

ITER News Log July 2011

1. Japan nuke crisis 'twice as bad'
2. Wesfarmers wants urgent overhaul of energy regulation
3. Britain's carbon target in doubt
4. Nuclear power debate a 'live debate within the Labor Party', says Martin Ferguson
5. Noise level blow for wind farm
6. Japan looks to restart reactors
7. Design Flaw Fueled Nuclear Disaster
8. TEPCO takes step forward in battle to cool reactors
9. Phase-Out Hurdle
10. The final straw in nuclear beef fear
11. Japanese reactors finally stable
12. More picking winners as Greens block bioenergy
13. Wanted: carbon goes to ground
14. Generators will be caught short by carbon price
15. Japan PM to reveal nuclear phase-out

1. Japan nuke crisis 'twice as bad'

Rick Wallace, Tokyo Correspondent, The Australian June 08, 2011 12:00AM

<http://www.theaustralian.com.au/news/world/japan-nuke-crisis-twice-as-bad/story-e6frq6so-1226071255034>

THE Fukushima nuclear crisis led to more than twice as much radiation being emitted as previously thought, according to the latest government estimate.

Japan's Nuclear and Industrial Safety Agency has dramatically increased its estimate of the total radiation released to 770,000 terabecquerels of iodine-131 equivalent, up from 370,000 terabecquerels under its previous estimate.

In layman's terms, the first estimate represented about 7 per cent of what was emitted in the 1986 Chernobyl disaster, the only nuclear disaster to supersede Fukushima in severity.

The updated estimate is about 15 per cent of the total Chernobyl release.

The comparisons are made by giving each type of particle emitted a weighting to convert them to equivalents of iodine-131, an isotope commonly produced in nuclear accidents that is associated with thyroid cancer when absorbed in large quantities.

The agency made the upgraded estimate after adding in radiation thought to have leaked from the No 2 reactor to the figure used in the initial estimate, based only on reactors No 1 and No 3.

The upgraded estimate is just the latest in a string of findings that show the effect of the explosions and steam venting at the Fukushima Daiichi plant in the days after the March 11 earthquake and tsunami has had a more pronounced impact than first thought.

Early last month, plant operator TEPCO was forced to admit severe melting of fuel rods occurred at reactor No 1 at Fukushima Daiichi and probably at reactors No 2 and No 3.

The base of the stainless steel pressure vessels of these reactors may have been damaged by the molten fuel. Although radiation levels almost everywhere in Japan, excluding the immediate vicinity of the plant, have returned to near-normal, some radiation "hot spots" were discovered this week well outside the 30km exclusion zone around Fukushima Daiichi.

Green tea and plums have become the latest foods to be contaminated with fallout.

Authorities were recently forced by parent anger to begin clearing radioactive topsoil from school playgrounds around the stricken nuclear plant and reinstate tough annual exposure limits for children that had been raised after the disaster.

Radioactive isotopes have been detected in sea and river water and the Japanese government yesterday announced it would begin making radiation checks in popular bathing spots over summer to protect people's health.

Most of the total radiation released under the revised estimate occurred in the first days after the tsunami amid efforts to vent steam that led to several hydrogen explosions that damaged the buildings at several reactors.

The situation at the plant has been temporarily stabilised and radiation emissions have been reduced to low levels, although "cold shutdown" of the overheating reactors remains at least six months away on most estimates.

The new assessment is expected to be reflected in Japan's report on the accident to be submitted to a nuclear safety ministerial meeting hosted by the International Atomic Energy Agency later in the month.

2. Wesfarmers wants urgent overhaul of energy regulation

EXCLUSIVE Annabel Hepworth, The Australian June 08, 2011 12:00AM

<http://www.theaustralian.com.au/business/wesfarmers-wants-urgent-overhaul-of-energy-regulation/story-e6frg8zx-1226071255422>

WESFARMERS is demanding an urgent overhaul of the regulation of Australia's energy networks, saying that businesses are reeling from rises in electricity prices.

The diversified company, which owns the Coles and the Bunnings hardware chain, says it spends more than \$300 million a year buying electricity and is trying to find internal efficiency gains to offset rising input costs.

"Our retail businesses all operate in very competitive environments where supply-chain efficiency and cost reduction is a continual challenge," Wesfarmers sustainability manager Cameron Schuster states in a submission to the Australian Energy Market Commission.

"Significant rises in the cost of doing business, such as we have seen in recent years for electricity, puts pressure on these businesses. The rising price of electricity also affects our suppliers, among them many of Australia's farmers, food producers and many small product and service providers."

The submission points to warnings by Labor's climate change adviser, Ross Garnaut, and Australian Energy Market Operator chairman Tom Parry that regulatory arrangements had allowed too high a rate of return for network companies.

"Our strong view, based on this evidence and on our own experience as a major buyer in Australia's energy markets, is that flaws in the design of the regulatory framework and its implementation can explain much of the higher monopoly distribution costs that all users are being forced to bear," Wesfarmers says.

The submission says there is a "need for urgency" in reviewing the legal and regulatory systems underpinning the National Electricity Market, which operates along the eastern and southern states.

The AEMC is inquiring into priorities for the energy market and submissions to it will be made public today.

Australian Paper has echoed the concerns of Wesfarmers, saying that there has been an "abject failure" of regulation of the energy supply industry. The paper manufacturer has warned that Australia is getting "increasing prices for effectively the same service" and says that "consumers are not getting a fair deal" in its submission.

But the claims by big industrial users such as Wesfarmers and Australian Paper have been angrily rejected by network companies.

Infrastructure management company Jemena has warned that customers would face higher prices if there were major changes to the economic regulation of the networks. "The ability of network businesses to access equity and debt and their associated costs are strongly and directly linked to the view of investors and institutions that our regulatory environment is stable and provides regulatory certainty," Jemena says in its submission.

"Any change to that view will drive up our costs of capital and, consequently, prices to customers."

SP AusNet has also warned that a change in the regulatory system could drive investors away.

3. Britain's carbon target in doubt

Tim Webb, Energy Costs, The Times June 24, 2011 12:00AM

<http://www.theaustralian.com.au/business/mining-energy/britains-carbon-target-in-doubt/story-e6frg9df-1226080884249>

BRITAIN will have to abandon its carbon emission reduction targets if the public continues to resist higher bills, according to the chief executive of the British Gas owner, Centrica.

