Solar Horizons
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El Salvador Project Summary

Mission

Our goal is to be an innovative leader by building a 6.5 MW (DC) solar farm in El Salvador and grow it into a group of solar farms that qualify as a local utility. This will allow the company to sell power throughout Central America.

Business Model

Joint Venture with a long term investor to build the first 6.5 MW solar farm. Investor gets 100% collateral and gets their capital back first before a 50/50% profit split. Investor get a first right to finance additional solar farms with this power purchaser. By using the solar energy in the rural areas we are improving the way of living, the health of the population and also gives them opportunity of growth and feeling of inclusion to the society

Amount

$9.75 million payable at $1 million initially to mobilize, engineer and bid panels/hardware. Balance of funds is due as needed. The first $1,000,000 will be used for $150,000 land, $50,000 mobilization and $800,000 for the racking. Up to 80% of the work is installing the racking that holds the solar panels.

Use of Funds

solar panels(DC) at	$.65 per watt
inverters/transformers at	$.22 per watt
electrical hardware at	$.10 per watt
racking at	$.20 per watt
labor to erect at	$.15 per watt
total costs	$1.35 per watt
with contingency	$1.50 per watt time 6.5 MW = $9.75 million

Return

Capital is repaid in 5 years and then the return to investors starts in 6th year at 10% and grows over 30 years to 21% % based on a 3% annual inflation on the price of power.

Power Purchase Agreement (PPA)

A local utility Siget, has signed a "Power Purchase Agreement" with Solar Horizons in Denver, for three years and purchases power on a variable rate that floats daily. Siget is a local utility that sells power in several countries. Local government will receive 1% royalty to pay for schools. Siget collects, distributes and handles switching between types of power. See PPA agreement in Appendix.

Economics

Each watt generates 1500 watts per year (1.5 MW) times 6.5MW = 9.75MW of power per year. At 19 cents per KWH = $1,850,000 annual income. Assumptions for cash flow model:

1 .Each watt installed generates 1,500 watts(1.5KWH) per year
2. Farm of 6.5 MW each Generates x 1.5 KWH =9,750,000 kwh per year (DC)
3. Rate Inflation of 3% per KH rate per year
4. Operating Costs 4% for reporting, electrician, security and management
5. Total Cost = $9,750,000

The economic conclusion is this is a growing cash flow business that once installed, will grow profits from an initial 10% to 22% over 30 years. This is determined mostly by the rate of inflation and the amount of sunny days per year. Inflation is usually considered to be 6% per year in the energy business in the USA, so 3% is a low assumption.

First 10 Years Proforma

El Salvador Solar Farm	Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8	Column9	Column10	Column11
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	KWHper year										
6.5 mil x 1.5KWH =	9,750,000										
rate		0.19	0.20	0.20	0.21	0.21	0.22	0.23	0.23	0.24	0.25
inflation	103%										
revenue		1,852,500	1,908,075	1,965,317	2,024,277	2,085,005	2,147,555	2,211,982	2,278,341	2,346,692	2,417,092
less 4% costs		74,100	95,404	98,266	101,214	104,250	107,378	110,599	113,917	117,335	120,855
NOI		1,778,400	1,812,671	1,867,051	1,923,063	1,980,755	2,040,177	2,101,383	2,164,424	2,229,357	2,296,238
$9,7 Mil Capital return to investors first						9,361,940					
50% splits							1,020,089	1,050,691	1,082,212	1,114,678	1,148,119
R.O.I.%							10.5	10.8	11.1	11.4	11.8
	Capital Return Phase						Growth Phase Investing Profits				
ASSUMPTIONS											
1 .Each watt installed generates 1,500 watts(1.5KWH) per year											
2. Farm of 6.5 MW each Generates x 1.5 KWH =9,750,000 kwh per year (DC)											
3. Rate Inflation of 3% per KH rate per year											
4. Operating Costs 4% for reporting, electrican, security and management											
5. Total Cost = $9,750,000											

Next 10 years Proforma

Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
0.25	0.26	0.26	0.27	0.28	0.29	0.30	0.30	0.31	0.32	0.33
2,417,092	2,489,605	2,564,293	2,641,222	2,720,459	2,802,072	2,886,135	2,972,719	3,061,900	3,153,757	3,248,370
120,855	124,480	128,215	132,061	136,023	140,104	144,307	148,636	153,095	157,688	162,418
2,296,238	2,365,125	2,436,079	2,509,161	2,584,436	2,661,969	2,741,828	2,824,083	2,908,805	2,996,069	3,085,951
1,148,119	1,182,562	1,218,039	1,254,580	1,292,218	1,330,984	1,370,914	1,412,041	1,454,403	1,498,035	1,542,976
11.8	12.1	12.5	12.9	13.3	13.7	14.1	14.5	14.9	15.4	15.8

