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Monitored this issue:

The Swedish nuclear illusion: A cautionary tale of mining, subsidies, and environmental decay

Rolf Lindahl, Climate and Energy Campaigner, Greenpeace

The right-wing populist Swedish government has steered the country – once a pioneer on a clear path toward 100% renewables – into a deeply precarious nuclear adventure. As investments in renewable energy grind to a halt, opportunists are flocking to the nuclear sector, lured by the promise of favourable state loans and massive subsidies. This shift reached a tipping point at the turn of the year when the long-standing ban on uranium mining was lifted. However, local resistance is surging. The question now is: will the growing protests against uranium mines derail the government's entire nuclear project?

From green leadership to ideological dogma

Since taking power in 2022 with the support of the national-conservative Sweden Democrats, the government has made new nuclear power its flagship issue. By exploiting the 2022 energy price spike, they sold a simplistic, "energy-populist" agenda, promising quick fixes. With pledges of new reactors by the early 2030s and the equivalent of ten large-scale reactors by 2045, the so-called "Tidö Government" has created an illusion that it seems to believe in itself.

In just a few years, they have completely redrawn Sweden's energy map – not through market solutions or innovation, but through an ideological crusade where nuclear power has become a religious dogma. Through massive subsidies – taxpayer money that will bind future generations for decades – they are attempting to artificially resuscitate a technology that market actors long ago dismissed as too expensive and too risky. The suggested subsidies could be one of the largest and most long-term financial support measures for individual companies in Swedish history, and have been met with widespread criticism from businesses, academia and government agencies.

Nature as an "administrative detail"

The expansion is aggressive. The government is opening the entire Swedish coastline to nuclear development, regardless of local opinion or ecological value. The most chilling example is at the nuclear power plant of Ringhals, where the state-owned utility Vattenfall, cheered on by the government, has applied to dissolve established nature reserves to make room for new reactors. The message is clear: in the "new" Sweden, protected nature is merely an administrative detail to be erased with a pen stroke if it obstructs nuclear expansion.

While the government dreams of reactors that – if they materialise at all – won't be ready until at best the late 2030s, the immediate consequences are devastating. Investment in renewables has not just slowed; in some sectors, it has imploded. Capital is fleeing the fast, efficient solutions we need today, scared off by the market distortion of one-sided nuclear subsidies.

The result is as paradoxical as it is predictable: emissions are rising, breaking a downward trend held since the early 2000s. By actively sabotaging wind power and dismantling green incentives, the government has trapped Sweden in a waiting room. We are waiting for a nuclear mirage while the planet burns and

Swedish competitiveness in environmental technology withers away.

The uranium gamble

One of the most controversial moves is the decision to turn Sweden into a "nuclear Eldorado" by lifting the ban on uranium mining as of January 1, 2026. This decision was made despite significant environmental objections. On the other hand, the mining industry was quick to welcome the lifting of the ban. 'This will make Sweden more attractive as a mining nation,' said the CEO of the industry association, Svemin, in a statement.
Sweden is estimated to hold roughly 27% of the known uranium deposits in Europe, primarily in alum shale. The government justifies mining as a way to reduce dependence on external suppliers.

> "With this decision, we can improve Sweden's and Europe's energy independence and secure our self-sufficiency in critical minerals," stated Mats Green, spokesperson for the leading governing party, the Moderates.

In 2018, the then red-green government introduced a ban on uranium mining. The ban has been a thorn in the side not only of the current nuclear power-promoting government, but also of the companies that have long been most active in prospecting for uranium deposits in Sweden. Sveriges Television (SVT) has reported that the Australian company Aura Energy and the Canadian company District Metals have been conducting a systematic lobbying campaign to try to influence the government to lift the ban as soon as possible.

In a direct consequence of the removal of the uranium ban, Aura Energy supplemented its previous application to mine vanadium to also include uranium. They were evidently prepared. The application was submitted just over a week after the new regulations were introduced.

A weak economic case

Despite the rhetoric, the ambition to open uranium mines may be a hollow hope.

- **Low Concentration:** While mines in Canada boast concentrations of 20% uranium or more, Swedish alum shale contains a mere 0.01% to 0.04%. To extract one kilo of uranium in Sweden, you must process 500 to 2,000 times more rock than in Canada.
- **The Ghost of Ranstad:** In the 1960s, the Ranstad plant attempted uranium extraction. It was a financial disaster. The cleanup cost taxpayers hundreds of millions SEK and took decades. Ultimately, the cost of production was ten times the market price.
- **Environmental Rigour:** Sweden's environmental laws are among the world's strictest. At the same time, the environmental risks of mining uranium from alum shale are clearly established. The technical requirements to prevent acidic runoff from alum shale in 2026 are so advanced that they may render any project commercially unviable.

