

# Business Council of Australia

## 2020 ENERGY AND CLIMATE CHANGE PROJECT

### Scoping Paper – for discussion

January 2020

#### Current policy

For over a decade we have supported strong action on climate change:

- We support the science of climate change.
- We support the Paris Agreement and transitioning to net-zero emissions by 2050.
- If we can meet our emissions reduction targets without carryover credits then we should.
- We support the need for a market-based carbon price to drive the transition and incentivise investment in low and no-emissions technology.
- Technology needs to drive the transition which will not only get us to a net-zero emissions future but will also create new jobs, opportunities and industries and maintain Australia's competitiveness.

We supported the Rudd government's Carbon Pollution Reduction Scheme (CPRS), called for an Emissions Intensity Scheme, supported a Clean Energy Target (CET) and most recently worked hard to bring industry and the community together to support the National Energy Guarantee (NEG). Further information on our record is available [here](#).

#### Objectives

As agreed by our Energy and Climate Change Committee late last year, at the start of the 2020s the Business Council will review and update its energy and climate change policy positions.

The objective of this project is to develop an updated, comprehensive energy and climate change policy package that is driven by science, technology and innovation to put Australia on a path to net-zero emissions by 2050.

We will consider policy options across all sectors of the economy, taking a strategic and progressive view of how the Australian economy most effectively and efficiently delivers growth while achieving net-zero emissions by 2050.

As always, our policy positions are developed and driven by our members, through our thoughtful and rigorous committee processes and working groups.

#### Scope

All aspects of energy and climate policy are included in the scope of this review. This includes, but is not limited to:

- The guiding goals and principles that underpin the development of energy and climate change policies.
- The suite of policies required to drive the transition to net-zero emissions by 2050.
- How emissions reductions targets are set, delivered and reviewed.

- The range of technologies needed to reduce emissions and the policy settings required to drive the investment in these technologies.
- The requirements of different sectors, in particular emissions-intensive trade-exposed industries.
- The impacts on communities, jobs and industries of climate change and climate-related policies.
- A focus on adaptation and resilience.

Throughout this project, in addition to working closely with members, we will be seeking expert advice to test ideas and provide an independent reference point.

### **Next steps**

This scoping paper is designed to kick-off the discussion. It is not exhaustive, and we welcome comments, feedback and ideas.

We will be in touch shortly to organise a time to meet with members one-on-one to discuss your priorities and key areas of focus.

## Introduction

Climate change will have serious economic, environmental and social consequences for Australia. 12 years of intermittent policy action has delivered poor outcomes for consumers, businesses and governments. Electricity prices are on average 62 per cent higher in 2018 than a decade earlier. Under-investment in key generation types has increased the risk of supply shortages at times of peak demand.

Increasing numbers of Australian businesses and consumers are acting unilaterally to manage their carbon and climate risk. For some businesses the lack of effective national climate policy has resulted in a trade-off between competitiveness and risk mitigation. In sectors exposed to carbon risk, investment remains suppressed. Planning is compromised. Companies continue to operate in short term cycles, waiting for credible policy that will reduce investment risk.

These challenges are not unique to Australia. Global policy response to climate change has been marked by a lack of cohesion. There is increased risk that a co-operative international approach to climate change may be replaced by rising protectionism.

The challenge in 2020 is to learn from the frustrations of the past decade to design a credible, durable and bi-partisan approach to decarbonising the Australian economy while delivering investment, employment, competitiveness and a growing economy.

To deliver net zero emissions by 2050 at the lowest economic and social cost to all Australians, all parts of the Australian economy will need to commence reducing their emissions this decade: including industrial processes, mining, transport and agriculture. An efficient and effective approach to national climate policy reform will need to reach beyond energy.

The Business Council sees this both as a challenge and an opportunity. The Australian economy in the 20<sup>th</sup> century was shaped by many things: access to cheap energy, abundant natural resources and capitalising on proximity to our fast-growing Asian neighbours. Resolving a credible pathway forward on climate policy will define how we emerge from the 21<sup>st</sup> century.

