



Investment Proposal for 100MW Solar Power Project

Sri Lanka

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Executive Summary

This proposal presents a unique investment opportunity in a 100MW solar power project located in Trincomalee, Sri Lanka, a region with abundant sunlight and high solar potential. The project will be developed in two phases of 50MW each and offers significant long-term returns. The solar plant will utilize 295 acres of government-leased land, with all necessary licenses and approvals already secured. The investor will be responsible for providing equipment and teams to construct the plant, while a separate agreement can be arranged if the current project proponents are engaged for the construction.

Key Highlights:

- Location: Trincomalee, Sri Lanka, one of the sunniest regions in the country, providing optimal conditions for solar energy generation.
- Capacity: 100MW, divided into two phases of 50MW each.
- Licenses Secured: All necessary permits, including the Energy Permit and statutory clearances, are in place.
- Tariff: USD 0.08 per kWh through Power Purchase Agreements (PPA).
- Investment: Covers licensing, land acquisition, and consultancy fees, with the investor responsible for equipment and construction.

Global and National Solar Energy Context:

- According to a recent joint study by the United Nations Development Programme (UNDP) and the Asian Development Bank (ADB), Sri Lanka has the potential to deploy 16 GW of solar power, a crucial step in its energy transition. The government has set ambitious goals to generate 100% of its power demand from renewable sources by 2050, making this an opportune moment to invest in the country's rapidly growing solar energy sector.
- With the backing of international organizations and government support for renewable energy, this project aligns perfectly with Sri Lanka's long-term vision. The 100MW solar power plant in Trincomalee not only offers attractive returns but also contributes to the national goal of sustainable, clean energy development.

Market Opportunity:

- Growing Energy Demand: Sri Lanka's electricity demand is on the rise, driven by economic growth and urbanization. With its tropical climate and strong solar potential, the country is ideally positioned to meet this demand through solar energy.
- Favorable Regulatory Environment: The Sri Lankan government actively promotes renewable energy development through various incentives, including tax benefits and guaranteed tariffs, creating a favorable environment for solar investments.
- The project's location in Trincomalee is especially advantageous, as the region benefits from high solar irradiation, receiving an average of 5.5 to 6.5 hours of sunlight per day, ensuring optimal performance for the solar panels.

Sri Lanka's Solar Potential: Weather in Trincomalee

Sri Lanka is a tropical island located near the equator, which gives it abundant sunlight year-round. Specifically, Trincomalee, situated on the eastern coast of the country, enjoys some of the best solar energy conditions in Sri Lanka due to its geographical location and favorable weather patterns.

1. Solar Irradiation Levels:

Trincomalee benefits from high solar irradiation, with annual solar insolation levels averaging **5.5 to 6.5 kWh/m²/day**. This makes it one of the sunniest regions in the country, ideal for maximizing energy output from solar panels. The region's high level of direct sunlight ensures efficient energy production throughout the year, making it a prime location for large-scale solar projects like the 100MW solar power plant being proposed.

2. Sunlight Hours:

On average, Trincomalee experiences around **8-10 hours of sunlight per day**, especially during the dry season, which runs from April to September. This extended sunlight period, combined with minimal cloud cover during most months, contributes to consistent solar energy generation.

3. Climate and Seasonality:

Dry Season (April to September): During this period, Trincomalee receives **little to no rain**, and the skies remain clear, providing optimal conditions for solar energy capture. The temperature remains stable, ranging between 28°C to 32°C (82°F to 90°F), ensuring high efficiency of photovoltaic systems.

Monsoon Season (October to March): The northeastern monsoon affects Trincomalee, but even during this season, there are **considerable sunlight hours between rainfall**. While slightly reduced during this period, solar energy production continues, albeit at a slightly lower level compared to the dry season.

4. Ideal Conditions for Solar:

Consistent Year-Round Production: The high solar radiation levels and relatively stable temperatures make Trincomalee a reliable location for solar energy production. The consistent sunlight hours and favorable climate ensure minimal disruption in energy generation.

Long-Term Solar Viability: Given Sri Lanka's goal to transition fully to renewable energy by 2050, Trincomalee's strategic advantage as a solar hub plays a key role in the national agenda. The region's climate conditions are conducive to achieving long-term efficiency and cost-

Financial Overview

Total Project License Cost : USD 7 Million

This figure encompasses all aspects of project initiation, including licensing, land acquisition, and consultancy cost.

Cost Breakdown

Licensing, Land Acquisition, and Consultancy Costs

Total: **USD 7 million**

This includes all necessary statutory payments, land lease costs, and a consultancy fee of USD 2 million.

