

1. Japanese nuclear plants to power up

BY: RICK WALLACE, TOKYO CORRESPONDENT From: The

Australian May 15, 2012 12:00AM

<http://www.theaustralian.com.au/news/world/japanese-nuclear-plants-to-power-up/story-e6frg6so-1226355227438>

THE government's push to restart some of Japan's nuclear reactors before the heat of summer took a big step forward yesterday when a local council in the country's west agreed to allow two reactors to resume operations.

The town of Oi has become the first municipality to approve the restart of a nuclear reactor in Japan, where all 54 reactors remain offline over safety fears.

Oi is on the western side of Japan and fronts the Sea of Japan in a part of Fukui known as the nuclear "Ginza" for the proliferation of atomic energy plants in the area. The council's decision must be ratified by the prefectural governor, although his approval is likely to be granted.

Prime Minister Yoshihiko Noda has been desperate to achieve a

resumption of operations in Oi to stave off looming power

shortages this northern summer, to boost industrial output and

nurture Japan's sputtering economic recovery.

Recent predictions from power companies put the potential

shortfall of power in the Kansai region at up to 16 per cent, making power rationing a certainty and blackouts a possibility if the forecasts are correct.

However, environmental groups say the restart in Oi is premature, dangerous and unnecessary.

Greenpeace Japan campaign manager Wakao Hanaoka said the council's decision "ignores the voice of its people, goes against expert advice and shows that industry interests are still being favoured over the health and safety of communities". "Japan is surviving without nuclear power and can continue to do so with proper energy demand management and leadership from the government," he said.

Greenpeace argues that the stress tests applied to the plant in Oi were too lax. The anti-nuclear movement has public support; 63 per cent of respondents to a recent poll opposed the Oi restart even if it meant power shortages.

Distrust of the nuclear industry and regulators has been increasing in Japan. Polling shows a doubling in the proportions of people calling for a decrease or eradication of nuclear energy since April last year.

The Oi town council said it had made its decision to avoid damage to the town's economy and employment levels while the reactors were shut down.

Most of the town's working-age population is employed in the nuclear industry. The two reactors in Oi, run by Kansai Electric Power Company, are the only two to have been approved by the national government for restart under its program of stress tests.

They were built in 1991 and 1993 and between them generate almost 2400MW of electricity.

The reactors could roughly halve the 16 per cent shortfall for Kansai, but are not likely to provide extra supply for Tokyo, which sits on the opposite side of a divided power grid.

However, TEPCO, the disgraced operator of the Fukushima

Daiichi nuclear plant, says it will be able to supply enough power to the Tokyo area's 35 million inhabitants, thanks to extra fossil fuel imports.

2. The risks of dumping nuclear are too great

BY: [BRENDA O'NEILL](#) From: [The Australian](#) May 19, 2012

12:00AM

<http://www.theaustralian.com.au/national-affairs/opinion/the-risks-of-dumping-nuclear-are-too-great/story-e6frgd0x-1226360641705>
"NUCLEAR power kills!" scream green campaigners. Well, so does switching off nuclear power in response to irrational panics.

Indeed, if the post-Fukushima experience in Japan is anything to go by, it seems pretty clear that anti-nuclear hysteria poses a far greater threat to life and limb than does nuclear power itself.

Five people died as a result of the accident at the Fukushima nuclear power plant in March last year, when the terrible tsunami crashed into the plant's reactors. But far more people died from heatstroke after the Japanese authorities caved in to post-Fukushima pressure and switched off nuclear reactors across the country.

This led to power blackouts, causing airconditioning systems in homes and public buildings to fail, with predictably disastrous

consequences. So in June last year, with 35 of Japan's 54 nuclear power plants in shutdown for safety checks, there was an unusual spike in the number of heat-related deaths.

In the first 10 days of that month, 26 people died from heatstroke -- four times the normal number for that time of year. A further 13,000 were hospitalised. The greatest number of victims were, of course, pensioners, many of whom wanted to "help the nation by enduring the heat without airconditioning", according to Japanese officials.

In short, with power blacking out as a result of nuclear shutdown, and with officials and Greenpeace protesters arguing that everyone had a duty to use less energy while the "nuclear problem" was investigated, patriotic old men and women were left at the mercy of Japan's sweltering summer.

It looks set to get worse. Now, all of Japan's 54 nuclear plants are in shutdown, following intense post-Fukushima panic and pressure on the authorities, leaving Japan ill-equipped for the coming summer. The Japanese authorities this week warned of "mandatory power cuts".

Nuclear power contributed one-third of Japan's energy generation pre-Fukushima. Without it, whole towns are being forced to endure periods of blackness and unbearable heat as power fails. In western Japan, the authorities have forced through a 20 per cent reduction in everyday energy usage, causing pensioners (and their loved ones) to fret about the approaching summer.

The economy has been whacked too. The Japan Business Federation says businesses face a potential billion-yen downturn in the absence of the energy once provided by nuclear power plants. All of this reveals that anti-nuclear posturing is more than just a trendy, evidence-lite pastime. It's a posture that has very real consequences in the world, in people's lives.

Being against nuclear power may make the green-leaning sections of society feel good about themselves, as they make a great display of both their inner soul and their fashionable disdain for

modernity. But it has serious and terrible spin-offs, as people reliant on nuclear energy for light, for keeping cool, for living comfortably, are suddenly plunged back into the past.

That is a terribly high price to pay just so some eco-activists can role-play being brave warriors against Evil Nuclear.

The lesson of Fukushima is that, yes, pushing society forward by embracing nuclear power can be a risky business. But holding society back is also highly risky -- more so, in fact. Progress, especially of the nuclear variety, can sometimes have less than desirable consequences. But as we saw in Fukushima, and also in Chernobyl before it, it is entirely possible to contain those consequences and to limit the downsides that come with taking massive leaps into the future.

But anti-progress has even worse consequences. Eco-precaution is potentially lethal; risk-aversion is itself risky. It dismantles the force field that man has spent hundreds of years erecting between himself and nature -- unpredictable, chaotic, beastly nature -- and makes us once again susceptible to nature's whims.