## State of play

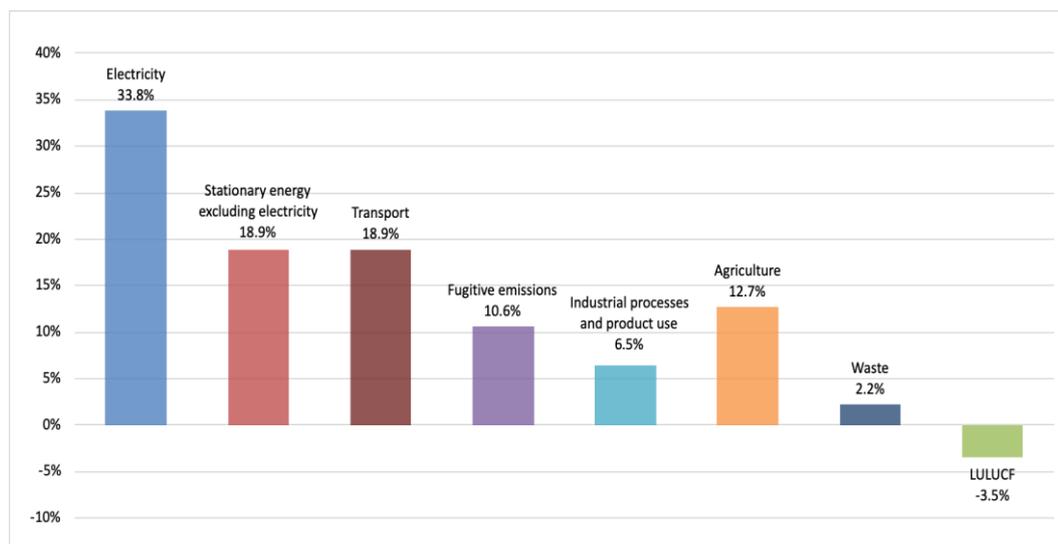
### ***International commitments***

The Business Council believes Australia must honour its international climate obligations. Australia is a signatory to the Paris Agreement and has committed to emissions reductions 26-28 per cent below 2005 levels by 2030.

There is current debate around whether the Federal Government's proposal to count Australia's over achievement in the first and second commitment periods of the Kyoto protocol against the 2030 target should be permitted.

Regardless of the final design and execution of the 2030 targets, emissions will need to continue to reduce across all parts of the economy for the next three decades to reach net zero emissions by 2050. This will require a policy platform that underpins, amongst other things, targeted technology development, sustained investment in both urban and regional Australia and a re-tooling of many sectors of the economy.

## Share of total emissions, by sector, Australia, June 2019



Source: National Greenhouse Inventory

## Current policy measures

The suite of current climate policies in Australia reflect the chequered political journey of the past 12 years.

Current policies promote actions across a number of sectors (Renewable Energy Targets, Emissions Reduction Fund).

### Energy policies and initiatives

**Renewable Energy Target** – the RET was first legislated in 2001 as a bi-partisan form of national industry policy/subsidy to establish renewable generation capacity. It was funded via a levy on electricity consumers. Introduced by the Howard Government in 2001, in 2009 it was expanded to 20 per cent by 2020 by the Rudd Government, split into two schemes (large and small scale) in 2010, the large scale scheme was then reduced to 33,000GWh in 2015 by the Abbott Government. The revised target was met in 2019.

The RET has delivered around 25GW of new renewable generation capacity since 2001. Australia now has one of the highest rates of renewable generation per capita in the world. Around 10GW of this capacity is residential (rooftop) generation. The RET also unintentionally accelerated some of the operational challenges of managing high renewables penetration rates. Around 40 per cent of large scale RET projects were built in South Australia. The high levels of intermittent generation increased wholesale price volatility and compromised the commercial viability of some of the firm generators needed when renewables were not operating.

The expanded RET was intended to work in support of a national carbon price, not as a stand-alone policy. It's phase out by 2020 assumed that further renewable investment would be driven beyond then by a national carbon price. Without this primary policy mechanism, there is uncertainty about continued efficient renewable investment.

