

# RE Price Stability Benefits in Utility Green Power Programs

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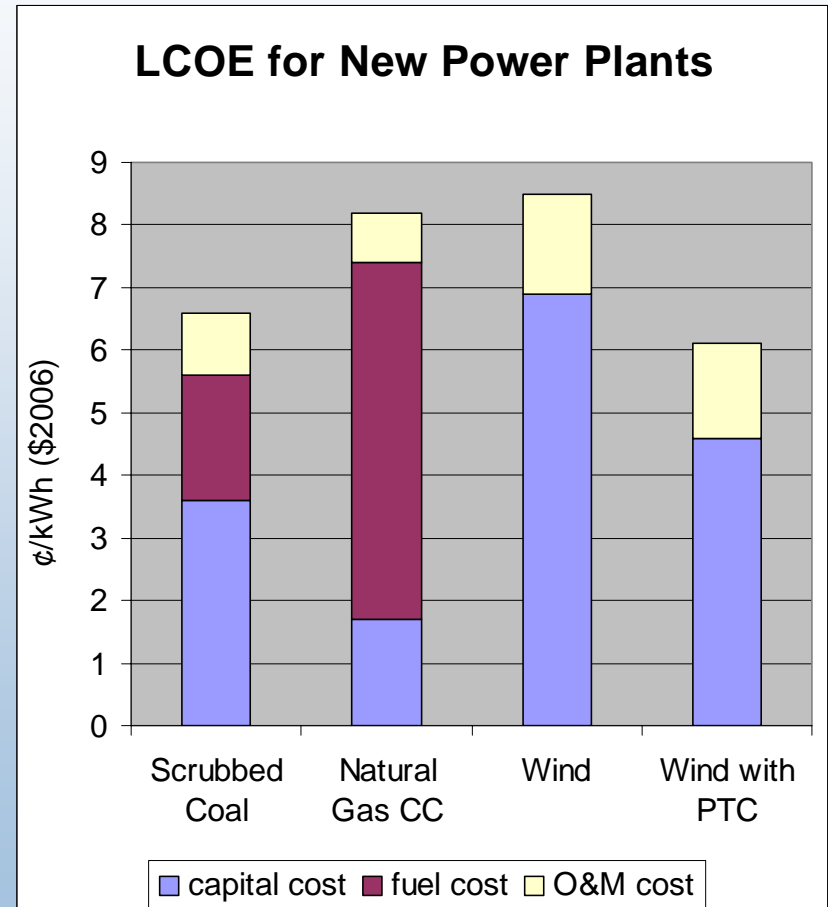
