convivium AFRICA

Ghana Project

ACCRA PV 20 MW Project

January 2020



Ghana Project: Project Description

- 20 MW DC ground-mounted solar PV plant (the plant will be built in the Ada West District of the Great Accra Region as part of the strategic plan of the Republic of Ghana for the develoment of renewable energies)
- PPA: 20 years Power Purchase Agreements ("PPA") at a fixed price of 100 $/MWh with Electricity Company of Ghana Ltd. ("ECG"), the local government owned electricity distributor. ECG's payment obligation under the PPA would be secured by static Bank Ghana [terms and condition are under negotiation].
- Put-and-call Option agreement: not envisaged.



Project Name	Accra Solar Park - 20 MW DC - Ghana
Location	Sege, Accra Region, Ghana
Coordinates	Latitude: 5°54'25.81"N Longitude: 0°22'13.24"E
Altitude	24m a.s.l.
Irradiation	1,930 kWh/m²
Nominal Capacity	20011 KWp DC --- 18003.0 KVA AC
Connection	33 kV power line [3km distance from power plant to interconnection pont- substation to be built]
Structures Type	Horizontal Single Axis Tracker
PR Ratio	80.8% [1.11 AC/DC Ratio]
Module Type	Poly-crystalline – Talesun TP672P
Module Power	330 Wp
Inverter Concept	String inverter
Inverter Type	Hauwei - SUN2000-50KTL-C1
Monitoring System	Meteocontrol

PPA [USD$/MW]	100 [USA dollar, fixed not inflated]- performance bond of $1m to be issued.
CAPEX [USD$/MW]	Estimated [$1.0.5m] *including substation and Permits . No Vat and other tax are included*
OPEX [USD$/MW] year	[15k -20k]

Site overview:

- The plant will be located in the Accra Region, the southeastern area of the country
- Distance from the power plant to the interconnection cost: 3.9km
- Substation: to be built
- Accra is the second most populated region, accounting for 15.4% of Ghana's total population
- The region has the highest electricity consumption in Ghana and is served by several power lines, also capable of distributing all the electric energy produced by the PV plant in the rest of the Country

Ghana Project: Status and Timeline

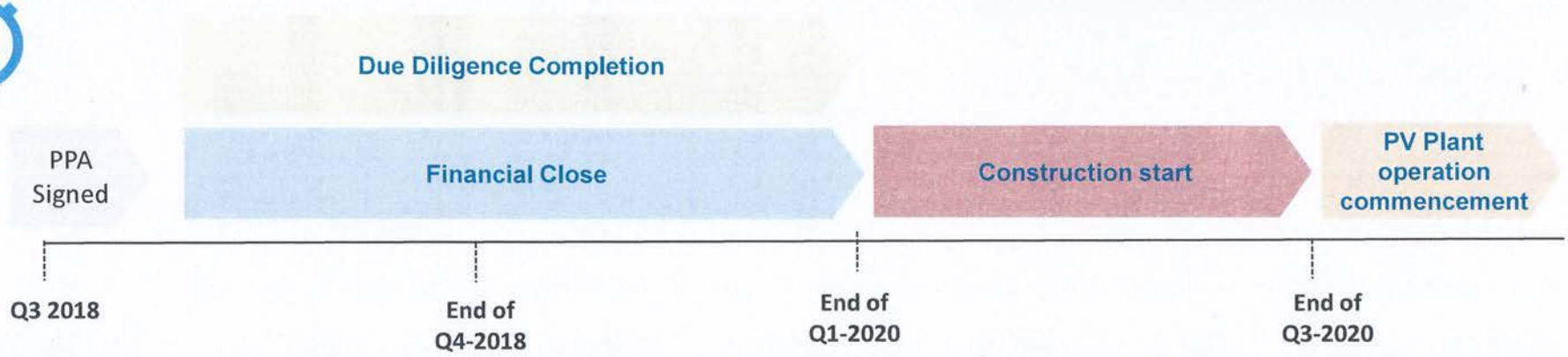
- Effective PPA signed on March 2018 ✓
- Legal Due Diligence ongoing (*First release available*) ✓
- Technical Due Diligence ongoing (*First release available*) ✓
- ECG Connection Assessment Complete ✓
- Connection Agreement signed on March 2018 ✓
- Environmental Permit Obtained ✓
- Land Secured for all the duration of the Project plan (leasing in place for 25 years) ✓
- Basic Plant Engineering completed ✓
- Detailed Plant Engineering in progress ✗
- License to build obtained ✓
- Financing: discussions ongoing with international lenders (including Development Bank)
- Preliminary Financial model: Available ✓
- Construction permit: Obtained ✓



