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WHERE KNOWLEDGE IS POWER

A dimmer light: The changing regulatory environment causes revenue to decline

IBISWorld Industry Report D2630

Electricity Distribution in Australia

December 2014

Ryan Kerin

About this Industry

Industry Definition

Companies in this industry operate low-voltage electricity distribution systems (including lines, poles, meters and wiring) that deliver electricity to consumers.

Main Activities

The primary activities of this industry are

Electricity distribution

The major products and services in this industry are

Electricity distribution

Smart meter installation

Street light operation

Similar Industries

D2700 Gas Supply in Australia

Companies in the Gas Supply industry distribute natural gas to end users via a system of pipes, known as mains. They also retail gas to consumers and businesses.

D2620 Electricity Transmission in Australia

Businesses in this industry are involved in high-voltage transmission of electricity.

D2640 Electricity Retailing in Australia

This industry is mainly engaged in retailing electricity via power distribution systems operated by others.

D2611 Fossil Fuel Electricity Generation in Australia

The Fossil Fuel Electricity Generation industry generates electricity using mineral or fossil fuels in internal combustion or combustion-turbine conventional steam processes.

Additional Resources

For additional information on this industry

www.aemc.gov.au
Australian Energy Market Commission

www.aemo.com.au
Australian Energy Market Operator

www.aer.gov.au
Australian Energy Regulator

Industry at a Glance

Electricity Distribution in 2014-15

Key Statistics Snapshot

Revenue
$17.8bn

Annual Growth 10-15
2.7%

Annual Growth 15-20
0.4%

Profit
$5.5bn

Wages
$3.0bn

Businesses
16

Market Share

Ausgrid 18.0%

ENERGEX Limited 15.5%

Ergon Energy Corporation Limited 11.5%

Essential Energy 10.7%

Victoria Power Networks Pty Ltd 9.3%

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Key External Drivers

Net energy consumption

10-year bond rate

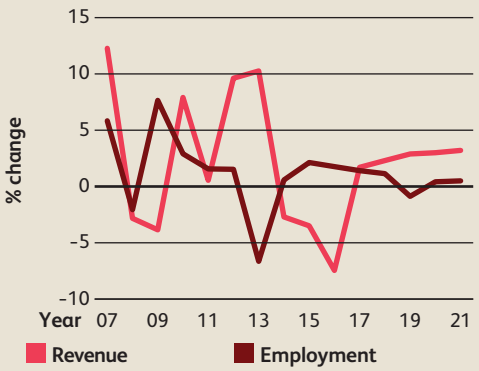
Number of households

Demand from air conditioning and heating services

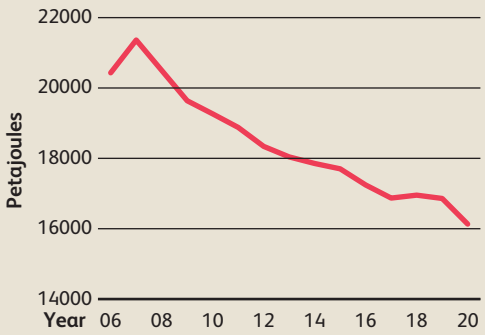
World price of natural gas

p. 4

Revenue vs. employment growth



Net energy consumption



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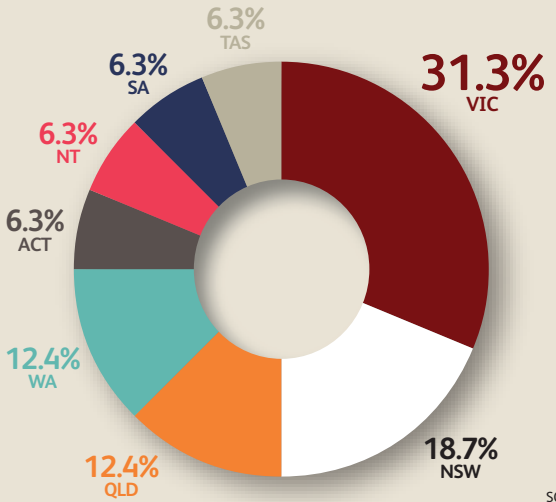
Electricity distribution



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Industry Structure

Life Cycle Stage	Mature	Regulation Level	Heavy
Revenue Volatility	Medium	Technology Change	Low
Capital Intensity	High	Barriers to Entry	High
Industry Assistance	Low	Industry Globalisation	Medium
Concentration Level	Medium	Competition Level	Low

FOR ADDITIONAL STATISTICS AND TIME SERIES SEE THE APPENDIX ON PAGE 31

Industry Performance

Executive Summary

Electricity distribution networks transport electricity from high-voltage transmission networks to households and businesses for consumption. They are built and regulated to ensure a safe supply of electricity, even during peak demand periods in summer. In the past five years, network operators have amended and extended their networks substantially to account for potential rises in peak electricity demand. To fund capital expenditure, industry operators are allowed a return on their capital by regulators so they can pay debt and equity holders. Historically, the amount of revenue the regulators have permitted the industry to capture from users has been proportional to the size of the industry's capital base. However, new revenue determinations will result in substantially lower revenue for some network owners.

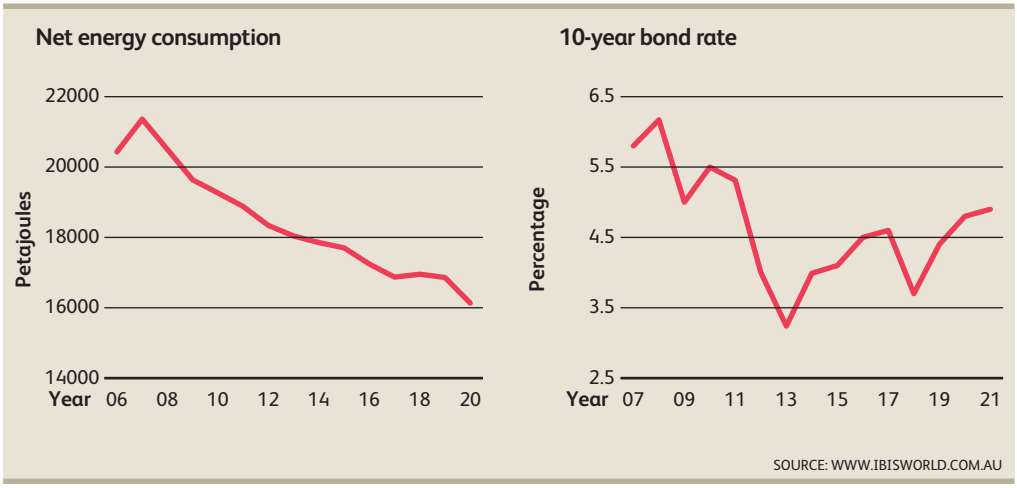
In the past five years, the nature of the relationship between permitted revenue and capital base has changed. After rising strongly between 2009-10 and 2012-13, revenue fell in 2013-14. The costs of larger networks were passed through to end users, with mounting charges for network access. This focused attention on the industry, as revenue growth occurred in line with steep climbs in electricity bills. The increased attention resulted in the development of new guidelines and rules for future investment in the industry, which is directly related to regulated revenue levels. Revenue is expected to increase at a compound annual rate of 2.7% over the five years through 2014-15, to $17.8 billion. A decline of 3.5% is forecast for 2014-15. New revenue determinations will have a large effect on revenue over the next five years, with revenue forecast to grow by just 0.4% annualised to reach $18.2 billion in 2019-20.

The industry's operating environment is changing in many ways, not just in its regulation. The technology used for generating electricity is also changing, with renewable energy sources such as wind showing the fastest growth in terms of new installation. The existing network is built to transfer electricity from generators to end users. The growth of renewables, particularly the installation of small-scale solar power generation by households, is likely to challenge the structure of current electricity transport networks over the next five years.

Key External Drivers

Net energy consumption

The net energy consumption in Australia includes total net use by industry and households, inventory changes, conversions and losses, and energy exports. While energy exports are growing, the net use of energy in Australia is declining due to the contraction of



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Industry Performance

Key External Drivers continued

heavy manufacturing. In 2014-15, net energy use is forecast to decline.

10-year bond rate

The 10-year Treasury bond rate reflects the current market interest rate demanded to hold debt for 10 years. Regulators use a formula that involves the cost of long-term debt to determine the allowable rate of return on industry assets. This is because the industry is capital-intensive and funds investment through a mix of debt and equity. The rate of return allowed on industry assets determines industry revenue. In 2014-15, the 10-year bond rate is forecast to increase.

Number of households

An increase in the number of households increases demand for electricity. Homes require lighting, heating and cooking facilities, which use power. In the past five years, decisions made at a household level have affected the industry. For example, the increased uptake of air conditioners has prompted additional investment in networks to service household demand, representing an opportunity for the industry. In 2014-15, the number of households is projected to grow.

Demand from air conditioning and heating services

The Air Conditioning and Heating Services industry installs household, industrial and commercial heating, refrigeration and air conditioning equipment. It also undertakes air conditioning ductwork. As the number of heating and cooling devices in Australia increases, so does potential peak electricity demand. Increases in peak demand mandate increases in electricity transmission and distribution networks, which provides an opportunity for the industry to expand. In 2014-15, demand from air conditioning and heating services is forecast to grow.

World price of natural gas

The relative prices of competing fuels such as gas and, to a lesser extent, solar power affect electricity demand. In general, the availability of other cost-competitive fuels tends to slow the growth in electricity demand and is therefore a threat to industry growth. In 2014-15, the world price of natural gas is expected to decrease.

Current Performance

Distribution networks are extremely expensive to build and are geographically specific, which means that they operate as natural monopolies in specific regions. The industry is highly regulated due to competition factors and because access to a reliable supply of electricity is considered essential by governments. Revenue and expansion of capacity depend on the access determination made by regulators such as the Australian Energy Market Commission (AEMC). In the past five years, the industry has expanded rapidly. In the past regulatory cycle for the eastern seaboard's National Electricity Market (NEM), regulators approved close to $36.0 billion of capital investment. This money was invested in upgrades, amendments and expansion to enable network operators to meet safety standards, as electricity demand has become more volatile. Industry participants then increased their access charges in line with the additional capital investment.

This expansion has since ended. New revenue determinations by the Australian Energy Regulator (AER) mean that revenue earned by networks in New South Wales will contract during 2014-15. This will contribute to a forecast 3.5% decline in industry revenue during the year, to $17.8 billion. Revenue also declined during 2013-14, mostly due to lower revenue for all three networks in New South Wales. These two successive years of falling revenue have resulted in annualised growth for the five years through 2014-15 slipping to 2.7%.

