

Global Energy Policy Research | GEPR

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?? ?? · Sunday, July 16th, 2023



Douglas Rissing/iStock

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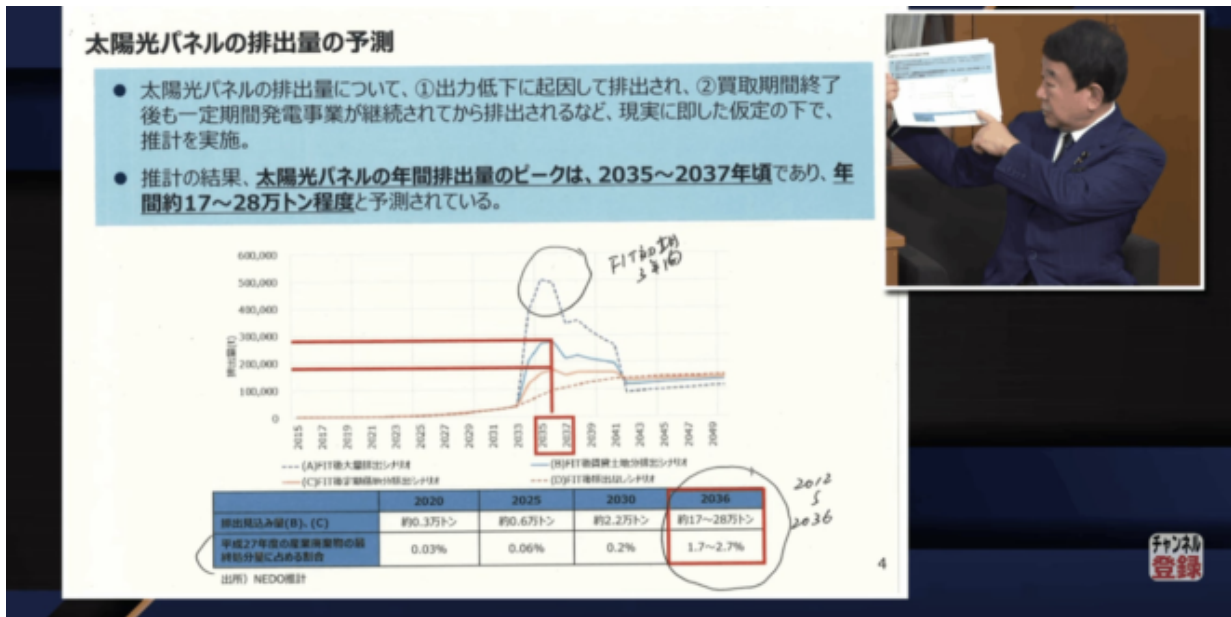
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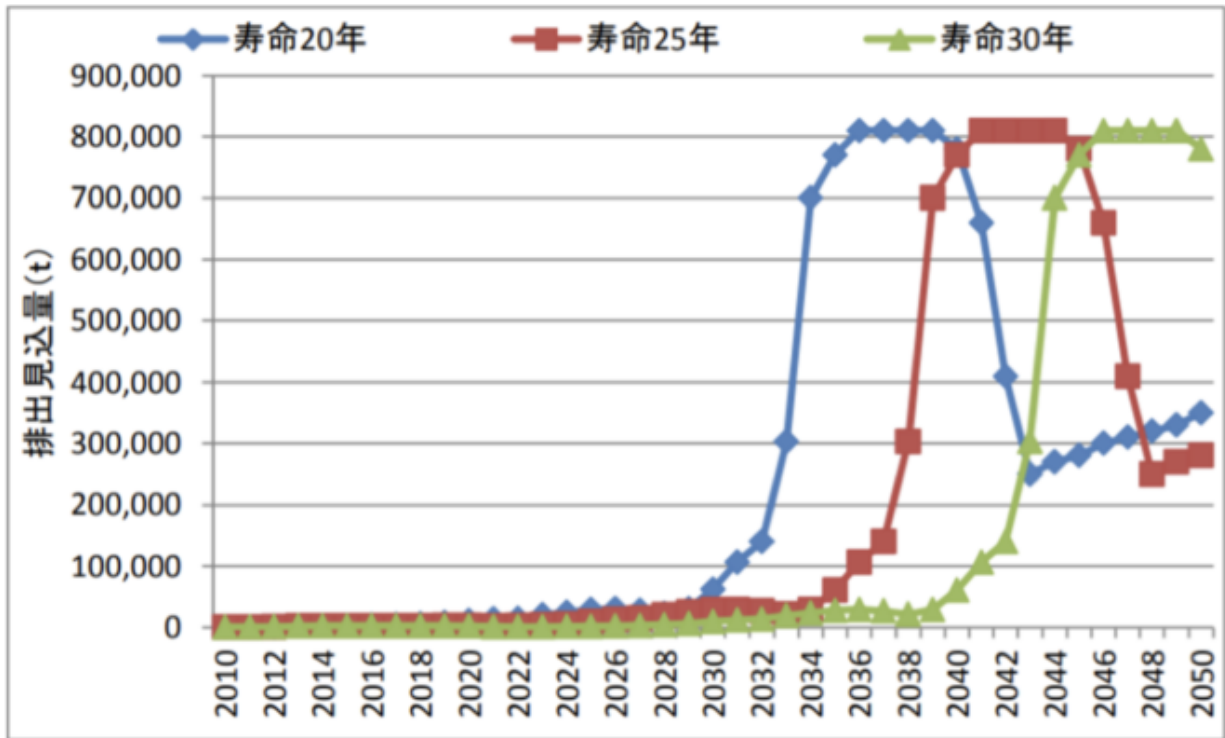
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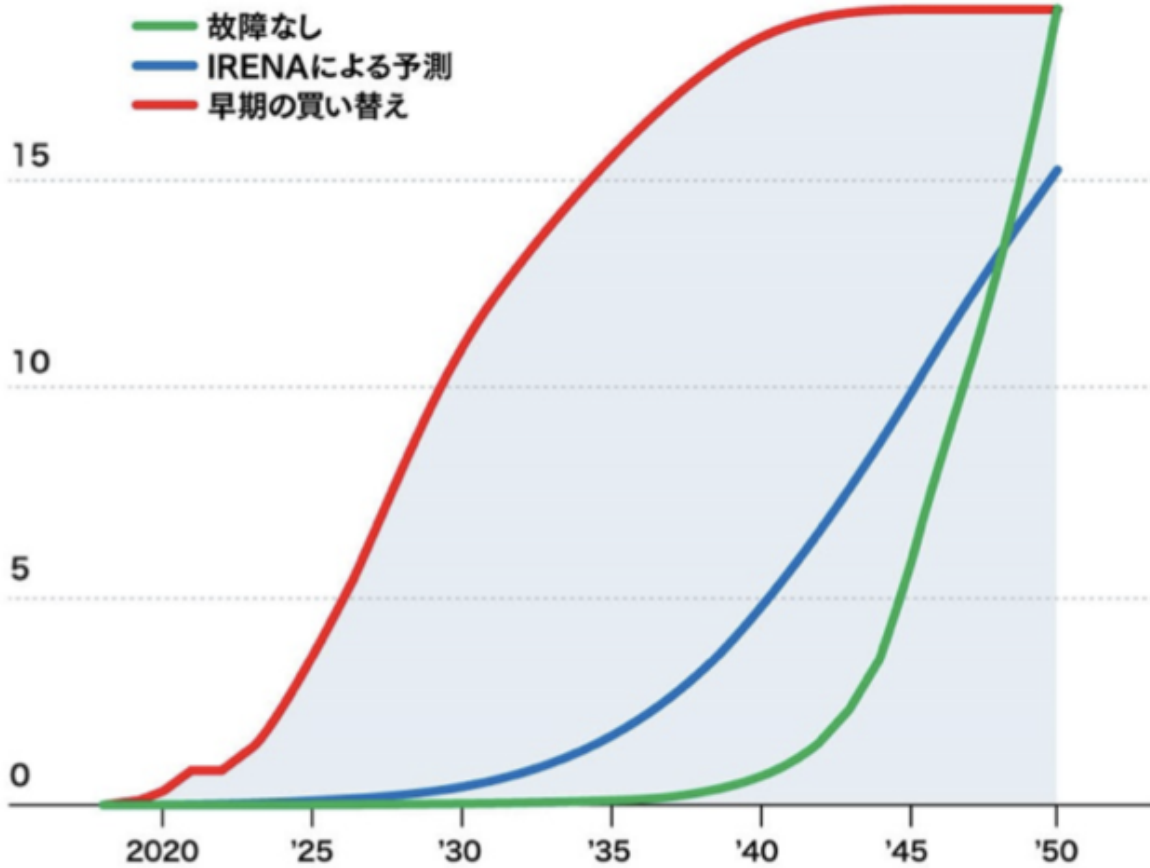
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 (発電容量ベース)