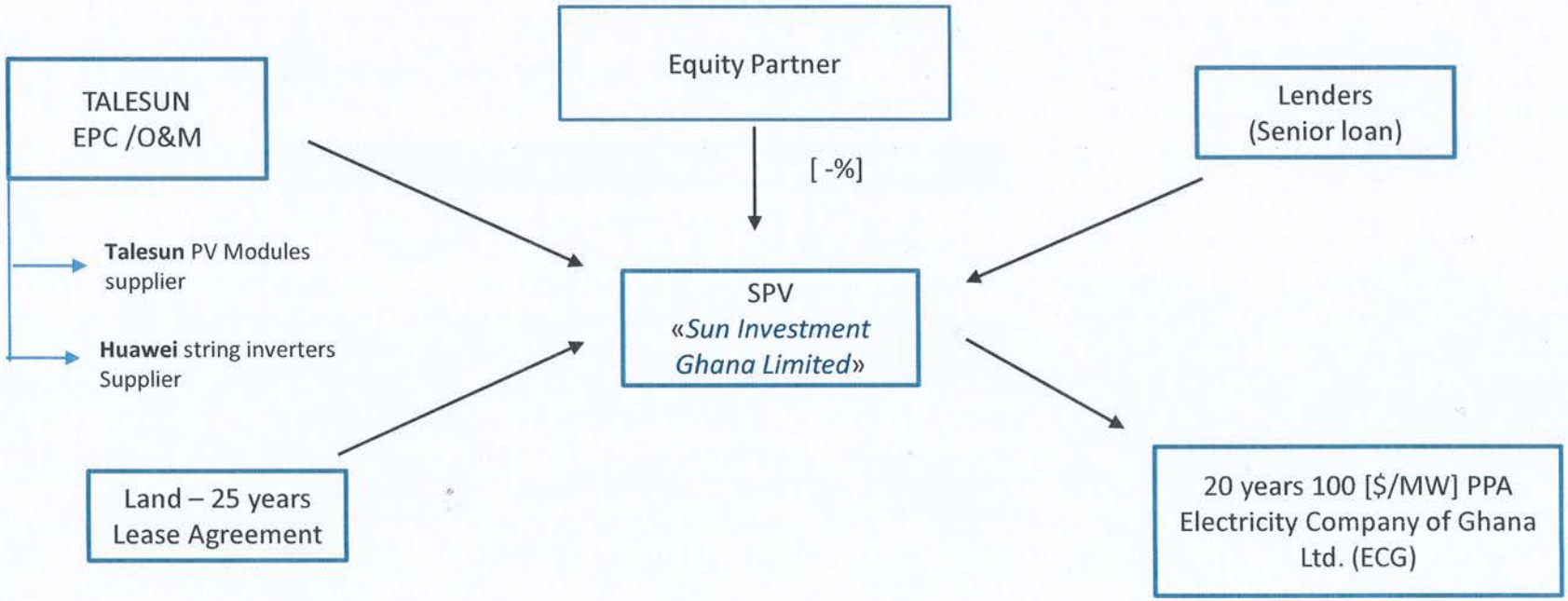


The execution calendar is made by the following phases:





Ghana Project: Envisaged Contractual Structure



Advisors:

Legal Advisor: Reindorf Chambers (DLA Ghana)
Technical Advisor: ATA
Insurance: TBD

