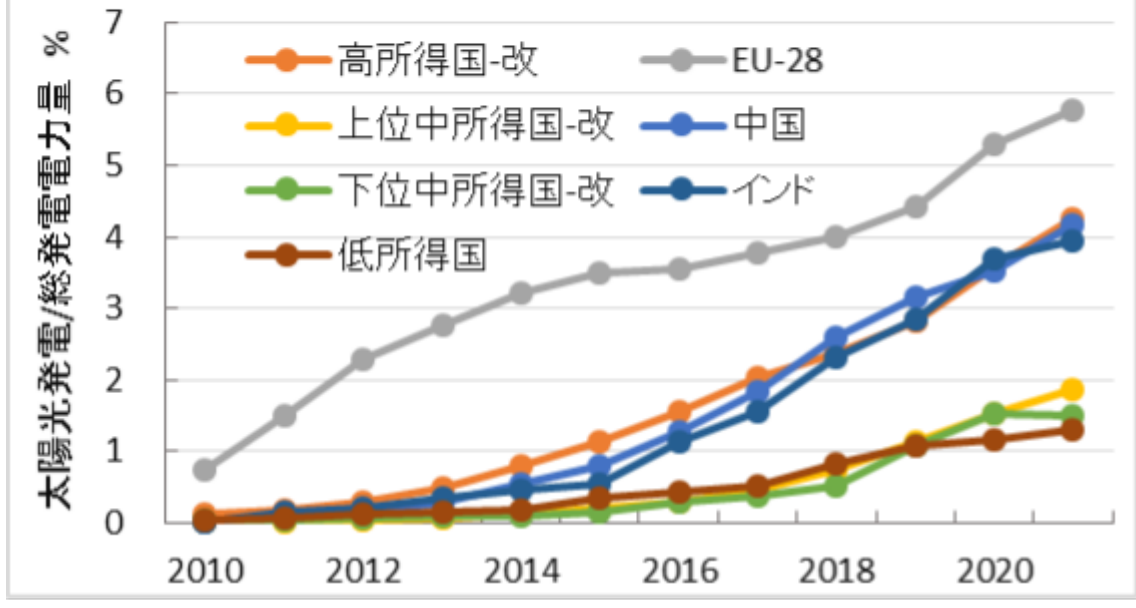


図-15 総発電量に対する太陽光発電比率の推移  
出所: eiaデータで作成



Variable Renewable Energy, GHG VRE GHG EU-28 GHG

VRE kW VRE kW VRE VRE

VRE EU-28 VRE VRE

VRE VRE VRE

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

VRE Energy-Charts

Energy-Charts?

Energy-Charts ISE

30

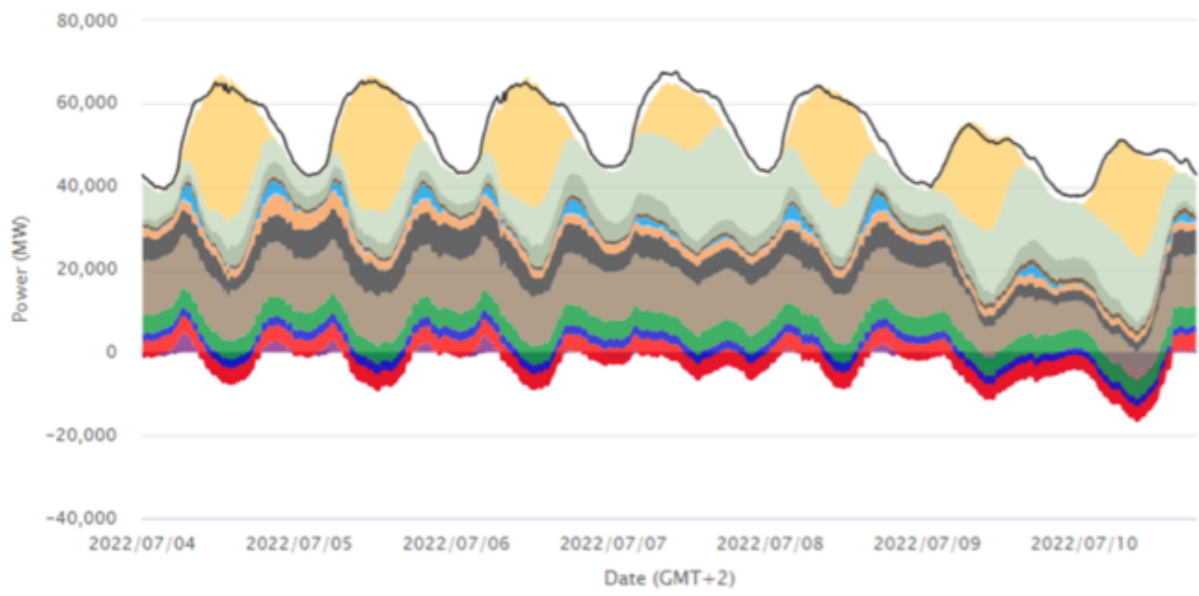
CO2

Energy-

Charts????????????2022??27??74??10??  
??

### Public net electricity generation in Germany in week 27 2022

Energetically corrected values



Energy-Charts.info - last update: 2023/06/02 18:13 GMT+2

??

#### ????????????????

?2?2022????????????????????????????????????1?kWh?1000TWh??  
????????????????25%????????12%????????

表-2 ドイツの電源構成 (2022年公共正味発電電力量)

電源	正味発電電力量		正味発電容量 GW	設備利用率 %
	TWh	%		
太陽光	57.6	11.7	64.16	10.2
陸上風力	98.2	20.0	56.91	19.7
洋上風力	24.8	5.1	7.89	35.9
非再エネ廃棄物	5.3	1.1		
再エネ廃棄物	4.6	0.9		
その他	0.6	0.1		
貯水式水力	1.1	0.2		
地熱	0.2	0.0		
ガス火力	45.2	9.2	33.84	15.2
油火力	1.0	0.2	4.77	2.4
瀝青炭火力	55.4	11.3	19.06	33.2
褐炭火力	105.9	21.6	18.69	64.7
バイオマス	41.9	8.5	8.91	53.7
流れ込み式水力	15.8	3.2	4.94	36.5
原子力	32.8	6.7	4.06	92.2
年間正味発電電力量	490.4	100.0		
電力輸出入(輸入-輸出)	-27.6	-5.6		
揚水発電発電電力量	6.0	1.2		
揚水発電ポンプ動力量	-8.1	-1.7		
年間電力負荷量	482.3			
年平均1日発電電力量	1,344.0	GWh		
年平均発電量	56.0	GW		

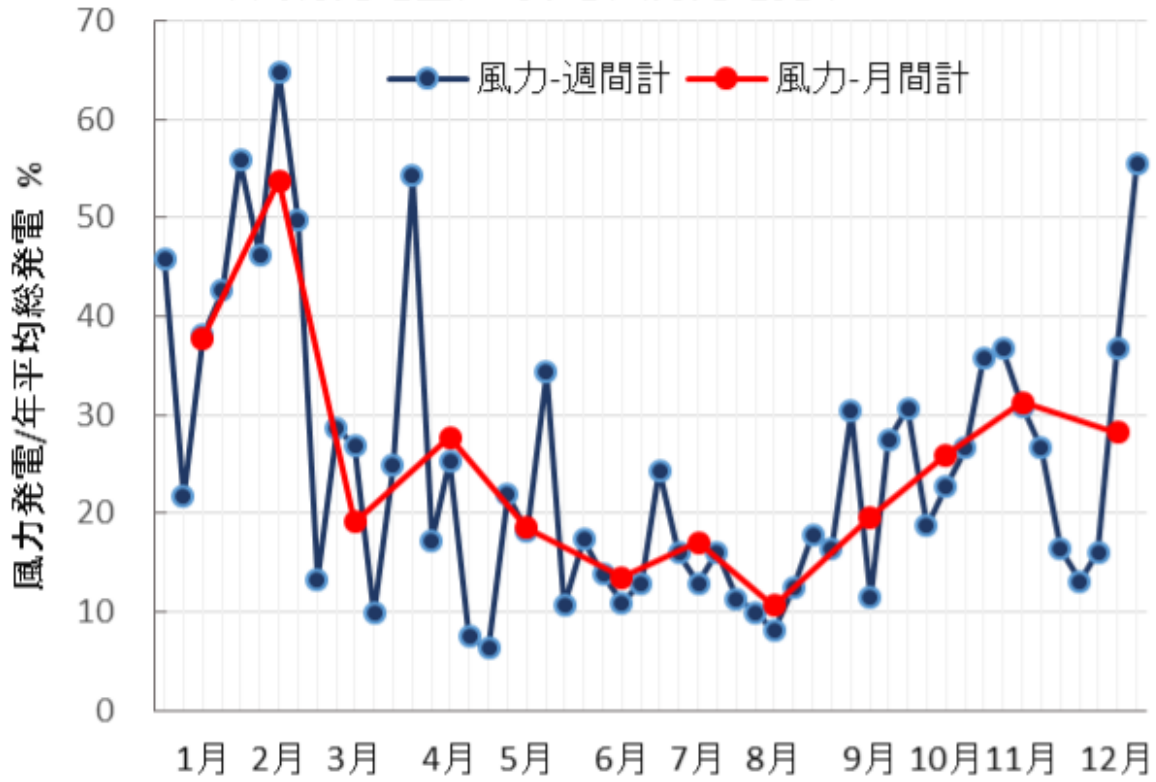
(注記)  
 1) 公共正味発電電力量は、自家発を含まない、電力ユーザーのコンセントから出て消費される値。  
 2) 太陽光、風力の発電容量は年間平均値、その他は2022年末の値。  
 3) 電力負荷量は電力系統に投入された値。

16% 2022年 100%  
 6% 65% 25% 10% 60%  
 0.3 2.6  
 1  
 1

図-16 ドイツの風力発電電力量の変動(2022年)

出所: Energy-Chartsのデータで作成

年間総発電量に対する風力発電比率:25.1%



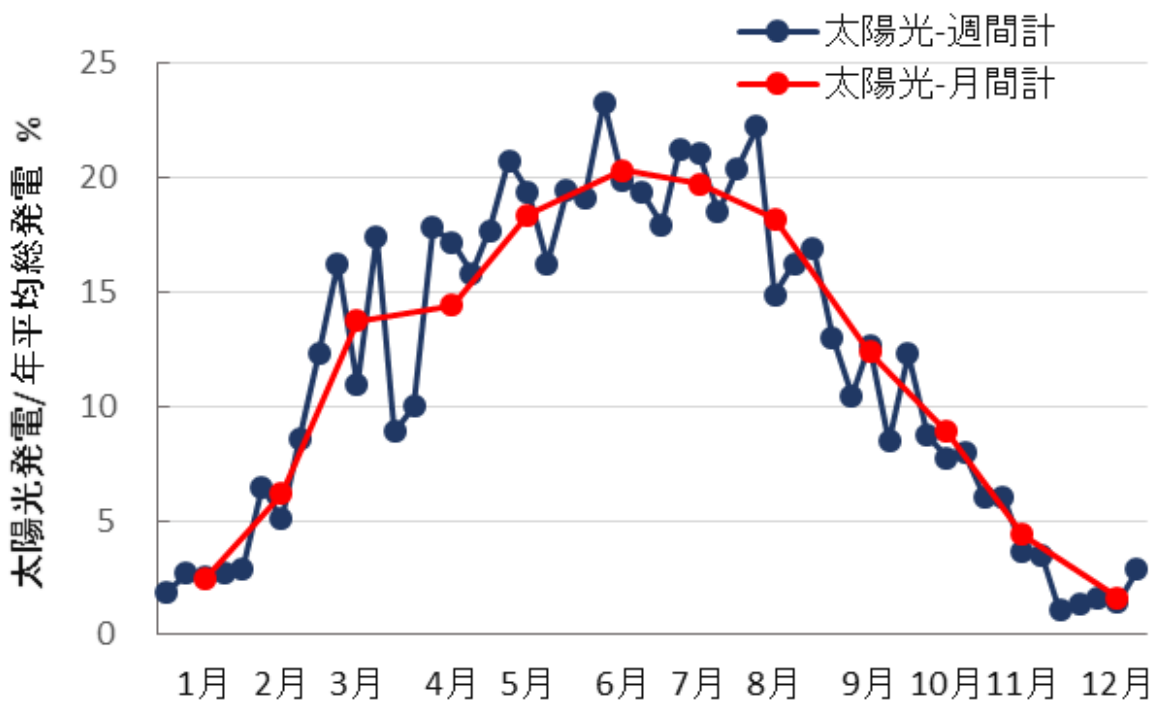
17% 12% 23% 0.12.0

0.14 1.7

図-17 ドイツの太陽光発電電力量の変動 (2022年)

