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

CO2??

?? ?? · Tuesday, February 6th, 2024



baileystock/iStock

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

?????????Voters???1????????????????3????????????????????????????????????

??1????????????????15??????????????????1?????????1??????????????

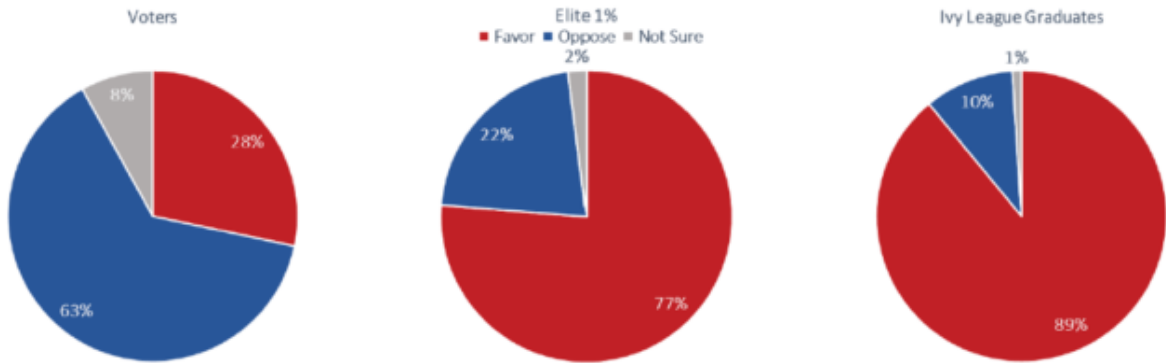
??????????????1??

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

1.????????????????????????????????

?????63%??????????????77????????????????89%???

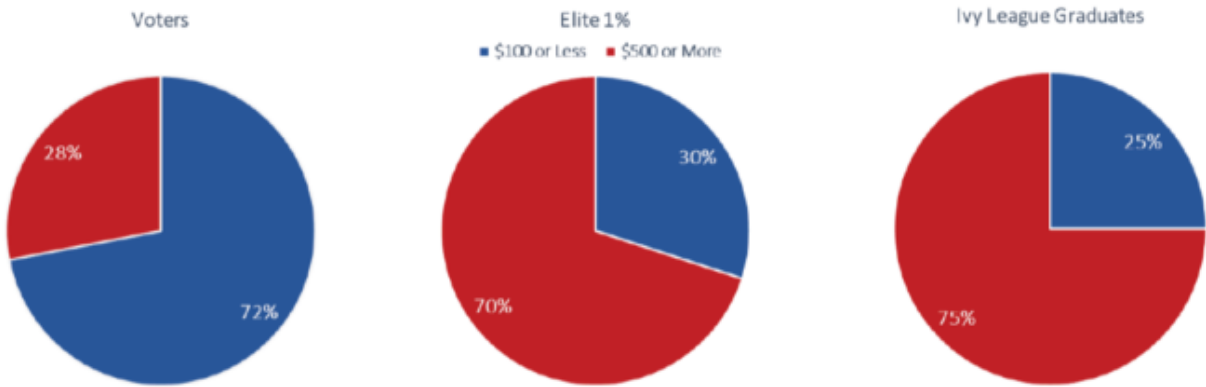
To fight climate change, would you favor or oppose the strict rationing of gas, meat, and electricity?



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

?????72??100??????????70??500?????

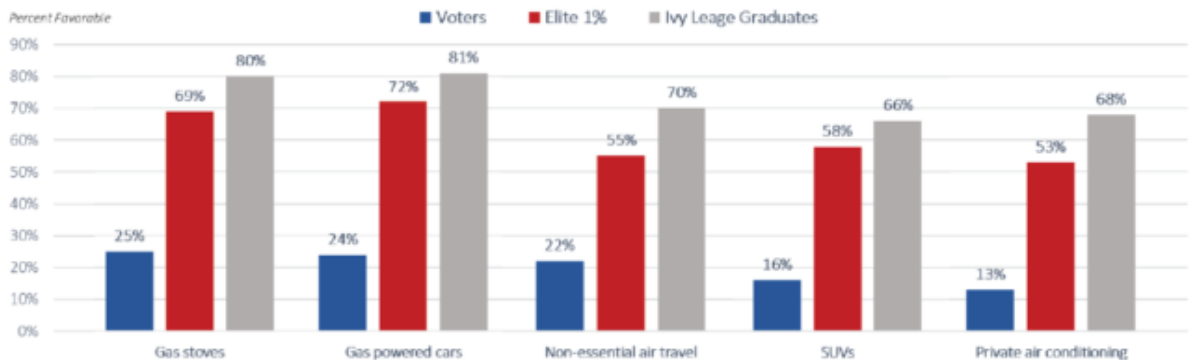
How much would you personally be willing to pay each year in terms of taxes and higher costs to reduce climate change?



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

????????????????????SUV????????????????????13??25????????????????53??
72????????????????????66??81????????????????

To fight climate change, would you favor banning each of the following?



????????????????????73?????14????????????????????????????????????84????????????????
????44???

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

CO2??

?? ?? · Monday, February 5th, 2024



Sakorn Sukkasemsakorn/iStock

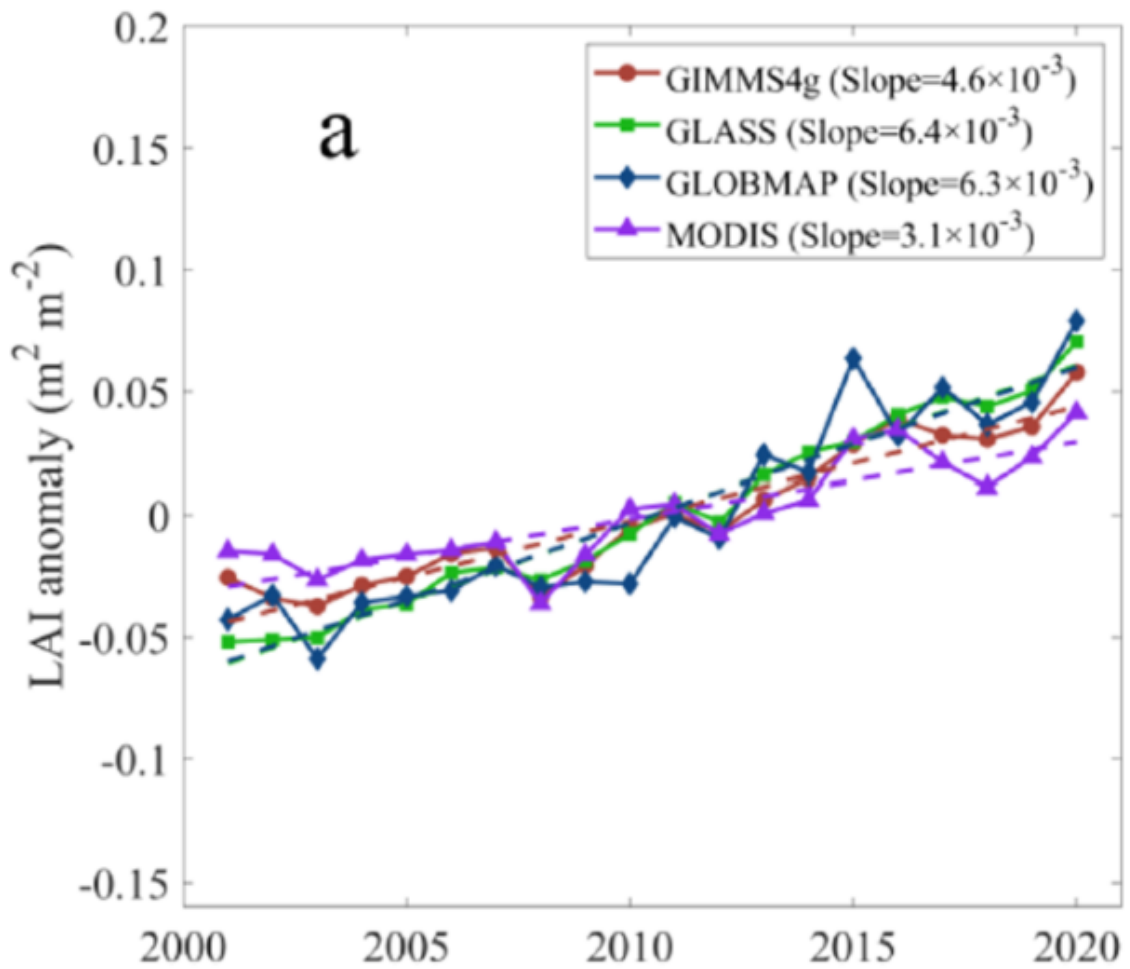
CO₂ global greening)

2000-2020 Leaf Area Index, LAI

LAI 1 3 1

LAI 20 0.1 0.1

4



?1?LAI???

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

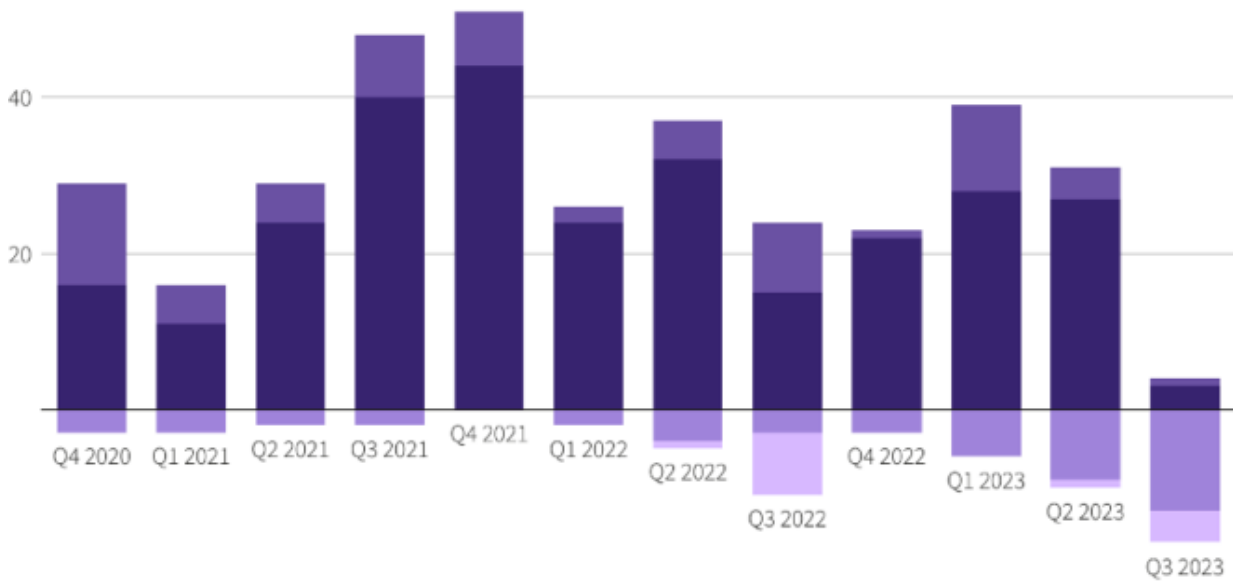
CO2?????Srad?????P???????Soil Moisture, SM?????Airt??5???????????????

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

Sustainable fund launches plummet

Asset managers closed sustainable funds faster than they opened new ones in the third quarter

● Launches ● Funds moved into sustainable category ● Closures ● Funds dropping sustainability mandates



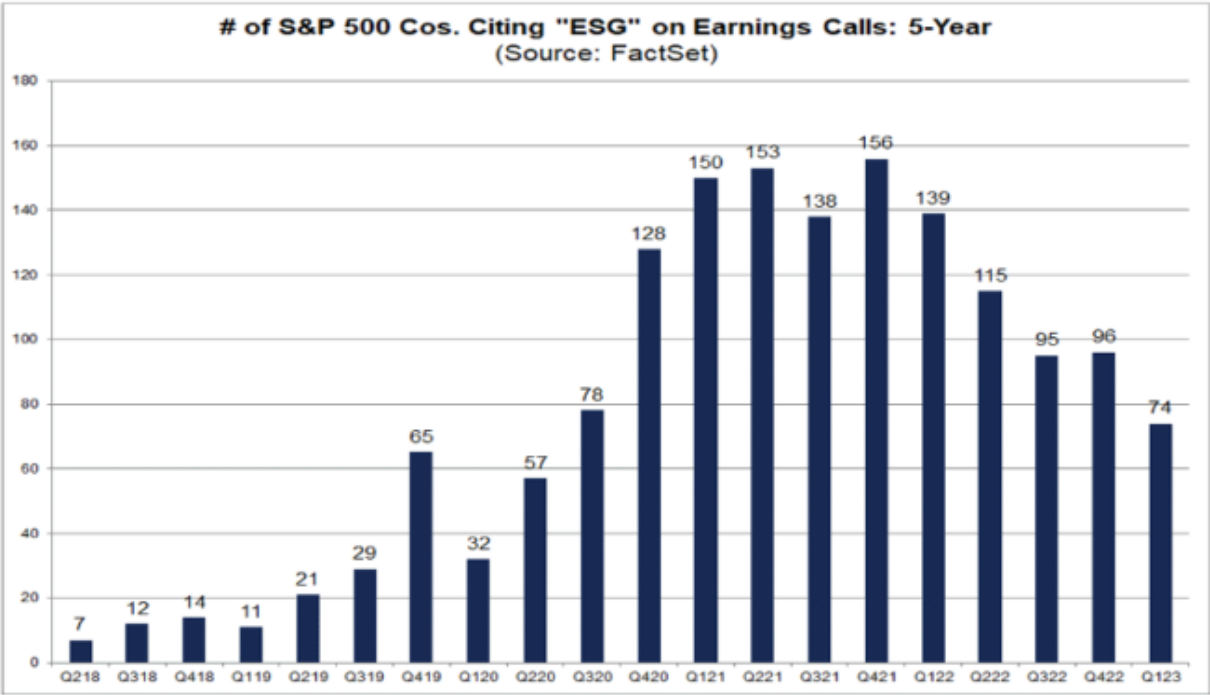
Source: Morningstar Manager Research

??????

