

FOSSIL FUTURE



Why Global Human Flourishing
Requires More Oil, Coal,
and Natural Gas—Not Less

ALEX EPSTEIN

FOSSIL
FUTURE



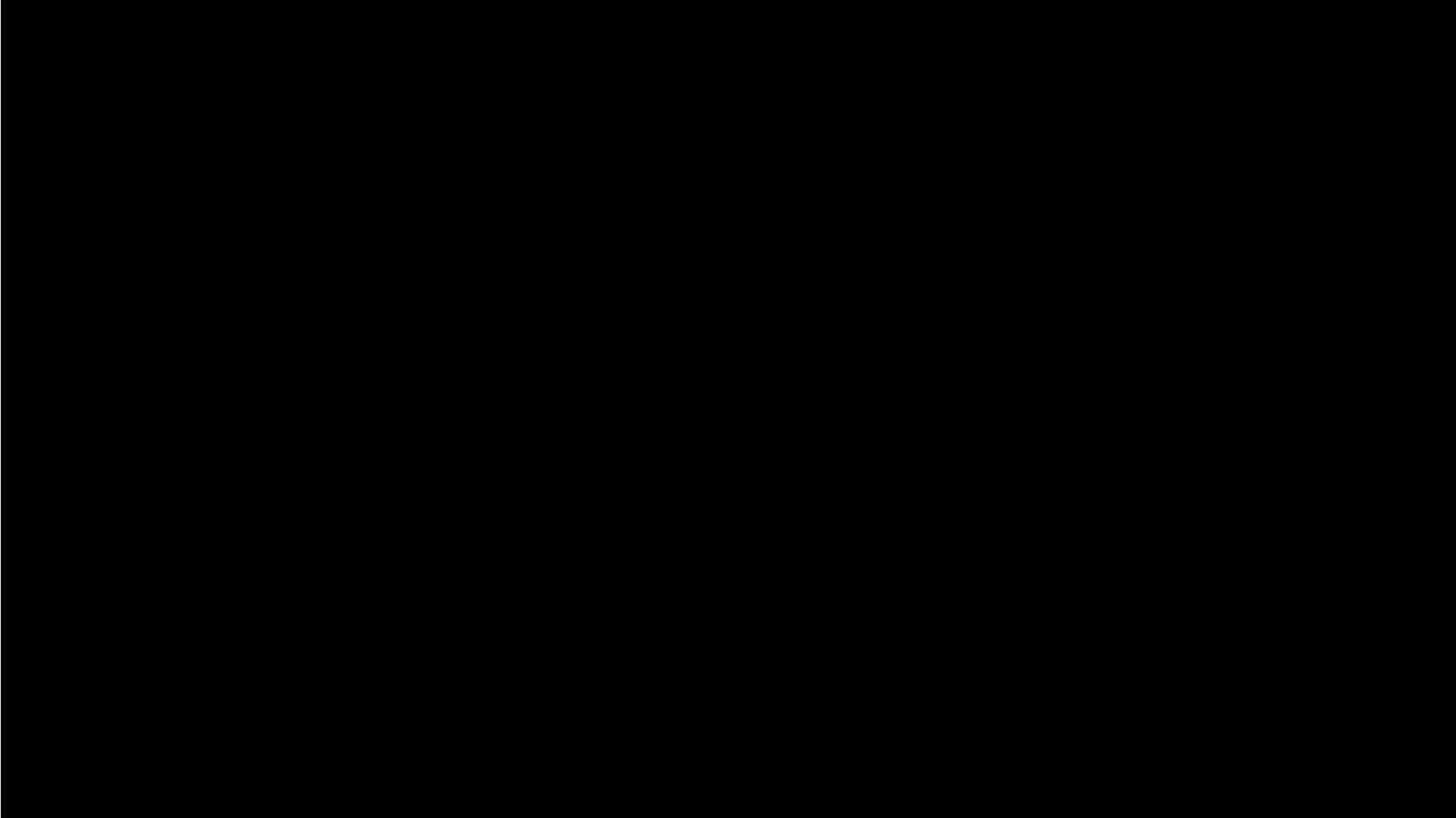
ALEX
EPSTEIN



Practicing what I preach



The key to clear thinking and effective persuasion



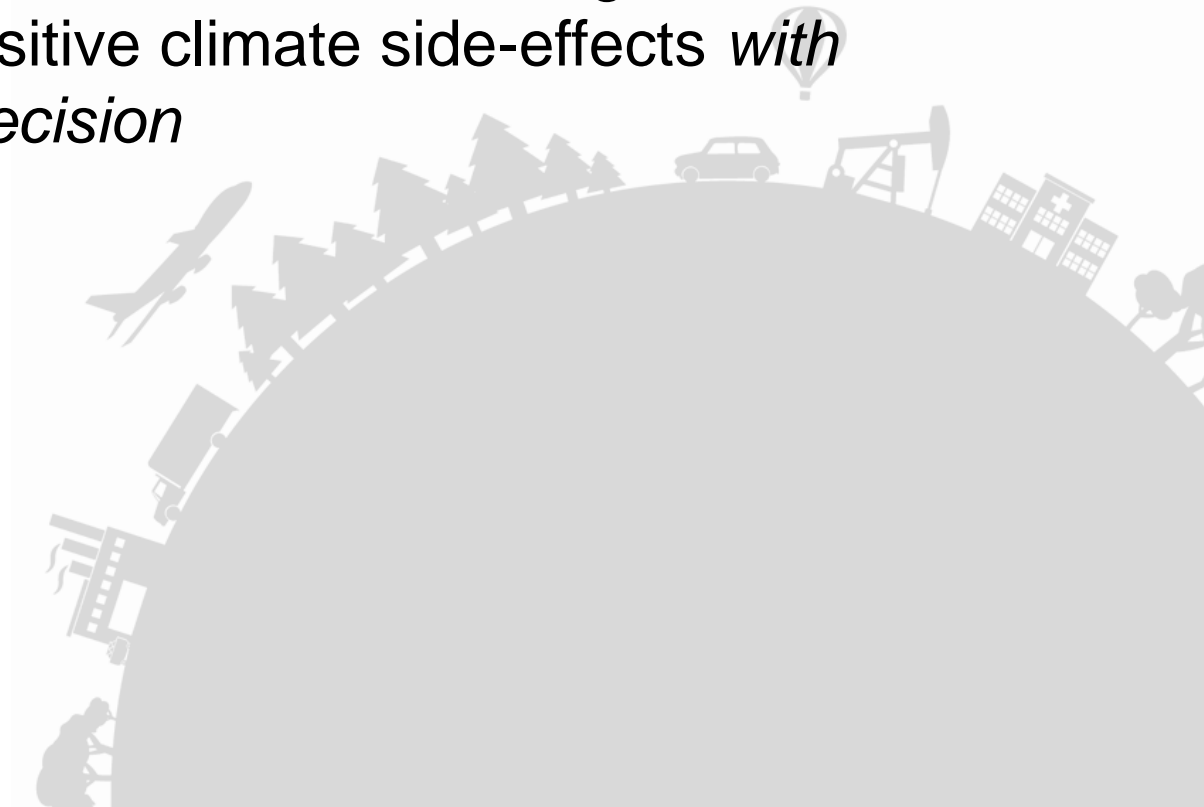
Irrefutable thinking
method: **carefully weigh
benefits and side-
effects**

No one disputes this, but
almost no one follows it

When evaluating what to do
about any product or
technology, we must **carefully
weigh the benefits and side-
effects** of every option



No one disputes these,
but almost no one follows
them

- # Positive climate side-effects *with* decision
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My contention: if you **apply these irrefutable principles** to the facts about fossil fuels and their climate side-effects, it's **obvious the world should use more fossil fuels** and that rapidly eliminating fossil fuels is mass suffering and death

