Australia's energy transition: supporting businesses to adapt and thrive

Joint submission to the King Review by the Australian Industry Group, the Energy Efficiency Council and the Property Council of Australia.

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Australian businesses need support to navigate Australia's energy transition

All Australian businesses – especially energy intensive businesses – are struggling with high energy prices and a rapidly shifting energy landscape. State and federal governments need to support industry to successfully navigate this major economic transition.

Government support is needed to help businesses across all sectors – industry, buildings, transport and land – to adapt to rapid and substantial shifts in Australia's gas and electricity markets.

- Improve the resilience and productivity of energy intensive businesses in sectors such as manufacturing, agribusiness and resources;
- Raise the energy management capability of businesses;
- Drive deployment of proven technologies across all sectors; and
- Shift focus and prioritise R&D to address pressing challenges faced by business.

This can be achieved through five complementary areas of activity:

- Information and capability building:

  Support the provision of information, training and professional certification to rapidly build energy strategy and management capability in target subsectors for both:

  - Businesses;
  - Expert advisors and service providers.
- Expert support and facilitation: Support businesses to implement, integrate and sustain effective energy management strategies.
- Market transformation: Use targeted grants, standards and other tools to encourage deployment of technologies that are mature but uncommon in Australia.
- Innovation: Support sector specific R&D and demonstration of smart energy management technologies to solve longer term challenges.
- Recognition: Profile and recognise businesses that are leaders in energy strategy and management.

About this paper

This paper sets out the case for government action on supporting businesses to adapt and thrive as Australia's energy system transitions by identifying:

- The characteristics of Australia's energy transition, and implications for business;
- Why industry needs support to adapt and thrive, and the role of governments in facilitating a smooth transition; and
- A framework for action from state and federal governments.

An energy system in transition

Australia's energy system is in the midst of a major transition, which has only accelerated over the last three years. This transition requires businesses to adopt a more proactive approach to energy strategy and management to stay competitive, especially energy intensive businesses in sectors like manufacturing, agribusiness and resources. Four key trends are in the process of re-defining the way businesses use, produce, and contract their energy:

- The generation mix is changing:

  The transition away from fossil fuels towards renewable energy, initially driven by government policy, and increasingly by renewables becoming cost-competitive with fossil fuels, is resulting in the decarbonisation of the electricity grid. Global climate commitments and investor pressures to decarbonise are accelerating this trend. However, while renewable generation low cost, it is also variable, meaning complementary, flexible supply- and demand-side resources are becoming increasingly important for system stability.

- The grid is decentralising:

  Highly centralised, one-way electricity grids are becoming more decentralised, with multiple sources of generation, storage and demand management distributed across the system. Increasingly, energy consumers are producing energy, and a world in which businesses sell energy to other businesses is becoming more feasible, enabled by new technologies and trading platforms.

- The demand profile is shifting:

  The amount of energy flowing from the grid to consumers at different times of the day and year – known as the demand profile – is shifting as more consumer needs are met by on-site renewable generation. In addition, proactive demand management is starting to play a bigger role in our energy system. Increasingly, businesses can control not just where their energy comes from and how much they use, but when they use it, which can improve system stability and help balance electricity supply and demand.

- The unit cost of energy is stabilising above historic lows:

  Prices for both electricity and gas have risen rapidly over recent years. Both have declined from the extreme highs of 2017, and further effort to moderate prices is important. However, few experts expect prices to return to their historic lows, meaning businesses, suppliers and regulators need to adapt to a new status quo.

Implications for business - the need for industry to adapt

Historically, many Australian businesses have pursued a procurement-focused energy strategy – locking in the lowest available fixed unit cost as part of a one-, two- or three-year supply contract, and paying only cursory attention to energy management opportunities behind the meter. However, businesses have been hit hard by rapid rises in energy prices; in recent years wholesale electricity prices have doubled and wholesale gas prices have tripled.