This is because, ceteris parabis, the value of electricity produced by additional renewables will continue to decline as renewable investment increases. Renewables generate irrespective of demand and generally at the same time. This is already creating increasing frequency of low or negative wholesale prices followed by periods of undersupply, reflected in higher wholesale prices. Efficient investment in more renewable generation will require rapid uptake in storage capacity to reduce wholesale price volatility, a carbon price, further energy market reform or a RET 2.0.

Some states have also adopted a range of renewable energy targets:

- Tasmania (aspirational, 100 per cent self-sufficient in renewable generation by 2022).
- Victoria (legislated, 25 per cent by 2020, 40 per cent by 2025, 50 per cent by 2030), no requirement for any firming generation.
- Queensland (aspirational, 50 per cent by 2030), new government owned generator, CleanCo, created in 2019 to drive investment in renewable generation.
- South Australia (aspirational, 75 per cent by 2025).

**Solar feed-in tariffs** – most state governments have wound back residential feed in tariffs that payed a premium for the solar PV electricity exported back into the grid. The Victorian Government still offers rebates for new systems and the Essential Services Commission has adopted a method for setting a minimum feed-in-tariff that is higher than the average wholesale value of the electricity. The Queensland Government has transferred the residual cost of its solar bonus scheme onto the state budget so it does not increase power bills (just state taxes).

**ARENA** – The Australian Renewable Energy Agency (ARENA) was established in 2012 to progress search and development of renewable energy technologies and increase supply of renewables. It operates an annual budget of around \$200 million spread across co-funding for a range of renewable technology development and research. ARENA was established when there was greater uncertainty around which renewable technologies would evolve and reducing the cost of generation was a priority. It is a positive that ARENA’s renewables scope is now increasingly out of date. The necessary research priorities are expanding into other areas. It has already expanded its scope into research into hydrogen,

**Clean Energy Finance Corporation (CEFC)** – the CEFC was created in 2012 as a government-owned investment vehicle to help emerging renewable technologies bridge the gap from demonstration to commercialisation. In simple terms, the CEFC was created to provide support for renewable technologies that had evolved beyond the scope of ARENA but were not fully competitive in the market.

**Underwriting New Generation Investment Program (UNGI)** – the Federal UNGI scheme evolved from some of the recommendations from the ACCC Retail Pricing Inquiry. It is designed to increase firm (as opposed to renewable) generation capacity in the National Electricity Market. Expressions of interest were lodged in 2018 and a shortlist of 12 storage and generation projects chosen from 66 applications, even though the funding model and selection criteria are still yet to be made public. A \$1 billion **Grid Reliability Fund** was allocated to the Clean Energy Finance Corporation (CEFC) in October 2019 to fund new generation, storage and transmission projects, which may include UNGI projects. Announcements on successful UNGI projects were expected by the end of 2019.

**Snowy 2.0** – The Federal Government committed up to \$1.4 billion to assist Snowy Hydro develop the 2000MW Snowy 2.0 pumped hydro project. The project will include the building of 27 kilometres of tunnels and the building of a power station a kilometre underground. It is nominally scheduled to be completed by 2024, but appears more likely to be completed around 2030.

**Victorian Renewable Energy target (VRET)** - the VRET is the key legislative tool to deliver the state’s renewable energy target of 50 per cent of generation by 2030. It consists of a program of reverse auctions awarded on a range of commercial and subjective (political) criteria. Six projects were approved in 2018. This funding is in addition to the revenue derived from renewable projects under the federal RET. The VRET is funded from the state budget, although the actual cost of the VRET remains opaque.

**CleanCo** – CleanCo is a newly created Queensland government owned clean generator established as part of the government’s **Powering Queensland Plan**. CleanCo has been given a small portfolio of pumped hydro and gas generation and \$250 million from the state government to enable it to build large scale renewables. As part of the Plan, the Queensland Government directed Stanwell to strategically bid down wholesale prices in Queensland and in 2017 undertook a reverse auction for 400MW of renewable generation.