Political and local backlash

The political ground is shifting. The ban was lifted by the narrowest possible margin – a single vote. With the opposition Social Democrats (polling at over 30%) vowing to fight the move, any investment today faces a massive "stroke-of-the-pen" risk. Who dares to invest billions in a mine that a new government might shut down in two years? Perhaps most importantly, the local resistance has woken up. While "new nuclear" was a winning slogan in 2022, the reality of uranium

mines in people's backyards is a different story. The government's attempt to override local municipal vetoes sparked such an outcry – even from their own local representatives – that they were forced to retreat. "There is a lack of public legitimacy because it has not been possible to demonstrate that alum shale can be mined in a way that does not pose a significant risk", says Ebba Busch, Minister for Energy, Business and Industry.

New nuclear power was the current government's winning ticket. Now, it threatens to be their anchor. The once-popular nuclear dream is being tarnished, not just by the risk of an accident, radioactive waste or massive debt, but by the stubborn, grassroots resistance of people defending their land. Lifting the uranium ban may be the strategic blunder that brings the government down – and their grand nuclear project with it

Increasing modulation of reactors costs France billions

Jan van Evert, reporter WISE-Netherlands

The French state-owned company EDF has published for the first time a report on the industrial and economic effects of increasing modulation of its fleet of nuclear reactors. It warns of the consequences of the increasing modulation due to the increase in electricity production by renewables such as wind and solar power and a stagnating electricity demand.

The nuclear power plants in France have been modulated since the eighties to help balance the electricity system. The reactors can adjust up to eighty percent of their power in thirty minutes, twice a day. If a modulation over eighty percent is desired, the reactor has to be shut down for at least 24 hours, which has happened frequently and increasingly.

But the phenomenon has changed dramatically in scale. Between 2019 and 2024, nuclear modulation volumes doubled, from around 15 terawatt hours (TWh) to over 30 TWh. In 2025 this was 33 TWh, nine percent of the total nuclear power production. And in 2028, the volume could peak at 42.5 TWh.

Because of the increased capacity of solar and wind power in France the variability of electricity production is much larger than in the past which is a challenge for the operation of the nuclear reactors. This leads to increasing maintenance costs for EDF because turbines, turbopumps generators etc. wear more rapidly. The consumption of chemicals that are added to the water of the primary circuit also increases. These costs consist of 30 million euros per year per reactor for the turbines alone. At this moment, France has 57 nuclear reactors in operation which means that the total costs add up to at least 1.7 billion euros annually. But there's another very obvious problem: less electric power produced means less money earned. EDF does not mention in its report how much money they lost because of this.

This situation is also caused by the third multi-year energy program (PPE3) which provides for an increase in electricity capacity – particularly nuclear capacity – to consolidate the country's energy sovereignty. But in the short-term the system is facing overcapacity. This is caused by the slow electrification of transport, building and industry.

Sources: Full report (PDF, in French):
https://www.edf.fr/sites/groupe/files/2026-02/2026_02_16_ETUDE_MODULATION.pdf
https://www.gazdaujourdhui.fr/

Nuclear (in)flexibility, nearly 100% electricity from solar PV and offshore wind surge!

David Toke

I keep hearing claims, most recently from the British Government, about how nuclear power can be used flexibly to help balance fluctuating wind and solar. But in reality in most situations around the world nuclear is inflexible and its operation simply pushes wind and solar off the grid. Also, according to a report from Ember, cheaper batteries and proliferating solar can lead to solar *on its own* cheaply providing all electricity demand for 97-99 per cent of the time in the sunnier parts of the world. Meanwhile back in the UK offshore wind is now surpassing generation from natural gas according to the Energy and Climate Intelligence Unit (ECIU).

Tales of SMRs nuclear (in)flexibility

Looking around the world, it is very difficult to find *any* examples of nuclear power being flexible. The main example quoted is France. However, France has some close connections with the rest of the European continent. These differ for example, to the connections to the UK and the continent.