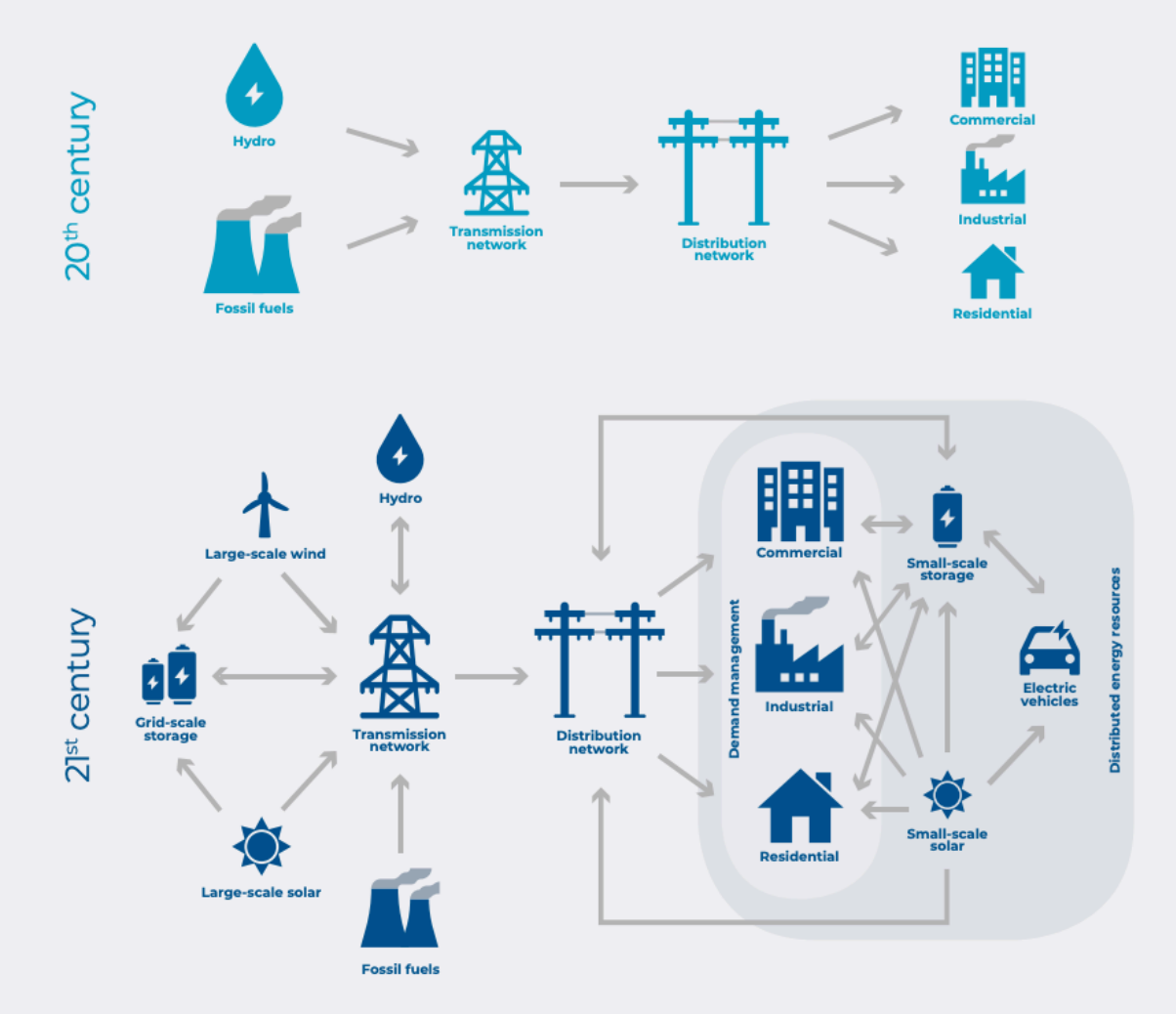

Figure 1: Our electricity system is in transition. As the generation mix changes and the grid becomes increasingly decentralised, a proactive approach to energy strategy and management is becoming more important for energy intensive businesses.

With low energy prices now a distant memory, a traditional, procurement-focused energy strategy risks operational profits, business productivity and competitiveness. By contrast, a more pro-active energy strategy allows business to leverage the trends outlined above to manage energy cost and risk, and capture the opportunities of the transition.

A proactive energy strategy includes:

- A granular understanding of how and when energy is used across the business, and how usage drives energy costs;
- Active monitoring of efficiency, demand management and generation opportunities, and investment where it is cost effective to do so; and
- Exploration of the full range of energy procurement options, rather than defaulting to a traditional contract with a fixed price.

In short, a more proactive approach to energy strategy and management is emerging as an important capability for energy intensive Australian businesses navigating an energy system that is part way through its transition.

Broader benefits of effective energy management

Widespread adoption of a more proactive approach to energy strategy and management by Australian industry would have significant additional benefits:

- Reduced greenhouse gas emissions:

  Energy efficiency has been the most significant source of emission reductions this century.[1] From 2014 to 2016, improvements in energy efficiency were responsible for 75 per cent of the stabilisation of emissions from the global energy system.[2] Australia's energy efficiency schemes have driven significant, low cost abatement in residential and commercial buildings. However, in Australia relatively little emissions reduction has taken place in energy intensive industry compared with other sectors.[3]

- Improved reliability:

  Improving the way that large energy users manage energy can strengthen Australia's electricity system. Across Australia, demand response from industrial energy users could easily provide 1.7 gigawatts of dispatchable capacity,[4] helping to improve the reliability and affordability of Australia's energy system. However, there has been limited effort to encourage the development of demand response resources relative to other firming technologies, such as batteries and pumped hydro.

