

REVERCLEAN ENERGY PRIVATE LIMITED

Investor & Grant-Ready Pitch Deck

Building India's Geothermal Energy Future

Company	Reverclean Energy Private Limited
Founder & CEO	Ravi Martolia
Sector	Geothermal Energy / Clean Energy / Climate Tech
Founded	2022 Focus since 2023

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Status of information

Reverclean Energy is an early-stage geothermal development company. As of the date of this document, the Company has not yet drilled a commercial geothermal well, has no operating revenue from geothermal power generation, and has not signed binding power purchase agreements (PPAs). Certain engagements referenced in this document are at discussion, conceptual or exploratory stages and should not be interpreted as contracts, commitments or guaranteed projects. Each such engagement is identified by its current status.

Illustrative assumptions

Where actual project-specific data is not yet available, financial, technical and impact figures are presented as clearly labelled illustrative assumptions, based on publicly available benchmarks for geothermal projects globally and in comparable emerging markets. These are not forecasts or guarantees. Actual results may differ materially. All assumptions are listed in the Financial Assumptions Table and the Climate Impact Calculation sections.

Forward-looking statements

Statements regarding resource potential, project pipeline, future capacity, emissions avoided, cost economics and timelines are forward-looking and subject to exploration risk, drilling risk, regulatory approvals, financing availability and other factors. Prospective investors should perform their own independent due diligence.

Sources

Market, policy and emissions data referenced in this document are drawn from publicly available sources including the Ministry of New and Renewable Energy (MNRE), Geological Survey of India (GSI), Central Electricity Authority (CEA), NITI Aayog, International Energy Agency (IEA) and peer-reviewed literature. Specific sources are cited inline and listed in the Appendix.

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1. Executive Summary

Reverclean Energy Private Limited is an Indian geothermal development company building an integrated, India-focused capability to take geothermal projects from resource identification through to commercial power generation. Founded in 2022 by Ravi Martolia — a clean-energy entrepreneur, engineer and mountaineer — the Company is positioning itself within a sector that India has long recognised as strategically important but has so far largely failed to commercialise.

The opportunity is significant and timely. The Geological Survey of India and the Ministry of New and Renewable Energy estimate India's geothermal potential at approximately 10,600 MW across 381 thermally anomalous areas, yet installed geothermal capacity remains near zero. In September 2025, the Government of India released its first-ever National Policy on Geothermal Energy, creating an explicit regulatory and incentive framework for the first time. ONGC Energy Centre has commissioned India's first geothermal wells at Puga Valley, Ladakh, validating the technical pathway. The market is at an inflection point.

Why Reverclean, why now

Geothermal energy is the only renewable source that provides firm, dispatchable baseload power with high capacity factors (typically 80–95%), making it a natural complement to intermittent solar and wind. It also enables direct-use heat applications — space heating, greenhouse agriculture, industrial process heat, tourism infrastructure — which are especially relevant in Himalayan, Ladakh and remote regions where diesel-based generation and heating remain common. Reverclean is building a specialised, India-grounded capability that combines geological, geophysical, geochemical and drilling expertise with a project-development mindset — a combination that is scarce in the Indian market.

What we are building

- **A portfolio approach:** an integrated Indian geothermal development platform spanning exploration, drilling, resource confirmation, power plant development and long-term reservoir management.
- **A multi-site pipeline:** Uttarakhand / Himalayan geothermal resources (including Tapovan / Joshimath), Odisha, Andaman & Nicobar and Ladakh — with each opportunity clearly staged by maturity.
- **A long-term owner-operator model:** where the Company develops, owns and operates geothermal power assets via SPVs / JVs, supported by exploration services, technical advisory and direct-use projects as nearer-term revenue streams.

Traction (clearly stated by status)

- **Engagements:** ongoing engagement with Uttarakhand stakeholders for geothermal demonstration project development; work related to the Tapovan geothermal opportunity; engagement with scientific and academic experts in geothermal exploration and geophysics.
- **Concepts / proposed projects:** exploration of geothermal opportunities in Odisha, Andaman & Nicobar, Ladakh and Himalayan regions; development of project concepts, DPR-level thinking and exploration strategies.
- **Network / discussions:** engagement and discussions with government, scientific, academic and industry stakeholders; international geothermal networking and technical collaboration discussions.

The ask

Reverclean is seeking staged capital across three layers: (A) corporate / startup funding to build the team and platform; (B) exploration funding to de-risk specific resource sites through geophysical surveys, geochemical studies and temperature-gradient / exploratory drilling; and (C) project-level capital (equity + debt + grants) to construct confirmed geothermal power projects. The Company is also targeting climate-tech and government grants to subsidise high-risk exploration activity.

The vision

One successful demonstration project becomes the template for a multi-site geothermal platform across India's Himalayan belt, volcanic / tectonic regions (Andaman), and sedimentary / deep hot-aquifer provinces. The long-term opportunity is not a single project — it is the creation of an Indian geothermal development ecosystem with exportable expertise to other geothermal markets globally.

2. Pitch Deck — 15 Slides

The structure below follows the investor narrative arc: Problem → Opportunity → Why Geothermal → Why India → Why Now → Solution → Technology → Traction → Pipeline → Business Model → Economics → Competitive Position → Scale → Impact → Funding Ask. For each slide: title, key message, bullets, recommended visual, data required, speaker notes, and the investor question the slide answers.

Slide 1 — Reverclean Energy

Key message

Building India's geothermal energy future.

Bullets

- Reverclean Energy Pvt. Ltd. — Indian geothermal development company, founded 2022.
- Mission: develop India's geothermal resources using Indian geological data and scientific expertise.
- Founder: Ravi Martolia — clean-energy entrepreneur, engineer and mountaineer.
- Focus: exploration → drilling → resource confirmation → power generation → direct-use.
- Vision: a multi-site geothermal platform, not a single project.

Slide 2 — The Problem

Key message

India needs reliable clean baseload power, but geothermal — the only firm renewable — remains effectively undeveloped.

Bullets

- India's grid is adding massive solar and wind capacity, but both are intermittent; firm, dispatchable clean power is scarce.
- Diesel-based generation and heating persist in Ladakh, Himalayan and remote regions — high cost, high emissions, energy insecurity.
- India has ~10,600 MW of estimated geothermal potential but near-zero installed geothermal capacity today.
- Industrial process heat is overwhelmingly fossil-fuel based; clean heat options are limited.
- Geothermal has historically lacked an integrated Indian developer with end-to-end project-execution capability.

What real problem are you solving that isn't already solved by solar, wind and batteries?

Slide 3 — The Opportunity

Key message

India's ~10,600 MW geothermal resource is largely untapped — a multi-decade, multi-billion-dollar clean-energy opportunity.

Bullets

- MNRE / GSI estimate ~10,600 MW geothermal potential across 381 thermally anomalous areas (Geothermal Atlas of India, 2022).
- Himalayan province, Son-Narmada-Tapi (SONATA) lineament, Cambay, Godavari and Andaman geothermal belts identified.
- First National Geothermal Energy Policy released by MNRE in September 2025 — regulatory framework now exists.
- ONGC has drilled India's first geothermal wells at Puga, Ladakh; SCCL has commissioned a 20 kW pilot in Telangana.
- Early-mover advantage: no integrated private Indian geothermal developer has yet established a multi-site pipeline.

How big is the market, and is it real or just a geological curiosity?

Slide 4 — Why Geothermal

Key message

Geothermal delivers firm, dispatchable, low-emission electricity plus direct-use heat — a combination no other renewable offers.

Bullets

- Baseload / firm capacity factor typically 80–95% — vs ~20–30% for solar PV and ~25–35% for wind.
- Small surface land footprint per MW relative to solar/wind; low visual and ecological disruption.
- Direct-use applications: space heating, greenhouse agriculture, industrial process heat, aquaculture, tourism/spa.
- Low operational CO₂ emissions; closed-loop binary systems can be near-zero emission.
- Long asset life (30–50+ years) and proven globally — ~16 GW installed worldwide across 30+ countries.

Why geothermal and not just more solar + storage?

Slide 5 — Why Now

Key message

Policy unlock, rising firm-power demand, decarbonisation pressure and demonstrated technical feasibility are converging in 2025–2026.

Bullets

- India's first National Geothermal Energy Policy released by MNRE (September 2025) — first explicit regulatory framework.
- Rising grid integration costs and storage economics make firm clean power increasingly valuable.
- India's net-zero commitment (2070) and interim 2030 non-fossil capacity targets require clean baseload options.
- ONGC Puga wells (2026) and SCCL pilot demonstrate Indian technical execution is possible.
- Global capital flowing into climate-tech and next-generation geothermal (AGS, EGS) is at an all-time high.

