

# Global Energy Policy Research | GEPR

GEPR <http://agorajp.com/>

## IPCC AR6 “?”

?? ?? - Sunday, July 30th, 2023

2023 IPCC AR6 “?”

IPCC AR6 “?”

1.5°C GHG

2040

AR6 GHG

AR6-SPM Longer Report



NicoElNino/iStock

AR6?COP26????????????????????2????1.5????????????????????IPCC????????????????2014????5????  
 ?AR5????2021????????????1.5??

????????????????????????????????2????1.5????????????????????????2????????????????????????????  
 ?????????2????67????????????????????????????1.5??  
**0????1.5????????????????????????????????**

????????????????????1.5????2????????????????????????????1.5????????????????????1.5????????????????  
 ???1.5????????????????????????????  
 ?????????????????2????1.5????????????????????

????1.5??1.5????2????67????  
 ?????????????????????????????????????IPCC??  
 ?????????

??

????????????????????2????2????1.5????????????????AR 6-  
 SPM????????????????GHG????????????????????????????????

????????1.5????????????2019????????????????500????CO<sub>2</sub>e????????????2????????????1150????  
 ?????<sup>21</sup>?

????2020????????????50????GHG????????????1.5????????????????10????23????????????  
 ???

IPCC 1.5 2 0.5  
650

AR 6-

SPM Table SPM.1 GHG 2050 2019 64 2030  
21 2070 Table

SPM.1 1.5 2030 43 2050 84 22?

1.5 1.5 50 1.5  
0.2 0.3

AR6 1.5 1.7 1.8 1.5  
500 500 1.5 1150 2 825  
825 GHG 1.5

AR6 1.5

1.5

AR6-SPM C.2.4

??



2 3?

????

1.5

1.5 AR6-SPM P26



1.5 1.5 2 24?

????

1.5 IPCC AR6 AR6  
1.5 2 1.5

?

2030?21?GHG?AR6-  
SPM?C.2.4

1.5?30?43?50?84? AR6-  
SPM?C.2.5



imply???

5?

1.5

AR6  
6?

IPCC

AR6  
1.5  
2  
1.5

IPCC

AR6



GHG?2019?2030?43?2050?84?  
1.5  
1.5

1.5  
1.5

1.5  
5  
1.5

IPCC

AR6  
1.5

?

1?AR6-SPM?B5.2  
1.5

GHG CO2 1.5 2050 99 2030 48 30 50

AR6.SPM.C.2.4”Even without accounting for all the benefits of avoiding potential damages the global economic and social benefit of limiting global warming to 2°C exceeds the cost of mitigation in most of the assessed literature” (medium confidence)

AR6-SMP P26 2050”The evidence is too limited to make a similar robust conclusion for limiting warming to 1.5°C. Limiting global warming to 1.5°C instead of 2°C would increase the costs of mitigation, but also increase the benefits in terms of reduced impacts and related risks, and reduced adaptation needs.”

AR6.SPM C.2.5: “Ambitious mitigation pathways imply large and sometimes disruptive changes in existing economic structures, with significant distributional consequences within and between countries.”

AR6-SPM E.1.3: “Strengthened and coordinated near-term actions in cost-effective modelled global pathways that limit warming to 2°C (>67%) or lower, reduce the overall risks to the feasibility of the system transitions, compared to modelled pathways with relatively delayed or uncoordinated action.”

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

??

?? ? · Saturday, July 29th, 2023



BrianAJackson/iStock

??  
??

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

??

????????TV??  
??IAEA????????????????  
??

??  
??

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

??

??  
??

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

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

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

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

??

??  
??

??  
????????????????????????????????????TV????????????????????????????????

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

??  
??

????????????????????2019????????????????????????????????4????????????????????  
???

??

????2019?7??

??

??

??

???

1??

2??

??

1??

??

2??

??

??

??AI??

??????????

??

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

## ??????CO2????????????????????????????

?? ?? · Thursday, July 27th, 2023



JaCZhou/iStock

????CO2????????????????2023????4??Enrico Mariutti????????????????????????????The Dirty Secret of the Solar Industry???

????????????????CO2????????????????????????????????CO2????????????IEA?IPCC????????????????????????????????

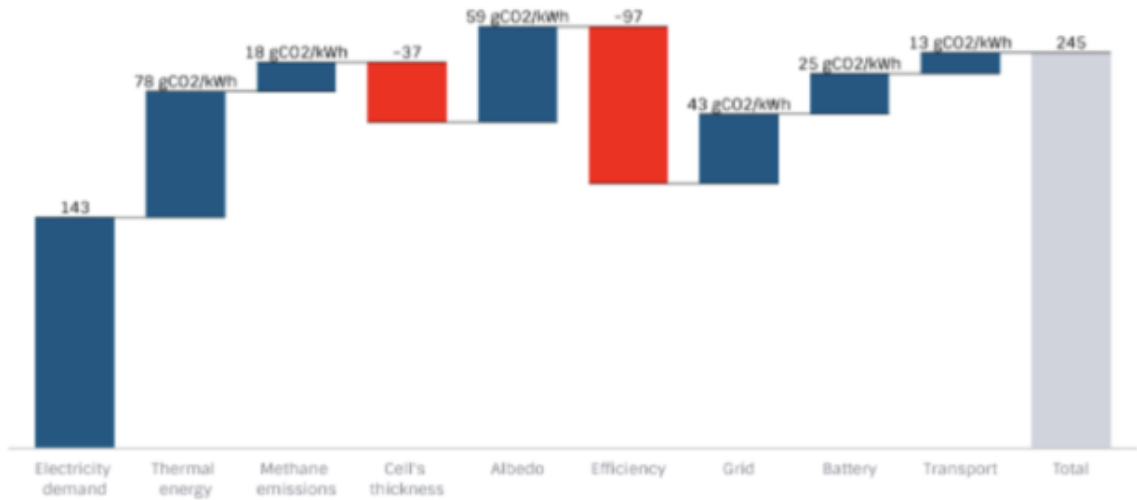
????????????????????

- ???CO2??????????
- ???CO2????????????????????????????????
- ???CO2????????????
- ???CO2????????????
- ???CO2????????????????????????????????

??CO2????????????????kWh????245gCO2????????????1?



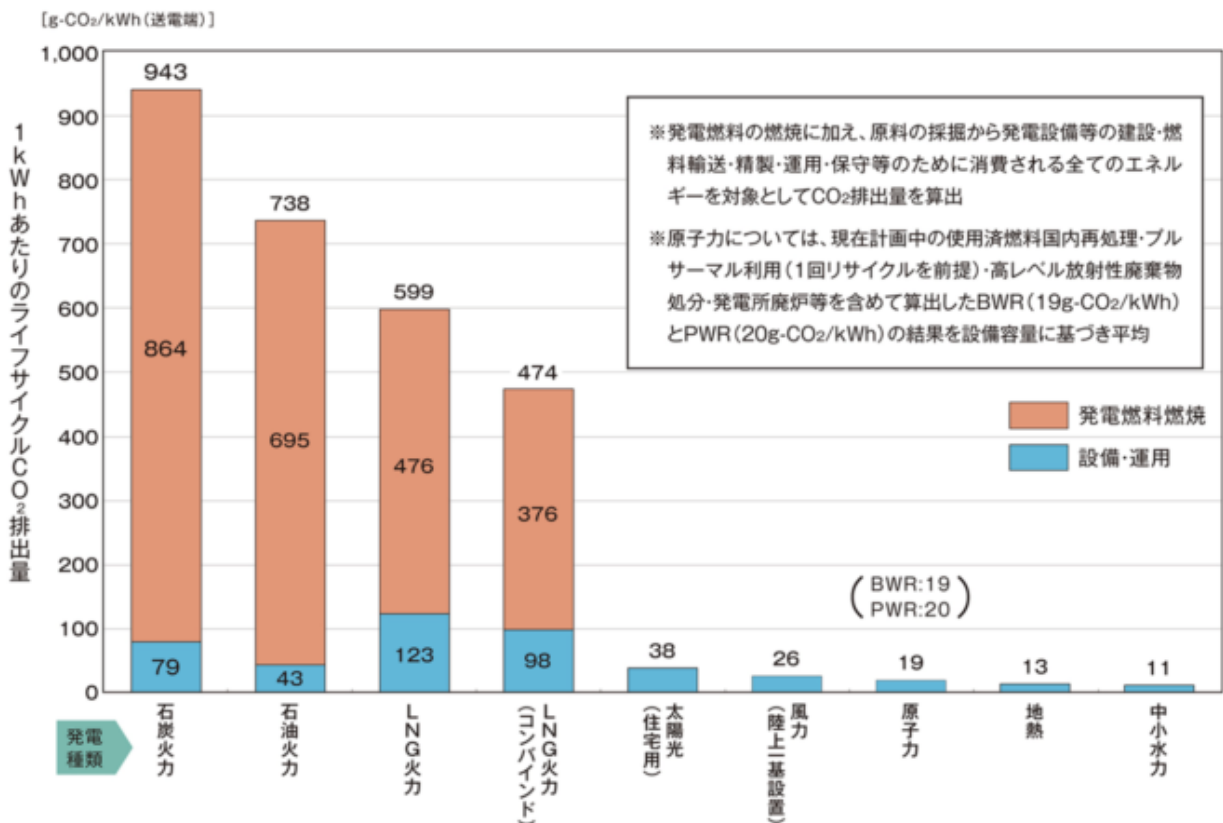
2022  
Carbon intensity, Worst Scenario



??????????

??CO2??CO2????????????  
245????????

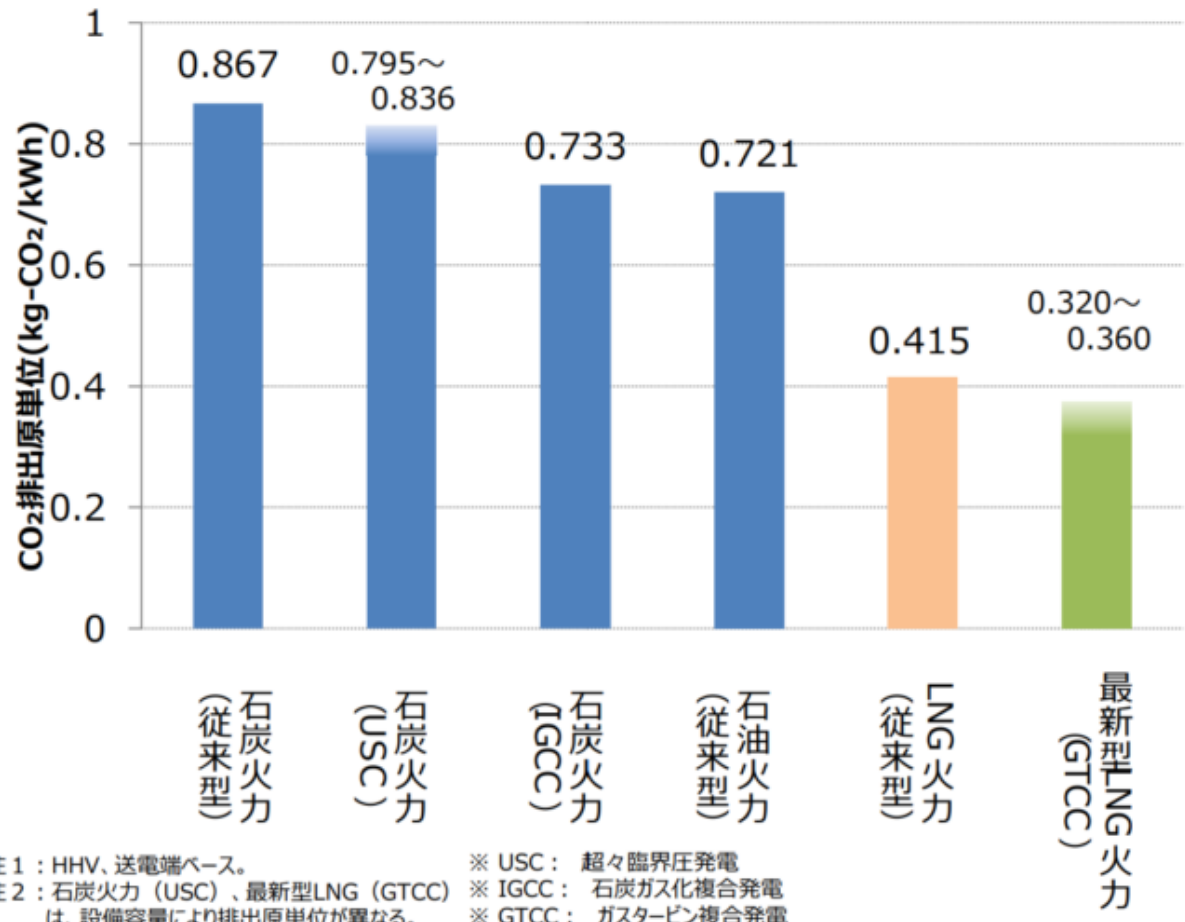
??1kWh??245??2016????????????????????????  
?????kWh??38????????????2??????????



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

CO2 9

1kWh 245 CO2 2022 LNG CO2 1kWh 320 360



3

CO2

CO2

??

?? “???????”  
“??????????20??”

??

??CO2??  
??

?



Posted in ???, ????? | No Comments »

### ??????EV??????????????????

?? ?? · Friday, July 21st, 2023

????????????????EV??EPA?EV?  
??

EV??



jetcityimage/iStock

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

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

????????????????5????????????????????????????????????3????????ESG????????????????????  
????????????????????

????????????4,000????????????????????????3????????????????????????????????  
??

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

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







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

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

1??100????0.72??1979????????????????1.4  
????IPCC????????????3?5????????????????????????

2????CO2?????????2ppm?????????4????40????????????????CO2????????????IPCC????????  
????????CO2????????????CO2????????????????????????????

????????????????????CO2????200????????????????IPCC????????????????????????????200  
????????CO2?????????5????????????CO2?5?????????2ppm?????5????0.1ppm????????????  
??2ppm????????????

????????????????CO2????????????????????????????2009????????????2021????????????  
????2022????????????????????????CO2????????????????????????????

????????????0.1ppm????????????20????????????0.02ppm????????????????  
????????????????????????

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

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

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

??  
????CO2??

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

3????1????????????CO2????????

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

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

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

??TV????????  
????????????10????????



