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Magma Energy's Reserves, Resources and Exploration Results According to the Geothermal Reporting Code

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Summary

Magma Energy Corp was the first company outside of Australia to use the Geothermal Reporting Code. Magma was the also the first company in the world to use the Geothermal Reporting Code to document Reserves. Additionally, Magma was the first company listed on a North American stock exchange (Toronto Stock Exchange: MXY) to use the Code for Public Reporting.

As at August 31, 2010, Magma Energy holds the following:

- 186 MW of Production
- 193 MW of Proved Reserves
- 0 MW of Probable Reserves
- 0 MW of Measured Resources
- 41 MW of Indicated Resources
- 1,120 MW of Inferred Resources
- 3 Operating properties on 3,441 hectares
- 18 Early stage properties on 78,758 hectares
- 5 Advanced stage properties on 149,020 hectares

The Geothermal Code for Public Reporting provides a minimum set of requirements for the reporting of Exploration Results, Geothermal Resources and Geothermal Reserves for companies listed on stock exchanges. The Geothermal Code is expected to be a key factor in increasing investor confidence and interest through the standardization of geothermal reporting. Use of the Code aims to provide transparency, accuracy and confidence in the reporting of geothermal resources from public companies, and is a profound step towards building a stronger geothermal industry.

This paper and accompanying presentation describes the categories of Public Reporting: Exploration Results, Inferred Resources, Indicated Resources, Measured Resources, Probable Reserves and Proved Reserves. The paper and accompanying presentation will take the audience through Magma's current holdings and use photos, videos and comparison tables to detail the differences in the categories.

The paper and accompanying presentation will cover off answers to such questions as:

1. Why do you think the Reporting Code is necessary for the geothermal industry and for geothermal producers?
2. How will the Code affect business at your company?
3. How will the Code affect your internal asset evaluation process?
4. How will the Code affect your development strategy?
5. How will the Code affect your company's efforts to raise capital in equity and/or debt financing?
6. How will the Code affect geothermal value assessments?
7. What are the challenges your company faces in becoming Code-compliant?
8. Will the Code affect your financial advantages over your competitors?
9. Why are Qualified Persons necessary for geothermal reporting?
10. What do you think is next for the industry with respect to the Code?

The Geothermal Code for Public Reporting

Magma Energy has been a member of the Canadian Geothermal Energy Association (CanGEA) since 2009 and has actively supported CanGEA's efforts to establish a Geothermal Reporting Code. More information about the Code can be found at the following link, http://www.cangea.ca/ccpr/. The following is an excerpt from CanGEA's Canadian Geothermal Reporting Code:

The exploration and development of geothermal resources progresses through many categories of development. Typically these categories have been broadly defined based on the physical aspects of development such as resource identification and extraction with little mention of modifying factors such as financing. With the advent of the Internationally recognized **Geothermal Code for Public Reporting** these broad definitions can be further defined to incorporate the framework established under the Code. The Code will ultimately increase confidence in exploration and development results and seek to provide a better means for com-

parison within the industry. The **Geothermal Code for Public Reporting** provides a minimum set of requirements for the public reporting of Exploration Results, Geothermal Resources and Geothermal Reserves. The Code will provide a basis for transparency, consistency and confidence in the public reporting of geothermal information.

Categories of Geothermal Resources and Reserves

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.

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.

Figure 2. Provides an overview of Magma's Geothermal Resource Base under the Geothermal Reporting Code.

Country	Region	Exploration Results	Inferred	Indicated	Measured
USA	Nevada	Baltazor Beowawe Buffalo Valley Columbus Marsh Dixie Valley Granite Springs Soda Lake East Upsal Hogback	Desert Queen[1] - 36 MW Panther Canyon[4] – 34 MW McCoy[4] – 80 MW	Soda Lake – 41 MW	
	Oregon	Glass Buttes			
	Utah		Thermo[4] – 20 MW		
Chile	Maule		Mariposa - 320 MW		
Argentina	Salta	Coranzuli			
	Jujuy	Tuzgle-Tocomar			
Peru	Tacna	Casiri			
	Arequipa	Sabayanca			
	Moquegua	Ccollo Tiscane Huaynaputina San Pedro Crucero			
Iceland			HS Orka* – 630 MW		

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.

