

















Getting Projects Built: Addressing Long-Term REC Revenues

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MA Renewable Energy Trust



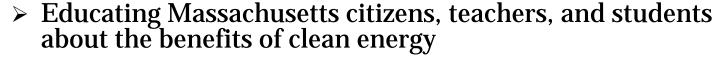
Funded by a system benefits charge as part of 1998 electricity restructuring (\$25 million annually)



1.Clean Energy



> Supporting large-scale clean energy development in the state





2. Green Buildings and Infrastructure



> Developing green building projects powered by clean energy





3.Industry Support

> Accelerating job growth, economic development, and technological innovation in the state



4. Policy Unit

> Collaborating with interested stakeholders to address market and regulatory barriers to new clean energy development





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New England Market Landscape for Renewables

- Solid renewable supply potential
 - > Good wind and biomass resources
 - > Several self-identified developers in planning stage
- Some substantial constraints
 - > Land constraints restrict size of wind plants
 - > Siting and permitting are challenges
- Mandatory and voluntary renewable demand
 - > Mandatory RPS: MA, CT, ME, RI, VT (proposed)
 - > Voluntary markets: MA, RI, ME, CT, plus REC products
- Attribute trading tacked through Generation Information System (www.nepoolgis.com)
 - > Flexible renewable energy certificate ("RECs") trading, easier reporting and regulator verification





















<u>Issue:</u> Renewable Project Financing is Difficult to Secure

- Projects need predictable energy and REC revenues
 - > REC revenue is subject to regulatory/political risk
- Most projects in New England are small (<40 MW) and of limited interest to financial market; NY projects are larger
- Investors unwilling to take risk on merchant renewable plants – require 10-15 years of contracts (today? forever?)
- Long-term energy and REC contracts with creditworthy buyers are needed, but...
 - > Retail suppliers serving load in restructured utility territories cannot count on having load in 10 years.
 - > Few creditworthy entities have emerged in the REC market.
 - ➤ Few entities willing to make even 5 year commitments for energy or RECs.



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Minimizing Investor Risk

(In order of preference)

- 1. Investment risk is reduced by...
 - > A higher the return on investment
 - > Long-term contracts w/creditworthy entities
 - > Tax incentives used to increase project revenues
 - > Risk shared with other investors
- 2. Energy resource risk is key concern
 - ➤ How much wind/water/biomass is available?
 - **Biomass concerns**: small suppliers, short-term contracts
- 3. Environmental risk (siting and permitting)
- **4. Technology risk** commercial, not emerging
- 5. Portfolio diversity helps reduce risk
 - Invest in several different geographic regions
 - > Long-term contracts with several different off-takers





















MA Solution: Mass. Green Power Partnership (MGPP)

- Goal: Get renewable projects financed by providing developers long-term REC contracts (MTC takes risk)
 - > Up to 10 yrs of first 15 yrs of operation (RECs only)
 - > REC prices bid for Purchase or Options (put or collar)
 - > Must be new construction/incremental generation
 - > MA RPS eligible, or hydro (no new dam)
 - > Commercial operation within two years (advanced stage)
 - Substantial due diligence required
- MTC escrows funds, since not creditworthy
 - > Round 1: \$21 M and Round 2: \$15 M
- → Trust funds insufficient to support large projects, much less total MA renewable demand

http://www.masstech.org/renewableenergy/mgpp.htm





















CT Solution: Project 100

- In 2003, RPS legislation was amended to:
 - > Include default service suppliers (not just competitive LSEs)
 - > Adjust RPS percentages (up and out)
 - > Require DisCos to do long-term contracts with renewables
- Project 100 long-term Disco contracts
 - > Energy **and** REC contracts sufficient for financing (≥10 yrs)
 - > At least 100 MW Class I renewable projects
 - > CT CEF evaluates 3 rounds: 30 MW, 30 MW, 40 MW
 - Must begin operational after July 1, 2003
 - > Pricing: REC price up to 5.5¢ per kWh
 - > PUC will consider approving contracts could go into rates
- → Will not fulfill entire RPS Class 1 requirement

http://www.ctcleanenergy.com/investment/Project100.html



















NY Solution: Central Procurement

- RPS created administratively by PSC
 - > includes existing (19.5%) and new (5.5% by 2013)
 - > No penalty for not reaching goals
 - > Implementation plan expected by late May 2005
- Centralized state agency (NYSERDA) does long-term contracts to help get projects financed
 - > PSC established SBC to fund NYSERDA contracts
 - > Existing resources (pre 1/1/03) can qualify if "need"
 - > Program review in 2009 expect transition to competitive market
 - > Fast track procurement in Jan 2005 (capture PTC benefit)
- → Counts on voluntary and state procurement to meet RPS requirement (15% and 3% of target, respectively)

http://www.dps.state.ny.us/03e0188.htm





















Additional information on MGPP

We presented a paper at the 2004 AWEA Windpower conference that details the MGPP – much of the information is still relevant.

www.masstech.org/renewableenergy/green_power/ MGPPpaperAWEA.pdf





















MGPP Round 1 Contracts (2003)

Project	Tech.	Location	Form	MW	Present Value Exposure
Berkshire Wind, LLC	Wind	Hancock, MA	Purch.	15	5,491,000
Brockton Brightfields (City of Brockton)	PV	Brockton, MA	Option	< 1	644,000
CommonWealth New Bedford Energy, LLC	LFG	Dartmouth, MA	Option	3+	2,019,000
Hoosac Wind, LLC	Wind	Florida, MA Monroe, MA	Option	30	9,943,000
Pepperell Hydro, LLC	Hydro	Pepperell, MA	Purch.	1+	611,000
Northern Wood Power - Schiller (Public Service Co. of NH)	Bio.	Portsmouth, NH	Option	50	2,379,000
			Totals	100	21,087,000
MTC Nominal Exposure				33,455,000	





















MGPP - Lessons Learned and Limitations

- REC purchase and option contracts can be structured to offer long-term price security
 - > 3 projects from Round 1 under construction
 - > All 6 expected to be on-line by end of 2006.
- Later year price support is of greater concern for most applicants (i.e. starting in year 3-5)
- Options (as guarantees) seem more attractive to developers than committing to REC sales
- MGPP is only a partial solution
 - > Trust funds insufficient to support large projects, much less total MA renewable demand





















Additional Information...

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