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Grafissimo/iStock

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Pixelci/iStock

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xijian/iStock

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

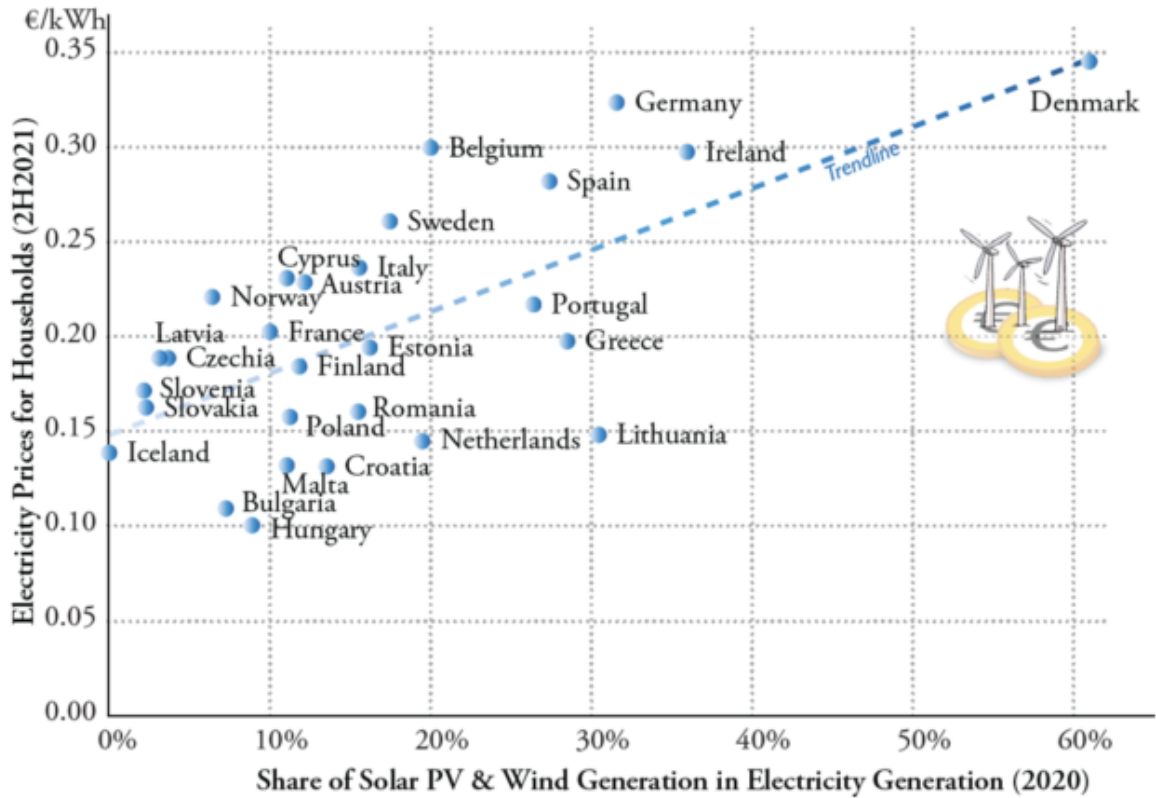
A Critical Assessment of the IEA’s Net Zero Scenario, ESG, and the Cessation of Investment in New Oil and Gas Fields.

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

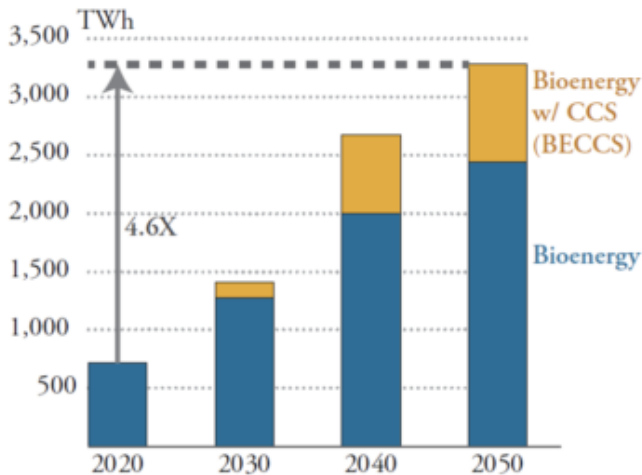


Source: Energy Policy Research, Eurostat, IEA

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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)

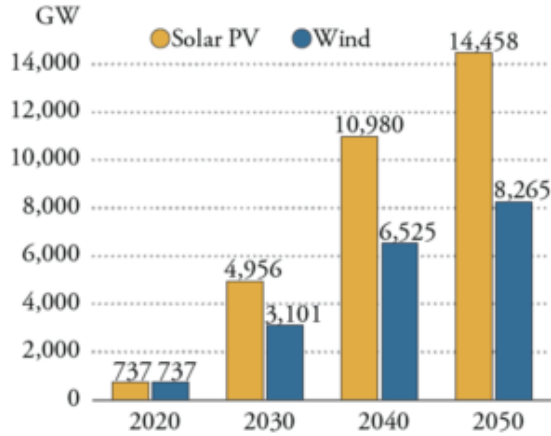
Figure 24. Global Land Requirements for Bioenergy for Electricity Generation in NZE



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

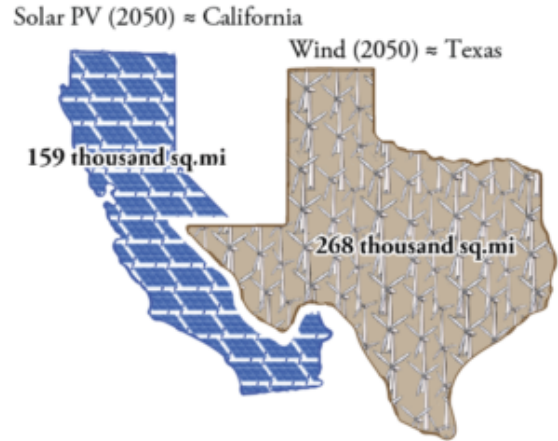
Batt Odgerel, Lucian Pugliaresi, Michael Lynch 38

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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?? ? · Monday, July 3rd, 2023



CHUYN/iStock

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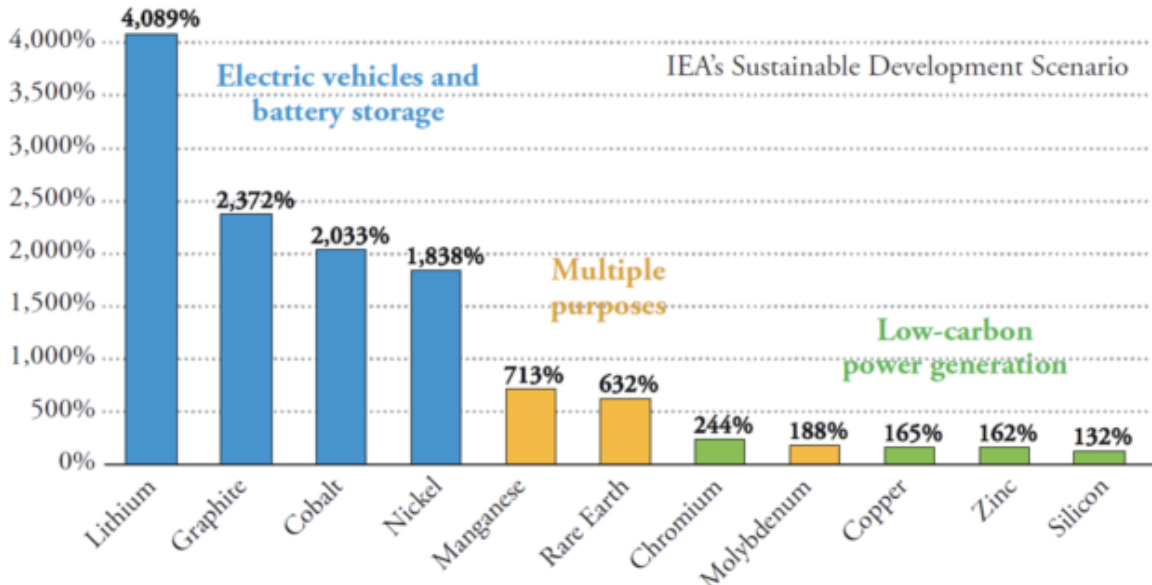
PhonlamaiPhoto/iStock

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

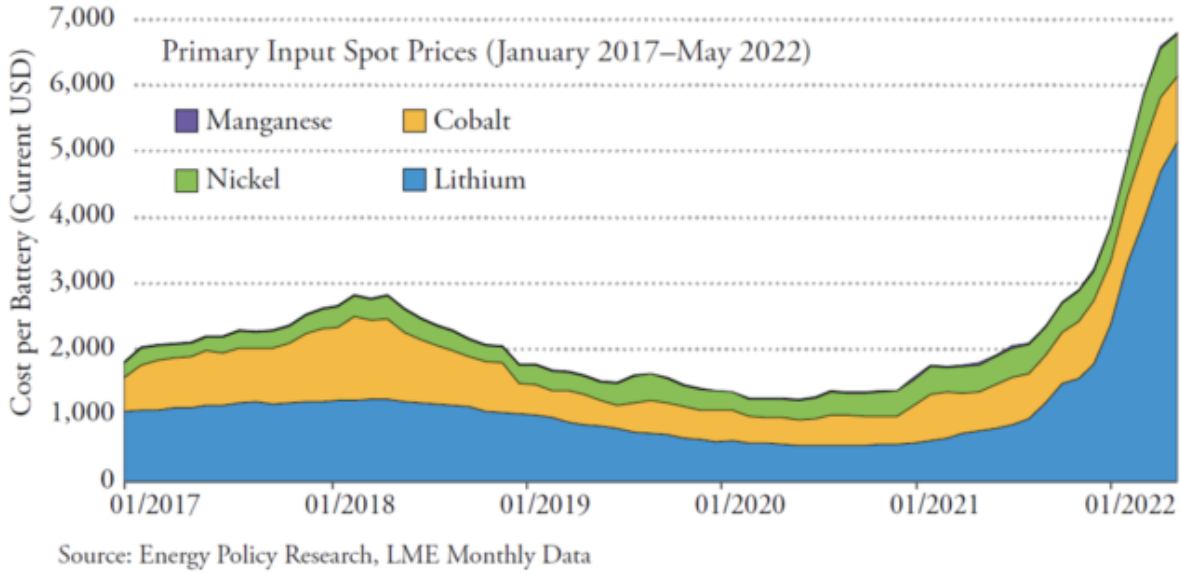
Mineral/Metal	NMC811	NMC523	NMC622	NCA+	LFP
Lithium	5	7	6	6	6
Cobalt	5	11	11	2	0
Nickel	39	28	32	43	0
Manganese	5	16	10	0	0
Graphite	45	53	50	44	66
Aluminum	30	35	33	30	44
Copper	20	20	19	17	26
Steel	20	20	19	17	26
Iron	0	0	0	0	41

