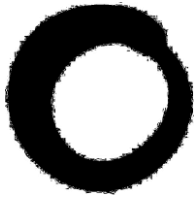


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Spring
2022



Nottingham
Friends of
the Earth

NOTTINGHAM FRIENDS OF THE EARTH
Down to Earth

Welcome to Nottingham Friends of the Earth. We are one of around 150 local Friends of the Earth groups campaigning for a better environment locally as well as nationally and internationally. **Friends of the Earth** has a reputation for effective campaigns backed up by authoritative research.

Notts Pension Fund continues to fund climate change



Nottingham FoE, DivestNotts and Extinction Rebellion Nottingham campaigning outside the Council offices

Nottinghamshire County Council has refused to move pension fund money out of fossil fuel industries.

INSIDE THIS ISSUE

- Solar PV technology developments
- Keep 1.5 Alive? Notts Pension Fund Divestment
- Nottingham COP26 Coalition
- Eastcroft Incinerator “low carbon” myths busted
- Alternative Carbon Sinks
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Sunshine Time for Home Solar



UK solar PV installations have plummeted since the closure of the Feed-In Tariff scheme to new applicants

In the depths of winter, probably the last thing people are thinking of is sunshine and solar power at home but read on!

The premature closure of the government's Feed in Tariff for home solar electricity generation (solar photovoltaic or solar PV) in 2019 was a huge mistake in the view of FoE. The number of installations virtually collapsed and with it the livelihoods of many solar installers. The Feed in Tariff's replacement with Smart Export Guarantee payments has failed to incentivise homeowners. This was despite the costs of solar PV panels per kWh of capacity falling by over 90% between 2009 and 2020 [IRENA, 2020].

However, that may be about to change with the development of new solar panel designs incorporating an affordable, sustainable synthetic material called perovskite. Conventional panels are made of silicon. Around 2010, when the Feed in Tariff was introduced, the efficiency of these silicon panels at converting light to electricity was around 15%, exceptionally 20%. In December 2020 Oxford PV, a spin-off company from the University of Oxford developed and tested a 'tandem' perovskite /silicon solar panel which achieved an efficiency of 29.52%, around twice

that of most conventional solar PV and an independently certified world record [Oxford PV].

This year, Oxford PV will become the first company to manufacture these next-generation solar cells. Initially designed for residential roofs, they will generate 20% more power from the same number of cells. With UK government project funding, Oxford PV are also currently developing improved multi-layer perovskite cells, with efficiencies of 37% expected in the next five years. Oxford PV believes, that eventually, future perovskite solar cells could achieve 83% efficiency and replace silicon completely [Oxford PV].

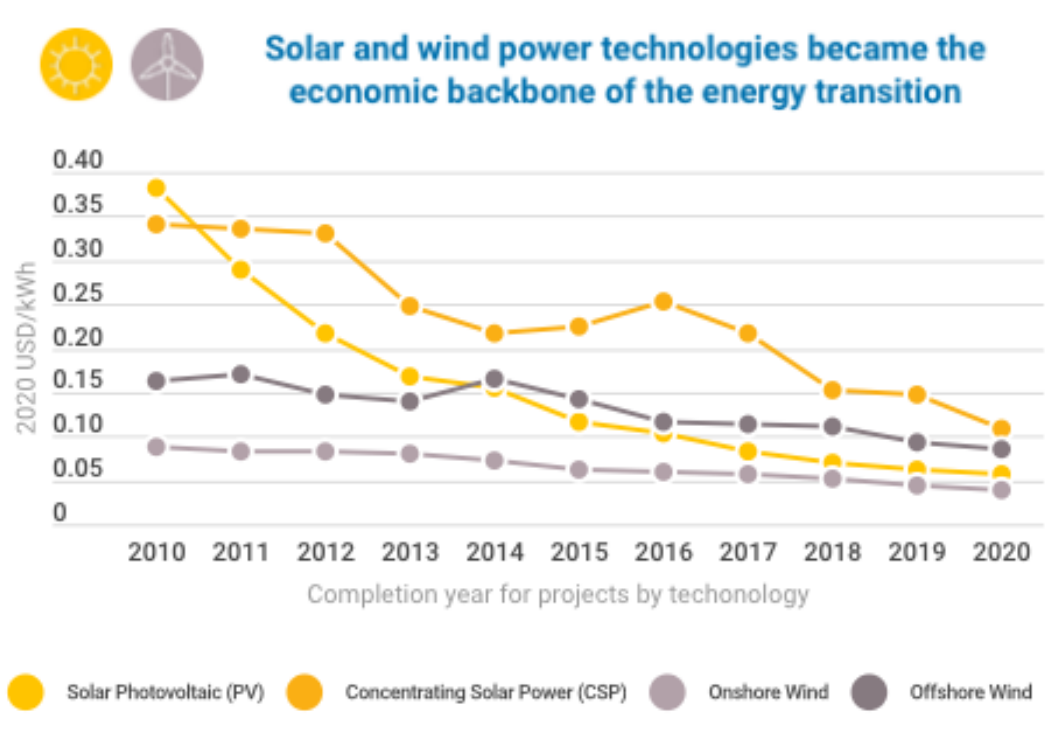
Oxford PV's development coats conventional silicon solar PV with their synthetic perovskite. This 'tandem approach' enables Oxford PV cells to capture more available solar radiation. The perovskite layer absorbs shorter wavelengths, while the silicon layer absorbs longer wavelengths.

