



A Sustainable Utility Company

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- The contained resource estimates have been prepared by Jun Seastres and Zim Aunzo under the direction of Brian Lovelock (Practice Leader and Senior Geochemist), full-time employee of Sinclair Knight Merz Limited (SKM), who takes responsibility and is accountable for the report as a Qualified Person in terms of the Canadian Geothermal Code. Brian has 32 years experience in the geothermal industry and is a member of the International Geothermal Association. SKM is a corporate member in good standing with the Canadian Geothermal Energy Association and has a Code of Ethics. SKM has been engaged as Consultant by Earth Heat but holds no financial interest in the project or in Earth Heat.
- Any determination by any financial organisation mentioned within the context of Senior Debt and the Drilling Loan to participate in the financing of the Project shall be conditioned upon all of the following, to the satisfaction of the entities: (i) the completion of the analysis process; (ii) the structuring and negotiation of a financial plan for the financing of the Project; (iii) the negotiation of terms, conditions and arrangements for the Investor's participation in the Project; (iv) formal approval by the investor's Management and Board of Directors; (v) negotiation and execution of appropriate financing and security documentation; (vi) the receipt by the investor's from participants satisfactory to the Investor's of firm commitments in an amount equal to the amount of the B Loan (Senior Debt only); and (vii) payment of all reasonable legal and other consultant expenses incurred by the entities through such date, in accordance with the Mandate Letters, each Retainer Agreement and each Consultant Agreement.

# Executive Summary



- **ASX Listed Utility Company – electricity from sustainable sources, for baseload power:**
  - Origin Energy
  - Enel Green Power
  - EON Renewables
    - **WE ARE IN THE SAME BUSINESS**
- **Sector leading performance positioned to be first producer of Geothermal Power in the ASX space by end of 2013:**
  - US\$250m guaranteed + indicative financing or **33.6cps**
  - **Final equity needed for Phase 1 power plant to be arranged through Cifi Q4 2012 (seeking up to US\$30m)**
  - Almost there, despite the economic turbulence
- **Substantial holder of low risk development projects:**
  - Initially a Farmin to earn 87.5% of the project, now the right to purchase JV partner (CDN \$6m), to take 100%
- **Targeting geothermal resources in geologically favourable settings**
  - Development projects = countdown to significant cashflow
  - *Financeability greatly enhanced by maturity of these projects*
  - Argentina – **90%+ funded, with more finance and corporate partnerships coming**

# Corporate Overview



## SHARES ON ISSUE:

Share Price (9/08/12)

Market Cap (AUD)

Cash (AUD)

