

Conditions for new coal-fired electricity generation

About this initiative

In 2007, the *ClimateSmart 2050* strategy set out a number of conditions under which investments in new coal-fired generation would be supported.

Since then, a better understanding of the impacts of climate change, Commonwealth Government commitments to introduce the Carbon Pollution Reduction Scheme (CPRS) and a Renewable Energy Target (RET), and significant investments in demonstrating carbon capture and storage technologies provide the opportunity for Queensland to realign its approach to new coal-fired power generation and position it for the future.

To support the transition of the energy sector towards a lower carbon future, and equip it to take advantage of the opportunities presented, the Government has revised the conditions for new coal-fired electricity generation.

No new coal fired power station will be approved in Queensland unless:

- a) It uses world's best practice low emission technology in order to achieve the lowest possible levels of emissions; and
- b) It is carbon capture and storage (CCS) ready and will retrofit that technology within five years of CCS being proven on a commercial scale.

This initiative complements and extends the significant investment that the Queensland Government has made in accelerating the development and commercial deployment of low emission coal technologies.

This is one of a range of initiatives within Queensland's revised climate change strategy, *ClimateQ: toward a greener Queensland*. The \$196 million Strategy represents the next phase of Queensland's climate change response, and includes investments and policies to further reduce the state's greenhouse gas emissions, and support community and industry to prepare for, and adapt to a changing climate.

Our rationale

The Queensland Government's strategy for tackling climate change addresses the challenge of energy security needs with the urgent need to tackle global greenhouse gas emissions.

Coal-fired power stations have higher greenhouse gas emissions per unit of electricity produced than most other fuels including gas-fired stations. This initiative will provide greater clarity about the use of technology in Queensland in the transition period before the deployment of CCS.

CCS technologies have the potential to reduce emissions from fossil fuel power stations by around 90 per cent. They offer the opportunity for coal to continue to be an important element of a secure and diverse low carbon energy mix.

This initiative is consistent with the aim to reduce the emissions intensity of our economy and address the challenge of maintaining the sustainability of coal as an important part of our economy.

Providing clear policy signals will enable project proponents to plan appropriately to meet the State's requirements for new coal-fired generation investment. The policy also places Queensland on the critical path to achieving significant emission reductions before 2020, as well as preparing industry for the impending implementation of CPRS by 2011

Outcomes

This initiative will ensure that any new use of coal for electricity generation will use world's best practice equipment and be ready for deployment with CCS.

Advancements in the use of coal for generating electricity are always underway. These advancements have led to the wider use of higher efficiency 'conventional' coal fired power stations using super critical and 'ultra' supercritical steam cycles. The higher efficiency equipment has lower emission rates of greenhouse gases and better utilisation of natural resources for the electricity delivered to customers.

Low emission coal technologies (clean coal technologies) with CCS have the potential to significantly reduce the level of greenhouse gas emissions from coal-fired power stations.

These conditions will lead to the continued development of a number of technologies that are being considered for deployment with CCS including:

- Integrated Gasification and Combined Cycle (IGCC);
- Post combustion carbon capture equipment (PCC); and
- Oxyfiring.



More information on these technologies can be found at www.energyfutures.qld.gov.au.

How will it be delivered?

All new power stations in Queensland require a Generation Authority as described in the Electricity Act 1994. This policy initiative will be a part of the consideration of applications for any Generation Authority.

What are we doing to accelerate CCS technologies?

Queensland is at the cutting edge of global low emission coal technology development and offers exciting prospects for international investors and strategic partnerships.

A key initiative of the Queensland Government involves a \$900 million joint investment (\$300 million from Government and \$600 million from the State's coal mining industry over ten years) for the accelerated development and deployment of low emission coal technologies with CCS in Queensland.

These commitments will be used in collaboration with Commonwealth Government funding commitments for the demonstration of industrial-scale low emission coal technology projects.

In Queensland there are currently a range of projects of international significance demonstrating low emission coal across a range of the prospective technologies. These include IGCC with CCS by ZeroGen and at least one other project in early development: - the Callide Oxyfuel project; and the Tarong Energy PCC project.

The Commonwealth Government has also formed the Global CCS Institute (GCCSI) to accelerate flagship demonstration low emission coal technology projects. An objective of the GCCSI will be to deliver a diverse portfolio of integrated, industrial scale demonstration projects by 2020.

What about storage?

The application of low emission coal technology relies on the ability to store captured carbon dioxide and other greenhouse gas emissions.

The Queensland Government and the Australian Coal Association have committed to undertake an assessment of the State's carbon dioxide storage capacity.

The Carbon Geostorage Initiative (CGI) will assess the geological storage capability of Queensland to show the potential for long-term, safe and secure storage of carbon dioxide.

The CGI will produce pre-competitive information that can be used by potential developers and operators of future carbon dioxide storage facilities.

What does this mean for the coal industry?

This initiative provides greater clarity of the role and expectations for the use of coal in the electricity generating sector, and aims to provide a sustainable future for an important part of Queensland's economy.

What does 'CCS-ready' mean?

In Queensland, 'CCS-ready' means that generators must demonstrate that new plants have been designed with plans and milestones for incorporation of operational CCS, and that there are no known barriers to installation once the technology has been proven on a commercial scale. Furthermore, the government requires that new coal-fired power stations retrofit CCS within five years of CCS having been proven on a commercial scale.

The Queensland Government will continue to work with the Commonwealth Government's GCCSI to further refine this term and provide practical benchmarks for use nationally and internationally.

How will this initiative contribute to reducing the State's carbon footprint?

This initiative will ensure electricity generators considering the use of coal will ensure plants with the lowest possible greenhouse gas emissions are utilised. It will also lead to the accelerated development and deployment of low emission coal technology with CCS.

Key milestones

The Queensland Government and QCCC have identified the target of demonstrating low emission coal technology with CCS by as early as 2015, and no later than 2020. This milestone aligns with the Commonwealth Government initiated GCCSI.

Who are the stakeholders?

- Commonwealth Government and GCCSI
- Energy and power generation sector
- Australian Coal Association
- University and industry researchers
- Plant manufacturers and technology developers

Lead agency details

Department of Employment, Economic Development and Innovation

Phone: 1800 657 567 or www.deedi.qld.gov.au.