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"CanGEA is a national industry association that believes we can provide competitively priced, emissions free, renewable, base-load energy to Canadians and to U.S. export markets. CanGEA works on behalf of our members to facilitate the growth of geothermal power projects and promote publicly listed companies on the Canadian Exchanges."

# THE GEOTHERMAL CODE FOR PUBLIC REPORTING

REPORTING OF EXPLORATION RESULTS, GEOTHERMAL RESOURCES AND GEOTHERMAL RESERVES
2010 EDITION

# **CODE OVERVIEW AND KEY TERMS**

The Canadian Geothermal Energy Association (CanGEA) is pleased to announce the launch of the 2010 Geothermal Code for Public Reporting for the reporting of Exploration Results, Geothermal Resources and Geothermal Reserves. The Geothermal Code for Public Reporting will provide a basis for transparency, consistency and confidence in the public reporting of geothermal information.

#### **CODE OVERVIEW AND KEY TERMS**

This document is intended to provide the reader with an overview of the Geothermal Code for Public Reporting and introduce key terms included in the Code. For more information on the content covered in the document please refer to the Code.

# THE OBJECTIVES OF THE "THE CODE"

The Geothermal Code for Public Reporting was developed by the Canadian Geothermal Code Committee (CGCC) to provide a basis for transparency, consistency and confidence in the public reporting of geothermal information. The primary objectives of the Committee were to:

- Provide a reporting basis that is satisfactory to investors, shareholders and capital markets, such as the Canadian Securities Exchanges, in a similar manner that existing Canadian instruments provide for the reporting of Mineral and Petroleum Resources (National Instruments 43-101 and 51-101, respectively).
- Be applicable to geothermal plays in both Canada and internationally since the Canadian Securities
   Markets are utilized for the exploration and development of both national and international
   geothermal plays for companies based in Canada and in other jurisdictions.

The document is the Geothermal Code for Public Reporting (the "Geothermal Code" or "Code"). It outlines the requirements for reporting of Exploration Results, Geothermal Resources and Geothermal Reserves and provides a minimum set of requirements for the public reporting of Geothermal Resources and Reserves.

# **ACKNOWLEDGEMENT**

Since key elements of the Geothermal Code for Public Reporting were adopted from the Australian Code, the work performed by the Australian Geothermal Code Committee (AGCC) is recognized as forming the essential part of the development of the Canadian Code.

#### LEGAL STATUS IN CANADA

The Geothermal Code for Public Reporting will serve as industry self-regulation and will be on a voluntary compliance basis for 2010. After 2010, Code compliance for entities or companies affected will be necessary for CanGEA membership.

The Code is not yet endorsed by the Canadian Securities Exchanges or any other regulator involved in Canadian securities regulation, and the use of the Code by an entity or company does not imply acceptance by regulators of the content of a report written under the Code.

# SCOPE OF THE CODE

The Geothermal Code for Public Reporting is a required minimum standard for public reporting. Companies are encouraged to provide information in their public reports, which is as comprehensive as possible.

Public reports include any form of publication of Exploration Results, Geothermal Resources, and/or Geothermal Reserve assessments. This may include, but is not limited to, company annual reports, quarterly reports,

information on company websites, information releases, updates for shareholders, stockbrokers or investment analysts.

#### **COMPETENCE AND RESPONSIBILITY**

Public reporting concerning a company's Exploration Results, Geothermal Resources and/or Geothermal Reserves is the responsibility of the company. Any such report must be based on, and fairly represent, the information and supporting documentation prepared by, or under the direction of a Qualified Person or Persons.

A Public report should provide:

- Name(s) of the Qualified Person(s);
- Name of the company issuing the report;
- Whether the Qualified Person(s) are independent of the company, and if independent, the name of the company contracted to complete the report

### **QUALIFIED PERSON**

To be a "Qualifed Person" under the Geothermal Code for Public Reporting the candidate must:

- Have a minimum of 5 years experience;
- Have professional registration with an Association with a governing Code of Ethics or equivalent;
- Be a member in good standing of CanGEA (either as an individual or as a corporate member)

If the Qualified Person is not a member of a professional organization, but believes themselves qualified for the efforts provided, they should clearly state that they are not a professional, and provide a summary of their credentials, and state the reasons that they believe qualify them for the work provided.

Experience must be relevant to the type of geothermal play under consideration and to the activity that the Qualified Person is undertaking. Determination of what constitutes relevant experience can be difficult and common sense must be exercised.

