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Consolidation in the Geothermal Market

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ABSTRACT

It is well known that the combination of capital intensity and a significant upfront risk factor associated with geothermal projects' development makes the early stage financing a challenging yet a crucial milestone. This element is a central building block in the high barriers into the geothermal project development market. Historically, there are two main models used to try to cross the barrier from the financing point of view: the “step up” model and the “platform” model. The numerous failures to use the “step up” model created a market with a relatively large number of “one project” players, in which case consolidation is the only way to get their project pipeline to advanced development and into operation. Ram Power, Corp. (“Ram”), in its formation, chose the “platform” model. Its success in the first step in consolidating the market, while attracting enough capital through a public financing, enabled Ram to cross the barrier and position itself in the mainstream of the geothermal market. The objective of this article is to describe Ram’s formation and lessons learned.

1. Introduction—The Financing Challenge

The development of geothermal power plants is a capital intensive business, like most of the power sector, creating a common challenge each power projects developer is faced with—financing. New entrants to this market find this issue critical to their survival. Tied to the volatility of the capital markets, power projects developers find themselves in constant efforts to keep their balance sheets healthy while growing their business with heavy investments as quickly as possible. In the geothermal power space, another important characteristic that adds to this challenge is the upfront risk. Unlike other energy sources, renewable sources included, the supply of geothermal resources depends on the success in finding and producing the energy from the sub-surface, by drilling and flow testing geothermal wells. This drilling activity is associated with significant risks that are not readily under taken by investors. The investment community, which usually analyzes potential investments through a risk-reward equation, traditionally finds this drilling risk to be a challenging input into their formulas.

This high risk-high return activity results in a very narrow band of potential financing sources. Excluding governmental support tools (which have limited availability as well), developers usually find themselves in the search of corporate and/or project equity. Equity investors (or semi equity sources, such as mezzanine funding) are often the only ones that are able to absorb the risk associated with drilling. Even within this group, the number of investors that can actually feel comfortable making such an investment is limited.

This challenging environment, that combines the necessity for large capital investments and a limited investment arena, is probably a central barrier into the geothermal project development market.

2. Discussion

Financing Models

In most cases the development of a geothermal power plant includes the following stages:

- Early Development Activities: This phase includes the acquisition of the geothermal site, negotiating and signing a power purchase agreement and applying for permits for drilling.
- Exploration: Exploration involves the use of geotechnical procedures as well as drilling one or more deep wells to delineate the reservoir characteristics.
- Well Field Development: The completed well field represents the upfront capitalized lifetime fuel supply for the geothermal project.
- Power Plant and Interconnection: This phase includes the construction of the power plant by an EPC contractor on a fixed price, date certain turnkey basis. The interconnection facilities would be constructed in parallel.
As mentioned, the well field development is financed primarily by equity investments. This means that the first three stages of the development process require significant equity investments. Loan providers usually move forward when the project gets to the fourth stage when the resource delineation is complete and funding is directed to power plant construction and interconnection. At the fourth stage most of the well field is proven and the geothermal risk is dramatically lower, which allows banks and other construction loan providers to step in. From this stage on the project development may be financed by external sources. The construction loan facility usually converts to a term financing in the form of debt and/or tax equity that monetizes tax benefits that are available for new geothermal projects.

As opposed to the well defined and commonly structured project financings that back the later stage development process, the early stage development equity raise may take a few forms. The most common financing models seen in the market in the last few years are:

- The “step up” model – which divides the large funding needs into smaller pieces, based on the assumption that smaller financings are easier to execute, and a successful development process will make the later funding efforts easier and cheaper, where company’s value “steps up” reflecting the success in the development process and the lowering risk associated with it. The “step up” model is usually seen in “one project” companies as explained later on.
- The “platform” model – which tackles the large financing requirements from a different angle by offering a risk reward equation that matches large scale financing with multi project development plan that mitigates the risk associated with a one project play.

