world nuclear news

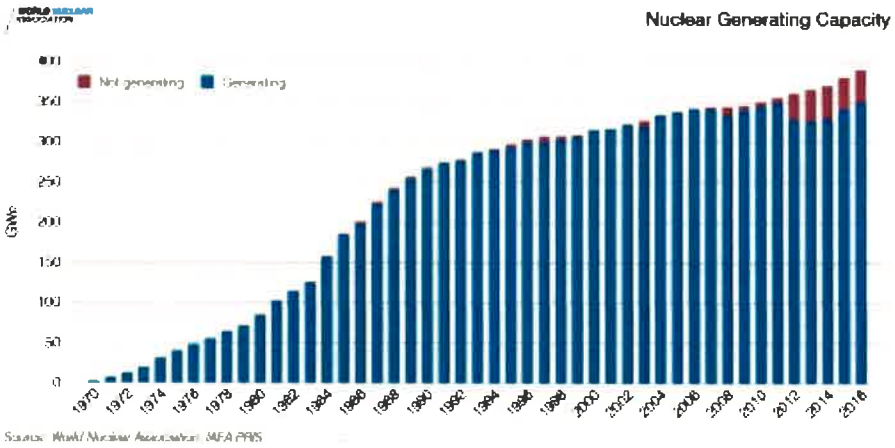
Nuclear construction reaches 25-year high

28 June 2017

The nuclear industry brought more than 9 GWe of new plant on line last year, the largest annual increase in 25 years, according to a new World Nuclear Association report, putting it on track to achieve the Harmony goal of providing 25% of electricity in 2050 using 1000 GWe of new capacity.

In the *World Nuclear Performance Report 2017*, the Association detailed power generation and construction achievements for the previous year.

The ten new reactors which came on line in 2016 added 9.1 GWe to global capacity and took the total nuclear capacity supplying electricity to the grid past 350 GWe for the first time ever. This does not include around 40 GWe of operable nuclear plant that remains offline in Japan and is making slow progress towards restart.



The global nuclear fleet is growing faster than at any time in the last 25 years. Restarts in Japan would significantly boost output (Source: World Nuclear Association, IAEA PRIS)

Growth in nuclear power is being led by China, where five of the ten new reactors are located. "This trend is likely to continue in the coming years with around a third of reactors currently under construction being located in China," said Agneta Rising, the Association's director-general.

Chinese industry constructed its new reactors in 5 years and 9 months on average. Series build is a major factor in this. A case study showed that 912 issues were identified during the construction of Yangjiang 1-3. Successfully addressing these helped unit 4 to be built more than ten months more quickly than unit 1.

Steady performance is a feature of nuclear power plants and this continued across the fleet with a global average capacity factor of 80.5%, down just slightly on last year's 81%. According to the report, 64% of the world's reactors operated at an

average of 80% of their full potential across the entire year. Only 8% of reactors achieve below 50% of their potential output.

The report states that "there is no significant age-related trend in nuclear reactor performance" with older units achieving the same level of performance as newer ones. It highlights the case of Heysham II-2 in the UK, a reactor that has operated since 1988 and in 2016 completed a record-breaking run of 941 days generating electricity without interruption.

Total nuclear power generated worldwide was up for the fourth year in a row, to 2476 TWh in 2016, which broadly keeps pace with the overall growth of the electricity system. Figures for global electricity of all kinds take longer to compile, but the latest data, for 2014, shows nuclear maintaining a 10.6% share of electricity.

"The world's nuclear power plants have performed well this year, making a significant contribution to meeting the need for clean, reliable and affordable electricity," Rising said.

Future growth

The build rate of 9 GWe per year represents a doubling compared to the average over the previous 25 years, said the report. Rising welcomed it as being in line with the needs of the Harmony goal for nuclear power to generate 25% of electricity with 1000 GWe of new capacity in 2050. Rising said the path to acheiving this needs an average of 10 GWe per year of new build now, then a doubling to 25 GWe on average from 2021-2025 and a peak construction rate of 33 GWe per year on average from 2026. This represents a return to the build rates the industry acheived in the 1980s.

The Association has identified three areas for action to achieve this: establishing a level playing field in electricity markets, building harmonized regulatory processes, and an effective safety paradigm. The latter means considering matters of nuclear safety not just in technical terms, but "from a holistic society perspective", said Rising.

