



Australian Government
Department of the Environment and Energy

POWERING FORWARD

A better energy future for Australia



POWERING FORWARD

A better energy future for Australia

The Australian Government is powering forward with a plan that will deliver an affordable and reliable energy system that will also help meet our international commitments.

As our energy system transitions, we must ensure there is enough electricity generation to supply households and businesses reliably while delivering affordable power.

Our plan to address Australia's urgent needs and prepare for the long term is based on engineering and economics.

The Government has already taken steps over the past 12 months to address generation, network and retail costs, while pursuing reforms that place an emphasis on well-regulated markets and technology.

Building on this comprehensive package, the Government is acting on the Chief Scientist's recommendation that new measures are needed to improve reliability and investment certainty in the electricity sector. To do this, we will take the advice of the independent Energy Security Board and implement a new **National Energy Guarantee**.

"... we need reliable, affordable and secure baseload. For the first time in 10 years we are finally addressing all three."

Paul O'Malley, CEO, BlueScope Steel

TACKLING THE ENERGY 'TRILEMMA'

A decade-long failure to effectively integrate energy and climate policy has created uncertainty in the market, affecting investment decisions and therefore prices and reliability.

Affordability: Household electricity prices as at June 2017 have more than doubled over the past decade. Since 2007, this has been driven by network costs and, most recently, generation costs due to high gas prices.

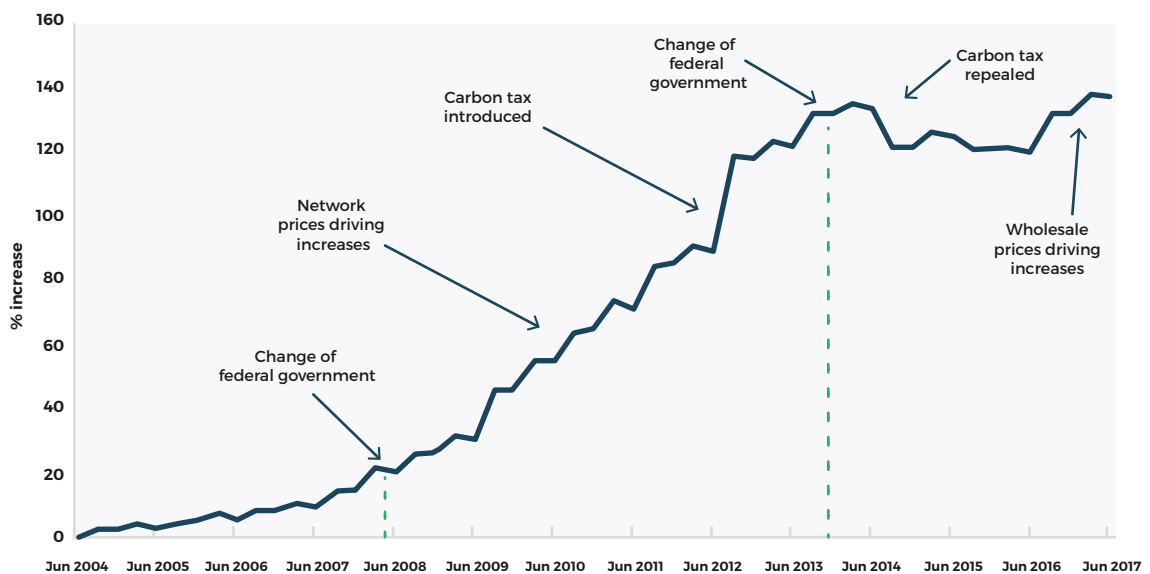
Reliability: South Australia's statewide blackout in 2016 and the February 2017 load-shedding events in New South Wales and South Australia were wake-up calls. They threw the spotlight on the energy challenges facing Australia with a greater

reliance on intermittent sources of generation and a more decentralised grid. They indicated that the National Electricity Market (NEM), designed in 1998, was no longer fit for purpose.

Emissions: Australia's emissions per capita and per GDP are at their lowest levels in 27 years, and emissions in the electricity sector have fallen over the past two quarters as coal-fired power stations have closed and demand has flat-lined. But this cannot come at the expense of the reliability and affordability of our electricity system.

It is in these challenging times that the Government is powering forward with our energy plan.

AVERAGE RETAIL ELECTRICITY PRICE INCREASES



Source: Australian Bureau of Statistics

A NATIONAL ENERGY GUARANTEE

To respond to these challenges, the Government will implement a **National Energy Guarantee**, as recommended by the independent Energy Security Board.