Unlike the UK, the French electricity system operator has no choice but to order the scaling down of some French nuclear plant. This is to cope with inflows of wind and solar across its borders that they cannot stop. In Britain where the inflows can be better controlled, as elsewhere, nuclear operators would prefer not to be flexible. Instead, wind and solar power get turned off and the renewable sources are blamed for energy that is really being wasted by inflexible nuclear operations! A study of Scotland, where a lot of wind power is constrained because of a lack of grid capacity, found that most wind power would *not* have been be wasted if there were no nuclear power stations operating in Scotland (see HERE). And, in practice there is no chance of nuclear power plant being flexible in normal operations, whatever people say!

The current UK Government is struggling to mask the fact that it's so-called new generation of 'small modular reactors' (SMRs) is going to cost even more, MW for MW, than the much-overpriced Hinkley C and Sizewell C Nuclear plant. Rolls Royce is leading the charge here with a proposed 470MW (not small!) nuclear reactor. This will come into operation sometime in the next 20 years or so. According to Rolls Royce this development will be 'equivalent to more than 150 onshore wind turbines'' (See HERE) Ah, so that's the crack! SMRs are now promised to replace wind turbines! That will please the widely expected future leader, Nigel Farage! Nigel hates windfarms but loves Rolls Royce and nuclear stuff - so patriotic, he claims!

I must say, it's pretty small fare. I mean the Rolls Royce 'SMR' will only replace 150 onshore wind turbines - and at double or probably triple the price of onshore wind in delivered energy! (currently there are over 11000 wind turbines in the UK). Not much of a bargain really for Nigel, there I'm afraid. But really, as with populists the world round, its the headlines that matter, and never mind the facts!

Of course, as with other policies the Government is struggling to compete in messaging with the far-right. In doing so it feels it has to buy into a lot of myths about nuclear power. As one Government minister was made to say recently (presumably by his pro-nuclear civil servants) in an answer to a Parliamentary Question from a Liberal Democrat MP:

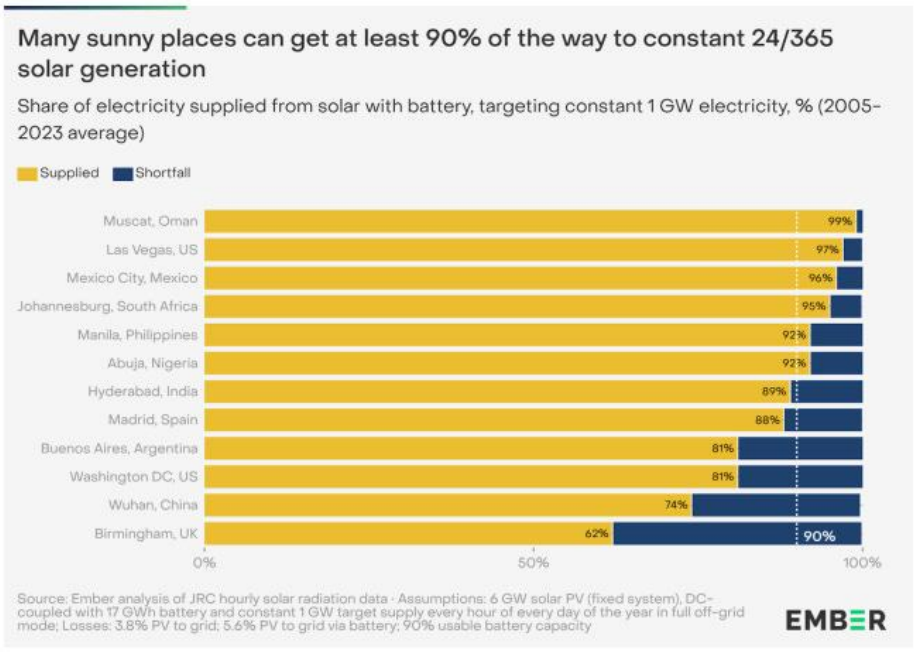
'The next generation of nuclear, including small modular reactors (SMR), offers new possibilities including faster deployment, lower capital costs, and greater flexibility…..Whilst nuclear energy has a unique role to play in delivering stable, low carbon baseload energy, SMRs may be able to serve the electricity grid more flexibly than