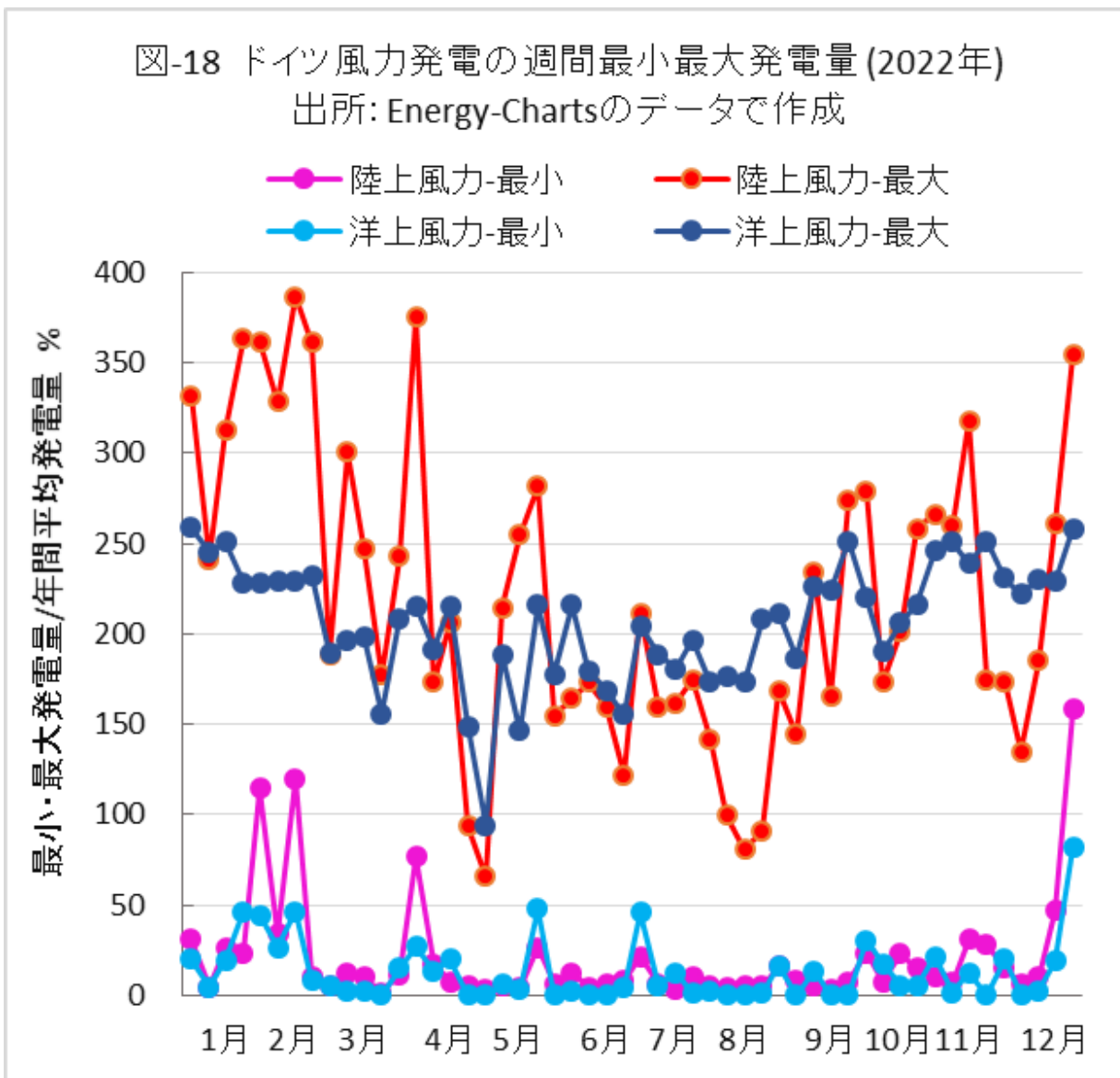
出所: Energy-Chartsのデータで作成

年間総発電量に対する太陽光発電比率: **11.7%**



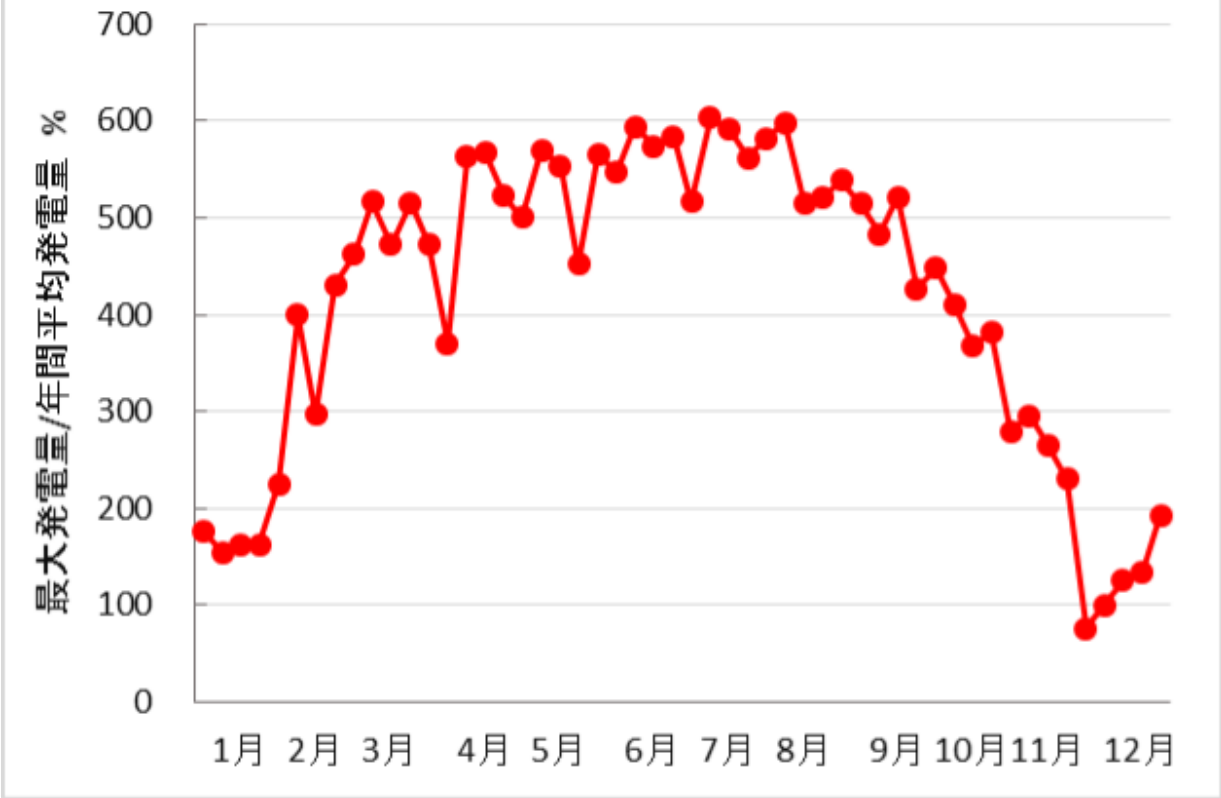
18%  
 10% 4%





?19??1????6????????????  
???

図-19 ドイツ太陽光発電の週間最大発電量 (2022年)  
出所: Energy-Chartsのデータで作成



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

??20212022????????????????  
??Q&A?????????

??

図-20 日本の風力発電の月間発電量 (2022年)

出所: 資源エネルギー庁電力調査統計  
電気事業者の発電実績と電気事業者以外の事業者からの受電電力量の合計

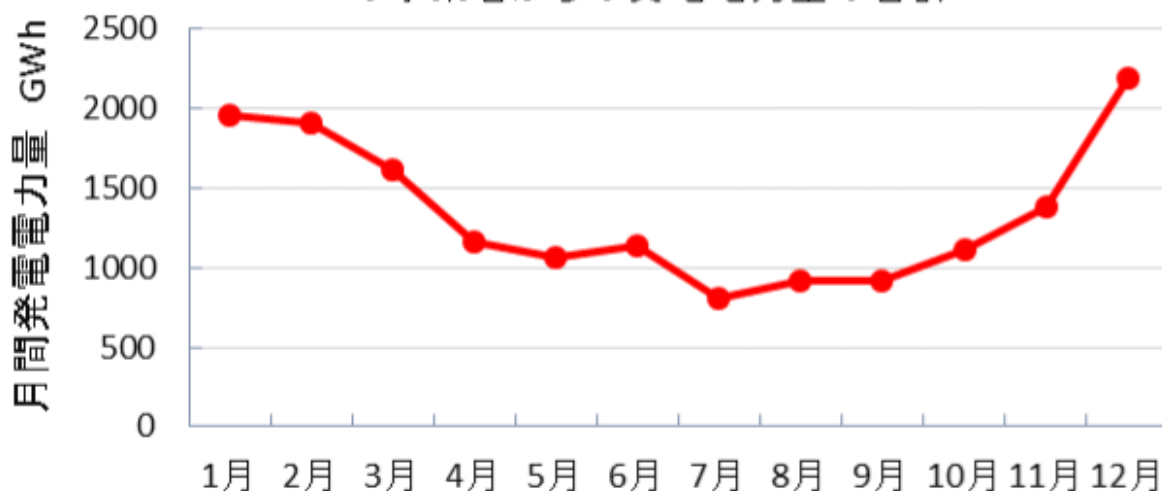
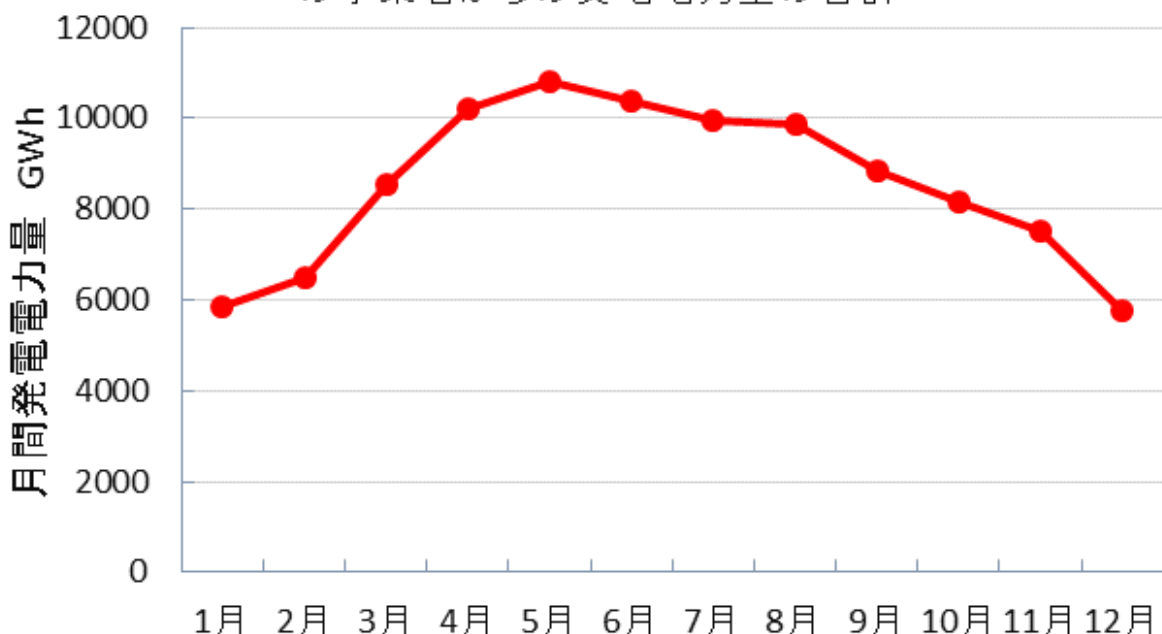


図-21 日本の太陽光発電の月間発電量 (2022年)

出所: 資源エネルギー庁電力調査統計  
電気事業者の発電実績と電気事業者以外の事業者からの受電電力量の合計



??

??

??

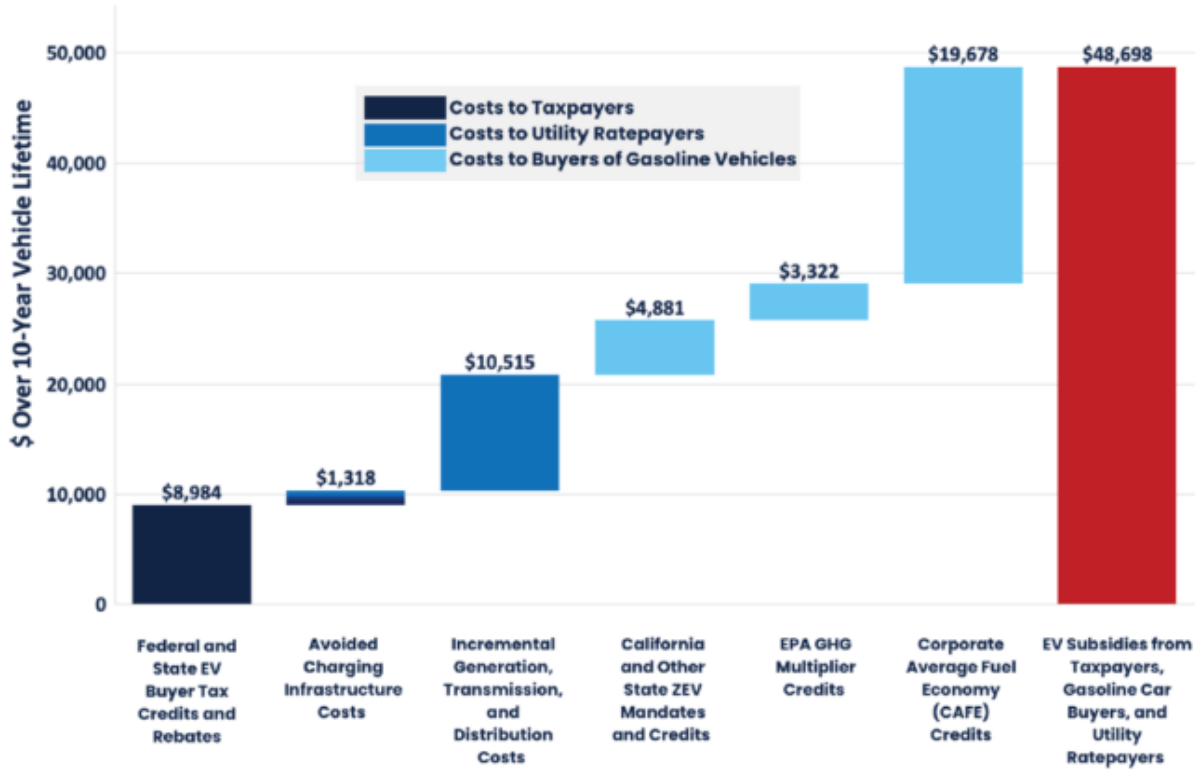
??

