

Purchasing Green Power and Renewable Energy Certificates

Climate Leaders Partner Meeting

January 18-19, 2006

How do green power and REC's fit into our CO2 reduction program?

How do we purchase them?

How do we account for them?

Climate Friendly Energy Policy 2003

Achieve a 7% absolute reduction in Green House Gas (CO₂) emissions from facilities worldwide by 2010, compared to a base year of 1990.

(CL: 14% reduction by 2010, compared to 2001, in US)

Strategy - CO₂ Reduction Pathway

Energy Efficiency – Best Practices

On-site cogeneration

On-site renewables: solar, wind, landfill gas

Carbon trading/REC's

Green power purchases

What do we mean? Green Energy



Renewable electricity

- Wind
- Solar
- Biomass
- Landfill gas
- Geothermal
- Low-impact hydro



Renewable thermal energy

- Landfill gas
- Biomass
- Solar



“Clean” energy technologies

?

- Fuel cells



Renewable Power

Multiple ways to purchase



On-site systems

- Install renewable energy system on own premises



Green electricity

- Purchase renewable-generated power from utility or electricity supplier



Renewable energy certificates

- Buy "environmental attributes" separately from electricity

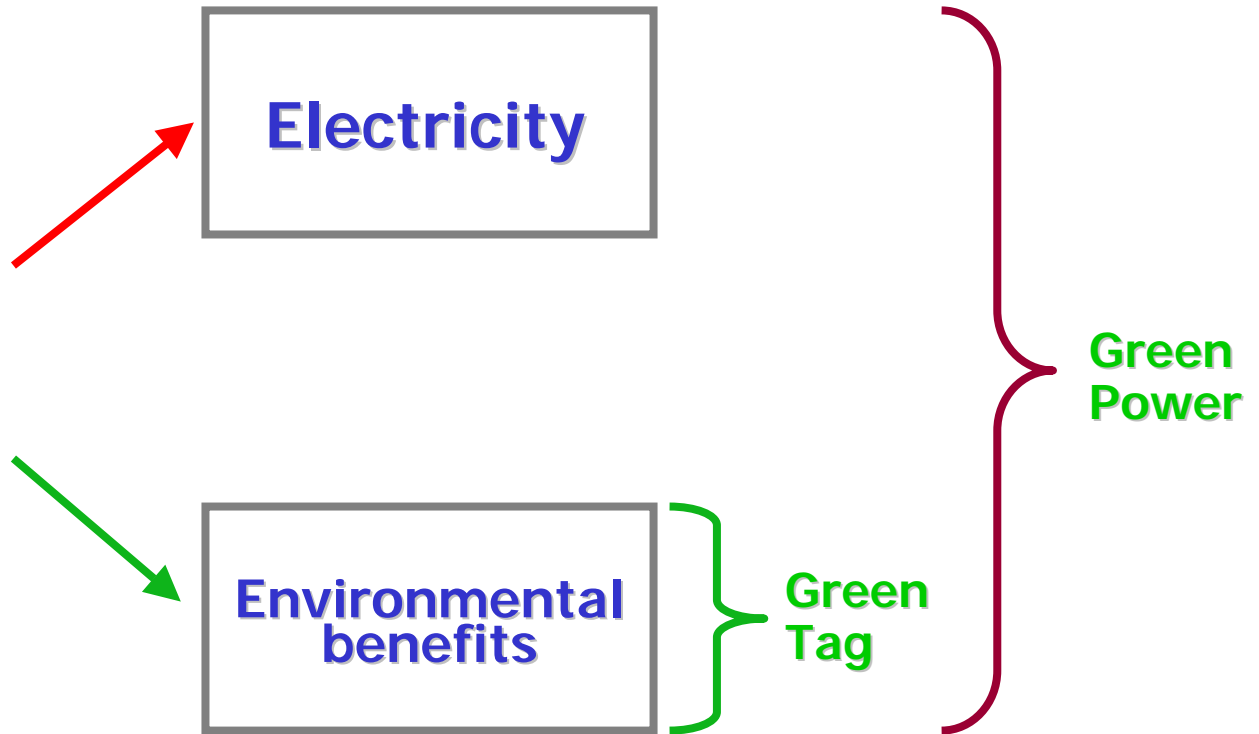


Renewable Power

Two distinct products



Renewable power generator



Green Power & Tags

More similar than different!

