

A Green New Deal for Europe: Decarbonization by 2050

Prof. Jeffrey D. Sachs

University Professor at Columbia University

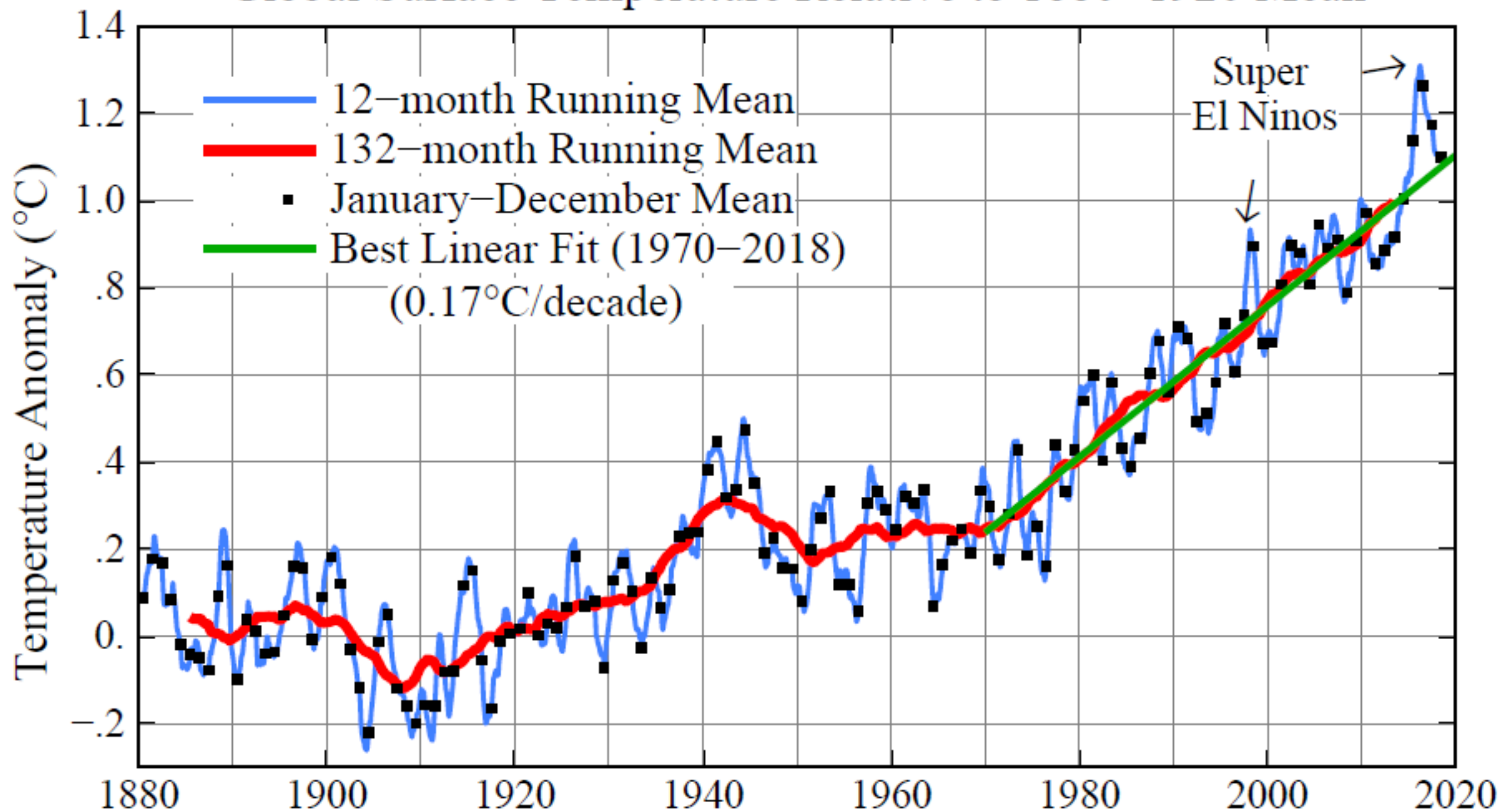
Director of the UN Sustainable Development Solutions Network