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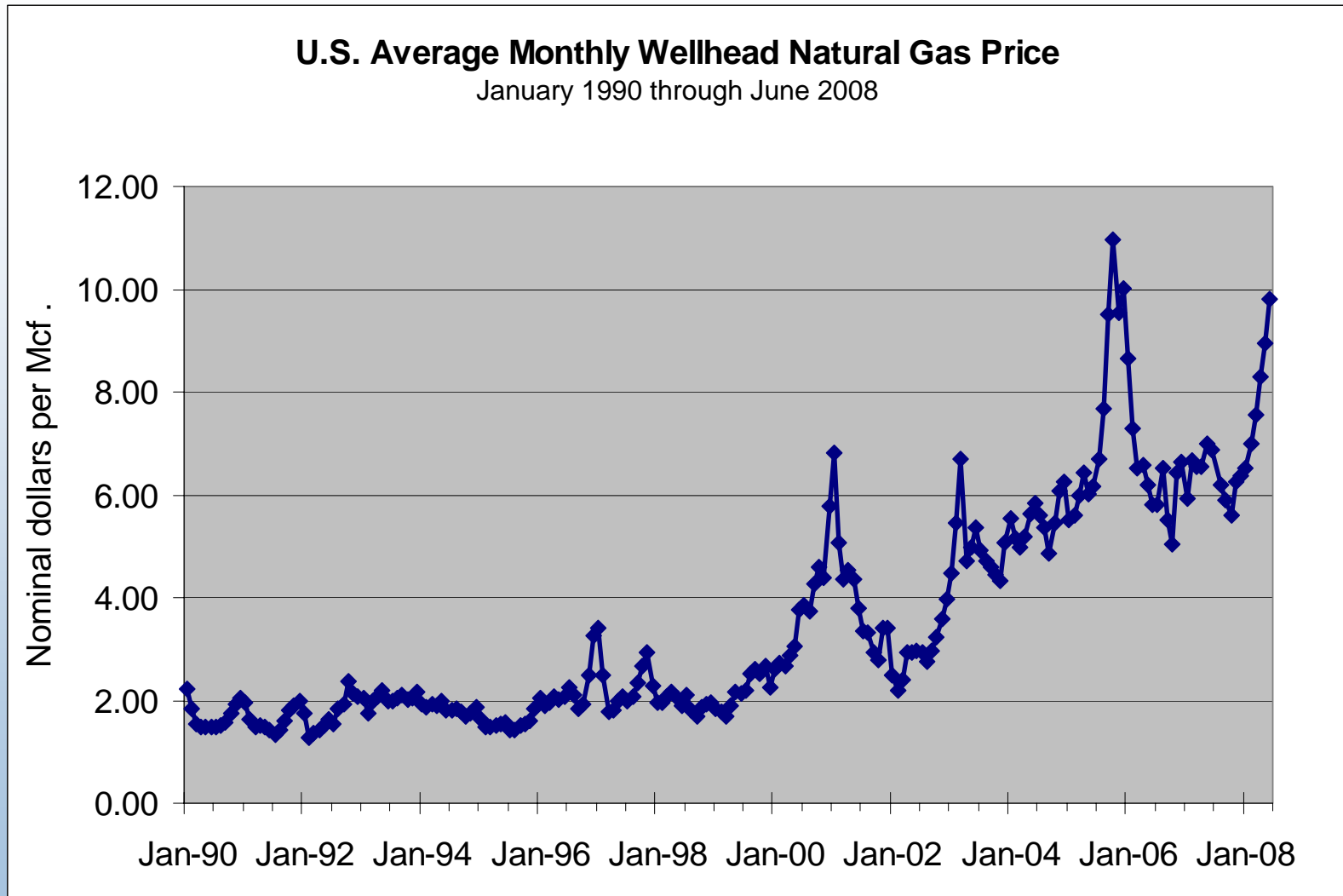
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# Why Offer Green Power Customers Fuel Price Stability Benefits?