This could be a yet another game changer for the economics of installing solar PV as most of the cost of solar panel arrays is in the metal frames to hold the cells together. Reducing the area of the panels reduces the cost per kWh of

capacity or alternatively, much more electricity can be generated from the same roof area. Also, by installing a solar storage battery, homeowners can store and use 100% of their own solar electricity (and cheap off peak electricity) ensuring security of supply and reducing electricity costs which are being predicted to increase by as much as £700 per annum in the next 12 months [The Guardian, 2022]

The accelerating climate crisis we face requires complete decarbonisation of every part of our lives – at unprecedented speed. Key to this will be electrification of everything from transport to heating our homes, requiring a massive increase in generating capacity. The quickest and cheapest means of generating that electricity is now solar - so now is the time to ride on sunbeams!

Karl Barrow



SOURCE IRENA <https://www.irena.org/newsroom/articles/2021/Jun/Low-Renewable-Costs-Allow-To-Power-Past-Coal> accessed 8/1/22

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Why won't Notts Pension Fund "Keep 1.5°C Alive"?



Demonstrators from DivestNotts activists had a clear message for the Pension Fund Committee outside the offices of Nottinghamshire County Council

At the Nottinghamshire Pension Fund AGM in January 2022 members of the public asked 39 questions, mostly about the failure to properly protect their pensions from climate risk.

But Fund managers refused to consult Pension Fund members about climate change (or anything else). They have even failed to include pensioner representatives as non-voting members on the Pension Fund Committee – even though this has been promised for some time. They have at last promised that members will be asked about this when the next annual notification goes out in March.

They admitted that many of the companies the Fund invests in are not aligned with the aim of keeping global warming below 1.5°C (as agreed at the UN Climate conferences in Paris in 2015 and Glasgow in 2021). But they refused to divest from these companies – claiming that 'engagement' is more effective.

Meanwhile, the #DivestNotts campaign reacted to a claim in the Pension Fund Annual Report that global warming of 4°C by 2050 would reduce annual returns to the Fund by only 0.11%! That was part of a climate risk analysis (which was obviously not worth the paper it

was printed on).

DivestNotts wrote to members of the Pension Fund Committee pointing to scientific consensus that 4°C global heating could:

- melt most glaciers with 2 metre sea level rise;
- render most of the tropics uninhabitable;
- create huge oceanic dead zones
- cause Himalayan glaciers to be lost leading initially to flooding and then drought in major food growing areas such as large parts of Pakistan, India and China;
- lead to 2 billion climate refugees.

DivestNotts has asked the Committee to confirm that they "fully understand the inadequacy of the advice" in this climate risk analysis.

"DivestNotts demands clear targets from the Committee to align the Pension Fund with the COP 26 goal of limiting global warming to the relatively safe level of 1.5°C."

"Nottinghamshire Pension Fund must 'Keep 1.5 Alive'."

Nigel Lee

Nottingham Coalition for Climate Justice



On 6th November 2021, the 'Global Day of Action', 100s marched through the streets of Nottingham

On 6 November last year, people all over the world called on world leaders meeting in Glasgow to agree the action needed to keep global temperature rise below 1.5°C. That was at the UN Climate Conference known as COP26. It will be followed by COP27 in Egypt later in 2022.

Nottingham Friends of the Earth supported a local COP26 Coalition which organised events leading up to a large rally in Nottingham with support from over 30 local groups. Now these groups have created a local Climate Justice Coalition to continue the campaign.

