

## After Sandy - Smarter Power and Transportation



It seems more and more evident every day, with [storms like Sandy](#) upon us, that business as usual is no longer an option. It's certain that we have to accelerate our efforts to mitigate the greenhouse gases that are exacerbating, day by day, global climate change. But we also have to adapt. The sad reality is that we are seeing the [unmistakable signs of a warming world](#) and that the impacts of climate change are here to stay, probably for a hundred years or more. As no less a personage than the New Yorker's David Remnick writes this week, we can have [No More Magical Thinking](#).

You have been reading about how coastal regions like the New York metropolitan area need to find ways to buffer storms. I could write more about that, and perhaps I will in the not-too-distant future, but, for now, let me refer you to some very useful resources on that score if you want to delve deeper: See [this](#), for instance, from Yale Environment 360, and [these papers](#) from a conference from 2009 on preventing precisely just what happened to the New York region. ([My book](#), you might not be surprised to learn, looks at the issue of coastal flooding and how to adapt.)

But I want to touch here upon the issue of power and, beyond that, surface transportation. Last week I asked one of my students who's in the solar power business if the phones were ringing off the hook with calls from people seeking systems for their homes and businesses. He said not yet. I predict, though, that the PV sector is going to fire up as people begin to reconstruct.

There was, however, a story in the NY Times about [ground source heat pumps](#). These don't provide power, but they do give you heating and cooling. The phones are indeed ringing for businesses involved in installing these storm-proof systems. How does this work? Here's an

instructive video from the [US Department of Energy](#).

So, the promise of distributed generation of renewable energy is simple: We can avoid exactly the sort of massive grid failures that we've just seen with Sandy – and with Irene, and Ike, and Katrina, etc. What is the number one source of failure for the power grid? [Weather](#). (You're not surprised, I'd guess.) The indomitable crew at the Rocky Mountain Institute reckon that "...letting distributed generators compete and interconnect fairly could **nearly eliminate blackout risks** [my emphasis] by organizing the grid into local '[microgrids](#)' that normally interconnect but can stand alone at need ('islanding')."

A recent conference in New York – before the storm – looked at how the urban energy picture is changing. See [Not Your Grandma's Infrastructure: The Urban Energy Revolution](#). Utilities always take [a beating](#) from the affected public in the aftermath of big storms but, you know what, they're operating with very fragile systems that, with more [extreme weather of all types](#) to come in the near and medium-term future, are going to stay vulnerable if we continue to generate, transmit and distribute electricity in the same way as we have been for over a hundred years.

What's this got to do with transportation? Simple. You saw the massive lines for gasoline after the storm. You might've been in them! (Takes me back to the 70s and the Arab oil embargo. No nostalgia there, I can assure you.) Well, think about it for a second. Okay? What have you got? [Electric vehicles](#), of course. You've heard of the American Dream. I've got an [Earth Dream](#). Aha, you say: But you need power for these EVs and if the grid's down, you've got Sweet F.A. But that's where you come back to distributed generation – locally produced power - as the excellent folks at [RMI](#) and a growing body of other smart folks are hoping to roll out, sooner rather than later. See more from the [Institute for Local Self-Reliance](#), for instance, and the [World Alliance for Decentralized Energy](#).

And enjoy this video on the [nation's largest microgrid](#):