

1. Rising levels of anxiety for future planners

BY: □ NEVILLE EXON AND TIM MOLTMANN From: □ The Australian

April 27, 2012 12:00AM

<http://www.theaustralian.com.au/national-affairs/opinion/rising-levels-of-anxiety-for-future-planners/story-e6frgd0x-1226339212832>

THE debate over predictions of sea level rise in a greenhouse world has hit the headlines recently as state and local government planners make decisions on coastal zoning that affect people's lives and property values.

The controversy underlines the urgent need for good data to firm up predictions and guide decisions.

2. Scientist cools on climate alarmism

From: □ AAP April 26, 2012 12:00AM

<http://www.theaustralian.com.au/news/world/scientist-cools-on-climate-alarmism/story-e6frg6so-1226338267619>

CLIMATE scientists have distanced themselves from author James Lovelock, who this week backtracked on his predictions of doomsday-like fallout from global warning.

According to US cable news channel MSNBC, Professor Lovelock described his own projections as wrong and those of others as "alarmist".

"We thought that we knew 20 years ago. That led to some alarmist

books - mine included - because it looked clear-cut, but it hasn't happened," he said, referring to Tim Flannery's book *The Weather Makers* and Al Gore's *An Inconvenient Truth*.

Professor Lovelock's 2006 book *The Revenge of Gaia* postulated catastrophic global warming. He stated that since 2000, warming had not happened as expected. "The climate is doing its usual tricks" he conceded. "There's nothing much really happening yet" even though "we were supposed to be halfway towards a frying world now."

Professor Lovelock, who introduced the Gaia hypothesis describing life on Earth as a vast self-regulating organism some 40 years ago, said he still believed climate change was occurring, though not as rapidly as he once thought. "The world has not warmed up very much since the millennium. Twelve years is a reasonable time," he said. Yet the temperature "has stayed almost constant, whereas it should have been rising - but carbon dioxide is still rising, there's no question about that".

Writing for Britain's *The Independent* in 2006, Professor Lovelock stated: "Before this century is over, billions of us will die and the few breeding pairs of people that survive will be in the Arctic where the climate remains tolerable."

In an email to LiveScience, climate scientist Michael Mann of Pennsylvania State University, said Professor Lovelock's views were not in line with mainstream climate science to begin with. "Jim's views were at the alarmist end of the spectrum of scientific opinion, so frankly I see him largely as just coming back into the fold of mainstream thinking," Professor Mann wrote.

"That ... said, he has made some statements which appear to reflect a misunderstanding of what the science has to say." Kevin Trenberth, a climate scientist at the independent National Centre for Atmospheric Research in Boulder, Colorado, went further, dismissing both Lovelock's initial predictions and his backtracking .

"The fact is he knows little or nothing about climate change," Dr Trenberth said.

3. Solar shakeout hits even large companies

Christopher Martin

Thursday, April 19, 2012

<http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2012/04/18/BUQU1O54NO.DTL>

First Solar's decision to fire 30 percent of its staff and reduce production shows that even the biggest solar panel makers aren't immune from the shakeout that's bankrupted at least eight companies on two continents in the past year.

The largest thin-film solar producer said Tuesday it will cut 2,000 jobs by the end of the year at a cost of as much as \$370 million. It marks the biggest staff reduction for the industry since bankrupt Solyndra LLC, backed by U.S. government loans, dismissed its 1,100 employees on Aug. 31.

Solar manufacturers, which expanded rapidly to meet double-digit demand growth in the past decade, are struggling with subsidy cuts in Europe and plunging natural-gas prices that make renewable energy less competitive. The largest producers in China say their profits will slump this year as shipments grow.

"Oversupply has become a problem for the entire industry," said Ben Schuman, an analyst at Pacific Crest Securities. "China's manufacturers have not demonstrated rational behavior."

Solar panel prices have fallen 46 percent in the past year as manufacturers led by First Solar and Suntech Power Holdings, the world's largest solar company, boosted output. Germany and Italy, the two biggest markets, are cutting rates paid for solar power to curb an uncontrolled installation boom.

The Bloomberg Large Solar index tracking 17 shares has fallen 74 percent in the past year.

Germany's Q-Cells SE, once the world's biggest solar-cell maker, filed for insolvency on April 3, becoming the fourth casualty in the country since December. Solon SE, Solar Millennium AG and Solarhybrid AG have all filed for insolvency as Germany cut incentives and China's

suppliers reduced prices.

They join Fremont's Solyndra and three other U.S. solar companies that have failed since August - SpectraWatt, Evergreen Solar and Energy Conversion Devices.

Solar factories have expanded faster than demand and will be able to make as much as 38 gigawatts of electricity this year, about 54 percent more than estimated demand, according to Bloomberg New Energy Finance.

That excess supply will arrive on the market as Europe's largest economies, including Britain, Spain and France, follow Germany and Italy in scaling back incentives to curtail installation of power systems that are paid above-market rates.

"Demand is falling as governments, particularly in Europe, lose appetite for subsidizing the industry," said Theodore O'Neill, an analyst at Wunderlich Securities.

The shifting support in Europe is particularly painful to First Solar because Europeans favor rooftop power systems, which are more likely to use Chinese polysilicon panels. First Solar focuses instead on ground-mounted utility-scale plants that use its thin-film products, he said.

The U.S. Commerce Department, responding to complaints from U.S. solar manufacturers that Chinese competitors receive unfair government support, imposed tariffs last month of as much as 4.73 percent on panels made in China.

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This article appeared on page **D - 3** of the San Francisco Chronicle

Read more: <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2012/04/18/BUQU1O54NO.DTL#ixzz1tOcMQe7a>

4. Landslide Risk at Reservoir Cited in China

By MICHAEL WINES

Published: April 18, 2012

<http://www.nytimes.com/2012/04/19/world/asia/landslide-peril-near-chinese-reservoir-grows-official-says.html>

BEIJING — A growing threat of landslides on ground surrounding the massive Three Gorges Dam reservoir could force the government to relocate 100,000 more residents of the area, from which 46,000 were moved earlier, an expert with [China's](#) land and resources ministry said this week.

The official, Liu Yuan, told China National Radio that rising water levels in the reservoir had made adjacent land increasingly unstable. Since the reservoir reached its high-water mark in 2010, landslides and other accidents have risen 70 percent.

“Due to the complexity and uncertainty of the problems, the pattern of geological disaster cannot be accurately predicted,” he said. “It’s difficult to know what’s going on.”

Mr. Liu runs the ministry’s Three Gorges Geological Disaster Prevention Office.

The dam, the world's largest [hydroelectric](#) project, has been a target of criticism by environmentalists and some geologists since before the reservoir began to inundate a long stretch of the Yangtze River, long regarded as one of the world's scenic wonders, in 2003. A massive landslide occurred that year, followed by others, but only in 2007 did the government admit that the rising waters were [causing instability](#) and that a catastrophe could occur unless preventive steps were taken.

Officials have recorded 430 landslides and nearly 2,900 smaller geological incidents along the lakeshore, and 5,386 other potentially dangerous sites are being monitored, Mr. Liu said.

Major slides not only imperil people living along the shore, but can also create huge, dangerous waves. The 2003 landslide generated a 65-foot wave that killed at least 14 people. A 2007 slide on a Yangtze tributary near the reservoir buried a bus, killing 31.

The government relocated 1.4 million people to build the dam and reservoir, which is comparatively narrow but longer than [Lake Superior](#) in North America. The latest proposed relocation would affect residents along hundreds of miles of twisting lakeshore from Jiangjin, in the Chongqing municipality, to the dam's location at Yichang, in Hubei Province.

Since the reservoir began filling with water, officials have experimented with different water levels, from 445 feet to 575 feet deep, the proposed eventual depth. Geologic incidents have become more frequent as the amount of water has

increased.

Landslides can be expected within three to five years after the reservoir reaches its maximum depth, Mr. Liu said.

The slides are caused in part by the government's seasonal raising and lowering of the lake's water level to cope with floods, according to an examination of the dam's problems in a 2008 article in Scientific American magazine. Other experts say the sheer weight of the massive lake has increased the threat of earthquakes in the fault-prone region.

