

# State Renewable Energy Requirements and Goals: Status Through 2003

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# End of 2003 15 States, 17 Programs

- 9 Renewable Portfolio Standards (RPS)
- 4 Mandates
- 4 Voluntary Goals

# In this presentation -

- Define RPS, Mandates, Goals
- Identify States With Each
- Briefly Describe Key Characteristics
- Show Amount of Capacity Built in Each
- Introduce Changes Since 2003
- Discuss Expectations for Future

# Renewable Portfolio Standards

## 9 States

- RPS Set Increasing Percentages Over Time
- RPS Set Shares of Generation or Sales
- Do Not Specify or Project New Capacity
- Supplier Can Choose From a Menu (Portfolio) of Renewable Energy Choices
- Most Just Beginning, Peaking Around 2010
- Arizona, California, Connecticut, Maine, Massachusetts, Nevada, New Jersey, New Mexico, and Wisconsin

# RPS

- 5 of 9 Established as Part of Deregulation
- 7 of 9 Accept Existing Capacity
- All 9 Accept Out-of-State Supply
- 8 Accept Credit Trading
- All Accept Landfill Gas, Solar, and Wind
- Acceptance of Biomass, Hydro Varies
- 3 Favor Some Renewables (usually solar)

# RPS

## Financing, Alternatives

- 6 States Allow Costs Passed to Ratepayers
- Only 3 Allow Systems Benefits Charges
- Only 4 Explicitly Allow Green Power Contributions to RPS
- 8 of 9 Excuse if Costs are Excessive
- 7 of 9 Feature non-Cost Alternatives/Delays
- 8 of 9 Have Penalties, None Used

# Mandates

## 4 States

- Set Specific Amounts of Capacity
  - Sometimes targets are by technology
  - Target may be set based on fraction of expected generation, but remains fixed once established
- Must be New Capacity
- Sets Deadlines (Many Already Met)
- Fewer Cost/non-Cost Outs than RPS
- Iowa (105 MW), Minnesota (1,250 MW), Texas (2000 MW), Wisconsin (50 MW)