?



- ?????????????????????????????????8984????1318????????????
- ?????????????????????????????????10515????1318????????????
- ???4881+3322+19678= 27881????????

Figure 1(a)  
Subsidies and Regulatory Credits Accrued by a MY2021 Electric Vehicle Over 10 Years



????????8984??

????????????????????????????????EV????????????????????????????

??EV????????????????

?



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

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

?? ?? · Thursday, December 7th, 2023



alashi/iStock

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

**?????????????????????3???2023?11?30???????**



??

**?????????????????????2023?12?2???????????**



????????????????????2??X??  
 ???

???

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



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

??

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

**????????????????1??????3.4?2022?1?25?????????**



????????25??  
????????????????1??????3.4????27????????????????????????????

????26????24????????????????170.2??3.2?  
????1??????3.4????????????

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

**????????9?????????????????????**



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

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

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



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

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



GX??CO2????????????????  
??

??

???

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

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

??

???

**????????????????????????????????????2021?06?17??JETRO?**



2020?6?17?CO2?2020?6?17?CO2?2020?6?17?CO2?2020?6?17?CO2?2020?6?17?CO2?  
??  
??  
??  
??  
????????????????

??????

**???????? – ?????????????????????????2023?9?25??Blackout-News?**



????????????????2045? ???  
??  
??  
????????????????????”????????????????  
???  
??  
????????????????????????  
???  
??

???

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



??  
??

??  
???

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

??  
??



?????

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

?

??

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

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

?? ?? · Thursday, December 7th, 2023



HunterBliss/iStock

1. IPCC?????

IPCC?CO2????????Princeton????????1??????1967??3??????1975??????????1979??MIT??????  
?R. Newell ??????????????

????DOE??1979????????????????????????????????????CO2????????????????????????<sup>21</sup>?R.  
Newell?????????????R. Cess?????????????Lawrence Livermore?????????????????R.  
Newell????????????????????

1986????????????2??1988??IPCC????????????????????  
????????????????CO2??

??1990??Hadley????????????????????CO2????????????????????????????????CO2????????????????  
????CO2????????????????????????????????

Hadley??????IPCC Working  
Group1?????IPCC??R.  
Courtney????????????????????

**R. Courtney, ” Global Warming : How It All Began ”,(1999)**

????CO2????????????????????fake science????????????R. Newell????????IPCC????????????R.  
Cess????CO2????????????????S. Schneider?J. Hansen? M. Schlesinger?T.  
Wigley????????????????????????????

R.  
Cess????????????????????????????CO2?300ppm??600ppm????????????????????3????????????  
????????????????????????????????2????????1.5????????????????????????

?????1????????CO2??2005????????????  
????????????????????????????????CO2????????2????????????????????????2006????????????  
????????

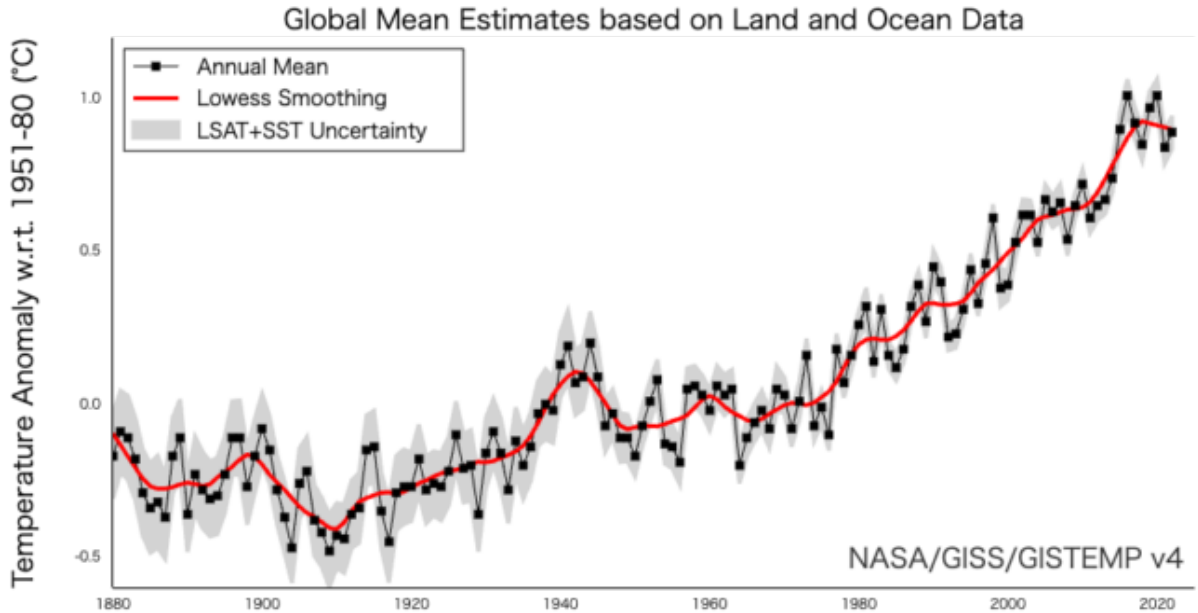
????????????????????????????????????Green New Deal??Clean Power  
Plan????2015????????????????????EV????????????????????2050?Net  
Zero????????????????????2020?10????????2050?Carbon Neutral????????

**2. ?????????????????????**

CO2????????????????????NASA GISS????IPCC?WMO?NOAA????????????????NASA  
GISS?Director?1981-2013????J. Hansen????G. Schmidt????????????

J.  
Hansen?1988????????????????????????????????99?CO2????????????????????  
????????????????????

<https://realclimatescience.com/overwhelming-evidence-of-collusion/>

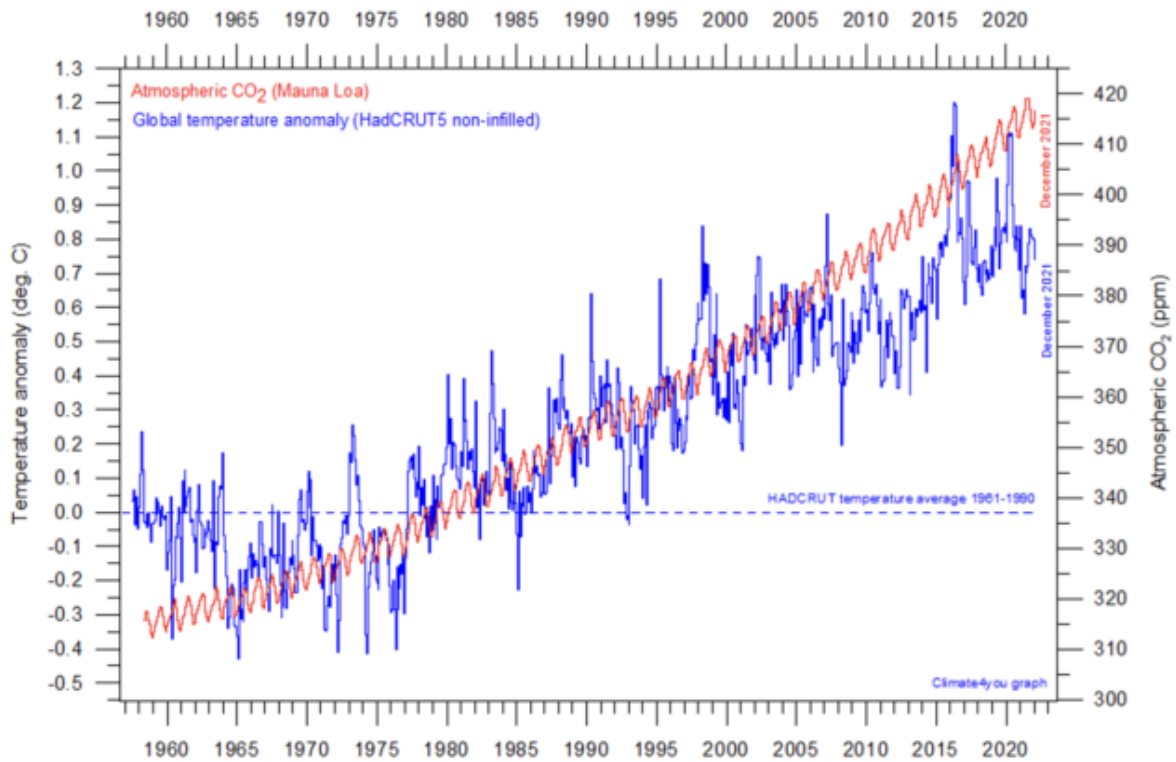


Data.GISS: GISS Surface Temperature Analysis (GISTEMP v4) (nasa.gov)

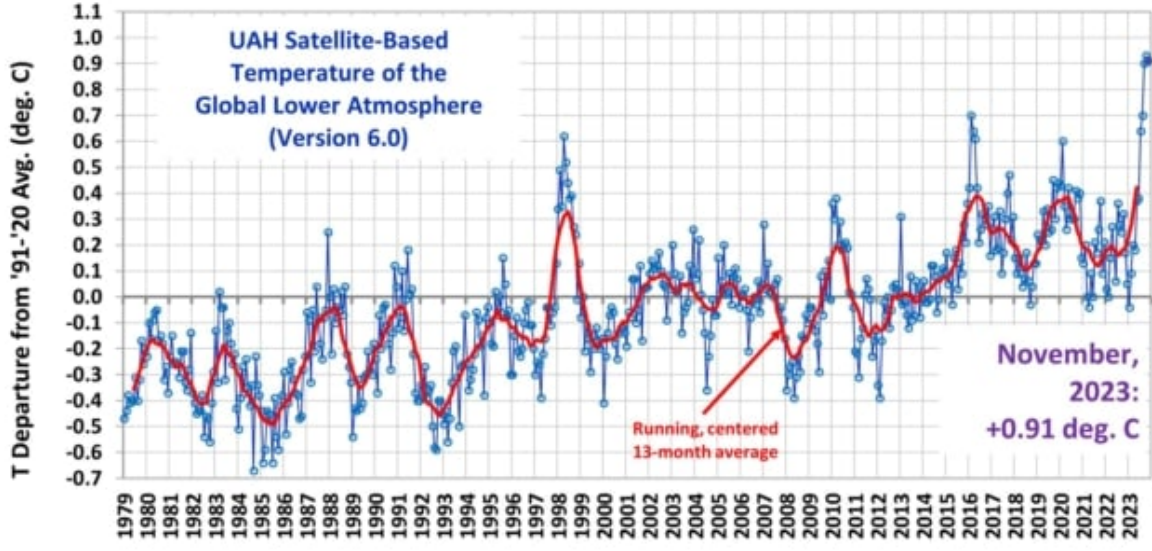
?? ? N A S A

GISS?????????????????????HadCRUT5?UAH?????????????????????CO2?????????????????2023?????

?????El Nino?????????????????????



<https://www.climate4you.com/>



<https://www.drroyspencer.com/latest-global-temperatures/>

?. ?????????????????????????????????

????????????????????CO2????????????????????CO2????????????????????600????????????????????CO  
 2??  
 ?????????2016?9??24-53??



**Newton Special**

熱波、大干ばつ、集中豪雨——世界を襲う気象災害  
**異常気象と地球温暖化の脅威**

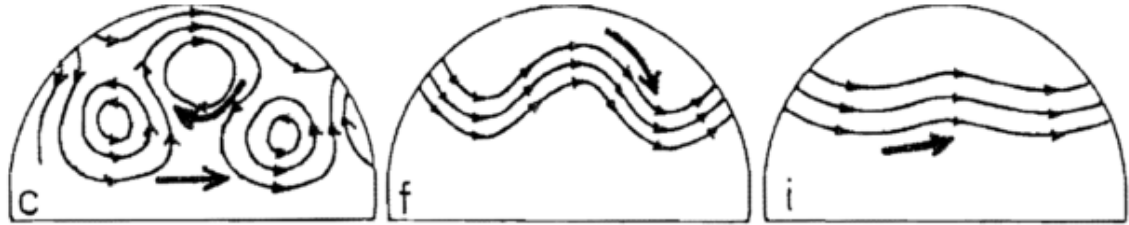
協力 江守正多 / 木本昌秀 / 塩塚秀夫 / 坪木和久 / 森 正人 / 渡部雅浩  
 執筆 宮内 諭 (編集部)

現在、地球は過去に例を見ないペースで「温暖化」が進んでいる。異常気象と地球温暖化はどのように関与しあっているのだろうか。そして、今後、地球環境はどのように変化していくと考えられているのだろうか。

Amazonでのご購入はこちら Amazonで買う

Newton ????????

