



Speech by
Lesley Clark

MEMBER FOR BARRON RIVER

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GEOHERMAL EXPLORATION BILL

Dr LESLEY CLARK (Barron River—ALP) (3.20 p.m.): The Geothermal Exploration Bill 2004 is aimed at providing a timely, effective and efficient regime to allow for the commencement of geothermal exploration in Queensland. To achieve the policy objectives of the bill the state will assert control of all geothermal energy within Queensland and assert the state's right to regulate geothermal exploration.

The bill also provides a form of tenure, the geothermal exploration permit, and a regulatory structure to support it so as to allow geothermal exploration to commence. These tenures will be made available by the state through competitive tender with the successful tenders required to achieve specified objectives for each year of the permit. The bill extends native title holders the same rights as the other holders of ordinary land title in compliance with the requirements of the Native Title Act 1993. However, as geothermal exploration does not fall within the definition of mining under the Commonwealth act, the right to negotiate provisions do not apply.

How significant is this geothermal resource? Queensland is believed to have more geothermal material than any other state, with five to 10 per cent of the state underlain by rocks heated to more than 200 degrees Celsius less than 5,000 metres deep. If water already exists or can be injected into these rocks this heat has the potential to be extracted and used to produce electricity or for other industrial purposes. One cubic kilometre of rock at a temperature of 250 degrees Celsius contains about as much energy as four million barrels of oil. That is more than the combined energy content of Queensland's identified oil and condensate resources. In fact, energy equivalent to Queensland's entire estimated natural gas resources, some 27,500 petajoules, could be contained in less than 120 cubic metres of hot rock. An energy equivalent to our immense and rich black coal reserves, all 32.7 billion tonnes, could be contained in an area only slightly larger than Beaudesert shire. It is estimated that Queensland has at least 90,000 cubic metres of hot rocks. It is certainly food for thought.

Enabling geothermal exploration then presents a number of potential benefits to the state. These include access to a new and potentially vast energy source, attracting significant exploration and research investment, and placing the state at the forefront of a new technology, as members have said in this debate.

Geothermal energy is also virtually emissions free and therefore greenhouse friendly. I would like to take this opportunity to draw to the attention of all members of the House the Queensland Greenhouse Strategy that was released just recently. This is a whole-of-government strategy that is very detailed and comprehensive. As Queensland is a high-emission state, it is important that Queensland takes responsibility for reducing its emissions and sequestering greenhouse gases from the atmosphere. An approach that includes actions across all sectors not only protects the environment highly valued by all Queenslanders but also seeks to be equitable and robust through actions that will position Queensland for economic and social resilience by fostering sustainable industries.

The Queensland government is already working towards smart greenhouse solutions on a number of fronts, including programs aimed at promoting low emissions technology, greater use of alternative fuel sources such as gas, eco-industrial estates, more efficient use of energy, water and waste in the built

environment, research into rumen ecology to reduce emissions from livestock, and improved management of vegetation such as we have seen with the introduction of the Vegetation Management Act into this House.

The section in the strategy devoted to energy indicates the significance of this sector if Queensland is to significantly reduce its greenhouse gas emissions. In 1999 electricity generation in Queensland produced 35.3 megatonnes of carbon dioxide equivalents, which represented about 26 per cent of Queensland's total net emissions. Emissions associated with electricity generation are expected to grow strongly over the next decade, with 53 megatonnes anticipated by 2012-13 as a result of strong population growth and electricity demand. In 2002-03, 88 per cent of electricity was produced from coal as a consequence of the fact that Queensland has abundant high-quality and low-cost coal supplies. The percentage of electricity provided by gas-fired power stations which have lower CO₂ emissions will increase when the Townsville gas-fired power station comes on stream in 2005 and will contribute to the target set for electricity retailers of 13 per cent of power sold to be provided from gas-fired generation.

Despite the potential of geothermal power, the percentage of electricity generated from this and other renewable resources is realistically likely to remain relatively low for a long time to come given that renewal resources currently account for only 4.6 per cent of Queensland's power. In reality, then, coal will continue to be a major energy source in Queensland due to its abundance, low cost and sustainability for use in baseload power stations to meet Queensland's rapidly growing demand.

Consequently, Queensland generators have already taken the lead in Australia in reducing greenhouse gas emissions by adopting supercritical technology in the most recent power station developments. These include the new coal-fired plant at Millmerran, Tarong North and Callide C. The move in technology from subcritical to supercritical and gas-fired plants has seen significant improvements in greenhouse gas emissions. Through support for the Cooperative Research Centre for Coal in Sustainable Development, the Queensland government has been working with industry to enable more informed choices on fuel and operating practice and to facilitate technological advances in new thermal coal combustion technologies.

The Queensland government is keen to build upon these and other Australian research efforts to enhance Queensland's knowledge, skills and capabilities in low emission technology. To this end, the Queensland government recently announced the establishment of the Centre for Low Emission Technology. This centre, located at Pullenvale, is an \$80 million joint venture between the Commonwealth Scientific and Industrial Research Organisation, CSIRO, and the Queensland government. The University of Queensland, Tarong Energy, Stanwell, CS Energy and Xstrata have also indicated in principle support with possible contributions of \$2 million each year over four years, bringing the total funding to an expected \$28 million.

The centre facilitates research, development and demonstration of clean coal technologies, coal gasification and carbon dioxide capture and storage technologies, some of which have the potential to significantly reduce and sequester greenhouse gas emissions associated with the use of coal in electricity generation. The centre also looks to improve the environmental performance of existing coal-fired generation and examine the commercial potential for cogeneration with renewable energy resources such as sugarcane bagasse. I commend that centre and look forward to seeing the results of its work.

Notwithstanding the reality of Queensland's reliance on coal-fired power stations, I do urge the mining industry and power companies to take up the challenge of geothermal power because renewable energy resources indeed represent the only future for power generation on our planet when our finite resources of fossil fuels are finally exhausted. I commend the bill to the House.