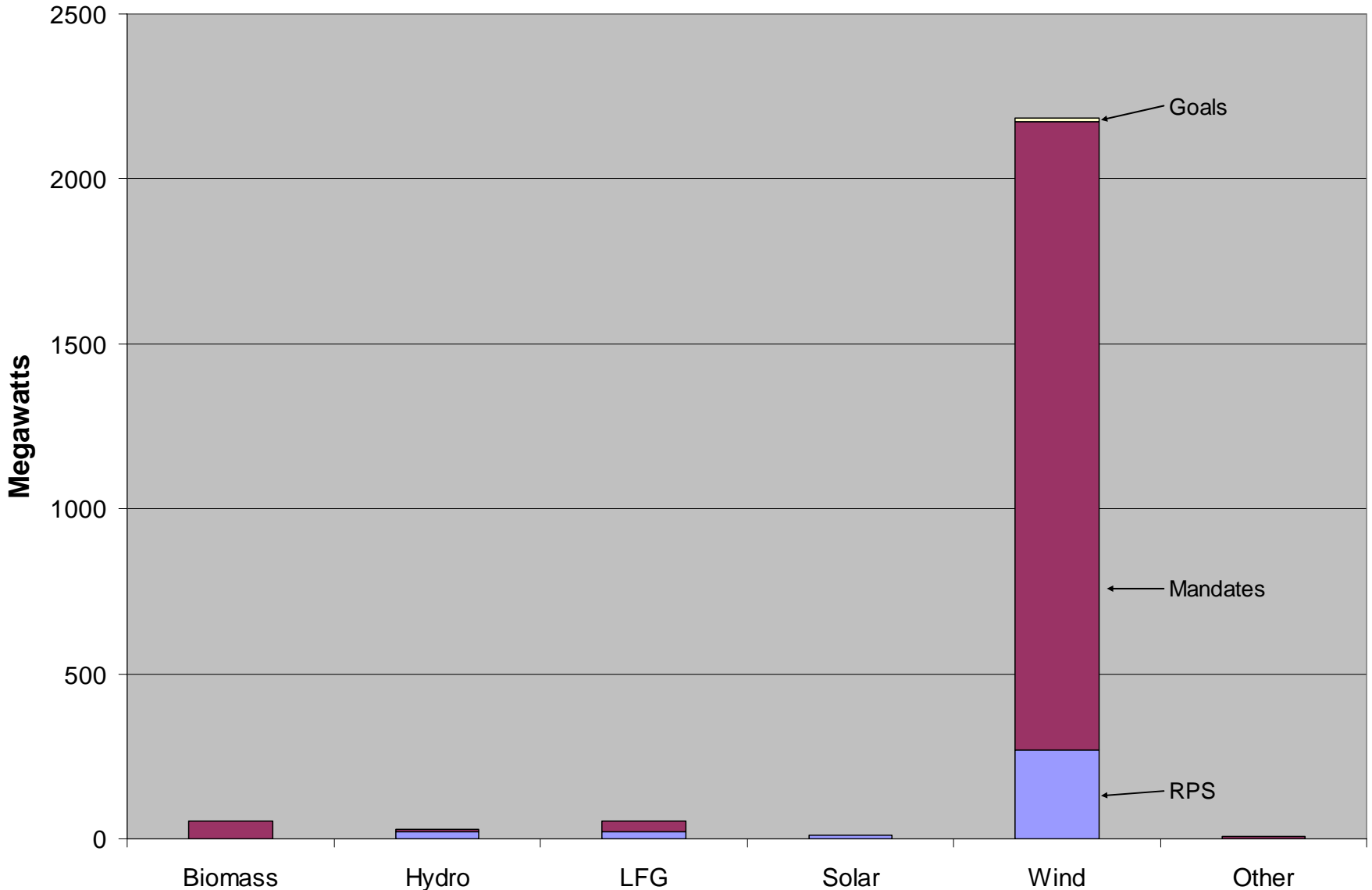
# Voluntary Goals

## 4 States

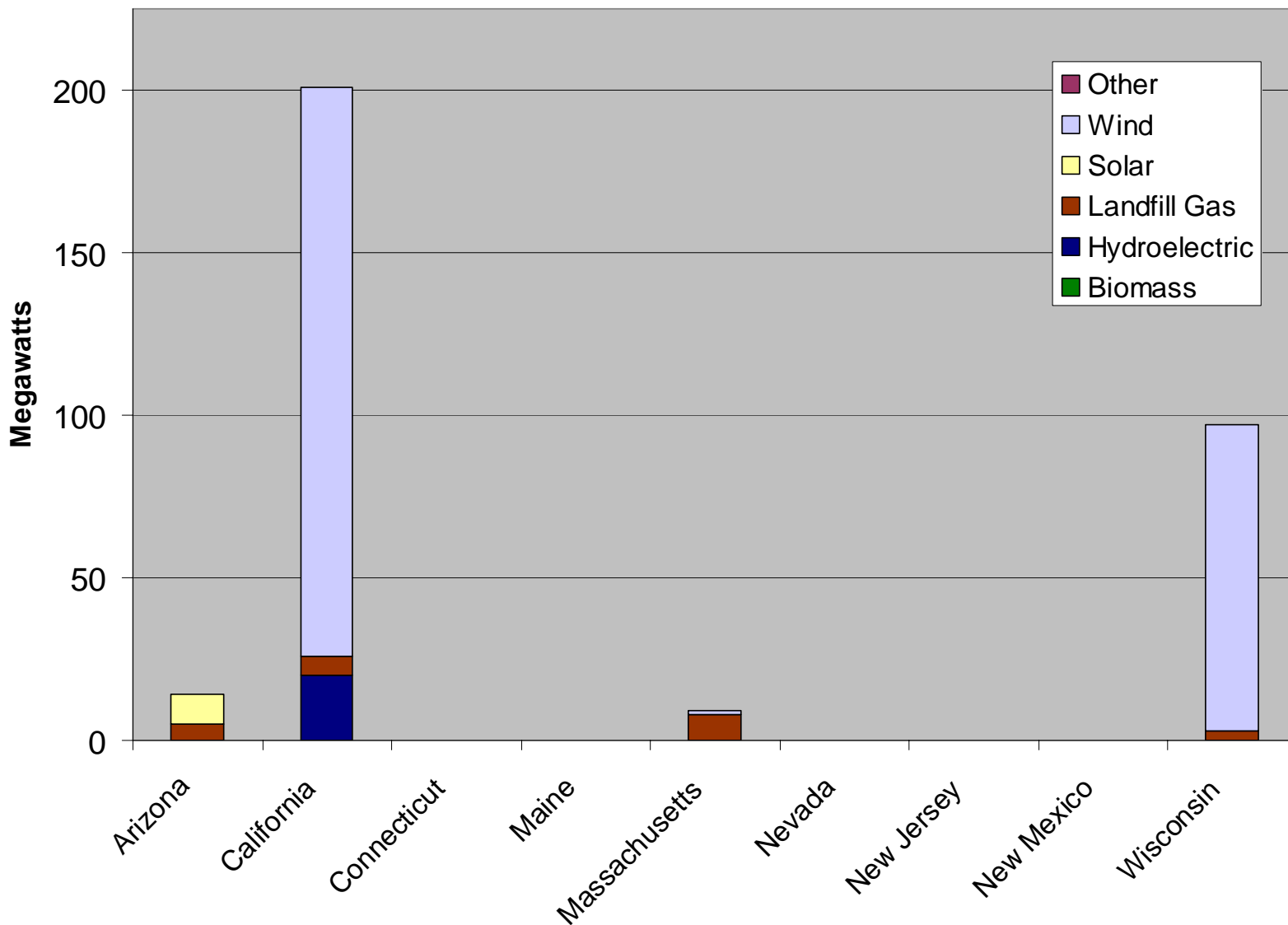
- Resemble RPS, but
  - Lack Penalties
  - Set Percentage Goals
- Hawaii, Illinois, Minnesota (except Xcel), Pennsylvania