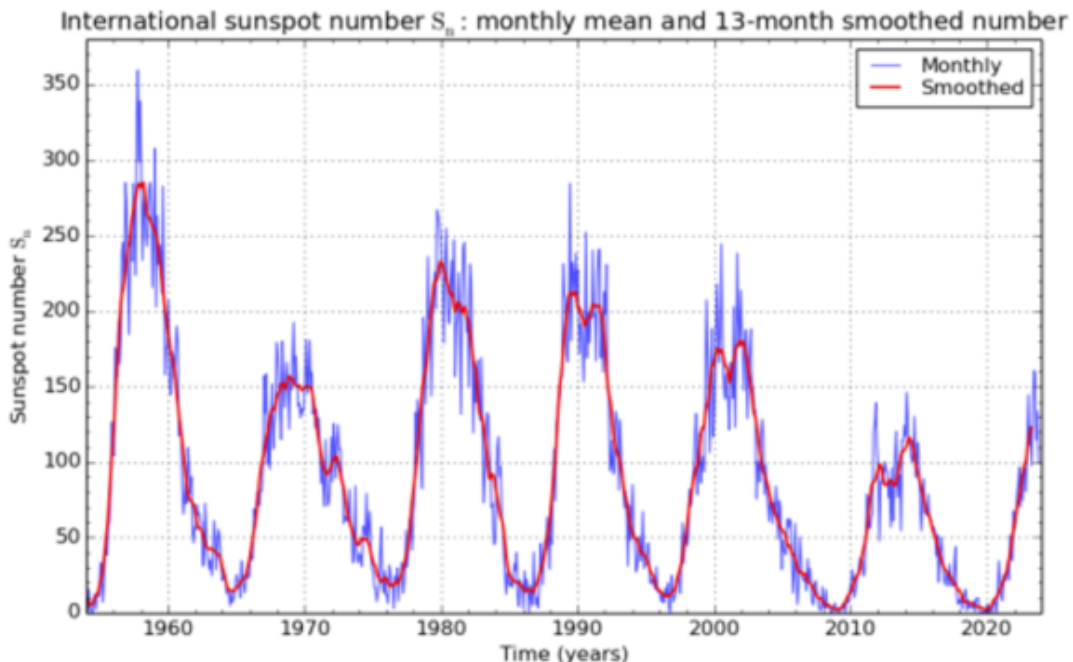
?????????????????Bucha??



太陽活動低い	太陽活動中位	太陽活動高い
偏西風蛇行大	偏西風蛇行中	偏西風蛇行小
異常気象多い	異常気象中位	異常気象少ない

???V. Bucha, Annales Geophysicae, Vol.6, 513-524 (1988)

???SIDC?????????????????cycle20?1964-1976??cycle24,25?2008-??????????????????

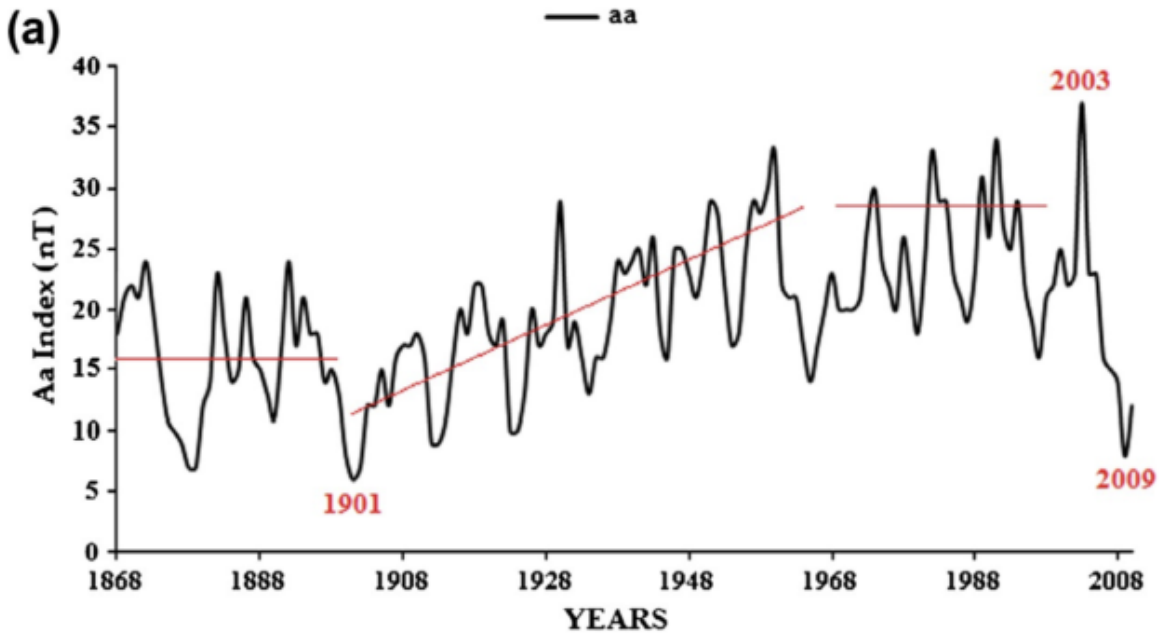


SILSO graphics (<http://sidc.be/silso>) Royal Observatory of Belgium 2023 November 1

?????????????????fake  
 science??44??????  
 ?????????????????????????????11??22??44??????????????

- 2006??18???
- 1963??38???
- 1918?????
- 1877??????????25cm???
- 1833????1m???

??

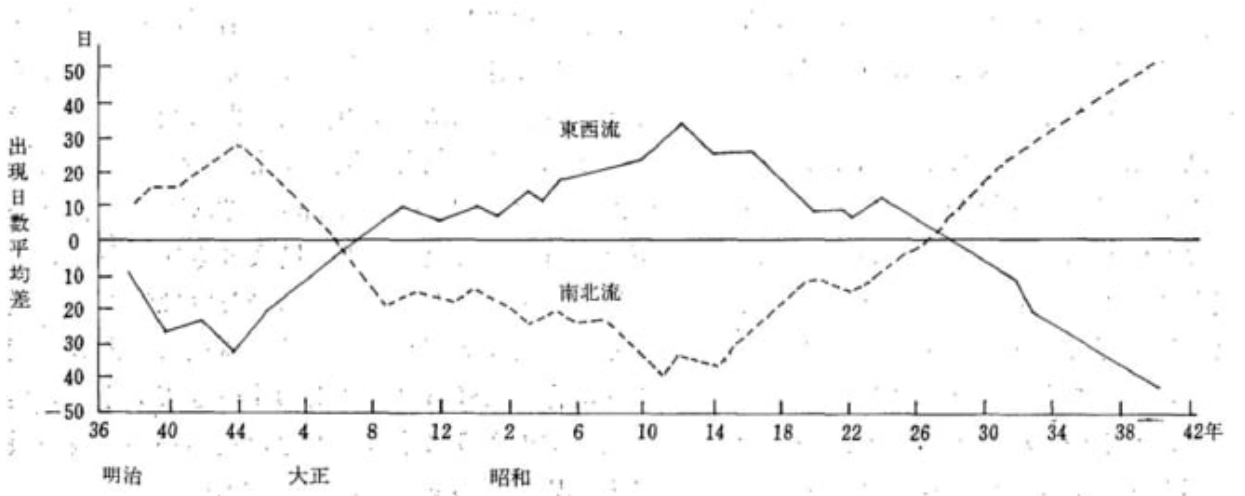


?????Zebro, J-L et al., Journal of Adavanced Research (2013),4, 265-274

1300?1918?	???	???????????
1919?1962?	???????	???????????
1963?1976?	???????	???????????
1977?2005?	???????	???????????
2006???	?????	???????????

????????????????????????1951????????????1910?2000????????????????1960?1980????????????????  
 ???1975?????????????????????Bucha??????  
 ???

??1918????????1952???  
 ?cycle20????????????????????????



????????????????????  
 ?????????????????1963??38??

1963?	38??????????
1964?	????????????????
1965?	?????????9?100??????
1966?	????????????????
1967?	??????
1968?	?????????????????????????10??
1968??1969?	????????????1969?3??
1969?	?????????100?????????2000??
1969?	?????????6-8000??
1971?	1??????3????????100??
1972?	????????????????????????
1973?	????????????
1973?	????????????????????????????250?????????????????????????????????9????

?????????????cycle20????????????38?????????????????cycle24,25?????????????18?????????????  
 ????

IPCC?????1988????1977-2005?????????????????????????????????????2000???Independent???CO2?  
 ?????????????????????????????

?????????????????2006??2005/12-2006/2?????????18????????????????????????????????????  
 ??????????????????????????????????????2009????????????????????????

2006??	?????18????????????
2010??	?????????
2010??	????????????????????????????????
2012??	????????????????
2013??	?????
2014??	????????????
2014??	????????????????????????????
2015??	????????????
2016?	?????
2017??	?????????????
2017??	????????????????
2018??	????????????????????

2019??	??????????
2019???2020?2?	??????????????????
2021??	??????????????
2021??	??
2022?1?	?????????50.7??
2022??	????????????????????????????????????
2023??	???????????
2023??	????????????????????????????

4. ??

??????????1967,1975?????CO2?????????????R. Newell????????????????1979?????????

**CO<sub>2</sub>?????1979?????????**

???IPCC????????CO2??  
???

??EV????EV??????50????????????1??CO2?  
????????????????????????

COP28????????CO2??  
??

??????1?????J-  
POWER????????????????BBC??  
????????????????????

?

?1?

1985????????DOE????Lawrence Livermore?????  
**DOE Report: PROJECTING THE CLIMATIC EFFECTS OF INCREASING CARBON DIOXIDE (1985)**

1990????????R. Newell????????H. W. Ellsaesser??  
**W. Ellsaesser, A different view of the climatic effect of CO2-Updated\*, Atmosfera (1990), 3, pp. 3-29.**



??2011?157-171??

??

Posted in ???, ????? | No Comments »

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

GEPR??? · Tuesday, December 5th, 2023



deepblue4you/iStock

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

?? ??

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

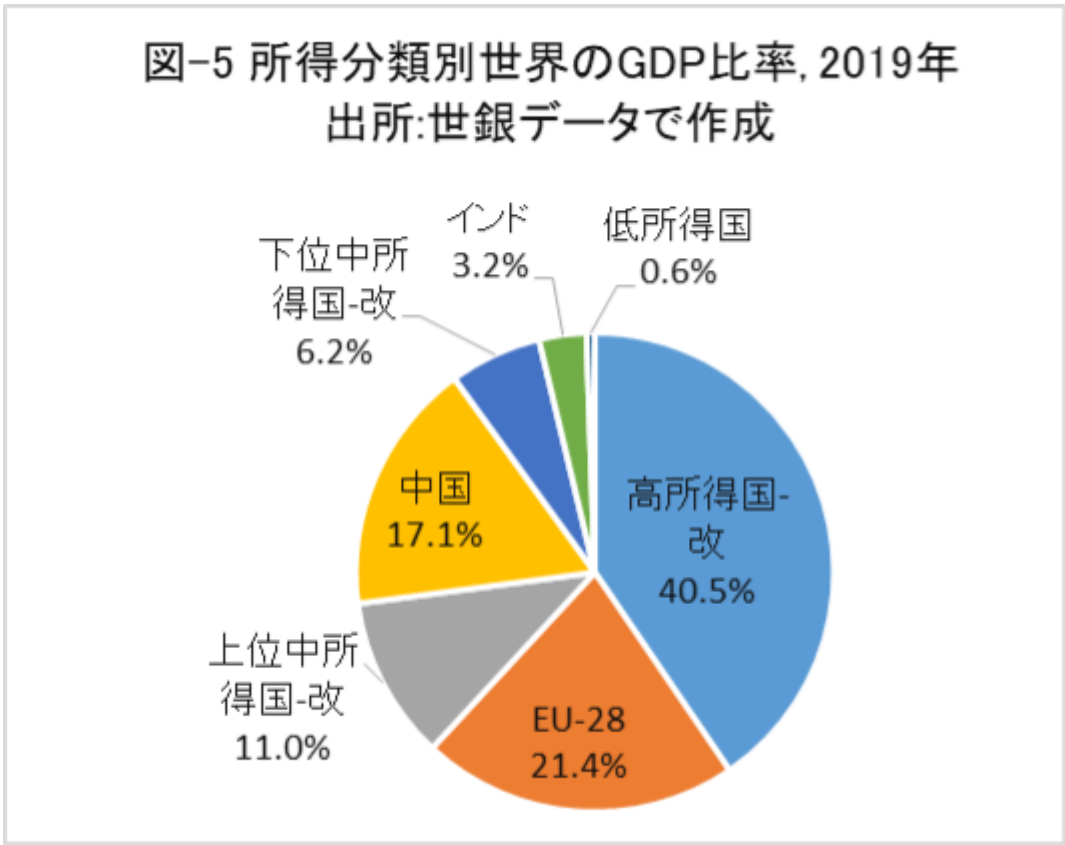
?????????

GHG??GHG????????????????????1????????1?