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

Posted in ???, ????? | No Comments »

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

?? ?? · Wednesday, July 19th, 2023



Max Lirnyk/iStock

??  
??  
**Electric Vehicles for Everyone? The Impossible Dream**??

????????????????????BEV??ICE??BEV????????  
????????????ICE????????????HEV??

EV??I  
CE????EV????????????????????????????????

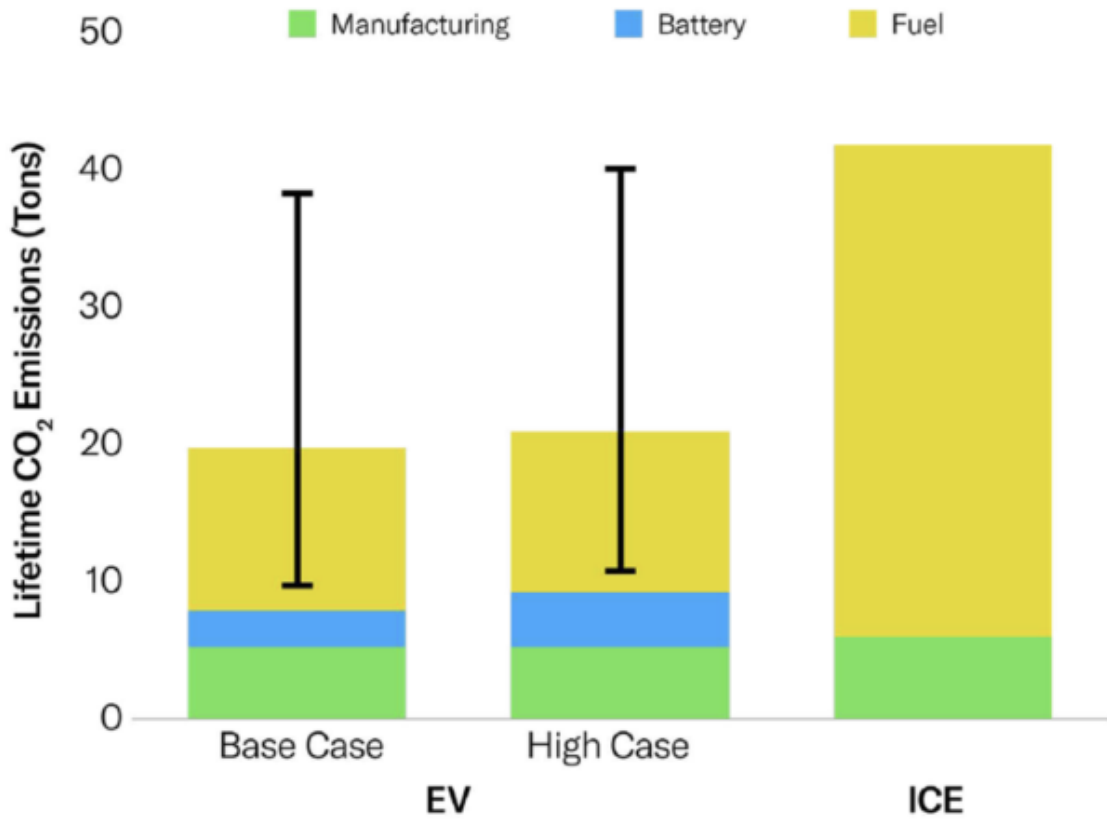
?????2??????CO2????????EV????CO2????????????????????

??1?CO2

??BEV????ICE????????????CO2????????????????

Figure 3

Estimated Life-Cycle Emissions for EVs vs. ICE Cars, per IEA



Source: IEA, "The Role of Critical Minerals in Clean Energy Transitions"

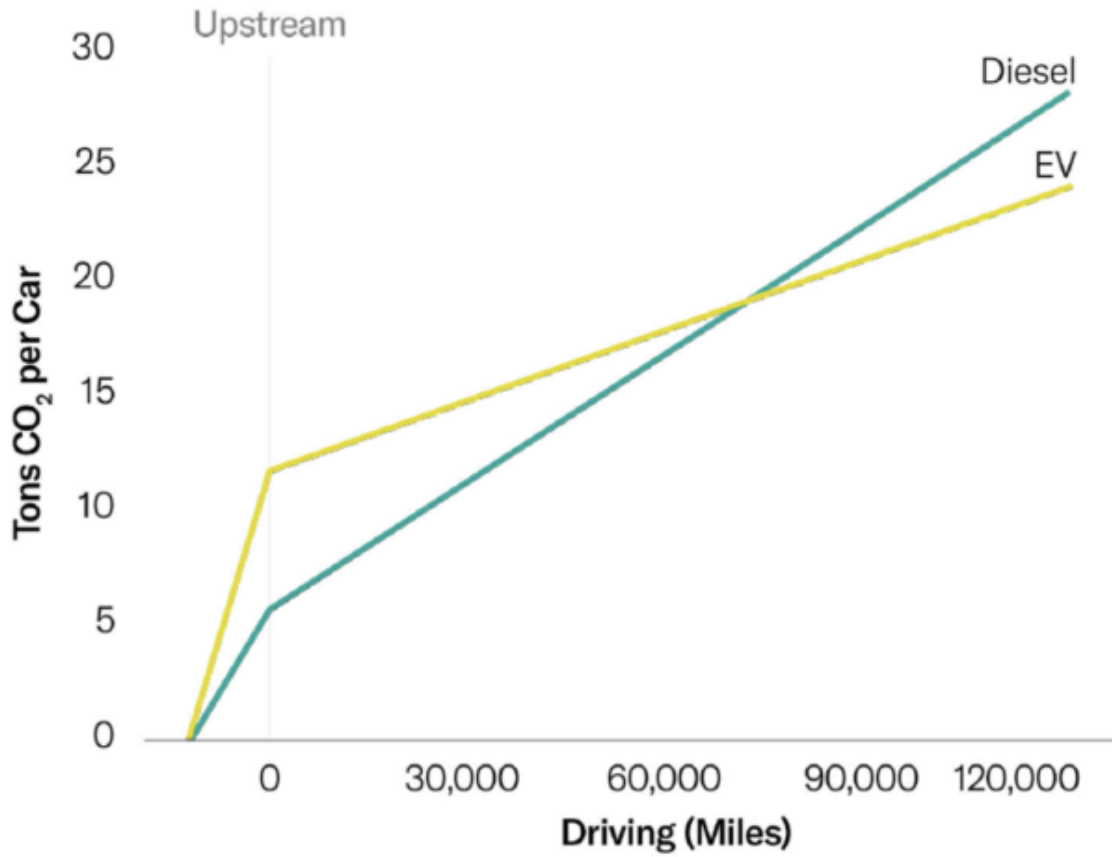
??

????IEA??  
??

????????ICE?EV????????CO2????????????6????????????????????EV????CO2????????????????  
??EV????????????

Figure 4

Life-Cycle Emissions: Volkswagen EV vs. Diesel



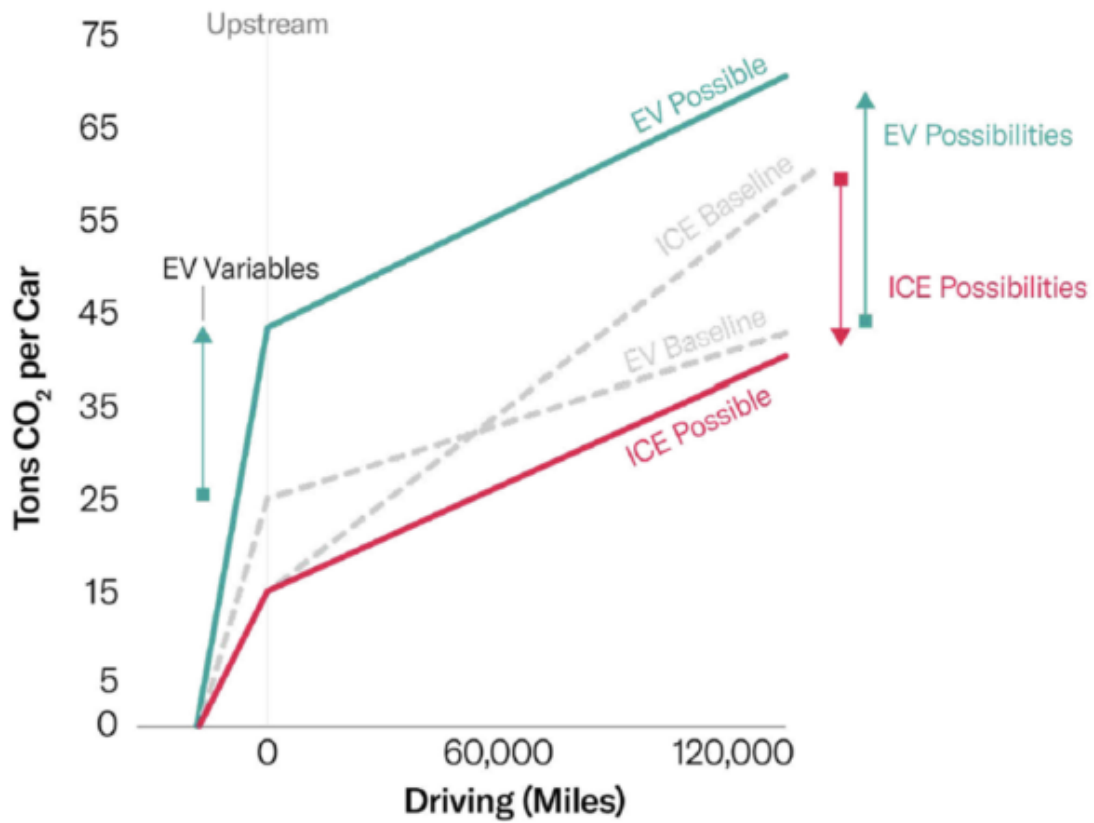
Source: Maciej Neugebauer, Adam Żebrowski, and Ogulcan Esmer, "Cumulative Emissions of CO<sub>2</sub> for Electric and Combustion Cars: A Case Study on Specific Models," *Energies*, Apr. 6, 2022

????????????????EV????????????????EV????CO2????????????????????????????????ICE????????????  
 ?????????????

????????????????EV????????CO2????????????ICE????????????????????????????????????12????????  
 ?EV???ICE???CO2????????????????????????????????

Figure 6

EV vs. ICE CO<sub>2</sub> Emissions: Scenarios with Known Unknowns



Source: Author's calculations from multiple data sources in this report; see Appendix

??????

CO<sub>2</sub>?????????1????????????????? EV??ICE????????????????????????????????

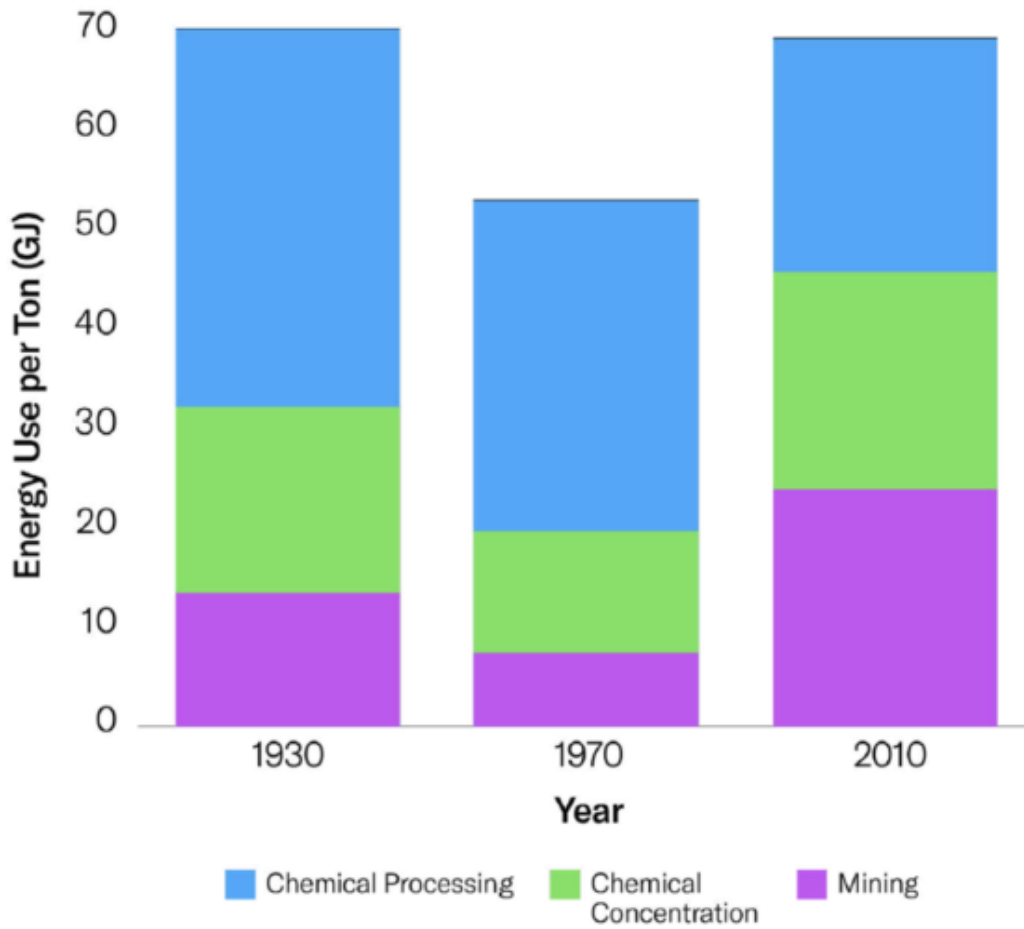
??1?????????????????????EV??

?????????????????????????1??2?????????????????0.5??  
 ??????????????????????



Figure 10

### Copper Production: Technology Trends in Energy Use per Ton



Source: Nadine Rötzer and Mario Schmidt, "Historical, Current, and Future Energy Demand from Global Copper Production and Its Impact on Climate Change," *Resources* 9, no. 4 (April 2020)

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

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



??ICE?HEV????????????????????  
??

?????EV???EV????????????????????ICE??EV??  
????????????????????????CO2?????2??

ICE??  
????????????CO2????????????????????????????????????EV????????????????????

?