**NSW electricity strategy** – The NSW strategy was announced in November 2019 and includes a suite of smaller, practical measures including the creation of a state energy security target to ensure adequate supply, case management for critical infrastructure, creation of renewable energy zones, schemes for energy efficiency and demand reduction, grants for emerging technologies, trialling solar PV for low income households and subsidies for solar-battery systems in households.

**Electricity market reforms:** There are a suite of electricity market reforms being developed through the relevant market agencies and the COAG Energy Council. These include a review of the design of the National electricity Market (Post-2025 review), development of Integrated system planning by the Market Operator (AEMO), a review by the Market Commission of the integration of transmission and generation (COGATI) and the development of a retailer reliability obligation (RRO) as an attempt to force retailers to finance new generation capacity when the reliability standard is breached.

**National EV strategy** – the Federal Government has committed to developing a national electric vehicle strategy.

**National Low Emissions Coal Initiative** – is an ongoing Federal Government initiative to support development of technologies to reduce the emissions from coal use. It co-funds research carbon capture and storage with the resources sector through the Australian National Low Emission Coal research and Development.

### ***Non-energy policies and initiatives***

**Climate Solutions Fund/Emissions Reduction Fund** – the Emissions Reduction Fund (ERF) was a voluntary scheme that paid companies, land-owners, governments and other entities to reduce emissions outside of the electricity sector. Established in 2015 following the repeal of the Carbon tax, the ERF spent \$2.5 billion over four years on more than 800 projects to abate an estimated 192 million tonnes of emissions. The majority of the activity was in sequestration of carbon in planting of vegetation, avoided burnoffs and avoiding emissions from landfills.

The scheme allocated carbon credit units for each tonne of certified abatement. These certificates could then be sold or traded.

In February 2019 the Federal Government committed another \$2 billion through a Climate Solutions Fund (CSF) to fund emissions reductions in agriculture, energy efficiency, industrial facilities, fugitive emissions from coal and gas, transport, vegetation management and water management. Both the ERF and the CSF are managed by the Clean Energy Regulator.

**Safeguard mechanism** – the safeguard mechanism was introduced in 2016 and designed to prevent a blowout in emissions from major industrial facilities. Around 140 companies with the highest emissions were required to hold to aggregate emissions baselines. Any business which breached its total baseline could buy carbon credit units to offset the difference. A number of companies were subsequently granted revised baselines.

### ***International developments***

**COP25:** The latest round of UNFCCC climate negotiations were disappointing without broad consensus from major economies. The next Convention is in Glasgow in December 2020.

**Brexit:** The mandate for a UK Conservative exit from Europe underscores the populist rise of isolationism and the retreat from more open and integrated global markets achieved in the late 20<sup>th</sup> century. This has implications both for the possibility of future carbon trading systems and for the rise of carbon protectionism.

**EU carbon price:** After nearly two decades in design and implementation, the EU has finally returned some credibility to its emissions trading scheme by tightening supply of permits to increase the price of emissions. The EU carbon price peaked in July at around 28 EUR/tonne (AUD\$48/tonne) before easing ahead of justified concerns about Brexit. Given the carbon price tracked in single digits for the decade after the GFC, the price recovery is significant and more likely to be permanent.

**European Green Deal:** Stemming from this the European Commission last week announced its Green New Deal package, legislating emissions targets to zero in 2050. This is estimated to cost around \$420 billion of new investment each year for the next three decades. Significantly, the EGD proposes the introduction of carbon border taxes for selected sectors to protect carbon taxed European steel and cement from untaxed high emissions imports from China. It has the potential to be expanded.

**US Democrats campaign on carbon import tax:** Leading Democrat Presidential candidates like Joe Biden and Elizabeth Warren have also proposed the introduction of a carbon border tax on imports (i.e. China), even though the US doesn't have a domestic carbon price.

As a small, open, high emissions economy, Australian exporters have a lot to lose from the potential rise of carbon protectionism.

## **BCA climate policy objectives**

The Business Council has consistently supported the development of an integrated, national and bipartisan energy and climate change policy framework that can deliver secure, reliable and affordable energy supply, meet current and future emission reduction targets and ensure the Australian economy remains strong and internationally competitive.