????GNI??4????????



図-5 所得分類別世界のGDP比率, 2019年  
出所:世銀データで作成



????GHG???

??GHG????????????????10??1%????  
????????????2050?GHG??

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

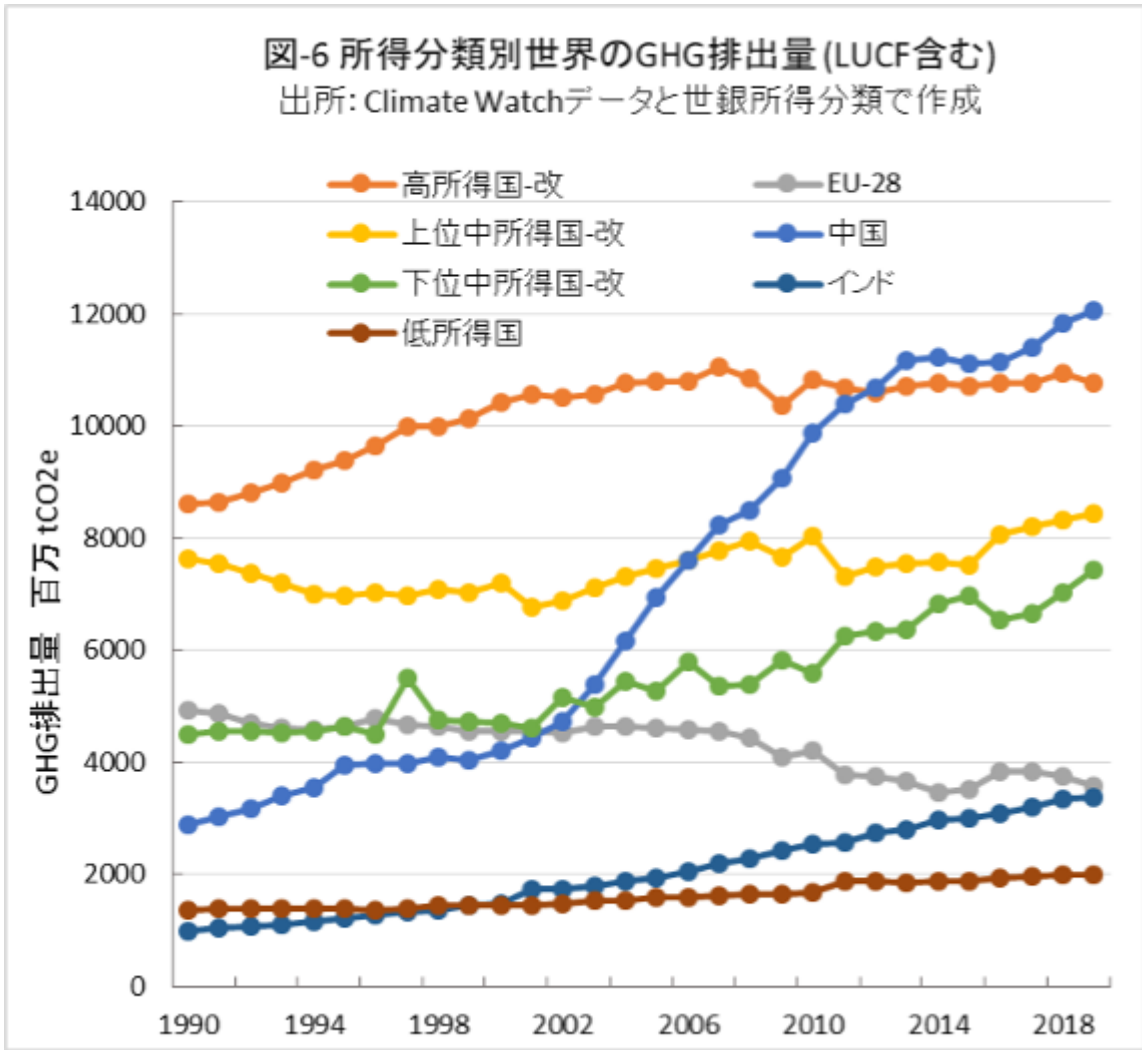
GHG??GHG????????????????????????

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

?6?????7?????GHG????????????????????????????????GHG??????Climate  
Watch??GHG??Climate  
Watch??1????????????????????IPCC?6????????????????????????????????

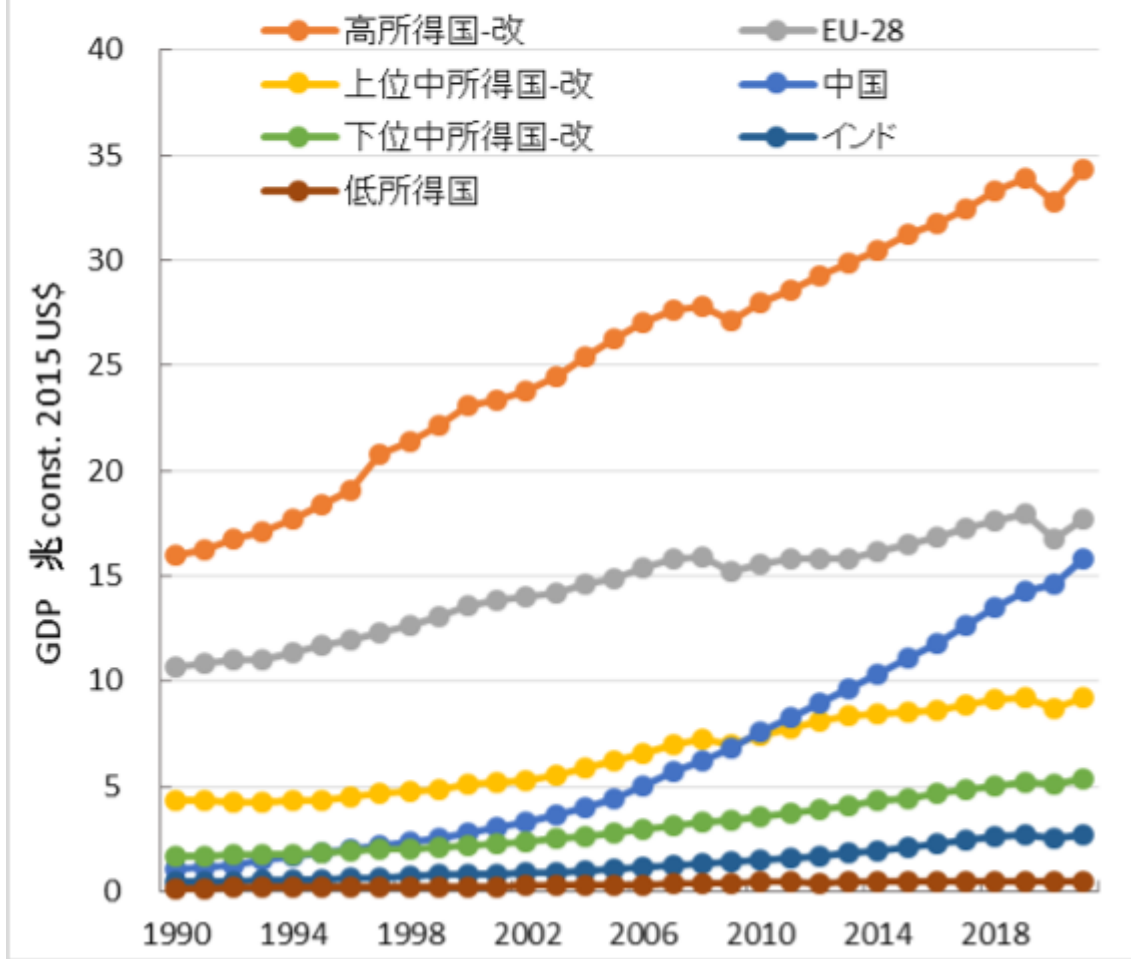
6??????WG3????????????????????????????CO2????????????????8%????????????????????????????????CH4????F-  
????30% ?N2O??60% ?????????????????????????????  
CO2?????70%??GHG????????????????10%????????????????????

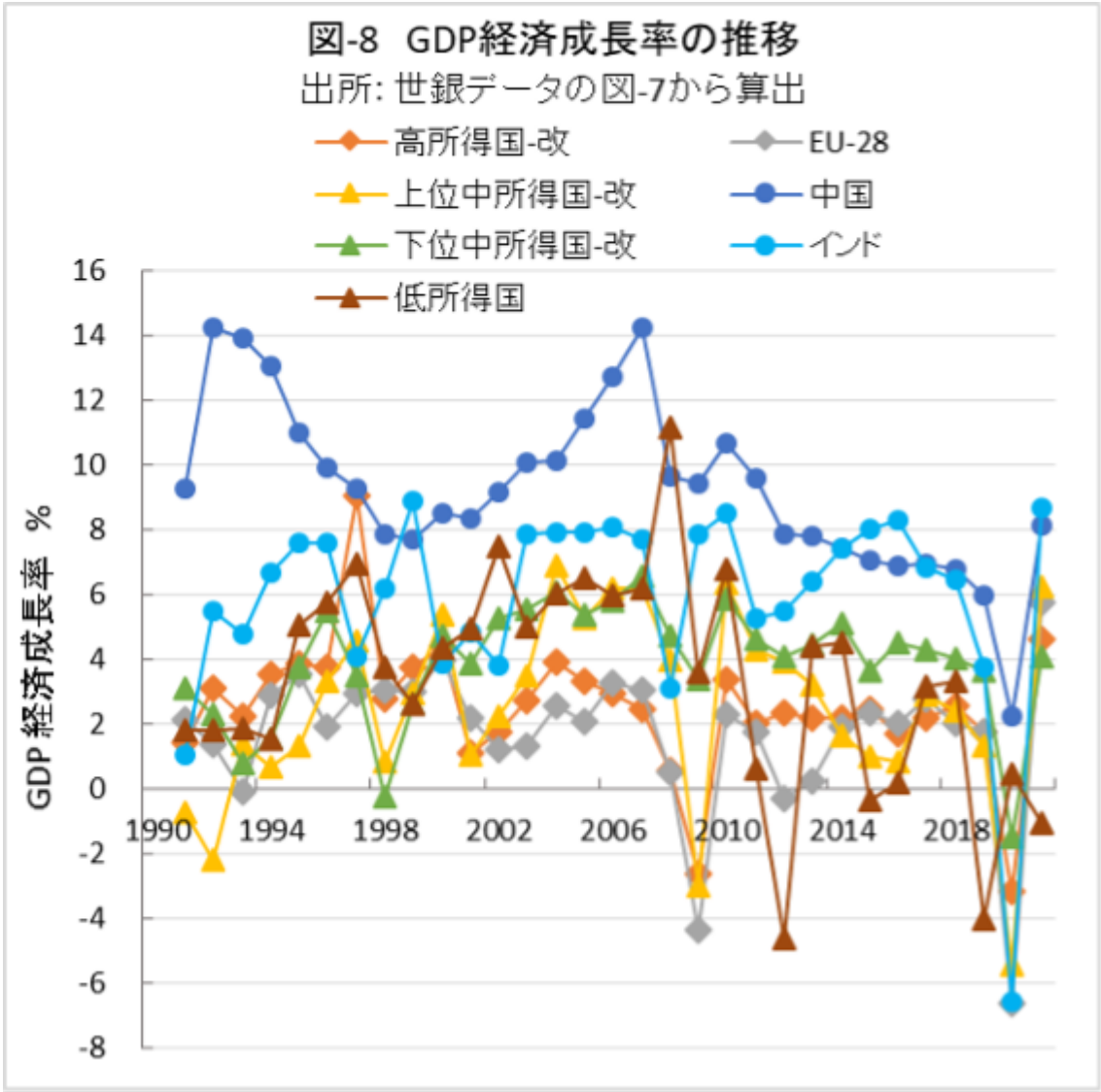
?????GHG??6????????????????GH  
G????????????????GDP????????????????????



????????GDP????8??GDP????????GDP??  
?

図-7 所得分類別実質GDPの推移  
(constant 2015 US\$)  
出所: 世銀データで作成





??-  
 ??EU-28????????2008????????????????3?4%????????????????2%????????????????-  
 ??GHG??EU-28?GHG????????????????????  
 ???????????????

????????????????????10%????????????????????9%????????????GHG????2002????2013????????  
 ?????????????????????????????????????6%????????????GHG????????????????

??????-??????????-  
 ?????????????????2005????????6%????????????????2.5%?4%?3.4%???GHG????2000????????????  
 ?????????????????-????????????????