# State Programs Through 2003 Added 2,335 Megawatts

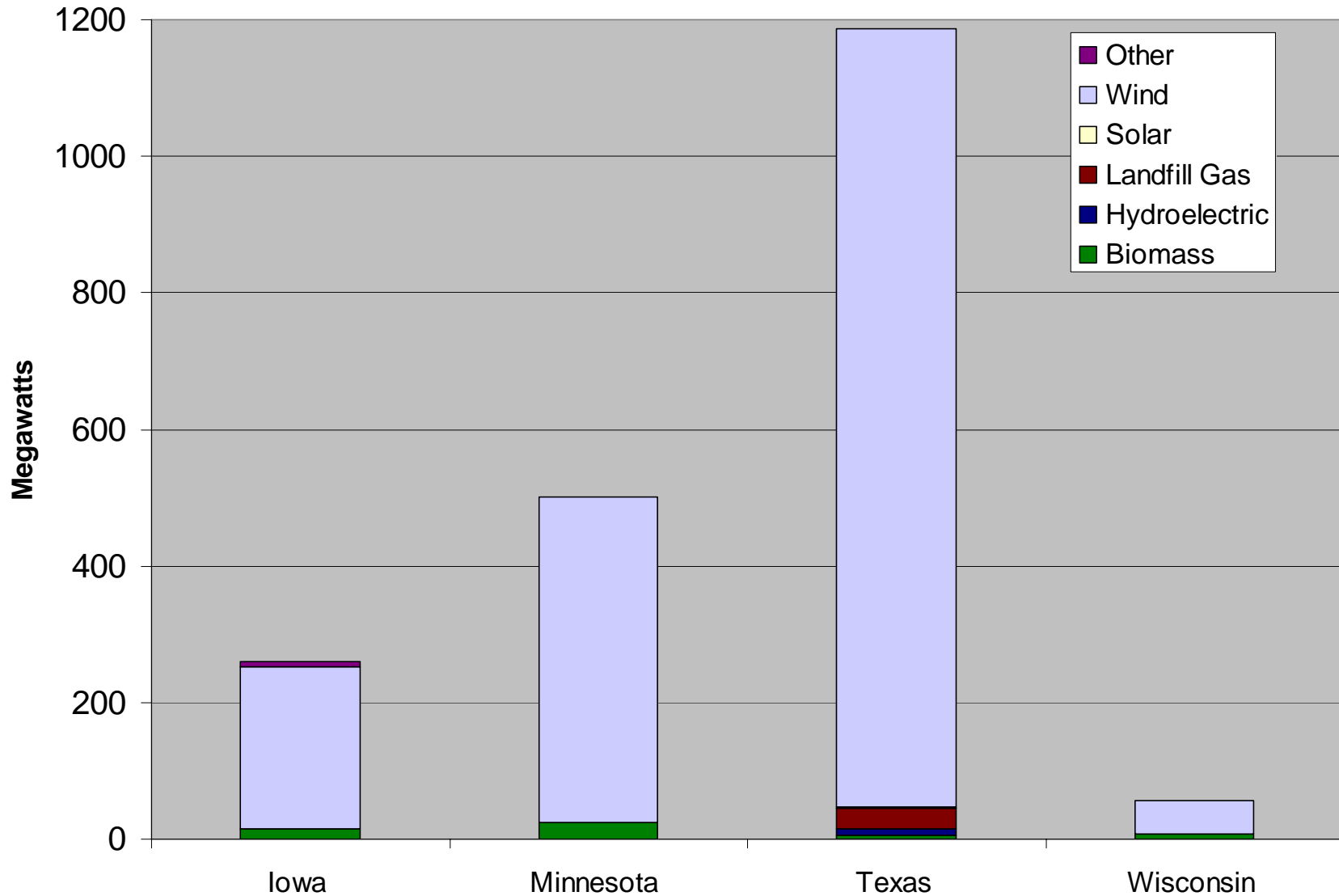


# State Breakout of RPS Additions



Not all RPS-qualified capacity was necessarily “caused” by the RPS

# State Breakout of Mandates



Solar (PV) accounts for a few hundred kilowatts

# Tentative Conclusions Through 2003

- Mandates (Texas, Minnesota, Iowa, Wisconsin) have been the state-level primary drivers of new renewable energy capacity
- So Far, state RPS have not unambiguously resulted in much new capacity
  - Most RPS programs are relatively new
  - Most have compliance options without renewable generation
- Little new capacity observed in 2004 – PTC lapsed but anticipated.

