



WE MAKE CLEAN ENERGY HAPPEN®

UN Framework Convention on Climate Change (COP28) and Natural Gas in a Lower-Carbon Future

March 2024

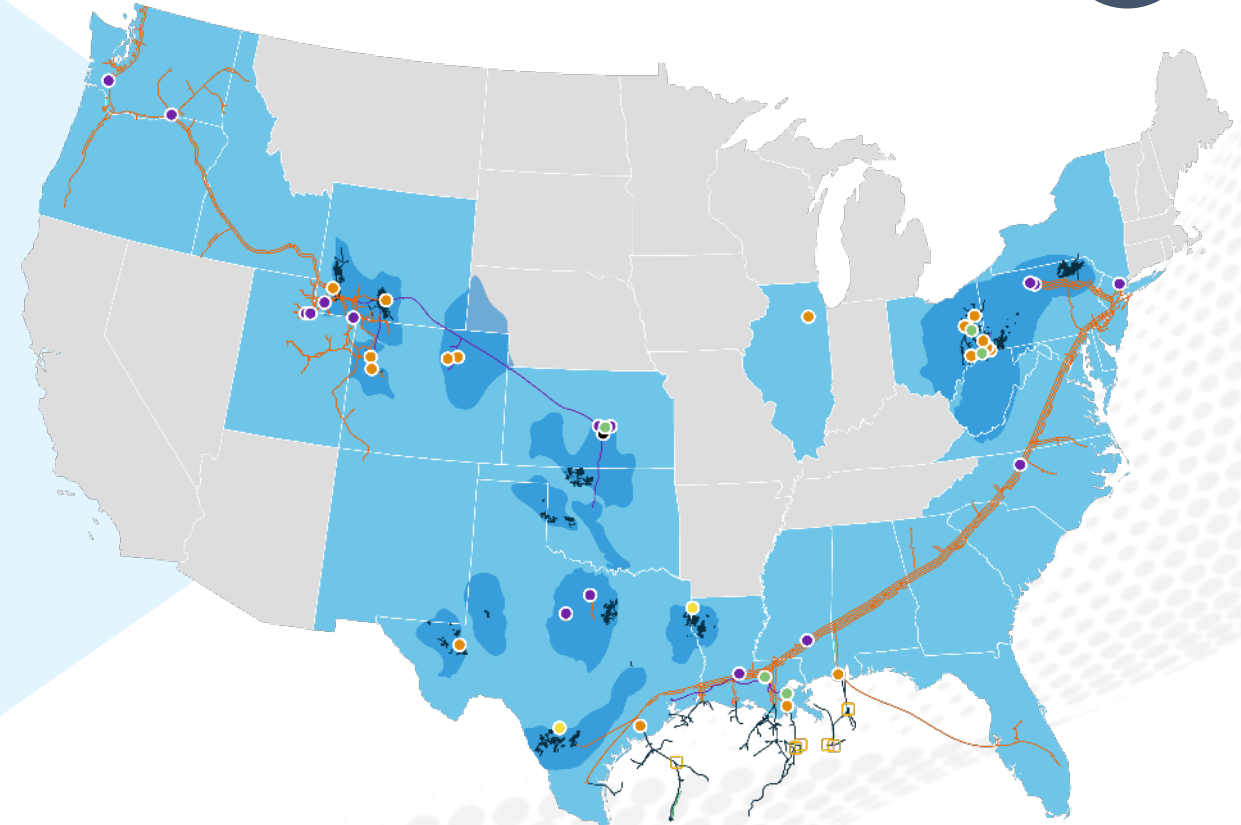
T. Lane Wilson

Senior Vice President and General Counsel



Williams: critical infrastructure serving our nation's energy needs

Scale. Reliability. Growth.



~1/3rd
of U.S. natural
gas production
across **25** states

Pipeline capacity
take-or-pay
contracts serving
High-demand

fee-based
natural gas gathering
& processing serving
14 supply areas

Growing natural
gas storage
capacity, an
increasingly
important piece
of the energy mix

Notes: Statistics as of 12/31/2022 and includes acquired MountainWest assets, which closed on 02/14/2023. Map as of February 2023.