??????ESG??????S&P500??????2020??2???????



??????ESG????????????????74??????S&P500????????????????ESG????????????2020
 ??2????57????????????????2021??4????156????????????????ESG??????S&P500?????5?
 ?????4????????????????2022??4????????????2023??1????????????ESG?????S&P50
 0????23%?????



FACTSET

2018-2023

Q218-Q123

ESG



ESG
ESG
ESG
“
“

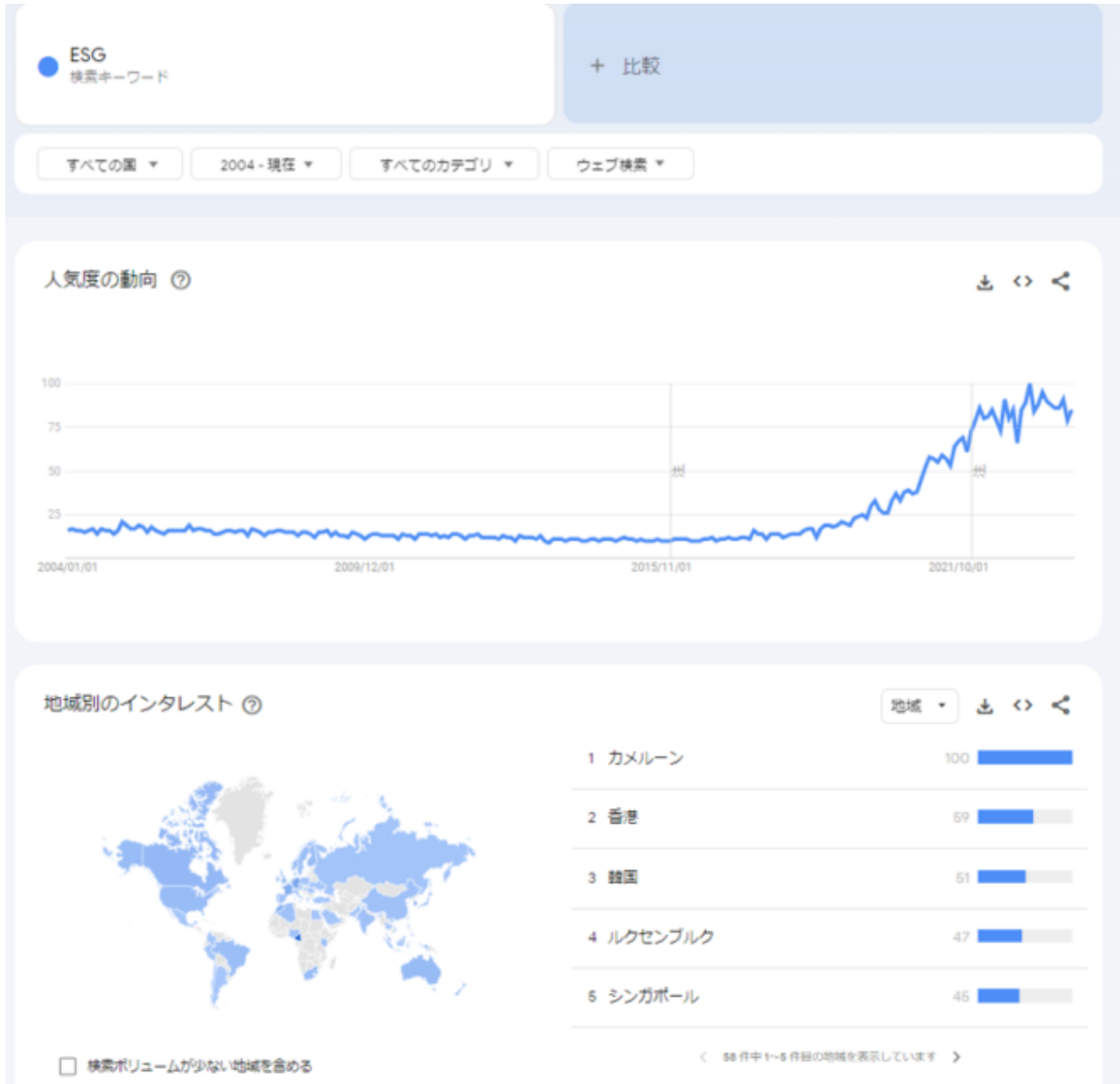
ESG
ESG

ESG
ESG
ESG
ESG

ESG
DWS
ESG

ESG





???Google???

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2023??ESG??????????

ESG??ESG??ES
G??ESG????????????????????????

ESG????CO2??
????CO2??
????????????????????????ESG????????????

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EV?HV?PHV?
“transitional
fuel?”COP
“transition away from fossil
fuels”COP
COP
COP?12?7?COP?1?
COP?UAE?
COP
COP28?
CCUS?COP?
COP?
COP28?
12?5?
CO2?
CO2?
de-
industrialization?

?????????10?11????????????5.4%?5.8%????¹¹????????????

????????????????0.3%????????
?????G7????????

????????11????????600????????

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????????IT????????EU????

????????EU????EU????

????????EU????EU-
CBAM????CBAM????

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

EU -
ETS????3????2013????EU????1500????100
0????EU????1.5????2500????1500????10
00????17????

EU????ETS????ETS????
FIT????EU????
EU????

EU????CBAM?EU??

???EU?????

EU????EU????

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EU????

EU CO2 EU
EU
EU

COP28

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EurActiv, January 16, 2024

Posted in | No Comments »

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?? ?? ? - Thursday, February 1st, 2024



ollo/iStock

10 CA?

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????????GDL????????

????????????????????????????????????GDL????????????33?4000????????????
??100????????GDL????????????4????????????????????????????????????
????????????????????????????????15?GDL????????

GDL????????????555????????????25????????????????3000????????????
????????38????35????????

??12?7?8?GDL??

????????????????????????????????????3????????????GDL?1????????1?9?????10
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????8????????????????1????????????????????????????????????
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????????????????????????CO2????????????????????????????

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??340km????????
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??6????????????????????????????????????1????2500?3000????????
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??6??10????????????EU????????????6????????
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DGL?4??
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SNS??

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- ?????????????????????????1?2????600?????
- 2????????????????????1000?????????????

1????????600??0.47????????????????????
????????871????600????“?”????????????????????846????????????????????

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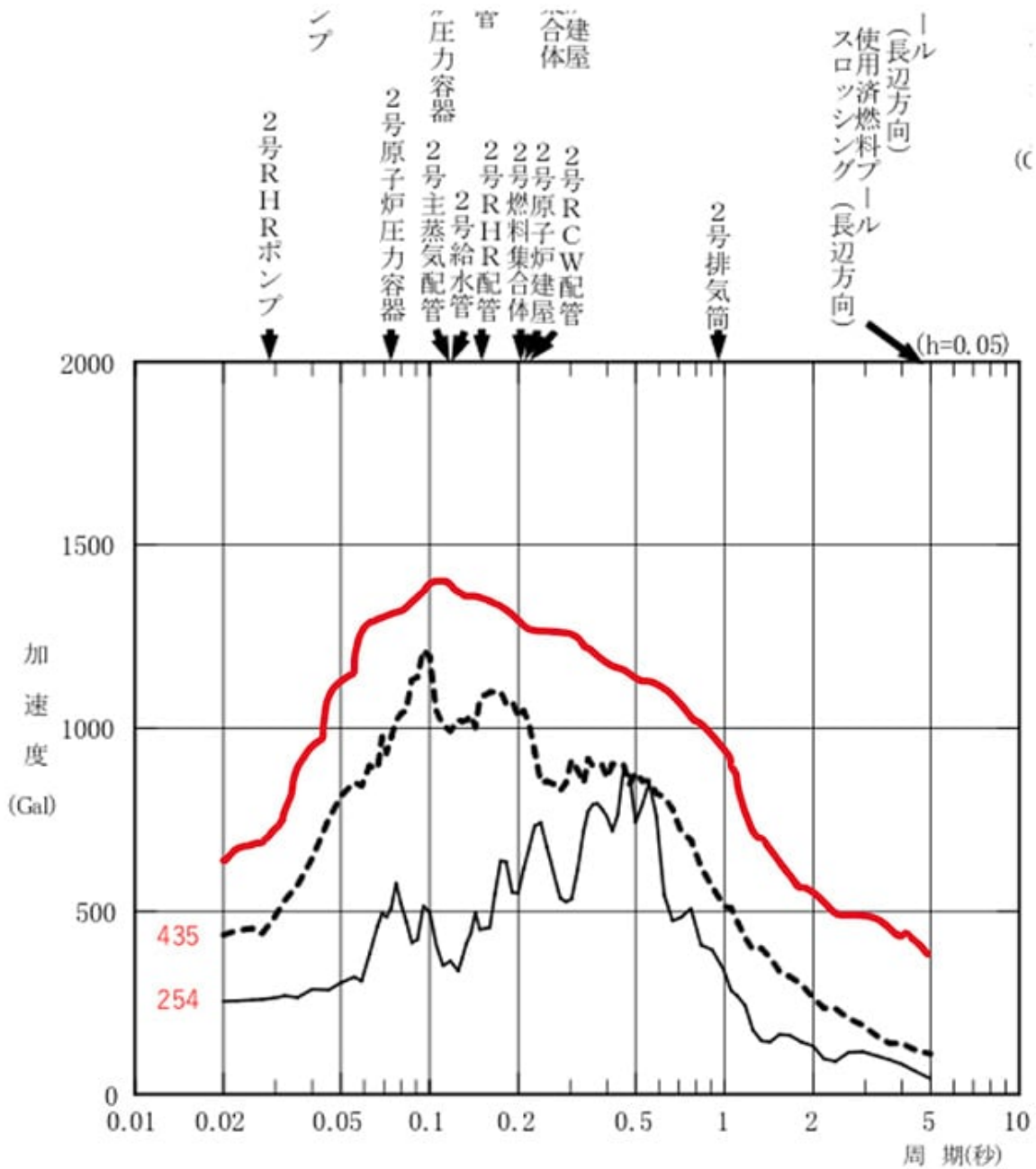
??F????????????????G????????????????G????????????
????????1G?980????????980??1G????????????????????????????

????????????2??
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????2?“?”????1000??

????2????????1000????????????????1000????????????????

????1000??



????????1000????????????

????????????????1000??
????????????1000????????????????????????????

????????????????????600????1000??
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????????2000???????

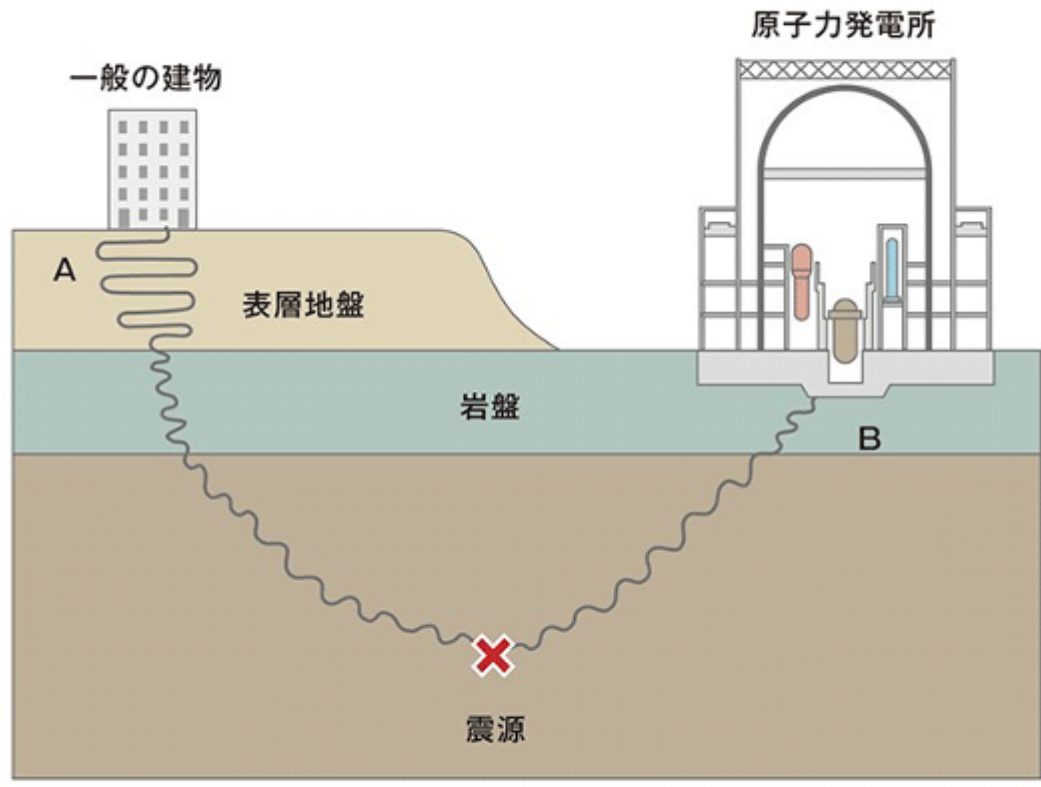
??
????????600????1000????????????????????——????????????????????????????

????????????????2,112????????200????????????????3,406????????????????5,115????????????
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????????????????????4,022????2008?6????????????????

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

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??3??



堅固な地盤（岩盤）での揺れは表層地盤に比べ1/2～1/3程度

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??2,933????????????????????????????????1????????????2????3?B????????

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

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?? ? · Wednesday, January 24th, 2024



Cinefootage Visuals/iStock

2023?12????????????COP28????????????????????????????????????

COP28??2050????????????????????10??
??transition away from fossil
fuels??

