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Investment In The Renewables Sector
Part 1

Commissioner Terry Jarrett

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Why Promote Renewable Energy Resources?

- Assume renewable energy sources (RES) are more expensive than the utility's cost of generation from traditional sources
- Offsetting benefits of RES:
  - – Environmental
  - – Diversity (technical and geographic)
  - – Economic development
  - – Encourage development of RES technology

Restructured (Deregulated) States: How are They Different From Traditional States?

What is Traditional Rate of Return Regulation?

- Rate-of-return regulation is a system for setting the prices charged by regulated monopolies.
- The central idea is that monopoly firms should be required to charge the price that would prevail in a competitive market, which is equal to efficient costs of production plus a market-determined rate of return on capital.
- Price set by regulators, not by the market.
- Guaranteed recovery of costs at a predetermined rate of return.

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What is “Deregulation”?

- In deregulated, or restructured, states, utilities are no longer responsible for building generation.
- Prices set by market, not regulators.
- The development of new generation assets require private capital investment unaffiliated with utilities or the supply of electricity to retail customers served by regulated utilities.

What is "Deregulation"?

- Instead of receiving guaranteed cost recovery at a predetermined rate of return, investors now look to market signals to determine how best to invest their capital.
- Hence, the market price signals have to offer a higher potential return than the returns seen in the relatively low risk, regulated environment.

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Factors for Successful Deregulation

- Adequate phase-in period—typically 2-3 years.
- Use of pilot projects—for example, in Texas, utilities could offer pilot programs for up to 5% of their customers before phase-in period ended.
- Robust education programs for consumers.
- Texas “price to beat” rate freeze—retail prices for consumers not served by retail energy provider frozen at 6% discount for three years.
- Encouragement of renewables—mandates and tradable credits for generators to produce renewable energy.
- Problems relating to switching providers and starting new service were quickly identified and resolved.
- Exit strategy if plan goes off the rails.

Special Considerations for Deregulated States

- How do policymakers create an atmosphere in which new generation and new technologies will be built?
  - Such technologies often come at a higher capital cost than conventional technologies and are unproven on a large scale. These elements add even more risk to prospective projects and arguably require an even greater return than the conventional projects.
- How can policymakers balance regulation and open markets to produce a reliable, environmentally friendly power system that operates at a reasonable cost?

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Financing Projects in the Renewables Sector

Financing Renewable Projects

- There are two primary ways of financing a power plant: project financing and corporate financing.
- Renewable industry has primarily focused on project financing.
  - Lenders look primarily to the cash flow and assets of a specific project for repayment rather than to the assets or credit of the promoter of the facility.

Financing Renewable Projects

- Financing is particularly important to renewable projects because they often have high capital costs.
- Additionally, renewables are currently disadvantaged in the financing process *vis-à-vis* other generation technologies because of perceived resource and technology risks, small project size, and small industry size.

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Regulatory Tools to Encourage Financing in Renewable Projects

Renewable Energy Standards

- A renewable portfolio standard (RPS) allows regulators and/or legislators to require that a certain percentage of annual electric use in a given jurisdiction comes from renewable energy.
- More attractive for investors because of a guaranteed market for selling renewable energy.
- As of 2012, 37 states, Washington, DC, and 2 US territories have renewable energy standards or goals.
- In Missouri, mandatory renewable electricity standard of 15% by 2021.

Guaranteed Grid Access

- Mandatory right of interconnection (terms may vary with size or type of generation).
- Standard interconnection agreement for smaller generators (reduced transaction costs).
- Caveat: Costs of transmission or distribution system upgrades can be an issue.

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Long-Term Contract

- Typically, investors expect contract terms (or other purchase guarantees) long enough to repay the investment and a return.
- 15 to 25 years seems to be typical.

Adequate Purchase Price

- Must be high enough to repay investment, plus return, within term of contract (and projected life of project).
- Many ways to establish purchase price.
  - –Avoided cost of purchasing utility.
  - –Generator's expected cost of production.
  - –Market-based mechanisms.
  - –May increase or decrease over time.

Performance-Based Payment

- Typically, the renewable energy-source generator gets paid for kWhs produced; no output, no payment.
- Provides strong incentive to perform, giving the purchasing utility some assurance it will receive the benefit of its bargain.
- May be inequitable if performance is hindered by factors beyond the control of the generating entity.

Cost Containment

- Renewable energy promotion tends to create upward pressure on retail rates, at least in the short term.
- Can limit adverse effect with caps.
  - –Caps on individual project size.
  - –Caps on overall program size.

Potential Funding Sources

- Retail rates.
- Tax revenues.
- Carbon emission auction revenues.
- Utility tax credits.
- Multi-utility assessments (share the costs).

Taxes, Credits and Incentives for Renewables

- US transactions are very tax driven.
- Both Federal and State programs.
- These make renewable projects more attractive to investors because it lowers their risk.

Taxes, Credits and Incentives for Renewables

- Production tax credit (Federal).
  - provides a 2.1 cent per kilowatt-hour benefit for the first ten years of a renewable energy facility's operation.[
- Renewable energy production incentives (Federal).
  - Qualifying facilities are eligible for annual incentive payments of 1.5 cents per kilowatt-hour (1993 dollars and indexed for inflation) for the first 10-year period of their operation.
- Renewable Energy Credits (States).
- Government grants and guaranteed loans.

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Alternatives

- Alternative means of promoting renewable energy generation include:
  - –Feed-in Tariffs.
  - –Ratemaking incentives for utility-owned projects.
  - –Utility renewable purchase requirements.
  - –Developer partnerships.

Conclusions

- Renewable energy policies should be designed with consideration given to the realities of power plant financing.
- Policies that do not provide long-term stability or that have other negative secondary impacts on investment decisions will increase financing costs and may reduce policy effectiveness.

Conclusions

- In the long-term, such commitments will also help create a regulatory, political, and business climate that is conducive to continued and sustained development of the renewable energy industries.
- On the other hand, stable and predictable policy commitments can lead to a decrease in financing costs, which should result in reductions in renewable energy costs and in more effective policies.

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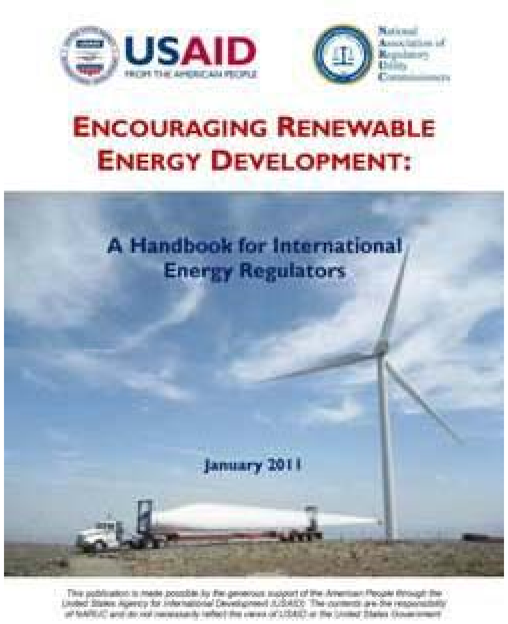
Additional Resources

http://www.naruc.org/International/program.cfm?page=51



Additional Resources

- National Renewable Energy Laboratory "Policymaker's Guide to Feed-In Tariff Policy Design", Tech. Report NREL/TP-6A2-44849
- http://www.nrel.gov/docs/fy10osti/44849.pdf

Questions?