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

Source: Bhutada, G. VC Elements

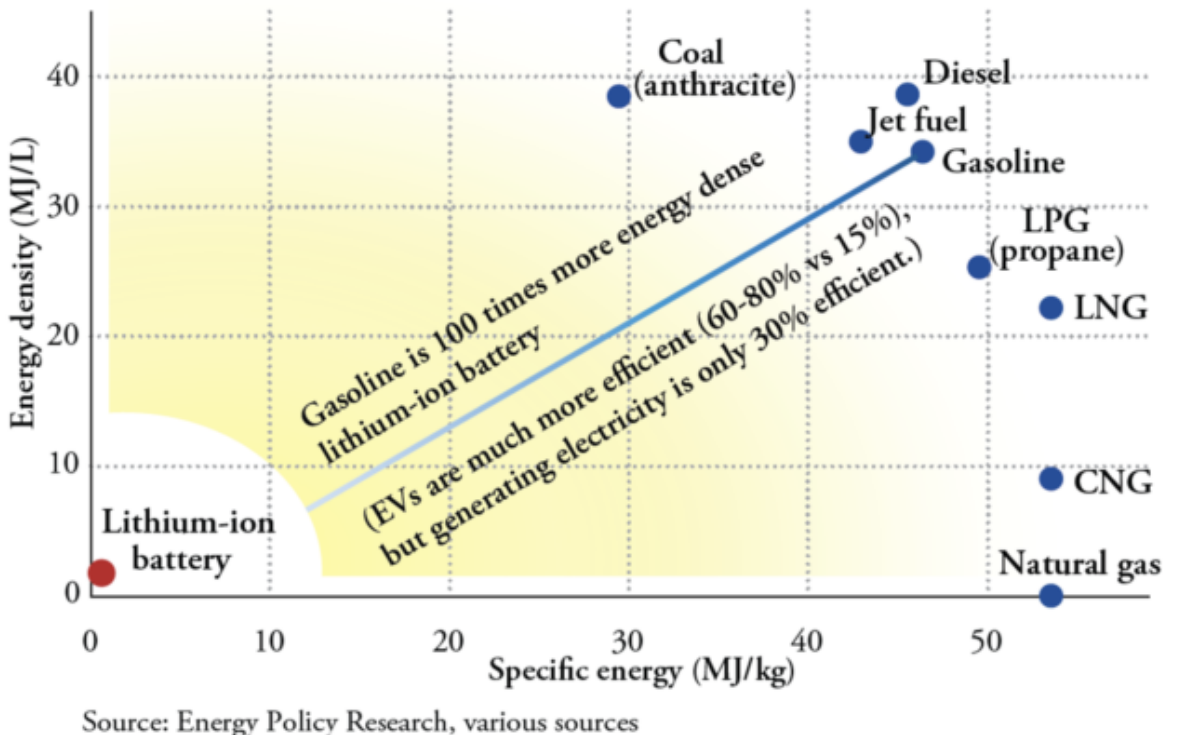
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Figure 34. Tesla Battery Cost Based on Monthly Average



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Figure 35. Energy Densities of Common Fuels, Li-ion battery



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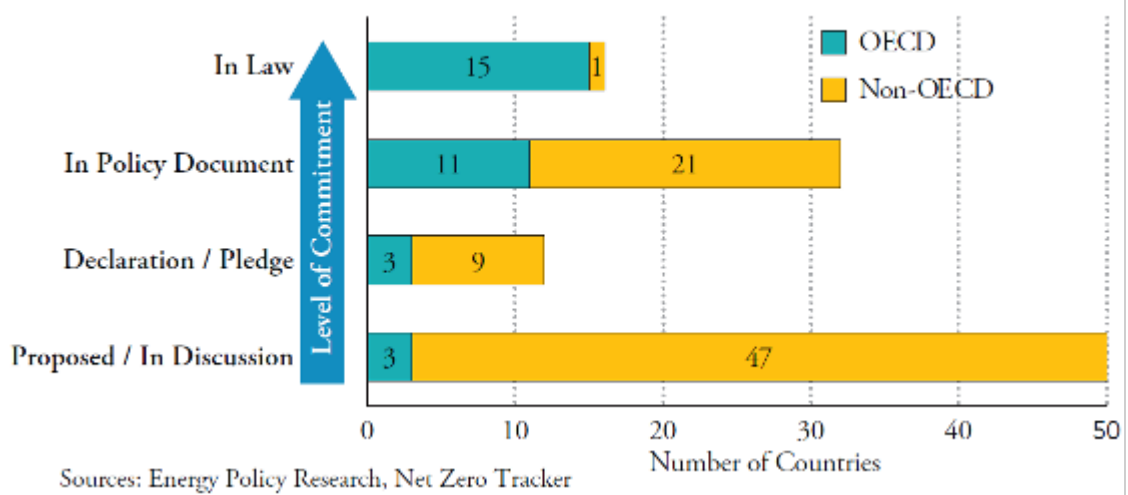
A Mokhtari/iStock

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

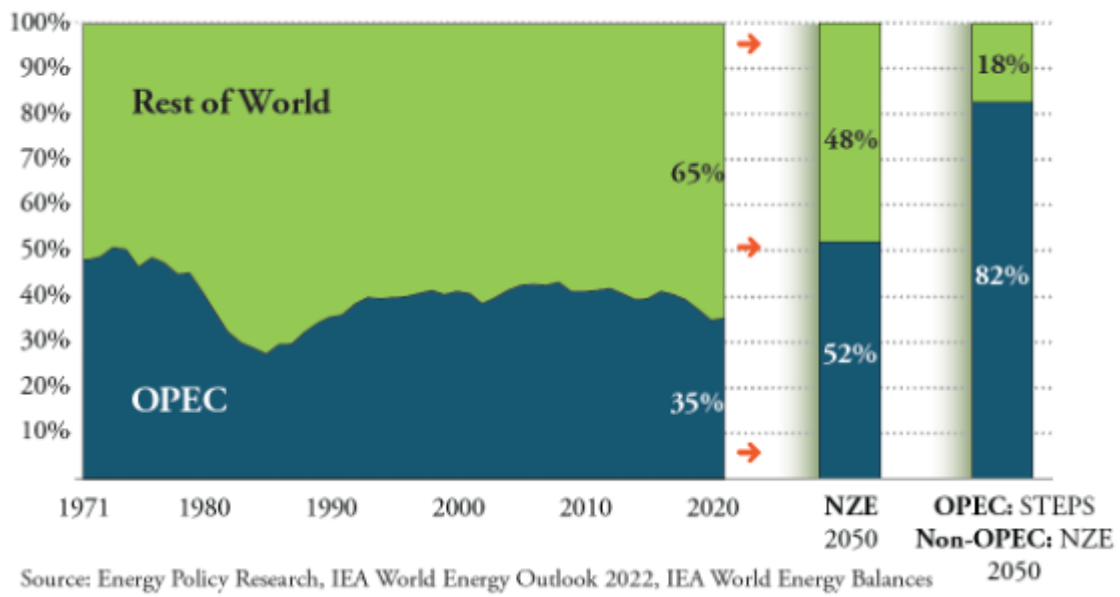


IEA NZE OPEC 35% 52% 1973

NZE OPE C

OPEC NZE OPEC NZE STEPS OPEC 82%

Figure 17. OPEC Share of Global Oil Production

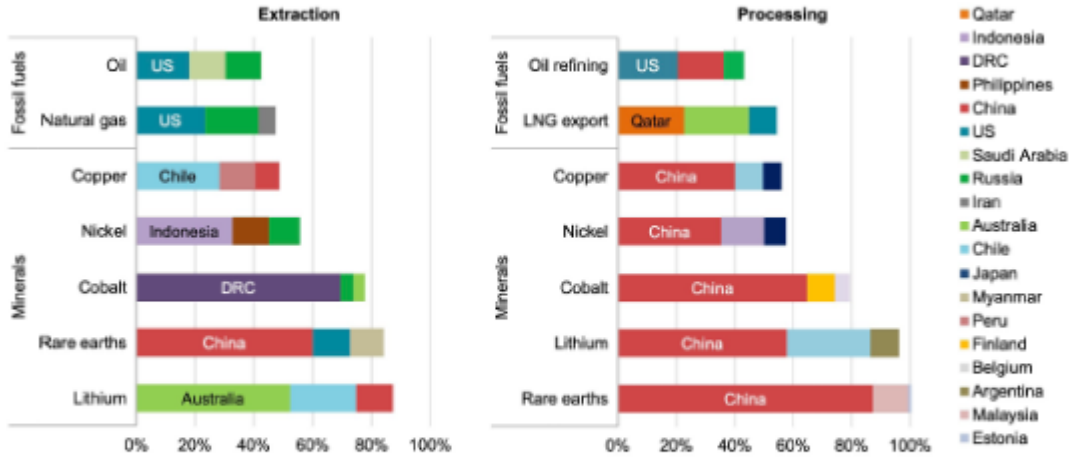


??OPEC??

