

SPECIALISED INSURANCE & RISK FINANCE PRODUCTS FOR CARBON MARKETS,
CLIMATE RISKS, RENEWABLE ENERGY AND EMISSION REDUCTION PROJECTS

Parhelion Underwriting Ltd

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

Geothermal Energy

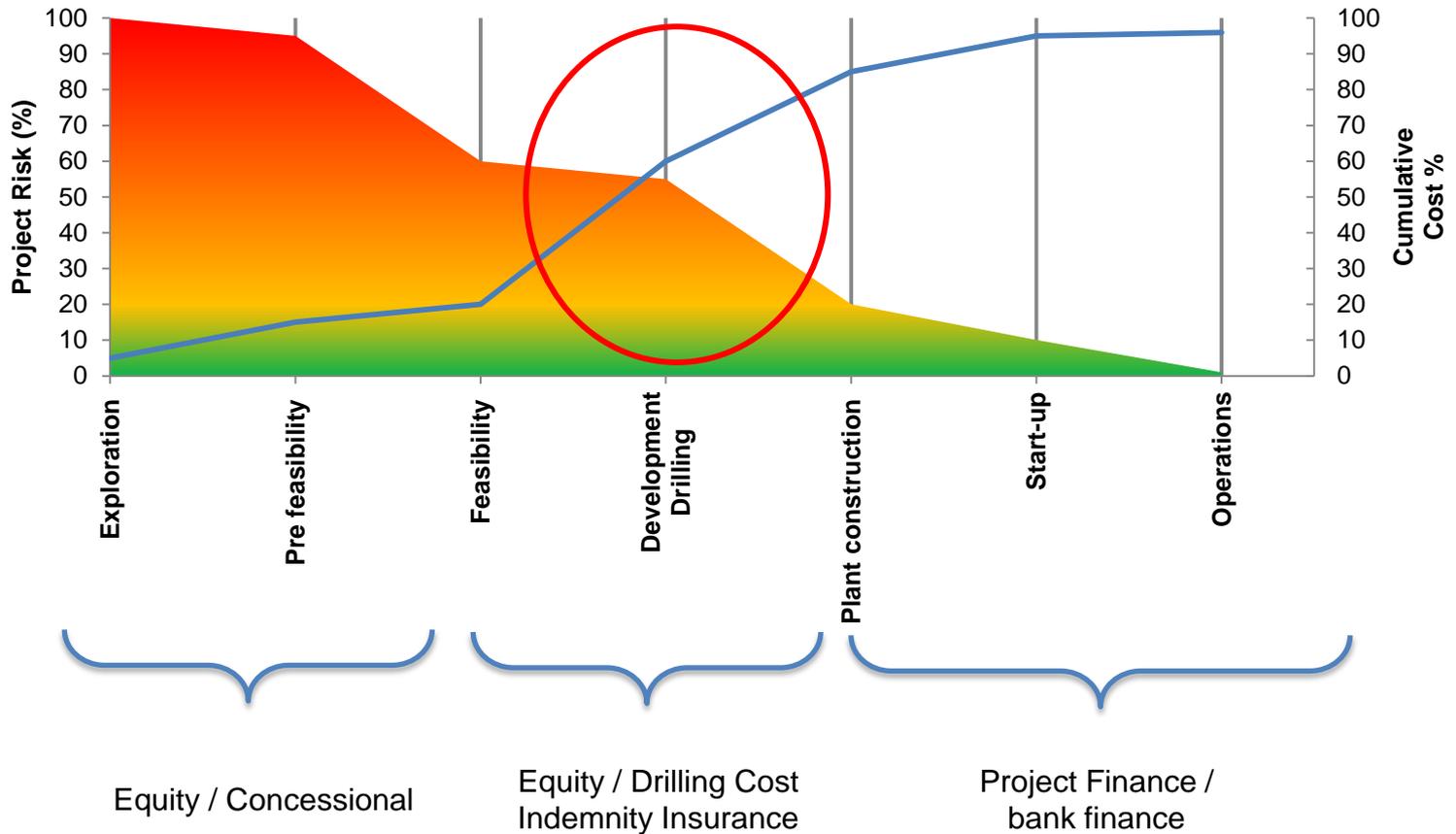
Why Geothermal?

