



Younger, P. (2015) Why strangle at birth this exciting new fuel source? *Times (Scottish Edition)*(71423). p. 7.

Copyright © 2015 The Author

<http://eprints.gla.ac.uk/102314/>

Deposited on: 05 February 2015

Enlighten – Research publications by members of the University of Glasgow
<http://eprints.gla.ac.uk>

Let me first declare two things: Firstly, I voted Yes in the Referendum. Secondly, I have no links at all with any shale gas fracking companies: I own no shares in them, have never held any positions (paid or unpaid) with them and have no research funding from them. My experience and reputation as an engineering academic were hard-won in the battle to save the former coalfield areas of the UK from massive water pollution following the widespread abandonment of mines in the 1990s. I introduced passive mine water treatment technology to Europe, and designed so many wetlands for that purpose that, whatever I do hereafter, my personal carbon footprint will remain super-virtuous as long as I live. So I know a thing or two about what human alteration of the subsurface can do to water quality. Furthermore no one works in collieries, as I did, without learning about the serious safety issues surrounding methane.

It was this background – plus my current activities in developing deep geothermal energy overseas and trying to pioneer a new process to extract energy from deep subsea coal while leaving the CO₂ permanently trapped there – that gave me the right sort of background to join an august panel of academics that were convened by the Scottish Government in autumn 2013 to take a long, dispassionate and erudite look at the many claims and counter-claims surrounding the environmental impacts of shale gas fracking. As a Fellow of the Royal Academy of Engineering, I had previously served on the panel the Academy had convened jointly with the Royal Society to provide a similar service to the UK government. Both appointments were unpaid – in fact the Scottish Government never even reimbursed me for multiple train trips to Edinburgh! I knew nothing of shale gas before I sat on these panels, but I brought a vast international perspective on the environmental misdemeanours of the extractive industry to bear on the abundant evidence we heard.

What I learned on that committee convinced me that the shale gas ‘fracking’ furore is a typhoon in a tea cup. I realised that the development of this imperfect storm was due to an eccentricity of the USA political system, which rewards Vice-Presidents with their choice of one unopposed bill through Congress. At the time Dick Cheney was US Vice-President he was also a senior figure in the giant oilfield service company Halliburton. He chose to make his pet bill an exemption of shale gas developments from the bulk of Federal pollution prevention legislation. Naturally enough, that prompted fury, suspicion, and a flurry of conspiracy theorising. It also led to some cowboy companies rushing in amongst the majority of sober and responsible developers: these cowboys took a slapdash approach to industrial site management that would never be allowed in any European Union Member State. Having said that, the number of genuine environmental problems attributable to shale gas operations is tiny, and they are highly localised in any objectively demonstrable effects. Certainly the impacts are trivial compared to those I spent my career combatting in the deep mining sector. This should come as no surprise, since the very greatest disruption which a heavily-fracked well could ever do to the subsurface is miniscule in comparison to what total extraction coal mining routinely achieves. It is like comparing a peach stone to a boulder. Yet the fuss which has greeted UK shale gas proposals has portrayed it as an apocalyptic development with unfathomable scope for environmental damage. This is simply wrong. In the case of Scotland, the oft-repeated claims that potable supply aquifers are particularly at risk is utter nonsense: not just because fracking up into such aquifers would destroy the productivity of wells rather than pollute the freshwaters, but more fundamentally because such aquifers do not exist above the gas shale and coalbed methane-bearing strata of Scotland.

So our panel concluded that the environmental and public health risks posed by unconventional gas developments here are well within the capacity of Scotland’s world-class regulatory system. Indeed, they are less worrying than many another existing industry, which we

accept without concern. As with any new industrial development, however, there would be issues of ensuring that regulators are sufficiently well-resourced to cope with a sudden step-increase in work, and that lines of communication between different agencies are functioning well. But we are good at that in Scotland, so why worry?

The final report of the Scottish Government's independent expert panel was published on-line in July 2014 (<http://www.scotland.gov.uk/Publications/2014/07/1758>), with warm endorsement from the responsible Minister, Fergus Ewing MSP. At that time, those of us who had freely given weeks of our time to this endeavour fondly hoped that the ensuing public debate might take advantage of the vast compendium of information we had carefully written in as simple language as possible. Yet in the ensuing furore, the Scottish Government has repeatedly refrained from reminding people that the report even exists, let alone rehearsed its principal conclusions in public. The culmination of this embarrassing tendency occurred last Sunday (1st Feb 2015) when Stewart Maxwell MSP claimed on the BBC that the report didn't address public health issues (it did, at length). Corrected by the interviewer, he went on unabashed to claim that "... many experts disagreed with its findings ..." This is simply untrue. No such disagreements from any scientists or engineers have been passed to members of the Expert Panel by the Scottish Government, and no disagreements have been directed to me, either publicly or privately. One wonders why the Scottish Government wasted the time of senior academics producing such a report of which even its own public spokespeople are clearly ignorant. That such culpable ignorance extends to the population as a whole thus comes as little surprise. In the days following the Yes campaign, myself and other scientists watched in dismay as our social networks degenerated into wilfully uninformed anti-fracking lobbies, fuelled by the feeling that fracking could be (mis)construed as a case of incipient "English" imposition onto Scotland, via the changes to the Infrastructure Bill. In the midst of this carnival of misinformation, when I happened to publish an academic paper which demonstrated that the UK government's hastily-introduced rules on fracking-induced seismicity are effectively 40,000 times stricter than the long-standing rules for quarry blasting, I ended up with a death threat.

So here we are with a sharp downturn in the North Sea destroying jobs in Scotland's small but world-leading hydrocarbon sector and we are insisting on ignoring the abundant scientific scrutiny that demonstrates that Scotland is more than capable of handling any potential environmental and health impacts of new unconventional gas developments that might re-employ at least some of them. Meanwhile, four-fifths of Scottish households are utterly reliant on gas heating, and the remaining fifth are in the most extreme fuel poverty in Europe. Why would any country in such a condition want to ignore the scientific evidence to strangle at birth an industry that could provide a domestic source of gas – as opposed to increasing reliance on the largesse of Vladimir Putin? Maybe when the entire country has the worst fuel poverty in Europe the scientists and engineers will finally be accorded a hearing.