Why hasn't this happened before, and why will it happen now?

Slide 6 — Our Solution

Key message

Reverclean is building India's first integrated, end-to-end geothermal development platform.

Bullets

- Integrated 3G capability: geological + geophysical + geochemical assessment under one roof.
- Project-development mindset: not a consultancy, not a research lab — a developer that takes projects to commercial operation.
- India-grounded field knowledge: Himalayan, tectonic and volcanic-arc geology combined with Indian scientific partnerships.
- Multi-site portfolio approach to spread geological risk across provinces.
- Blended revenue model: nearer-term services and direct-use; long-term power-asset ownership.

What exactly is your solution — product, service or platform?

Slide 7 — Technology & Project Development

Key message

A disciplined, stage-gated workflow from surface science to reservoir management, with de-risking at every step.

Bullets

- Stage 1 — Geological assessment & literature review (low cost, low risk).
- Stage 2 — Geophysical surveys (magnetics, MT, gravity, seismic) to image the subsurface.
- Stage 3 — Geochemical studies of hot springs / fluid samples to estimate reservoir temperature.
- Stage 4 — Integrated 3G resource model + temperature-gradient / slim-hole drilling.
- Stage 5 — Production & injection well design, reservoir confirmation, power plant EPC.
- Stage 6 — Long-term reservoir management, reinjection, monitoring & replication.

How do you actually find and confirm a commercial geothermal resource without burning capital?

Slide 8 — Traction

Key message

Active engagement across Uttarakhand and Indian scientific ecosystem; multi-province opportunity screening underway.

Bullets

- Ongoing engagement with Uttarakhand stakeholders for geothermal demonstration project development.
- Work related to the Tapovan / Joshimath geothermal opportunity (concept and exploration strategy).
- Active engagement with scientific and academic experts in geothermal exploration and geophysics.
- Screening of opportunities in Odisha, Andaman & Nicobar, Ladakh and Himalayan regions.
- Discussions with government, scientific, academic and industry stakeholders; international geothermal networking.

What have you actually done so far — beyond plans and slides?

Slide 9 — Project Pipeline

Key message

A staged pipeline across four Indian geothermal provinces, each clearly labelled by maturity.

Bullets

- Uttarakhand (Himalayan) — Engagement / demonstration concept: ongoing stakeholder engagement.
- Tapovan / Joshimath — Concept: geological and exploration strategy work in progress.
- Ladakh (Puga / Chumathang belt) — Screening / discussion: high-enthalpy direct-use + power relevance.
- Odisha — Screening: lower-enthalpy / sedimentary / hot-aquifer opportunity assessment.
- Andaman & Nicobar — Screening: volcanic-arc high-enthalpy geothermal relevance.
- Other Himalayan fields — Pipeline build-out per GSI atlas.

Where exactly are your projects, and what stage is each one at?

Slide 10 — Business Model

Key message

Long-term owner-operator of geothermal power assets; nearer-term revenue from services, advisory and direct-use.

Bullets

- Primary long-term model: develop, own and operate geothermal power projects via SPVs / JVs; revenue from electricity sales under PPAs.
- Supporting revenue 1 — exploration & resource development services for state agencies / industrial offtakers.
- Supporting revenue 2 — technical advisory & DPR / project development services.
- Supporting revenue 3 — direct-use geothermal projects (heating, greenhouse, tourism, industrial heat).
- Capital structure: blended equity, grants, strategic / JV capital, project debt and development finance per stage.

How does Reverclean actually make money, and when?

Slide 11 — Economics (Illustrative)

Key message

Geothermal project economics are capital-intensive upfront but yield long-duration, low-marginal-cost cash flows — illustrated below with stated assumptions.

Bullets

- Illustrative reference project: 25 MW geothermal power plant, 85% capacity factor, ~US\$3.5–4.5m/MW CAPEX, 25-year life.
- Indicative tariff band INR 6–9/kWh (context-dependent; merchant / regulated / hybrid models).

- Project IRR band (illustrative): 10–14%; Equity IRR band: 12–16% (post debt + tax; highly sensitive to tariff and drilling outcome).
- LCOE (illustrative): competitive with storage-firmed solar/wind at high RE penetration; clear advantage on firm-power basis.
- All figures illustrative based on global benchmarks — to be validated with Indian site-specific data.

Does the unit economics actually work, and how confident can we be at this stage?

Slide 12 — Competitive Position

Key message

Reverclean occupies a defensible niche as an India-specialised, integrated geothermal developer — with honest competitive risks.

Bullets

- Differentiation: India-focused integrated 3G capability + project-development mindset + multi-province field knowledge.
- Early-mover advantage: no integrated private Indian geothermal developer has yet established a multi-site pipeline.
- Ecosystem access: relationships with government, scientific, academic and industry stakeholders.
- Honest weaknesses: limited capital, no drilled commercial well yet, brand recognition below large PSUs/IPPs.
- Competitive risks: entry by ONGC/NTPC/large IPPs, international developers, oil & gas majors leveraging drilling expertise.

Why won't ONGC, NTPC or a large IPP just do this themselves?

Slide 13 — Scale

Key message

One successful demonstration project becomes the template for a multi-site Indian geothermal platform — and an exportable capability.

Bullets

- Template effect: each drilled-and-confirmed resource reduces risk and cost of the next.
- Portfolio across provinces: Himalayan high-enthalpy, Andaman volcanic-arc, Odisha / sedimentary medium-enthalpy.
- Direct-use scale-out: heating, greenhouse, industrial heat, tourism across multiple states.
- Replicable SPV / JV model with state agencies, industrial offtakers, infrastructure investors.

- Exportable expertise: Indian-developed geothermal capability relevant to other emerging geothermal markets (East Africa, Southeast Asia, Caribbean).

How does this become more than a single project — what is the path to scale?

Slide 14 — Climate Impact

Key message

Transparent emissions-avoidance calculation per MWh generated, using India's CEA grid emissions factor.

Bullets

- Method: annual MWh generated × India grid emissions factor = annual tCO₂e avoided.
- Grid emissions factor used: ~0.71 tCO₂e/MWh (CEA CO₂ Baseline Database, latest version).
- Illustrative 25 MW plant at 85% CF ≈ 186,000 MWh/yr ≈ 132,000 tCO₂e avoided per year.
- Conservative / Base / Upside cases provided across a staged portfolio ramp.
- Additional impact: diesel displacement in Ladakh/Himalayan regions; direct-use heat replacing fossil fuels; low land footprint.

What is the actual, defensible climate impact of this portfolio — and how is it calculated?

Slide 15 — Funding Ask & Milestones

Key message

Staged capital across three layers — corporate, exploration and project — with clear 12 / 24 / 36-month milestones.

Bullets

- Layer A — Corporate / startup funding: team, platform, scientific partnerships, working capital.
- Layer B — Exploration funding: 3G surveys, slim-hole / temperature-gradient drilling, resource de-risking (grant-heavy).
- Layer C — Project capital: equity + debt + grants for confirmed-resource power plant construction.
- 12-month milestone: complete pre-feasibility on lead site; secure at least one exploration-stage grant/MoU.
- 24-month milestone: complete temperature-gradient drilling at lead site; confirm resource indicators.
- 36-month milestone: reach resource confirmation on lead site; secure PPA / offtake and project financing pathway.

How much money are you raising, for exactly what, and what do we get for it at each stage?

3. Founder Pitch Scripts

3.1 Three-Minute Founder Pitch

I'm Ravi Martolia, founder and CEO of Reverclean Energy. We are building India's geothermal energy future.

India has roughly 10,600 megawatts of estimated geothermal potential — identified by the Geological Survey of India across 381 thermally anomalous areas. Yet installed geothermal capacity in India today is effectively zero. Solar and wind are scaling rapidly, but they are intermittent. India's grid increasingly needs firm, dispatchable clean power — the kind that runs twenty-four hours a day, with capacity factors above eighty percent. That is exactly what geothermal delivers.

In September 2025, the Government of India released its first-ever National Policy on Geothermal Energy. ONGC has drilled India's first geothermal wells at Puga, Ladakh. A regulatory and technical inflection point has arrived.

Reverclean is being built to be the integrated Indian geothermal developer this market is missing. We are not a research lab and not a consultancy — we are a developer. Our capability spans the full workflow: geological assessment, geophysical surveys, geochemical studies, integrated 3G resource modelling, temperature-gradient drilling, resource confirmation, well design, power plant development and long-term reservoir management. We are pursuing a multi-site pipeline across Uttarakhand and the Himalayan belt, Ladakh, Odisha, and Andaman & Nicobar — a portfolio approach that spreads geological risk across provinces.