???COP28?2??28????
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????????????????1928??
 ???10????????????????????
 ???UAE?
 ?????????????????????????????????????OPEC??2022??28??????????10.6????????????????
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Posted in ???, ????? | No Comments »

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

?? ?? · Saturday, January 20th, 2024



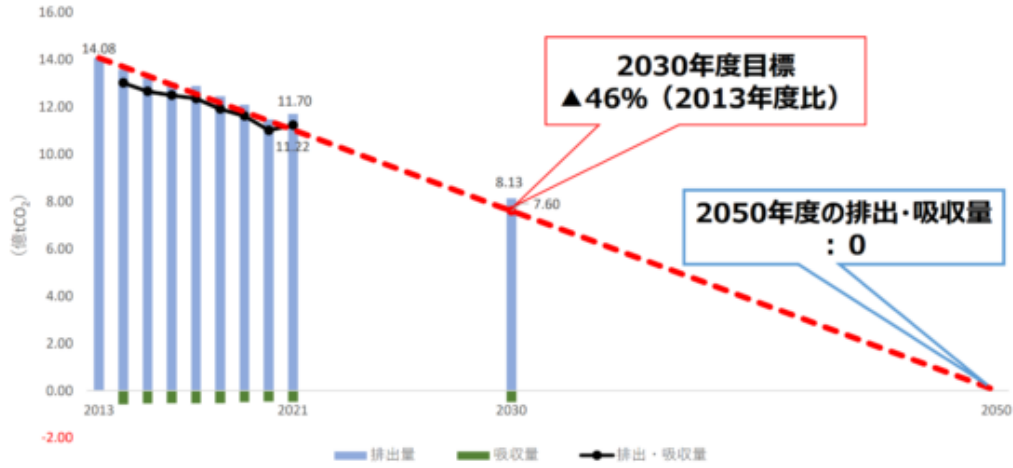
Slavica/iStock

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2030年度目標及び2050年カーボンニュートラルに対する進捗



- 2020年度からの増加については、コロナ禍からの経済回復により、エネルギー消費量が増加したこと等が要因と考えられる。
- しかし、2019年度からは3.4%減少しており、2030年度目標の達成及び2050年カーボンニュートラル実現に向けた取組については一定の進捗が見られる。



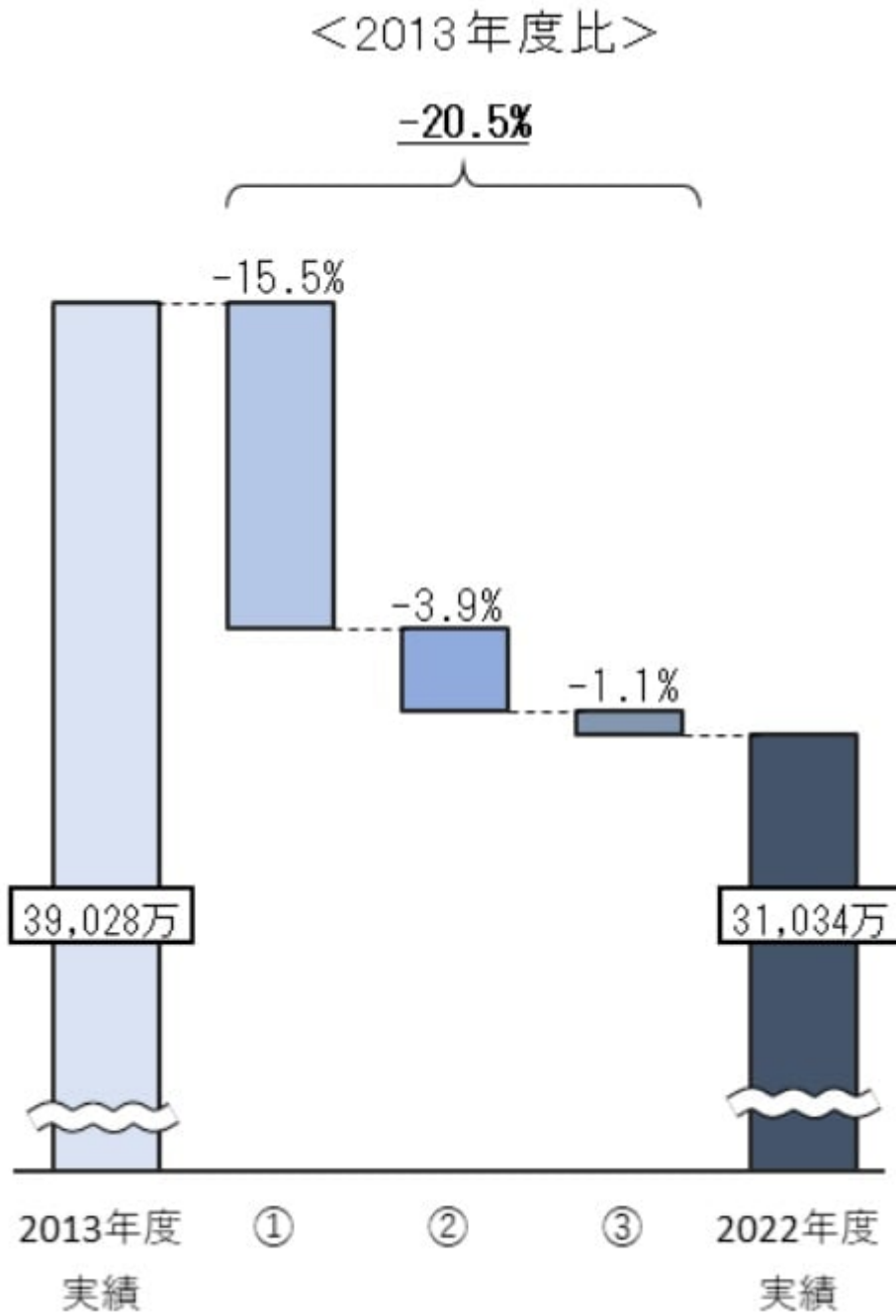
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? CO2????????????????

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

????????2013????2022????CO2????????76????????????????

????????????????????24%????

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

????????????????????CO2????????????2030????2050????????????????????????????????????
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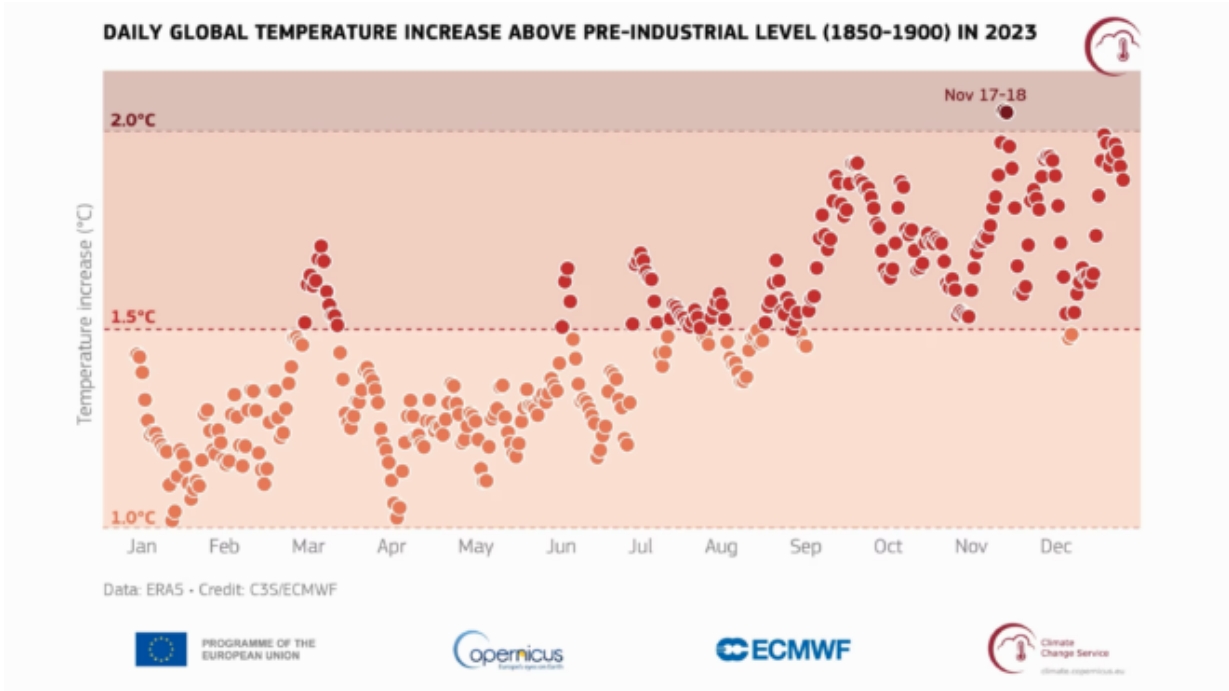
Posted in ??????????, ??, ????? | No Comments »

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

?? ?? · Wednesday, January 10th, 2024

EU????????????????????2023????????????????????1.48????????

????????1.5????????????????0.02????????????1.5????????????
????????



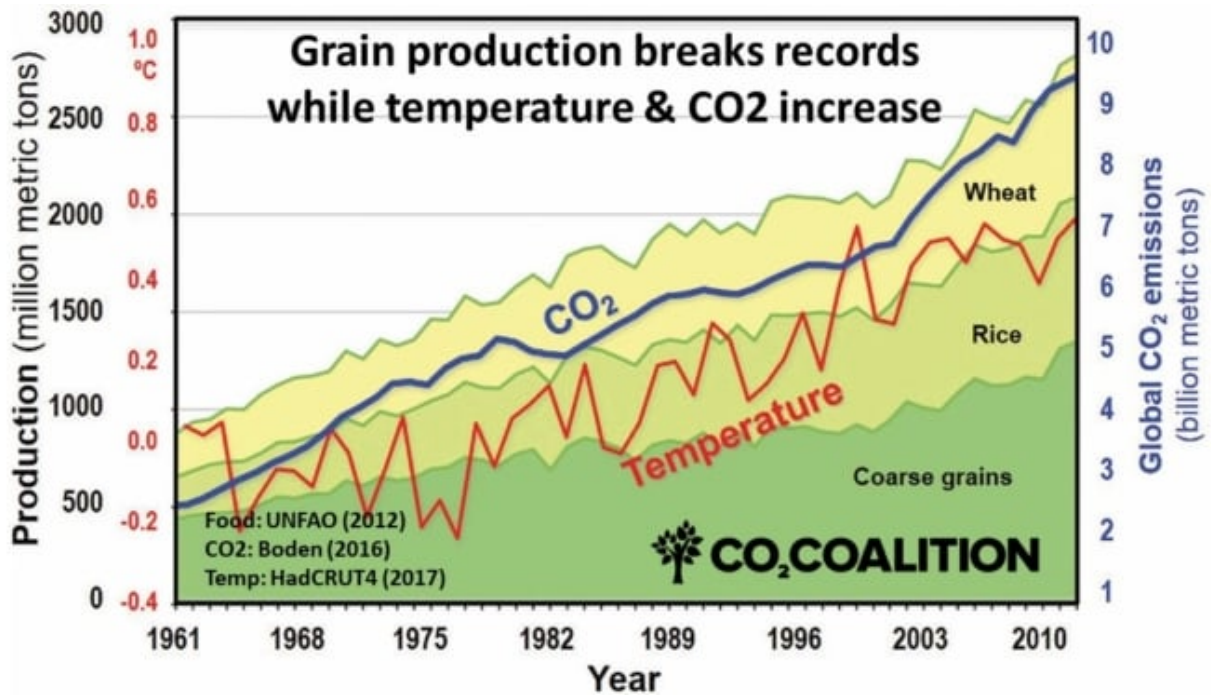
????1.5????(ABC News)

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

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

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CO??



CO2????????(CO2 Coalition)

??10????????WMO??????????4.5mm????????IPCC????????7mm????????????????????????????????

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??????22??23??
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??145??18??????????????41??????

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??CDU????????
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??5000??1?
4??4500????????????????????
“?”??6600????????????

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????????????????????390????????54??
??30??
????????????????????5000??

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

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??????????????10??1??
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??50????????????
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Posted in ???, ?? | [No Comments »](#)

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?? ?? · Sunday, December 31st, 2023



shotbydave/iStock



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

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

????G7????CO2??
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Posted in ??????????, ???, ????? | No Comments »

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?? ?? · Saturday, December 30th, 2023



CampPhoto/iStock

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????????27??
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21?4????????????????????????????????????28????????????????????????????????????67?????????????????
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Wikipedia??

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

COP28???????

?? ? · Tuesday, December 26th, 2023



Heiness/iStock

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

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

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

??????¹²??1.5????????????2025????????2035????60????????????????26?27????2025????????
?NDC?????1.5????????????????????????47??

????????????1.5????????????????????IPCC????????2025????????2035??60????????????????
????????????????????????recognize????????????2025????????????????????????????
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?NDC??2025????????20
35??60????????????????????????????????????2025????????2035??60????????????????????
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COP28????????????????????????????????1.5????????????????????????????????
????????????????????????CO2????????????????????????????????

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

2030 3 2 CCS 29

COP CCS

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3

COP28 OPEC

12 UAE

NGO COP

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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????????????????
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????????????????B.Sc????????????????PhD????????????????MBA????????????????
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COP28 ?????????????????????

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

????????2050????????75??
 ?????????????????

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

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

?? ?? · Friday, December 22nd, 2023

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

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

COP????????

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

????????????????????2050??
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- ?????????????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??????



Ignatiev/iStock

EV??????...???????

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

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

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????????????????????????????????11?15????????????????????600????????
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????????????????????1949????????????????????

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????????????????23????????2????????????????1????????
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????????????????12????????3????33????????14????15??

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

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

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

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

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??2030????????1????????????2030????????5.8-5.9????2050????????5????????????