Last 10 Years Proforma

Column22	Column23	Column24	Column25	Column26	Column27	Column28	Column29	Column30	Column31
Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
0.34	0.35	0.36	0.37	0.39	0.40	0.41	0.42	0.43	0.45
3,345,821	3,446,196	3,549,582	3,656,069	3,765,751	3,878,724	3,995,085	4,114,938	4,238,386	4,365,538
167,291	172,310	177,479	182,803	188,288	193,936	199,754	205,747	211,919	218,277
3,178,530	3,273,886	3,372,102	3,473,266	3,577,464	3,684,787	3,795,331	3,909,191	4,026,467	4,147,261
1,589,265	1,636,943	1,686,051	1,736,633	1,788,732	1,842,394	1,897,666	1,954,595	2,013,233	2,073,630
16.3	16.8	17.3	17.8	18.3	18.9	19.5	20.0	20.6	21.3

Technology

All solar is measured in DC. This solar farm of 6.5 MW is equivalent to 5MW (AC). The panels are Grade A with State of the Art inverters which transfer DC to AC This integrates the power through net metering with a local utility and allow Denver computer monitoring over the Internet. Warranties for the panels are 25 years with life spans of 40 years. The Inverters have 10 years warranties with 25 year life spans. Up to 80% of the construction work is setting up the racking that holds the panels. Installation will take approximately ____ months.

Market:

El Salvador is seeking to build 100 MW of solar, wind power**.** El Salvador will solicit bids for 40 MW of wind farms and 60 MW of solar parks in November of 2014 as the Central American nation seeks to diversify its energy supply from fossil-fired power generation. Developers will compete for contracts to sell electric power for 20 years to local distributors and winners will be announced as soon as May 20, according to the country's National Energy Council, a government agency that helps guide energy policy. El Salvador is seeking to cut its dependence on oil and diesel, which were used to run about 47 percent of its grid's generation capacity in 2011. The solar projects will have to start producing power by October 1, 2015, and the wind projects by Oct. 1, 2016. The wind farms must have capacities between 5 MW and 40 MW

Local Utilities

The departments of El Salvador are divided into 262 municipalities. With demand expected to grow at a rate of 5% in the coming years, the Government's 2007 National Energy Strategy identified several hydroelectric and geothermal projects as the best option to meet demand in the future and to diversify the country's energy mix. Electricity prices are regulated by SIGET. They comprise generation, transmission, distribution, and supply components.[4] In 2005, the average residential tariff in El Salvador was US$0.139 per kWh, which is above the US$0.105 per KWh weighted average for LAC. In contrast, the average industrial tariff for El Salvador, US$0.103 per kWh was below the US$0.107 per kWh average for LAC.[5] Electricity prices vary considerably from one Distribution Company to another. Small (high cost) consumers have high prices and larger (lower cost) consumers have lower prices. This is an indication that tariffs in El Salvador reflect costs better than those in other countries

Energy rates paid vary from

Approvals

Critical permits are in place and the remainder will be obtained using the mobilization funding**.** An environmental study was done and is in need of refreshing. Government approvals have been secured from the federal, state and local authorities.

Climate:

El Salvador has a tropical climate with pronounced wet and dry seasons. Temperatures vary primarily with elevation and show little seasonal change. The Pacific lowlands are uniformly hot; the central plateau and mountain areas are more moderate. The rainy season, known locally as *invierno*, or winter, extends from May to October. Almost all the annual rainfall occurs during this time, and yearly totals, particularly on southern-facing mountain slopes, can be as high as 200 centimeters. Protected areas and the central plateau receive lesser, although still significant, amounts. Rainfall during this season generally comes from low pressure over the Pacific and usually falls in heavy afternoon thunderstorms. Although hurricanes occasionally form in the Pacific, they seldom affect El Salvador.