Formed out of the Independent Review into the Future Security of the National Electricity Market (the Finkel Review), the Energy Security Board comprises an independent chair and deputy chair along with the expert heads of the Australian Energy Market Commission (AEMC), the Australian Energy Regulator (AER) and the Australian Energy Market Operator (AEMO).

The Guarantee is made up of two parts that together will require energy retailers and some large users across the NEM to deliver reliable and lower emissions energy generation each year.

- **A reliability guarantee** will be set to deliver the right level of dispatchable energy—from ready-to-use sources such as coal, gas, pumped hydro and batteries—needed in each state. It will be set by the AEMC and AEMO.

Based on Energy Security Board advice, it is expected that the Guarantee could lead to a reduction in residential bills in the order of \$100-115 per year over the 2020-2030 period.

- **An emissions guarantee** will be set to contribute to Australia's international commitments. The level of the guarantee will be determined by the Commonwealth and enforced by the AER.

This two-part Guarantee, proposed by the Energy Security Board, will deliver affordable and

reliable energy for households and businesses without subsidies, taxes, emissions trading schemes or carbon prices. It is a market-based solution that will integrate energy and climate policy to deliver a more affordable, more reliable and lower emissions energy system.

Past approaches have ignored reliability and affordability, rewarding some industries, punishing others and slugging consumers. We are taking a very different course. The National Energy Guarantee does not pick winners—it levels the playing field and is technology-neutral.

The Energy Security Board says these obligations will encourage much-needed investment in the electricity sector.

WHAT DOES THE NATIONAL ENERGY GUARANTEE ACHIEVE?

- Puts downward pressure on household and business power bills and reduces spot price volatility—more investment and therefore more supply of electricity puts downward pressure on prices.
- Encourages the right investment in the right place at the right time—to meet the obligation, retailers will need to secure power from a variety of sources ensuring an ongoing place for coal, gas, wind, solar, batteries and hydro in the nation's energy mix.
- Improves reliability—increasing investment in new and existing dispatchable supply.
- Reduces emissions at lowest cost—emissions targets can be met using a range of technology, including existing resources.
- Is not a subsidy or a tax—allows the lowest cost range of technologies to meet overall targets.

“Under this scheme, the wholesale price would be expected to be lower relative to today and lower compared to a certificate-based scheme. Since retailers will need to contract with new low emissions and dispatchable generators, the increased supply will place downward pressure on wholesale prices.”

Kerry Schott AO, Chair, Energy Security Board

This integrated policy values both reliable electricity and lower emissions generation and will guide much-needed investment in the electricity sector, delivering the right resources, in the right place at the right time, making energy more affordable.

Retailers will be responsible for the National Energy Guarantee as part of the generation they already buy and sell. It will be up to individual retailers how they meet the requirements. Retailers could choose to:

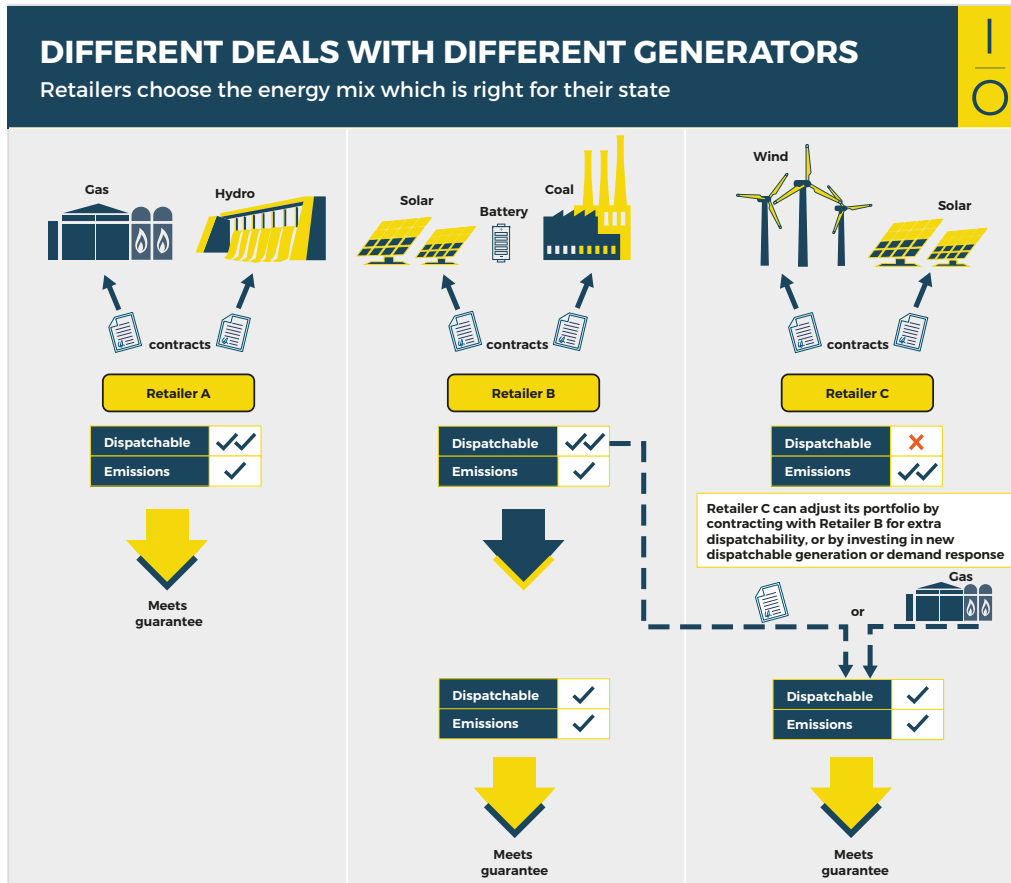
- **invest directly** in new generation capacity that is dispatchable and/or lower emissions
- **enter into contracts** with generators specifying the emissions produced by that electricity