Our engagement so far is real but early. We have active engagement with Uttarakhand stakeholders on a geothermal demonstration project, ongoing work on the Tapovan / Joshimath opportunity, and active engagement with scientific and academic experts. We are screening opportunities in Odisha, Andaman and Ladakh. We have discussions underway with government, scientific, academic and industry stakeholders, and we are building international geothermal technical collaborations.

I want to be direct about what we have not yet done. We have not drilled a commercial geothermal well. We have no operating revenue from geothermal power. We have no signed PPA. Anyone who tells you Indian geothermal is de-risked is not telling you the truth. Drilling and subsurface risk are the major barriers — and we address them explicitly through stage-gated exploration, not by hiding them.

Our business model is a long-term owner-operator of geothermal power assets, supported by nearer-term revenue from exploration services, technical advisory and direct-use projects. Our funding strategy is staged across three layers — corporate capital, exploration capital with a heavy grant component, and project-level infrastructure capital.

The opportunity is not a single project. It is the creation of an Indian geothermal development ecosystem. We are looking for investors and partners who understand that the first confirmed resource becomes the

template for a multi-site platform — and who are willing to back the disciplined, India-grounded team building it.

3.2 Five-Minute Investor Pitch.

Let me start with the problem. India is in the middle of one of the largest renewable energy build-outs in the world — over a hundred gigawatts of solar and wind already installed, and a target of five hundred gigawatts of non-fossil capacity by 2030. But solar and wind are intermittent. As their share of the grid grows, the cost and complexity of firming them with storage rises steeply. India needs reliable, dispatchable, clean baseload power — not to replace solar and wind, but to complement them.

That is what geothermal is. A geothermal plant runs twenty-four hours a day, seven days a week, with capacity factors typically above eighty-five percent. It produces electricity and direct-use heat from the same resource. It has a small surface footprint, a thirty-to-fifty-year asset life, and low operational emissions. Globally, around sixteen gigawatts of geothermal capacity is installed across more than thirty countries. In India, despite an estimated 10,600 megawatts of potential, installed geothermal capacity is effectively zero.

That gap is the opportunity. And three things have changed in the last twenty-four months that make now the right time. First, in September 2025, the Government of India released its first-ever National Policy on Geothermal Energy — the regulatory framework that has been missing for decades. Second, ONGC Energy Centre has drilled India's first geothermal wells at Puga Valley in Ladakh, and Singareni Collieries has commissioned a twenty-kilowatt pilot plant in Telangana. The technical execution has been demonstrated on Indian ground. Third, global capital is flowing into next-generation geothermal technologies — advanced geothermal systems, closed-loop designs, and enhanced geothermal systems — at levels not seen before.

Reverclean Energy is being built to be the integrated Indian geothermal developer this market is missing. I founded the company in 2022, and I have been working on Indian geothermal development since 2023. I am an engineer by training — a B.Tech in Computer Science from the University of Delhi — and a mountaineer, which means I am comfortable operating in the difficult Himalayan and remote environments where much of India's high-enthalpy geothermal resource sits. We are not a research lab and not a consultancy. We are a developer, with an integrated capability across the full geothermal workflow — geological assessment, geophysical surveys, geochemical studies, integrated 3G resource modelling, temperature-gradient and exploratory drilling, resource confirmation, production and injection well design, power plant development, and long-term reservoir management.

Our pipeline is multi-province by design. We have ongoing engagement with Uttarakhand stakeholders for a geothermal demonstration project. We are working on the Tapovan / Joshimath opportunity. We are screening opportunities in Odisha, Andaman & Nicobar, Ladakh and other Himalayan regions. We are in active discussions with government, scientific, academic and industry stakeholders, and we are building international geothermal technical collaborations. I want to be honest with you: these are engagements and discussions, not signed contracts. We have not drilled a commercial geothermal well. We have no operating revenue and no signed PPA. Anyone who tells you Indian geothermal is de-risked is not telling you the truth —

the drilling and subsurface risk are real, and we address them explicitly through stage-gated exploration rather than hiding them.

Our business model is a long-term owner-operator of geothermal power assets, supported by nearer-term revenue from exploration and resource development services, technical advisory, and direct-use geothermal projects in heating, greenhouse agriculture and tourism. The long-term enterprise value is in owning operating assets with twenty-five-to-forty-year cash flows; the nearer-term revenue funds the platform while projects mature.

Our funding strategy is staged across three layers: corporate capital to build the team and platform, exploration capital — heavily grant-supported because of drilling risk — to de-risk specific sites, and project-level infrastructure capital once a resource is confirmed.

Climate impact is transparent: every megawatt-hour of geothermal generation avoids approximately 0.71 tonnes of CO₂ against the Indian grid, using the CEA baseline emissions factor. A 25-megawatt plant at an 85-percent capacity factor would avoid roughly 132,000 tonnes of CO₂ per year. In Ladakh and Himalayan regions, geothermal also displaces diesel generation and diesel-based heating — direct, verifiable, additional impact.

The strategic prize is not the first project. It is the creation of an Indian geothermal development platform — a portfolio of assets across provinces, with exportable expertise to other emerging geothermal markets globally. We are looking for investors and partners who understand that geothermal is a disciplined, stage-gated business, that the first confirmed resource compresses risk and cost for every subsequent project, and that the right time to back the integrated Indian developer is now.

3.3 Ten-Minute Detailed Pitch

Opening — same framing as the five-minute pitch: problem, opportunity, why geothermal, why India, why now.]

Let me go deeper on five areas: our technology and project-development discipline, the project pipeline, the business model and economics, the competitive position, and the risks and what we are doing about them.

On technology. Geothermal is not a technology gamble — it is a risk-management discipline. The global standard for de-risking a geothermal resource before expensive drilling is the integrated 3G approach: geology, geophysics and geochemistry. We start with a geological assessment and literature review, drawing on the Geological Survey of India's atlas and the extensive Indian geoscientific literature. We then run geophysical surveys — magnetics, magnetotellurics, gravity, and where appropriate seismic — to image the subsurface. We do geochemical studies on hot springs and fluid samples, using silica and Na-K geothermometers to estimate reservoir temperature. We integrate these into a 3G resource model, and only then do we move to temperature-gradient drilling and slim-hole drilling to confirm the resource at depth. If the resource is confirmed, we move to production and injection well design, power plant EPC, and long-term

reservoir management with reinjection to maintain pressure and sustainability. Each stage has a clear cost band, a clear timeline, and a clear go/no-go gate. Capital is committed stage by stage, not in a single bet. Drilling is the largest cost and the largest risk — we acknowledge this explicitly, and the entire workflow is designed to minimise the number of dry or sub-commercial wells.

On the pipeline. We are pursuing a multi-province portfolio because geological risk is best diversified across provinces. In Uttarakhand, we have ongoing engagement with stakeholders for a geothermal demonstration project. On the Tapovan / Joshimath opportunity, we are developing geological and exploration strategy concepts. In Ladakh — the Puga and Chumathang belts — we are screening the relevance to both direct-use heating and high-enthalpy power, with awareness of ONGC's work at Puga. In Odisha, we are screening lower-enthalpy and potentially sedimentary or hot-aquifer opportunities. In Andaman & Nicobar, we are screening the volcanic-arc high-enthalpy relevance. We are deliberately not putting a single-nameplate-megawatt number on each site, because the responsible position at this stage is to label each by its exploration maturity and to progress them through stage gates. Pipeline value is created by drilling outcomes, not by slide-ware estimates.

On the business model and economics. Our long-term model is to develop, own and operate geothermal power projects via SPVs and JVs, with revenue from electricity sales under PPAs. Because the path to a first operating asset is long, we have three nearer-term supporting revenue streams: exploration and resource development services for state agencies and industrial offtakers; technical advisory and DPR / project development services; and direct-use geothermal projects in heating, greenhouse agriculture, tourism infrastructure and industrial heat. On economics, I want to be explicit that the figures we show are illustrative, based on global benchmarks and Indian-context adjustments — not Reverb clean project data. A reference 25-megawatt geothermal plant at an 85-percent capacity factor, with CAPEX in the range of three-and-a-half to four-and-a-half million US dollars per megawatt, a 25-year asset life, and an indicative Indian tariff band of six to nine rupees per kilowatt-hour, would typically show a project IRR in the ten-to-fourteen-percent band and an equity IRR in the twelve-to-sixteen-percent band. LCOE is competitive on a firm-power basis with storage-firmed solar and wind. The real economics will only be known after drilling, which is why we present sensitivity analysis on tariff, CAPEX, drilling success rate, capacity factor, well productivity, financing cost, exploration failure and construction delay — not a single point estimate.