Debt

## SIGNIFICANT SHAREHOLDERS: (24/7/12)

Directors

Norm Zillman

1147 Pty Ltd

Washington H Soul Pattinson

Planet Gas Ltd

Top 50 shareholders

No of shareholders

## BOARD OF DIRECTORS:

Torey Marshall

Managing Director

Ray Shaw

Non Executive Chairman

Malcolm Lucas-Smith

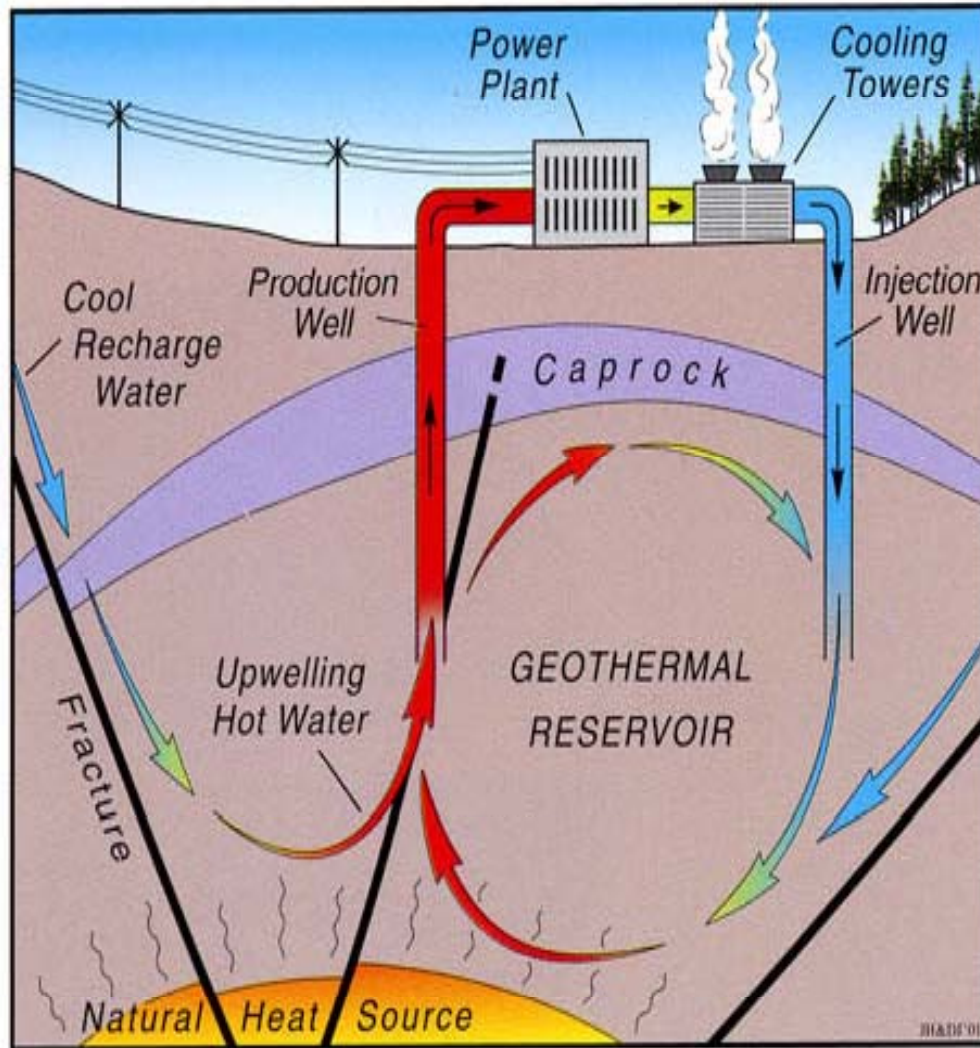
Non Executive Director & Co Sec



12 Month Performance chart to 12 July 2012



# Geothermal Power-Sustainable Energy earthheat



- Geothermal energy is one of the few sustainable energy sources sufficiently reliable to provide efficient BASELOAD power - capacity factor at 95%
- Cost competitive with other methods
- Development strategies and operating costs are very site specific
- Geothermal power has had more than a 100 year operational history

# Off the Shelf Technology



- EHR is focused on exploiting favourable geothermal settings where off the shelf, surface, technology is readily available.
- Established, recognised international, certification of geothermal resources and reserves are key project attributes;
- In addition, proximity to markets and government incentives are also key criteria for project selection.



