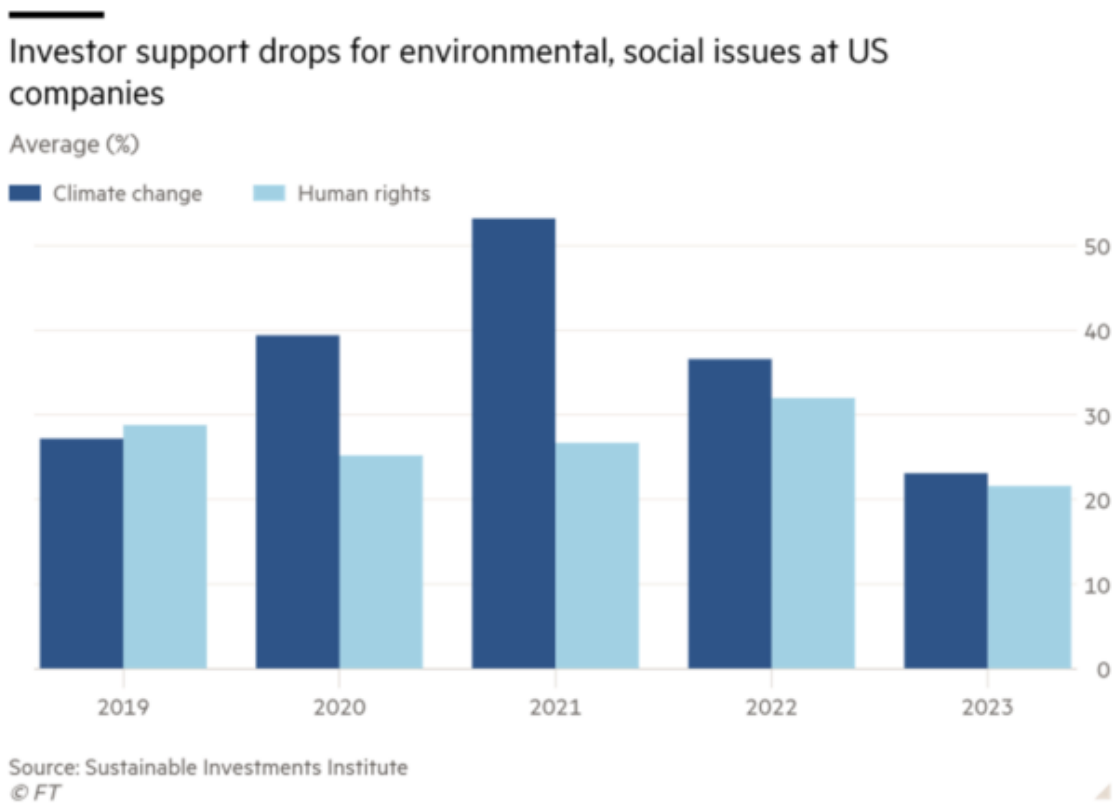


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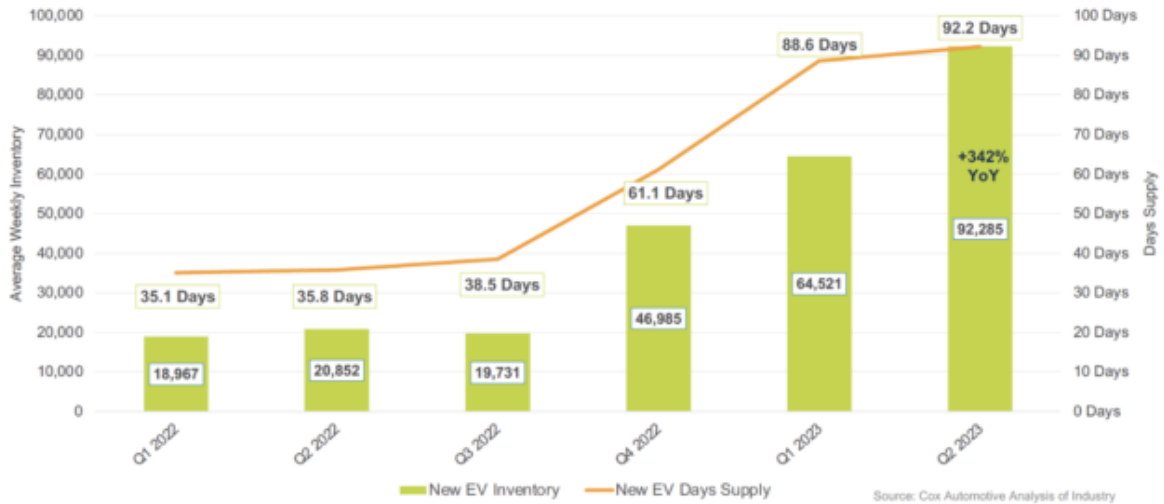
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2023 Cox Automotive Mid-year Review 2023
92,000 2022 342%

NEW EV INVENTORY & DAYS' SUPPLY ESTIMATES

EV inventory is having a "Field of Dreams" moment – and days' supply follows



COX AUTOMOTIVE

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12 EV

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NickS/iStock

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Nobel Physics Laureate 2022 Slams ‘Climate Emergency’ Narrative as “Dangerous Corruption of Science”

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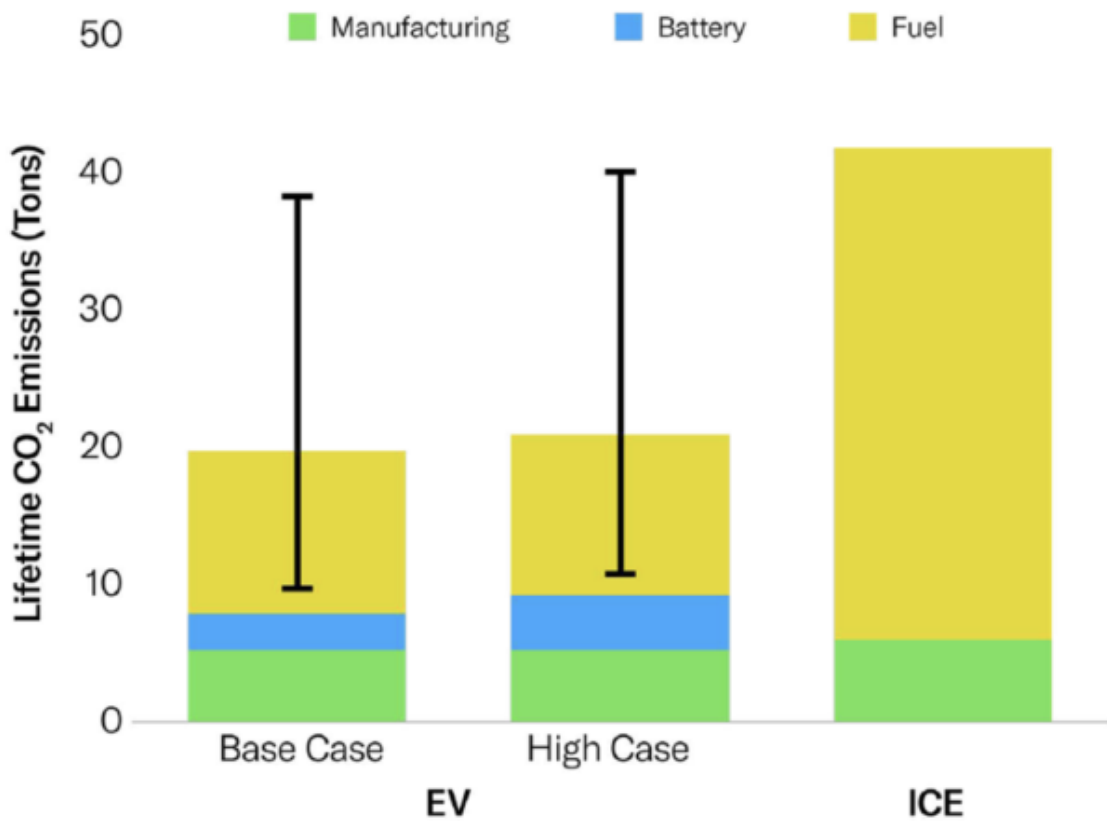
??????2????????????CO2????????????????EV????CO2??

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Figure 3

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



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

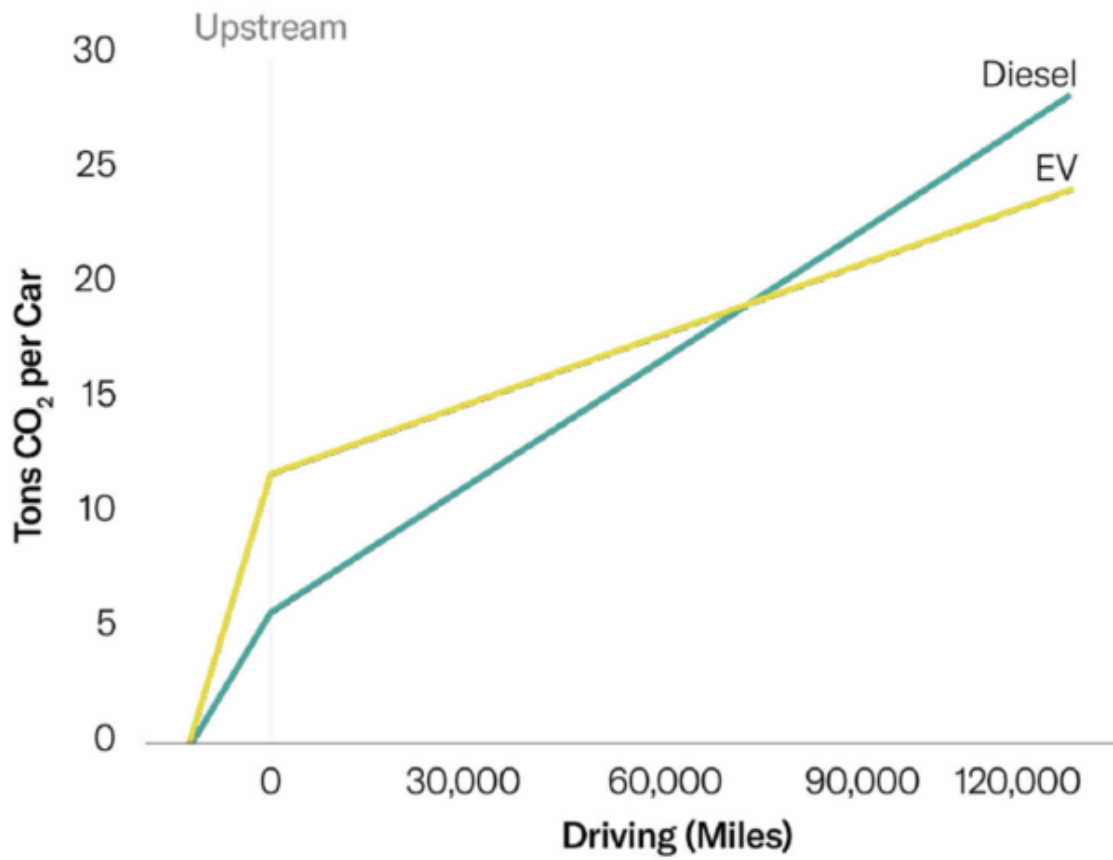
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Figure 4

