

Overview of the Green Power Market : The Basics

October 26, 2008

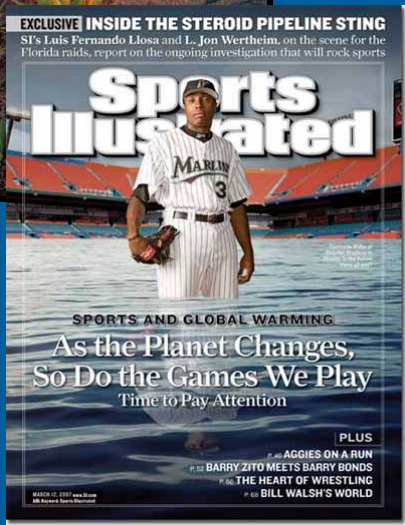
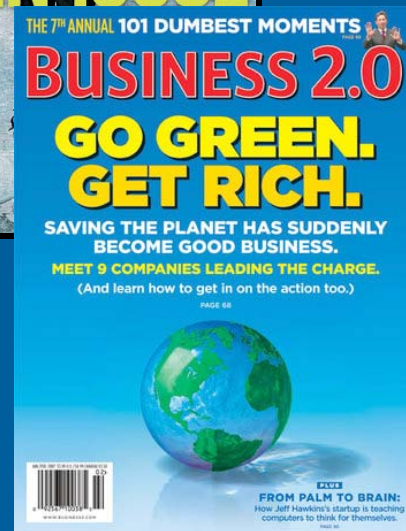
PRESENTED TO

National Renewable Energy Marketing Conference
Denver, Colorado

PRESENTED BY

Dan Lieberman

3degreesinc.com



Agenda

- o Who is 3Degrees?
- o Renewable Energy Generation
- o The Grid
- o Renewable Energy Certificates
- o Renewable Energy Financing
- o Q & A

What does 3Degrees do?

1. Enable customers to become green powered and carbon balanced
2. Channel capital to clean energy and carbon reduction projects

How?

We find high quality projects and bring to market Renewable Energy Certificates and Verified Emission Reductions from around the world.

3Degrees Products and Services

We find high quality projects and bring to market Renewable Energy Certificates and Verified Emission Reductions from around the world.