System change not climate change

The COP26 Coalition said:

“The decisions made at the UN climate talks will shape how governments respond (or not) to the climate crisis. Right now, we are living through a period of multiple breaking points - from climate change to covid to racism. These crises share the same cause. Our political and economic system is built on inequality and injustice. For centuries, rich governments and corporations have been exploiting people and the planet for profit.

“Those who have done the least to cause climate breakdown suffer the most and must be at the centre of decision-making about the solutions. We need to keep fossil fuels in the ground and invest in low carbon alternatives

now. We need an economy based on the wellbeing of everyone, not exploitation and profit for the few.

“The planet is already burning, yet world leaders reject the scale of change we need in favour of tinkering at the edges. That's why we are bringing together movements from across the world to build power for system change and we need your help to amplify their voices and demands.”

As we all know, COP26 fell well short of what is necessary. See: <https://campaigning.friendsoftheearth.uk/climate/outcome-cop26>. In summary:

“Despite the media spin, the outcome of the negotiations failed to keep the world below 1.5 degrees of temperature rise or provide finance to the Global South. Outside the talks, people came together in incredible numbers up and down the country and around the world. Now we need to hold governments to account for what they failed to do in Glasgow and continue to show that the solutions to the climate crisis lie with us.”

Nottingham Coalition for Climate Justice will be working over the next year to hold our governments to account locally, nationally and globally. For details of meetings contact: nottingham@cop26coalition.com

Nigel Lee

Does the Eastcroft Incinerator provide 'low carbon' energy?

Nottingham City Council continues to insist that district heating powered by waste burnt at the Eastcroft Incinerator (pictured) is 'low carbon'. That is, if you ignore over 160,000 tonnes p.a. carbon dioxide emitted by the incinerator!

The way the system works is that residual waste from the city and surrounding districts is delivered to the incinerator. The incinerator burns the waste, producing steam which is exported to a heat station on London Road run by Enviroenergy. This is used to generate electricity, with residual steam and hot water exported to the district heating system.

The incinerator is owned by Spanish company FCC (which in turn is owned by Latin American billionaire Carlos Slim). Enviroenergy is owned by the City Council. So carbon dioxide coming out of the incinerator chimney is nothing to do with heat supplied by Enviroenergy. Simples!

Using figures supplied by FCC and the City for 2020:

FCC reported to the Environment Agency that 191,097 tonnes waste was burnt in 2020 with a calorific value of 8.3MJ/kg. So we can calculate energy in the waste as 1,586TJ = 440,000 MWh. Of this, 405,000 MWh thermal energy was exported to Enviroenergy (steam and hot water).

In 2020, Enviroenergy produced

- 62,580 MWh electricity, of which 50,602 MWh was sold (35,195 via national grid, 15,407 to the local private grid, the rest being used within the incinerator or district heating system).
- 106,611 MWh heat, of which 75,072 MWh

was sold through the district heating system (21,735 domestic and 53,337 commercial, the rest being used internally or lost)

This means that only 11.5% of energy in the waste was converted to electricity exported to the national or local grid. A further 17% was sold as heat through the district heating scheme.

FCC also reports that 161,924 tonnes carbon dioxide was emitted from the incinerator in 2020. The City says that a further 1,443 tonnes CO₂ was emitted from gas burnt in the heat station (when the incinerator was offline).

Dividing total CO₂ of 163,367 tonnes into heat and electricity sold (applying a ratio of 2.5:1 to allow for the relative efficiency of converting heat to electricity), gives:

- 2,026g CO₂/kWh for electricity
- ...810g CO₂/kWh for heat

(This compares to around 200g CO₂/kWh for a domestic gas boiler, and less than 300g CO₂/kWh for electricity.)

The City Council states that "We account for the carbon emitted at Eastcroft under waste, because that is what causes it." So it can be ignored as far as heat from Enviroenergy is concerned!

That has echoes of East Midlands Airport which claims that its ground operations since 2012 have been carbon neutral – if you ignore the aeroplanes.



Nigel Lee

Under examination ... other carbon sinks

Most plant matter returns its carbon to the air, by rotting, burning or being eaten. A 'carbon sink' removes carbon dioxide from the air in a form that won't quickly return. Growing tree tissue, for example, stores carbon for its lifetime. Trees' potential as carbon sinks depends on scale, aiming for a larger share of the earth's total carbon to be stored at any one time.