Sam Laidlaw was due to say in a speech at The Economist's UK Energy Summit this morning (AEST) that there is a "disconnect" over the public's understanding of the reality of rising costs to keep the lights on and generating electricity from more expensive lower-carbon sources.

He believes the public needs to "take ownership" of government policy to cut carbon emissions and hit renewable energy targets, which they are paying for through higher utility bills.

Mr Laidlaw was to warn in his speech that Britain was "rapidly approaching a tipping point" and there was a risk society was being unrealistic about the scale and cost of the energy challenge.

British energy regulator Ofgem has estimated that decarbonising electricity generation could add up to pound stg. 600 (about \$900) to each annual household bill by 2020.

Yet, according to new polling carried out by Centrica, only a third of the public are willing to pay an extra pound stg. 100 on their annual bills to do this and only 1 per cent are prepared to pay pound stg. 500.

Only a quarter of those surveyed said it was crucial for the government to stick to plans to cut carbon emissions, even if it meant customers paying more.

Without wider acceptance of higher bills, Mr Laidlaw was to suggest that carbon emission targets would have to be ditched.

"We as a nation have got one year in which to take action, or our carbon reduction targets may have to be sacrificed in the interests of safeguarding the security of our energy supplies," he was to say.

For millions of customers, annual gas and electricity bills are set to hit pound stg. 1162 in August, when rises announced this month by ScottishPower kick in.

The company blamed a 30 per cent rise in the wholesale cost of gas on global markets.

Mr Laidlaw will call for a "constructive" engagement to educate the public about the scale of the energy challenge, timely progress on government plans to reform the electricity market, support for lower carbon gas plants to back up wind farms when the wind does not blow, and a more attractive North Sea tax regime.

Speaking to The Times E.ON UK chief executive Paul Golby warned the government against plans to increase its carbon reduction target.

Britain has committed to a European Union target to cut emissions against 1990 levels by 20 per cent by 2020, but Energy Secretary Chris Huhne has been pushing for a 30 per cent cut in Brussels this week.

Mr Golby said a higher target would be "meaningless" if other countries did not follow suit.

"Leadership is about getting other people to follow you," Mr Golby said.

"Otherwise, it's a bit of a meaningless position to take. [It] might make us feel good, but it won't get us very far. If you increase the emissions reduction target, you also increase the cost."

THE TIMES

4. Nuclear power debate a 'live debate within the Labor Party', says Martin Ferguson

Mitchell Nadin, The Australian June 30, 2011 12:00AM

<http://www.theaustralian.com.au/national-affairs/nuclear-power-debate-a-live-debate-within-the-labor-party-says-martin-ferguson/story-fn59niix-1226084456535>

THE option of introducing nuclear power remains a "live debate within the Labor Party".

Resources and Energy Minister Martin Ferguson said yesterday the topic remained a "live debate in Australia, despite the best efforts of the Greens and the non-government organisations to demonise the discussion".

Speaking in Sydney at a forum on nuclear power, he said Australia would "eventually have to decide on the issue of energy reliability, at the cheapest possible cost".

After its 2007 election victory, the Labor government scrapped its "no new mines" legislation that banned new uranium mines, opening up 40 per cent of the world's economically recoverable uranium supply. However, Western Australia and Queensland remain opposed to uranium mining.

Mr Ferguson's comments present the clearest indication yet that sections of the Labor government are open to the possibility of looking at the nuclear option in Australia's energy mix in an attempt to reduce carbon emissions.

"We are an energy-rich nation, be it coal or LNG or a range of renewable options, but we are challenged in the climate change debate," he said. "We want energy security at the cheapest possible cost, but we also want to reduce emissions."

The minister bolstered his support for the use of nuclear power in other parts of the world, saying he did not think it wise for other countries to wind down nuclear programs as they would only turn to more carbon-intensive forms of power generation.

He took a swipe at Germany's decision to shrink its nuclear program in the wake of the Fukushima nuclear disaster, saying it was a political decision and the country would only start to import power from nuclear plants in other countries such as France.

Nuclear physicist and former Telstra chief Ziggy Switkowski -- the former chairman of the Australian Nuclear Science and Technology Organisation -- told the forum the push for nuclear power had taken a blow after Fukushima, but he was still optimistic about the future of nuclear energy, saying it should be a part of providing base-load power in the future.

"If Australia is serious about reducing its carbon footprint and having an impact on climate change without having to reduce its standard of living, nuclear power is fast becoming one of the few viable options for base-load power," he said.

Dr Switkowski said to drive a shift towards alternative technology for power generation, a \$50-a-tonne price on carbon would be needed to change consumer behaviour.

"By 2050, Australia will be using twice as much energy as it currently does," he said. "Considering it will still take at least 10 years working at lightning speed to get a reactor online, it should be a high priority."

5. Noise level blow for wind farm

Pia Akerman, The Australian June 25, 2011 12:00AM

<http://www.theaustralian.com.au/national-affairs/noise-level-blow-for-wind-farm/story-fn59niix-1226081608169>

A VICTORIAN court has ruled that a wind farm proposal must follow the Baillieu government's new tougher guidelines, raising opponents' hopes the project will soon be axed.

The decision by the Victorian Civil and Administrative Tribunal has dealt a blow to Wind Farm Developments' plan to base 12 turbines at The Sisters, near Terang, 220km west of Melbourne.

Wind farms are coming under increased scrutiny nationally after a Senate committee this week recommended firmer noise limits and urgent research into the turbines' potentially damaging health effects on nearby residents.

The Gillard government is yet to respond to the committee report, but wind farm opponents have called for an immediate halt to all developments until the research is complete.

In Victoria, deputy VCAT president Helen Gibson found the proposal at The Sisters needed to be judged by wind farm guidelines implemented by the Baillieu government in March, instead of the former planning rules, which had more lenient noise limits.

Moyne Shire has been fighting the proposal since 2009, when it first rejected the application from Wind Farm Developments.

The company took the case to VCAT last year, when the tribunal ruled that the development should not proceed because it breached last year's noise standards, which consider the cumulative impact of noise and set a lower decibel limit in some cases.

Wind Farm Developments then appealed to the Supreme Court, which ordered the case back to VCAT after finding the tribunal had erred by applying recent noise standards instead of the 1998 version.