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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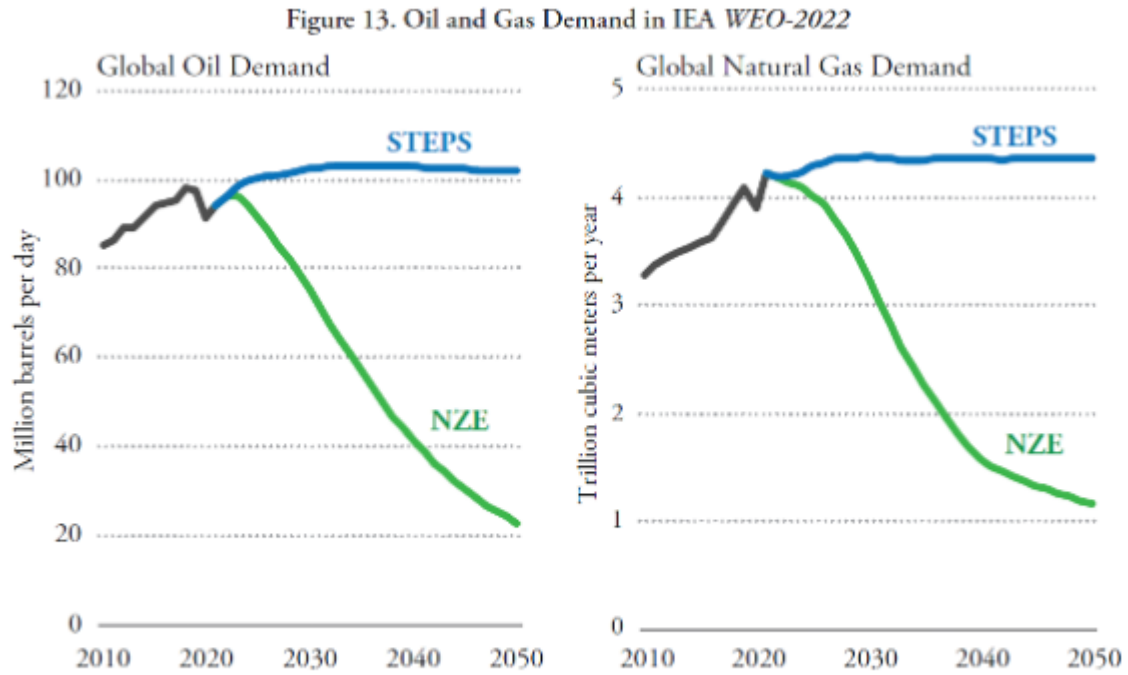
privetik/iStock

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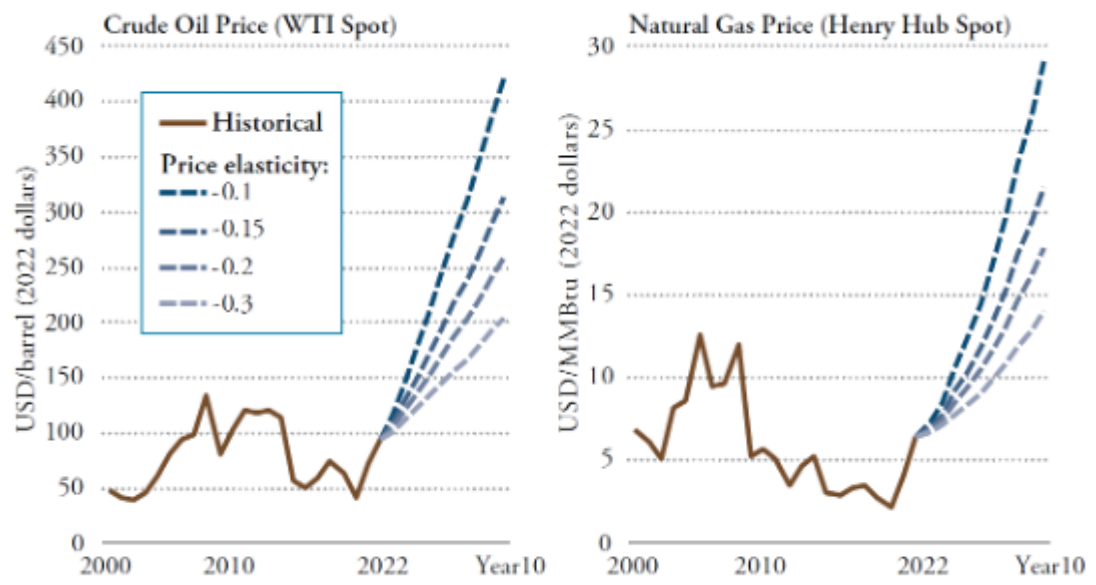
Source: Data from IEA, *World Energy Outlook* (2022) & *Outlooks for gas markets and investment* (2023). The data derived and estimated from graphs in the *WEO-2022* and the IEA’s gas report for the G7, as the IEA’s data tables only show scenario data for 2030 and 2050.

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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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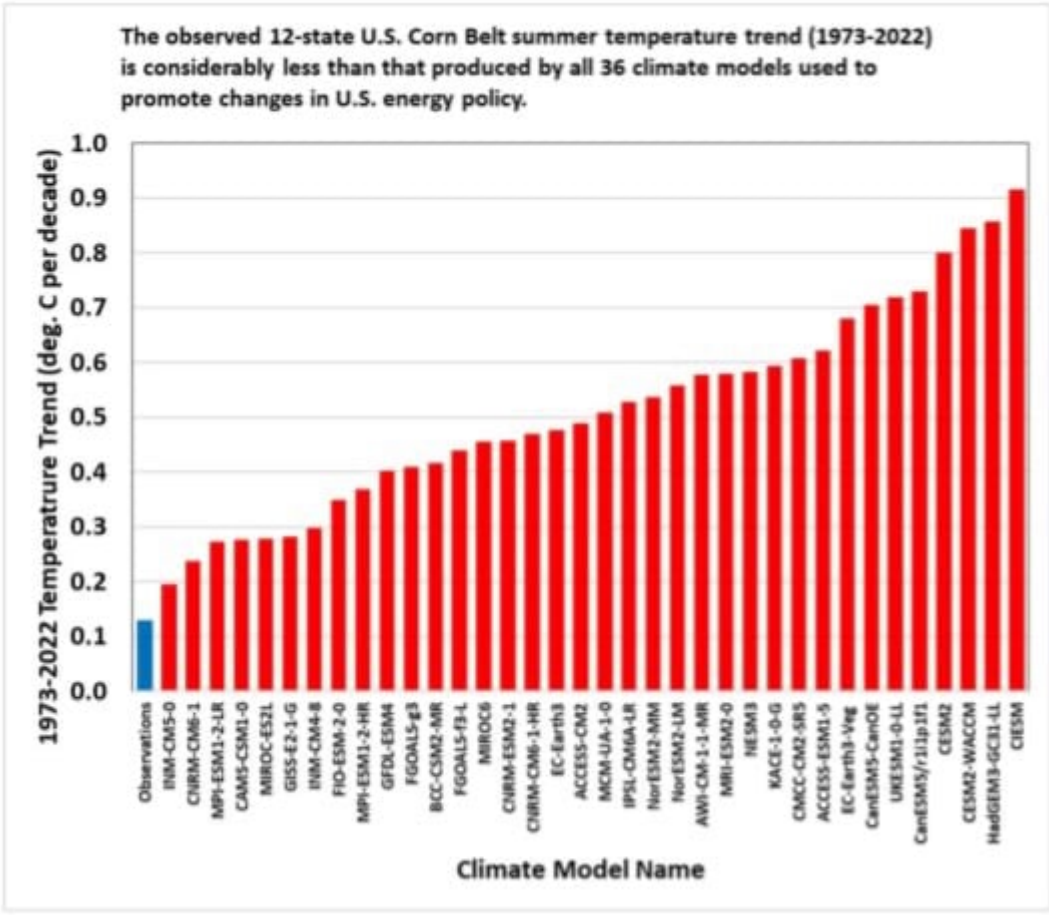
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feellife/iStock

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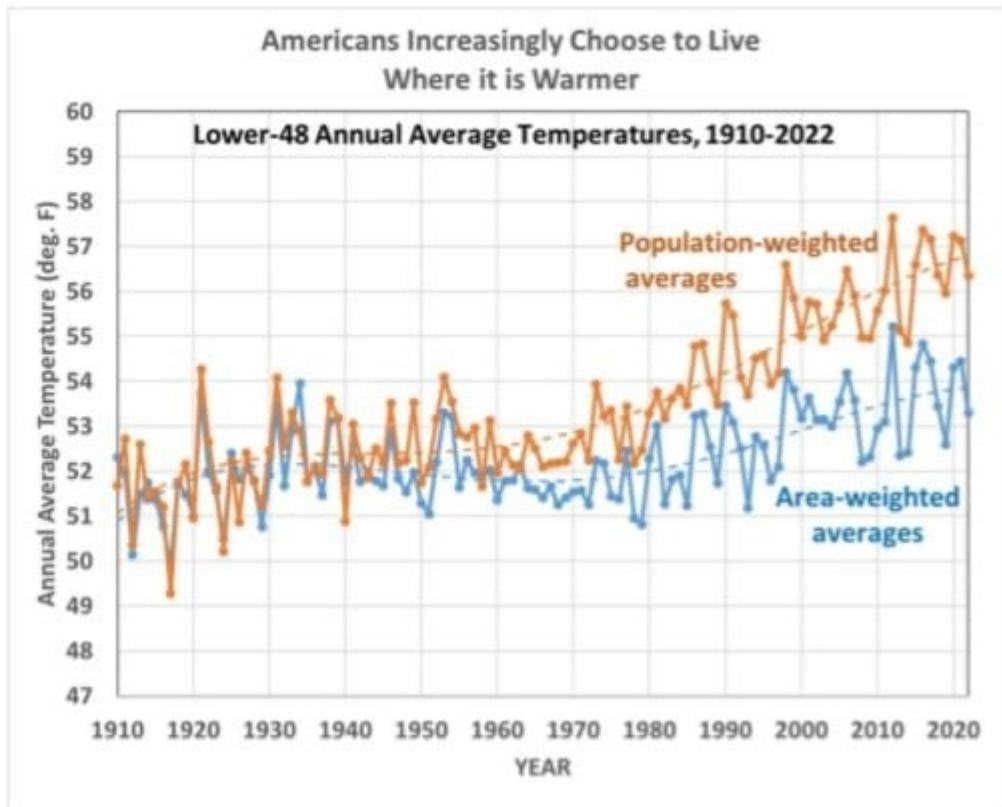
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Darwel/iStock

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PhonlamaiPhoto/iStock

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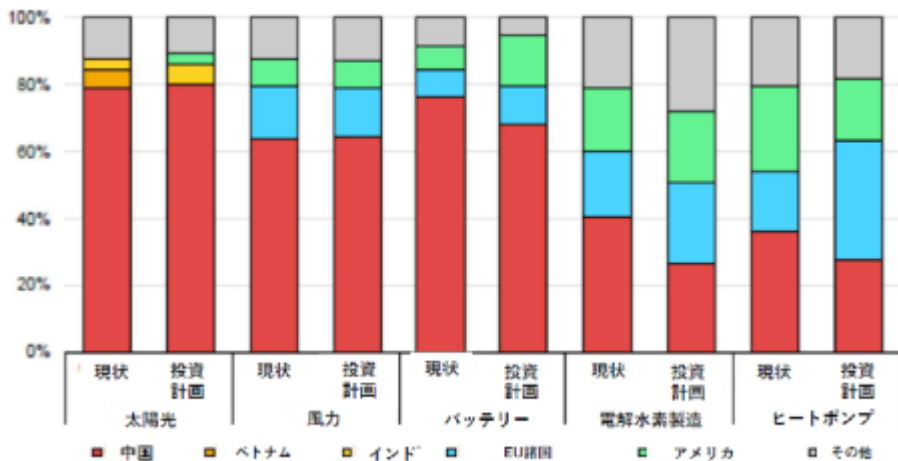
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図3. グリーン技術製造の地域集約度—現状と将来



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

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

?4?Reuters, 2011?1?17?