Li Bobo contributed research.

A version of this article appeared in print on April 19, 2012, on page A13 of the New York edition with the headline: Landslide Risk At Reservoir Cited in China.

Read more: <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2012/04/18/BUQU1O54NO.DTL#ixzz1tOcH5oqQ>

Read more: <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2012/04/18/BUQU1O54NO.DTL#ixzz1tOcBowff>

5. A boon to California's electric vehicle economy

Martin Lagod

Thursday, April 19, 2012

<http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2012/04/18/EDAK1O4RCA.DTL>

California leads the nation when it comes to hybrid and electric vehicles and, with record electric and hybrid vehicle sales across the country last month, advanced vehicles are set to break into the mainstream. That breakthrough so far has been held back by the relatively limited number of electric vehicle charging stations available to California drivers. That's about to change.

The electric vehicle industry got a huge shot in the arm last month when Gov. [Jerry Brown](#) announced the largest-ever investment in electric vehicle charging

infrastructure. The California Public Utilities Commission reached an agreement with an energy company, NRG, under which the state will get much-needed infrastructure to support more than 10,000 electric vehicle charging hookups and at least 200 fast-charging stations in the San Francisco Bay Area, the San Joaquin Valley, the Los Angeles basin and San Diego County. All told, the project will put \$100 million of infrastructure and charging stations on the road, and will provide another \$20 million directly to California electric ratepayers.

The PUC's deal closes the book on one of the last lawsuits from the electric crisis of 2001. Of all the settlements to come out of that dismal episode, none has presented a greater opportunity for the state to change its energy future and reach its ambitious greenhouse gas, clean air and clean vehicle goals than this one.

By providing the backbone on which electric vehicle charging companies can build a statewide network of charging stations, the agreement will open the door to innovation, job creation and vehicle purchases.

That's because this infrastructure will finally help solve the "chicken and egg" problem - that is, a comprehensive charging network will not be built unless there are enough vehicles to support it (but there won't be enough vehicles until such a network is built). Now California will have the core network, and the vehicles will come.

This new infrastructure also will help address the fear that you'll run out of charge on the road. By ensuring that drivers will be able to find fast-charging stations on the go, the project should turn range anxiety into range confidence, increasing electric vehicle sales. Solving these challenges is essential to meeting the state's target of 1.5 million zero-emission vehicles on the road by 2025.

More electric vehicles also mean more jobs for California. Not only will auto dealers have a greater demand for workers, from mechanics to sales staff, but also electricians, construction workers and technicians will be in demand to build and maintain the infrastructure and charging stations. Those jobs will come to the communities where the network will be built, including parts of our state not yet commonly associated with advanced energy.

Some have expressed concern that this deal would give unfair advantage to a single company, because NRG would have 18 months to install its own charging stations on the infrastructure backbone. In fact, this project should do the opposite by creating infrastructure that other charging station providers will be able to employ. That's a good thing for innovation and competition. Nothing in the electric vehicle industry is easy, and there is a long road ahead. But we're all in this together - investors, entrepreneurs, innovators and customers - and with the promise of a major new investment in our technology, the future looks

bright.

Martin Lagod is co-founder and managing director of Firelake Capital Management.

This article appeared on page **A - 10** of the San Francisco Chronicle

Read more: <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2012/04/18/EDAK1O4RCA.DTL#ixzz1tOfZ0Wna>

6. Fukushima's Legacy Debated

By Michael Lucibella

APS News April 2012 Vol. 21 No. 4

<http://www.aps.org/publications/apsnews/201204/fukushima.cfm>

A year after the meltdown at the Fukushima Daiichi power plant, its legacy still divides scientists over the future of nuclear power. At this year's March Meeting, a special session organized by the Forum on Physics in Society, the Forum on International Physics and the Division of Condensed Matter Physics brought the two sides to the forefront. □□ Stephen Kuczynski, CEO of Southern Nuclear Operating Company, defended his industry. His company recently received the first new construction license to build a new nuclear power plant in the United States since the Three Mile Island incident in 1979. □□ "It's the safest industry that you can work in. The workers at our power plants are the safest in any industry," Kuczynski said. "We also have layers of oversight... There [are] multiple layers to detect if there is a change or degradation in the safety culture, and we can take action." □□ However, concerns about safety persist. On the same panel, following Kuczynski's remarks, Edwin Lyman from the Union of Concerned Scientists laid out his organization's reservations about the safety of nuclear power in the US. □□ "The question does come up: 'Can it happen here?' There's been a lot of debate on this issue, whether it was a Japan-specific event, whether the US was better prepared than Japan to deal with this kind of contingency. In our view, complacency is as prevalent here in the United States as it is in Japan," Lyman said. "US nuclear plants were not designed or intended to survive major natural disasters, multiple system failures or terrorist attacks." □□ Following the crisis at Fukushima, leaders of the US nuclear industry put together a study titled "The Way Forward" to review what happened in Japan and prevent such an accident in the United States. The document that emerged included a strategy for coping with potential accidents, which the industry referred to as its FLEX plan. According to the plan, plants acquire self-contained portable pumps, generators, batteries, compressors, hoses and equipment to clear debris. The equipment is kept onsite to deal with a catastrophic event that knocks out external power. The idea is to use the batteries, hoses and other equipment to keep water flowing over spent

fuel rods and the reactor cores, preventing them from overheating. □□“Let’s just assume that we’re not smart enough to know every single possible external event; let’s develop strategies to deal with whatever they are,” Kuczynski said. “It may be a flood, it may be a seismic activity, it may be something that we’re just not thinking about at this point in time. But can we develop strategies to extend battery life, make sure our sources of AC power are secure, and can transport water so our ultimate heat sink can be functional? That is the whole purpose around FLEX.” □□Lyman said that the FLEX program did not address some of the fundamental issues that contributed to the disaster at Fukushima. He said he was concerned that a major catastrophic event, like the tsunami that struck the Japanese plant, could still knock out all of the emergency equipment stored onsite. □□“The US nuclear industry has proposed a program which they call FLEX, which essentially involves buying lots of commercial grade, off-the-shelf equipment like diesel generators that anyone can buy for their home, and storing them at various places, on and off reactor sites, in the hope that no matter what event might come, that at least some equipment somewhere will survive and you’ll be able to get it to the site and use it,” Lyman said. “It’s really not clear how much additional safety we’re getting from the industry’s program. And the NRC has not yet issued its guidelines as to how that equipment should be regulated.” □□The designs of reactors were also the subject of contention. The reactors slated for construction at Southern Nuclear’s new plant are the first to use a much touted, third generation nuclear reactor, the Westinghouse AP1000. It’s been designed with a number of passive safety features built in that don’t need any power or operators to shut down fission reactions and start cooling the core. The system is supposed to keep the reactor from going critical for three days if emergency power hasn’t been restored. □□“In the AP1000 there is a pool of water on top of the containment, so if it’s needed, it will stream and it will exchange the heat and that pool of water is there for at least a three day period,” Kuczynski said. “All we need to do is fill it back up; it’s a very simple evolution. And that’s just gravity, that’s just convection, that’s just normal heat transfer.” □

The robustness of that 72 hour estimate was disputed by Lyman. He said that overall the plans developed by the nuclear industry lacked vision and flexibility for disasters outside of the imaginations of designers. Prior to the disaster in Japan, no one had developed contingency plans for such severe damage inflicted upon a nuclear plant. Lyman said that such is also the case with the new Westinghouse reactors; their safety is predicated on the entire system remaining mostly intact. One potential flaw he pointed to was if the pool of water used for cooling is punctured there would be no contingency to prevent the reactor from going critical. □□“We hear a lot about the AP1000s that can cope with a 72 hour station blackout. But really that’s only under the design basis of certain conditions,” Lyman said. “So if you have something that’s beyond the design basis of the plant, a seismic event or major flooding, then you might not be able to count on that 72 hour plan.”