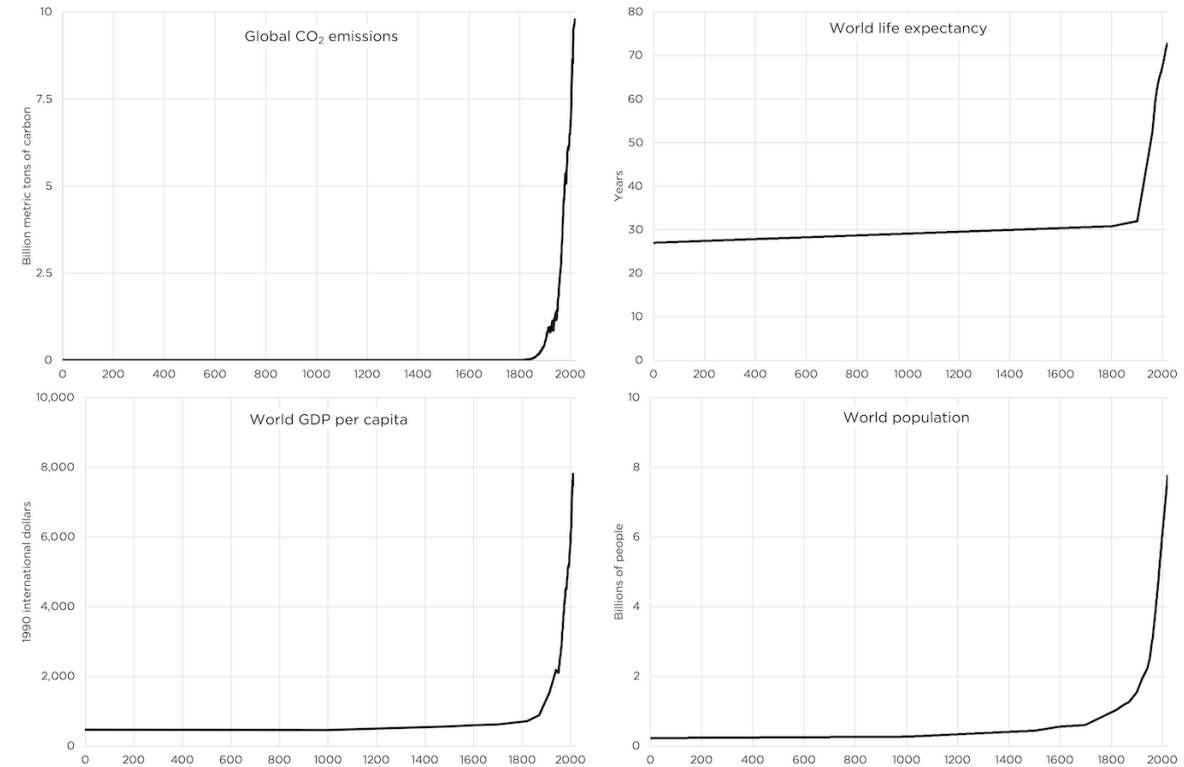
10 undeniable facts

- 5 about fossil fuels' benefits, including climate mastery benefits
- 5 about fossil fuels' climate side-effects

Fossil fuels' benefits
going forward

Undeniable fact 1

Cost-effective energy is essential to human flourishing.

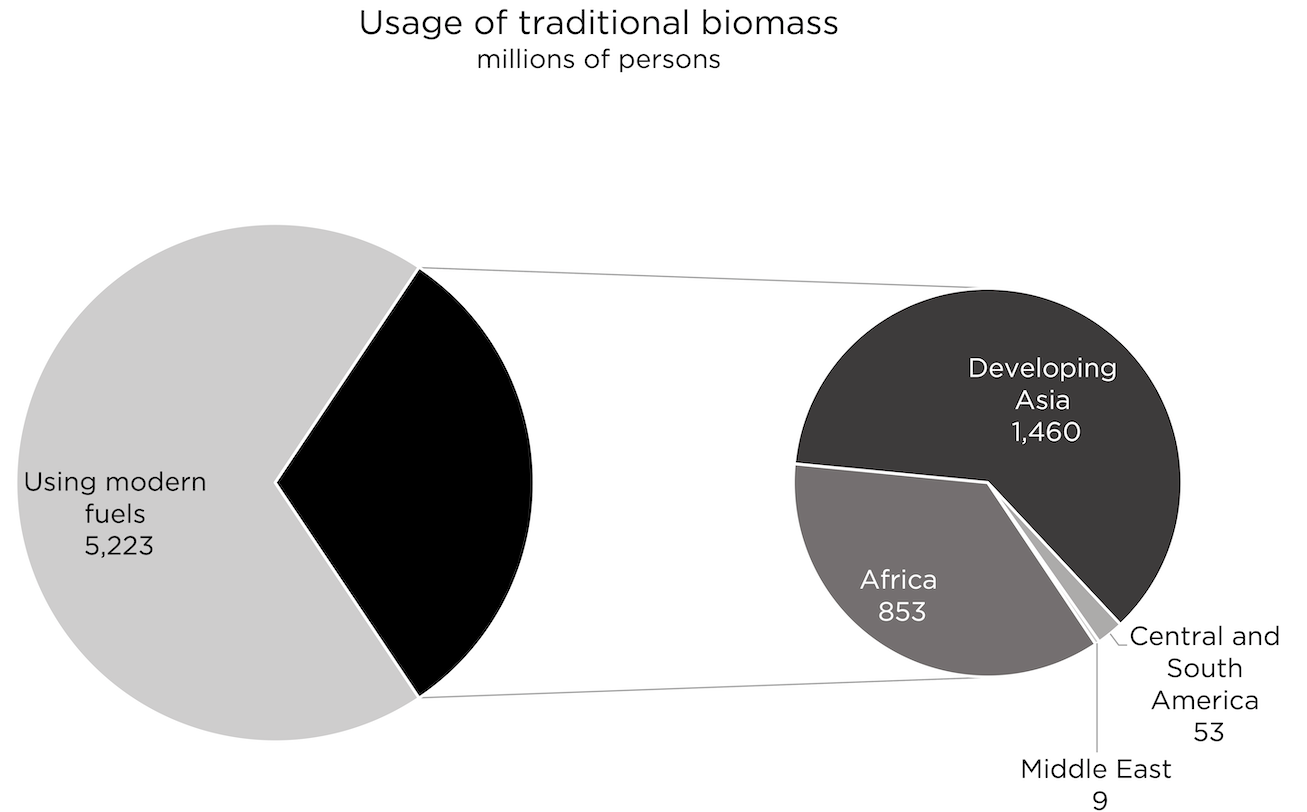


- Cost-effectiveness: affordability, reliability, versatility, scalability.
- Human flourishing: humans have the ability to live long, healthy, fulfilling lives.
- The more cost-effective energy is, the more we can use machines to be productive and prosperous.
- Availability of food, clothing, shelter, medical care all depend on it.
- Innovation and progress depend on it.
- Environmental health and safety depend on it.

Fossil fuels' benefits
going forward

Undeniable fact 2

Billions of people lack cost-effective energy.