Ms Gibson said she took into account the Supreme Court's direction that the case be "heard and decided again in accordance with law, and with the hearing of further evidence".

"It does not matter that the process of decision-making is being made on remittal from the Supreme Court," she said.

"I find the law requires the tribunal to hear and decide the remitted proceeding in accordance with the provisions of the planning scheme at the time the tribunal makes its decision."

Moyne Mayor Jim Doukas said he felt the VCAT decision would halt the proposal at The Sisters. "It will breach the guidelines," he said. "It's now a whole new ballgame with a new set of rules."

The amended planning guidelines fulfil part of the Coalition's pre-election promises regarding wind farms, but the government has yet to make changes to block turbines being built within 2km of homes if residents oppose them.

6. Japan looks to restart reactors

Rick Wallace, The Australian June 30, 2011 12:00AM

<http://www.theaustralian.com.au/news/world/japan-looks-to-restart-reactors/story-e6frg6so-1226084416061>

THE nuclear deadlock that threatens to choke Japan's power supply and thrust the nation deeper into recession may have been broken after a mayor agreed in principle to restart the first reactor since the tsunami.

Hideo Kishimoto, Mayor of Genkai in southern Japan, bowed yesterday to pressure from the national government to suggest he would approve the resumption of reactors No 2 and No 3 at the Genkai nuclear power plant.

The reactors, which supply more than 1700MW of power, had been shut down for maintenance. Industry Minister Banri Kaieda visited the town on the island of Kyushu -- at the opposite end of Japan to the tsunami-hit Fukushima nuclear plant -- and requested the mayor's permission to restart the reactors.

Mr Kishimoto said he would instruct Kyushu Electric Power Company to restart the reactors if "the state guarantees safety". It was unclear what guarantees the national government would provide, but it appeared the resumption would occur.

Many of Japan's nuclear reactors automatically shut down after the March 11 quake struck and none has resumed operations.

Since the quake, more reactors have been shut down for scheduled maintenance and local governments have been delaying restarting them in the absence of new national safety standards. The standoff had evolved into a high-stakes game of chicken. The government and groups aligned with power companies predicted the deadlock, which has taken 35 reactors offline, could see Japan's economy shrink by 3.3 per cent in the July-September quarter because of power shortages.

As all Japanese nuclear plants must shut down every 13 months for periodic inspections, the standoff raised the prospect of the entire nuclear industry shutting down by late next year, robbing Japan of more than 25 per cent of its total power generation.

Prefectural and municipal leaders have been under intense pressure from voters since the tsunami which killed up to 23,000 people triggered the Fukushima nuclear crisis. Citizens are demanding assurances the nuclear plants, all of which are in coastal areas, can be protected from both earthquakes and tsunamis.

Mr Kaieda has insisted it was safe to resume operations at most plants, but it appears the inadequate standards are yet to be seriously revised, and steps by plant operators to secure alternative quake- and tsunami-proof power supplies are interim measures at best. Nevertheless, he appears to have prevailed on Mr Kishimoto to budge and the government will be hoping he is the first of many local politicians to agree to a restart.

Japan has about 55 nuclear reactors spread throughout the coastal regions of the country.

7. Design Flaw Fueled Nuclear Disaster

[Norihiro Shirouzu](#) and [Chester Dawson](#)

<http://connect.in.com/fukushima-nuclear-power-plant/article-design-flaw-fueled-nuclear-disaster-1955321-27c0bda97d5e2d9516b44b6031b0f65adff41c86.html>

TOKYO—Some senior engineers at Tokyo Electric Power Co. knew for years that five of its nuclear reactors in Fukushima prefecture had a potentially dangerous design flaw, but the company didn't fully upgrade them, dooming them to failure when the earthquake hit, a Wall Street Journal examination of the disaster shows.

The company used two different designs for safeguarding its 10 reactors in Fukushima. When the devastating quake struck on March 11, the five reactors with the newer design withstood the resulting 45-foot tsunami without their vital cooling systems failing. Those reactors shut down safely.

But the cooling systems failed at four reactors with the older design. Backup diesel generators and electrical-switching equipment were swamped by seawater. As a result, fuel melted down at three reactors and there were explosions at several reactor buildings, culminating in the largest release of radiation since Chernobyl.

The tsunami exposed an Achilles heel in the design of some of the plants: the questionable placement of a single kitchen-table-size electric-switching station. At newer plants, the station was in a robust building that also housed the reactor. In others, it stood in a poorly protected outbuilding—a relic of the original design. When the tsunami hit, those switches were knocked out, rendering operating generators useless.

This article is based on interviews with a dozen current and former senior Tokyo Electric Power engineers, including several who were intimately involved when the fateful design decisions were made in the 1970s. Some of them say the company, known as Tepco, had opportunities over the decades to retrofit the oldest reactors. They blame a combination of complacency, cost-

"There's no doubt Tepco should have applied new designs" throughout Fukushima, says Masatoshi Toyota, 88 years old, once a top Tepco executive who helped oversee the building of the reactors. He says he blames himself for not noticing the design problems and correcting some of them later.

A spokesman for Tepco declined to comment for this story, citing the Japanese government's ongoing investigation into the cause of the accident.

Japan isn't the only nation grappling with aging nuclear reactors. The U.S. has dozens of reactors that have operated for more than 30 years, and 23 with the same General Electric Co. design as the older Fukushima reactors. Several face fights over relicensing in the next few years. Elsewhere, Germany and Switzerland have decided to phase out their aging plants and drop nuclear power altogether.

All the Fukushima plants, including the newer ones, were based on GE designs. GE maintained lucrative contracts to service GE reactors in Japan and was engaged with partner Hitachi Ltd. in a global campaign to extend the lives of its aging plants.

GE said any flaws at the Fukushima reactors weren't its fault because Tepco was in charge of design changes. "The location of emergency diesel generators at the Fukushima Daiichi plant were reviewed and approved by Tepco and regulatory authorities," said GE spokeswoman Catherine Stengel.

Construction of the oldest Fukushima plants dates to the 1960s. The Fukushima Daiichi nuclear-power station—the source of all the post-quake radiation problems—was the first for Tepco, Japan's largest utility. The facility, located on the Pacific coast, was seen as a learning lab. At that time, barely two decades removed from the devastation of World War II, Japan was incapable of designing its own nuclear-power plants. It imported nuclear technology wholesale from GE, say Japanese engineers.