If that is true even in modern, hi-tech Japan, where the reining-in of nuclear power has instantly made summer a terrifying prospect, it is trebly the case in the Third World. The anti-progress, growth-sceptical agenda promoted there by Western do-gooders and NGOs has consequences that, in the long term, are far dirtier and more destructive than pursuing a new industrial revolution would be today.

The most striking thing about the Fukushima accident is the impact it has had across Europe. It has unleashed a metaphorical tsunami of anti-nuclear panic, as politicians and activists who have long felt uncomfortable with nuclear power have exploited it to shut down plants.

So German Chancellor Angela Merkel announced last year that Germany would shut down all its nuclear power plants by 2022. New French President Francois Hollande has promised to close half of France's very impressive nuclear plants by 2025.

The real lethal danger here is not nuclear energy, which, post-war, has killed remarkably few people, but the hysterical turn against it, the elite's rejection of this safe, efficient and brilliant technology

that has transformed the lives of huge swaths of humanity.

3. Climate at its warmest for the past 1000 years

BY: □ LEIGH DAYTON, SCIENCE WRITER From: □ The Australian
May 17, 2012 7:00AM

[http://www.theaustralian.com.au/news/health-science/climate-at-its-warmest-for-the-past-1000-years/story-e6frg8y6-](http://www.theaustralian.com.au/news/health-science/climate-at-its-warmest-for-the-past-1000-years/story-e6frg8y6-1226358250606)

[1226358250606](http://www.theaustralian.com.au/news/health-science/climate-at-its-warmest-for-the-past-1000-years/story-e6frg8y6-1226358250606)

THE first comprehensive reconstruction of Australasian climate reveals that the period beginning in 1951 is the warmest in the past 1000 years.

That exceeds the so-called Medieval Warming period of 1238-1267, according to the analysis reported today in the Journal of Climate by a 30-member team of international scientists, led by paleoclimatologist Joelle Gergis of Melbourne University.

"The reason we did the study was to place the recent warming into the context of the last 1000 years," she said.

In order to build what they called their "best estimate" of temperatures for the combined land and oceans of the southern hemisphere, the group combined results from 27 climate records, among them tree rings, coral and ice cores.

They then estimated the impact on temperature of natural events such as variation in the sun's output and major volcanic eruptions in the pre-industrial period and the emission of greenhouse gases such as methane and carbon dioxide in the industrial period.

"We did the reconstruction 3000 times to improve our confidence in the result," Dr Gergis said.

"We could not explain the 20th century warming by natural variability alone, suggesting a strong influence of greenhouse gases in the Australasian region."

According to Dr Gergis, they got the same result in 95 per cent of the 3000 reconstructions.

Team member Chris Tinney, a scientist with the University of NSW, said the work was important not only for teasing out details of regional atmospheric and oceanic features, but also for the understanding of temperature variations worldwide.

"Ultimately, we are trying to pull together all the different (data sets) from around the world as part of an international effort to coordinate and promote past global change research," he said.

4. Japan carbon hopes resting on nuclear

BY: [RICK WALLACE](#), TOKYO CORRESPONDENT From: [The](#)

[Australian](#) May 25, 2012 12:00AM

<http://www.theaustralian.com.au/news/health-science/japan->

[carbon-hopes-resting-on-nuclear/story-e6frg8y6-1226366138315](http://www.theaustralian.com.au/news/health-science/japan-carbon-hopes-resting-on-nuclear/story-e6frg8y6-1226366138315)

JAPAN will not be able to cut its carbon dioxide emissions by any more than 11 per cent by 2020 if it is unable to restart any of its 50 serviceable nuclear reactors, data suggests.

However, if the nuclear power stations are restarted, cuts of almost 20 per cent on 1990 levels are still possible, figures released by the Environment Ministry show.

The country's reactors - capable of producing 30 per cent of electricity demand - remain offline amid safety worries and political wrangling in the wake of the Fukushima Daiichi disaster.

Since the accident, Japan has been importing and burning record amounts of fossil fuels - mostly liquefied natural gas, but also coal. The ministry's central environment committee suggests Japan will fall short of its target of a 25 per cent cut to emissions by 2020 even if nuclear energy production is fully resumed.

At the moment, the government is facing a tense battle to convince

local authorities and citizens to allow nuclear power plants to

restart amid post-Fukushima fears over their safety in the event of

another earthquake or tsunami.

The figures pose an interesting challenge to Japan's environment movement as to which is the greater evil - rising carbon emissions or nuclear energy.

Greenpeace Japan's climate and energy campaigner Hisayo Takada said environmentalists in Japan were united in their support of a nuclear-free future.

"Before the disaster, some people believed that nuclear energy was a good way to cut CO2 emissions, but now it has been proven that nuclear energy is not a reliable means of doing this," Ms Takada said. The government should not abandon its 25 per cent by 2020 target, and the aftermath of the disaster - when power use was cut by 18 per cent in greater Tokyo - showed energy efficiency measures were working.

There was still time for the government to reach its targets by replacing nuclear energy with renewable energy, she said.

Worryingly for Japan, the committee's figures are based on anaemic annual GDP growth of 1.1 to 1.8 per cent. To get to either 11 per cent (nuclear free) or 19 per cent (with nuclear) in reductions, extra energy efficiency measures are assumed to be part of the mix.

Looking at the most likely course of action (whereby the newer reactors are eventually allowed to resume operations but older reactors are shut down permanently and 15 per cent of electricity comes from atomic energy), the committee found emissions would be cut by 12 to 15 per cent, assuming energy efficiency was improved.

Without new energy efficiency measures, these figures would drop

to 1 to 4 per cent, depending on the assumed growth rate.

5. Japan nuclear reactors approved for use

Eric Talmadge, AAP

June 16, 2012, 4:39 pm

<http://au.news.yahoo.com/thewest/a/-/world/13964825/japan-nuclear-reactors-approved-for-use/>

Japan's government has approved bringing the country's first nuclear reactors back online since last year's earthquake and tsunami led to a nationwide shutdown, going against wider public opinion that is opposed to nuclear power after Fukushima.

The decision on Saturday paves the way for a power company in western Japan to immediately begin work to restart two reactors in Ohi town, a process that is expected to take several weeks.