Life-Cycle Emissions: Volkswagen EV vs. Diesel



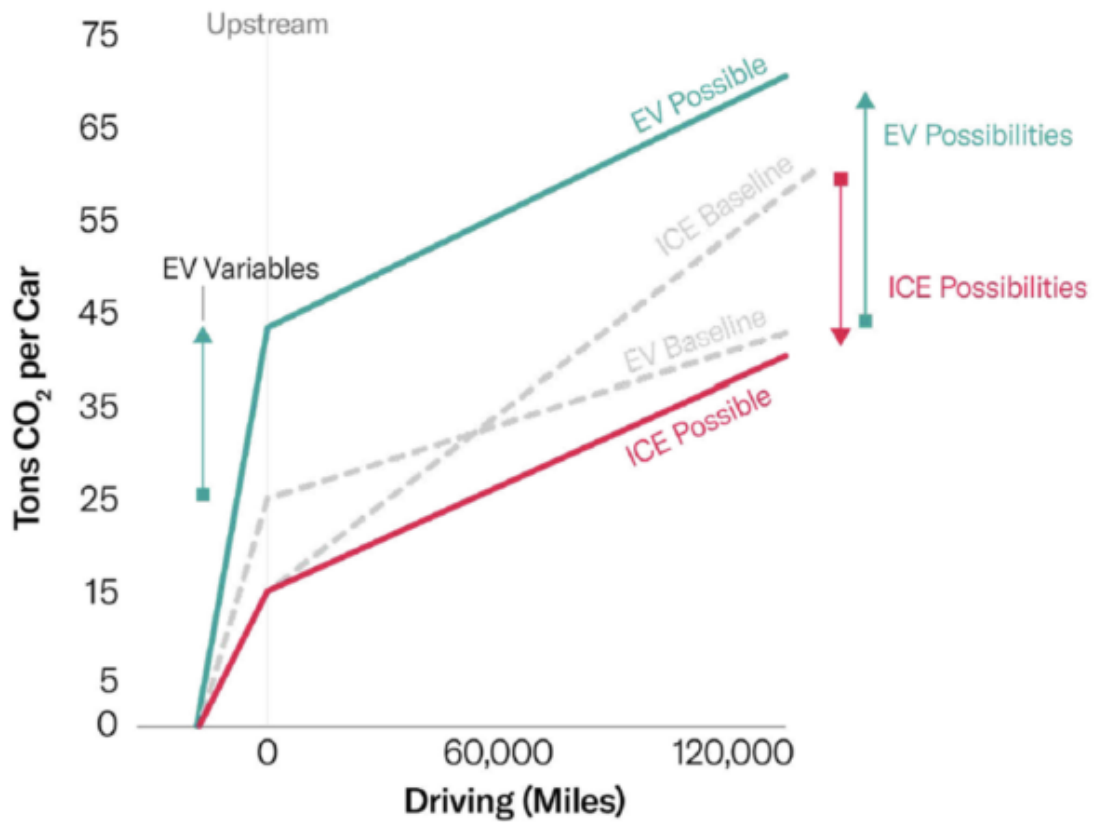
Source: Maciej Neugebauer, Adam Żebrowski, and Ogulcan Esmer, "Cumulative Emissions of CO₂ for Electric and Combustion Cars: A Case Study on Specific Models," *Energies*, Apr. 6, 2022

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Figure 6

EV vs. ICE CO₂ Emissions: Scenarios with Known Unknowns



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

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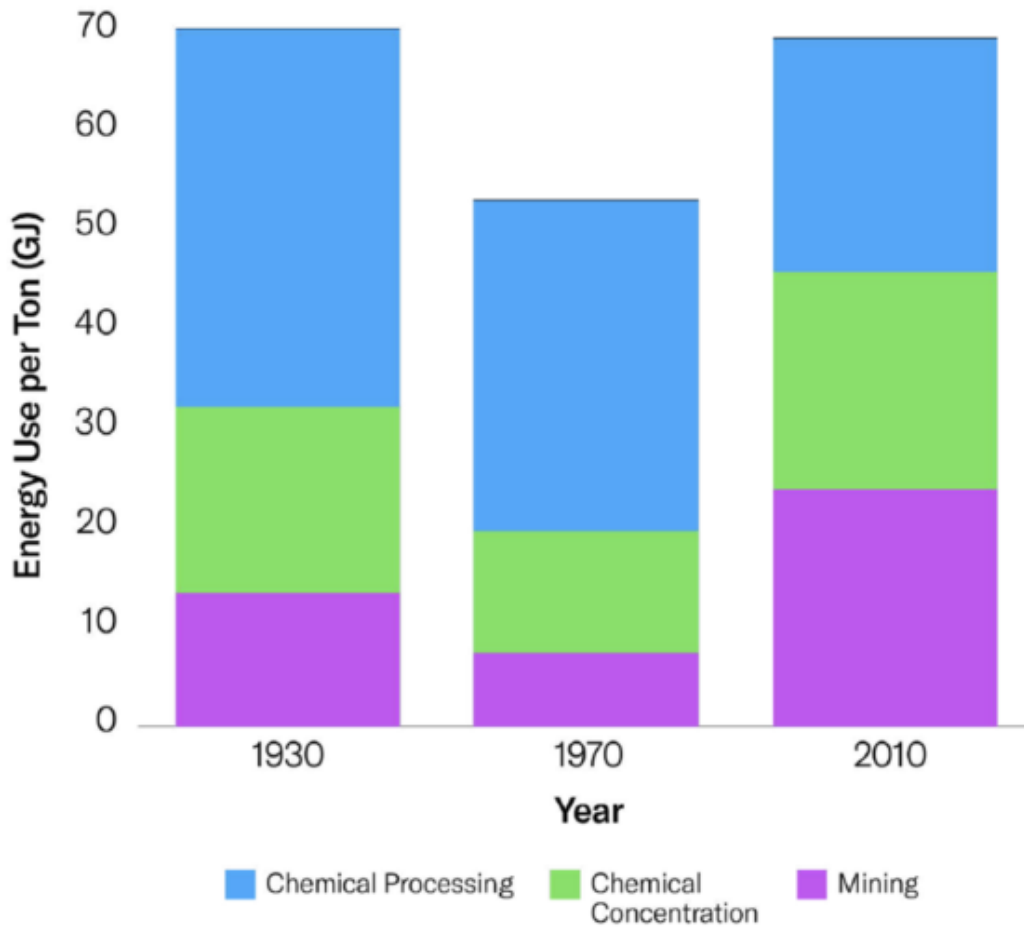
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Figure 10

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)

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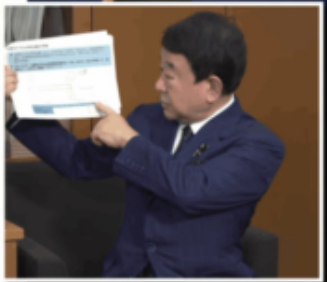
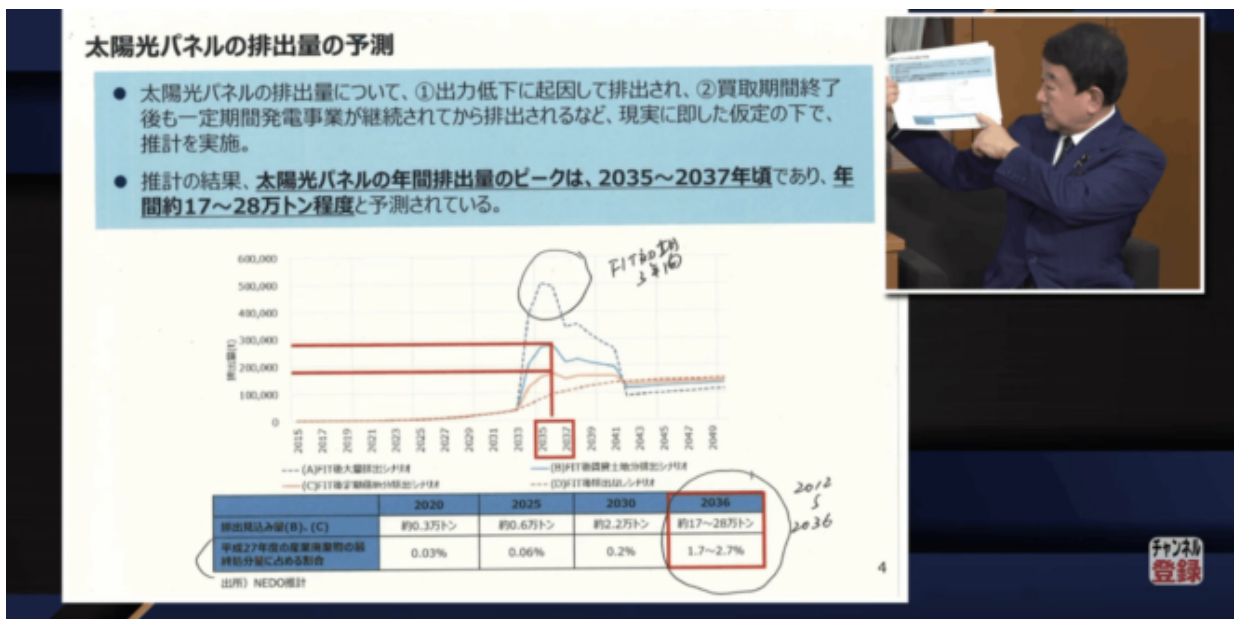
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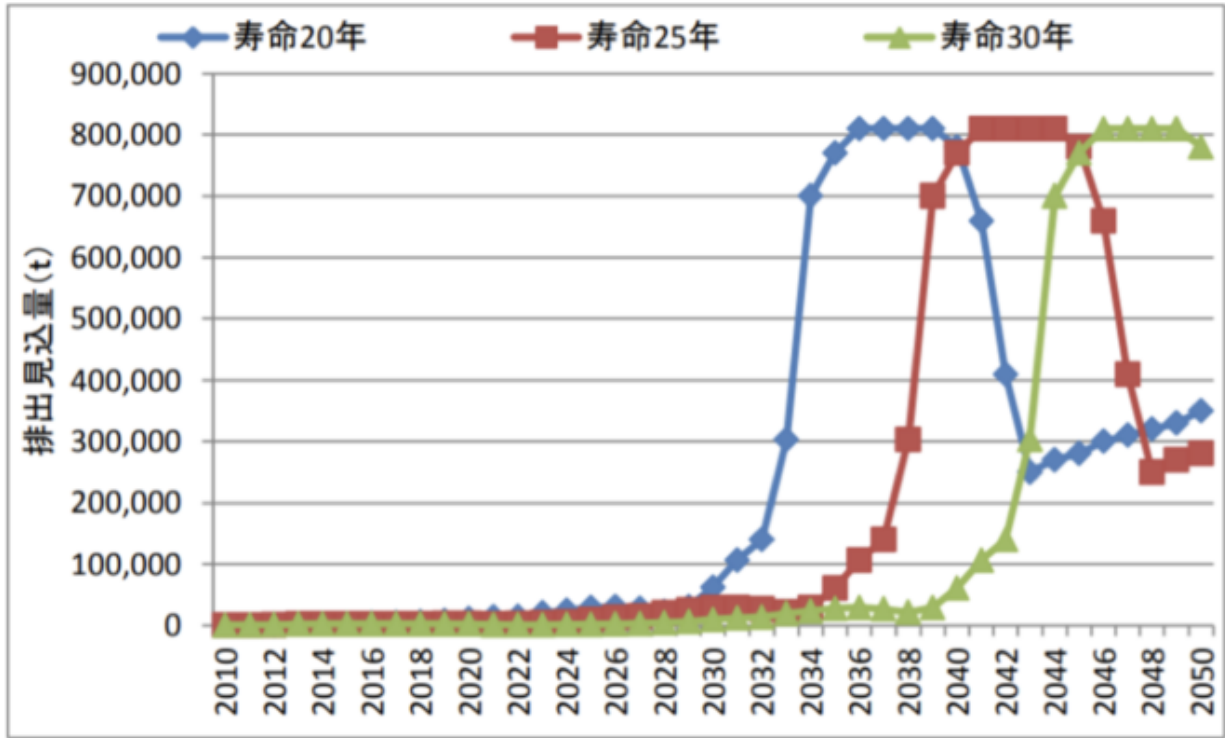


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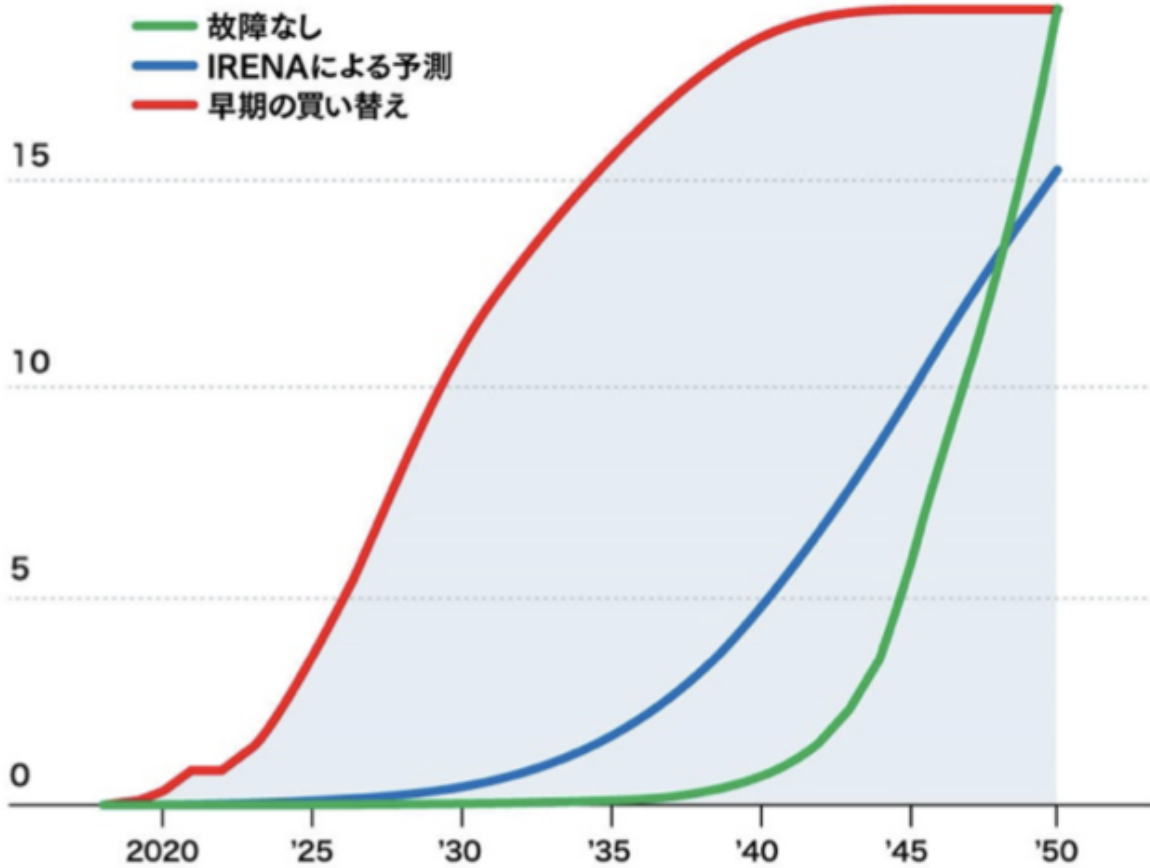
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廃棄物の累計
 (発電容量ベース)

