

Opportunities and challenges

The State has a rich endowment of natural gas, which is important both as a source of energy for domestic needs and as an export commodity, helping meet energy demand in the global economy.

As an energy source, natural gas helps deliver cleaner energy, with a lower emissions intensity than coal-fired electricity generation. It is also the fuel of choice for important industrial and mineral processing users, delivering heat and electricity efficiently through the process of co-generation.

Modelling¹ conducted as part of the *Energy2031* process has highlighted the risks associated with future domestic gas supplies, in terms of availability to meet local requirements and the pricing of such supplies. These risks reinforce the need for the continued application of the Domestic Gas Reservation Policy.

The Government has clarified arrangements for the application of the Domestic Gas Reservation Policy. Under these arrangements gas producers will be required to demonstrate their ability to meet the Domestic Gas Reservation Policy as a condition of project approval. The State will apply the policy flexibly in accordance with the following requirements:

- LNG Producers will commit to make available domestic gas equivalent to 15% of LNG production from each LNG export project by:
 - reserving domestic gas equivalent to 15% of LNG production from each LNG export project;

- developing, or obtaining access to, the necessary infrastructure (including a domgas plant, associated facilities and offshore pipelines) to meet their domestic gas commitments as part of the approvals process; and
- showing diligence and good faith in marketing gas into the domestic market.

These efforts may be subject to independent review.

- Producers should undertake the above actions such that domestic gas is made available to coincide with the start of LNG production. This timing may, however, vary depending on project circumstances.
- Prices and contracts for domestic gas will be determined by the market.
- Producers may propose to offset their domestic gas commitment by supplying gas or other energy from an alternative source, rather than supplying gas from their LNG projects. Among other conditions, producers will have to demonstrate that the proposed offset represents a net addition to the State's domestic energy supply. The State will consult with industry to develop criteria for domestic gas offsets.
- The Policy will be reviewed in 2014-15.

Future domestic gas supplies are likely to be largely integrated with production for LNG exports from offshore fields, providing lower cost supplies than stand-alone domestic production. Many of the decisions and policies directly affecting the development of Western Australia's offshore gas resources must be jointly undertaken with the Commonwealth.

The State has greater capacity to support the development of onshore gas resources. An increase in the availability of onshore domestic gas would provide for greater diversity in the

¹ ACIL Tasman 'Energy Futures for Western Australia' and SKM MMA 'WA Domestic Gas Market Analysis Report for the Strategic Energy Initiative'.

sources of supply at the same time as increasing overall supply capacity. However, the cost of exploration and investment make it unlikely that significant price reductions will result, at least in the short term.

Western Australia has considerable quantities of 'tight gas' (gas that is difficult to extract because of the porosity and permeability of host rock reservoirs). Much of the State's tight gas is in large reservoirs close to Perth.

Shale gas is another potential unconventional source of onshore gas, which may reach commercial development in the State with increasing gas prices in the future, as has happened in the United States and is anticipated in China.

While bringing unconventional gas into the market would improve the security of gas supply and contribute to meeting increasing demand, concerns have been expressed over the potential environmental impacts from processes associated with the extraction of these unconventional gas sources.

The second of our major energy sources today is coal, which supplies nearly half our electricity in the South West Interconnected System. Given the economics of coal-fired generation, coal is likely to continue to play a significant role in our generation mix, as indicated in projections developed in *Energy2031* modelling of future energy supplies.

However, coal-fired electricity generation will need to adapt to handle an increasingly variable demand profile and to respond to the requirements of reduced greenhouse emissions. Changes in technology to address emissions from generation facilities are occurring on a global scale, with current efforts mainly being directed to large scale facilities. These technologies will need to be adapted to the comparatively smaller scale facilities in our State.

Recent changes in ownership of Western Australia's coal supply sources have prompted consideration of the potential for coal as an export commodity. This additional demand could place increased pricing pressures on companies when renegotiating or contracting for additional coal supply arrangements.

With significant sources throughout the State, including solar radiation, wind, wave, geothermal and bio-energy, renewable energy is playing an increasing role in our electricity markets. There is an opportunity for renewable energy to not only meet the global and national requirements for cleaner energy, but also help diversify energy supplies, increasing future energy security and enhancing market competition.

The Commonwealth Large Scale Renewable Energy Target will remain as the primary driver for renewable energy developments in Western Australia over the medium term, complemented by the carbon pricing mechanism.

Voluntary schemes with GreenPower accreditation will also continue to provide a degree of support to the uptake of renewable energy.

As the contribution of renewable energy to the State's electricity supply increases, the intermittent nature of some renewable energy sources will need to be addressed to ensure our generation fleet can meet our patterns of consumption.

Regional and remote power generation is predominantly reliant on liquid fuels, exposing the cost of operating these facilities to international pricing pressures.

Similarly, long distances for regional travel and the need for heavy vehicles in the mining industry mean that liquid fuels will continue to be the major source of energy for transport in Western Australia.