Forum on Sustainable Development

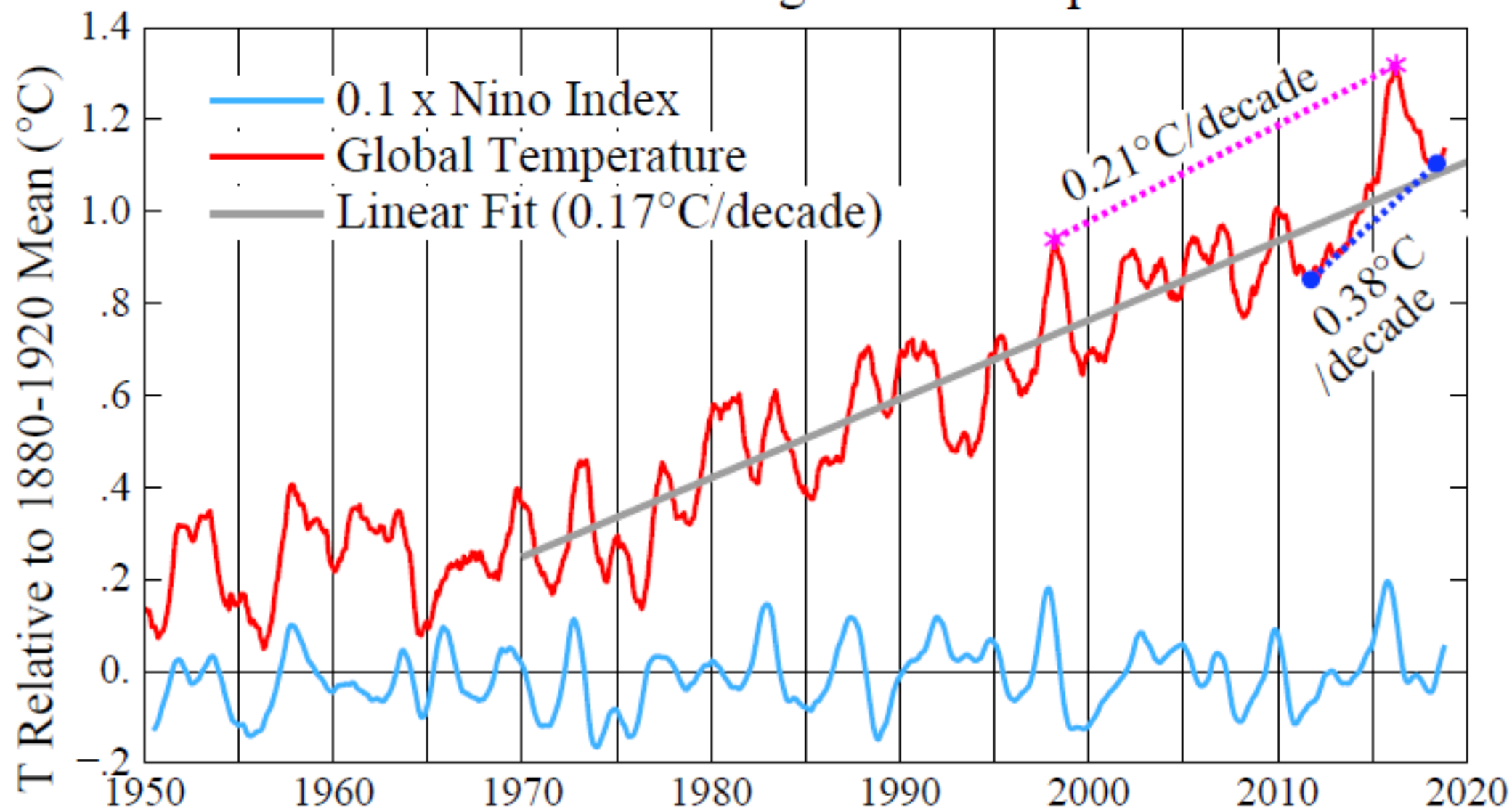
Academy of Public Investments

Prague, November 22, 2019

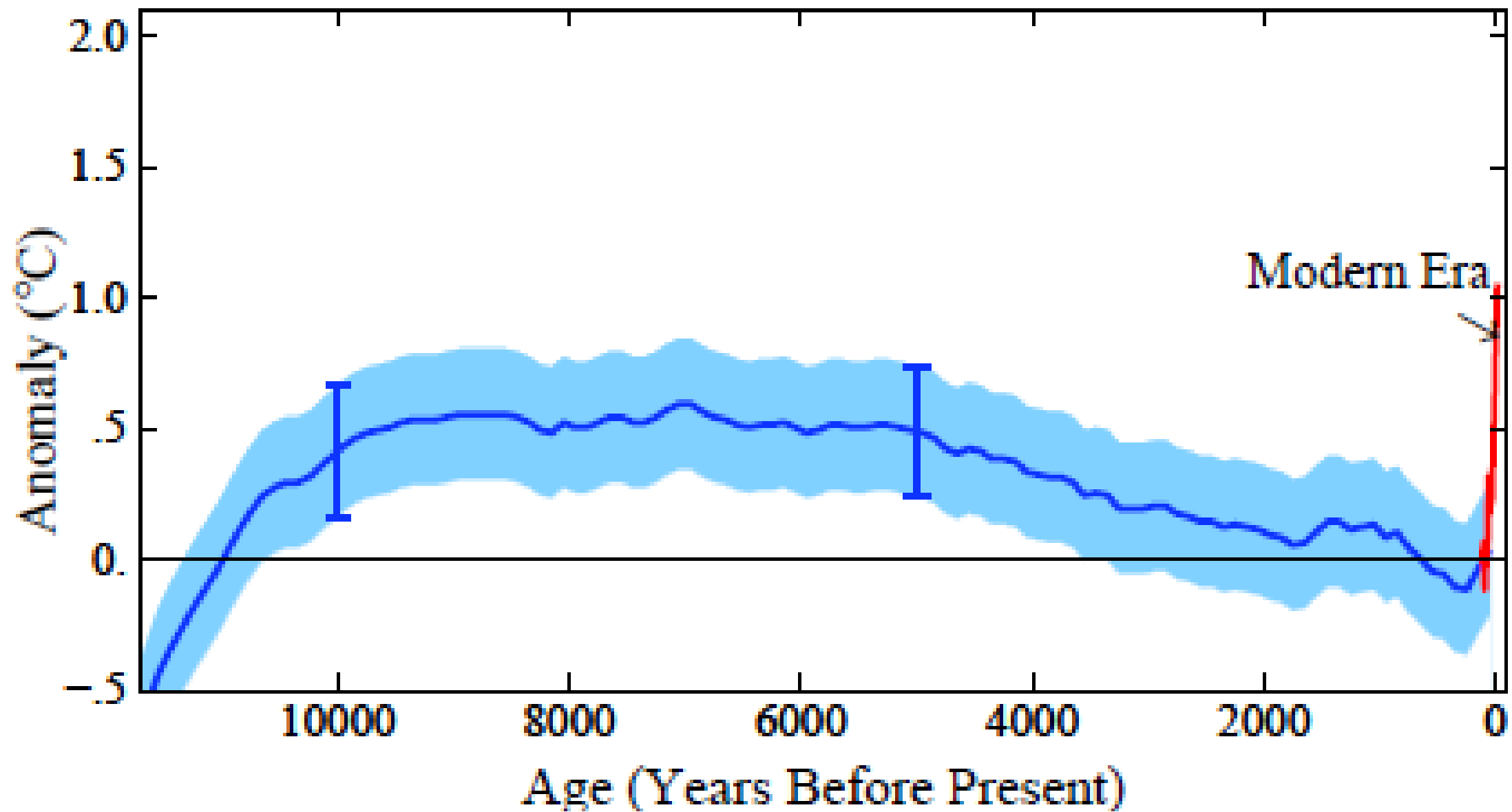
Global Surface Temperature Relative to 1880–1920 Mean