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Grafissimo/iStock

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xijian/iStock

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

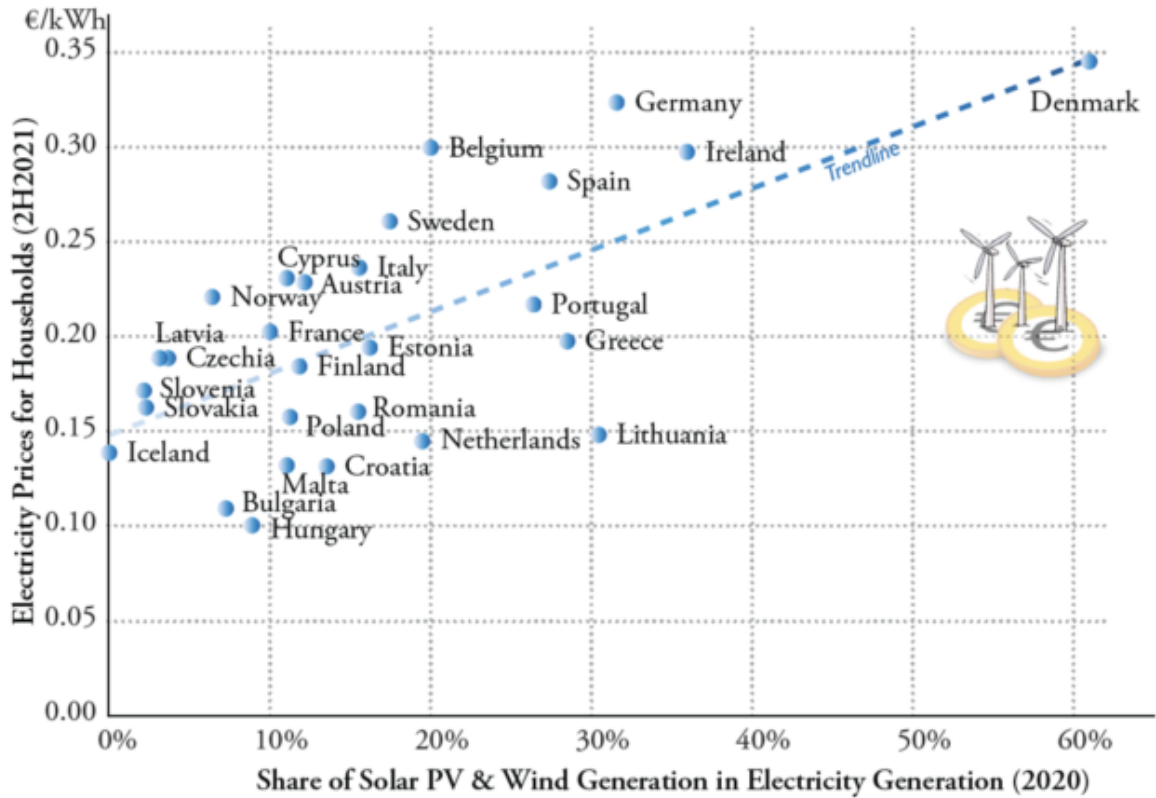
A Critical Assessment of the IEA’s Net Zero Scenario, ESG, and the Cessation of Investment in New Oil and Gas Fields.

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Figure 46: Solar and Wind Penetration and Electricity Prices in Europe

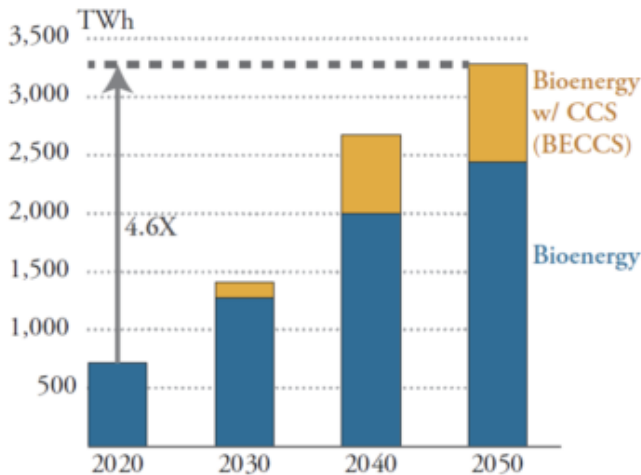


Source: Energy Policy Research, Eurostat, IEA

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IEA?NZE??2050??
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Figure 23. Bioenergy for Electricity Generation in NZE



Source: IEA, Net Zero by 2050 (2021)

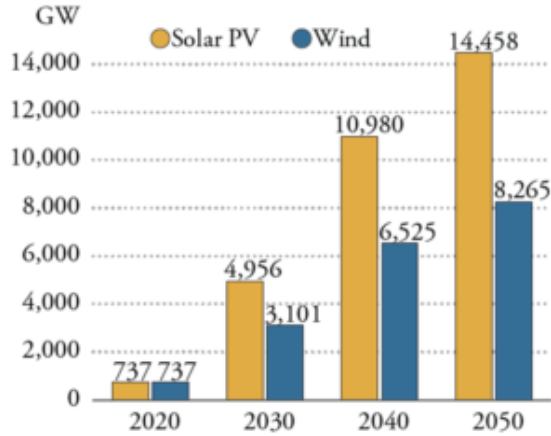
Figure 24. Global Land Requirements for Bioenergy for Electricity Generation in NZE



Source: Energy Policy Research. Land requirement calculations made using FreeingEnergy.

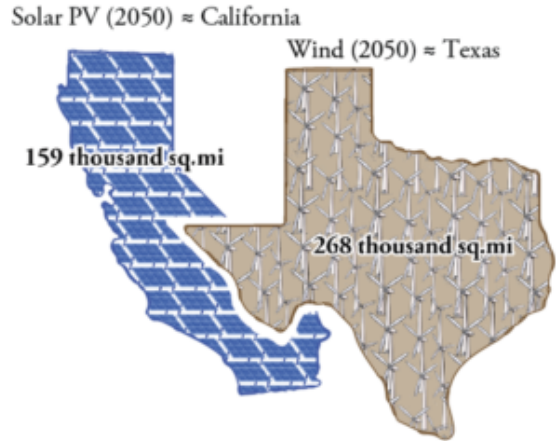
Batt Odgerel, Lucian Pugliaresi, Michael Lynch 38

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

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CHUYN/iStock

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PhonlamaiPhoto/iStock

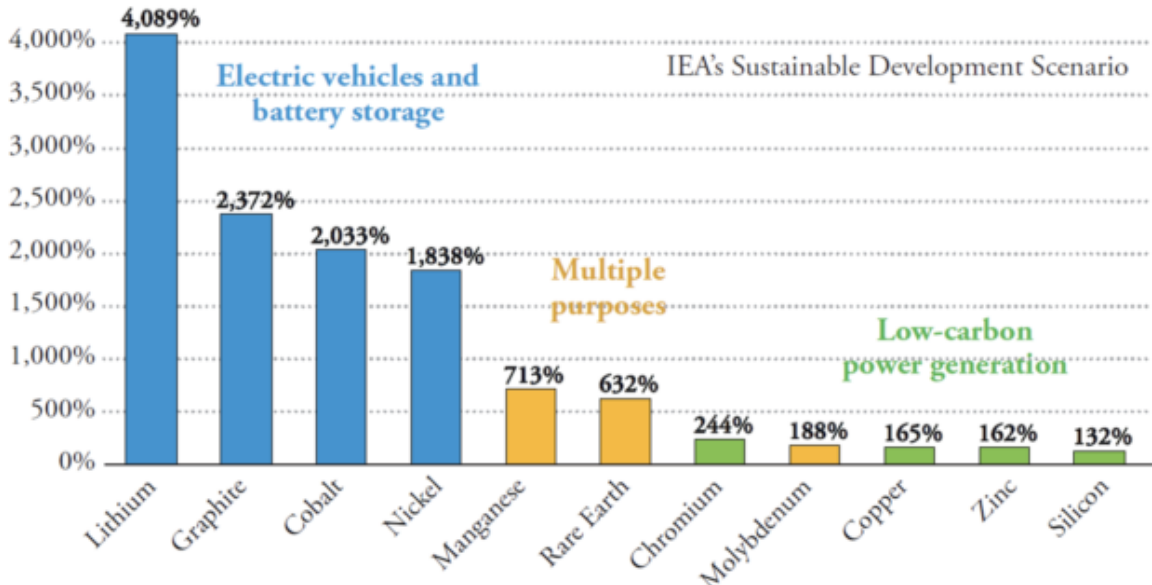
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A Critical Assessment of the IEA’s Net Zero Scenario, ESG, and the Cessation of Investment in New Oil and Gas Fields.

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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

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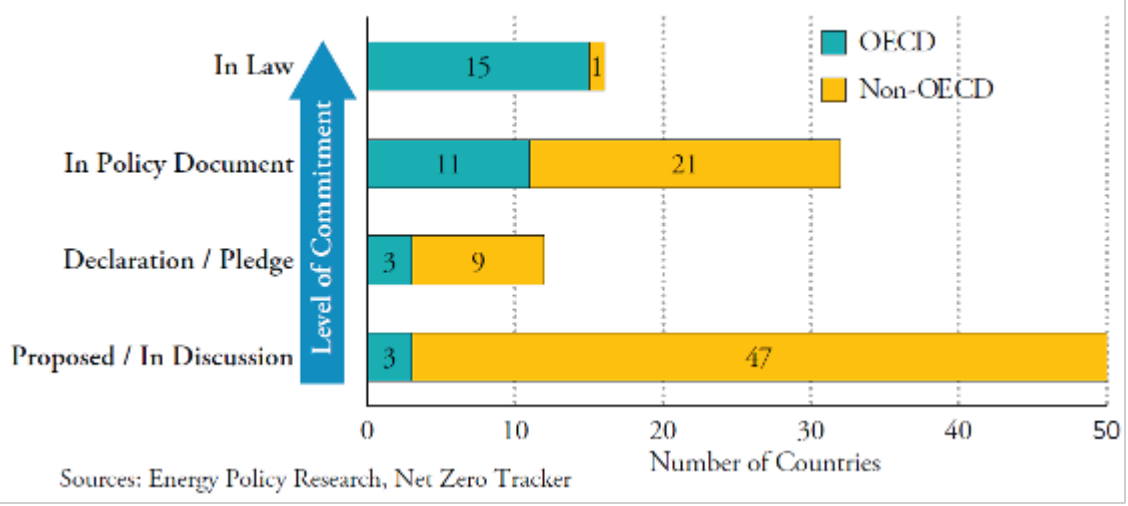
A Mokhtari/iStock