"The health and environmental benefits of nuclear energy are not valued on an equitable basis with alternative energy sources," she said. Other factors, "such as economics, industrial, social, public health and environment", all need to be considered, she added.

Researched and written by World Nuclear News

ISSN 2040-5766

world nuclear news

Three Chinese reactors approach commissioning

24 July 2017

Three new nuclear power reactors in China have passed significant pre-operational tests and inspections. Sanmen 1 passed a comprehensive safety check ahead of fuel loading, while a containment integrity test was completed at Haiyang 2. Meanwhile, cold function tests were completed at Yangjiang 5.

Testing under way of the containment of Haiyang 2 (Image: SNPTC)

China National Nuclear Corporation announced on 21 July that the AP1000 reactor at unit 1 of the Sanmen nuclear power plant in China's Zhejiang province had completed a comprehensive nuclear safety check. This, it said, is the "most critical inspection" before fuel loading.

A team of inspectors from the Ministry of Environmental Protection's National Nuclear Safety Administration concluded that the quality assurance work of the construction and pre-loading phase of the unit meets basic safety requirements.

Hot testing of Sanmen 1 - aimed at simulating the temperatures and pressures which the reactor's systems will be subjected to during normal operation - was completed on 30 June.

Four AP1000 units are under construction in China - two each at Sanmen and Haiyang - and are all scheduled to start commercial operation in 2018. Sanmen will

be the first.

Haiyang 2 containment tests

Tests on the containment vessel at another AP1000 unit under construction in China - unit 2 of the Haiyang plant in Shandong province - have also been completed.

State Nuclear Power Technology Company (SNPTC) said the two-part tests to confirm that the containment vessel meets design and construction quality requirements began on 14 July. The first part - the structural integrity test - involved the vessel being pressurized and monitored to confirm that its design and construction meet all applicable industry codes and standards at 110% of design pressure.

The vessel was then pressurised to design pressure and the integrated leak rate test was performed to demonstrate its ability to prevent the release of radioactive materials in the event of an emergency.

Such tests were completed at Haiyang 1 - also an AP1000 - in December 2015.

Yangjiang 5 completes cold testing

Meanwhile, cold hydrostatic testing was completed on 21 July at unit 5 of the Yangjiang nuclear power plant in China's Guangdong province, China General Nuclear has announced.

Cold hydrostatic testing involves filling the reactor's primary circuit with water, which is circulated at high pressure by the reactor coolant pumps to verify that the welds, joints, pipes and components of the reactor coolant system and associated high-pressure systems meet regulatory standards. The coolant pumps will help to maintain the reactor's internal temperature at a safe level during operations. The tests are an important step in the commissioning of new units.

First concrete for Yangjiang unit 5 - the first ACPR1000 reactor to be built - was poured in September 2013. It is scheduled to begin operating in 2018. Unit 5 marks the first application of a digital control system designed in China.

Six units are planned for the Yangjiang site. The first four units are CPR-1000s, with units 5 and 6 being ACPR-1000s. Unit 1 entered commercial operation in March 2015, with units 2, 3 and 4 following in June 2015, January 2016 and March 2017, respectively. All six reactors at Yangjiang should be in operation by 2019.

Researched and written by World Nuclear News

ISSN 2040-5766

world nuclear news

Trump heralds golden era for US energy

30 June 2017

President Donald Trump yesterday announced a "complete review" of US nuclear policy as the first of six new initiatives to secure domestic energy independence and create a "new era of American energy dominance."

Energy Secretary Rick Perry applauds President Trump at the Unleashing American Energy *event (Image: Simon Edelman/DOE)*

The president's remarks were made in speech on American energy dominance at a Department of Energy (DOE)-hosted event on *Unleashing American Energy*. The event was also attended by Vice President Mike Pence, US Energy Secretary Rick Perry and Scott Pruitt, head of the US Environmental Protection Agency, who took part in a panel discussion on the policy framework for US energy dominance.

