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National opinion: Energy guru says energy gap can be bridged

Dave Marston Writers on the Range

6–7 minutes

The following is the opinion and analysis of the writer:

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Dave Marston

The experts tell us an energy gap looms. Fossil fuels are phasing out, and solar and wind power can't produce enough electricity to meet the demand in coming decades.

But that's not the thinking of Amory Lovins, the 76-year-old co-founder of RMI, formerly the Rocky Mountain Institute in western Colorado.

A Harvard and Oxford dropout who's been called the "Einstein of Energy Efficiency, Lovins said recently: "If we do the right things, we'll look back and ask each other, 'What was all the fuss about?'"

Lovins became famous in the 1970s after his research told him that building more polluting coal-fired power plants was a destructive mistake. His solution then was **greater efficiency and reliance on renewables**, and they, he insists, are still the answer.

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"Though it's invisible, efficiency will cut 50% of energy use and up to 80% if we do the right things," he told me recently. "Most of the energy we use is wasted, which makes it much cheaper to save it, rather than buy it or burn it."

According to a recent Princeton paper, he's right: **84% of all energy consumed goes to waste** during delivery or by leakage.

To prove it decades ago, he built a passive solar, super-insulated house at 7,100 feet of elevation in Old Snowmass, Colorado. It never had a heating system though winters regularly recorded 40 degrees below-zero temperatures.

When I arrived there recently at 8 a.m. it was 12 degrees F. Yet the house featured banana and papaya trees growing in natural light around a koi pond.

We became acquainted when he read my January 2023 Writers on the Range column entitled; "The energy gap nobody wants to tussle with." I'd advocated building **small modular nuclear reactors to bolster the grid** when the wind doesn't blow and the sun doesn't shine.

from the energy sector site, nuclear began contributing to the energy chart by 1970, maxed out at ~6% by around 2000, and has been declining in importance ever since. 2022: 3.75%

Lovins called to set me straight, and after a second conversation and more research, I'm beginning to think he's right.

Though Lovins has many solutions for the energy gap, he touts three major ways to find more energy in what we already do. Tops on the list is changing how we build and retrofit existing structures because buildings consume 75% of the electricity we buy.

Most energy jobs in the United States are already increasing efficiency, ranging from upgrading windows and other retrofits, far outpacing the shrinking fossil fuels industry. (energy.gov)

As one example, Lovins advocates "outsulation" for older structures, defined as adding exterior insulating panels to save heat. Courtesy of the European Union, my Irish in-laws recently had their house "wrapped" and saw their heating bills plummet.

His second way is demand-response, which Lovins calls flexiwatts. An example is cycling air conditioners off for 15-30 minutes at a time, a barely noticeable adjustment that cuts demand for peaker-power plants, those big emitters of greenhouse gases.

His third way is using renewables more effectively. Diversifying renewables by location and type within a region evens gaps from windless and cloudy weather.

As for electric cars being a drain on the grid, they will prove to be sources of electricity, he said, as the next generation batteries will be cheaper and likely have double the storage. Daytime solar stored in vehicles will be bi-directional, spooling out power during peak evening demand.

Lovins also cites LED lights dramatically cutting the cost of energy. In just a decade, they've become 30 times more efficient, 20 times

brighter and 10 times cheaper.

Lovins is quick to admit that an energy gap remains, but he predicts a single-digit gap — 6% — between what renewables produce and what's needed. That, he said, can be made up by stored, green hydrogen or ammonia, manufactured from water and air with solar energy, and burned in existing gas plants.

As for nuclear power plants, Lovins said even the best-case scenarios for the next generation of nuclear generators are at least a decade away, and at least eight times more costly than renewables today.

“It's better to use fast, cheap and certain rather than slow, costly and speculative,” he said.

Though cutting loose from fossil fuels is a massive undertaking, Lovins said America is on track. “We are on or ahead of schedule on renewables, with 85% of net new additions to the grid from renewables, and \$1 billion invested in solar in the United States daily.”

For these reasons and more, Lovins sees our energy future as more of what we're already doing — only smarter and faster.

Let's hope that he's right.