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

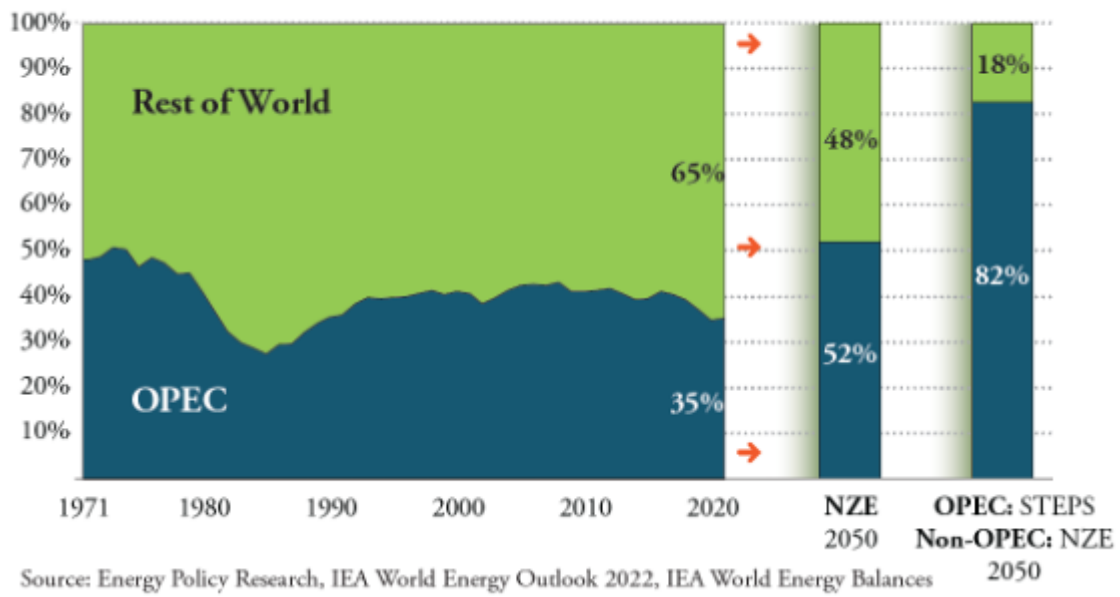


IEA NZE OPEC 35% 52% 1973

NZE OPE

OPEC NZE OPEC NZE STEPS OPEC 82%

Figure 17. OPEC Share of Global Oil Production

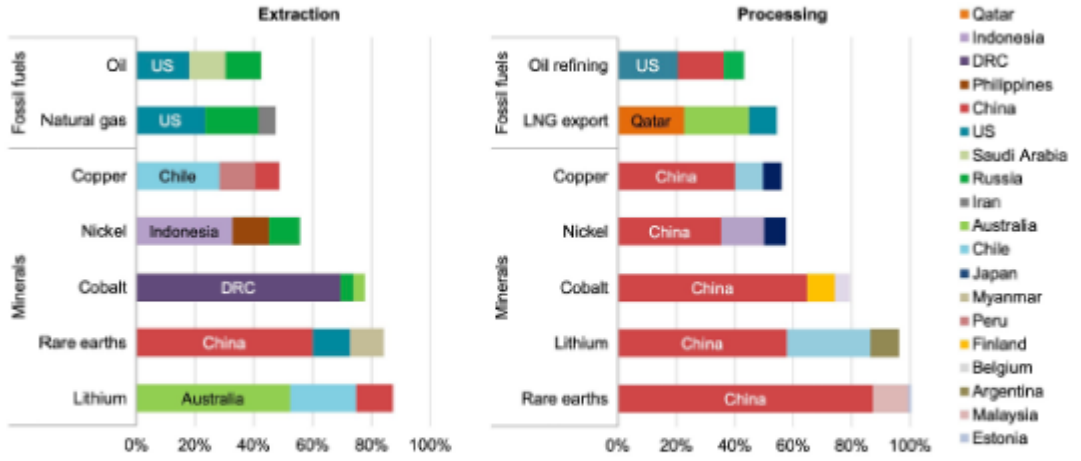


??OPEC??

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



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

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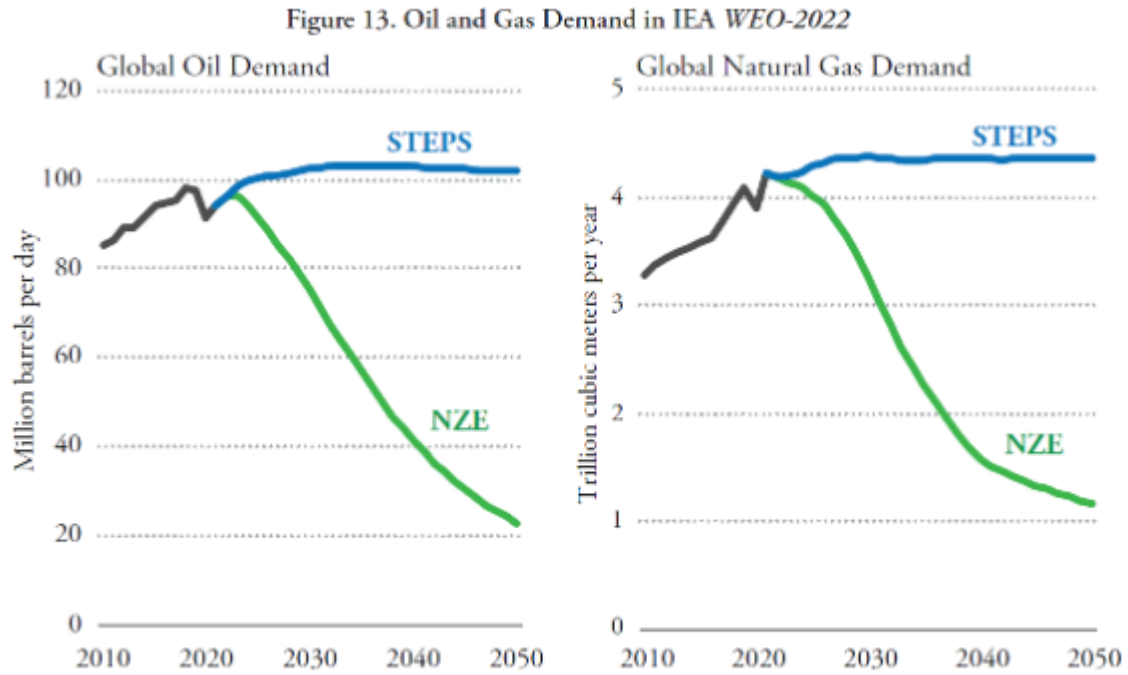
privetik/iStock

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

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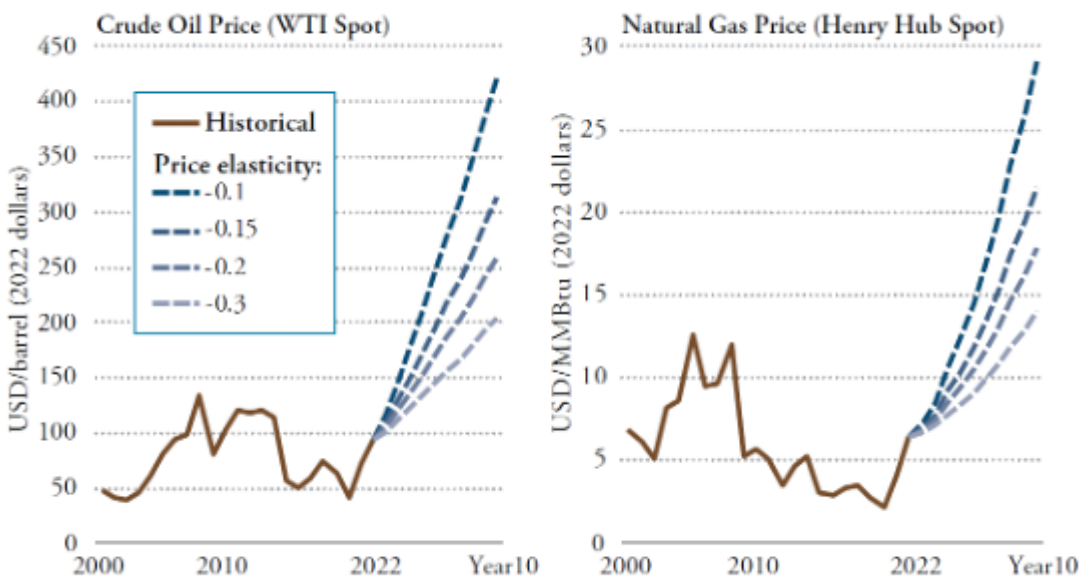
Source: Data from IEA, *World Energy Outlook* (2022) & *Outlooks for gas markets and investment* (2023). The data derived and estimated from graphs in the *WEO-2022* and the IEA’s gas report for the G7, as the IEA’s data tables only show scenario data for 2030 and 2050.

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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

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Rawf8/iStock

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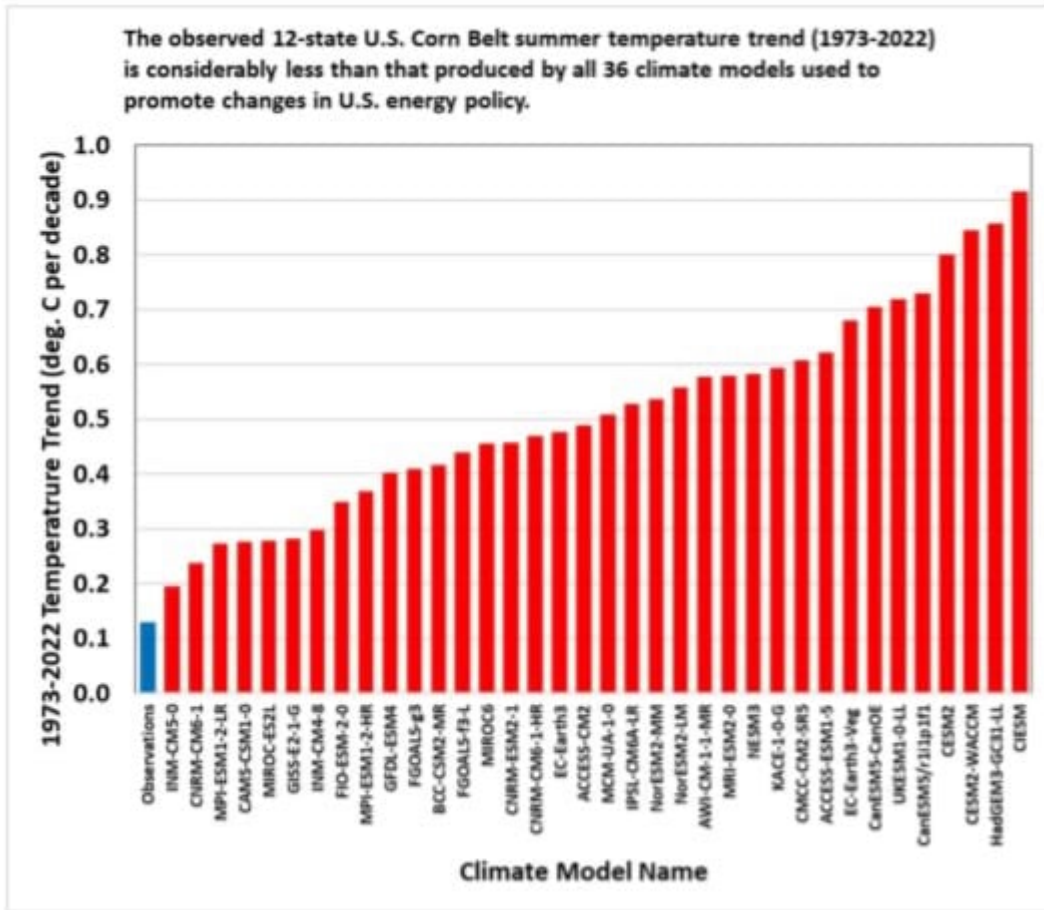
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feellife/iStock

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— BBC News Japan (@bbcnewsjapan) February 18, 2021