67. *Highlights* the growing gap between the needs of developing country Parties, in particular those due to the increasing impacts of climate change compounded by difficult macroeconomic circumstances, 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 for the pre-2030 period;⁵

68. *Also highlights* that the adaptation finance needs of developing countries are estimated at USD 215–387 billion annually up until 2030, and that about USD 4.3 trillion per year needs to be invested in clean energy up until 2030, increasing thereafter to USD 5 trillion per year up until 2050, to be able to reach net zero emissions by 2050;⁶

1????1????????????150???1?????15??2030??????????????????
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????COP????????????????

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

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GEPR??? · Thursday, December 14th, 2023



deepblue4you/iStock

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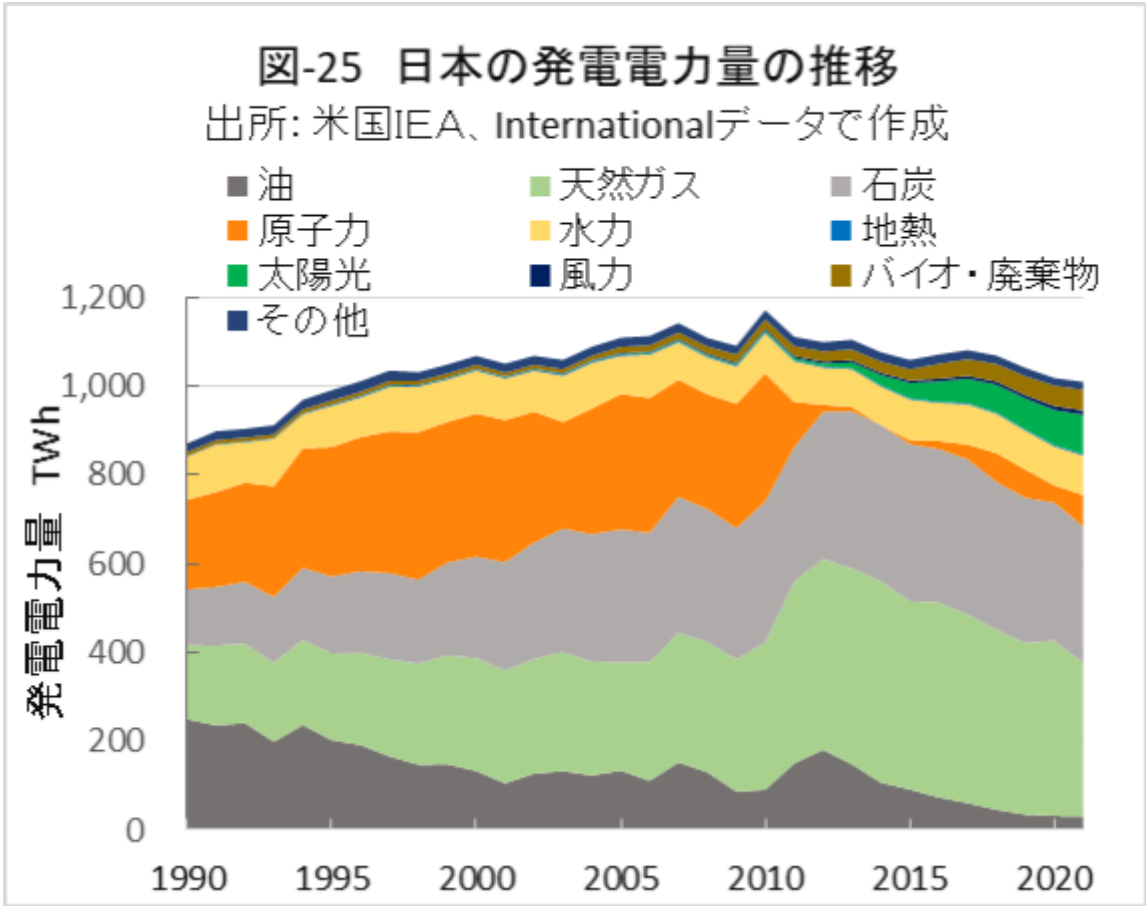
????????????????

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

?23??-

??EU-28??10??



2011年3月11日の東日本大震災以降、原子力発電の稼働が大幅に減少し、火力発電（石炭、天然ガス、油）の稼働が増加した。2020年には、原子力発電が全体の約28%を占め、石炭が約25%、天然ガスが約20%、油が約10%、水力が約10%、地熱が約1%、バイオ・廃棄物が約1%、その他が約5%を占めた。

2012年7月のFIT（固定価格買取制度）の導入により、再生可能エネルギーの発電電力量が増加した。FIT導入後、FIT対象の再生可能エネルギーの発電電力量は、2017年には約25%に達した。FITの対象外となる再生可能エネルギーの発電電力量も増加している。

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）排出量が非常に少ないエネルギーである。VREの発電電力量を増加させることは、日本のエネルギー政策において重要な課題である。

VREの発電電力量を増加させるためには、再生可能エネルギーの発電能力を向上させる必要がある。再生可能エネルギーの発電能力を向上させるためには、再生可能エネルギーの発電設備を増設し、再生可能エネルギーの発電効率を向上させる必要がある。

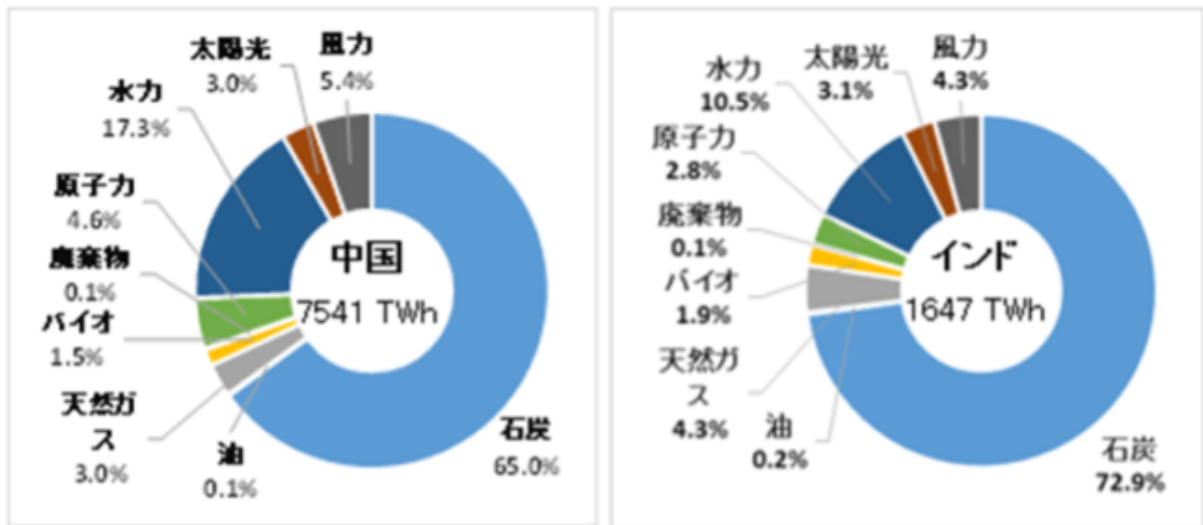
VREの発電電力量を増加させるためには、再生可能エネルギーの発電設備を増設し、再生可能エネルギーの発電効率を向上させる必要がある。再生可能エネルギーの発電設備を増設するためには、再生可能エネルギーの発電設備の建設費を削減し、再生可能エネルギーの発電設備の建設期間を短縮させる必要がある。

GHG（温室効果ガス）排出量を削減するためには、再生可能エネルギーの発電電力量を増加させる必要がある。再生可能エネルギーの発電電力量を増加させるためには、再生可能エネルギーの発電設備を増設し、再生可能エネルギーの発電効率を向上させる必要がある。

2026年には、再生可能エネルギーの発電電力量が全体の約30%に達する見込みである。再生可能エネルギーの発電電力量を増加させるためには、再生可能エネルギーの発電設備を増設し、再生可能エネルギーの発電効率を向上させる必要がある。

図-26 中国とインドの電源構成 (2019年)

出所: IEA データで作成



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

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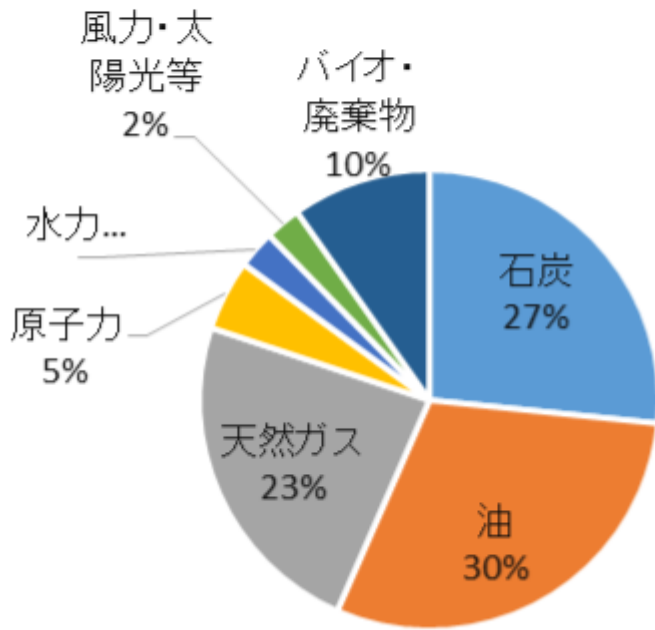
?????????

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

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

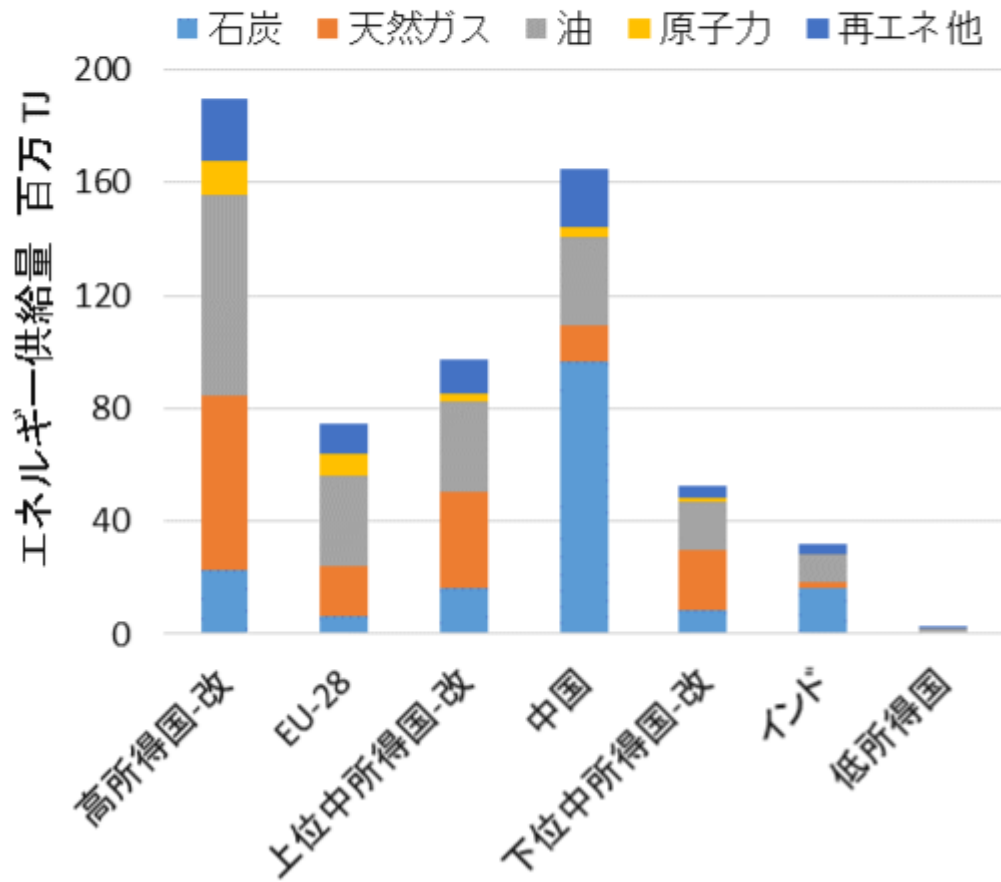
????????TES????????????????27%????????

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



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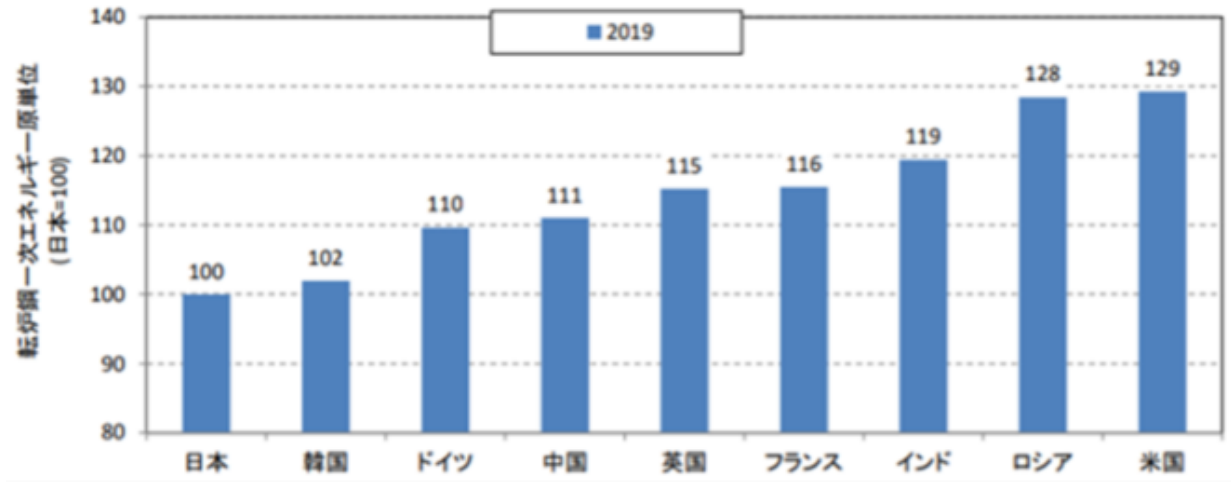
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図-30 高炉-転炉鋼の一次エネルギー原単位 (2019年)
出所：2019年時点のエネルギー原単位の推計(鉄鋼部門-転炉鋼)、RITEほか



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GHG????????????????????GHG????????????????????????????????2050????????????GHG????????????
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GHG??EU????????GHG???60?70%????????????????GHG?
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Posted in ??????????, ??? | No Comments »

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GEPR??? · Monday, December 11th, 2023



deepblue4you/iStock

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Charts??
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2045??6?????4????????????????????????3?????
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 ???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	ピーク発電量が大き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シフト
	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: フラウンホーファー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??