COP28

- Panel Discussions/Energy Forums
- Media Interviews
- Direct Engagement with U.S. Elected Officials, Global Energy Leaders

- Williams coverage reached an audience of 370M for an estimated ad value of \$3.4M.
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- A lot of this was driven by Alan's television interview which aired on three CNBC programs (Worldwide Exchange, Last Call and Squawk Box); featured on the homepage of Worldwide Exchange: [COP28: Williams CEO on opportunities to utilize natural gas \(cnbc.com\)](#) and also on their YouTube channel: [COP28: Williams CEO Alan Armstrong on opportunities to utilize natural gas – YouTube.](#)
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- In terms of social, Alan's LinkedIn posts from COP had 51,000 impressions and 4K engagements (likes, shares or comments).

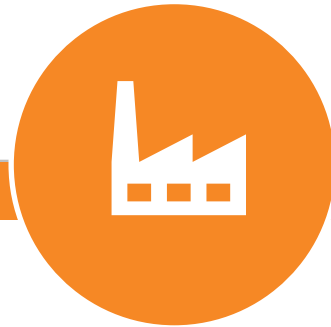


A screenshot of a CNBC news article. The top navigation bar includes "CNBC" and various categories like "MARKETS", "BUSINESS", "INVESTING", "TECH", "POLITICS", "CNBC TV", "INVESTING CLUB", and "PRO". A search bar is on the right. The main image shows a man in a suit speaking, with a blue overlay text that reads "COP28 FOCUS ON ENERGY PLEDGE TO CUT METHANE EMISSIONS". Below the image, the text says "WORLDWIDE EXCHANGE" and "COP28: Williams CEO Alan Armstrong on opportunities to utilize natural gas". At the bottom, it says "CNBC's Diane Olick speaks with Williams CEO Alan Armstrong about the future of natural gas usage." and "FRI, DEC 8 2023 - 7:57 AM EST".

