

# The California Renewables Portfolio Standard: SB 1078

## Issues of Importance to Wind Energy



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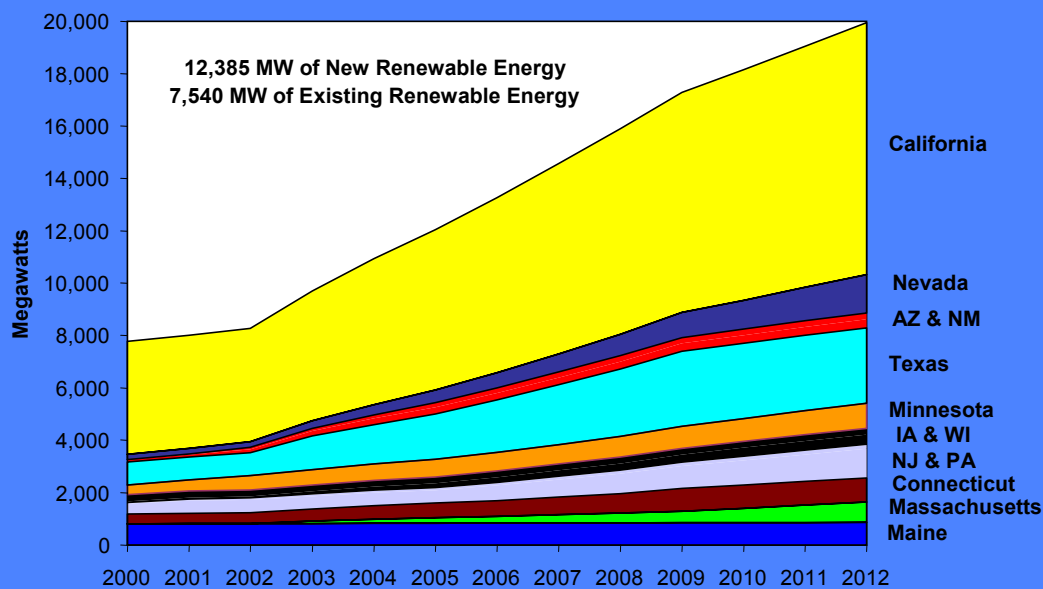
# SB 1078 Key Features

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- **IOUs increase renewables portion of energy mix each year by at least 1% of total retail sales**
- **Renewables portion must reach 20% by 2017**
- **Renewables chosen from competitive bids**
  - Compared on “least-cost and best-fit” basis
  - Total costs to be considered (including the indirect costs of transmission, integration and operating expenses)
- **Winning bidders’ costs covered by:**
  - IOU contract, up to “market price” benchmark
  - Public Goods Charge (PGC) funds, for above-benchmark costs
- **RPS obligation waived if/when PGC funds run out**

# Renewable Energy Expected From State RPS Policies



\* Projected development assuming states achieve annual RPS targets.

Source: Union of Concerned Scientists



## Example: 5¢/kWh Benchmark



### Bid A

5.50¢/kWh bid  
5.75¢/kWh total cost

### Bid B

5.25¢/kWh bid  
6.00¢/kWh total cost

- Bidder A wins
- Bidder A receives 5.0¢/kWh from IOU contract and 0.5¢/kWh from PGC fund
- Total cost evaluation affects selection, not payments
- Indirect cost evaluation will affect achievement of RPS goals



# Components of Wind's Integration Costs



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- **Regulation (minute to minute variations)**

Studies have shown wind's regulation costs are modest (e.g., \$0.05 to \$0.30 per MWh), but California-specific study would be straightforward and useful.

- **Load following or energy imbalances (10-minute to several hour variations)**

CAISO's Tariff, Participating Intermittent Resources Protocol "avoid(s) imposing additional costs on other market participants" according to FERC.

- **Contingency reserves (forced outages)**

Wind's modularity may create a relatively positive value.



# Assessment of Wind's Capacity Value



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- As-available product benchmark may be appropriate for wind (in addition to firm, peaking, and possibly other benchmarks)
  - Capacity value must be evaluated fairly
  - Wind industry data suggest that capacity value will be in the 30%-of-nameplate range; SCE has suggested it is in the “single digits”
  - Simplified analysis of wind's capacity value can be done using the capacity factor of a wind resource during the top 20% of load hours in the year.
  - This approach underestimates capacity value using more sophisticated effective load carrying capability (ELCC) approach



# Implementation Issues of General Importance



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- **Estimating and allocating the transmission costs associated with each bid. (SB 1078 requires costs with network benefits to be rolled-in to transmission rates.)**
  - **Standard contract terms**
  - **Eligibility issues (Geysers, out-of-state resources)**
  - **CEC payment caps, bid bonds**
  - **Accounting system (tradable credits)**
  - **Availability of PGC funds**