

Q&A with Julian Darley



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Julian Darley is president of Post Carbon Institute, which has as its mission helping communities adapt to an energy-constrained world. Post Carbon’s programs include Global Public Media, Relocalization Network, Post Carbon Cities, Oil Depletion Protocol, and Energy Farms Network. Darley wrote High Noon for Natural Gas: The New Energy Crisis (2003) and cowrote the forthcoming Relocalize Now! Getting Ready for Climate Change and the End of Cheap Oil. A native of the United Kingdom, Darley now lives in Sebastopol, California.

Post Carbon Institute has focused its efforts on helping local governments, communities, and individuals prepare for—and adapt to—the postcarbon world. Why should we plan for a postcarbon world?

We shouldn’t be burning hydrocarbons for several reasons. First, a well-known critical issue is the global warming caused by greenhouse gas emissions from carbon

fuels. Second, the sources of fuel that we are burning are limited, temporary, and unsustainable.

In nature, when animals find a “free,” or available, energy source, they increase their population as much as possible to use all the available energy in their ecological niche. However, often the available energy supply peaks and declines, and you get a classic population bloom and then decline or collapse. Ditto for human economic systems, cultural systems, food systems, and our current built environment based on the availability of that energy.

That’s the risk—*bloom* and decline—that we face with peak oil, peak gas, and now, likely, peak coal.

You claim that the world is reaching its peak of oil production, that the peak may come well before 2010, and then oil supplies will begin to dwindle. What problems will peak oil create around the world?

It’s clear now to most people that we are in the bumpy plateau of oil extraction. The peak period of oil production is now. The question that’s arisen is when the bumpy decline will occur. We may get one answer when the extraction figures come in for third quarter 2007 and we find out if they are more or less than third quarter 2006.

We are already feeling the preshocks, as you get with earthquakes. As demand tries to exceed production, we see wild variations in the price of oil. Eventually this constrains demand and the economy starts to cool off, and energy prices start to come down again.

The moment that happens, we open the throttle again, and then we bump up against the production limit and prices shoot up and then we cool down again. This is one of the reasons the plateau is bumpy, and the decline will be bumpy and disruptive. We are starting to see this back-and-forth whipsaw rippling into the economy and currency, with many stark problems arising.

There is a much closer connection than people realize between currency and energy. Money is really a proxy for the flow of energy. As we start to get into more trouble with oil, I think we will start to see more trouble with the dollar as well.

You also referred to peak natural gas, and your 2004 book *High Noon for Natural Gas* focuses on the peak of natural gas. What are the impacts of this trend?

North American natural gas [production] peaked in 2001, and it is now in undulating decline. The risks of peak gas are similar to the types of risk posed by peak oil. The decline of natural gas is particularly relevant for property owners and real estate professionals because of its importance for heating and air conditioning.

The peak of natural gas poses a major problem also for Europe, which is particularly dependent on natural gas, especially from Russia. If Europe is foolish, it will allow itself to become more dependent on Russian gas, making it more vulnerable politically and economically as gas becomes more scarce. People were telling Europe that gas would peak and decline, and it didn’t listen, just as America didn’t listen.

Won’t rapidly expanding renewable energy sources, like photovoltaic or wind, counterbalance our declining oil supplies?

We are jolly late in trying to do that. America was one of the leaders in renewable energy in the 1970s, but things changed in the 1980s and America gave up a lot of work in renewables. Now we’re starting to make a few more efforts, but battery technology and electric car technology are way behind.

The argument that renewable energy sources alone will solve the problem is the “grand substitution” argument. It’s also wishful thinking. Renewables will help, but in the real and practical world, can we get enough renewable energy from sun and wind and soil to substitute for all the

oil, gas, coal, big hydro, and uranium we use now? Almost certainly we physically can't. To put it bluntly, there are too many people on the planet demanding too much stuff in a system that is too spread out.

It's not just the population level, it's the level of consumption. People in England or Canada or America consume many times the amount of energy [consumed by] people in developing countries. This is the underlying reason: we've built a system which relies on consuming too much energy. The whole system is too greedy and wasteful, top to bottom.

