

**Sector
Highlight**

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**Cambodia's
Energy Sector**

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Operating in a country with extraordinary social needs, Leopard Capital likes to invest where possible in projects which deliver not only an excellent financial return to investors but also an above average 'utility' return to local people. The power business has the potential to deliver on both fronts. Hard to imagine but the whole of Cambodia has only 195MW of installed generating capacity-that's what, probably enough to run a section of Central on Hong Kong Island? Point is of course, there is a structural deficit of this most necessary commodity and with the right take off agreement, the demand inelastic business of power generation and distribution can be highly profitable AND deliver tremendous social advantages to people. We are currently looking closely at a couple of interesting Small Power Projects (SPPs) and Transmission and Distribution projects. Here, Leopard Capital Associate Matt Magenheim gives a brief explanation of just why it looks so interesting.

Matt writes: 'Cambodia's energy sector is at a critical stage of development. Despite expansion of the electricity supply since 1995 when the rehabilitation of the national power system began, capacity is still significantly below the rapidly growing demand. Electricity costs in Cambodia are among the highest in the world, while the electrification rate remains one of the lowest in Asia. Currently, less than 20% of Cambodian households have access to the public electricity grid, and tariffs generally range from \$0.15 to \$0.50 per kilowatt hour. Rural Cambodians off the grid at best may have access to small community generator sets which may charge car batteries for household use at rates of up to \$1.00 per kilowatt hour.

The domestic electricity supply is fragmented, consisting of 20 to 25 small isolated power systems that primarily rely on diesel or heavy fuel oil. In 2007, the capacity output of the Electricité du Cambodge was approximately 195 megawatts and 1,100 gigawatt hours. By 2024, required capacity is expected to approach 3,050 megawatts and 16,250 gigawatt hours.

The Royal Government of Cambodia has targeted hydroelectric generation as a priority and estimates that Cambodia has the potential to generate more than 10,000 megawatts from hydro sources. There are currently several hydroelectric dam projects under development by Chinese firms with plans to add more than 2,000 megawatts of large scale power generation projects over the next ten years. As a stopgap measure, Cambodia plans to import up to 260 megawatts from Vietnam, Thailand and Lao PDR over the next three to five years. Several transmission projects for this are now under construction with funding by development finance institutions.

Large scale power plants fueled by gas or coal may be introduced in Cambodia if recent local resource discoveries prove commercial and extraction commences. However, these projects will require significant investment in expanding the national grid system.

Cambodia is committed to rural electrification and has set a goal of providing quality electricity services to 70% of the rural population by 2030. It is estimated that only 13% of rural households have access to electricity today. The limited national grid system will require significant expansion of the domestic transmission and distribution system as well as innovative small power generation projects to ensure electrification of rural communities and emerging commercial centers.

Investment opportunities in the power sector are numerous and include both power generation and transmission. Greenfield projects for medium to large scale hydropower, coal and gas plants are available. There is also the potential to acquire smaller oil-fueled plants that are currently operating



inefficiently but have attractive power purchase agreements with Electricité du Cambodge. Cross-border transmission lines as well as domestic transmission and distribution systems may offer attractive returns contingent on the agreements investors are able to negotiate with Electricité du Cambodge.

Given the unusually high cost of electricity from traditional sources, Cambodia offers unique opportunities for alternative energy projects that would minimize or avoid the negative environmental impacts of generating power from oil, coal or hydroelectric dams. Leopard Cambodia is currently researching several options including underwater current driven turbines along the Mekong River, biomass, biogas, solar, and wind. These projects could initially target rural towns off the national grid.

So in sum, power-related projects look to us, attractive indeed-provided sufficient returns can be negotiated. We hope to give you more concrete news in the ensuing months".