



Perth's Energy Economy

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Research highlights

- Perth is the hub of Australia's energy industry, and one of the leading players globally.
- Perth has become an increasingly important location for corporate headquarters within Australia. Arguable Perth is now Australia's third most 'powerful' city in corporate Australia.
- In October 2010, there were some 220 energy companies listed on the ASX that had headquarters in Australian cities, 110 or half, of these are located in Perth. Sydney followed with 48 energy headquarters and then Melbourne with 24.
- Between the population censuses of 2001-2006 direct employment in the energy sector nearly doubled.
- Perth has five underlying advantages that appear to be critical in contributing to the emerging energy 'cluster'.
- Perth's Energy sector adds value to urban life and the outcome is a city that is as much about scientific and technological innovation and international competitiveness, as it is about resource extraction.

Introduction

As recently as the 1970s, Western Australia's energy credentials were, at best, modest. While coal had long been used for power generation near Collie, the petroleum industry was a marginal contributor to the State's economy. Early players such as the Western Australian Petroleum Company (WAPET) had produced limited quantities of oil in the north of the State since the early 1950s, and Anglo-Iranian Oil (now BP) had opened a refinery south of Perth in 1955. Beyond this, the industry was largely non-existent.

The discovery of large reserves of gas off the North West coast in the 1960s and 1970s began to transform Perth's economy. By 2010, the transformation was such that Perth had become the hub of Australia's energy industry, and had begun to emerge as a leading global player. While in large part this was achieved on the back of the oil and gas industries, new opportunities are emerging around other forms of energy, including uranium, geothermal, bioenergy and solar. This



Bulletin provides a brief overview of some of the key characteristics of Perth's energy industry, focussing on the scale of production, corporate control, and the creation of a knowledge economy. The purpose is not to provide a comprehensive review of the industry, but a snapshot of Perth's increasingly significant role in the national and global energy sector.

Energy Production

The Western Australian Department of Mines and Petroleum produces an annual *Statistics Digest* that offers a comprehensive assessment of the productivity and performance of the resources sector within the State. Data from the Department show that between 2000-01 and 2009-10 the value of petroleum production in WA increased from a little over A\$10 billion \$18.7 billion, an increase of a little over 80 per cent. Estimates undertaken as part of the FACTBase research program indicate that, between the 2001 and 2006 population censuses, direct employment in the energy sector nearly doubled. The expansion of the sector has also contributed to significant increases in employment in sectors such as exploration, oil and gas engineering, legal and financial services, manufacturing, and logistics – to name but a few. At a global scale, the expansion of the Western Australian energy industry has seen it emerge as a significant competitor. In the LNG global market, for example, the State now contributes nine per cent of world production, compared to the rest of Australia's contribution of around one per cent (Department of Mines and Petroleum, 2010a).

The availability of large reserves of natural gas, together with strong economic linkages to markets in China, Japan, South Korea and the United States has seen considerable recent investment in new petroleum projects. Moreover, regulatory changes now mean that investment is occurring in the uranium industry, while new money is also flowing into coal, geothermal and other projects. While it is difficult to quantify the exact size of current commitments to new energy projects, the available evidence suggests that this is currently in the order of between A\$120 and A\$130 billion (Department of Mines and Petroleum, 2010b). To put this in perspective, the Australian government's stimulus package in response to the global economic downturn in 2009 amounted to around A\$42 billion.

Energy and Corporate Power

While the scale of production and the investment in new projects is a well-rehearsed theme in the press and other forums, what is perhaps not appreciated is how this economy has reshaped Perth's position in the national and global corporate hierarchy. A paper recently published in *Urban Studies*, Tonts and Taylor (2010) showed that Perth has become



an increasingly important location for corporate headquarters within Australia. Indeed, they argued that Perth was now Australia's third most 'powerful' city in corporate Australia. They also revealed that Australia's cities showed a clear specialisation in terms of their corporate activities, with Perth being in part defined by its energy companies.

This trend is borne out by a closer assessment of the energy sector. In late October 2010 there were some 220 energy companies listed on the Australian Stock Exchange that had headquarters located in Australian cities. Of these, 110 are located in Perth (see Figure 1). Indeed, most are concentrated in Perth's CBD or in West Perth and Subiaco. The next most important centre for energy headquarters was Sydney with 48, followed by Melbourne with 24.

It is, however, important to note that most of Perth's energy companies are relatively small. While Woodside dominates in terms of the scale of operations, employees and market capital (around A\$34 billion), the next largest has market capital of around \$A3 billion, while most have less than A\$500 million. As a result, Perth's dominance of market capitalisation in the sector is less pronounced than it is for headquarters (Figure 2). In late October 2010, Perth controlled A\$48 billion of market capitalisation in the sector, or 39.9 per cent. This was followed by Sydney (A\$37 billion or 30.5 per cent) and Brisbane (\$16.7 billion or 13.8 per cent).

