



**New England | Renewable Portfolio Standards** **May 12, 2009**



## Brookfield Renewable Power | Overview



# Brookfield Asset Management

## *A global asset management company*

- Brookfield Asset Management is an asset management company, focused on property, power and infrastructure assets
- Approximately US\$80 billion of assets owned and under management
- Approximately 10,000 employees in the Americas, Europe and Australia



▶ 120 million sq. ft.  
office and retail space



▶ 165 renewable  
power plants



▶ 2.5 million acres  
of timberlands



▶ 11,000 km of  
transmission lines



# Brookfield Renewable Power

## *Unique power operations focused on renewable energy sources*

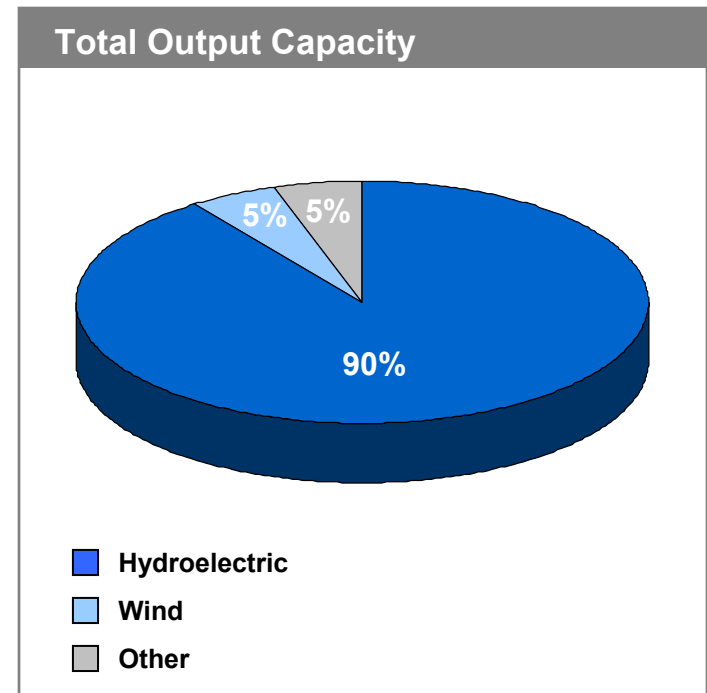
- Brookfield Renewable Power is a leading producer and developer of renewable energy focused on:
  - hydroelectric
  - wind
- Over US\$12 billion of assets owned and under management
- Approximately 1,000 employees in North America and Brazil



# Brookfield Renewable Power

## *Leader in hydroelectric power in North America and Brazil*

Hydroelectric Portfolio		
Markets	Stations	MW
<b>United States</b>		
New England	20	841
New York	75	705
PJM/MISO	4	168
Louisiana	1	192
<b>Canada</b>		
Quebec	6	286
Ontario	21	897
British Columbia	5	135
<b>Brazil</b>	32	532
	<b>164</b>	<b>3,756</b>



- 95% of our production is sourced from renewable energy
- Generating assets on 64 river systems
- Over 100 years of power generating experience



# Hydroelectric - New England



## Operating Statistics

<b>Installed capacity:</b>	841 MW
<b>Annual generation:</b>	1,828 GWh
<b>Storage:</b>	509 GWh
<b>Generating stations:</b>	20
<b>Generating units:</b>	68

- Located on five river systems in New Hampshire and Maine.
- New England assets are interconnected to the New England Power Pool.

