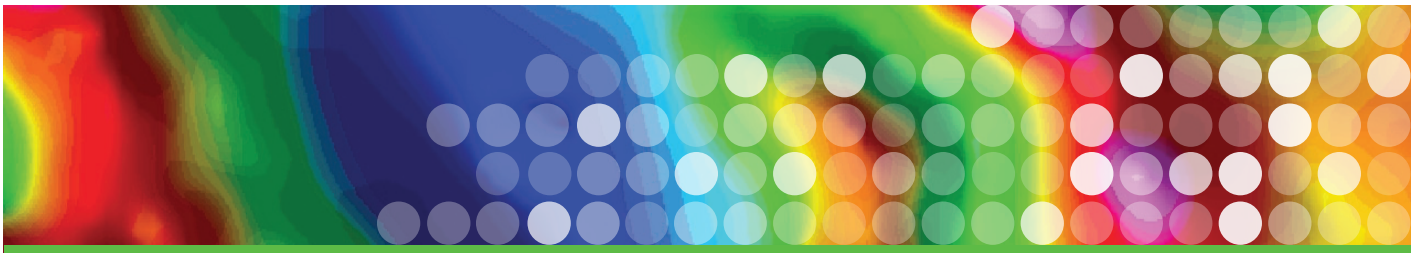
Department of **Employment, Economic Development and Innovation**
Geological Survey of Queensland



Coastal Geothermal Energy Initiative

Queensland's known geothermal resources are in the far south-west of the state, a long way from the existing electricity transmission lines and major population centres. The $5 million Coastal Geothermal Energy Initiative (CGEI) is the Queensland Government's program to implement the commitment in the ClimateSmart 2050 strategy through the Queensland Renewable Energy Fund to investigate additional sources of hot rocks for geothermal energy close to existing transmission lines. The CGEI is a cooperative undertaking between Office of Clean Energy and Geological Survey of Queensland.

Timeframe: January 2009–June 2012

Objectives

- Identify areas in eastern Queensland where collection of additional temperature and heat flow data sets is required
- Collect new data by drilling wells and through liaison with industry
- Increase knowledge of crustal temperature along the east coast
- Provide an assessment of geothermal resource potential in eastern Queensland.

Rationale

Thirty-two potential geothermal targets have been identified based on the current understanding of the geology and tectonic history of eastern Queensland. These areas are considered to have the potential for hot rocks at depth and elevated heat-flow conditions. Critical factors in the identification of each target area included the likelihood of a well insulated heat source at depth and the target's proximity to existing transmission lines.

A thorough geoscientific assessment has been undertaken for each potential geothermal target based on available geological and geophysical data.

Potential targets covered by an existing Geothermal Exploration Permit or application were not selected for drilling under this initiative.

Drilling Program

Drilling of the 10–12 highest priority targets (map over page) forms "Phase 1" of the program and includes:

- Fully cored HQ size boreholes from below unconsolidated formations to nominal depth of 300–500m
- Temperature and additional petrophysical data acquisition from geophysical down-hole logging
- Well log interpretation and core logging
- Collection of core samples for analysis of thermal conductivity.

Drilling commenced in mid November 2010 at Maryborough Basin South followed by Tarong Basin, Barcaldine and Roma. The remaining eight sites are scheduled to be drilled this year.

Geoscience Australia will provide analytical services through laboratory analysis and down-hole logging. Temperature measurements and thermal conductivity analysis will be used to determine conductive heat-flow regime for each borehole. Additional geophysical data may be acquired over target areas as determined from the drilling results.

Outcomes

- Provide an updated database of temperature and heat flow data sets
- Develop maps showing heat anomalies in eastern Queensland
- Report on the geothermal potential of eastern Queensland
- Provide the background data for industry to identify potential targets for geothermal energy exploration in eastern Queensland.

