
u3a Second Nature 012 (Feb 2024)

1 message

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Bulletin 012

Second Nature is sent by the Subject Adviser on Climate Change & Environment to subscribers in the u3a Climate Network. It should be second nature to think about our impact on the environment when we take decisions, and as instinctively as we think about the impact on our bank balance.

I am not a robot

I am not a robot, but as a Subject Adviser I worry that I may soon be replaced by one. At Head Office the Learning Team is working long hours to train our own generative AI, Chatu3a. I asked Chatu3a to introduce the Valentine's Day edition of Second Nature, and after musing for a few milliseconds it sent me this:

Be My Green Valentine

*I gave my love red roses
A symbol of devotion
She said "I'm worried that the plastic wrap
Will end up in the ocean".*

*I booked a quiet restaurant
And gypsy violins
She said "I'm worried about the food waste
That ends up in the bins".*

*I ordered us a limousine
Because I thought she'd like it.
She said "I'm worried about the CO2;
I think that we should bike it".*

*I gave my love the elbow
I fear we cannot marry
I cannot take another month
Like vegan January.*

There is still work to do obviously, but the technology shows promise.

That was the best bit of this newsletter. The rest is all my own work.

We now have a u3a Subject Adviser for AI: you can contact him as u3a.ai.adviser@icloud.com; and the latest issue of [Katharine Hayhoe's climate newsletter](#) is headed "Can AI make you care about climate change?". She reports that engaging with an AI chatbot on the topic of climate change shifted people's views towards the scientific consensus on climate change; sceptics shifted their views the most.

Know your audience

After 326 opens of Bulletin 011, the most clicked link was the one to [the Guardian Australia piece about toilet towels](#), holding the number 1 position for the second month in a row. The [BBC article about high-temperate heat pumps](#) came a poor second.

Not the End of the World

I've been reading Hannah Ritchie's new book "Not the End of the World". Ritchie is lead researcher at [Our World in Data](#).. She seems to be a Guardian favourite at present: there is an extract from the book [here](#) and she was the subject of a [long interview](#) last month. The Guardian's [review](#) describes the book as "an optimists guide to the climate crisis", but is not uncritical. Read the extract and the review, and if you like what you read buy the book; I found a lot of commonsense in it.

Wood Recycling

For the benefit of any subscribers within striking distance of South Hertfordshire I would like to plug [St Albans Wood Recycling](#). This is a not-for-profit social

enterprise which repurposes discarded wood and provides work and skills to people who for various reasons find it hard to find regular employment. You can see examples of their product on their [Facebook page](#).

In the Press

GB electricity in December: in previous issues I've commented that the government's wind strategy, at least for England, seems to be in disarray. In December however, wind was the largest component of the generation mix at 41.2%. There was a new record of 21.8GW of wind electricity on 21 December, when wind accounted for 56% of generation. High levels of wind meant that 60% of electricity was low-carbon, peaking at 87%. December was the greenest month of 2023 with electricity being generated at an average carbon intensity of 122 gCO₂/kWh. Demand peaked on 1 December at 5pm. Reference: [Dec 2023 Electricity Stats](#).

In Bedfordshire, [England got a new wind turbine](#): at 4.1 MW it's a decent size, but it's only our second in the last 12 months.

EV Reliability: The Feb edition of Which? comes with its Car Guide: not something I would normally look at, but I was interested in the article *The Truth about EV Reliability*. Which? reports that EVs come out as less reliable than petrol or hybrid, but fault rates vary a lot across models, so if you do your research you should be OK.

Car journalism is a whole other language - what should I make of *we've got some reservations over its imprecise handling*, for example? That car is labelled a best buy, so presumably imprecise handling is OK. Another model is a Best Buy *despite an overall lack of feel and precision to the steering and merely adequate brakes*. Hmm.

The European Commission says it wants to cut net GHG emissions by 90% compared with 1990 levels by 2040. The goal, which is not yet legally binding, is part of the EU's commitment to achieve 'climate neutrality' by 2050. Some [worry that the ambitious target risks relying heavily on largely unproven carbon removal technology](#) rather than cutting fossil fuels - note the emphasis above on *net* emissions. The election in some countries of governments less committed to climate action might also make the goal difficult to achieve. [This taken from Nature Briefing].