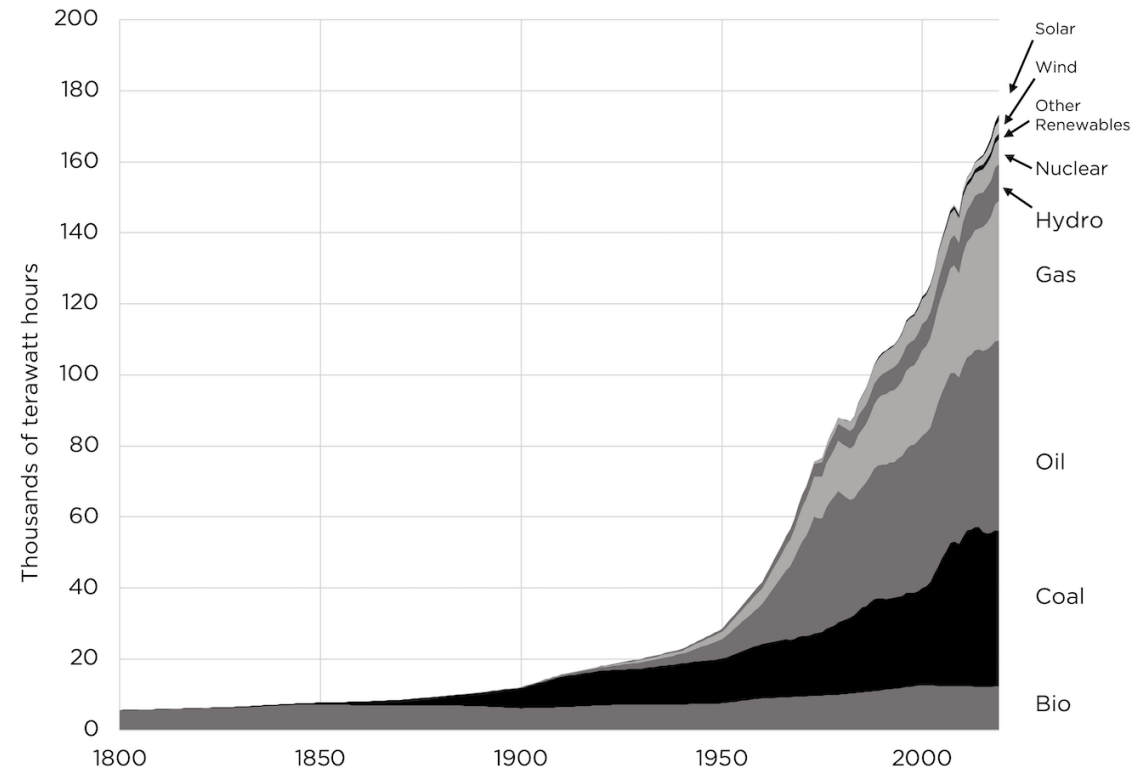


- 6 billion use an amount of energy we would consider unacceptable.
- 3 billion use less electricity than a typical American refrigerator.
- 1/3 of the world uses wood and animal dung for heating and cooking.

Fossil fuels' benefits
going forward

Undeniable fact 3

Fossil fuels are a uniquely cost-effective source of energy.



- Low-cost, reliable, versatile energy for billions of people in thousands of places.
- Fossil Fuels provide 80% of the world's energy, despite 100+ years of aggressive competition.
- Fossil fuel use is still growing, mostly in the countries most concerned with cost-effective energy—e.g., China, 200+ new coal plants commissioned.
- Recent price increases are due to political restrictions not resource, technological, or economic fundamentals.
- Why so cost-effective? Crucial question that's rarely asked.

Fossil fuels' natural attributes, harnessed by generations of ingenuity and refinement

1

Natural storage

2

Natural concentration

3

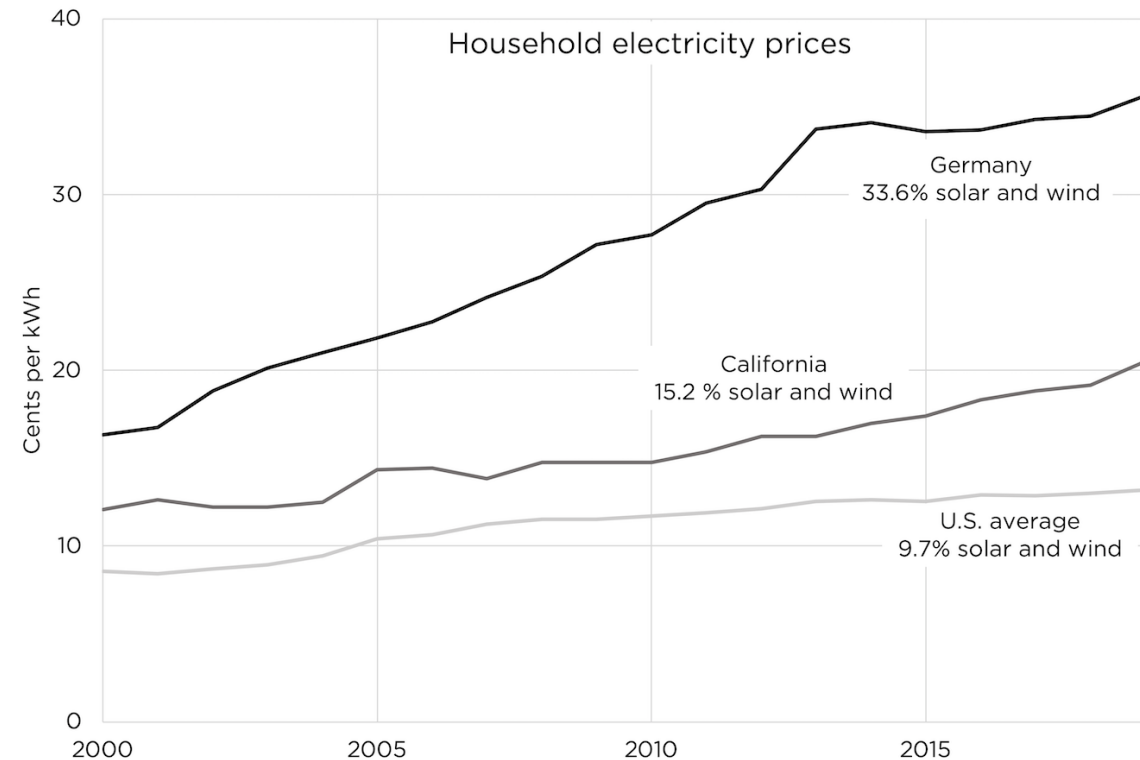
Natural abundance



Fossil fuels' benefits
going forward

Undeniable fact 4

Unreliable solar and wind electricity are failing to replace fossil fuel energy



- Solar + wind are used in significant quantities only with strong government preferences.
- Solar + wind use correlates strongly with higher prices.
- Solar + wind only provides electricity, which is 1/5 of world energy.