On competitive position. The honest framing is not that we have no competition. ONGC is at Puga. NTPC and the large IPPs have balance sheets that dwarf ours. Oil and gas companies globally are entering geothermal because drilling is their core competence. International geothermal developers may look at India. Engineering and geological consulting firms exist. The differentiation we offer is narrow but defensible: we are India-specialised, we are integrated across the full workflow, we are pursuing a multi-site portfolio, and we are building relationships with the government, scientific, academic and industry ecosystem. Our weaknesses are equally honest: we have limited capital, we have not yet drilled a commercial well, and our brand recognition is below the large PSUs and IPPs. Our strategy is therefore partnership and complementary positioning, not head-to-head competition for the same site. We are most useful to a state agency or industrial offtaker as the developer that de-risks the resource before large capital is committed — a role the large players are structurally less suited to play early.

On risks. Exploration risk — the resource may not be commercially viable at a given site; mitigated by 3G de-risking and portfolio diversification across provinces. Drilling risk — wells may be dry or sub-commercial; mitigated by stage-gated capital commitment, slim-hole drilling before full-size wells, and where possible risk-sharing with drilling contractors and insurance instruments. Resource uncertainty — reservoir temperature and flow may differ from pre-drill estimates; mitigated by long-term well testing and conservative plant sizing. Financing risk — geothermal is capital-intensive with long lead times; mitigated by the three-layer capital structure and aggressive grant pursuit. Regulatory risk — permitting, water rights, environmental clearance; mitigated by the new National Geothermal Policy framework and early engagement with state agencies. Grid connectivity risk — remote resources may be far from grid; mitigated by considering direct-use, microgrid and industrial offtake models where grid is weak. Reservoir sustainability — over-production can deplete the resource; mitigated by reinjection and long-term monitoring. Water and geochemical issues — scaling, corrosion, contamination; mitigated by closed-loop binary systems and proper fluid management. Long project-development timelines — mitigated by realistic milestone planning and patient capital structure. Community and environmental considerations — mitigated by early stakeholder engagement, local benefit-sharing and rigorous environmental and social due diligence.

On the ask. We are seeking staged capital across three layers: corporate startup funding, exploration funding with a heavy grant component, and project-level capital once a resource is confirmed. In twelve months, we target completing pre-feasibility on the lead site and securing at least one exploration-stage grant or MoU. In twenty-four months, we target completing temperature-gradient drilling on the lead site and confirming resource indicators. In thirty-six months, we target reaching resource confirmation on the lead site and securing a PPA / offtake pathway and project financing structure.

The strategic prize is not the first project. It is the creation of an Indian geothermal development platform — a multi-site portfolio of operating assets across provinces, with exportable expertise to other emerging geothermal markets globally. Each confirmed resource compresses risk and cost for the next. We are looking for investors and partners who understand that geothermal is a disciplined, stage-gated business and that the right time to back the integrated Indian developer is now. Thank you.

4. One-Page Investment Teaser

Purpose: a single-page summary suitable for circulation to prospective investors, grant committees and strategic partners. Designed to be read in under three minutes and to trigger a request for the full pitch deck.

REVERCLEAN ENERGY PRIVATE LIMITED

Building India's Geothermal Energy Future

Company: Reverclean Energy Pvt. Ltd. (founded 2022), an Indian geothermal development company.

Founder & CEO: Ravi Martolia — clean-energy entrepreneur, engineer (B.Tech CS, Univ. of Delhi), mountaineer; working on Indian geothermal development since 2023.

Sector: Geothermal energy / clean energy / climate tech — exploration, drilling, power generation and direct-use applications.

Mission: Develop India's geothermal resources using Indian geological data, Indian scientific expertise and commercially viable project models.

Market opportunity: India's estimated ~10,600 MW geothermal potential (GSI / MNRE, 2022); installed capacity near zero. First National Geothermal Policy released by MNRE in September 2025. ONGC drilled India's first geothermal wells at Puga, Ladakh (2026). Inflection point reached.

Why geothermal: Only renewable providing firm, dispatchable baseload power (capacity factor 80–95%); direct-use heat applications; long asset life; low emissions; small land footprint.

Pipeline (by status): Uttarakhand / Himalayan (engagement); Tapovan-Joshimath (concept); Ladakh, Odisha, Andaman & Nicobar (screening). Multi-province portfolio approach to diversify geological risk.

Business model: Long-term: develop, own and operate geothermal power projects via SPVs/JVs (PPA revenue). Near-term: exploration services, technical advisory, direct-use projects.

Traction (honest): Active engagement with Uttarakhand stakeholders, scientific and academic experts; multi-province opportunity screening; government, scientific and industry stakeholder discussions; international technical collaboration discussions. No drilled commercial well, no operating revenue, no signed PPA as of date.

Climate impact: Geothermal generation avoids ~0.71 tCO₂e per MWh vs Indian grid (CEA baseline factor). Illustrative 25 MW plant at 85% CF ≈ 132,000 tCO₂e avoided per year. Diesel displacement in Ladakh / Himalayan regions is additional.

Funding strategy: Three layers: (A) corporate / startup equity; (B) exploration funding (grant-heavy); (C) project capital (equity + debt + grants) once resource confirmed.

Use of funds (illustrative): Team build-out, 3G exploration programme at lead site, temperature-gradient drilling, partnerships, working capital.

Milestones: 12-mo: pre-feasibility on lead site + exploration grant/MoU. 24-mo: temperature-gradient drilling + resource indicators. 36-mo: resource confirmation + PPA / financing pathway.

Differentiation: India-specialised integrated 3G capability; project-development mindset (not a lab/consultancy); multi-site portfolio; ecosystem relationships; ability to operate in difficult Himalayan/remote environments.

Competitive risks: Entry by ONGC / NTPC / large IPPs / international developers / oil & gas majors. Mitigation:

partnership and complementary positioning, early-mover advantage.

Contact: Ravi Martolia, Founder & CEO — Reverclean Energy Pvt. Ltd. (insert email / phone / registered office).

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5. Funding Ask & Use-of-Funds

Reverclean's funding strategy separates capital by purpose and risk profile. The three-layer structure reflects the reality that geothermal development moves through distinct risk stages, each requiring different capital types. Indicative ranges below are illustrative and to be confirmed with the founder based on detailed costed work programmes.

5.1 Three-Layer Capital Structure

Layer	Purpose	Capital type	Risk profile	Indicative range (illustrative)	Why investors fund this stage
A. Corporate / startup	Team, platform, scientific partnerships, working capital, governance	Equity (founder, angel, strategic, climate-tech VC)	Highest risk; pre-resource-confirmation	INR 5–15 crore (US\$0.6–1.8m)	Backs the team and platform ahead of resource confirmation; earliest-mover valuation
B. Exploration	3G surveys, slim-hole / temperature-gradient drilling, resource de-risking at lead site(s)	Grants (MNRE, DST, multilateral climate funds) + soft equity + strategic partner capital	High (drilling risk); mitigated by 3G de-risking	INR 15–40 crore (US\$1.8–5m) per site over 18–24 months	Grants subsidise high-risk exploration; strategic partners (PSU/industrial) gain resource access
C. Project capital	Confirmed-resource power plant construction (EPC, wells, plant, grid)	Project equity + debt (infra NBFCs, multilateral DFI) + Viability Gap Funding if applicable	Lower post-confirmation; infrastructure-grade	INR 250–500 crore (US\$30–60m) per ~25–40 MW project	Infrastructure-grade risk/return once resource confirmed; long-tenor PPA-backed cash flows

5.2 Use-of-Funds — Layer A (Corporate, illustrative)

Use category	Indicative %	Purpose
Core team (geoscience, drilling, project dev, finance)	35–40%	Build integrated technical and commercial capability
Lead-site exploration programme (3G studies)	25–30%	Surface science + early de-risking before Layer B
Partnerships & advisory (scientific, legal, environmental)	10–15%	MoUs, expert engagement, regulatory navigation
Governance, compliance, IP	5–8%	Company secretarial, audits, IP protection
Working capital & contingency	10–15%	Operational runway and risk buffer

5.3 Why investors fund Reverclean at each stage

- **Layer A — because:** the only point in the geothermal value chain where an investor can access the full platform upside before resource confirmation. High risk, but maximum upside if the team executes and the resource is confirmed.

- **Layer B — because:** drilling risk is the single biggest barrier in geothermal, and the stage where grant capital is most available (MNRE, DST, multilateral climate funds). Strategic partners co-fund to gain site access without taking full drilling risk.
- **Layer C — because:** once the resource is confirmed, the project becomes infrastructure finance — long-tenor, PPA-backed cash flows attractive to infra NBFCs, DFIs and pension/insurance capital. This is the lowest-risk layer and the one where institutional capital is most comfortable.

Indicative ranges above are placeholders for founder confirmation. They should be replaced with site-specific costed work programmes before circulation to investors.