Further Information

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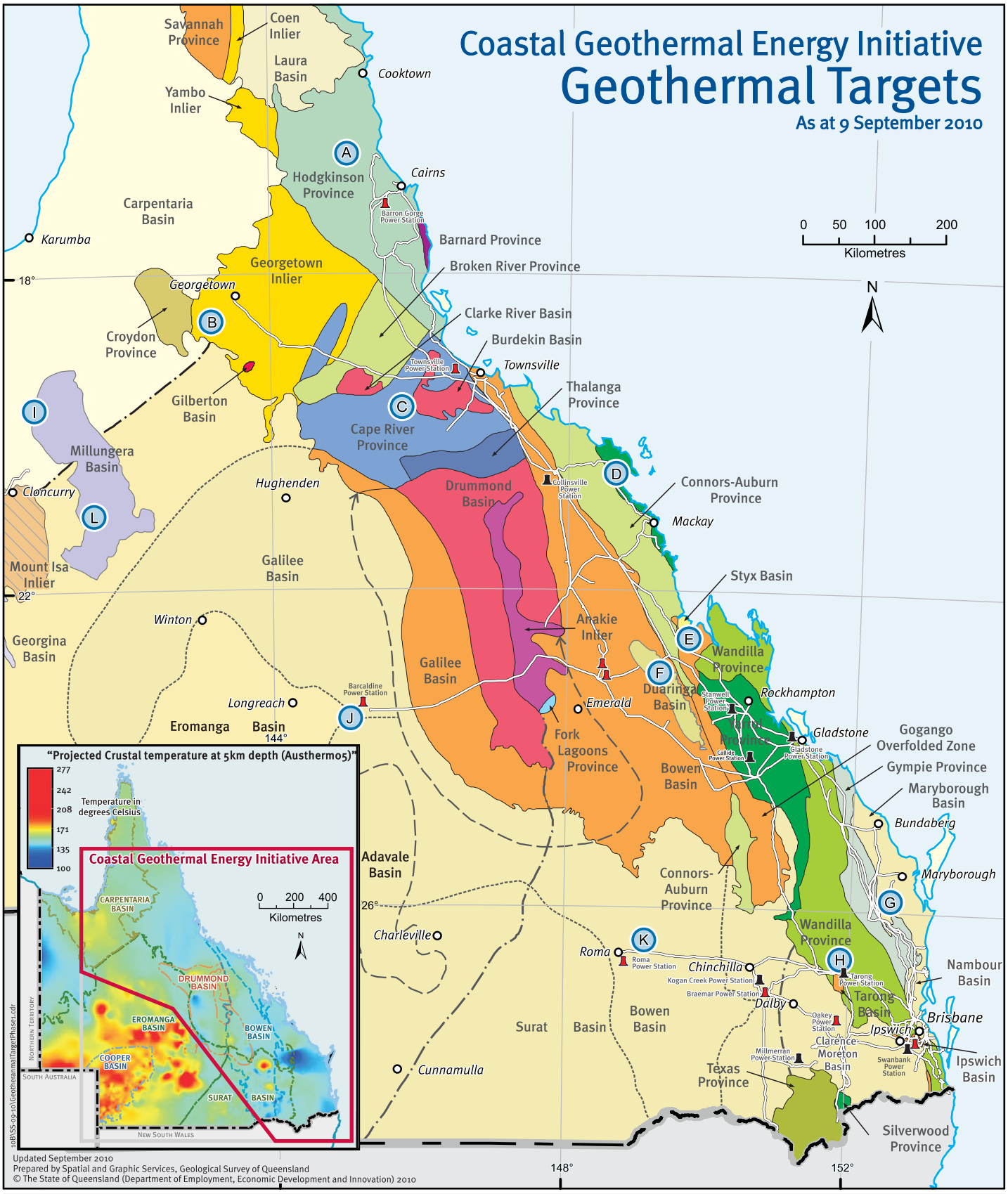
Queensland Government



CGEI Drilling Program Phase 1

- (A) Hodgkinson Province
- (B) Candlow Formation
- (C) Burdekin Basin
- (D) Hillsborough Basin
- (E) Styx Basin
- (F) Duaringa Basin North
- (G) Maryborough Basin South
- (H) Tarong Basin
- (I) Millungera Basin North
- (J) Barcaldine
- (K) Roma
- (L) Millungera Basin South
- Major Cities
- Transmission lines
- Power station: coal-fired, gas-fired