7. NIF facility fires record laser shot into target chamber

March 21, 2012 by Bob Yirka

<http://phys.org/news/2012-03-nif-facility-laser-shot-chamber.html>

(PhysOrg.com) -- The National Ignition Facility (NIF) at Lawrence Livermore National Laboratory in California has set a new record for a laser shot. This past week, its combined 192 lasers fired a single 1.875-megajoule shot into an empty test chamber. After passing through the last of its focusing lens, the shot reached 2.03 megajoules, making it the first 2 megajoule ultraviolet laser. (PhysOrg.com) -- The National Ignition Facility (NIF) at Lawrence Livermore National Laboratory in California has set a new record for a laser shot. This past week, its combined 192 lasers fired a single 1.875-megajoule shot into an empty test chamber. After passing through the last of its focusing lens, the shot reached 2.03 megajoules, making it the first 2 megajoule ultraviolet laser.

Prior to this achievement, the most the facility had managed to coax out of the laser, the world's largest, was 1.6 megajoules. Also, the new record shows that the NIF laser is capable of producing more than it was designed for, which was 1.8 megajoules. It also proved that it was capable of doing so without damaging its parts, allowing for another shot a day and a half later, which is important, because one of the goals for the laser is to get it to fire off shots at 15 per second eventually. That's what researchers think will be needed to produce power economically from the laser system.

The ultimate goal of the NIF is to figure out a way to use a laser to produce nuclear fusion in a way that gets more energy out than is put in. Currently, that goal is still a ways off. Thus far, engineers at the project haven't even reached the break-even or ignition point, though they expect that to occur sometime this year. Tweaking the laser to produce more than it was designed for is a step in that direction. The NIF facility was designed to produce a fusion reaction by imploding hydrogen isotope pellets using the huge laser. To that end, the team has made steady progress. When the project first began eighteen months ago, it had just one percent of conditions in place that are believed necessary to achieve the

ignition point. They have improved that mark to ten percent and it's because the pace has picked up dramatically in recent months that they believe they will achieve the ignition point sometime over the next six months, which is when the original ignition campaign was slated to end.

Because the facility is funded by the US nuclear weapons complex, there has been debate about whether it would ever be used to prove or disprove the idea that lasers could be used to create nuclear fusion to produce electric power. Having the [laser](#) break records doesn't really resolve that argument in the short term, but it might in the long run if it does eventually show that electricity could be created economically using such a process.

The National Ignition Facility (NIF), the world's most energetic laser, surpassed a critical milestone in its efforts to meet one of modern science's greatest challenges: achieving fusion ignition and energy gain in a laboratory setting. NIF's 192 lasers fired in perfect unison, delivering a record 1.875 million joules (MJ) of ultraviolet laser light to the facility's target chamber center. □ This historic laser shot involved a shaped pulse of energy 23 billionths of a second long that generated 411 trillion watts (TW) of peak power (1,000 times more than the United States uses at any instant in time). □ The record-breaking shot was made March 15. □ "This event marks a key milestone in the National Ignition Campaign's drive toward fusion ignition," said NIF Director Edward Moses. "While there have been many demonstrations of similar equivalent energy performance on individual beams or quads during the completion of the NIF project, this is the first time the full complement of 192 beams has operated at this sound barrier." □ The ultraviolet energy produced by NIF (after conversion from the original infrared laser pulse to the final ultraviolet light) was 2.03 MJ before passing through diagnostic instruments and other optics on the way to the target chamber. As a result, NIF, located at Lawrence Livermore National Laboratory, is now the world's first 2 MJ ultraviolet laser,

generating nearly 100 times more energy than any other laser in operation. □ Satisfying the NIF objective coincides with the third anniversary of the startup of NIF operations in March 2009, when 1 MJ operation was first achieved. Since then, NIF has increased its operational energy about 1 kilojoule each day for three years, a remarkable achievement. Today, NIF is fully operational around the clock, completing important steps toward the goal of ignition and providing experimental access to national and international user communities. □ The 1.875 MJ shot exceeds NIF's original design specification and sets the stage for full-power experiments over the coming months. Not only did the shot achieve the highest recorded energy threshold, it also was one of the most precise ever fired at NIF: The energy produced was within 1.3 percent of its goal. Such precision is vital because the energy distribution among the beams determines how symmetrical an implosion is obtained in capsules containing fusion fuel. Implosion symmetry is a critical factor in achieving the pressures and temperatures required for ignition. Moses said that NIF will pursue operations at even higher power and higher energy levels to achieve ignition. □ "Our facility's ability to demonstrate this level of precision performance as part of routine operations is a testament to the efforts of multiple teams supporting laser operations, target chamber operations, transport and handling and optics refurbishment," Moses said. □ "For the past 15 years, since NIF groundbreaking in 1997, the scientific community has regarded the 1.8 MJ milestone as a tremendous technical challenge," said NIF Operations Manager Bruno Van Wonterghem. "In 2003, we demonstrated this performance level on a single beam line, and in 2008 we repeated the demonstration on a single quad of four beams. To achieve this performance level with this kind of precision, quality and reliability on all 192 beams is unprecedented and very exciting." □ Van Wonterghem points in particular to the enormous progress NIF scientists and engineers have made in economically maintaining the facility's optics system while operating at unprecedented energy levels.

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8. EPA orders air pollution controls for fracked gas wells

<http://www.mcclatchydc.com/2012/04/18/145786/epa-orders-air-pollution-controls.html>

By Renee Schoof | McClatchy Newspapers

WASHINGTON — Air pollution from thousands of natural gas wells that are “fracked” every year will be reduced under regulations that the Environmental Protection Agency issued on Wednesday.

It’s the first time the EPA has required air pollution controls at hydraulically fractured, or fracked, wells. The new rule targets smog-forming volatile organic compounds and air toxics that increase cancer risks. The same equipment also would trap methane, a potent heat-trapping gas in the atmosphere.

President Barack Obama has called for expansion of natural gas production with fracking, but he has said it should be done without harming health and safety. While water pollution has gotten most of the attention, natural gas production, processing and delivery also produce large amounts of air pollution.

The rule mainly would require companies to capture the burst of emissions that occurs as a well is being prepared for commercial production.

Beginning in 2015, all fracked wells will be required to use “green completions.” The process involves truck-mounted equipment that captures the waste that flows for about three to 10 days after water, sand and chemicals are injected into a well. The captured gas and liquid hydrocarbons can be separated, treated and sold.

Fort Worth, Texas, and other cities already require green completions, as do Colorado and Wyoming. The EPA estimates the equipment is used voluntarily in about 50 percent of wells today.

“This levels the playing field,” said EPA air administrator Gina McCarthy. She said the rule was designed to promote responsible production of natural gas and to protect the public, and it will “do it in a way that more than pays for itself.”

The American Petroleum Institute, the industry’s lobby group, had

argued that the EPA underestimated the cost of the equipment and had asked for an exemption for many wells. The EPA didn't grant that exemption but accepted the industry's request for more time to build the equipment needed for green completions.

The institute had no immediate comment about costs because it needed to review the details, said spokesman Carlton Carroll. "We were pleased that they recognized the need for a phase-in period," he said.

But the Western Energy Alliance, another trade group, said in a statement that the EPA overestimated the benefits and underestimated the costs of compliance. It said the rule would result in minimal environmental benefit and higher energy costs.

Environmental groups said the benefits were broad.

"These important rules start to cut down on air pollution that harms people living near wells, creates smog and warms the climate," David McCabe, senior scientist with Clean Air Task Force, said in a statement. "They are a solid start, but we need to keep working to reduce pollution from the gas industry all the way from the well to the customer. People who live near compressors and equipment already in use need to see their air cleaned up as well. Unfortunately, these rules won't do that."

The new rule doesn't address much of the pollution from compressor stations, storage tanks and other equipment used in the natural gas industry.

The Natural Resources Defense Council in a statement said it welcomed the requirement for green completions but was disappointed that they wouldn't be required for 2 1/2 years, arguing that the equipment to capture the emissions could be built in less time.

During the phase-in period until 2015, companies that don't use green completions voluntarily will be required to burn off the gas instead. Large flares, up to 80 feet tall, burn off much of the volatile organic compounds, one of the components that make smog, but they produce nitrogen oxides, another smog-forming pollutant.