Advance Payment Breakdown (USD 2 Million)

Cost Item	Amount (LKR)	Amount (USD)
Energy Permit	120,875,000	364,096
Interconnection Study	28,000,000	83,333
Environmental Impact Assessment	5,000,000	15,152
Stamp Duty	4,000,000	12,121
Legal Fees	4,000,000	12,121
BOI Approval	2,000,000	6,061
Operational Expenditures	65,000,000	196,970
Share Purchase of 3rd Partner	71,125,000	215,244
Consultancy Fees	USD 1 million	USD 1 million
Total Advance Payment	USD 2 million	USD 2 million

Responsibilities of the Investor

Equipment Procurement: The investor will procure all necessary equipment for the solar plant, ensuring adherence to quality and regulatory standards.

Construction Costs: All costs related to the construction of the solar plant will be borne by the investor, including labor, materials, and any additional infrastructure needed.

Operational Costs: The investor will manage all operational costs once the solar plant is in service, including maintenance, labor, utilities, and other day-to-day expenses.

Financial Projections

Revenue Generation

Selling Tariff: USD 0.08 per kWh.

Average Sunlight Hours: Ranging from 5.5 to 6.5 hours per day.

Installed Capacity: 100 MW.

Daily Energy Production Calculation:

Using an average of 6 hours of sunlight:

Daily Energy Production (kWh)=Installed Capacity (MW)×Average Sunlight Hours×1,000.

Daily Energy Production=100MW×6hours×1,000=**600,000kWh**

Annual Energy Production Calculation:

Annual Energy Production (kWh)=Daily Energy Production (kWh)×365

Annual Energy Production=600,000kWh×365=**219,000,000kWh**

Projected Annual Revenue:

Annual Revenue=Selling Tariff×Annual Energy Production

Annual Revenue=0.08USD/kWh×219,000,000kWh=**17,520,000USD**



Risks and Mitigations

1. Grid Connectivity

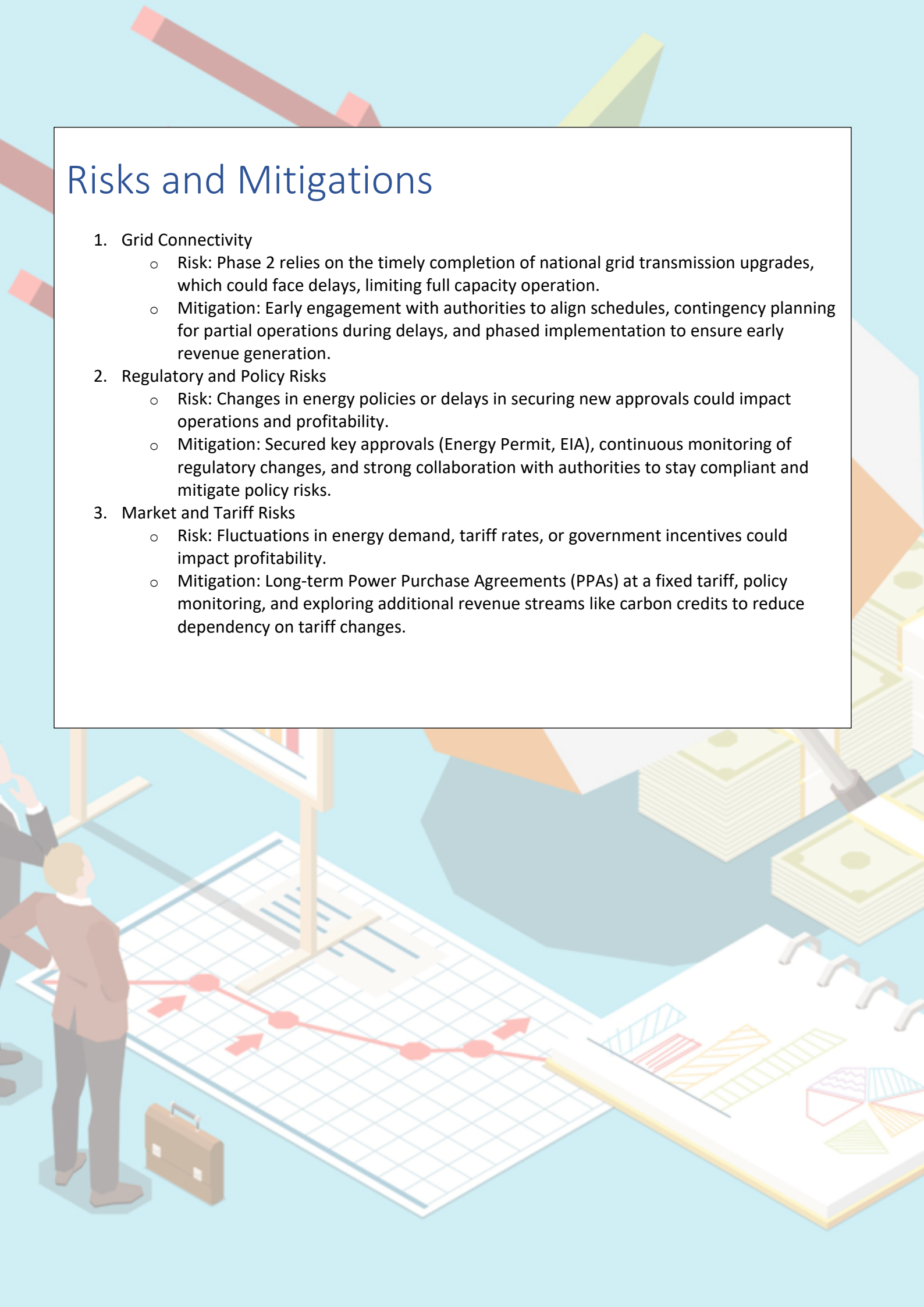
- Risk: Phase 2 relies on the timely completion of national grid transmission upgrades, which could face delays, limiting full capacity operation.
- Mitigation: Early engagement with authorities to align schedules, contingency planning for partial operations during delays, and phased implementation to ensure early revenue generation.