From November through April, the northeast trade winds control weather patterns. During these months, air flowing from the Caribbean has had most of the precipitation wrung out of it passing over the mountains in Honduras. By the time this air reaches El Salvador, it is dry, hot, and hazy. This season is known locally as *verano*, or summer. Temperatures vary little with season; elevation is the primary determinant. The Pacific lowlands are the hottest region, with

annual averages ranging from 25°C to 29°C (84F). San Salvador is representative of the central plateau, with an annual average temperature of 23°C and absolute high and low readings of 38°C and 7°C, respectively. Mountain areas are the coolest, with annual averages from 12°C to 23°C (73F) and minimum temperatures sometimes approaching freezing.

Sunny Days

A government group publishes research on how many sunny days the country enjoys and how much sun is available. Those calculations for this project point to approximately 3300 hours of sunshine annually or about 9 hours per day.

Building Site

A $150,000 site is available that will hold two 6.5MW solar farms. An adjacent site is available for expansion at $1.8 million that will accommodate 8 more 6.5MW solar farms.

Economic Stability

With a recovery underway in the US, and much of the developed world, growth in El Salvador is expected to grow accordingly. El Salvador has relatively positive growth prospects due to its wave of privatization efforts in the banking and utilities sectors and the liberalization of trade policies. The US Dollar is the legal currency. The use of a stable currency has helped to contain inflation and interest rates in recent years, however it allows them very limited monetary flexibility. In the world economy it also gives them a broader horizon.

The Superintendency of the Financial System is responsible for supervision of the insurance sector. There have been slight improvements, however transparency and implementation of regulation remain problematic. Banks are well-capitalized and dominate the financial sector, but capital markets remain small and underdeveloped. The proposed Financial System

Supervision and Regulation Law would merge the Supervisor of Banks with the Supervisor of Insurance, Pensions, and Securities into a single supervisory body and shift regulatory power to the central bank. This move has the potential to facilitate consolidated supervision and reduce regulatory gaps.

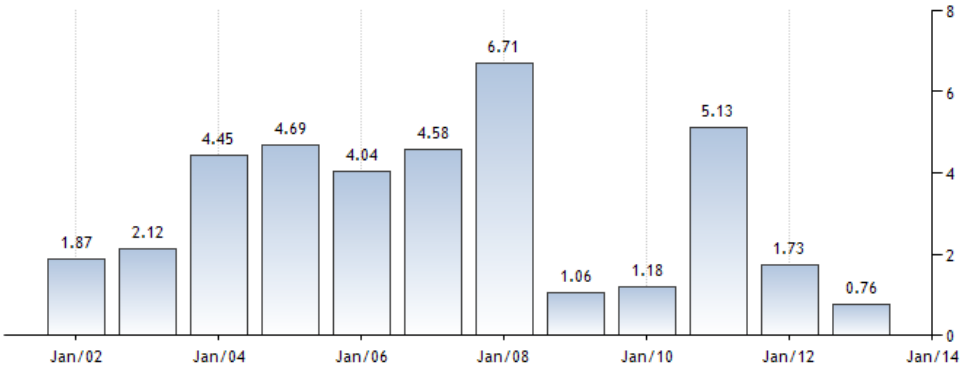
Political Risk: Moderate

Social issues, including a poor education system, high rates of poverty and lack of security are systemic problems. Violence related to organized crime and drug trafficking is a pervasive issue in El Salvador. Previous Vice President Salvador Sanchez Ceren was elected President in March 2014. He has vowed to crack down on crime and violence while also helping the economy through deepening ties with Venezuela. He will also need to consider spending cuts as the public debt has reached 57% of GDP in recent years.

Financial Risks

The risk involved is really minimal unless the world economy and specifically the US has financial meltdowns. Another risk is inflation that is too low. This $9.75 million investment will grow in earnings that go up each year based on the price inflation of say 19 cents per KWH today becoming 45 cents per KWH in 30 years. This chart shows an average of 2.66% inflation per year over a 12 year time period.

History of El Salvador Last 12 Years of Inflation



Competition

El Salvador is a good growth market and that is attracting competition such as:

SolarReserve 20 MW El Salvador Solar Power Plant Is El Salvador's 1st Utility-Scale Plant.