Do you think it is possible for developing nations to recognize the broad challenges, spot their mistakes, jump past them, and create a new, better model for the world?

Yes, it is possible. But one of the biggest problems so far is that everyone is copying the model of endless growth. The world is trying to copy a kind of southern California way of life. Even Europe, where there are strong central cities, it has copied sprawling patterns as it expands. We need to get our city sizes down. We need to densify—to build four to seven stories high with the buildings connected.

So, we come back to real estate and how we've designed our buildings and cities. What are some of the land use patterns necessary for communities to cope with global climate change and scarce traditional energy sources?

This is one of the most important questions of our age. Groups have thought seriously about how we lay out cities and where we build. We've built in a lot of the wrong places—the hottest and driest places with no water. We still need to build settlements and cities, but we'll do it in a smarter way—build with much more density and in places that make ecological sense.

We need to retrofit the existing built environment: move away from horizontal suburban layouts and get density back up—build four- to seven-story buildings connected around squares and blocks with internal gardens. The current linear strip mall idea is disastrous and condemns one to use a car because the shopping district is two miles [3.2

km] long, whereas if a shopping district wraps around a block or square, one could walk 400 yards [365 m] with shops the whole way and then arrive back home again.

Europe offers some good examples because most of its cities were built pre-petroleum. This pre-petroleum layout will give Europe an advantage over America, whose cities are largely petroleum based.

Americans should carefully consider emulating the pre-petroleum designs of Europe to help retrofit their built environment. One of the greatest things about the United States is that Americans are amazing at saying yes to ideas. This makes America a great place to be if you have lots of new ideas.

You mentioned rural development patterns. Can you expand on that?

City dwellers have looked down their noses on rural dwellers for hundreds, maybe thousands of years. People who know how to grow things for food, fuel, fiber, feedstock, fertilizer, or grow forests back should be valued at the top of the economic and social pyramid.

If we're going to have a chance at this thing called sustainability, we'll have to get all our resources in a renewable way, including fuel, feedstocks, fiber, and food. The bulk of it will come from rural areas. We should put no more asphalt and concrete on fertile land. That means if we need to build a farmhouse where there wasn't one, we ought to de-pave, un-tarmac a more than equal amount of land.

It seems like a lot of this comes down to dependence on cars and the internal combustion engine. What do you think we should do to reduce this dependence?

At the core of all this, which a few architects and planners get, is the five-minute circle. The pre-petroleum cities in Europe were based on this idea: how far one can walk in five minutes—or about a quarter of a mile [0.4 km]. All of human life should be based on getting daily needs within a quarter-mile radius. This is the essence of relocalization: get your daily needs from as locally as possible, preferably within walking distance.

That's really difficult to do with millions of people in an American city. In such cities, we need a lot of mechanized transport, and in America, we gave up rail for cars and designed our cities exclusively around cars. That was a very bad idea. But now we are going to have to start thinking about the city *after* cars. European cities offer some great examples, with car-free areas downtown. I would say, America, you can do it, too. You can get rid of the cars downtown. It is possible.

It really helps to have metal rails, especially subways. They give you a much better chance in the coming postcarbon, post-petroleum age. To become truly car-free, you need a variety of transit options—a comprehensive system beyond underground subways. We need to bring back electrified railways across the nation—including streetcars and interurban rail and electric trolley buses as well, like in San Francisco—then, fill in with walking and bicycles, and some electric delivery vehicles and some small electric cars.

What is Post Carbon Institute doing to fix these problems?

We are working with people from many walks of life—institutions, government, business, and citizens—to build a multilayer, integrated strategic response: a long, but fast and urgent transition to a postcarbon world. We propose scientifically practical structures and strategies that have enough political and human appeal that people will start to adopt them. We have a number of major programs underway.

We humans have broken the world into millions of parts—a clever technique that can do useful things—but now is the age of reintegration. Post Carbon Institute does exactly this kind of integrating work.

Getting everything from garlic to gaskets from overseas consumes enormous quantities of energy and contributes to global warming. We literally cannot continue like this. Relocalization is the key. **UL**

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