Ghana Project : EPC Contractor and Off Taker

TALESUN

Jiansu Talesun Solar Technologies Co. Ltd., a wholly owned subsidiary of Jiangsu Zhongli Group Co Ltd, (formerly Zhongli Science And Technology Group Co), (SZ:002309) which is listed on the Shenzhen Stock Exchange, successfully operates as:

1. Leading producer of solar Cell & Module With a total **initial investment of c.a. 1bn USD**, Talesun Solar has the largest global independent manufacturing base spread over 210,000㎡, **1.8GW cell and 4 GW module capacity**: the world's leading large-scale scientific & PV manufacturing company with additional 900 MW of cells and modules manufactured in Thailand. Talesun Solar Technologies is vertically integrated from Cells to Modules. Talesun equipment comes from leading PV equipment manufacturers: Reis and Centrotherm from Germany, NPC from Japan and Baccini from Italy.

2. International EPC and PV turnkey solution provider Talesun Solar specializes in EPC works, worldwide acquisition of project-rights, project development and sale of turnkey PV plants. Talesun´s EPC division is active in business development, EPC, O&M and Asset management. The company has successfully built medium and large scale PV plants for more than **5 GW in its role of global EPC.**

3. Talesun Development/ investment team has a compelling track record of successful investments across project cycle from development to exit on global scale. The team coming from leading energy, financial and legal firms (Masdar, WestLB, KPMG, Orrick, DLA Piper and Canadian Solar) has with a strong international networking across the entire value chain of renewable sector.

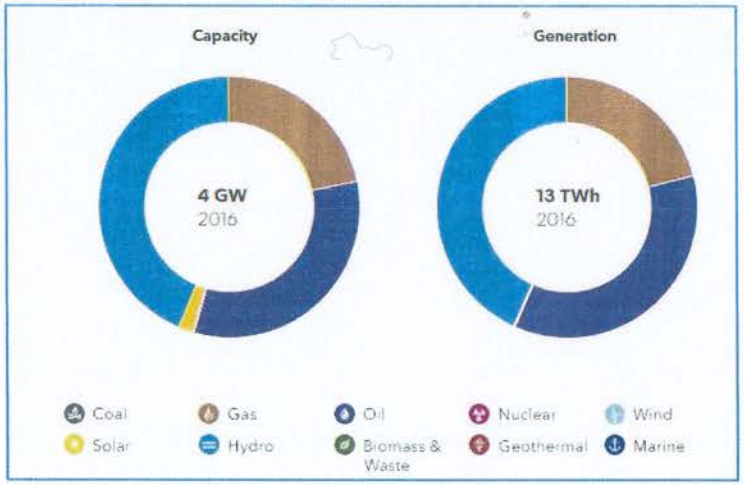
Electricity Company of Ghana Limited is a public company which transmits, supplies, and distributes electricity. It engages in the distribution of electricity in the southern part of Ghana, including Ashanti, Central, Eastern, Greater Accra, Volta, and Western region. The company was founded in 1967 and is based in Accra and thought is operation covers about thirty percent of the total land mass of the country