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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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?? ?? · Saturday, May 20th, 2023

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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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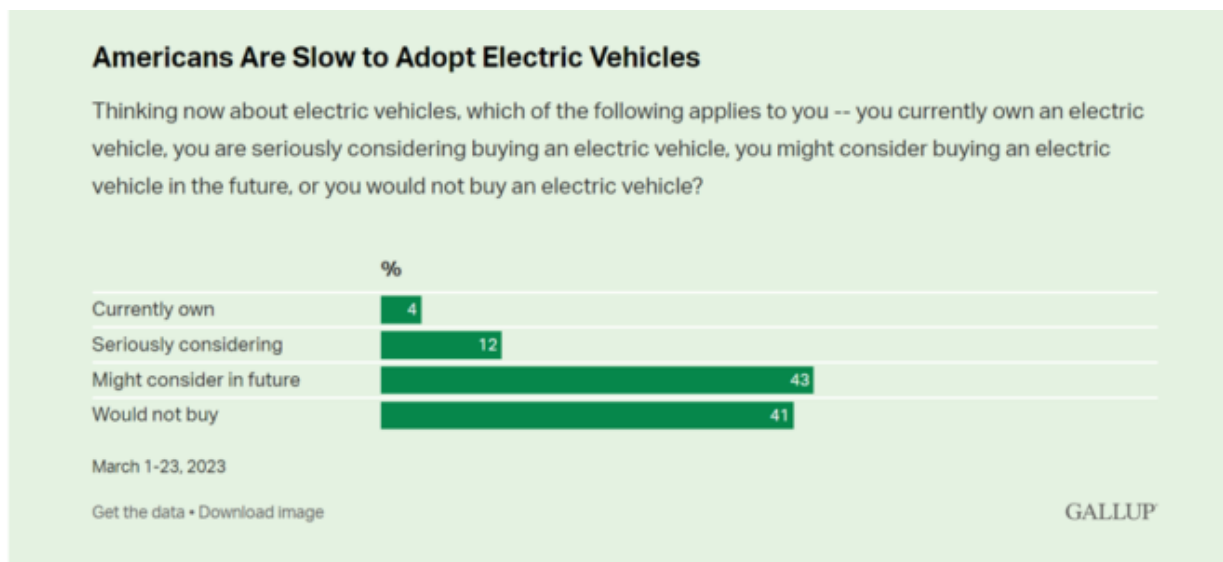
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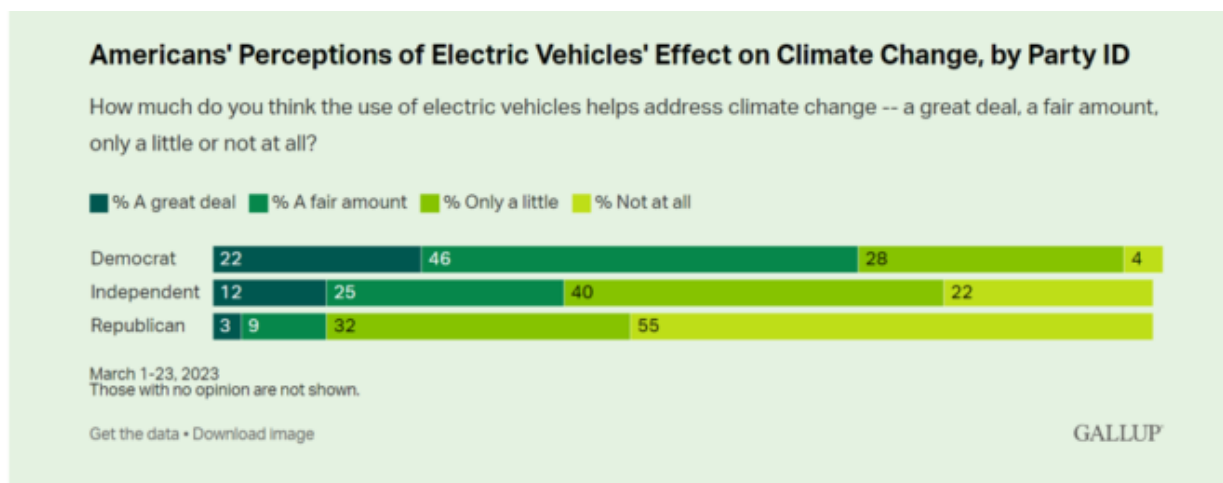
Most Americans Are Not Completely Sold on Electric Vehicles