Industry Performance

Investment peaks

Peak demand for electricity occurs when the majority of end users use the most energy-intensive technology at the same time. During a typical day, peak demand occurs during business hours, when air conditioners, plant and equipment are turned on. During a typical year, peak demand occurs during extreme weather events such as heatwaves. The industry's assets are built to ensure safe and reliable supply during peak demand periods to prevent events like blackouts, which are expensive for the industry and for users. In the five years through 2014-15, potential peak demand for electricity has grown due to the widespread adoption of energy-intensive devices such as air conditioners.

The industry has invested in its networks to satisfy the different state and federal legislation that mandates safety and reliability standards. According to the AER's 2012 State of the Energy Market report, an estimated 20.0% to 30.0% of capacity in the NEM is maintained solely to meet peak demand events that account for less than 90 hours per year. The extent of the industry's asset base is a critical factor in its performance, as the value of industry assets has a strong relationship to revenue growth.

Potential peak demand for electricity has grown due to the widespread adoption of energy-intensive devices

The majority of industry participants operate within the NEM and are overseen by the AEMC. Rules for generators and networks are set by the AEMC and implemented by the AER. The asset base that is accepted by the AEMC for a given pricing period is a key factor in the determination of how much industry participants should be allowed to charge other market participants for access. Increases in assets are therefore linked to greater revenue and absolute profit earned by operators within the NEM. The same relationships between total assets and return also exist for operators in the Northern Territory and Western Australia, although they are not as explicit as those on the eastern seaboard.

Structural impacts

The industry is dominated by state-owned enterprises, so its structure is very stable over time. While the cost and extent of industry networks change, establishments and enterprises are constrained geographically along state lines. This is a continuing legacy of state control, with exceptions in South Australia and Victoria. Therefore, the biggest impact of the capacity expansion of the past five years has been on the industry's cost structure. Depreciation has grown due to the rise in the industry's asset base. Depreciation costs are largely fixed and so have further risen as a share of revenue over 2013-14 and 2014-15 due to declining revenue. Despite increased investment, industry employment has declined due to increased automation, which reflects the highly capital-intensive nature of the industry. Profitability rose over the four years through 2013-14 as the regulator allowed networks to increase revenue to cover additional capital expenditure, but profit margins are expected to fall back to near 2009-10 levels during 2014-15 as the regulator requires some networks to reduce their charges.

Smart meter rollout

The industry has introduced a new area of activity: the installation of smart meters. In June 2008, the Ministerial Council on Energy lent support to the development of a national smart metering framework and smart meter deployments in Victoria and New South Wales. This move followed cost benefit analysis indicating that the

Industry Performance

Smart meter rollout continued

meters offered a net benefit. Electricity distributors are responsible for the smart meter rollout in those states, which is expected to result in over five million meters being deployed by 2017. The extension of smart metering to small electricity consumers in Victoria (those using less than 160 megawatt hours per year) is mandated by legislation and commenced in late 2009. However, the rollout has been troubled in Victoria. Concern over increased electricity costs to households led to a temporary suspension of the program. Under the resumed rollout, the majority of residential and small business customers in Victoria had a smart meter installed by the end of 2013. In Victoria, the five active distribution businesses are implementing the rollout.

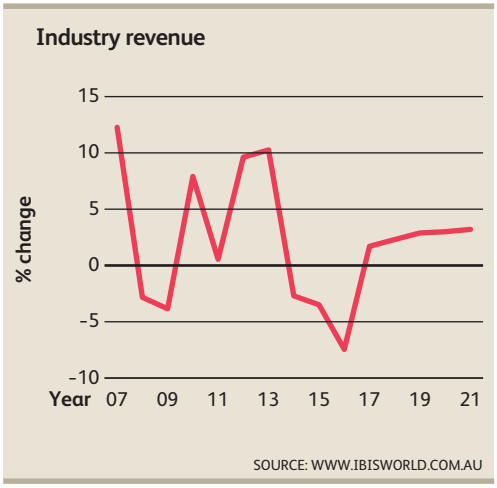
These activities have created an additional revenue stream for the industry over the past five years and will add to the industry's asset base over the next five years. From April 2015, electricity distributors in Victoria will be able to recover the costs of running a separate meter from households that have not upgraded to a smart meter. This extra cost is expected to result in a near 100% uptake of the new meters.

Adverse events

The industry's networks are vulnerable to damage during natural disasters such as floods and bushfires. Over the past five years, the industry has had to invest in replacing parts of the network in Victoria that were damaged by the Black Saturday bushfires of 2009. In addition, numerous other areas around the country have been affected by bushfires, and there was large-scale flooding in Queensland in 2010-11. The Black Saturday fires also resulted in a series of legal actions against industry operators, with the allegation that badly maintained distribution networks had both started fires and contributed to the intensity of the fires in the Kilmore East-Kinglake area. In the years since, entities owned by SP AusNet have agreed to settlement payments for damage caused by the fires. Other cases are still progressing through the courts.

Industry Outlook

Over the next five years, decisions by the AER are expected to affect the industry. In November 2014, the AER made new revenue determinations for the 2014-15 to 2018-19 regulatory period, which affects networks in New South Wales and Tasmania. Decisions on the next regulatory period for the other eastern states are due over the next year. Changes to where, how and when electricity is generated are also expected to challenge industry operators. Distribution networks are large fixed assets and are proving increasingly ill-suited to the needs of their customers. As the industry and its regulators adapt to new market conditions, industry profitability is expected to come under pressure. Revenue is forecast to grow at a compound annual rate of 0.4% over the five years through 2019-20, to $18.2 billion. During this period, the industry's structure is expected to remain stable, with no changes to enterprise or establishment numbers in the absence of privatisation. Employment is expected to rise at a slow rate.



Industry Performance

Network expansion and use

Over the past five years, the cost of retail energy has grown dramatically. Much of the increase has been attributed to growth in the costs of electricity distribution and transmission, which are determined by the industry's asset base. The industry's investment and charging decisions are heavily regulated, with five-year revenue determinations setting the structure for most operators in the industry. The past round of determinations from bodies like the AER were made on the assumption of continuing growth in electricity use per capita and rising peak demand.

The industry invested accordingly, although average energy use has declined over the period, while peak demand has grown. The adoption of solar panels by households, the success of energy efficiency initiatives and structural change in energy-intensive industries such as aluminium refining have all contributed to this decline in average use. On the other hand, the increasing use of air conditioners by businesses and households has amplified potential peak demand during extreme weather events. With these changing demand conditions, the expansion in industry assets has supported industry revenue growth, but at the expense of profitability for some operators, as electricity flows have dropped.

The mismatch between the network investment and the declining use of centrally generated electricity makes the industry's asset base appear suddenly surplus to requirements. As electricity bills have grown year on year, political pressure to contain further price rises has mounted. New revenue determinations by the AER in New South Wales will have a dramatic effect on revenue during 2015-16, when all three networks in the state move to new regulated revenue limits. In some cases, these are more than 30.0% lower than 2014-15 allowable revenue. Aurora Energy in Tasmania has also had its regulated revenue cut, but most of the decline is occurring in 2014-15. Over the next year, the AER will also determine revenue for the next regulatory period for distributors in other states, but changes outside New South Wales are expected to be far less disruptive. This is due to a higher level of over-investment there compared with other states over the past five years. Industry revenue is forecast to decline by 7.5% to $16.5 billion in 2015-16. Falling revenue will result in lower profit margins.

Storage and solar

The traditional role of distribution networks has been the transport of electricity from high-voltage distribution networks to end users. Technology use, particularly the adoption of solar panels, is challenging the suitability of the current grid. Distribution networks in South Australia and Queensland, two states very well suited to solar generation, are at the forefront of this change. The uptake of technologies like solar panels has been strong, and operators in these states are already curtailing investment due to declining demand for electricity transport. This has hurt profitability, and distribution networks have reduced their workforce in response to these shocks. In both states, potential gains from such technology remain. Their electricity networks are large, and remote communities are expensive to service. Distribution network operators in Queensland, such as Ergon Energy, have trialled solar and storage systems as alternative methods of supplying electricity to remote communities. This can reduce the usage of diesel generators in remote areas.

The adoption of solar panels by households is challenging the suitability of the current grid

Industry Performance

Smart meters and productivity

To adapt to changing network needs, the industry will need better information about the timing and location of electricity demand. In Victoria, investment in smart meters allows distribution network owners access to such data. Ausgrid has also trialled smart meters in New South Wales under a federal program. So far, distribution networks have been responsible for the installation and management of smart meters, and this has been a source of revenue for the industry. More importantly, the data from smart meters has allowed productivity gains through more accurate maintenance and has the potential to improve network planning. The future expansion of smart metering within the grid is uncertain. The rollout of meters has been contentious, with concern about their health impacts and disquiet about interval pricing. Additionally, the industry's role in their operation is open, with other jurisdictions such as New Zealand having stand-alone smart meter companies. Smart meter technology is discussed further in the Technology and Systems section.