Despite lingering safety concerns, the restart could speed the resumption of operations at more reactors across the country. All Japan's 50 nuclear reactors are offline for maintenance or safety checks.

Public opposition to the resumption of nuclear operations remains high because of the crisis the tsunami touched off at Fukushima Dai-ichi plant, the worst atomic disaster since Chernobyl. As the government announced its decision, a protest was held outside the prime minister's offices.

Prime Minister Yoshihiko Noda announced the government's approval after Ohi's mayor and the local governor publicly stated they support the plan. Local approval isn't needed legally.

Kansai Electric Power Co. (KEPCO) officials say bringing the two reactors

online is needed to help avert a power crunch in Osaka, Japan's second-largest metropolis, and other areas in the west. They say demand is expected to peak in mid July or early August, so they need to begin work immediately to get the reactors up and running to avoid shortages.

While pushing for the restart of reactors that have passed safety checks, Noda has pledged to gradually reduce Japan's reliance on nuclear power. Before the crisis, nuclear generated about one-third of Japan's electricity.

Japan is debating renewable energy targets of between 25 per cent to 35 per cent of total power generation by 2030, looking to Germany, which raised the proportion of renewables from 5 per cent in 1990 to 20 per cent by 2010.

6. Summit striking at wrong goal

BY: [BJORN LOMBORG](#) From: [The Australian](#) June 18, 2012
<http://www.theaustralian.com.au/national-affairs/opinion/summit-striking-at-wrong-goal/story-e6frgd0x-1226398020777>

12:00AM

TENS of thousands of people will soon gather in Rio de Janeiro for the UN Earth Summit. The participants, from weary politicians to enthusiastic campaigners, are supposed to reignite global concern for the environment. Unfortunately, the summit is likely to be a wasted opportunity.

The UN is showcasing the alluring promise of a "green economy", focused on tackling global warming. In fact, the summit is striking at the wrong target, neglecting the much greater environmental concerns of the vast majority of the world.

Global warming is by no means our main environmental threat. Even if we assumed unreasonably that it caused all deaths from floods, droughts, heatwaves, and storms, this total would amount to just 0.06 per cent of all deaths in developing countries. In comparison, 13 per cent of all Third World deaths result from water and air pollution.

So, for each person who might die from global warming, about 210 people die from health problems that result from a lack of clean water and sanitation, from breathing smoke generated by burning dirty fuels (such as dried animal dung) indoors, and from breathing polluted air outdoors.

By focusing on measures to prevent global warming, the advanced countries might help to prevent many people from dying. That sounds good until you realise that it means that 210 times as many people in poorer countries might die needlessly because the resources that could have saved them were spent on windmills, solar panels, biofuels, and other rich-world fixations.

But of course, poor countries' tangible pollution problems are not trendy, and they do not engage outspoken campaigners, media, and governments the way that global warming can.

Nowhere are the failed priorities better illustrated than in the UN's official, colourful "Rio+20" leaflet. Here, the UN helpfully provides a layman's explanation of the summit, along with examples of its envisioned "green economy" in action. We see scary pictures of dry riverbeds (the result of global warming), along with pretty solutions such as wind turbines and solar panels.

The problem is that green energy mostly is still much more expensive, less effective and more intermittent than the alternatives. Yet, the summit literature claims that it will boost economic growth and eradicate poverty.

But seriously, why do well-meaning First Worlders think that the Third World should have energy technologies that are more expensive, feebler and less reliable than their own?

Without a hint of irony, the leaflet is called *The Future We Want*. But, in a world where a billion people go to bed hungry, and where six million die each year from air and water pollution, most of those in the developing world likely have a very different set of priorities for their future.

The leaflet cheerfully claims that China's shift "to a low-carbon growth strategy based on the development of renewable energy sources (has) created jobs, income and revenue."

In fact, over the past 25 years, China has quadrupled its CO₂ emissions. While China does produce about half of the world's solar panels, 98 per cent are exported to reap generous subsidies from rich-world markets. Only 0.005 per cent of China's energy comes from solar panels.

China's decades-long economic expansion has lifted 600 million people out of poverty, but the enormous pollution that this has entailed does not fit into Rio+20's green narrative.

Likewise, the brochure explains that some farmers in Uganda have embraced organic farming. Unfortunately, Africa is almost entirely organic now, leading to low yields, hunger and deforestation. Africa needs to boost its yields, and that means enabling farmers to use modern crops, fertilisers and pesticides. Producing less with more effort might appeal to well-fed First Worlders, but it is literally starving the poor.

Reading further, the leaflet gushes that France has created 90,000 jobs in the green economy. But the stark reality remains hidden: the average cost of each green job is more than \$US200,000 (\$198,000) a year, which French taxpayers patently cannot afford. And economic models show that France has lost as many or more jobs because of the extra costs of the subsidies.

Adding insult to injury, a beautiful photograph shows electric cars finishing the "Zero Emissions Race" in Geneva. Omitted is the fact that most electricity still comes from burning fossil fuels, so the cars are anything but "zero" emissions. And, more importantly, most of our planet's inhabitants still dream of owning some form of mechanised transport, which is unlikely to be an electric vehicle with a price tag of \$US50,000 or more.

This breezy focus on trendy topics and unrealistic solutions is deeply disturbing. A disconnected global elite is flying to Rio to tell the world's poor to have a solar panel. Rio+20 could do more good for humanity and the planet by focusing on the top environmental problems and their simple solutions.

Bjorn Lomborg is the author of The Skeptical Environmentalist

Project Syndicate

7. Bloggers, scientists claim

high moral ground on climate data error

BY: □BERNARD LANE From: □The Australian June 15, 2012

12:00AM

<http://www.theaustralian.com.au/higher-education/bloggers-scientists-claim-high-moral-ground-on-climate-data-error/story-e6frqjx-1226396038196>

MAY 17 was a red letter day for climate science. The US's Journal of Climate reported the first large-scale reconstruction of 1000 years of Australasia's weather.

Using 27 records, including tree rings and ice cores, a 30-strong international team of scientists had estimated temperature for the past 10 centuries.

They concluded our recent past was the warmest on record, suggesting the influence of greenhouse gases.

