The Energy Choices We Face and the Tradeoffs Too Many Wish to Ignore



THOMAS J SHEPSTONE FEB 26, 2025

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A new report out by ARC Research does a beautiful job setting out a rationale discission of energy issues against the shrill cries of climate cultists. It's titled "The Choices We Face, Energy for the 21st Century: A Declaration of Guiding Principles."

ENERGY FOR THE 21ST CENTURY: A Declaration of Guiding Principles

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Dr Scott Tinker is the CEO of Tinker Energy Associates, Chairman of the Switch Energy Alliance, professor at The University of Texas at Austin, and Director Emer of the Bureau of Economic Geology.

Here is the beginning of the report setting for the overall rationale followed by a simple list the nine guiding principles proposed:

Myriad national and local governments are proposing and implementing policies propel or mandate an "energy transition" to minimise society's use of fossil fuels This "transition" idea emerges from, and is driven by, climate policy objectives.

Consequently, debates over energy scenarios, forecasts, and manifestos abound. Notwithstanding the certainties and uncertainties around climate issues, the principles of the physics of energy are independent of climate science. Supplying energy at a global scale requires an understanding of different domains in scienc technology, economics, and human nature.

For wealthy nations, concerns about our natural environment—land, water, local and atmosphere—have become a driving force behind public perceptions and political goals surrounding energy systems. But we believe that the primacy of human flourishing, globally, is required for all else to succeed.

We believe that civilisation can indeed produce sufficient, affordable energy, and that diversification of the energy portfolio is healthy, but not to the exclusion of fossil fuels— oil, natural gas, and coal—as primary energy sources for decades tc come.

Because energy is foundational for civilisation, as a guide for framing civil dialog

and deep thinking around the energy-environment balance, we propose herein r energy principles, three each in three domains—Economics, Politics, and Science and Technology. These principles are underpinned by the laws of nature, fundamentals of economics, and standards of civil governance, rooted in what history teaches, and what is possible, practical, and reasonable.

While there is much that can and should be debated about details, nuances, and aspirations, we hold these principles to be self-evident...

Guiding Principles:

- 1. Lifting up those in poverty to alleviate suffering and promote human dignity requires more energy.
- 2. Human flourishing requires more energy that is less expensive and more reliable, not less energy that is more expensive and less reliable.
- 3. In the pursuit of flourishing, humans continually invent new products and services, all of which necessarily use energy.
- 4. Energy security is a top priority for global leaders, revealed in their actions, in not always their words.
- 5. When wealthy economies export energy production, they impose environmental impacts on less-wealthy nations.
- 6. Government mandates and/or excessive intrusion in markets stifles energy innovation, options, and freedoms.
- 7. Capturing and delivering energy to society is about inventing, building, and perfecting technologies based on what physics and engineering allow.
- 8. All society-scale energy systems have environmental trade-offs.
- 9. The energy available in nature itself is fundamentally unlimited.

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Each of these of these is on the money, as I see it, but No.9 is the one that comes closest to my own thinking on the bigger picture:

The idea of some inevitable "energy transition" is, to a significant extent, rooted the belief that there are limits to the energy available to civilisation. Delivering useful energy to society is made possible by technologies that can capture natur forces and materials and convert them into a useful form.

Forecasting long-term possibilities for energy supplies is thus determined by fut innovations that can take advantage of the underlying scale of those primary resources. Scientific estimates of those quantities illuminate the reality that unimaginably enormous amounts of energy exist in the natural world around us.

Earth's natural fluxes of sunlight, wind, and the movement of water constitute or daily basis thousands of times more energy than humanity consumes. Similarly, t energy existing in estimated global fossil fuel deposits constitutes roughly a thousand years of world energy use.

Then, there's uranium deposits that hold ten-thousand-fold more energy than global needs. Our natural world offers functionally limitless energy supplies awaiting foundational discoveries and revolutionary machines that can usefully harvest and convert it all, some of which may well happen before humanity crack the code for taming fusion.