- Increased jobs and economic growth:

  Energy efficiency improvements increased global GDP by an estimated AU$2.8 trillion in 2017.[5] Energy management itself is a huge economic opportunity, with AU$346 billion of global investment in 2018.[6] There are also big jobs benefits from energy efficiency. California has almost 520,000 clean energy jobs across energy efficiency, renewable energy, smart grid and next generation vehicles. Almost 60% of these jobs – over 310,000 – are in energy efficiency, the legacy of decades of smart energy efficiency policy and programs.[7]

[1] Edenhofer, O., Pichs-Madruga, R., Sokona et al. 2014, Mitigation of Climate Change. Working Group III Contribution to the IPCC Fifth Assessment Report, International Panel on Climate Change, Geneva.

[2] International Energy Agency 2017, Energy Efficiency Market Report, IEA, Paris.

[3] Other than through site closures.

[4] ClimateWorks Australia 2014, Industrial demand side response potential: Technical potential and factors influencing uptake. Initial findings and discussion paper, ClimateWorks Australia, Melbourne.

[5] International Energy Agency 2018, Energy Efficiency Market Report 2018, IEA, Paris.

[6] International Energy Agency 2019, World Energy Investment 2019, IEA, Paris.

[7] E2 2018, Clean Jobs California, E2, Washington DC..

Business adaptation and the role of government

Why does industry need support to adapt and thrive?

Proactive, effective energy management can have big benefits for individual businesses and the broader economy. However, many Australian businesses are struggling to adapt. Energy prices are stabilising well above their historic lows, and this has created a strong incentive for Australian businesses to improve the way that they manage energy. However, many businesses face *significant barriers* that outweigh this incentive.

A number of these barriers are a legacy of low gas and electricity prices, which curtailed the development of internal energy management capability within businesses, and hampered the emergence of a sophisticated market for energy management products and services supporting particular economic sectors.

These barriers affect all sectors, but can have particularly serious implications for energy intensive businesses. These barriers include:

- Capability barriers:
    - Limited internal capability around energy strategy and management, either among directors/executives, middle managers, or site manager/engineers; and
    - Difficulty accessing external support due to:
        - Lack of established relationships with trusted external advisors; and
        - Lack of sector relevant capability among external advisors.
- Data barriers:
    - Granular data on electricity or gas use unavailable due to a lack of submetering.
- Mature technology barriers:
    - Limited deployment of some mature energy management practices or technologies in particular sectors, even if they are commonly deployed overseas; and
    - Highly efficient technology unavailable or expensive in Australia due to historic lack of demand.
- New technology barriers:
    - High innovation (R&D and deployment) costs to develop necessary energy and low carbon technologies.

Businesses also face some more generic barriers which affect their ability to adapt to a rapidly changing energy landscape:

- Competition for capital and implementation capability:
    - Businesses can tend to prioritise revenue growth over managing energy risk and securing cost reductions.
- Caution around allocating capital to investment or reinvestment:
    - Some energy intensives businesses are cautious about investing – or reinvesting – in Australian facilities given broader concerns about competitiveness.

If the transition in Australia's energy system were occurring at a gentler pace, many of these barriers would resolve themselves naturally over time. However, Australia's energy transition is rapid, and it's accelerating, which leaves many energy intensive businesses poorly positioned to respond.

The role of governments in facilitating a smooth transition

There is a role for governments – state and federal – in supporting industry to successfully navigate Australia's energy transition.

Governments in other major developed and emerging economies have programs to increase the energy management practices of industry to:

- Improve their industries' competitiveness;
- Strengthen the reliability of national electricity systems; and
- Reduce carbon emissions.

However, substantive support for energy management from state and federal governments in Australia is modest; in some states it is non-existent.

Global leaders in industrial energy efficiency, such as Germany, the United Kingdom and Japan, have all introduced integrated suites of complementary measures that include:

- An incentive or mandate to encourage good energy management practices;
- Information and capability building efforts, such as funding for training and accreditation; and
- End-to-end support programs to help businesses identify and implement energy saving measures.

A move from Australian governments to increase support for industry on energy management would bring our policy framework into line with our global competitors.

Framework for action

Objectives

Renewed effort from governments to support Australian businesses through the current energy transition should have the following objectives:

- Raise the energy management capability of businesses and external advisors in target sectors;
- Drive deployment of proven energy management technologies that are uncommon in Australia;
- Shift focus of government investment in energy R&D and demonstration to addressing particular challenges faced in target industry sectors; and
- Prioritise R&D and the deployment of technologies and practices that have a double or triple dividend, generating immediate benefits for business while also:
    - Improving system reliability and affordability; and
    - Reducing emissions;
- Improve the resilience and productivity of energy intensive businesses in sectors such as manufacturing, agribusiness and resources through implementation of an effective energy management system.

Areas of activity

This effort should have five key areas of activity, all of which are essential and are ideally delivered as an integrated suite of policies:

- Information and capability building:

  Support the provision of information, training and professional certification to rapidly build energy strategy and management capability in target subsectors for both:
    - Businesses;
    - Expert advisors and service providers.
- Expert support and facilitation:

  Support businesses to implement, integrate and sustain effective energy management strategies.
- Market transformation:

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