As the lead author, Joelle Gergis, a young paleoclimatologist and science communicator at the University of Melbourne, got national publicity. The pioneering nature, scale and robustness of the study were emphasised. The results were to be this region's contribution to a scientific stock-taking report by the Intergovernmental Panel on Climate Change, according to the university.

Last week, however, a terse note appeared on the university's newsroom website: "Print publication of scientific study put on hold. An issue has been identified in the processing of the data." On May 31, the blog Climate Audit, run by Canadian mining consultant Steve McIntyre, put up the first of several posts on the study.

Last week, a mix-up in the study's methodology was detected. Of two possible approaches to the data analysis, the Gergis paper describes the first (which happens to be preferable in McIntyre's opinion) while a mistake in computer coding meant the method actually used was the second. It's not clear whether the bloggers or the researchers themselves were first to notice this contradiction,

it may have been a near simultaneous discovery on June 5.

The Gergis team notified the journal editor, the paper vanished from the journal's website and print publication is on hold.

A fresh analysis of the data will be done, using the intended method, and the effect on the study conclusions is uncertain. The paper will have to go through peer review again and it may miss the deadline for the IPCC report.

It is a blow, especially in the highly charged field of climate research, where polemic can be brutal and any stumble can be exaggerated. "We would have preferred that this did not happen but it did," says David Karoly, the co-author who has taken the lead in explaining what happened. "It is better that we admit our mistakes -- and it's not even clear that it is a mistake."

Professor of meteorology at Melbourne and an IPCC player, Karoly is very much senior to Gergis, who did not return calls from The Australian.

To a climate outsider, much of the content on McIntyre's Climate Audit site appears bafflingly technical but the theme is clear: they want to lay hands on the data used by climate scientists. They want to see if the unglamorous data and trumpeted results are singing from the same song sheet.

Some of the bloggers sneer about the scientists, just as some researchers were shown to be contemptuous of critics in 2009 when hacked emails from the Climatic Research Unit at the University of East Anglia were released.

McIntyre, referred to in those emails more than 100 times, became a symbol of clever amateurs who challenge climate scientists. He was named a "climategate keeper" and one of "50 people who matter" by the New Statesman magazine in 2010. In an email to The Australian, he says he could have done his doctorate in mathematics at Harvard or Oxford but went into hard-rock mining and mineral exploration, "where I've learned things are not always as they seemed".

He believes peer review of climate papers is "cursory" and carried

out in a club-like atmosphere but won't be drawn on what he thinks about the climate change hypothesis itself.

Karoly was well aware of who McIntyre was when he requested data that had been "screened out" as part of the statistical analysis for the Gergis study. (The data actually used to reconstruct temperatures had already been placed in a public archive.)

McIntyre reproduces an emailed reply from Gergis which he interprets as dismissive.

"We risk damaging our work relationships by releasing other people's records against their wishes," she wrote, suggesting he contact those with rights in these other data sets. "We will not be entertaining any further correspondence on the matter."

Then Karoly stepped in. In an email to McIntyre he suggests it is the research team that first identified the mix-up but gives kudos to the bloggers "for your scrutiny . . . which also identified this data processing issue".

McIntyre believes the bloggers got there first, and points out that posts debating the Gergis analysis set the scene for the June 5 discovery. Karoly says the Gergis team had not seen these posts before June 5. "Several of the co-authors have chosen not to read the Climate Audit website because of the cynical and derogatory comments that are posted about climate change and climate scientists," he says.

Karoly seems to be made of sterner stuff. He says peer review can ensure that a study describes its methods clearly so others can replicate its results, but it cannot prevent publication of errors.

"I'm not aware of any journals that would expect the peer reviewers to reprocess the data."

That is what a Climate Audit blogger, known simply as "Jean S" did on June 5. It showed something was amiss.

Karoly says the affair has been "an interesting example of the process of science".

"What this indicates is the growing role or potential influence of blogsites providing additional scrutiny on scientific studies."

8. Flawed models making fuzzier climate picture

BY: □ TOM WHIPPLE, LONDON From: □ The Times June 15, 2012

12:00AM

<http://www.theaustralian.com.au/news/world/flawed-models-making-fuzzier-climate-picture/story-fnb64oi6-1226395997725>

THE more we know about climate change the more uncertain our models become - and scientists need to explain this if they want the trust of the public, a senior climatologist has said.

Mark Maslin, a former director of the UCL Environment Institute, was speaking yesterday at the Cheltenham Science Festival in Britain before publication of a commentary in Nature.

He said the next Intergovernmental Panel on Climate Change report, in 2014, was likely to produce a greater range of projections than the previous one, and that this increasing fuzziness was an inevitable consequence of better calculations.

In one case the uncertainty means that forecasts of the future flow of the Mekong river as a consequence of climate change range from a fall of 16 per cent to a rise of 55 per cent.

However, there was no doubt about the broader outcome, he said. "Increasing our knowledge doesn't change our story. If you put more greenhouse gases in the model, it gets warmer."

Models were becoming less certain in their predictions because as they improve it is possible to introduce "known unknowns" such as changes in vegetation growth and reflection from clouds, whose feedback mechanisms were previously too complicated to be included.

"The sceptics will jump on this and say, 'Actually climate change modellers know nothing'," Professor Maslin said. "I spent six months having a discussion with myself about whether this is

something I should write. I believe though, as scientists, we have to be open, honest and transparent."

Speaking up now would prepare the IPCC report's authors, who have been notoriously bad at engaging with the public, he said. "It's a warning shot to say, 'Guys, guess what? You need to deal with this, and with the media'."

Professor Maslin said a challenge was to convey that uncertainty was not a reason for inaction but an inevitability. A key reason was that predictions of fossil fuel use rely heavily on economic forecasts, which have been shown to be almost useless.

"I've stuck my head above the parapet," he said. "Considering we are not even sure what the economy will do in the next six months, there are unrealistic expectations that scientists can model the future to any accuracy."

"The introduction of new physics into the model makes some difference to our uncertainty. The biggest uncertainty, though, is what we ourselves do. If we go down a green path, we know our effect on the environment will be reduced. If we go down the business-as-usual route we are looking at extreme consequences. But people seem to like to forget that."