Johnson & Johnson

Similarities

- Electricity from renewable generator delivered to the grid. Dirty coal, oil, or natural gas-based power displaced from the grid.
- Buyer's purchase supports renewable generation.
- Buyer can claim environmental benefits.
- No change in reliability & power quality.

Differences

- Who sells the "greenness" of renewable power generation.
- One or two invoices/bills.



Photo courtesy of National Renewable Energy Laboratory

REC's

Advantages over green power

- Lower cost
- Wider selection of suppliers
- Greater variety of renewable resource options
- Simplified transactions
 - Independent of electricity supply
 - Multiple locations at once

Green Power

Advantages over REC's

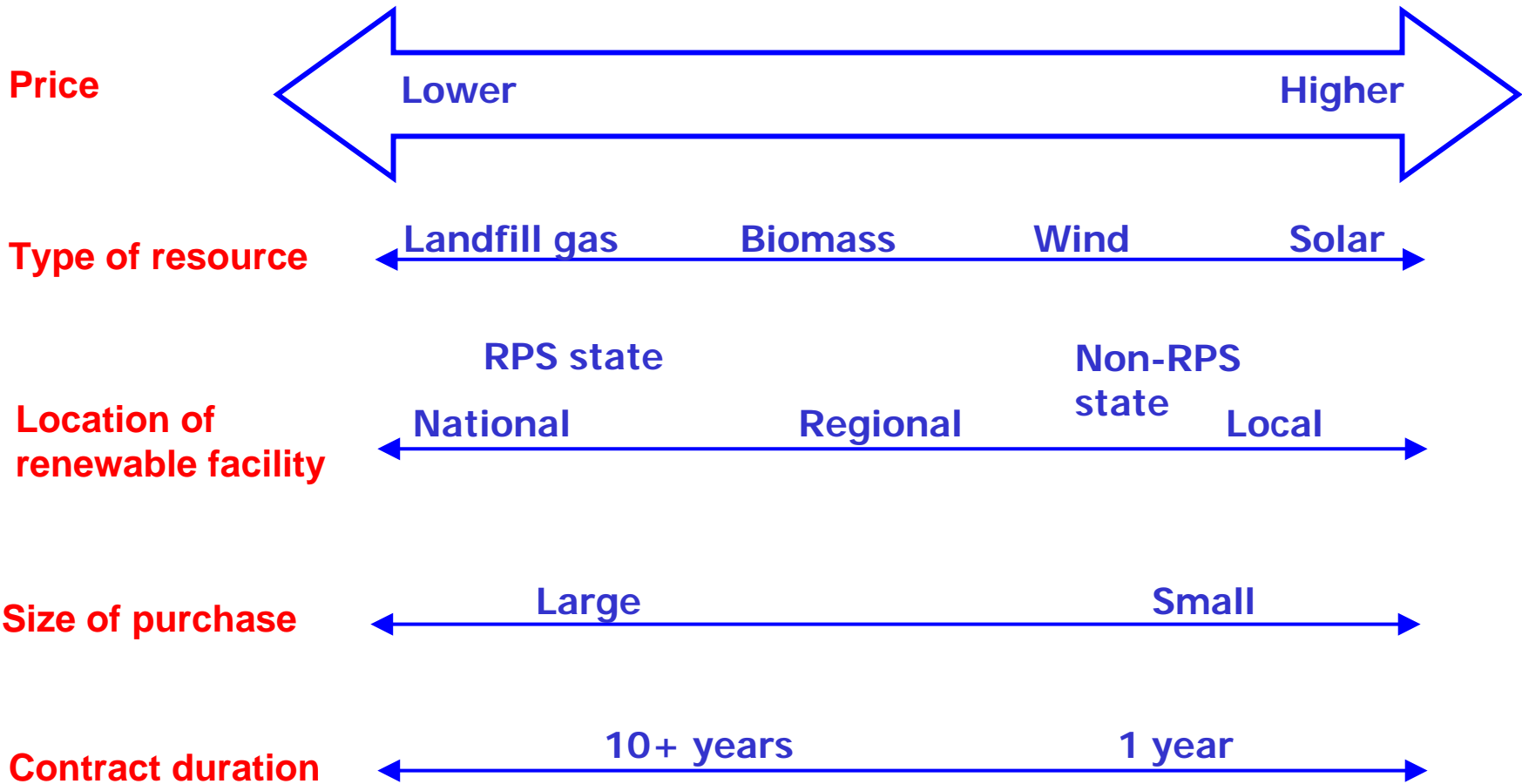


Photo courtesy of National Renewable Energy Laboratory

- Less abstract
- Becoming competitive. Often based on REC's
- One transaction

Purchasing Green Power - Factors to consider

ILLUSTRATIVE



REC Purchases

2004-2005 – J&J worked through WRI on a group purchase for member companies.

Ten REC suppliers responded to RFP. Provided a lot of flexibility:

- Resources – wind, biomass, geothermal, combinations
- Numerous geographic options
- 1-5 year contract options
- Broad range of prices
- Green-e certification
- Various project start dates
- Volume discounts based on total buy; over 300,000 REC's

REC Purchases

J&J preferences:

- Voluntary markets
- Mix of resources: biomass, wind
- No geographic preference
- “New” REC’s (recent projects)
- Lowest cost per ton of CO₂ offset (<\$2/ton)
- Buy for current and next year

REC's US – 2005 (estimated)

253,000 mWH

216,000 tons CO₂

Green Power U.S.
2004

- New Jersey, New York, Texas, California