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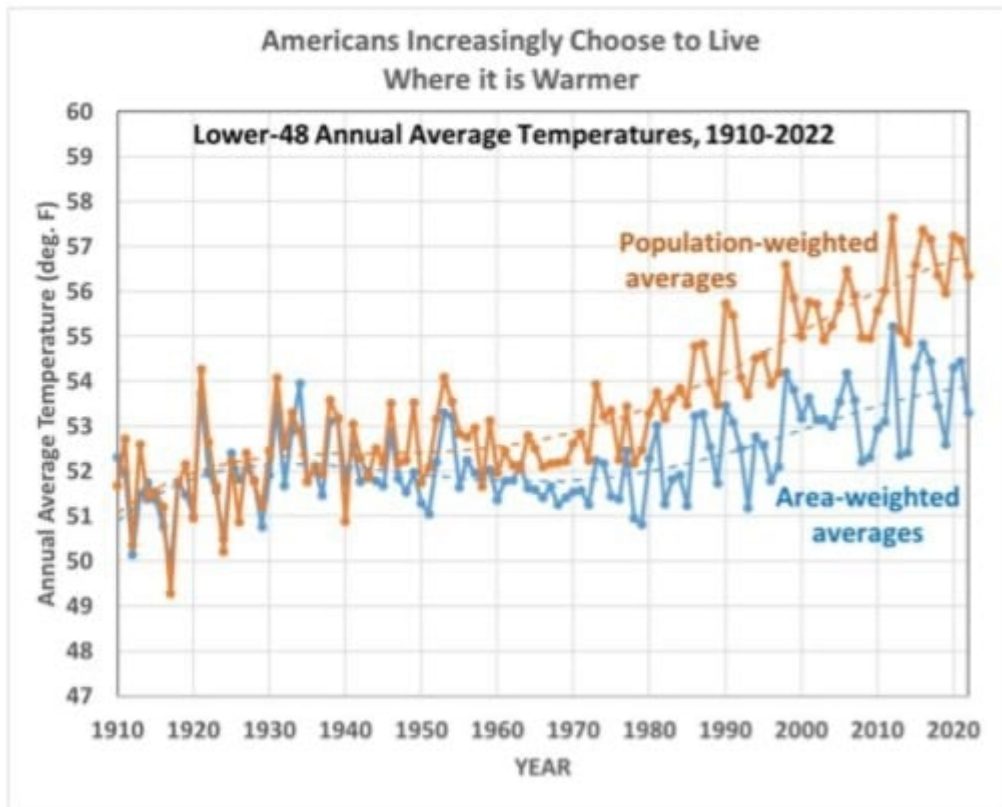
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Darwel/iStock

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spooh/iStock

Energy Transition Confronts Reality – 2023 1 23
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Posted in ??????????, ??? | [No Comments »](#)

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?? ?? · Sunday, May 28th, 2023



sasun bughdaryan/iStock

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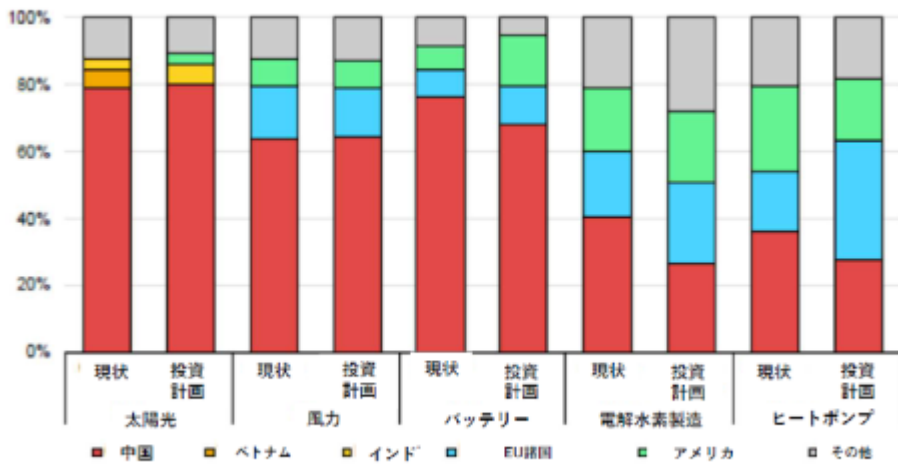
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図3. グリーン技術製造の地域集約度—現状と将来



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



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

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?? ?? · Monday, May 22nd, 2023



Wikipedia??

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Allkindza/iStock

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

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- ????CO₂????2????100????CO₂????????????????????????????????
- EV1????????????12,000????????????????????200????????????????????????????
- ?????????????2032????????????????SUV????????????67????????????????50????????
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- CO₂????????????????????????????????????5000ppm????????????????????1000ppm????????????????
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- EV1????????12,000??
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EV adoption trends and market projections.

EV adoption trends and market projections.

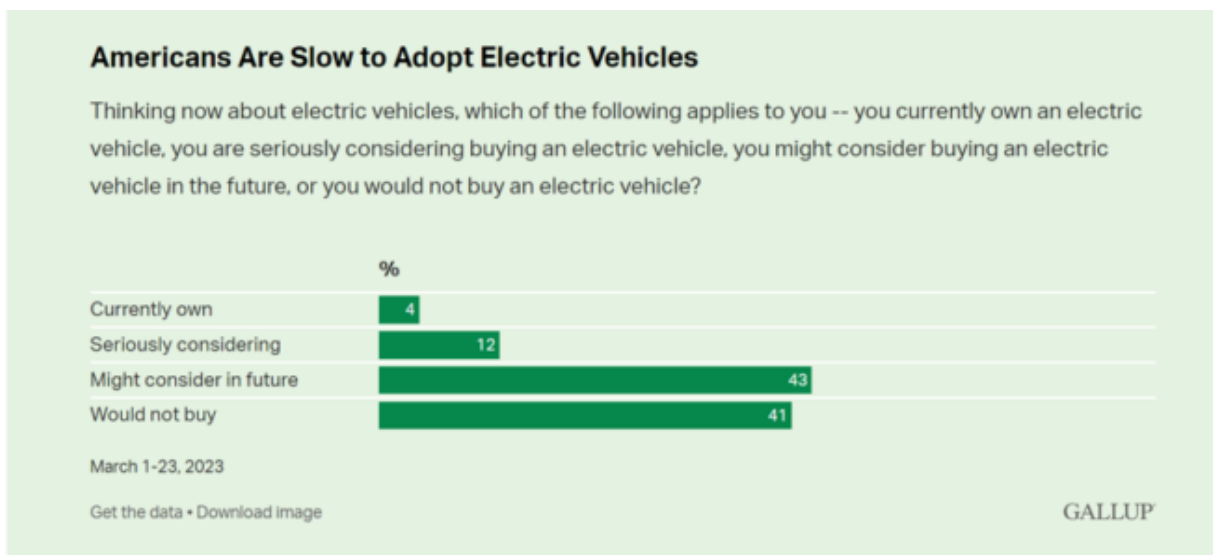
EV adoption trends and market projections.

EV adoption trends and market projections.

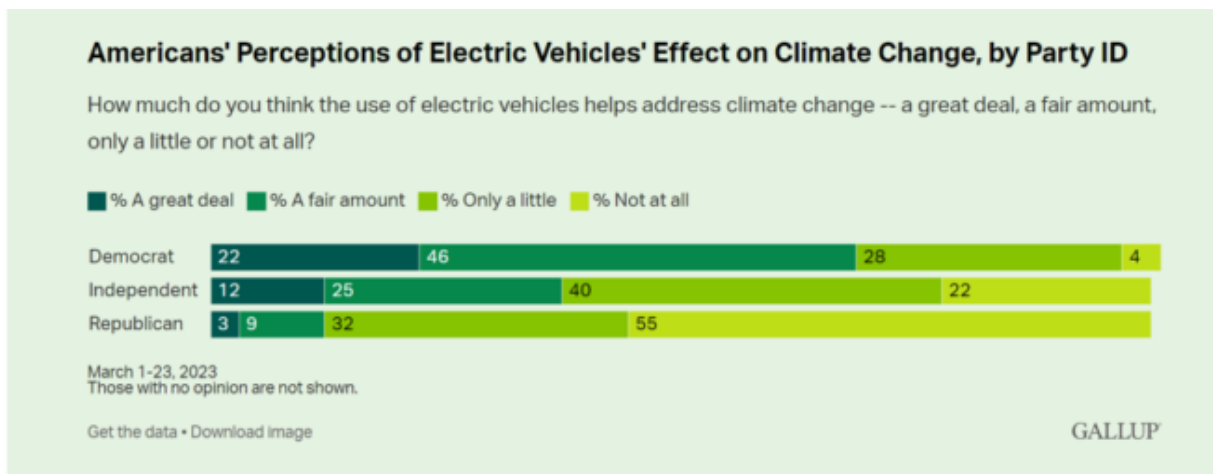
Most Americans Are Not Completely Sold on Electric Vehicles

EV adoption trends and market projections.

- EV adoption trends and market projections.
- EV adoption trends and market projections.



- EV adoption trends and market projections.
- EV adoption trends and market projections.
- EV adoption trends and market projections.
- EV adoption trends and market projections.



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

IPCC?????63????????????????????????????????

