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u3a Second Nature 015 (Apr 2024)

1 message

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Second Nature 015

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Emails that you send me in response to content in Second Nature me may be used here, and edited in the interest of brevity (or occasionally levity). Please make it clear if you don't want me to do that. I keep your emails in a Gmail folder to which only I have access. I delete them when I don't need them any more.

Carbon Intensity of UK Electricity

On 5 April at around midday, National Grid ESO achieved a new low carbon intensity record of 21g CO₂ per unit of electricity, beating the previous record set on 18 Sept 2023 of 27g CO₂ per unit.

u3a Climate Group Leaders on Facebook

The group description is:

A group for discussion of the practical aspects of running a climate group in u3a - goals, objectives, activities, talks, possible topics for discussion at meetings,

what works and what doesn't.

There are 32 in the group now, which I think is a critical mass. So far we don't have too much to say to each other, but it is early days. Prospective members can find the group [here](#).

Previously in Second Nature ...

Deaths resulting from Chernobyl

In SN 013 I referenced two estimates of the Chernobyl death toll - 4,000 or so from UN agencies and 90,000 from Greenpeace. I was surprised then on reading Hannah Ritchie's recent book *Not the End of the World* that she offers an estimate of 400 (on p62 of the hardback edition). You will find an explanation of this number on the *Our World in Data* [website](#) here. There is a related OWiD post on the [safest and cleanest sources of energy](#).

I've done a fair amount of estimating in my time and I know how to fuff with the assumptions until the spreadsheet gives you an answer that you believe, but a ratio of 1:225 between two estimates of the same thing is to say the least unusual. Many regulators use the [Linear No Threshold](#) (LNT) model to estimate the effects of low-level radiation exposure: LNT takes data obtained from studies of people exposed to high doses of radiation (people like A-bomb survivors) and extrapolates to exposure at lower levels. It assumes that all exposure to ionizing radiation is harmful, regardless of how low the dose is, and that the effect is cumulative over lifetime. There are other models, including the radiation hormesis model, which claims that radiation at very small doses can be beneficial. I'm not qualified to offer an opinion on the validity of these different assumptions.

If I seem to be labouring this point it is because in climate debate we are often presented with different kinds of numbers. Some things (like CO2 concentrations in the atmosphere) are measured directly; some things can be counted; others are estimates, and estimates depend crucially on assumptions made. We need to look at estimates critically, and drill down to see where they come from. Numbers are very malleable things.

Recycling soft plastics

In SN 014 I recycled an email exchange with **Margaret** about soft plastics. There is a [pilot project](#) for soft plastic recycling under way: you can find the Interim Report [here](#). Particularly interesting I think is the discussion on finding end markets - collecting stuff is the easy bit, but 'recycling' doesn't happen until

somebody buys the material and makes something new out of it. 82% of the material collected was considered recyclable. They seem to have found recyclers that can process this, into plastic lumber or into pellets. It's not yet clear whether this recycling is commercially viable.

Energy from Waste

Andrew sent me this:

The EFW plant in Copenhagen [see SN 014] may seem to have a poor electricity output. From an annual waste input of 400,000 tonnes a year it produces 63 MW of electricity and between 157 and 247 MW (according to the time of year) of district heating.

60 MW seems to be at the top end of the scale for these things - in London for example Edmonton claims only 55 MWe, and SELCHP 35 MWe. I don't know why it is so low, I can only assume that a significant proportion of the fuel isn't very combustible.

Air Quality: in the 1970s UK waste incinerators were simple, they only removed dust from emissions. Analysis of flue gases showed dioxins and other acidic and toxic compounds. These plants have all been closed down. Modern plants heat flue gases to over 850C to eliminate dioxins, they have bag filters to remove dust, they use urea to eliminate NOx and lime to neutralise acids. The remaining bottom ash can be used as aggregate. Unfortunately there is little scope for district heating.

And in a later email:

Wisbech has hit the headlines following a spiteful quarrel in Westminster. It's a 50 MW plant that will take 96 44-tonne trucks daily and 40 more to take away the ash. EFW plants need planning permission and an Environmental Impact Statement which give everyone the opportunity to object. No-one wants an incinerator at the end of their street, all those trucks or a plant that is big enough to take other people's black bag waste.

I Googled "Wisbech" and found COPILOT explaining all the pollutants produced by burning waste and the health problem caused by bad air quality. I prodded them to include the emission controls that would be in place. General waste has an energy content of about 9 MJ/kg, a lot of this in in the plastic and paper which should be diverted for recycling, leaving the black bag rubbish at 6 MJ/kg or less. So:

Inputs: 650,000,000(kg) x 6 = 3,900 x10⁶ MJ

Outputs: 50MW = 50,000(kw) x 3.6 x10⁶x say 5,500hrs = 990 x10⁶ MJ

Generating efficiency = 25% (seems plausible considering the estimates).

There will also be 30 MW of steam if they can sell it.

Since this email exchange the government has imposed a (temporary) [ban on all new EfW](#). This gets ministers off the hook (until after the election?).

Dishwashers

The May 2024 *Which?* follows hard on the heels of SN 014 with an article on dishwashers. 43 models are reviewed, and given 'Best Buy' and 'Eco Buy' labels; many have both. I find myself wondering if the world really needs 43 different models of dishwasher.

Miranda asked me about energy efficiency labels on appliances. I can't really do better than refer her to [this article in Good Housekeeping](#). In a nutshell, the rating system changed in 2021 so that appliances rated A++ or even A+++ are rated B or C under the new system. It's due to change again in 2029.

Which? Money in May has an article *How green is your pension?* The best provider rated only 54% on their measure, while the worst rated 5%. I don't know how you get a score that low, unless you are heavily invested in a fleet of coal-fired whaling ships.

Second Nature International

The influence of *u3asecondnature* now stretches as far as South East Asia, from where Mr Roth Savuth emails me. Mr Savuth is Chief Accountant of the Foreign Trade Bank of Cambodia: he tells me that he has \$32,640,000 unclaimed in his vaults, and to help him balance the books he would like me to take it off his hands. I plan to dedicate the money to green causes (after deduction of my expenses and a reasonable handling charge).

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There is now an [Index](#) which covers past issues of SN and some of the material

that is on the website. It is a work in progress.

(ends)



See also the [u3a Climate Change & Environment website](#).

A note on sources: I am a Guardianista (and a Guardian Supporter) and I frequently forward links to content from that newspaper. This is for practical reasons, not political ones - unlike your favourite newspaper Guardian content is not behind a paywall (you may have to register, but you won't have to pay). I also link to content from The BBC, [The Conversation](#), [Ensia](#), Nature, and other sites that I like and feel are credible.

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