6. 3-Year Milestone Roadmap

The roadmap is built around stage gates: each phase produces a verifiable output that justifies committing capital to the next phase. A failure at any gate triggers re-evaluation rather than automatic capital commitment.

6.1 Milestone Roadmap Table

Phase	Timeline	Key milestones	Go/no-go gate	Indicative capital layer
Phase 1 — Platform & pre-feasibility	Months 0–12	Team build-out; lead-site selection; 3G surface studies; stakeholder MoUs; secure exploration grant; DPR-level concept for lead site	Pre-feasibility outcome + grant/MoU secured	Layer A + early Layer B (grant)
Phase 2 — Exploration drilling	Months 12–24	Temperature-gradient / slim-hole drilling at lead site; resource indicators (temperature, flow); updated 3G model; PPA / offtake discussions begin	Resource indicators commercially promising (or stop / re-site)	Layer B (grant + soft equity + strategic)
Phase 3 — Resource confirmation & financing	Months 24–36	Production / injection well design; full-size well drilling; reservoir confirmation; PPA / offtake agreement; project finance term sheet	Resource confirmed commercially + PPA + financing structure in place	Layer C (project equity + debt)
Phase 4 — Construction (post-36-month)	Months 36–60	Power plant EPC; grid interconnection; commissioning; COD	COD achieved; revenue begins	Layer C (drawn)

6.2 Milestone Detail — 12 / 24 / 36 months

12-month milestone

- Complete pre-feasibility (3G surface studies) on the lead site.
- Secure at least one exploration-stage grant or MoU (MNRE / state / multilateral).
- Build core team: geoscientist, drilling advisor, project developer, finance lead.
- Formalise at least two scientific / academic partnerships.
- Complete regulatory mapping (National Geothermal Policy compliance, environmental clearance pathway).

24-month milestone

- Complete temperature-gradient / slim-hole drilling at lead site.
- Confirm resource indicators — temperature and flow consistent with commercial viability thresholds.
- Update 3G resource model with sub-surface data.
- Initiate PPA / offtake discussions with prospective offtakers (DISCOM, industrial, C&I).
- Shortlist 1–2 additional pipeline sites for parallel screening.

36-month milestone

- Reach resource confirmation on lead site via full-size production well.
- Secure PPA / offtake term sheet for lead project.

- Secure project financing structure (equity + debt + grants) for lead project construction.
- Move lead project to EPC construction phase.
- Begin Phase 1 (pre-feasibility) on second pipeline site.

7. Financial Framework & Assumptions

All figures in this section are illustrative, based on publicly available global geothermal benchmarks (IEA, IRENA, World Bank ESMAP Geothermal Handbook, IGA) adjusted for Indian context. They are NOT Reverclean project data and must be replaced with site-specific numbers once drilling results are available.

7.1 Reference Project Assumptions (Illustrative)

Parameter	Value (illustrative)	Basis / source
Reference project capacity	25 MW	Typical demonstration / early commercial scale
Capacity factor	85%	Global geothermal average (IEA / IRENA)
Annual generation	~186,000 MWh/yr	25 MW × 8,760 h × 0.85
Plant life	25–30 years	Standard geothermal asset life
CAPEX — total	~US\$3.5–4.5m/MW (INR 30–38 cr/MW)	Global benchmarks; India-adjusted
CAPEX breakdown — exploration	~10–15% of CAPEX	Surface science + slim-hole drilling
CAPEX breakdown — drilling (production + injection wells)	~30–40% of CAPEX	Largest single cost component; high risk
CAPEX breakdown — power plant (turbine + BOP)	~30–35% of CAPEX	Binary or flash plant depending on resource
CAPEX breakdown — transmission / interconnection	~5–8% of CAPEX	Site-specific; can be higher in remote regions
CAPEX breakdown — contingency	~10% of CAPEX	Standard for early-stage geothermal
O&M cost	~US\$100–150/kW/yr	Global benchmark; India-adjusted lower
Indicative electricity tariff	INR 6–9/kWh	Indian RE tariff band; geothermal-specific tariff under policy
Debt : equity ratio	70 : 30	Typical infrastructure project finance
Cost of debt	~9–11% p.a. (INR)	Indian infra debt benchmark
Cost of equity	~14–16% p.a.	Reflecting geothermal + India risk premium
Tax rate	~25.17% (corporate)	Indian corporate tax rate
Project IRR (illustrative)	10–14%	Highly sensitive to tariff + drilling outcome
Equity IRR (illustrative)	12–16%	Post debt + tax
Payback period (illustrative)	7–9 years	From COD
LCOE (illustrative)	INR 4.5–6.5/kWh equivalent	Competitive with storage-firmed RE

8. Financial Sensitivity Analysis

Sensitivity analysis is the honest way to present early-stage geothermal economics. The table below shows the directional impact on Project IRR of changes to each key driver, holding other variables constant. “High” and “Low” columns reflect realistic upside and downside scenarios based on industry experience.

8.1 Sensitivity Summary

Driver	Base case	Low scenario	High scenario	IRR impact direction	Notes
Electricity tariff	INR 7.5/kWh	INR 6/kWh	INR 9/kWh	High sensitivity	±INR 1/kWh can move Project IRR by ±2–3 percentage points
CAPEX	US\$4.0m/MW	US\$4.5m/MW	US\$3.5m/MW	High sensitivity	Drilling cost overruns are the main driver
Drilling success rate	70%	50%	85%	Very high sensitivity	A single dry well can jeopardise project economics
Capacity factor	85%	75%	92%	High sensitivity	Reflects reservoir productivity and plant availability
Well productivity (flow rate / well)	Industry base	–20%	+15%	High sensitivity	Drives number of wells required for target capacity
Financing cost (debt rate)	10% p.a.	12% p.a.	8.5% p.a.	Medium sensitivity	Lower for multilateral / DFI-backed debt
Exploration failure (full loss at site)	Probability: low-moderate	Loss of exploration capital + re-siting	N/A	Asymmetric / catastrophic	Mitigated by stage gates and portfolio approach
Construction delay	24 months to COD	30–36 months	20 months	Medium sensitivity	Delays push revenue and inflate interest during construction

8.2 Interpretation for investors

- Drilling success rate is the single largest driver of project IRR. A dry or sub-commercial well at the production stage can convert a viable project into a write-off. This is why stage-gated exploration and portfolio diversification are essential, not optional.
- Tariff and CAPEX are the second-tier drivers. Indian tariff certainty (through a geothermal-specific tariff or PPA structure) materially de-risks the investment case.
- Capacity factor uncertainty persists until wells are flow-tested at production scale — conservative plant sizing is appropriate.
- Financing cost is a meaningful but secondary driver; access to concessional / DFI capital is a strong lever.
- Exploration failure is asymmetric — the downside is total loss of exploration capital, which is why Layer B capital should be grant-heavy and why Layer C capital should only commit post-confirmation.

8.3 Recommended base / downside / upside IRR framing

Scenario	Tariff	CAPEX	Drilling success	Capacity factor	Project IRR (illustrative)
Downside	INR 6/kWh	US\$4.5m/MW	55%	78%	6–9%
Base case	INR 7.5/kWh	US\$4.0m/MW	70%	85%	10–14%
Upside	INR 9/kWh	US\$3.5m/MW	85%	92%	14–18%

These are scenario bands, not forecasts. They demonstrate that even under conservative assumptions, geothermal project economics are credible — and that the key risks are identifiable and mitigable.

9. Climate Impact Calculation

Climate impact is calculated transparently using the standard methodology: annual megawatt-hours generated multiplied by the Indian grid emissions factor. The grid emissions factor used is sourced from the Central Electricity Authority (CEA) CO₂ Baseline Database, the official Indian inventory used for CDM projects and corporate GHG disclosures.

9.1 Methodology

Element	Value	Source / basis
Grid emissions factor (India)	~0.71 tCO ₂ e/MWh	CEA CO ₂ Baseline Database (latest published version; commonly cited value ~0.71–0.73 tCO ₂ e/MWh)
Geothermal direct emissions factor (closed-loop binary)	~0–0.05 tCO ₂ e/MWh	Near-zero for closed-loop binary systems; modest for flash plants
Net emissions avoided per MWh	~0.66–0.71 tCO ₂ e/MWh	Grid factor minus geothermal direct emissions
Diesel generator emissions factor	~0.80 tCO ₂ e/MWh	IPCC / DEFRA diesel generation factor; used for remote-region displacement

9.2 Per-Project Illustrative Calculation

Parameter	Value	Calculation
Reference capacity	25 MW	—
Capacity factor	85%	—
Annual generation	~186,150 MWh/yr	25 MW × 8,760 h × 0.85
Grid emissions factor	0.71 tCO ₂ e/MWh	CEA baseline
Annual CO ₂ e avoided (gross basis)	~132,167 tCO ₂ e/yr	186,150 × 0.71
25-year lifetime CO ₂ e avoided	~3.3 million tCO ₂ e	132,167 × 25

9.3 Portfolio Scenarios — Conservative / Base / Upside

The portfolio scenarios below are illustrative and assume a staggered build-out of capacity across multiple sites. They are NOT forecasts and assume successful exploration and financing at each stage.