12-Month Running Mean Temperature

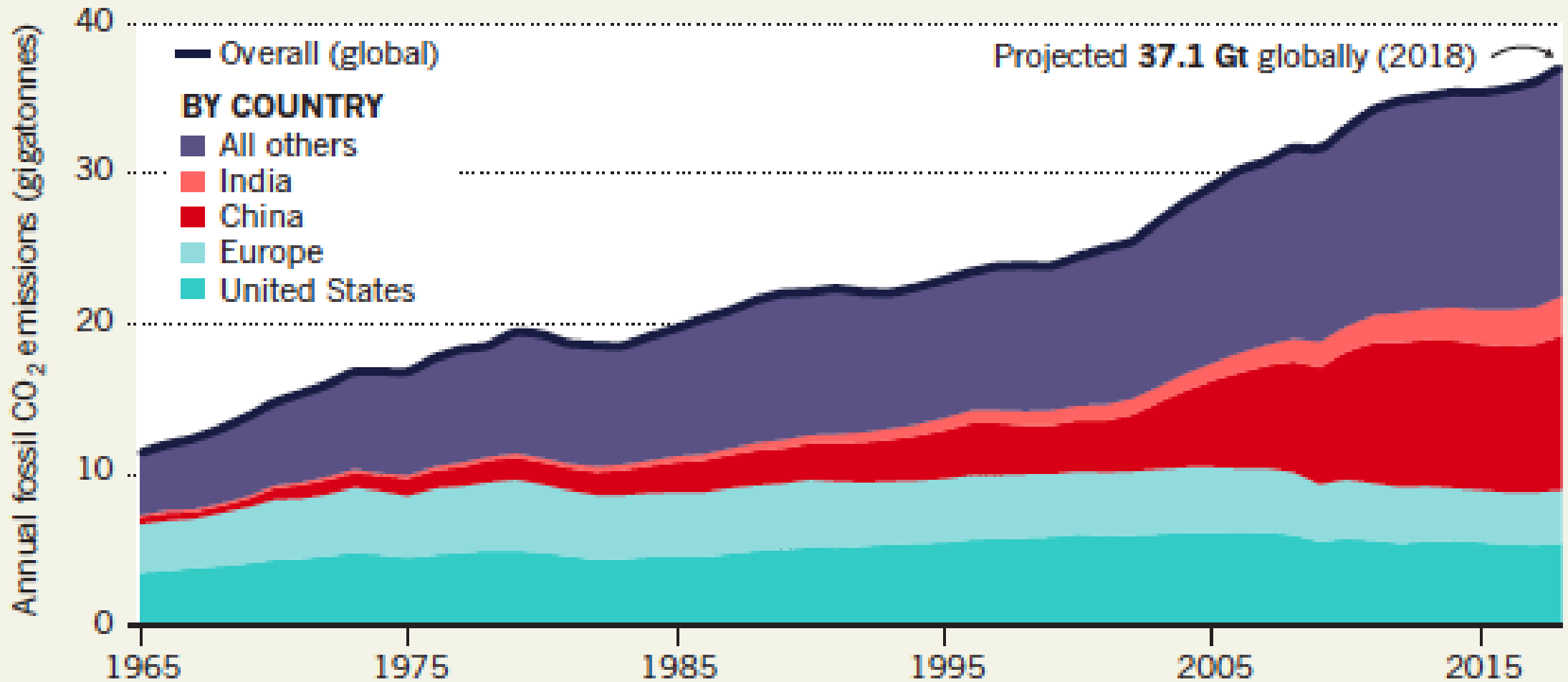


(b) Holocene: Last 11,700 Years

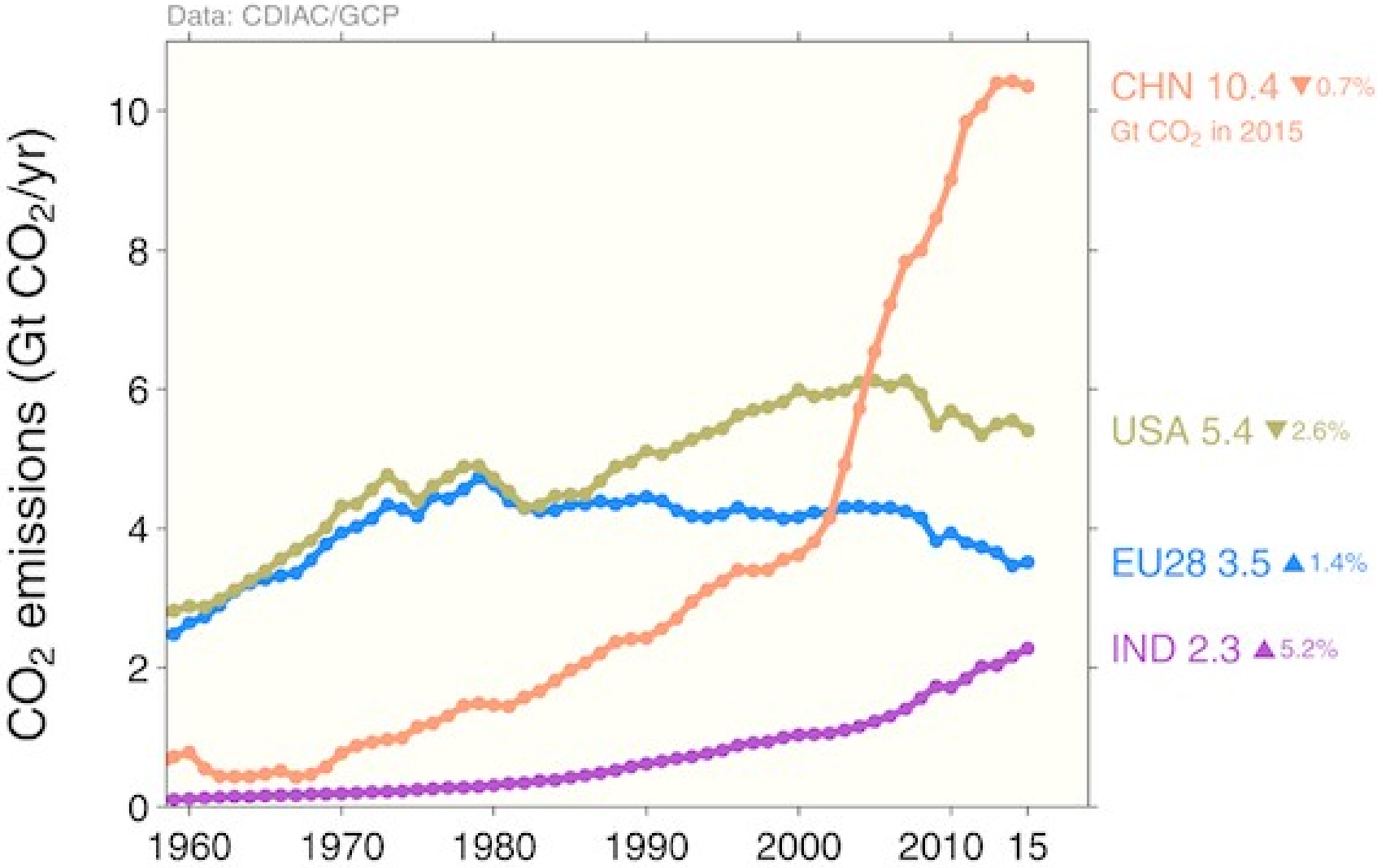


EMISSIONS ARE STILL INCREASING

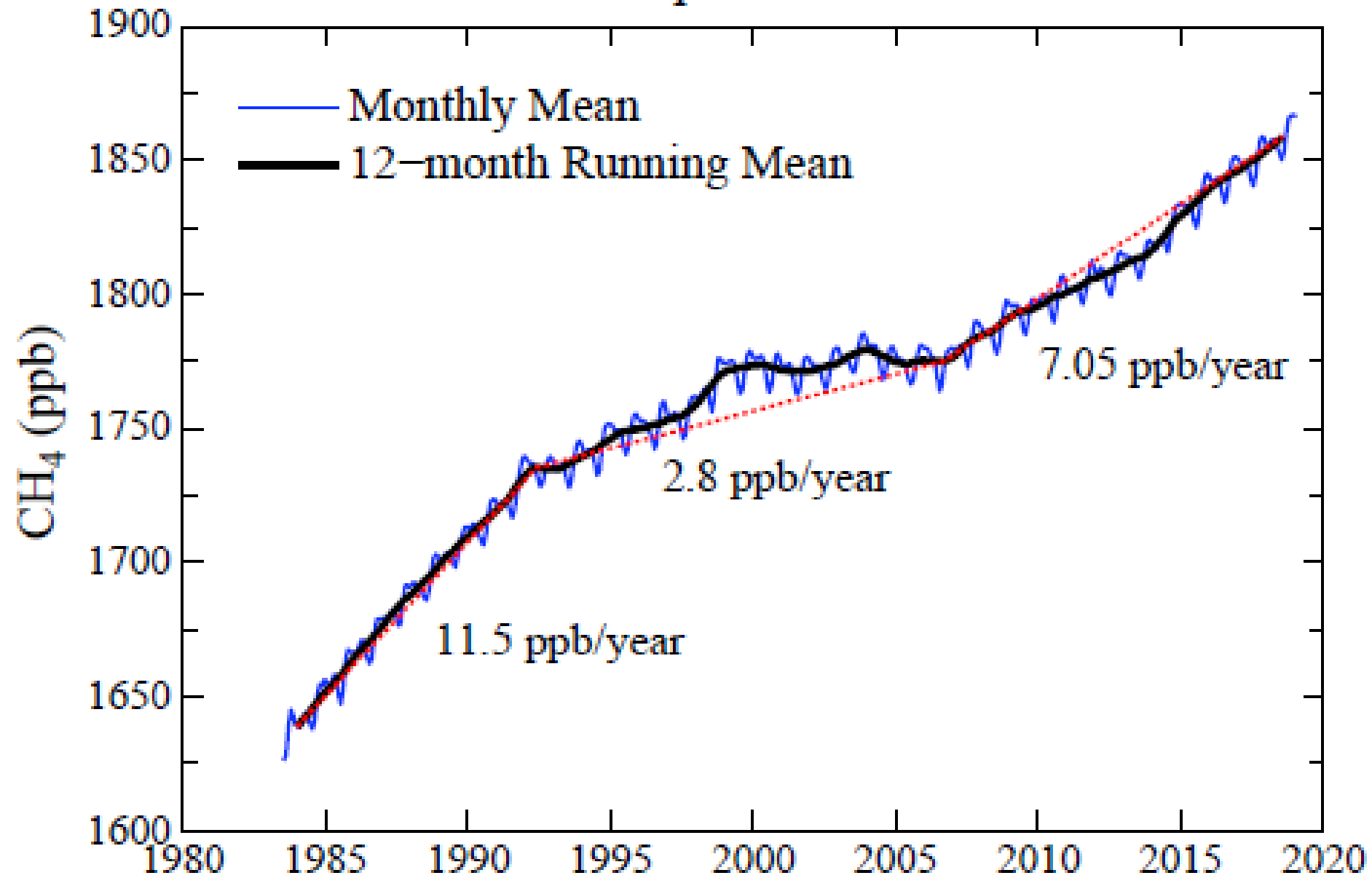
China and India still rely heavily on coal; the United States and the European Union are slowly decarbonizing.