With the USA's "extraordinary energy abundance" - unknown of "even five years ago" - Trump promised his administration would seek not only "the American energy independence that we've been looking for so long, but American energy dominance". He spoke of plans to export energy "all over the world, all around the globe". This potential could only be realised with governmental promotion of energy development, he said, going on to announce "six brand-new initiatives

AP1000s in India

The USA and India reconfirmed their commitment to commercial civil nuclear cooperation during a visit by Indian Prime Minister Narendra Modi to the White House on 26 June. A fact sheet issued by the White House referenced a contract for six Westinghouse AP1000 reactors to be built in Andhra Pradesh. "Once completed, the project will provide reliable electricity for millions of Indian citizens," the statement said.

to propel this new era of American energy dominance."

The first of those initiatives, he said, would be to "revive and expand" the country's nuclear energy sector. "A complete review of US nuclear energy policy will help us find new ways to revitalise this crucial energy resource," Trump said.

The other five initiatives announced by the president addressed issues connected with the export of US coal plants, natural gas and petroleum, and opening offshore areas to fossil fuel development.

"The golden era of American energy is now underway," Trump said.

Nuclear Energy Institute president and CEO Maria Korsnick said the US nuclear industry welcomed a comprehensive study of the issues it faces. "If the president wishes for our nation to achieve nuclear energy dominance both at home and abroad, he'll do it by preserving the existing nuclear fleet, paving the way for the deployment of advanced nuclear designs and stimulating exports abroad. We look forward to working with the administration on these incredible opportunities," she said after attending the event.

Making nuclear cool

The president's speech gave no further details of the planned review of the nuclear industry, but earlier in the week Energy Secretary Perry reaffirmed the administration's support for nuclear energy, particularly advanced reactors and small modular reactors.

"I believe no clean energy portfolio is truly complete without nuclear power, and so does the President. If you want to see the environment and the climate that we live in affected in a positive way, you must include nuclear energy with zero emissions to your portfolio," he said at a White House press briefing. "Do it safe, do it thoughtfully, do it economically. Under the leadership of the United States, the world can benefit from that."

"This administration believes that nuclear energy development can be a game-changer and an important player in the development of our clean-energy portfolio globally. I believe we can achieve this by focusing on the development of technology, for instance, advanced nuclear reactors, small modular reactors," he said.

In answer to questions about the USA's two nuclear plant construction sites, VC Summer and Vogtle, Perry said it was important to keep America engaged in the development of nuclear energy. "One of the things we want to do at DOE is to make nuclear energy cool again ... we need as a country, I think, to again bring us to that place where the nuclear energy is a part of a portfolio and to be able to sell it in great truthfulness and honesty about what it can add to America both from an environmental standpoint and from a security standpoint," he said.

Researched and written by World Nuclear News

world nuclear news

Moon urged to halt South Korean nuclear exit

05 July 2017

South Korean President Moon Jae-in has been urged to consider the climate and environmental impacts of phasing out the use of nuclear energy in the country. Moon used the permanent shutdown of Kori unit 1 last month to outline his intended nuclear energy phase-out policy.

Moon was one of seven candidates in the May presidential election who signed an agreement in March for a "common policy" for phasing out the country's use of nuclear energy. At a ceremony on 19 June to mark the permanent shutdown of Kori 1, he said plans for new power reactors will be cancelled and the operating periods of existing units will not be extended beyond their design life.

An open letter to Moon signed by 27 international scientists and conservationists - including climate scientist James Hansen - calls for Moon to reconsider his policy. It says, "If South Korea withdraws from nuclear the world risks losing a valuable supplier of cheap and abundant energy needed to lift humankind out of poverty and solve the climate crisis."

The letter notes there is strong consensus among climate policy experts that an expansion of nuclear energy is needed to achieve a significant reduction in carbon emissions and improvement in air quality.

"Over the last 20 years, South Korea has earned a global reputation for its ability to build well-tested and cost-effective nuclear plants," it says. "South Korea is the only nation where the cost of nuclear plant construction has declined over time. And in the United Arab Emirates, South Korean firm Kepco has proven it can build cost-effective nuclear power plants abroad just as it can at home."

The signatories to the letter claim a nuclear phase-out in South Korea would "profoundly undermine efforts" by Kepco to compete for nuclear new build contracts abroad. "Buyer nations would rightly question why they should buy nuclear plants from a nation phasing out its nuclear."

"Solar and wind are not alternatives to nuclear," the letter states. Given the intermittent nature of solar and wind and South Korea's land scarcity, replacing the country's nuclear power plants would require a significant increase in the use of coal and/or natural gas. This would prevent South Korea meeting its climate commitments and would increase air pollution.