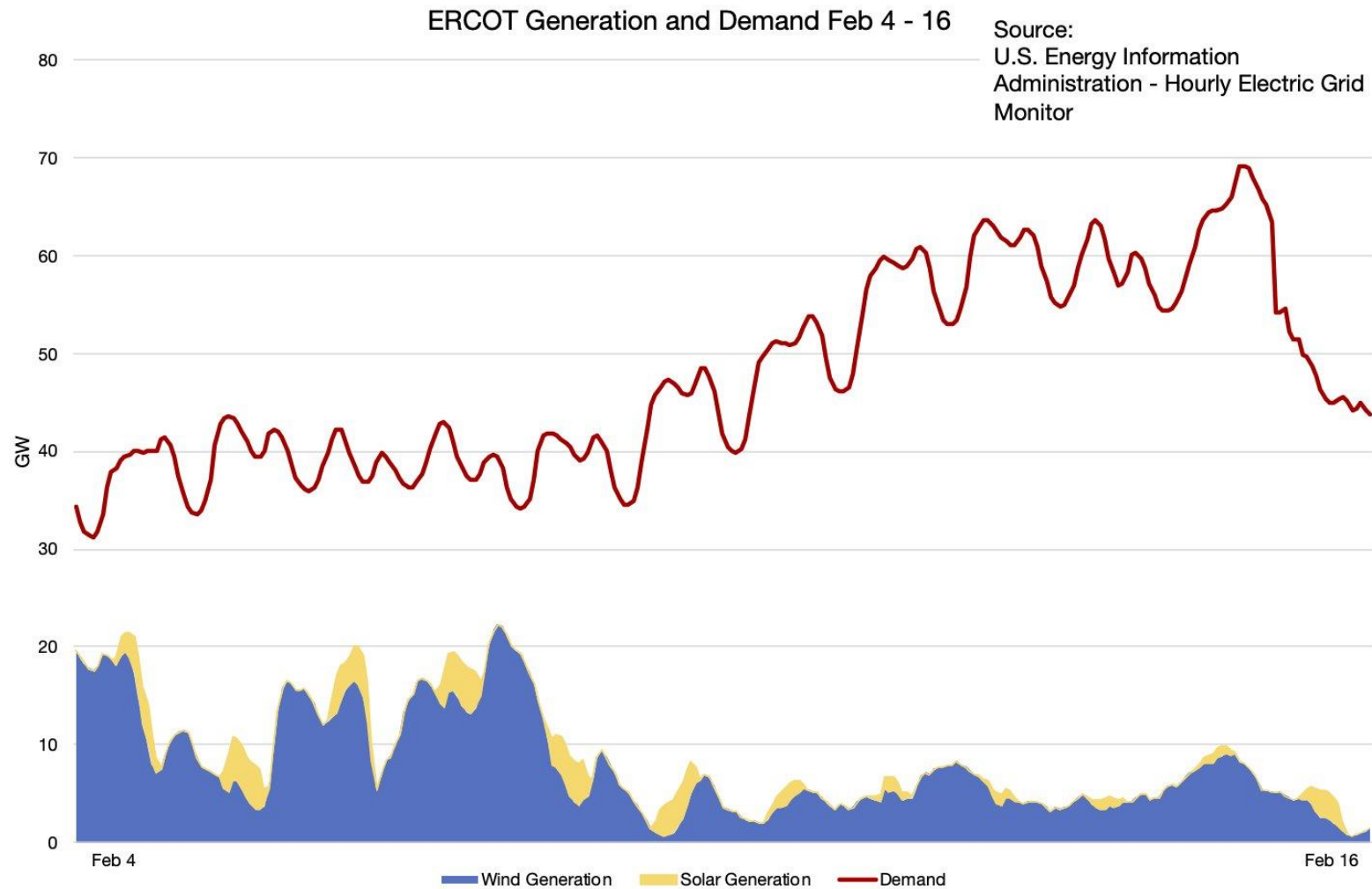
Key principle

The cost of energy is determined by the cost of the total process for producing it

It's hard to create low-cost, processes for all the energy needs of billions of people around the world—especially for heavy-duty transportation energy

Mining
Processing
Manufacturing
Transportation
Operation
Maintenance
Disposal

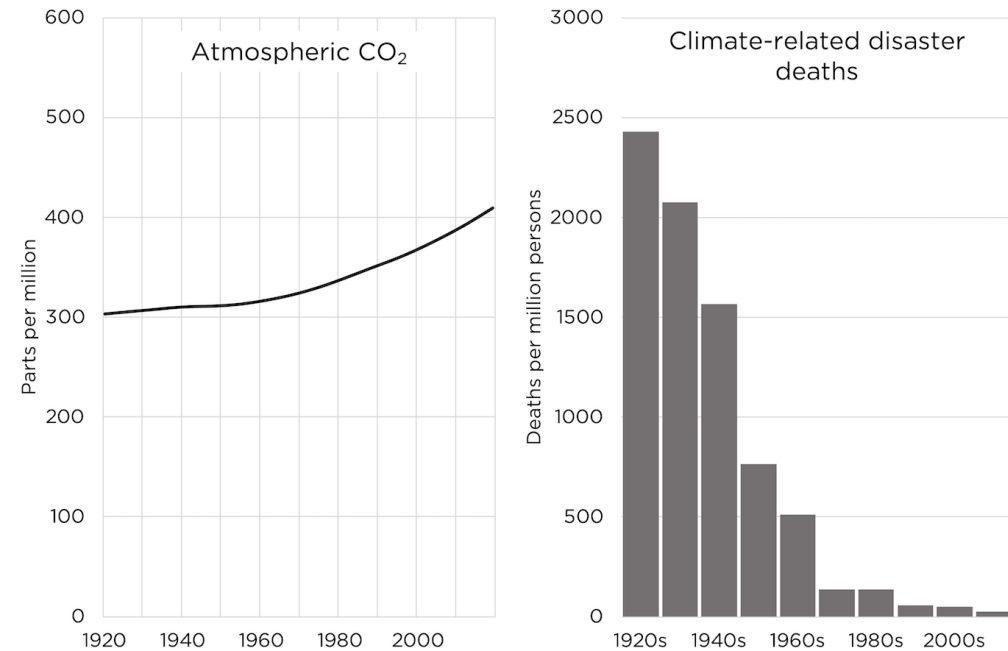
The truth about solar and wind: unreliability 1) requires dependence on “reliables,” 2) creates huge system costs



Fossil fuels' benefits
going forward

Undeniable fact 5

Fossil fuels give us an enormous ability to master climate danger, whether natural (massive) or manmade



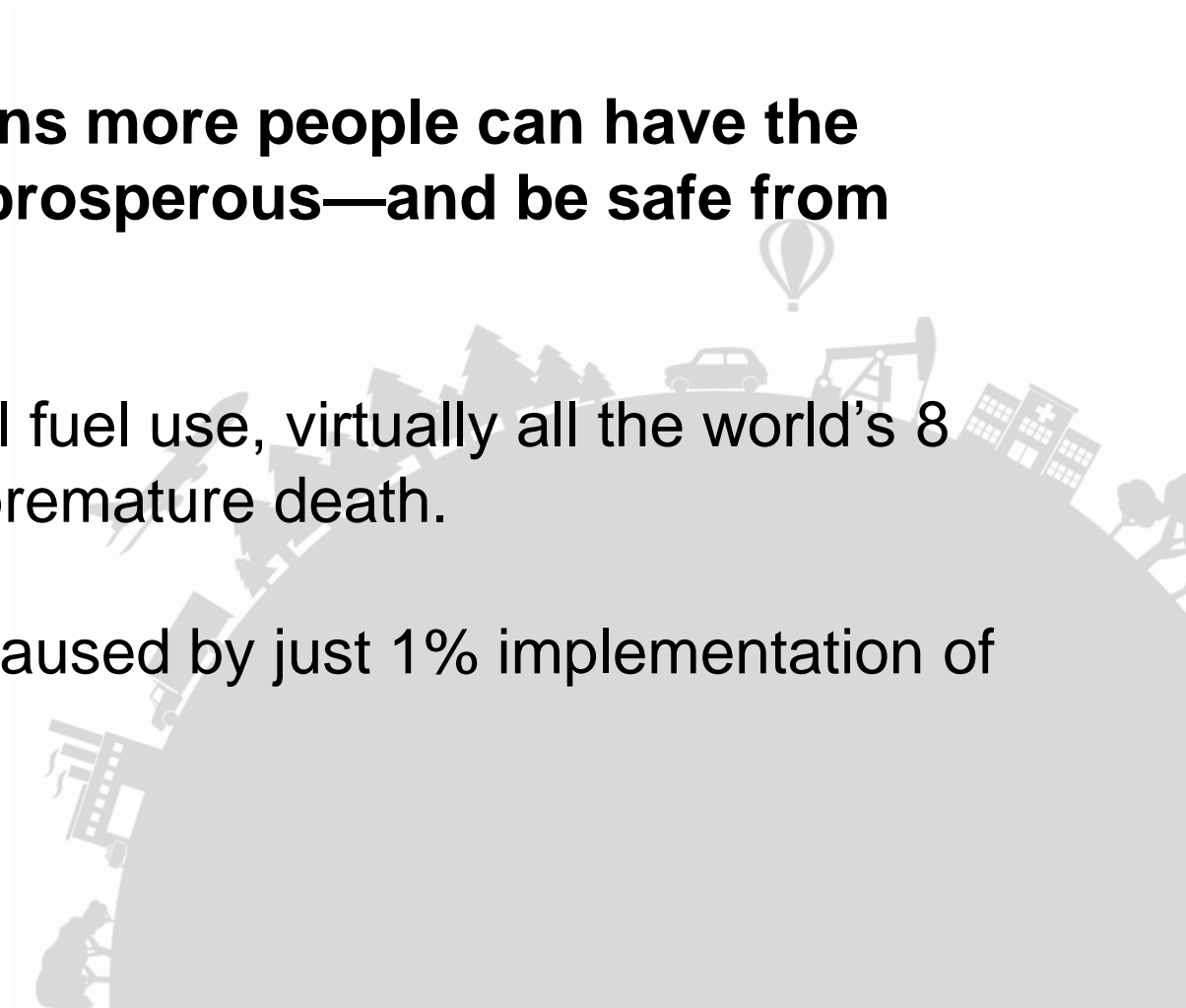
- Climate-related disaster deaths—extreme temperatures, storms, floods, wildfires, drought—down 98% over the last century.
- Made possible by fossil fueled climate mastery.
- E.g., 100 million people live below sea level (high tide).