15% Green Power
23,000 tons CO₂

Green Power– Europe - 2005

Janssen, France	100%	
All J&J sites, Holland	100%	
Alza, Ireland	100%	
Janssen, Italy	100%	
Lifescan, UK	100%	
Janssen, Belgium	100%	
Total Europe	43%	65,000 Tons CO ₂

On-site Renewables Worldwide

Solar, land-fill gas, wind

On-line or in construction

9,000 tons CO₂

Total Renewables Worldwide – CO₂ Reductions

	<u>CO₂ "Avoided"</u>	<u>% of Emissions</u>
REC's	216,000 tons	17%
Green Power	88,000 tons	7%
On-site	9,000 tons	1%
Total	313,000 tons	25%
2004 net emissions	943,000 tons	
Gross emissions	1,256,000 tons	



Top 25 Partners

1. U.S. Air Force
2. U.S. Environmental Protection Agency
3. **Johnson & Johnson**
4. U.S. Department of Energy
5. The World Bank
6. Safeway, Inc.
7. U.S. General Services Administration / Region 2



Accounting for CO₂

REC's Offset using emissions factor in the power pool where the project exists.

Green Power Not an offset. Zero emissions associated with the power consumed.

On-site renewables Not an offset. Zero emissions with the power consumed.

Problem: Green power and onsite renewables don't appear on Climate Leaders Report. We add the information as a "footnote".

Accounting for CO₂

Other issues we are facing:

1. “Green Power” is not always Green Power. Electrical suppliers can bundle the power with REC’s. We are accounting for this as Green Power.
2. We have sold some NJ Solar REC’s in 2005. We plan to report this as a “negative offset” (add).

REC Purchases - Resources

EPA - Climate Leaders

EPA - Green Power Partnership

DOE

World Resources Institute

Center for Resource Solutions (Green-e)

i.e., Guide for Purchasing Green Energy

<http://www.epa.gov/greenpower/buygreenpower/guide.htm>