"Instead of phasing out nuclear, we encourage you to lead an effort to both make nuclear even safer and more cost-economical than it already is through the development and demonstration of accident-tolerant fuels and new plant designs."

The signatories "strongly encourage" Moon to "deliberate with a wide range of energy and environmental scientists and experts" before making any final decisions.

Academics oppose shutdown

Publication of the letter came as a group of several hundred South Korean university professors and scholars also called on the president to drop his nuclear phase-out plans.

The group has called for the government to "immediately halt the push to extinguish the nuclear energy industry that provides cheap electricity to the general public", according to the *Yonhap* news agency.

Some 410 professors - including those from Seoul National University and the Korea Advanced Institute of Science and Technology - called for the phase-out plan to be carried out only after extensive deliberation, not only by government officials by also by industry experts.

Moon has cited concerns about the safety of nuclear power plants due to earthquakes as one reason for the phase-out policy. However, the academics argue that South Korea's plants are capable of withstanding any kind of earthquake that may hit the Korean Peninsula and there is little chance of a Fukushima-like accident happening there.

South Korea has 24 power reactors in operation with a combined generating capacity of 22,505 MWe. Together they provide about one-third of the country's electricity.

Researched and written
by World Nuclear News

ISSN 2040-5766

world nuclear news

Construction of two Korean reactors put on hold

14 July 2017

Korea Hydro & Nuclear Power (KHNP) has decided to temporarily suspend construction of units 5 and 6 at the Shin Kori nuclear power plant in south-eastern Korea. The move comes two weeks after South Korean President Moon Jae-in issued an administrative order to halt construction of the reactors.

An artistic impression of how Shin Kori 5 and 6 could look (Image: KHNP)

President Moon last month outlined his intended nuclear energy phase-out policy. Moon was one of seven candidates in the May presidential election who signed an agreement in March for a "common policy" for phasing out the country's use of nuclear energy. At a ceremony on 19 June to mark the permanent shutdown of Kori 1, he said plans for new power reactors will be cancelled and the operating periods of existing units will not be extended beyond their design life. At that time, Moon said he would reach a "social consensus" as soon as possible on whether the construction of Shin Kori 5 and 6 will proceed.

Following a board meeting today, KHNP said it will suspend construction work on the two APR1400 units for a three-month period as soon as the government-appointed committee is formed to discuss South Korea's nuclear energy policy. Should the committee fail to reach a decision within that time, KHNP said its board will meet again to reassess its suspension of the construction work.

Although first safety-related concrete has yet to be poured for Shin Kori 5 and 6, KHNP noted that work on the foundations of the reactor buildings - which it says is very important for reactor safety - will "inevitably" be completed by the end of August.

KHNP said it expects the temporary suspension to cost it about KRW100 billion ($88 million) for maintaining equipment and the construction site. The company said it plans to carry out "special safety measures, such as construction site inspections, equipment cleaning, anti-rusting and packaging by making full use of the local labour force so that quality problems will not occur in the future" as a result of the suspension of construction work. KHNP added it will "take measures with partner companies to minimise the cost and impact on the local economy".

Worker protests

The KHNP board had been due to meet at KHNP's headquarters in Gyeongiu yesterday to make a decision on suspending work on Shin Kori 5 and 6. However, the meeting had to be cancelled as seven of the board's 13 directors were prevented from entering the building by "hundreds of union workers", the *Korea Times* reported. The board meeting was instead held today at a nearby hotel.

Union leader Kim Byung-gi said workers will not accept the decision by the board, saying the union will take all possible measures until its demands are met. "The board's decision is not legally binding" he said. "The union and concerned residents will not remain idle. We will continue to protest until matters are rectified."

The construction of Shin Kori 5 and 6 was approved by South Korea's nuclear regulator last June. Actual construction of the reactors was due to start this year. The 1400 MWe units are scheduled to begin operating in March 2021 and 2022, respectively.

In late May, KHNP announced that it had suspended design work for the planned units 3 and 4 at the Shin Hanul plant - also APR1400 units - until the government policy on the construction of new nuclear power plants is confirmed.