Nuclear power is likely to break global records next year, rising to almost 3,000 TWh, according to the International Energy Agency. China and India are expected to invest in new reactors and France is planning to bring plants back

online after maintenance. [This also taken from Nature Briefing]. Reference: [IEA report](#)

Feedback and Groups News

Any 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.

Regular correspondent Richard M sent me this:

Thanks for another informative bulletin.

Great start Richard. More in this vein please.

Two suggestions for the next issue:

Greta Thunberg's The Climate Book is a goodie. She's got over 80 authors to contribute short readable articles - some just 2-3 pages - on how climate works, how our planet is changing, how we're being affected; what we're done so far, what we must do now. Helpful graphics. It's the sort of book you can study or dip into.

Alert people to [Futurebuild](#): at ExCel, docklands from 5-7 March. It's a big annual show with talks and seminars, largely by and for the construction, planning and architecture industries but joe public is invited too. It's free, we just have to [register](#) in advance. Firms show their latest ideas for heat retention, insulation, green infrastructure, and there are always interesting conferences and briefings, some with big-name speakers. My group has found that spending a day there is eye-opening and bring us up to date; some of us try to attend every year.

Philip from Farnham says *my friend Stewart and I run the Farnham u3a CC group and we have run a pretty full monthly agenda for around 40 members, including some original research. Many of our presentations are available from [our website](#) and some of our members are willing to present if requested. A recommended podcast is Michael Liebreich "[Cleaning Up](#)", a set of very good interviews with some of the heavyweights of climate change. His writings on hydrogen are well worth a read. Highly recommended reading from the Royal Society no less is [Prof Llewellyn-Smith's report on large-scale energy storage](#).*

The Prof's paper is indeed an interesting read. In a net zero economy the need for storage comes mainly from the intermittency of wind: this is his Table 1:

TABLE 1

Extreme weather events.

Stress events	Description	Frequency
Summer wind drought – frequent	One full day of very low wind speed in summer.	One or two per year
Summer wind drought – infrequent	Up to four weeks of very low wind speed in summer.	Once every 10 years
Winter wind drought	Up to a week of very low wind speed in winter.	Every few years

As I see it there are three types of storage:

- short-term storage over a 12- or 24-hour cycle; we do this already, using pumped storage. The operators of this plant buy electricity when it is cheap and sell it when it is more expensive. They can also get premium rates by offering rapid response
- medium-term storage to cover a 4- or 5-day wind drought when wind power drops close to zero. The grid currently carries around 23 TWh a month, so even with today's volumes we are looking at 5 TWh or so. We don't have any technology deployed at scale that can do this
- long-term storage, where we capture renewables in summer store and store them until the winter. We don't have a technology for this either, although [DESNZ is carrying out a consultation](#).

When I look at storage, or at hydrogen, it strikes me that we are trying to turn the energy economy on its head - 20 years ago it was based on fuel (coal, gas oil) and we burned fuel to generate electricity, on demand. In a net-zero world you get (most of) the electricity when it is available, and we want to turn some of it into fuel. We've made progress with renewable electricity but little with renewable fuel. It would be great to have a device where electricity goes in and something like coal comes out: we never had problem storing coal.

Christine from Pembury u3a would like to make contact with other u3a climate groups in West Kent. Please email me if you can help and I will pass your message on.

In December Anne from Bath emailed me to ask *have you anywhere in your posts mentioned, or seen on line how much for example the Canadian wildfires added to predicted emissions? I'm increasingly biting my nails about these vast*

events which almost annually seem to negate efforts in other areas of decarbonisation.

You need to google (say) 'wildfire co2 emissions' or 'wildfire effect climate', then see what you get, then decide what you believe.

I found a [paper in Nature](#) that says that landscape fires burn 3–5 million km² of the Earth's surface annually and emit 2.2 petagram of carbon per year to the atmosphere. A petagram is 10¹⁵ grams, eg 10⁹ tonnes - so about 2.2 bn tonnes. [Another article](#) gives a figure of 1.76 bn tonnes of CO₂ for North America and Eurasia in 2021. Maybe 80% of these emissions will be recovered by regrowth, leaving maybe 0.4-0.5 bn tonnes in the atmosphere long-term. Based on the Nature paper, 256 Tg (256 m tonnes) of charcoal is produced in wildfires and may remain in the soil long-term - about 12% of the carbon produced. [This paper](#) says 33.9 bn tonnes CO₂ over a 11-yr period, say 3 bn tonnes pa.