Scenario	Cumulative capacity by Yr 10	Annual MWh by Yr 10	Annual CO ₂ e avoided (t/yr)	Cumulative CO ₂ e avoided by Yr 10 (t)
Conservative	50 MW	~372,000	~264,000	~1.3 million
Base case	100 MW	~745,000	~529,000	~2.6 million
Upside	200 MW	~1,490,000	~1,058,000	~5.3 million

9.4 Additional environmental & social benefits

- **Diesel displacement:** Diesel displacement in Ladakh and Himalayan regions, where diesel generators produce high-cost, high-emission electricity and heating (Leh alone generates an estimated ~28,000 tonnes CO₂/yr from diesel — Stanford/IGA reference).

- **Direct-use heat:** direct-use geothermal heat can replace coal, diesel and LPG in space heating, greenhouse agriculture, aquaculture, food drying and light industrial process heat.
- **Firm renewable power:** firm renewable power reduces the need for battery storage and fossil-fuel peaking capacity, indirectly avoiding the embedded emissions of those alternatives.
- **Land footprint:** geothermal plants typically require ~10–20% of the land area per MW of comparable solar PV, reducing land-use conflict in densely populated India.
- **Energy security:** reduced reliance on imported coal, gas and oil; improved energy security in remote and border regions.

All CO₂e figures are illustrative calculations based on stated assumptions, not Reverclean measured impact. Actual impact will depend on installed capacity, capacity factor achieved and grid emissions factor at time of generation.

10. Competitive Landscape

Reverclean does not claim “no competition.” The honest framing is that the market is early, several large players are exploring entry, and no integrated private Indian geothermal developer has yet established a multi-site pipeline. The table below positions Reverclean against each major category.

10.1 Competitive Positioning Matrix

Competitor category	Strengths	Weaknesses vs Reverclean	Reverclean’s relative advantage
Large renewable developers (IPPs)	Massive capital, PPA execution, grid expertise	No geothermal drilling capability; no geoscience depth; intermittent-renewable mindset	Integrated geothermal specialisation; subsurface expertise
Oil & gas companies (ONGC, OIL)	World-class drilling capability, deep balance sheets, ONGC active at Puga	Geothermal is non-core; slow corporate innovation; limited commercial geothermal power operating experience	Agility; geothermal-first mindset; commercial project-development focus vs. pilot / R&D mindset
Government / PSU programs (ONGC Energy Centre, GSI)	Mandate, data, public funding, Puga pilot	Bureaucratic pace; not commercially structured as a developer	Commercial velocity; integrated developer (not a research body)
International geothermal developers	Decades of operating experience, technology, capital	Limited India ground knowledge; slow market entry; high overhead	India-specialised ecosystem relationships; local field knowledge; regulatory navigation
Engineering / geological consulting firms	Geoscience depth, advisory revenue	No project execution / risk-taking; advisory mindset, not developer	Developer mindset; willing to take project risk and own assets
NTPC / large thermal IPPs	Power plant EPC capability, offtake relationships	Limited geothermal-specific geoscience; thermal-power DNA	Geothermal specialisation; partnership opportunity rather than competition

10.2 Reverclean’s Defensible Advantages

- **India specialisation:** the only integrated 3G geothermal development platform focused exclusively on the Indian market.
- **Early-mover positioning:** first-mover advantage in assembling a multi-province pipeline before large players commit serious capital.
- **Local field knowledge:** Himalayan, volcanic-arc and tectonic-lineament field knowledge, including difficult-terrain operating capability rooted in the founder’s mountaineering background.
- **Integrated approach:** end-to-end from surface science to power plant ownership — not a single-point service provider.
- **Ecosystem relationships:** relationships with government, scientific, academic and industry stakeholders across the geothermal value chain.
- **Project-development mindset:** explicit focus on commercial project development rather than pilot / R&D execution.
- **Difficult-environment operating capability:** founder and team capable of operating in difficult Himalayan, Ladakh and remote environments where much of India’s high-enthalpy resource is located.

10.3 Honest Weaknesses & Competitive Risks

- **Capital constraint:** Limited capital base relative to PSUs / large IPPs / international developers.
- **Track record:** No commercial geothermal well drilled yet; track record to be built.
- **Brand recognition:** Brand recognition below ONGC, NTPC and large IPPs in the Indian power sector.
- **Competitive entry risk:** Large players (ONGC at Puga, NTPC, large IPPs, international developers) can enter and outspend Reverbclean at any time.
- **Talent risk:** Human capital in Indian geothermal is thin; competition for geoscientists and drilling engineers will intensify.
- **Supply-chain risk:** Drilling contractors and geothermal EPC providers are limited in India — reliance on international contractors may inflate costs.

10.4 Strategic Response

- **Partnership over competition:** position Reverbclean as a complementary developer that de-risks resources before large-capital commitment by PSUs / IPPs — not as a head-to-head competitor for the same sites.
- **Speed and focus:** secure pipeline and relationships at multiple sites before large players commit significant capital.
- **Blended capital:** pursue grants, soft capital and strategic co-investment to extend runway and credibility.
- **IP and data advantage:** build proprietary 3G resource models and site-specific data that become a defensible asset over time.

11. Risks & Mitigations

Geothermal development is a risk-management business. This section presents the major risks honestly and the mitigation strategy for each. Investors should evaluate Reverclean not on the absence of risk, but on the discipline with which risk is identified, staged and mitigated.

Risk	Description	Mitigation strategy
Exploration risk	Surface studies indicate a resource that does not prove commercially viable at depth	Stage-gated 3G workflow; portfolio across provinces; grant-funded exploration; go/no-go gates
Drilling risk	Wells are dry, sub-commercial, or experience mechanical failure	Slim-hole / temperature-gradient drilling before full-size wells; risk-sharing with drilling contractors; insurance where available; conservative well count
Resource uncertainty	Reservoir temperature, flow and sustainability differ from pre-drill estimates	Long-term well testing; conservative plant sizing; phased capacity installation; reservoir simulation modelling
Financing risk	Inability to raise Layer B and Layer C capital at required scale and cost	Three-layer capital strategy; aggressive grant pursuit; strategic partner co-investment; milestone-gated fundraising
Regulatory risk	Delays in permits, environmental clearance, water rights, PPA approvals	Early engagement with MNRE / state agencies; leveraging the new National Geothermal Policy framework; experienced legal counsel
Grid connectivity risk	Remote resources far from transmission network	Consider direct-use, microgrid, industrial offtake, and captive models where grid is weak; partner with CTU / state transmission utilities
Reservoir sustainability	Over-production depletes resource over time	Reinjection design; long-term reservoir monitoring; conservative production rates; make-up well programme
Water / geochemical issues	Scaling, corrosion, contamination of fluids	Closed-loop binary systems where appropriate; proper materials selection; fluid management plan; environmental monitoring
Long development timelines	5–7 years from concept to COD; capital lockup	Realistic milestone planning; patient capital structure; nearer-term revenue from services / direct-use to fund platform
Community / environmental	Land use, water use, social licence, ecological sensitivity in Himalayan / protected areas	Early stakeholder engagement; local benefit-sharing; rigorous ESIA; alignment with ESG standards and FPIC principles
Market / tariff risk	Insufficient tariff certainty or unwilling buyers	Geothermal-specific tariff advocacy under National Policy; multiple offtake options (DISCOM, C&I, industrial, captive)
Technology obsolescence	Newer geothermal technologies (AGS / EGS) shift competitive landscape	Monitor and selectively adopt advanced geothermal technologies; maintain flexibility in technology choice per site
FX / macro risk	Imported equipment exposure to INR depreciation; interest rate cycles	Hedging strategy; maximise local content where possible; concessional FX financing via DFIs
Geopolitical / border risk	Some high-potential sites (Ladakh, Himalayan border regions) carry strategic sensitivity	Close coordination with state and central authorities; security clearances; alignment with national energy-security priorities

12. 30 Investor Due-Diligence Questions & Answers

These are the difficult questions investors are most likely to ask. Answers are honest, factual and avoid exaggeration. Where the honest answer is “not yet,” it is stated plainly — along with the plan to change that answer.

1. What is the proven resource?

No resource is yet proven at commercial scale. We have surface-science indications at the lead site based on 3G assessment (geology, geophysics, geochemistry), but commercial viability can only be confirmed through drilling. The honest status is: promising surface indications, subsurface confirmation pending.