South Korea has 24 power reactors in operation with a combined generating capacity of 22,505 MWe. Together they provide about one-third of the country's electricity.

Researched and written by World Nuclear News

ISSN 2040-5766

world nuclear news

Environmentalists appeal to Macron for nuclear

04 July 2017

An open letter to French president Emmanuel Macron warned him that closing nuclear power plants would be a step backward for France. If the country wants to build renewables, let the new capacity support faster electrification of transport, said Energy for Humanity.

Published today, the letter was signed by 45 activists, writers and academics spearheaded by eminent climate scientist James Hansen as well as Kerry Emanuel and Francois-Marie Breon, the lead author for the Intergovernmental Panel on Climate Change Fifth Assessment report.

Energy for Humanity Executive Director Kirsty Gogan said, "For France, the next necessary step to help combat climate change and improve air quality is to increase clean electricity from all non-fossil sources and massively reduce fossil fuels used in heating and the transportation sector. Nuclear power must play a central role in this."

Dear President Macron,

We are writing as environmentalists, conservationists and climate scientists to congratulate you on your win in the presidential election, and to applaud your push for a carbon tax. Nobody has done more for advancing clean energy on the grid than France. In light of this knowledge, we are also writing to express our alarm at your decision to move France away from clean nuclear power.

Few nations have done more than France to demonstrate the humanitarian and environmental benefits of creating a high-energy, nuclear-powered, and electrified society. Not only was France host of United Nations climate talks, it also has some of the lowest per capita carbon emissions of any developed nation.

Any reduction in France's nuclear generation will increase fossil fuel generation and pollution given the low capacity factors and intermittency of solar and wind. Germany is a case in point. Its emissions have been largely unchanged since 2009 and actually increased in both 2015 and 2016 due to nuclear plant closures. Despite having installed 4 percent more solar and 11 percent more wind capacity, Germany's generation from the two sources decreased 3 percent and 2 percent respectively, since it wasn't as sunny or windy in 2016 as in 2015.

And where France has some of the cheapest and cleanest electricity in Europe, Germany has some of the most expensive and dirtiest. Germany spent nearly EUR 24 billion above market price in 2016 for its renewable energy production feed-in tariffs alone, but emissions have remained stagnant. Germany is set to miss its 2020 emission reduction goals by a wide margin. Despite its huge investment in renewables, only 46 percent of Germany's electricity comes from clean energy sources as compared to 93 percent in France.

Solar and wind can play an important role in France. However, if France is to make investments in solar and wind similar to those of Germany, they should add to France's share of clean energy, not inadvertently

reduce it. Renewables can contribute to the further electrification of the transportation sector, which France has already done with its trains and should continue to do with personal vehicles.

Shifting from nuclear to fossil fuels and renewables would grievously harm the French economy in three ways: higher electricity prices for consumers and industry, an end to France's lucrative electricity exports, and - perhaps most importantly - the destruction of France's nuclear export sector. If the French nuclear fleet is forced to operate at lower capacity factors, it will cripple the French nuclear industry by adding costs and shrinking revenues. Eventually this will lead to poorer safety standards and less opportunities to fund research, development and efforts to export French nuclear technologies. Nations seeking to build new nuclear plants rightly want to know that the product France is selling is one that France itself values.

The French nuclear program has historically been the envy of the world. It demonstrated in the 1970s and 80s that the decarbonization of an industrialized country's electricity sector is in fact possible. For France, the next necessary step to help combat climate change and improve air quality is to increase clean electricity from all non-fossil sources and massively reduce fossil fuels used in heating and the transportation sector. Nuclear power must play a central role in this.

Signed,

James Hansen, Climate Science, Awareness, and Solutions Program, Columbia University, Earth Institute, Columbia University

Kerry Emanuel, Professor of Atmospheric Science, Massachusetts Institute of Technology

Robert Coward, President, American Nuclear Society

Andrew Klein, Immediate Past President, American Nuclear Society

Steven Pinker, Harvard University, author of Better Angels of Our Nature

Richard Rhodes, Pulitzer Prize recipient, author of Nuclear Renewal and The Making of the Atomic Bomb

Robert Stone, filmmaker, 'Pandora's Promise'

Pascale Braconnot, Climate Scientist, IPSL/LSCE, lead author for the IPCC Fourth Assessment Report and Fifth Assessment Report