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

?? ?? · Tuesday, May 16th, 2023



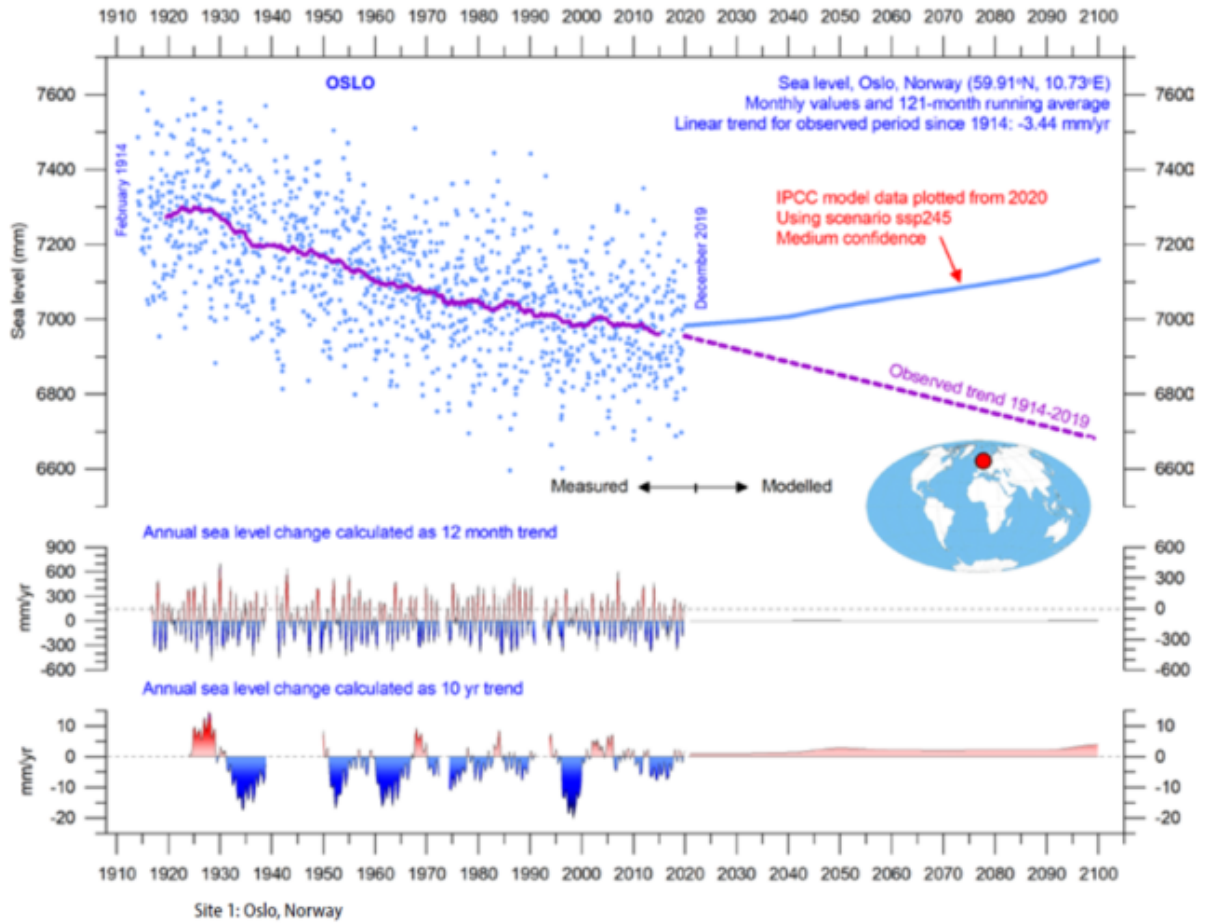
remotefx/iStock

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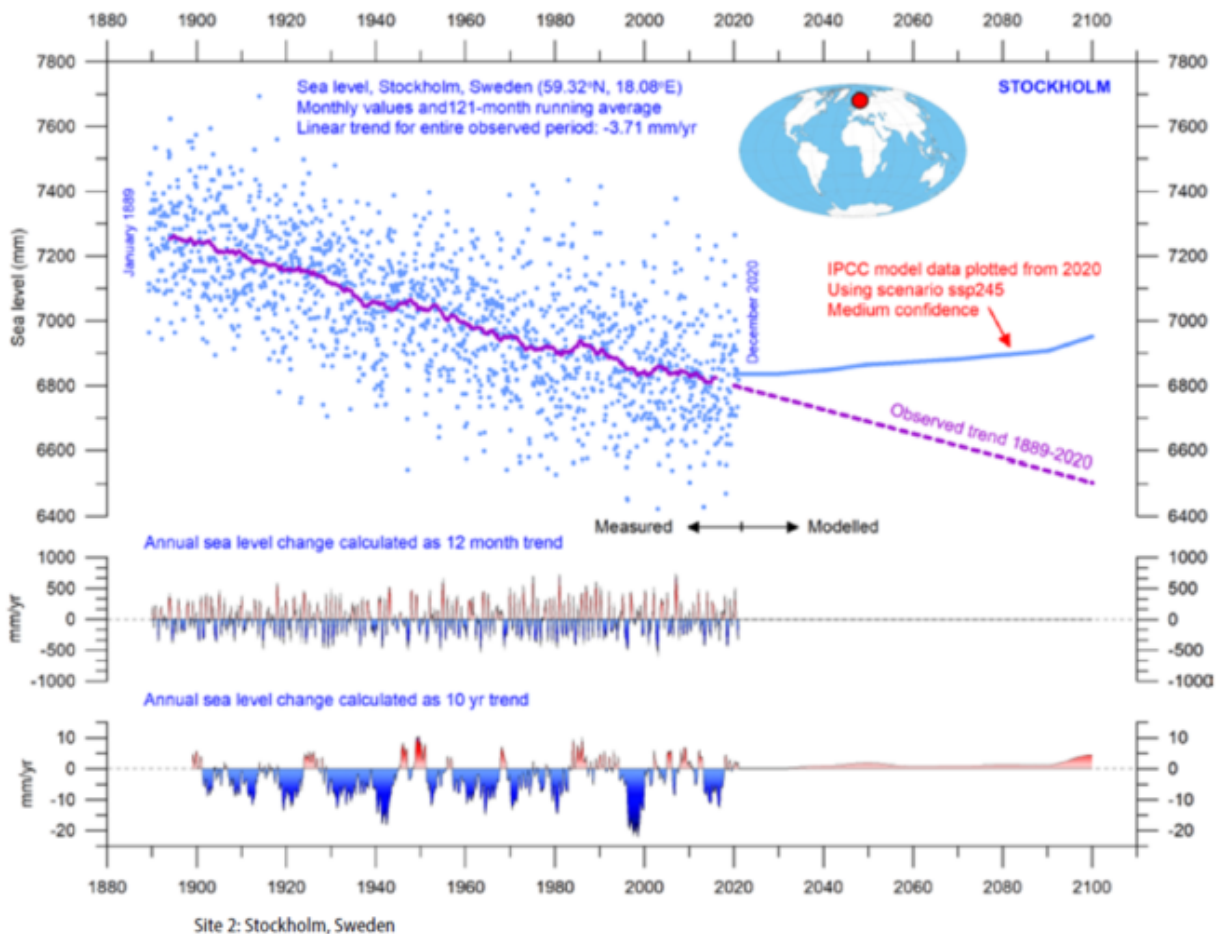
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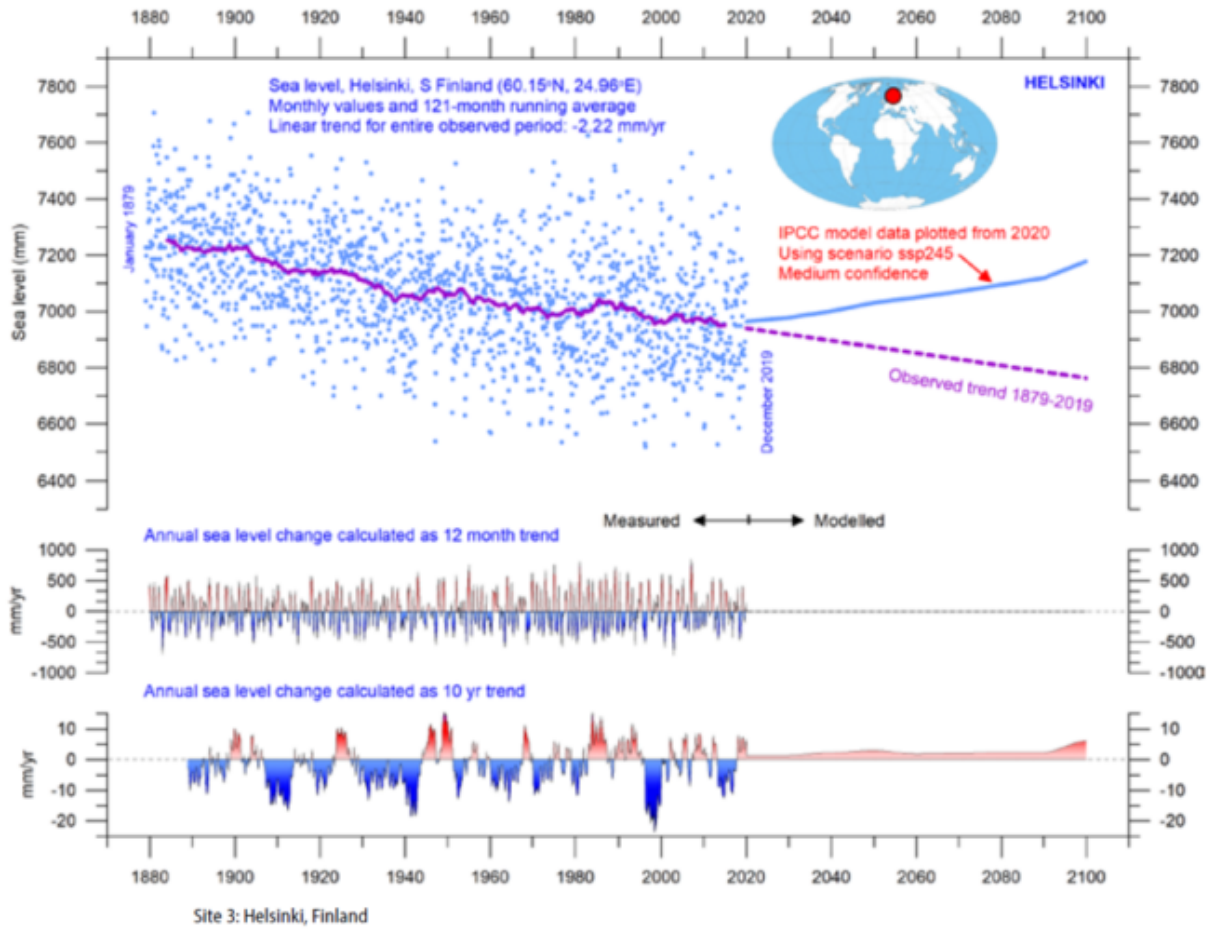
IPCC AR6 Sea Level Projection Tool



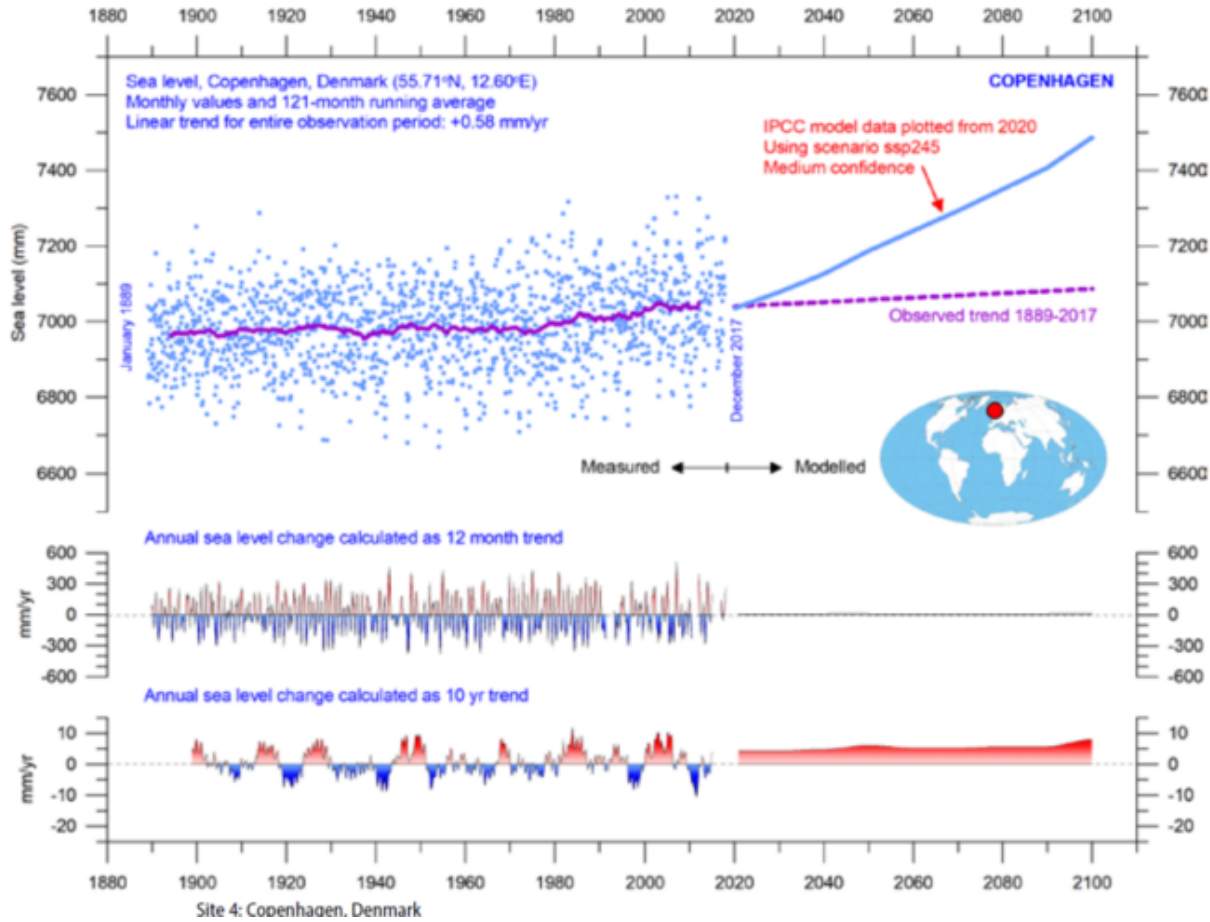
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?? ?? · Monday, May 15th, 2023