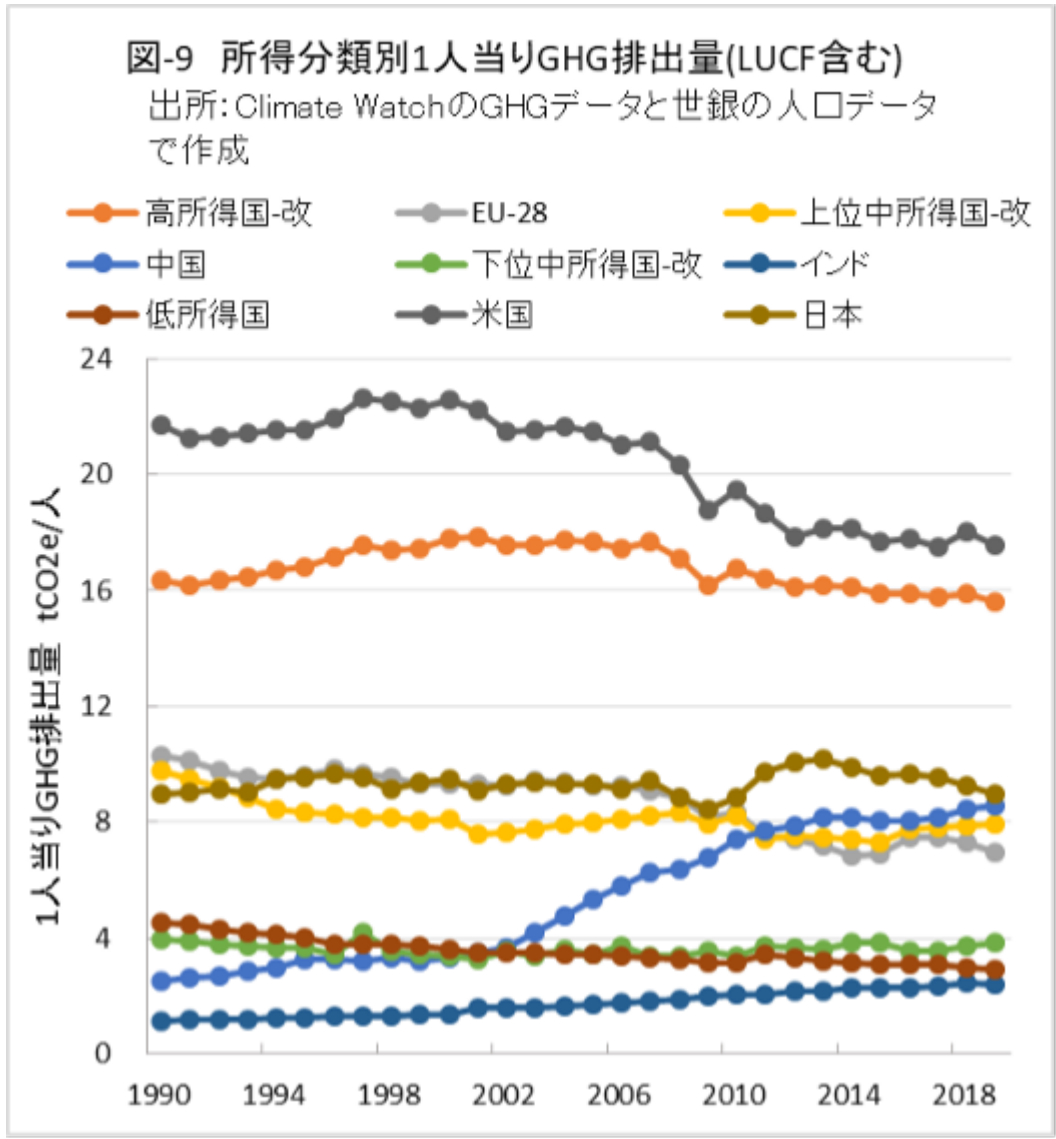
????2%????????????????GHG????GHG????????????EU-28????????GHG????????????????????  
 ???4?5%????????????????????????????????GHG????GHG????????????????????GHG??  
 ?????????????????

**1???GDP?GHG**

????????????????????GHG????????????GHG????????????????????1????????1????????  
 ?GDP????????GHG1????????????????????

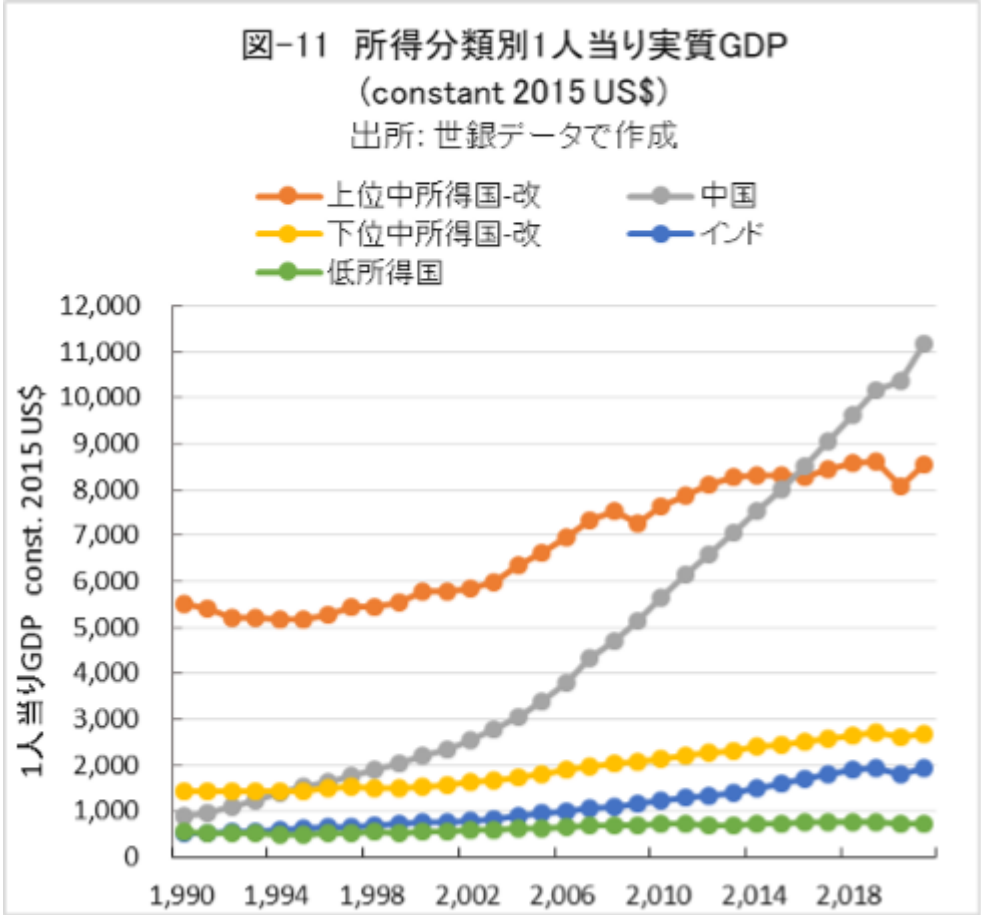
????????1????GHG????????????????????1????????GHG??2??????  
??

????????1???GHG??10??1???GDP????????????









1??GHG??16t CO2e/????????EU-28????????-  
??GHG???????

GHG????????

????2020??1????????3?????????1000????6????????????????  
??

????????????GHG????????-????????????????????GHG????????????????????

????2023????????????????????????10?1??GDP????????????????????1990????????????????????  
??

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

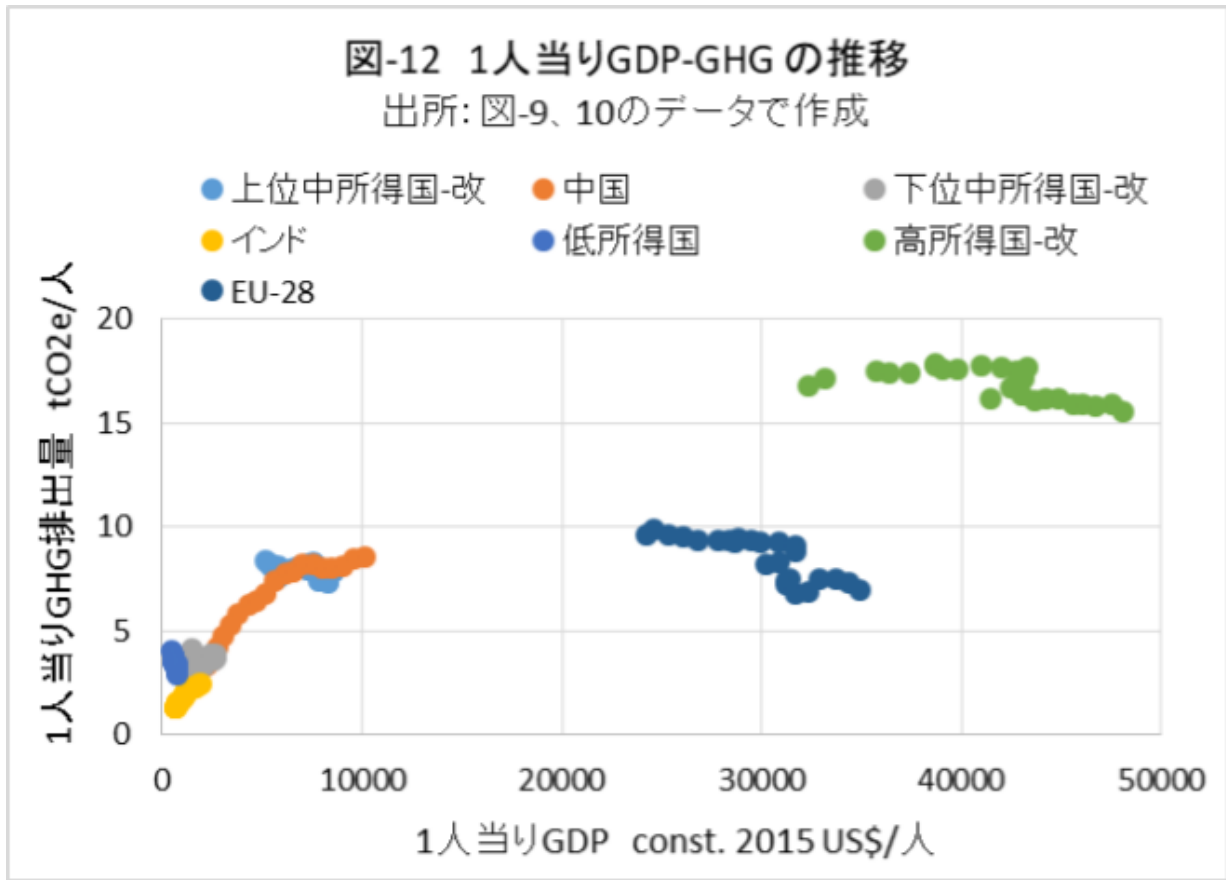
?9????????2000??GHG??  
??

????1990????GHG??FIT????????????????????????GHG?  
????????????????GHG????????????

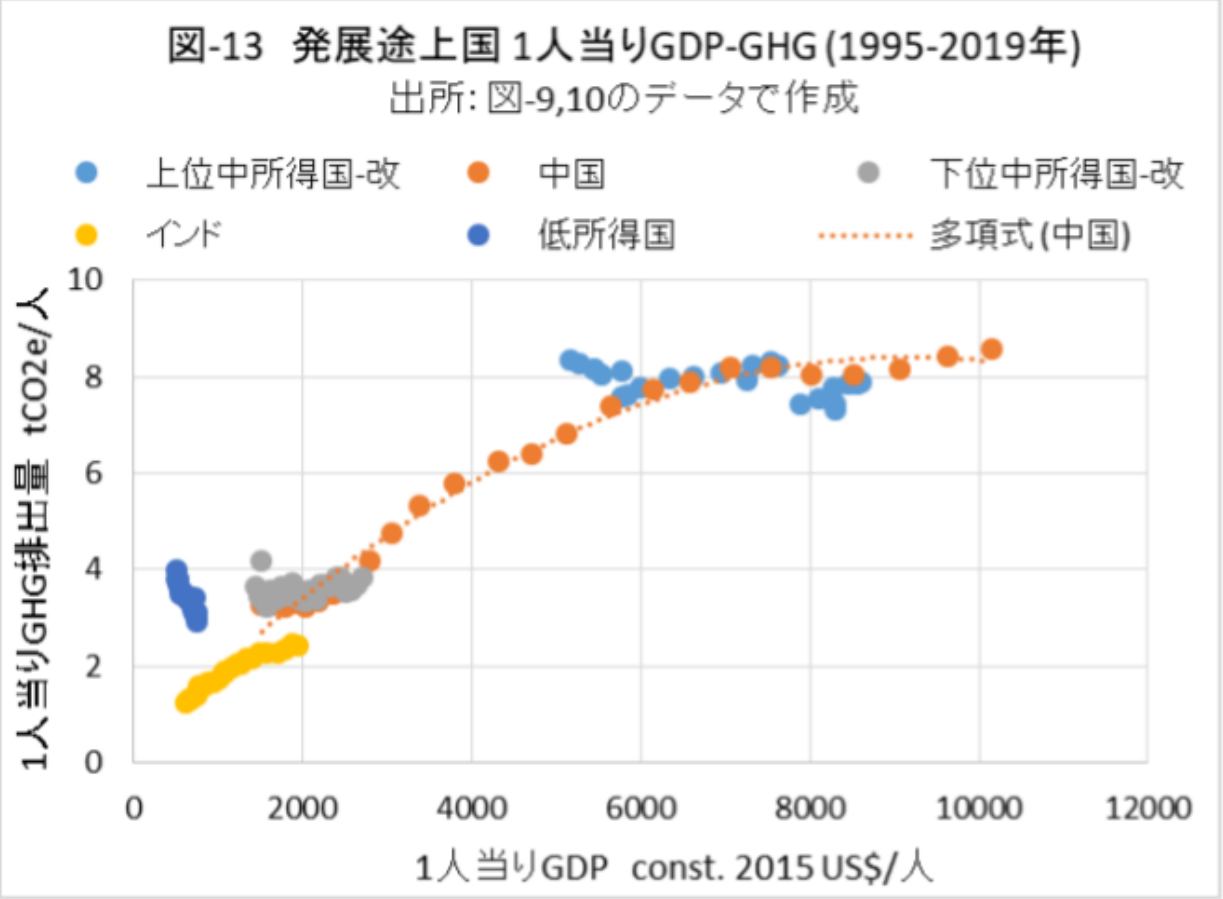
??GHG???