**Example or Illustrative Numbers**

In order to illustrate the financing challenges faced by new developers, let us assume a new developer that wishes to develop its first 50 MW project in California as in the table above. In its business plan the following are typical assumptions which may be used:

<table>
<thead>
<tr>
<th>Size</th>
<th>50 MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total CAPEX</td>
<td>$230-250M</td>
</tr>
<tr>
<td>Well Field Development</td>
<td>$65-75M</td>
</tr>
<tr>
<td>Equity Portion of Financing</td>
<td>20-30%</td>
</tr>
<tr>
<td>Debt Portion of Financing</td>
<td>70-80%</td>
</tr>
</tbody>
</table>

**Chart 1. A Generic Imperial Valley Project.**

The high barriers, led by the financing challenges, result in a market with many opportunities for North American geothermal developers, but with just a few players who have the capabilities to actually get to the project’s Commercial Operation Date (COD), and continuously grow their business. Most of the market participants have fallen into one of two groups: the “platforms” and the “one project” companies.

The “platforms” are the more robust companies that hold relatively large geothermal portfolios, in many cases geothermal being only a part of their overall power project portfolio. In many of these cases, the platform was created through acquisitions with some supplemental development in some cases, backed by large scale equity financings to match this multi projects activity. Another characteristic of this group is limited new development activity.

The “one project” developers are in most cases relatively new entrants to the market with a penetration strategy that calls for focusing on developing the first project as their entry ticket, and plans to continue after the first success. These developers are eager for growth through green field development, but are limited by their financing means.

As a result, financing the “next” project for these two types are very different in nature. The “platforms” can either finance the development phase from their internal financial means, or they can raise it in the corporate equity market, where the geothermal risk of that “next” project (or usually a few) is bundled with the rest of the portfolio.
The “one project” companies have limited or no internal financing means and find themselves constantly in the equity markets. The financing can be either at the corporate or the “one project” level, but the difference is minimal. The investors here try to assess the probabilities of success and failure. In these cases it is not only that the investment community finds it hard to absorb such an investment opportunity, but that the lack of development capital had dictated the “step up” financing model, as described above.

For many of these smaller companies, the number of financing “step up” rounds may be high with the amounts raised relatively low, usually sized to match a one-time event like drilling the next well or two. This model enabled some of the investors to digest geothermal risks by limiting the investment amount, and also enabled the developers to avoid a onetime large capital raise that is usually more difficult to execute. However, this turns out to be very expensive for the original shareholders, being diluted at low valuations that reflect the geothermal risk that still lies in the future.

The “step up” model requires developers to go back a number of times into the market place (private or public) depending on continuous drilling results and continuous appetite in the market for their investment proposals. Anything that goes awry either in the drilling activity or the market will result in the company finding itself under distress. This means projects that cannot be completed and the result is a limited and expensive way to finance project development. This risk was realized when the markets collapsed during 2008, and most of these “one project” companies found themselves under distress.

At this point it was clear that there is a need to start consolidating these companies, where in the right structure a few goals can be achieved:

- The few “one project” companies can become a platform
- The platform creates a more attractive investment opportunity which is easier to finance
- The chances to grow a sustainable company grow dramatically

This reality was very clear to us when we formed Ram Power. This is illustrated by the process we went through; Ram Power has placed itself as in the forefront in this consolidation process.

**Ram Power’s Story — Leading the Consolidation Process**

Ram Power Inc. was formed in 2008 with the basic idea of utilizing its management experience in the geothermal market to become a leading company in the development, ownership and operation of geothermal power projects in North America and the international markets. With seed financing secured in May 2008, Ram Power was able to begin accumulating sites for projects development in the US, negotiate power purchase agreements and engage in development activities that are necessary to reach the drilling phase.

With the understanding of the market in the geothermal space Ram Power sought for opportunities to execute the platform model. The desired result was initially to be achieved through securing multiple sites and the early development phase for these sites in parallel. In addition, we embarked on a search for consolidating “one project” companies to achieve a critical mass for project completion by bundling these activities together.

In terms of financing, it was clear that in order to achieve the platform model a significant equity financing would be a necessity. When we initiated our financing efforts in early 2009, an equity raise of $100M and more was set as the high bar for us to achieve. In preliminary discussions at the time, the situation in the capital markets together with the geothermal risks, were a daunting combination.