Geothermal Resources Defined

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

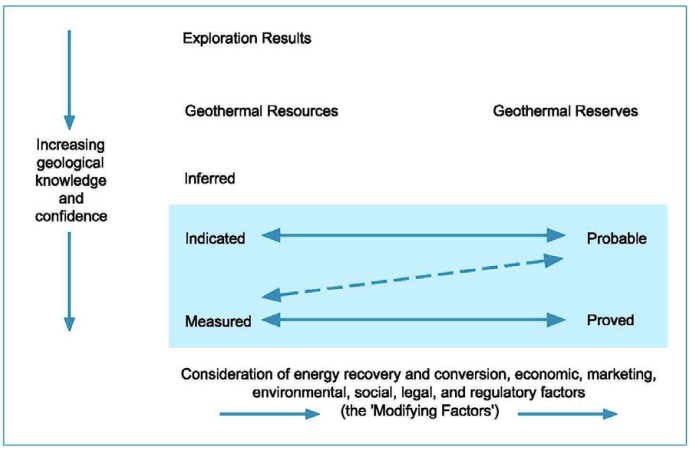

Figure 1. General relationships and pathways between various Geothermal Resources and Reserve categories that are permitted under the Code are shown above.

Geothermal Reserves Defined

A Geothermal Reserve is that portion of an Indicated or Measured Geothermal Resource which is deemed to be economically

Figure 3. Provides an overview of Magma's Geothermal Reserves base under the Geothermal Reporting Code.

Country	Region	Operating Plant	Probable	Proved
USA	Nevada	Soda Lake		20 MW, 13.5 MW producing
Iceland		HS Orka*		173 MW
Total Geothermal Reserves				**193 MW**
Total Operating				**186.5 MW**

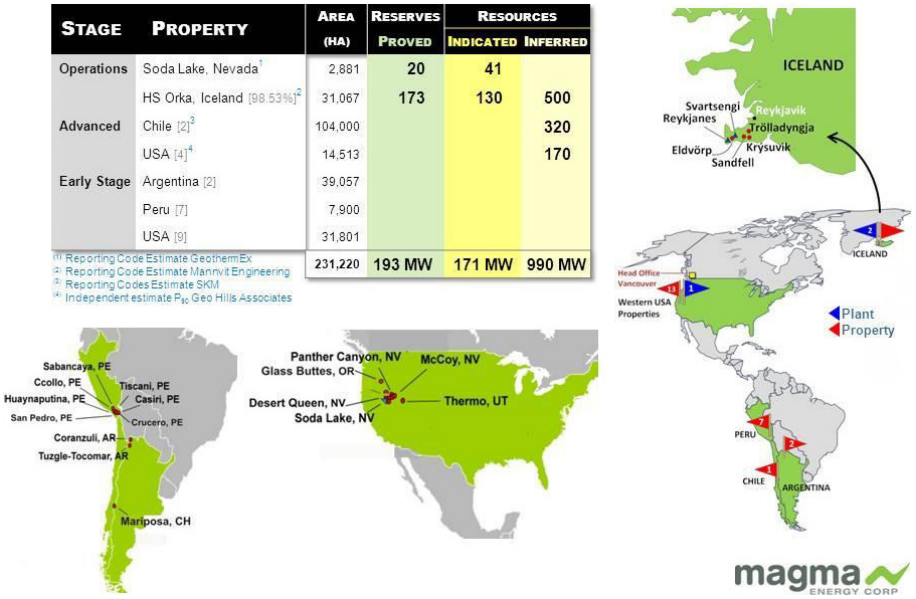

Figure 5. Further breaks down the Reserves and Resources in Iceland and demonstrates the type of de-risking activities that have been completed on the properties to warrant the categories they have been placed in.

