



*Orion Energy, Inc.*

# Proposal for 28 MW Independent Power Project in Monrovia, Liberia

**Panel on Power and Electricity Development  
The New Liberia – Open for Business!**

Grand Hyatt, Washington, DC

February 15, 2007

**SOFITEL**

CAPITAL CORPORATION USA, INC.

# Proposal for Independent Power Project in Liberia

## **SOFITEL**

**CAPITAL CORPORATION USA, INC.**



***Orion Energy, Inc.***

Sofitel Capital has provided Orion Energy, Inc. with a Loan of US\$30 million to finance the development, construction, and operation of a 28 MW Independent Power Project in Monrovia, Liberia.

The IPP Project will begin operations 9 months after acceptance of proposal by the Government of Liberia.

The IPP Project utilizes HFO fuel and new state-of-the-art Caterpillar engines. Price of electricity will be under US\$0.25/kWh, based on current world oil prices, more than 1/3 less than the price of current and alternative diesel generation systems.

EPC and O&M will be provided by Africa Power Systems, a registered CAT dealer with substantial experience in managing similar Projects in Africa.

# Sofitel Capital at a glance...

## SOFITEL

CAPITAL CORPORATION USA, INC.

**Sofitel Capital** is a private Merchant Bank based in Annapolis, MD.

- U.S. ownership
- Target of Emerging Markets
- Provides Senior Loans – with financial guarantees or insurance
- Arranges equity for transactions
- MGA with the Export Import Bank of the United States

*For further information view our website at [www.sofitel-capital.com](http://www.sofitel-capital.com).*



- **Orion Energy, Inc** is a US based Company with principal offices in Washington D.C.
- Formally established in March 2006 as an energy development company with the focus on strategies and business solutions to meet short-term and intermediate power generation needs of developing economies such as Liberia.
- Founding promoters are active members of the American Association of Blacks in Energy (AABE), a leading association of energy professions in the United States.
- Orion's affiliation with the Edison Electric Institute (EEI) provides access to professional advice from the highest tier of experts in the field of energy in the United States.
- Orion Energy's management and Board are composed of career professionals with combined experience of more the 75 years in energy and business in the US and internationally.

# Africa Power Systems at a glance...

**JA Delmas Export** has developed an unrivalled network of skills covering twelve countries of West Africa, with local companies in each country.

In total:

- 350 technicians,
- 60 vehicles,
- 12 workshops,
- 2 oil-analysis laboratories,
- 1 hydraulic test bench,
- 1 engine test bench,
- 1 certified training center.

## The heart of our operations

At JA Delmas Export in Bordeaux:

- A team of technicians and specialized trainers, ready to assist you at all times
- Sales representatives for each client
- A large documentary database



**JA Delmas Export**



For the Power Generation business (engines and generators), JA Delmas Export has joined forces with Tractafic, the Caterpillar® dealer in Central Africa and Morocco, to form **AFRICA POWER SYSTEMS (APS)**, covering 22 countries.

## Some of our references

- **BENIN**  
4000 KVA - COTON DU BENIN  
2000 KVA - HOTEL SHERATON
- **GUINEA**  
13 MW - MINE DE SIGUIRI / ASHANTI  
5 MW - CBG  
3,5 MW - MINE DE JEAN & GOBELE / SEMAFO
- **MALI**  
16 MW - MINE DE SYAMA / RANDGOLD  
9,6 MW - MINE DE YATELA / ANGGLOGOLD
- **MAURITANIA**  
2 750 KVA - SONELEC
- **NIGER**  
8 500 KVA - NIGELEC
- **SENEGAL**  
3 000 KVA - SÉNÉGAL PÊCHE
- **LIBERIA**  
2 750 KVA - CEMENCO



# Project Location



- ★ Capital City
- ★ Regional Capital City
- Significant City
- Important City - Town
- Attraction - Landmark
- ▣ River
- ▲ Highest Point

# Current Situation

In November of 2005, Ellen Johnson-Sirleaf became Liberia's first democratically elected President. A Harvard-trained economist who has worked at Citibank and served in the UN, one of Ms. Sirleaf's premiere goals has been to re-establish power in the Liberian capital.