- Most renewables only have up-front, fixed costs over time (i.e. no fuel costs)
- Cost-based green power premiums should account for the difference between fuel-dependent energy and fixed-price energy
- Customers value the “hedge” provided by price stability
  - It could influence their decision to buy green power
  - Particularly important for non-residential customers



# Natural Gas Price Volatility



# Pricing Green Power

1. Cost of green power source
  - Electricity and RECs
  - Either owned by utility or purchased with PPA
2. Program implementation costs
  - Administration and marketing
3. Ancillary services cost
4. Cost of displaced utility generation resources
  - Embedded costs from all other generation (fuel, PPAs)
  - Utility avoided cost

$$\text{Green Power Premium} = (1) + (2) + (3) - (4)$$

# Methods of Offering Price Stability

## 1. Static Premium Modification

- One-time premium change

## 2. Dynamic Premium Modification

- Regular premium adjustments:

### i. Fuel cost adjustment exemption

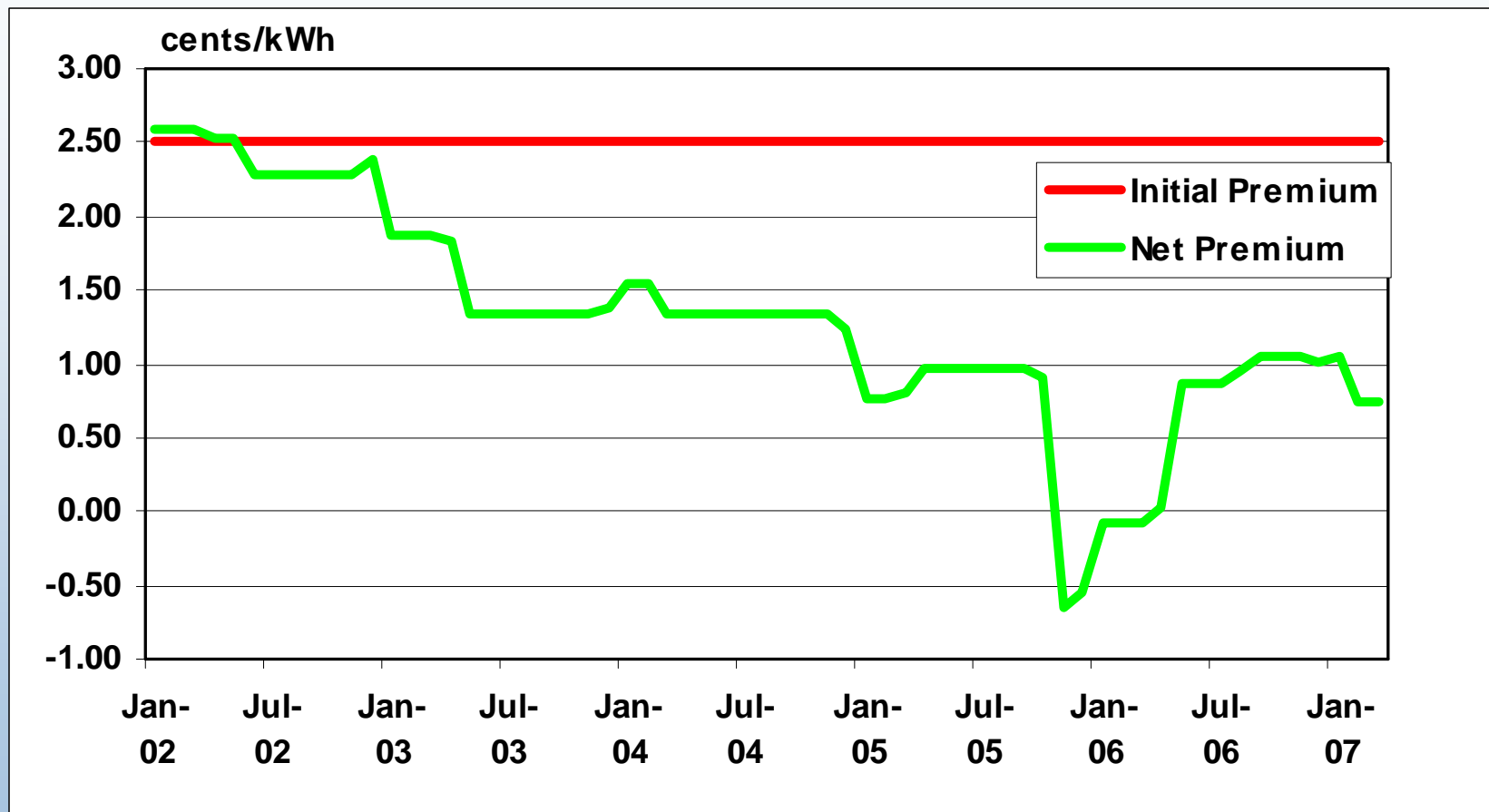
- Short-term collection mechanism used between rate cases that eventually gets included in the base rate
- Xcel Energy example