- **contract with another retailer**, as already occurs, that has overachieved its reliability and/or emissions guarantee.

In this way, the guarantees work within the existing framework of the energy market. It is a technology-neutral approach that does not provide direct subsidies to renewables or any other particular technology, creating a level playing field for all energy sources.

The Commonwealth will work through the Council of Australian Governments (COAG) to ensure the National Energy Guarantee provides the certainty we need to power forward.

The Energy Security Board says the Guarantee will result in lower emissions and a more affordable and reliable energy system for Australian consumers.



“The Prime Minister’s intervention this month had shone a spotlight on major problems with the way energy retailers were engaging with their customers, and elicited some important initiatives to put downward pressure on household power bills.”

Energy Consumers Australia





MAKING ENERGY MORE AFFORDABLE



Australian households and businesses must be able to afford to power their lives and livelihoods.

The Government has tackled power bills from every angle—from network to generation to retail costs.

We've worked to get better-regulated markets, more transparency and more competition.

GETTING A BETTER DEAL FOR HOUSEHOLDS AND SMALL BUSINESS

Too many families are not on the best power deal. That is why we have taken action to ensure this is no longer the case. The Government's agreement with energy retailers will see them contact all customers who are on expired discounts to tell them how much they can save on a better deal. It will also see customers informed when their discount benefits end and of the dollar impact of doing nothing. Families and individuals on hardship payments will also not lose any benefit or discount for late payment.

We are already implementing a range of reforms to make energy more affordable.

- **Introduced compulsory arbitration** if gas pipeline operators and customers can't reach agreement, reducing the cost of delivering gas.
 - **Abolished the Limited Merits Review** mechanism that has allowed the network companies to game the system at the expense of consumers, which has added around \$6.5 billion onto consumers' power bills since 2008. This will stop the networks from being able to appeal the decisions of the AER through the Australian Competition Tribunal.
 - **Increased the scrutiny of the energy market** with more funding to the AER and the Australian Competition and Consumer Commission (ACCC) to ensure consumers get a fair deal.
 - **Initiated an immediate one-off cash payment** to almost four million Australians of \$75 for singles and \$125 for couples to offset rising power bills for our most vulnerable community members while other energy reforms take effect.
 - **Boosted energy efficiency and productivity** to meet future energy consumption needs and to underpin strong economic growth and lower power bills.
 - **Created new energy information and services** that suit consumers' needs and get them the best deal. Almost half a million Australians have visited the Government's Energy Made Easy website in the past two months.
- **Secured agreement from energy retailers** to provide better, clearer and more information with immediate measures that will put households and businesses first.
 - **Secured agreement from gas companies** to ensure there's enough gas for Australian consumers before it is shipped overseas, helping keep prices down and covering any projected shortfalls over the next two years.



MAKING ENERGY MORE RELIABLE

Australian households and industry must know they can always switch on the lights and run their business operations.

The Government has strengthened the security and reliability of Australia's energy system.