Renewable Energy Certificates

Resale and Wholesale Sales of Renewable Energy Certificates

Globally Sourced Carbon Offsets

Resale and Wholesale Sales of Verified Emission Reductions

Utility Green Pricing Programs

Green Power Program Design and Management

Carbon Footprinting

Calculation of the Bounds of Organizations' Carbon Profile

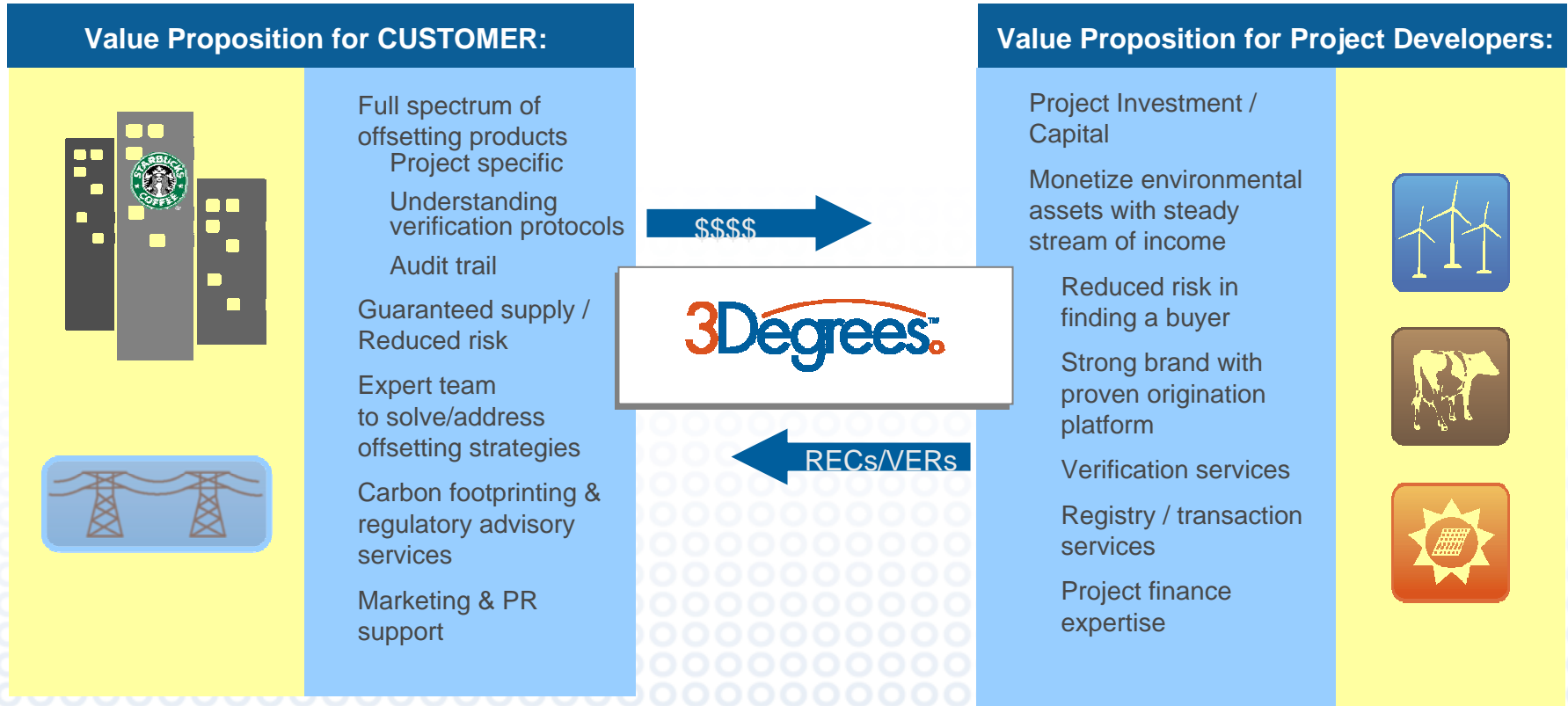
Regulatory Advisory

Federal, Regional, and Local Renewable Energy and Climate Advisory Services

*2007, 2005 DOE Renewable Energy Marketer of the Year
2005 U.S. EPA/CRS Beacon Award for inspiring corporate demand for renewable energy*

What does 3Degrees do?

We remove the complexity for you...



...while working with clean energy projects to solve their challenges.

3Degrees is a proud supplier of renewable energy certificates and verified emission reductions to:

- o 9 of the Top 25 Green Power Purchasers
- o 15 Fortune 500 Challenge companies
- o 30 Fortune/Global Fortune 500 companies
- o 20 Climate Leaders