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

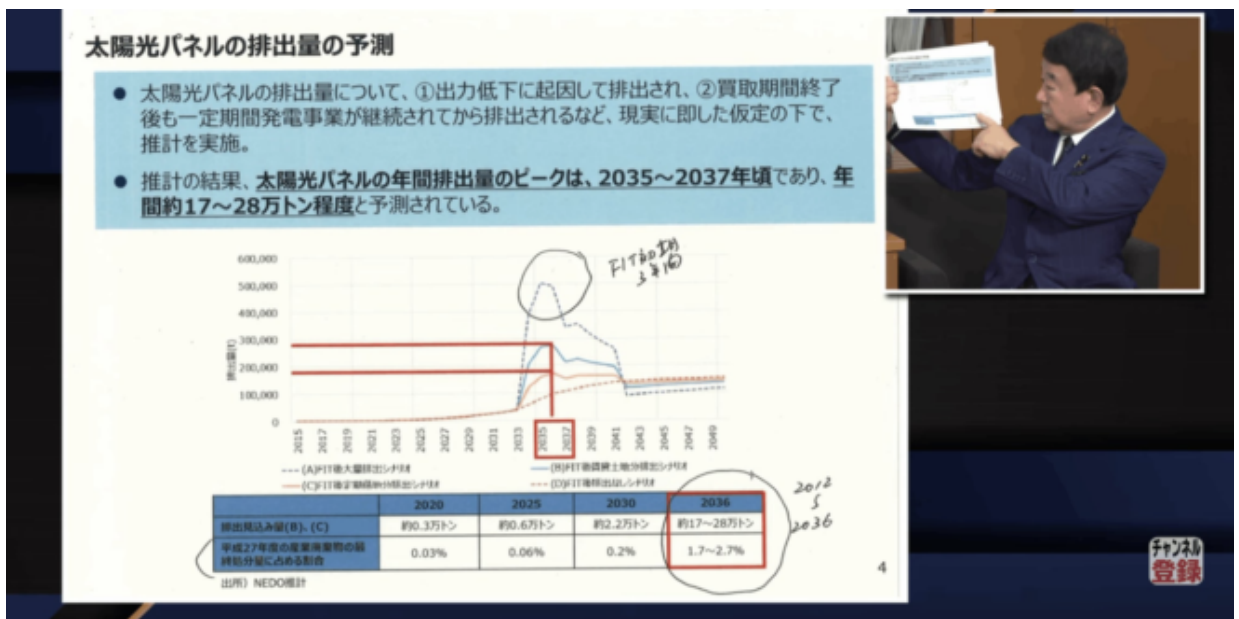
????????????????????????????????1????????????????????3????5????????????

????????????????????????????1????3????????????????????????????12????25??  
????????????????????????????1????????????

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

????????????????????????????2030????????????????????????????????  
??

????????????????????????????????2035????????????????2015????????????3%????  
????????????1??



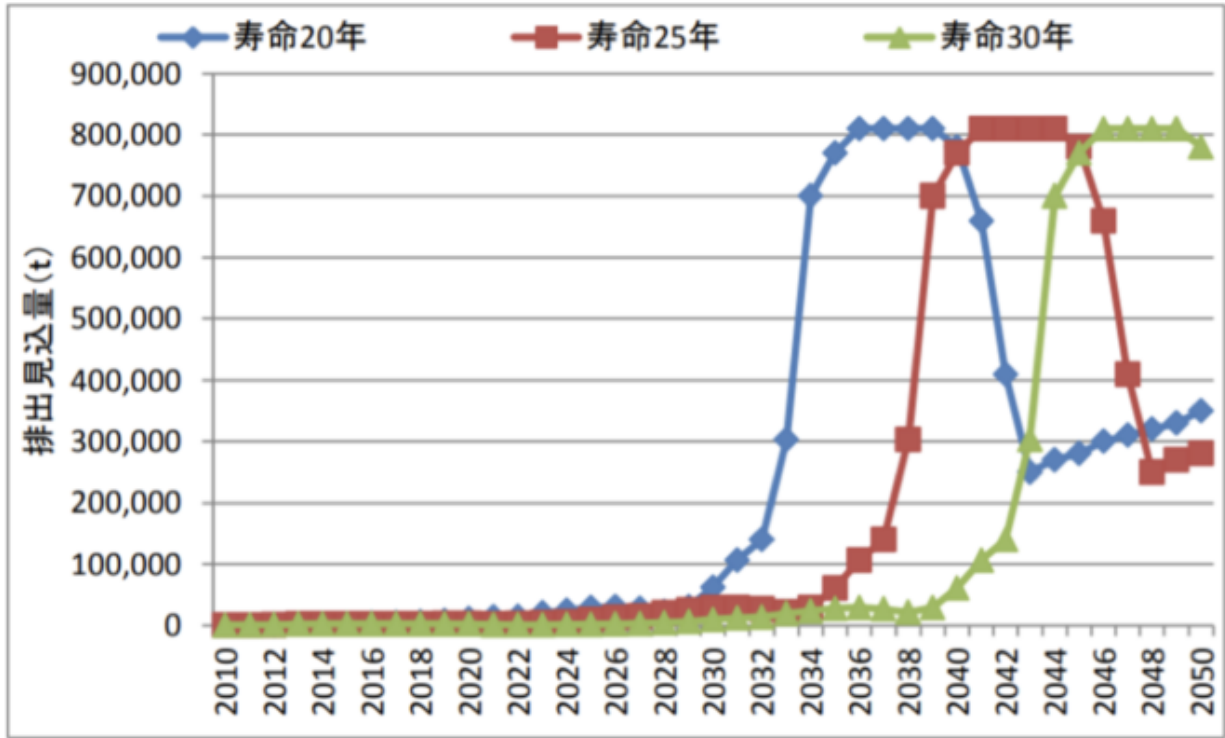
?1????????????

????????????????446????????????????

????????????????9????????1????????????????????????????10%??  
????????????????????

????????????????2035????????????2????????????????3??

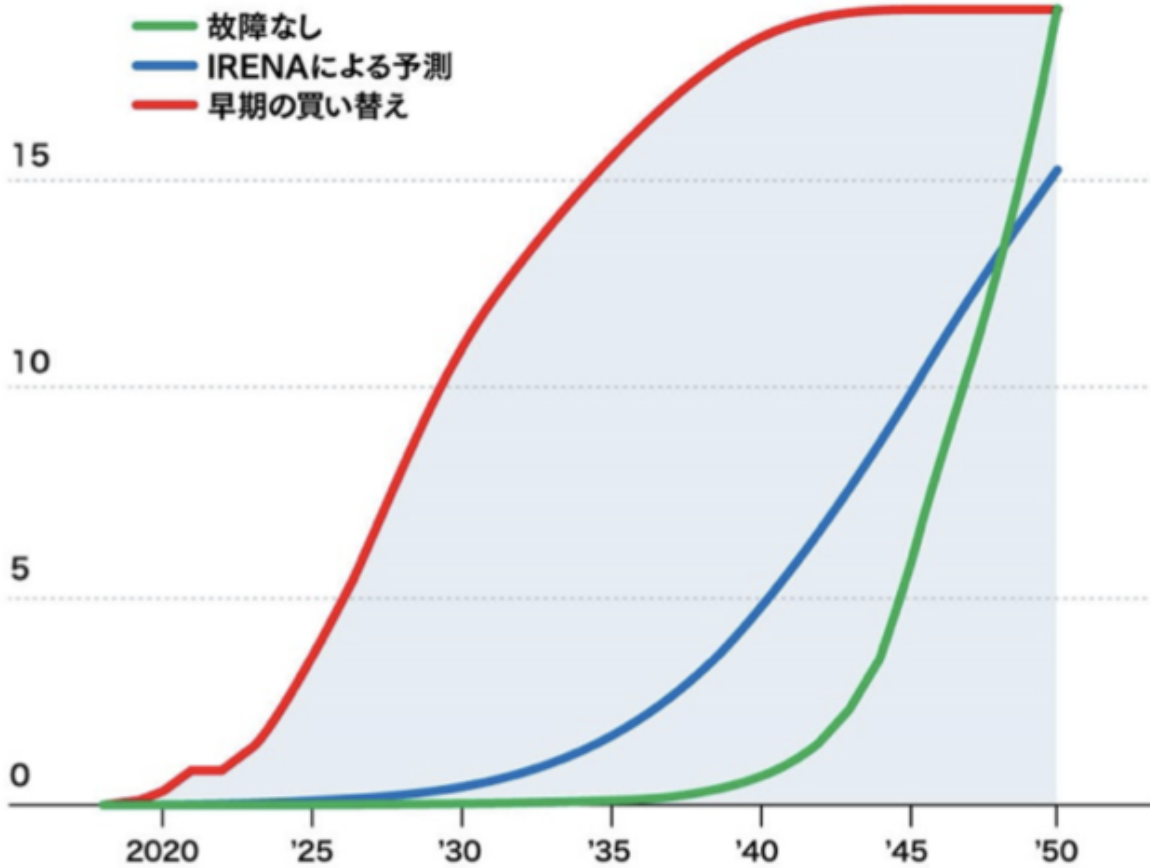




????????????????????20?25?30??  
 ??????

**廃棄物の累計**  
 (発電容量ベース)

20ギガワット



3?????????  
??DIAMOND ??????????

????????2035????????????????????????????????

????????????????????????????????PCB????????????????????????????PCB????????????????  
????????????????????????????PCB????????????????????

**?PCB???**

PCB??Poly Chlorinated Biphenyl????????????????????????  
????????????PCB??  
??

**?PCB???**

??PCB????????????????  
????????1968??43????????????????????????????PCB????????????????????  
????????43?10??  
????????????????????????????????

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

PCB????????????????????????????????1972??47????????????????30????????  
??  
??13?6?22????????  
????????????????????PCB ??????????????15????????

1972??PCB????????????????????????????PCB????????????????????2001??PCB?????  
2004????????????????????JESCO????????????????????????????????30????????  
????PCB????????

PCB????????2016????????????????JESCO????????????????????????????PCB?????  
????????????????????????????????PCB????????????????????????????  
????????????????????????????????

??

????????????????PCB??  
????????????????????PCB????????????

????????????????????????PCB????????????????????????????????????  
????????????????????????????????





??

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

??“?????”????????????  
??

?????22?2??  
?????????????????23?????

??  
????????

??  
?????????????????200??????

??YouTube??  
??

?????????????????????22?6??  
???4??

??

?????????????????6?????????????????????2??  
??

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

????????????????????????GPS??  
??????????????????

???2??YouTube?1????????  
?????????????????????1????????????????????????????????

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

??

?????????????????2??7?3??  
??

?????2??  
??

??



1?LCA?????????2?CFP?????????

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

??  
??  
?

??

??  
??  
?????SDGs?SBT????????????????????  
?????

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

??  
??  
??

??

??CFP??  
??  
??

??  
??

???????

??  
??  
??

??  
??

??CFP????????????

??  
??  
??







xijian/iStock

??IEA????????????Net Zero Scenario, NZE????????????

**A Critical Assessment of the IEA’s Net Zero Scenario, ESG, and the Cessation of Investment in New Oil and Gas Fields.**

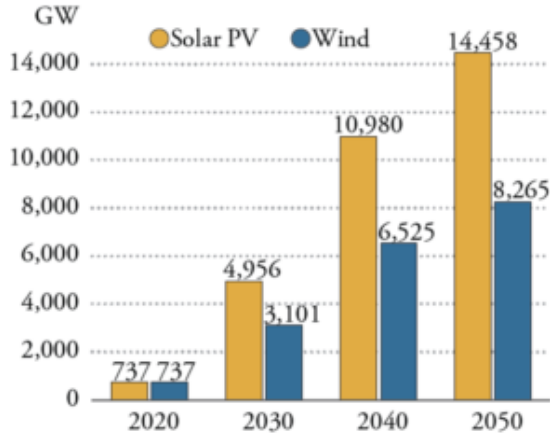
??PV??  
????????????

??PV??PV????????????????????????????????  
????????????

????????????????PV??PV????????????????????????  
????????????

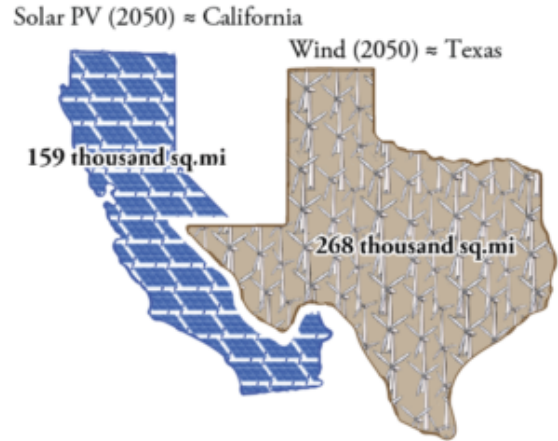


Figure 25. Global Solar and Wind Capacity in NZE



Source: IEA, *Net Zero by 2050* (2021)

Figure 26. Global Land Requirements for Solar/Wind Farms in NZE



Source: Energy Policy Research based on NZE  
Assumes sufficient/optimal grid infrastructure (transmission, storage) and current rate of efficiency

	万 km2	日本=1
メキシコ	197	5.2
フランス	55	1.5
カリフォルニア	42	1.1
テキサス	70	1.8
日本	38	1.0

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

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

????

????????????????????????????????1244?km2??????6??1??  
 ???

??

?



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

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

?? ? · Monday, July 3rd, 2023



CHUYN/iStock

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

????????

- 2025?????GHG?????2050?????10?????  
?????IPCC?????2030?43%?2035?60%?????
- 2030?NDC?????GHG?????LTS?1.5?????2050?????  
?????COP28?????2030?NDC?????2050?????

????????

?????G20?????1?30?12?12?COP28?????G7?????  
?????6?5?15?????

?????EU?????LMDC?????

?????LMDC?????

2030?45?????10?????  
COP27?????LMDC?????

COP28?????GST?????GST?????  
2023?7?5?????COP28?GST?????

GST?????3?????

2021?11?????IPCC?6?????  
?????3?????

GST?????  
???

GST?????IPCC?6?????  
?????1.5?????GST?2025?????

?????2024?????  
2020?????1000?????2030?????6?????  
?????GST?????

?????IPCC?6?????IPCC?????2025?????2030?43?2035?6  
0?????2019?????GST?????

?????TWN?Third World Network?IPCC?????

- IPCC?6?????3?????2,425?????1,202?????  
?????
- ??????UNFCCC?????  
?????...?????  
?????

- 10 ?????????????????????????????? IPCC  
 WGIII??  
 ???