The EPA's McCarthy said that the requirement for flaring during the phase-in period before 2015 would "significantly help" reduce

the smog that forms from natural gas production. Green completions, required for all wells after Jan. 1, 2015, will reduce smog more because, unlike flaring, it adds no additional pollutants, she said.

The EPA said that green completions reduce the volatile organic compounds released to the air by nearly 95 percent.

The Natural Resources Defense Council said in a report last month that green completions were only one of a number of technologies that should be required to control emissions of methane, the main component of natural gas, and other pollutants.

The new regulation reduces methane as a co-benefit of reducing the other pollutants. McCarthy said that the EPA had no plans for more extensive requirements for methane reductions. Methane is 25 times more potent than carbon dioxide, the primary greenhouse gas, in driving climate change.

The EPA was under a court order to issue the new pollution standards. The agency is required to review them every eight years by law. The existing standards were issued in 1985. Environmental groups sued the agency in 2009, saying it had failed to review the standards. The U.S. District Court for the District of Columbia required the EPA to take final action by Tuesday.

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Read more here: <http://www.mcclatchydc.com/2012/04/18/145786/epa-orders-air-pollution-controls.html#storylink=cpy>

9. Energy strategy void puts us at pricey end of market

BY: [ANDREW LIVERIS](#) From: [The Australian](#) April 25, 2012

12:00AM

<http://www.theaustralian.com.au/national-affairs/opinion/energy-strategy-void-puts-us-at-pricey-end-of-market/story-e6frgd0x-1226337476769>

FRESH from a visit to booming Asia and a very busy few days in my homeland, I find myself buzzing with enthusiasm. The opportunities, possibilities and raw energy across Asia are a tonic to those of us who from time to time may run up against the consequences of the new capacities unleashed in that region.

Australia, I found, is flat-out euphoric in one sense, yet strangely dissonant in many others. People are talking of a "two-speed economy", but to a visiting expat it's more like a split personality.

10. **Climate alarmists need to cool down**

by: □ Miranda Devine From: □ [The Sunday Times](#) April 28, 2012

3:50PM

<http://www.perthnow.com.au/opinion/climate-alarmists-need-to-cool-down/story-e6frq41u-1226341572092>

THE timing couldn't have been more perfect for Gaia guru James Lovelock to recant his climate alarmism last week.

His epiphany came on the eve of ABC TV's hotly anticipated 10-city, 21-day eco-extravaganza, I Can Change Your Mind About Climate Change.

Oddly, however, on the Q&A panel show that followed, in which, naturally, sceptics were outnumbered three to one, it barely rated a mention.

Here was the scientist hailed as the godfather of the modern environmental movement admitting that he had over-egged the pudding on global warming.

The doomsday merchant, who wrote in 2006: "Billions of us will die and the few breeding pairs of people that survive will be in the Arctic where the climate remains tolerable", has allowed the evidence to change his mind. Hallelujah.

The Earth has "not warmed up very much since the millennium", he told msnbc.com last week, even though, "we were supposed to

be halfway towards a frying world now".

The temperature "has stayed almost constant, whereas it should have been rising. But carbon dioxide is still rising, there's no question about that".

Let history mark the moment when the gig was up for climate alarm.

Unfortunately, there was no such dramatic conversion on the ABC on Thursday night. But Lovelock's change of mind provided a sobering backdrop for the saccharine condescension of the documentary.

Starring climate skeptic and former Liberal senator Nick Minchin, 59, and climate activist Anna Rose, 28, the aim was to have each try to persuade the other to their view. They travelled around the world, camera crew in tow, seeking out the best advocates to help argue their case and listening with an open mind to opposing views.

That was the theory, anyway. But from the start it was obvious that, despite her sweet smile and winsome ways, Rose was a cliché climate fanatic incapable of changing her mind.

You have to give points to her, as co-founder of the Australian Youth Climate Coalition and wife of GetUp! leader Simon Sheikh, for having the courage to take part in the show, despite condemnation from fellow alarmists such as Clive Hamilton.

According to Simon Nasht, the documentary producer, Hamilton heaved Rose not to participate, in the most manipulative manner, by placing the entire future of the environmental movement on her young shoulders.

Heavy burden, which may explain the insults and ad hominem attacks she engaged in, when meeting experts chosen by Minchin.

In Boston, when she met Richard Lindzen, the eminent American atmospheric physicist, she blanked everything he said about

climate feedback and instead performed a stunt, accusing him of being a tobacco industry ring-in.

"I never did that. That is pure slander," he exclaimed. But the triumphant smirk on Rose's face told you she believed she'd damaged his credibility.

It was the one time Minchin lost his cool, telling her: "The thing that really pisses people like me off is this red herring that people like you raise about tobacco. It is part of the slander of the environmental movement." It's a pity Minchin didn't get fired up some more, because Rose continued in the same vein for the rest of the show.

She insulted Marc Morano in Washington, DC, saying he was the worst of the worst Republican attack dogs who makes things up, but refusing to provide examples or debate him.

After meeting mathematician David Evans and scientist Jo Nova in Perth, she dismissed their kitchen table science.

She didn't even try to meet Minchin half way. It was as if skeptics were supposed to be pathetically grateful to get airtime on the ABC at all.

The alarmists have only been driven to dialogue with the enemy through desperation, as public opinion deserts them. They tried ignoring the skeptics. But that just made them look shifty and insecure. They tried to smear skeptics by linking them to Big Tobacco or Big Oil, but that made them look mean and tricky. They tried accusing skeptics of violence and death threats, but it didn't wash. They even talked about suspending democracy. Now, when they're licked, they deign to talk.

Big concession.

Nobody disagrees that the climate is changing. It's a question of what is driving that and whether there is anything we can actually do about it.

11. Nuclear Power's Death Somewhat Exaggerated

By MATTHEW L. WALD

Published: April 10, 2012

New York Times

<http://www.nytimes.com/2012/04/11/business/energy-environment/nuclear-powers-death-somewhat-exaggerated.html>

NUCLEAR energy is going through an odd patch. It refuses to die, but it does not prosper.

This is how modest the nuclear industry's prospects now look: Senator Lamar Alexander, a Tennessee Republican who has called for building 100 reactors in the next few years, told a conference of industry specialists in late March that the long-ballyhooed "nuclear renaissance" did not really exist anymore. Now, he said, it is an "awakening to the awareness of nuclear."

But it is an awakening with a price of \$30 billion or more. Mr. Alexander was speaking to a conference convened on the 33rd anniversary of the Three Mile Island accident, a few weeks after the [Nuclear Regulatory Commission](#) gave permission to build a power reactor for the first time in more than 30 years, for the twin [Vogtle reactors](#) near Augusta, Ga.

Those will cost \$14 billion, if all goes well, and more if it does not. A few days after he spoke, the commission approved a license for another pair of reactors in South Carolina, which will cost about the same. Several other companies are laying out hundreds of millions of dollars in planning for reactors that may or may not get to the groundbreaking stage.

The industry's three great recent stumbling blocks, the Fukushima accident of March 2011, the exceptionally low price of [natural gas](#) and a [recession](#) that has stunted demand for power, mock the idea that dozens of new reactors are waiting in the wings. But in an era of worry over [global warming](#), support is plentiful for at least keeping a toe in the water.

“Even if global warming science was not explicitly invented by the nuclear lobby, the science could hardly suit the lobby better,” complained a book published last month, [“The Doomsday Machine,”](#) a polemic on the evils of splitting the atom. In fact, the industry continues to argue that in the United States it is by far the largest source of zero-carbon energy, and recently began a campaign of [upbeat ads](#) to improve its image.

According to the authors of “The Doomsday Machine,” Martin Cohen and Andrew McKillop, “In almost every country — usually for reasons completely unrelated to its ability to deliver electricity — there is almost universal political support for nuclear power.”

That is probably an exaggeration, with Japan leaving almost all of its 54 reactors idle at the moment because of the Fukushima Daiichi triple meltdown, and Germany promising to close its fleet. But China and India, two countries with enormous demand for electricity and not much hand-wringing over global warming, are planning huge reactor construction projects.

And even the Japanese catastrophe plays in some quarters as a reason to build new reactors. For example, the reactors being

built in Georgia and South Carolina are the [AP1000 model](#), with the letters standing for “advanced passive,” because emergency cooling relies on natural forces like gravity, evaporation and convection, not power-operated pumps and valves that require a supply of electricity, the force that Fukushima simply did not have.