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

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

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

?? ?? · Sunday, December 10th, 2023

????COP28??



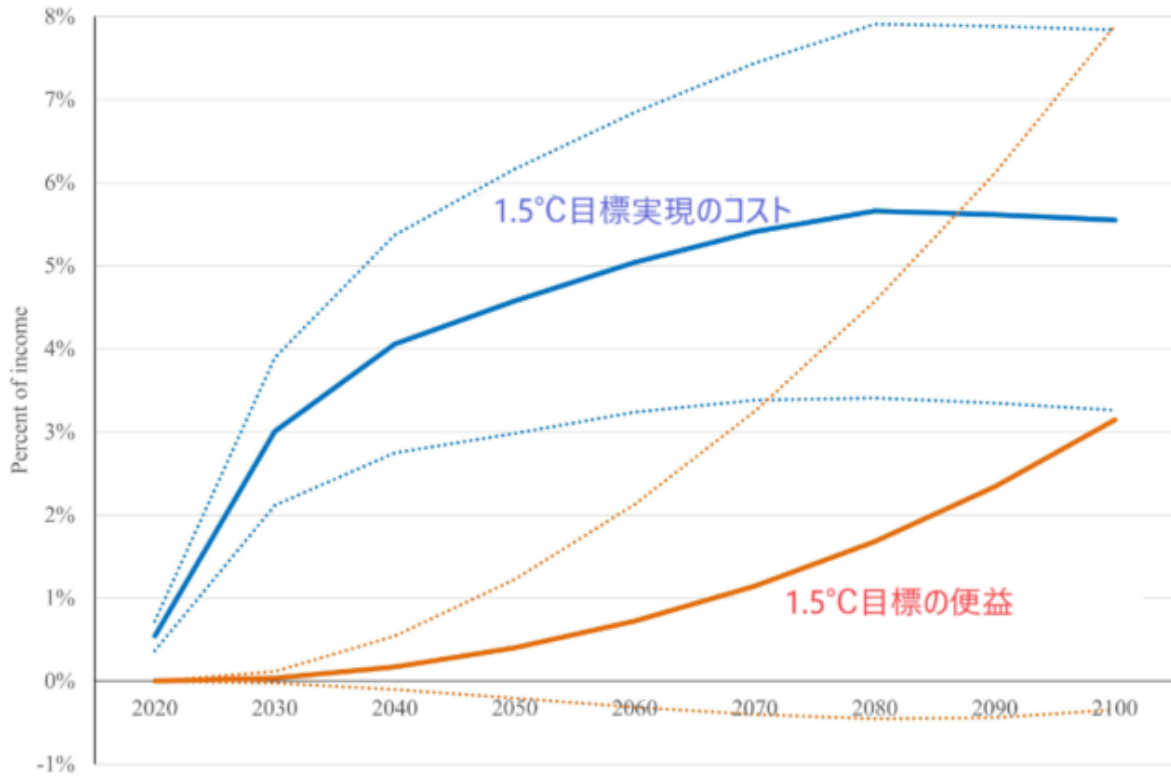
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1.5????????????2?10?

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

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



1.5°C target (Tol)

IPCC SSP5-8.5 2100

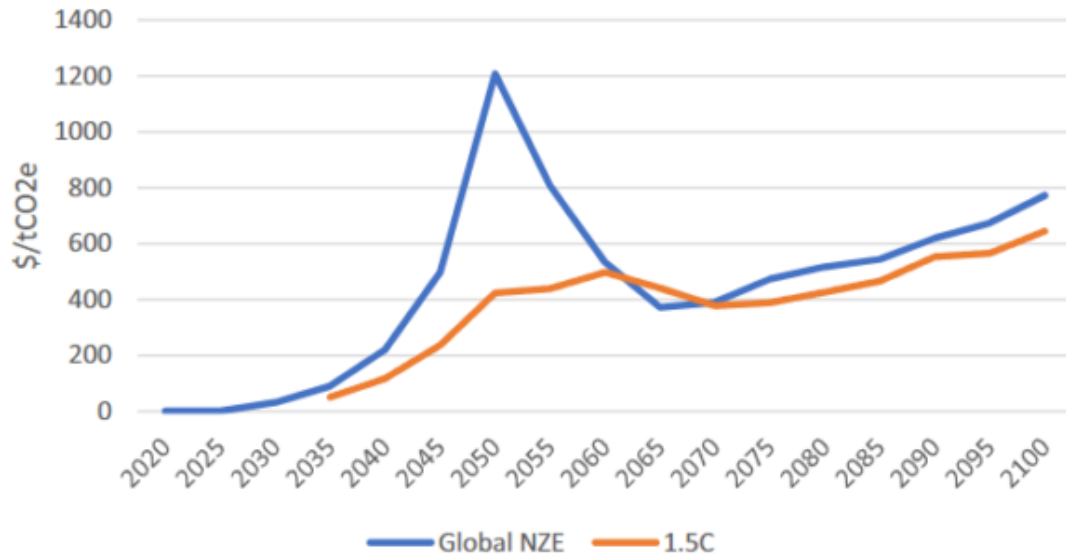
1.5°C target

2100

1200

Jennifer Morris et al. 2050 CO2 1200

Global Emissions Price



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5????2050????????????????

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

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wildpixel/iStock

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IPCC????????????????????CO2????????????????2100????????????????????????????????????
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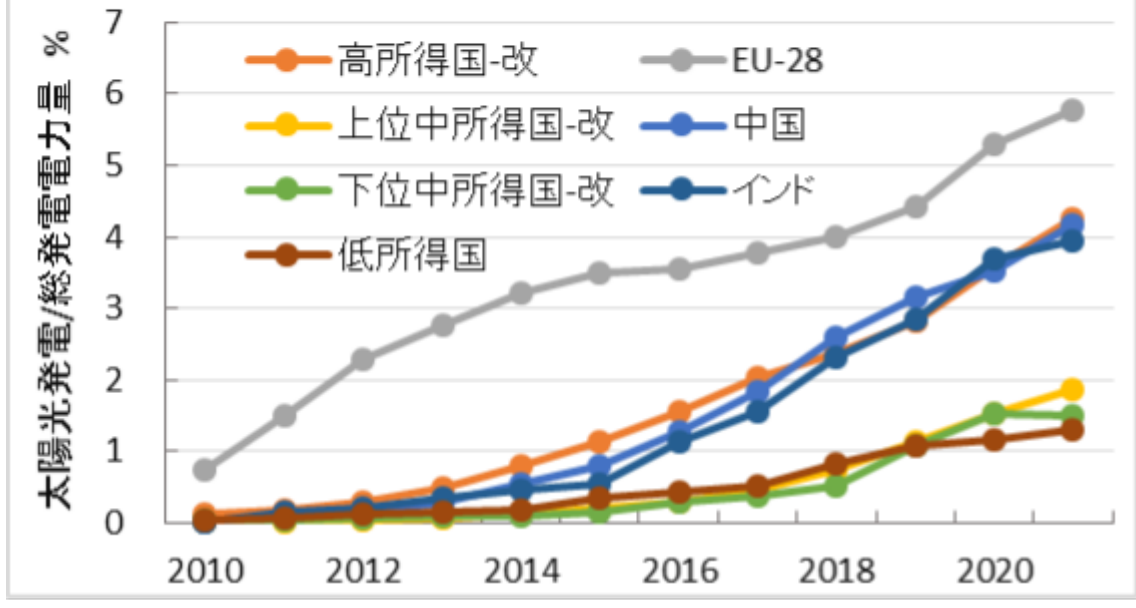
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図-15 総発電量に対する太陽光発電比率の推移
出所: eiaデータで作成



Variable Renewable Energy, VRE GHG VRE GHG EU-28 GHG

VRE kW VRE kW VRE

VRE EU-28 VRE VRE

VRE VRE VRE

Energy-Charts

Energy-Charts Energy-Charts

Energy-Charts

Energy-Charts ISE

30

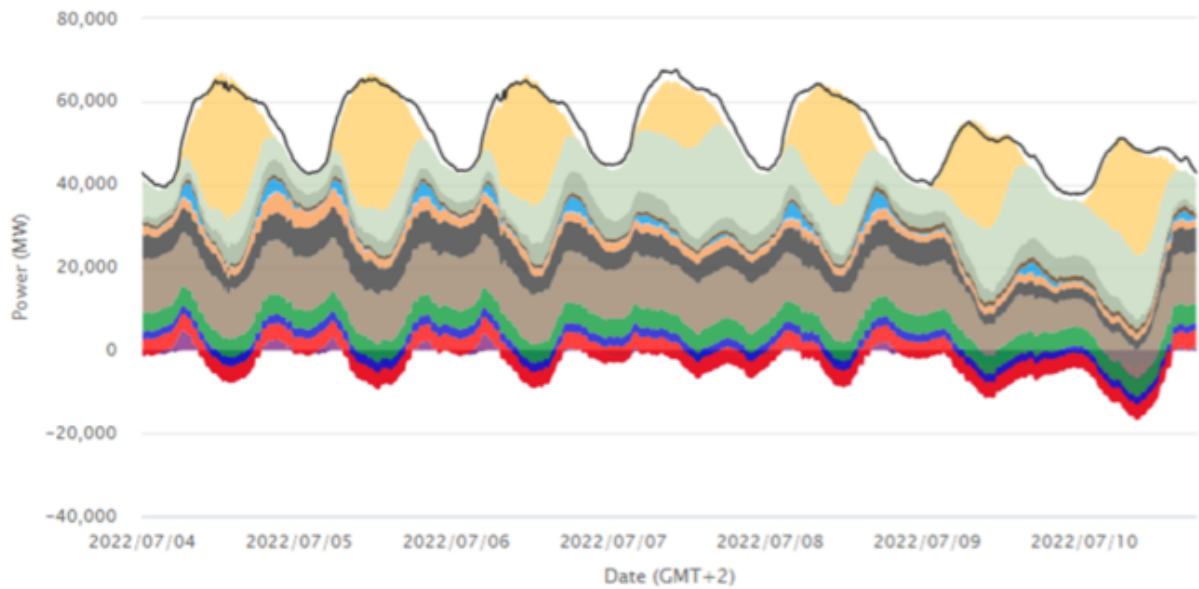
CO2

Energy-

Charts????????????2022??27??74??10??
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Public net electricity generation in Germany in week 27 2022

Energetically corrected values



- Hydro pumped storage consumption
- Nuclear
- Biomass
- Fossil hard coal
- Fossil gas
- Hydro water reservoir
- Others
- Wind offshore
- Solar
- Residual load
- Renewable share of load
- Import Balance
- Hydro Run-of-River
- Fossil brown coal / lignite
- Fossil oil
- Geothermal
- Hydro pumped storage
- Waste
- Wind onshore
- Load
- Renewable share of generation
- Day Ahead Auction (DE-LU)

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

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?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
非再生エネルギー廃棄物	5.3	1.1		
再生エネルギー廃棄物	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、自家発電を含まない、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% 100%

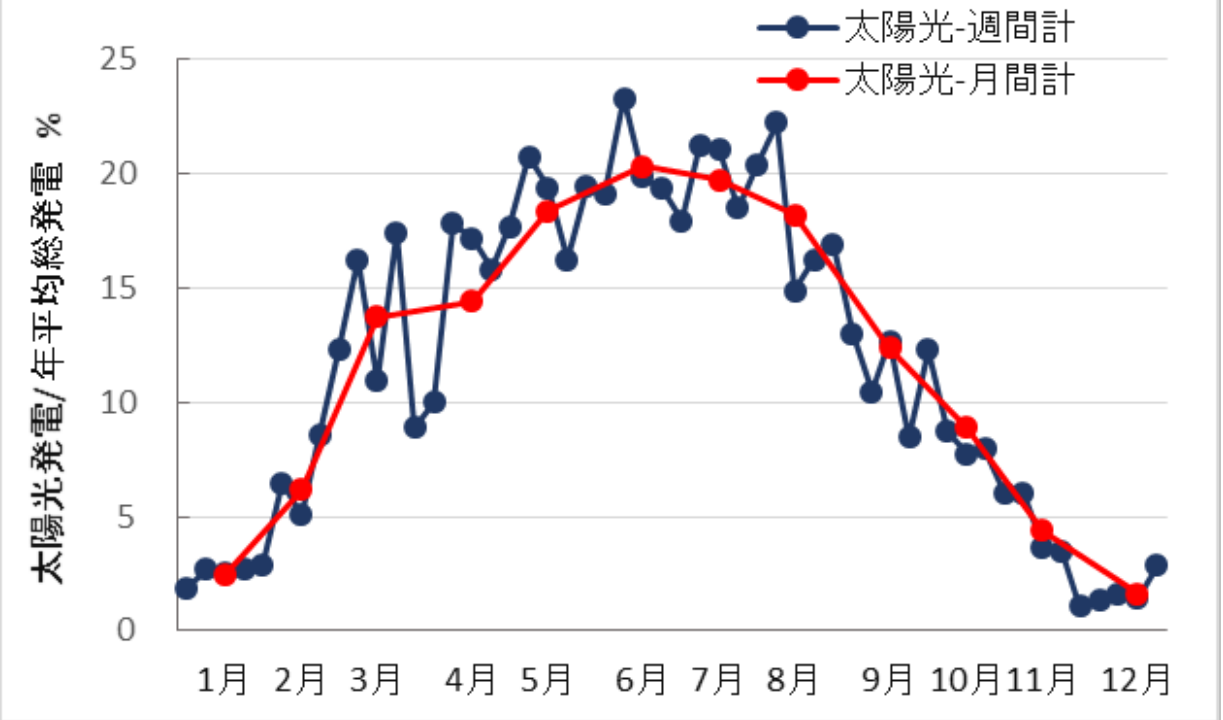
6% 65% 25% 10% 60%

0.3 2.6

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%

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?? ?? · Thursday, December 7th, 2023



alashi/iStock

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GX??CO2????????????
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2020?6????????????CO2??2020?6?17????????????????????????????????CO2????
??CO2??3??1?????????2??1????????????
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?? ?? · Thursday, December 7th, 2023



