



Supporters of Nuclear Energy

Newsletter

No 256

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Notice AGM

For your diary: The 2020 Annual General Meeting is set for 2pm on Monday 26 October 2020 at the Institute of Civil Engineers, Great George Street. If by any chance that is not possible we hope to hold the Meeting online by ZOOM.

CALL TO ARMS!

Everybody is waiting for the Government to announce its energy policy. Whether it is the Government or the Civil Service that is in disarray, it is clear that feet are being dragged and that plans for a viable energy future are still gathering dust in Whitehall. The need to publicise the case for Nuclear Energy has never been greater. Politicians are not well informed, nor indeed is the public. Every member of SONE is encouraged to write to their local MP this week demanding action from the Government.

Neville Chamberlain CBE, as Chairman of SONE, has written to the Prime Minister, copied to the BEIS Minister, as follows:

Dear Prime Minister,

Energy is the lifeblood of a modern economy. A long term, consistent energy policy is therefore essential. A string of eye-catching initiatives is not enough. In particular, the UK's commitment to nuclear energy has, over decades, been uncertain and fragmented.

A recent survey of members by The Energy Institute showed that a significant number believes that "Nuclear" is an opportunity missed in the UK. We have missed out on investment in non-carbon energy sources, missed out on international trade opportunities and missed out in strengthening our high-tech skill base. New large nuclear power stations require huge investment with a long payback period, sadly not conducive to normal risk-taking capital sources, especially when Government is less than unequivocal in its support! Only government-backed or sovereign funds can contemplate such investments, such as French or Chinese sources. And now, understandably,

concerns are being raised over the exposure of our critical infrastructure to foreign control.

Without a significant contribution from new nuclear, there is no chance that the UK will meet its zero-carbon emission target in 2050. We, in SONE (Supporters Of Nuclear Energy) urge your Government to embrace this truism, declare a firm, unequivocal commitment to a new nuclear programme and demonstrate that commitment by funding such a programme. The time to transfer ownership of nuclear power stations to the private sector is when they have been commissioned.

An ambitious, new nuclear programme should include, not only new traditional, large stations using existing technology but also the supporting facilities for the building, by the private sector, of a fleet of new Small Modular Reactors, with the export potential that would follow.

At a stroke, such action would simultaneously declare confidence in Britain's economic future, help rebalance the UK economy, create jobs, tackle climate change and lay the basis of a return to the UK's leadership role in modern nuclear technology with the chance to more actively influence international standards and practice.

SONE is ready to help, with others, your Business Department put the above ideas into practice.

Yours sincerely,

Neville Chamberlain CBE, Chairman, SONE

MAJOR ITEMS OF PRO-NUCLEAR NEWS

- On 24 June the Nuclear Industry Association published a powerful article: <https://www.niauk.org/media-centre/press-releases/net-zero-risk-without-nuclear-power-new-report/> In addition, it published a video interview with Tim Stone, the Chairman. It is very positive indeed and well worth watching – please encourage others to do so, too. <https://www.youtube.com/watch?v=OXWBYzaSbBs>
- There are signs that people on the political right, and on the left too, are starting to accept the true benefits of nuclear energy. The new supporters are surprising, but welcome of course.