?????????IPCC?????????????????????????????COP28?????????????????????????????????GST?????????  
 ?????????????????????

Posted in ???, ????? | No Comments »

### EV???????????????????????

?? ?? · Monday, July 3rd, 2023



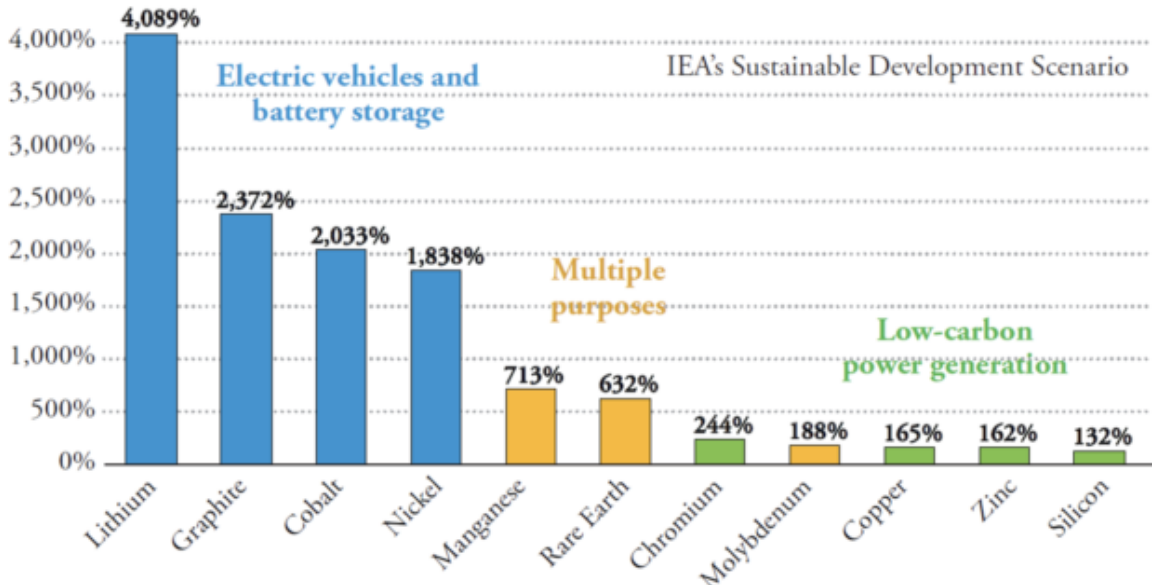
PhonlamaiPhoto/iStock

??(IEA)????????????Net Zero Scenario, NZE????????????????

**A Critical Assessment of the IEA’s Net Zero Scenario, ESG, and the Cessation of Investment in New Oil and Gas Fields.**

?????????EV??2020????2040????20????????????????????????  
 ??????????????????????????4089?????????40??20??????????????

Figure 33. Required Growth of Critical Mineral Supply (IEA's SDS scenario, 2020–40)



Source: Energy Policy Research, IEA, *The Role of Critical Minerals in Clean Energy Transitions* (2021)

EV??60kWh????????????????????????????????  
 150??200????????????????????

Table 13. Battery Chemistry by Content, Kg (60 kWh Lithium-Ion)

Mineral/Metal	NMC811	NMC523	NMC622	NCA+	LFP
Lithium	5	7	6	6	6
Cobalt	5	11	11	2	0
Nickel	39	28	32	43	0
Manganese	5	16	10	0	0
Graphite	45	53	50	44	66
Aluminum	30	35	33	30	44
Copper	20	20	19	17	26
Steel	20	20	19	17	26
Iron	0	0	0	0	41

NMC811 Nickel (80%) Manganese (10%) Cobalt (10%) NCA+ Nickel Cobalt Aluminum Oxide  
 NMC523 Nickel (50%) Manganese (20%) Cobalt (30%)  
 NMC622 Nickel (60%) Manganese (20%) Cobalt (20%) LFP Lithium iron phosphate

Source: Bhutada, G. VC Elements

EV??7000????????????????  
 100????????????????????EV??





?



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

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

?? ?? · Sunday, July 2nd, 2023



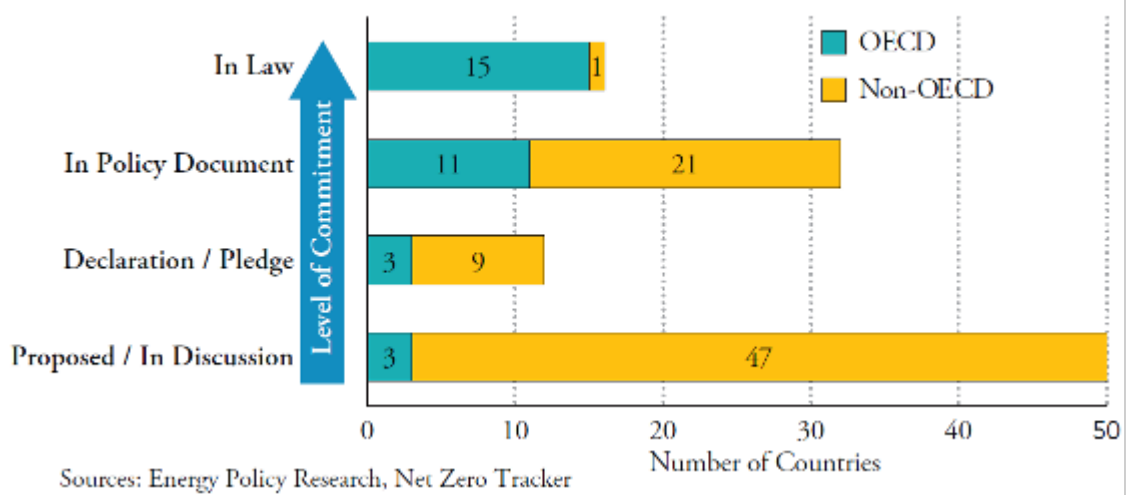
A Mokhtari/iStock

IAE Net Zero Scenario, NZE

### A Critical Assessment of the IEA's Net Zero Scenario, ESG, and the Cessation of Investment in New Oil and Gas Fields.

OECD 2050

Figure 49. Two-Speed Transition: Net Zero by 2050 Level of Commitment



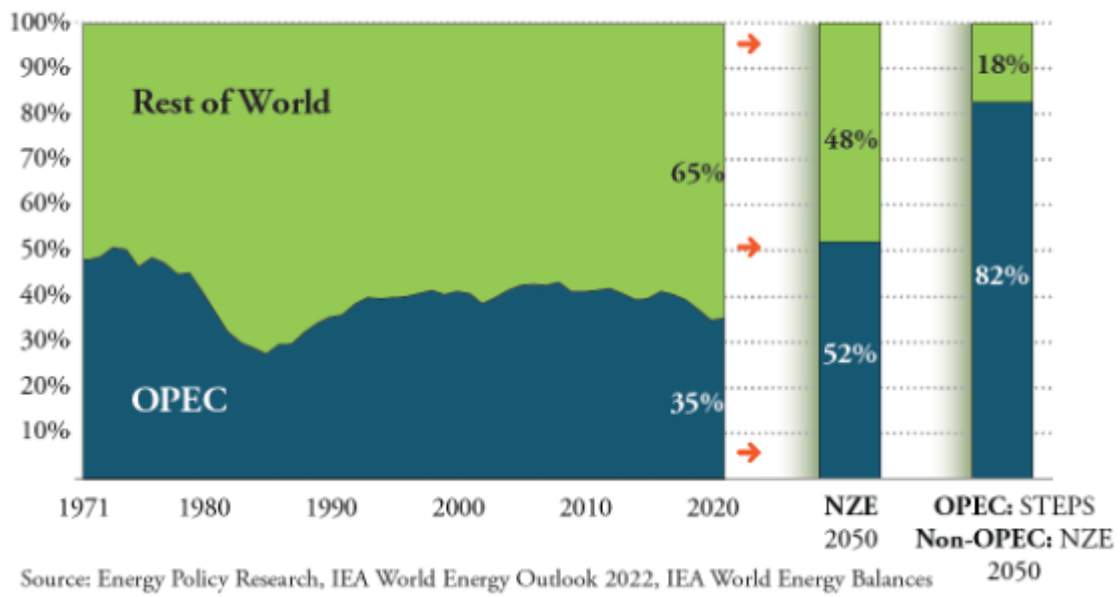
IAE Net Zero Scenario, NZE

OECD 2050

IAE Net Zero Scenario, NZE

OECD 2050

Figure 17. OPEC Share of Global Oil Production

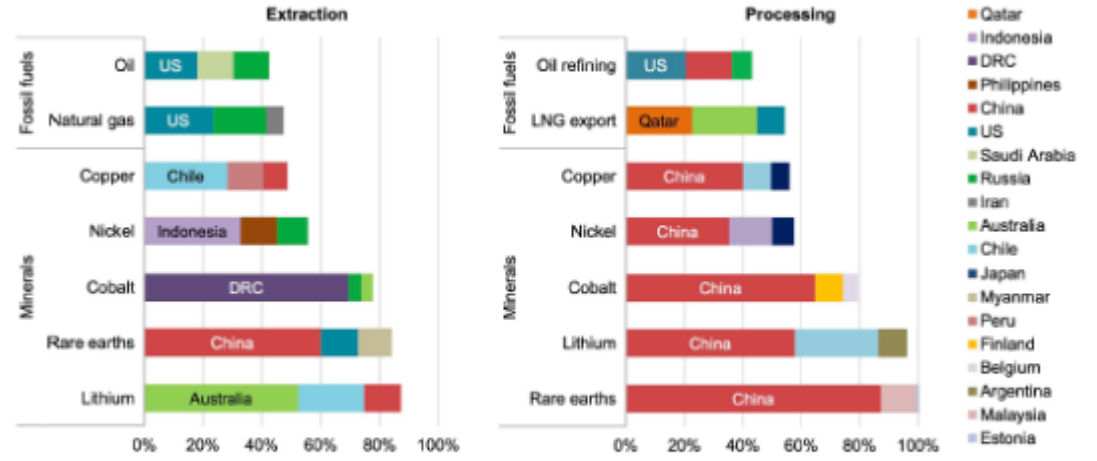


??OPEC??

NZE????????????PV????EV??  
??

????????????OPEC????PV????EV??

Figure 18. Share of Top Three Producing Countries in Production of Selected Minerals and Fossil Fuels, 2019



Notes: LNG = liquefied natural gas; US = United States. The values for copper processing are for refining operations. Sources: IEA (2020a); USGS (2021); World Bureau of Metal Statistics (2020); Adamas Intelligence (2020).

Source: IEA, The Role of Critical Minerals in Clean Energy Transitions (2021)

OPEC??NZE??  
??? NZE??

?



12????????????34????????????????????????????????????

????????????3????????????????????7????????????????12????????????????4????????????????

??



????????3?????4??

????????

?????????

????34????????2012??2???

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

??10??????

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

10??

??

??

???????SRZ-1200

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

??8??  
??  
?????????????

????????????PWR??SRZ?1200????????????????  
??

??

?????????5????1????????IT??

1????????????????????????????????SRZ?1200?120?kW??2????????????????????????????6200????????

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

??

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

### IEA????????????????????

?? ?? · Saturday, July 1st, 2023



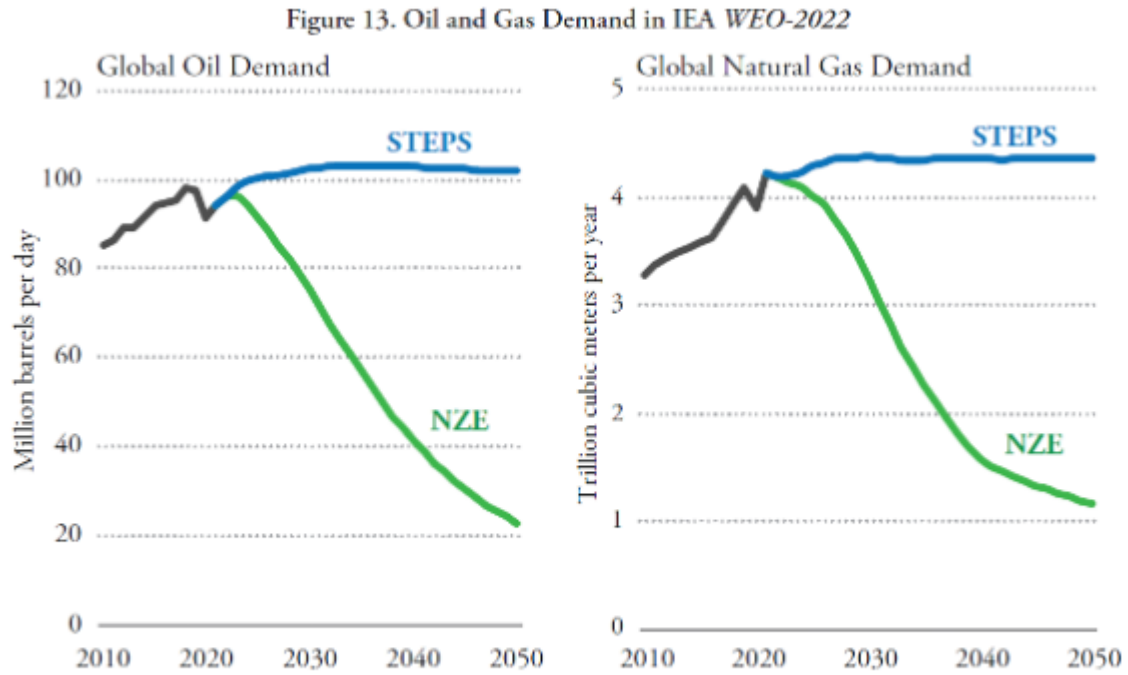
privetik/iStock

????????IEA????????Net Zero Scenario, NZE????????

????????IEA????????ESG??  
????????

**A Critical Assessment of the IEA’s Net Zero Scenario, ESG, and the Cessation of Investment in New Oil and Gas Fields.**

????????????????NZE??2050????CO2????????????STEPS????????????  
???



