



(<https://energyconsumerconnection.org/>)



October 10, 2022 (<https://energyconsumerconnection.org/2022/10/10/> )

## Meet the Energy Champion of the Radical Middle



(<https://energyconsumerconnection.org>

/about#scottbio)

### Scott Carlberg

Scott has worked in energy public affairs, communications, project management, community relations, and stakeholder engagement for more than 45 years.

Share Post:





With a world that seems to revel in extremes it is nice to have someone dedicated to hearing all sides. That is Scott Tinker when it comes to energy. He says he is dedicated to the *Radical Middle*. Tinker founded the non-profit *Switch Energy Alliance* (<https://switchon.org/>) (SEA), dedicated to spurring an energy educated future, which has a massive film portfolio including two feature-length films on energy (Switch (<https://switchon.org/films/switch/>)) and energy poverty (Switch On (<https://switchon.org/films/switch-on/>))). SEA has just released a PBS talk switch on Energy and Climate (Energy Switch (<https://switchon.org/tv-series/energy-switch/>))).



His “day job” is director of the 250-person Bureau of Economic Geology, the State Geologist of Texas, and a professor holding the Allday Endowed Chair at The University of Texas at Austin.

Tinker, left, is a science guy. I put his short bio at the end of the column.

I talked with Scott recently to get his take on energy issues following decades of study and visits to more than 60 countries researching energy.

***Scott, you have tracked big energy issues and spoken with an immense number of people globally over the past decades. What has that changed in your own view about the challenge of managing our energy systems***

***better?***

I’ve been at this for 40 years. What is perhaps interesting is what has not changed. There remains a lot of the world without much energy at all, and even more without much secure energy – three out of every four people. Energy security needs to drive the global energy conversation, but sometimes it doesn’t.

I have been to 60 countries and seen the poorest and the richest people. Our conversations in the wealthy developed world tend to be around high-wealth focused topics like climate change. But these must go hand in glove with conversations about affordable, reliable, “secure” energy.

It is not a matter of simply putting in a solar panel or even putting up a grid. For example, we've got a slum called Kibera outside Nairobi, Kenya. Kenya Power has installed a grid to provide power, paid for by taxpayers. But the cartel that governs Kibera (the largest

slum in Nairobi, and the largest urban slum in Africa) tapped around the legal power to provide illegal electricity, cheaper. The problem is that it is also more dangerous because it is not grounded properly, so it kills people during rainstorms and other events. Nothing is simple.

What has changed is that we now recognize that we are managing a global energy system whose demand is going to increase.

Population will grow, emerging economies will grow. Together these drive energy demand up.

This demand must be addressed. I am not a fan of catastrophism, where everything is an unprecedented crisis, driving fear and irrational decisions. But we do need to have a modern energy approach to dense population and growing energy demand. Dense energy provides a significant part of the solution for dense demand

***So, is density a concept in energy that people could understand better?***

Energy density? Yes. We need dense energy, like nuclear, natural gas and hydrogen. Low density energy like solar, wind and batteries have a place, especially if you have nothing and are off the grid, like 1 billion people in the world. But we must have dense and reliable energy for the other 7 billion.

Think about it, a data farm somewhere is whirring so we can Zoom like this. Huge energy consumption. Big change from a decade or two ago.

***Those are big, and almost abstract concepts, but it all comes back to physical resources, right?***

Everything we need for energy comes from the earth. We mine for coal. We drill for oil and natural gas. We mine for the metals to make solar panels,

*SWITCH – in Nepal and a wood energy fire*

wind turbines, and batteries. And we mine for uranium and thorium for nuclear. We take what we drill or mine and turn it into useful energy via manufacturing or refining. And we either burn it, dumping emissions into the atmosphere, or dump the panels and batteries, or giant inert turbine blades into landfills when

they wear out.

drill and burn, mine, manufacture and dump. None of that is renewable.

This is not a judgement about energy sources, it's physics. Coal, oil and natural gas, made by nature, has more energy density than wood, hay, sun, or wind. It takes less "stuff" to create useful energy from dense energy.

***While the energy system has a vast number of moving parts, are there two or three big opportunities you would emphasize to make progress in a cleaner and more efficient energy system?***

*SWITCH – at a geothermal site*

There are different objectives for different populations, so those have varied opportunities.

Some people just need some kind of energy to get started because they have none; others have energy, but it is not reliable; others have reliable energy so they seek to reduce environmental impacts.

And what is "clean"? In energy, the term *clean* is essentially meaningless. We should try to be as specific as possible in our language – lower emissions, lower air particulates, NO<sub>x</sub>, SO<sub>x</sub>, lower mining impacts, lower impacts on landfill and soil, and so on. Specificity helps define what to solve.