Rotokawa Geothermal  
Power Plant, New Zealand

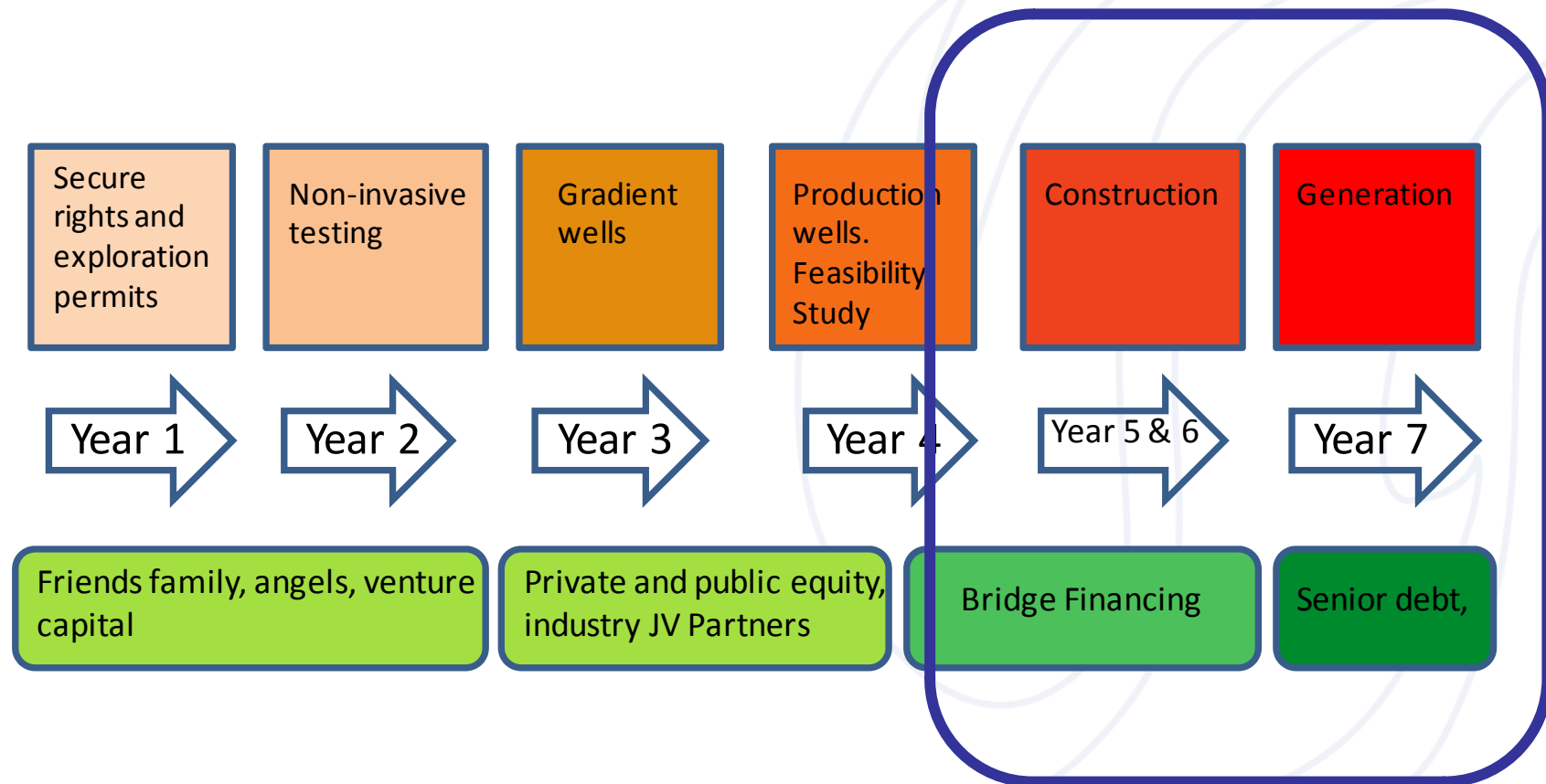
# Key Criteria



<b>Heat</b>	Temperature over 150° C typically needed in reservoir.
<b>Porosity</b>	Water or steam must flow to surface fast enough to transmit continuous energy and maintain, heat and pressure.
<b>Pressure</b>	Water or steam must have enough pressure to drive turbines or heat secondary fluids.
<b>Site Access Grid Access</b>	Site Access determines cost of construction. Grid Access determines cost of connection.
<b>Power Agreement</b>	Long Term Power Purchase Agreement allows for long term economic projections and facilitates debt financing.