The festival was also told wind power is ludicrously expensive, technically primitive and its promotion as a solution to carbon output is a prime reason why China has ignored the low-emissions economy.

John Constable, from the Renewable Energy Foundation, said the West had failed to provide a viable model for renewable energy power without subsidies. In a debate against the environmentalist Jonathon Porritt and the wind power engineer Andrew Garrad, he said: "Between 2002 and 2011 the UK consumer shelled out pound stg. 7.3 billion in income support for renewable electricity."

Mr Garrad said fossil fuels were also subsidised and wind power was only part of the mix.

9. [OPINION](#)

June 5, 2012, 6:56 p.m. ET

Europe's Green Energy Suicide

If it's cheap and plentiful—even low in carbon-dioxide emissions—much of the continent wants no part of it.

<http://online.wsj.com/article/SB10001424052702304203604577398541135969380.html>

By RAEL JEAN ISAAC

As austerity bites into European living standards, sparking revolt at the polls, "growth" has become the politician's mantra. But to be competitive, European countries require a secure, plentiful and competitively priced energy supply. Unless Europe radically rethinks its obsession with carbon-dioxide emissions and the anti-fossil fuel energy policies that flow from it, growth is likely to remain elusive.

European Union law mandates that the 27 member countries on average cut their CO₂ emissions 20% by 2020, compared to 1990 levels. The goal after that is to cut emissions by between 80% and 95% by 2050. In May 2010, a study by the European Commission's energy department estimated the 20% cut would cost 48 billion euros (\$66.3 billion) a year. The Commission's draft Energy Roadmap for 2050 is frank: "There is a trade-off between climate change policies and competitiveness."

There is indeed. The consultancy Verso Economics has calculated the opportunity cost of the United Kingdom's subsidy system for renewables to be 10,000 jobs between 2009 and 2010 alone. A report by the Energy Intensive Users Group (which represents energy-intensive British businesses) and the Trades Union Congress cited steel making, ceramics, paper, cement and lime manufacture, aluminum and basic inorganic chemicals as industries facing up to 141% in additional energy costs by 2020 as a result of CO₂ emissions-reduction schemes. EIUG Director Jeremy Nicholson notes that "the current policies do seem to be angled towards creating a market for overseas competitors."

Emissions-free solar and wind energy, on which the U.K. plans increasingly to rely, are expensive. The government estimates that a planned offshore wind farm project ringing the coast will cost £140 billion, or £5,600 (\$8,972) for every household in the country. Conventional energy could provide the same amount of energy at 5% of the cost.

The U.K.'s Department of Energy and Climate Change commissioned a report (led by Prof. John Hills of the London School of Economics) to examine the issue of "fuel poverty," defined as when fuel bills take up more than 10% of household income. It found four million of England's 21.5 million households fall in this category and the number could rise to 9.2 million by 2016, equivalent to 43% of all homes in England. One of the key factors are green taxes and levies expected to add up to £200 (\$306) to bills by 2020.

Spain's experience with subsidizing renewables has been painful. A 2009 study at Universidad Rey Juan Carlos found subsidies required 3.45% of all of Spain's household income tax revenues and had led to a loss of 110,500 jobs. An April 2010 internal assessment by the former Zapatero government was equally bleak. It noted that the price of electricity determined the competitiveness of Spanish industry, and the price had risen to 17% above the European average. The chief reason: government subsidies for renewables, which had increased fivefold between 2004 and 2010.

While Spain has sought to lance its solar investment bubble, others are proceeding with poorly conceived schemes. Denmark already has the highest energy prices in Europe. Yet the recently elected Danish government raised its CO₂ reduction target to 40% by 2020 and has set a goal of completely phasing out fossil fuels by 2050.

Italy's subsidy system sets the price floor for wind energy at three times the market level. A study at Italy's Instituto Bruno Leoni found the capital necessary to create one green job could have created 6.9 jobs if invested in industry.

Even Germany, Europe's healthiest economy, may be in for some rude surprises. Germany's Renewable Energy Feed-in Act of 2000 requires electric utilities to buy renewables from all producers at fixed, exorbitant rates and feed it into the power grid for 20 years. A German utility executive has observed that solar energy in Germany makes as much sense as growing pineapples in Alaska. Despite this, Germany now has half the world's solar photovoltaic capacity.

Fritz Vahrenholt, the departing head of the renewable energy arm of RWE Innogy and a former hero of the German

environmental movement, now says: "We're destroying the foundations of our prosperity. In the end what we are doing is putting the German automotive sector at risk, the steel, copper and chemical sectors, silicon, you name it."

France, because of its heavy reliance on nuclear power, has no emissions problem. But new President Francois Hollande has promised to cut nuclear energy by a third. His defeated Socialist rival, Maxine Aubry, had promised to eliminate nuclear altogether.

If the energy source is cheap and plentiful—even low in CO2 emissions—much of Europe wants no part of it. Although Europe has huge shale gas resources, Germany has imposed a moratorium on shale-gas exploration, which France already forbids by law.

Evidence mounts daily that man-made global warming is a phony apocalypse, but its effect in depressing living standards is all too real.

Ms. Isaac's most recent book is "Roosters of the Apocalypse: How the Junk Science of Global Warming Almost Bankrupted the Western World" (Heartland Institute, 2012).

A version of this article appeared June 6, 2012, on page A15 in the U.S. edition of The Wall Street Journal, with the headline: Europe's Green Energy Suicide.

10. **The most important building in the world**

Malcolm Potts, professor of population and family planning | 5/27/12 |

<http://blogs.berkeley.edu/2012/05/27/the-most-important-building-in-the-world/>

What I call "The Most Important Building in the World" is large and expensive and it is on the Lawrence Livermore campus off Highway 580 and 40 miles from Cal.

Three huge challenges will dominate the rest of the 21st

century:

Can we avoid destroying ourselves with weapons of mass destruction?

Can we slow rapid population growth in a human rights framework?

Can we generate power without pouring CO₂ into the atmosphere?

The Most Important Building in the World is the National Ignition Facility (NIF) at the Lawrence Livermore Laboratory, because it promises to make nuclear fusion a reality. It is much nearer this supreme goal than I realized until I had the privilege of joining a party of colleagues who were shown around the facility by Ed Moses, the director of NIF.