In developing energy and climate change policies, the Business Council has been guided by the following principles.

- achieve emission targets at the lowest possible cost while maintaining our international competitiveness
- ensure the supply of reliable, secure and affordable energy for all Australians
- be durable and national wherever possible
- technology neutrality
- be scalable to meet future emissions reduction targets while managing risk and uncertainty
- provide access to domestic offsets and credible international permits.

These principles will be reviewed and updated as part of this project.

While there is and will continue to be emphasis on electricity markets, these only constitute one-third of Australia's greenhouse gas emissions. The scope of this work needs to incorporate all energy as well as industrial processes, transport and agriculture.

## **Key sectors**

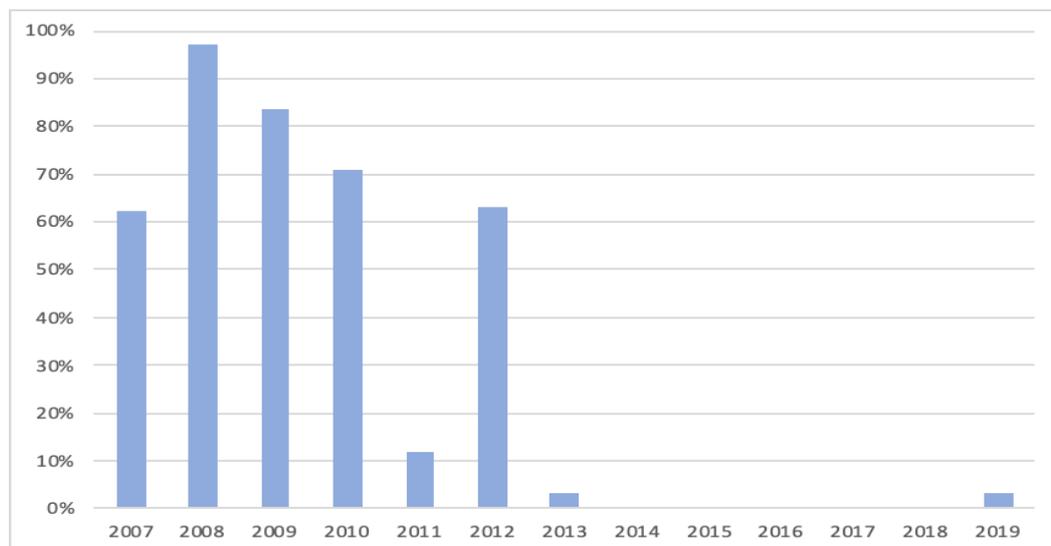
### ***Electricity***

The electricity challenge is broadly well understood. Coal fired base load generators need to be replaced by either (1) a combination of renewables and firming generators (gas and storage) with increased transmission and supporting technology costs (like synchronous condensers) or (2) a nuclear power based system.

Based on a renewable grid, the latest Integrated System Plan from AEMO forecasts a requirement for more than 30GW of new renewables investment by 2040, and an additional 5-21GW of firming capacity. That is more than a doubling of current renewable generation capacity and up to ten times the capacity of Snowy 2.0 required to firm them. This will also require an expansion of the transmission networks required to connect these new dispersed generators to their markets. A similar, but scaled challenge would apply to the Wholesale Energy Market (WEM) in WA.

This replacement capacity will not be built by the National Electricity Market without the introduction of major policy reforms. The NEM's investment signal is almost inoperable. Almost all new generation built in the NEM since 2012 has been co-funded or subsidised by government (the only exception is Barker's Inlet in South Australia).

### Share of unsubsidised investment in new generation, NEM MW per annum, 2007-19



Source: Clean Energy Regulator, AEMO

The cost of electricity provided by this expanded renewables based grid will reflect a range of contributing factors: the falling cost of renewable generation, the need to augment transmission and networks, the cost of double-building capacity and the additional cost of storage, firming and dedicated ancillary services providers. It will also depend on the cost and availability of demand management services.