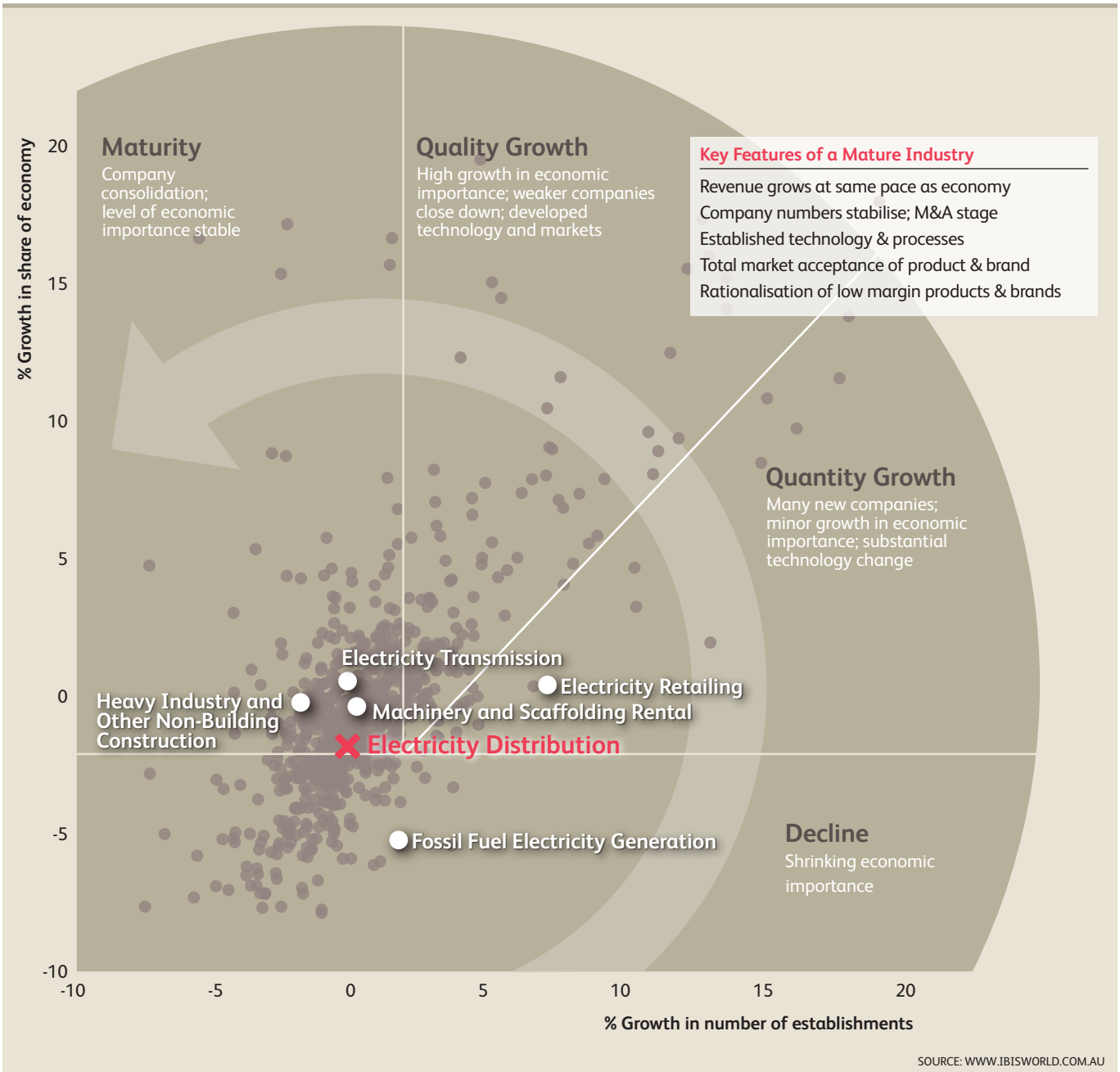
Industry Performance

Life Cycle Stage

The industry has benefited from large increases in investment in networks

The industry is tightly regulated due to its position as a natural monopoly

The industry provides a well-established service



SOURCE: WWW.IBISWORLD.COM.AU

Industry Performance

Industry Life Cycle

This industry is **Mature**

The Electricity Distribution industry is in the mature phase of its economic life cycle. Electricity distribution networks provide a well-established service and have a stable and slowly growing customer base. Long-term growth is closely linked to growth in the wider economy, although can diverge greatly over shorter-term horizons. Industry participants are increasingly grappling with the potential threat of new technology, such as solar panels, electricity storage and smart meters. These technologies are expected to reshape the industry and the wider Electricity Supply subdivision.

The industry's scale is intimately related to the size of its networks. The large amount of capital expenditure undertaken by the industry in the past five years resulted in rapid revenue growth. This drove profitability higher but this trend is expected to be short lived. The AER has cut regulated revenue for many of the networks that have made these investments. This will reduce profitability and therefore the industry's contribution to the economy. Industry value added is forecast to grow at an annualised 0.6% over the 10 years through 2019-20. This is slower than the growth of the Australian economy over the same period, which is forecast to grow at an annualised 2.7%. Therefore the industry is expected to underperform the economy. This underperformance is in part due to starting from a high base in 2009-10, when capital expenditure driven profit margin growth had already begun.

Products & Markets

Supply Chain | Products & Services | Demand Determinants
Major Markets | International Trade | Business Locations

Supply Chain

KEY BUYING INDUSTRIES

C **Manufacturing**
Manufacturing industries are key final markets for electricity, especially non-ferrous metals manufacturing.

G **Retail Trade**
Retailers require electricity to heat and light their stores, as well as operate point of sale equipment.

Z **Consumers**
Households are major users of electricity, accounting for about 28 % of industry revenue.

KEY SELLING INDUSTRIES

E3109 **Heavy Industry and Other Non-Building Construction in Australia**
The industry uses construction services to augment its networks.

L6631 **Machinery and Scaffolding Rental in Australia**
The industry hires equipment when maintaining its networks.

M6923 **Engineering Consulting in Australia**
The industry requires engineering services to manage and augment its networks.

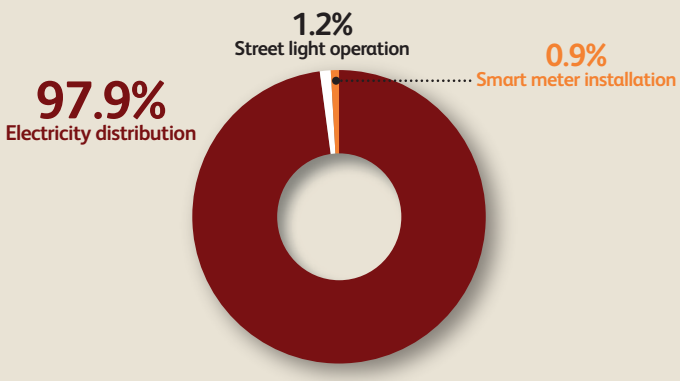
M6925 **Environmental Science Services in Australia**
The industry needs to clear environmental approvals processes for expansion.

Products & Services

The industry plays an extremely specific role within the transport of electricity. The generation of electricity typically occurs at locations removed from major users. Electricity is converted to high voltage for long-distance movement through the transmission network, as this reduces the losses associated with transportation. Few end users are equipped to work with high-voltage electricity, so distribution network operators use transformers and electricity substations to convert electricity from high to low voltage. Industry operators then distribute the electricity to consumers. This is the industry's primary activity.

As electricity cannot be stored on a large scale (outside of batteries and certain types of hydroelectric generation techniques), certain standards of efficiency and reliability are required within the transport network for efficiency. These standards also determine the operating expenditure and capital expenditure required by networks.

Products and services segmentation (2014-15)



Total $17.8bn

SOURCE: WWW.IBISWORLD.COM.AU

Products & Markets

Products & Services continued

The industry is highly regulated. Price determinations by the Australian Energy Regulator have a significant effect on industry revenue. These price determinations take into account a commercial return on the regulated asset base (RAB) of an operator. Increases in electricity use, reliability standards and replacement of existing networks can all increase an operator's RAB. When the RAB increases, the maximum allowable revenue (MAR) an operator can earn is also likely to grow. Other inputs to price determinations that increase the MAR include higher rates of return on assets and increases in allowances for operating and capital expenditure. Over the five years through 2014-15, industry operators have expanded and invested in their networks, which has flowed through to increased revenue.

Streetlight operation

Several industry operators also provide street-lighting services. This reflects the alignment in location of end electricity users and the need for on-street lighting. Industry employees have skills that can be transferred to street light operation. In the five years through 2014-15, this segment has declined as a share of revenue due to the faster growth in other areas of industry activity. In general, the segment tends to move slowly, in line with trends in residential construction.

Smart meter installation

Smart meter systems are designed to allow consumers to access information on real-time electricity prices. The rollout of smart meter systems supports demand management policies. With price information available, energy retailers can charge more for peak usage and consumers can respond by moderating their electricity usage. Policy objectives for smart meters include reducing both peak demand and the investment in infrastructure required to supply electricity in periods of high demand.

Demand Determinants

The demand for the Electricity Distribution industry's services is a derived demand: customers call on distribution services to gain the electricity they require. Not all electricity users rely on electricity distribution to access the power they need. For example, large metal smelting and refining operations and large miners typically access electricity supplies directly from the transmission network. Essentially, they are not customers of the Electricity Distribution industry.

Households, and the commercial and service sector, are the major users of electricity supplied by this industry. Together, they account for over three quarters of the total supplied. The factors that play a role in household electricity consumption include shifts in household disposable incomes, changes in the price of electricity and competing fuels, and the availability of a wider range of fuels. Fuel availability has been increased through the extension of gas pipelines, and improvements in technology that have made solar power more accessible. Similar factors influence demand by the commercial and service sector, although its consumption is less income-sensitive.

Major Markets

Firms in the industry supply electricity through low-voltage distribution networks, either as the operators of those or as electricity retailers. Not all the electricity generated and consumed in Australia passes through low-voltage distribution systems. Some large users (such as metal smelting and refining operations and mine sites) obtain their electricity directly from the high-voltage transmission network. Excluding these large users from electricity consumption data provides an indication of those electricity consumers reliant on the low-voltage networks.

Products & Markets

Major Markets continued

Manufacturers

Manufacturers, other than those engaged in metal smelting and refining, are the third-largest market. Within this group, food producers and chemical manufacturers are the largest category of users. Demand from manufacturers has declined in the past five years. This reflects a general reduction in the Manufacturing division's contribution to GDP over this period. A challenging operating environment due to high labour costs and a high Australian dollar has caused this sector to contract.

Households

Households are the major users of electricity distributed via the low-voltage network. Households rely on electricity for heat, light and the power to run essential pieces of household equipment. As households tend to use electricity at certain times, they contribute disproportionately to demand peaks. In this way, household behaviour has contributed to a higher rate of investment in the industry over the five years through 2014-15. The uptake of domestic air conditioning units has increased the level of demand that the Electricity Supply subdivision is required to meet during peak times. This has led to a surge of investment in the industry's networks. The rollout of smart meters to households has increased the industry's asset base in the past five years. As revenue determinations are made to ensure a fair return on industry assets, this has put upward pressure on industry revenue.

Another trend at a household level is the uptake of small-scale photovoltaic systems (solar panels). This means that households are increasingly generating electricity as well as using it. The current grid is built to deliver energy to households, creating a new set of challenges for the industry in the next five years. Over the past five years, the share of revenue from households has risen due to increases in regulated tariffs.

