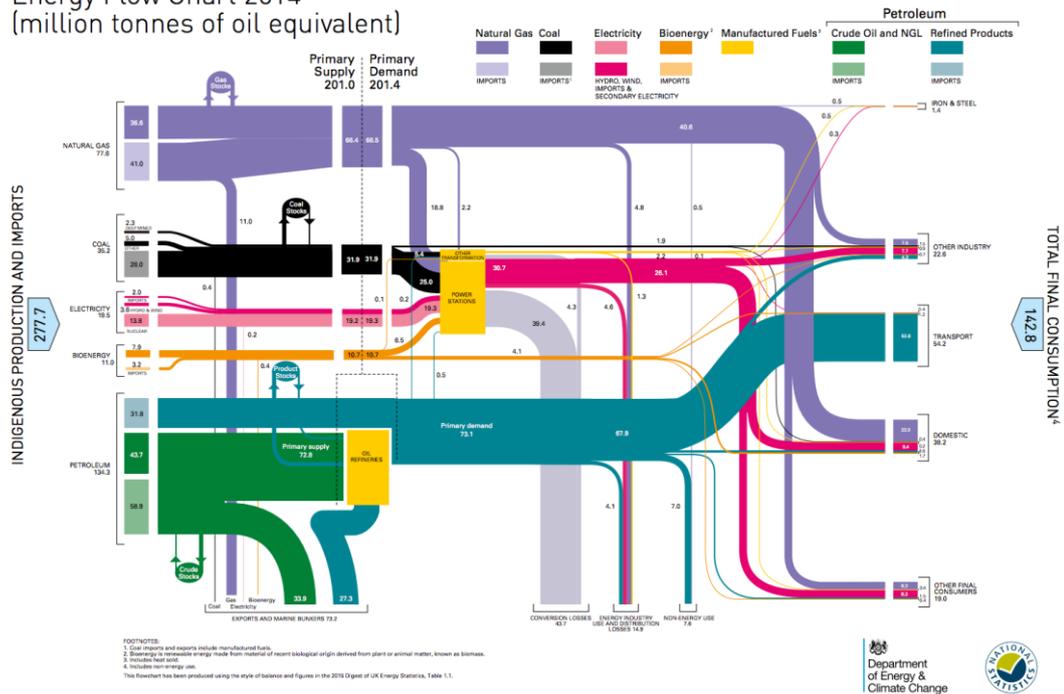


Submission of Evidence for Royal Society of Edinburgh "Energy Inquiry"

5 September 2017

Energy Flow Chart 2014
(million tonnes of oil equivalent)



1. Ideas

Here I offer suggestions and ideas for consideration by the Inquiry. I am trying to avoid doing a full analysis and full defence of what what you can no doubt consider is my general view on these issues. Analysis and consideration are the role of the Inquiry, Investors, Government, etc. My views are based on many years of study and consideration of the issues. But please consider some or all of these issues.

I no particular order:

- Who is customer for the Inquiry and is there a terms of reference from them?
- Don't necessary conflate energy policy with climate change policy. Address one or there other. Not both. If must be conflated defined precisely the expected changes, e.g. by how much will the atmospheric temperature be reduced by when in Scotland, how will the weather change, etc. due to the investments in the implementation of Energy Policy?
- Don't seek or promise Utopia! Of if sought and/or promised, define the measurable goals.
- The Inquiry should precisely define the term "climate change" on first use of the term
- There is a difference between energy and power. People buy "power", not "energy". Focus on power for customers to buy. People want power delivered to their homes, transportation, industry, etc. Focus on power production and delivery. Use consistent units of power throughout all documentation. Avoid units like "number of households" as a unit of power or energy.
- Ensure to recruit some electrical engineers (power generation and distribution), electrical grid experts (design and operational), cost and schedule engineers, etc. to evaluate and critique the Plan.
- Do a full risk assessment of both the problem and the solutions. Consider both negative and positive impacts. Assess both impact and likelihood. From this risk assessment build a "controls catalog" to mitigate the right, project execution plans to implement those controls, etc. Where the so-called "precautionary principal" is used as justification to execute mitigation plans, then state that.
- The draft Energy Strategy for Scotland "put out for consultation earlier this year sets a target of producing 50% of all Scotland's energy consumption (heat, electricity, and transport) from "renewables" by 2030. What defines "renewables"? Interestingly if the answer to this is limited to wind, wave, current, and sun ... none of these fuel sources are managed by or controlled by the power-producer selling on to energy consumers. Mother Nature is in full charge. The society we now live in is dependant on power generated by energy from fuel delivery under the responsibility of the power producer. How will this change things? How will Scotland's consumers be affected? Why not focus on how much power is to be produced and delivered.
- It's now the Summer of 2017. We were told (over and over) the Arctic was supposed to be ice-free, hurricanes were going to be more frequent and more deadly, and sea levels should have alarmingly risen. Al Gore swore in his 2006 "science fiction" movie—still being shown in Scottish Schools—"An Inconvenient Truth," that within a decade there would be a "true planetary emergency." "Unless we act boldly and quickly to deal with the underlying causes of global warming, our world will undergo a string of terrible catastrophes," said Gore in the movie's introduction. The grand storyteller also predicted in 2011 that "there will be no more snows" on Mt. Kilimanjaro "within the decade." Four years earlier, the Guardian reported that the United Nations was warning that we had "as little as eight years left to avoid a dangerous global average rise of 2C or more." Three years and more than 1,000 days ago, then French Foreign Minister Laurent Fabius — a socialist, of course — advised us that "we have 500 days to avoid climate chaos." What learnings does that offer to this Committee? Should this view point as expressed by Al Gore et. al. still drive Scotland's power production industry?