2. Have you drilled a successful geothermal well?

No. Reverclean has not yet drilled a commercial geothermal well. Our first drilling activity will be temperature-gradient / slim-hole drilling at the lead site, planned for the 12–24-month window, subject to funding. We are not presenting pilot results as commercial proof.

3. What is your current revenue?

No operating revenue from geothermal power generation. Nearer-term revenue from exploration services, advisory and direct-use projects is part of the business model but is not yet material. The Company is pre-revenue at the project level.

4. Who will buy the electricity?

Target offtakers include state DISCOMs under PPAs, C&I / industrial offtakers seeking firm clean power (especially for 24x7 operations), captive industrial users with heat and power needs, and potentially government-backed offtake under the National Geothermal Policy framework. No PPA is signed yet; PPA / offtake discussions are part of the 24–36-month milestone.

5. What is your CAPEX per MW?

Illustrative benchmark: ~US\$3.5–4.5m/MW (INR 30–38 crore/MW) for a 25 MW project, based on global benchmarks adjusted for Indian context. The largest component is drilling (~30–40% of CAPEX). Actual CAPEX will be site-specific and confirmed post-drilling.

6. What is your expected LCOE?

Illustrative LCOE: INR 4.5–6.5/kWh equivalent, competitive on a firm-power basis with storage-firmed solar and wind. Highly sensitive to tariff, capacity factor and drilling outcome. Not a Reverclean-measured figure — based on industry benchmarks.

7. How will you finance drilling?

Through Layer B capital — a combination of MNRE / DST / multilateral climate-fund grants (drilling risk is precisely where grant capital is most available), soft equity from strategic partners (PSUs / industrial offtakers gaining site access), and risk-sharing arrangements with drilling contractors. We will not finance drilling through pure commercial equity alone — that is structurally uneconomic given the risk.

8. What happens if the first well fails?

Stage-gated capital means a failed well at the slim-hole / temperature-gradient stage does not trigger full project CAPEX commitment. The portfolio approach means capital is re-allocated to the next site. A failed production well, post-confirmation, is more serious — mitigated by conservative well programmes, insurance where available, and make-up well planning. We acknowledge openly that drilling failure is a real risk and the single biggest one in geothermal.

9. What is your competitive moat?

Integration (3G capability + project development + asset ownership), India specialisation, multi-site portfolio, ecosystem relationships, and difficult-terrain operating capability. None of these is impregnable — the moat is built progressively through executed milestones, proprietary subsurface data, and accumulated relationship capital. Early mover advantage is real but time-limited.

10. Why can't ONGC / NTPC / large renewable companies do this?

They can, and some are starting (ONGC at Puga). But large PSUs move slowly, geothermal is non-core for most, and they lack an integrated commercial-geothermal-developer DNA. Their natural role is to partner with a developer who de-risks the resource before they commit large capital. International developers lack Indian ground knowledge and move slowly. Large IPPs lack subsurface capability. The window for an integrated Indian specialist developer is real but finite — which is why speed of execution matters.

11. What government support is required?

Three things: (1) continued implementation of the September 2025 National Geothermal Policy including any geothermal-specific tariff or VGF; (2) exploration-stage grants from MNRE / DST / state governments for high-risk drilling; (3) facilitation of permits, environmental clearance and grid connectivity, especially in remote and Himalayan regions. We are not asking government to underwrite commercial risk — we are asking for the policy and grant support that is standard globally for geothermal exploration.

12. What is the regulatory pathway?

The September 2025 National Geothermal Policy provides the overarching framework. Site-specific pathway includes: exploration licence / allocation through the relevant state and central agencies; environmental clearance under EIA norms; water rights; grid connectivity approval through CTU / state transmission utility; PPA / tariff approval by SERC where applicable. We are mapping the pathway for each pipeline site in parallel with pre-feasibility.

13. How scalable is geothermal in India?

India's estimated 10,600 MW potential is large; capturing even 5–10% over 15–20 years is a multi-billion-dollar opportunity. Scalability is constrained not by resource but by drilling capability, capital, and skilled geoscientists — all of which Reverclean's platform approach is designed to build. The portfolio approach across provinces is the correct scaling structure.

14. What is your realistic timeline to first revenue?

Honest timeline: 4–5 years from start of serious exploration funding to first power COD at the lead site. Nearer-term service / advisory / direct-use revenue may begin earlier (12–24 months). Investors who need 2–3-year exits should not invest in geothermal — patient capital is essential.

15. What is the biggest technical risk?

Drilling risk — specifically, the risk that a resource indicated by surface science does not prove commercially productive at depth. This is mitigated by stage-gated 3G de-risking, slim-hole drilling before full-size wells, portfolio diversification, and conservative well count. It is not eliminable — only manageable.

16. What is the biggest financial risk?

Layer B capital gap — the risk that grant and soft-equity capital is not available at the scale and timing required to fund exploration drilling before project-level capital can be raised. Mitigation: aggressive grant pursuit, strategic-partner co-investment, and milestone-gated fundraising that aligns capital raises with de-risking outcomes.

17. What evidence validates the resource?

Surface-science evidence at the lead site: geological mapping, hot-spring geochemistry (estimated reservoir temperature from Na-K and silica geothermometers), and geophysical anomalies consistent with a geothermal system. This is preliminary evidence, not proof — proof requires drilling. We will share site-specific data under NDA in detailed diligence.

18. What exactly are you raising money for?

Layer A: corporate / startup equity to build the team and platform, complete lead-site pre-feasibility, secure partnerships and grants. Layer B (next raise): exploration drilling capital, grant-heavy. Layer C (project-level, post-confirmation): project equity + debt. The current raise is Layer A, with a clear roadmap to Layers B and C.

19. Why you, and not an experienced international team?

International teams lack Indian ground knowledge, ecosystem relationships, and the regulatory navigation that takes years to build. My background as an engineer and mountaineer, combined with active engagement across the Indian geothermal ecosystem since 2023, provides a foundation that an international team would take years to replicate. We will, however, bring in international technical advisors and drilling expertise where required — the model is India-grounded execution with international technical inputs, not isolationism.

20. What is your team depth today?

Founder-led with active engagement of scientific and academic experts. Building core team (geoscientist, drilling advisor, project developer, finance lead) is a primary use of Layer A capital. Honest assessment: the team is currently founder + network, not yet a full bench — team build-out is a top priority.

21. How do you handle environmental and social risk in sensitive Himalayan / protected areas?

Rigorous ESIA, early stakeholder engagement, FPIC principles where indigenous communities are involved, alignment with IFC Performance Standards and ESG frameworks, local benefit-sharing arrangements, and conservative plant siting. Geothermal's small surface footprint is a real advantage here, but we treat community and environmental considerations as a first-order design constraint, not an afterthought.

22. What is your exit for investors?

Multiple pathways: portfolio company sale to a strategic (large IPP / PSU / international developer) once a multi-site portfolio is operating; secondary sale to infrastructure / pension capital at the project level once assets are de-risked and generating cash flows; or IPO at sufficient scale. Early-stage (Layer A) investors exit at Layer C or post-COD via secondary; project-level (Layer C) investors exit via refinancing or portfolio sale post-COD.

23. How do you handle the long lead time to revenue?

Three ways: (1) nearer-term revenue from exploration services, advisory and direct-use projects; (2) milestone-gated capital structure that matches investor risk appetite to project stage; (3) patient capital structure that rewards long-duration cash flows. Investors who cannot accept 5–7-year horizons to first power COD are not the right investors for geothermal.

24. What is your relationship with ONGC / ONGC Energy Centre?

We are aware of and respect ONGC Energy Centre's pioneering work at Puga. Our positioning is complementary, not competitive — we are an integrated commercial developer, while ONGC Energy Centre operates in a national-mission / R&D mode. Where appropriate, partnership with ONGC / ONGC Energy Centre on specific sites is a possibility we are open to.

25. What happens if the National Geothermal Policy implementation is slow?

Policy implementation risk is real. Mitigation: (1) pursue sites and offtake structures that work under existing regulatory frameworks (captive, industrial, direct-use) even before full policy implementation; (2) active engagement with MNRE and state agencies to support implementation; (3) portfolio diversification across states with different paces of implementation. We are not solely dependent on rapid federal implementation.

26. What is your realistic capacity build-out over 10 years?

Illustrative, not a forecast: Conservative 50 MW, Base 100 MW, Upside 200 MW cumulative by Year 10, subject to exploration success and financing at each stage. These are clearly labelled scenarios, not commitments. The honest position is that capacity build-out is gated by exploration outcomes, not by ambition.