HunterBliss/iStock

1. IPCC?????

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

????DOE??1979????????????????????????????????????CO2????????????????????????¹⁷?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????????????????
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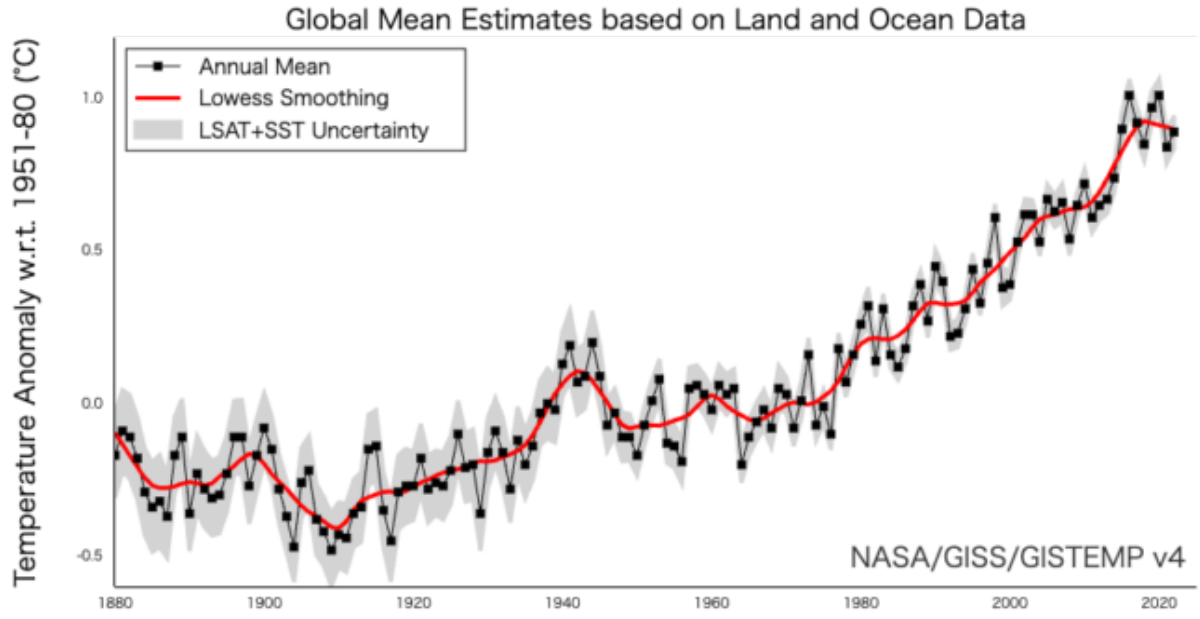
??Green New Deal???Clean Power
Plan??????2015????????????????????????????EV????????????????????????????2050?Net
Zero????????????????????????2020?10????????????2050?Carbon Neutral??????????

2. ?????????????????????????

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

J.
Hansen?1988??99?CO2????????????????????????????????
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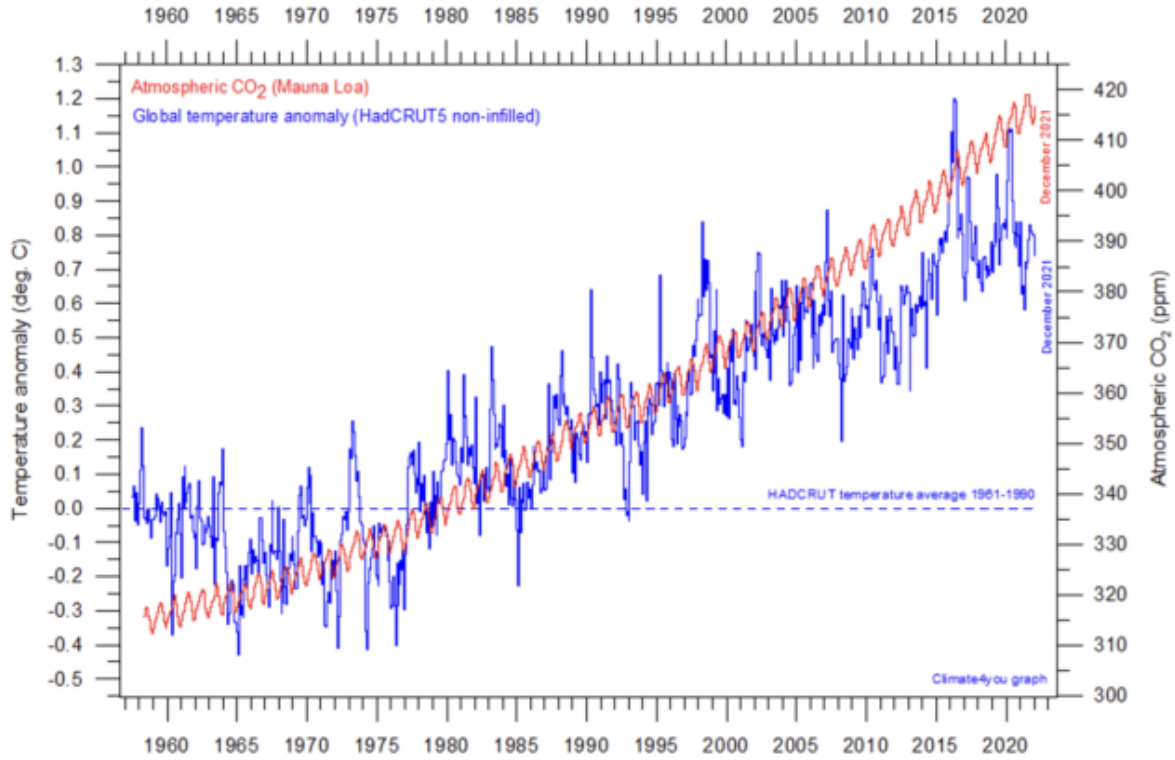
<https://realclimatescience.com/overwhelming-evidence-of-collusion/>



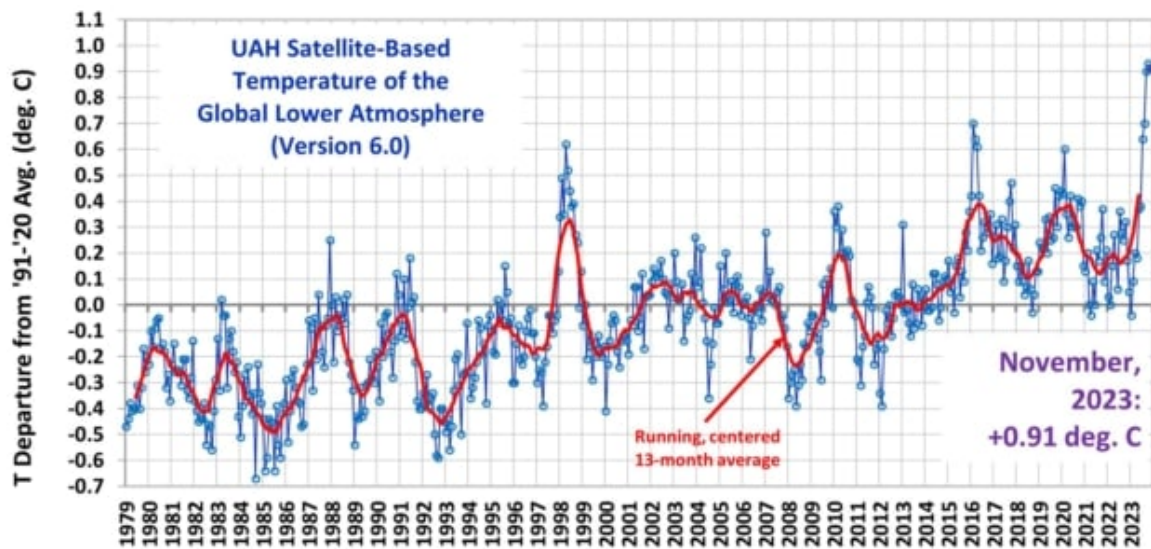
Data.GISS: GISS Surface Temperature Analysis (GISTEMP v4) (nasa.gov)

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GISS?????????????????????HadCRUT5?UAH?????????????????????CO2?????????????????2023????
?????El Nino?????????????????????



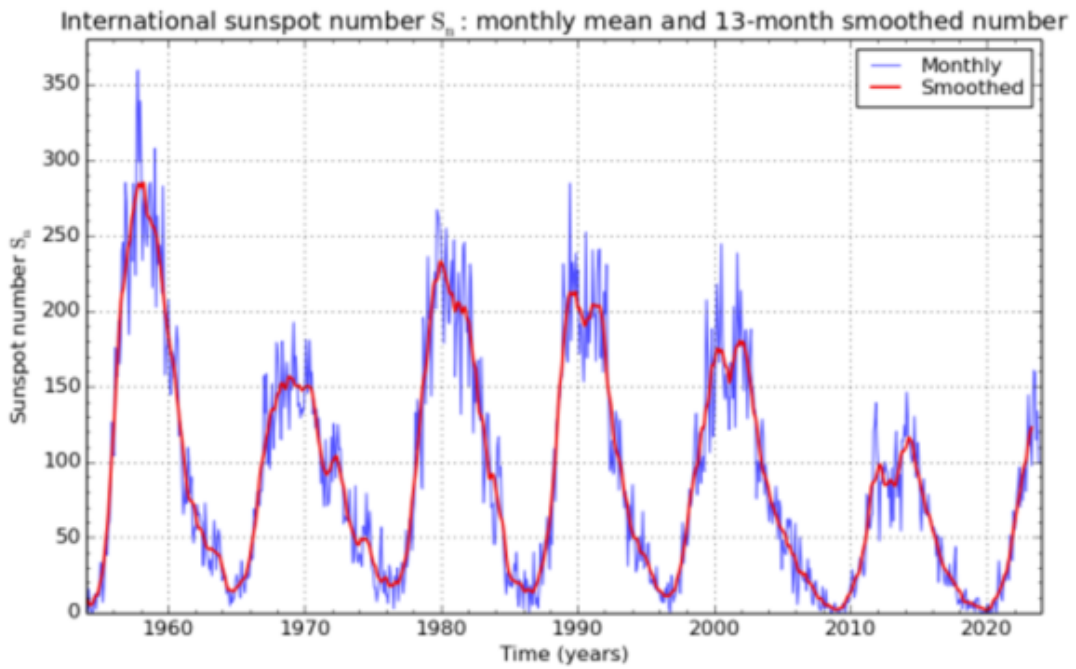
<https://www.climate4you.com/>



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

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

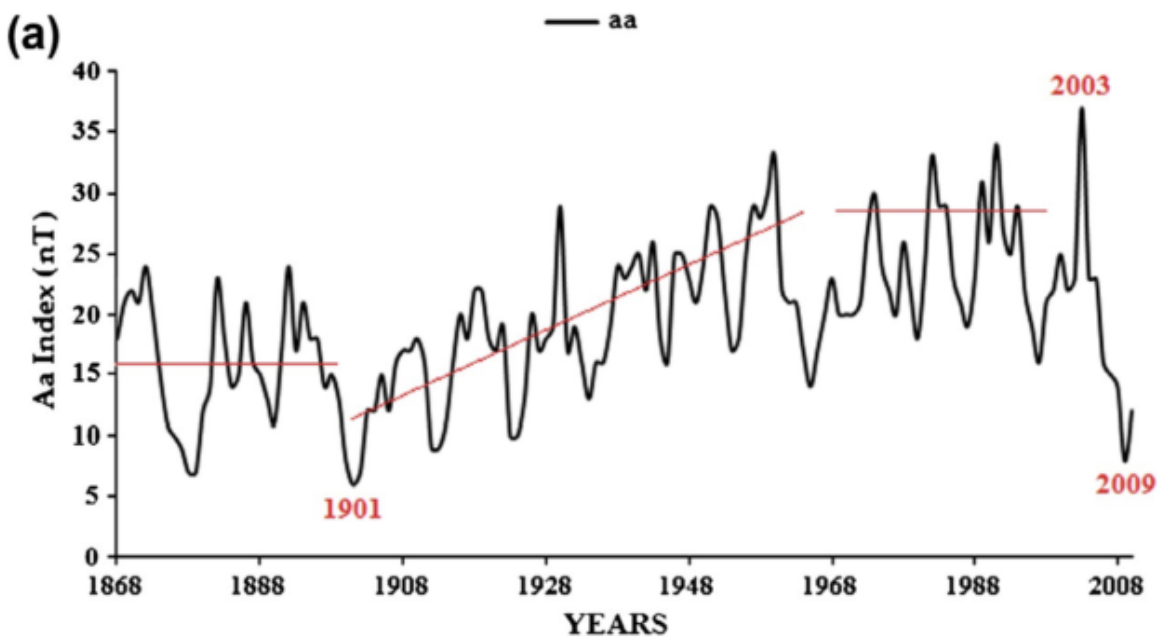
????????????????fake

science??44???????