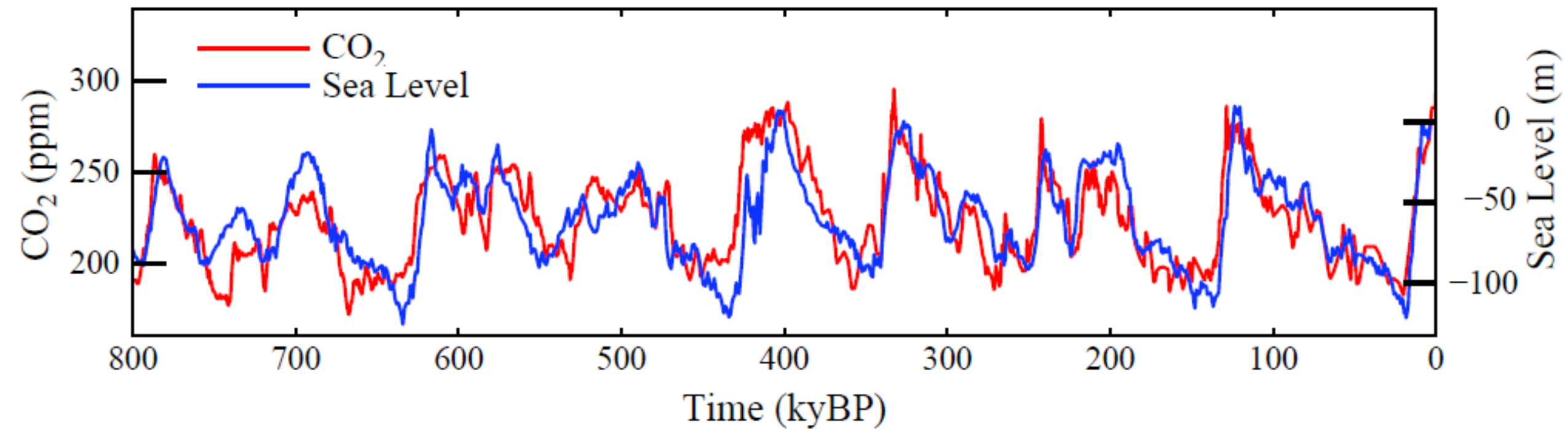
CHINA'S CO2 EMISSIONS



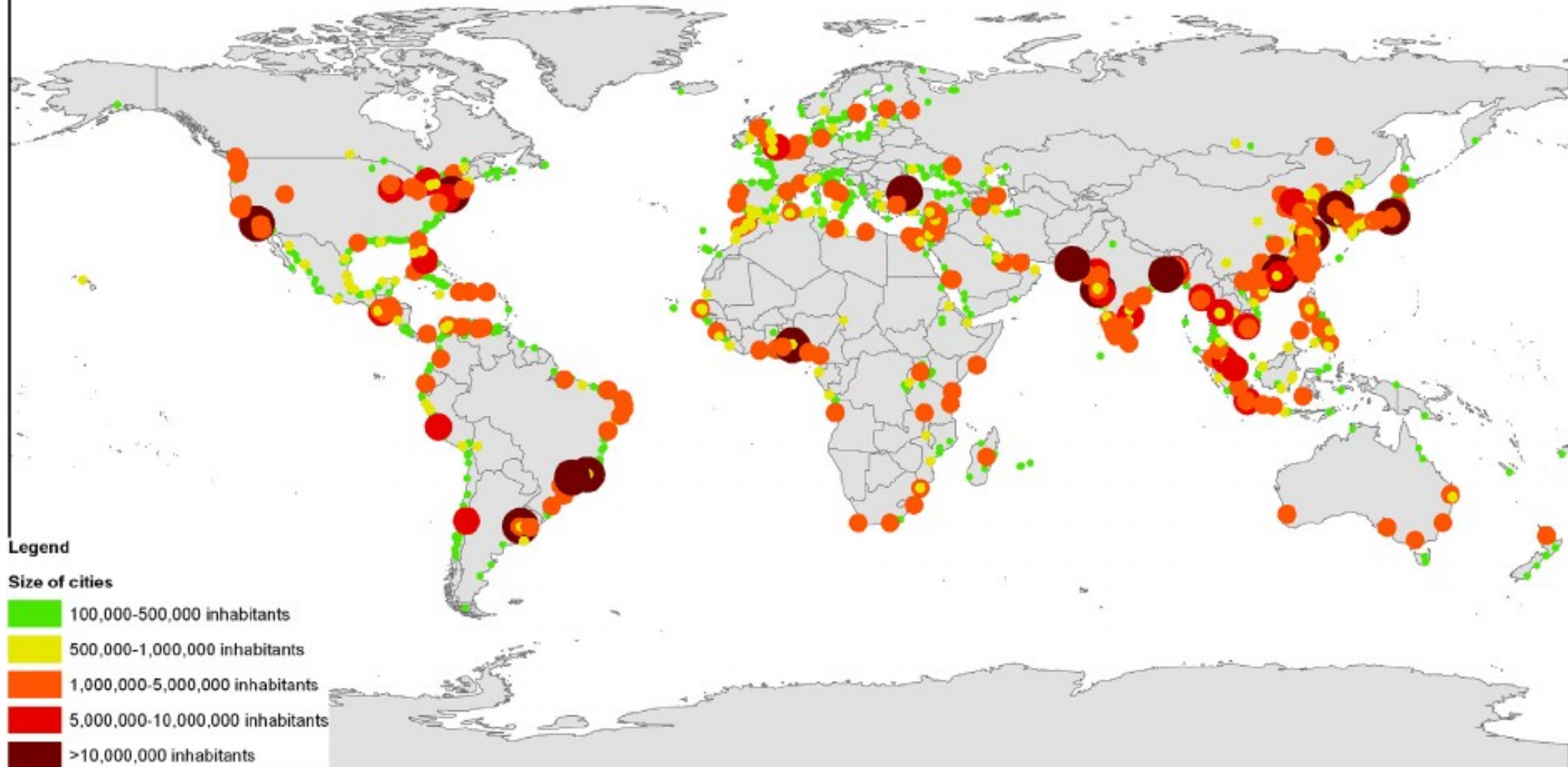
Global Mean Atmospheric Methane Abundance



CO₂ and Sea Level



More than half of the world's largest cities are on the coastline.



Flames rise as a wildfire burns in the town of Rafina, near Athens, 23 July 2018.



Photo by Angelos Tzortzinis/AFP/Getty Image



Photo by Valerie Gache/AFP/Getty

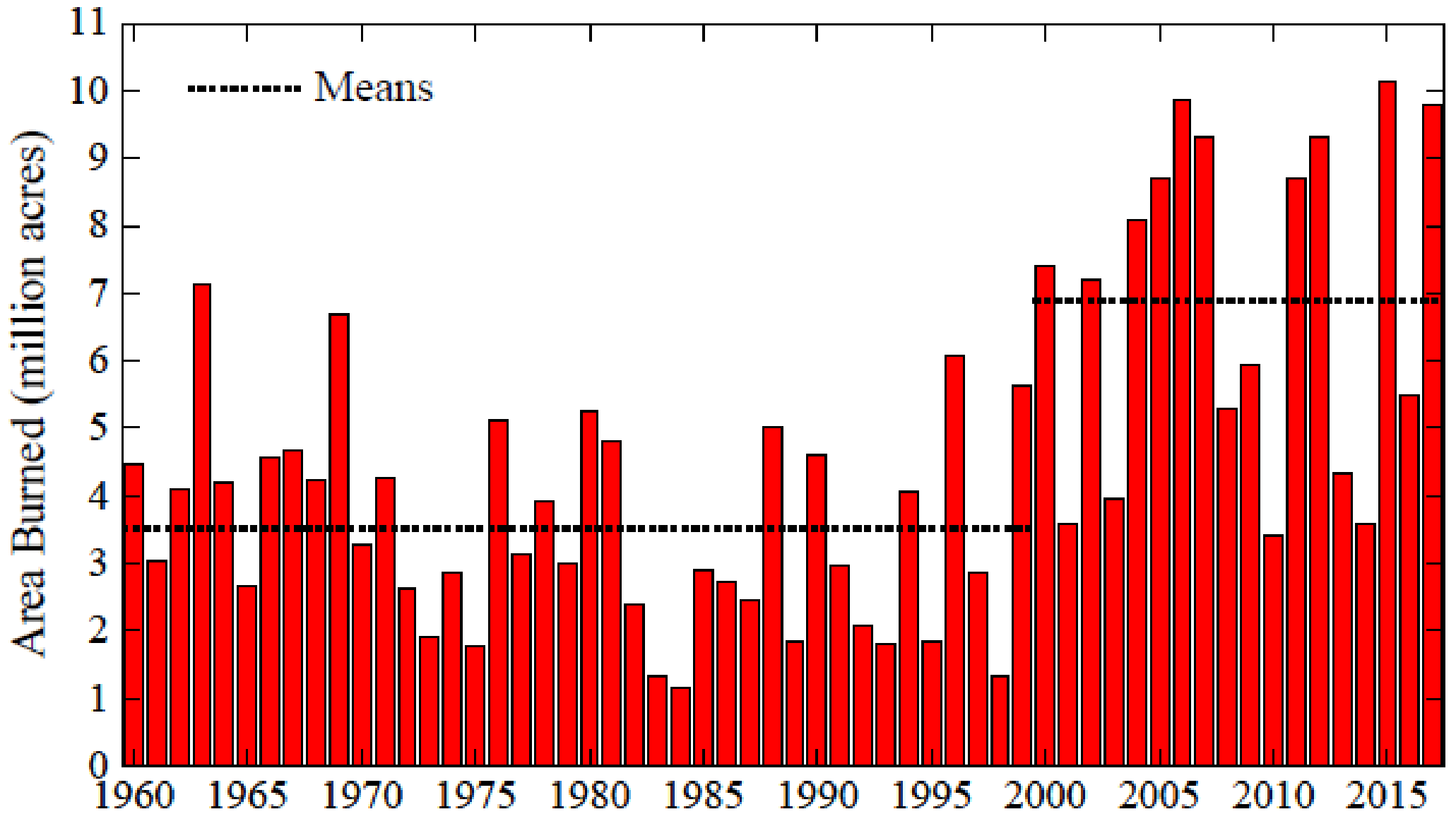
Cars blocked at closed National Road as wildfire rages in Kineta, west of Athens.