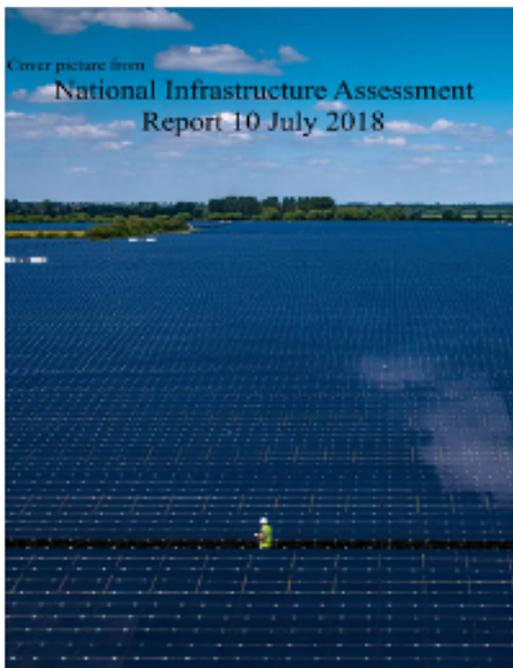
A recent article “A-BOMBS, BEARS AND CORRUPTED SCIENCE: Reassessing radiation safety” is published by the GWPF¹ <https://www.thegwpf.org/dangers-of-nuclear-energy-much-less-than-previously-thought/> . The Foreword is written by Peter Lilley, former Minister, now in the Lords. Though without detail it is forthright in its support of nuclear energy and its attack on LNT. The body of the article contains two papers, the first is by Professor Edward Calabrese on the LNT story and the second by Mikko Paunio on radiation exposures at Hiroshima and Nagasaki. However, these are less significant than the fact that GWPF has sided with nuclear energy.

And then on the left there are further surprises. Members may feel that Xtinction Rebellion has some justifiable grievances. However, screaming and stamping feet provide no solution. A leader in the UK has been Zion Lights. Recently she has broken away and declared herself pro-nuclear. She is working with environmentalist, Michael Shellenberger, and is promoting Sizewell C. <https://capx.co/boris-should-make-a-new-nuclear-plant-should-be-the-keystone-of-our-green-recovery/> Supported by a large number of familiar engineering and scientific names, of which at least 50% are overseas, an open letter appears in the daily press on Monday 13th July urging the UK Government to support the project. The link: <https://www.cityam.com/an-open-letter-to-the-pm-britain-must-build-sizewell-c-nuclear-sits-at-the-heart-of-a-green-recovery/>

There is also firm evidence for further reconsideration among Greenpeace supporters.

A short comment with a picture (see right) and link posted on Twitter by Wade Allison:

“Green? How could this be called “Green”? Mindless destruction of countryside and nature, to my eyes! The small boy in the story of the Emperor’s New Clothes would see that. He would shout out! The science would agree with him.” See



1 The Global Warming Policy Foundation is a well endowed think tank set up by Nigel Lawson and others. https://en.wikipedia.org/wiki/Global_Warming_Policy_Foundation#cite_note-fs2011-1 It is noted for its scientific scepticism, in particular about Climate Change and the response to it.

“Nature Energy and Society: A scientific study of the options facing civilisation today” https://www.researchgate.net/publication/339629356_Nature_Energy_and_Society_A_scientific_study_of_the_options_facing_civilisation_today This produced an independent comment posted by Tim Stone:

“Fabulous piece with great clarity & logic which should be required reading (and understanding!) for all policy-makers in any way involved with energy. There’s hard, irrefutable science in Wade’s article.”

A serious study that compares the many different designs for Small Modular Reactors and Advanced Modular Reactors has been undertaken by Fermi Energia of Estonia. Their analysis is presented here. <https://www.youtube.com/watch?v=PE6yDjwqWLS> They aim to have an early SMR, even Europe’s first, and Moltex appears prominently on their shortlist. They have also shown great interest in nuclear education and have contacted Wade Allison about this.

NUCLEAR RADIATION IS NOT LIKE A VIRUS

Public opinion can transmit a story faster than any virus can infect. A supposition that someone thinks “could” be correct is readily repeated many times until it is perceived to be a fact – a fact that may then precipitate instability in society, even panic. Animal life can suffer in this way too, but modern media have made a fine art of the process. Science should tackle the questions that might dampen this behaviour.

Unfortunately, science’s answers are not always accepted. Today, everybody is hoping for a vaccine for the COVID-19 virus, but it is worth recalling the widespread public rejection of the triple vaccine for mumps, measles and rubella triggered by a mistaken scientific supposition that then “went viral”.