We are focusing on reliability as intermittent renewables, such as solar and wind, now account for a greater share of our energy mix.

The Commonwealth has agreed and is already advancing with the states and territories the implementation of the Finkel Review's recommendations to improve the future security of the NEM.

- **An Energy Security Obligation** to provide the necessary support services that have traditionally come from coal generation and help stabilise the system as intermittent generation increases.
- **A three-year notice of closure** that requires large generators to give notice before closing which will provide enough time for investment and system planning.
- **An Energy Security Board** to oversee the health, security and reliability of the NEM.

Beyond the Finkel Review we are also securing agreements and making investments to ensure adequate energy supplies for Australians.

- **The Australian Domestic Gas Security Mechanism** ensures there is enough gas for Australians before it is shipped offshore and gives the Government a trigger should it need to be pulled.
- **A Gas Supply Commitment** from industry ensures gas will be available to avoid forecast shortfalls, particularly for electricity generation. A separate agreement from the whole gas supply chain is making sure that gas will be available for days of peak electricity demand.
- **A package of gas measures in the Budget** worth \$90 million to improve the transparency, competitiveness and long-term security of Australia's gas supply.
- **An urgent audit of existing thermal generators** with AEMO to identify low-cost opportunities to add more dispatchable power and achieve greater efficiency which will improve the reliability of the system.

“The announcement of a gas deal is a welcome relief to energy users who have been under significant pressure with energy prices and gas supply.”

Energy Users Association of Australia



A LOWER EMISSIONS ENERGY SUPPLY

As Australia's energy system transitions, the Government is investing in new ways to make our energy system cleaner.

The Government last year ratified the Paris Agreement and has set a strong, credible and responsible target to reduce emissions to 26–28 per cent below 2005 levels by 2030. This amounts to a halving of emissions per person and is among the strongest targets of any major economy on that basis.

Reform of the electricity sector, which represents around 35 per cent of Australia's emissions, is important. The new National Energy Guarantee recommended by the Energy Security Board will result in lower emissions over time, consistent with our international commitments.

In addition, the Government has already advanced a lower emissions energy system through a range of actions.

- **Clean Energy Finance Corporation (CEFC)**—commitments of more than \$4.3 billion for projects worth over \$11 billion (as at 30 June 2017).
- **Australian Renewable Energy Agency (ARENA)**—commitments of more than \$1 billion matched by more than \$2.5 billion in co-funding (as at 30 June 2017).

- **The \$2.5 billion Emissions Reduction Fund**, providing incentives for organisations and individuals to adopt new practices and technologies to reduce their emissions.
- **The National Energy Productivity Plan**, improving Australia's energy productivity by 40 per cent between 2015 and 2030.

We are also exploring advances in cleaner energy solutions.

- **Supporting carbon capture and storage (CCS)** to capture emissions from power plants and industrial sites. We have introduced a Bill to the Parliament to remove the CEFC's prohibition from investing in CCS technology.
- **Providing up to \$110 million for a new concentrated solar thermal (CST) power plant** in Port Augusta, South Australia, supplementing funding available through ARENA and the CEFC, if required.

ROOFTOP SOLAR

- **17 per cent of Australian households have solar panels on their roofs.**
- **This represents more than 1.5 million units across Australia.**
- **Australia has the highest number of solar panels on people's roofs per capita anywhere in the world.**





HARNESSING TECHNOLOGY

Australian consumers are at the centre of the energy supply chain as technology advances. The Government is making significant investments in new and innovative technology.

SNOWY 2.0

In March 2017, the Prime Minister announced this game changing project that will expand the capacity of the iconic Snowy Mountains Scheme by 50 per cent.

Using pumped hydro energy storage, it will act as the biggest 'battery' in the Southern Hemisphere and help to make wind and solar reliable.

Snowy 2.0 can add up to 350,000 megawatt hours a year of electricity to the grid helping to meet our energy needs at times of peak demand and ease volatility in the wholesale electricity market.



Will add an extra 2000 megawatts of dispatchable capacity to the system.



Will provide enough power for half a million homes.



Will create 5000 new jobs.

We've put storage on the map and invested in pumped hydro energy storage projects across Australia.