Photo by Angelos Tzortzinis/AFP/Getty

Charred cars lined a roadway in the village of Mati, east of Athens, July 24.

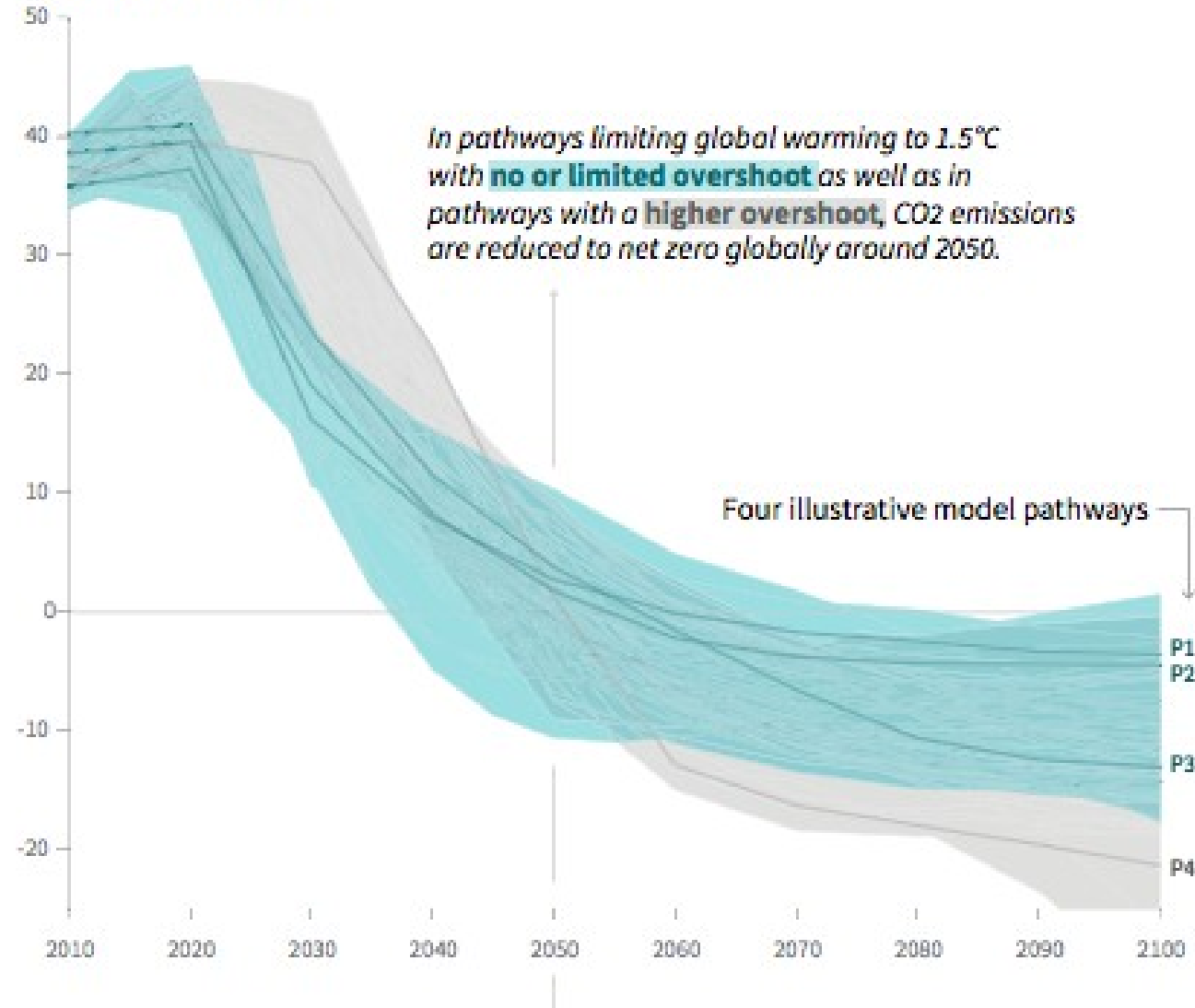
Total Wildland Acres Burned in U.S.



Data source: National Interagency Fire Center 1960-2016: https://www.nifc.gov/fireInfo/fireInfo_stats_totalFires.html

Global total net CO₂ emissions

Billion tonnes of CO₂/yr



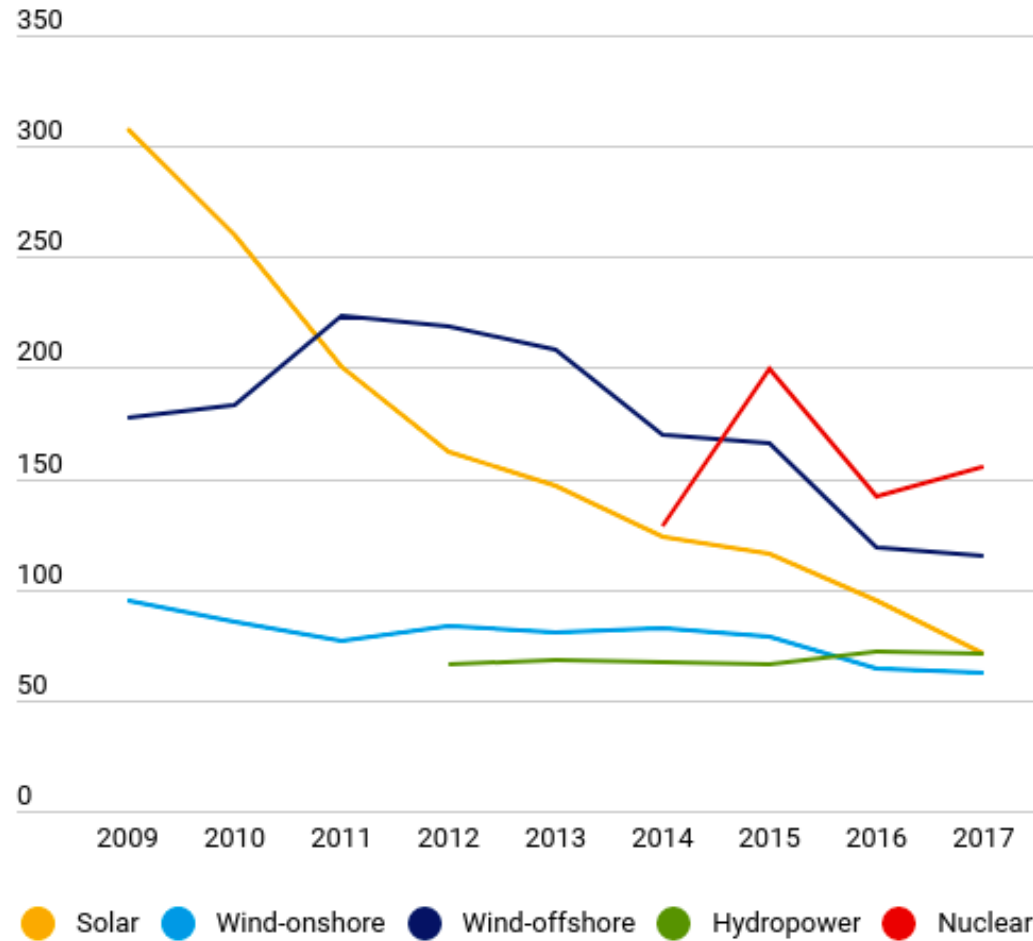
GOAL:

DECARBONIZATION
BY 2050

Cheaper power

Rapidly falling costs are fueling investment in solar panels and wind turbines for electric power generation.

(levelized cost of electricity, US dollars per megawatt hour)



Sources: Bloomberg New Energy Finance; Federal Reserve Economic Data; and IMF staff calculations.