Property	Reserves	Resources		Comment
	Proved	Indicated	Inferred	
Svartsengi	75 MW			No further expansions planned
Reykjanes	100 MW	80 MW		45 MW of steam behind pipe for expansion phases; 50 MW turbine arrived June 2010; further production drilling underway
Eldvörp		50 MW		Steam behind pipe from 1 production well
Krýsuvík			500 MW	4 MW of steam behind pipe from 2 production wells that are candidates for stimulation; 9 slim wells; 19 temperature gradient wells
TOTAL MW	175	130	500	

Stage	Property	Area	Resources		Exploration Results
			Indicated	Inferred	
Expansions & Advanced Stage		(Ha)	MW	MW	
Chile	Mariposa [1]	104,000		320	2 slim hole, 3 more underway; 3 fumarole fields
Iceland	HS Orka[2]	31,067	500	130	49 MW of steam behind pipe from 6 production wells and outflow canal; 3 reservoirs; 50 MW Fuji turbine delivered June 2010; further drilling underway
Usa	Soda Lake[3]	2,881	41		Production well drilling on-going > 100 wells on site including slim holes, temperature gradient and production/injection wells
Usa	McCoy[4]	4,621		80	7 slim holes; 55 temperature gradient wells
Usa	Panther Canyon[4]	4,515		34	85 temperature gradient wells
Usa	Desert Queen[4]	4,672		36	13 temperature gradient wells, 4 new wells drilled
Usa	Thermo[4]	706		20	1 slim hole; 21 temperature gradient wells
Early Stage					
Argentina	2 Concessions	39,057			50 temperature gradient wells; hot springs, vents
Peru	7 Concessions	7,900			34 hot springs on properties; sulphur deposits
Usa	9 Leases NV + OR	31,801			1 dry production well (injection candidate); 9 slim holes; numerous temperature gradient wells
Total		231,220	541	620	

Figure 6. Depicts the type of work that has been performed on our properties to substantiate the Resources and Exploration Results categories.

[1] Reporting Code Estimate GeothermEx
[2] Reporting Code Estimate Mannvit Engineering, *[assuming 98.53% interest]*
[3] Reporting Codes Estimate SKM
[4] Independent estimate P_{90} Geo Hills Associates

Figure 4. Shows the global distribution and tally of Magma Energy's Exploration Results, Inferred and Indicated Resources and Proved Reserves.

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.

With increasing geological knowledge and confidence the Geothermal Resource progresses from **Inferred**, to **Indicated**, to **Measured**. Similarly, with consideration of energy recovery and conversion, economic, marketing, environmental, social, legal, and regulatory factors (all Modifying Factors) the resource may be labeled a **Probable** or **Proved** Geothermal Reserve.

The important distinction is that geological results alone do not indicate whether a geothermal resource can be stated as a Probable or Proved Geothermal Reserve. The Modifying Factors must be taken into consideration to determine whether the geothermal resource can be classified as a Geothermal Reserve.

Figure 7. Depicts the type and quantity of work that has been performed on our South American properties to substantiate the Exploration Results category.

Properties	Temperature Gradient Wells	Desktop Studies (Geophysics, Geochemistry, Geology)
Casiri - Peru	-	11 hot springs on property, + 4 nearby; sulphur deposits
Ccollo - Peru	-	1 hot spring; sulphur deposits
Coranzuli - Argentina	-	1 hot spring; gas vents; young volcanic geology
Crucero - Peru	-	Exploration on going
Huaynaputina - Peru	-	5 hot springs; in close proximity to several volcanoes
Sabancaya - Peru	-	5 hot springs; in close proximity to a volcano
San Pedro - Peru	-	Exploration on going
Tiscani - Peru	-	12 hot springs; in close proximity to a volcano
Tuzgle-Tocomar - Argentina	50	2 hot springs; sulphur deposits; young volcanic geology

Figure 8. Depicts the type and quantity of work that has been performed on our North American properties to substantiate the Exploration Results category.

Properties	Temperature Gradient Wells	Slim Hole Wells	Desktop Studies (Geophysics, Geochemistry, Geology)
Baltazor Hot Springs	several	2	Abundant data from US DOE, UNR, USGS, SMU[(1)]
Beowawe	several	1	Adjacent to a 17 MW operating plant; abundant data from above sources
Buffalo Valley	-	-	1 hot spring; young faulting
Columbus Marsh	1	-	Data from US DOE, UNR, USGS, SMU
Dixie Valley	3	-	1 dry production well (injection candidate); Nearby to a 56 MW operating plant; data from US DOE, UNR, USGS, SMU
Glass Buttes	several	4	Abundant data from US DOE, UNR, USGS, SMU
Granite Springs	several	1	Abundant data from US DOE, UNR, USGS, SMU
Soda Lake East	-	-	Believed to share reservoir with Soda Lake operations
Upsal Hogback	-	-	On same trend with Soda Lake operations

