

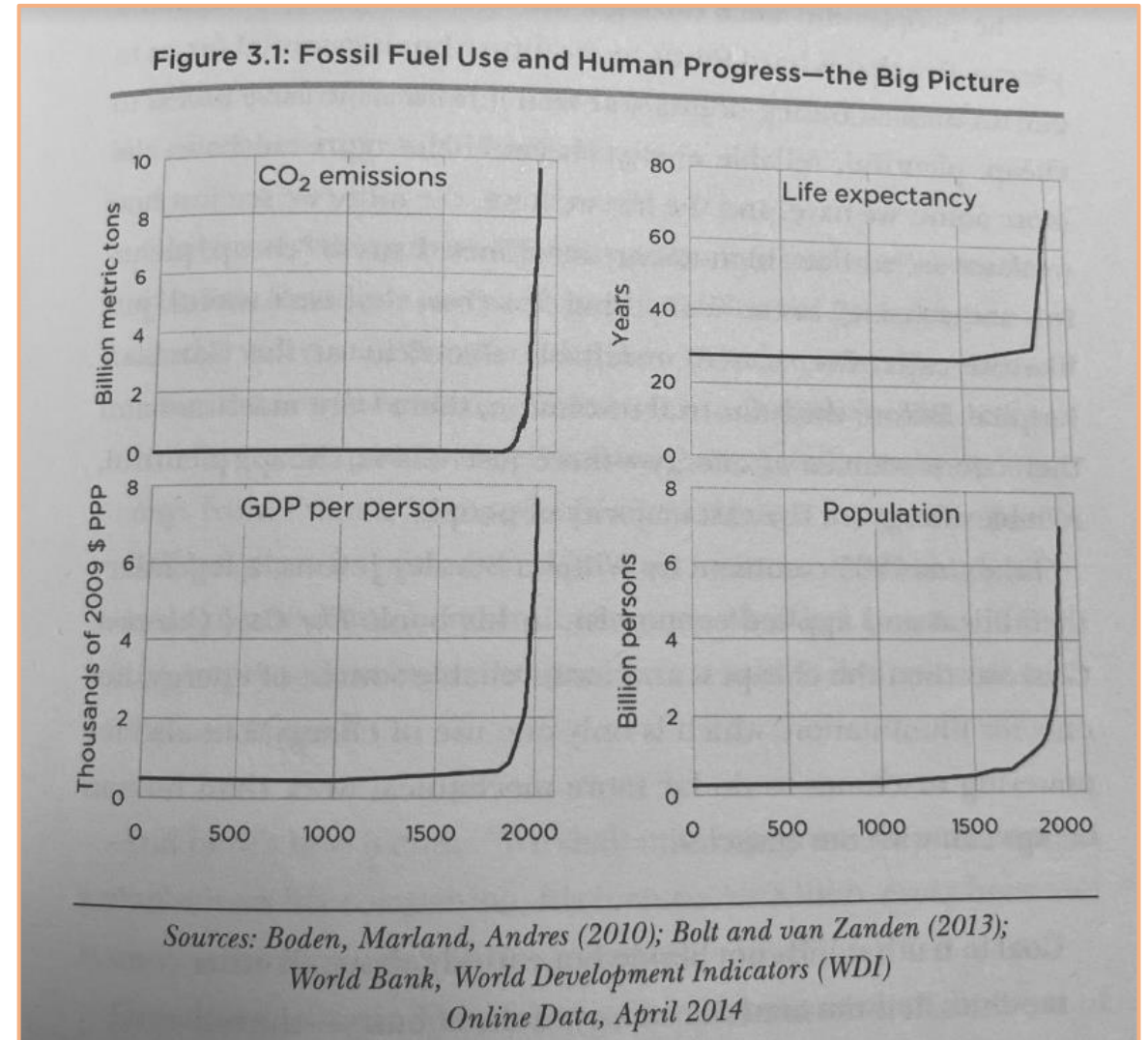
The background of the slide features a silhouette of an oil pumpjack against a sunset sky. The sun is low on the horizon, creating a warm, golden glow that illuminates the clouds. The pumpjack's mechanical structure, including its walking beam and counterweights, is clearly visible in dark silhouette against the bright sky.

The Moral Case for Fossil Fuels

A healthy, moral choice for the development of humanity

Epstein argues that fossil fuels can *improve* human well-being.

GDP per person and life expectancy data trend directly in tandem with CO₂ emissions



Epstein argues that fossil fuels involve the greatest technology.

The world's leading fuel for electricity – producing

41%

of the world's electricity in 2011 – and is expected to become the leading source of energy overall.