Nuclear generation is currently illegal in Australia, would have a lead up time of at least a decade and the cost of new reactors is expensive. Two new nuclear units soon to come on-line for Georgia Power in the US will cost in total around USD\$25 billion. This is around \$14 per watt of installed capacity. Nuclear advocates are hoping smaller modular reactors currently under development may provide a more affordable and versatile pathway forward.

### Gas

Australia's east coast gas market has experienced three simultaneous and related shocks: the depletion of the Moomba gas fields, which has provided abundant, low cost conventional gas since the 1970s, the opening of the east coast to export markets and the development of higher cost unconventional shale and coal seam gas fields. These fields have yielded large reserves of new gas, but extraction cost is more expensive. As a result there has been a permanent step change in the cost of east coast gas – from around \$3/GJ to around \$7/GJ.

The price and terms paid by domestic consumers have been impacted by global market trends and supply of domestic gas. Lower flow rates from unconventional fields both in Australia and overseas tightened supply conditions. The construction of six trains from three projects exacerbated the domestic shortage because of the volumes of gas needed to meet contracts.

Gas prices have eased towards the end of 2019 from increased supply and softening prices in Asia. Concerns remain about the decline of Bass Strait gas supplies and ongoing bans of onshore gas development in Victoria.

Gas will be an important transition fuel in electricity production by helping to firm intermittent renewable generation. It will require development of cost effective capture and storage capability to continue as a source of industrial heat.

Total gas demand for electricity generation is expected to ease with increased renewable generation, but the contracting and supply will need to be more flexible to meet shorter but higher demand spikes. More sustainable and stable gas supplies will need development of new fields in Victoria, the Northern Territory and the Cooper Basin.

### ***Industrial emissions***

Around 36 per cent of Australia's total greenhouse gas emissions come from a range of industrial processes: the direct combustion of fuels like coking coal and gas, fugitive emissions from coal mining and gas production and industrial processes. These include steel and cement manufacture, mining operations, some metals processing and other industrial processes like pulp and paper and chemicals.

Decarbonising these sectors will require a suite of different techniques: finding alternative low or zero carbon heat sources for cement and other high temperature industrial processes, improved capture and use of fugitive emissions from coal and gas extraction.

Given the width and scale of these industries and the complex nature of some of the abatement required and the novel technical solutions that will, in some cases, be required, it is challenging to design policy that meets multiple criteria. The scale of the contribution of these sectors total emissions cannot be ignored in delivering deep cuts required.

### ***Buildings***

The design, construction and operation of the built environment will have an increasing impact on reducing greenhouse emissions in Australia. Buildings account for between 20 and 25 per cent of Australia's net emissions (including electricity, gas and materials). While there are basic energy efficiency requirements in the national building code and two separate voluntary rating systems, the way Australian cities are planned and built suggest there is considerable scope for further improvement in their performance.

The continued urban sprawl of Australian cities is both expensive and inefficient to service. The time taken, distances travelled and lack of amenities for the people who live at the edges of these cities is often compensated for by building dwelling that maximise usable space. It is a rational choice made in the absence of any workable alternative.

Urban consolidation and improved planning protocols by councils are evolving the quality and design of larger buildings, but the improvements are modest. In particular it is unclear how adept many of these buildings will be to adequately cope with higher temperatures without placing material strain on an evolving energy system.

### ***Transport***

Emissions from the burning of fossil fuels in transport (road, rail, domestic aviation and domestic shipping) contribute around 19 per cent of Australia's greenhouse emissions. Eliminating emissions will require the replacement of Australia's fleet of 19.5 million cars with either probably electric vehicles powered by batteries or hydrogen fuel cells. The same applies to Australia's fleet of 400,000 trucks.

Eliminating emissions from domestic air and sea transport will require significant new technology development which is more likely to be imported.

### ***Agriculture***

Currently around 12.7 per cent of emissions are derived from agricultural activities, although this share increases and decreases with cyclical weather events like drought. Like other sectors, the range of point sources is both diffuse and diverse: methane and nitrous oxide from livestock, methane from rice fields and emissions from chemical fertilisers, while soils can both release and store greenhouse gases.