By a strange coincidence, this was in Nature Briefing on the day that I received Anne's email:

Extreme forest fires fuel emissions

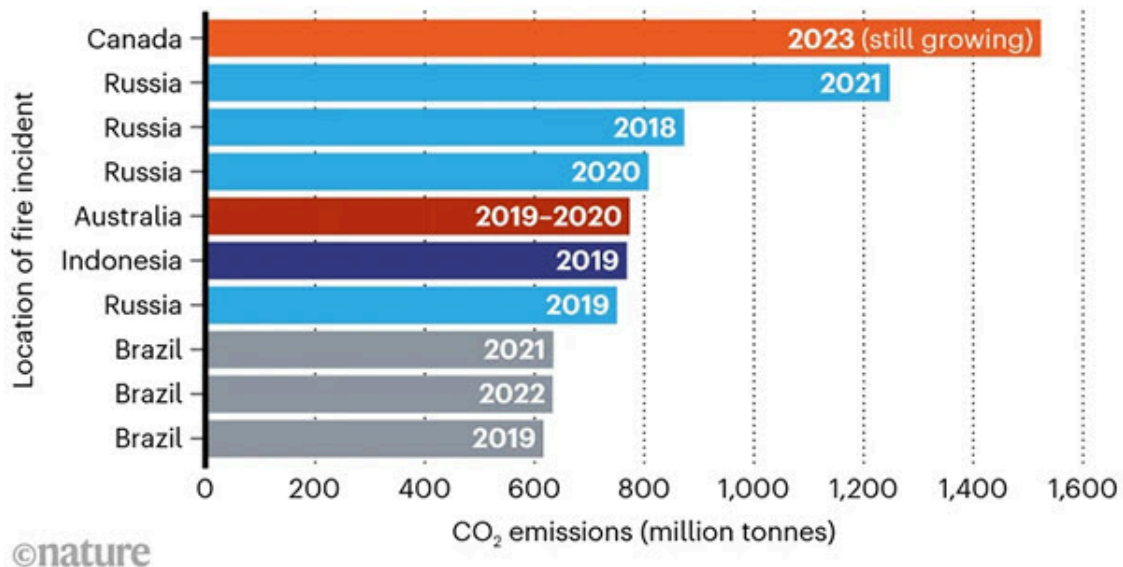
The annual CO₂ emissions generated by forest fires are now higher than those from burning fossil fuels in Japan, the world's sixth-largest CO₂ emitter. In particular, emissions from boreal-forest blazes, such as those in Canada this year, "showed a rapidly growing trend", says landscape ecologist Xu Wenru. The report calls for countries to include forest fires in their climate plans — their emissions "cannot be ignored".

[Nature | 3 min read](#)

Reference: [Chinese Academy of Sciences report](#)

EXTREME FOREST FIRES

Over the past five years, the world witnessed ten fire incidents, across five countries, that each emitted more than 600 million tonnes of CO₂.



Emissions from this year's record-breaking conflagration that ripped through Canada surpassed those from all forest fires in the country over the previous 22 years combined. (Source: Chinese Academy of Sciences)

Unfortunately in all cases the original work has disappeared behind paywalls, except the Chinese Academy of Sciences report - but this is in Chinese. (I find that the the trick with reports linked to Nature newsletters is to save them as PDF before they disappear.)

Confusingly, the Nature paper talks about tonnes of carbon and the Science paper talks about tonnes of CO₂, so agreement is not all that close. To convert tonnes C to tonnes CO₂ multiply by 44/12.

Climate Change Tool Kit

This message is from Tom Wilkes:

You may be aware of the Climate Change Tool kit that we produced about 18 months ago. Part of the Tool kit included [case studies](#) and we are now reviewing and updating those that we have and asking for more.

The tool kit provides a source of information for u3a climate groups and the case studies illustrate the different approaches that groups have taken.

To update your existing entry or include a new group please [email me](#) with the following details: name of u3a; group title; when formed; leader name and contact details; group format and key points. Please have a look at the current contributions for ideas of what to include.

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Over the next few weeks I will be unsubscribing subscribers that haven't been opening these emails. If you are reading this then you are presumably not in that group. I'm doing this in order to keep the size of the audience under the limit for a free Mailchimp account.

(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](#), [Ensià](#), Nature, and other sites that I like and feel are credible.

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