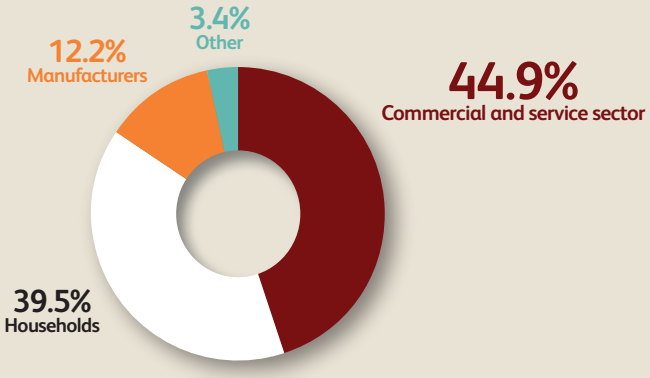
Commercial and service sector

The commercial and service sector (including wholesalers, retailers, private and government offices, educational institutions, health facilities and hotels) represents a diverse set of markets for the industry. Over the past ten years, demand from this market has grown with the penetration of communications technology. Computer systems require temperature-controlled environments, boosting the use of electricity-intensive air conditioning. In the past five years, the trend of growth has reversed, with energy efficiency measures resulting in declining demand from this sector.

Other

The transport sector, farming sector and other industries like construction are small users of distributed electricity.

Major market segmentation (2014-15)



Total $17.8bn

SOURCE: WWW.IBISWORLD.COM.AU

Products & Markets

Major Markets continued

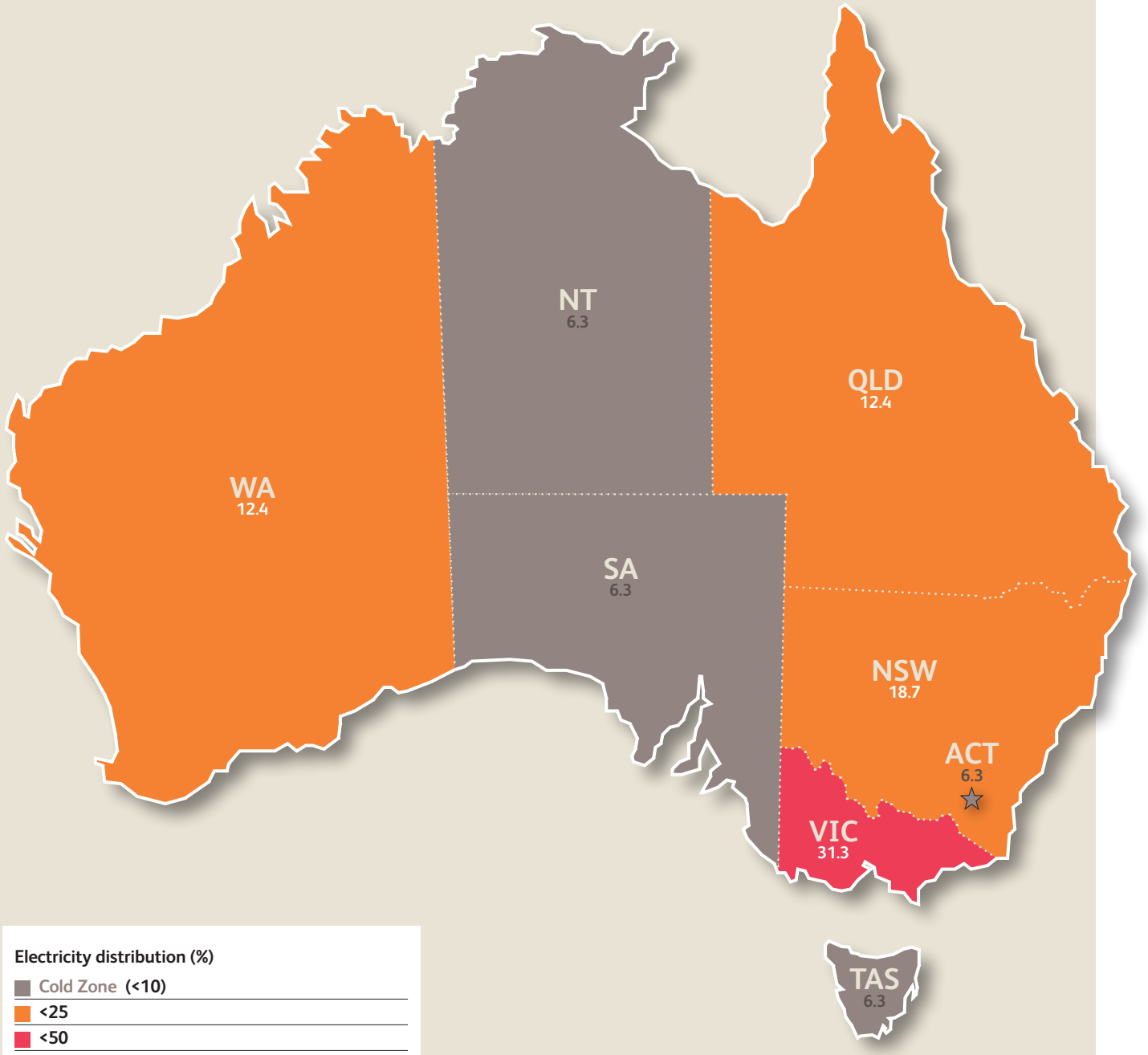
Other fuel types such as oil and gas are preferred by these industries. Transport's share of demand is mainly due to electrified inner-city commuter rail systems. In both the broader transport industry and in agriculture, the reliance on vehicles such as trucks and tractors means that oil is a preferred source of fuel. This market is expected to be growing.

International Trade

The industry provides services that facilitate the transport of electricity from generators to end users. These services are geographically specific. Imports and exports are not a feature of the industry's activities. In the absence of international trade, domestic demand is equal to industry revenue.

Products & Markets

Business Locations 2014-15



SOURCE: WWW.IBISWORLD.COM.AU

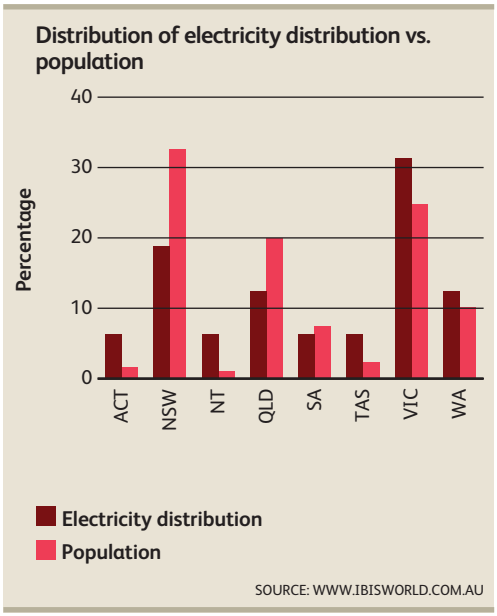
Products & Markets

Business Locations

The pattern of enterprise locations reflects the regulation and ownership of industry operators more than it does the spread of population or businesses in Australia. States with lower population densities, such as Tasmania, the Northern Territory, Western Australia and South Australia, are each home to single operators.

The structure of the privatisation of Victoria's distribution network in 1994 established five different distribution operators within the state. The legacy of this reform has been Victoria's dominance in terms of share of business locations. Additional factors include Victoria's share of population and business activity within Australia.

The trend in business locations has been stagnant in the five years through 2014-15. In the coming years, little change is expected. The most recent series of distribution market reforms in New South Wales, for example, did not result in an increase in the number of operators within that state.



Competitive Landscape

Market Share Concentration | Key Success Factors | Cost Structure Benchmarks
Basis of Competition | Barriers to Entry | Industry Globalisation

Market Share Concentration

Level
Concentration in this industry is **Medium**

The industry has a medium level of market share concentration, as measured by the contribution to industry revenue of the four largest players. The four largest companies in the industry are estimated to earn 55.7% of total industry revenue during 2014-15. This is up from 56.1% during 2009-10. During that time Endeavour Energy has fallen out of the top four, replaced by Essential Energy. State and territory governments still play a large role in electricity distribution and industry businesses are structured to cater to specific geographic areas. This limits the market share any one company can hold.

The low privatisation of the industry limits trends in market share concentration, as the majority of industry assets cannot be acquired. Victoria and South Australia have moved to private operations of distribution networks through the sale and lease of former state government assets. In these states, joint ownership structures also obscure the apparent concentration in these markets, which in practice are dominated by three entities.

Government ownership limits the volatility of industry market share concentration often caused by mergers and acquisition activity. Shifts in the market share of major players, while broadly stable, tend to occur when the Australian Energy Regulator makes revenue determinations for new periods, a process that occurs in an irregular fashion across the industry. Moves toward privatisation would likely lead to a change in the market share concentration of the industry, should they occur in the five years through 2019-20.

Key Success Factors

IBISWorld identifies 250 Key Success Factors for a business. The most important for this industry are:

Effective cost controls
Electricity distribution charges are fixed by government regulation. Since rising costs cannot be recouped in the market, cost control is particularly important.

Ability to negotiate successfully with regulator
Companies in this industry must be competent at dealing with a range of regulatory issues.

Superior financial management and debt management
The level of borrowing and interest rates has a major effect on the profitability of the industry's operation.

Ability to manage outsourcing contracts
Electricity retailers and distributors typically rely on labour outsourcing arrangements, the management of which has an effect on costs.

Cost Structure Benchmarks

The Electricity Distribution industry is characterised by high profit margins. Due to the industry's large asset base, operators need to generate high margins to cover the cost of capital invested in their businesses. The industry is highly regulated due to its position as a natural monopoly in the electricity supply chain, along with the Electricity Transmission industry. There is significant government involvement, often through ownership, and this affects the industry's cost structure.

Profit
The industry has a high level of profitability, although this is due to the large capital investment required by companies. Profit margins are forecast to be 30.9% during 2014-15. This is a similar level to 2009-10, but significantly lower than during the past two years. Changes to regulated revenue determinations by the AER are expected to reduce profitability in New South Wales and South Australia during 2014-15. In New South Wales, revenue

Competitive Landscape

Cost Structure Benchmarks continued

and profit growth was previously exceptionally strong because the regulator allowed revenue to increase as companies invested huge amounts in network capital expenditure. Much of this expenditure was subsequently viewed as unnecessary gold plating of the networks to attract higher revenue determinations.

The outlook for profit margins is poor as the AER has cut revenue determinations, with the largest falls due to occur in 2015-16. Revenue in New South Wales is expected to be much lower through to 2018-19, when the current regulatory period in the state ends.

Purchases

The largest costs incurred by the industry are purchases relating to the construction and maintenance of industry networks. This reflects the importance of capital infrastructure to the industry's operations, and the need for industry operators to meet regulated safety and reliability standards. The value of industry purchases is related to the size of its asset base, and therefore tends to remain stable as a share of revenue over time.

