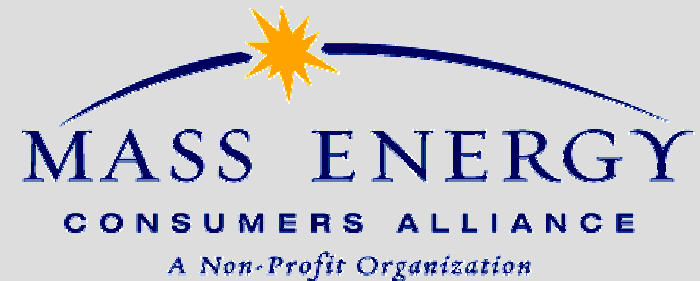




# **Going Green:** Markets for Wind Energy

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**Mass Energy Consumers Alliance**  
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# Mass Energy

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- Non-profit organization, celebrating 20<sup>th</sup> anniversary
  - Dual mission of energy affordability and environmental sustainability
  - Largest program currently is heating oil network which serves 7,000 MA households
  - Solar Boston, [www.solarboston.org](http://www.solarboston.org)
  - Green electricity, supported by MA Technology Collaborative and the John Merck Fund
- [www.massenergy.com](http://www.massenergy.com)



# Is It Just Energy?

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- Energy has market value
- But, fossil fuels cost less than wind power
- So, there's no hope, right? Wrong!
  - Federal Production Tax Credit and Renewable Energy Production Incentive
  - State incentives are even more powerful



# The Great Equalizer

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- Mass. Technology Collaborative's Renewable Energy Trust Fund
  - Created in 1997, [www.masstech.org](http://www.masstech.org)
  - Currently > \$100 million in account
  - Stimulate supply and demand of renewables



# Real Demand - Mandate

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- 1997 law created a “Renewable Portfolio Standard” (RPS), requiring suppliers to include renewables in their mix
  - 1% or 518 GWh in 2003 (>300 Hull’s)
  - 4% or 2386 GWh in 2009 (>1500 Hull’s)



# Real Demand – Customer Choice

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- 1997 law created competition for generation, competition for supply, and customer choice for supply
- People will pay more for wind power than fossil fuels and nuclear power
- Wind power bought through customer choice will be in addition to RPS #s



# Generation Information System

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- Electricity is a familiar commodity, “non-energy attributes” are a new commodity
- ISO-NE will issue “certificates” for each MWh of energy generated, showing the unit’s non-energy attributes (location, source, emissions, labor characteristics, etc.)
  - energy and certificates are traded separately



# Energy Plus Certificates = Build

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- Energy value is straight forward
  - sell thru bilateral contracts and/or spot market
- Certificate value will be driven by RPS and customer choice
  - sell thru bilateral contracts and/or spot market
- \$ value of energy and certificates will exceed cost plus reasonable profit for good sites



# More About Certificates

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- Retailers are required to disclose the details of their **CERTIFICATES** (for compliance with RPS and marketing to public)
- At wholesale and retail levels, can buy or sell certificates with energy or separately



## More About Certificates cont.

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- At retail level, can sell as “tags” (certificates alone) OR as a “delivered product” (energy and certificates)
- Can be sold independently or through distribution company
  - **Green Pricing** = distribution company sells tags directly to customers
  - **Mass Energy** hopes to offer a delivered product by April, 2003 (as independent retailer and competitive supplier, but listed on regular bill)



# Clean, Renewable, Predictable

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- Developers and buyers (suppliers of energy and/or certificates) should agree to fixing the price per MWh for the SUM of energy and certificates
  - Easy to do if one buyer wants both energy and certificates
  - Also possible if energy and certificates are sold to different buyers - a “contract for differences” sets an inverse relationship and floating prices for energy and certificates that add up to a fixed price for “green power”
- Let wind lead the way to stable green electricity prices



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