GEODYN™
SOLUTIONS

$500 MILLION INVESTMENT IN ORGANIC RARE EARTH MINING IN MONGOLIA

www.geodynsolutions.com

EXECUTIVE SUMMARY

Geodyn Solutions proposes a $500 million investment to develop a sustainable rare earth element (REE) mining project in Mongolia, one of the world's largest untapped sources of rare earth minerals. This project will utilize cutting-edge organic mining technologies, ensuring minimal environmental impact while maximizing economic returns. Additionally, the project includes a $100 million investment in advanced mining equipment and a $100 million investment in a 60 MW hybrid power generation system, utilizing Organic Rankine Cycle (ORC) power units, solar, and wind energy to provide reliable, sustainable energy for mining operations. A $50 million contingent fee is allocated to address unforeseen costs, ensuring project resilience and operational flexibility. This investment aligns with global trends in clean energy and critical mineral independence, providing a high return on investment (ROI) and establishing Geodyn Solutions as a leader in responsible rare earth extraction.

INVESTMENT OVERVIEW

TOTAL INVESTMENT: $500 MILLION (INCLUDING $100 MILLION FOR POWER GENERATION AND $50 MILLION CONTINGENCY FUND)

PROJECT DURATION: 15 YEARS (7 YEARS OF PEAK PRODUCTION)

MINEABLE RESERVE ESTIMATE: 31 MILLION TONS OF RARE EARTH-BEARING MATERIAL

TECHNOLOGY: ORGANIC LEACHING, BIO-MINING, MICROBIAL-ASSISTED EXTRACTION

ANNUAL PRODUCTION TARGET: 25,000 METRIC TONS OF REO (RARE EARTH OXIDES)

TARGET ELEMENTS: NEODYMIUM, PRASEODYMIUM, DYSPROSIUM, TERBIUM (ESSENTIAL FOR EVS, WIND TURBINES, AND ELECTRONICS)

POWER SUPPLY: 60 MW HYBRID POWER GENERATOR (ORC UNITS, SOLAR, WIND)

CAPITAL EXPENDITURE

(CAPEX)

EXPLORATION & GEOLOGICAL SURVEYS
$50 MILLION

ADVANCED MINING EQUIPMENT & ORGANIC PROCESSING PLANT:
$100 MILLION

INFRASTRUCTURE (ROADS, POWER, WATER): $80 MILLION
RESEARCH & DEVELOPMENT FOR SUSTAINABLE EXTRACTION:
$50 MILLION

REGULATORY COMPLIANCE & LICENSING:
$20 MILLION

ENVIRONMENTAL PROTECTION & REFORESTATION PROGRAMS:
$30 MILLION

60 MW HYBRID POWER GENERATION (ORC, SOLAR, WIND):
$100 MILLION

CONTINGENT FEE FOR UNFORESEEN COSTS: $50 MILLION
TOTAL CAPEX:
$500 MILLION

OPERATIONAL COSTS (OPEX) & REVENUE PROJECTIONS

ANNUAL OPEX BREAKDOWN:

- Labor & Workforce: $30 million
- Energy Costs (Hybrid Power & Grid Supply): $25 million
- Mining & Processing Operations: $40 million
- Logistics & Transportation: $10 million
- Equipment Maintenance & Depreciation: $15 million
- Environmental Compliance & Waste Management: $10 million
- Total Annual OPEX: $130 million

REVENUE PROJECTIONS:

- Average Rare Earth Oxide Price: $10,000 per metric ton
- Annual Production: 25,000 metric tons
- Annual Revenue: $250 million (25,000 metric tons x $10,000/ton)
- Projected ROI: 20-25% per annum
- Payback Period: 5-6 years
- 15-Year Net Profit Projection: $2.5 billion

JOB CREATION & SOCIOECONOMIC IMPACT

DIRECT JOBS CREATED:
3,000 (ENGINEERS, GEOLOGISTS, PLANT OPERATORS, ENVIRONMENTAL SCIENTISTS, LOGISTICS PERSONNEL)

- **INDIRECT JOBS CREATED:** 8,000 (SUPPLY CHAIN, LOCAL BUSINESSES, SERVICES, LOGISTICS)
- **TRAINING & UPSKILLING PROGRAMS:** PARTNERSHIP WITH MONGOLIAN UNIVERSITIES FOR WORKFORCE DEVELOPMENT
- **COMMUNITY INVESTMENT:** $15 MILLION ALLOCATED FOR EDUCATION, HEALTHCARE, AND CLEAN WATER PROJECTS

POWER SUPPLY & SUSTAINABILITY STRATEGY

60 MW HYBRID POWER GENERATION (ORC, SOLAR, WIND)

- Provides efficient, reliable, and sustainable power to support mining and processing operations.
- Uses Organic Rankine Cycle (ORC) units, improving energy efficiency and reducing carbon footprint.
- Integrates solar and wind energy to reduce dependence on fossil fuels.
- Ensures continuous power supply, reducing costs and emissions.

RENEWABLE & HYBRID ENERGY INTEGRATION

- Solar & Wind Power will contribute 30 MW of the total energy supply.
- Battery Storage Systems to enhance energy security and efficiency.

ENERGY EFFICIENCY MEASURES

- Use of high-efficiency electric mining equipment.
- Adoption of smart-grid technologies to optimize energy use.
- Water recycling and low-energy bio-mining technologies.