# EHR's Stage in Cycle





# Flagship Project - Copahue



## Location

- Neuquen Province, Argentina – adjacent to the Chilean border.
- Associated with Copahue-Caviahue Volcanic Complex of the Southern Andean Volcanic Zone
- Stratovolcano

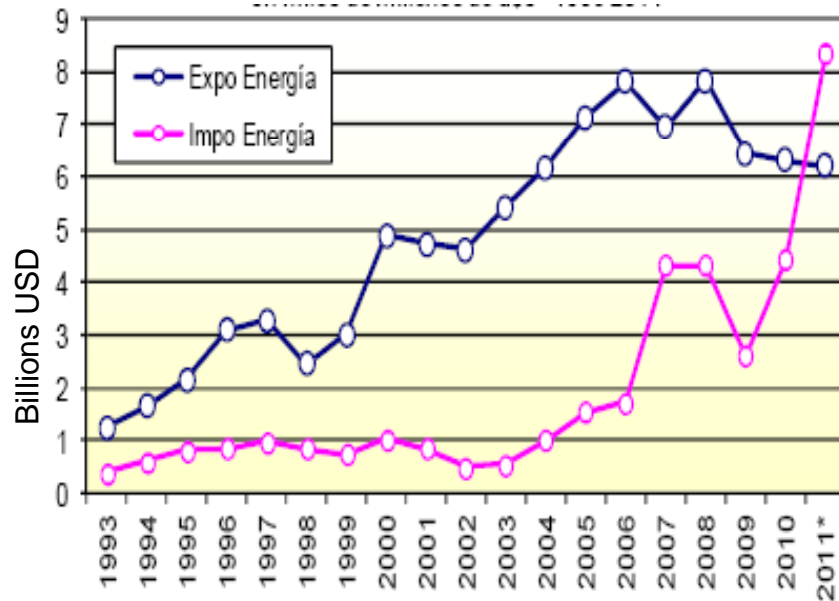
## Existing Infrastructure

- Connected by sealed bitumen road to Neuquen City
- 55 km to national electricity market interconnector
- Existing 18 Kv connection from site to nearby town of Caviahue
- Plentiful supply of water
- Province has oil field services and equipment supplies

## Markets

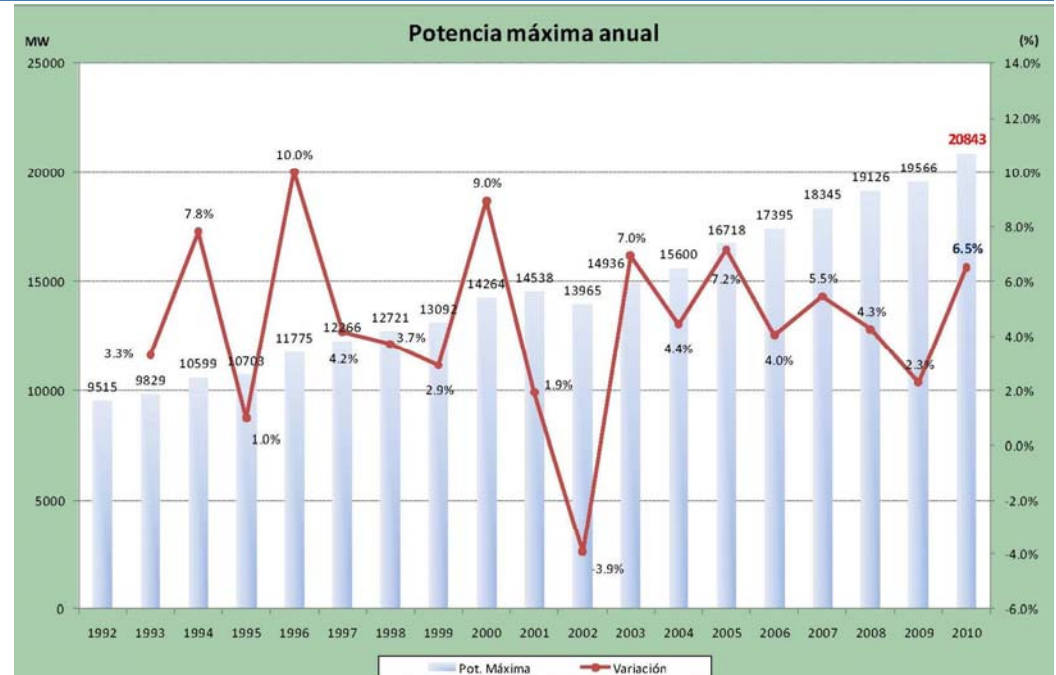
- Strong energy demand by regional miners
- Population of Neuquen province is 475,000 and adjoining Mendoza is 1.7 million.
- Substantial state and private customer demand (Xstrata, Loma Negra EMA, 90MWe to date)