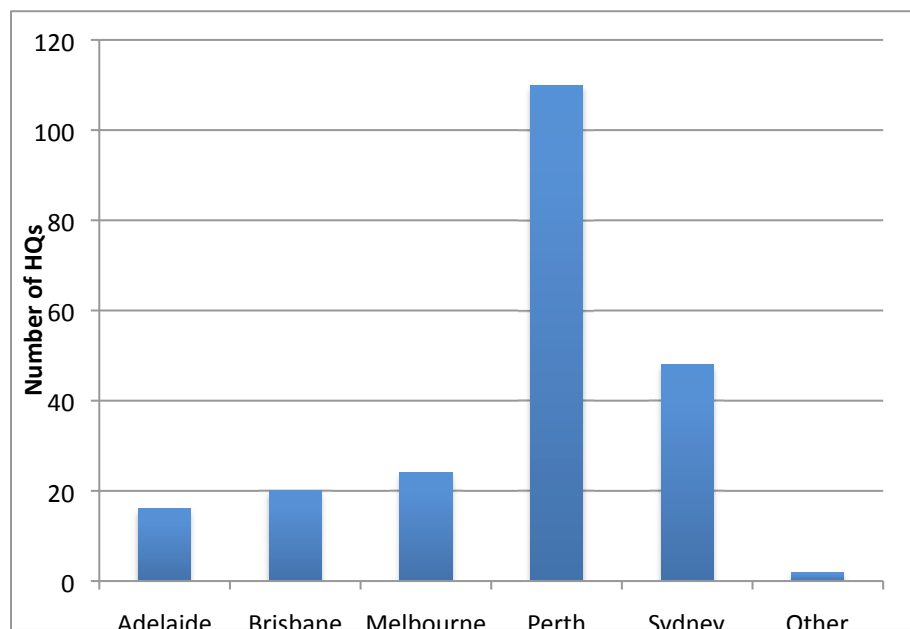


Figure 1 Location of Listed Company Headquarters in the Energy Sector, October, 2010

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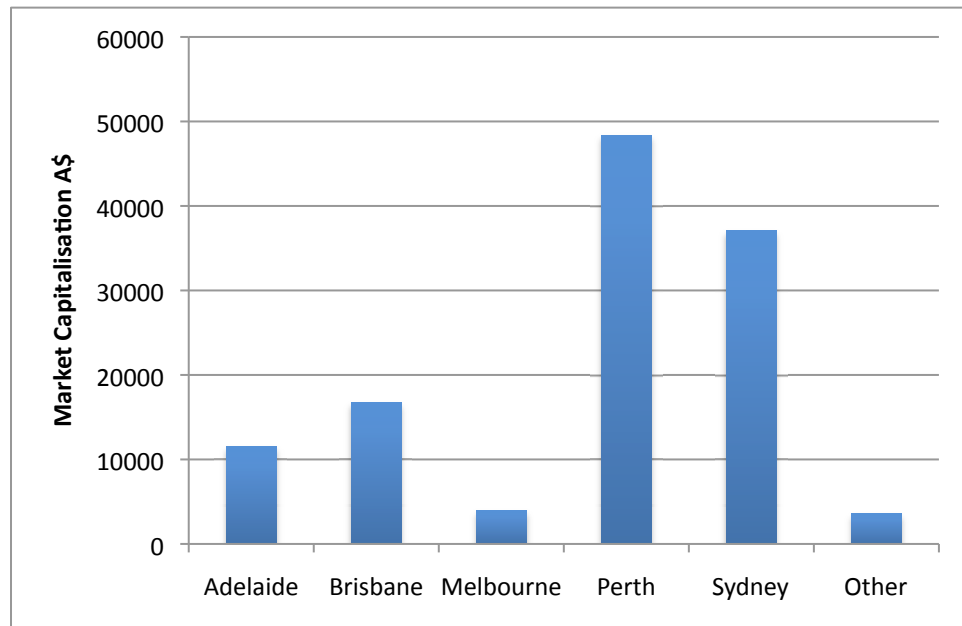


Figure 2 Market Capitalisation of Energy Companies Located in Australian Cities, October 2010

One of the noteworthy characteristics of this pattern of corporate control is that there is clear intra-sectoral specialisation within the national urban system. Sydney, Melbourne and Brisbane, while home to some newer and existing companies in the petroleum industry, tend to be dominated by a relatively smaller number of large, coal related businesses. By contrast, Perth's specialisation is clearly around oil, gas, uranium and some of the newer energy resources, such as geothermal.

It is important to recognise that listed companies are only part of the story with regards to corporate control. Equally significant are the headquarters of international corporate subsidiaries and/or 'branch offices'. These play a critical role in integrating urban economies into the world economy and in shaping patterns of investment and business activity. Perth's significance as the nation's energy capital is reflected in the presence of Chevron's Australian Headquarters, and was further strengthened by the decision of Shell to move its national office to the city during 2010.

In assessing the reason for the dominance of headquarters, Tonts and Taylor (2010) built on research from the United States (Testa, 2006) and hypothesised that there a number of distinct underlying advantages that shape the distribution of corporate headquarters in national systems. In terms of Perth, these appear to be critical in contributing to the emerging energy 'cluster'.