In the developing world, it has been the overwhelming choice for every country that has industrialized recently

Coal is...

- Easy to extract & transport
- Plentiful & widely distributed
- Little processing

and has single-handedly...

- Decreased infant mortality rate
- Improved drinking water
- Increased electricity availability and consumption

Epstein argues that renewable energy is a risk-adjusted resource.

“Wind turbines require far more toxic materials than fossil fuels do- materials called rare-earth elements.

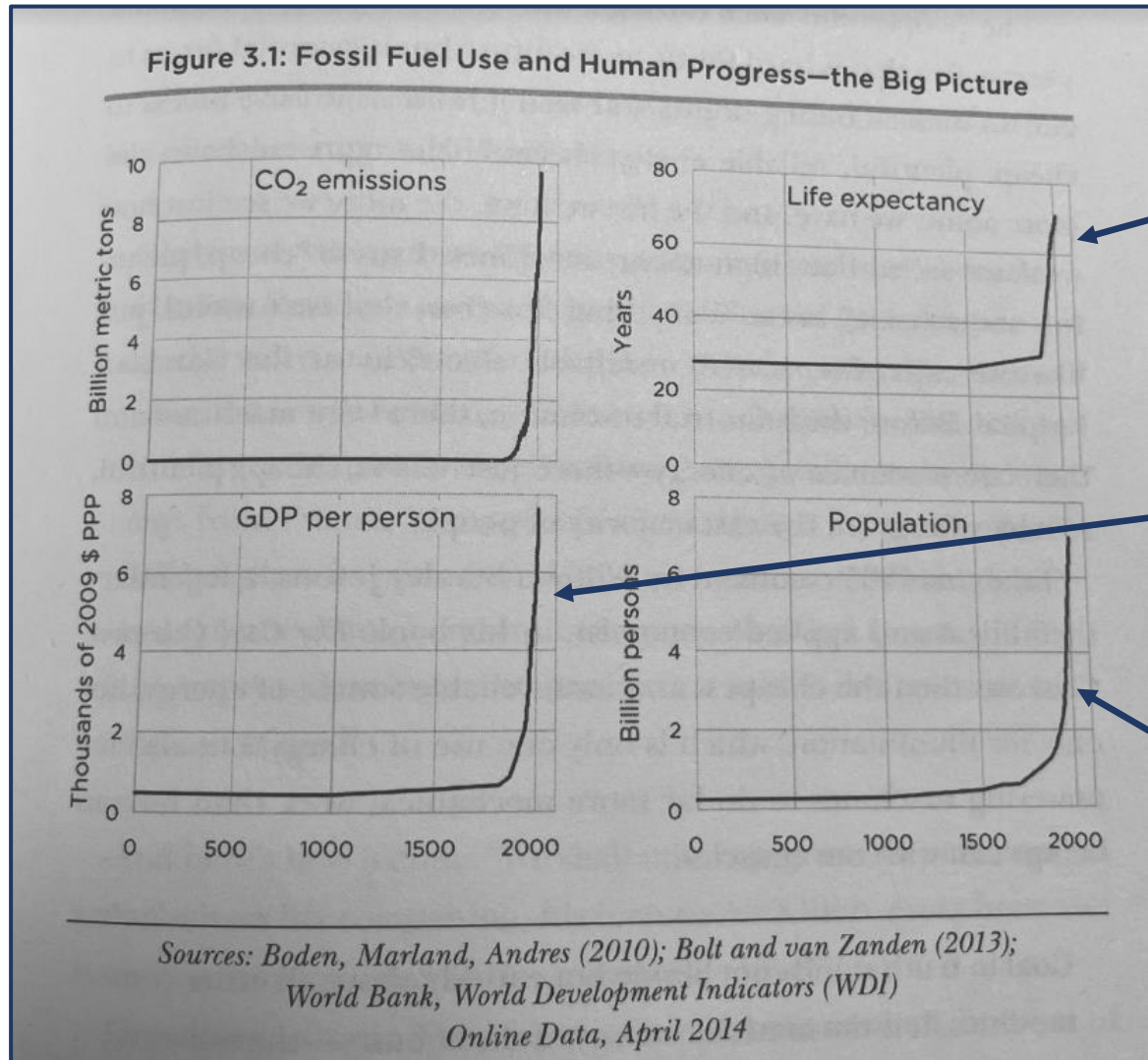
These are “rare,” not in the sense that there are few of them, but in the sense that they exist in low concentrations on the Earth: it takes a lot of mining and a lot of separating of the desired metals from other elements using hazardous substances like hydrofluoric acid in order to get usable rare earth elements.”



