# Michigan's oil-gas contribution to air pollution and global warming

Last year a group of scholars led by Mark Jacobson at Stanford published a study on the feasibility of converting New York State's energy infrastructure to one using wind, water, and sunlight. Jacobson is with The Solutions Project, "a group of top scientists, visionary business leaders and cultural influencers with a mission of accelerating the transition to 100% renewable energy."

The study proposes that New York switch to power produced 10% by onshore wind, 40% offshore wind, 10% concentrated solar, 10% solar-PV plants, 6% residential rooftop PV, 12% commercial/government PV, 5% geothermal, 1% tidal, and 5½% hydroelectric.

Natural gas (methane), touted by industry as a "bridge" fuel to renewable energy and now widely debunked as a "gangplank" off the climate precipice, was excluded as a recommended source for future energy. Due to the effects of methane and pollutants that cause air pollution, it is not a near-term "low" greenhouse alternative, either in absolute terms or relative to coal.

The study compares the generation and transmission costs of wind, water, and solar (WWS), to those of fossil and nuclear energy sources including their externalities.

Jacobson's team asserts that a complete transition to WWS would result in no associated environmental externalities. No externalities in terms of bronchitis, heart disease, or asthma resulting from particulate matter and ozone in the air. And none in terms of coastline loss, agricultural and fish losses, human heat stress mortality, increases in severe weather, or air pollution, all of which come from global warming.

Externalities are key. The study estimates annually averaged premature mortalities from particulate matter in New York at: 820 (low estimate), 3260 (medium estimate), 6480 (high estimate). Estimates of premature mortalities from ozone are: 356 (low), 713 (medium), 1070 (high).

**Michigan's frack attack required by law**

For 75 years Michigan's oil and gas industry has enjoyed special-interest protection, written into the state law. The law requires the State to "foster the development of the [oil-gas] industry along the most favorable conditions and with a view to the ultimate recovery of the maximum production of [oil and gas]." Requiring maximized production as a goal of of DEQ's Office of Oil, Gas and Minerals means requiring it to maximize Michigan's contribution to air pollution and global warming.

The industry is just getting started in Michigan, plunking down exploratory wells throughout the Lower Peninsula, with 53 wells permitted already over the past three years. A network of

thousands of wells across the Michigan landscape would change our state--and planet--forever, and not for the better.

**Michigan's contribution to global warming and planetary destruction**

What exactly is Michigan's contribution to the world crisis we now face? The question will be answered for every state later this week at The Solutions Project website.

But on Monday Jacobson provided Ban Michigan Fracking with a Michigan preview:

- Current air pollution premature mortalities per year in Michigan: 1600 (range of 530-2940).
- Current air pollution health costs in Michigan: $14.7 billion/year (range of $4.8-26.7 billion/year).
- Current health cost as % of state GDP: 3.9% (range of 1.3%-7.2%).
- Year 2050 costs to the US due to Michigan emissions: $2.1 billion/year.
- Year 2050 costs to the world due to Michigan emissions: $21.4 billion/year.

On February 14, The Solutions Project went live showing specific roadmaps for every state, including Michigan, to transition all energy sources to wind, water, and solar by 2050 using existing technologies. Under The Solutions Project plan, fuel costs would drop to zero and healthcare costs and premature air-pollution mortalities would diminish significantly, as detailed for every state.

**What are some of the benefits of switching to alternatives?**

- Year 2050 electricity cost savings/year due to converting to WWS in Michigan: $34 billion/year.
- Year 2050 electricity cost savings/person/year due to converting to WWS in Michigan: $2800 /person/year.
- Year 2050 total electricity + health + climate cost savings: $69.7 billion/year (range of $59.8-81.7 billion/year).
- Year 2050 total electricity + health + climate cost savings/person: $5840/person/year (range of $5000-6800/person/year).

Additional information is at: http://www.stanford.edu/group/efmh/jacobson/Articles/I/susenergy2030.html .

The study's conclusion recommends a number of first steps toward NY's conversion to WWS, rather than natural gas. The first step in Michigan: Ban horizontal fracking.

Get involved in the Committee to Ban Fracking in Michigan's ballot initiative campaign, http://letsbanfracking.org . It will end the requirement that Michigan foster the gas

industry, and end the state's horizontal fracking.