COP28: Global recognition that natural gas is key to a lower-carbon future



Media Coverage Not
Reflective of the
Reality on the Ground

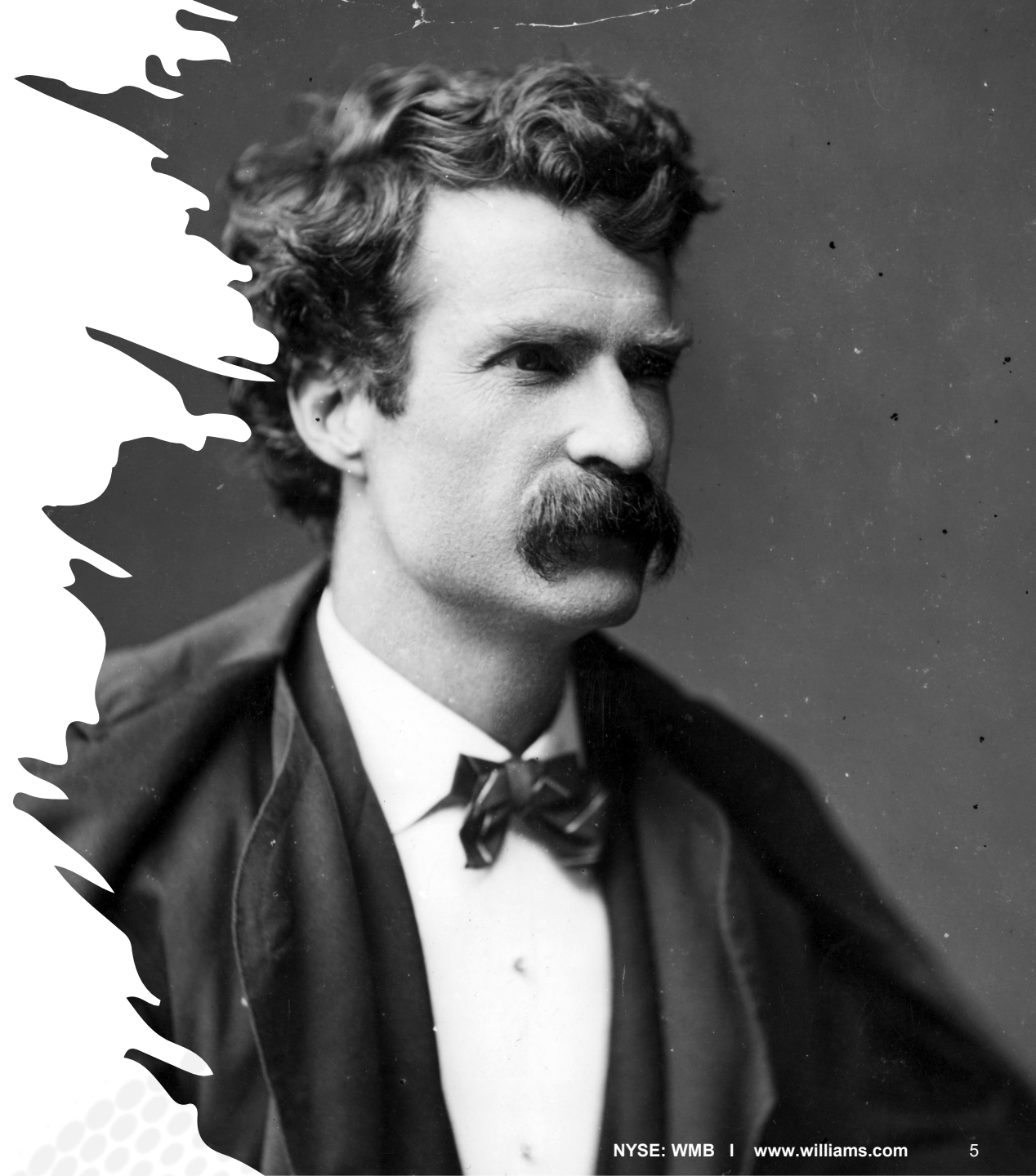


Political Winds are
Changing, especially
in Europe because of
deindustrialization



Industry is Part of the
Solution & Necessary
Emissions Reductions

COP28 Reinforces Critical Role of Natural Gas in our Energy Future



COP28 Reinforces Critical Role of Natural Gas in our Energy Future

The final text adopted by delegates at COP28 Climate Change Conference serves to reinforce the role of natural gas and LNG in the global energy transition. In particular, the reference to “[Recognition] that transitional fuels can play a role in facilitating the energy transition while ensuring energy security” is a strong pointer to the ability of gas/LNG to provide highly reliable electricity generation as a much lower-emission alternative to coal.

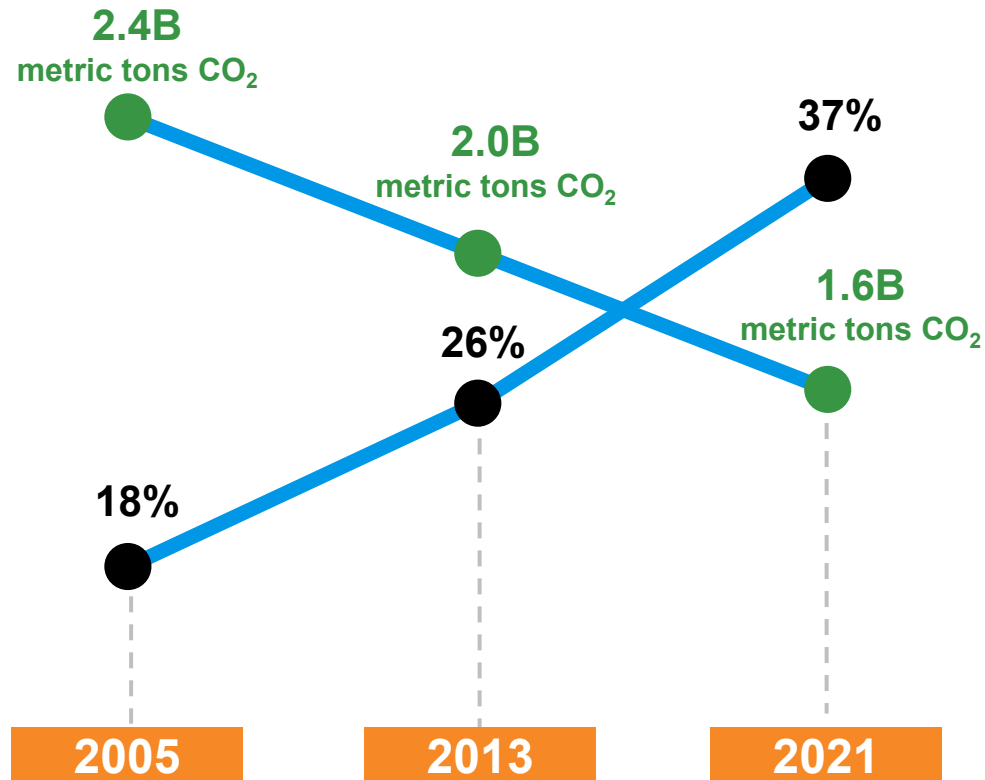
“Equally a reference to ‘accelerating efforts towards the phase-down of unabated coal power makes it clear that gas and LNG will be essential to an orderly and just energy transition over coming decades, particularly for emerging economies like many in Asia Pacific.” – **Asian Natural Gas and Energy Association**