The Moral Ramifications of Fossil Fuels

Fossil fuels have and will
continue to deteriorate our
climate and wellbeing

Epstein considers correlational evidence to be causal



Medical improvements, namely vaccine developments, are direct causes of increased life expectancy

Coupled with population growth, hardware and software technology develops have enabled GDP growth

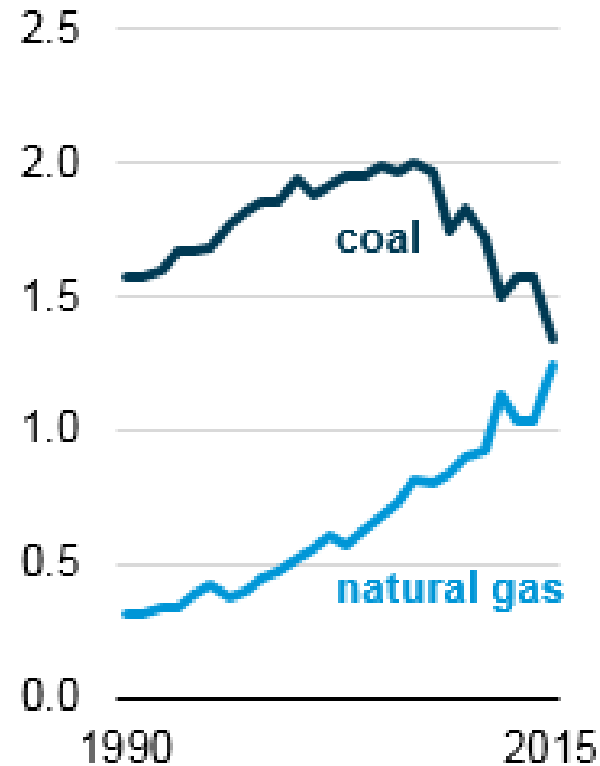
Population growth stems from a multitude of factors: controlling disease, food production, life expectancy, and more,

Epstein correctly acknowledges the widespread presence of coal without recognizing its negative impacts

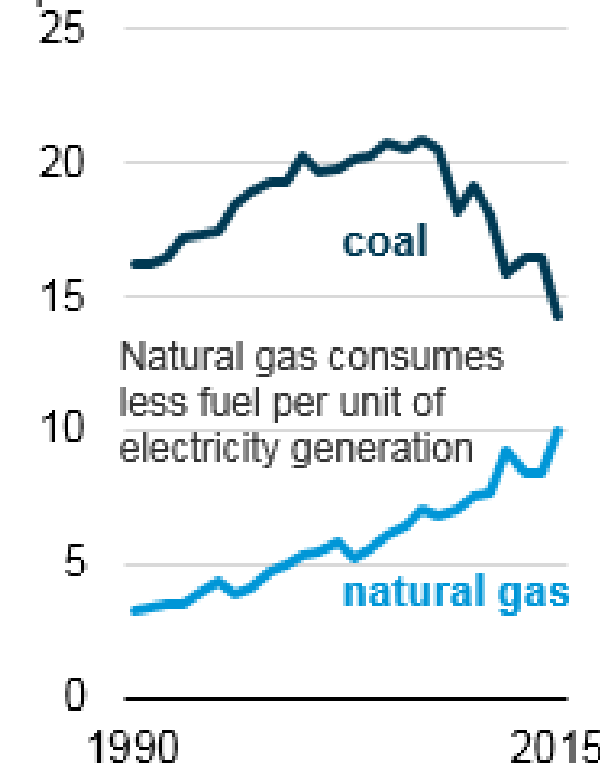
Coal combustion
accounts for
40%
of global CO₂
emissions from
energy use

U.S. electric power sector comparison of coal and natural gas (1990-2015)

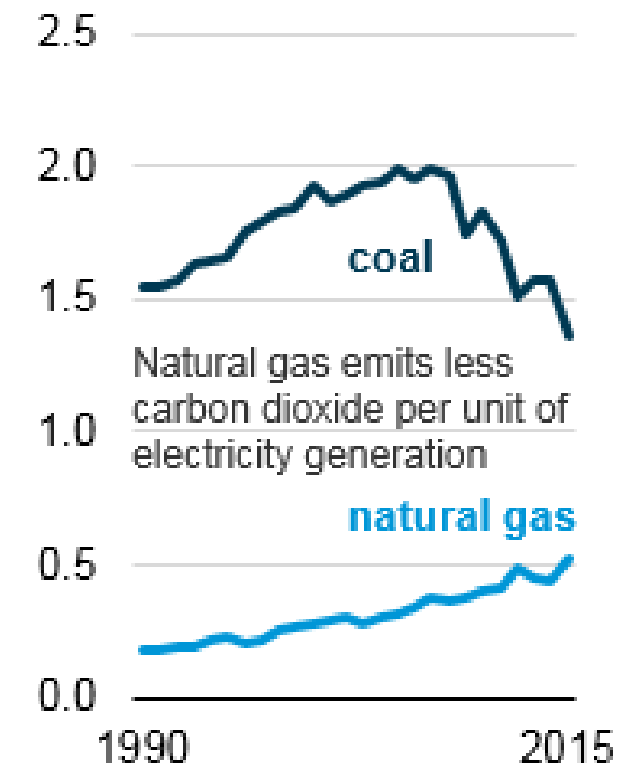
electricity generation
billion kilowatthours