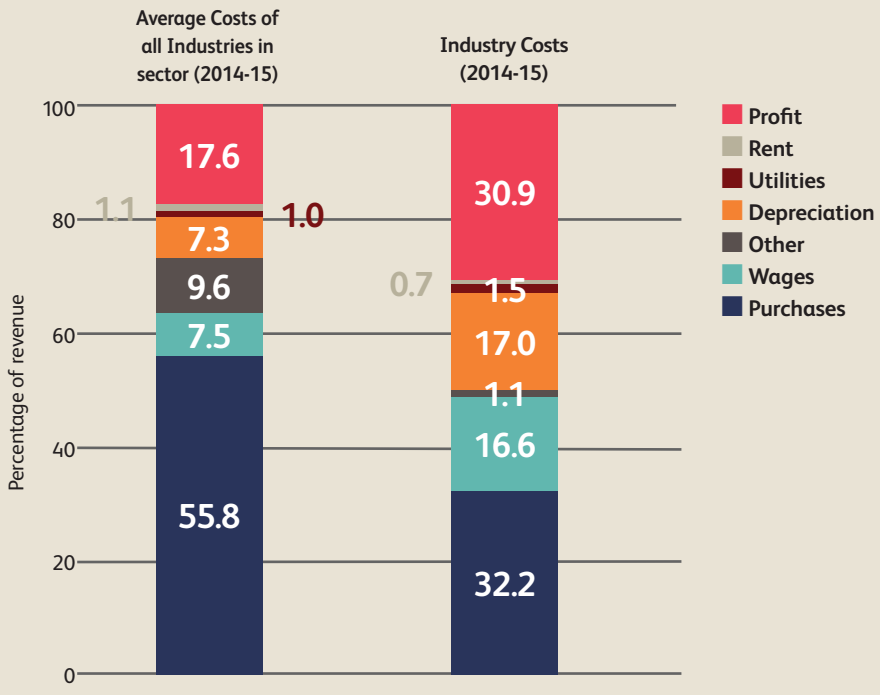
Wages

Total labour costs are a large expense for companies in this industry. Electricity distributors make use of both contractors and employees. The split between these two sources of labour differs company to company, while total labour use is similar. Contractors and employees perform a range of tasks, including distribution line maintenance and meter reading. The industry is the largest employer in the Electricity Supply division despite being a large user of contractors. Over the past five years, expenditure on labour as a share of revenue has declined as other cost segments have grown.

Depreciation

Depreciation is estimated to account for 17.0% of industry revenue in 2014-15. Depreciation has risen as a share of revenue over the five years through 2014-15 due to a period of rapid

Sector vs. Industry Costs



SOURCE: WWW.IBISWORLD.COM.AU

Competitive Landscape

Cost Structure Benchmarks continued

investment in some networks. The industry's assets are long-lived and thus depreciated over a long period of time. Most recent capital expenditure would not have had much effect on depreciation as a share of revenue as regulated revenue is usually allowed to rise as companies invest. However, in new price determinations in New South Wales in 2014, regulated revenue is being cut after networks over-invested. This decline in revenue will result in depreciation, which is largely a fixed cost, rising to record high levels.

Rent, utilities and other

The remainder of the industry's cost structure is made up of administration-related expenses. The cost of maintaining industry assets is high and dominates industry revenue. As a result, costs such as rent, utilities and insurance account for less than 5.0% of industry revenue combined.

Basis of Competition

Level & Trend
Competition in this industry is **Low** and the trend is **Steady**

The industry is comprised of a series of highly regulated natural monopolies on the distribution of electricity. Competition within geographic areas is prevented by the extremely high cost of replicating the physical assets of distribution networks. Industry operators transform high voltage electricity from transmission networks and deliver electricity to users. The specific role that the industry plays within the electricity transport supply chain precludes competition from substitutes. The lack of competition to industry operators for the provision of core industry services is reflected in the extent of regulation.

Internal competition

Competition based on price and reliability is present in non-core industry activities such as the provision of street lighting. Even in these areas of activity, incumbent distribution operators are at a considerable advantage in tendering to provide services. Distribution network operators possess both the networks and skilled employees to successfully provide these services.

External competition

The main substitute for using electricity networks is using gas. This competition is not complete, as gas is only really a substitute for heating and cooling applications. End users need to modify long life systems such as hot water heaters to switch between the two energy sources, which creates a barrier to switching which limits competition.

New technology, such as solar panels and battery storage systems, are opening up the potential for substitutes to industry services. Using a combination of both, households and business could remove themselves from the electricity grid entirely. Currently this is not economically viable, but the use of emerging technologies is a major challenge for industry participants.

Barriers to Entry

Level & Trend
Barriers to Entry in this industry are **High** and **Steady**

Barriers to entry in the industry are so high as to be prohibitive. The industry is extremely capital intensive and the cost of replicating networks gives rise to geographic monopolies. The industry's monopoly structure and role in providing an essential good mean that regulatory oversight is heavy. Entry to the industry by buying an existing operator is the most likely route. This would require substantial capital investment. An additional barrier is

Barriers to Entry checklist	Level
Competition	Low
Concentration	Medium
Life Cycle Stage	Mature
Capital Intensity	High
Technology Change	Low
Regulation & Policy	Heavy
Industry Assistance	Low

SOURCE: WWW.IBISWORLD.COM.AU

Competitive Landscape

Barriers to Entry continued

the high level of state government ownership of industry assets, which limits the number of business able to be bought.

The only way a new company can enter the industry is by buying an existing business in the industry.

Industry Globalisation

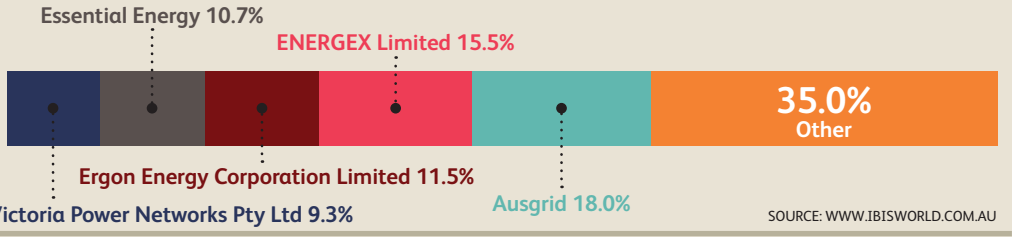
Level & Trend
Globalisation in this industry is **Medium** and the trend is **Increasing**

The industry has moderate globalisation, a legacy of privatisation undertaken by the Victorian Government and the SA Government commencing in the 1990s that allowed ownership of industry assets to change. Privatisation facilitated the entry of international distribution network operators, most notably Cheung Kong Infrastructure & Power Assets Holdings and SP AusNet. State ownership in the industry remains high and has not changed over the past five years. This has limited any increase in industry globalisation. Increases in globalisation for related industries like the Electricity Transmission industry and the Fossil Fuel Electricity Generation industry in the past five years indicate that industry assets would likely be attractive to foreign investors.

Major Companies

Ausgrid | ENERGEX Limited | Ergon Energy Corporation Limited
Essential Energy | Victoria Power Networks Pty Ltd | Other Companies

Major players
(Market share)



SOURCE: WWW.IBISWORLD.COM.AU

Player Performance

Ausgrid
Market share: 18.0 %

Ausgrid is a NSW Government-owned entity that owns and manages the electricity distribution network. The company provides power to homes and businesses in Sydney, the Hunter Region and the Central Coast. Three government-owned distribution businesses operate in New South Wales: Ausgrid, Essential Energy and Endeavour Energy. Ausgrid is the largest of these.

The company was formerly part of a combined electricity distribution and retail business, EnergyAustralia. In March 2011, the NSW Government split the distribution and retail functions. The retail segment was privatised and sold to TRUenergy, while the distribution network remained under government ownership.

In July 2012, the NSW Government restructured the three state-owned electricity distribution networks. Under the new structure, the three networks remain separate legal entities but share a board of directors and have a common CEO. As separate legal entities, the three distribution networks are treated as individual enterprises for this report. The combined entity is Networks NSW.

In 2013-14, Ausgrid reported total assets worth $16.2 billion. The company operates a network including more than 200 large electricity substations, 500,000 power poles, 30,000 small distribution substations and almost 50,000 kilometres of below- and above-ground electricity cables. These connect to over 1.6 million customers. In addition, Ausgrid operates streetlights on behalf of councils and similar customers, reporting 248,466 streetlight connections in 2012-13.

Over the past five years, the company has undertaken significant capital expenditure, including a $500.0 million electricity-metering project funded by the Federal Government under the Smart Grid, Smart City program.

Financial performance

Over the past five years, Ausgrid's revenue growth is expected to have outperformed that of the overall industry. Company revenue is expected to grow by an annualised 9.9% over the five years through 2014-15. Until 2012-13, the AER approved significant capital investment in

Ausgrid – financial performance

Year	Revenue ($ billion)	(% change)	EBIT ($ million)	(% change)
2009-10	2.00	N/C	911.9	N/C
2010-11	2.58	29.0	829.1	-9.1
2011-12	2.92	13.2	1,032.2	24.5
2012-13	3.35	14.7	1,585.7	53.6
2013-14	3.30	-1.5	1,336.4	N/C
2014-15*	3.20	-3.0	N/A	N/C

*Estimate

SOURCE: ANNUAL REPORT AND IBISWORLD

Major Companies

Player Performance continued

Ausgrid's networks, which have expanded. This growth in its asset base supported higher regulated tariffs. During 2013-14, capital expenditure was reduced by over 40.0% compared with forecasts due to lower demand growth over the previous five years. This contributed to revenue declining during the year. Capital expenditure is expected to be lower than previously forecast between 2014-15 and 2018-19 following a new revenue determination by the AER in November 2014. Ausgrid has been the most profitable major company in the industry over the past five years, with profit reaching 47.4% of revenue in 2012-13.

Player Performance

ENERGEX Limited
Market share: 15.5 %

ENERGEX Limited operates the electricity distribution network in south-east Queensland. The company is structured as a government-owned corporation and is the largest distribution network in Queensland. In 2013-14, ENERGEX reported a total asset base of $13.3 billion, including a network with a total line length of 52,176 kilometres and over 1.4 million customers. In addition, the company operates over 300,000 streetlights on behalf of councils.

ENERGEX's distribution area includes a number of remote and sparsely populated communities. Due to their distance and density, these communities are expensive to service. ENERGEX receives a community service obligation payment from the Queensland Government as a subsidy for providing services to these areas, as the government prohibits the company from charging tariffs sufficient to recover these costs.