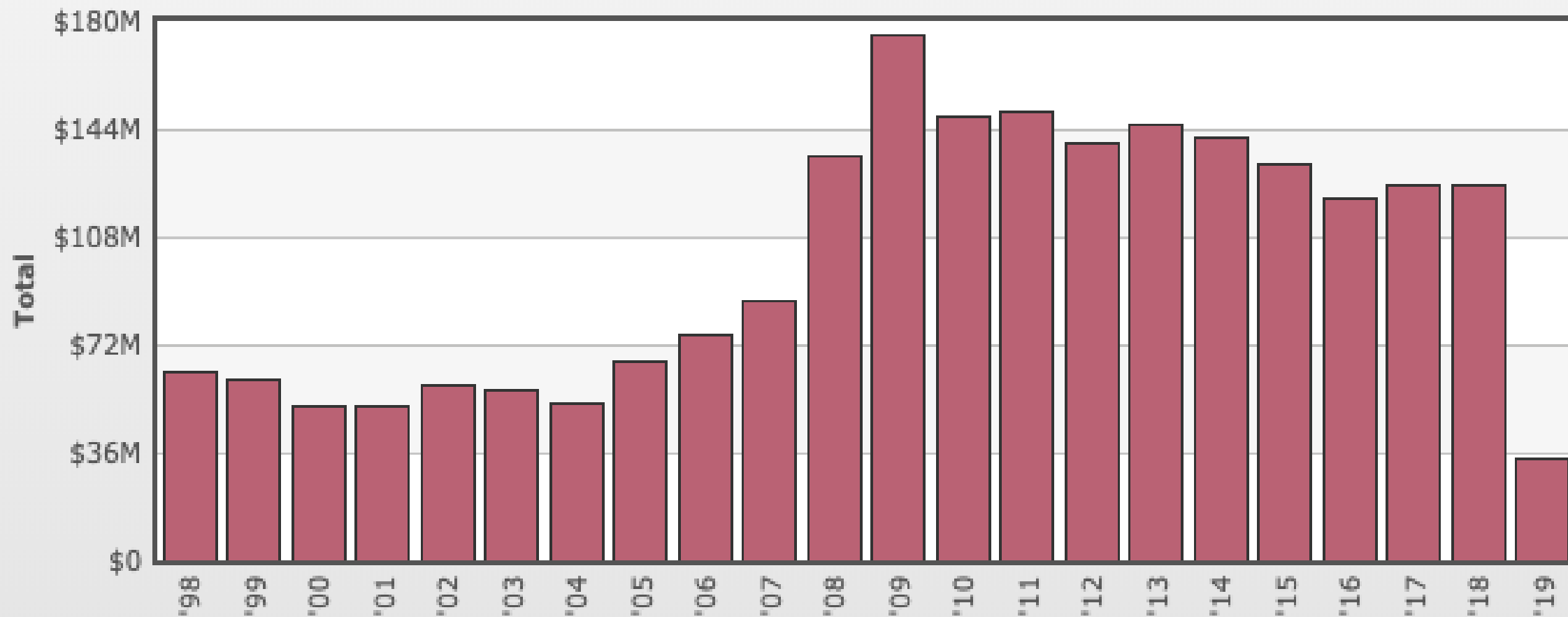
So What's Wrong?

US, Canada, Russia, China, India, GCC, Australia, Indonesia
Account for Roughly Three-Quarters of Fossil Fuel
Production

They fight for market share and profits

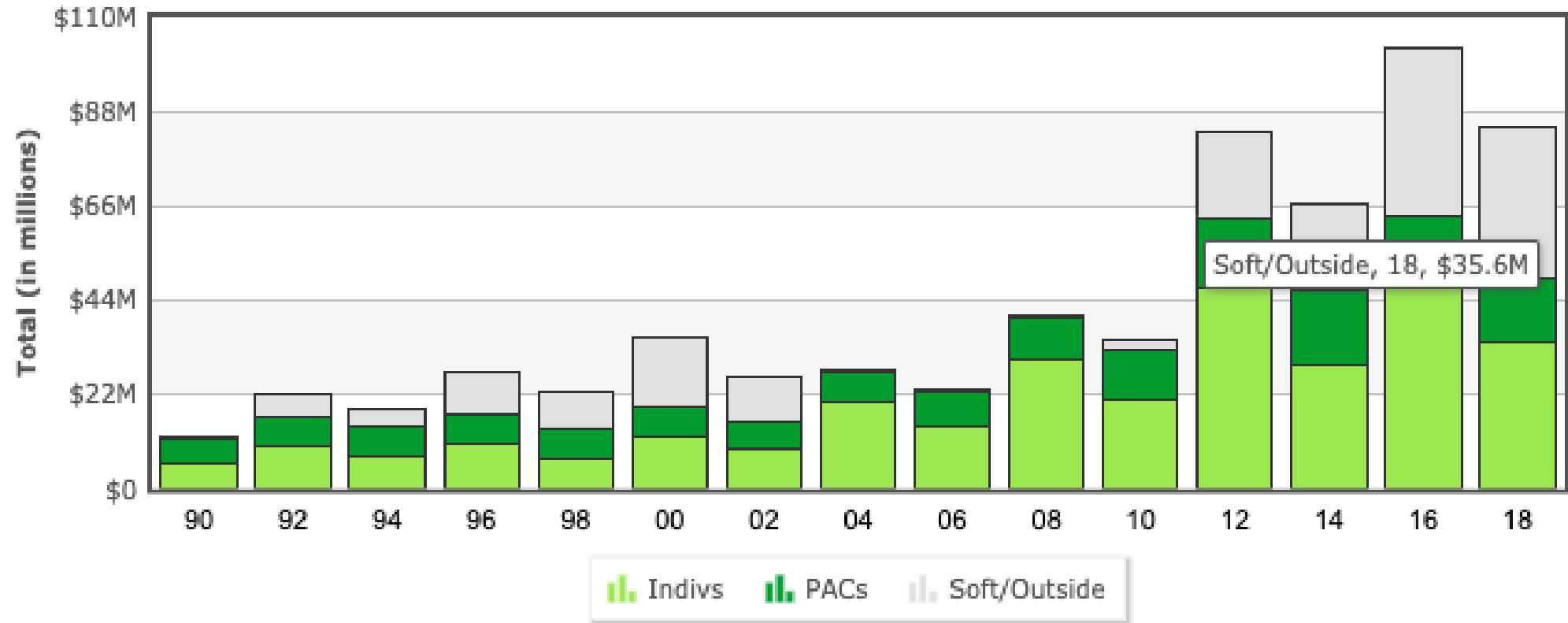
The governments empower their companies or their
companies run the governments or the oil companies and
governments are the same thing!