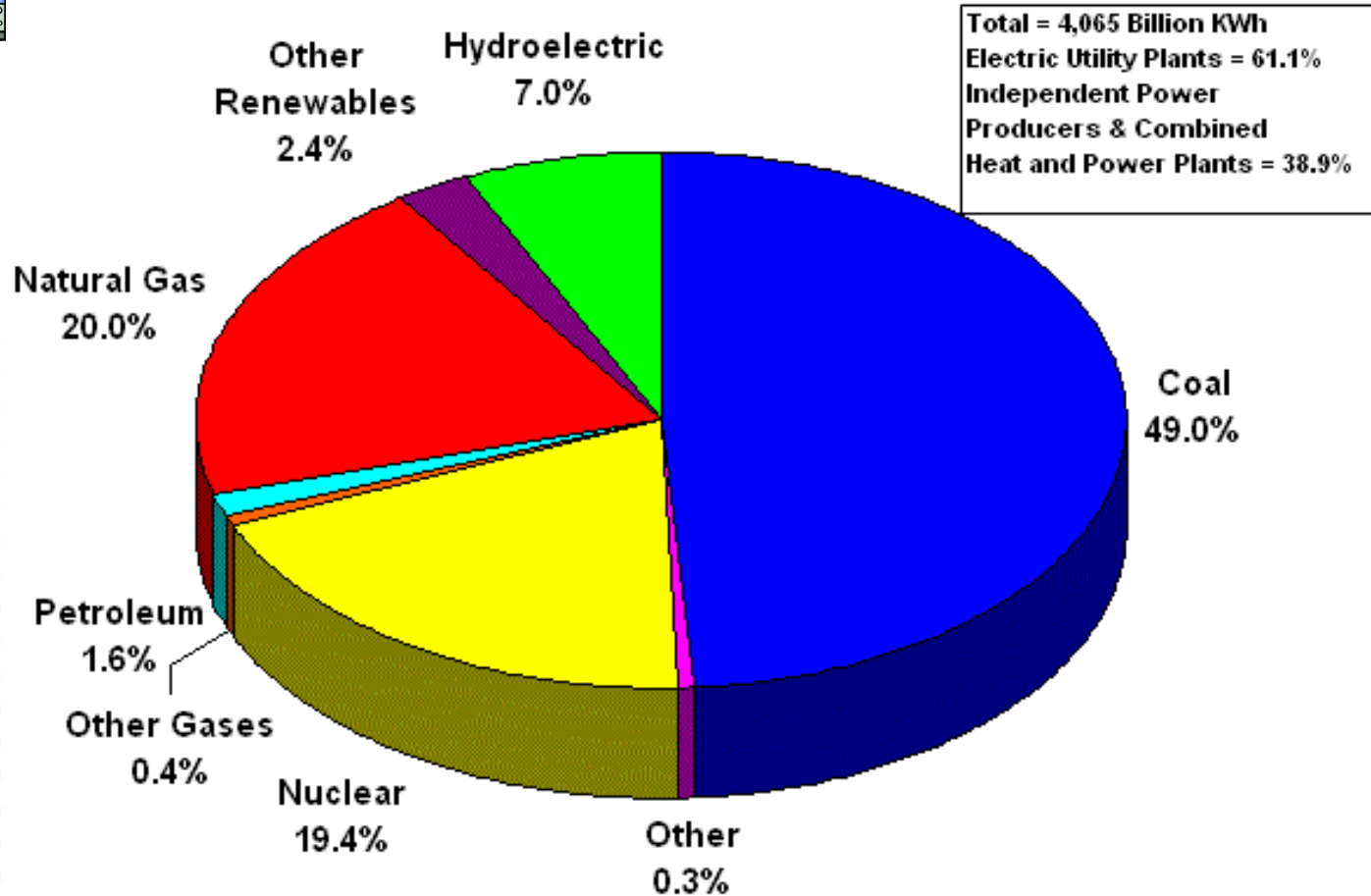


US Air Force, Pepsi, NBC, IKEA, Staples, IBM, and over 250 other businesses and institutions...

Acronyms and Terms You Prolly Should Know

- RPS = Renewable Portfolio Standard
- MWh (and kWh) = Megawatt Hour
- MW (and kW) = Megawatt
- Voluntary market vs. compliance market
- REC = Renewable Energy Certificate
- Green Pricing
- CRS = Center for Resource Solutions

Our National Electricity Mix



Renewable Energy Generation: What is It?

Look to Green-e

- Definition of eligible renewable fuel types:
 - Wind
 - Solar
 - Geothermal
 - Biomass
 - Hydro
- Vintage of facility: post January 1, 1997
- Life span (freshness) of RECs
- No use of RPS or otherwise mandated renewables
- Renewables must be fully aggregated

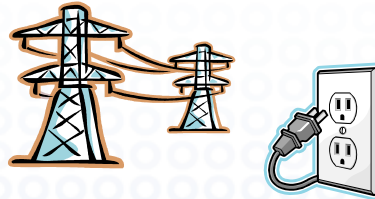


Why are Renewables Good?

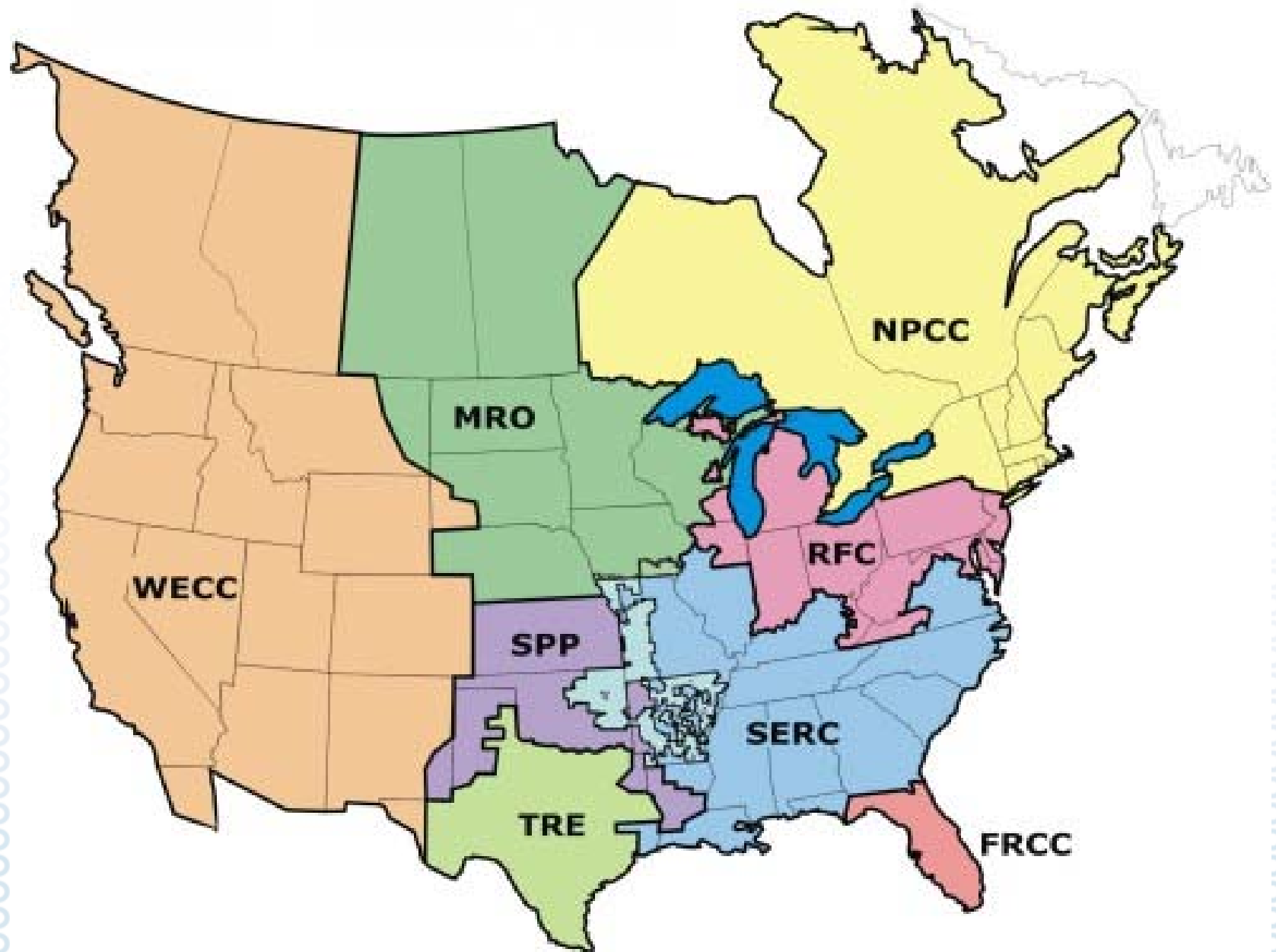
- Increase energy security (diversify portfolio)
- Foster energy independence
- Improve energy price stability (decrease price volatility)
- Create domestic clean-tech jobs
- Help protect the environment
- Fight global warming