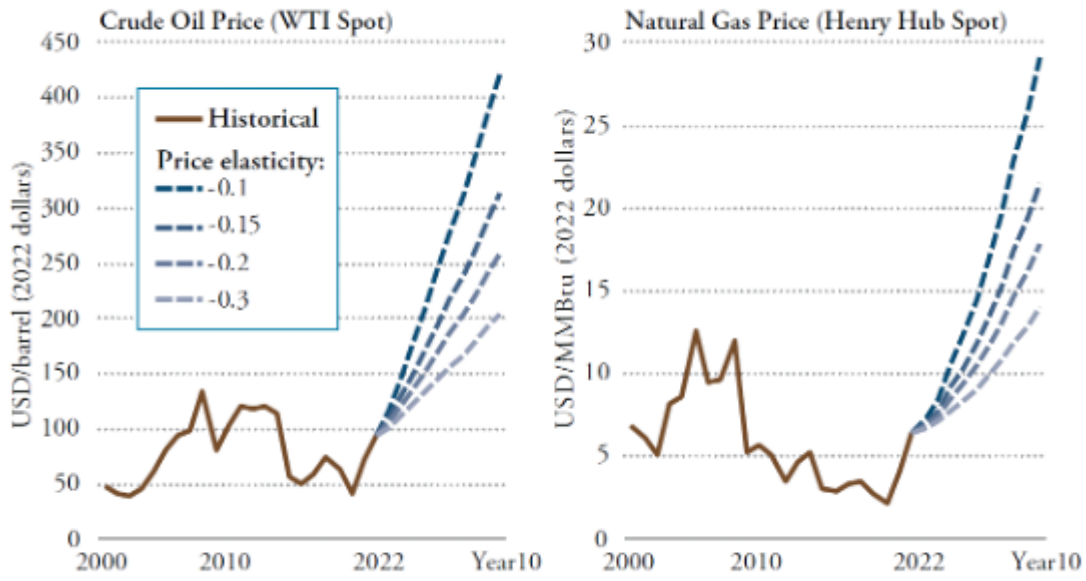
Source: Data from IEA, *World Energy Outlook* (2022) & *Outlooks for gas markets and investment* (2023). The data derived and estimated from graphs in the *WEO-2022* and the IEA’s gas report for the G7, as the IEA’s data tables only show scenario data for 2030 and 2050.

??NZE??

??  
IEA?NZE??  
STEPS??NZE????????????  
????????

??WTI????????????????200????400????????  
????????????????MMBtu??15????30??

Figure 14. Potential Price Spikes by Price Elasticity Level Under Net Zero Scenario



Source: Energy Policy Research based on IEA NZE

IEA NZE  
 NZE

IEA OPEC  
 IEA

?



Posted in , , | No Comments »

??????

?? ?? · Monday, June 26th, 2023





Rawf8/iStock

??6????????????????????ZDF????????????????  
 ?????????????????NATO????????????????

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



????????????????EF-2000  
 Wikipedia??

????????NATO??10????????????????????

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

??1933????????????????????????????????????100??37??

??

??1??30????????????????????????????????

??

6??



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

NHK??

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

??2??

????????????????????3??  
????????????????????“?????”??

????????????????????41??41??50????????????????????2?  
????????????????????????????????????

????????10??MAD????????????????  
??????

????MAD????????????????????NATO??  
????????????????????????????

????????????2014??  
??

??????1????H?2013??  
?H????????????????ZDF????????????

????????????S????????H????????????????????????13????????????????????????????????????  
??  
??

J??13????  
????????????????????????????

??  
??

?10??  
??

??  
??  
??

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

????????????????23????????????????2??  
??

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

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

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

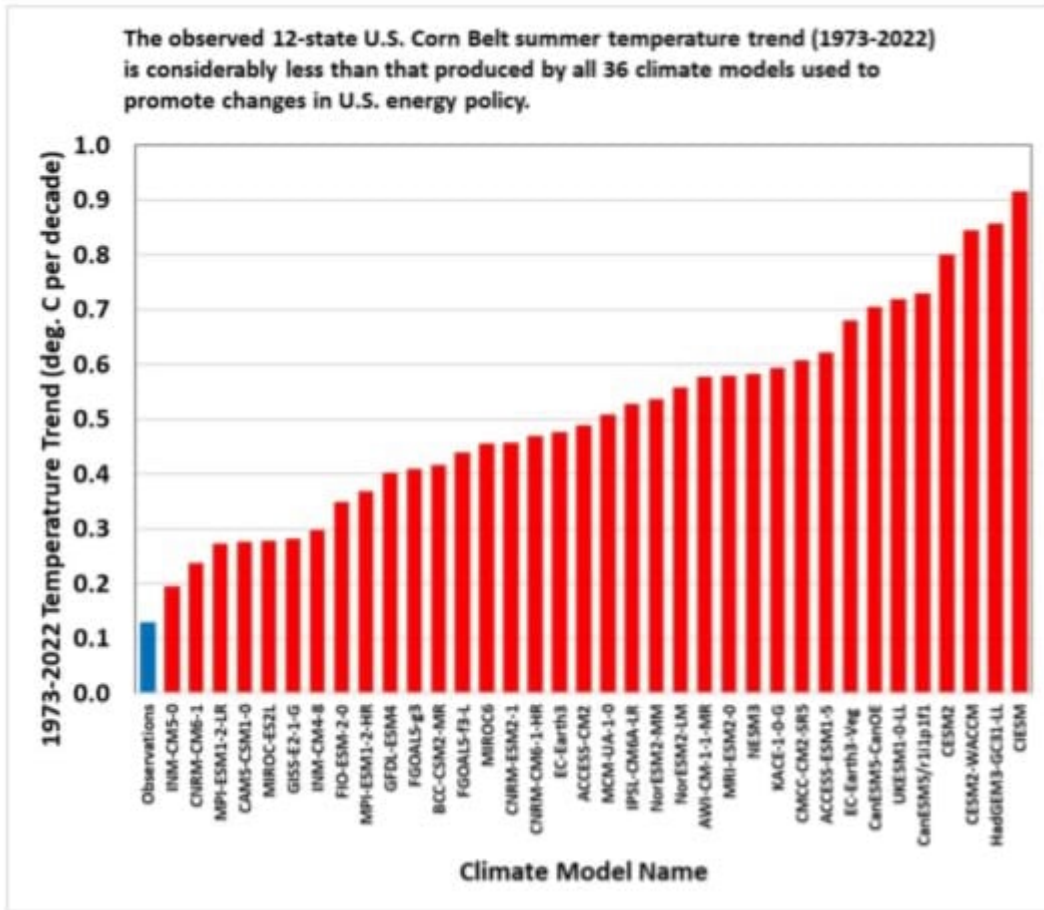
?? ?? · Friday, June 23rd, 2023



feellife/iStock

IPCC??  
???NOAA????????????????????????????

????????NOAA????????????????????????IPCC?????????36?CMIP6????????????SSP245????????  
??



????????????????????????????????12????????????????6??7??8????????1973????2022????50?????????  
?????????

????????????10????0.1??  
????????????????????????????

??

??

???NOAA??

?





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

?????1kW?????????????1kW??5000kW??  
 ?????????????????????5000kW?????????????

??  
 ???

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

??BWR????????????????????  
 ??????????????

??2013??  
 ??????????????????????

??  
 ????????

????????????????7????????????????????????????10??  
 ??????

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

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

?? ?? · Sunday, June 4th, 2023

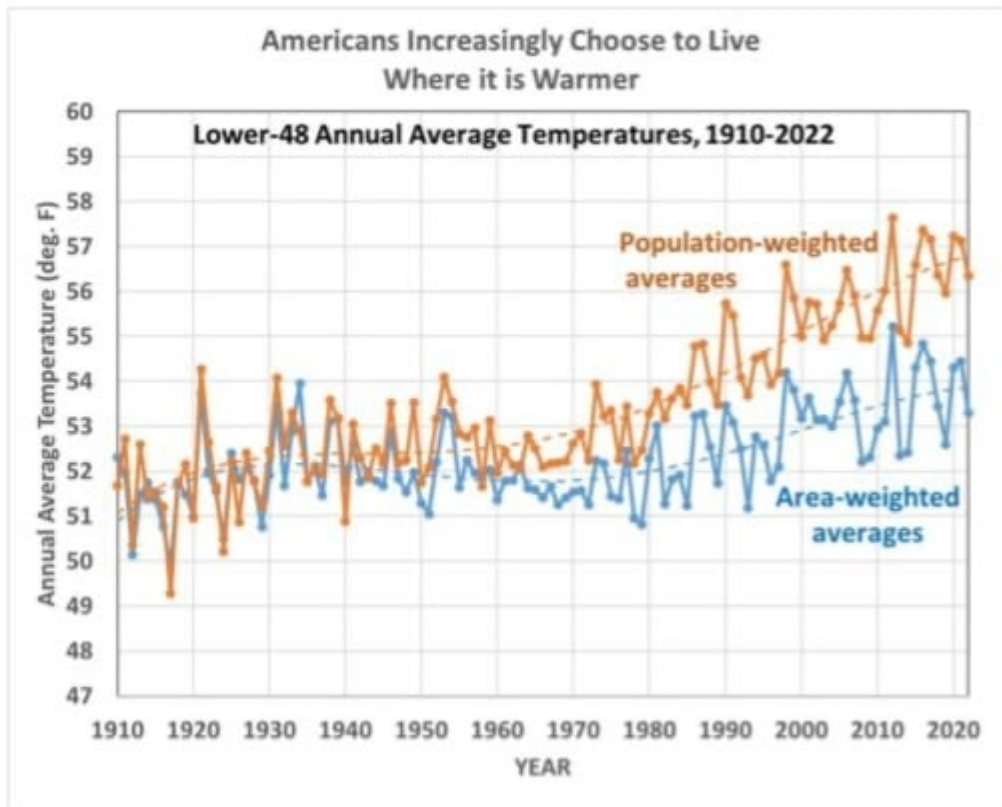




Darwel/iStock

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

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



????????48????????????????????48????????????????????1????????????????????2????  
?????

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

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

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

?

????????????????\_?? ?????????????????????



Posted in ???, ????? | No Comments »

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

?? ? · Monday, May 29th, 2023

????????????G7????????????5??1??  
??G7????????????????

?????G7??  
????????????????????????????????????1.5?2050????????????????????????????



spooh/iStock

[“The Energy Transition Confronts Reality”](#) 2023?1?23?G7?2022?1960?2022?2021?1970?

- RePower EU?
- 2021?4?
- LNG?
- 100?

????????????????80%??  
??How The World Really  
Works????4??  
????????????????????????????????????1????????????????????????5????  
??80????  
????????????????????????????????

- ???  
??  
??  
??GDP????50?  
60??  
??
- ???Big Oil????Big  
Shovel??S&P????205  
0????????????????????????????2????????????????EU????IEA????  
??16?25????  
????????????????????????????????
- ???

??1.5?2050????  
????????

??G7?1.5?2050????  
??

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

**3????????????????**  
?? ?? · Sunday, May 28th, 2023



sasun bughdaryan/iStock

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

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

????????1????????????????????????????????5?19????????6????????????????????

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



??????

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

**3??????**

????????2020?11????????????2????????

????????NUMO????????????2????????

??  
??

??  
??

??NUM  
O????????????????????

?????3????????????NUMO????????2????????????????

**???100????????????**

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

?2????????????????10????NUMO????????????????  
??

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

????????

??

??

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

????????NUMO?????25?10????????????

????????????100????500????????????  
?????1718?????792????743????183????

??  
????????????????20????????????

**???????**

????4?28????????8????????

????????NUMO?100????????????100??  
????????

?????????—?????????

??  
?????????

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

????????????????????????????Gx????????????????????????????????????Gx?????????

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

# **Gx????????????**

?? ?? · Saturday, May 27th, 2023



PhonlamaiPhoto/iStock

????????????????Gx<sup>21</sup>?5?12????????????????????10???20????Gx????????????Gx????????  
????????????????????????????10???150????????????????????????????????????

????????????????????????????????8????????????????<sup>22</sup>????????????????????????  
??  
????????????????????????????????????





??6????????????????  
?

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

??Gx????150  
??

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

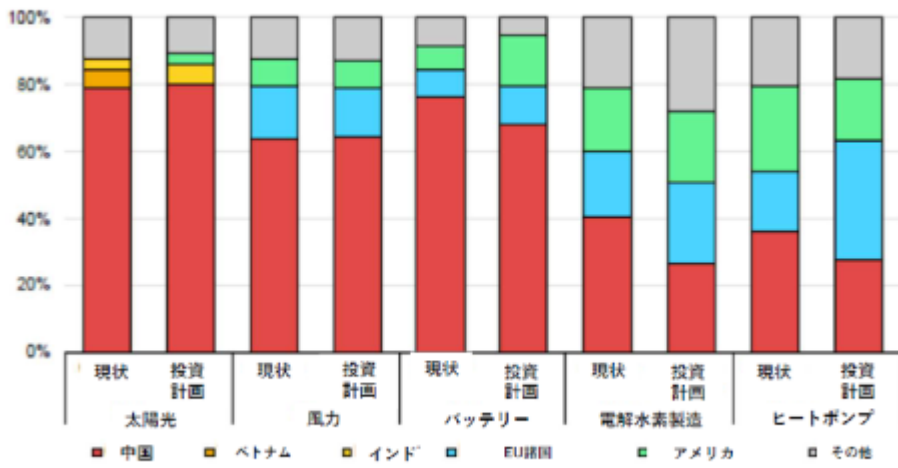
????????????????????????10??ENECO????2012?  
????Q??Q????4????????????????  
????????

????????????5800??  
??FIT????????????????????  
??  
????????????????????????????<sup>242</sup>?

??  
??

????????????????????????3????IEA??  
????????????????????2030????????????????????????????????????

図3. グリーン技術製造の地域集約度ー現状と将来



出典：The State of Clean Energy Technology Manufacturing, IEA, May 2023

????????????????????????????2040????????????????????????????????????  
10????????????70?80????????????

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

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

??  
??  
??

??  
??

??<sup>5</sup>????????????????  
??

?

?1??

?2??85??2020????????84??2019??????

?3?“Securing Clean Energy Technology Supply Chains”, IEA, July 2022 / “The State of Clean Technology Manufacturing”, IEA, May 2023

?4?Reuters, 2011?1?17?

?5????????????????WTO??

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

## G7????????????????????CO2??

?? ?? · Wednesday, May 24th, 2023

????????COP????????????G7??



????  
????2050????CO<sub>2</sub>??  
??1.5????????????????????????  
????????????????

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

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



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

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

????1960??CO<sub>2</sub>????????????

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

1960??SO<sub>2</sub>????????????????????????????  
??SO<sub>2</sub>????????????????????????????

??