The early reactors used GE's Mark 1 design. The general contractor was an American engineering firm called Ebasco, which no longer exists. To keep the reactor compact and economical, Ebasco made the reactor building small, said Mr. Toyota, the engineer who helped oversee the construction.

Nuclear-power plants must continuously cool their unstable, radioactive fuel. Those cooling

systems run on electricity, which the plants ordinarily pulled from the nation's power grid. If the grid fails, on-site diesel generators kick on to keep the cooling systems running. If they don't, that plant is in danger of melting down.

Because Tepco's first reactor buildings were small, the generators had to go somewhere else. Engineers put them into neighboring structures that house turbines. The reactor buildings were fortress-like, with thick concrete walls and dual sets of sturdy doors. The turbine buildings were far less sturdy, especially their doors.

"Backup power generators are critical safety equipment, and it should've been a no-brainer to put them inside the reactor buildings," Mr. Toyota says. "It's a huge disappointment that nobody at Tepco—including me—was sensitive enough to notice and do something about this discrepancy."

8. TEPCO takes step forward in battle to cool reactors

The Australian, TOKO SEKIGUCHI TOKYO, 5 Jul 2011

<http://www.pressdisplay.com/pressdisplay/viewer.aspx>

THE operator of the crippled Fukushima Daiichi nuclear power plant said yesterday that it had resumed the use of contaminated water to cool the reactor cores, a week after its first attempt was suspended because of leaks. If successful, the use of recycled water to cool the reactors will solve one of the major complications as workers struggle to bring the complex under control. Until now, they have been using fresh water from an outside source to cool the reactors, creating even more irradiated water, which then requires storage or disposal. Tokyo Electric Power Company said on Saturday that it installed a tank to store 1000 tonnes of decontaminated water to complete the recycling system, stabilising the water source for cooling the No 1-3 reactors. "All the (cooling) water is now recycled water" since Saturday evening, Junichi Matsumoto, a company spokesman, said on Sunday. TEPCO was ahead of its schedule to complete the first stages of what is known as a cold shutdown, Mr Matsumoto said. The establishment of a closed cooling system is a key step forward to stabilise and bring the Daiichi reactors by the target date of January to a cold shutdown, which is defined as lowering the temperature of the fuel rods to below 100C — water's boiling point — and keeping it there. If the system can remain in operation, it will make it easier for TEPCO to begin increasing the flow of water and further bring down the reactor-core temperatures, which currently hover between 100C and 160C. Until now, TEPCO limited the amount of cooling water to 16 tonnes an hour to prevent the overheating of the No 1-3 reactor cores to minimise the production of newly irradiated water. The recycling system has had difficulties. TEPCO had to halt the operation after just 90 minutes last week because of leakage, indicating the challenges of using a complex network of tubes connecting various reactors and purification facilities. There are currently about 120,000 tonnes of contaminated water from the four reactors awaiting processing. TEPCO said it had recycled 11,770 tonnes, and 3862 tonnes had been purified and ready for reuse in cooling the reactors. Until Saturday, cooling water had to be brought in from outside the plant. The water is irradiated as soon as it is injected into the damaged reactors since it comes in contact with the melted reactor cores, which are emitting high levels of radiation. Even if the recycling system is now working smoothly, problems with the operation remain, including how to dispose of radioactive sludge being created in the filtering process. While Japan has a disposal site for low-level radioactive waste, there are no guidelines for disposing of the type of sludge now being created, which is expected to total 2000 cubic metres. Another complication TEPCO faces in the work at the complex is the unseasonably hot weather, which for workers wearing protective suits is not just uncomfortable but potentially dangerous. The company reported on Sunday that a worker had lost consciousness from heatstroke while driving a truck with a broken airconditioner. It was the 17th reported case of heatstroke at the plant in recent weeks.

9. Phase-Out Hurdle

Germany Could Restart Nuclear Plant to Plug Energy Gap

July 21, 2011, Spiegel On-line International

<http://www.spiegel.de/international/germany/0,1518,774203,00.html>

Germany's energy agency is warning that one of the German reactors mothballed in the wake of Fukushima may have to be restarted to make up for possible power shortages this winter and next. Berlin is also using money earmarked for energy efficiency to subsidize coal-fired power plants.

Nuclear energy, as has become abundantly clear this year, has no future in Germany. For once the government, the parliament and the public all agree: Atomic reactors in the country will be history a decade from now.

Before that can happen, however, the country has to find alternate power sources. In fact, amid concerns that supply shortages this winter could result in temporary blackouts, Germany's Federal Network Agency on Tuesday indicated that one of the seven reactors shut down in the immediate wake of the Fukushima nuclear disaster in Japan could be restarted this winter to fill the gap.

"The numbers that we currently have indicate that one of these nuclear energy plants will be needed," said agency head Matthias Kurth on Tuesday in Berlin. He said that ongoing analysis has indicated that fossil fuel-powered plants would not prove to be adequate as a backup.

The government of Chancellor Angela Merkel established an atomic "moratorium" immediately following the March 11 disaster in Japan and took Germany's seven oldest reactors offline. Not long after, Berlin decided to keep them shut down permanently. But with concern rising that solar and wind power might not be sufficient on cold winter days, one of those older reactors will likely have to be switched back on. A final decision will be made in August.

Merkel and her government have celebrated the phase out of nuclear energy in Germany as an "energy revolution" and vowed to make up for the capacity lost through the reactor shutdowns through billions in investments in renewable energies and energy savings measures. But according to a report in the daily *Berliner Zeitung* on Wednesday, some of that money has now been earmarked to subsidize the construction of new coal-fired power plants.

Filling the Gap with Coal

Citing a statement issued by the Economics Ministry in response to a formal query from the Green Party, the paper reported that over €163 million (\$229.3 million) is to go toward subsidizing the construction of coal- and natural gas-fired power plants in both 2013 and 2014. The money, generated by the trade in CO2 emissions certificates, is reportedly to come out of a fund originally earmarked to finance projects aimed at promoting energy efficiency.

Criticism from the Greens has been scathing, with parliamentarian Oliver Krischer telling the paper that "coal-fired power plants are damaging to the climate and are not flexible enough to make up for fluctuations in the supply from renewable sources."