The Grid

- Renewables must be grid-tied to be Green-e eligible
- Net metering: gross output is eligible for RECs
- Non-baseload annual output rates
- Intermittent resources: don't even worry about it
- Regional Grids: your environmental claims are based upon it

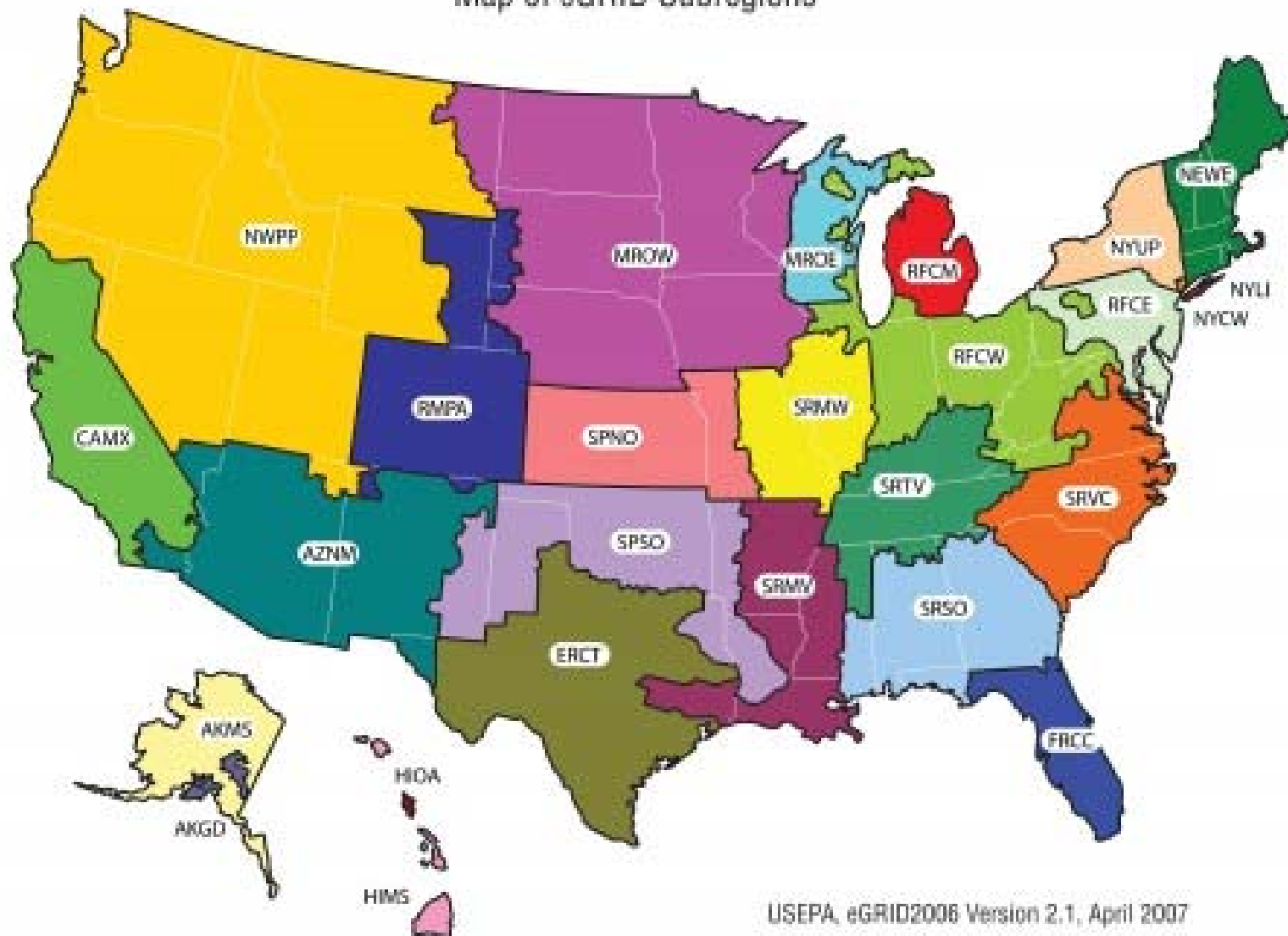


North American Electric Reliability Corporation (NERC) Regions



Emissions & Generation Resource Integrated Database (eGRID) Subregions Map

Map of eGRID Subregions



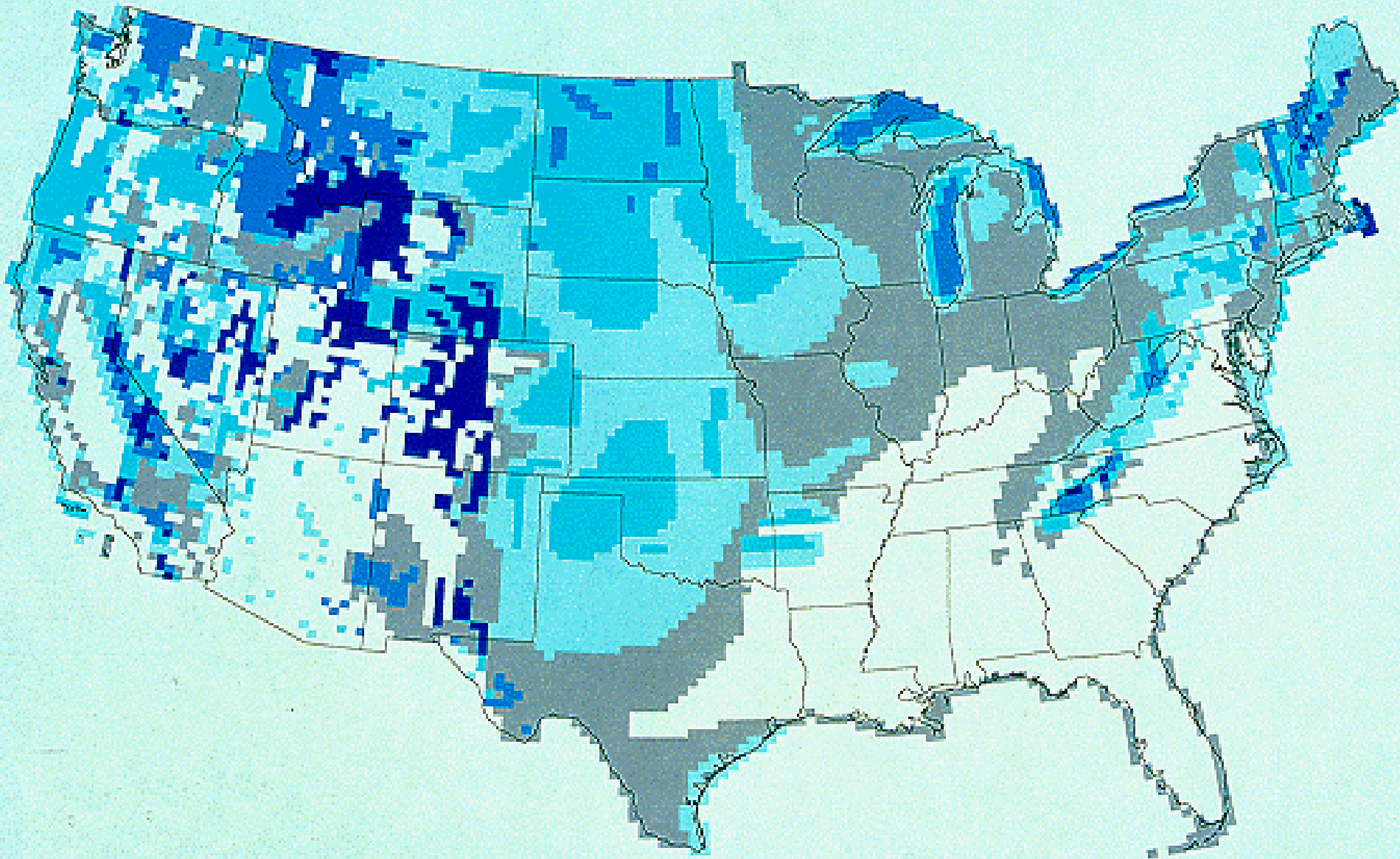
Capacity Factors

Defined: ratio of the actual output of a power plant over a period of time and its output if it had operated at full nameplate capacity the entire time.

- Wind farms 20-40%
- Photovoltaic solar in Massachusetts 12-15%
- Photovoltaic solar in Arizona 19%
- Thermal solar power tower 73%
- Thermal solar parabolic trough 56%