Queensland is ideally located for solar generation. ENERGEX and other Queensland distribution networks have been strongly affected by household uptake of solar panels. The number of homes with small-scale solar systems in ENERGEX's network has soared from 2,000 in 2008-09 to a reported 261,454 in June 2014. This has reduced the extent of daytime peak demand and energy usage.

Financial performance

Over the past five years, the company's revenue has grown at a faster rate than the industry and profit margins have grown. The regulated nature of the company's revenue has allowed this growth despite the uptake of solar panels reducing energy usage. ENERGEX's revenue is estimated to grow at an annualised 13.4% over the five years through 2014-15, outperforming the industry.

ENERGEX Limited – financial performance

Year	Revenue ($ billion)	(% change)	EBIT ($ million)	(% change)
2009-10	1.47	15.4	467.3	31.7
2010-11	1.74	18.4	606.5	29.8
2011-12	2.01	15.5	681.0	12.3
2012-13	2.27	12.9	818.2	20.1
2013-14	2.59	14.1	1,059.0	29.4
2014-15*	2.76	6.6	N/A	N/C

*Estimate

SOURCE: ANNUAL REPORT AND IBISWORLD

Major Companies

Player Performance

Ergon Energy Corporation Limited
Market share: 11.5 %

Ergon Energy Corporation Limited distributes electricity in Queensland, outside the Brisbane metropolitan area. The company was created in 1999 through the restructuring of the industry in Queensland, a process managed by the Queensland Electricity Reform Unit. Ergon's large and sparsely populated distribution area results in higher costs than those faced by other power distributors.

In 2006, the Queensland Government announced plans to sell the electricity retailing operations of Ergon (PowerDirect) and the retailing business of ENERGEX (Sun Retail) prior to the state's electricity market being opened to full retail competition from July 2007. Government ownership of the electricity distribution assets of the two businesses has been retained. PowerDirect was sold to AGL Energy for $1.2 billion in February 2007.

Financial performance

In the five years through 2014-15, Ergon is expected to underperform the industry. Ergon's revenue rose substantially in 2010-11 and the following two years as sales revenue, community service obligation payments from the state government and capital contributions all increased. However, revenue contracted heavily during 2013-14 and a reduction in regulated revenue during 2014-15 is expected to result in an overall decline for the past five years. Despite the poor revenue performance, the company's profitability increased over the four years through 2013-14, with operating profit growing faster than revenue.

Ergon Energy Corporation Limited – financial performance

Year	Revenue ($ billion)	(% change)	EBIT ($ million)	(% change)
2009-10	2.20	-28.0	460.7	N/C
2010-11	2.54	15.5	723.5	57.0
2011-12	2.69	5.9	736	1.7
2012-13	3.00	11.5	932	26.6
2013-14	2.59	-13.7	960	3.0
2014-15*	2.05	-20.8	N/A	N/C

*Estimate

SOURCE: ANNUAL REPORT AND IBISWORLD

Player Performance

Essential Energy
Market share: 10.7 %

Essential Energy is a NSW state-owned corporation that owns and maintains an electricity distribution network in regional New South Wales and parts of southern Queensland. The company is now headquartered in Queanbeyan, NSW, after moving from Bathurst in 2012. Essential Energy employs over 4,000 people across New South Wales and Queensland.

In July 2012, the NSW Government restructured its ownership of the three electricity distribution networks in the state. Essential Energy was merged with Ausgrid and Endeavour Energy to create a new entity, Networks NSW. The three networks remain separate legal entities and retain their individual branding, but share a board of directors and CEO. Throughout this report, all three are treated as separate enterprises.

Financial performance

Over the five years through 2014-15, Essential Energy is expected to outperform the industry. Revenue is expected to grow at an annualised 9.0% over the period. Investment in the

Major Companies

Player Performance continued

network has allowed Essential Energy to increase its tariffs, which was reflected in strong revenue growth until 2012-13. A new revenue determination for 2014-15 to 2018-19 will cause regulated revenue to contract and capital expenditure to decline. This follows a contraction during 2013-14 due to reduced consumption of electricity by residential and commercial markets.

Essential Energy – financial performance

Year	Revenue ($ billion)	(% change)	EBIT ($ million)	(% change)
2009-10	1.24	-50.2	323.0	N/C
2010-11	1.47	18.5	339.3	5.0
2011-12	1.87	27.2	514.4	51.6
2012-13	2.16	15.5	817.6	58.9
2013-14	1.97	-8.8	677.4	-17.1
2014-15*	1.91	-3.0	N/A	N/C

*Estimate

SOURCE: ANNUAL REPORT AND IBISWORLD

Player Performance

Victoria Power Networks Pty Ltd
Market share: 9.3 %

CHEDHA Holdings Limited is an ownership vehicle that controls Victorian Power Networks and its two distribution businesses: Powercor and CitiPower. CHEDHA Holdings is jointly owned. The Hong Kong-based firms Cheung Kong Infrastructure Holdings and Power Assets Holdings Limited together own 51.0% of the company. The remaining 49.0% of CHEDHA Holdings Limited is owned by the domestic infrastructure trust Spark Infrastructure Group.

CHEDHA Holdings Limited purchased Powercor and CitiPower in 2001 and 2002 respectively. Powercor and CitiPower are two of the five privatised distribution networks that transport electricity in Victoria. Powercor's distribution business covers central and western Victoria and Melbourne's outer-western suburbs, while CitiPower's network covers central Melbourne and the inner-western suburbs. CHEDHA Holdings Limited also owns SA Power Networks, a SA distribution network. For a discussion of the SA holdings, refer to SA Power Networks in the Other Companies section.

Victoria Power Networks Pty Ltd – financial performance

Year*	Revenue ($ billion)	(% change)	EBIT ($ million)	(% change)
2009	1.06	N/C	437.4	N/C
2010	1.18	11.3	444.9	1.7
2011	1.21	2.5	281.6	-36.7
2012	1.29	6.6	420.3	49.3
2013	1.43	10.9	490.1	16.6
2014**	1.53	7.0	N/A	N/C

*Year end December **Estimate

SOURCE: ANNUAL REPORT AND IBISWORLD

Major Companies

Player Performance continued

Financial performance

Over the five years through 2014, Victoria Power Networks Pty Ltd's revenue growth is expected to outperform the industry, with revenue growing at an annualised 7.5%. This outperformance is due to favourable regulatory determinations. The AER first regulated CitiPower and Powercor in 2010-11. The AER's ruling reduced the distribution prices CitiPower was permitted to charge.

Other Companies

The industry is separated into distinct geographical areas, reflecting the natural monopolies that operate within the industry. The other companies discussed have been chosen to provide an example of a distribution network from major states of operation.

Other major players include SA Power Networks in South Australia and Endeavour Energy in New South Wales. The smaller states and territories account for a low share of industry revenue. ActewAGL services the Australian Capital Territory, Aurora Energy services Tasmania and the NT Government-owned Power and Water Corporation provides services in the Northern Territory.

Singapore Power International Ltd

Estimated combined market share: 9.3 %

Jemena, United Energy and SP Ausnet are all active in Victoria. Singapore Power International Ltd (SPI) is the ultimate owner of shares of these businesses, through investment vehicles and direct control. SPI controls 51.0% of SP Ausnet, 34.0% of United Energy and controls Jemena through SPI (Australia) Assets Pty Ltd. The company also has a 50.0% stake in the ActewAGL business held through SPI (Australia) Assets Pty Ltd. Singapore Power International Ltd does not consolidate these activities through a head Australian entity and so the activities of these subsidiaries are treated individually here.

Electricity Networks Corporation

Estimated market share: 5.6 %

Western Power provides distribution services in the South West Interconnected System (SWIS), which covers the more densely populated part of Western Australia. Western Power was restructured into four new businesses from April 2006. Prior to the restructure, Western Power reported on electricity generation, transmission and distribution on a segment basis, even though it was a vertically integrated utility. The restructure created a disaggregated system, while retaining a vertically integrated approach outside this area.

Two businesses operate within the SWIS: Electricity Generation and Retail Corporation, trading as Synergy, and Electricity Networks Corporation, which retained the trading name Western Power. It transports electricity from generators to customers, and maintains and upgrades the transmission and distribution network. Horizon Power is the new vertically integrated entity responsible for generating or procuring power and distributing and selling it to customers outside the SWIS.

SA Power Networks

Estimated market share: 5.2 %

SA Power Networks manages the SA electricity distribution network. The company also provides construction and maintenance services to the electrical infrastructure sector in South Australia. SA Power Networks is jointly owned by Hong Kong-based global infrastructure investment firm Cheung Kong Infrastructure Holdings (CKI) and Australian energy distribution company Spark Infrastructure Group through their investment vehicle CHEDHA Holdings. CHEDHA Holdings also owns Victorian Power Networks. CKI entered the Electricity Distribution industry when it acquired a 200-year lease on the SA electricity distributor, ETSA Utilities, in December 1999.

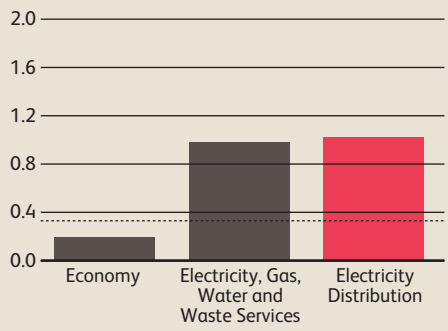
Operating Conditions

Capital Intensity | Technology & Systems | Revenue Volatility
Regulation & Policy | Industry Assistance