# Power Market

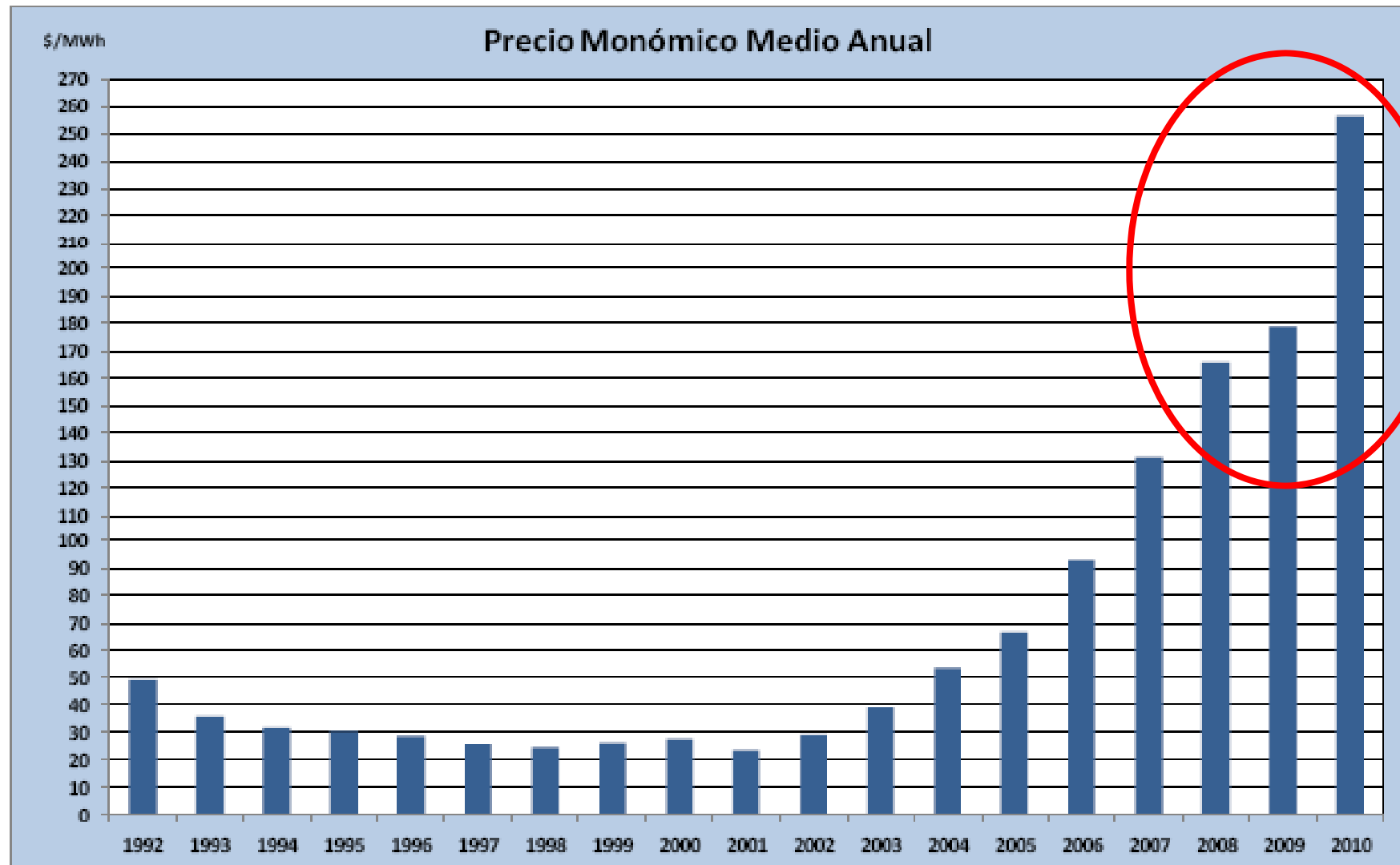


→ From 2011 the energy sector produces a deficit about 2 Billions USD

- Managing the deficit in imports of energy versus exports is a challenge for Argentina
- Peak load is increasing, as are average power usage loads which has one natural outcome
- Argentinean Federal Gov has acted to encourage new energy sources