- Headline in New York Times¹ 27 June 2017: “Carbon in Atmosphere Is Rising, Even as Emissions Stabilize”. That’s incongruous and inconsistent with expectations. Therefore does the Inquiry agree these expectations still drive Scotland’s power production industry?
- Carbon [sic] is wrongly demonised. If the Inquiry must refer to this “thing”, please properly call it “Carbon Di-Oxide” (which is a trace, invisible, “clean” gas which is essential for life on this planet). Carbon is not yet considered a risk to the claimed human-caused apocalypse.
- If the plan requires “sacrifice” by citizens, explain precisely why and what benefits, risks, etc.
- Why must make society sacrifices? Is plan that bad?
- Be careful what you ask for.
- Build a set of responsibilities and if possible, a responsibility flow diagram for procurement of energy, fuel, production of power, delivery of power, consumption of power, facilities maintenance, provision of capital, ownership.
- For the Inquiry committee, agree and document who is the Problem Owner, Expert, Solution Owner, Decision Maker. etc. Four specific and discrete roles required to develop the plan and execute the plan
- Do a full risk assessment of both the problem and the solutions. Consider both negative and positive impacts.
- Provide alternative assessments. For example, if “Climate Change” is the problem, why are we forced to a) accept that as a problem, and then given that acceptance, be forced to agree with only one solution—reduce and eliminate “fossil fuels” [sic]? Give alternatives.
- Look at. Power (price, reliability, social benefits/cost) experience in Germany and Australia, especially the power outages in November 2016 in South Australia.
- Is the objective of this Inquiry to “combat climate change” or propose an energy/power policy/plan?
- If CO2 is the problem, how does “solutions” involving current or yet-to-be-developed technologies compare with simply planting more trees and clearing less land around the world?
- How will wealth be redistributed, from who to who, with the proposed policy?
- Don’t measure success for any new power generation method on the basis of “additional jobs” or “meet needs of XXX thousands of households”. Use real engineering-based units of measure.
- Modern society has been built upon a reliable, secure and affordable energy system. Obsession with decarbonisation is now putting all of this at risk. How big is that risk? Zero? See "Decarbonization poses risks to Europe’s grid operators says Moody’s - Power Engineering International"² Also see Driessen³ (Required Reading).
- Read and summarise in an appendix of the report the actual requirements of the UK and Scottish "Climate Change" Acts and list the relevant specific demands which become basis assumptions for the proposed scenarios. Inquiry should assess and comment on what parts of these Acts are no longer relevant or add unnecessary risk to life and economy in Scotland.
- Is Scotland’s Gov’t funding self-driving automobiles and lorries? If yes, the Inquiry should evaluable and consider the “wisdom” and prudence of such publicly-funded “investments”.
- Decide and propose specific and measurable goals/objectives that define success for the Energy Policy: “Energy Policy Success” Goals and Criteria. For example, “Meeting Climate Change Targets”? “Lower Energy Consumption”, “Lower or Higher Energy Prices and/or

¹ <https://www.nytimes.com/2017/06/26/climate/carbon-in-atmosphere-is-rising-even-as-emissions-stabilize.html>

² <http://www.powerengineeringint.com/articles/2017/06/decarbonization-poses-risks-to-europe-s-grid-operators-says-moody-s.html>

³ <https://wattsupwiththat.com/2017/08/13/life-in-fossil-fuel-free-utopia/>

Cost”? “Transformation to XX% [Another form of energy fuel]” “Transformation to XX% [Another form of power distribution?”, etc.