[1] US Department of Energy
University of Nevada at Reno
US Geological Survey
Southern Methodist University

Magma Energy's Use of the Australian and Canadian Geothermal Reporting Code

When Magma was founded in early 2008, it acquired a large land position in the U.S. namely Nevada, Utah and Oregon. 5 of the properties were chosen to have a resource estimate performed on them in preparation for documenting the MW base for Magma's Initial Public Offering in July, 2009. At the time, the notorious P90 and P50 was in widespread use in the U.S. and that methodology was used for estimates for Thermo (Utah), Soda Lake, McCoy, Panther and Desert Queen, (Nevada)

As background, it is worth pointing out that the overall subsurface resource sector (oil, gas and mining) already have well established, internationally recognized regulatory frameworks (Codes) for documenting Exploration Results, Resources and Reserves which are mandatory for publicly traded companies and in standard use for privately traded companies, governments, et al.

CanGEA and other geothermal industry associations believe our industry will be regulated under a Code system in the future and that the voluntary acceptance of a Code now assists with input/revision to the ultimate Code as well as provides the company with valuable hands on experience before a Code becomes a regulation. As well, it is believed that consistent MW reporting increases investor confidence and thus access to project capital. Please visit this video link to hear more about the Geothermal Reporting Code, http://www.b-tv.com/features/watch-now.html?clip=AlisonThompson2ep226.wmv.

Due to Magma's commitment for increased investor transparency, shortly after the Initial Public Offering in July 2009, Magma released a resource estimate for its Maule, Chile Property using the Geothermal Reporting Code. Since that time, all new assessments have been reporting using the Geothermal Reporting Code. These include resource and reserve assessments at our Iceland properties, a resource assessment at our Mariposa (Maule/Pellado), Chile property and a resource and reserve assessment at our Soda Lake, Nevada property. To date, Magma has used the following CanGEA Registered Qualified Persons to perform the Geothermal Code estimates: SKM, Mannvit Engineering, and GeothermEx.

Further, all of Magma's remaining P90/P50 system estimates have been deemed by management to be conservatively equivalent to the lowest level of confidence reporting under the Code (Inferred Resource). To be even more conservative, all P50 resource estimates have been dropped and only P90 estimates for Thermo, Panther Canyon, Desert Queen and McCoy are used and set at the Inferred Resource level until a Geothermal Reporting Code estimate can be established. The original P90/P50 resource estimate at Soda Lake that appeared in the Company Prospectus during the Initial Public Offering has been replaced under the Geothermal Reporting Code.

Conclusion

As Magma Energy and the industry gains more experience using the Geothermal Reporting Code, many of the questions posed in this paper will be answered. By the time of the GRC meeting in October, 2010 Magma will have had over a year's worth of experience with the Code throughout many corporate activities (divestitures, acquisitions, debt financing, equity financing) and anecdotal answers to the questions will be provided during the presentation.

What is clear, though, are the next steps for the industry with respect to the Code:

- Stock exchange and regulators around the world are working with industry associations to enact Geothermal Reporting Code legislation for use on public markets.
- More and more international groups are endorsing the Code, including the International Geothermal Energy Association, Australian Geothermal Energy Association and Canadian Geothermal Energy Association.
- More and more geothermal companies are voluntarily using the Code (10 in Australia, at least 4 in Canada as of June, 2010)
- Registration of Qualified Persons is increasing.
- Investment Banks and their Research Departments are increasing their use of the Geothermal Reporting Code in their published material. Early adopters include:
  - Cormark Securities Inc.
  - Dundee Capital Markets
  - Islandsbanki
  - Jacob Securities Inc.
  - Mackie Research Capital Corporation
  - National Bank Financial
  - Pritchard Capital Partners
  - Raymond James Ltd.
  - Salmon Partners Inc.
  - Thomas Weisel Partners Group, Inc.
  - Wellington West Capital Management Inc.

[1] These projects require Reporting Code compliant Qualified Person verification and are presented here as management estimated categories.

*Based on 98.53% ownership of HS Orka