From the different structures and investors with whom we had serious discussions, both in the public and private equity markets, the transaction we ended up with was the only one that had a good probability to succeed – creating a well funded platform company with advanced development projects to lead the necessary consolidation process in the geothermal market. This was accomplished by merging three geothermal companies, Polaris Geothermal and Western Geopower which were public entities together with Ram Power Inc. into a Canadian public company as shown in Figure 2 below.

![Figure 2. Structure of Ram Power, Corp.](image-url)

After reaching a principal agreement between the three companies on relative valuations and the framework of the transaction, as reflected in a letter of intent that was signed in June of 2009, the transaction process took two parallel routes: the capital raise led by Ram Power as the management team of the expected combined company, and the merger process. A unique characteristic of this transaction was that while the two routes were worked on in parallel, they are both dependent on each other, where one of the conditions precedent to close the merger was the success to raise at least $100M, and the equity raise was only officially closed when the merger was done, as described further below.

In mid July two Ram Power teams were sent out on the road to sell this investment opportunity to institutional investors, covering both coasts of US and Canada as well as the Capital Cities of Western Europe. This roadshow lasted for two weeks and turned out to be a success. The interest by investors in our shares, based on the plans to develop the key geothermal projects and the experience of the Ram management team, resulted in our decision to increase the amount that was raised from US$100M to just over US$160M. As described above, the availability of this level of
corporate equity investment for well field and project development was the crucial factor for Ram Power to move ahead as a “platform” company.

Although, the main challenge in the fund-raise process was to convince the investors to take geothermal risks, this issue was mitigated by the following factors:

- The combined company is a platform that holds a large development pipeline and therefore the risk is spread between projects.
- The combined company has in its portfolio proven well fields.
- The combined company will be managed by an experienced management team with a proven track record in the geothermal market.
- The Canadian capital markets are geared to take resource related investment risks based on the large number of mining, oil and gas companies which have been financed in this area.

The transaction closed in October 2009, and created Ram Power Corp. (TSX:RPG), a combination of three geothermal companies into one public company led by Ram Power’s management team, and a significant capital raise of more than US$160M. As a result, a new “platform” was formed with a diversified development pipeline between the US and Latin America and with the necessary capital to turn the pipeline into real geothermal projects.

Lessons Learned

We can say that the platform approach is the right way to go when it comes to establishing a company with intention of playing a significant role in the geothermal arena. To make it happen there were a few lessons we learned:

- **The limited importance of valuations:** In consolidation discussions, when it is clear the parties can create the platform that is needed valuations need to be negotiated but enabling the merger is more important.
- **Public Markets are more receptive of geothermal platforms:** Platforms that need significant capital have better chances in the public markets than the private ones. However, the public market is a “firm judge” and therefore the transaction that is offered in today’s marketplace requires strong fundamentals that withstand a reality check.

  - **Necessary Fundamentals in the Public Markets:** Should be a strong and experienced management team, resource diversification and a sound development plan that will utilize the raised capital, and will create acceptable returns after the plan is executed.
  - **Timing is crucial:** When the markets are ready, the company should move as aggressively as possible. We found ourselves at the point in time when there was willingness in the market for geothermal investment. No significant financing was accomplished after Ram Power Corp’s public offering due to market conditions and lack of offerings based on advanced development project portfolios.
  - **Raise money as available even if it is more than necessary:** Due to the capital intensiveness of this market, raising “excess” capital is desirable. These funds can open new opportunities that will come along, and will give the “platform” the necessary business flexibility while growing.

3. Conclusions

Ram Power’s successful formation as described above demonstrates the superiority of the “platform” model vs. the “step up” when it comes to creating a geothermal development company and sufficiently financing it. However, this model requires a few ingredients which have an important positive effect on the chances to execute it. This reality calls for consolidation of the “one project” companies financed according to the “step up” model into larger platforms that has the right elements to succeed. This desired process is expected to create a healthier geothermal market with fewer companies that have much more opportunities to grow.

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2 The market relates mainly to North American developers, even though these phenomena are reflected in many other regions which are also affected by local factors that are not relevant to this discussion.