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

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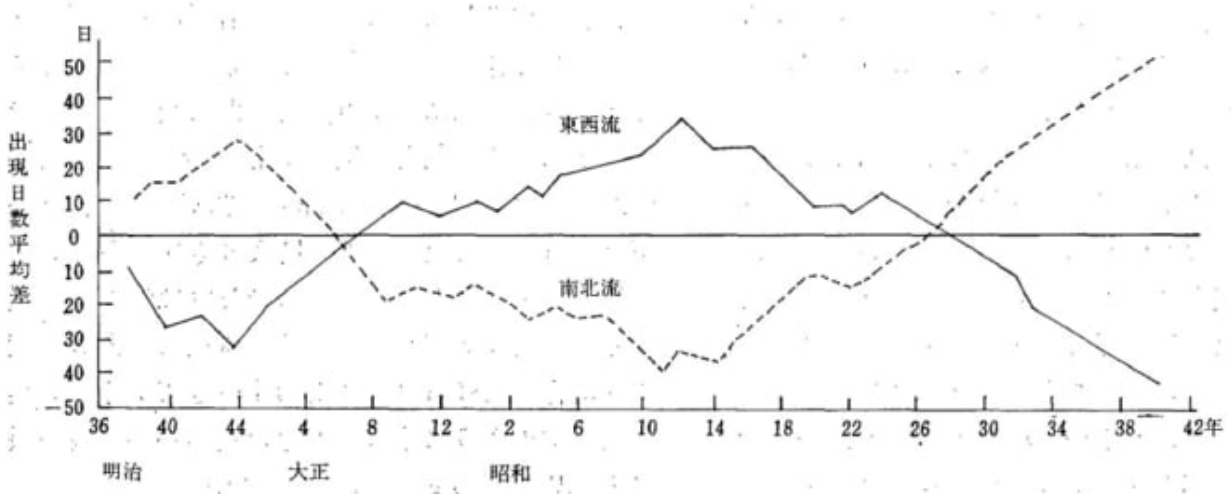


??????Zebro, J-L et al., Journal of Adavanced Research (2013),4, 265-274

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

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 ???1975????????????????????Bucha??????
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??1918????????1952???
 ?cycle20????????????????????????



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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????????????
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IPCC????????1988????1977-2005????????????????????????????????????2000???Independent???CO2?
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??2009????????????????????????

2006?? ?????18????????????

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2019??2020?? ?????????????????????

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2021?? ???

2022?1? ??????????50.7???

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4. ??

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

CO₂????1979????????

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??EV????EV????550????????1??CO2?
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COP28????CO2??
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POWER????????????BBC??
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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?
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Posted in ??, ???? | No Comments »

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GEPR?? · Tuesday, December 5th, 2023

????GHG???

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

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

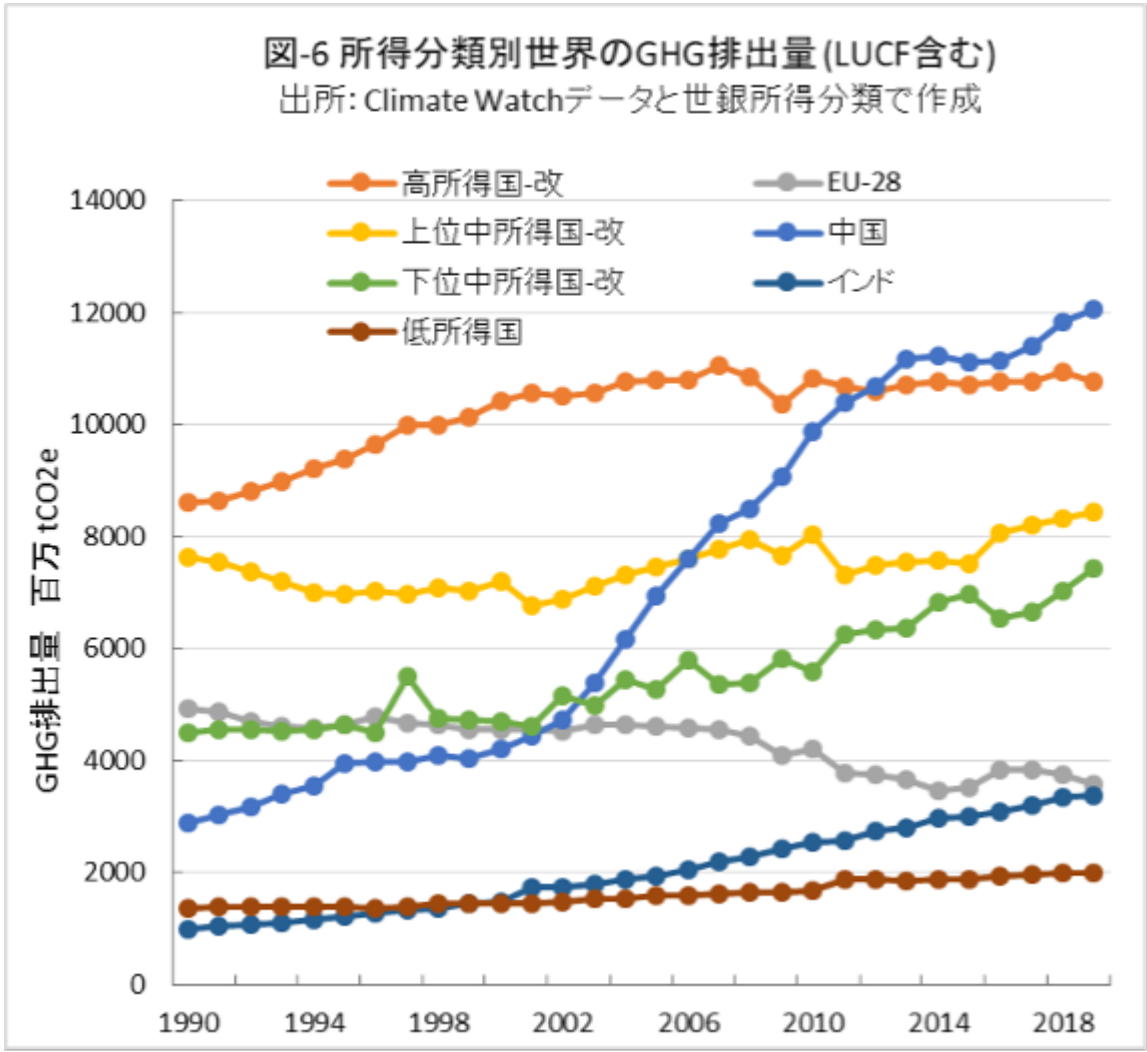
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????GHG?????

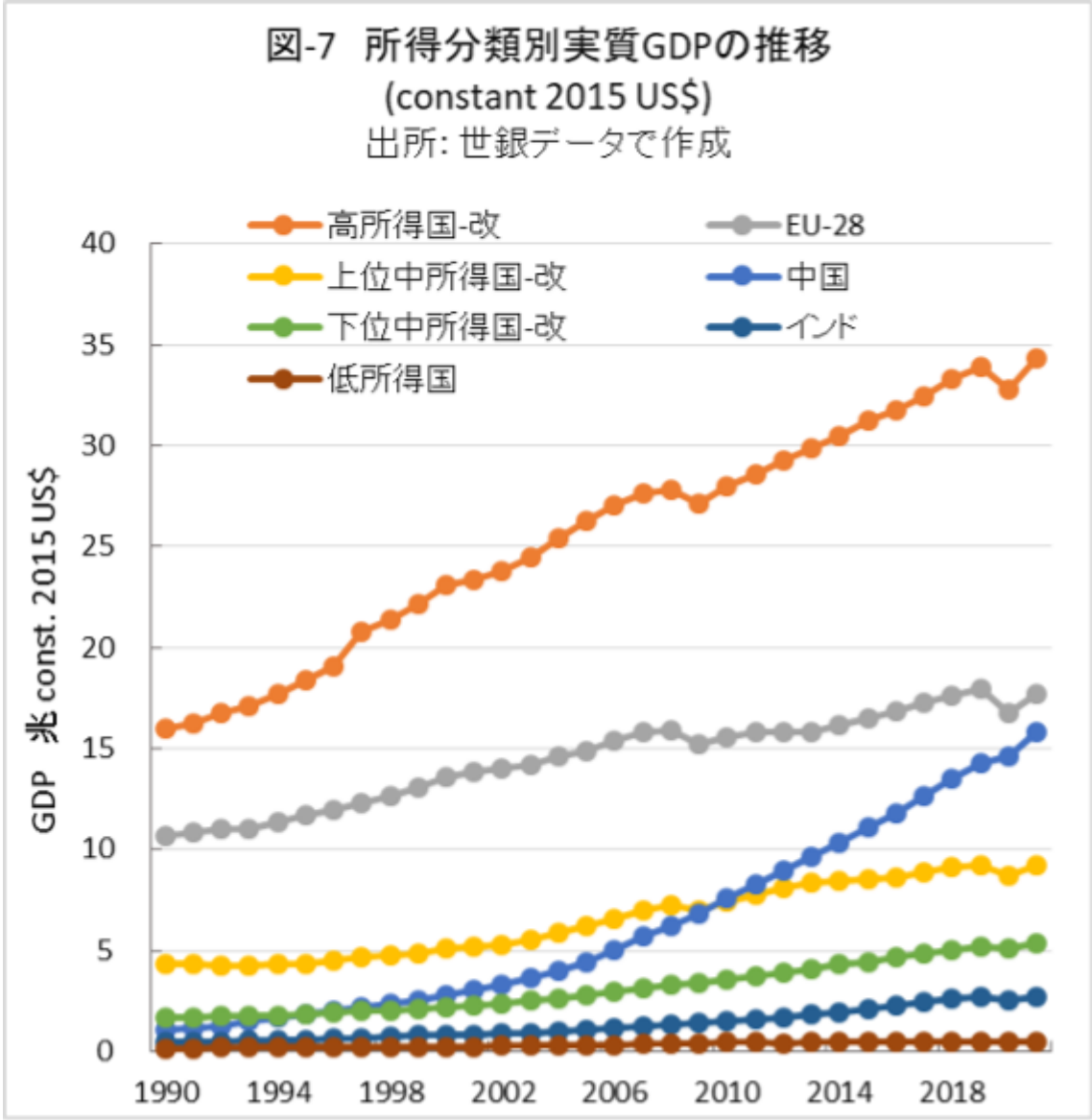
?6????????GHG????????????????GHG????Climate
Watch????????????????????GHG????????????????????????????????Climate
Watch????????????????????????????????IPCC?6????????????????????

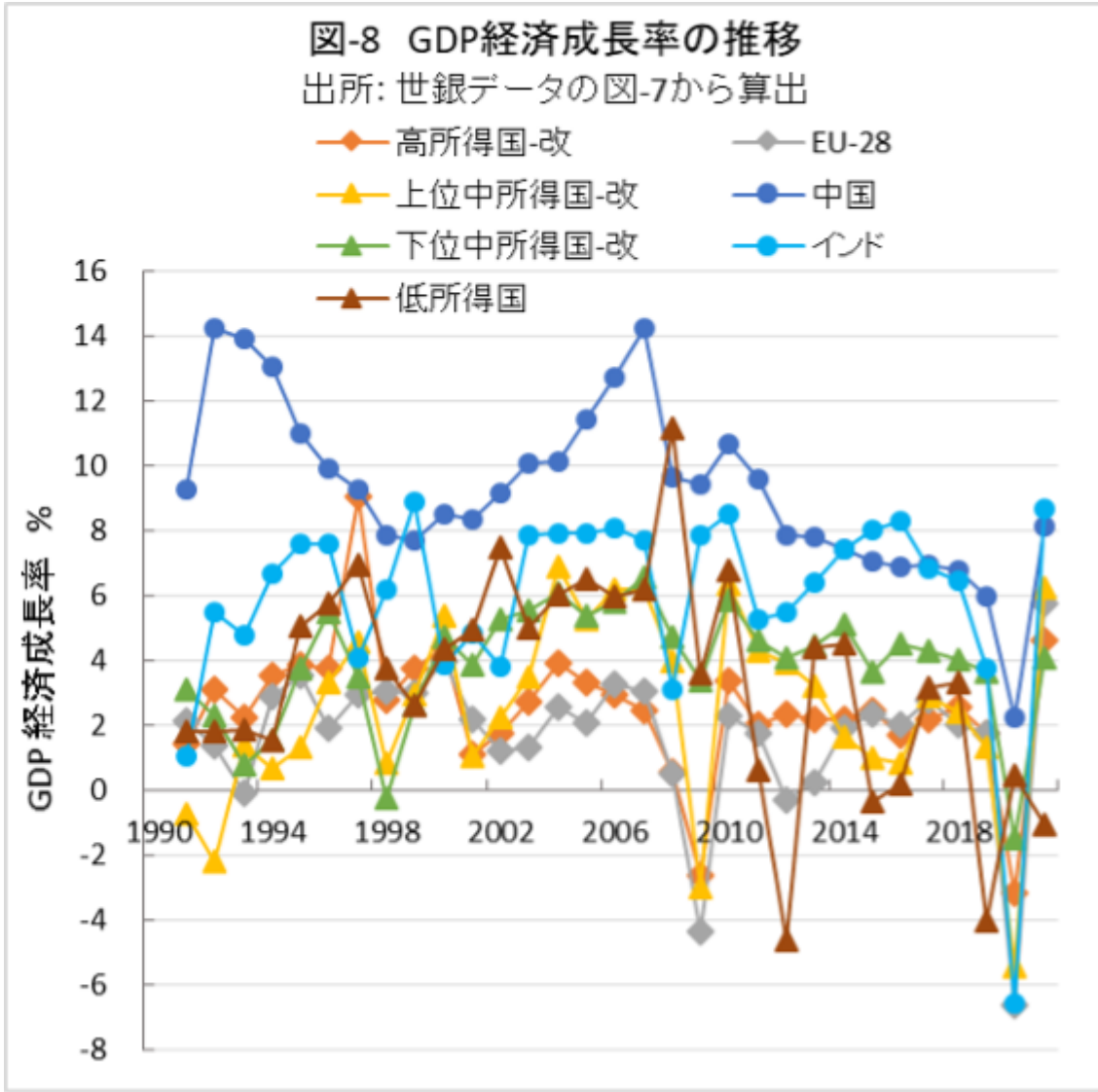
6????WG3????????????????CO2????????8%????????????????CH4???F-
????30%?N2O??60%?????????????
CO2????70%????????????????????GHG????????10%????????????