????????????????????????????????????1??GHG????????????????????????????????????GHG????  
????????????

12 GDP GHG 1995 10 1995  
GDP GHG EU-28 GHG  
???



13 GHG  
????



??????GHG??

??

?

?? ??

????????????????1970??kindle????????????????????

??????

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

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

### COP28??80?

?? ?? · Monday, December 4th, 2023



Heiness/iStock

1. COP28??

COP28?UAE??10?21????????????????????????  
??

COP??CO2??  
??????????????????

??27????COP??CO2??????27????????????????????????CO2  
??????????????????

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

2. ??????

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

????

?????????2006????2022???1990??????50????CO2??  
??45??????????????

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

??  
??  
??

??????????????????30?3??COP28?118??  
?????????

Request to Reconsider Proposed Regulations on Battery Electric Vehicles

?????

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

1. BEV????????????????
2. BEV????????????????
3. BEV????????????
4. BEV????????????????

???

????????2010????????2022????????2050????????????????

Renewables*	36.59%
Coal	27.96%
Gas	14.86%
Nuclear	12.26%
Hydro	3.30%
Oil	0.83%
Other	4.20%

How is Electricity Generated in Germany?(2019/2022)

(\*) Wind:56.2%, Solar: 21.2%, Others:22.6% ?

??14.9????????78????????????????

<b>Oil</b>	35.2%
<b>Natural gas</b>	25.1%
<b>Renewables</b>	14.9%
<b>Lignite</b>	9.1%
<b>Coal</b>	8.6%
<b>Nuclear</b>	6.4%
<b>Other</b>	0.7%

What Primary Energy Sources are Consumed in Germany? (2019/2022)

???Lignite????:????????????????????????????

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



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



3. ???

??  
??

??  
??COP28????????????????????

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

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

GEPR??? · Monday, December 4th, 2023



deepblue4you/iStock

?? ??

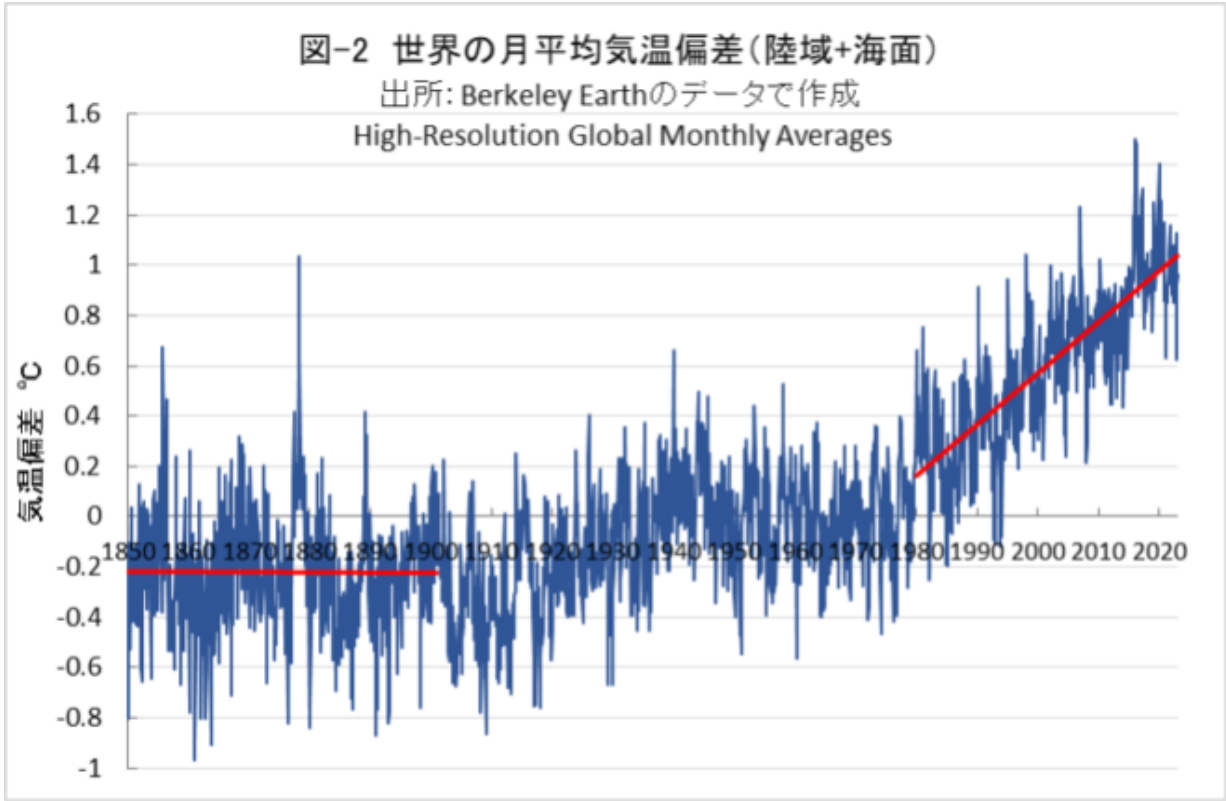
??

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

??????GHG????????1/3????2050????GHG????????????????GHG????????????????  
????????????????????????????????????EV????????????????????????????





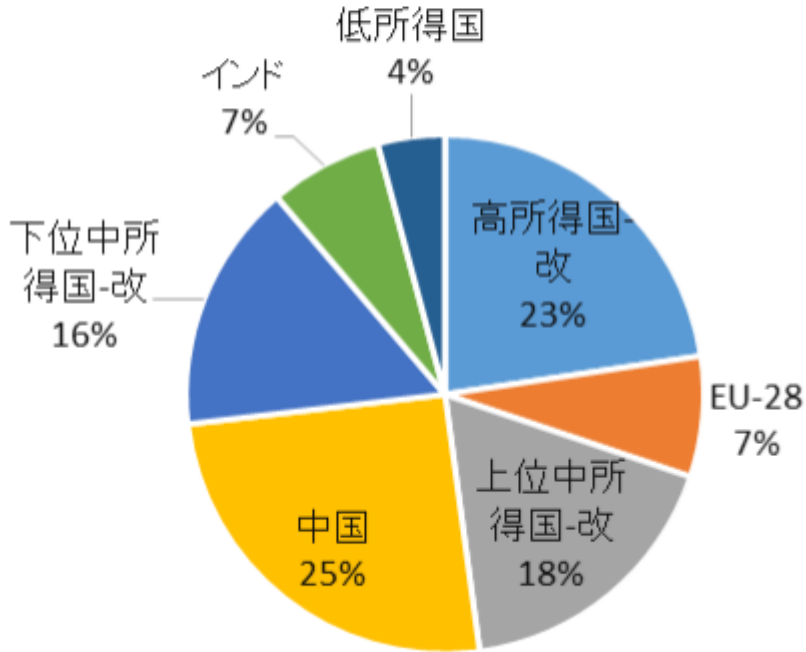


1850??????2022??????1.2????????????????????????????????2030????1.5????????????????????????1.5??  
??

??GHG????????????????????????????????2050????????????????????GH  
G????????????????????2060????????2070????????????????

?3????????????????????????GHG????????1/3????????????????1/3????????1/3????????????????  
????????????????GHG????????????????????

図-3 所得分類別世界のGHG排出量比率  
(2019年, LUCF含む)  
出所: Climate Watchデータで作成



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

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

??

?

?? ??

????????????1970??kindle????????????????  
????????????????

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

????????SMR????

?? ?? · Saturday, December 2nd, 2023



mrdoomits/iStock

????SMR????????????

????????????????????????????????????5????????????????????

??1942????????1????????????????????????????  
??



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

??Wikipedia

????????????1980??  
????????????????

??2010????????????????2011??  
????????????????

9??

????????????????SMR????????????????????????????????????

????SMR????????????????????NuScale????????????????????????????????11????????  
????????????

**????????SMR????????????**

????????SMR????????????

**??SMR ??????**

????????SMR????????????SMR??

?????

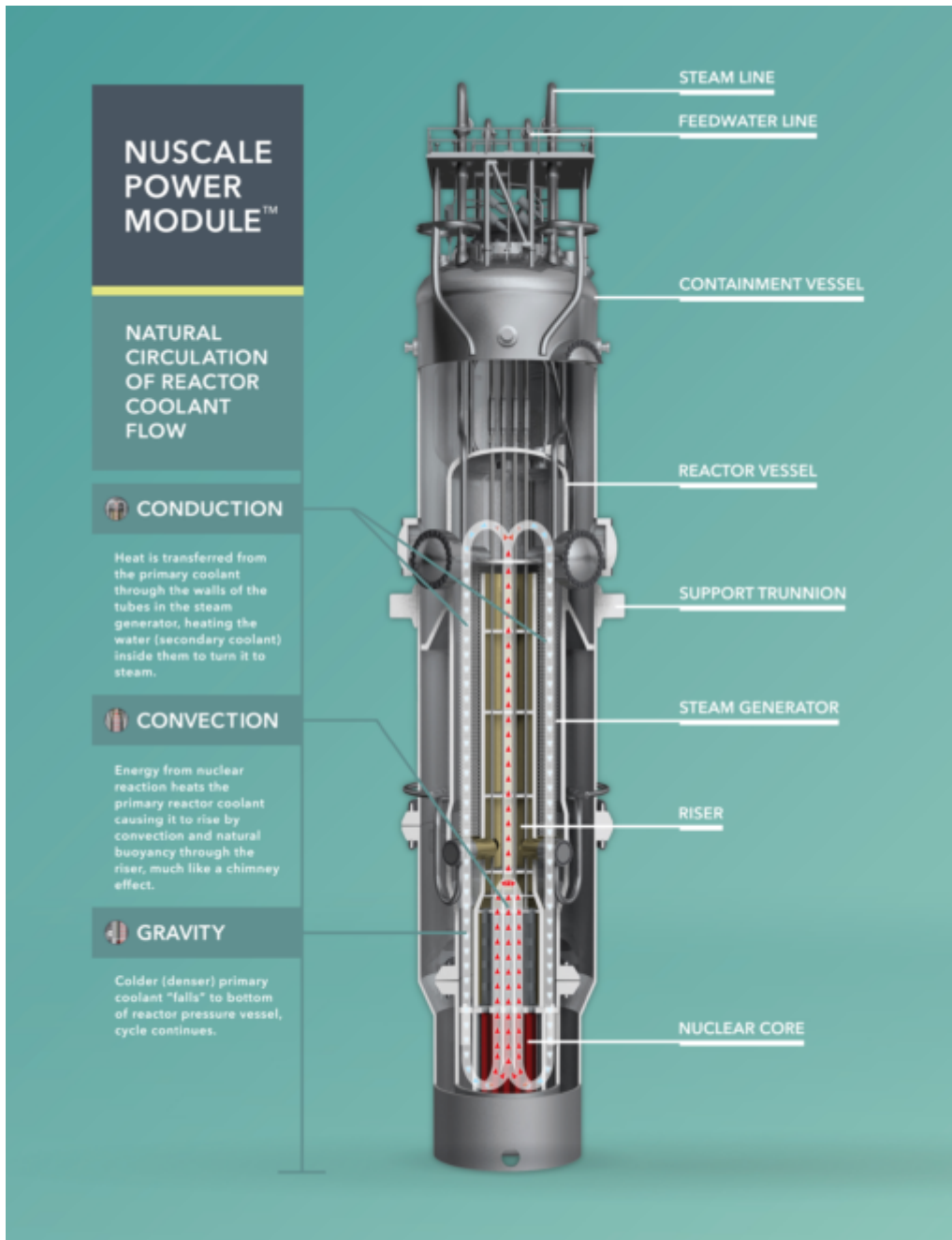
**GX????????????????**



????????SMR??  
 ???SMR????????SMR?????????

????????SMR??

??



SMR????

??

NuScale??SMR????????????????????????????????????

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

??

???????

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

??80????????????????

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

**SMR**??  
??10???????

??10????????????????SMR????????????  
10??

????????????????NuScale??SMR??1????????25kW????????????????7.7kW?1.5????????  
??  
????NuScale??SMR????????????????????????

???SMR??????

NuScale?SMR??  
????????

SMR????????????????????40????????1980????????????PRISM????????  
????????????????????4S????????

4S????????472/2020????????2004????????

????????PBMR????????1993????????2010????  
????

??

NuScale??SMR????????IHI????????2023?9????

???SMR????????????????????

NuScale??SMR????????????????

????????

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

????????????????????100?kW????????????????????????????????

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

### ????????????????????????????????

?? ?? ? - Thursday, November 30th, 2023



????????????? bluejayphoto/iStock

### ????????????????

11?15????????????????2????????????????????????????????2021????????????????????????????  
????????????????????????????????600?????????????????

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

??EV????????????????????????????  
??

????????????????????????24?27?2129????????????600????????????????????????????????  
????????600??