Capital Intensity

Level
The level of capital intensity is **High**

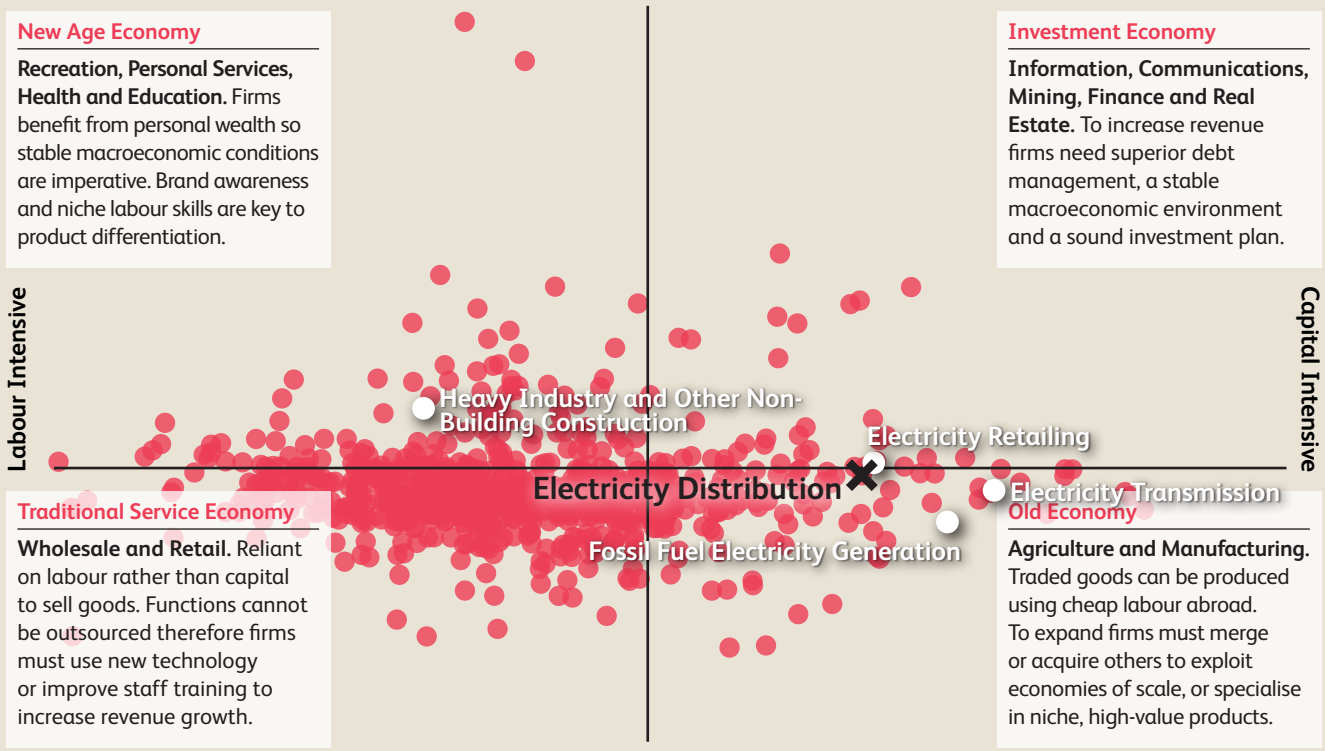
The industry relies on infrastructure rather than labour to deliver its product. Capital intensity is high, given that the industry spends $1.02 on capital for every dollar spent on labour. The industry has the second highest level of capital spending within the Electricity Supply subdivision after the Electricity Transmission industry. Capital spending by the industry relates to items such as the replacement of old infrastructure, infrastructure in newly developed areas, updating information technology systems, and meeting safety and environmental requirements. The industry operates a substantial asset base, reflecting its significant investment in the poles-and-wires distribution system.



Dotted line shows a high level of capital intensity

SOURCE: WWW.IBISWORLD.COM.AU

Tools of the Trade: Growth Strategies for Success



SOURCE: WWW.IBISWORLD.COM.AU

Operating Conditions

Technology & Systems

Level
The level of Technology Change is **Low**

The industry's assets, frequently referred to as poles and wires, are used in the transport of lower voltage electricity to its final user. The technology used for the industry's core activities is mature. Substations and transformers have long been used to convert high-voltage electricity carried by transmission networks to the low-voltage electricity used by households and most businesses. The industry's main technological advances in the past five years relate to the measurement of how electricity flows through networks.

Interval meters (i.e. smart meters) measure electricity consumption at the point of connection in real time. After a troubled adoption period, these have been rolled out in Victoria and are optional in other states. Older meters are accumulation meters that record total consumption at a connection point, but not the time of consumption. Consumers are billed solely on the volume of electricity consumed. Smart meters, by contrast, collect data about electricity demand in half hour blocks, under the instalment specifications in the Victorian rollout. With their use, far more detail about the flow of electricity through their networks is available to distribution network operators. The use of smart meters enables distribution network owners to more accurately model the impacts of household solar systems on their networks.

The adoption of the technology in Victoria was driven by a state government mandate. The main benefit of interval meters, in conjunction with an appropriate tariff structure, is to help energy users self-manage their demand in response to price signals. Consumers would be encouraged to reduce electricity use at peak times, when prices are high. Interval meters are more sophisticated and record consumption in defined time intervals (for example, half-hour periods). This information allows time-of-use billing, under which the charge for electricity can be varied with the time of consumption. Smart meters are interval meters with remote communication capabilities between retailers and end users. They allow for remote meter reading, connection and disconnection of customers.

Revenue Volatility

Level
The level of Volatility is **Medium**

The industry is dominated by distribution services for the National Electricity Market (NEM), which covers the states on the eastern seaboard and South Australia. Revenue volatility is limited, as maximum allowable revenue (MAR) on the NEM is set by the Australian Energy Regulator, commonly for five-year periods. Key inputs to MAR calculations include the regulated asset base (RAB) and a calculation of the cost of capital. These inputs are used to calculate yearly revenue to provide a reasonable return on the distributor's assets. Other factors used in the MAR calculation include depreciation rates, operating and maintenance expenditure, required capital expenditure, tax and any incentive scheme payments included.

A series of expansionary rulings made by the AER from 2005-06 through 2007-08 have contributed to the industry's current medium volatility. These rulings allowed many industry operators to invest significantly, increasing the RAB. Revenue determinations in some states for the 2014-15 to 2018-19 regulatory period have gone some way to unwind this, with revenue expected to contract by over 30% for some individual distribution networks.

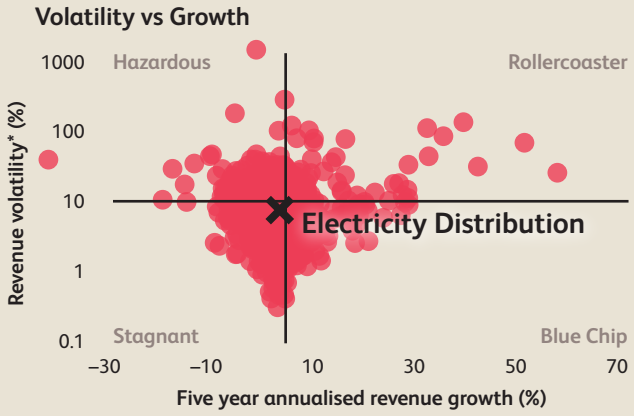
The RAB has an important relationship to industry revenue. Growth in the RAB of individual operators increases industry revenue as well. Increases to the RAB occur as distributors invest to maintain current reliability standards set by state and federal bodies. As the volume of electricity used in Australia at peak and normal periods increases, so to do the capacity requirements for distribution networks, which in turn flows through to increases in the RAB.

Operating Conditions

Revenue Volatility continued

A higher level of revenue volatility implies greater industry risk. Volatility can negatively affect long-term strategic decisions, such as the time frame for capital investment.

When a firm makes poor investment decisions it may face underutilised capacity if demand suddenly falls, or capacity constraints if it rises quickly.



* Axis is in logarithmic scale

SOURCE: WWW.IBISWORLD.COM.AU

Regulation & Policy

Level & Trend
The level of Regulation is **Heavy** and the trend is **Steady**

The duplication of distribution networks is uneconomic, so natural monopolies dominate the industry. This situation lends itself to a high degree of regulation, with state and Federal Government agencies acting to limit distribution networks from charging unreasonable prices for access to their distribution networks. In addition to the federal bodies discussed below, there is significant regulation by state governments. In most states, the same regulators deal with the licensing of electricity distributors and related compliance issues.

The National Electricity Market

The National Electricity Market extends across the eastern seaboard of Australia, covering Queensland, New South Wales, the Australian Capital Territory, Victoria, Tasmania and South Australia. The Australian Energy Markets Operator (AEMO) oversees the NEM and the transmission network. AEMO acts as a clearinghouse for the wholesale trade of electricity in these jurisdictions. Electricity industries in Western Australia and the Northern Territory operate outside of the NEM as they are geographically remote. In these states, regulation is undertaken by the Economic Regulation Authority and the Utilities Commission for Western Australia and the Northern Territory respectively.

The Australian Energy Market Commission

The Australian Energy Market Commission (AEMC) sets the National Electricity Rules (NER) that affect the operations of the NEM. The AEMC role is to create National Electricity Rules for the NEM for efficient investment and reliable networks. In 2012, the AEMC changed the National Electricity Rules in response to increased network investment, political scrutiny and rising bill costs. The Australian Energy Regulator is working on improving its regulatory framework in response to these rule changes.

The Australian Energy Regulator

The Australian Energy Regulator (AER) is a critical regulatory body for the industry, as it makes revenue determinations for regulated distribution businesses. These revenue determinations are commonly made for five-year periods. Determinations are made to cover forecast capital expenditure that is required to ensure network reliability and a commercial return on assets for the operator of the distribution network over the determination period. The result is a

Operating Conditions

Regulation & Policy continued

ruling on the maximum allowable revenue permissible for the distributor.

As well as price determinations, the AER monitors network performance, rewarding or penalising industry participants based on performance against criteria such as reliability or progress with the Demand Management and Embedded Generation Connection Incentive Schemes.

The AER acts within the National Electricity Law and the NER set by the AEMC. It is undertaking a Better Regulation reform program in response to changes in the national electricity rules made by the AEMC. The reforms are expected to result in more regular adjustments to the cost of capital measures used to set industry returns. They are also expected to establish incentives and penalties to target efficient investment in the industry.

Industry Assistance

Level & Trend
The level of Industry Assistance is **Low** and the trend is **Steady**

The industry benefits from direct government assistance in the form of community service obligations in regions where it is not considered feasible to recover the full economic costs of network operation from end users. Direct assistance is a feature in large and sparsely populated areas in regional Queensland. Direct assistance is small as a share of total industry revenue, but in some regions it is required for a network to be viable.

Solar challenges

Trends in electricity demand are likely to challenge the business models of distribution networks in the next five years. The demand for commercially generated electricity is declining, in part due to household adoption of small-scale photovoltaic systems (solar panels). As adoption of this technology grows, the flow of electricity on distribution networks will change, and charging practices may need to be adjusted. Currently, for reasons of equity, the fixed costs of networks are recouped through variable charges to electricity end users. This practice limits the exposure of low users of electricity, who are typically on lower incomes, to the full cost of networks and is supported by government.

These trends may result in increased industry assistance. Households with solar panels reduce their exposure to network costs and wholesale energy prices in the current system. This undermines the principles of variable pricing and could lead to revenue shortfalls for distribution networks. Both private and public owners have invested in industry assets to generate a return, and governments have adopted policies that undermine their ability to do so from users. This suggests that governments may either need to write off assets or provide more subsidies for operation in the long term as industry networks become less economic.