Natural gas will play the role of a backup in Australia's course to have 82% renewable power in the electricity grids by 2030; The virtue of natural gas is that [it] can turn on and off real quickly...if you've got gas-fired peakers backing up your 82% renewable system that are only turned on rarely...that is a big step forward for emissions reduction” – **Australia Climate Change and Energy Minister Chris Bowen**

African countries, many of them low and middle-income developing economies, are negotiating for opportunities to accelerate their fossil fuel production to enable them to industrialise, before reinvesting those gains in green energy sources. At the moment, more than 600 million Africans do not have electricity and about 900 million cannot access clean cooking methods. “We are being sold this dream of renewables but we barely have any investments in it. Gas is the only option available to Africa.” – **Former African Union (AU) climate adviser Faten Aggad**

U.S. CO₂ emissions declined with increased natural gas generation

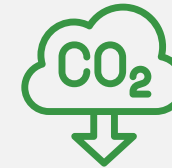
U.S. Electric Power Sector: CO₂ Emissions vs. Natural Gas Market Share



Sources: U.S. Energy Information Administration, December 2022; Environmental Protection Agency Greenhouse Gas Equivalencies Calculator



Natural gas increased to **37% from 18%** market share



Shift to natural gas directly responsible for reducing ~500 MM metric tons of CO₂ or **60%** of the total reduction



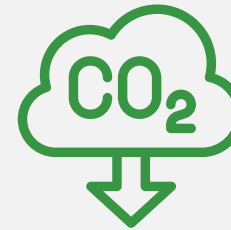
Equivalent to removing **111 million** gasoline-powered vehicles off the road, almost all in the U.S. today

Continued opportunity to reduce U.S. emissions by replacing coal with gas

There are **230** operating coal plants remaining in the U.S. today



Replacing remaining U.S. coal plants with natural gas generation could:

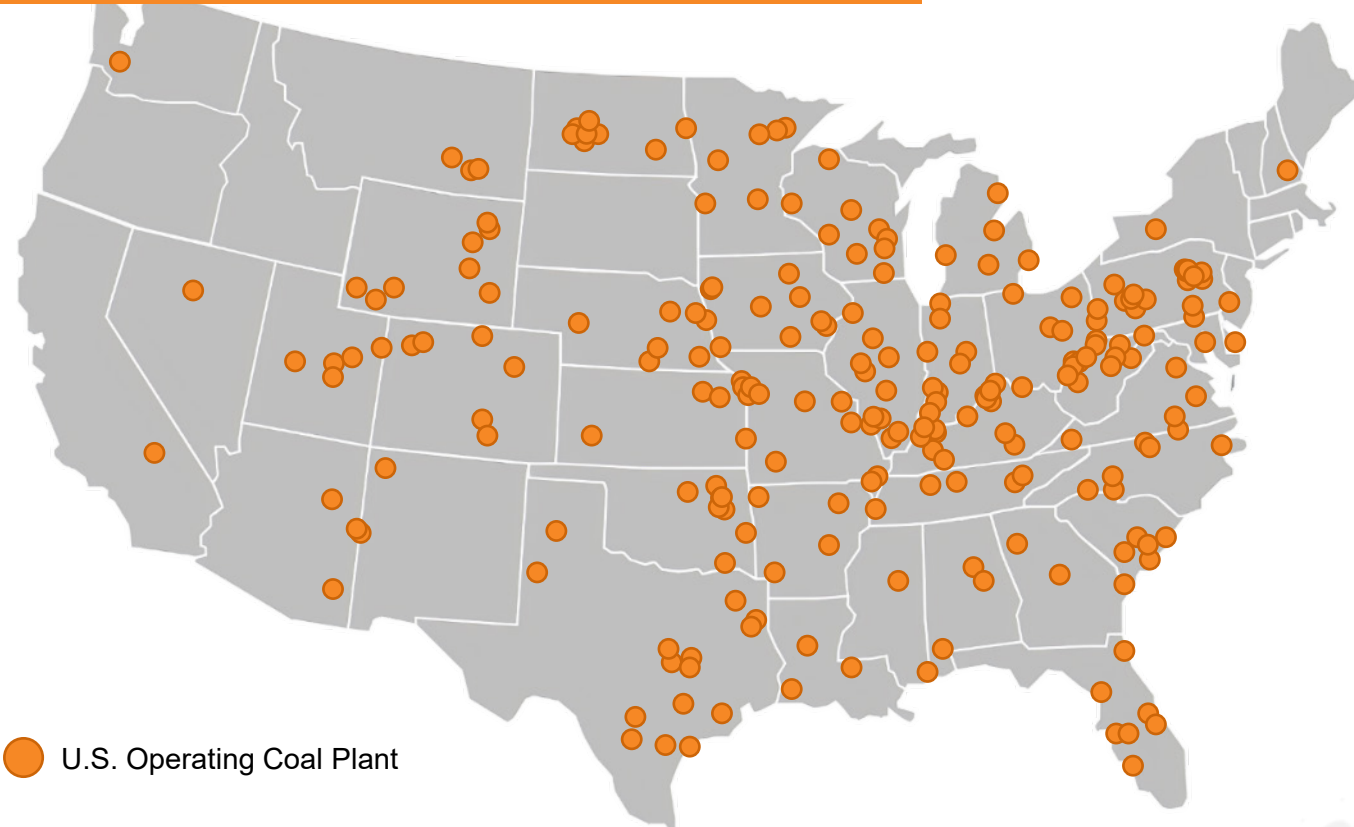


Cut CO₂ power emissions by **34%**

Equivalent to



Removing **all U.S. gasoline cars** off the road today



● U.S. Operating Coal Plant

Sources: Coal plant data per Wood Mackenzie; Coal and natural gas plants emissions rates and heat rate assumptions per U.S. Energy Information Administration; Metric tons of CO₂ emitted by a typical passenger vehicle per year per Environmental Protection Agency. As of January 2023.

Coal-to-gas switching is critical to reduce emissions worldwide

Replacing global coal with low-cost, abundant U.S. natural gas would drive significant CO₂ emissions reductions