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



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 ??EU-28????????2008????????????????3?4%????????????????2%????????????????-
 ??GHG??EU-28?GHG????????????????????
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????????????????????10%????????????????????9%????????????GHG????2002????2013????????
 ?????????????????????????????????6%????????????GHG????????????????

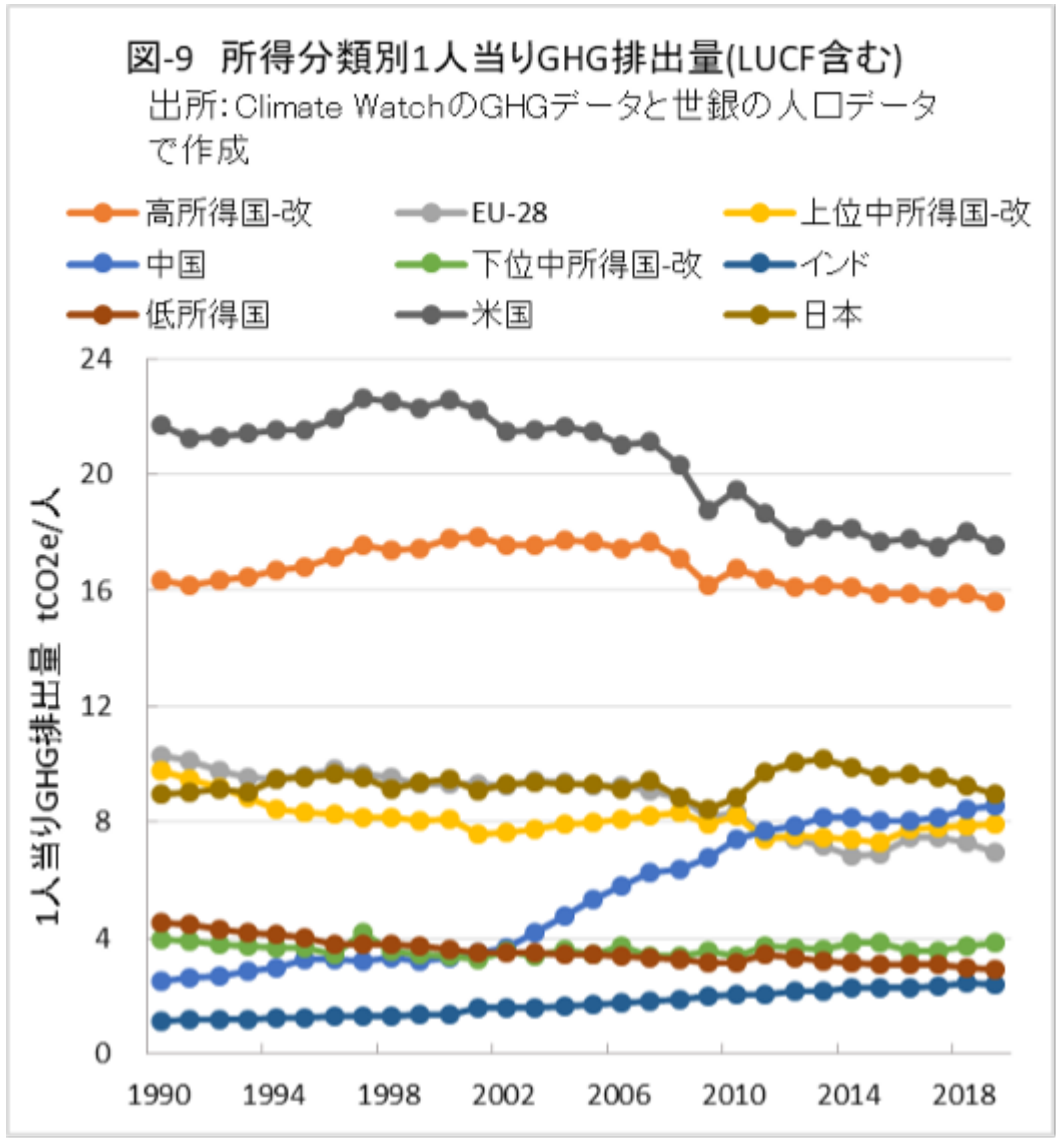
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 ?????????????????2005????????6%????????????????2.5%?4%?3.4%???GHG????2000????????????
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????2%????????????????GHG????GHG????????????EU-28????????GHG????????????????
 ???4?5%????????????????????????????GHG????GHG????????????????????GHG??
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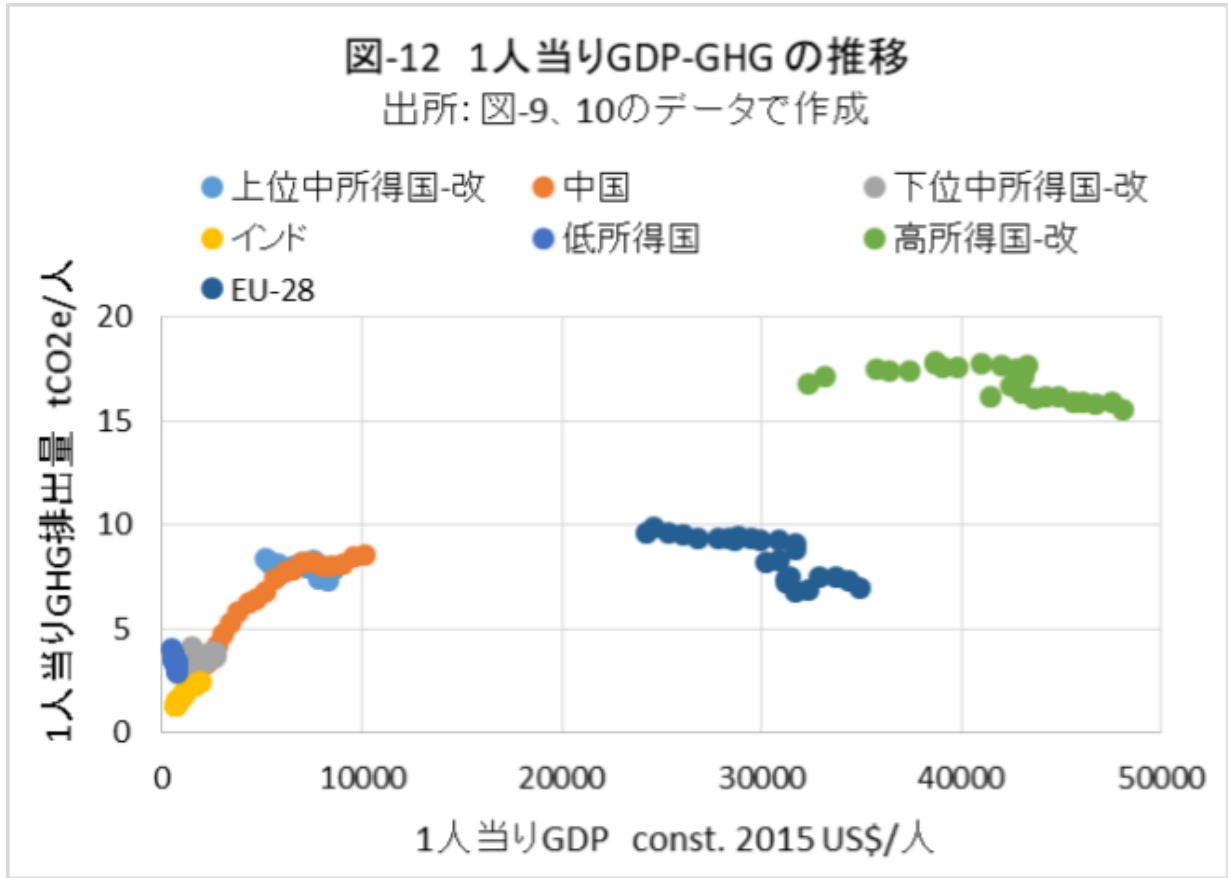
1???GDP?GHG

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

????????1????GHG????????????????1????GHG????????????????????????????????????2?????
??GHG????????????????????????????
?9????????1????GHG????????????????????????????????????10??1????GDP????????????



12 GDP GHG 1995 10 1995
GDP GHG EU-28 GHG
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13 GHG
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Oil	35.2%
Natural gas	25.1%
Renewables	14.9%
Lignite	9.1%
Coal	8.6%
Nuclear	6.4%
Other	0.7%

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

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

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3. ???

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

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

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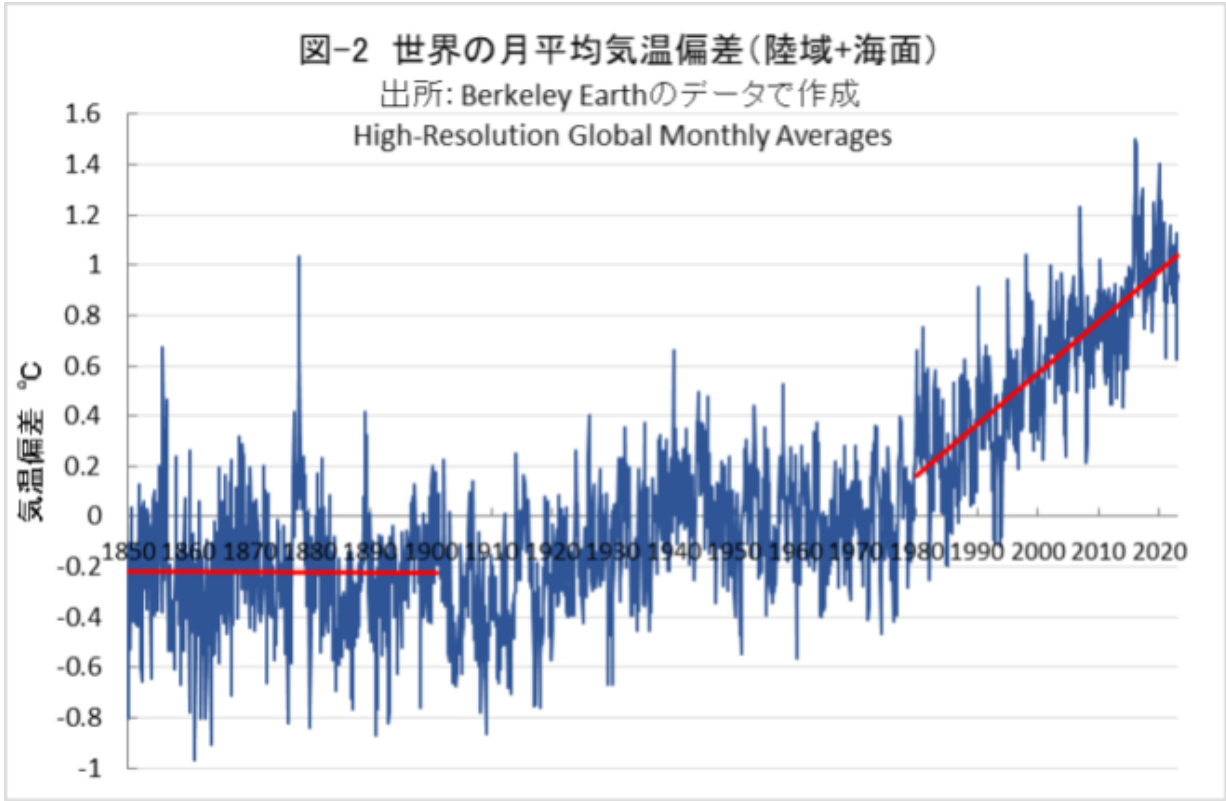
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????GHG????1/3????2050????GHG????????????GHG????????
????????????????????EV????????????????

????????GHG??
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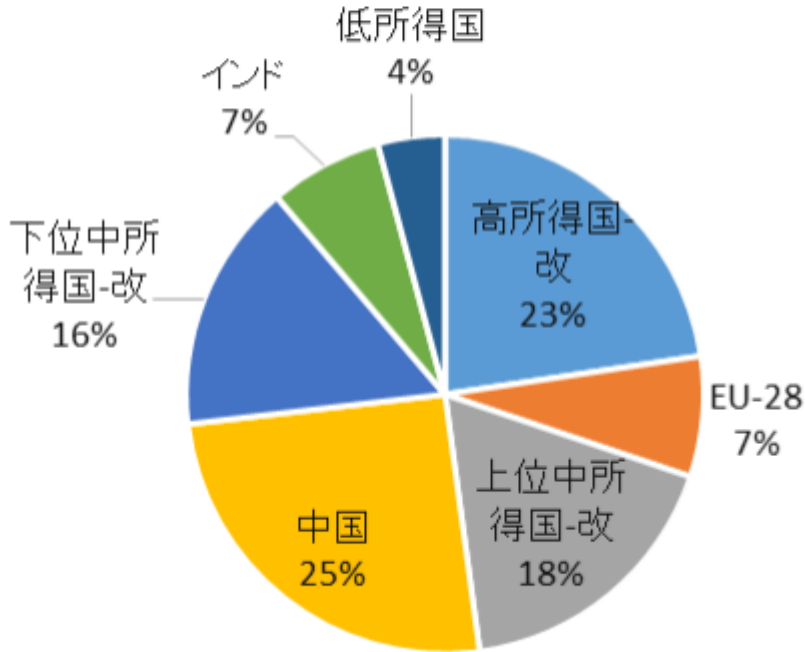


1850??????2022??????1.2????????????????????????????????2030????1.5????????????????????????1.5??
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??GHG????????????????????????????????2050????????????????????????GH
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?3??GHG????????????1/3????????????????????1/3????????????1/3????????????????????
 ???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



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