??1960??????????????????????????

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

????????????????????SO<sub>2</sub>????????????????????SO<sub>2</sub>????????????????????

??SO<sub>2</sub>????64????????????????????  
??

??  
????????????????????????????????puff??  
??????

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

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

????SO<sub>2</sub>????64????????????????CO<sub>2</sub>????????????CO<sub>2</sub>????????????44????????????N<sub>2</sub>?79????  
O<sub>2</sub>?21????????29????SO<sub>2</sub>????CO<sub>2</sub>?50????????

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

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

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

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



???Twitter by True Science PEng, DFP, ADFS, MA, MBA



??????CO<sub>2</sub>????50%

????????????????????????????????3300m????????????????CO<sub>2</sub>????????????????????????????

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

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

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

??

??

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

??SO<sub>2</sub>????????CO<sub>2</sub>??

??

????????

????????CO<sub>2</sub>????????3????????????????8??

????????0.00X????????

??CO,  
?

??  
??

?????

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

?CO<sub>2</sub>?  
O<sub>2</sub>?

??CO<sub>2</sub>?  
??80??  
??1000ppm?

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

????????

?? ??? · Monday, May 22nd, 2023



Wikipedia??

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

G7??

??2????????????????START????????????????????????????????  
????????????????????3??2035????????????????4????????????????????  
??

??

**2010????????????????????????????**

????????????????2009?9??PMDA?????????  
????????START????????????????????????????????????34????????????????????????1?7????????????????  
????????????

????????????????????????????BN600???BN800????????????????MOX????????????????

??  
????????????????????Jr.????2007????????????MFFF???MOX????????????????????MOX????????????  
????

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

2009??  
????PMDA????????????????????????

??MOX????????????????????????????  
????????????2012???MFFF????????????????????????????<sup>21</sup>????MOX????????????????????

??2014????????????????8????????????  
????MFFF????????????2016?2??  
????????????3????????

????????????????????????????10?PMDA??  
????????????????????MOX????????????????BN800????????????BN600????MOX????????????  
????????

???MFFF????????????????????????????????????1?7????????????????PMDA????  
??MOX?  
????????????????????

??

**???IF??????**

MFFF????????????????????78????????????????1????????????????????  
????????????????????PMDA????????????????

????????????????????????????????1????731??????10????????????????????????????????  
????????????????????1????????????

??IF????MFFF??  
??  
?PMDA??

PMDA??

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

?

?1??  
??

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

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

?? ?? · Saturday, May 20th, 2023

??????????????????2035????????????????????????EV????????????????????

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





Allkindza/iStock

??????????

??4?12??

**FACT SHEET: Biden-Harris Administration Proposes New Standards to Protect Public Health that Will Save Consumers Money, and Increase Energy Security**

??????????

- ????CO<sub>2</sub>????????100????CO<sub>2</sub>????????????????????????????????
- EV1????????????12,000????????????????????200????????????????????????????
- ?????????????2032????????????????SUV????????????67????????????????????50????????  
????????35????????????????????25?????????

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

- CO<sub>2</sub>??5000ppm????????????????????????1000ppm????????????????
- ?????CO<sub>2</sub>??430ppm??
- EV1????????12,000??
- ???
- ?????????????????XL??  
??  
????????????????????

??

2032 EV EV 78

EV EV 78

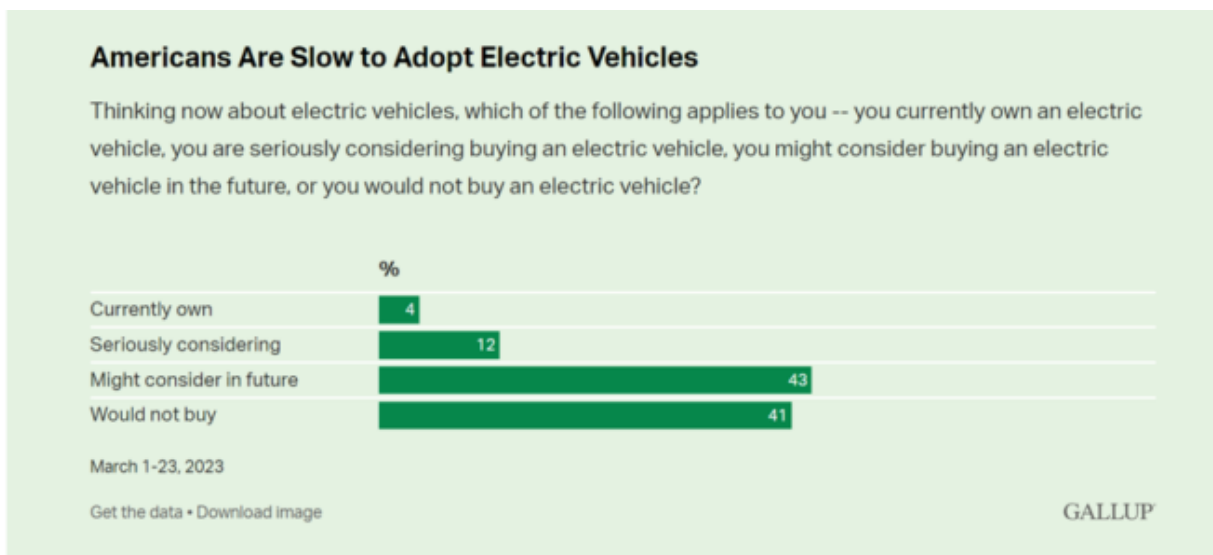
????????

????????

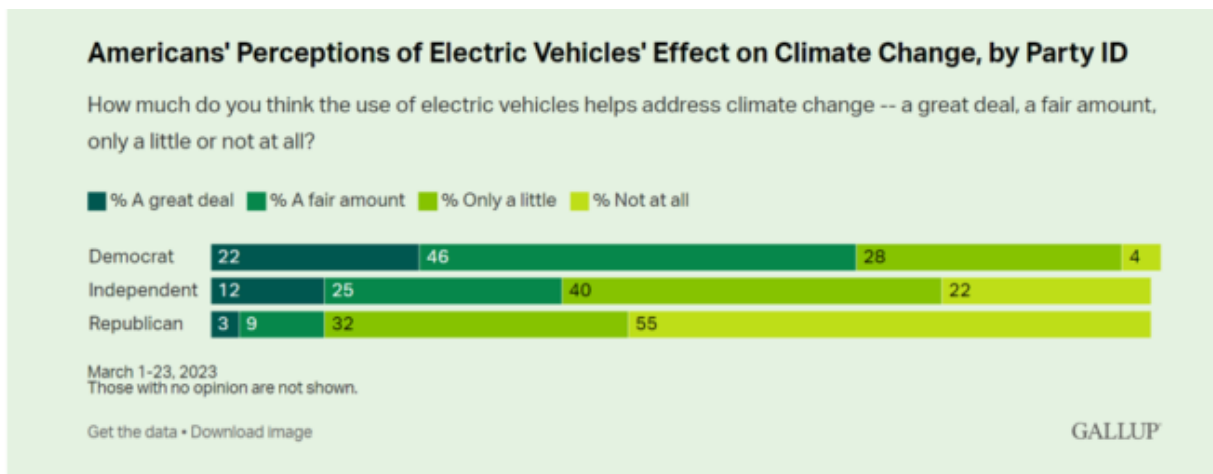
## Most Americans Are Not Completely Sold on Electric Vehicles

????????

- EV 4
- 43% EV 41% EV 78



- EV 75 EV 16 EV 58
- EV 22 EV 46 EV 3 EV 2 EV 46 EV 4
- 55% 32% EV 3
- EV 46 EV 4



??

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

??????????

57??2026????10??EV????????????????????150?????  
????????

??????EV????????????????????????????????FCV????????????????????HV????????????????????????????????  
????EV????????????????????

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

# IPCC?????63????????????????????????????

?? ?? · Tuesday, May 16th, 2023



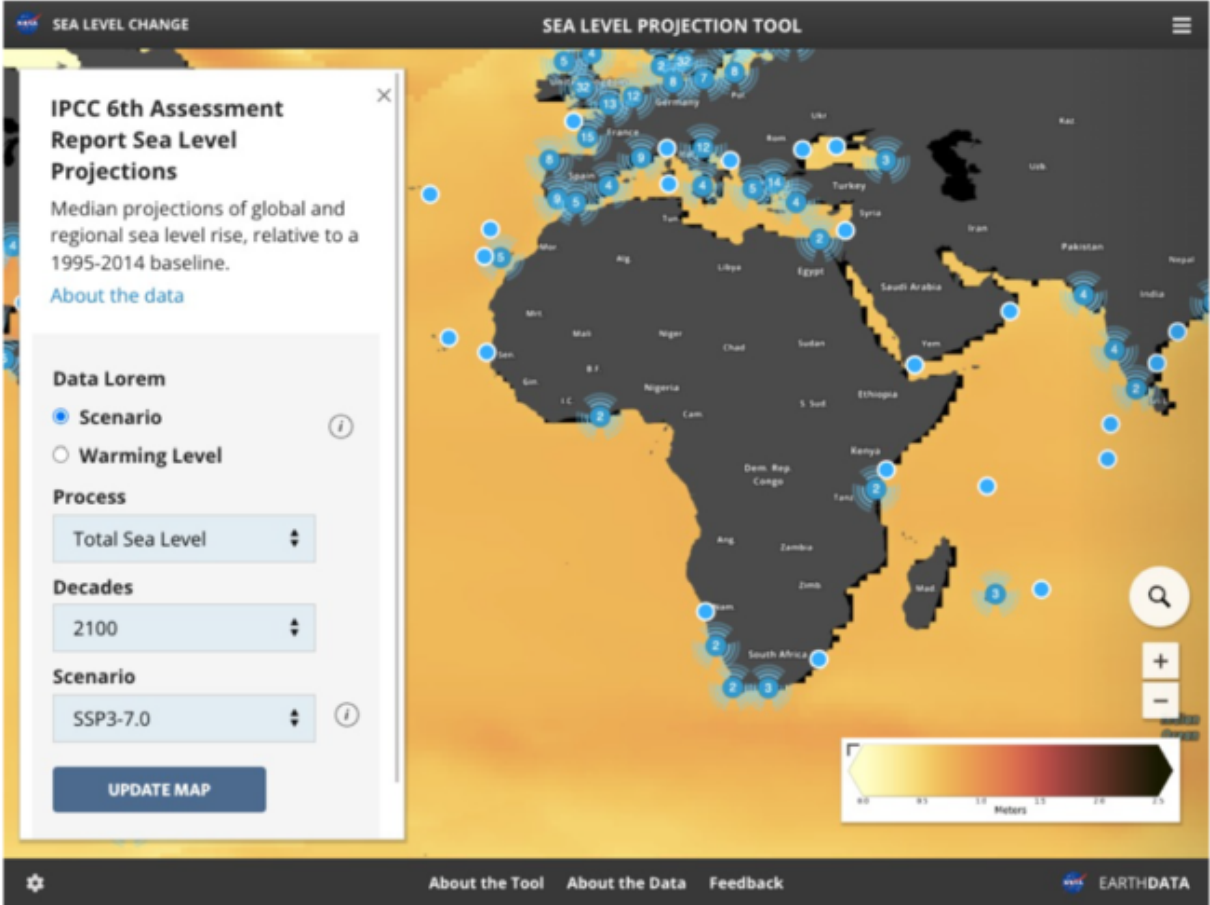
remotefx/iStock

????????????????IPCC????????????????????????????????2023?4????????????????????????????????????

?

IPCC??