The benefits of continuing fossil fuel use: conclusion

If we are free to use fossil fuels, then **billions more people can have the energy they need to be productive and prosperous—and be safe from climate.**

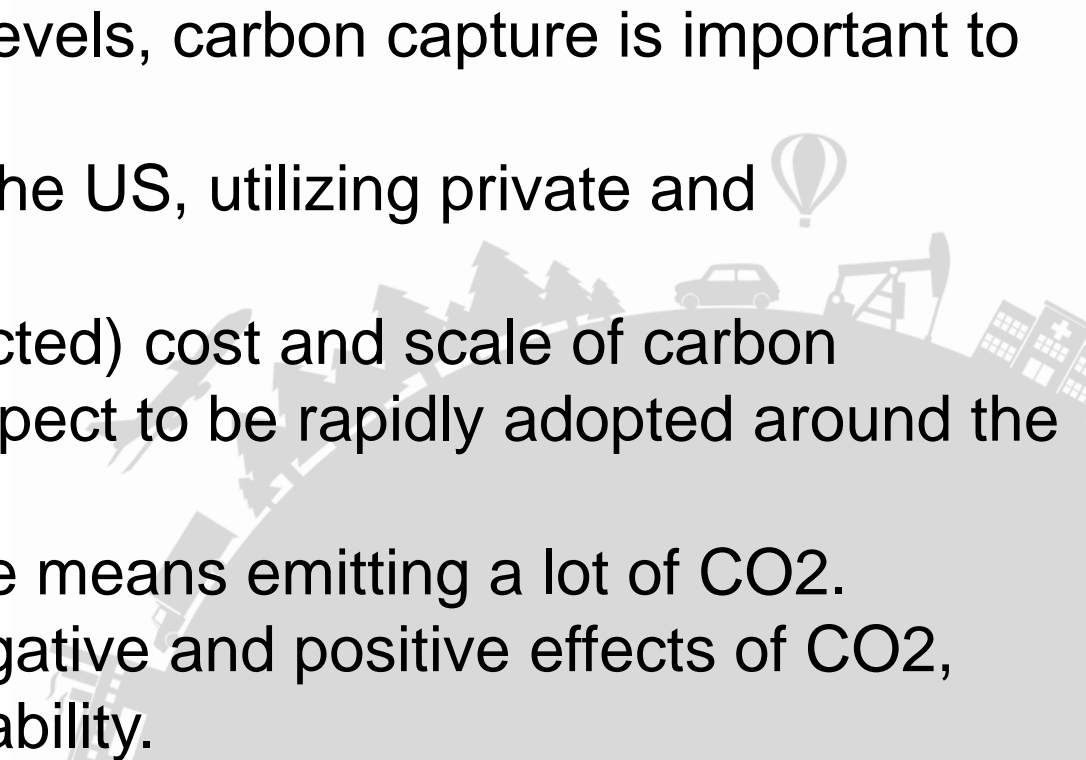
If and to the extent we try to eliminate fossil fuel use, virtually all the world's 8 billion people will plunge into poverty and premature death.

The deadly global energy crisis has been caused by just 1% implementation of the anti-fossil-fuel agenda.



Can we use fossil fuels without CO2 emissions?

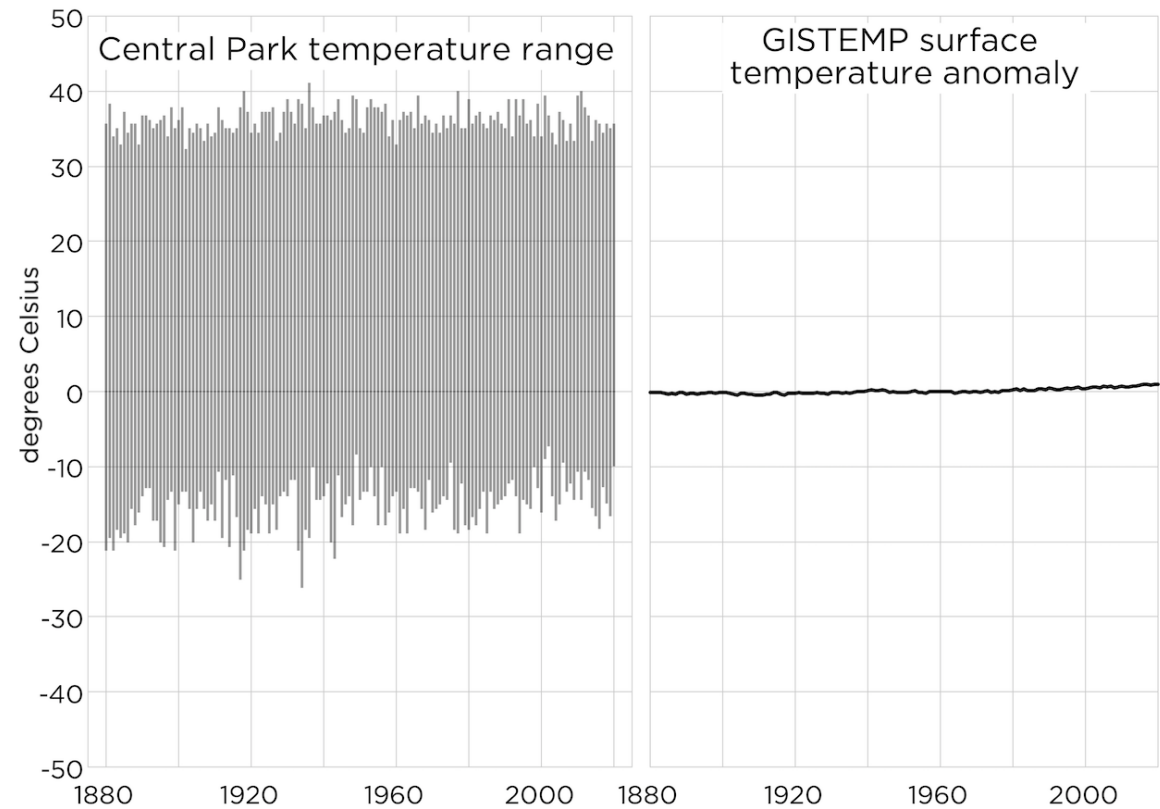
Not on a global scale on the 2050 timetable

- Insofar as we're concerned about CO2 levels, carbon capture is important to explore.
 - North Dakota is taking a leading role in the US, utilizing private and government incentives.
 - Given the current (and realistically expected) cost and scale of carbon capture, this is not something we can expect to be rapidly adopted around the world—especially not in the poor world.
 - For the foreseeable future, fossil fuel use means emitting a lot of CO2.
 - So we need to carefully evaluate the negative and positive effects of CO2, always factoring in our climate mastery ability.
- 
- A faint, stylized background illustration of a globe. On the right side of the globe, there are several icons: a hot air balloon, a car, an oil pumpjack, and a building with a cross on its roof. The globe itself is a simple outline with some shading to indicate its shape.