# Rising prices (\$AR)



# Technical Summary



World Class Vapour Based Reservoir  
Discovered by Steam at Surface  
High Temperature over 235° C at depth  
Favourable Chemical Characteristics

Thick Reservoir at least 600m thick  
Shallow Depth: 600 – 900m below surface  
Extending to at least 1400m depth

Studied since 1970's  
JICA Feasibility Study 1987 - 88  
Measured Resource of 19MWe  
Total Resource (Indicated + Inferred) 264MWe

4 Deep Wells Drilled - Numerous Gradient Holes  
Production\Deep Wells from COP 1, 2, 3, 4  
Past production from COP1  
High MW resource in COP 3, 4 (~7MW per well)



# Copahue Vs Key Q's



✓	<b>Heat</b>	Temperatures over 235° Celsius
✓	<b>Pressure</b>	High Pressure 10 - 16 Bars Pressure at Well Head
✓	<b>Permeability</b>	High Permeability over 207,000 md-m in COP 3 and 4
✓	<b>Site Access\ Grid Access</b>	Paved Road to Site, Gentle Agrarian Landscape. 55Km to National Grid
✓	<b>Power Agreement</b>	US\$120 MWh Power offtake under the Renewable Energy Act. Up to US\$300 under ENARSA special pricing, LOI's from Xstrata Copper (50MWe), Loma Negra (10MWe), EMA Group (30MWe)

# Copahue - Development



## Established Resource

- Located in a site of active fumaroles and where 4 wells previously drilled has enabled “behind pipe” resource estimation
- Historical pilot plant demonstrated concept for power generation

Geothermal Resource Classification	Generating Capacity (MWe)	Stored Heat in Place (PJ)
Measured Resource	19	700
Inferred Resource - Vapour Zone	55	2500
Inferred Resource - Deep Liquid Zone	190	7300

## The Project

- Initially Phases 1 and 2 will involve installation of 15 MWe each
- Capital cost of each phase is approx US\$100m-\$150m
- Total of 4 production wells conservatively estimated for each phase.
- Based on definition of resource project is significantly upwardly scalable.

## Commerciality

- Project has robust economics and is NPV positive for initial Phases of development
- Significant upside through expansion and likely higher deliverability of production wells.



# Milestones



## World Leading Technical Support

- EHR engaged the world's leading geothermal consultants Sinclair Knight Merz (SKM) as its independent technical expert.
- EHR signed an exclusivity agreement with Alstom Power, to develop a geothermal power plant solution for its Copahue Project.
- EHR has established a strong professional management team in Argentina

