

**National City Commercial Capital  
Dick Rai – renewable energy financing**

**FINANCING OF CLEAN ENERGY:  
KEY TO THE NATION'S ENERGY INDEPENDENCE**

America is the world's largest energy consumer and our appetite shows no signs of ebbing. In fact, the U.S. Energy Information Administration (EIA) predicts an 11 percent increase in total primary energy consumption in the United States by 2030, as reported in its Annual Energy Outlook 2009 Early Release.

With an increasing human population and global industrialization, the worldwide demand for energy is skyrocketing. It's no secret that traditional fossil fuels, such as oil and coal, are finite resources with increasing production costs.

The volatility of the world's oil markets during the past year – combined with future uncertainty – raises the stakes higher for America to achieve energy independence. The urgency to develop clean, renewable energy sources has never been greater. As the country wrestles with these realities, President Obama is imploring Americans to finally abandon what he calls a “shock and trance” pattern of energy consumption.

There was a nationwide outcry last year when oil prices spiked at close to \$150 a barrel. Then oil prices subsided, along with the public's consternation. Angst over OPEC's production plans is a distant memory for many. Nevertheless, the country is being asked to finally embrace renewable energy. Much of the developed world already has done so, led by China and its massive new hydroelectric operations.

U.S. energy independence relies heavily on accelerated development of advanced solar, wind, biofuel and geothermal energy resources. Not only will this reduce our dependence on fossil fuels, it will help the United States strengthen its technological leadership in energy development. The national initiative also will create millions of jobs in these economically trying times.

## **A STRONG START**

Consumption data indicates about 20 percent of the world's energy already comes from renewable sources. In 2007, U.S. renewable energy sources accounted for seven percent of our energy supply, according to the EIA, led by hydroelectric and biomass resources.

EIA data indicates electricity producers consumed half of the renewable energy in 2007. A growing number of industrial plants producing heat and steam relied on biomass resources. Biomass also was used in the production of transportation fuels (ethanol) and to provide residential and commercial space heating.

Ethanol remains very popular today. Recent adjustments to farm subsidies, however, are closing some ethanol operations. There also are land-use concerns. Other raw materials like algae and garbage refuse are attractive alternatives. In addition, an increasing number of geothermal energy projects are underway to better harness the energy deep within the earth.

Wind is the largest niche in the renewable market and utility-scale wind farms have become increasingly common. In fact, the EIA reports the increase in wind-generated electricity from the years 2005 to 2007 was unmatched versus that produced by other renewable sources. It also should be noted solar, while currently saddled with high costs, is becoming increasingly affordable and is perhaps the technology of the future. The good news is there is no shortage of smart engineers and scientists with the expertise to exploit renewable energy technology. Significant advancements are achieved each year and costs are declining. The EIA projects renewable energy-generated electricity will account for 12.5 percent of the total U.S. electricity supply by 2030.

The political support needed to push clean energy is maneuvering in place, as are government incentives to encourage development. A variety of investment tax credits, subsidies, rebates and accelerated depreciation tools are available to companies willing to pursue such energy sources.

The new \$787 billion economic stimulus bill includes a number of provisions aimed at clean energy developers. They have the option of turning renewable energy tax credits directly into cash via government grants for up to 30 percent of the cost of projects started during the

next two years. There also is a new tax credit for manufacturers of components for renewable energy production. Cash grants in lieu of the ITC, is a game changer that will be of substantial benefit to this industry.

## **FINANCING IS A GREAT CHALLENGE**

The fact is renewable energy transactions are complicated, with tax incentives and regulations varying from state to state and also federally. Renewable energy is a relatively new field and there is a dearth of financing expertise. While many renewable energy projects receive the necessary approvals to commence, less than 20 percent are actually completed. The technical expertise, political clout, tax subsidies and other incentives are in place. Unfortunately, the financing of renewable energy projects can still be very challenging.

To make renewable energy cost effective, many large funders focus their attention on projects valued at \$50 million or more. This minimum financing threshold hampers some legitimate solar, biogas and community-oriented wind power projects from ever getting off the ground. There are lenders such as National City Energy Capital, now a part of PNC, that are willing to invest the time, energy and knowledge to carefully evaluate and often fund these smaller renewable energy projects.

Smaller biogas and geothermal projects are growing in popularity, but wind power continues to dominate. During 2008 alone, more than \$20 billion was allocated to wind projects. Massive commercial wind farms cost \$500-\$600 million each, but a growing number of much smaller, community-oriented wind farms are being developed across the country.

Solar power is heating up too. Solar has the advantage of needing only sunlight to produce electricity. In addition, it's a distributed energy source. One can put a solar energy system on the roof of a building and power that structure. The solar energy produced is generally not sold to the nation's power grid, so there are no transmission costs. Many large (200Mw) utility-scale solar projects also have been announced and slated to start during the next two years. A number of high-profile companies have turned to solar energy, and many states offer performance-based incentives to solar users. These subsidies help green-minded firms make solar energy a very competitive option versus traditional energy sources.

## **FINANCING SOURCES AND STRUCTURES.**

There are many ways to structure energy deals, including standard and operating leases, as well as partnership flip structures. Power purchase agreements (PPAs) also are becoming increasingly popular. PPAs were initially introduced for municipalities looking for financing. Since they do not pay taxes, municipalities establish PPAs with banks and other funders who, upon government approval, can take advantage of tax credits for financing renewable energy projects. Flexibility is valued with any energy transaction, but some lenders fail to optimize the value of these deals. Fortunately, many new and aggressive financial structures are being explored. There also remains a concern about the efficacy of some structures and whether they would pass IRS scrutiny. More consistency in the evaluation and structuring of deals is critical.

Any financing source should evaluate transactions as follows:

1. Who are the parties involved in the transaction? Can they fulfill their obligations through the term of the project?
2. Is there construction financing and who is handling that? Lenders cannot absorb construction risk. The quality of the developers and/or availability of mitigants like construction bonds may be required.
3. Who is going to manage the operation and maintenance of the energy facility over the long term? The project must generate its forecasted production at the expected cost. This is significant with wind power systems, but not as important for a passive production system like solar.
4. Who is the actual credit and can they pay for the power over time? Revenues can come in many forms, not just by the sale of the power produced. The credit risk may include the purchaser of Renewable Energy Credits (RECs). These often subsidize the user, but what happens if these go away?

5. Is the structure of the deal and documentation acceptable? The project structure and related documentation must be in sync. This isn't as easy as it sounds, since all the nuances of a fairly complicated transaction must be covered.

Renewable energy may still be in its infancy in the United States, but its potential is vast and alluring to financial services companies. The meltdown of the financial infrastructure has

been devastating, but given the unprecedented losses suffered by traditional financing sources, there could be a \$5 billion deficit in tax equity availability this year. Can traditional lenders like banks continue to support the future as they come back to profitability? Will other profitable and tax-paying entities elect to engage?

More lenders must join the cause to finance the many promising renewable energy projects proposed each year. Creative financing can spell the difference between a great idea coming to fruition or being pushed aside.

### **THE TIME IS NOW**

Given the projected energy demands over the next 20 years, there's little time to waste in leveraging renewable resources to help America achieve energy independence. President Obama has made it a mandate of his administration. It is imperative the country succeeds in this effort.

The U.S. and global engineering and scientific communities are working to bring sustainable energy to life. The public and private sectors have begun to realize that energy independence is critical to maintaining our standard of living. The only way it will become a reality is if everyone, including developers, government agencies and financial institutions, come together to recognize the opportunity before them. This will help shape the future of this country and the world – one clean energy endeavor at a time.

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