Full effects of CO2 going forward (- and +) with precision

Undeniable fact 1

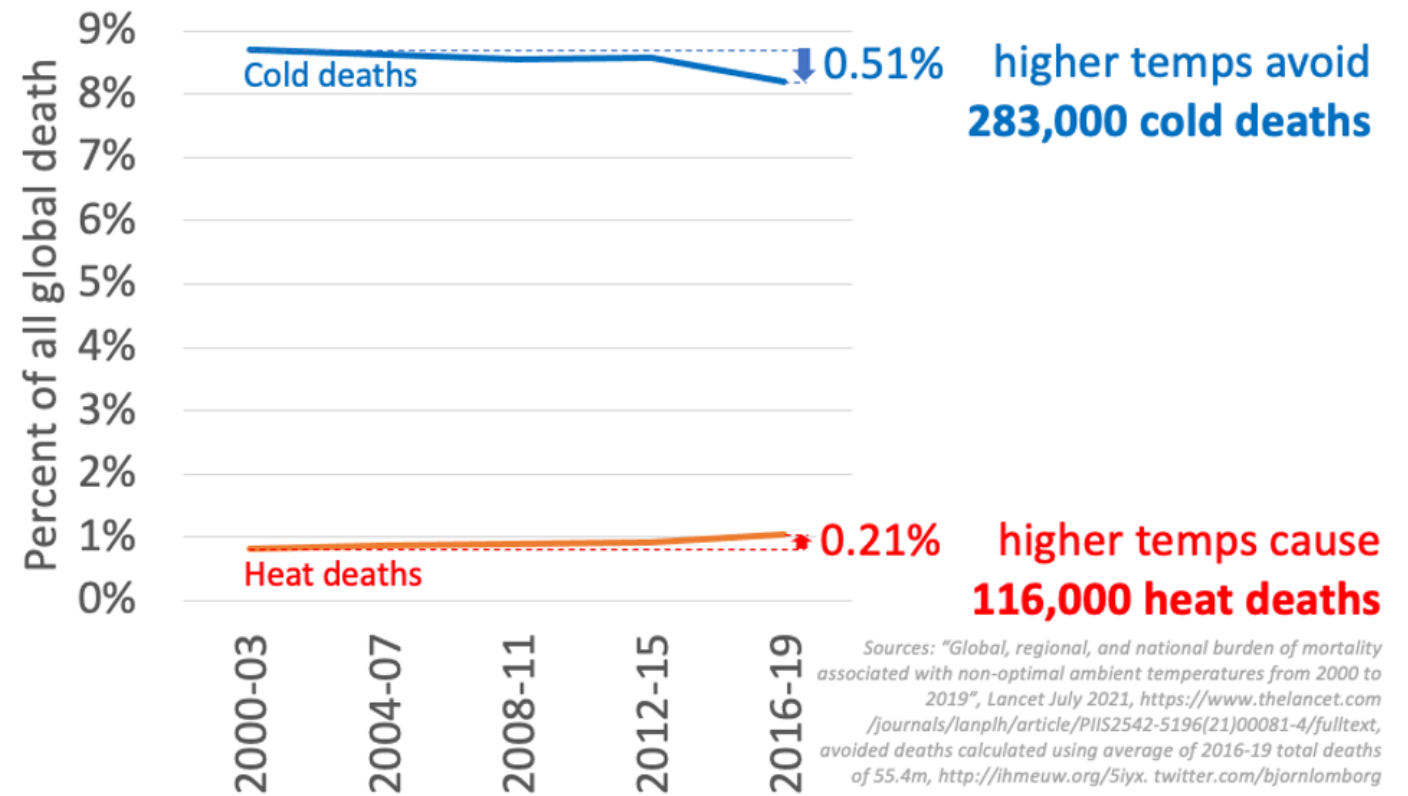
Our CO2 emissions of the last 170 years of fossil fuel use have correlated with about 1°C (2°F) warming and significant greening



Full effects of CO2 going forward (- and +) with precision

Undeniable fact 2

We still have far more cold-related deaths than heat-related deaths.



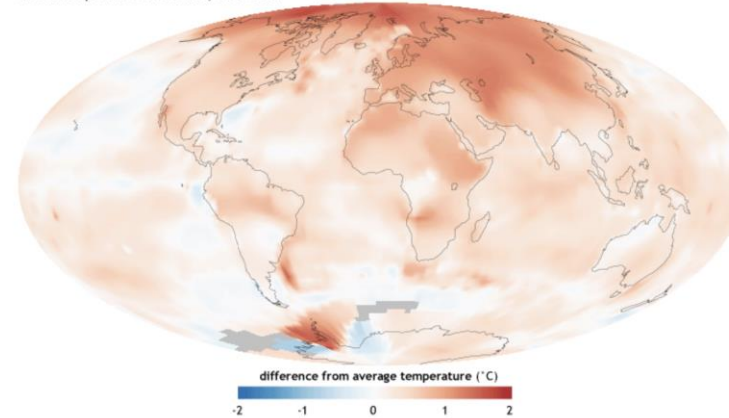
Full effects of CO₂ going forward (- and +) with precision

Undeniable fact 3

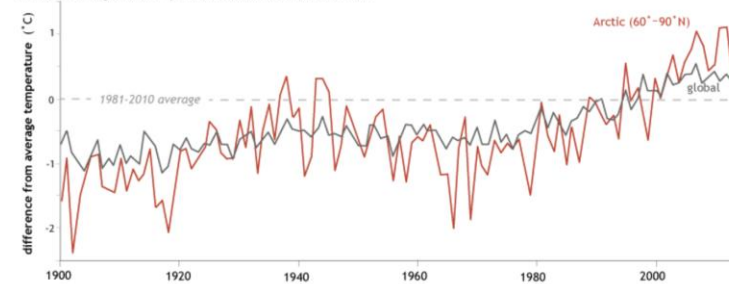
Warming occurs more in colder places, during colder seasons, and at colder times.