- Decide what is more important: Achieving Climate change targets or achieving delivery of power to citizens within target (cost, schedule, quantity). May not be able to do both. If the Climate Change Targets are achieved, what is impact and at what cost? Assess risks/opportunities for achieving or not achieving on a risk (impact and probability) basis.
- In support of above, agree targets on cost, schedule, and quantity of energy and power delivery to citizens and residents of Scotland. Make time period same as the legally obligated climate targets.
- It is essential that the Committee evaluate ideas based on results not intentions. (In conversation with two MSPs earlier this year I questioned their reliance on certain NGOs for policy advice which was, in my opinion, not in Scotland’s interest and their quick retort was “But they have noble intentions!”).
- If Carbon Capture and Storage in in the Inquiry’s plan then do a review of viability given investments in projects around the world. Review and comment on the full life cycle including costs (money and energy/power of extraction, transportation, storage, maintenance).
- Energy and Power is not a necessarily scientific issue. It’s engineering, business, and politics. Ensure these aspects are included in the Inquiry. If the Inquiry’s recommendations are based on anticipated/expected future “scientific” discoveries and follow-on engineering-based development (design, testing, piloting, etc.), say so. Define the timeline/costs.
- Can we now agree that the “Paris Agreement” would be ineffectual, is a political power thing, and is about wealth re-distribution? Analysis has shown full compliance would have a non-measurable impact on temperature 80 years from now.
- If Scotland really wants to save the planet from man-made climate change, they should consider other more definitive ways to do this. Perhaps control the population, eliminate travel, heat in homes, etc. By contrast, the “solutions” pushed by governments and educators, such as recycling and switching to energy efficient lightbulbs, while they may be “feel good” exercises, are being demonstrated to be relatively insignificant.
- National Grid’s profits are regulated to their amount of infrastructure spending. So the more the system is messed up, the more money National Grid has to spend to keep the lights on and the more profit they make. It is in their interest to encourage the Government to have the most lunatic policy possible. Recommend you review and critique "contracts" with energy/power suppliers to ensure interests are aligned.
- The UK Government is expected to announce plan to create a network of electrical storage facilities around the national grid? Where has that come from? Who is paying? What is cost? What are benefits? Does it work? Where else done? See Sunday Times 24 July 2017 (in Doc Library).
- Write a DBM and Design Spec. Use the Engineering Design Process (see document)
- The focus should NEVER be on the process but on the outcome. Regulate the exhaust (the pollutants in the exhaust per weight/mile) and do not pick how to achieve it – let economics pick the winner. If ethanol ends up being the best economic answer, so be it.
- Related, Scotland is not big enough in the market to drive the technology. Focus on procurement.
- There is some evidence that temperature records and statistics are not reliable. The Inquiry should investigate as it is temperature that is supposed to be affected by the Scottish Energy Policy. How can a policy change something that is not measured adequately?
- Carbon DiOxide is up! Some of that from emissions but a lot (most?) from other sources unknown (volcanos, ocean de-gassing, other life, ...). But warming is not up! Carbon DiOxide perhaps is not the problem, nor part of any solution. 100% of competent scientists are sure the planet is warming; 1850 was the end of the Little Ice Age. Conveniently, its called “the end” because it started to get warmer. However, thus far, 0% of scientists have been able to

conclusively prove what component is natural and what is man-made. Global Temperature has not real physical meaning. Get over it.