?? ?? · Tuesday, May 16th, 2023



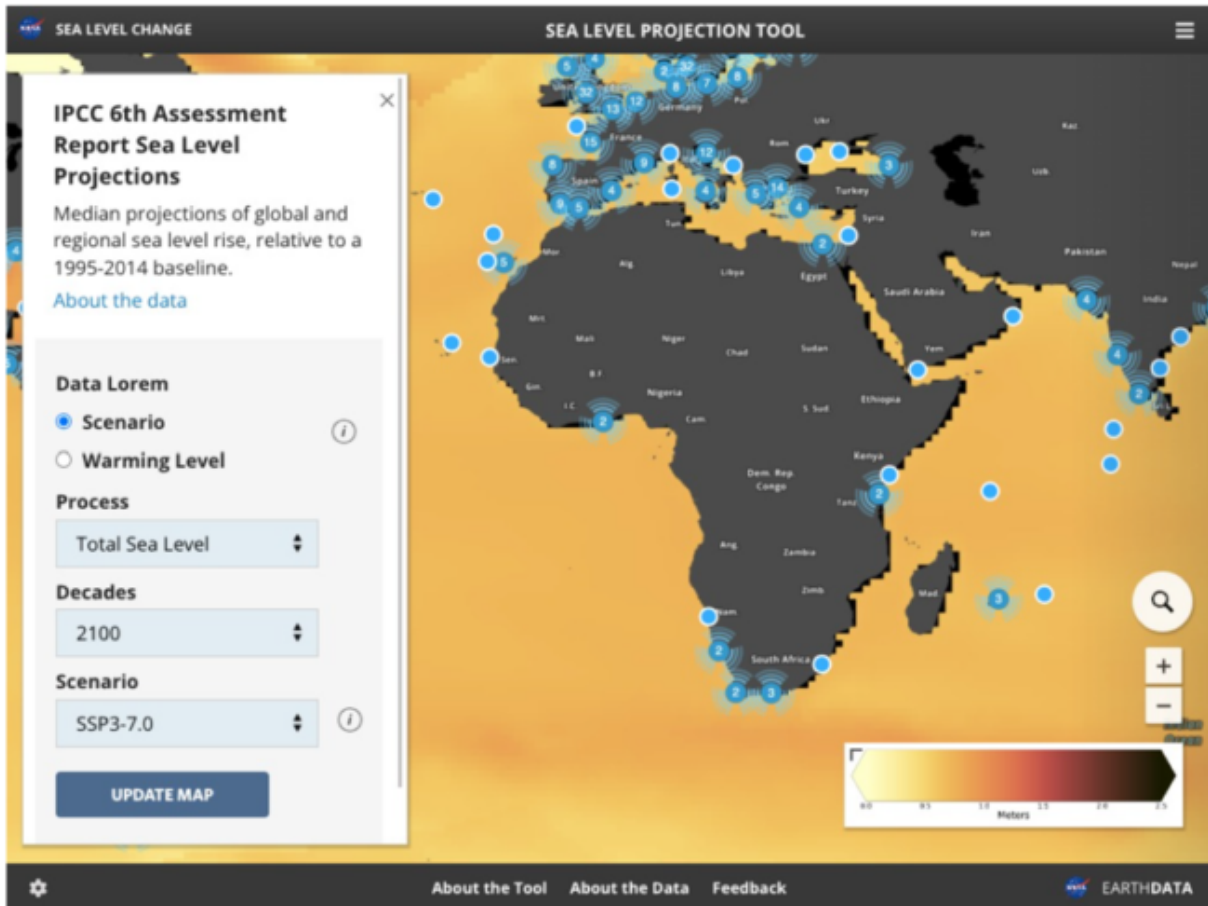
remotefx/iStock

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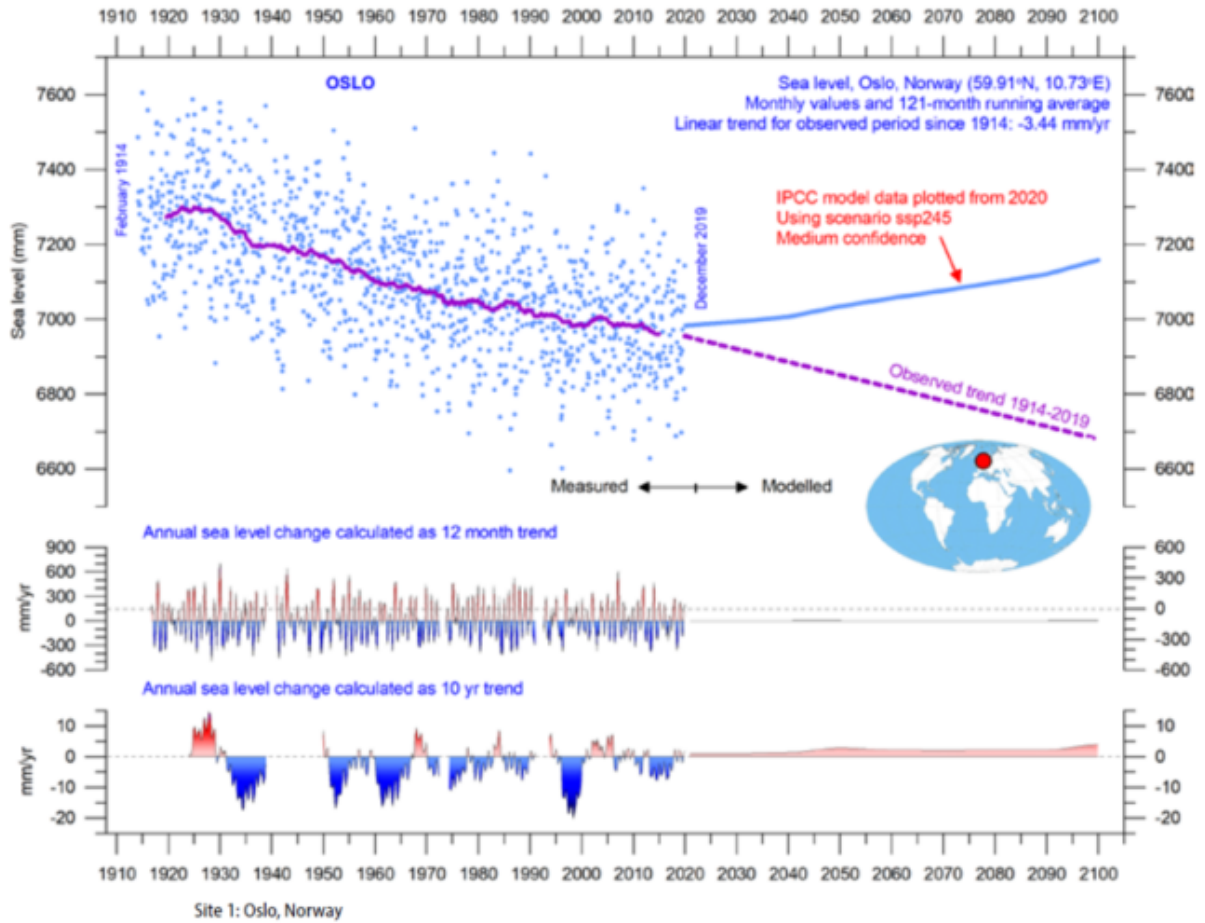
IPCC AR6 Sea Level Projection Tool



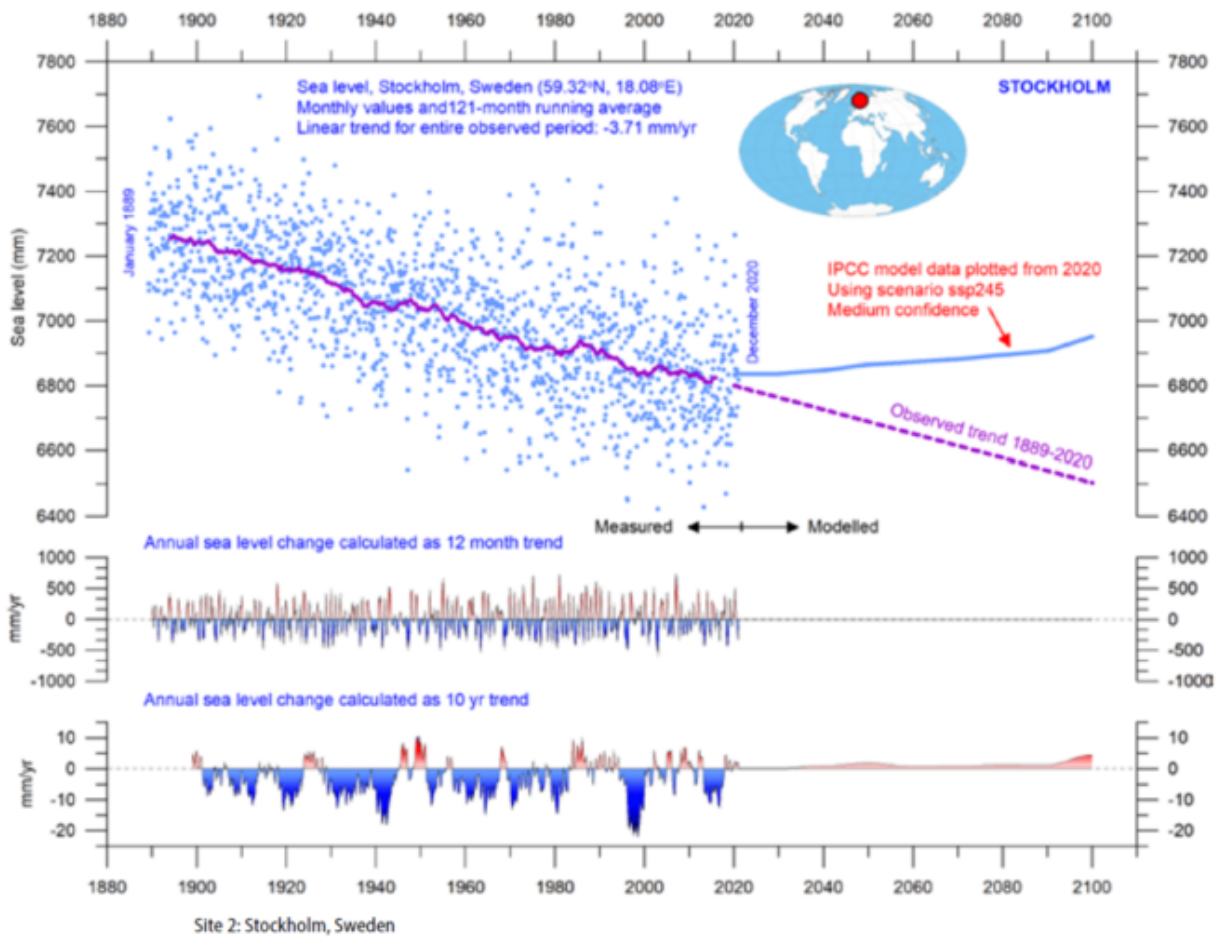
IPCC AR6 Sea Level Projection Tool

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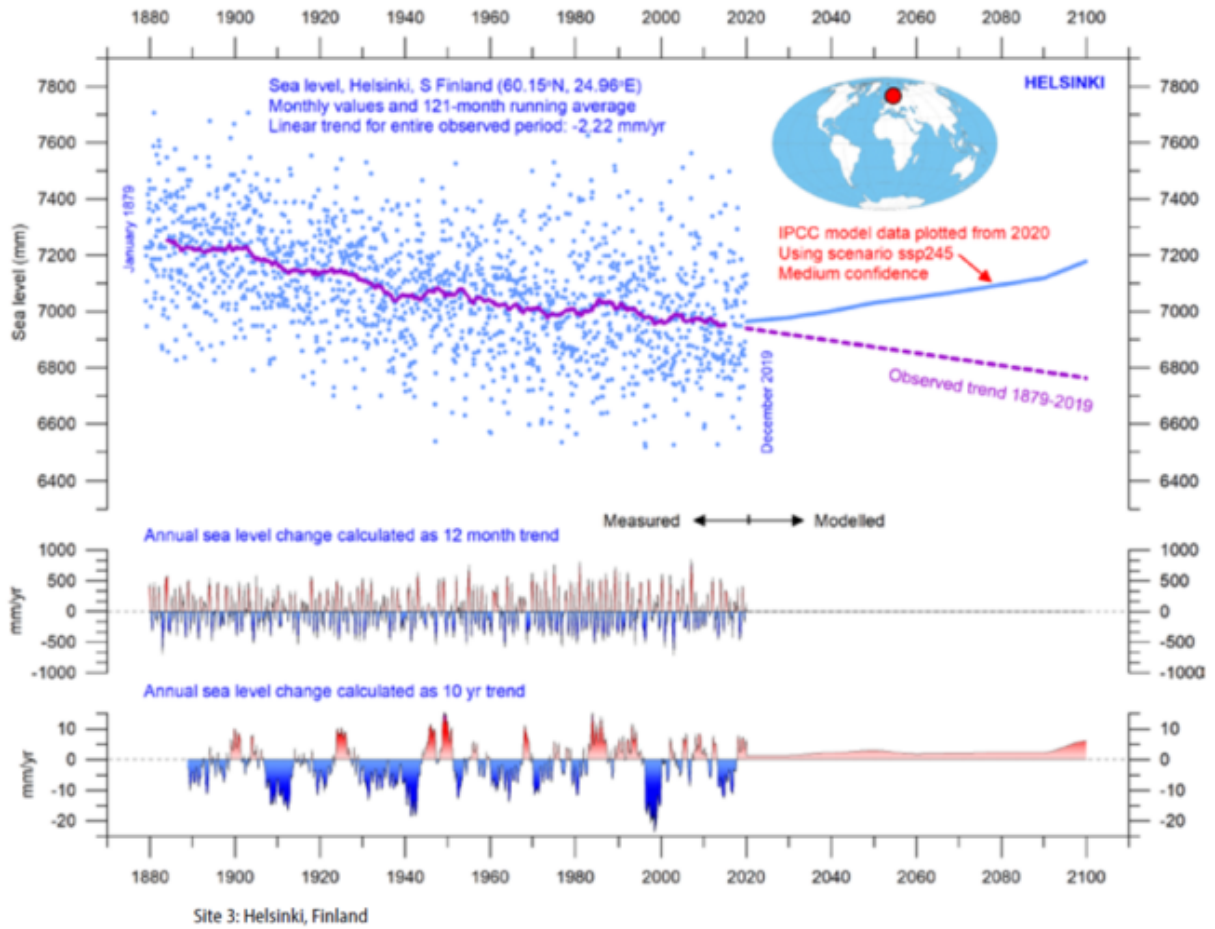
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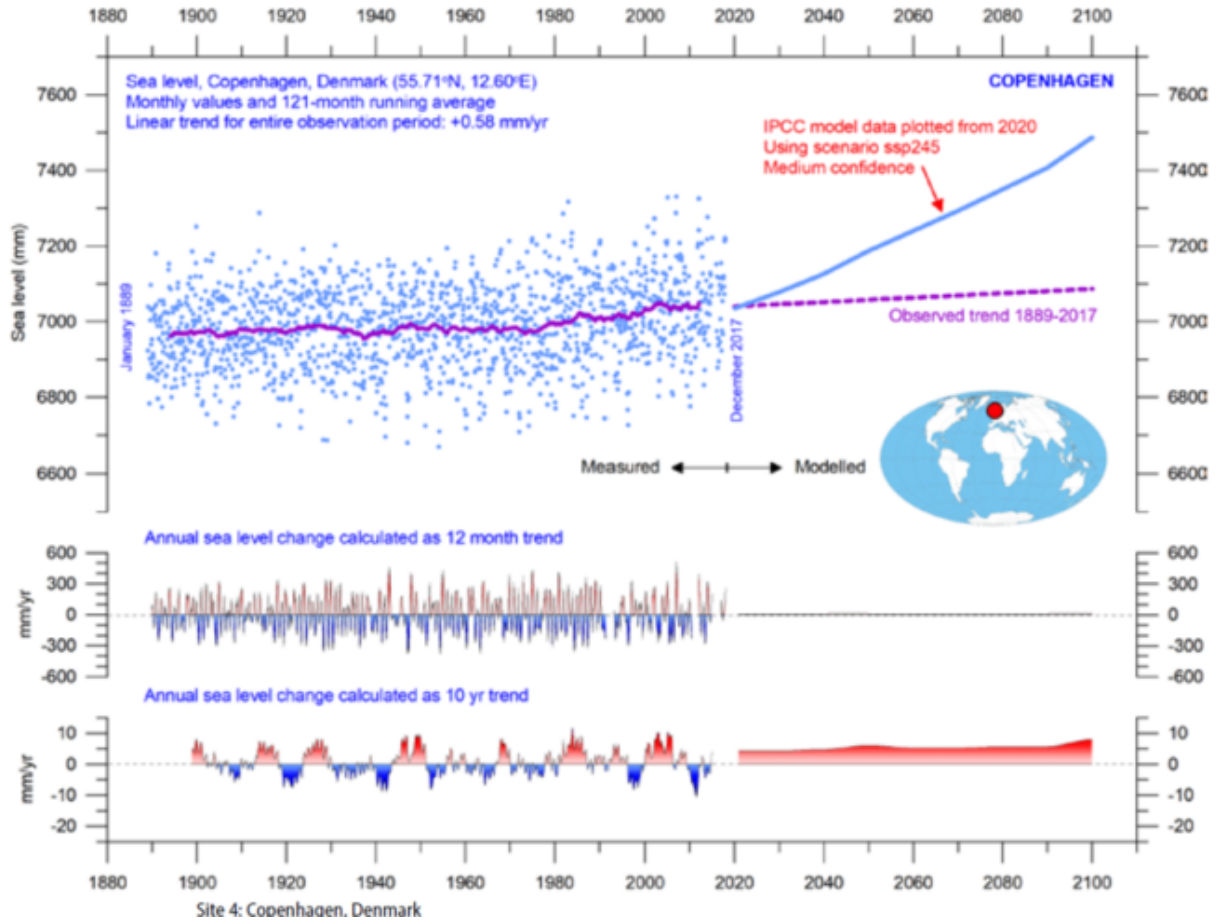
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Posted in ???, ????? | No Comments »