Climate.gov Media

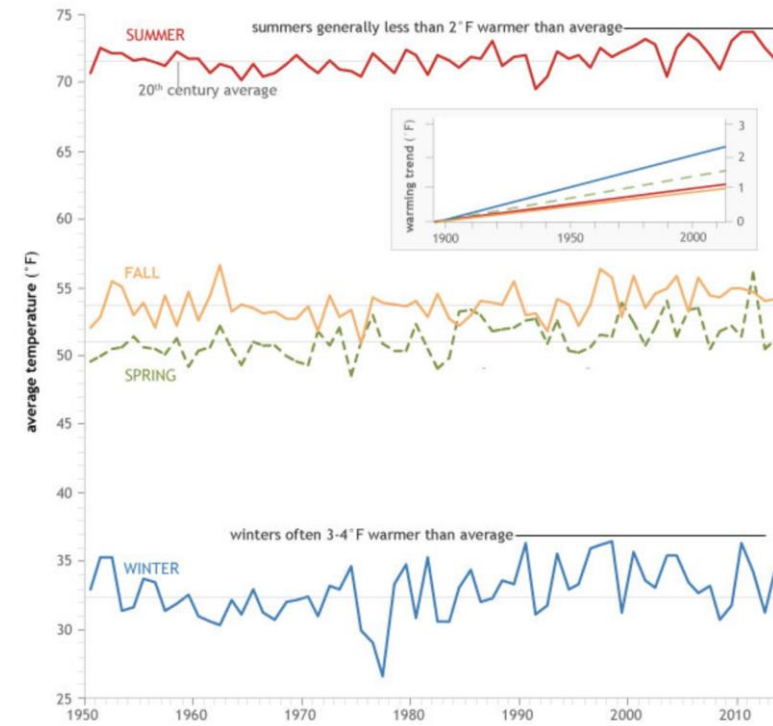
Global temperature anomalies, 2000-2009



Arctic versus global temperatures anomalies, 1900-2014



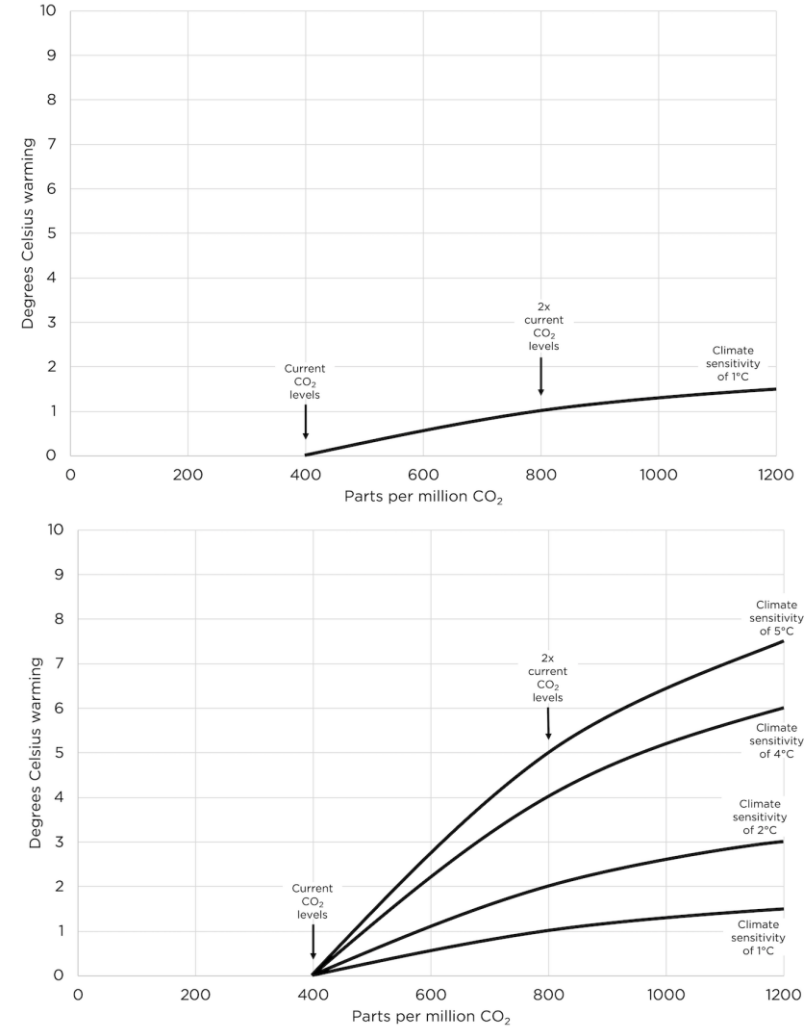
Seasonal average temperatures 1895-2014



Full effects of CO₂ going forward (- and +) with precision

Undeniable fact 4

The “greenhouse effect” of CO₂ is a diminishing, logarithmic effect, which means that even in (highly unlikely) extreme projections warming will slow.

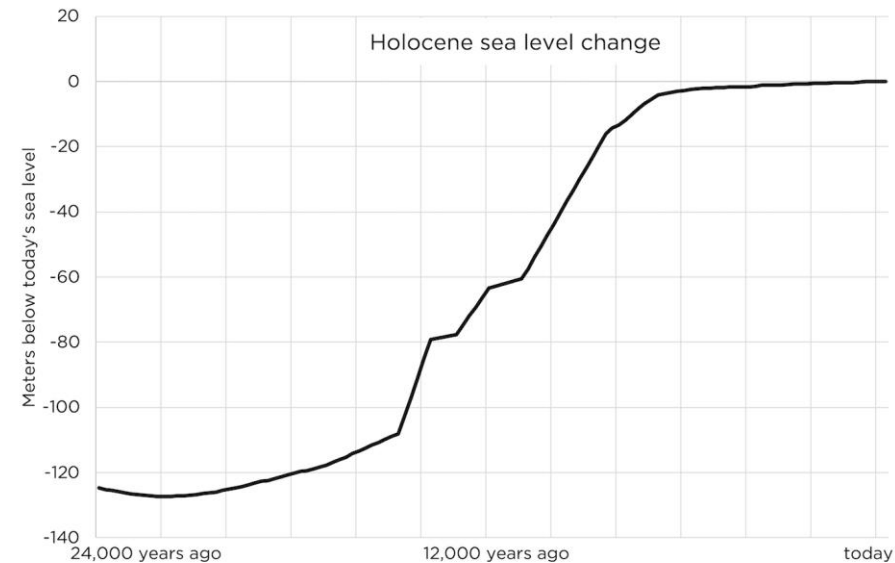
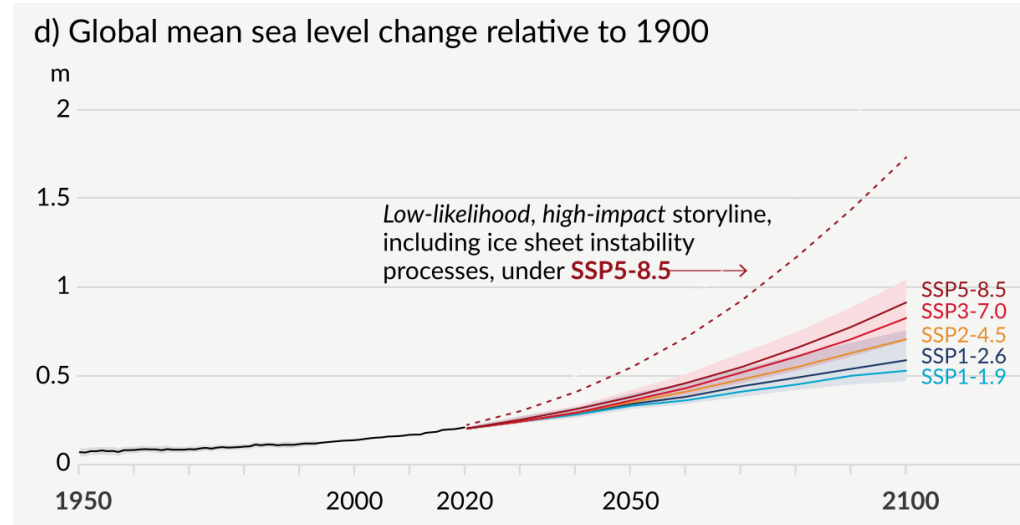


- 1 degree in 170 years.