- Nuclear U.S. average 92%.
- Base load coal plant 70-90%
- Combined cycle gas plant, about 60%

Source: wikipedia

All Renewables are Local



CO2 Emissions and Related Claims

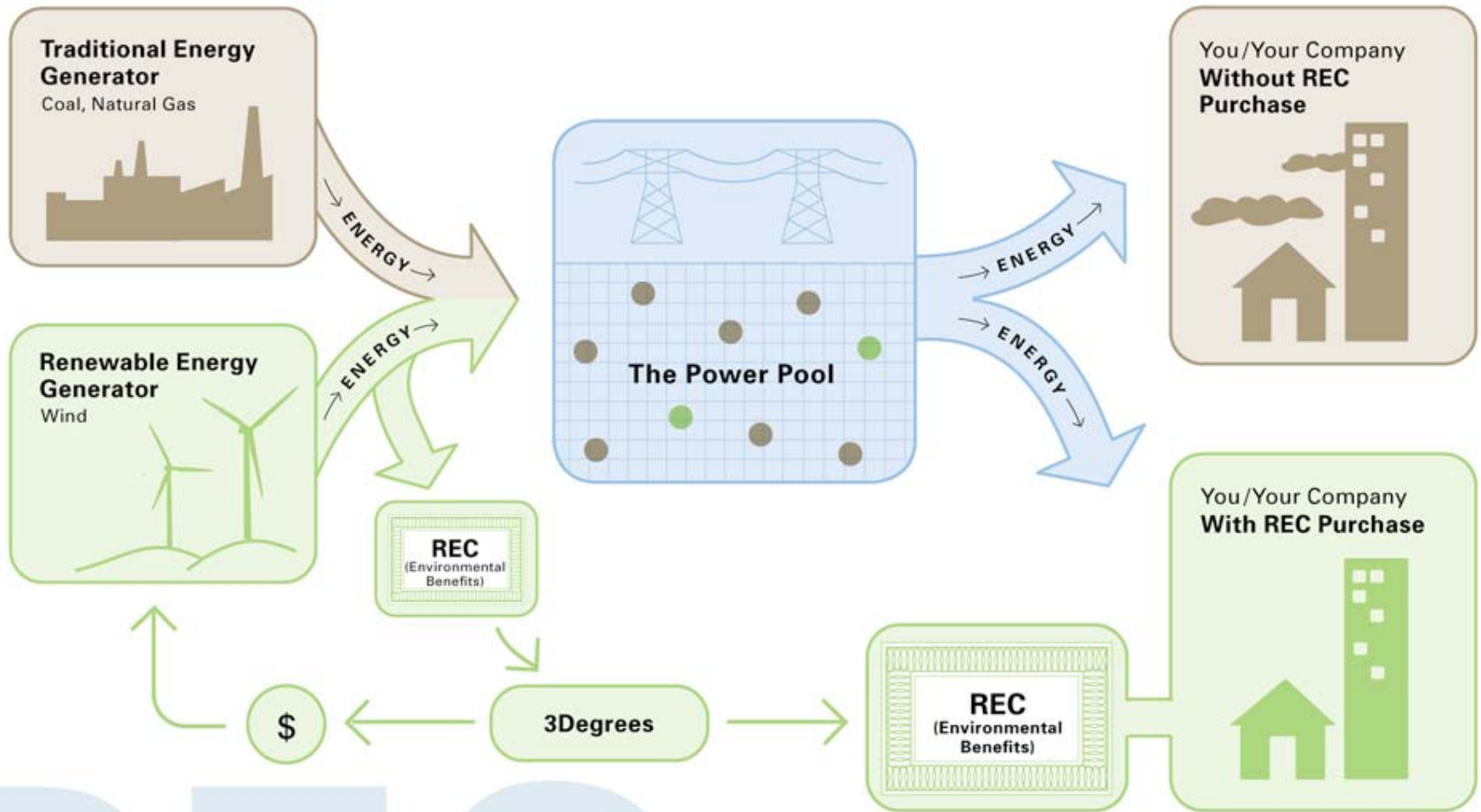
- By offsetting xxx MWh of electricity, you would help prevent the release of more than xx million pounds of CO2, the leading greenhouse gas. This has the equivalent environmental benefit as one of the following:
 - xx cars removed from the road for a year
 - The CO2 absorbed annually by protecting xxx acres of forest
- See the EPA Green Power Partnership's Green Power Equivalency Calculator and the EPA's Greenhouse Gas Equivalencies Calculator
- Read the National Association of Attorneys General's Environmental Marketing Guidelines for Electricity and the Federal Trade Commission's Green Guides