At the same conference that Senator Alexander addressed, Jim Ferland, then the president and chief executive of Westinghouse Electric, insisted, “If an AP1000 had been there, we wouldn’t be having this discussion today; that plant would be back on line.” General Electric, which designed the reactors used by Tokyo Electric Power at Fukushima, has made similar claims for its new “passively safe” design.

If the nation’s 104 reactors, all but one finished by the 1980s, were eventually replaced, it would be with equipment that has fewer moving parts and fewer ways to get into accidents. But they may not be replaced because the competition from other sources of electricity is strong.

In the United States, nuclear power is stumbling forward because of an energy policy of limited diversity — what President Obama refers to as his “all of the above” strategy. That means loan guarantees and production tax credits for new reactors, created in the George W. Bush administration, are viewed favorably in the Obama White House. But “all of the above” also means support for solar and wind, as well as support for [oil](#) and natural gas production, especially hydraulic fracturing for gas in shale rock.

Fracking, as it is known, has turned gas into a formidable competitor. Gas is priced in a unit called a million B.T.U.’s, a

quantity that will produce about 150 kilowatt-hours, about as much as a small house uses in a week.

When gas was \$14 per million B.T.U.'s, it cost 9 cents per kilowatt-hour just for the fuel. Today, with natural gas priced at about \$3 per million B.T.U.'s, the fuel cost to make a kilowatt-hour is about 2 cents. That does not count the cost of building the plant to burn the gas, but it does make almost anything else, including zero-carbon sources like solar, wind and nuclear, much less attractive.

In the wings are other competitors, including the possibility of a better reactor. The Energy Department recently said it might spend \$450 million on [“small modular reactors”](#) that could be built in a factory and trucked to sites to replace old [coal](#) plants or power small communities. The government, though, researches far more types of reactors than ever achieve commercial life.

And the Fukushima meltdowns did not help. “It seems like every time something happens, you always get these prognostications this is the end, the nuclear industry has come to a halt,” said William D. Magwood IV, one of the five members of the Nuclear Regulatory Commission and a former assistant secretary of energy in charge of promoting nuclear power.

Fukushima, said Bart Gordon, a former Democratic representative from Tennessee and former chairman of the House Committee on Science, Space and Technology, was “undermining some of the environmental converts, so the political issue is more difficult.”

Fukushima certainly did not help the [South Texas Project expansion](#), one of the four selected by the Energy Department as prime candidates for loan guarantees. That project was in trouble before March 2011, because an important municipal partner had dropped out.

One of the replacement partners was the Tokyo Electric Power Company, which is now hardly in a position to invest in new reactors abroad. Another candidate for a loan guarantee, now probably dead, was the Calvert Cliffs 3 project, about 40 miles south of Washington, which was supposed to be built in a competitive marketplace, where the price of power was set by natural gas. That made even the Energy Department rather [skeptical about its prospects](#).

Mr. Magwood argues that the situation is not so dire, though, because the “renaissance” was never as big as some people assumed. He said he calculated in 2008 that of the 23 or so projects that were under discussion, only 12 were actually under development, and of those, only 10 faced no real licensing or technical hurdles. But only five of those had clear sources of financing. He assumed three would be in the first wave; now it is two. The industry insists that even its small-scale rebirth is a step forward. Those two pairs of reactors could lay the groundwork for more.

Mr. Ferland said that AP1000s in this country would be easier to build because of the experience of construction in China. For example, he said, technicians there had misrigged one heavy component at a plant, bending it slightly and causing a two-week delay. That will not happen in Georgia or South Carolina, he said. Smaller lessons, like how to lay out cable

trays so they do not occupy space later needed for other components, were accumulating rapidly, he said.

Simply breaking ground on a reactor and finishing it, something this country has not done for 30 years, would be a step forward.

A version of this article appeared in print on April 11, 2012, on page F4 of the New York edition with the headline: Nuclear Power's Death Somewhat Exaggerated.

A blog about energy and the environment.

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12. Wind farm scam a huge cover-up

BY: [JAMES DELINGPOLE](#) From: [The Australian](#) May 03, 2012 12:00AM
<http://www.theaustralian.com.au/national-affairs/opinion/wind-farm-scam-a-huge-cover-up/story-e6frgd0x-1226345185075>

ONE of the great popular misconceptions about climate-change sceptics such as Ian Plimer, Bob Carter, Cardinal George Pell and me is that we're all Big-Oil-funded, Gaia-ravaging, nature-hating emissaries of Satan. We can't look at a lovely pristine beach, apparently, without praying for a nice, juicy oil slick to turn up and wipe out all the pelicans and turtles and sea otters.

But this isn't actually true. I love our beautiful planet at least as much as your \$180,000-a-year (for a three-day week) climate commissioner Tim Flannery does. One of my great heroes is Patrick Moore, the Canadian co-founder of Greenpeace with whose sensible, rational approach to environmental issues I agree 100 per cent. Another of my heroes, after an article headlined "Where eagles dare not fly" in The Weekend Australian on April 21, is this newspaper's environment editor Graham Lloyd.

It took great courage for Lloyd to write up his expose of the tremendous damage being caused by a wind farm to a small community in Waterloo, north of Adelaide. Most newspaper environment editors -- from Australia to Britain and the US -- tend, unfortunately, to be so ideologically wedded to the supposed virtues of renewable energy they find it all but impossible to criticise it.

Lloyd interviewed a number of victims whose lives had been ruined by the vast, swooshing wind towers looking over their homes. They found sleep almost impossible; they couldn't concentrate; they had night sweats, headaches, palpitations, heart trouble. Their chickens were laying eggs without yolks; their ewes were giving birth to deformed lambs; their once-active dogs spent their days staring blankly at the wall. The damage, it seems, is caused not so much by the noise you can hear but by what you can't hear: the infrasonic waves that attack the balance mechanism in the ear and against which not even home insulation can defend you. Its effects can be felt more than 10km away.

Inspired by Lloyd's article, I went to investigate and was heartbroken by what I found. Until you've seen what it can do to people, it's easy to dismiss wind turbine syndrome as a hypochondriac's charter or an urban myth. But it's real all right. Waterloo felt like a ghost town: shuttered houses and a dust-blown aura of sinister unease, as in a horror movie when something dreadful has happened to a previously ordinary, happy settlement and at first you're not sure what. Then you look up on to the horizon and see them, turning slowly in the breeze . . .

Even more shocking than this, though, were my discoveries about the finance arrangements and behaviour of the wind farm companies. What we have here, I believe, is the biggest and most outrageous public affairs scandal of the 21st century -- one in which the Gillard government is implicated and that far exceeds in seriousness and scope of the Slipper or Thomson sideshows.

At the heart of this scandal are the union superannuation funds that are using the wind farm scam as a kind of government-endorsed Ponzi scheme to fill their coffers at public expense. One of the biggest wind farm developers -- Pacific Hydro -- is owned by the union superfund Members Equity Bank. To meet its carbon reduction quotas, we're told, Australia needs to build about 10,000 new wind turbines like the ones that have destroyed Waterloo (and

dozens of communities like it from NSW to South Australia).

The figures are mind-boggling. Each of those turbines will cost about \$3 million, which means \$30 billion even before you've started building the power lines. And where's this money coming from? The consumer, of course -- mostly via tariffs whacked on to the price of conventional, fossil-fuel energy prices, in the form of payouts called Renewable Energy Certificates.

Note that wind turbines produce very little power. Because wind is intermittent, they operate at between one-fifth and one-third of their capacity, meaning they are erratic, unreliable and have to be fully backed up by conventional "black" (mostly coal-fuelled) power. Where the money is to be made is through the REC subsidy. A 3MW wind turbine that generates (at most) \$150,000 worth of electricity a year is eligible for guaranteed subsidies of \$500,000 a year. A ridgeline hosting 20 or 30 turbines generates very little power -- but an awful lot of free cash for those lucky enough to get their snouts in the trough.