The first of these is the importance of Perth as a source of strategic and specialist information needed to support decision-making. In large part, this is about ensuring that corporations are able to meld their internal accounting and information flows with other information on markets, prices, alternative sources of inputs, new technologies and new company strategies to manage and monitor their own operations more fully.

The second is the importance of Perth as a communication hub facilitating the ready assembly of executives, decision-makers and key informants for the face-to-face meetings that remain pivotal within the modern business environment. Despite the emergence of information technology and 'virtual meetings', cities remain the locus of the face-to-face real networks.

Third, and closely related to the above point, is Perth's advantage in the co-location and proximity of other enterprises in the energy sector. Klier (2006) suggests that this enhances learning-through-integration. Knowledge and information remain amongst the most spatially constrained resources that businesses depend on in order to remain competitive. Indeed, there is a growing body of literature that has emphasised the transfer of knowledge amongst co-located or proximate firms and the way that this can, in turn, shape economies, business practices and corporate cultures (MacKinnon *et al.*, 2002).

Fourth, Perth now has a critical mass in the sector, which offers a good prospect for recruiting skilled and professional people. This pool of labour provides the specialist skills and knowledge that contribute to competitiveness and innovation. Moreover, the emergence of specialised segments within the energy sector, together with labour market churn, can result in significant recruitment advantages for firms in markets where skilled labour is at a premium.

Fifth, the concentration of business service firms experienced in working with the energy sector in Perth means that the city can offer a wide range of specialist activities for companies located in the city. Companies can easily outsource specialist business and professional functions to, for example, legal and accounting professionals, to media and advertising companies, and to a wider range of consultants, and especially to specialist financial institutions.

Adding Value to Urban Life

In a recent FACTBase Bulletin, Wray (2010) posed the question 'is a resource economy necessarily inconsistent with a knowledge economy?' While the typical caricature of a knowledge economy might be the high tech industries of Silicon Valley in California, or the M4 Corridor in the



UK, Wray concluded that this view needed to be challenged. Her research on Western Australia's nickel industry showed that a considerable amount of intellectual capital underpinned the industry, and that this contributed to the Perth's competitive advantage.

This is also true of Perth's energy sector, where a considerable store of human capital has built up around the industry. The energy sector is based on innovation and creativity in disciplines as diverse as geoscience, engineering, computer science, chemistry, and business management. Moreover, in order to remain competitive the industry competes for labour within the global economy, adding not only skills to Perth's economy, but also social and ethnic diversity. This circulation of labour within the world energy economy, and Perth's place within the network, helps to enhance the city's competitiveness and vibrancy.

Perhaps even more telling is the commitment of the energy industry to the development of science and technology. While resource companies have often been accused of simply extracting resources and capital from host nations and regions, the reality is more complex. In Perth, the energy sector now forms part of a network of those engaged in 'knowledge production' that incorporates partnerships with government agencies, universities and research organisations.

Such partnerships have contributed not only to improved productivity within the sector, but also increase the competitiveness of the cities in which they occur. For example, at the University of Western Australia partnerships have been established between companies such as Woodside and Chevron to support research centres, professorial appointments, postgraduate research scholarships and research projects. Major initiatives such as the Centre for Offshore Foundation Systems, Centre for Petroleum Geoscience, Centre for Mining, Energy and Natural Resources Law, and Institute for Minerals and Energy are all examples of the way in which the sector is underpinning the creation of new knowledge. The outcome is a city that is as much about scientific and technological innovation and international competitiveness, as it is about resource extraction. An increasing body of research shows that these 'smart cities' have more vibrant economies and social structures than other centres, and that this contributes to competitive advantage (Winters, 2010).

Boomtown Blues?

While the above has painted a largely positive picture, it is important to recognise that the booming energy sector (and resources sector more generally) is not without problems. Recent papers in the FACTBase series have shown that as Perth's economy boomed in line with the expansion of the resources sector, social and economic problems emerged that contribute to significant quality of life issues (Bulletins 2, 3

and 5). There is evidence that socio-economic stress has increased as the general cost of living has risen. This is particularly evident in lower income suburbs. It is also clear that the gap between rich and poor has widened as the speed of economic growth increased. Other major challenges include housing costs and stress, difficulties in matching service provision with rapid growth, urban sprawl, transport challenges, and environmental stress.

All of this raises policy questions about how to maximise the benefits associated with the expanding energy and resources economy, while mitigating against the problems associated with rapid economic and population growth. It is in this regard that networks such as the World Energy Cities Partnership play a role. The shared experience of these cities offers the opportunity to reflect on the challenges and identify means of capitalising on the opportunities that the energy industry provides.

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About FACTBase

The FACTBase project is a joint venture between the University of Western Australia and the Committee for Perth, an influential member-based organisation driven by a diverse assembly of Perth's leaders. Members collaborate with business, government and community groups



to actively improve the liveability of our city, resulting in a real and enduring contribution to Perth and the metropolitan area.

One of the only broad-reaching projects of its kind to be undertaken in the southern hemisphere, FACTBase condenses the plethora of databases and studies on the subject of liveability and analyse what's happening in Perth through words, maps and graphs.

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