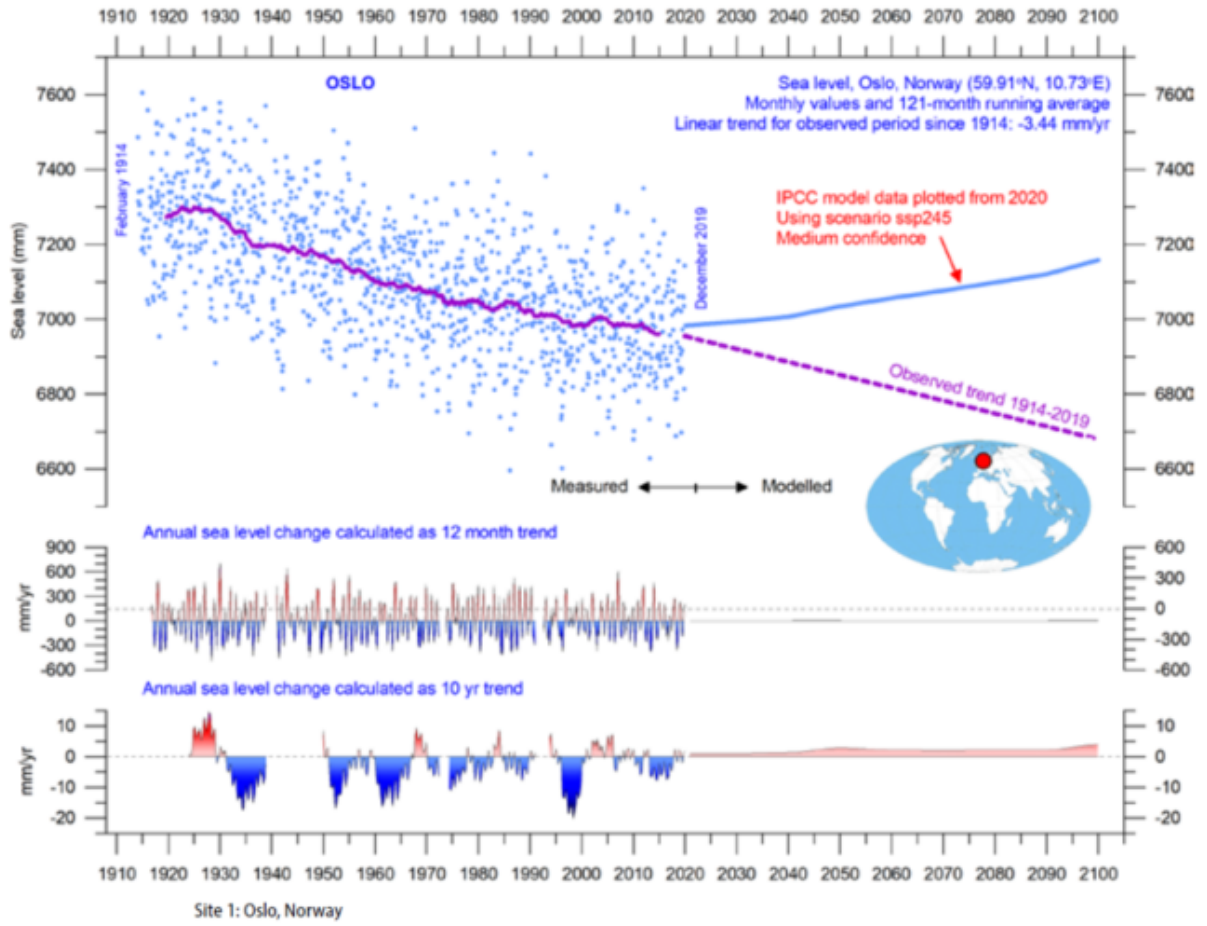
## IPCC AR6 Sea Level Projection Tool



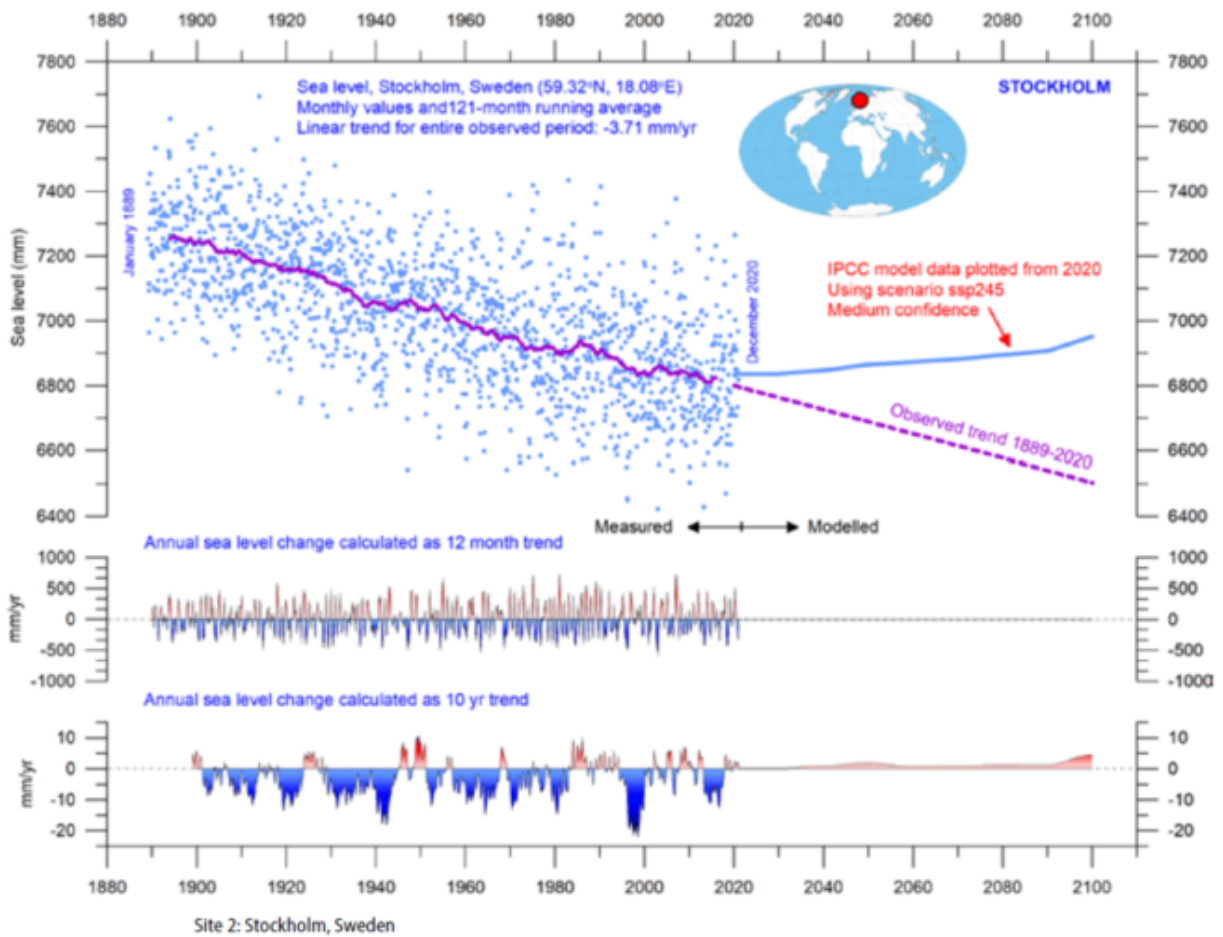
**IPCC AR6 Sea Level Projection Tool**

??  
??SSP245??????????

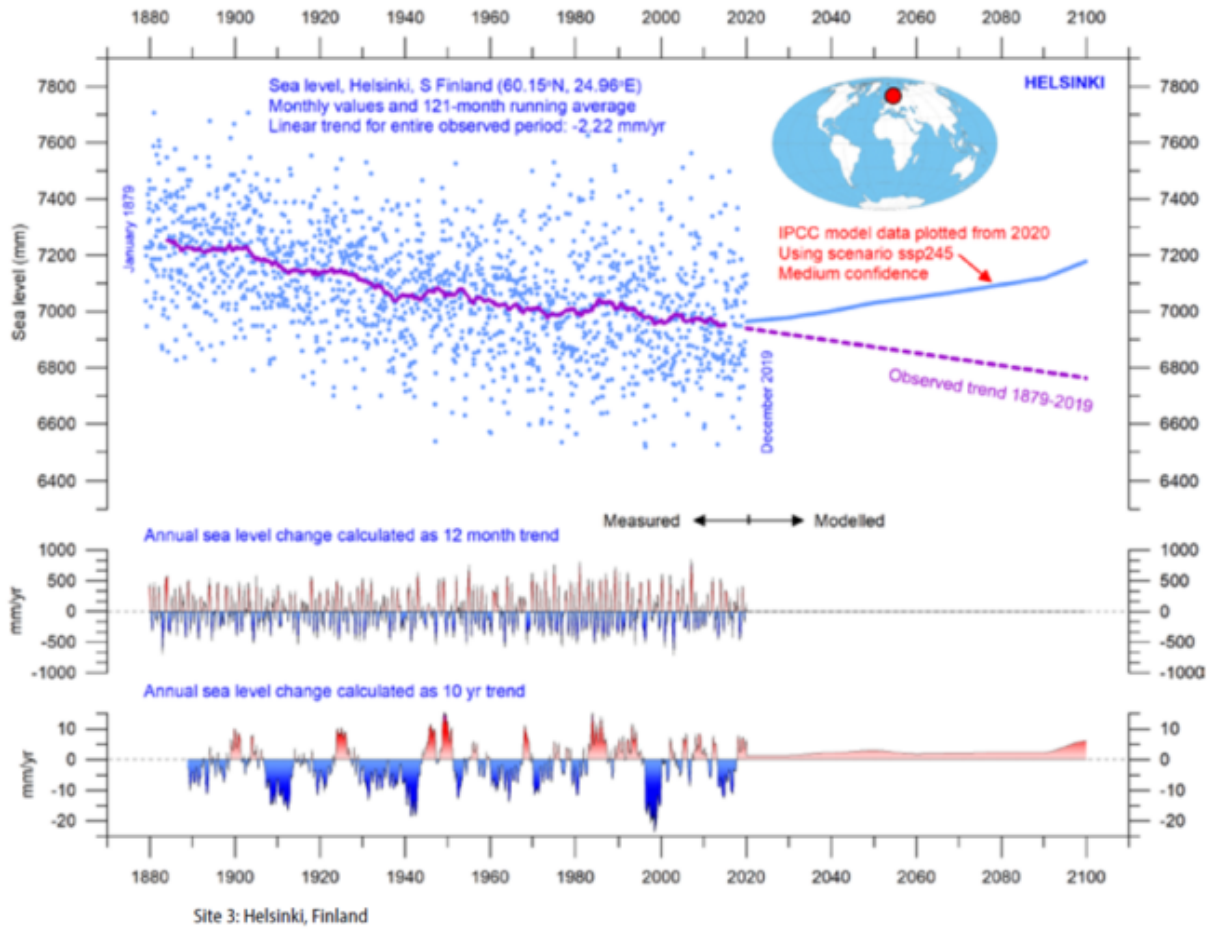
??IPCC  
????????



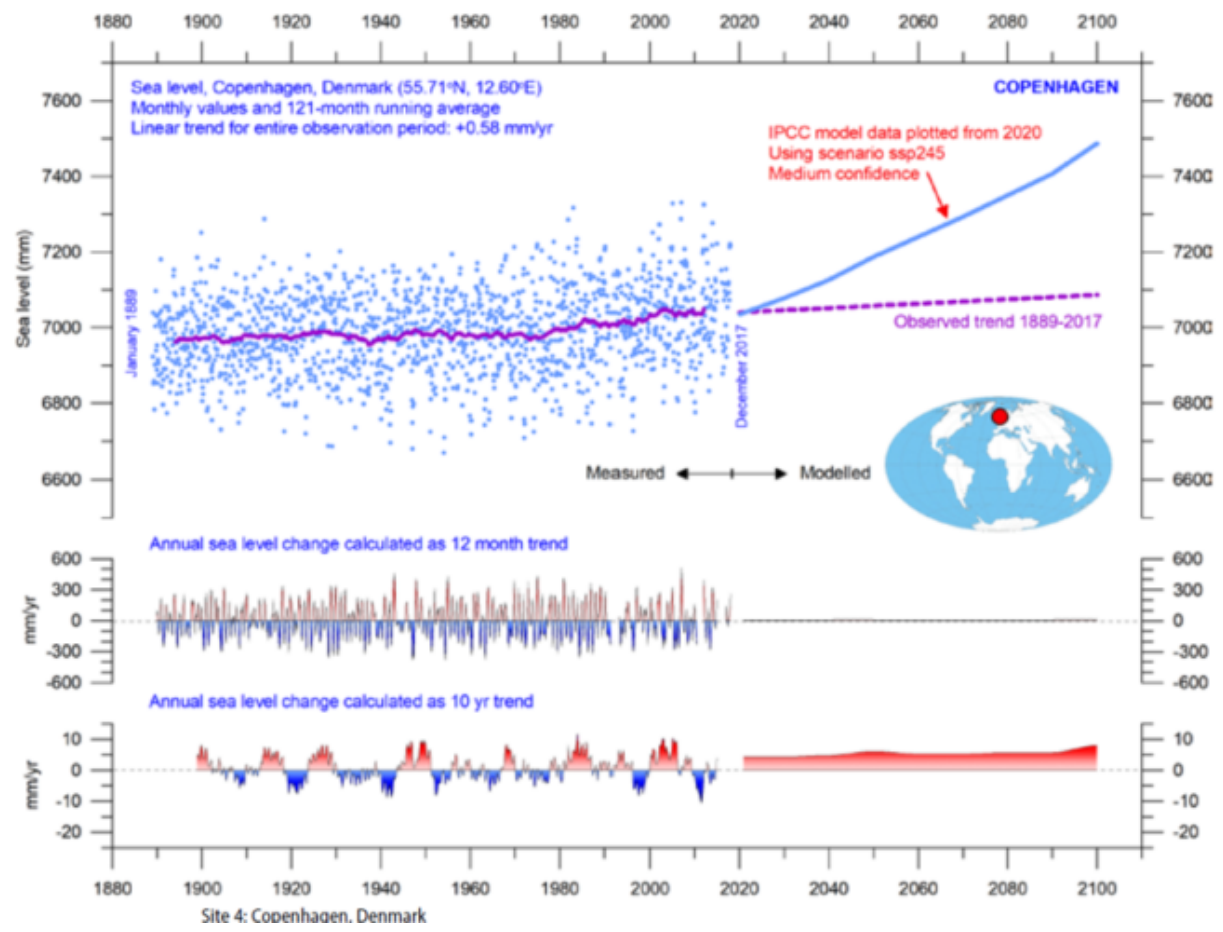
??????????



??????



??



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

??2000????????????????  
 ???

??  
 ???

??

?IPCC??

??????

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

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

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

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

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

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

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

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

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

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

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





?IPCC?????62??????????????

?

????????????????\_?? ?????????????????????



Posted in ???, ????? | No Comments »

**IPCC??????62??????????????????**

?? ?? · Monday, May 15th, 2023

????????????????IPCC????????????????????????????2023?4??

?

??

??



????????????????????????????????????  
Wikipedia??

??

- ??????????8400???4000?????????400m???
- ??????????9000???2500?????150-200m???
- ??????????400m???
- ??????????9500???6500?????600-700 m???
- ??????????????????10600?????7500?????235???????

??

??100m?0.65?????200m??1.3??400m??2.6???????

????????????????????????????????????10000???6000??????????????????????????????????



?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????100????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????CO2????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????CO2????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????CO2????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????CO2????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????CO2????????  
?IPCC????????????????  
?IPCC????????CO2????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????????????  
?IPCC????????51????????  
?IPCC????????52????????  
?IPCC????????53????????  
?IPCC????????54???? CO2????  
?IPCC????????55????????  
?IPCC????????56????????

?IPCC?????57?????????????  
?IPCC?????58?????????????  
?IPCC?????60?????????????  
?IPCC?????61?????????????

?

??????????????\_?? ?????????????????



Posted in ???, ????? | No Comments »

**IPCC?????61?????????????**

?? ?? · Sunday, May 14th, 2023



borchee/iStock

????????????IPCC????????????????????????????????2023?4??

?

IPCC?????4???????Snow Cover Extent, SCE??