The goal is to create the pressures and temperatures found in the middle of the sun, sufficient to fuse two isotopes of hydrogen (deuterium and tritium) into helium with the release of prodigious energy. But without the radio-activity and other dangers associated with the current nuclear fission power plants.

Ernest Lawrence was recruited from Yale to join the Berkeley faculty in 1928 as an associate professor. In 1930 he became the youngest ladder rank professor on the Berkeley faculty and nine years later he received the Nobel Prize for his invention of the cyclotron. Lawrence played an important role in the Manhattan project and after the War he was involved in some of the early attempts to limit the proliferation of nuclear weapons. In 1952 Lawrence and Edward Teller helped found the Lawrence Livermore National Laboratory. Much of its early work was in the development of compact nuclear weapons and today it 'tests' nuclear weapons in a super-computer, instead of underground in Nevada.

The slogan of the NIF is "Bring star power to Earth?" The most Important Building in the World houses 192 lasers, each 50 times more powerful than their rivals anywhere else on Earth. The building is 10 stories high (we took the

elevator to the laser level) and the size of three football fields. The photons from these lasers are focused onto a tiny target about the size of a peanut.

The NIF marries cutting-edge science with extraordinary accurate and ingenious engineering solutions. All the work has to be done to engineering tolerances equivalent to one third the diameter of a human hair and on time scales of billionths of a second. The vacuum chamber in which the lasers are focused is 10 meters in diameter. Ed Moses looks to the complex engineering in the room with the cleanliness of an operating theater and says wistfully, "You're not supposed to fall in love with an inanimate object!" When you see the NIF you understand this perspective.

The scientists and engineers are more bullish than I expected. Could they have fusion in a year or two? And if they succeed can the process be brought to scale?

The first lasers invented in the 1950s and 1960s filled a lab room, but now a laser fits into the end of my ball point pen. I'm old enough to remember the newsreel images of the first hydrogen bomb. It was vast device, the size of an airplane hangar on the remote Bikini Atoll in the Pacific. Within a short time multiple hydrogen bombs were being fitted on top of one intercontinental ballistic missile. NIF has diagrams of lasers which could be used in a commercial fusion facility that would be an order of magnitude smaller than those in the Most Important Building in the World. But in this case, instead of threatening humankind with destruction, they hold the possibility changing the world in a magnificent way and without any downside risks. The water found in a water cooler at the end of the corridor in most Cal buildings would provide enough electric power to supply San Francisco for many months..

UC Berkeley, and especially our students, are suffering from the grid-lock policies of the California legislature and the Stone Age tribal politics of the Tea Party. It is uplifting

to know that 40 miles from the campus The Most Important Building in the World is doing experiments which could begin to 'bring star power to Earth' in the life time of even the older faculty such as myself. There are big things that are worth tax payers' money. There are skills and insights only a university can provide that do have the power to change the world.

I am a physician and a biologist and from a blog on Health and Medicine I salute my colleagues in physics and engineering and I hope more young students will enter these fields.

11. 'Safer' nuclear fusion power comes closer to reality

Washington, June 9 : University of Tennessee engineers have made a giant step toward developing nuclear fusion power.

http://www.newkerala.com/news/newsplus/worldnews-35229.html#.T-Eyq1Fpu_F

The researchers have successfully developed a key technology in developing an experimental reactor that can demonstrate the feasibility of fusion energy for the power grid. □□ Nuclear fusion promises to supply more energy than the nuclear fission used today but with far fewer risks. □□ Mechanical, aerospace and biomedical engineering professors David Irick, Madhu Madhukar and Masood Parang are engaged in a project involving the United States, five other nations, and the European Union, known as ITER. □□ UT researchers completed a critical step this week for the project by successfully testing their technology this week that will insulate and stabilize the central solenoid'the reactor's backbone. □□ ITER is

building a fusion reactor that aims to produce 10 times the amount of energy that it uses. The facility is now under construction near Cadarache, France, and will begin operations in 2020. □□'The goal of ITER is to help bring fusion power to the commercial market. Fusion power is safer and more efficient than nuclear fission power. There is no danger of runaway reactions like what happened in nuclear fission reactions in Japan and Chernobyl, and there is little radioactive waste,' Madhukar explained. □□Unlike today's nuclear fission reactors, fusion uses a similar process as that which powers the sun. □□Since 2008, UT engineering professors and about 15 students have worked inside UT's Magnet Development Laboratory (MDL) located off of Pellissippi Parkway to develop technology that serves to insulate and provide structural integrity to the more than 1,000 ton central solenoid. □□A tokamak reactor uses magnetic fields to confine the plasma'a hot, electrically charged gas that serves as the reactor fuel'into the shape of a torus. The central solenoid, which consists of six giant coils stacked on top of one another, plays the starring role by both igniting and steering the plasma current. □□The key to unlocking the technology was finding the right material'a glass fiber and epoxy chemical mixture that is liquid at high temperatures and turns hard when cured'and the right process of inserting this material into all of the necessary spaces inside the central solenoid. The special mixture provides electrical insulation and strength to the heavy structure. The impregnation process moves the material at the right pace, factoring in temperature, pressure, vacuum and the material's flow rate. □□This week, the UT team tested the technology inside its mockup of the central solenoid conductor. □□'During the epoxy impregnation, we were in a race against time. With the epoxy, we have these competing parameters. The higher the temperature, the lower the viscosity; but at the same time, the higher the temperature, the shorter the

working life of the epoxy,' said Madhukar. □ □ It took two years to develop the technology, more than two days to impregnate the central solenoid mockup and multiple pairs of watchful eyes to ensure everything went according to plan. □ □ This summer, the team's technology will be transferred to US ITER industry partner General Atomics in San Diego, which will build the central solenoid and ship it to France. (ANI)

12.

Fusion presents low proliferation risk

<http://www.bio-medicine.org/biology-technology-1/Fusion-presents-low-proliferation-risk--experts-conclude-22364-1/>

Date:6/8/2012

American researchers have shown that prospective magnetic fusion power systems would pose a much lower risk of being used for the production of weapon-usable materials than nuclear fission reactors and their associated fuel cycle.