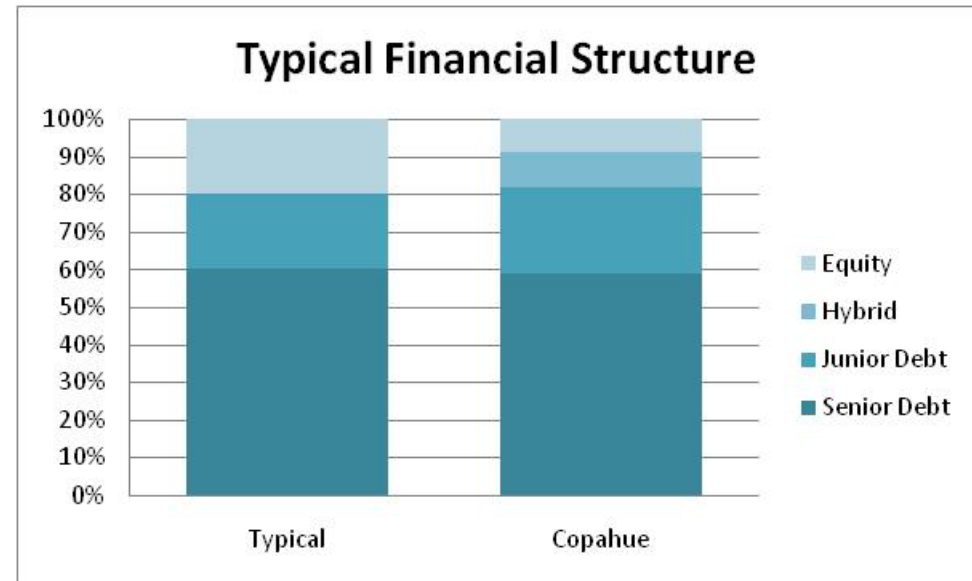
## Feasibility Studies

- SKM has undertaken an independent resource update
- Alstom providing a power plant solution for the stage 1 power plant, inclusive of an indicative pricing offer.
- Stage 1 Environmental Impact Assessment completed which identified no major environmental issues, stage 2 underway
- SKM and Alstom site visits in March/April 2012 provided positive additional input to the engineering and geoscience studies
- SKM has provided preliminary engineering costing and design proposal in conjunction with Alstom input.
- EHR is working through the ideal design based on the work completed
- Progressing PPA, Transmission and Interconnection studies

# How do you Finance?



- In general terms project finance is accessible for those developments using existing technology, with proven resources, a business plan, and commercial output.
- Geothermal financing has been around for 50 years, this is nothing new
- EHR simply has a project that debt lenders have some comfort with



- Drilling – Done
- PPA (LOI) – Done
- Pre-Feasibility – Done
- Indicative financing – Obtained
- To close, we will invest the balance, no other ASX listed Contemporary is close



## Securing Senior Project Finance

- Inter American Development Bank to directly invest up to US\$75 mil and assist in syndication of the balance of a US\$135 mil Senior Debt. (total US\$210 mil for Phases 1 and 2).
- Copahue is consistent with the IDB's integrated strategy for Climate Change Adoption and Mitigation, and Sustainable and Renewable Energy which seeks to increase the energy portfolio of the IDB by 25% by 2015.

## Drill Loan (Mezzanine) Financing

- Mandated Corporacion Interamericana para el Financiamiento de Infraestructura (CIFI) as lead bank and arranger for a Drill Loan of USD \$22.5 mil subject to DD.
- Funds to be used for drilling 3 of 4 planned production wells for Copahue Stage 1.
- Drilling loan to close contemporaneously with Senior Debt.
- Agreement with AGS Capital Group LLC for \$17.5 Mil in Capital Contingency

# 2012 Project Finance



## Final Equity Contribution

- EHR Recently announced a project equity raising of up to US\$30m to be arranged through CIFI
- Non-voting preferred share raising, US\$1 with a conversion into EHR parent stock to provide exit
- Acquisition of JV partner to unitise the project sponsors making financial close easier
- This finance funds the remaining gap in funds needed for the development as currently estimated, plus working capital and the costs of formal close on the debt products

Subject to various terms and conditions EHR has established four forms of financing facilities to install the first geothermal power plant:

## Summary

- Up to US\$210m – Senior Debt (Phases 1 & 2)
- Up to US\$22.5m – Mezzanine Debt (Phase 1)
- Up to US\$30m – Preferred Shares
- AUD \$17.5 mil – Capital Contingency Finance.

# Economic Snap (30Mwe)



Parameter	Economics
1 MW of Geothermal Produces	~8500 MW hours/ year
Renewable Act PPA at \$120/MW	~\$1MM Revenue per year
Operating & Maintenance Costs	\$30 / MW
Pre-Tax Equity Cash Flow (without Debt Financing)	~ 765K / MW per Year
Annual Total Pre-Tax Cash Flow for (~\$100MM Capital Cost)	\$23.0 million dollars
Argentine Tax Rate of 35% Annual After Tax Cash Flow	\$14.9 million dollars

