



Center for  
**RESOURCE SOLUTIONS**

P.O. Box 29512 San Francisco, CA 94129  
415/ 561.2100

# U.S. Green Power Certification Programs:

Resource definitions  
and how we got there



*Presented by:  
Kirk Brown  
Assistant Director  
Center for Resources Solutions*



# Who is CRS?

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- Non-Profit Organization -- 501(c)3
- Mission -- Promote Renewable Energy and Energy Efficiency
- Support Comes from:
  - Foundations (45%)
  - State & Federal Government (45%),
  - International Energy Agency (6%),
  - Other (4%)



# Why Voluntary Certification Programs?

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- Build understanding of renewables
- Ensure people get what they pay for if they buy certified “green” electricity
- Shape the renewable energy market
- Use minimum thresholds as basis for getting good information to consumers



# Why Focus On Minimums?

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- Markets Evolving
  - Consumers grow more sophisticated over time
- Interim Steps Are Acceptable
  - Build customer awareness
  - Ensure resource availability



# CRS Certification Initiatives

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- Green-e
  - Consumer confidence in restructured markets
- Green Pricing Accreditation
  - Best practice criteria for utility programs
- Low Impact Hydropower Institute
  - What is “renewable” hydropower?
- Green-e *PLUS*
  - Integrating renewables and efficiency



# Typical Organization for Programs

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- Governing Board
- Participant Advisory Committee
- Stakeholder Advisory Committee
- Ad-hoc Governmental Advisory Committee



# Typical Thresholds for “Eligible Products”

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- Use of renewables
  - biomass, geothermal, wind, small hydro (less than 30MW), solar, ocean
  - 50-100% of total energy for Green-e
  - Emphasis on use of new renewables
- Non-renewables, if used, are as clean or cleaner than system power per kWh for  $SO_x$ ,  $NO_x$ , and  $CO_2$
- No differentiated nuclear power purchases



# Renewables Definition: Evolving Areas of Discussion

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- Biomass Definitions
  - From broad to more specific
- Co-Firing
  - Could very specific definition become more broad?
- Hydropower
  - Size-based standard evolves to Low Impact Hydropower?
- Efficiency
  - Negawatts in place as pilot
  - Green-e *PLUS*?



# Green-e Biomass Definitions

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- **California**
  - Wood-based, agricultural crops or wastes, animal or other organic wastes, landfill gas, MSW
- **Mid-Atlantic**
  - Landfill gas, clean urban wood waste (no painted, treated, or pressurized wood or wood contaminated with plastics or metals), animal or non-herbaceous agricultural waste, mill residues, bioenergy crops
- **New England**
  - Waste wood (including construction debris that does not contain any painted, treated, or pressurized wood), agricultural crops or waste, animal or other organic waste, and landfill gas



# Green-e Biomass NOx Emissions Limits

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- Biomass emissions limits in New England and Mid-Atlantic
  - Standard Starts at 2.9 lbs./MWh in 2000
  - Ratchets to 2.25 lbs./MWh during 2006-2008
  - Based on average weighted Nox emissions from all biomass sources, except for landfill gas or digester gas
- New England -- NOx emissions on landfill gas facilities
  - Standard set at 3.5 lbs./MWh
  - Based on weighted average of the resource supply mix contributing to the product



# Green-e Definition on Co-firing

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- Co-firing of landfill methane with natural gas permitted
  - can be piped directly to gas facility or co-mingled in pipeline
  - landfill gas must be metered
  - contracts must be in place to allow verification
  - New England -- must meet emissions limits for landfill gas facilities
- Co-firing limited to landfill methane with natural gas
  - Only amount of electricity produced by the landfill methane counts towards Green-e's "eligible renewables" requirements



# Low-Impact Hydropower

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- Eight Criteria Areas:
  - Flows
  - Water Quality
  - Fish Passage & Protection
  - Watershed Protection
  - Threatened and Endangered Species Protection
  - Cultural Resource Protection
  - Facility Removal
- Information at [www.lowimpacthydro.org](http://www.lowimpacthydro.org)



# Pennsylvania Green-e: Energy Efficiency Option

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- In PA, Marketers Can Use Energy Efficiency
  - Recognizes Potential Lack of Renewables in Early Years
- Energy Efficiency Option
  - Year 1: Up to Half “Renewable” Resource May be Derived from Energy Efficiency
  - Decreasing Amounts to Year 5



# What is Green?

## Some Parameters

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- Perspective View
  - Electricity system is dirty and dangerous
    - ◆ 52% of electricity is coal; 18% nuclear
- Existential View
  - All resources have impacts
- “Right Answer” View
  - Regulatory -- race to bottom?
  - Environmental -- race to top?



# Part of the Answer: Disclosure

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- Education is the key
  - Green power choice forces us to talk to consumers -- for the first time?
- Disclosure forces customer education
- Certification reinforces disclosure
- Standard definitions long-term goal
  - Policy discussion has time to evolve increasing degrees of sophistication as customers learn more



# Green Power In Prime Time

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