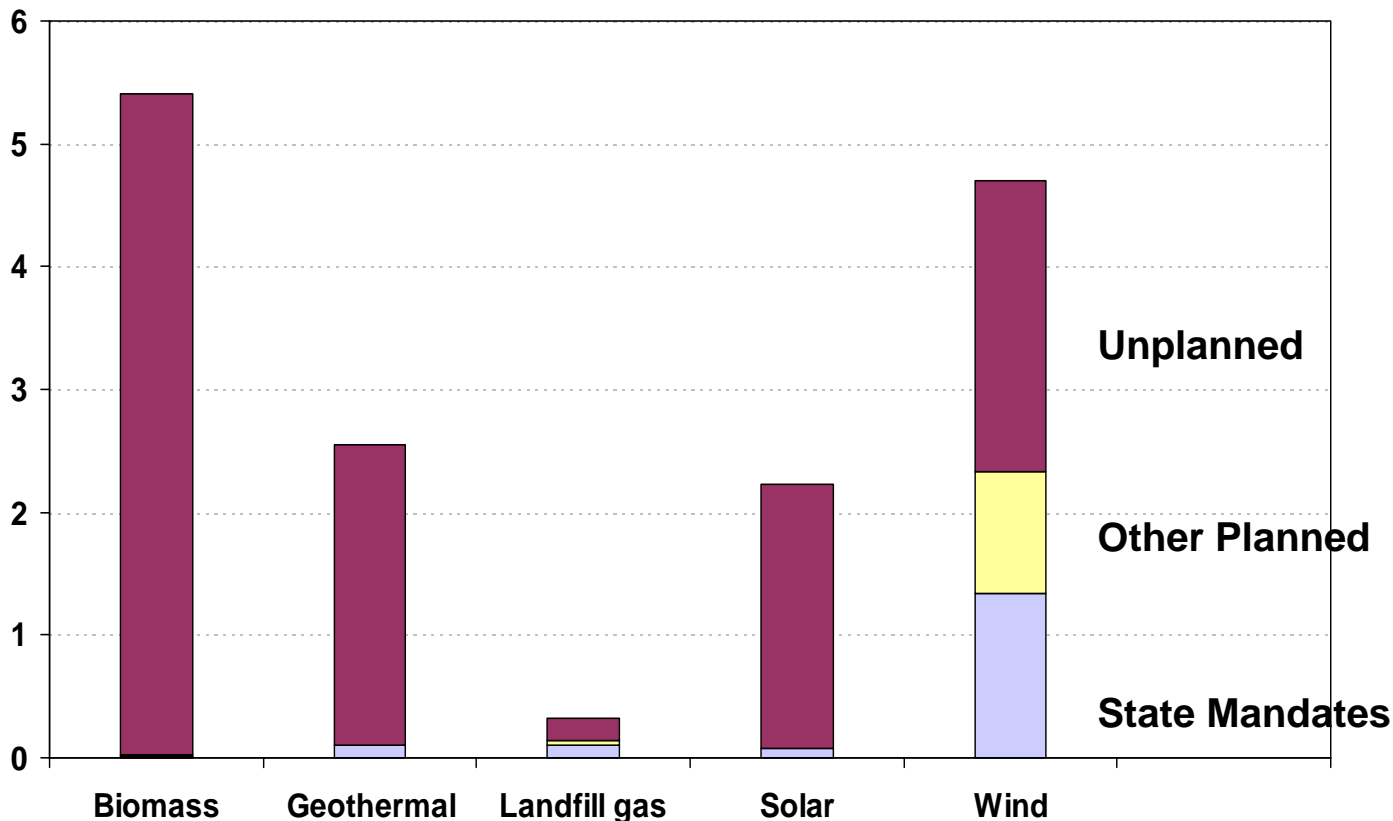
# New Requirements Since 2003

- Colorado
  - Ballot initiative, 10% by 2015
  - Includes solar set-asides, credit trading, limits on electricity price impacts
  - Awards “bonus” credits, which may effectively reduce target amount
- District of Columbia
  - 11% by 2022
  - Credit trading, penalty payments
  - Awards “bonus” credits, which may effectively reduce target amount
- Maryland
  - 7.5% by 2019 for “Tier I” resources, 2.5% for “Tier II”
  - Has credit trading, alternative compliance payments
  - Awards “bonus” credits, which may effectively reduce target amount
- New York
  - Regulatory action, 25% by 2013 (up from current 19%)
  - Portion of target to come from “voluntary” market
  - Includes distributed resource set-asides
- Rhode Island
  - 16% by 2020
  - Has credit trading, alternative compliance payments

# Revised Requirements or Goals

- Changed target
  - Minnesota: from 425 MW of wind to 1125 MW
  - New Jersey: from 2% to 4%
  - New Mexico: reduces target for large electricity consumers
- Goal replaced with RPS
  - Pennsylvania: 8% “Tier I”, 10% “Tier II” by 2020
  - Hawaii: 20% by 2020 (up from current 8%)
- Added credit trading
  - Maine
  - Nevada
- Other
  - New Mexico: regulatory action recognized by statute; established maximum cost threshold
  - Connecticut: RPS now applies to larger share of generation, new resources added

# Additions of Renewable Generating Capacity, 2003-2025 (gigawatts)



- AEO2005 projects 1,600 MW of additional state-mandated capacity through 2025
  - Based on consultations with state officials
  - 13,300 MW of new commercial builds through 2025 (not mandated)
  - Union of Concerned Scientists estimates about 25,500 MW if all RPS/mandate targets are met with capacity additions

# Expectations

- New states continue to propose, pass, and modify existing renewable target programs
  - Specific programs match local needs and resources
  - While some features seem to be popular, no common, comprehensive model has emerged
- Compliance with renewable capacity additions may hinge on Federal policy
  - PTC has been seen as critical in wind market compliance
  - FERC policy will play a role in both ability to comply and cost of compliance



# Massachusetts Compliance Report

- In 2003, MA estimates 45% of RPS compliance was from prior-year banked credits
- Outlook for 2004 suggests about 40% compliance from alternative compliance payments @ 51 \$/MWh
  - About 20 \$/MWh is available from PTC
  - Implies approx. 70-100 \$/MWh in value available, including electricity value
  - Wind costs estimated between 40 and 60 \$/MWh
  - New England has wind resource available
  - What's wrong with this picture?

# Questions?

- Report at  
<http://www.eia.doe.gov/oiaf/analysis.htm>
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