# Value Proposition



- NPV based on Cashflows \$90-\$225m for a 30MWe plant (see below)
  - Plenty of room for expansion.
  - Min value = capital cost on balance sheet of plant
- Might River Power analogy
  - \$250-\$300m NZD NPAT
  - Sale process underway from NZ Govt
  - Preliminary valuation \$4-\$5b (16\* NPAT)
  - EHR ~= \$240m from one project alone (16\*15m, or 30MWe project)

Discount Rate	30 MW	50 MW*	75MW*	100MW*
8%	\$224MM	\$374MM	\$564MM	\$752MM
14%	\$122MM	\$203MM	\$308MM	\$410MM
20%	\$93MM	\$157MM	\$238MM	\$317MM

\* Like all modelling, variable upon final parameters of the PPA and Feasibility Study, plus the influence of the modeller

\* Using 60% leverage & 10% cost of debt



# Where we sit TODAY

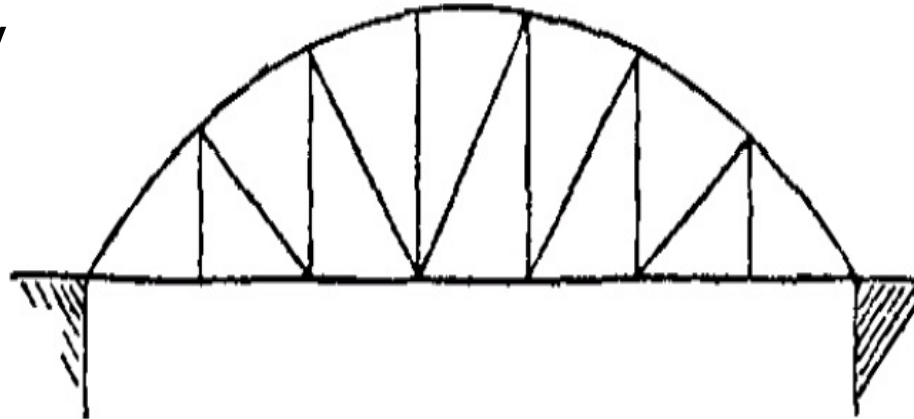


## Pre-Feasibility



✓ Junior Debt \$  
✓ Senior Debt \$

**✗ Gap remaining  
~\$10-\$15m**



## EHR Power Plant



✓ Junior Debt \$  
✓ Senior Debt \$

(up to) US\$30m CIFI  
Raising

**✓ Gap remaining**

**NIL**

✓ Placement  
✓ ?Rights Issue?

✗ Gap remaining  
~\$10-\$15m

- EHR is only ASX listed Geothermal Company with a mature viable volcanic geothermal project
- EHR is the only group with a funding solution
- EHR is the closest company to building a power plant based on geothermal energy

# Contact



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ASX : EHR

# Key Differences with Aust



- **There is no equivalent volcanic geothermal project in Australia;**
  - Equivalents exist in Lardarello Italy (operative for nearly 100 years), and the Geysers field in California (operative for over 50 years), and of course New Zealand (Wairekai and numerous others).
- **Production demonstrated by historical production of steam;**
  - AUST- sustainable production supporting a power generation pilot plant yet to be proven.
- **Drilling costs of \$3m-\$6m USD;**
  - AUST- costs estimated for HDR of \$20m-\$50m USD depending on depth, objectives etc.
- **TOTAL depth for primary target 1400m at Copahue;**
  - AUST- 3000 to 5000m wells.
- **Reservoir Exists naturally;**
  - AUST- HDR projects require a reservoir to be created.
- **Dry steam vapor dominated reservoir;**
  - AUST- nominally fluids need to be injected before extraction to sustain production.

# Fiale Project



- **A similar very high quality, quantifiable project like Copahue**
- Stable country (former French colony), with significant western military presence
- Power poles constructed to access national grid
- Sealed bitumen road to site from Djibouti City- 2 hour drive
- Located in a lake, lowest point in Africa, a source of fluids and water exists
- Towns nearby with range of facilities.
- Considerable services available both from the Middle East and from Continental Africa
- Industrial and potentially mining customers with pent up demand
- Large populations in neighbouring Somalia and Eritrea