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

?? ?? · Monday, May 15th, 2023

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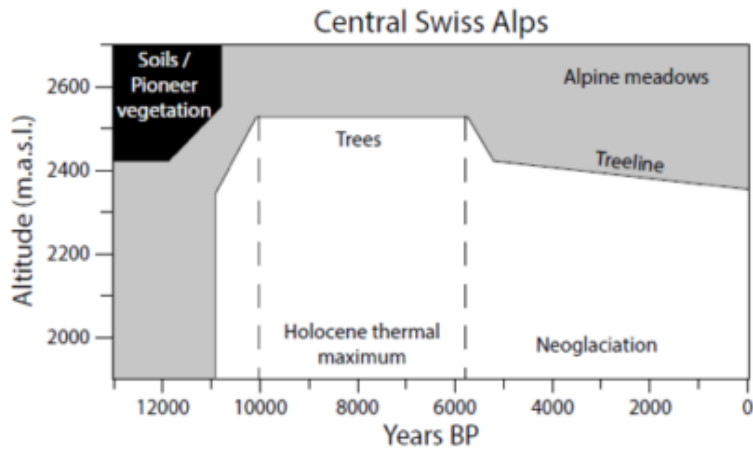


Figure 4: Fluctuations of the treeline in the Swiss Central Alps during the Holocene. The limits of the vegetational zones are placed between the sites according to the presence of the respective vegetation type as inferred by macrofossil analysis. Altitude in meters above sea-level. After Tinner & Theurillat 2003. Current treeline in the Swiss Central Alps is 150-200 m below Holocene Thermal Maximum treeline limit.

??Obliquity??
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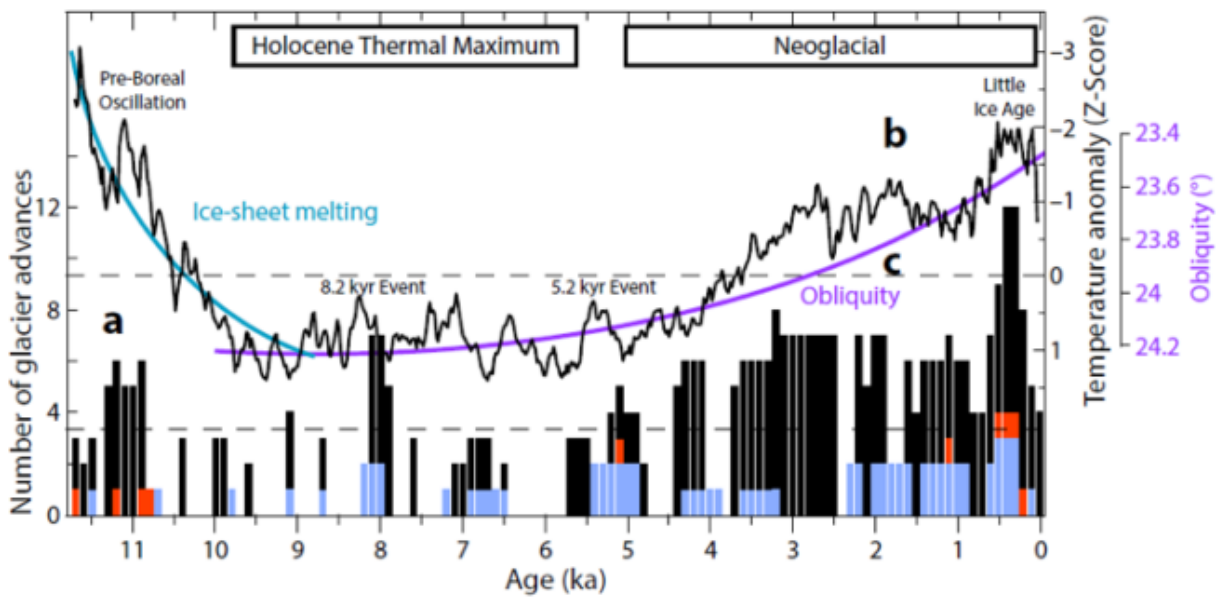


Figure 3: Glacial advances versus temperature (inverted) during the Holocene. a) Number of regions displaying glacier advances at each Holocene century. Black, NH 17 regions; orange, low latitudes single region; ice blue, SH 4 regions. Bottom dashed line, Holocene glacial position average. b) Inverted temperature reconstruction from the same 73 proxies used by Marcott et al. 2013. The reconstruction ends in 1910 and does not include modern warming. Temperature anomaly changes are expressed as Z-score (distance to the mean). Some well-known cooling periods or events are indicated by their accepted names. The period affected by the melting of the extra-Arctic ice sheets is indicated in aquamarine. c) Inverted changes in obliquity. Vinós, 2022, page 55.¹³

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Posted in ???, ????? | No Comments »

IPCC?????61?????????????

?? ?? · Sunday, May 14th, 2023



borchee/iStock

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

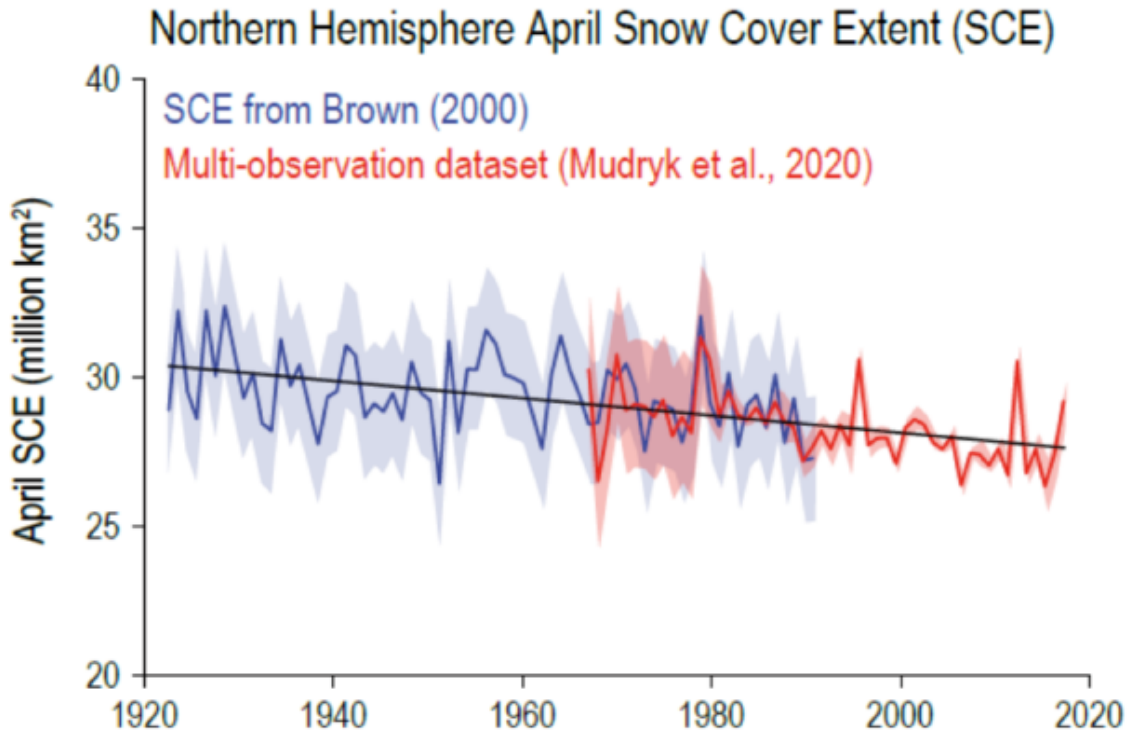


Figure 2: April snow cover extent (SCE) for the Northern Hemisphere. From: AR6, chapter 2.

??IPCC????4??

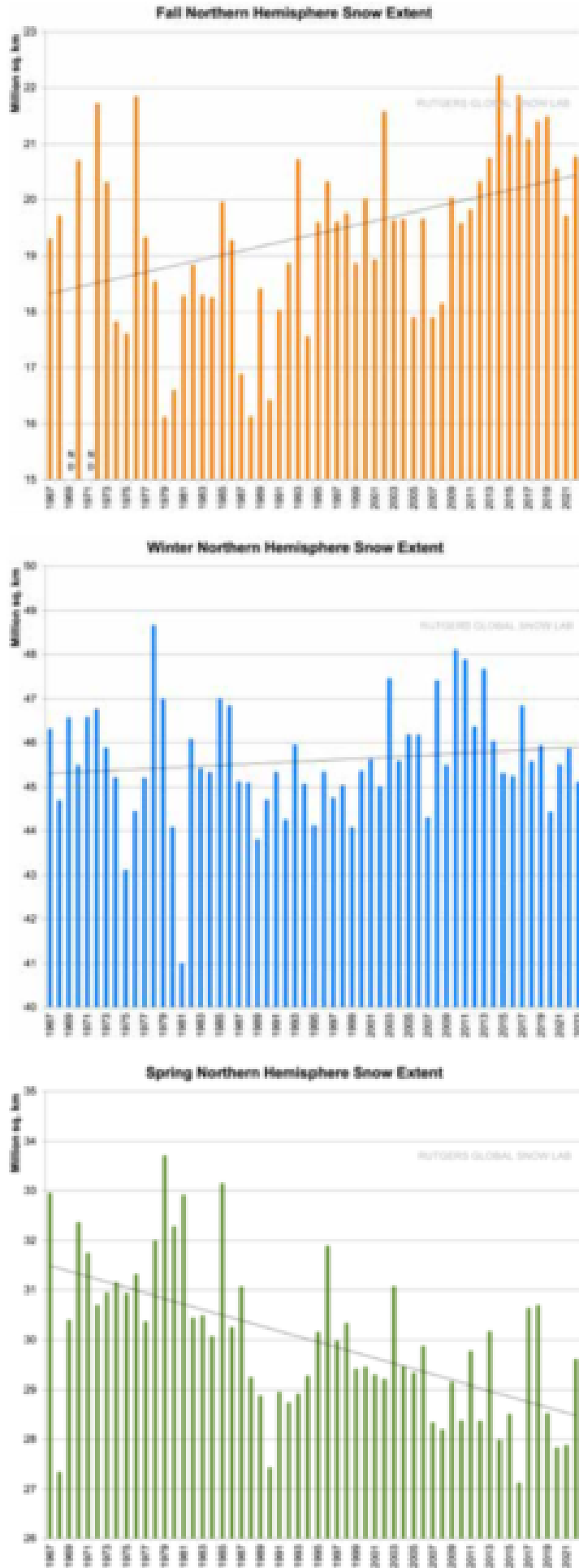


Figure 4: Snow cover extent (SCE) for the Northern Hemisphere for autumn, winter and spring. From: Rutgers Global Snow Lab (2023)