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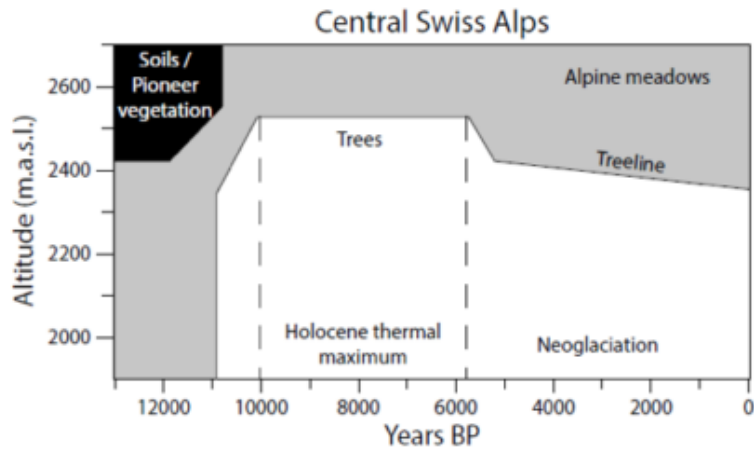


Figure 4: Fluctuations of the treeline in the Swiss Central Alps during the Holocene. The limits of the vegetational zones are placed between the sites according to the presence of the respective vegetation type as inferred by macrofossil analysis. Altitude in meters above sea-level. After Tinner & Theurillat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

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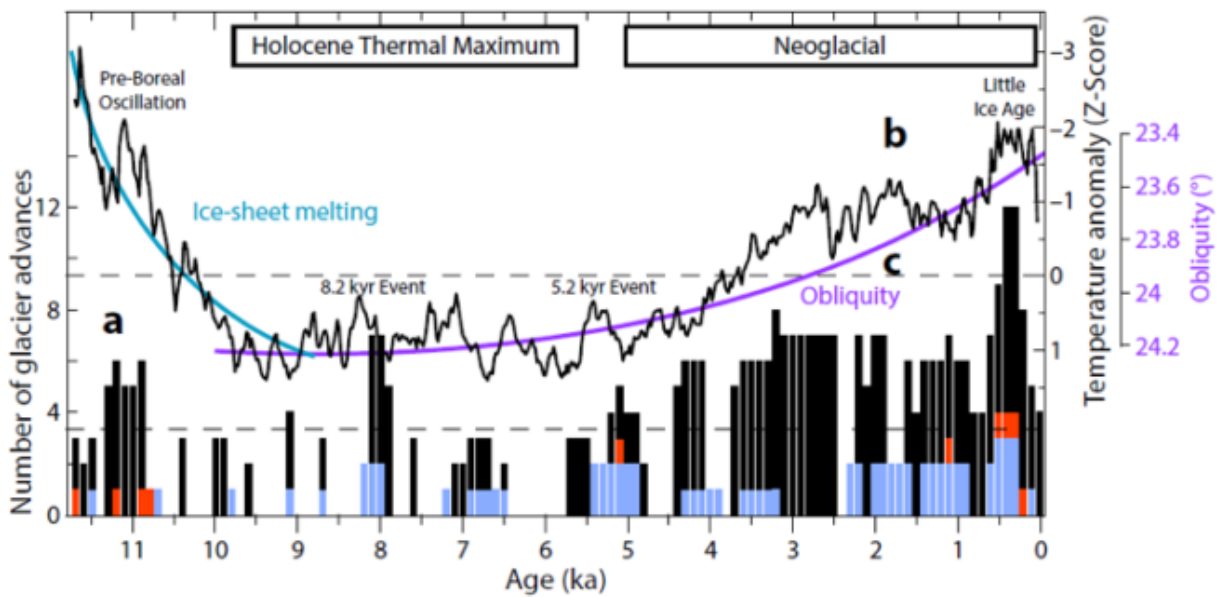


Figure 3: Glacial advances versus temperature (inverted) during the Holocene. a) Number of regions displaying glacier advances at each Holocene century. Black, NH 17 regions; orange, low latitudes single region; ice blue, SH 4 regions. Bottom dashed line, Holocene glacial position average. b) Inverted 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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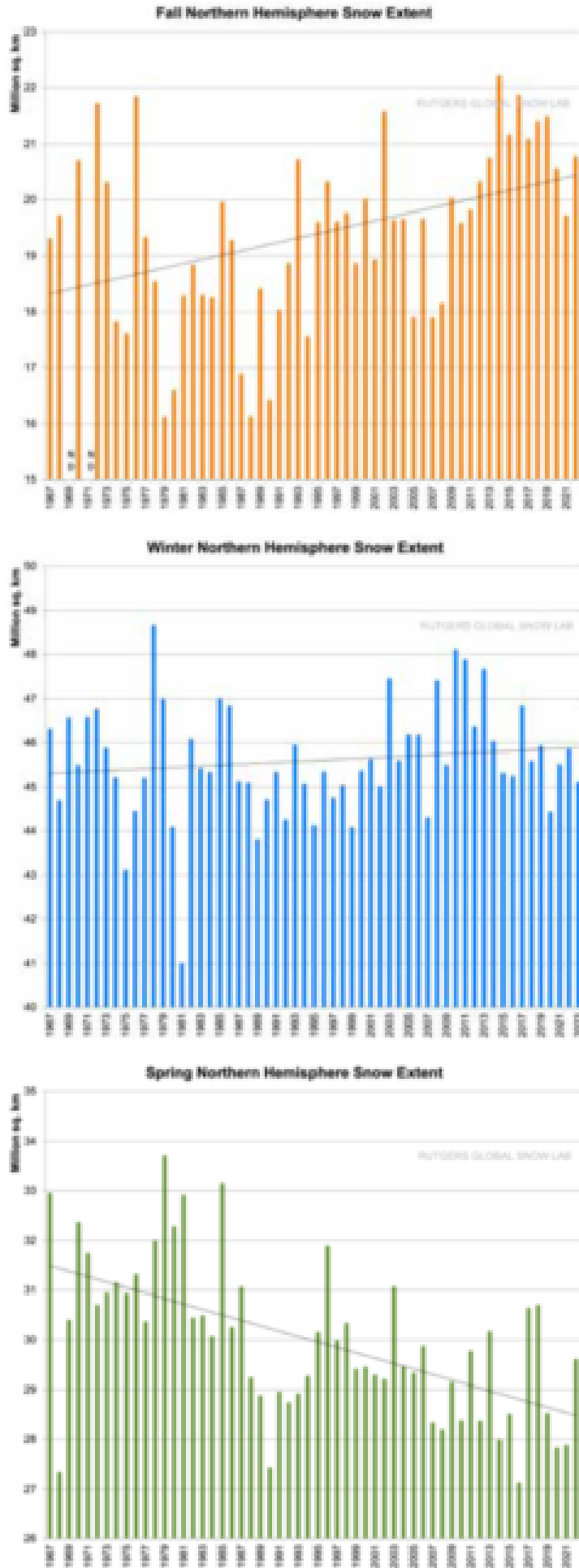


Figure 4: Snow cover extent (SCE) for the Northern Hemisphere for autumn, winter and spring. From: Rutgers Global Snow Lab (2023)

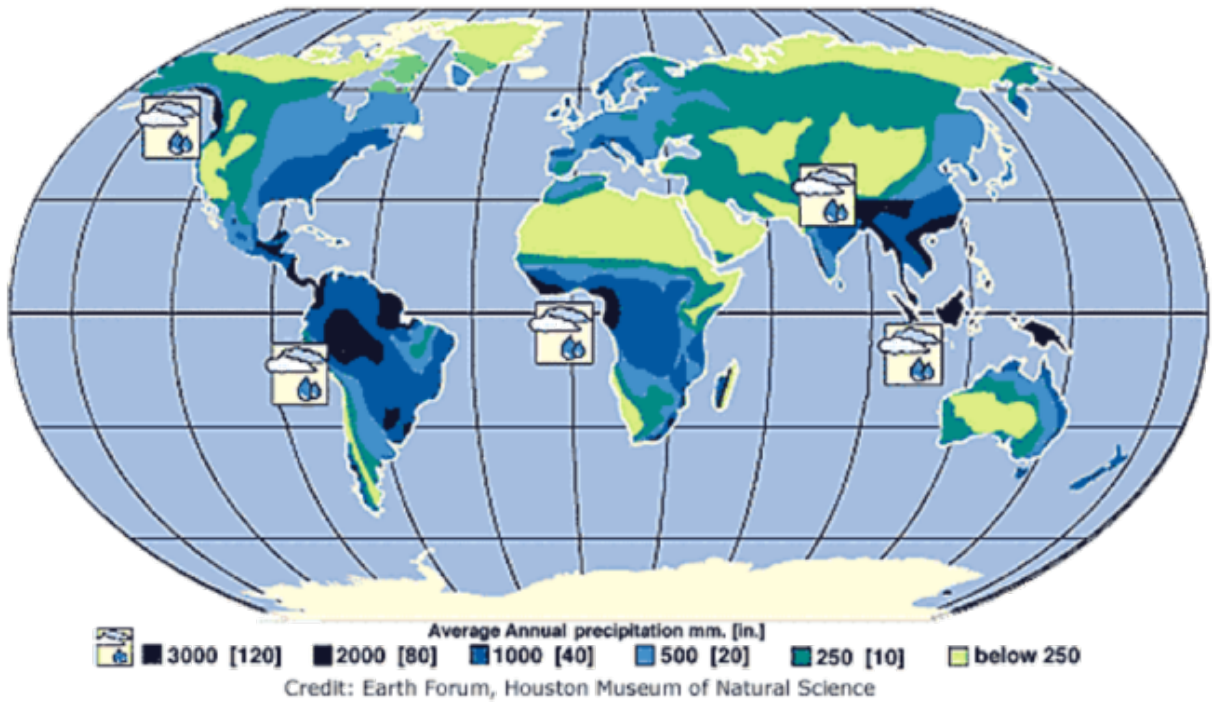
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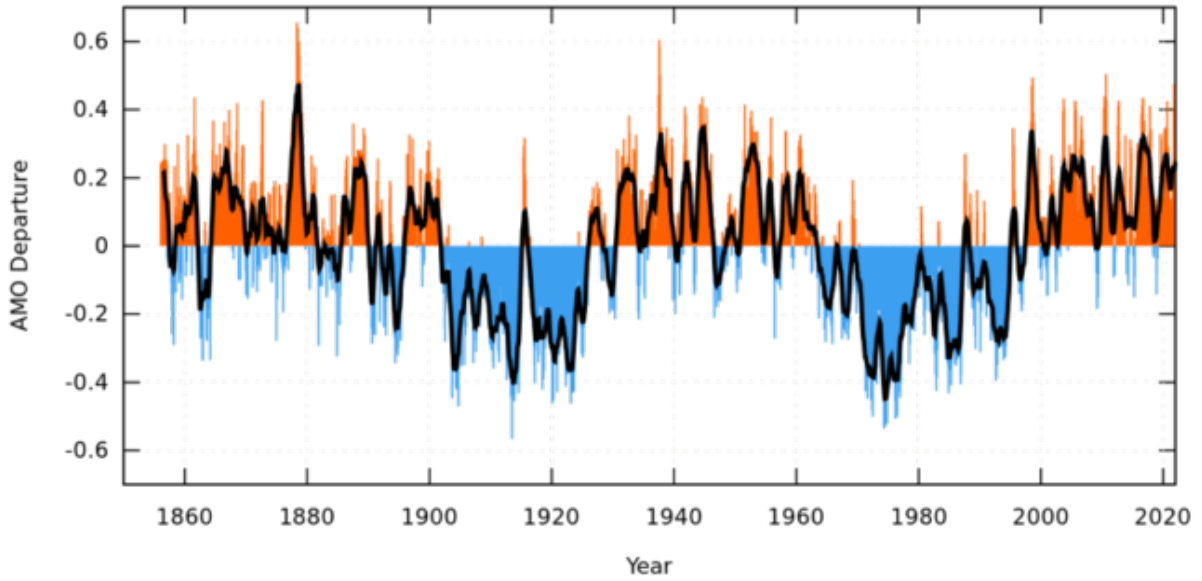
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Monthly values for the AMO index, 1856 - 2022