If there has been a team effort in the estimation of geothermal assets each Qualified Person's contribution should be identified and responsibility accepted for that contribution.

#### THE GEOTHERMAL CODE FRAMEWORK

The Geothermal Code for Public Reporting recognizes three levels of Geothermal Resource (Inferred, Indicated and Measured) based on increasing levels of geological confidence and knowledge, which directly affect the assessment of probability of occurrence.

Two categories of Geothermal Reserves are recognized by the Code (Probable and Proved) based upon increasing levels of geological confidence and the application of "Modifying Factors".

Modifying Factors directly affect the likelihood of commercial delivery and include, but are not limited to, production, marketing, legal factors, land access, social issues, environmental factors and regulatory factors.

General relationships and pathways between various Geothermal Resource and Reserve categories that are permitted under the Code are shown below in Figure 1.

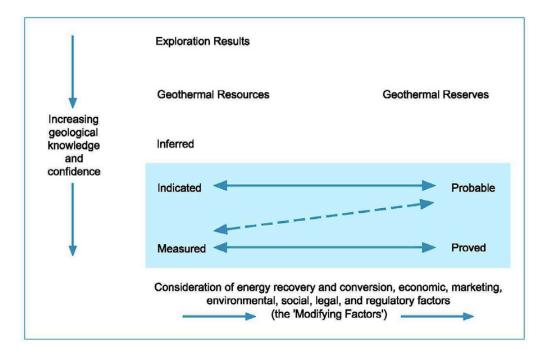


Figure 1: Relationships between Exploration Results, Geothermal Resources and Geothermal Reserves.

Source: Australian Geothermal Energy Association. The Geothermal Reporting Code. 2008 Edition.

## **EXPLORATION RESULTS**

Exploration Results include data and information generated by exploration programs. The Exploration Results may or may not be part of a formal declaration of Geothermal Resources and/or Reserves.

The reporting of Exploration Results is common in the early stages of the exploration when the quantity of data available is generally not sufficient to allow any reasonable estimates of Geothermal Resources. Public reports of Exploration Results must not be presented to unreasonably imply that potentially economically extractable energy has been discovered.

#### **GEOTHERMAL RESOURCES**

A Geothermal Resource is a geothermal play, which exists in a form, quality and quantity that there are reasonable prospects of eventual economic extraction. The location, quantity, temperature, geological characteristics and extent of the Geothermal Resource are known, estimated or interpreted from specific geological knowledge and evidence. Geothermal Resources are subdivided, in order of increasing confidence, into:

- Inferred Resources;
- Indicated Resources:
- Measured Resources

The term Geothermal Resource covers those geothermal plays, which have been identified and estimated through exploration and sampling and within which Geothermal Reserves may eventually be estimated by reduction of the risk after the consideration and application of the Modifying Factors.

The term 'reasonable prospects for eventual economic extraction' implies a judgment by the Qualified Person(s)

in respect of the technical and economic factors likely to influence the prospect of economic extraction.

#### **GEOTHERMAL RESERVES**

A Geothermal Reserve is that portion of an Indicated or Measured Geothermal Resource which is deemed to be economically recoverable after the consideration of both the Geothermal Resource parameters and the Modifying Factors. These assessments demonstrate, at the time of reporting, that energy extraction could reasonable be economically and technically justified. Geothermal Reserves are subdivided, in order of increasing confidence, into:

- Probable Reserves
- Proved Reserves

The term 'economically recoverable' implies that heat extraction of the Geothermal Reserve has been demonstrated to be viable under reasonable financial assumptions. What constitutes 'reasonably economically and technically justified' will vary with the type of geothermal play, the level of study that has been carried out and the financial criteria of the individual company.

#### FEEDBACK AND REVISION PROCESS

The Geothermal Code is intended to be a living document and it is recognized that further consultation, presentations and shareholder input will be required during implementation, since reporting of geothermal results through the Canadian Securities Exchanges is relatively recent. Once established, however, it will require a formal process to change. This process will be managed initially through CanGEA. The process for managing the Geothermal Code is anticipated to evolve over time as the practical application of the Code progresses.

# CANADIAN GEOTHERMAL CODE COMMITTEE (CGCC)

The Geothermal Code for Public Reporting has been prepared by the Canadian Geothermal Code Committee (CGCC).

Correspondence should be issued through the Chairman of the Canadian Geothermal Code Committee.

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