Francois-Marie Breon, Climate Researcher, IPSL/LSCE, lead author for the IPCC Fifth Assessment Report

Ben Britton, Ph.D, Deputy Director of the Centre for Nuclear Engineering, Imperial College London

Claude Jeandron, President, Save the Climate, French association

James Orr, Climate Scientist, IPSL/LSCE

Didier Paillard, Climate Scientist, IPSL/LSCE

Didier Roche, Climate Scientist, IPSL/LSCE

Myrto Tripathi, Climate Policy Director, Global Compact France

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M J Bluck PhD, Director, Centre for Nuclear Engineering, Imperial College London

Gwyneth Cravens, author of Power to Save the World

Bruno Comby, President, Environmentalists for Nuclear Energy

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Michelle Marvier, Professor, Environmental Studies and Sciences, Santa Clara University

Alan Medsker, Coordinator, Environmental Progress – Illinois

Elizabeth Muller, Founder and Executive Director, Berkeley Earth

Richard Muller, Professor of Physics, UC Berkeley, Co-Founder, Berkeley Earth

Rauli Partanen, Energy Writer, author of The World After Cheap Oil

Peter H. Raven, President Emeritus, Missouri Botanical Garden. Winner of the National Medal of Science, 2001

Paul Robbins, Director, Nelson Institute for Environmental Studies, University of Wisconsin-Madison

Samir Saran, Vice President, Observer Research Foundation, Delhi, India

Michael Shellenberger, President, Environmental Progress

Jeff Terry, Professor of Physics, Illinois Institute of Technology

Tim Yeo, Chair, New Nuclear Watch Europe; former Chair, Energy and Climate Change Parliamentary Select Committee

ISSN 2040-5766

THE AUSTRALIAN

Power and gas prices to soar next month

"This is bad news for families and businesses and absolutely not what they wanted to hear," EnergyAustralia chief customer officer Kim Clarke said.

ANDREW WHITE THE AUSTRALIAN 1:12PM June 15, 2017

Soaring wholesale prices will push up household and business gas and electricity bills by double-digit amounts next month, with retailers warning of steep price rises as Canberra debates energy reforms.

EnergyAustralia will become the second of the three major energy companies to raise prices this year, telling households and businesses in Queensland, NSW and South Australia they face rises of up to 19.9 per cent for electricity and up to 13.3 per cent for gas.

The increases are among the highest in the past five years and will add an average of $915 to the electricity bills and $1042.60 to gas costs for small and medium businesses in NSW.

Household electricity bills will jump $319.80 after doubling in the past five years thanks to soaring network and wholesale prices.

David Leitch of consultancy ITK said the rises were the direct result of years of uncertainty over energy and carbon policy that had stalled investment in new capacity and handed an opportunity to the retailers and generators.

But the problem was worsened by the closure of the Hazelwood and Northern coal-fired power stations and the Victorian government deal to keep the Portland aluminium smelter going. The smelter consumes 10 per cent of Victoria's energy output.

"There is genuine tightness in demand and supply, but they have also milked it," Mr Leitch said.

EnergyAustralia, business groups and the NSW government yesterday said the rises highlighted the need for a clearer national policy and urged the federal government to embrace the recommendations of the report by Chief Scientist Alan Finkel to introduce a carbon emissions target to guide investment in new energy systems.

Professor Finkel's report has divided the Coalition, with a quarter of MPs concerned its recommendations do not do enough to secure reliability and lower prices, and others wanting a higher target that would allow new coal-fired generation to qualify as low- carbon.

"Without a sensible national plan, we won't have enough new investment in new power plants to bring prices down," NSW Energy Minister Don Harwin said.

"With the kind of flat market conditions many businesses face, especially those exposed to international competition, such cost increases can't be passed on."

NSW Business Chamber chief executive Stephen Cartwright said state and federal governments should set out a short-term plan "above and beyond Finkel" to ease the price increases that have already come through and continue again on July 1.

EnergyAustralia chief customer officer Kim Clarke said the cause of higher prices was higher wholesale costs, which have almost doubled in some states, increased demand for gas by liquefied natural gas projects in Queensland and reliability issues with some big generators.

"This is bad news for families and businesses and absolutely not what they wanted to hear," Ms Clarke said. "Today, getting electricity to our customers costs more right across the energy chain."