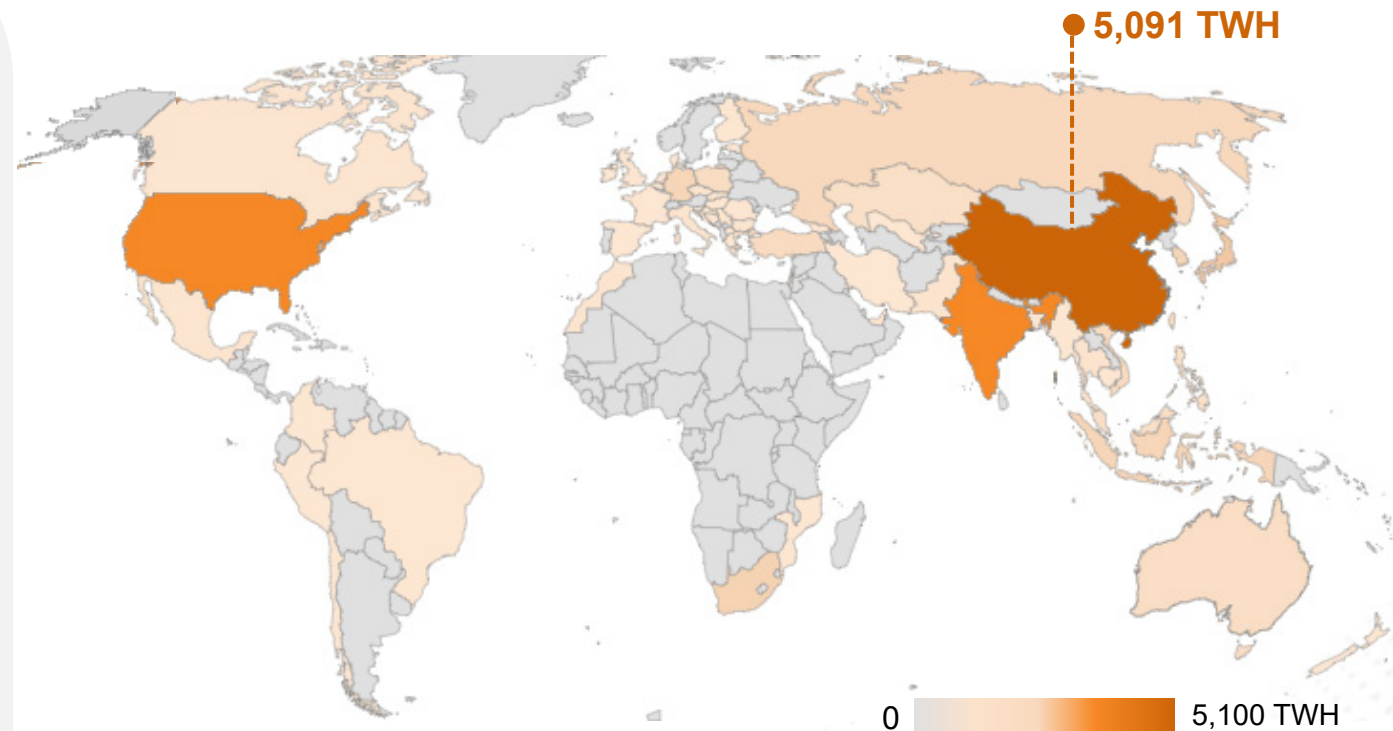
'22 was a **record year** for coal-fired generation across the globe



China's coal generation was **~5x** that of the U.S. in '22



Forecasts show Chinese coal-fired generation **continues to increase**



2022 Global Coal Generation Heat Map by Country

Sources: Wood Mackenzie data as of January 2023; International Energy Agency. Note: TWH = Terawatt hour

The world needs more energy

Every source of primary energy has been increasing globally



~3 billion people cook using open fires fueled by polluting kerosene, biomass and coal