traditional nuclear, as well as unlock a range of additional applications in energy sectors beyond grid electricity.' (See HERE)
What unbelievable nonsense! I would never want to be a government minister and have to spout such rubbish! I've already suggested that the SMR(s) will take a long time to emerge at eye-watering cost. But flexibility? Why should this happen? It does not happen now with the PWR plant at Sizewell B. So why should it happen with the Rolls Royce 'SMR' which is also a PWR? No reason at all!
In fact, the Rolls Royce 'SMR' it is even less likely to operate flexibly than Sizewell B (which does not). This is because of the likelihood that, as in the case of Hinkley C, Rolls Royce will be offered a so-called 'baseload' contract. This means that the nuclear power plant are paid a set price for every MWh they generate - whenever it is generated. It does not matter whether wholesale prices become negative and wind and solar is forced off the system, nuclear continues to generate.
Rolls Royce will no doubt be given such a contract to ensure that the investors get a virtually guaranteed return. Otherwise it will be virtually impossible to attract private investors to give the required facade of part-private finance to the operation. In reality of course the bulk of the money to finance the equity for the plant will come directly from the taxpayer and the consumers will pick up the bill for the inevitable cost overruns.

To cap it all, the SMR(s) will contribute practically nothing to balancing renewables since that will be done by 'peak' gas plant (see my blog post HERE).

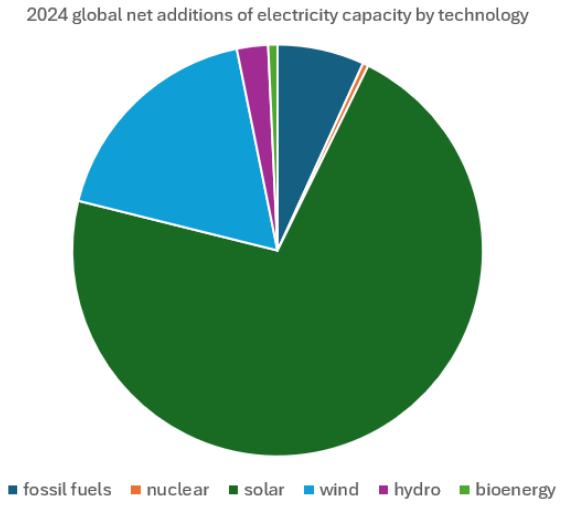
Almost 100 per cent 24/7 electricity from solar + batteries

Meanwhile solar PV is advancing around the world at several times the pace of new nuclear and fossil fuel power plant. See my earlier blog post HERE and the Figure below. Now, the energy think tank 'Ember' (see HERE) conclude that almost 100 per cent electricity can be delivered cheaply in the sunnier parts of the year using solely solar PV and batteries. In places like Las Vegas and Oman 97-99 per cent of all electricity demand, 24/7 can be provided solely by solar PV for a cost of $104 per MWh. That is exactly the wholesale power price in the UK. It should be recalled that they are talking about just solar PV and batteries, never mind other renewables.



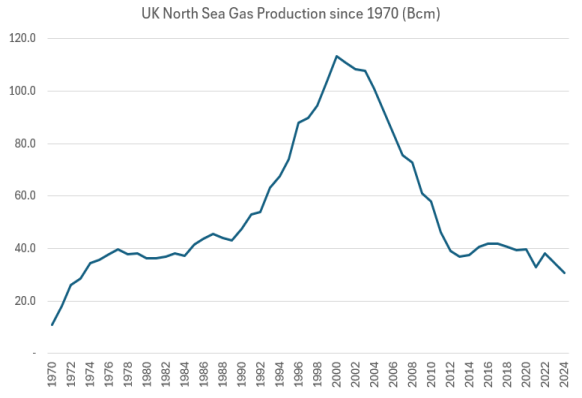
Source: Ember, see HERE

In Las Vegas, according the Ember: 'Around 17 kilowatt hours of battery are enough to flatten solar to 1 kilowatt of 24-hour solar generation……A 17 kWh battery is relatively small compared to most electric vehicle (EV) batteries' (pages 17-18). Too right! My Nissan Leaf EV has a 62 kWh battery!
They say: 'At the grid level, solar with batteries will be a growing asset — though not a silver bullet. Demand varies hourly and seasonally, and no single resource can meet that variability alone. Batteries play a crucial role in balancing, but must work alongside other renewables like wind, hydro, geothermal, as well as interconnectors and flexible demand.' (page 35 see HERE).



Note: the green bit is solar PV! Source: IRENA - Renewable Energy Capacity Statistics 2025, see HERE
It has been amusing to see solar-sceptics (on LinkedIn) dissing this report by erecting straw men to distract attention from what the report said. For example, one analyst focuses on how solar PV cannot provide 24/7 coverage of electricity on its own in Germany (see HERE). No **** Sherlock, as they say! Well, that's not quite the point the report was making about the sunnier parts of the world! Besides which Germany has a lot of wind power to use to balance solar power, which is not mentioned by the detractors.