Such technical diversity requires tailored solutions and efficient monitoring and reporting techniques, which are challenging given they need to be measured from more than 85,000 farm business across the country.

## **Policy options**

The Business Council's consistent and preferred option for reducing emissions is a national, economy-wide approach that accelerates relevant technology development and utilises market mechanisms to achieve abatement at least cost. The simplest, most efficient method of achieving this transition is a price signal that places a value on lower-emissions, more efficient technology and encourages innovation to drive this technological shift. While this remains the economic first-best option, it is politically unlikely for at least the short to medium term.

Therefore, we need to examine what the package of policy options, across all sectors of the economy, can be implemented to achieve net-zero emissions by 2050 whilst ensuring access to affordable and reliable energy for all Australians and addressing the current failings of the market to drive investment.

### ***Federal Government priorities***

The Federal Government is focussed on developing practical solutions that build on existing policies and incentivise opportunities for further abatement and the development of lower-emissions technologies.

The main economy wide abatement policy is the ERF and the Safeguard Mechanism. The government has recently appointed an expert panel to examine opportunities for further abatement in the industrial, transport, agriculture sectors as well as energy efficiency options. There will be a willingness to expand the operation of these existing policies to help provide a long-term investment signal.

The Federal Government has flagged upcoming consultation on a new technology roadmap charting the way forward in areas such as hydrogen, solar and batteries, transmission and networks, large-scale energy storage, and carbon capture and storage.

The Federal Government is also expected to release its electric vehicle strategy shortly, as well as provide further information on its planned 2020 long-term climate strategy.

### ***Investment***

Ultimately, emissions reduction is delivered by large scale investment.

The European Union has identified \$440 billion of new investment is needed each year until 2050 to deliver net-zero emissions. Applying this metric to Australia the level of investment would be at least \$22 billion each year. To give a sense of scale, the Snowy 2.0 pumped hydro project proposes to spend around \$5 billion over five years.

The Federal Government's main policy measure in the electricity market is the UNGI program. Its design criteria and scope is still being developed. Underwriting new firm investment in an efficient and competitive manner will help lower wholesale electricity prices and reduce reliability risk. This type of measure is unlikely to be able to efficiently deliver more than 50GW of new renewables, gas peakers and storage technologies over the next two decades.

Delivering investment in new transmission is probably less problematic. Transmission is a regulated asset subjected to a regulatory test to determine if it can proceed (the Regulatory Investment Test – Transmission). Adequate re-design of this test will deliver the necessary transmission investment.

### ***Business requirements***

Australian companies have similar basic requirements: to remain safe and profitable, to grow and invest, attract new customers and develop and apply new technologies. Business is a willing participant in a decarbonising economy. Its needs include:

- downward pressure on input costs (particularly energy) to retain international competitiveness
- a clear focus and plan for what Australia does “for a living” in the 21st century, and therefore what Australians do too, reflected in a re-exploration of appropriate industry policy plans for the 21<sup>st</sup> century

- consideration of future trade policy and strategy as it relates to climate risk
- how existing government agencies (including ESB, AEMO, AEMC, AER, CER, CEFC, ARENA) might be streamlined and better organised to coordinate their efforts

***Possible areas of inquiry***

- Where does bulk heat come from in the 21st century?
- How do we optimise the operation of the electricity markets?
- What is the most effective and efficient way to incentive research and development New technologies – fuel switching, hydrogen, biogas, carbon capture, usage and storage (CCUS)?
- How do we ensure we have efficient and adequate investment in energy transmission and distribution?
- What is the appropriate and robust use of offsets, in particular for major projects?
- How does policy align with the Climate-Related Financial Disclosures (TCFD) framework?
- What are the economic impacts of rapid scale up of investment in low or zero carbon infrastructure across the economy as measured by economic growth and employment?
- How does Australia learn from other economies to accelerate uptake of low/zero transport vehicles at the lowest cost?
- How do we deliver realistic, cost effective energy efficiency and flexibility to households and businesses?
- How do we ensure effective adaptation practices and resilience building is a core focus of future climate policies?