ENVIRONMENTAL BENEFITS & SUSTAINABILITY MEASURES

ORGANIC & ECO-FRIENDLY MINING TECHNIQUES

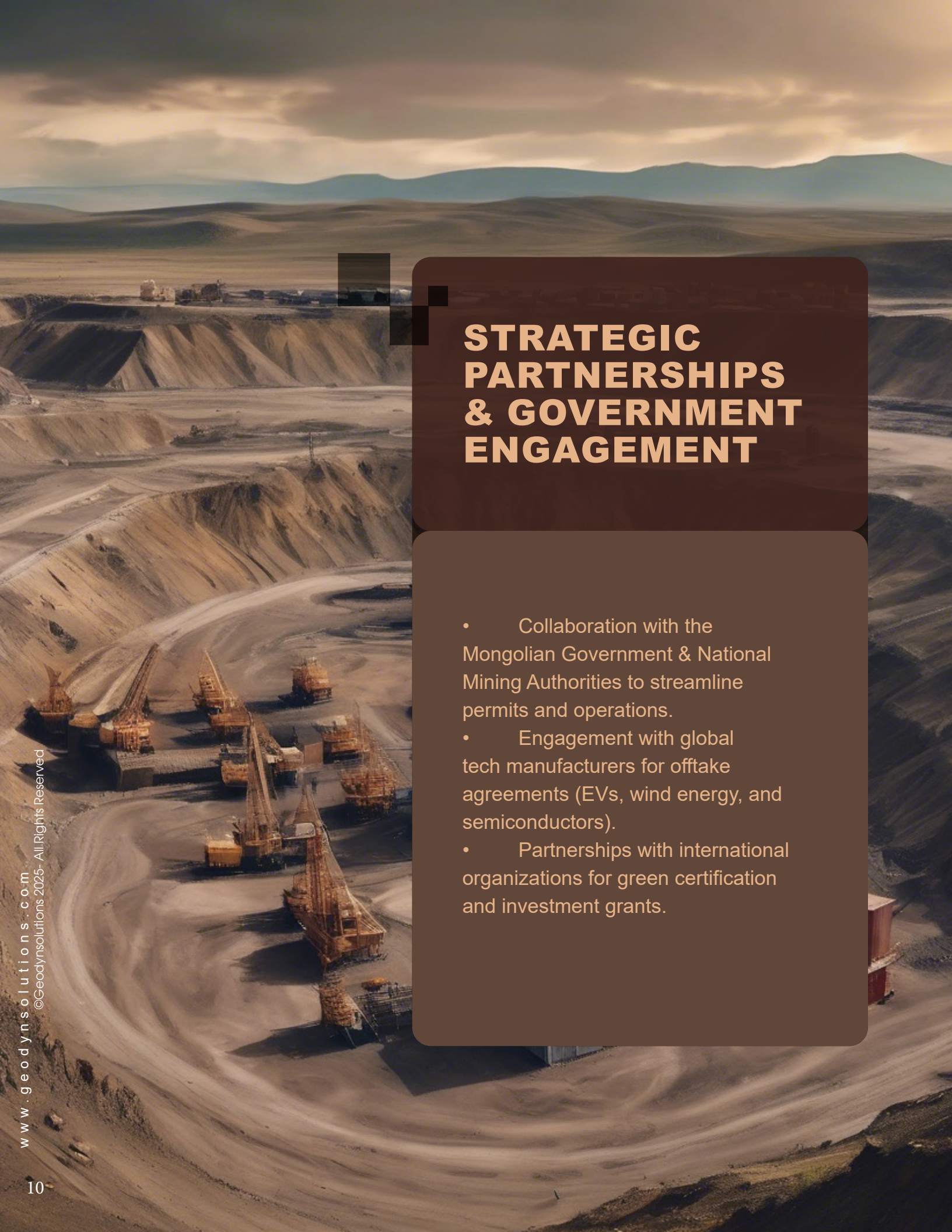
- Use of bio-leaching microbes to extract REEs with minimal chemical impact.
- Avoidance of toxic reagents like sulfuric acid and cyanide.
- Reduced water usage through closed-loop water recycling systems.

REFORESTATION & LAND RESTORATION

- Active restoration of mined areas with native tree species.
- Carbon sequestration programs to offset emissions.

WASTE MANAGEMENT & CIRCULAR ECONOMY

- Recycling of process tailings for secondary mineral recovery.
- Safe disposal and management of residual materials.



STRATEGIC PARTNERSHIPS & GOVERNMENT ENGAGEMENT

- Collaboration with the Mongolian Government & National Mining Authorities to streamline permits and operations.
- Engagement with global tech manufacturers for offtake agreements (EVs, wind energy, and semiconductors).
- Partnerships with international organizations for green certification and investment grants.

This investment will establish Geodyn Solutions as a pioneer in sustainable rare earth mining, tapping into one of the most promising untapped REE reserves in the world. By using organic and eco-friendly extraction methods, the project ensures long-term environmental responsibility while achieving strong financial returns and strategic market positioning.

NEXT STEPS

1. CONDUCT FEASIBILITY STUDY AND FINALIZE ENVIRONMENTAL IMPACT ASSESSMENTS.
2. SECURE NECESSARY PERMITS AND GOVERNMENT APPROVALS.
3. BEGIN PHASED DEVELOPMENT WITH EXPLORATION AND INFRASTRUCTURE SETUP.
4. ESTABLISH INITIAL PILOT PRODUCTION AND EXPAND TO FULL-SCALE OPERATIONS WITHIN THREE YEARS.

Geodyn Solutions is poised to lead the next generation of responsible rare earth mining in Mongolia.

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