Indeed, with Germany slowly making the shift toward renewables, many have seen natural gas-fired plants as the logical technology to fill gaps in the energy supply when the wind isn't blowing and the sun isn't shining. The output of such plants can be regulated much more quickly than can that of a coal-fired plant -- and gas burns much cleaner.

But it is expensive. Whereas a megawatt hour of electricity produced by coal currently costs between €18 and €19, a megawatt hour of gas-electricity costs €40. "In Germany at the moment, we don't see a price scenario that would allow for newly constructed natural gas-powered plants to become profitable," the German energy giant RWE recently said in a statement.

Still, Germany's Federal Network Agency insisted on Tuesday that, should a nuclear plant have to be switched back on for this winter and next, it is only a "temporary solution." After that, a spokesperson added, there should be enough coal-fired plants to fill the gap.

cgh -- with wire reports

10. The final straw in nuclear beef fear

The Australian, July 20, 2011 12:00AM

<http://www.theaustralian.com.au/news/world/the-final-straw-in-nuclear-beef-fear/story-e6frg6so-1226097840406>

JAPAN's radiation-tainted beef scandal widened yesterday amid fears that cattle from neighbouring prefectures have been fed the cesium-laced rice straw that has contaminated the meat of about 650 cows from Fukushima.

The government yesterday announced a ban on all cattle shipments from Fukushima as it began spot checks on cattle fodder in farms in 10 prefectures closest to the Fukushima Daiichi nuclear plant. Checks will be extended to farms nationwide.

About 550 of the cattle shipped after eating the contaminated straw were from Fukushima and the rest from Niigata and Yamagata prefectures.

The straw is thought to have been left in the open since the March 11 tsunami crippled cooling functions at the plant, sending radioactive isotopes spewing into the air and sea.

Test have shown meat from affected cattle -- several hundred kilograms of which has been sold and eaten in 37 of Japan's 48 prefectures -- had readings of up to five times the allowable limit.

The government insists consumption of the contaminated beef will cause no health effects.

While the beef crisis again exposed Japan's failure to account for problems with the fallout, the government got some good news yesterday with a positive report on measures to stabilise the nuclear plant.

Prime Minister Naoto Kan said the crisis at the plant was "heading towards a certain level of settlement" with work proceeding largely on schedule.

He held out the prospect of a "cold shutdown" being achieved before the January deadline first flagged by the plant's disgraced operator TEPCO.

11. Japanese reactors finally stable

AP July 20, 2011 12:34PM

<http://www.theaustralian.com.au/news/world/japanese-reactors-finally-stable/story-e6frg6so-1226098265051>

THE crippled reactors at Japan's tsunami-hit nuclear power plant have reached stability more than four months since the disaster and the plant is on track for a cold shutdown within six months, the government and plant operator said.

Workers have toiled in hot and harsh conditions to stabilise the Fukushima Dai-ichi plant since the March 11 earthquake and tsunami destroyed reactor cooling systems, triggering partial meltdowns of the reactors and making the disaster the world's worst nuclear crisis since Chernobyl.

The assessment of reactor stability was based on several milestones: temperatures at the bottom of reactor pressure vessels are no longer climbing, a makeshift system to process contaminated water works properly after initial problems and nitrogen injections are helping prevent more explosions.

Radiation around the plant has shown a "sufficient decrease" from peak levels measured soon after the disaster, according to the report released by the government and TEPCO, the plant's operator.

The progress achieves TEPCO's initial goals of its road map to bring the plant under control, the report said.

"The accident has not been resolved, but we have been making progress steadily," trade and industry minister Banri Kaieda said. "We will continue our utmost effort so that we can bring this to an end as soon as possible."

The work now shifts into a second stage, when workers will aim to further cut radiation released into the air, soil and water. They expect a cold shutdown sometime in January.

A reactor reaches cold shutdown when the temperature at the bottom of the reactor pressure vessel drops below 100 degrees Celsius, and when the release of radioactive materials is "under control."

TEPCO also said it would continue to improve conditions for workers by expanding temporary dormitories and onsite rest stations, as well as stronger controls over their radiation exposure.

Still, growing worries about radiation in Japan's beef supply underscore the widespread impact of the nuclear accident.

The central government instructed Fukushima to suspend shipment of all beef cows raised in the prefecture.

The move comes amid a growing tally of cows - now about 650 - that were fed radiation-tainted rice straw and then shipped nationwide. Some of the meat has already reached consumers.

Major supermarket chain Aeon acknowledged over the weekend that 14 of its outlets in Tokyo and nearby prefectures sold meat from the exposed cows between April and June.

Chief Cabinet Secretary Yukio Edano said the contamination stems from rice straw that had been sitting outside since the March 11 disaster, then fed to the cattle.

Fukushima officials have said they did not properly inform farmers to avoid using feed stored outdoors.

Cesium levels exceeding the legal limit has been detected in beef samples in three cities.

"We are doing utmost to track down beef that might have been fed rice straw," Edano said. "If we find any samples we will suspend it from distribution and inspect."

AP

12. More picking winners as Greens block bioenergy

Andrew Lang, The Australian July 14, 2011 12:00AM

<http://www.theaustralian.com.au/national-affairs/commentary/more-picking-winners-as-greens-block-bioenergy/story-e6frqd0x-1226094153315>

I HAVE just returned from the European Bioenergy conference in Brussels.

The drive to renewable energy across Europe is mainly based on bioenergy in its many forms: as heat, electricity and transport fuels made from forestry or agricultural residue, sewage, food waste, manure and combustible non-recyclable municipal wastes.

By using these mature European bioenergy technologies Australia could, by 2040, produce 20 per cent of its electricity, up to half our heat energy and perhaps 30 per cent of transport fuels from available biomass.

But at present the potential for bioenergy, our most cost-effective renewable energy option, is being obstructed by the Greens and other allied vocal interest groups. This is largely a byproduct of their determination to close down all native forest harvesting, which is only a relatively small potential source of biomass. Instead, vast amounts of taxpayers' money have been outlaid on solar photo-voltaic phantom renewable energy certificates, purchase subsidies and inflated feed-

in tariffs, and on stimulating wind and geothermal development. In neglecting the potential of bioenergy Australia is alone in the world.