Why Aren't We 100% Renewable Already?

- Renewable energy facilities (except biomass) do not require purchased fuel, but they do require large up-front capital expenditures.
- Renewables compete on price, and in some regions of the country electricity prices are low.
- To have a high capacity factor, you need excellent renewable resources. Renewable resource availability varies.
- To generate utility-scale renewables, you need transmission capacity and someone who needs power.
- Subsidies, Tax Credits, PTC
- Be patient (or don't be...) – we're getting there!

What is a Renewable Energy Certificate (REC)?

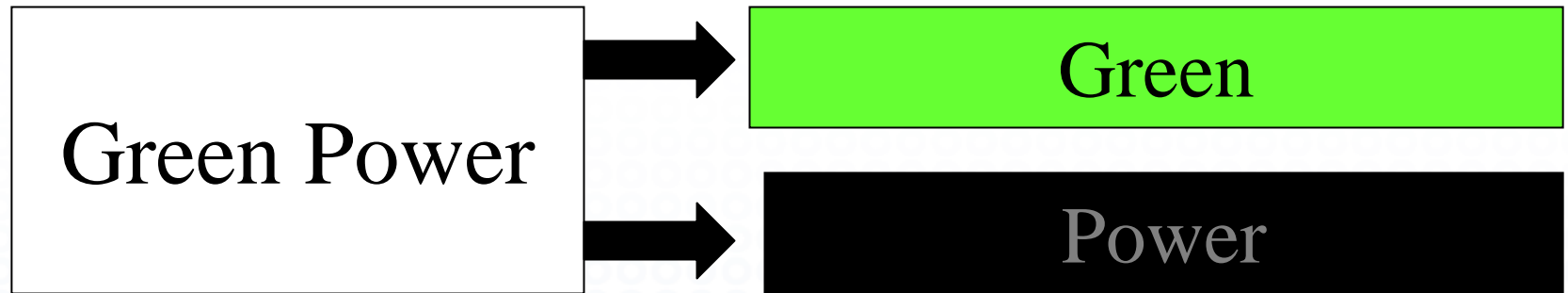
Targets Scope 2



A REC represents delivery of 1 MWh of renewable energy to the grid and all associated environmental benefits of displacing 1 MWh of conventional power.

3Degrees markets Green-e® Certified Renewable Energy Certificates

RECs – Like Green Power, but Without the Power



RECs – What's in a Name?

- Green Tags
- Green Tickets
- Renewable Credits
- Renewable Certificates
- Tradable Renewable Certificates (TRC)
- T-RECS
- **Renewable Energy Certificates (RECs)**

RECs – What a Short, Strange Trip it's Been

2000

- Bonneville Environmental Foundation forms 'Green Tag Program'
- 'Green Tickets' sold in California by APX
- EPA 1st large purchaser of RECs

2001

- TX begins RPS program using RECs (ERCOT tracking Program -- Mandatory market)
- CRS issues White Paper on RECs best practices

2002

- NEPOOL/GIS formed (issues & tracks RECs Mandatory market)
- Green-e certifies first REC end-use retail products

Current

- Environmental Tracking Network of North America (ETNNA)

RECs – What For?

- Substantiating compliance with RPS
- Supplying green pricing programs
- Providing choice for customers with no green power option
- Simplifies green procurement for national account holders
- Meeting emissions reduction goals
- Greening of events and products

RECs – Why?