energy consumption
quadrillion Btu



CO₂ emissions
billion metric tons



Epstein does not recognize the expansiveness of the clean energy universe or the wellbeing impacts of fossil fuels

The energy transition landscape is well-diversified with the current, core growth drivers outside of wind



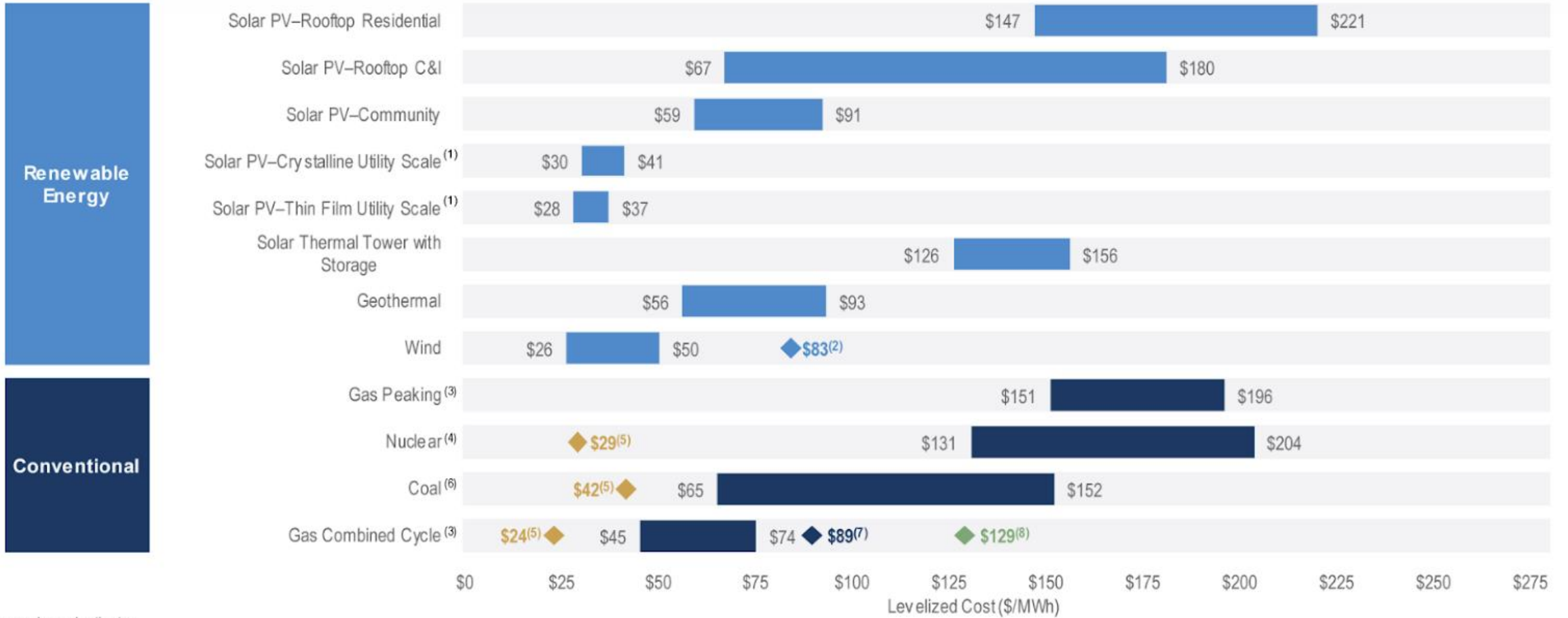
Source: Evercore ISI Research

Fossil fuels are responsible for
8,000,000 deaths
annually

Sources: Harvard University, Evercore

Levelized Cost of Energy Comparison—Unsubsidized Analysis

Selected renewable energy generation technologies are cost-competitive with conventional generation technologies under certain circumstances



Source: Lazard estimates.





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