The researchers, from Princeton University, found that if nuclear fusion power plants are designed to accommodate appropriate safeguards, there is little risk of fissile materials being produced for weapons, either secretly or overtly.

Their results have been published today, 29 March, by IOP Publishing in the journal *Nuclear Fusion*.

In the study, the researchers undertook a quantitative assessment of the risks of proliferation the spreading of nuclear materials for use in weapons that could be associated with future magnetic fusion energy power systems in three different scenarios and compared them to the risks associated with nuclear fission.

Co-author of the study Alex Glaser summarizes: "We found that the proliferation risks from fusion are low compared with fission, assuming that IAEA safeguards are applied in both cases."

The three scenarios were: the clandestine production of weapon-usable material in an undeclared facility; the covert production of

such material in a declared facility; and the production of material in a breakout scenario where the effort is not concealed.

Firstly, their findings showed that it is highly implausible that a small-scale nuclear fusion system could be built, and then operated, in a clandestine fashion to produce material for even one weapon in two years, due to the large size and power consumption of the facility that would be required; it would be clearly visible by, for example, the continuous power it would consume and ultimately have to dissipate at least some 40 MW.

More text follows.

13. Holt Announces Restoration of \$76 Million for Fusion Research

The House passed the increased appropriation, now the Senate will review it.

June 15, 2012

<http://princeton.patch.com/articles/holt-announces-restoration-of-76-million-for-fusion-research>

U.S. Rep. Rush Holt (D-NJ-12) and Rodney Frelinghuysen (R-NJ-11) announced on Wednesday at the Princeton Plasma Physics Laboratory that the U.S. House of Representatives has passed legislation to restore \$76 million in funding for fusion energy research.

"Fusion research is key to America's energy future, and we are proud to have this important work in New Jersey," said Holt, who was the assistant director of the PPPL before his election to Congress.

Funding that supports PPPL and other energy research laboratories was not included in the President Barack Obama's fiscal year 2013 budget request, according to Holt. Without that funding, PPPL could face cutbacks of as many as 100 people, including scientists, engineers and lab technicians.

After the president's announcement, Holt led a bipartisan coalition of 48 members of Congress to oppose the cuts. The group sent a letter to Frelinghuysen, chairman of the U.S. House of Appropriations Subcommittee on Energy and Water Development, asking that the funding be restored.

"Clean energy is an area in which our government can ill-afford to fall behind," the letter read in part. "We will cede further advantage to countries such as China, South Korea, Japan and the European Union, all of which are pursuing substantially more aggressive fusion programs than our own."

Frelinghuysen wrote legislation to restore full funding in the FY 2013 Energy and Water appropriations Bill. The bill passed the House on June 6.

The U.S. Senate must still pass the bill.

"Faced with unsustainable budget deficits, we are making difficult funding decisions," Frelinghuysen said. "But I will be working with my colleagues in the Senate to ensure that the PPPL's cutting-edge research to create alternative sources of energy moves forward."

PPPL Director Stewart Prager and Princeton University President Shirley Tilghman also appeared with Holt and Frelinghuysen on Wednesday.

"I asked Representative Frelinghuysen to join us at PPPL today mostly so that we could say, 'Thank you,' Holt said. "His leadership is admirable and deeply appreciated. The Senate still must pass an energy bill that retains this new funding, but thanks to his efforts, the momentum is moving in the right direction."

Princeton University manages PPPL under contract with the U.S. Department of Energy.

14. **TWI awarded major contract**

(19/06/2012)

http://www.constructionnewsportal.com/construction_article8281.html

A major framework contract to support the fabrication of key components of the ITER nuclear fusion reactor was awarded to TWI by Fusion for Energy (F4E), the organisation delivering the European contribution to the ground-breaking ITER International Fusion Energy project. ITER is a first-of-a-kind global collaboration. It will be the world's largest experimental fusion facility and is designed to demonstrate the scientific and technological feasibility of fusion power. □□ The four-year contract will see TWI (with subcontractors Ceram and The Test House) provide engineering support to F4E on the performance of materials, joining, structural integrity of joints and non-destructive testing activities in support of the manufacture of components such as the vacuum vessel, magnets system, remote handling equipment and in-vessel parts. The core of ITER is the 'Tokamak' based doughnut-shaped vacuum vessel in which plasma is heated and confined in magnetic fields, as no solid material could withstand the extremely high temperature of the plasma necessary for fusion to occur at around 150 million degrees Centigrade. □□ The construction of ITER, underway at Cadarache southern France, is the next exciting phase of an international fusion development programme to meet the world's demand for clean and sustainable energy. It builds on the knowledge gathered from various global fusion energy projects including the Joint European Torus (JET) fusion reactor in Oxfordshire UK, where, almost thirty years ago, the first plasma was

achieved by fusing light atoms. □□ Calling upon all of TWI's technical specialisms and encompassing many metallic and composite materials, the support TWI will provide to F4E will include: engineering and materials studies; assessment and testing of joining technologies including destructive and non-destructive testing; specification of design and manufacturing procedures; failure analysis; technical audits; and ensuring appropriate certification, validation and qualification of all procedures and personnel involved in the build of components for the reactor. □□ TWI Chief Executive Christoph Wiesner commented, 'TWI has supported fusion projects for over 30 years as the science has developed from concept into reality. The award of this contract by F4E recognises TWI's unique expertise and independence in all aspects of materials joining technology, which are critical for the design and fabrication of the reactor components and ultimately to the success of the ITER project. TWI is very proud to play its part in this project which has a vital role in the world's drive to secure sustainable, low carbon forms of power generation.'

15. Green power in the red

BY: □ GRAHAM LLOYD, ENVIRONMENT EDITOR From: □ The Australian
June 23, 2012 12:00AM

<http://www.theaustralian.com.au/national-affairs/green-power-in-the-red/story-fn59niix-1226405898865>

WITH electricity prices rising, the carbon tax looming and the world turning away from expensive deep-green ambitions in Rio and beyond, the race is on to reshape Australia's renewable energy landscape into a more coherent national strategy.

The Renewable Energy Target, which forces electricity suppliers to buy a percentage of electricity from renewable sources and pass the additional cost to consumers, is back in the spotlight.

