



Power of Choice Review

Response to the Australian Energy Market Commission

NEXTDC Limited is pleased to offer this brief response to the Australian Energy Market Commission's *Power of Choice* review and welcomes the Commission's intention to explore a range of options in relation to better manage electricity demand across the economy. NEXTDC is pleased that the Commission is examining a holistic range of options to broaden the focus of securing our energy future beyond the supply and distribution side, to include how demand side forces can be best leveraged to improve resilience and efficiency.

NEXTDC is Australia's only ASX-listed, carrier neutral supplier of data centre facilities and is building and operating a national platform of premium data centre facilities to meet the needs of government, corporations and service providers.

With the exponential growth of cloud computing, facilities such as NEXTDC are becoming increasingly important to businesses, governments and the economy generally as new service delivery vectors are pioneered, and economies of scale are realised to allow greater efficiency. However, just as more and more services transition to cloud-based technologies, consumers expect 'always-on' products and applications and these applications themselves are ever-increasing.

NEXTDC Limited Energy Context

Through our portfolio of data centre infrastructure, NEXTDC will be an intensive consumer of power over coming years. To illustrate the scale of this demand, our M1 facility in Melbourne opened in July 2012 has 12MW of IT load capacity. In practical terms this means that this one site will use more power when at full capacity than the entire Crown Casino complex with its four hotels, casino and expansive restaurant and retail businesses.

With such power-hungry infrastructure, a key feature of NEXTDC's next generation data centres is energy efficiency. The company has invested significant capital in ensuring we have the latest technology including direct free air cooling, tri-generation power and solar. At M1 we have invested over \$1.2 million to construct the largest privately-owned commercial rooftop solar array in Australia. M1 is the first data centre in the Asia-Pacific region to install solar power, and we plan to invest in solar power for all our upcoming new-build facilities.

Our rooftop array will be installed over the coming months and once it is live will generate 400 kilowatts of power annually, which translates to 550 MW hours of electricity per year, enough to power a NABERS 4 star rated office space for over 890 people for a year.

Our solar-generated power will offset approximately 670 tonnes of carbon emissions per year, which is equivalent to the emissions from 200 cars over the course of a year.

M1 is working towards an industry-leading PUE of 1.35 initially, which will be even lower once the solar array is operational, and after we have installed the two 2MW tri-generation power plants which will be the largest installation of tri-generation technology by any data centre in Australia.

NEXTDC strongly believe that powering data centres in the face of rising demand across the economy, rising electricity prices and other factors is one of the most significant challenges facing the capacity of the digital economy moving forward. Although broadband ubiquity will be achieved through existing policies, it is important that steps are taken to ensure the economy can extract maximum value out of that public investment by making certain that all sectors of the economy are thinking differently about how supply can be generated.

NEXTDC believes that data centre providers should take steps to utilise the environment to provide power rather than using electricity to solve the problem. As the previous statements indicate, NEXTDC believes that solar has a significant role to play. Solar investment among the commercial and industrial sectors has been relatively low level in Australia, even within the ICT sector. Notwithstanding our natural competitive advantage living in a proverbial sunburnt country, Australia is in many areas lagging behind: In North Carolina, technology giant Apple will host a 100-acre solar farm generating in excess of 20MW power to support their 46,000 square-metre facility.

Other environment-led initiatives can help ameliorate the power consumption requirements from conventional generation and distribution networks, including direct free air cooling. CyberAir 2 precision air-conditioning systems along with DFC cools data centres up to 80% more economically than conventional compressor cooling systems. DFC utilises conditioned ambient air below 18°C to keep the data centre cool providing enormous energy savings and freeing capacity.

Power of Choice recommendations

NEXTDC is pleased to endorse the vision of the *Power of Choice* review and welcomes the preliminary steps identified to help drive effective use of the demand side of the energy market to achieve greater efficiency and capacity management in the NEM. Moreover, NEXTDC welcomes the non-prescriptive approach taken by the Commission to allow for greatest choice by consumers in pursuing DSP initiatives.

NEXTDC specifically endorses the preliminary work done and principles reflected by the Commission in identifying ways in which consumers can utilise the potential of DSP services. Of specific interest are the principles of rewarding DSP in the wholesale market and separating DSP actions from the sale and supply of electricity.

NEXTDC understands that significant work to educate consumers, along with regulatory harmonisation across the economy and NEM will be required and looks forward to opportunities to participate in these discussions from a broader industry perspective. NEXTDC also recognises that, particularly when it comes to solar in this context, there will need to be robust involvement from regulators and expert bodies to ensure that metering technology is sufficient to serve the needs of both generators, distributors and consumers. Similarly, there are significant upfront costs with installation and operation of such technologies and sensible approaches need to be agreed to in order to empower the advantages that DSP can offer.

NEXTDC welcomes the principles outlined by the Commission to provide safeguards to retailers and distributors to ensure that DSP will not deliriously effect their ability to meet their existing responsibilities. Related to this, NEXTDC agrees with the principles that market arrangements regarding the ownership, connection and operation of certain DSP resources should not constrain their use. Overwhelmingly, NEXTDC believes much of this report, along with the principles of the original SCER framework allow for a mature debate to be held in relation to Australia's energy requirements into the future.

Conclusion

Although an intensive energy consumer and a communications business rather than a generator or distributor of energy, NEXTDC feels that this is an area of policy where a broad a range of market participants should participate. The Commission should be commended that it has involved the voices of consumer advocacy groups and energy users in formulating this review and eventual submission.

NEXTDC's power requirements will only continue to grow in accordance with long accepted principles and patterns of growth in our own sector and we are determined to ensure that we can take steps within our business, in partnership with conventional generators to help improve efficiency in the NEM.