Offshore wind overtakes power from gas
According to a new analysis by the Energy and Climate Intelligence Unit (ECIU) production of electricity from UK offshore windfarms has overtaken production of electricity from domestic UK natural gas production. This has enabled the UK to save around £1 billion in 2024 alone that would otherwise have been paid for Russian gas (based on historical consumption).
As can be seen in the Chart below UK natural gas production has been declining since the turn of the century as gas fields are exhausted.



Source: Energy Institute Review of World Energy, 2025

The Government is currently holding an 'auction', called AR7, that will result in the issue of contracts for difference (CfDs) to offshore windfarms. This involves giving a guaranteed price for generation of units of electricity from the windfarms over 20 years. We shall have to wait to see the contract prices are for these winning bids. But in an earlier report, the ECIU has already 'calculated that in 2024 UK wholesale electricity prices would have been over 30 per cent higher if there had been no wind power generated in the UK' (see HERE).
What does seem certain is that if it was not for renewable energy generated in Europe as a whole, the energy costs of the Ukraine War would have been even higher. That is because gas prices would have been even higher. Renewable energy is the only practical way Europe can escape from using Russian gas.

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Mining companies helped trigger Trump's interest in Greenland

Erik Jensen URANI? NAAMIK / NO TO URANIUM Society in Nuuk,
Niels Henrik Hooge and Palle Bendsen NOAH Friends of the Earth Denmark

From all over the world, expressions of sympathy are pouring in for Greenland due to the Trump administration's threats. They come not only from government leaders and politicians, but also from civil society and the international community.

"In Greenland, we are happy about the support because it shows that Greenland does not stand alone, but has friends everywhere,"

says Erik Jensen, chairman of the URANI? NAAMIK / NO TO URAN association in Nuuk. *"This also applies to us environmental activists. We need all the help we can get, so that the Trump administration does not gain control of Greenland. If that happens, it will mean, among other things, that environmental legislation will be rolled back and uranium mining and extraction of minerals containing radioactive substances once again become a possibility, which would be disastrous for the Greenlandic environment."*

In 2013, Greenlandic and Danish environmental organizations and opposition politicians pointed out that the ownership group behind the Australian mining company Energy Transition Minerals (ETM, then Greenland Minerals and Energy Ltd., GMEL) had connections to organized crime in Australia and financed terrorist activity in Africa's Horn. ETM holds the exploration permit for the large Kvanefjeld/Kuannersuit uranium and rare earths mining project in South Greenland. The warnings resulted in inquiries in the Danish Parliament's Foreign Policy Committee as well as in the Greenlandic Parliament, Inatsisartut, with a view to having the mining company investigated by the authorities. In both places, the ministers in charge refused to do anything about the problem.

Over the next several years, ETM undermined the regulatory process on numerous occasions and was reprimanded in 2019 by Greenland's then Prime Minister and the Permanent Secretary of the Department of Nature and Environment for improperly trying to influence ministers and senior officials. Although the mining company denied involvement, during the so-called uranium general election in 2021, ETM was linked to an anonymous smear campaign targeting the future Prime Minister Múte B. Egede of Inuit Ataqatigiit, which could have cost his party the election. After Inuit Ataqatigiit's reintroduction of the ban on uranium mining, ETM sued the Greenlandic and Danish governments for €10 billion – a case without legal merit that the company now is on the verge of losing. More seriously, however, ETM has been linked to the American offer to buy Greenland. The company, which is currently in the process of being registered on the US stock exchange Nasdaq, is trying to attract investors with connections to the Trump administration.

"The Australian owner of Tanbreez, who holds the exploitation permit for the large rare earths mining project at Kringlerne/Killavaat Alannguat in South Greenland, also bears responsibility for the Trump administration's attempt to annex Greenland," says Palle Bendsen from NOAH Friends of the Earth Denmark. *"He has made no secret of the fact that without him it would not have happened. The fact that dubious mining companies are active in Greenland is still a problem. Together with three European and two Australian environmental organizations, NOAH complained to Nasdaq in December 2024 about the Australian-American mining company Critical Metals Corp, which is on its way to take over Tanbreez. In the complaint,*

we document that Critical Metals Corp has misled the public, the authorities, and current and possibly future shareholders in at least twelve cases."