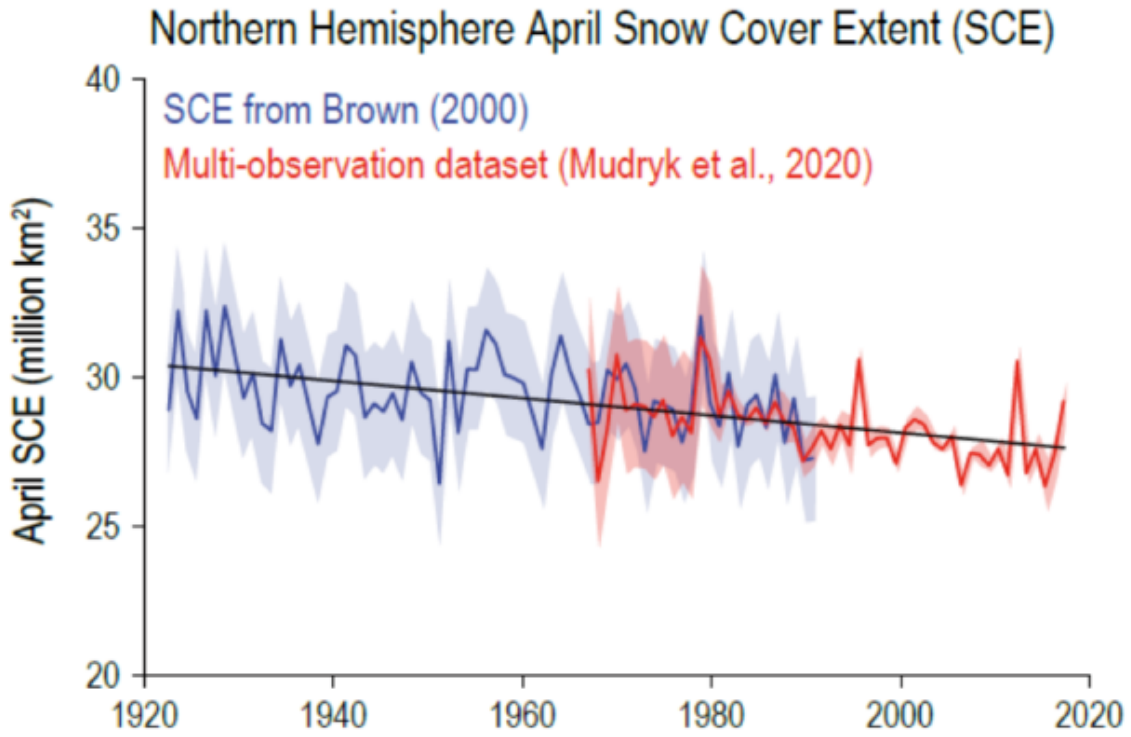


Figure 2: April snow cover extent (SCE) for the Northern Hemisphere. From: AR6, chapter 2.

??IPCC????4????????????????????????????????????

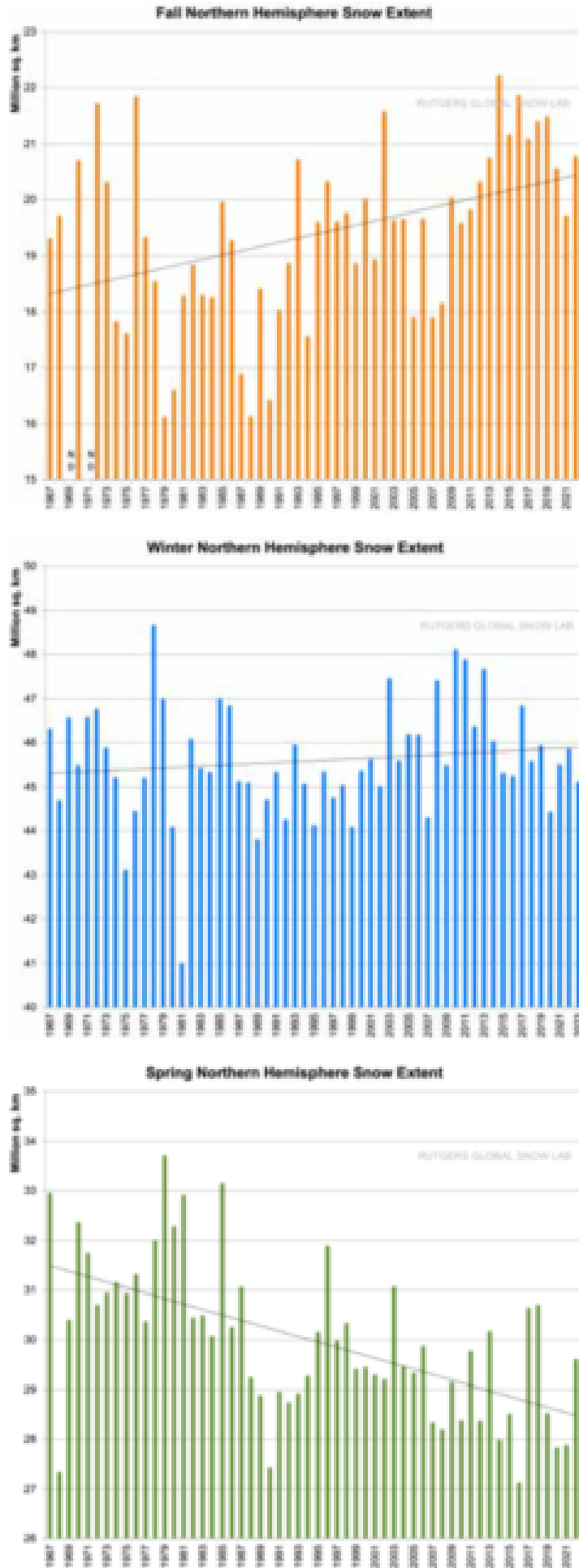


Figure 4: Snow cover extent (SCE) for the Northern Hemisphere for autumn, winter and spring. From: Rutgers Global Snow Lab (2023)



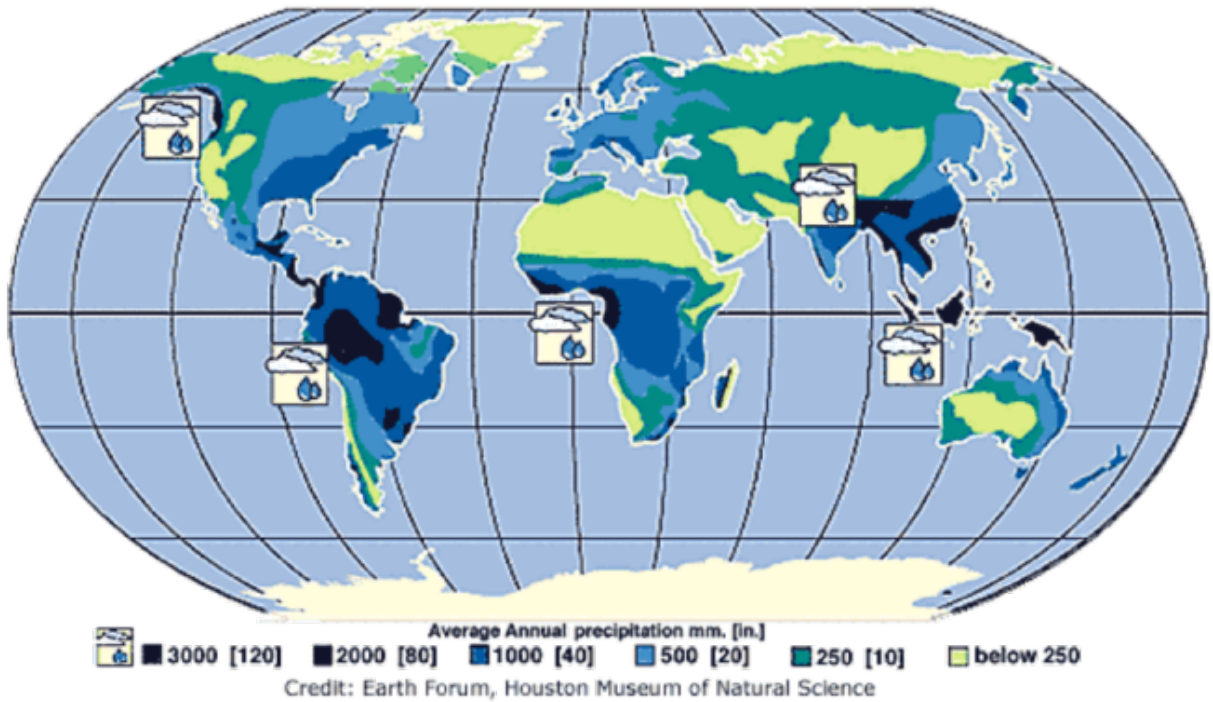
??

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

??IPCC??  
???

??

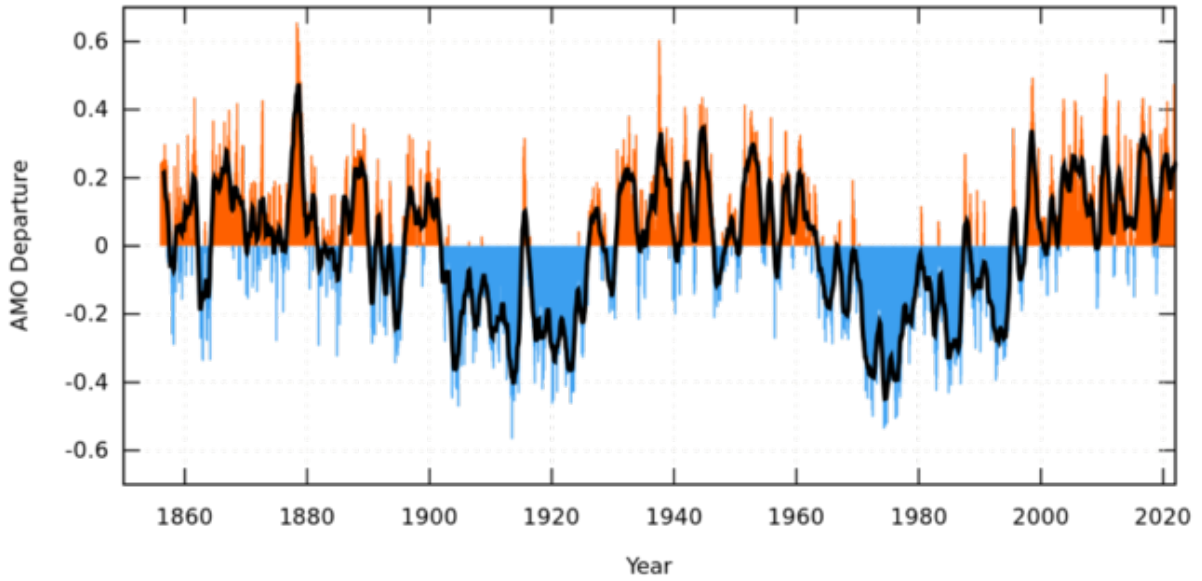
??  
????????????????????????????????250????????????????????



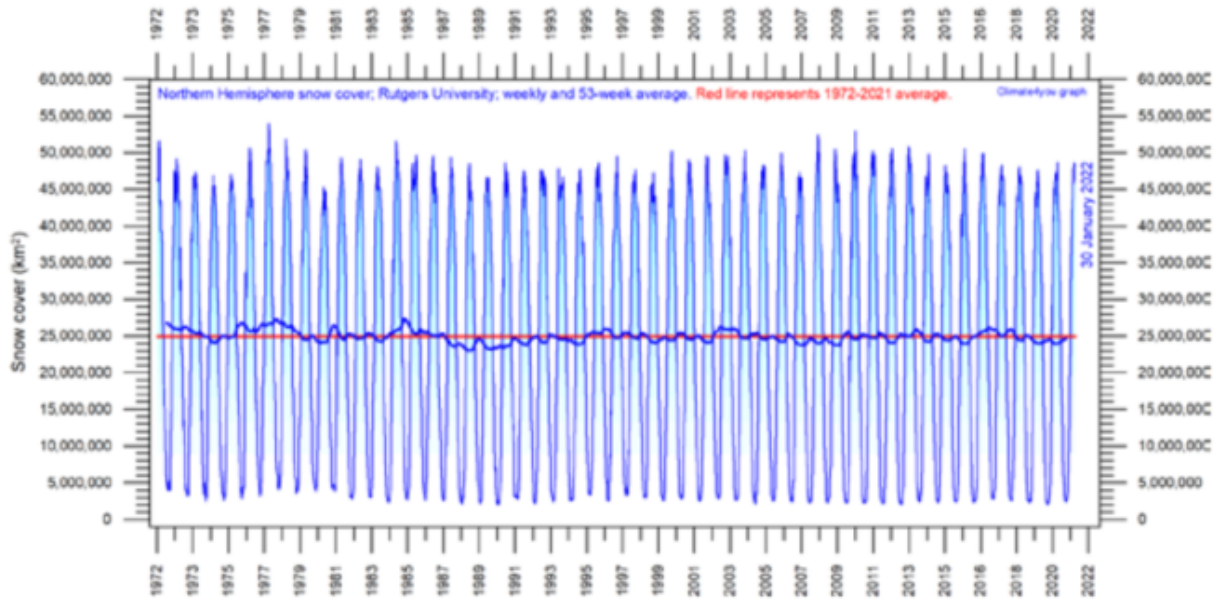
??

??1967??2022????56????????????????????????????????AM  
O????????60??AMO????????????????

Monthly values for the AMO index, 1856 - 2022



???1972??



**Figure 7:** Northern hemisphere weekly snow cover since January 1972 according to the Rutgers University Global Snow Lab (<http://climate.rutgers.edu/snowcover>), the thin blue line is the weekly data, and the thick blue line is the running 53 week average (approximately 1 year). The horizontal red line is the 1972-2021 average. Last week shown: week 1 in 2022. Last figure update: 11 January 2022. Source: Ole Humlum, climate4you.com

??

??????

- ?IPCC????????????????????????????
- ?IPCC????????????????????????????
- ?IPCC????????????????????????????
- ?IPCC????????????????????????CO2?????
- ?IPCC????????????????????????????
- ?IPCC????????????????????????????
- ?IPCC????????????????????????????



?IPCC?????56????????????????

?IPCC?????57????????????????

?IPCC?????58????????????????

?IPCC?????60????????????????

?

??????????????\_?? ?????????????????



Posted in ???, ????? | No Comments »

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

?? ??? ?? · Thursday, May 11th, 2023





??

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

??

??  
??

5?????Insa????????????????????????????????1????????????????13????????????????  
??

????????????????????180??  
??

??

?

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



Posted in ???, ?? | No Comments »

**RFK Jr.?2024????????????????**  
?? ?? · Wednesday, May 10th, 2023



?????????F?????????  
kennedy24.com??

4?5?????F?????????2024??F????????????????????  
?????F???????????????????

??  
??????

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

??

- COVID??
- ???
- ???
- ???40??1980??
- ???
- ???
- ???
- ???





- ???
- ?????????????????18 ??? 29 ???62% ?????????????????50 ???????????40??????????
- ???18 ??? 29  
??????????22%??50 ???????????10??????????

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

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

?????????2024??

??  
News??20????????????????????

??

??

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