For those with limited energy – well, they need to get started. Some people may not have roads, pipelines, or wires, so use distributed energy – small generating and distribution – to begin and then grow the energy system longer-term. They would

*Part of SWITCH-ON (<https://switchon.org/films/switch-on-series/>) TV series episodes*

benefit from access to the best technologies, from solar and wind, to other distributed energy.

One distributed oddball could be small modular nuclear reactors [SMRs]. These are small units that make 50 to 100 MW of power, for example. SMRs could be distributed and partnered with the sun or wind in a local grid. That concept, repeated many times, could serve one or two billion people in the emerging and developing world. Yet there remain people fearful of nuclear.

The next four billion people in the world have unreliable power. They will do what China and



Indicate use coal. It is affordable and available. There is a global economic story here, too. These countries make products the developed world needs. Our society wants and needs the stuff they make, and we want it to be affordable. And that means coal. A bit of an emissions irony: Make our stuff. Emit "our" CO<sub>2</sub>.

Much of Latin America, Russia, Southeast Asia, and parts of Middle East are in this category of needing improved reliability. They are adding various sources of power. There are some 50 large-scale nuclear reactors being built in China. Here's an interesting statistic: In India and China alone live one of every three people in the world, and they need lots of stuff, too, so they need lots of energy.

The rest of the world – US, Canada, Australia, Europe – is less than one billion people. We will refine our systems, probably more natural gas and nuclear. They are scalable. We are not yet scaled in solar, wind, and batteries, but they are getting started. The US needs to lead in these new technologies because the US still has an edge in research. Federal investment has challenges, but also does some good.

### ***What do you tell individuals to do to improve energy stewardship?***

Get educated about energy. We think we understand energy, but we really don't. Yet everyone has an energy opinion and if you don't agree with them, they think you are a shill for a company, or a "denier." This crosses the political aisle.

There is no clean/dirty, good/bad. These choices are not binary. Energy stewardship is more complex than that. That is why I started the whole SWITCH thing, to provide context and nuance to the energy debate.

### ***The energy transition seems to require more choices, not fewer.***

We have not left one single form of energy behind since humans left the cave. It is energy addition, not transition. We are adding

*SWITCH ON – nuclear primer (<https://switchon.org/videos/video/nuclear-primer>)*

### *One of the SWITCH platforms*

advanced energy types. We need to be educated in energy addition.

The primary climate challenge is emissions. Don't try to pick fuel winners. We will still have coal, and oil and gas, so focus on the emissions.

Picking winners through policy reduces optionality. See Europe and California. A third of Europe will choose between heating and eating this winter. California has to import



([https://www.ted.com/talks/scott\\_tinker\\_the\\_dual\\_challenge\\_energy\\_and\\_environment](https://www.ted.com/talks/scott_tinker_the_dual_challenge_energy_and_environment))

insulation in attic, including deck spray under the shingles. And most recently replaced the AC with an air exchange heat pump.

**Check SWITCH, (<https://switchon.org/>) a smart approach to energy education. And check the SWITCH Energy Competition (<https://switchon.org/case-competition>).**

power. Yet is still cutting off gas hookups and mandating EVs. The US can't go down the same track. Optionality is a good thing.

**What have you done in your daily living at home to improve your energy stewardship?**

The most recent three actions have been to ensure our lights are LEDs, we have an on-demand hot water, have doubled down on

*Feature image: SWITCH in Kenya*

**Scott Tinker** works to bring industry, government, academia, and nongovernmental organizations together to address major societal challenges in energy, the environment, and the economy. Dr. Tinker is Director of the 250-person Bureau of Economic Geology (<https://www.beg.utexas.edu/>), the State Geologist of Texas, and a professor holding the Allday Endowed Chair in the Jackson School of Geosciences at The University of Texas at Austin (<https://www.jsg.utexas.edu/>).

With Director Harry Lynch, Tinker coproduced and is featured in the award-winning energy documentary films *Switch* and *Switch On*, which have been screened in over 50 countries and used on thousands of campuses worldwide. Dr. Tinker formed and serves as Chairman of, the nonprofit Switch Energy Alliance, whose materials appear from schools to board rooms globally. Tinker is the voice of EarthDate, which is featured weekly on over 425 public radio stations in all 50 United States. In his visits to some 60 countries, Scott has given over 1000 keynote and invited lectures. In 2022, Dr. Tinker presented a TEDx talk on The Dual Challenge: Energy and Environment. Scott is an angel investor and has helped bring companies from startup to acquisition. His writing has appeared in publications ranging from *Forbes* to *Scientific American*.

Dr. Tinker has served as president of the American Geosciences Institute (AGI), the Association of American State Geologists (AASG), and the American Association of Petroleum Geologists (AAPG). He is an AGI Campbell Medalist, AAPG Halbouty Medalist, GCAGS Boyd Medalist, American Institute of Professional Geologists (AIPG) Parker Medalist, and a Geological Society of America (GSA) Fellow.