2. Regulatory and Policy Risks

- Risk: Changes in energy policies or delays in securing new approvals could impact operations and profitability.
- Mitigation: Secured key approvals (Energy Permit, EIA), continuous monitoring of regulatory changes, and strong collaboration with authorities to stay compliant and mitigate policy risks.

3. Market and Tariff Risks

- Risk: Fluctuations in energy demand, tariff rates, or government incentives could impact profitability.
- Mitigation: Long-term Power Purchase Agreements (PPAs) at a fixed tariff, policy monitoring, and exploring additional revenue streams like carbon credits to reduce dependency on tariff changes.



Conclusion

This 100 MW solar power project presents a unique and highly attractive investment opportunity within Sri Lanka's rapidly expanding renewable energy sector. The project capitalizes on the country's favorable geographic location, benefiting from consistent sunlight exposure ranging between 5.5 to 6.5 hours per day, which ensures optimal energy production year-round. With all necessary regulatory approvals, including energy permits and environmental impact assessments, already secured, the project minimizes administrative and regulatory risks, providing investors with a clear path toward timely execution.

The Power Purchase Agreement (PPA), set at a stable tariff of USD 0.08 per kWh, offers a predictable and steady revenue stream over the project's lifecycle. This guaranteed rate provides confidence in long-term financial returns, making the investment especially appealing for stakeholders looking for reliable and sustainable income in the renewable energy space. Given the growing demand for clean energy in Sri Lanka and the global trend toward decarbonization, this project positions itself as a key contributor to the country's energy transition.

Flexibility and Expertise

Investors have the flexibility to engage their own engineering, procurement, and construction (EPC) teams or opt to negotiate a separate agreement for project construction and management. This customization ensures that the investment aligns with the investor's preferences, whether they seek hands-on involvement or prefer to leverage third-party expertise.

Additionally, the inclusion of dedicated consultancy services provides expert guidance throughout the project's execution. These services cover critical aspects such as project management, regulatory compliance, and technical oversight, further reducing operational risks. The experienced consultancy team brings a proven track record in solar energy projects, enhancing the likelihood of the project being delivered on time and within budget.

Long-Term Growth Potential

The project is not just a one-time opportunity but a stepping stone into Sri Lanka's expanding renewable energy market. With the government's focus on increasing renewable energy's share in the energy mix, there is significant potential for future expansion and opportunities for additional projects. As grid infrastructure improves and energy demand grows, this solar project will be at the forefront of meeting both national and regional electricity needs.

Investors also have the opportunity to benefit from long-term value creation through carbon credits or renewable energy certificates (RECs), which can provide additional revenue streams as global demand for carbon offsets rises. This opens up new avenues for maximizing returns, while also contributing to global climate change mitigation efforts.

Strategic Impact

Beyond financial returns, this investment offers the chance to play a significant role in Sri Lanka's green energy transition, reducing the country's dependence on fossil fuels and lowering carbon emissions. By supporting a renewable energy initiative of this scale, investors will not only achieve financial returns but also contribute to environmental sustainability and the global fight against climate change.