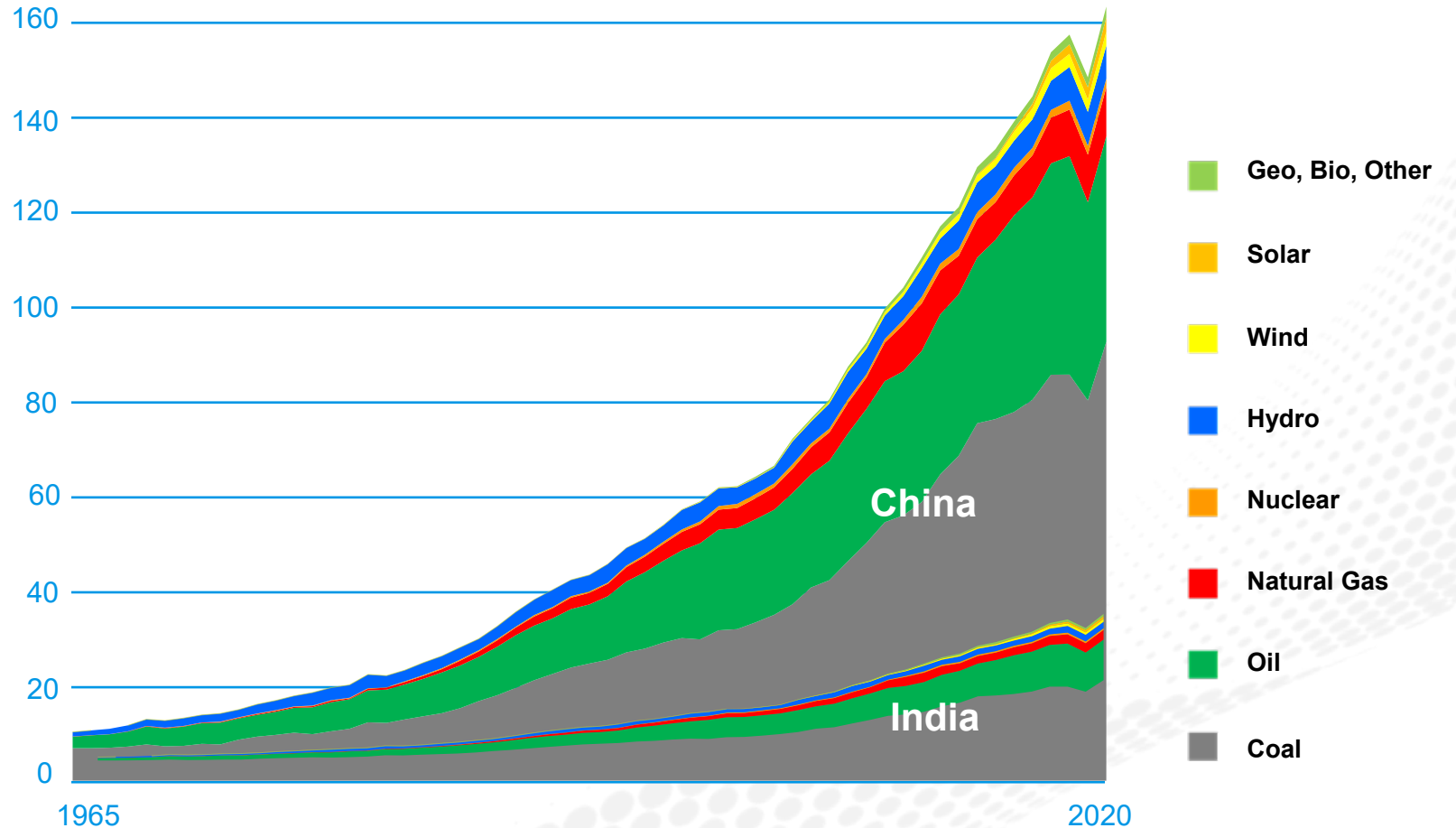


Each year, ~4 million people die from illness attributable to household air pollution



~17,300 children under age 15 die every day from preventable causes due in large part to a lack of energy

China & India energy consumption by source (Exajoules)



Sources: World Health Organization, BP Statistical View of World Energy (2020)



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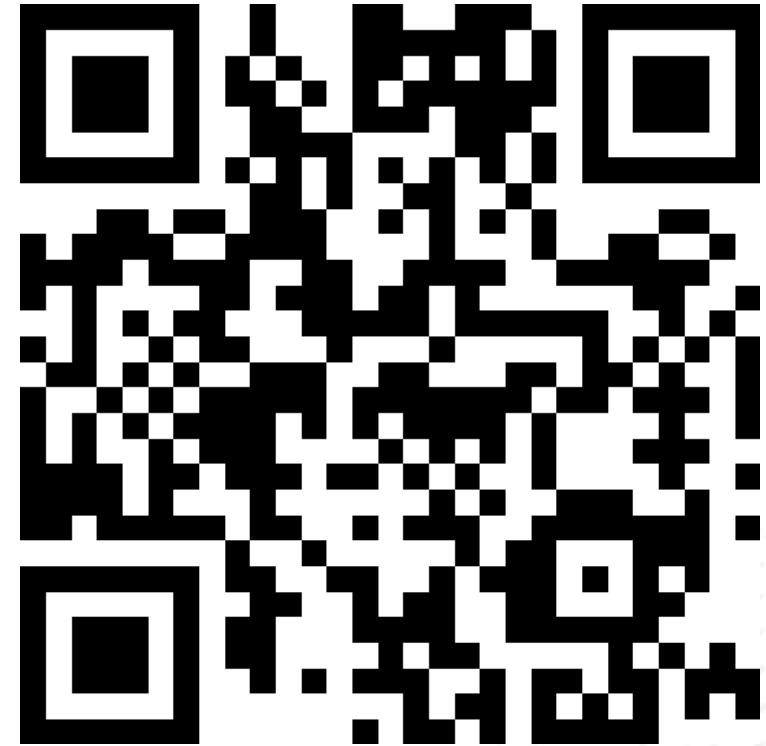
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