There is fierce debate about what impact the RET schemes, for large and small-scale projects, are having on electricity prices today and into the future.

The NSW Independent Pricing and Regulatory Tribunal has called for a review of all green schemes, including the RET, following the introduction of the carbon tax.

Energy giant Origin wants the RET scaled back to take account of falling electricity demand.

The renewable industry wants certainty, not more reviews.

In contrast to the carbon tax, the RET continues to enjoy bipartisan support from the federal government and the opposition.

But as Climate Change Minister Greg Combet lashes state governments over power price increases, opposition environment spokesman Greg Hunt has been negotiating with his Coalition state colleagues to centralise green schemes under a single federal umbrella in exchange for giving states control over federal environment approvals.

Meanwhile, this week federal Energy Minister Martin Ferguson announced commonwealth funding for a study into how the national energy market might achieve cuts in carbon emissions most cheaply while increasing the use of renewable energy.

Australia is not alone in questioning the political cost and economic value of a decade-long rush towards green power.

As the financial crisis continues in Europe it would be easy to conclude the developed world's infatuation with heavily subsidising renewable energy had peaked.

Last month the compliance committee of the UN Economic Commission for Europe issued a draft ruling against the EU's renewable energy target, saying it was introduced without proper consultation.

Wind energy companies are abandoning Spain after the government killed off generous subsidy schemes that had spawned a modern-day gold rush in renewables. Spanish spending of \$US69 billion (\$68bn) in power capacity from 2004 to last year was three times the per-capita rate of the US and created an electricity network that could supply almost three times peak demand. Wind investment in Spain is forecast to plunge to \$US244 million in 2014 from \$US2bn this year. Spanish investment in solar photovoltaic is expected to drop to \$US107m next year from \$US1.5bn last year.

In Germany - which introduced the solar rooftop revolution - the

Merkel government has gone cold on government handouts for photovoltaic systems as prices have fallen. But the bill to taxpayers has continued to rise.

The cutbacks were delayed last month when Germany's upper house referred the issue to a parliamentary inquiry to investigate the impact of rooftop solar on electricity prices.

In Britain, debate remains confused between green-Tory rhetoric of a renewable energy led economic recovery to growing despair about generous subsidies for increasingly unpopular wind turbines ruining the nation's balance sheet and the countryside.

Prime Minister David Cameron will reportedly come down firmly on the side of cutting renewable subsidies worth £400m (\$621.2m) a year to onshore wind companies.

John Constable, director of Britain's Renewable Energy Foundation, says high subsidies have harmed the reputation and integrity of the renewables sector, which has been "corrupted by easy money and undeserved fortunes".

In the US, President Barack Obama's renewable energy ambitions were quickly tarnished after solar hopeful Solyndra collapsed and sacked thousands of workers after picking up \$US535m in government support.

The US wind industry is forecasting a decline of 80 per cent if a US2.2c-a-kilowatt-hour tax break is not extended past December.

Big corporations including Microsoft, Nike and Starbucks are lobbying hard for the retention of the scheme, which effectively subsidises their clean energy bragging credentials. Extending the tax break, first offered in 1992, is forecast to cost \$US4.1bn in forgone tax revenue across a decade.

No decision is likely before the November presidential elections.

Meanwhile, US and German solar companies are deep in a trade war with cheaper manufacturers in China and India.

While developing nations including China and India are investing heavily in wind and solar, they are spending up big on coal, gas and nuclear power generation as well. And despite the global

addition to subsidies, which has underpinned a big role in wind and solar capacity during the past five years, global carbon emissions continue to rise. The International Energy Agency has put forward a "golden opportunity" blueprint to reduce carbon emissions and boost energy security.

As always, the energy revolution will not come cheaply but the IEA says the long-term benefits far outweigh the costs.

It says an additional \$US36 trillion of investment will be required to overhaul the world's energy system by the middle of the century, but this will be offset by \$US100 trillion in savings through reduced use of fossil fuels.

And here lies the real puzzle of the renewable energy rollout. Are green power subsidy schemes really responsible for soaring electricity prices? And, if so, is it still a good investment for the long term? Will an abundance of installed renewable capacity result in lower electricity prices?

This certainly is the argument put by the renewables industry, which claims rooftop solar and demand-management programs are responsible for an unexpected fall in electricity demand, which in turn will drive lower wholesale electricity prices across time. But this is not the cut-through message for today's hard-pressed electricity consumers or government.

Community attention is on the news from energy price regulators that have approved electricity price increases of almost 20 per cent for the next 12 months.

The federal government wants to downplay the impact of the carbon tax and the RET on the electricity price increases.

Combet instead highlights heavy spending by state governments to "gold-plate" distribution networks after years of neglect and their opportunistic grab for dividends.

Given the fierce political debate over the carbon tax, there is a surprising bipartisan support for the RET.

This week Tony Abbott stared down partyroom criticism of the RET on the basis there was still a lot of public support for renewable energy.

The loudest voice of dissent against the RET in its existing form has come from energy retailer Origin Energy, which wants the basis of the scheme reworked.

Origin argues the RET is not adjusted to reflect actual demand for energy, resulting in higher costs for consumers.

Origin managing director Grant King enraged many in the renewables industry last month when he called for the 20 per cent renewables by 2020 scheme to be just that.

"Australians signed on to a 20 per cent by 2020 target, not a 26 per cent by 2020 target, which is what it is likely to be given current industry forecasts for lower total electricity sales," King said.

The renewables industry rejects King's calculations as uncertain and says the "20 per cent by 2020" target was always more a slogan for political convenience. They say the RET was legislated as a fixed amount of electricity, something Origin supported to enshrine certainty in commercial decision-making.

Renewable energy companies say changing the rules now will create uncertainty and make their project financing more difficult, if not impossible. Origin also has called for a rationalisation of state-based energy efficiency schemes including the level of subsidies for rooftop solar installations and the rate of feed-in tariffs.

The government and opposition are listening. This week Ferguson announced a \$900,000 grant to the University of Melbourne for a \$1.2m study.

He said the project would produce software modelling of Australia's electricity market to assist with understanding how the national energy market might achieve the cheapest cuts in carbon emissions while using increased levels of renewable energy.

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