If you have a $5 million capital made available to you, how, where and why would you spend it to set up a new energy business? Please prepare a sound business statement, acceptable to financiers, and plan for consideration by the jury.

In order to honour my mandate to propose a suitable investment in the fields of supply chain, transportation, shipping or energy; I believe that I have found an opportunity for Young Leaders in Energy Plc to get its first exposure in the energy sector by investing in South Africa.

I have decided to invest in South Africa for various reasons. The country is in strong need of energy with no sufficient supply creating an imbalance of supply and demand. This has resulted in some significant electricity outages in a country where the economy is recovering and demand for electricity increasing. This issue has caused electricity prices to skyrocket by 170% in the last five years and prices will continue to increase at a rate of 8% until 2018. This has not only impacted consumers but also businesses, especially in the mining sector that relies a lot on electricity. By launching the South African Renewable Energy IPP in 2011, the government targets to get up to 16% of its energy from renewables in 2030, coming from 1% today. This proves the important place that renewables will play in the country’s future energy mix.

I strongly believe that South Africa is a good country to invest in at the moment. The conditions to develop a Solar PV complex are idealistic. Through my risk analysis, I have identified that the country benefits of low financial system risk and moderate economic and political risk. Furthermore, the country encourages FDI by making the establishment of a subsidiary fairly straightforward. In terms of funds repatriation, dividends are freely remittable and there are no restrictions on equity investments.

Traditionally, the mining industry has relied heavily on fossil fuel based sources such as diesel to meet its growing energy demand. However, due to the pressure of supply linked to fossil fuels, renewable energies will supply between 5% and 8% of the world’s mining industry power consumption by 2022 (Jansen, 2014). There are several factors that push mines to turn themselves towards renewable source of energy.

First, the fact that mines are expanding into remote locations, located far from the grid means they have to deal with unreliable power supply. As a result, they rely on other expensive and price volatile sources of energy such as coal and oil (Bouw, 2012)

With fossil fuels prices rising, margins are getting under pressure, especially since global demand in energy is expected to increase by 36% by 2035. With energy representing 25% of costs of production for a mine, managing and locking costs sustainably is the new priority.

South African Market

The South African market is in strong need for energy with no adequate supply. The country has been facing significant electricity outages and with the economy currently recovering, this is becoming a major problem. The market is regulated by the National Energy Regulator of South Africa (NERSA) and Eskom which is the main supplier of electricity that accounts for 95% of the electricity supplied in South Africa. In response to the rising demand for electricity, Eskom has asked their customers to cut their usage instead of increasing its production. For the past five years, electricity prices in South Africa have increased by 170%, when prices in other BRICS countries have decreased by an average of 36% (Vecchiato, 2013).

In order to assess the level of competition that can expected by entering the South African market, the following Porter’s five forces have been analysed.
**Rivalry**

The intensity of rivalry in Solar PV in South Africa is moderate at the moment. However, it is expected that by 2020 South Africa solar power will become the cheapest source of energy in South Africa, even when comparing with abundant coal (Frost & Sullivan, 2013).

By 2030, 8400 MW of solar PV should be installed throughout the country and this illustrates the intensity of rivalry that can be expected to occur in the upcoming years. With the opportunity to build a 10 MW plant for Sibanye, Renewables Mine Industries will certainly not be the only contestant. Recent voices have been raised in South Africa to encourage more local players to play in the field of renewables, which impact negatively Renewables Mine’s candidacy. However, I consider that this argument would be more valid in the case of the national grid. It is predicted that Sibanye will select the candidate that will maximize its efficiency on top of anything else. Based on the financial stability of Young Leaders in Energy Plc combined with the competitive price offered, I am confident about being in a good position to be the chosen candidate.

**Threat of Substitutes**

The main substitutes can be divided into three main energy sources, which are:

1. Coal, oil and other fossil fuel
2. Other kind of renewables
3. Grid

For this specific project, the fact that Sibanye has already settled down for the solar PV technology makes the threat of substitutes irrelevant in this particular scenario. However, it is worth mentioning that Sibanye has already commissioned a 2 MW methane-fired electricity plant for its Beatrix operation, this proves that Sibanye is looking to diversify its energy mix as much as possible.

