

Economics of Energy.



Principal Voices.

Why do we need to reduce our use of fossil fuels?

Renewable and efficient energy technology will have to replace fossil fuels far faster than most people currently anticipate. The reason is the combined impact of two key problems that will shape the 21st century: peak oil and climate change. A premature topping point in global oil production would wipe out economic plans currently on offer in boardrooms and finance ministries around the world. This is because such plans assume growing supplies of affordable oil for several decades to come. But as former U.S. Energy Secretary James Schlesinger recently concluded, “we can’t continue to make supply meet demand much longer. It’s no longer the case that we have a few voices crying in the wilderness. The battle is over. The peakists have won.”



Among the main escape clauses for peaking oil supply, according to traditional energy experts, are the mining of Canada’s vast tar sand deposits, and coal-to-liquids technology. Using the tar sands would require massive amounts of water and gas. Coal-to-liquids technology is similarly greenhouse-gas profligate, though here—as with regular coal burning—advocates hold up the prospect of carbon capture and storage, where emissions are buried underground. Of this prospect Schlesinger has concluded that, “it will take at least 15 to 20 years to introduce, if then.”

But according to NASA’s top climatologist, we have less than a decade to deeply cut emissions. If we don’t, we risk climate

horrors such as an irreversible melting of the Greenland ice sheet, which would lock-in a global sea level rise of up to 23 ft. (7 m).

Can renewable and efficient technology reduce our dependence on fossil fuels?

Here there is good and bad news. Yes, we can run the world on renewables and efficiency. Any self-respecting solar energy company—hooked up with the right partners—can put up zero carbon buildings in a matter of weeks. Around 50% of CO₂ emissions come from buildings, directly or indirectly. Meanwhile, as traditional power prices soar, solar manufacturing costs are falling.

But solar is no panacea. We need an explosive growth in all renewable and efficient energy markets. In Britain, for example, we have the potential to source all of our primary energy from wind and marine technologies. Knowing what the renewables family can do, imagine the frustration that practitioners like me feel having watched these technologies held back during the great addiction to fossil fuels.

What will happen if the world doesn’t embrace renewable energy?

The bad news is that no combination of technologies can plug the energy gap if the peakists are correct. There will be a third, and last, global energy crisis. It will dwarf previous crises. Profound economic dislocation will result. The challenge for human civilization will be how we rebuild post-peak. If we mobilize with renewables and efficiency, as though for war, we have the potential to achieve a renaissance on many fronts. If we forget climate change and go for coal and tar sands, we will achieve the opposite. A few hundred billion tons of coal and tar sand could cause economically ruinous, and irreversible, climatic impacts. That would amount to a fraction of remaining coal and tar sand deposits, even if the experts have overestimated those “resources” the same way they have conventional oil.

“We need an explosive growth in all renewable and efficient energy markets.”



Jeremy Leggett
Frontline Pioneer.

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