Liberian President Johnson-Sirleaf discusses plans for her country's recovery with US President George Bush, in March 2006

# Liberia's Power Sector

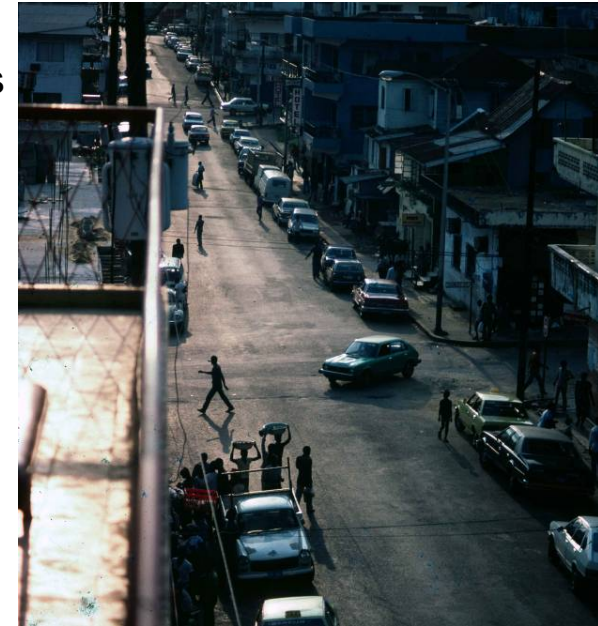
During the recent war, the power infrastructure—particularly the area in and around the Liberian capital of Monrovia—suffered heavy damage.

Despite Government's recently launched Emergency Power Program, Monrovia today remains a city largely without publicly supplied power. More than 90% of the estimated 800,000 residents subsist on gas lanterns or small private generators at a considerable high cost and risk to health.

Commercial and industrial companies operate their own private supply at a significantly higher cost than when there was an organized electric power system.

The initial Emergency Power Program (EPP-1) spearheaded by the Government of Liberia with support from the EU, Ghana, USAID and World Bank established 2.5 MW power supply in the city, primarily supplying the major health facilities and providing limited street lighting in strategic areas.

Additional support by donors pledged for EPP-2 is earmarked for grid rehabilitation and to purchase 7-9 MW additional "leopard spot" power generators to supply residential and commercial establishments.



*Broad Street, Liberia.* French, Howard W.

# Market Demand and Project Supply



The **Potential service area** includes Bushrod Island, central Monrovia, the Sinkor District and adjacent areas.

Orion Energy research projects a total power demand for the area of:

	<i>kWh/year</i>
Government PSA	26,000,000
Commercial/Industrial PSA's	[20,000,000] <i>est.</i>
Other Demand	[69,416,792] <i>est.</i>
<b>Total</b>	<b>115,416,792*</b>

The 28-MW power plant being developed by Orion Energy will be able to deliver over **200 million kWh/year**, after technical and Transmission & Distribution losses.

Map shows **concession area** of Monrovia, including Sinkor district and Central Monrovia

\*These estimates do not include recently constructed residential developments in the concession area; actual power demand is expected to be significantly higher.

# Power Generation Station



**Orion Energy's Designated HFO Power Plant – 28 MW.** Built by Caterpillar, Inc. in 2004 with less than one year of operation. Orion Energy has arranged with Africa Power Systems, Inc. (Caterpillar distributor with wide experience in Africa) to move the plant to Monrovia, Liberia. APS will provide full warranties of turnkey installation and plant operation.