Full effects of CO2 going forward (- and +) with precision

Undeniable fact 5

IPCC projected changes in weather and sea level due to warming are all readily masterable by an empowered world.



- E.g., mainstream projects of storms being 1-10% more intense, 25% less frequent
- Extreme sea level projections of 3 feet in 100 years. Not in 10 years.

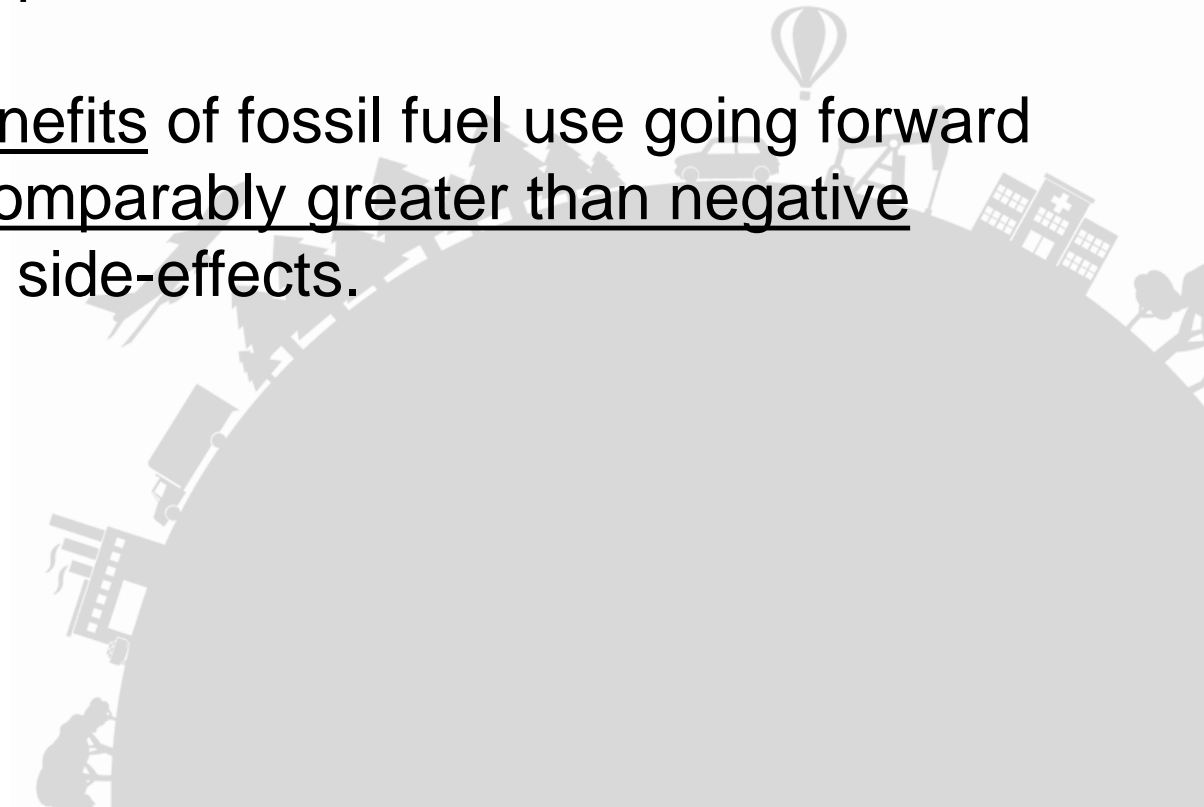
Full effects of CO2 going forward (- and +) with precision

Conclusion

Whatever warming occurs will continue to be masterable—with some significant benefits (maybe net beneficial).

Nothing resembling catastrophic, let alone apocalyptic.

The benefits of fossil fuel use going forward are incomparably greater than negative climate side-effects.



Conclusion

Rapid elimination of fossil fuels is based on total failure to proper good thinking principles—ignores benefits of fossil fuels, “catastrophizes” negative side-effects, denies/distorts today’s reality.

Net zero is mass-destruction in theory, destruction of free world’s prosperity and security in practice.

Right policy: Energy liberation, including nuclear decriminalization

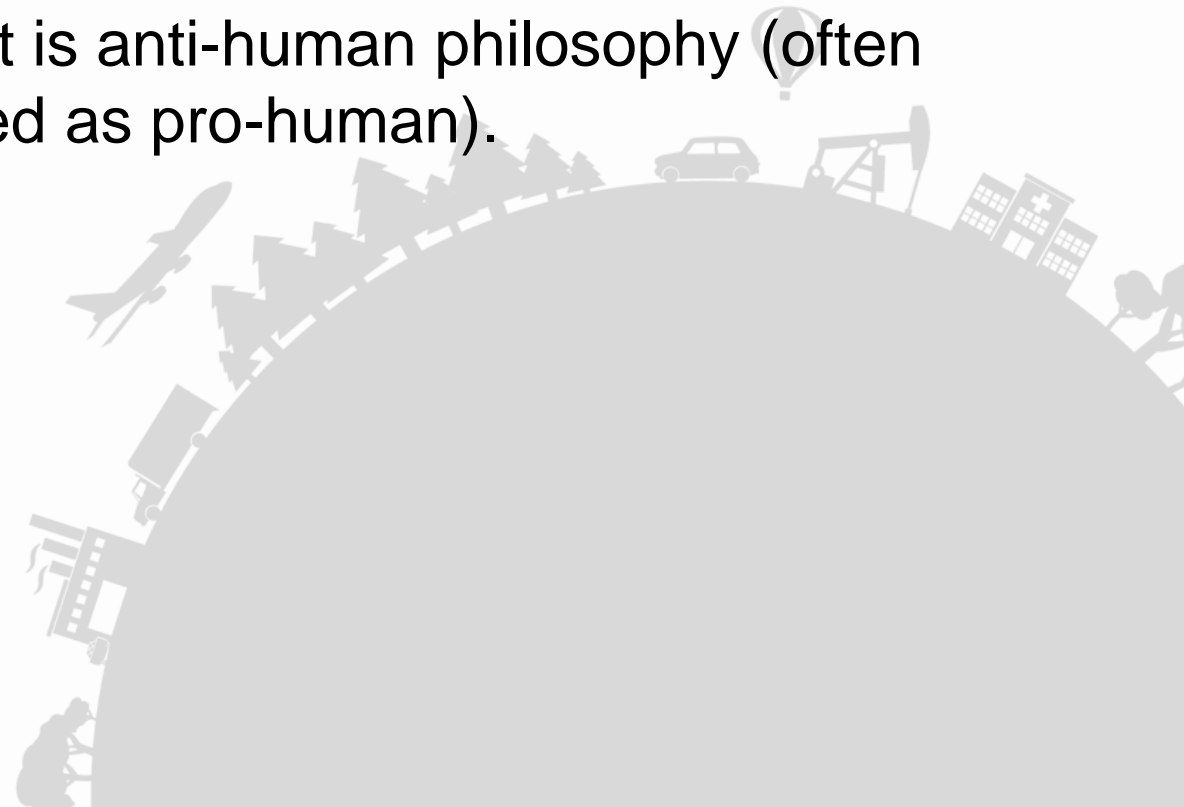
Create an abundant and safe world for 8 billion people, lower CO2 emissions (as well as pollution and danger) long-term.

Why?

Why do our leaders think so irrationally about fossil fuels?

Feel free to ask in the Q&A (or read Chapter 3 of Fossil Future).

The root is anti-human philosophy (often disguised as pro-human).



Today's unprecedented energy education opportunity

Resource: Fossil Future
(FossilFuture.com)

Resource: EnergyTalkingPoints.com

Next steps

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