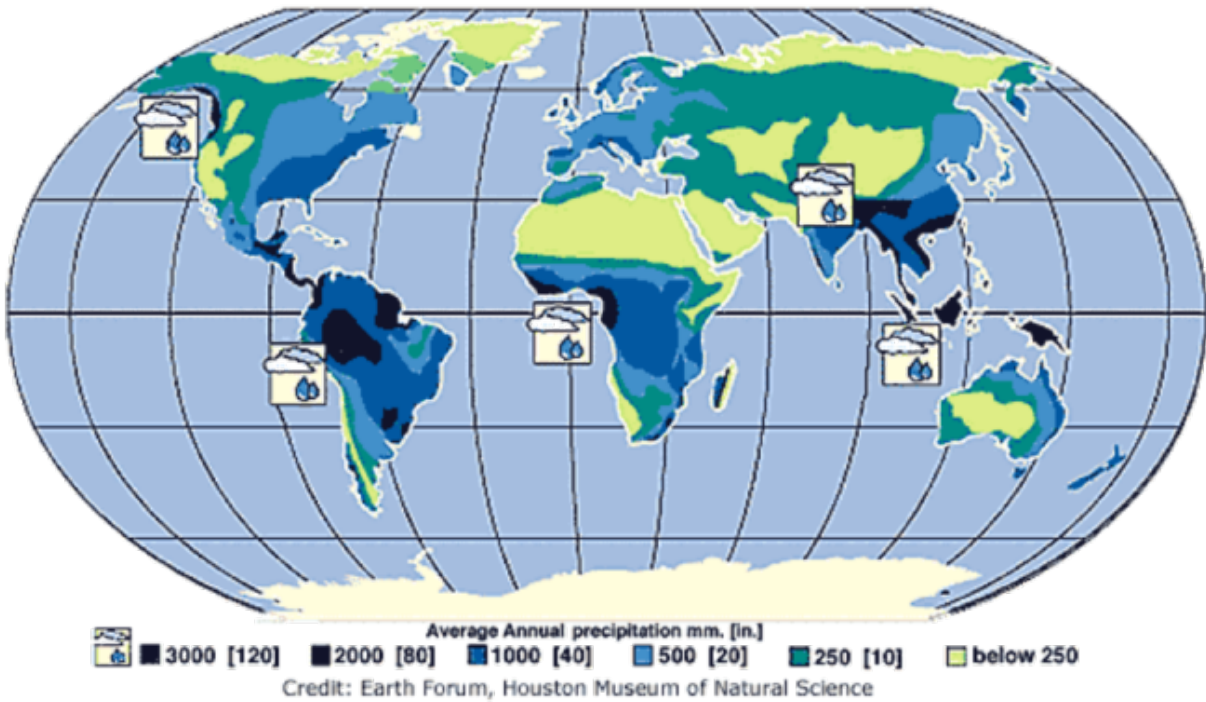
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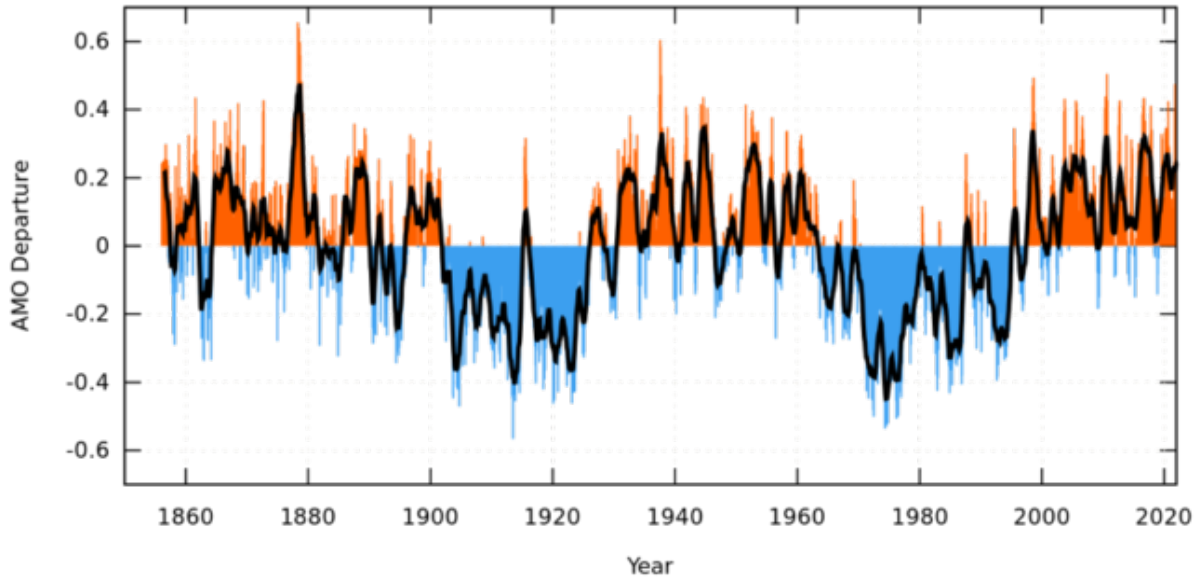
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Monthly values for the AMO index, 1856 - 2022



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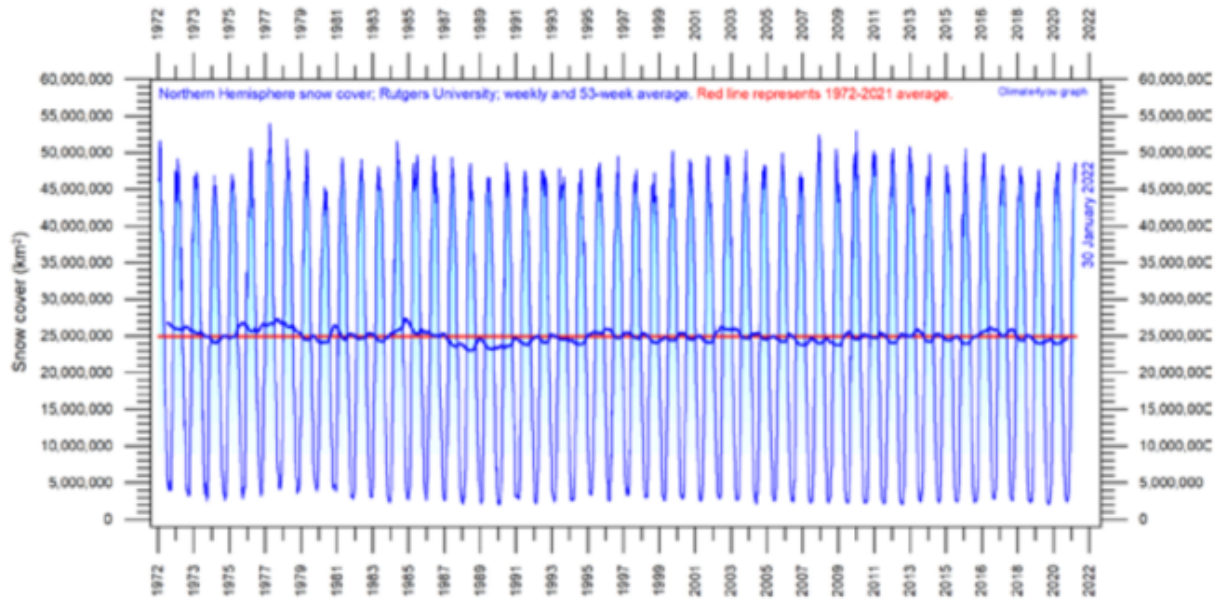


Figure 7: Northern hemisphere weekly snow cover since January 1972 according to the Rutgers University Global Snow Lab (<http://climate.rutgers.edu/snowcover>), the thin blue line is the weekly data, and the thick blue line is the running 53 week average (approximately 1 year). The horizontal red line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

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Posted in ???, ????? | No Comments »

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?? ??? ?? · Thursday, May 11th, 2023

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Posted in ???, ?? | No Comments »

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



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

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Posted in ???, ?? | No Comments »

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

?? ?? · Saturday, May 6th, 2023



Kanur Ismail/iStock

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2023????????????EU????????????????????????????????????2035?EV????????????????????????????????????ESG???

ESG 19 ESG

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CO2

年	日本	米国
1997年	▲6% (橋本政権)	▲7% (クリントン政権)
2015年	▲26% (安倍政権)	▲26% (オバマ政権)
2021年	▲46% (菅政権)	▲50~52% (バイデン政権)

CO2

CO2 CSR

2021 2021 46% 2024 ESG

ESG ESG

CO2

ESG CO2 CO ESG

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SDGs

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

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

?? ?? · Sunday, April 30th, 2023



a-image/iStock

EU?EV?????

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 CO₂????e-
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Development Impact Meetings????????????????????????

UN Secretary for Global Comms says we “own the science” on “climate change,”
and we think that “the world should know it.”

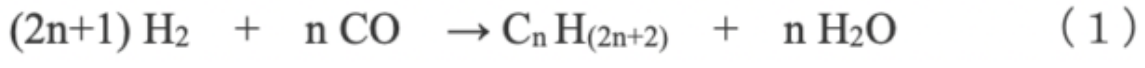
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Tropsch?FT????????????????????FT????1920????????????????FT????????????????
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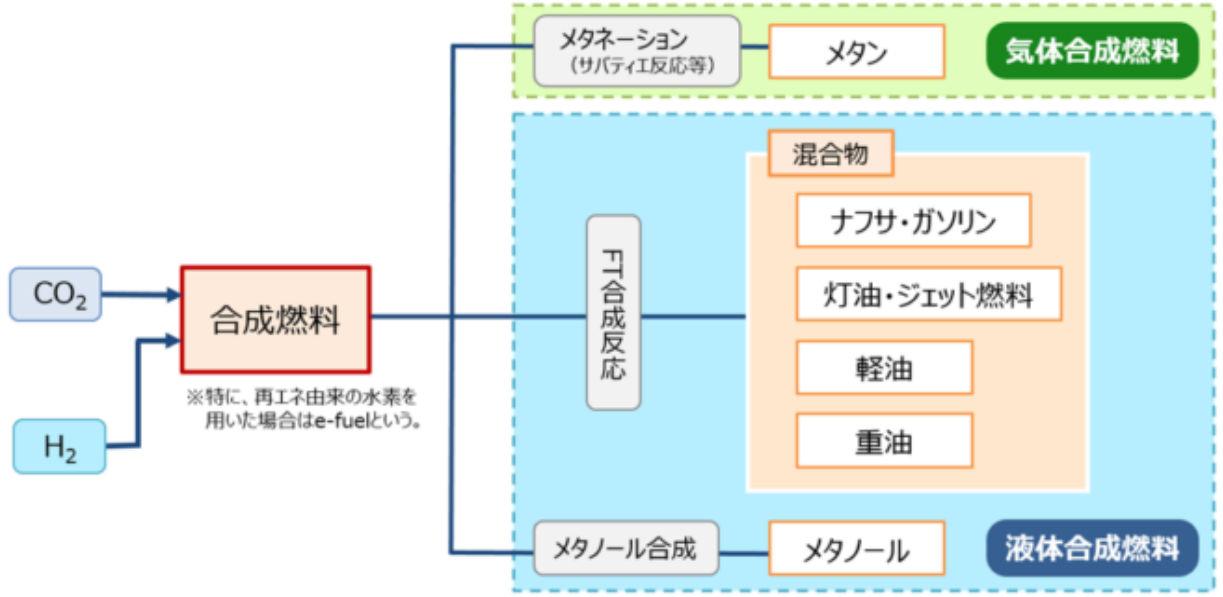
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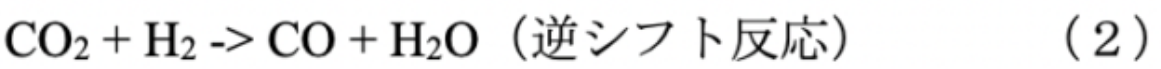
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O₂?????700?800????????????????????



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H ₂	CO ₂	製造コスト		
100円/Nm ³ ×6.34Nm ³ /L	5.91円/kg×5.47kg/L			※NEDO「CO ₂ からの液体燃料製造技術に関する開発シーズ発掘のための調査(2020.8)」の結果に基づき試算。
= 634 円/L	+ 32 円/L	+ 33 円/L	= 約700円/L	国内の水素を活用し、国内で合成燃料を製造するケース
$\left(\begin{matrix} 32.9\text{円/Nm}^3 \\ + \\ 14.65\text{円/Nm}^3 \end{matrix} \right) \times 6.34\text{Nm}^3/\text{L}$				
= 301 円/L	+ 32 円/L	+ 33 円/L	= 約350円/L	海外の水素を国内に輸送し、国内で合成燃料を製造するケース
$32.9\text{円/Nm}^3 \times 6.34\text{Nm}^3/\text{L}$				
= 209 円/L	+ 32 円/L	+ 33 円/L	= 約300円/L	合成燃料を海外で製造するケース
$20\text{円/Nm}^3 \times 6.34\text{Nm}^3/\text{L}$				
= 127 円/L	+ 32 円/L	+ 33 円/L	= 約200円/L	将来、水素価格が20円/Nm ³ になったケース

2021

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Posted in | No Comments »

G7

Tuesday, April 25th, 2023

41516 G7



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