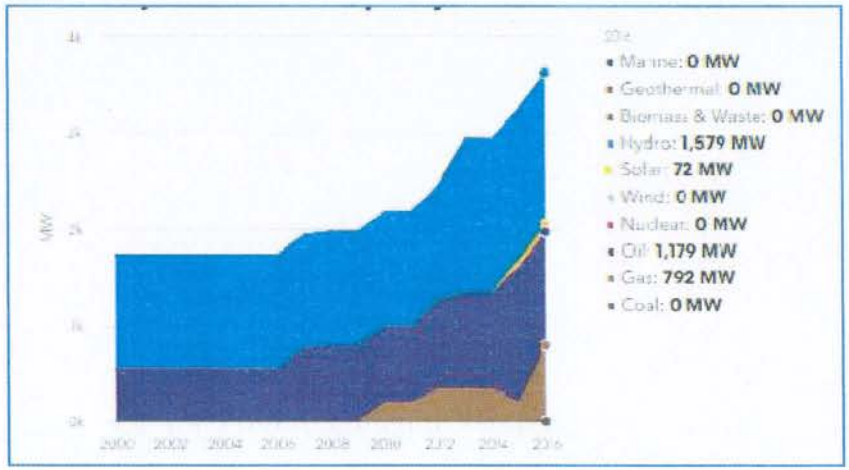
Ghana: Energy Renewable Market Overview

- Energy was a key issue in the election campaign of Ghana's President Nana Akufo-Addo, who began in January 2017
- Low penetration of solar energy Ghana has only connected two solar projects totaling 72MW
- Ghana has a rich in solar resources, with an average yearly irradiation of around 1900 kWh/m2
- Ghana offers a range of fiscal incentives, including exemption for duties and taxes for imports of plant and machinery. In addition, in Ghana, all sectors except banking, finance, commerce, insurance, mining and petroleum enjoy access to accelerated depreciation.



Electricity Mix and Generation Capacity :





Source: Bloomberg Energy;

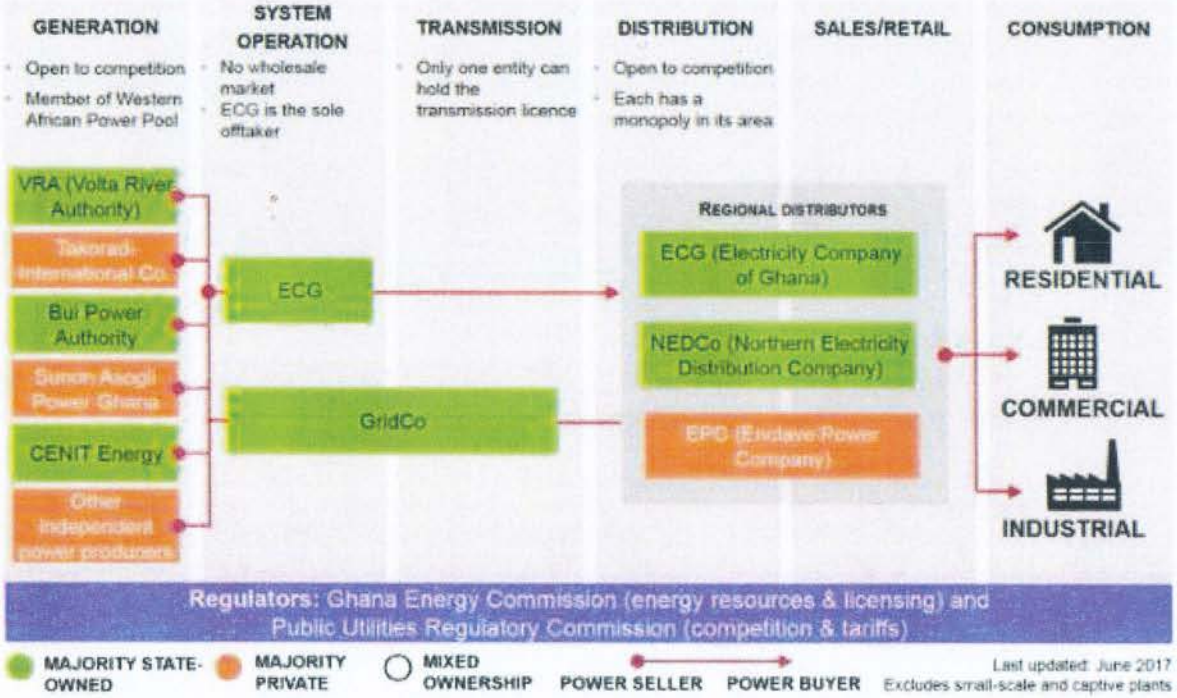
Ghana: Energy Renewable Market Overview

- Ghana has yet to meet its 5GW generating capacity target, which was due by 2016. It has also failed to fully implement a renewable energy law from 2011, it is set to miss its targeted 10% renewables share of capacity by 2020 (excluding large hydro)

- High on the President's agenda will be improving the credit-worthiness of the state utility and offtaker – Electricity Company of Ghana (ECG). A companywide restructuring is underway with help from a five-year compact agreement and funding package signed with the U.S. Millennium Challenge Corporation

- The Ghana Ministry of Energy has set a notional target of 500MW of installed renewable energy - roughly 10% of the energy mix - by 2020.