The Scandinavian countries are the world leaders in development of energy from biomass. This has been largely driven by their implementing of a carbon tax about 20 years ago. The present confusion here about the carbon tax should be informed by the Scandinavian experience.

In 1991 the Swedish and Danish governments imposed a carbon tax. The Finns followed with market mechanisms similarly aimed at lifting energy efficiency and reducing their heavy reliance on fossil fuels. These policies were driven by the economic pain of the 1970s oil price shocks. It was an urgent matter of national security to move towards energy self-reliance

The carbon taxes in each country were on all fossil fuels for transport and energy generation (including for heat), and were designed to be calculated simply and easily collected. To minimise impacts on the cost of living cuts to various other taxes meant household expenses remained approximately the same. The level of carbon tax imposed on the population was significantly higher than the tax on industry. The objective was to change each individual's or family's decisions about energy use or misuse; about what sort of car or household appliances to buy, what sort of heating system to install, and how to move from A to B.

The revenue raised funds research and development, contributes to capital costs of new efficient low-emission combined heat and power plants and district heating plants, subsidises biofuels and provides rebates on new "safe fuel" cars, and the availability of biofuels at big service stations. Added to this was a general support for upgrading of public transport, particularly rail services.

Twenty years later outcomes include household energy use of about half that of urban Australia and emissions per capita of half or less. Public transport is far superior to ours both in cities and between cities. Light and heavy industry flourishes and at the same time these are truly "knowledge economies".

Energy is produced locally and regionally. In each city and town and most villages there are one or more tall chimney flues rising from a highly efficient district heating plant or a combined heat and power station. These are fuelled by either forest residues, timber industry processing residues and wastes, or agricultural residues such as straw. In larger plants one furnace may be fuelled by biomass and another by sorted waste.

In Denmark and Sweden (and increasingly across all the EU countries) municipal waste that is not recycled is used for producing energy (about 75 per cent of this is usually material or organic such as paper, food scraps, wood and cardboard).

Sending general waste to landfill has been illegal in Denmark for more than 10 years. This means that for the 285,000 households of inner Copenhagen 20 per cent of their electricity and about 30 per cent of their heat needs come from the energy produced from 400,000 tonnes annually of their own non-recyclable waste.

And since it is also now illegal to dispose of wet waste into landfill this has to be dealt with in another way by farmers and municipalities. This is by putting it into anaerobic digesters to produce biogas that is about 65 per cent methane. This can run a motor-driven generator, or upgraded to be a substitute for LPG in cars, trucks and buses. The residue from the process is quality odourless fertiliser.

Now, due to long-term coherent intelligent policies, biomass is the largest source of renewable energy in Sweden, Denmark and Finland (and many other EU countries). In Sweden more than 32 per cent of primary energy is from biomass (only 1 per cent is from wind). In Finland it is closer to 29 per cent from biomass. In Denmark biomass and waste provide more than three times the renewable energy of their much-lauded wind sector. All three aim to get up to 50 per cent of their primary energy from biomass by 2050. Many other European countries have similar targets.

Why? Because bioenergy technologies are cost-competitive, baseload, use wastes and residues, produce heat, petrochemical substitutes and biofuels as well as electricity, create permanent rural jobs, are associated with active carbon sequestration, and create real environmental benefits.

Andrew Lang is a board member of the World Bioenergy Association.

13. Wanted: carbon goes to ground

Graham Lloyd, Environment Editor, The Australian July 14, 2011 12:00AM

<http://www.theaustralian.com.au/news/features/wanted-carbon-goes-to-ground/story-e6frg6z6-1226094141511>

THE environment editor at The Guardian newspaper, John Vidal, is fond of saying his home garage is Ferrari ready.

It is a reference to laws that, as in Australia, require all new power stations in Britain to be CCS ready: capable of capturing and storing their carbon emissions at some point in the future.

Vidal's inference is that there is as much chance of a Ferrari gracing his garage as there is of coal-fired power stations one day being emissions free: not likely.

Vidal may have his reasons for doubt, but his view reflects the fact it is very fashionable in environmental circles to be dismissive of carbon capture and storage as a realistic technology to help stop the world from overheating.

This is despite the UN's Intergovernmental Panel on Climate Change and the International Energy Agency saying CCS will be central to success in cutting the world's carbon emissions.

And this is because, in the rapidly expanding electricity markets of China and India, coal use is forecast to keep growing strongly well into the future.

This is not to dismiss the strong growth that is also taking place in less carbon-intensive power generation technologies such as nuclear, hydro, wind and solar.

But whatever happens, coal is forecast to be around for a long time to come. Opposition to CCS clearly owes as much to ideology as technological reality.

In Australia, the Greens are explicit about their desire to phase out coal.

Greens deputy leader Christine Milne told the recent Economic and Social Outlook conference co-sponsored by The Australian and the Melbourne Institute: "We set the goal for 100 renewables, a de-carbonised economy by 2040 and we go for it. Maintaining what people have now on a fossil fuel economy is fools gold."

Milne says she is prepared to bet Australia's economic future on research and development, but not, it seems, in the area of CCS.

Greens leader Bob Brown is unambiguous: "So let the multi-billion-dollar coal industry pay for its own research and not pilfer the public purse over that while we get on with supporting solar power and the alternatives we want to see grow here in Australia."

Their views put them in the same camp as Greenpeace, which says CCS is "intrinsically incompatible" with the sustainable development of the host country.

Internationally, not all environment groups are opposed to carbon capture and storage.

The World Wildlife Fund has called for the rapid deployment of carbon capture and storage demonstration plants worldwide, including in Australia.

In retrospect, those people driving research and development in carbon capture and storage concede it was a mistake to allow the coal industry to adopt and brand the technology as "clean coal".

Put simply, very few people accept that there is anything clean about coal. But the results from CCS research are promising.

According to Barry Jones, of the Australia-based and government-funded Global CCS Institute,

there are 71 large-scale integrated CCS projects across the world, eight of which are in production.

CCS involves capturing the carbon emissions from industrial processes such as making cement, fertilisers or burning coal or gas to generate electricity.

The captured carbon emissions can be stored deep underground in geological formations such as saline aquifers or locked up in other products, such as road aggregate or algae as a feedstock for biofuels.

Options for capturing carbon emissions are being evaluated worldwide. There are two basic approaches to capture:

One is pre-combustion, where coal is altered in some way before it is burned, and the other is post-combustion, where the carbon is captured after the coal or gas has been burned.

