Parhelion Underwriting Ltd

Geothermal Output Drilling Cost Indemnity: June 2016 – Addis Ababa
UNECA / UNDESA
Geothermal Energy

Why Geothermal?

• Clean
• Baseload
• Cheap

…… But <10% of global potential has been exploited.
Financing geothermal projects: the role for insurance

Project Risk and Cost during Geothermal Development

- Exploration
- Pre feasibility
- Feasibility
- Development Drilling
- Plant construction
- Start-up
- Operations

Equity / Concessional
Equity / Drilling Cost Indemnity Insurance
Project Finance / bank finance
Key Benefits of the Insurance

By removing reservoir output risk during the initial development drilling phase, the Parhelion product can:

- Encourage the influx of private equity and other 3rd party capital to finance the development stages of geothermal reservoirs by substantially improving risk-adjusted returns.

- Enable project developers to receive greater certainty that their drilling programme

- Provide protection for project developers’ and other 3rd parties’ equity, allowing it to be recycled into additional opportunities.
Product Summary

- Development / Appraisal Drilling phase
- Indemnifies the Insured parties for incurred costs of drilling
- Program of (typically 5) wells in the event that lower than expected aggregate geothermal capacity (in MWe) is tested
- Independent third party verification of expected & actual capacity
- Typical period on risk is 8 to 12 months with a maximum of 18 months
- Insured value is based on the direct drilling costs incurred
- Product excludes any ongoing performance of wells and all other damage, costs or liabilities during the drilling, completion and testing process
Key terms

• Insured value will be the lower of agreed and actual well drilling costs on unsuccessful wells under the drilling programme after adjusting for any agreed salvage, subject to a pre agreed aggregate limit.

• Threshold for individual well success is one that is sufficiently productive to warrant connection to a power plant and will be a combination of pressure, enthalpy and flow rate and will be pre-agreed.

• Threshold for an insured payment is based upon successful wells where the aggregate capacity achieved for the insured drilled wells is below the pre-agreed aggregate capacity insured success level.

• Budgeted well drilling costs will be pre-agreed with project developers and will incorporate a budget for possible well remediation costs.

• Salvage will include the possibility of a well being capable of being used as an injection well or observation well, the extent to which salvage being possible (eg injection:productive well ratio) being pre-agreed with project developers.
Public Private Scheme Overview

1. Due Diligence Facility
2. Premium Buy Down Facility

Project

3. Parhelion Underwriting Agent
   - MDB Co.
   - Insurer
   - Insurer
   - Insurer

4. Commercial Vehicle capitalised by IFC & other MDBs

5. Reinsurance Stop / First Loss

Demand Side Support Measure
CIF / Donor funding via MBDs
CIF / Donor funding

Supply Side Support Measure
Public Private Scheme Benefits

• Crowds In Private Sector Capital from Insurance Sector
• Very Efficient Use of Public Funds
• Private : Public Leverage est. > 60:1 (typically 5 : 1)
• Engages Domestic Insurers and Other Stakeholders
Thank you

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