Queensland customers received the smallest increase, with electricity prices up 7.3 per cent for households and 11.3 per cent for businesses. This month the Queensland government moved to ease pressure on price rises by restarting the Swanbank gas-fired turbines and ordering the state's generators to take less profit.

South Australia, which already has the highest prices and suffered blackouts last year, faces a 19.9 per cent rise for households. Business bills rise 19.9 per cent, or about $967.20, a year for electricity and 13.3 per cent, or $936, a year for gas.

FROM THE HOMEPAGE

Mal 'better leader' than Tony

DAVID CROWE

Australians believe Malcolm Turnbull has better values and credentials to lead than Tony Abbott, Newspoll finds.

Labor's tax war to hit business

DAVID CROWE, JOE KELLY

Bill Shorten is facing a war with small business over an imminent Labor policy to increase taxes.

Four years good only for pollies

PAUL KELLY

Malcolm Turnbull must be kidding. The idea of fixed four-year terms at the national level is a con job.

IMF cuts US growth

ADAM CREIGHTON

The International Monetary Fund is losing faith in US President Donald Trump's promise to revive the US economy.

PM urged to lobby US insiders

CAMERON STEWART

The Turnbull government must adopt a radical new approach to US relations under Donald Trump, a new report says.

Frydenberg gets schooled

SAM BUCKINGHAM-JONES

Students tell Josh Frydenberg to address "the other empty half of the glass" when debating the quality of life of millennials.

Sex abuse conviction quashed

CAROLINE OVERINGTON

The High Court has quashed the conviction of a Queensland father who was convicted of sexually assaulting his daughter.

'ABC waging war on Christians'

SAM BUCKINGHAM-JONES

Media Watch criticises the ABC for "cherry picking" information — implying irregular Christian churchgoers are more likely to beat their wives.

THE AUSTRALIAN

Weatherill must come clean on Musk deal

South Australian Premier Jay Weatherill with Tesla's Elon Musk. Picture: Facebook

GRAHAM RICHARDSON THE AUSTRALIAN 9:07PM July 11, 2017

Elon Musk remains an enigma to me. I dare say I would be richer than God and have my own private plane if I were able to amass the reputed $US6 billion ($7.9bn) in subsidies his business has received from federal and state governments in the US.

Batteries are supposed to be the answer to the world's future energy demands. Perhaps they will be but I suspect that won't be any time soon.

For Musk, there is tremendous upside in his venture in South Australia. If this mega battery can produce real power when it is needed in a state that lives on a knife's edge of praying that the sun keeps shining and the wind keeps blowing. If the battery works, Musk gets massive global publicity and an enormous boost to being able to sell his batteries all over the world. By the same token, if this new battery provides only 1½ hours of power a day then I, for one, will wonder what all the fuss was about.

Call me a cynic but I am always suspicious when the zillionaire flies in to a fanfare of a hundred trumpets and a thousand cameras to make an announcement as big as this without mentioning, or even hinting at, what the enterprise might cost.

Musk is a proven grand master at relieving governments of huge chunks of taxpayers' money. It is a fair assumption that he is not paying the whole of the bill. Well then, how much is he coughing up and how much is Jay Weatherill putting in. If Musk is putting it all in then surely the South Australian Premier would be crowing about his negotiation skills.

Make no mistake about it, the South Australian government and its Premier desperately need this project to do more than be delivered on time. Every citizen of that state, already reeling from far too many power failures, will expect this battery to provide a big percentage of the state's power needs. When the build-up is this big, the end result must live up to or exceed expectations. Billions of people around the globe want battery technology to be one of the real contributors to future energy needs. Even Chief Scientist Alan Finkel said battery technology at the moment could deliver less than two hours of power to Australia. If the whole of the country is getting only a piddling couple of hours, then presumably South Australia will get far, far less.

We do not have enough data on this project to make sense of it. There are two possibilities here — either the data does not stack up with the promises, or for some reason I am utterly unable to fathom, the data is being withheld.

It is time Weatherill briefed his voters and the rest of Australia as well about the truth of the claims or counter claims.

Every one of us wants to believe that Musk will deliver something special that will provide direction in finding the energy to power Australia to the next level.

However, we need facts, not fantasy, if we are to become true believers.