**Buyer and Supplier Bargaining Power**

Power of buyers is significantly high in this industry since mines can chose the mean of generation of their choice. Not only mines have access to excessive and cheap amount of coal, but they are also frequently located close to the grid which adds another option of power source and even within the solar PV industry there exist an increasing number of ventures that are willing to supply electricity to mines because of their recurrent cash-flow. On the other hand, power of suppliers is relatively low. There exists a great amount of suppliers of solar panels that has been increasing lately mainly due to the subsidies that government grants for renewable energies. Suppliers compete for projects all over the world.

**Barriers to Entry**

The Solar PV industry has several barriers to entry that are non-negligible. A large amount of capital is needed to build and run a plant. Furthermore, it goes without saying that the Solar PV plant has to be located in a region with significant irradiation for it to be successful. Moreover, a significant amount of land is needed in order to build a plant, in our case 39,000 square meters. The location of that land is also very important since strong distribution channels are needed in order to receive constant amount of revenue to cover the high set-up and maintenance costs of the plant. Finally, I have to take into consideration the existing provider of energy of a certain place, since it is not easy to takeover the market of an already existing provider. In our specific case, the fact that I will have a land to operate on the mine’s site, that the grid is the only supplier of Sibanye for the moment and given the financial availability of Young Leaders in Energy Plc, those barriers should be easily avoided.
**Risks**

In terms of risks, I have identified two; the one relative to the country of South Africa and the ones relative to running a large scale solar PV plant.

**South Africa Risk Profile:**

South Africa has a Country Risk Tier (CRT) of level 3, defined as moderate level of risk the country benefits of a low financial system risk and moderate economic and political risk (AMB, 2013).

**Economic Risk:** South Africa has a well-developed industrial sector largely dependent on the mining, manufacturing and agricultural sector. The economy is projected to keep growing in the foreseen future. However, the domestic demand is under pressure in prevision of the 2014 general elections. Uncertainties regarding currency and government finances have kept investors with a bearish business sentiment.

**Political Risk:** Different social problems are affecting South Africa such as high crime rates, poor education, highest HIV/AIDS rate worldwide and weak infrastructures. These problems represent a serious issue for the stability of the country and have affected the prospects of growth and investments. Moreover, the unemployment rate of 23% has exacerbated the already fragile social conditions, causing violent labour strikes in more than one occasion, especially in the mining sector.

**Financial Risk:** The capital market of the country is far ahead from all other countries in the continent and the banking system has not been severely affected by the recent financial crisis thanks to its limited exposure to risky assets. As stated previously, there are no restrictions on fund repatriation and dividends are remittable.

**Currency Risk:** The cash flows generated from Renewables Mining Industries will be hedged for the entire duration of the project with currency forward contracts. By locking into a forward contract the exchange rate is fixed; the over the counter agreement with a tier one investment bank stipulates the exchange of a certain quantity of South African rand (ZAR) for a definite amount of US dollars (USD) once a year. The cash flows agreed to be exchanged annually are matched with the projected cash flow of the investment. This hedging will allow Renewable Mining Industries to protect its cash flows from exchange rate fluctuations.

**Inflation Risk:** South Africa’s Central Bank sees the Rand and fuel prices as main risk to the inflation outlook. In January 2014 the central bank raised interest rates for the first time in six years as countermeasure to the sell-off of the national currency, which caused a depreciation of 7% against the US Dollar this year (Reuters B, 2014). The Rand is considered one of the five most vulnerable emerging market currencies due to South Africa’s high current account deficit as well as the reduction of the Quantitative Easing program operated in the US by the Federal Reserve. The country’s inflation target is set between 3-6 percent, while the expected GDP growth is set at 2.8% for 2014.

To sum up, Young Leaders in Energy PLC's plant will have an initial value approximate to EUR 8.5 million which is equivalent to ZAR 102 million. This amount of money is more than what is given to me, however, the remaining balance is going to be borrowed from bank, which after will be paid back from the generated revenue. I have assumed an useful life of 35 years but the plant will be operated for 30 years. I have assumed linear depreciation of the plant with a scrap value that is equivalent to five years of D&A.

*Please note that the idea of this project was found in 2014, when I was studying my Master's Degree at CASS Business School. We have created this project together with four of my classmates. I have used some relevant information from this Group Work to answer this question. However, the original group work was more detailed and were not answering the question in here. Thus, I have changed some information and created this project for your considerations.*