- Facilitates renewable energy markets
- Breaks down geographic boundaries
- Creates fluidity in markets
- Directs dollars to lowest cost renewable resources
- Can be used as a financing mechanism for new renewable energy facilities
- Could be used for solar aggregation
- Monetizes the value of attributes

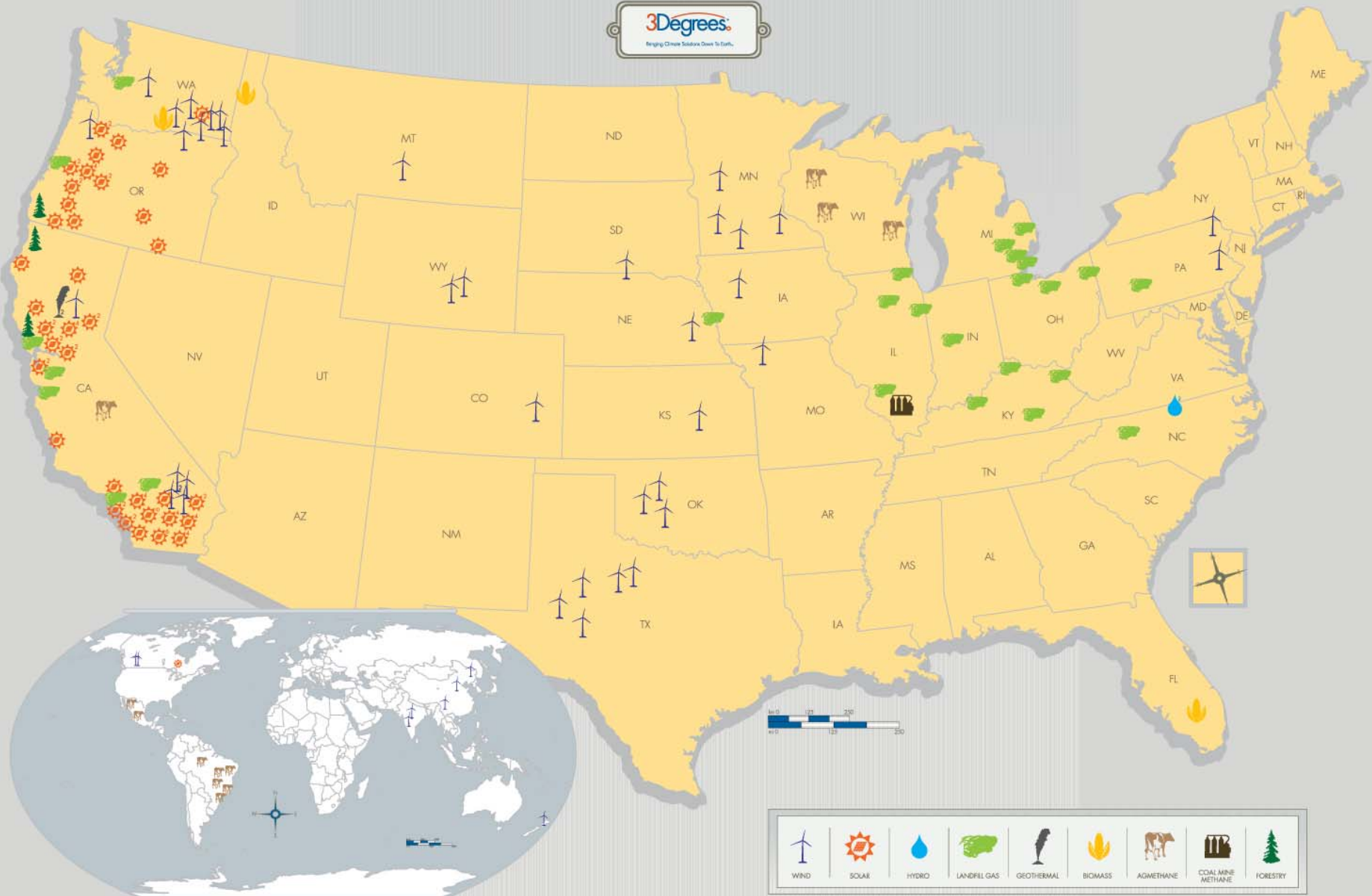
What Happens When RECs are Traded?

- RECs can be bought/sold/traded any number of times so long as no environmental, regulatory, or supply claim is made
- Once an environmental, regulatory, or supply claim is made, the REC is retired
- Unlike Brett Farve, a REC cannot come out of retirement
- RECs are not a donation:
 - REC purchasers are buying a specific megawatt hour of renewable energy
 - This is NOT like buying indulgences



It's All About the Money

- I was going to put a picture of my kids here, but it's really not about them at all
- Buying/selling renewable energy and RECs helps to finance new renewable energy projects
- Long-term contracts for RECs and renewables help developers get financing
- Short-term and spot market transactions of renewable energy and RECs provides the market with liquidity
- In many cases, electricity contracts (Power Purchase Agreements – PPA) plus Production Tax Credits are not enough to make a project financially viable – that's where RECs can make the difference



3Degrees Supports Over 200 Projects Around the World



Bringing Climate Solutions Down To Earth™

Questions?

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