<b>Production Centers</b>	<b>Installed Capacity in MW</b>	<b>Annual Generation in GWh</b>	<b>Generating Units</b>	<b>Generating Stations</b>
Southern Operations	694	960	34	12
Northern Operations	147	868	34	8



# New England | Renewable Portfolio Standards



# Overview

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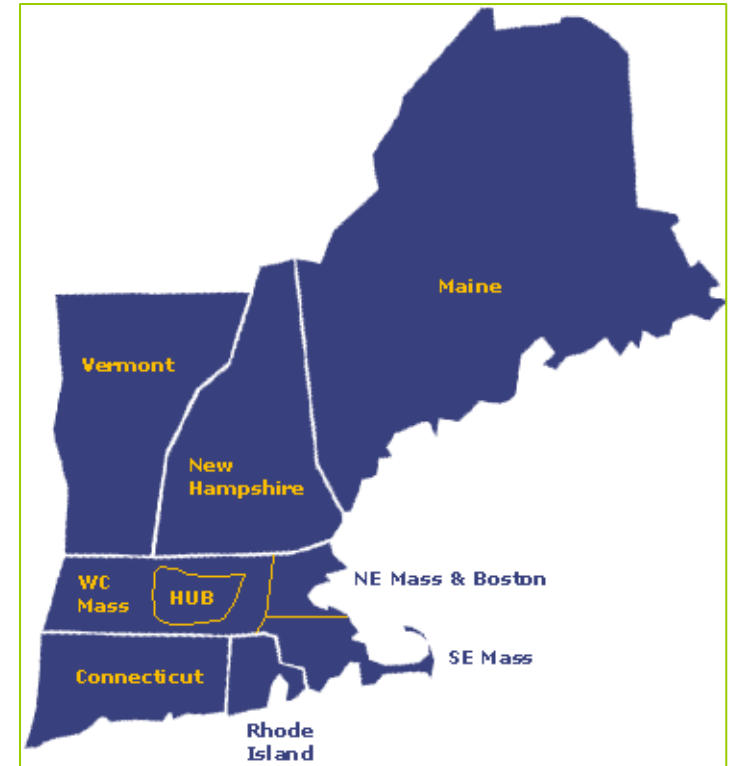
- **1** Control area
- **6** States
- **5** Renewable Portfolio Standards
- **1** Renewable Portfolio Goal
- **6** Different targets
- **11** different definitions of eligible hydropower





# Renewable Targets

State	Target	Year
ME	10%	2017
NH	23.8%	2025
MA*	20%	2025
CT	27%	2020
RI	16%	2020
VT**	20%	2017



Source: ISO-NE

\* Massachusetts increases 1% per year with no end date

\*\* Vermont has a non-binding goal where utilities must procure power but not turn in RECs



# Hydropower Definitions

RI: “New”: after 1997  $\leq$  30 MW (no new impoundments)

“Existing”: same but for assets on-line before 1997

ME: Class I: after 9/1/05  $\leq$  100 MW

Class II: before 9/1/05  $\leq$  100 MW

VT: after 3/31/04  $<$  200 MW

CT: Class I: after 7/1/03 new/incremental run-of-river  $\leq$  5 MW

Class II: before 7/1/03 run-of-river  $\leq$  5 MW

NH: Class I: after 1/1/06 incremental

Class IV: before 1/1/06 and  $\leq$  5 MW + fish passage

MA: Class I: after 1997 incremental/new  $\leq$  25 MW + LIHI

Class II: before 1997 and  $\leq$  5 MW + LIHI



# Tradability / Flexibility

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- All New England states with established targets accept renewable energy certificates (“RECs”) tracked in the regional generation information system for the New England Power Pool (the “NEPOOL GIS”) (within the control area)
- Allow qualifying renewables from adjacent control areas
  - Some states require that the energy be delivered into the control area in order for RECs to be counted for compliance purposes



# Brookfield's Experience

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- Participate in only 2 state RPS so far: Rhode Island and Maine
  - Matching facilities
  - Available resources
  - Import and sell RECs from outside ISO-NE
- Have to apply for qualification in each state separately
- NEPOOL GIS system tracks RECs and prevents double counting
- Also sell RECs in the New-England voluntary markets



# New England's Example

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- Good small scale example of what a national system will face
- Good opportunity for lessons:
  - National tracking system
    - There is at least a need for a better interaction between existing systems
  - Uniform definitions
    - What is a qualifying renewable resource?
    - Important to harmonize CO2 treatment
      - Does a REC include CO2 or not?
  - Streamlined processes