- 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



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.

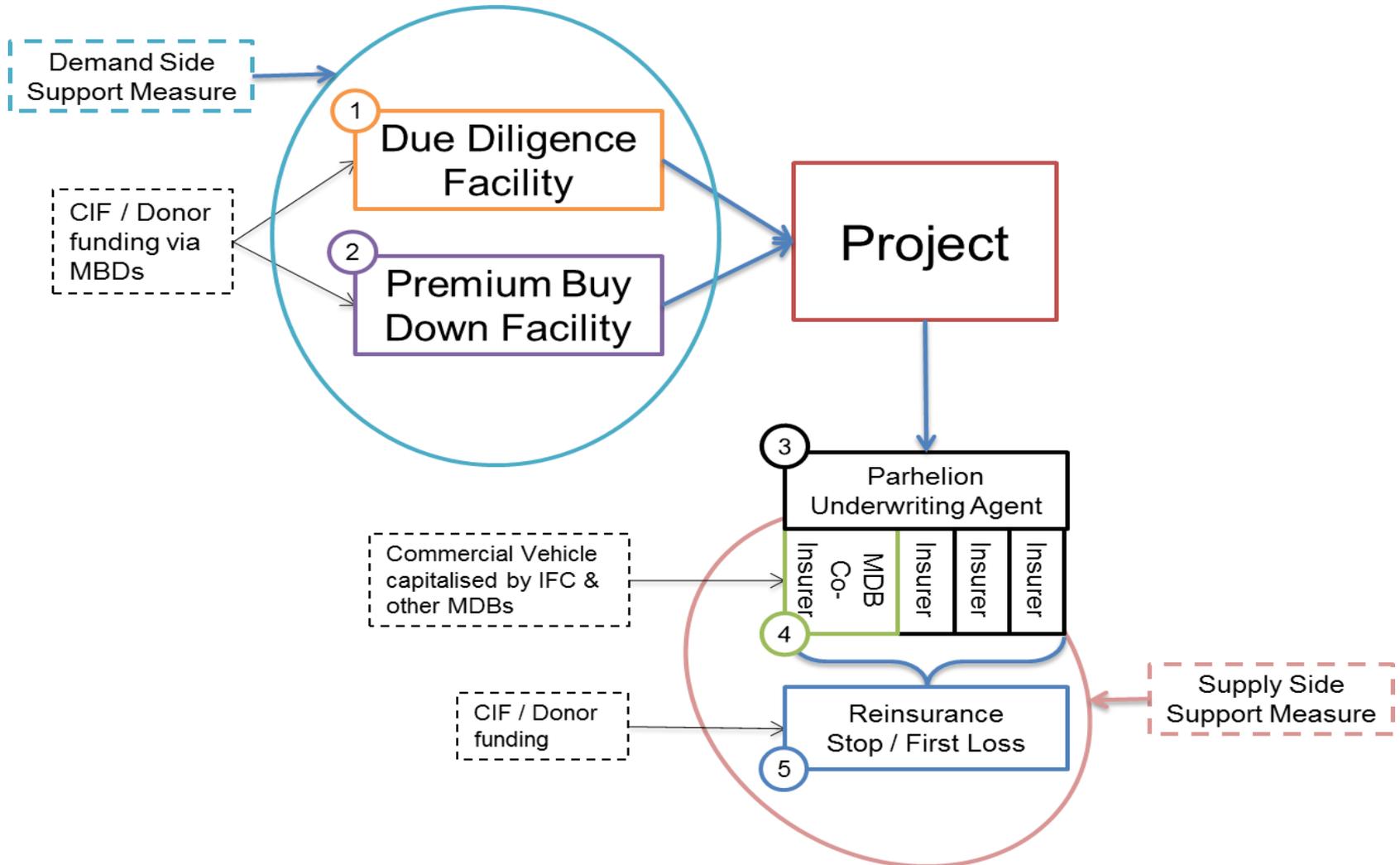
Product Summary

- 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



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



*Insurance and
risk finance solutions*

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Thank you

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