

**Speech for American Scottish Foundation all-day forum**  
**The Future of Energy in America and Scotland:**  
**The Challenges of Today and Tomorrow**

SUNY Center, 55<sup>th</sup> St / Park Av

October 31, 2011

*[In response to several prior speakers]* I too find it really heartening to hear about what some of you are doing in Scotland. That approach to a renewable future is exactly what the world needs more of.

First I'd like to thank Alan Bain and Camilla Hellman for their very kind invitation to the Sierra Club to be part of this program. They said they'd like an alternative voice to spark lively discussion today. I'll do my best.

Some of you probably know that the Sierra Club was started in 1892 by John Muir, originally from Dunbar, Scotland. He has been called "The Father of our National Parks," "Wilderness Prophet," and "Citizen of the Universe." This visionary helped persuade Pres. Teddy Roosevelt to establish the first National Monuments and Yosemite National Park.

Why did Muir do that? Then as now, nature was under threat and needed help to be preserved from unbridled exploitation and destruction. But now the situation is infinitely more extreme.

I'm going to take a wild stab and say that everyone in this room considers themselves to be an environmentalist. There is a clear orientation here toward renewables and concern for the future.

To state the obvious, the environment is *not* a special interest. It encompasses all the natural systems that sustain us all. Put another way — we are all connected. John Muir said it this way:

When we try to pick out anything by itself, we find it hitched to everything else in the Universe.

— *My First Summer in the Sierra*, 1911, page 110

People, companies and governments are shifting — too slowly — to renewables. But I feel a strong need to inject some sense of urgency. The very survival of human civilization is at stake. That's not hyperbole. It's not said for dramatic effect. We must act **now**. So say the 3,000 scientists from 140 countries who make up the IPCC — the Intergovernmental Panel on Climate Change, sponsored by the UN.

Yet what's going on now has the feel of a last mad dash to grasp what's left and make a killing. Tar sands, deep sea drilling, hydrofracking, mountaintop removal, commodification of everything in sight that can be called a "business opportunity," such as patenting life forms or taking possession of fresh water rights around the world.

If this continues, they'll make a killing all right. That's what will happen if we don't start a serious transition to a post-carbon, post-nuclear future and start it *yesterday*. A dollar or pound spent on further exploitation of fossil fuel is a dollar or pound *not* spent on renewables.

**There's no time left.** We're already well above the 350 ppm of atmospheric CO<sub>2</sub> those scientists have said could be the upper limit before catastrophic change kicks in. Instead of 350, as of last month, it's 389 ppm (<http://co2now.org/>) and is projected to be between 541 and 970 ppm by the end of this century. The results keep coming in:

- acidification and heating up of the oceans

- islands beginning to disappear, along with coastal Bangla Desh and East Anglia
- coral reefs dying
- 40% of the polar ice cap has disappeared in 40 years
- huge numbers of bees dying — Einstein observed that if bees were to disappear, humanity would have four years left
- methane emitted directly into the atmosphere by melting permafrost
- more intense and more frequent storms and droughts and floods are already in our faces

The list goes on. We're all connected and there's no time left. Either the transition starts now or we're all going over the cliff — the 99% *and* the 1%.

So how do we find the right balance of energy, jobs and the environment? There are ways we can live comfortably without destroying the Earth — but we can't live the way we have been for too much longer and remain comfortable.

There are a couple of familiar assumptions that have gotten old. The first is **risk/benefit analysis**. Very 20<sup>th</sup> century and very outmoded. It must be replaced by the **Precautionary Principle** — best summarized by the famous line from the Hippocratic Oath: First, do no harm. The Earth can no longer afford further harm.

The other assumption is a mantra of capitalism: growth.

For a couple of centuries it's worked. But the growth model assumes unlimited resources. Yet we're rediscovering every day that the Earth is finite. That's why energy corporations are drilling for oil and gas using hydrofracking, why we have tar sands and mountaintop removal. We've gotten the easy stuff. Now these extreme forms of extraction are necessary to get at what's left.

