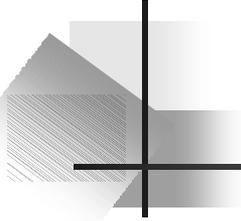


# Renewable Energy Credits

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By Harvey Boyce  
Arizona Power Authority



# Renewable Energy Credits

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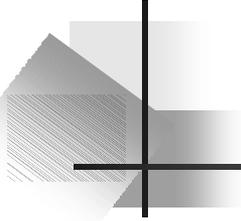
- A Renewable Energy Credit represents one megawatt hour (MWh) of energy generated from an energy source that is naturally regenerated, such as solar, hydro, wind, geothermal energy, methane gas from landfills, fuel cells, and other technologies.

# Renewable Energy Credits

## "RECs"

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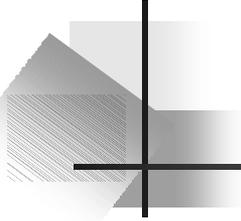
- "In a REC deal, the power from the new renewable energy facility is not physically delivered to the customer, but the environmental benefits created by the facility are attributed to that customer, directly offsetting the environmental impact of the customer's conventional energy use." - Bonneville Environmental Foundation



# REC Variables

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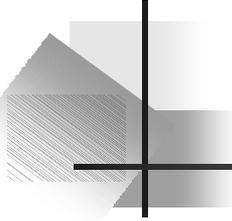
- The REC market is in its infancy and is currently being tested and defined
- Price volatility
  - May be mitigated by long-term contracts, or banking considerations
- No standardized verification, tracking, or accounting systems



# REC Benefits

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- Generators can sell RECs bundled or unbundled, enhancing the flexibility of the REC market.
- An independent REC trading market promotes development of renewable resource technology.
- In some states, retailers can achieve RPS compliance with RECs in lieu of direct renewable purchases, without having to install capital-intensive improvements.



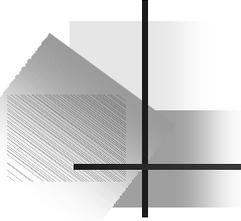
# The REC Market

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- The renewable energy credit market has begun to develop due to:
  - State purchase mandates (“green procurement”),
  - State incentives such as tax incentives,
  - Environmental disclosure requirements that reveal fuel mix and emissions,
  - Consumer-driven green power demand,
  - Air quality improvement.

# States with Established Renewable Energy Credit Markets

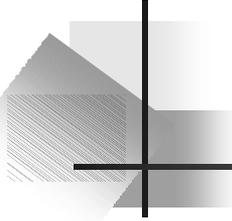




# TEXAS

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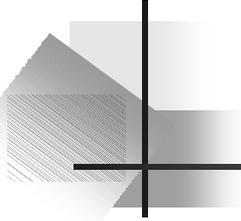
- Renewable Energy Credits (RECs) have been mandated as part of Texas' electric deregulation requirements.
- The Texas RPS was established in January, 2002.



# NEPOOL

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- The New England Power Pool (NEPOOL) is comprised of six states: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.



# NEW YORK

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- Although New York has not yet instituted an RPS, in 2001 Governor Pataki issued Executive Order 111, requiring state agencies to source 10% of their electricity needs from renewable generation by 2005, and 20% by 2010.

# PJM

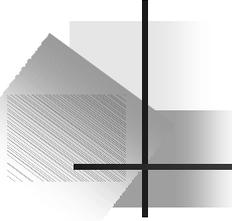
(Pennsylvania, New Jersey, Maryland)

## Class I =

- solar technologies, photovoltaic technologies, wind energy, fuel cells, geothermal technologies, wave or tidal action, and methane gas from landfills/biomass facilities, (provided the biomass is cultivated and harvested in a sustainable manner).

## Class II =

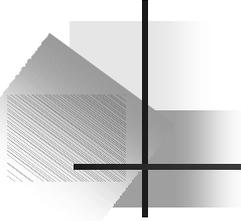
- electric energy produced at a resource recovery facility—“waste to energy” or municipal solid waste—or hydroelectric facilities (maximum of 30 megawatts or less).



# CALIFORNIA

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- The California RPS was passed in 2002.
- SoCalEdison and PG&E, with 80%+ market share, get a significant portion of their electricity from renewable sources, and are expected to achieve the 20% RPS goal by 2012 (five years early).
- California plans to have an REC program in place by December 2003, and an REC tracking system established by January 2005.



# ARIZONA

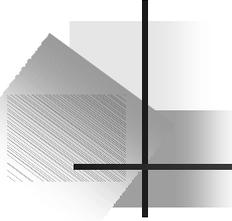
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- The Arizona Corporation Commission passed the Arizona Environmental Portfolio Standard (EPS) in 2001.
- For utilities regulated by the ACC, compliance with the EPS is voluntary.

# Arizona's Predominant Renewable Resources



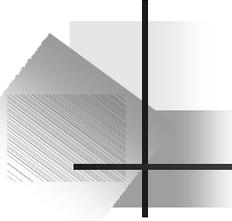
Credit: Robb Williamson



# Arizona RECs

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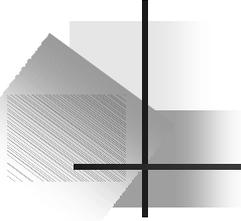
- Promote development of the renewable energy market in Arizona with:
  - State-wide consumer education campaign
  - Establish and regulate a state-wide and regionally-compatible REC Program
  - Encourage the market-based development of new and existing renewable energy industries
  - Fully utilize Arizona's unique renewable resources (wind, solar, hydro)



# Arizona RECs

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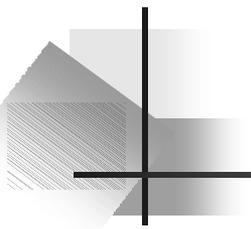
- Arizona now has the opportunity to assume a leadership position in the development of a regional REC program (via Western Governor's Association (WGA), Public Renewable Partnership (PRP), and other developing committees/councils).
- A statewide, regionally compatible REC Program would provide the structure for financial and environmental benefits for Arizona.



# Arizona Power Authority

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What is APA's role  
in the Arizona REC Program?



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BEST USE OF  
ALL POWER RESOURCES  
BASED ON NEW TECHNOLOGIES