Research has shown that carbon capture is possible through either of these approaches, but the challenge is to make it cheaper.

In Australia, the federal government's \$1.7 billion CCS flagship program is focused on storage.

A geological survey has confirmed that more than 120 million tonnes a year of Australia's future carbon dioxide emissions can be avoided by the capture of CO₂ from 10 emissions hubs.

The survey found that the east of Australia has aquifer storage capacity for 70 to 450 years at an injection rate of 200 million tonnes per annum, while the west of Australia has a capacity for 260 to 1120 years at an injection rate of 100Mtpa.

The capacities were estimated using a probabilistic analysis similar to that used for petroleum resource estimation and are considered to be highly conservative.

"We know there is sufficient storage, what needs to be done is the more detailed work on particular projects," Jones says.

Some of the highly suitable geology for underground storage is located close to existing electricity infrastructure. This includes the Latrobe Valley in Victoria and Collie in the southwest of Western Australia. Large potential also exists in Queensland and NSW but more work is needed.

The Australian government announced in June that it had selected the Collie South West Hub project in Western Australia for funding under the CCS Flagships Program.

The base case for the Collie project aims to capture about 2.5Mtpa of CO₂ from an industrial source south of Perth.

The government is providing \$52 million in funding to support the studies required to move the project to the next phase of decision making. This includes the completion of a detailed storage viability study.

Initial studies have identified the Lesueur formation in the southern Perth Basin as the best potential CO₂ storage site and community consultation is now under way.

The Australian government also announced it would continue to progress other large-scale Australian CCS projects, including the CarbonNet CCS hub project in Victoria and the Wandoan project in Queensland.

The government is also funding a \$61m National CO₂ Infrastructure Plan to study sites potentially suitable to store captured CO₂ and speed up the development of transport and storage infrastructure near major emission sources.

The plan includes development of a national CO₂ drilling rig deployment strategy and an assessment of infrastructure needs.

Australia will also host the world's largest CCS project when the Gorgon gas field comes into production off the north coast of Western Australia.

As part of the Gorgon development, so-called fugitive carbon emissions -- the CO₂ that comes to the surface with the gas -- will be reinjected and stored in the original geological structure from which it came.

Advanced CCS projects have been commissioned in the US and Canada, and the European Commission has mandated states to legalise the storage of carbon dioxide.

Britain, Spain, France, Denmark, Ireland, Belgium, Latvia, Lithuania, Luxembourg, Austria, Romania and Finland adopted the EC's directive in time for the June 25 deadline.

This month, the German parliament granted its approval for testing of CCS technology, despite public objections that the potential dangers of the technology had not been adequately addressed.

Herbert Huppert, Australian-born scientist and foundation director of Cambridge University's Institute of Theoretical Geophysics, says the risks of carbon sequestration are well understood.

Huppert was invited last month to deliver the Royal Society's most prestigious annual lecture. He used it to outline the role the CCS could play in helping guard against climate change.

According to Huppert, the widespread adoption of CCS is inevitable. He says the safety of storage depends on the CO₂ being kept more than 1km below the earth's surface.

Jones agrees and says he believes CCS will be among the least costly ways of reducing emissions in the longer term.

"Policies that put a price on carbon are a necessary part of the overall response, but for CCS what you need is a significant price," Jones says.

"In the interim it is important for government to provide support for the research and development phase so that the technology can be demonstrated and innovation can occur."

As with other high-cost, carbon-abatement technologies, the timeframe for the introduction of CCS will depend on the trajectory of the carbon price.

"It is not low-hanging fruit; it will probably come into the money from 2030 onwards," Jones says.

"Energy efficiency improvements will come first but we will eventually need CCS to be a significant part of the solution."

With significant government funding in place it is debatable whether CCS is better off within or outside of the federal government's Greens-sponsored \$10bn clean energy fund.

Julia Gillard says the government remains committed to CCS research and development but left it under the control of Energy Minister Martin Ferguson rather than within a broader climate change portfolio.

According to Peter Cook, of the Co-operative Research Centre for Greenhouse Gas Technologies (CO₂CRC) there is a danger of being left outside of the broader government response.

CO₂CRC is a joint venture comprising participants from Australian and global industry, universities and other research bodies, including New Zealand, as well as federal, state and international government agencies.

"If we do not include CCS in the overarching clean energy package and the Clean Energy Finance Corporation, we run the risk of taking a highly polarised approach to lowering our carbon footprint," Cook says. "Without inclusion of CCS there is no solution to the greenhouse issue."

Cook says CCS is not just about coal, adding that it is highly relevant to decreasing emissions from all fuel stocks, including biomass and gas. There are also opportunities for combining CCS with geothermal power and algae sequestration.

14. Generators will be caught short by carbon price

Brad Page, The Australian July 19, 2011 12:00AM

<http://www.theaustralian.com.au/business/mining-energy/generators-will-be-caught-short-by-carbon-price/story-e6frg9df-1226097146042>

THE federal government's arrangements for pricing greenhouse gas emissions are complex. It will take time for all the implications to be identified and understood.

What is clear is that this is a mixed bag for the electricity sector.

A range of sound initiatives, such as paying to close some high-emission plants and focusing renewable energy technology development through the Australia Renewable Energy Agency, could be overshadowed by incumbent generators left in distressed financial positions with serious consequences for the electricity market and consumers.

Let's be clear; in Australia's competitive electricity markets, where investment in new plant is driven by the decisions of private capital providers, pricing emissions is necessary for efficient new investment. But damaging the value of current generators without adequate recompense could stymie this new investment so fundamental to the government's aims.

Some estimate that up to \$200 billion in new capital may be needed over the next 20 years to build the new low-emission energy system.

Key to having this capital flow freely to Australia's electricity and gas sectors is finding a fine line on greenhouse gas emission pricing.

An efficient, equitable and enduring cap-and-trade scheme is vital to provide capital markets with assurances their allocations for power generation and gas pipeline facilities are well founded for the long term. But the emission pricing arrangement must avoid impairing today's assets or those same capital providers will take flight. The government already has advice from its Investment Reference Group that this risk is real.

On Carbon Sunday, the government also announced an assistance package for coal-fired generators.