August 3rd, 2014 by Adam Johnston *originally published on Solar Love*. Solar Reserve is bringing 20 MW of utility-scale solar power to El Salvador's Acajutla plant, while advancing its share of the Latin American solar market. The Santa Monica, California–based company won El Salvador's first ever utility-scale solar tender. The country's energy and telecommunications regulator oversaw the bidding process. SolarReserve sees Latin America as a good growth market, according to CEO Kevin Smith. "Many Latin American countries, including El Salvador, have experience with renewable energy such as geothermal or hydroelectric. As demand for electricity continues to grow, Latin America represents a great opportunity for solar power development," Smith said. "With the region's excellent solar resource and escalating and uncertain prices of fossil fuels, solar power makes more than just environmental sense – it makes economic sense. We look forward to continuing our work on Acajutla and on our other photovoltaic and solar thermal projects in development in Latin America." Currently, SolarReserve has 800 MW of Latin American projects scheduled, including the Acajutla plant. The company is using photovoltaic (PV), concentrated solar power (CSP), and hybrids (mixed PV and CSP systems) in creating potential around-the-clock clean energy solutions. With analysts predicting 700 MW of new solar capacity in the region this year, and falling solar prices, SolarReserve, is well primed to boost its own portfolio of $1.8 billion, while adding to Latin America's surging solar potential.

El Salvador Awards Contracts for 94 Megawatts of Solar
By Vanessa Dezem Jun 26, 2014 10:24 AM MT (http://www.bloomberg.com/news/2014-06-26/el-salvador-awards-contracts-for-94-megawatts-of-solar.html)

Three renewable-energy developers were awarded contracts to sell 94 megawatts of capacity from solar farms they're planning to build in El Salvador. UDP Neoen-Almaval agreed to sell 60 megawatts of capacity for $101.90 a megawatt-hour (20 cents per KWh), Georgina de Flores, director of El Salvador's National Energy Board, said in an interview yesterday. UDP Proyecto La Trinidad will sell 14 megawatts for $123.41 a megawatt-hour and Solar Reserve Development Co. will sell 20 megawatts at the same price. The 20-year contracts are expected to be finalized July 25 and the projects will begin supplying power in 2016. The maximum acceptable price for solar power in the auction was set at $165.53 a megawatt hour. The auction involved more than 26 companies from El Salvador, Spain, **France** and **Mexico**. Two companies submitted proposals to supply wind power and both exceeded the maximum level for wind of $123.41. El Salvador's government is seeking to spur new investments in power generation. The contracts offered in the auction are worth a total of about $300 million. In a similar event in November, developers agreed to sell 355 megawatts of capacity in deals worth $800 million to $1 billion, according to a statement from the Energy Board.

Management

Solar Horizon is the developer of this project. They have been in business for 5 years. Gross revenues last year were $400,000. The company is owned by to brothers will engineering degrees from the University of Colorado in engineering. Raid Zakhem has a PHD and led the company to a United Nations Award for an International competition for excellence. *See Award in Appendix.* The Marwan Zakhem is the President and General Manager of the business side of the company. Their largest project to date is 500KW in size, but they have designed a 5MW system for a customer. The company owns their own office building in Denver. They plan to engage three employees in El Salvador to manage the installation: an electrician, a security guard and a maintenance man.

Contact Us ?

APPENDIX

http://www.bloomberg.com/news/2014-06-26/el-salvador-awards-contracts-for-94-megawatts-of-solar.html

El Salvador Export Prices at 121.45 Index Points
El Salvador Import Prices at 163.40 Index Points
El Salvador Exports at 433.70 USD Million
El Salvador GDP Constant Prices at 2437.10 USD Million
El Salvador Foreign Exchange Reserves at 3026.50 USD Million
El Salvador Consumer Price Index (CPI) at 110.91 Index Points
El Salvador Balance of Trade at -399.30 USD Million
El Salvador Imports at 833.00 USD Million
El Salvador Money Supply M0 at 4.40 USD Million
El Salvador Money Supply M1 at 2370.90 USD Million
El Salvador Money Supply M2 at 8728.70 USD Million
El Salvador Money Supply M3 at 9378.70 USD Million
El Salvador Producer Prices at 173.37 Index Points
El Salvador Industrial Production at 0.50 Percent
El Salvador Inflation Rate at 1.70 Percent
El Salvador Current Account at -308.30 USD Million
El Salvador Labor Force Participation Rate at 63.60 Percent
El Salvador Youth Unemployment Rate at 10.40 Percent
El Salvador Employed Persons at 165649.00 Persons
El Salvador Unemployed Persons at 165649.00 Persons

http://www.tradingeconomics.com/el-salvador/consumer-price-index-cpi