If the unions were merely exploiting government environmental legislation to milk the taxpayer it would be bad enough: but what makes the wind farm scam so scandalous are the public health issues. Why aren't we more aware of these? Because there have been cover-ups on an epic scale. The owners on whose land the turbines are built are subject to rigorous gagging orders (from law firms such as Julia Gillard's ex-company, Slater & Gordon); tame experts are paid huge sums to testify that there are no health implications; inquiries are rigged; victims are rehoused and silenced with million-dollar payoffs. The global wind farm industry - - a cash cow for everyone from Labor's unions to the mafia -- is so massive it can afford it.

Meanwhile the rest of us lose. Communities are divided, landscapes blighted, birds and bats sliced and diced, property values destroyed, lives ruined to deal with a "problem" -- anthropogenic CO2 causing "global warming" -- which most current evidence tells us doesn't even exist.

As a NSW sheep farmer fighting tooth and nail to stop a wind farm development near his beloved home told me the other day in trenchant style: "The wind-farm business is bloody well near a pedophile ring. They're f . . king our families and knowingly doing so."

James Delingpole's Killing the Earth to Save It (How Environmentalists are Ruining the Planet, Destroying the Economy and Stealing Your Jobs) is out now (Connor Court Publishing).

13. Nuclear waste will be stored in Sydney at Lucas Heights

BY: □IMRE SALUSINSZKY, NSW POLITICAL REPORTER

From: □The Australian May 01, 2012 12:00AM

<http://www.theaustralian.com.au/national-affairs/nuclear-waste-will-be-stored-in-sydney-at-lucas-heights/story-fn59niix-1226343173921>

NUCLEAR waste due to boomerang back to Australia in 2015 will be stored in metropolitan Sydney, after decades of political dithering over a national radioactive waste repository in the outback.

The Australian Nuclear Science and Technology Organisation will today launch its application for a licence to build an 800 sq m interim warehouse on the premises of the research reactor at Lucas Heights, which has generated the waste during the 50 years of its operation.

Lucas Heights is in Sutherland Shire, about 20km southwest of the Sydney CBD.

More than 13 cubic metres of waste - equivalent to about one-third of a shipping container - is due to return to Australia in three years after being reprocessed in France to remove plutonium and residual uranium.

Under an international agreement, the waste, which will remain toxic for centuries, was exported to France in four shipments between 1999 and 2004.

It is intended it will eventually be moved to a national repository that will house radioactive waste from across Australia.

ANSTO chief Adi Paterson said yesterday: "For decades,

Australians have benefited from nuclear medicine production, and environmental, industrial and minerals research undertaken at Lucas Heights.

"Along with these benefits comes a responsibility for Australia to safely deal with the by-products," Dr Paterson said. "Australia does not shy away from that responsibility, and ANSTO has comprehensive plans to safely manage it."

Dr Paterson said the warehouse would be so safe that a person standing next to it for an hour would receive about the same amount of radiation exposure as a traveller on a flight to Europe.

The waste will be shipped from France in a custom-built 6.5m steel cask with walls more than 20cm thick and capable of withstanding an earthquake or temperatures higher than 800C.

It will arrive in Australia at a port yet to be determined and will then be trucked to Lucas Heights under high security on a special multi-axle trailer.

Originally, it was intended the waste would be repatriated to a national repository in the remote outback. Such a repository was originally announced in 1992, and a site selected in remote South Australia.

But after a successful Federal Court challenge by the government of South Australia, the Howard government announced in 2004 it was abandoning the project.

A subsequent proposal for a national store for radioactive waste produced by commonwealth facilities was also ditched. Last month, the Gillard government passed legislation to establish a national repository for nuclear waste at an unspecified site, but this is not expected to be available until at least 2020.

Federal Resources Minister Martin Ferguson said yesterday: "Given the delays by successive governments in selecting a long-term national radioactive waste repository, it is appropriate Australia's nuclear waste be safely and temporarily stored by ANSTO until the national radioactive waste repository can be built.

"Responsibility for ensuring that any facility for temporarily storing Australia's nuclear waste at Lucas Heights meets world

standards rests with ANSTO and the nuclear regulator, and they have my full confidence.

"Importantly, the Australian government ... now has bipartisan support to ensure that a long-term storage facility for Australia's nuclear waste is established in accordance with required standards and proper approvals processes as soon as is practicable."

About 10,000 Australians benefit each week from isotopes produced at Lucas Heights - which is Australia's only nuclear reactor - for medical diagnosis and treatment.

The Australian Greens want to close the Lucas Heights reactor and ban the import and export of nuclear waste.

14. King coal still reigns

BY: □ GRAHAM LLOYD, ENVIRONMENT EDITOR

From: □ The Australian April 28, 2012 12:00AM

<http://www.theaustralian.com.au/news/features/king-coal-still-reigns/story-e6frg6z6-1226341179267>

IF there is to be a new beginning in global energy, the golden age is unlikely to be powered directly by the wind or sun. Despite high hopes for renewables, the figures show the world to be on the cusp of another fossil fuel boom.

King Coal is refusing to die and, without a significant breakthrough in technology, the biggest energy future winner looks certain to be gas.

The reality is in stark contrast to the big objectives of Australian Greens leader Christine Milne, who last night used her first speech on energy policy since taking the leadership from Bob Brown to repeat her call for 100 per cent renewable energy and for deep cuts in emissions as fast as possible.

Having negotiated the carbon tax arrangements with the Gillard government, Milne has since called for an even firmer government response. While industry groups have argued

for the Renewable Energy Target of 20 per cent renewables by 2020 to be scrapped or eased, Milne wants the target toughened up.

"Far from getting rid of the RET, we should be lifting it to a more ambitious target, supplementing it with other support mechanisms like feed-in tariffs," she says.

Climate Change Minister Greg Combet has defended the government's carbon tax and its starting price of \$23 a tonne against criticism that it is out of step with what is happening in carbon markets across the world, where prices have dropped to \$10 a tonne in Europe. Releasing Australia's National Greenhouse Accounts this month, Combet said emissions from the electricity generation sector rose by 50 per cent from 1990 to 2001, the strongest growth of all sectors in Australia.

"This shows the importance of investing in clean energy sources, like natural gas, wind and solar power, to cut carbon pollution and tackle climate change," he said.

Despite the good intentions, renewable energy projects are struggling to get finance, while the federal government's solar and carbon capture and storage "flagship" programs are behind schedule and in constant turmoil.

There are deep divisions between the state and commonwealth on climate change policy. Cost blow-outs have forced rooftop solar programs to be wound back, wind projects face tougher planning regimes and heightened local community opposition.

Progress on new technologies such as geothermal and concentrated solar has been more expensive and slower than expected. And research by ratings agency Standard and Poor's says coal will continue to dominate Australia's energy mix into the next decade at least.

But it is not just the finance sector and Opposition Leader Tony Abbott who are refusing to heed Combet's message.

Despite substantial taxpayer subsidies, cutting carbon emissions and replacing fossil fuels with renewable energy is proving to be slow and more difficult worldwide.

For US President Barack Obama, the photo opportunities may involve solar panels or wind turbines, but America's fossil fuel use is booming, with oil and natural gas set to power the economy for decades to come.

The Fukushima nuclear crisis has thrown Japan's short and long-term energy policy into turmoil, creating an increased dependence on fossil fuels that's likely to continue for at least this decade.

China -- already the world's largest carbon emitter, the largest coal producer and the largest user of coal-fired electricity -- is building Asia's largest coal-fired power station in the port city of Beihai, to produce 8GW of energy each year.

China is also the world's largest automobile user, with more than 220 million cars on the road.

Pollution is choking China as it gallops forward with unprecedented industrialisation and urbanisation, but the country -- despite its large investment in wind and solar -- has little choice but to rapidly expand its use of fossil fuels.

Even in Europe, where public and government determination to reduce carbon emissions is the strongest in the world, coal may well be in long-term decline but it has made a remarkable short-term comeback. Figures released yesterday by the British government showed that Britain used more coal for power generation in February than in any month since 2009, and the least gas of any month for 14 years.

In Germany, power companies are building 11 new coal-burning plants, including the world's largest lignite or brown coal plant, a 2.1GW giant at Neurath.