At first glance this seems to be better than the dumped CPRS, but actually it provides nothing for the black-coal-fired generation community -- both state government and private -- and is likely to be insufficient for a measured transition of the brown-coal-fired sector.

It amounts to \$4bn on a real net present value (NPV) basis over the first five years of the scheme. But let's put this in perspective. The generation sector will pay about \$19bn in NPV for its carbon permits over the same period.

Modelling done for the government in the CPRS process indicated that over the first 10 years, coal-fired generators would suffer asset value losses exceeding \$10bn in real NPV terms.

This will crimp the balance sheets of these businesses significantly, especially those with black-coal-fired assets that receive nothing. To continue trading, government owners will have to progressively inject further equity to affected companies.

For the private sector, refinancing will be made very difficult as its commercial fundamentals are challenged. As a last resort, the government is offering loans but at rates above the commercial market and subject to undisclosed terms.

The independent Australian Energy Market Commission advised Wayne Swan on June 21 that "without an appropriate level of transitional assistance for highly emitting generators, we believe there is a significant risk to energy security because of the impacts of a number of the generators not having a net equity position that would allow them to operate and maintain their plant, operate effectively in the contract market, and have the willingness and capacity to invest in new plant".

The AEMC is cautioning that assets in a carbon price-induced distressed position will take a very short-term approach, maximising returns and minimising operating and capital costs. And why?

Because their financiers will want their capital returned quickly.

But minimising operating and capital costs also compromises the reliability potential for generation equipment. It doesn't mean blackouts will occur, but it does increase the chance of them.

Maximising revenue in the compulsory wholesale market could be achieved by generators decreasing their contract levels with retailers.

Retailers rely on these contracts to give consumers -- industrial and residential -- the fixed prices they expect while avoiding the volatility of the wholesale market that could send them broke in hours.

The efficient functioning of the electricity market relies on generator-retailer contracting. Without this at a substantial level, the retail market will fail. The price-to-volume risk for retailers is unmanageable.

To compound the problem, the government has reversed a commitment in the CPRS to allow emission permit payment schedules to more closely match generators' income streams.

Without such an arrangement, the electricity industry requires an extra \$10bn in working capital to buy the permits to back the generator-retailer contracts.

Raising capital is difficult and expensive already.

Providing assistance for only eight or nine generation plants out of the 31 baseload coal plants while also assuming the industry will find another \$10bn in working capital, deserve further attention.

It is imperative that the transitional assistance to the coal-fired generation sector be increased while easing the narrow eligibility criteria twinned with sensible emission permit purchasing arrangements that do not unnecessarily increase electricity costs.

Not doing so risks disrupting an efficient electricity market.

Brad Page is the chief executive of the Energy Supply Association of Australia

15. Japan PM to reveal nuclear phase-out

Rick Wallace, Tokyo correspondent, The Australian July 14, 2011 12:00AM

<http://www.theaustralian.com.au/news/world/japan-pm-to-reveal-nuclear-phase-out/story-e6frg6so-1226094140899>

JAPAN's Prime Minister Naoto Kan was poised last night to announce a major shift away from atomic energy as another nuclear crisis erupted -- this time over the revelation that radiation-contaminated beef from the Fukushima area had been sold and eaten in Japan.

It followed last week's revelations that a Japanese power company had sent 50 employees to pose as citizens and write emails supporting the resumption of operations at one of its plants during a public meeting.

As more light is shed on the Japanese nuclear industry and its false promises of infallibility, support for it is waning, with 74 per cent of people in a recent Asahi Shimbun poll supporting a gradual phase-out of atomic energy.

The embattled Mr Kan, who wants to tap rising anti-nuclear sentiment to remain in his job, was set to announce a range of measures to wean Japan off its dependence on nuclear energy.

He has previously threatened to make moves to nationalise the nuclear industry and is believed to be furious that plant operators and regulators are not taking safety reforms seriously enough.

Japan's Yomiuri Shimbun reported that Mr Kan -- who pledged to quit to defeat a no-confidence motion but has since clung tenaciously to power -- would announce plans for a gradual phase-out

of atomic energy. He was also expected to clarify the conditions under which plants closed in the wake of the post-tsunami meltdown at the Fukushima Daichi nuclear plant would be allowed to restart.

Nuclear power accounts for about 30 per cent of energy production in Japan, which lacks reserves of LNG, coal or oil and has failed to embrace renewables on a significant scale.

The damage from the Fukushima disaster remains at the forefront of news in Japan with reports this week focused on a scandal over tainted beef.

Regional governments have confirmed that the meat of several cows tainted with radioactive cesium has been sold in 11 prefectures in Japan, including Tokyo, and some has been eaten.

The Tokyo Metropolitan government said last night it appeared that about 373kg of the 1438kg of tainted beef may have been already sold and eaten.

The meat from the Fukushima prefecture cattle involved is believed to have become contaminated when they ate radiation-tainted straw that had been stored outside since the plant overheated and began spewing radiation into the atmosphere, soon after it was struck by the March 11 tsunami.

The cows passed external radiation checks and were slaughtered, but more detailed tests on meat from the same herd found cesium levels of more than six times the allowable limit of 500 becquerels per kilogram.

The contaminated meat is thought to be confined to six carcasses.

Authorities announced they had traced 28kg of beef that had been bought by a Shizuoka meat-packing company, and about 15kg had already been consumed.

At least 190kg of beef shipped from the Minami-Soma farm in question was sold to retailers and restaurants in Kanagawa Prefecture, including Yokohama, according to the Tokyo government and other organisations.

Osaka City University professor Ginji Endo, who studies the impact of radioactive material in food, told the Yomiuri Shimbun that the limit for food was based on long-term consumption and eating small amounts of this beef posed no danger to human health.

The tainted beef comes on top of previous food radioactivity scares surrounding vegetables, milk and green tea.

Despite the negligible health impacts, such revelations have worried consumers in Japan, where food safety is taken very seriously.

On Monday afternoon, the Fukushima prefectural government started questioning 130 farmers in the area over how they stored feed and what kind of fodder they were using, according to the Yomiuri Shinbun.

The government will also conduct radiation screening on beef shipped from all 260 farms within the 20km to 30km zone around the plant where residents are allowed to remain but must be prepared to be evacuated. This area includes parts of Minami-soma.

Checks are then expected to be extended to the rest of the prefecture.