Power Market Structure



Ghana: General Economic Information

GDP	USD37.54bn (World ranking 89, World Bank 2015)
Population	27.41mn (World ranking 48, World Bank 2015)
Form of state	Constitutional Democracy
Head of government	Nana AKUFO-ADDO
Next elections	December 2020





Base Rates (2017):

20.00%



GDP (2017):

9.30 YoY%



Inflation Rate (2017):

11.82 YoY%



Population (2017):

27.50m



Strengths

- Established track record of good governance, with a functioning democratic system and peaceful transfer of power among political parties.
- Natural resource base (cocoa, gold, forestry etc.) now supplemented by discovery of commercially-exploitable oil reserves – output from 2011.
- Strong GDP growth in recent years, even with a downturn in 2014-15.
- Market-oriented policy framework.
- Positive relations with International Financial Institutions (IFIs).

Weaknesses

- While some safeguards are established, the ability and capacity to manage oil wealth is yet to be tested fully.
- Continuing twin deficits (fiscal and current account) require careful management.
- Frontier markets, like Ghana, are not immune to sell-off pressures in emerging economies. There is therefore periodic risk of currency depreciation, FX reserve depletion and capital flight.
- Although per capita incomes have improved, poverty remains pervasive in some rural areas.
- Regional instability and uncertainties, including in Burkina Faso, Nigeria and Mali.



B1 LOW RISK for entreprise

Ghana - Credit Rating

-Standard & Poor's credit rating for Ghana stands at B with stable outlook.

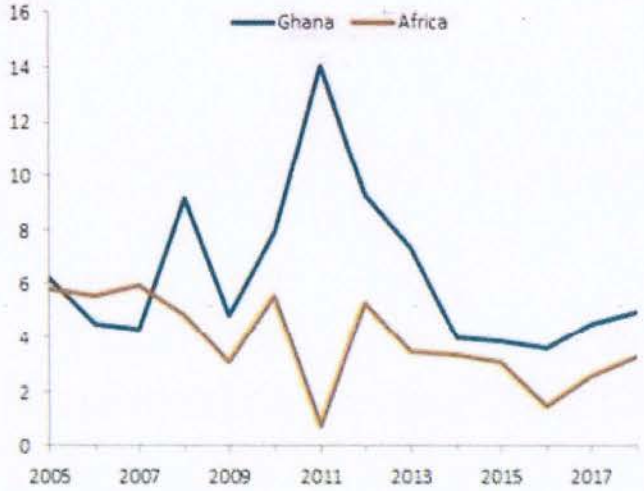
-Moody's credit rating for Ghana was last set at B3 with stable outlook.

-Fitch's credit rating for Ghana was last reported at B with stable outlook.

Source: Eulerhermes https://www.eulerhermes.com/en_global/economic-research/country-reports/Ghana.html.

Ghana: General Economic Information

GDP growth (%)



Sources: National sources, IHS, Euler Hermes

Trade Structure

Trade structure by destination/origin

(% of total)

Exports		Rank	Imports	
South Africa	13%	1	20%	China
United Arab Emirates	11%	2	8%	United States
Switzerland	11%	3	5%	Nigeria
France	7%	4	5%	Netherlands
China	7%	5	5%	Côte d'Ivoire

Trade structure by product

(% of total)

Exports		Rank	Imports	
Gold, non-monetary (excluding gold ores and concentrates)	41%	1	13%	Road vehicles
Coffee, tea, cocoa, spices, and manufactures thereof	23%	2	7%	Petroleum, petroleum products and related materials
Petroleum, petroleum products and related materials	14%	3	6%	Specialised machinery
Vegetables and fruits	4%	4	5%	Other industrial machinery and parts
Metalliferous ores and metal scrap	4%	5	5%	Other transport equipment

Source: eulerhermes.