There is a caste of three: the virus, public opinion and the scientific response. COVID-19 is a live virus that continues to evolve, so becoming more, or less, malign than it is now. That is a significant problem. Science is trying hard to understand the biology of how the virus works and how to outwit it, but the target is moving. The problem is new and unknown – It will take time to solve. Public opinion is fearful and unstable, and that is already having serious social and economic consequences, as we all know.

How does that compare with the threat posed by nuclear energy, radioactivity and ionising radiation?

Unfortunately, as far as many elements of public opinion are concerned, the nuclear threat is at least as frightening as COVID-19. One reason is it is powerful. That is

just as well because that is what we need. Consequently, the size of a nuclear power station can be very small and the mass of fuel needed is minute. The other reason for public fear dates back to the Cold War, but is frequently refreshed by blockbuster films designed to excite and entertain without regard to scientific fact.

But radiation is physical, not biological. The way it attacks life does not change. It has been understood for decades since the work of Marie Curie. More significantly it has not changed since life began and cellular biology has had time to perfect ways to combat it.

Radioactivity is not contagious like a virus. It does not spread. In the language of the pandemic it has an “R-number” of zero. Furthermore, all nuclei themselves are “locked down” at the centre of each atom, constrained to “self distance” by a factor 100000. This regime has prevented fresh nuclear activity on Earth since it was formed. Not only after Hiroshima and Nagasaki, but after Fukushima too, there were horrible reports of people being ostracised because they had been irradiated – even turned away from hospitals. Nobody in the radiation protection industry ever explains that this is both wrong and unnecessary. Why? Because they stick to the mantra that radiation is dangerous – that is their job.

MORE DEVELOPMENTS

There is great interest in Hydrogen, arguably the next best way after electricity to transmit carbon-free energy – and you can store it, or convert it to ammonia. I am grateful to Ian McFarlane for the following:

Extracts from:

The Future of Hydrogen Seizing today’s opportunities

Report prepared by the IEA for the G20, Japan

p32:

Hydrogen is not an energy source but an energy carrier, which means that its potential role has similarities with that of electricity. Both hydrogen and electricity can be produced by various energy sources and technologies. Both are versatile and can be used in many different applications. No greenhouse gases, particulates, sulphur oxides or ground level ozone are produced from the use of either hydrogen or electricity. If the hydrogen is used in a fuel cell, it emits nothing but water. However, both hydrogen and electricity can have a high CO₂ intensity upstream if produced from fossil fuels such as coal, oil or natural gas. This disadvantage can only be overcome by using renewables or nuclear as the initial energy input, or equipping fossil fuel plants with CCS.

p46:

Box 4.

Thermal routes for hydrogen production – a case for nuclear?...

Nuclear power plants are another option for the provision of heat for hydrogen production. They could, for example, provide steam for natural gas-based steam methane reforming. Depending on local conditions, using steam from nuclear power could be cheaper than using steam from natural gas, as well as reducing the carbon intensity of the hydrogen produced. It could also provide a useful additional revenue stream for nuclear power plants. Electricity and heat (produced at temperature levels of around 300°C by *nuclear power plants*) could also be used to provide electricity and steam for SOEC electrolysis. Research is underway to develop materials for SOEC electrolysis that are well suited to the temperature levels of nuclear energy heat sources (US-DOE, 2018).

Small modular reactors could also have a role to play in SOEC electrolysis in the future. Six small modular reactors with a combined capacity of 300 MWe could, for example, meet the annual hydrogen demand of a mid-sized ammonia plant (73 000 tonnes of hydrogen per year [tH_2 /yr]). *Exploring non-electric applications for small modular reactors, such as hydrogen, is part of the Joint Use Modular Plant (JUMP) research programme in the United States. In the longer term, advanced nuclear reactors, such as the two industrial prototype high-temperature pebble-bed reactors currently being constructed in China, could also become the heat source for thermochemical water splitting, with some reactor designs having coolant outlet temperatures of 800–1000°C.*

Source: US-DOE (2018), “Energy Department announces up to \$3.5m for nuclear-compatible hydrogen production”.