# Power Generation Station

## Orion Energy's Designated Power Plant

### Technical Specifications

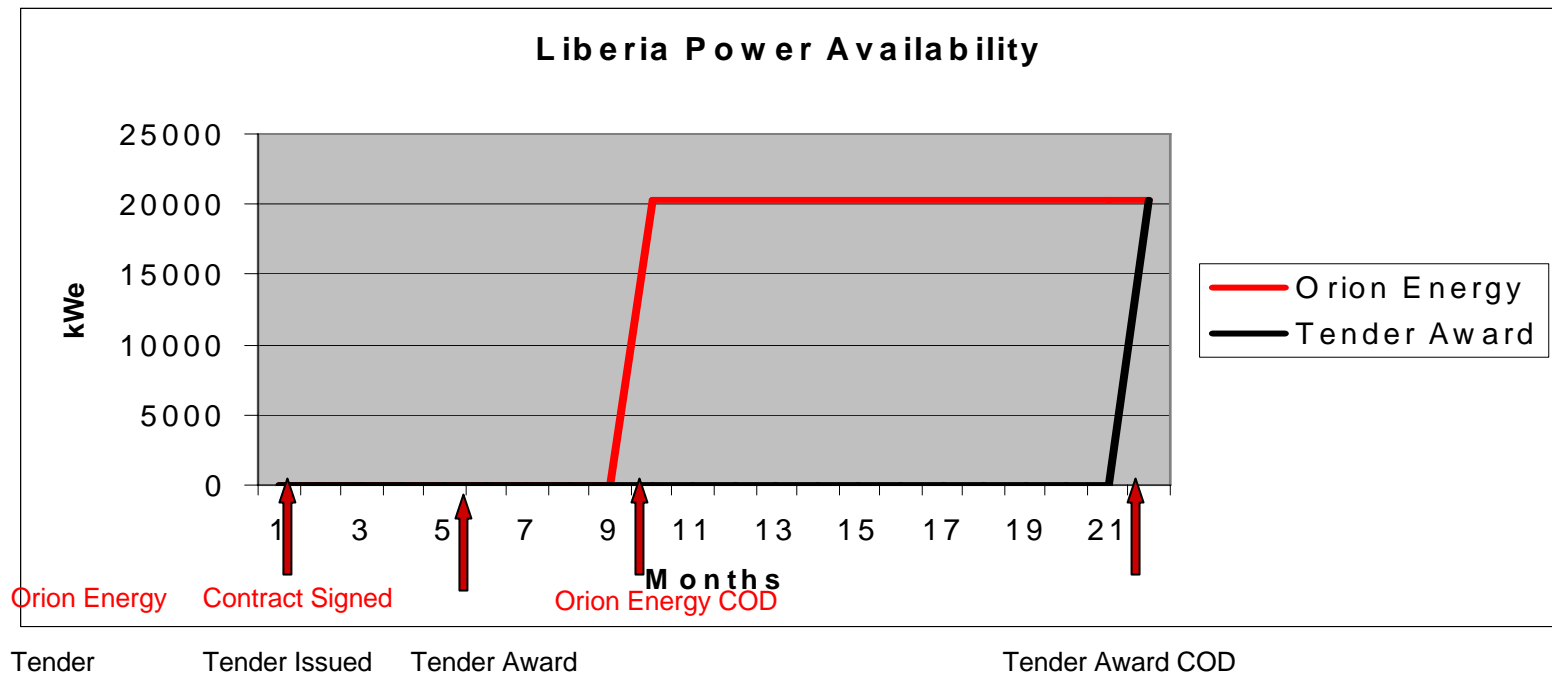
<u>Designation</u>	<u>Unit</u>	<u>Quantity</u>
Gross Power Generation	28 MW	4 x 16 CM32 CAT
Specific HFO fuel consumption	g/k Wh	207 (Heat Rate 8393 btu/kWh)
Availability	%	95
Max Net Production annually	GWh	208,298,000

***\*Plant can be fully operational in Liberia by 12/31/07, subject to:***

***- receipt of all approvals from Government of Liberia prior to April 1, 2007 and***

***- availability of distribution grid to end-user customers by COD on 12/31/07.***

# Project Time Line – Comparison with Tender Alternative



The Orion Energy proposal will save Liberia over US\$20 million in power costs during 2008 compared to the Tender Award alternative (based on an estimated current cost of power at US\$0.34/kWh).

# Benefits of Orion Energy IPP Proposal

- Sustainable, Market-Oriented, Private Sector solution
- State-of-the-Art Power Generation Facility
- Experienced EPC and O&M Provider
- Power Available within 9 months
- Power Cost at Market Price (US\$0.22/kWh)\*  
*\*depends on Market Price of fuel*
- Savings of over US\$20 million in 2008
- Requires Donor support for grid rehabilitation
- Requires Government support for private-sector, market-based solution

# Disclaimer and Contact Information

*All information in this Executive Summary is Confidential and was provided by Orion Energy, Inc. who is solely responsible for its content. Sofitel Capital Corporation USA, Inc. makes no representation as to the accuracy of the information provided herein.*

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