Despite this, energy analysts maintain that renewables will definitely make up an increasing amount of new power generation in Europe.

But coal, gas and oil-fired plants will increasingly vie for the role of being the reliable source of power needed to balance the more intermittent supplies such as wind and solar power.

The International Energy Agency puts the difficulty of weaning the world off fossil fuels into stark relief in its recent publication,

Tracking Clean Energy Progress.

"Recent environmental, economic and energy security trends point to major challenges; energy-related CO₂ emissions are at a historic high, the global economy remains in a fragile state and energy demand continues to rise," it says.

In summary, the IEA found few clean energy technologies are on track to meet the objectives of holding global temperature rises to two degrees.

"Cost reductions over the past decade and significant annual growth rates have been seen for onshore wind and solar, but maintaining this progress will be challenging," it says.

The IEA says the technologies with the greatest potential for energy and carbon dioxide emissions savings -- carbon capture and storage, and energy-efficient vehicles and buildings -- are making the slowest progress.

During the past decade, almost 50 per cent of new global electricity demand was met by coal, and many countries, including India, where 25 per cent of the population still has no access to electricity, have announced plans to rapidly increase construction of coal-fired power plants.

The rush to coal and gas has been accelerated by a new crisis in the nuclear industry following the Fukushima disaster in Japan.

Safety fears have seen all but one of Japan's 54 reactors shut down, robbing the country of 30 per cent of its energy supply. Liquefied natural gas and, to a lesser extent, oil have stepped into the breach to make up for the immediate shortfall.

A new energy policy will be released in a few months and is being debated within government and the community, with the nuclear energy and renewable energy lobbies at opposite ends of the spectrum.

The one thing that is certain is that nuclear power, which the government projected would eventually meet 50 per cent of Japan's energy needs, will be struggling to even get close to its pre-Fukushima scale of capacity in the foreseeable future.

Renewable energy, in the form of solar and wind and geothermal, will increase its share off a very low base of just a few per cent, although it's seen as doubtful if these sources and hydro can supply the 25 per cent being bandied about in panel discussions on the new energy policy.

As investment house Nomura points out, the world's largest wind farm has a capacity of 782MW and "bringing in 35GW of wind power would require 38 such installations in Japan plus a further 1000 offshore sites".

"Moreover, 60GW of solar energy would mean 40GW via solar panels on 10 million detached houses and the remaining 20GW in non-residential installations," Nomura's Shigeki Matsumoto wrote in a recent research note.

In the short to medium term, gas will be the key energy source, with Australia among the main beneficiaries, although Japan is anxious to find ways to import extra US shale gas cargoes to Tokyo.

Like Japan, the US has been squeezed between the political good intentions of renewable energy and the practical realities of energy demand.

Last month Obama travelled to Boulder City, Nevada, so he could deliver a speech on alternative energy with the impressive backdrop of solar panels stretching almost as far as the eye could see.

"If some politicians get their way, there won't be any more public investments in solar energy," Obama told his audience at the Copper Mountain plant, a giant solar complex built in the desert not far from Las Vegas.

He wanted to promote his administration's initiatives for meeting future US energy needs. But he also conveyed, in words and imagery, one of his biggest dilemmas.

When he took office more than three years ago, the Democrat President wholeheartedly supported green energy as an antidote for combating the US's economic ills and climate change.

Millions of new green jobs in solar and wind-power industries were

supposed to be created. Meanwhile, emerging alternative energy sources were meant to reduce dependence on fossil fuels and cut greenhouse gas emissions.

None of this has happened. While solar and wind-based power are attracting more interest, the focus of US energy expansion on Obama's watch remains squarely on the development of oil and gas. Fossil fuels are booming, with oil and natural gas set to power America's economy for decades to come.

The Copper Mountain project shatters the notion that millions of jobs could be created from green energy or that alternatives to fossil fuel are feasible on a large scale: one million solar panels spread across a desert plain can power a maximum 17,000 homes, while the plant has just 10 employees.

Rising oil prices have turned the US government's focus more keenly on developing domestic production and Obama appears to accept this reality.

US energy demand is expected to grow by 20 per cent during the next quarter-century and most energy jobs growth is expected in traditional fossil fuels. Pending legislation would require more land made available for drilling.

And Republicans, who control the US House of Representatives and could win back the Senate in this year's elections, are also backing legislation that would create energy production targets for all federal government-owned land.

Obama revisited climate change policy in a Rolling Stone magazine interview this week, as he sought to woo younger voters and differentiate himself from his Republican challenger, Mitt Romney.

But he has already essentially caved in on promoting a carbon cap-and-trade scheme after 2009 legislation was blocked by congress: the issue is off the agenda.

Despite setting renewable energy targets as recently as last year, the politics of solar power generation in particular has also pushed Obama into retreat.

The failure of solar panel maker Solyndra, which went bankrupt

after receiving a \$US535 million loan guarantee from the US government, has given the industry a bad name.

Obama had thought a solution was at hand in promoting nuclear power as a safe, clean alternative to coal-fired power stations for the future. With no nuclear power plants built in the US since the leak at Three Mile Island near Harrisburg in 1979, he argued that new technology could make the industry safe and efficient without the pollution of carbon emissions.

The Japanese nuclear disaster at Fukushima in March last year suddenly took nuclear power off the agenda as a feasible energy source to sell to the public.

But while the growth of oil and gas industry in the US looks assured, the future of coal-fired power stations is less clear.

The Obama administration's Environmental Protection Agency, headed by administrator Lisa Jackson, is set to impose rules on pollution and polluters that would prevent the construction of further coal-fired plants apart from those with issued permits.

It is a similar story in Europe, where industry analysts say those hoping for a return to King Coal should not get too excited.

"Right now you might say that coal is enjoying another moment in the sun but that same sun is still setting on it across Europe," says Brian Potzkowski, a European power analyst at Bloomberg New Energy Finance.

The recent surge in coal consumption in Britain and some other parts of Europe has several causes, the simplest of which is that coal is a lot cheaper than gas. The European economic crisis has helped to produce record low prices in the EU's emission trading system, the world's largest carbon market, reducing the cost penalty of burning coal.

While market forces in the US are helping the long-term goal of curbing emissions by making the cleanest fossil fuel, natural gas, cheaper than its rivals, the reverse is happening right now in Europe.

Laszlo Varro, the head of the gas, coal and power markets division of the IEA, says that while the US has abundant domestic supplies

of cheap gas, Europe is paying more because it imports most of its gas from countries such as Russia, Algeria and Qatar, on long-term contracts linked to the price of oil.

Europe also lacks the shale gas supplies that have revolutionised the US power industry.

"The geology is more difficult here and the industry has not even started here yet," Varro says, noting France and Bulgaria have already banned the hydraulic fracturing process used to extract shale gas.

British coal consumption is further boosted by the fact EU environmental directives to battle problems such as acid rain will force coal plants that lack the required equipment to close by the end of 2015, prompting the operators "to run them flat out to squeeze as much use out of them as they can". Further EU directives will cause another round of plant closures by 2020, Varro says.

What about the new coal plants in Germany? Eleven are due to come on stream by 2014, and figures provided to Inquirer yesterday by the German utility industry association showed another six plants on the drawing board or in the approval process.

Coal's position in Germany has been helped by the government's decision to shut down its entire nuclear industry by 2022 in response to the near-disaster at Fukushima.

Nuclear plants provided about one-quarter of Germany's total energy and half of its baseload, which will need to be replaced with new coal or gas supplies, given the intermittent nature of renewables.

Additional reporting: Brad Norington, Washington; Peter Wilson, Europe; Michael Sainsbury, China; Rick Wallace, Japan

15. Japan is nuclear no more

BY: [RICK WALLACE](#) From: [The Australian](#) May 05, 2012

12:00AM

<http://www.theaustralian.com.au/news/world/japans-nuclear-no-more/story-e6frg6so-1226347206680>

JAPAN'S government has made little obvious headway in brokering a deal to restart two nuclear reactors in the west as the country prepares to go atomic-energy-free from today.

The last operative nuclear reactor in Japan, at Tomari in Hokkaido, will be shut down for a regular inspection today.