Annual Lobbying on Oil & Gas



Contribution Trends, 1990-2018

Oil & Gas



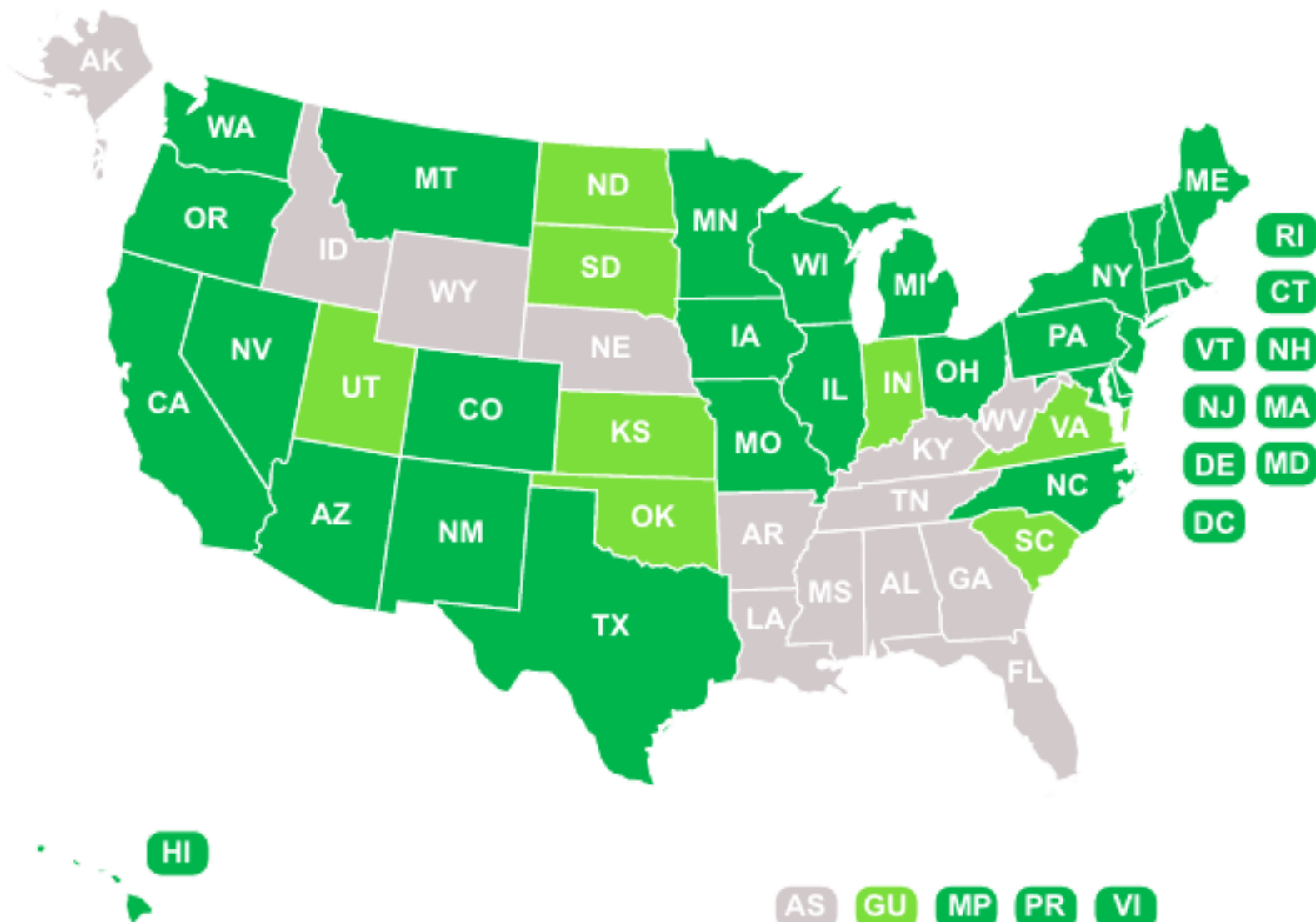
Oil & Gas Campaign Contributions by Cycle and Party

Election Cycle	Rank†	Total Contributions	Contributions from Individuals	Contributions from PACs	Soft/Outside Money	Donations to Democrats	Donations to Republicans	% to Dems	% to Repubs
2020	12	\$226,550	\$171,550	\$55,000	\$0	\$2,576	\$223,974	1%	99%
2018	16	\$84,442,562	\$33,987,296	\$14,856,666	\$35,598,600	\$6,278,892	\$42,531,062	13%	87%
2016	8	\$102,786,227	\$46,634,437	\$16,632,404	\$39,519,386	\$7,853,588	\$55,567,838	12%	88%
2014	9	\$66,403,610	\$28,953,688	\$17,314,778	\$20,135,144	\$5,977,236	\$40,369,685	13%	87%
2012	9	\$83,038,375	\$46,718,211	\$16,012,979	\$20,307,185	\$6,762,159	\$55,993,546	11%	89%
2010	12	\$34,749,804	\$20,546,119	\$11,591,143	\$2,612,542	\$7,051,783	\$24,795,845	22%	77%
2008	15	\$40,162,156	\$30,012,835	\$10,009,929	\$139,392	\$9,025,968	\$31,114,557	22%	77%

States and territories with Renewable Portfolio Standards

States and territories with a voluntary renewable energy standard or target

States and territories with no standard or target



The Way Forward

All countries should set bold 2050 Decarbonization Plans

The European Union should engage China, India, Africa and Latin America in **Decarbonization Partnerships**

The Financial Industry must understand that new Oil, Gas, and Coal Investments will be **Stranded Assets**

Roadmap to Decarbonization

Every Signatory Should Prepare a 2050 Roadmap
(Article 4.19 of the Paris Climate Agreement) by 2020

2050 Roadmap Should Include

- Power
- Transport
- Buildings
- Industry
- Land Use
- Adaptation, Resilience, Disaster Preparedness

Five Pillars of Decarbonization

1. **Zero-Carbon Electricity**

(Wind, Solar, Hydro, Nuclear, CCS, Ocean, Geothermal, other)

2. **Sustainable Land-Use and Agriculture**

(End deforestation, restore degraded lands, plant-based proteins diets)

3. **Electrification of Transport, Buildings, Industry**

(Battery EVs, heat pumps, induction heating, other)

4. **Synthetic Fuels made with Zero-Carbon Electricity**

(Hydrogen, Synthetic Liquids and Green Methane)

5. **Energy Efficiency**

(Design, Materials, Behaviors)



The Relatively Easy Sectors:

Zero-Carbon Power

Light-Duty Vehicles: Electric

Zero-Emission New Buildings

The Relatively Hard Sectors:

Zero-Emission Old Buildings

Heavy-Duty Vehicles: H₂, Synthetics

Shipping: H₂, Synthetics

Aviation: Electricity, Synthetics, Biofuels

Steel: H₂, Electrification

Petrochemicals: CCS, reuse, others

Cement: Materials substitution

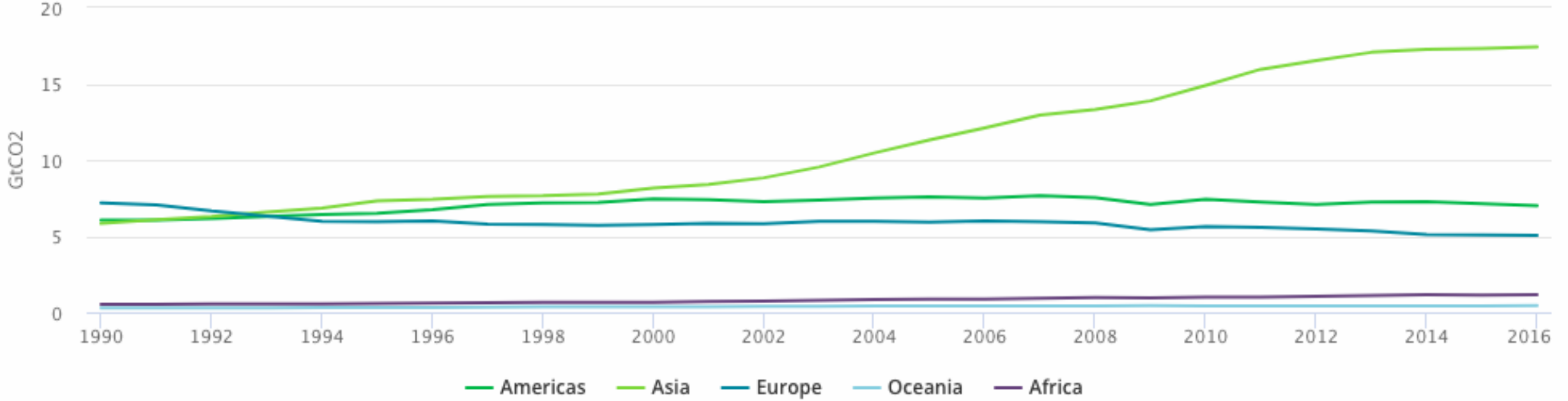
Agriculture: Diet, Land Use

ELEMENTS OF A EUROPEAN GREEN NEW DEAL PLAN

- Timelines for phasing out fossil-fuel-related capital stocks
- Allocations of responsibilities across Brussels, member states, and local governments
- Carbon pricing, including carbon taxes, feed-in tariffs, and renewable energy auctions
- Fiscal incentives for utilities and other sectors (such as EIB guarantees on loans to utilities to expand zero-carbon capacity)
- Horizon Europe R&D outlays for the hard technologies
- Public investments in interstate transmission, charging stations, catenary lines, government fleets and buildings, and other public infrastructure
- Financing for a fair transition (job retraining, income supplements, regional development)
- Public financing for building retrofits
- Leadership of the Paris Agreement