Key Statistics

Industry Data

	Revenue ($m)	Industry Value Added ($m)	Establishments	Enterprises	Employment	Exports	Imports	Wages ($m)	Domestic Demand
2005-06	13,776.5	7,561.9	16	16	27,295	--	--	2,494.7	N/A
2006-07	15,467.1	7,827.5	16	16	28,887	--	--	2,645.0	N/A
2007-08	15,029.9	7,400.2	16	16	28,293	--	--	2,479.1	N/A
2008-09	14,451.4	7,118.6	16	16	30,457	--	--	2,663.8	N/A
2009-10	15,594.4	9,817.6	16	16	31,342	--	--	2,809.4	N/A
2010-11	15,680.3	9,598.5	16	16	31,832	--	--	2,787.0	N/A
2011-12	17,188.3	10,917.3	16	16	32,318	--	--	3,061.5	N/A
2012-13	18,952.2	12,172.6	16	16	30,170	--	--	2,806.3	N/A
2013-14	18,440.2	12,741.2	16	16	30,345	--	--	2,882.2	N/A
2014-15	**17,796.3**	**11,489.0**	**16**	**16**	**30,991**	**--**	**--**	**2,956.9**	**N/A**
2015-16	16,469.6	9,381.2	16	16	31,538	--	--	3,042.4	N/A
2016-17	16,750.2	9,519.1	16	16	31,982	--	--	3,121.9	N/A
2017-18	17,136.0	9,654.5	16	16	32,347	--	--	3,195.0	N/A
2018-19	17,631.1	9,915.3	16	16	32,064	--	--	3,253.5	N/A
2019-20	18,160.0	10,395.3	16	16	32,198	--	--	3,406.5	N/A
Sector Rank	**2/16**	**1/16**	**16/16**	**15/16**	**1/16**	**N/A**	**N/A**	**1/16**	**N/A**
Economy Rank	**70/787**	**38/786**	**776/787**	**758/786**	**113/786**	**N/A**	**N/A**	**75/786**	**N/A**

Annual Change

	Revenue (%)	Industry Value Added (%)	Establishments (%)	Enterprises (%)	Employment (%)	Exports (%)	Imports (%)	Wages (%)	Domestic Demand (%)
2006-07	12.3	3.5	0.0	0.0	5.8	N/A	N/A	6.0	N/A
2007-08	-2.8	-5.5	0.0	0.0	-2.1	N/A	N/A	-6.3	N/A
2008-09	-3.8	-3.8	0.0	0.0	7.6	N/A	N/A	7.5	N/A
2009-10	7.9	37.9	0.0	0.0	2.9	N/A	N/A	5.5	N/A
2010-11	0.6	-2.2	0.0	0.0	1.6	N/A	N/A	-0.8	N/A
2011-12	9.6	13.7	0.0	0.0	1.5	N/A	N/A	9.8	N/A
2012-13	10.3	11.5	0.0	0.0	-6.6	N/A	N/A	-8.3	N/A
2013-14	-2.7	4.7	0.0	0.0	0.6	N/A	N/A	2.7	N/A
2014-15	**-3.5**	**-9.8**	**0.0**	**0.0**	**2.1**	**N/A**	**N/A**	**2.6**	**N/A**
2015-16	-7.5	-18.3	0.0	0.0	1.8	N/A	N/A	2.9	N/A
2016-17	1.7	1.5	0.0	0.0	1.4	N/A	N/A	2.6	N/A
2017-18	2.3	1.4	0.0	0.0	1.1	N/A	N/A	2.3	N/A
2018-19	2.9	2.7	0.0	0.0	-0.9	N/A	N/A	1.8	N/A
2019-20	3.0	4.8	0.0	0.0	0.4	N/A	N/A	4.7	N/A
Sector Rank	**11/16**	**13/16**	**12/16**	**11/16**	**9/16**	**N/A**	**N/A**	**11/16**	**N/A**
Economy Rank	**722/787**	**763/786**	**472/787**	**405/786**	**236/786**	**N/A**	**N/A**	**299/786**	**N/A**

Key Ratios

	IVA/Revenue (%)	Imports/Demand (%)	Exports/Revenue (%)	Revenue per Employee ($'000)	Wages/Revenue (%)	Employees per Est.	Average Wage ($)	Share of the Economy (%)
2005-06	54.89	N/A	N/A	504.73	18.11	1,705.94	91,397.69	0.60
2006-07	50.61	N/A	N/A	535.43	17.10	1,805.44	91,563.68	0.60
2007-08	49.24	N/A	N/A	531.22	16.49	1,768.31	87,622.38	0.55
2008-09	49.26	N/A	N/A	474.49	18.43	1,903.56	87,461.01	0.52
2009-10	62.96	N/A	N/A	497.56	18.02	1,958.88	89,636.91	0.70
2010-11	61.21	N/A	N/A	492.60	17.77	1,989.50	87,553.41	0.67
2011-12	63.52	N/A	N/A	531.85	17.81	2,019.88	94,730.49	0.73
2012-13	64.23	N/A	N/A	628.18	14.81	1,885.63	93,016.24	0.80
2013-14	69.09	N/A	N/A	607.68	15.63	1,896.56	94,981.05	0.81
2014-15	**64.56**	**N/A**	**N/A**	**574.24**	**16.62**	**1,936.94**	**95,411.57**	**0.71**
2015-16	56.96	N/A	N/A	522.21	18.47	1,971.13	96,467.75	0.57
2016-17	56.83	N/A	N/A	523.74	18.64	1,998.88	97,614.28	0.56
2017-18	56.34	N/A	N/A	529.76	18.64	2,021.69	98,772.68	0.56
2018-19	56.24	N/A	N/A	549.87	18.45	2,004.00	101,468.94	0.56
2019-20	57.24	N/A	N/A	564.01	18.76	2,012.38	105,798.50	0.57
Sector Rank	**3/16**	**N/A**	**N/A**	**9/16**	**5/16**	**1/16**	**6/16**	**1/16**
Economy Rank	**74/786**	**N/A**	**N/A**	**176/786**	**453/786**	**1/786**	**104/786**	**38/786**

Figures are inflation-adjusted 2015 dollars. Rank refers to 2015 data.

SOURCE: WWW.IBISWORLD.COM.AU

Jargon & Glossary

Industry Jargon

AUSTRALIAN ENERGY REGULATOR (AER) Implements National Electricity Rules set by the Australian Energy Market Commission.

ELECTRICITY DISTRIBUTION SYSTEM The low-voltage power lines carrying electricity to end users.

NATIONAL ELECTRICITY MARKET (NEM) An interconnected wholesale market for electricity covering Queensland, New South Wales, the Australian Capital Territory, Victoria, Tasmania and South Australia.

REGULATED ASSET BASE (RAB) The value of assets operated by a distributor within the NEM as accepted by the AER.

SUBSTATION A facility that lowers the voltage of electric energy by the use of transformers.

IBISWorld Glossary

BARRIERS TO ENTRY High barriers to entry mean that new companies struggle to enter an industry, while low barriers mean it is easy for new companies to enter an industry.

CAPITAL INTENSITY Compares the amount of money spent on capital (plant, machinery and equipment) with that spent on labour. IBISWorld uses the ratio of depreciation to wages as a proxy for capital intensity. High capital intensity is more than $0.333 of capital to $1 of labour; medium is $0.125 to $0.333 of capital to $1 of labour; low is less than $0.125 of capital for every $1 of labour.

CONSTANT PRICES The dollar figures in the Key Statistics table, including forecasts, are adjusted for inflation using the current year (i.e. year published) as the base year. This removes the impact of changes in the purchasing power of the dollar, leaving only the 'real' growth or decline in industry metrics. The inflation adjustments in IBISWorld's reports are made using the Australian Bureau of Statistics' implicit GDP price deflator.

DOMESTIC DEMAND Spending on industry goods and services within Australia, regardless of their country of origin. It is derived by adding imports to industry revenue, and then subtracting exports.

EMPLOYMENT The number of permanent, part-time, temporary and casual employees, working proprietors, partners, managers and executives within the industry.

ENTERPRISE A division that is separately managed and keeps management accounts. Each enterprise consists of one or more establishments that are under common ownership or control.

ESTABLISHMENT The smallest type of accounting unit within an enterprise, an establishment is a single physical location where business is conducted or where services or industrial operations are performed. Multiple establishments under common control make up an enterprise.

EXPORTS Total value of industry goods and services sold by Australian companies to customers abroad.

IMPORTS Total value of industry goods and services brought in from foreign countries to be sold in Australia.

INDUSTRY CONCENTRATION An indicator of the dominance of the top four players in an industry. Concentration is considered high if the top players account for more than 70 % of industry revenue. Medium is 40 % to 70 % of industry revenue. Low is less than 40 %.

INDUSTRY REVENUE The total sales of industry goods and services (exclusive of excise and sales tax); subsidies on production; all other operating income from outside the firm (such as commission income, repair and service income, and rent, leasing and hiring income); and capital work done by rental or lease. Receipts from interest royalties, dividends and the sale of fixed tangible assets are excluded.

INDUSTRY VALUE ADDED (IVA) The market value of goods and services produced by the industry minus the cost of goods and services used in production. IVA is also described as the industry's contribution to GDP, or profit plus wages and depreciation.

INTERNATIONAL TRADE The level of international trade is determined by ratios of exports to revenue and imports to domestic demand. For exports/revenue: low is less than 5 %; medium is 5 % to 20 %; and high is more than 20 %. Imports/domestic demand: low is less than 5 %; medium is 5 % to 35 %; and high is more than 35 %.

LIFE CYCLE All industries go through periods of growth, maturity and decline. IBISWorld determines an industry's life cycle by considering its growth rate (measured by IVA) compared with GDP; the growth rate of the number of establishments; the amount of change the industry's products are undergoing; the rate of technological change; and the level of customer acceptance of industry products and services.

NONEMPLOYING ESTABLISHMENT Businesses with no paid employment or payroll, also known as nonemployers. These are mostly set up by self-employed individuals.

PROFIT IBISWorld uses earnings before interest and tax (EBIT) as an indicator of a company's profitability. It is calculated as revenue minus expenses, excluding interest and tax.

VOLATILITY The level of volatility is determined by averaging the absolute change in revenue in each of the past five years. Volatility levels: very high is more than ±20 %; high volatility is ±10 % to ±20 %; moderate volatility is ±3 % to ±10 %; and low volatility is less than ±3 %.

WAGES The gross total wages and salaries of all employees in the industry. Benefits and on-costs are included in this figure.