And for what? To put more fossil fuel emissions into the atmosphere, speeding up rather than reducing the rate of global warming and climate change. There are so many areas to cover, but I'll focus briefly on water.

### **Some tidbits on water**

- A human body can survive only 8–14 days without water. We can survive all our lives without gas.
- [water tables are falling](#) and wells are going dry in some 20 countries containing half the world's people
- In 2008, [Saudi Arabia](#) became the first country in the world to acknowledge its bursting food bubble when it [announced](#) that the aquifer supporting its wheat production was largely depleted.
- [Yemen](#): water tables are falling by some 2 meters per year. The Yemeni grain harvest has shrunk by one third over the last 40 years. It must import 80–90% of its food. The capital, Sana'a, pop. 2 million, is **expected to run dry within 6 years**.
- [Israel](#) now imports 98 percent of its grain.
- [Mexico](#): 111 million people. In agricultural state of Guanajuato, water table is falling by 6 feet or more a year. In the northwestern wheat-growing state of Sonora, farmers once pumped water from a depth of 40 feet. Today, it's over 400 feet. Mexico's food bubble may burst soon.

- In the US, Atlanta was left with 3 months worth of water in 2006. The West has been in increasing drought for decades. Texas experienced painful drought this past summer. And Australia's recent drought lasted several years.

We're all connected.

With all this depletion of fresh water, we now have the hydrofracking boom that the oil and gas industry wants to bring into NYS, which is typical of the northeast US in having generous supplies of water. Very briefly, there are several myths about hydrofracking:

- gas is clean and safe so it's a good transitional fuel
- it will bring jobs and prosperity
- there's never been contamination of drinking water
- it will bring energy independence
- the NYC watershed will be protected

All are demonstrably myths. Fracking — now over 90% of all US drilling — is devastating people's health, livelihoods and lives, and leaving industrial wastelands in its wake.

And in this age of dangerously depleting water supplies around the world. Here in the US, frackers want to drill literally tens of thousands of wells in NYS alone. Each well requires on average 5½ million gallons. Once the water is used, it cannot be returned to the natural hydrologic cycle because it is permanently contaminated. And NYS has absolutely zero capacity to deal with disposal of fracking waste. Yet this technology is being heavily promoted here and all over the world. Is this rational?

There's another myth put out by the oil and gas industry: renewables are fine but not yet efficient enough or cheap enough for the world's needs.

There is study after report after book saying otherwise: that even with present technology we can provide sufficient energy for the world and afford the price tag.

- Jeremy Rifkin, lecturer at the Wharton School of business, has written on the *third* industrial revolution and the democratization of energy and is working with the European Future Energy Forum
- Institute for Policy Research & Development in London this year published "A Solar Transition Is Possible"
- Dr. Richard Perez, University of Albany, has published studies that show the economic viability of mass solar installations *now*. <http://www.asrc.cesdm.albany.edu/perez/>
- George Monbiot, who writes for the London *Guardian*, published *Heat* in 2006 — a densely detailed program for converting the world to renewables
- Jacobson & Delucchi from Stanford Univ published, a few months ago, an equally densely reasoned study. They claim that the entire world can be on renewables by 2030.
- The Rocky Mt Institute works closely with business to develop products and processes that will be prosperous *and* sustainable.

The ideas are out there. It remains for executives and entrepreneurs to embrace a new paradigm — immediately begin the transition away from all fossil fuels, including nuclear, based on sustainability and the Precautionary Principle.

I'll presume to echo some of John Muir's passion and worldview:

Remember, Mother Nature bats last. We must change our way of looking at the world. We must change our way of being in the world. We must reorder our lives to live well by using less. We must stop seeing nature as something to be conquered and recognize that we *are* nature, nature is *us*, and nature is our sustenance. We must collaborate with her and cherish her.

There's no time left. What's at stake is our very survival. We are all connected.

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