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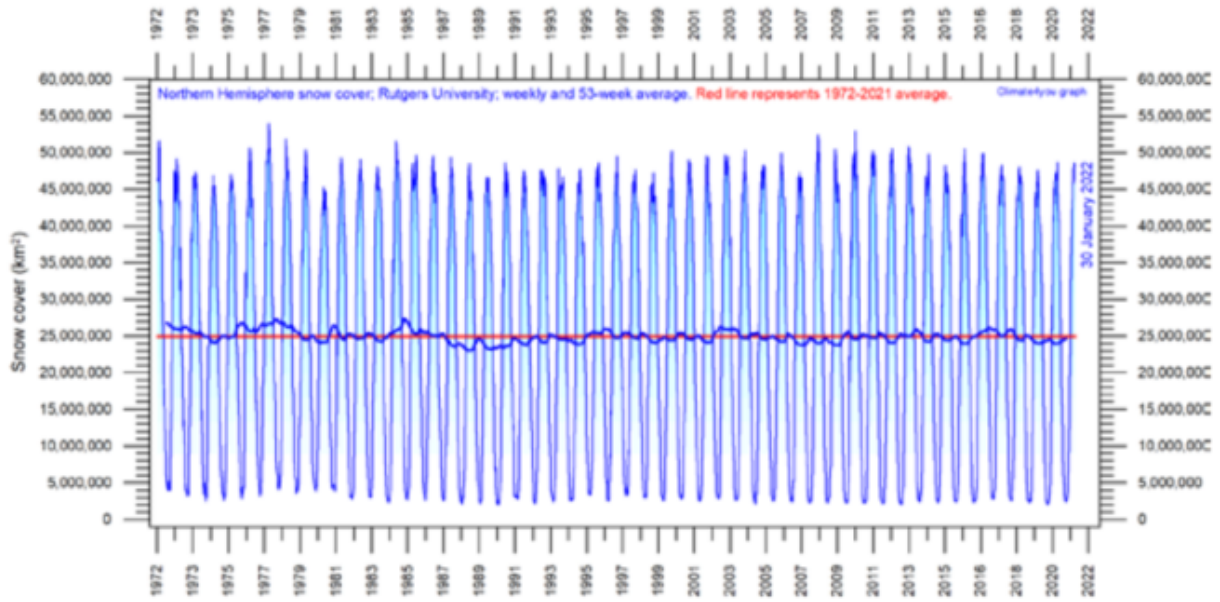


Figure 7: Northern hemisphere weekly snow cover since January 1972 according to the Rutgers University Global Snow Lab (<http://climate.rutgers.edu/snowcover>), the thin blue line is the weekly data, and the thick blue line is the running 53 week average (approximately 1 year). The horizontal red line 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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?? ??? ?? · Thursday, May 11th, 2023



mirza kadic/iStock

“Germany’s new coalition government, comprising the CDU/CSU and SPD, has taken office on 14 January 2021. The new government faces a number of challenges, including the COVID-19 pandemic, the EU recovery plan, and the climate change negotiations. The CDU/CSU is the largest party in the coalition, and the SPD is the second largest. The new government has a mandate to lead Germany through the challenges ahead.”

2005-2021, CDU/CSU, SPD, 6, COVID-19, EU recovery plan, climate change negotiations, CDU/CSU, SPD, 6, COVID-19, EU recovery plan, climate change negotiations.

Germany’s new coalition government, comprising the CDU/CSU and SPD, has taken office on 14 January 2021. The new government faces a number of challenges, including the COVID-19 pandemic, the EU recovery plan, and the climate change negotiations. The CDU/CSU is the largest party in the coalition, and the SPD is the second largest. The new government has a mandate to lead Germany through the challenges ahead.

Germany’s new coalition government, comprising the CDU/CSU and SPD, has taken office on 14 January 2021.

15 January 2021, CDU/CSU, SPD, EU recovery plan, climate change negotiations, CDU/CSU, SPD, 15 January 2021, EU recovery plan, climate change negotiations.

Germany’s new coalition government, comprising the CDU/CSU and SPD, has taken office on 14 January 2021. The new government faces a number of challenges, including the COVID-19 pandemic, the EU recovery plan, and the climate change negotiations.

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Germany’s new coalition government, comprising the CDU/CSU and SPD, has taken office on 14 January 2021. The new government faces a number of challenges, including the COVID-19 pandemic, the EU recovery plan, and the climate change negotiations.

Germany’s new coalition government, comprising the CDU/CSU and SPD, has taken office on 14 January 2021. The new government faces a number of challenges, including the COVID-19 pandemic, the EU recovery plan, and the climate change negotiations.

Germany’s new coalition government, comprising the CDU/CSU and SPD, has taken office on 14 January 2021. The new government faces a number of challenges, including the COVID-19 pandemic, the EU recovery plan, and the climate change negotiations.

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RFK Jr.?2024????????????????

?? ?? · Wednesday, May 10th, 2023



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

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

?? ?? · Saturday, May 6th, 2023



Kanur Ismail/iStock

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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)

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2021 2021 46% 2024 ESG

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SDGs

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

?? ?? · Sunday, April 30th, 2023



a-image/iStock

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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.”

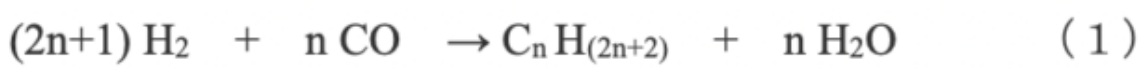
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?? ? · Tuesday, April 25th, 2023

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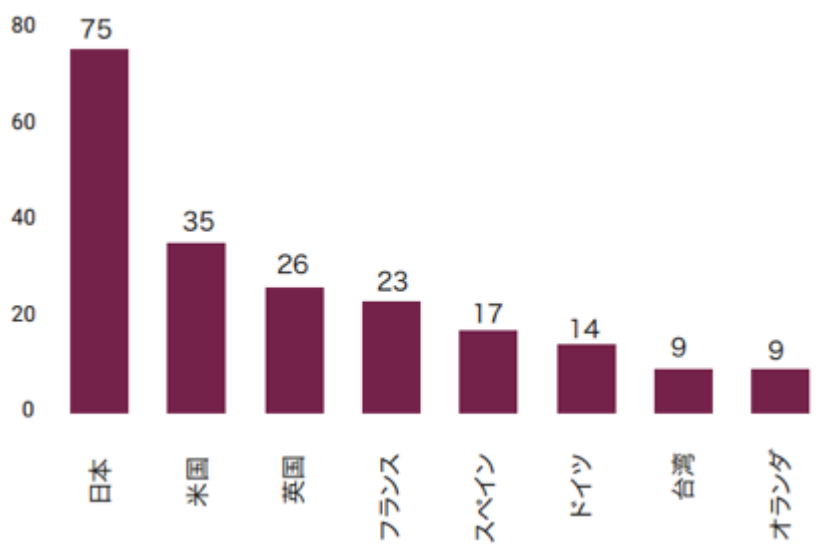
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気候変動 Aリスト 2022

Aリスト国・地域別企業数(上位8か国)



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CO2

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2021 6 2022 3 5

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?? ?? · Sunday, April 16th, 2023



deepblue4you/iStock

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Hydrogen

Friday, April 14th, 2023



Leestat/iStock

2017 6 15 15

2021 75

CO2



CO2 H2O
CO2
???

IT

???

60 60 2 36 64
40

CO2

km

???

???

2017 5 1 138

???

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1 CCUS CO2

1 CCUS

1000

2 EV

CCUS

??CO2??CO2??
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????????????200????????????2030??300????2050??2000????????????????????2040??1200????????????
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