"It is an open question why the authorities have not been willing to take action against the controversial mining companies in South Greenland," says Niels Henrik Hooge from NOAH Friends of the Earth Denmark. *"The companies have started a process that is contributing to Greenland being in danger of being annexed by the USA, NATO being dissolved, and the EU being involved in a trade war. One must ask oneself, how much more will it take before the authorities react? Greenland's new investment screening law provides the opportunity to investigate and, if necessary, prevent company activities that threaten Greenland's security. For this purpose, the Government can obtain and exchange information with the Danish security authorities, so why not utilize this and all other legal means to protect Greenlandic autonomy?"*

For more information, contact:
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15 years since Fukushima disaster commemorated with several actions

Jan van Evert

Fifteen years ago, on March 11th 2011, a tsunami caused a major nuclear accident at the Fukushima Daiichi nuclear power plant in Ōkuma, Fukushima, Japan. It resulted in electrical grid failure and damaged nearly all of the power plant's backup power systems. The subsequent inability to sufficiently cool four of the six reactors after shutdown compromised containment and resulted in the release of radioactive contaminants into the surrounding environment.

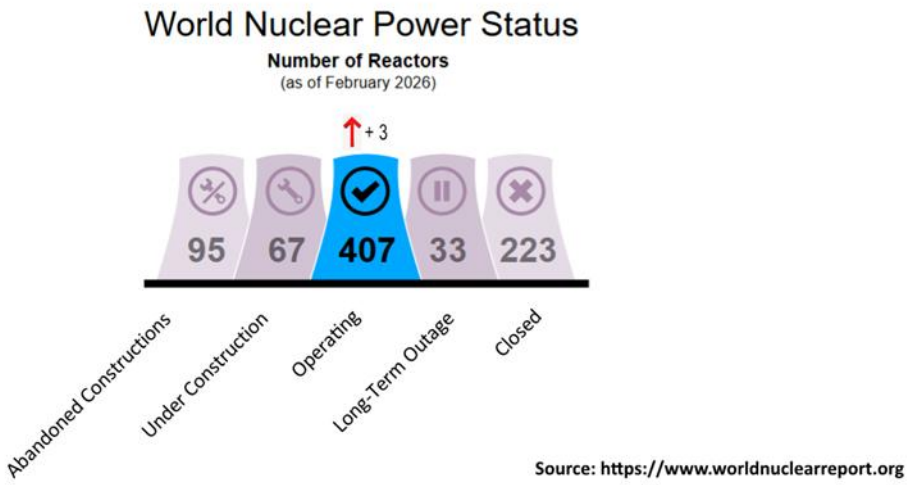
To commemorate this disaster an international demonstration will be held in Brussels, Belgium. The organisers will deliver a petition titled "Fund climate solutions, not nuclear problems" to the European Commission. They demand that "The European Union must not promote nuclear power, especially the construction of new nuclear power plants. There must be no funding for nuclear energy in the EU's multi-annual financial framework".
Human Rights Now (HRN) has submitted a written statement to the 61st session of the Human Rights Council in Geneva highlighting the problems of the lack of livelihood support, the termination of housing support, and the arbitrary evictions of evacuees. The disaster displaced 160,000 people, and about 27,000 of those are still designated as internally displaced persons.

The International Commission on Radiological Protection (ICRP) and the NPO Fukushima Dialogue organise a free webinar on March 12th (10:00–12:00 UTC) titled: "15th Anniversary of the Fukushima Nuclear Accident: Testimonies on the Past, Present, and Future". The webinar aims to share the current situation in Fukushima through the voices of local residents, as well as expectations and challenges for the future. On the day of the event, five residents from Fukushima Prefecture will be invited as speakers to share their experiences, reflections, and perspectives from their respective standpoints.

On March 1st 10:30 - 16:30 JST Friends Of the Earth (FOE) Japan organises an International Symposium "15 Years Since 3.11: Voices Connecting from Fukushima, for a Nuclear-Free World". The symposium will reflect on the Fukushima disaster, and efforts to achieve a nuclear-free world. It will be held online via Zoom.

You can sign the petition here:
Full text of the HRN statement: 69858_Fukushima_A_HRC_61_NGO_Sub_EN.pdf
More information and registration for the webinar: https://fukushima-dialogue.jp/en/archives/3538
FOE symposium: register here

NUCLEAR NEWS



Compared to the last edition of the Nuclear Monitor (934);

- ✓ In China; Taipingling-1 was connected to the grid.
- ✓ There were two grid reconnections, one in India (Tarapur-1) and the other in Japan (Kashiwazaki Kariwa-6).