This means Japan has lost 30 per cent of its peak generating capacity as it struggles to draw up a new post-Fukushima energy policy.

Remarkably, Japan is muddling through the power shortage and TEPCO, the disgraced operator of Fukushima and monopoly supplier to Tokyo, now says it will have enough energy to cope with summer peak demand.

However, soaring fossil fuel bills are adding to Japan's import costs and power bills are set to rise.

Anti-nuclear sentiment is rising quite dramatically, despite the effect this has on the economy of Japan, a major export manufacturing nation.

Opinion polling by the top-selling Yomiuri Shinbun newspaper found the proportion of Japanese wanting to eradicate nuclear energy has doubled from just 12 per cent about a month after the disaster to almost one in four people in March this year.

Over the same period of time, the proportion of those who want to maintain the current level of nuclear capacity has gone from 46 per cent to just 15 per cent.

More than one in every two Japanese now wants to see the reliance on nuclear energy decrease.

16. Geothermal future contingent on subsidies - ENERGY & MINING - SIX-PAGE SPECIAL REPORT -

Author: KEITH ORCHISON

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http://aap.newscentre.com.au/asu/120427/library/industrial_policy_-_economics_&_tax/28419247.html

AFTER three frustrating years in which investors have beaten a retreat from the sector, proponents of hot-rock geothermal energy are pinning fresh hopes for support on federal government predictions that their technology has strong future potential. □□The big problem for the sector is that it is caught in what federal Energy Minister Martin Ferguson describes as a catch-22 situation: investors are reluctant to support "heat mining" geothermal until it is proven, and it cannot be proven without major investment. □□The risk-averse attitude of international finance markets because of the global economic crisis has badly affected geothermal companies' plans to identify resources and to build small initial demonstration plants. □□They are committed to work plans under which they obtained licences from state governments to spend \$2.9 billion by 2014, but they are a very long way from the optimistic view of the Gillard government that they can deliver 22 per cent of national electricity needs by 2050. □□A significant stepping stone on this path is a new forecast by the federal Bureau of Resources and Energy Economics that they can deliver 5000 gigawatt hours of electricity by 2020 and 13,000 GWh by 2035. □□Meeting the government predictions would require geothermal companies to have about 500 megawatts of generation capacity commissioned by 2020, more than 1000MW by 2025 and about 10,000MW -- equal to the current capacity of Victoria's Latrobe Valley brown-coal power stations -- in operation by mid-century. □□Analysts have estimated that meeting the 2050 forecast will require investment of about \$64bn over the next three decades, with up to \$17bn to be outlaid in the next 10-12 years. □□If geothermal companies can achieve delivery of 13,000GWh a year by 2035, Ferguson points out, they will at last be able to match hydro-electric power, which is into its second decade of supplying electricity at this level. This output would also be the equivalent to production from 6000MW of intermittent wind farms. □□Even so, the BREE modelling sees the wind hare comprehensively outrunning the geothermal tortoise over the next 25 years. BREE expects wind power to be

contributing 49,000GWh a year to Australian power supply in 2035. □□Because of huge up-front costs involved -- even the smallest of these targets will involve drilling scores of 4km-deep wells to tap the radioactive heat of the earth -- and a drought in investor support, the geothermal industry is heavily dependent on a big increase in government subsidies. □□Ferguson, speaking to the Australian Geothermal Energy Association investor forum in Sydney last month, said the federal government had committed \$200 million in support to date and he pointed to the Australian Renewable Energy Agency, which will begin operating in July to co-ordinate renewable programs, and the \$1.7bn it will have to spend on assistance. □□The geothermal industry is also eager to see the proposed Clean **Energy Finance** Corporation legislated , although it will not start operations until 2013-14 and is under threat of being shut down by the Coalition should it win the next election. □□The Gillard government intends the CEFC to have \$10bn in seed money to help remove barriers to large-scale renewable energy projects going ahead. □□` ` Provided we make the necessary technological breakthroughs and overcome cost barriers, geothermal has the potential to be a major source of clean baseload energy," Ferguson says. □□Among the pluses for the 54 companies pursuing geothermal development in Australia -- 10 are listed on the stock exchange -- is that deep heat resources are now known to be dispersed across the country and are especially strong in South Australia. □□

17. Natural gas demand rises in Europe as nuclear power declines

Article rank

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GERMANY and Britain, Europe's two largest consumers of natural gas, are likely to lean ever more heavily on the fuel to meet energy needs in the coming years, as the expansion of low-carbon nuclear and renewable power falls short of their needs.

This extra demand would probably be met by high-priced imports, such as gas brought in from Russia via pipelines or liquefied natural gas from the Middle East and Africa.

For a continent already grappling with its long-term competitiveness, this could be bad news.

"Low prices for natural gas offer manufacturing a powerful competitive advantage, potentially stimulating much broader economic growth," said Mark Williams, downstream director for energy giant Royal Dutch Shell.

The US is enjoying just that, thanks to a boom in production of natural gas trapped in shale rock. In Europe, there are hopes that its shale-gas resources could eventually help it at least partially mimic the US.

The big shift that is pushing Britain and Germany towards greater dependence on gas is the decline in nuclear power.

After the Japanese earthquake and tsunami triggered a meltdown at the Fukushima nuclear power plant last year, the German government decided to close all its nuclear reactors, which produce 13 gigawatts of power, or the equivalent of 8 per cent of Germany's energy-generating capacity, by 2022.

This coincides with the end of life spans for all but one of Britain's reactors by 2023 that will leave just 1.2GW of capacity of the 11GW that they currently produce.

Several European and British utilities have planned to build 16GW of new nuclear reactors, but some projects are now in doubt as their backers say it is uncertain that these plants can operate profitably given current electricity prices.

German utilities E.ON and RWE have abandoned a joint venture to build new nuclear plants with a combined capacity of 6GW because they lacked the capital to finance the work and external financing was scarce. In February, British utility Scottish and Southern Energy quit a consortium with GDF Suez and Iberdrola to build plants with 3.6GW of planned new nuclear capacity in order to focus on renewable energy. GDF Suez and Iberdrola say they remain committed, but analysts say the projects are more doubtful.

A major expansion of coal power would cause countries to miss

their carbon reduction targets, and it seems unlikely that renewable energy could quickly fill this gap.

“Most clean energy technologies are not being deployed quickly enough, and are not on track to make their required contribution,” the International Energy Agency said in a report last month.

German Chancellor Angela Merkel has said an additional 10GW of gas-fired power plants will be built by 2022 to fill the gap left by closed nuclear plants. In Britain, even the most optimistic scenario for the use of nuclear power leaves a 6GW hole to be filled, most likely by gas.

Assuming the most efficient gas-fired power plants were built, replacing these reactors would add about 14 billion cubic metres a year to European gas demand, equivalent to almost 3 per cent of 2010 EU gas consumption. This figure could rise further if the British government can not come up with stronger financial support for new nuclear projects.

Meeting this extra demand could prove expensive. Pipeline gas from Russia is priced on a formula tied to crude oil, so is relatively expensive.

Goldman Sachs expects oil-indexed natural gas on continental Europe to sell at an average price of \$US13.60 per million British thermal units this year, a 24 per cent premium to the market price in Britain, which gets about half its gas from the North Sea.

Rising demand for LNG from Asia is also pushing up prices. The amount of LNG available to Britain in the first quarter of 2012 halved from the same period a year earlier, after the country was outbid by Asian customers, and it had to import more oil-indexed gas to compensate, said Barclays analyst Trevor Sikorski.

“We expect the LNG market to increasingly tighten as we go through the next few years,” Mr Sikorski said.

However, recent developments in the gas industry mean this is by no means set in stone. Many companies believe Britain and Germany’s neighbour Poland may hold resources that would enable them to at least partially mimic the boom in shale gas production that has pushed US gas prices to 10-year lows.

Industry analysts say there are still questions over how cheaply and quickly these resources could be tapped.

“Forget about straight-line forecasts for natural gas demand and supply,” said Anne-sophie Corbeau, a senior gas analyst at the International Energy Agency. Shale gas opened the way for “patterns to suddenly diverge from the conventional view in the most unexpected way”.