

### **Fracking and Water Contamination**

Many of you may remember Dr. John Cherry, the internationally recognized expert on groundwater contamination, whom NBASGA brought to New Brunswick to testify at the Commission on Hydrofracturing.

His testimony was very influential, as he pointed out that no place in the world was actually monitoring what happened to methane (and other substances) that leaked from shale gas wells. Thus, regulations were meaningless, as no one knew where methane was going or what effects it was causing.

Now, Dr. Cherry and colleagues have released the first study to track methane's voyage through an aquifer, and they conclude that, *"methane gas leaking from energy industry wells can travel great distances in groundwater and pose safety risks, contaminate water and contribute to climate change."*

The study also found that methane leakage into groundwater can affect not only water over a large area, but "is an equivalent, if not, more significant process relative to atmospheric emissions."

The amount of methane released in the study was much smaller than that released in actual shale gas well leaks.

Yet Dr. Cherry noted that, *"The study found that very small amounts of injected methane ended up having a large impact on the aquifer — the magnitude was huge, and the methane hung around for a long time."*

In 2014, the Council of Canadian Academies report on fracking recommended proper groundwater monitoring near shale gas facilities, yet Cherry noted that, "No regulator has yet done what we recommended," thus continuing the situation, where current monitoring *"is insufficient to meaningfully detect or assess methane impacts to atmosphere and groundwater."*

<https://thetyee.ca/News/2017/04/11/Methane-Leaks-from-Energy-Wells-Affects-Groundwater/>

**The study:** *Mobility and persistence of methane in groundwater in a controlled-release field experiment* (behind a pay wall)

<http://www.nature.com/ngeo/journal/v10/n4/full/ngeo2919.html>

## **Bans and Moratoria**

Even without this latest study, the evidence against shale gas is convincing enough that two jurisdictions that already had temporary moratoria in effect while they studied the issue, recently passed permanent bans. In the US, the state of Maryland passed a ban, with the governor (a Republican who once promoted shale gas) stating, "*Our administration has concluded that the possible environmental risks of fracking simply outweigh any potential benefits.*"

<http://grist.org/briefly/surprise-this-republican-governor-now-wants-his-state-to-ban-fracking/>

The Australian state of Victoria enacted its ban, "*To ensure the clean green reputation of its agricultural sector, and to guarantee the health of rural farming communities in Victoria.*"

<http://nofibs.com.au/community-campaign-wins-permanent-fracking-ban-in-victoria-reports-takvera/>

It is quite likely that soon Scotland and Ireland will enact moratoria or bans.

New York State, which has a ban, blocked the Northern Access Project on April 7, a pipeline that would have carried fracked gas from Pennsylvania to Canada via New York.

<http://www.ecowatch.com/cuomo-denies-northern-access-permit-2353618298.html>

## **Renewables**

Because of falling costs, last year renewable energy broke records for new installations despite less investment, producing by far the majority of new electricity added to the grid.

<http://www.ecowatch.com/unep-bnef-renewable-energy-growth-2349278971.html>

Wind and solar installations, in particular, keep breaking cost and supply records on an almost daily basis, and are providing many more jobs than the fossil fuel industry. (Too many references to list.)

## **Climate Change**

Unfortunately, even with the amazing growth of renewables, we are not reducing carbon emissions nearly fast enough to cope with the

increasing speed of climate change. A new study estimates that to meet the Paris goals:

Global CO2 emissions from energy and industry have to fall by half in each decade between now and 2050.

Net emissions from land use — i.e., from agriculture and deforestation — have to fall steadily to zero by 2050. This would need to happen even as population grows and we're feeding more people.

Technologies to suck carbon dioxide out of the atmosphere have to start scaling up massively, until we're artificially pulling 5 gigatons of CO2 per year out of the atmosphere by 2050 — nearly double what all the world's trees and soils already do.

<http://www.vox.com/energy-and-environment/2017/3/23/15028480/roadmap-paris-climate-goals>

**The study:** *A roadmap for rapid decarbonisation* (pay wall)

<http://science.sciencemag.org/content/355/6331/1269>

These daunting tasks must be achieved, because as *'The Guardian'* newspaper noted as it covered three news stories, "Climate change is rapidly becoming a crisis that defies hyperbole," with impacts "occurring faster in many parts of the world than even the most gloomy scientists predicted."

The stories:

[http://www.ecowatch.com/glacier-retreat-climate-change-2345873774.html?utm\\_source=EcoWatch+List&utm\\_campaign=7e1e27626f-MailChimp+Email+Blast&utm\\_medium=email&utm\\_term=0\\_49c7d43dc9-7e1e27626f-85328537](http://www.ecowatch.com/glacier-retreat-climate-change-2345873774.html?utm_source=EcoWatch+List&utm_campaign=7e1e27626f-MailChimp+Email+Blast&utm_medium=email&utm_term=0_49c7d43dc9-7e1e27626f-85328537)

I conclude by quoting Jim White, director of the Institute of Arctic and Alpine Research at the University of Colorado, Boulder, who said,

*"At 400 ppm of CO2 in the atmosphere, pretty much everything should be carrying a signature of climate change, it would be odd if it didn't".*

*"The question is not so much is this event caused by climate change. The question is, which event is not?"*