27. How do you price your exploration services if no one in India buys them yet?

Target customers include state government agencies (which have geothermal mandates but lack internal capability), industrial offtakers evaluating geothermal for captive power / heat, and other developers entering the market who need de-risking support. Pricing is benchmarked against international geothermal consulting

rates and Indian-context adjustments. The market is nascent but real — the September 2025 policy will increase demand for exactly these services.

28. How do you protect against cost overruns on drilling?

Three ways: (1) stage-gated commitment — slim-hole drilling before full-size production wells; (2) risk-sharing contracts with drilling contractors (metered pricing, turnkey elements where feasible); (3) contingency budget (illustrative ~10% of CAPEX) and conservative well count. Drilling cost overruns are the most common cause of geothermal project distress globally — we treat this as a primary design constraint.

29. What is your IP / proprietary advantage?

Currently: proprietary 3G resource models and site-specific geological data being built at each pipeline site. Over time, accumulated Indian geothermal subsurface data and operating experience become a defensible data and capability advantage. We will formalise IP protection for specific methodologies as they mature. The deepest moat in geothermal is executed experience, not patents.

30. Why should we invest now rather than wait for drilling results?

Because Layer A investment is precisely the capital that enables drilling results. Waiting for drilling results means investing at Layer C pricing, with materially lower upside and a different risk/return profile. Layer A investors take the highest risk but capture the full platform upside; Layer C investors take infrastructure-grade risk for infrastructure-grade returns. The right answer depends on the investor's mandate — but the platform upside is available only at Layer A.

13. Data Points Still Needed from Founder

The following data points are required to convert this pitch deck from a strong illustrative framework into a verified, investor-ready document. Items marked [Founder-only] should not be shared externally until confirmed.

13.1 Company & Founder

- Registered office address, CIN, GST, PAN (for teaser cover / due diligence).
- Cap table as of latest date [Founder-only].
- Detailed founder CV with specific geothermal engagements, dates and outcomes.
- List of team members / advisors with roles and time commitment.
- Any prior funding raised (amount, source, date, instrument) [Founder-only].

13.2 Pipeline & Traction (per site)

- For each pipeline site (Uttarakhand, Tapovan, Ladakh, Odisha, Andaman & Nicobar): current status, surface owner, relevant permits, scientific partner, next milestone, indicative timeline.
- Names and roles of government / scientific / academic / industry stakeholders engaged (with permission to reference).
- Any executed MoUs / letters of intent / letters of support — attach as annexures.
- Dates of key engagement milestones (first contact, latest meeting, agreed next steps).
- Specific direct-use opportunities under evaluation (greenhouse, heating, tourism, industrial heat).

13.3 Technical

- Site-specific surface-science data (geological, geophysical, geochemical) for the lead site.
- Estimated reservoir temperature ranges from geothermometers (if available).
- Any prior temperature-gradient / heat-flow data for the lead site.
- Drilling contractor availability and indicative cost quotations (Indian / international).
- Power plant technology preference (binary vs flash) per site, with rationale.

13.4 Commercial & Financial

- Indicative PPA tariff discussions or offtaker interest signals (without breaching confidentiality).
- Target Layer A raise amount and proposed instrument (equity / CCPS).
- Indicative valuation range or valuation methodology [Founder-only].
- Detailed costed work programme for Layer A and Layer B.
- Target grant programs and status of any applications.

13.5 Regulatory & Environmental

- Status of any exploration licence / allocation at the lead site.
- Environmental clearance pathway assessment for the lead site.
- Water rights / land access status at the lead site.

- Grid connectivity assessment for the lead site.

13.6 Climate Impact

- Founder's preferred grid emissions factor version (latest CEA baseline) for final calculations.
- Any site-specific diesel displacement data for Ladakh / Himalayan direct-use scenarios.

14. Claims Requiring Verification Before External Use

The following claims appear in this draft and MUST be verified against primary sources before the document is circulated externally. Until verified, treat each as a placeholder, not a fact.

#	Claim as stated	Verification source	Action required
1	India has ~10,600 MW geothermal potential	MNRE / GSI Geothermal Atlas of India 2022	Confirm exact figure and citation; check for updated atlas
2	GSI mapped 381 thermally anomalous areas	MNRE Lok Sabha reply (July 2024)	Confirm primary source and date
3	India's first National Geothermal Energy Policy released September 2025	MNRE notification	Obtain policy document; confirm date and provisions
4	ONGC drilled India's first geothermal wells at Puga, Ladakh	ONGC / MNRE press releases	Confirm date, depth, status; verify "first" claim
5	SCCL commissioned 20 kW pilot in Manuguru, Telangana	MNRE PIB press release	Confirm capacity, technology and current operational status
6	Himalayan province potential ~134 MW	Academic literature (ScienceDirect 2024)	Confirm source; note range of estimates in literature
7	300+ geothermal fields in Indian Himalayas	Nature / academic sources	Confirm primary source and definition of "field"
8	CEA grid emissions factor ~0.71 tCO ₂ e/MWh	CEA CO ₂ Baseline Database (latest version)	Confirm latest published version and exact value
9	Leh diesel generators emit ~28,000 tCO ₂ /yr	Stanford / IGA geothermal conference paper	Confirm source, year and methodology
10	Global geothermal installed capacity ~16 GW	ThinkGeoEnergy / IGA annual report	Confirm latest figure and year
11	Geothermal capacity factor 80–95%	IEA / IRENA benchmarks	Confirm source and range for binary vs flash
12	Global geothermal CAPEX US\$3.5–4.5m/MW	IEA / IRENA / World Bank ESMAP	Confirm latest benchmark and India-adjusted range
13	Reference plant life 25–30 years	Industry benchmarks	Confirm; some sources cite 30–50 years
14	O&M cost US\$100–150/kW/yr	IEA / IRENA benchmarks	Confirm and India-adjust
15	Engagement with Uttarakhand stakeholders	Founder records	Document status, dates, counterparties; obtain permission to reference
16	Engagement with scientific / academic experts	Founder records	Document names, institutions, nature of engagement
17	Discussions with government / industry stakeholders	Founder records	Document specifics; distinguish discussions from commitments
18	International geothermal networking discussions	Founder records	Document counterparties and substance
19	India net-zero by 2070; 2030 non-fossil target	India NDC / LT-LEDS	Confirm exact target language and source
20	All financial figures in Sections 7–8	Industry benchmarks	Confirm against latest published sources; mark clearly as illustrative

No claim in this document should be presented to an external investor, grant body or partner until the corresponding verification action above is complete. The credibility of the pitch depends on it.

15. Appendix — Sources & References

Public sources referenced or relied upon in the preparation of this document. All sources accessed in September 2026.

Government & policy

- Ministry of New and Renewable Energy (MNRE), Government of India — National Policy on Geothermal Energy (15 September 2025).
- MNRE — Press release on geothermal RDD&D projects (PIB, PRID 2039089).
- Geological Survey of India (GSI) — Geothermal Atlas of India (2022).
- Central Electricity Authority (CEA) — CO₂ Baseline Database (latest published version).
- NITI Aayog — India Long-Term Low-Carbon Development Strategy (LT-LEDS) and Net Zero 2070 commitment.

Industry & academic

- Economic Times Energy — "Geothermal energy exploration in India: 10,600 MW potential, pilot plant operational" (31 July 2024).
- Insights on India — "Geothermal Power Potential in India" (7 August 2024).
- ScienceDirect (Renewable & Sustainable Energy Reviews) — "An assessment of prospects of geothermal energy in India" (October 2024).
- Nature Scientific Reports — "Characterization of geothermal resources and estimation of... Badrinath geothermal field" (October 2025).
- Stanford / IGA Geothermal Conference papers — direct-use geothermal for space heating at Chumathang, Ladakh.
- ThinkGeoEnergy — "India publishes National Policy setting a framework for geothermal" (17 September 2025).
- Enerdata — "India launches first national policy on geothermal energy" (17 September 2025).
- Lexology — "India's First National Geothermal Energy Policy Unveiled" (28 October 2025).
- ONGC Energy Centre — public communications on Puga Valley geothermal pilot, Ladakh.
- Republic World / Current Affairs — coverage of Puga Valley wells inauguration (2026).

Global benchmarks

- International Energy Agency (IEA) — Renewables Market Reports.
- International Renewable Energy Agency (IRENA) — Renewable Power Generation Costs.
- World Bank ESMAP — Geothermal Handbook: Planning and Financing Power Generation.
- International Geothermal Association (IGA) — global capacity and capacity factor data.

Notes on use of sources

Where sources disagree (e.g., estimates of Himalayan geothermal potential range from ~134 MW to several hundred MW depending on methodology), the more conservative figure is used and the range noted. All forward-looking figures in financial and climate impact sections are clearly labelled as illustrative assumptions based on these sources, not as Reverclean project data.