IMcF, 4 Jun 2020

IN QUIETER MOMENTS

Neville Chamberlain has kindly gathered the following items of news from WNN, which should be of interest to our SONE Members.

WNN Daily bemoans the fact that the European Commission, in its “green recovery plan” has completely ignored the contribution, both actual and potential, of nuclear energy.

COMMENT: This is typical now of anti-nuclear tactics: the nuclear cause is increasingly being ignored rather than attacked. Supporters Of Nuclear Energy must promote the debate rather than let it go by default.

WNN also reports that EDF Energy has applied for a Development Consent Order to build Sizewell C. When in operation this station will supply 3.2 GW of carbon-free, secure, reliable electricity and will create 900 permanent high-skill jobs in Suffolk. Some 25000 jobs will be created for the duration of construction.

COMMENT: Let's hope the Government will actively support this project !

It is reported that COP26, which was scheduled for November in Glasgow this year but postponed because of Covid19, is now proposed to be held 1-12 November next year (2021).

Back in May this year, Wade Allison posted a comment on Twitter showing the negative electricity prices in Germany - meaning Germans *paying* to get rid of excess electricity! The same has happened several times in recent months between the UK and France. On occasions it has lasted for 12 hours, with power going to France but the UK paying for the privilege!

Whenever the wind blows and the sun shines and especially if it is a weekend, this may happen. It is easy to take a look. The grey histogram (below) shows the price profile, and the arrows in the Channel shows the interconnector sending electricity to France at a negative price.

The electricity map link is <https://www.electricitymap.org/map>

The screenshot shows a tweet from Wade Allison (@radiationreason) with the following text: "Mostly negative prices last 24 hrs, down to MINUS £39 a MWh. Paying to dump 2.4 GW excess abroad, currently. It seems UK imports electricity from F/B/NL when prices positive, and exports when negative - UK always pays! Build reliable, all weather, 24/7, safe, local, cheap nuclear".

The tweet includes a composite image with three parts:

- Top Left:** Three circular progress indicators showing 100g Carbon Intensity (gCO₂eq/kWh), 84% Low-carbon, and 54% Renewable.
- Top Right:** A map of Europe with arrows indicating electricity flow from the UK to France.
- Bottom:** A line chart titled "Electricity consumption" showing "Origin of electricity in the last 24 hours" with a y-axis in GW. Below it is a "Electricity prices in the last 24 hours" histogram with a y-axis in £/MWh.

The right sidebar of the tweet shows "Relevant people" (Wade Allison), "What's happening" (Andrzej Duda re-elected), and "Trending in United Kingdom" (Windsor).

LOOKING AHEAD

The press exploit every opportunity. No doubt they will do so on the 75th anniversary of Hiroshima and Nagasaki that falls next month. However, we know that the shock-horror of the radiation experienced there is misplaced. The fire and blast was responsible for much destruction and the loss of many lives – as in Tokyo, Hamburg, Berlin and Dresden, though delivered by one bomb instead of thousands. But the radiation and the subsequent birth defects and cancers? Three generations later and with the benefit of lifetime studies of 100,000 survivors we can assert that there is no evidence for birth defects and that the number of extra subsequent cancers was small, less than the number of UK road deaths in a single quarter, for instance. Or from COVID-19 in a day or two.

SAD NEWS

Neville Chamberlain writes:

“I notice from the Times that my old colleague (from BNFL) Martin Morland passed away last month (on the 28th April). He was 86. Martin was, at one time, British Ambassador to Burma (and later, because of his personal views, became persona non-grata to the present regime!) When he retired from the Diplomatic Service, he joined BNFL as our Corporate Affairs Director and became a good supporter of SONE, serving, until his health failed, on our Committee. His wife Jenny predeceased him.”

Wade Allison
Honorary Secretary
11 July 2020.

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