- Doctors don't know what causes asthma, yet Scotland's Energy Policy based on reducing risk of asthma! What?
- How many days per year are Scottish People willing to work to pay for the power they directly consume?
- When the power goes out, so does civil society. This has been demonstrated over and over. Are the people of Scotland *really* willing to pay more for expensive and unreliable power? I know some are because they are very afraid of the apocalypse called "Climate Change", but is continued stoking this fear in Scotland's best interests? Whose interest is it?
- Panel should make a road trip (by airplane, despite the [sic] "carbon footprint") to South Australia and hold hearings on electrical power experience there.
- The Panel should look into Scottish Education Curriculum to see what children are being taught (and examined for) in the areas of power, energy, climate change, etc. In line with expectations?
- Wind farm owners in Scotland seem to be doing well financially. Since 2010, we've paid £328m to wind farms not to generate - most of them in Scotland. Westminster must stop Holyrood from consenting new wind farms and extensions. Wind (and pseudo climate change mitigation) must stop being part of the energy plan—especially subsidies. Ref: <https://capx.co/the-scottish-wind-power-racket/>
- Government Energy Policy should focus on commercial issues: procurement/price, not so much on technology.
- If Scotland truly wants to combat climate change by minimising use of fossil fuels, then they should immediately ban the production and export of any and all fossil fuels (oil, gas, coal, natural gas liquids, ethylene, etc).
- If Scotland moves to all wind and solar, what percentage of the land area will be covered with machines, and what would be the social impact? See "Life in a fossil-fuel-free utopia"⁴.
- Get Paul Homewood, of NotALotOfPeople Blog, on your panel. Also get Euan Mearns of euanmearns.com
- Focus on the business, commercial, technology aspects. Minimise focus on the "science" as it's irrelevant in the time scales of importance to Scotland.
- If technology is a focus, then focus on evaluating "Ultra Super Critical Coal" generation stations, in ubiquitous use in Japan, China, and India. Perhaps could contribute some knowledge into Scotland.
- Why not consider/recommend that big users of electricity go "off grid" as has University of Edinburgh proudly has done. What are the economic benefits to the consumer for this? Does consumer benefits trump society's interests?
- Recent hurricanes and storms (New Orleans, New York, Sierra Leone⁵, Houston), have shown the importance of flood protection. Despite the climate alarmists' misplaced concerns about the alleged risk of catastrophic human-caused climate change, the Earth has long had very effective natural systems to control excessively high temperatures. One of those mechanisms is hurricanes, which reduce local temperatures when they exceed certain general levels depending on other local conditions. But Earth does not have natural flood control mechanisms. And when humans put things of value in the wrong spots and then fail to take adequate stormwater management measures, the bad results are just a matter of time."
- Smart Meters seem to be a dumb idea. Refute that with assessment with analysis, or do the right thing as part of this study and consider recommending that implementation of these expensive devices be ceased.

⁴ <https://wattsupwiththat.com/2017/08/13/life-in-fossil-fuel-free-utopia/>

⁵ <https://qz.com/1068790/floods-in-africa-in-august-killed-25-times-more-people-than-hurricane-harvey-did/>

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2. Required Reading

"Sustainable Energy - Without the Hot Air", David MacKay, ISBN 0954452933,
https://www.amazon.co.uk/Sustainable-Energy-Without-Hot-Air/dp/0954452933/ref=tmm_pap_swatch_0?encoding=UTF8&qid=1497703368&sr=1-1 or
<https://www.withouthotair.com/download.html>

"Scare Pollution: Why and How to Fix the EPA", Steve Milloy, ISBN 0998259713,
<https://www.amazon.co.uk/Scare-Pollution-Why-How-Fix/dp/0998259713>

"Life in a Fossil-Fuel-Free Utopia", Paul Driessen, Aug 13, 2017,
<https://wattsupwiththat.com/2017/08/13/life-in-fossil-fuel-free-utopia/>

"Honest Broker", Roger Pielke Jr. https://www.amazon.co.uk/Honest-Broker-Making-Science-Politics-ebook/dp/B00E3URCL8/ref=sr_1_1?ie=UTF8&qid=1504597537&sr=8-1&keywords=honest+broker

"Engineering Design Process", https://en.wikipedia.org/wiki/Engineering_design_process

"An Inconvenient Deception: How Al Gore Distorts Climate Science and Energy Policy Kindle Edition", Roy Spencer, https://www.amazon.co.uk/Inconvenient-Deception-Distorts-Climate-Science-ebook/dp/B074XG6KX1/ref=sr_1_1?s=digital-text&ie=UTF8&qid=1504597792&sr=1-1&keywords=An+Inconvenient+Deception%3A+How+Al+Gore+Distorts+Climate

"McGraw-Hill Encyclopaedia of Energy", Sybil Parker et. al. ISBN 0-07-045268-7. (Old but not necessarily out of date. Excellent primer.)