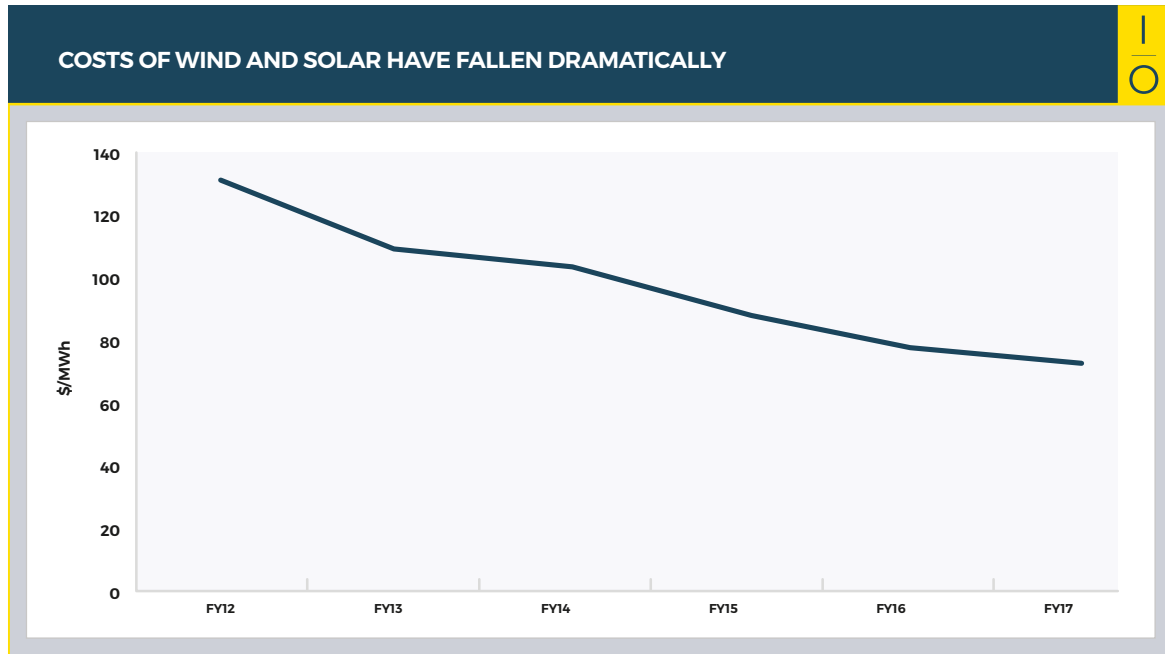
- **Tasmania**—examining four large and nine small scale pumped hydro projects, boosting its capacity and creating a battery for the mainland.
- **South Australia**—undertaking a feasibility study into a pumped hydro facility at Cultana that would be the first in Australia to make use of seawater.
- **Queensland**—plans to redevelop the Kidston mine site which will co-locate a large scale solar farm with a large scale pumped hydro project.

“The addition of up to 2000 MW of pumped hydro—effectively a massive battery within the National Electricity Market—would help facilitate a smooth transition to a lower emissions power grid.”

Australian Energy Council



Global wind generation costs and domestic solar PV costs have both dropped by more than 50 per cent in the past seven years. By 2020, costs of battery technologies are expected to fall 40–60 per cent and, by 2030, more than 70 per cent.



Source: Origin Energy presentation to Macquarie Australia conference, May 2017

We've invested a record amount in energy storage—more than \$220 million across the country—and other technology.

- **Developing new technology solutions** such as the commercially backed \$30 million battery on South Australia's Yorke Peninsula, which can strengthen the grid and lower energy prices.
- **Supporting 12 new large scale solar farms** across Australia, which together will triple Australia's large scale solar capacity.

We've invested in new ways to save energy so it can be produced around the clock.

- **Investing \$28.6 million to support households and businesses to voluntarily conserve energy** in exchange for incentives such as rebates on their power bills. Pilot projects in New South Wales, Victoria and South Australia will help free up temporary electricity supply during extreme peaks, such as summer heatwaves or during extreme weather events and emergencies.
- **Investing \$13.4 million in the Energy Use Data Model** that will enable better forecasting, management and planning of our future energy system and explain energy use behaviour.

“Electricity generated by wind and solar is now the lowest-cost power that can be built today.”

Clean Energy Council

WHERE TO FROM HERE?

The Government will deliver on this comprehensive plan for a better energy future.

The new **National Energy Guarantee** provides the investment certainty needed in the electricity sector to deliver more affordable and reliable power, while meeting our international commitments.

Working with the independent Energy Security Board and with the states through COAG will be essential to our success.

We will continue to roll out this comprehensive set of reforms to keep the lights on and to deliver more affordable power for Australian households and businesses.