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

????????????????????109??2009????2016????????GDP?0.35????????????????????????????????

??

????21?12????????????????22????????21????????????????????“????????????????”?????????

??600??

????????“????”?21??

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

??

????????CDU??

????????600??EV????????????????????????????????

??100????1.5????????????????????1????????????????????

??CDU????????????????????????????????????CDU????????????????????CDU????????????

??

??

????DIW??

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

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

??

CDU??  
??4  
??3  
??10  
????????????????????????????

??CDU  
??  
??“????”  
??

Posted in ???, ?? | No Comments »

### COP28????????????????????????????????????

?? ?? · Wednesday, November 29th, 2023



Darwel/iStock

COP28?11?30????????????????UAE????????????????????????????????  
??

????????????????????????????????????1.5????????<sup>21</sup>????????????2030  
????????????????????????????????????CO2????????????  
????????????????????????????????????

????5?????????G7??????????????



????2035????????????????????????????????????1.5????????????????????????????????  
??  
????????????????????????????

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

????????11??EIA????????????????????

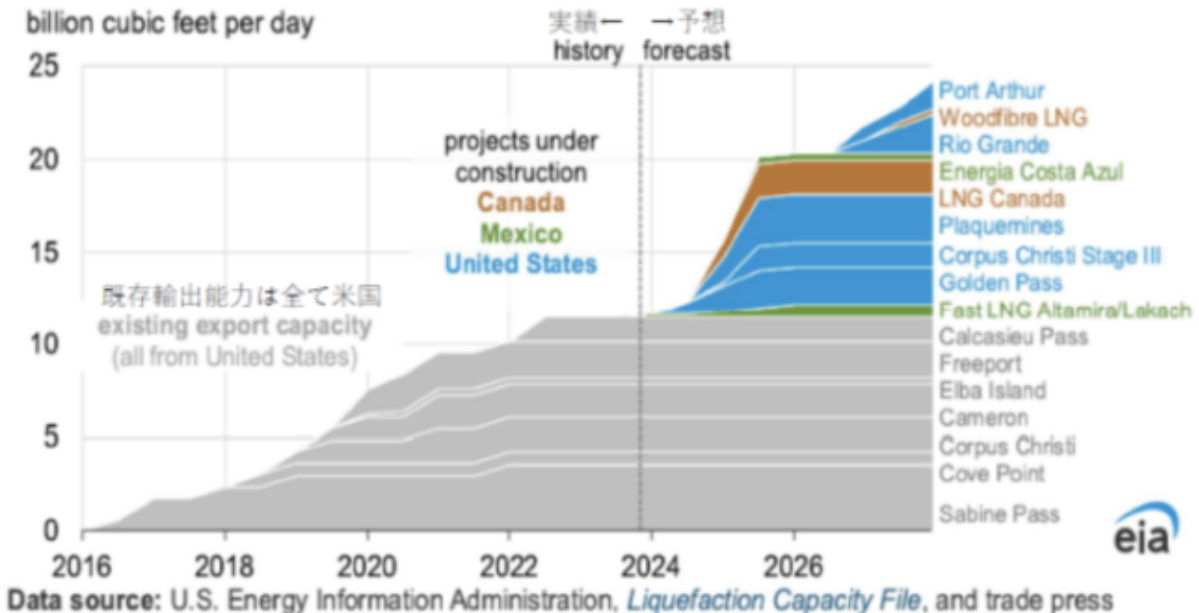
11?2????????????<sup>223</sup>??  
????????????2022?8????1???23?7????????????????????????????1????22????3310???<sup>233</sup>????????  
?????

????????????1440????51%????????1860????6????????????????????????????????  
????????300/????????????????????????????????100????????????????20????????

??  
??

??EIA?11?13????<sup>242</sup>??2027????LNG????  
????????????????????????????

北米の液化天然ガス (LNG)年間輸出能力 (2016-2027)



????????????????????129?Bcf/????????????11?Bcf/????21?Bcf/????97?Bcf/????  
????????????

????2010??2018????????  
????????????LNG????????2027????????????2030????????  
????????????





1274??14??COP28????????COP6????????????????????????17??CO  
P????????????????????

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

COP28????COP?????2023??????14????????????????????????GST????1????????????????????

GST??  
????????????????????

??????2025??????Nationally Determined Contribution:  
NDC??

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

COP28????????GST??

??5??G????????????????????G??????????1.5????2050????????????????IPCC?6??????????  
???2025????????2030??43????2035??65????????????GST????????????????????

????????G??2030????????????2050????????????????  
?????

??9??G20????????????????????1.5????????????????  
????????GHG????2025????????????IPCC?6????????????????????IPCC????????????????  
??

??  
????????2025????????????????????????????????NDC????????G????2035?65????????????  
??????

Third World Network

Third World Network



IPCC 2025 2030 43 2030 60

GST BASIC LMDC Like Minded Developing Countries: 1.5

1.5 2050

???

GST IPCC 1.5 2025 2030 43 2034 60 IPCC 1.5

???

GST

GST

1.5 2050

G20 NDCs 2030 5.8 5.9 2020 1000 78 1000 1.5

COP28

ADB AFDB

LDC

liability compensation 1000 2025

1

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

**UAE??????????????**

???UAE?COP28?2030????????????????????2??  
??



UAE????????????????????????????  
COP28?????????

??  
?

??  
??

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

??GST??

??  
??

????????????????????????????COP????????????????????????????

Posted in [??????????????](#), [???](#), [?????](#) | No Comments »

# CO2????????1.5????????????

?? ?? · Saturday, November 18th, 2023



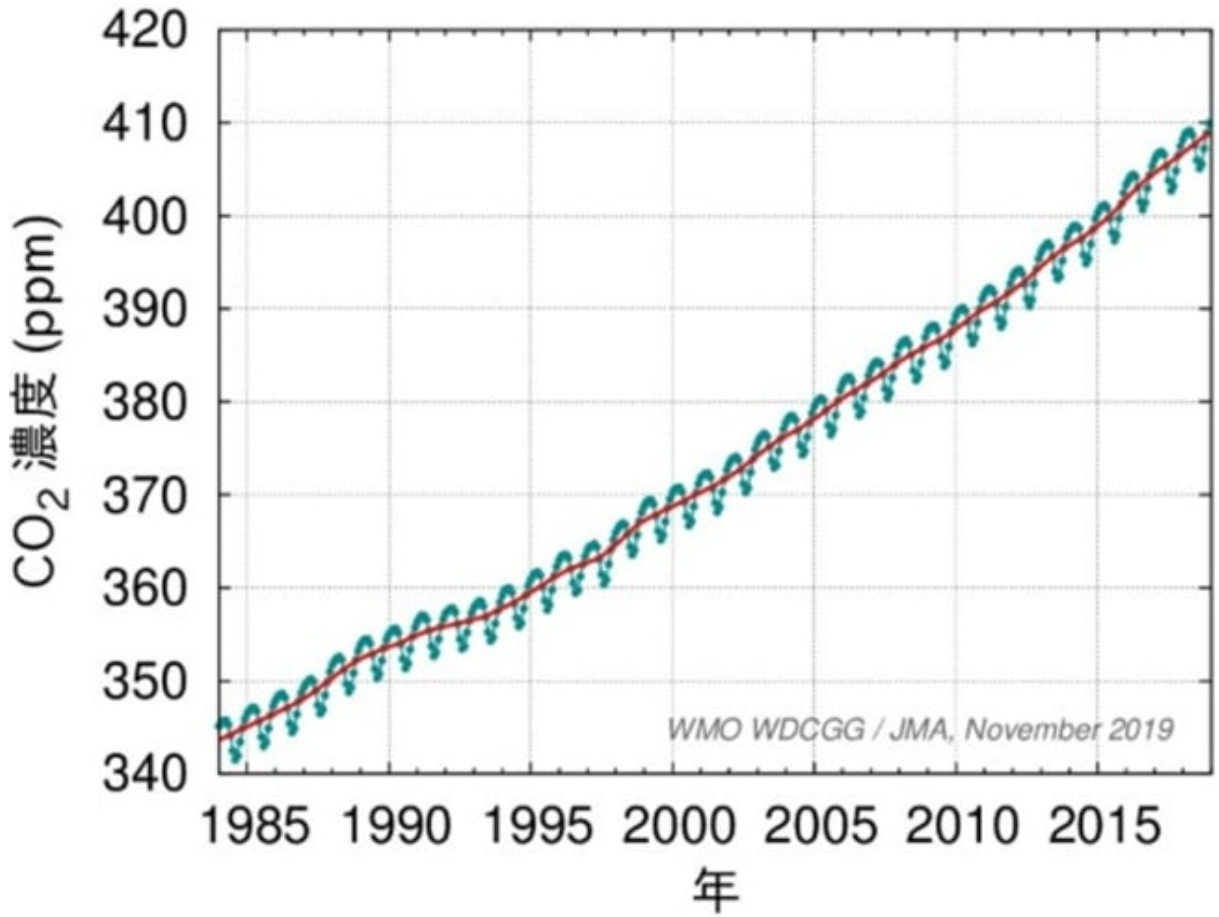
MR1805/iStock

CO2????????420ppm????????1850????280ppm?1.5????????????????

**???CO2????????1.5????????...????????????????????????????**

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





????CO2????40????2ppm????  
 ???HP??

????1.5????????????????

????280ppm????

????????

??1850????1????????????

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

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

??1850??280ppm??

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

????RCP8.5????CO2????????????

????RCP6.0????1.5??630ppm????2090????

CO2????????????????????????????????1????????420ppm?1.5??630ppm????420ppm?28

0ppm????560ppm????????????????????CO2??  
???

????????150??1????????????CO2????????????????2090????????????1????????70????????1????????????  
??

?



Posted in ???, ????? | No Comments »

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

?? ?? · Sunday, November 5th, 2023



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

???HP??

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



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

??

??

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

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

??

??????????

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

<https://agora-web.jp/archives/230217005900.html>

??

??

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

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

?



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

# ????3?CO2??????

?? ?? · Friday, November 3rd, 2023

## ??????????8????????????



????????????23????????????????????????????????530????8????????????

???

??

???

????????CEO?23??

??2022?9????????????  
?????

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



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

????????3??1????????  
????????????8,800????????????????????????8,800????????????3????????????  
??3????????  
????????

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

??  
????????????????IT??

??  
??  
??

??  
??IT????????????  
????????????????3????????????????????????????

???????



????????3??  
????3????????CO2??  
??

????????3?CO2??

?

??

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

### ????????????????300????????????????

?? ?? · Thursday, November 2nd, 2023



PhonlamaiPhoto/iStock

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

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

??

??



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

???????????

??

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

??  
??1997????????26????????????????????????25??????????????????



?????????????  
????HP??

??  
??

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

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

??

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



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

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

??  
??

??2?????

- ???  
?????MOX??MOX????????????????????  
??
- ???MOX??MO  
X??

**300???????????????**

????????????????50????????????????????300????????????????????390????????????260????????????  
???300??

??1000????????????????????????????????3??1  
????????????????

??4000??  
????????????????????????

????????????40????????????????????????????????????40????????????????????

????????5?????

1. ?????????????????????
2. ?????????????
3. ?????????????????
4. ?????????????????????????????????
5. ?????????????

**???????**

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

??300????????????????????????????  
??

??

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

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

?? ? · Wednesday, November 1st, 2023



Kirillm/iStock

2022????????????????????????????????2023?10????????????????????????????  
??

1973????????????50????????????????????????????????

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

????????????????????????????????1973?????4????????????????????????????  
??????????

?1??  
??

?2??1973??????  
??????????????

?3????????????????????????1970????????????????????????????

?4?????????????????????????????????5 IEA????????????12????????????????  
??????

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





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

??CEO????????????EV????????????EV????????  
 ??CO2??

????????????????EV??  
 ?????????????????????????????

????????????????EV??

???CO2????????????EV?LCA????????????????CO2?????????10????????????????CO2????????????  
 ???CO2????????????????EV????????????  
 ??EV????????????EV????????????????????????????????

**???“????????”????????????????????...?????“?”???**

???2020?10?26? ???????2050??12????????????  
 ???  
 ?????????

**EU?EV????????????????e-fuel???**

??2023?4?1????????????????????????????

????????????????10?25????????????????????????????????????EV????????????????????

?????EV??  
 ??????EV??

???EV??  
 ?????????????????????????EV????????????????????

**JAPAN MOBILITY SHOW 2023 Toyota Press Briefing**

??EV????????????????????

**2. ??????EV?????**

????????????????????EV????????49% ?????????63% ????????????????

????????GM??EV????????50????????????????GM????????????????GM????????????????  
????????????????????????????????????EV????????????????????????????????8????????????  
????????????????????

????????EV????????????????EV????????F-150????????????3?????1????????????????  
????????????LG?????EV????????????????????????

**More alarm bells sound on slowing demand for electric vehicles**

**3. ???????**

EV??EV????????????????????  
????????????????????????

????????AAA????????????????????????EV????????4??1????????????????????????  
??EV????????????????

??Ernst &  
Young????????????????????EV????????????????????2?????EV????????2035??  
????????6890????????????????

**4. ???**

????????????????????????????????????EV????????????????????????????????  
??

?????2050????????????????????????????????EV????????????????????????  
????????????????????????????????????

**?????EV????????????**

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