History shows that with progress in knowledge and invention, humanity continual expands the ability to tap into nature's abundance. And history also shows that t evolution of that progress has always led to expansions of and additions to energy upplies—not a transition away from previous sources. In fact, no source of prime energy—wood, coal, oil, natural gas, uranium, hydropower, solar, wind, geothern — has yet seen its use decrease, globally (Figure 10).



Figure 10: Global Energy Production. Source: Our World In Data.

The world burns more wood for energy today than 200 years ago.

As outlined above, over 80% of global primary energy still comes from fossil fuel oil, coal, and natural gas. As a practical matter, modern civilisation is anchored in direct and indirect uses of fossil fuels for all products and services somewhere in myriad and complex supply chains. However, within the mix, coal's share (%), not absolute consumption, has been declining, while the share supplied by natural g has been increasing.

The future share of oil and gas supplied to the world will not be constrained by resource limits, only practical barriers based on the technology available for extracting those resources. Technology converts resources into viable "reserves".

Peer-reviewed research of the major American shale basins conducted by the

Bureau of Economic Geology at the University of Texas found that approximately 500 billion barrels of oil are technically recoverable with today's technology and moderate prices, while, to date, only 60 billion have been produced.⁴⁴

The United States is not the only nation with hydrocarbon-rich shales. Comparable resources exist, for example, in the Middle East, Russia, and Argentina—where numerous companies are preparing, out of the limelight, to bring those resource to market when the economics and timing are right. Even Europe has shale resources; accessing them is a political decision, not a technological one.

This is not unlike the permissions required to mine for key metals or any of the resources needed to fabricate wind turbines, solar panels, and batteries. Indeed, extent to which any primary resource is useful—uranium, moving water, wind, lig or heat from the sun—depends on political permissions not just economically via technologies.

In essence, there are no fossil fuel resource limits per se, at least in time frames meaningful for human affairs. This does not mean fossil fuels will be primary ene sources forever. Ultimately, one can imagine fossil fuel production will decline if available technology is unable to produce economically significant additional output from accessible geological resources. All things have practical limits.

If the limits of viable conventional energy resources are reached before the development of viable alternative technologies that are scalable, the result will b tighter supplies and higher prices, which inevitably lowers demand but with seve economic penalties. What history shows is that inventions emerge that unlock capabilities across many energy domains, and lead to additions to available ener rather than transitions away from existing energy supplies.

Resources inherent in nature are often unlocked by unanticipated discoveries an innovations: the shale revolution a couple of decades ago; the fission reactor and the photoelectric effect, both first instantiated about 75 years ago; the gasoline combustion engine automobile 115 years ago; or kerosene 170 years ago. It is, fundamentally, a fool's errand for governments to use mandates and subsidies to attempt to create an "energy transition."

Too often, when governments pick "winners" from existing—i.e., yesterday's technologies, it is done at best based on aspirations more than physics and economics. The central challenge for policymakers is not one of guessing resour adequacy, but of a realistic understanding of the viability and timelines for the emergence of new technologies that add to and expand the portfolio of options available to humanity, and one of supporting investment in basic research to ens the discovery of new energy technologies.

This is all basic resource economics, realities taught to me when I took my first cour in Natural Resource Economics at Penn State a half-century ago. The basic truths haven't changed a whit. The problem, as usual, is our lack of humility, which is the fl side of the above. Once we grasp how much we can do with what we have been giv our thoughts quickly move to creating a utopian paradise, which is, at root, what th climate cult is all about (that and corporatism). All such attempts are doomed, of course, as history shows us. That's why humility and rationality are in such demand this report provides a good deal of both.

#EnergyTransition #Choices #MarkMills #Energy #ScottTinker #Energy #Climate

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Liked by Thomas J Shepstone

Reading this article just confirms what I think of our so called "leaders" who have blinkered visior that they are quite willing to allow some to make a fortune at the expense of the poorest in socie

Their attitude in asking underdeveloped countries to pursue renewables is a perfect example. Th saying to a country with no electrical infrastructure - you must use electric transportation! And the wonder why it doesn't work.

The more I hear from "The Climate Religion" the more I realise it is a great big Ponzi scheme des to move us back to living in great discomfort.

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