The Asian Drama

CO2 emissions from fuel combustion by region



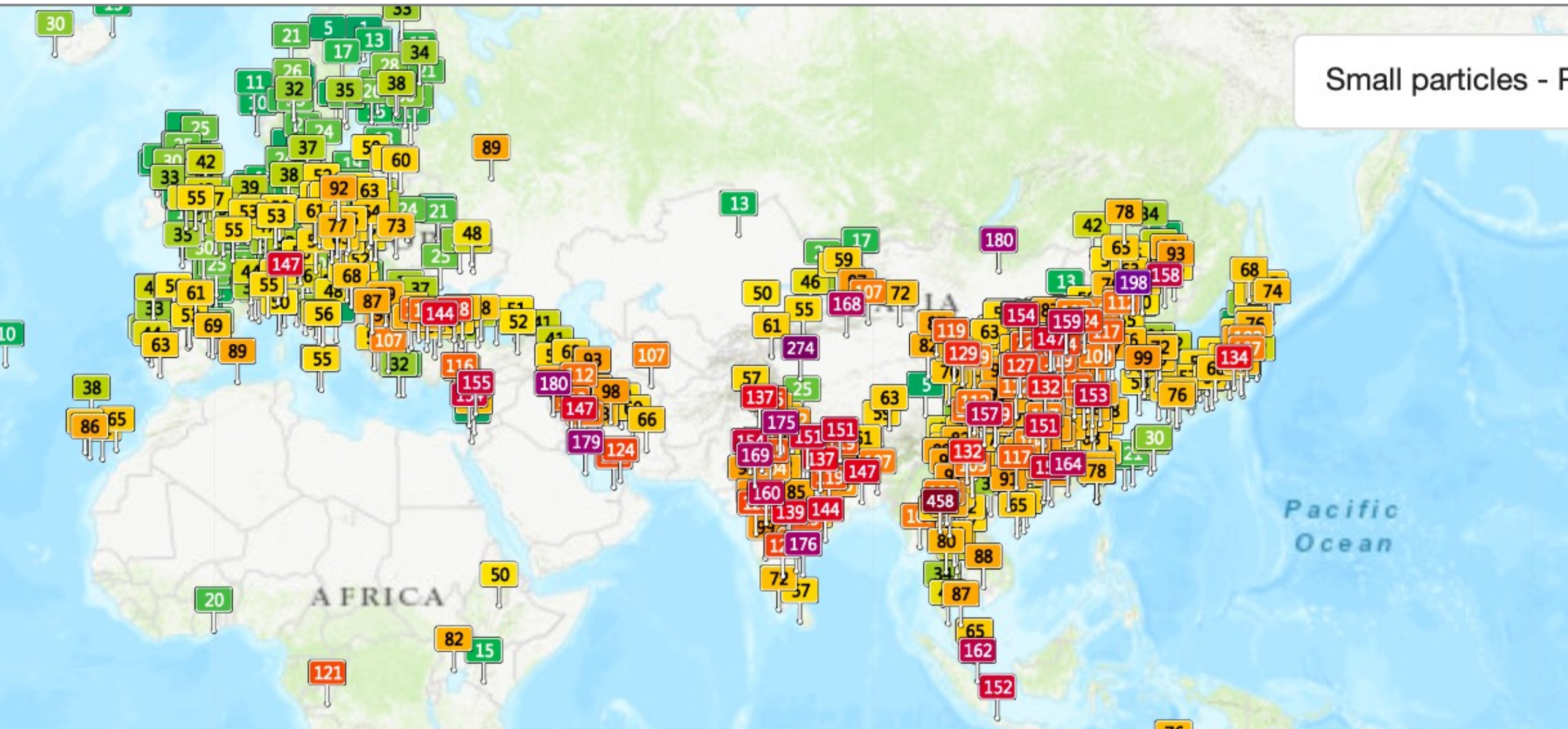
	Gigatons CO2	Percent
Asia	17.43	56.1%
America	7	22.5%
Europe	5.05	16.2%
Africa	1.16	3.7%
Oceania	0.44	1.4%
World	31.08	100.0%

Asian Decarbonization

Asia is profoundly vulnerable to heat waves, droughts, floods, and extreme storms.

Asian decarbonization will also bring about vast co-benefits of public health, especially through reduced air pollution.

Small particles - P



Air Quality Scale

Good

Moderate

Unhealthy
for sensitive groups

Unhealthy

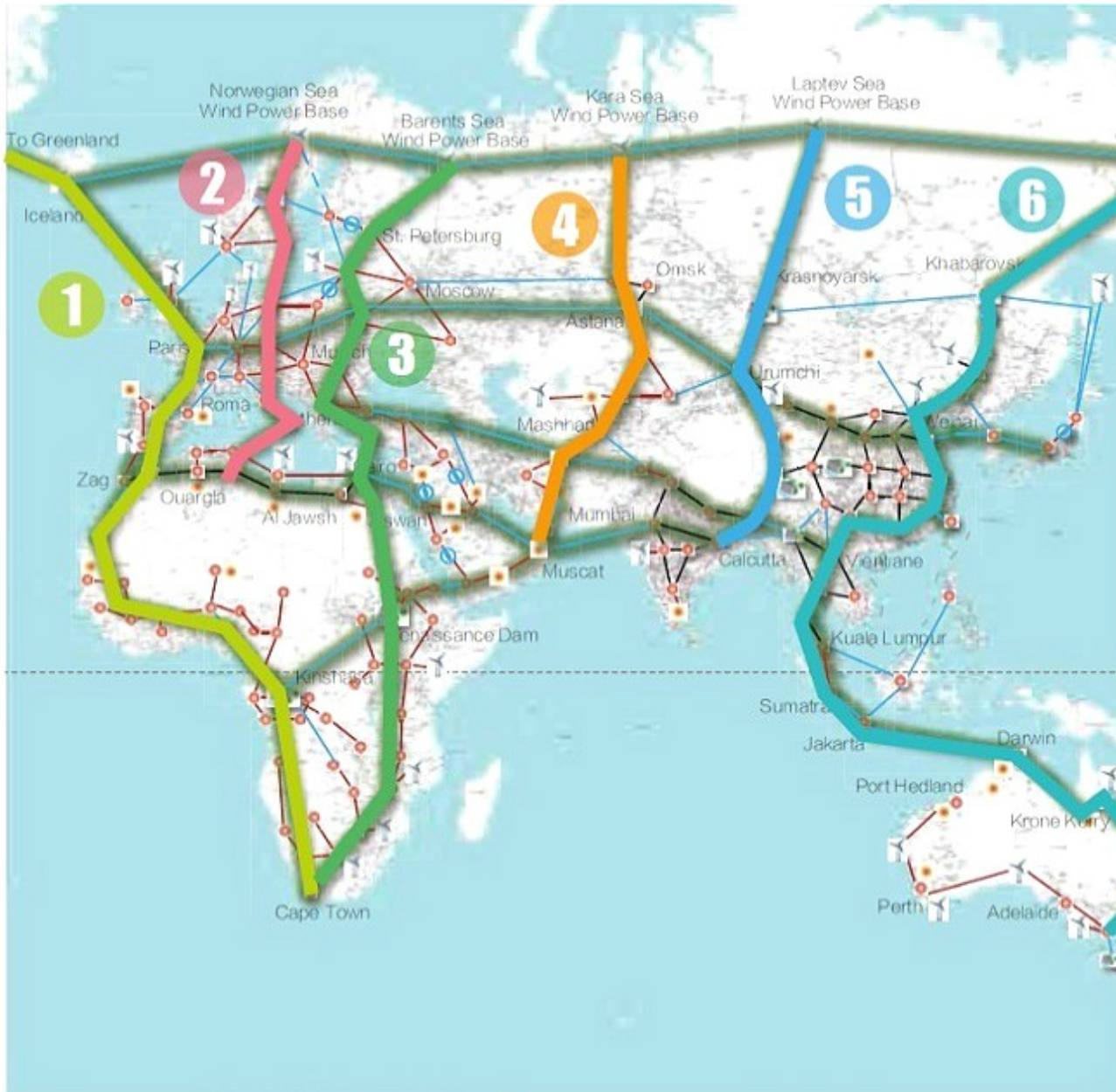
Very
Unhealthy

The reviving of the Silk Road

Infrastructure projects being planned and undertaken as of December 2015 in China's Belt and Road initiative.



SOURCE: MERCATOR INSTITUTE FOR CHINA STUDIES



Global Energy Interconnection (GEIDCO)