Many other proposals for carbon sinks are under consideration, some theoretical, others in practical trial. All aim to be carbon-negative, i.e. to extract more than they release. This must be on a worthwhile scale, without large cost, and without itself causing other environmental harm. Trivial carbon sinks may yet attract polluters as greenwash prestige projects. Man-made carbon sinks shouldn't be promoted to legitimise continued fossil fuel burning.

Biochar, resembling charcoal, is made by heating organic biowaste (from agriculture, forestry etc.) without air. The University of Nottingham is assessing its potential. 40% of feedstock's carbon becomes stable elemental form, porous but non-rotting, useable as mulch

for farming, grassland and horticulture. The other 60% produces fuel gas for renewable heat and electricity. Project leader Prof. Colin Snape describes recovery as energy-efficient and carbon-neutral. The process overall is potentially carbon-negative.

Limestone or calcium carbonate is a major natural CO₂ store. Speeding up its formation from calcium silicate rocks by 'accelerated weathering' is the aim of a study based at the University of Sheffield. Crushed silicate minerals, used to improve cropland soil, absorb a quota of CO₂. Under trial in four countries, this process might cut the carbon cost of growing food. Further gain might accrue if it proved able to replace carbon-costly synthetic fertilisers.

In similar geochemistry a University of Southampton team has modelled the impact of spreading volcanic ash from a ship to an ocean floor area to help amplify natural processes for locking away CO₂. Up to 2,300 tonnes of CO₂ could be sequestered per 50,000 tonnes of ash - this (as yet theoretical) idea prompts obvious ecological concerns.

Jeremy Jago

"Knowledge is power" to change direction

In the midst of the first lockdown I stumbled across an inspirational online climate reality group, led by a local to Nottingham Climate Reality Leader, which had gathered to learn and prepare to 'Countdown to Cop 26'. Oh well, that may not have been all we'd hoped for but we're now going for Cop 27!

It was part of Trust u3a, an online section of the national organisation for those no longer working, to come together and learn for fun, and so had people from all across the country with a wide range of knowledge and expertise. It may surprise you that the group is energetic and inquisitive as well as their real determination to work hard to help the planet because it is so beautiful, as well as for the sake of future generations.

The central aim of the group is basically to get more and more people talking about the climate reality we face today, and take a broad sweep of the different ways we can act to help slow global warming. They're very keen that

local u3as set up their own climate action groups, and it seems to be happening.

I've found thinking about choices about transport, home energy use, food, waste, stopping buying too much, and finances to have been really helpful, especially when spreading the word when talking to friends.

Gaining knowledge about new green tech is fascinating, and fundamental to the group, and I've learnt a lot about heat pumps, the wide spectrum of hydrogen colours and different home insulation options. It's this knowledge that's key to being informed enough to be able to lobby local MPs and councillors and so influencing their key decisions and plans for the future.

I see Nottingham FoE busy doing just that, lobbying local politicians on our behalf, influencing present and future policy decisions and am so grateful.

Sue Warren

Contacts

Co-ordinator: Jeremy Jago (c/o Sumac Centre, address as below)
Membership Officer: Nigel Lee, 0115 9788059; Jeremy Jago
Newsletter Editor: Roger Steele, 07474 257029
Website Editor: Nigel Lee, 0115 9788059

Campaigns:

Nottm ProWA: Roger Steele, 07474 257029
Anti-fracking: Nigel Lee, 0115 9788059
Clean Air: Vacancy
Waste & Resources: Nigel Lee, 0115 9788059
Trees: Hannah Evans

For general information, please visit our website (see below), or write with an SAE to Nottingham Friends of the Earth, c/o Sumac Centre, 245 Gladstone Street, Nottingham NG7 6HX.

For information about joining the group, please mark the envelope "Membership".

For latest campaign news and contact details, visit
<https://www.nottfoe.gn.apc.org>

National Friends of the Earth: The Printworks, 131-143 Clapham Road, London SW9 0HP (020 7490 1555), or email info@foe.co.uk.

See national website <https://friendsoftheearth.uk> for easy online actions.

Owing to the Covid-19 pandemic, we meet online on the second Tuesday of each month, between 7.30pm and 9.30pm. Please email nottinghamfoe@hotmail.com for details. You would be very welcome.

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If you would like to receive future editions of this newsletter electronically to save paper, please let us know your email address. You can contact us by email via our website (see above), or alternatively nottinghamfoe@hotmail.com. Please note that the file size can be over 1MB.

AGM Announcement

Our next Annual General Meeting will be held online on Tuesday 8 March 2022 at 7:30pm. Email nottinghamfoe@hotmail.com for details.

We look forward to seeing you there.