### ii. Fixed Green Rate

- Replace energy charge with green generation rate
- Austin Energy example

**Utilities can employ both static and dynamic mechanisms**

# Effective Price Premium of Xcel Energy's Colorado Windsource Program

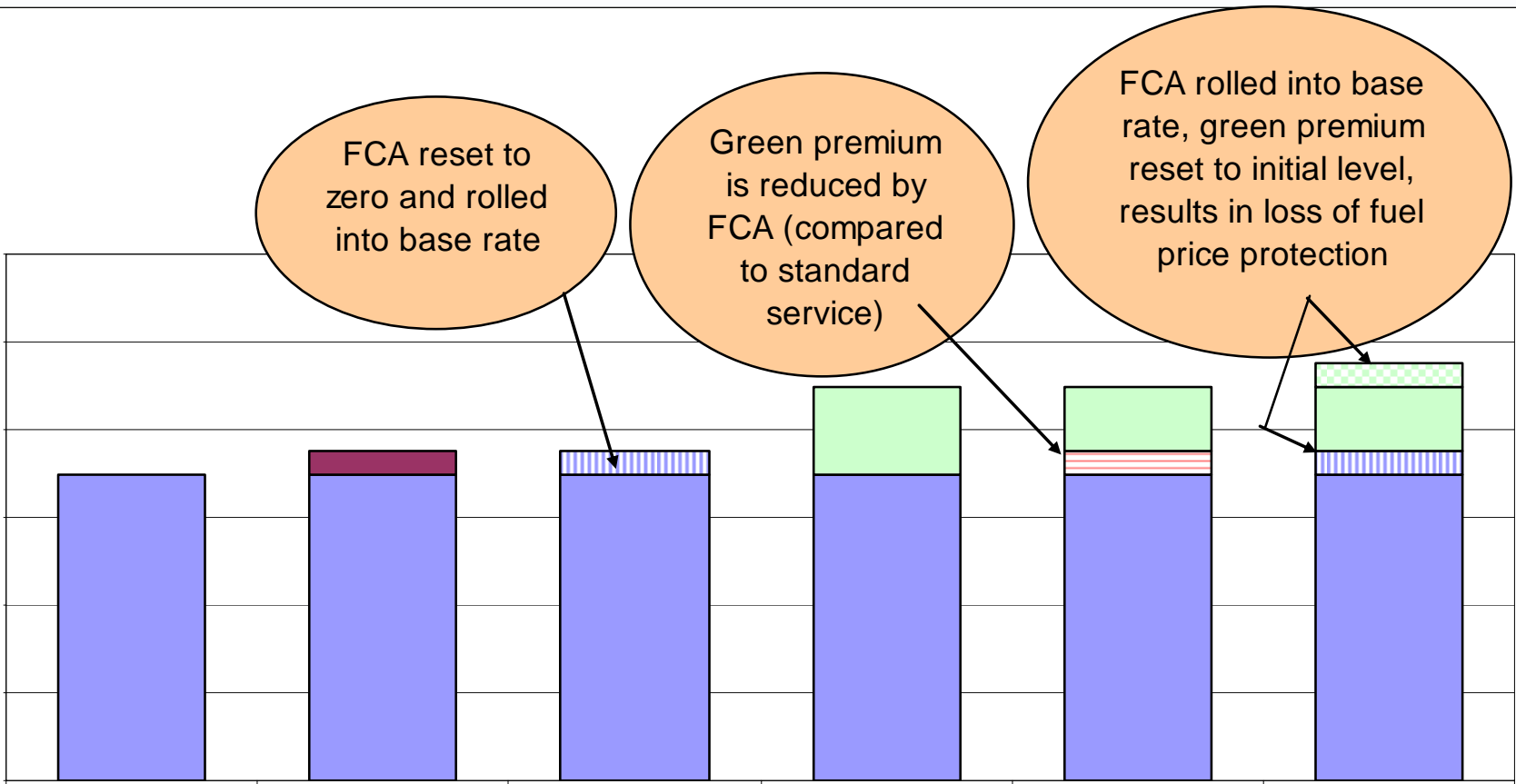


Note: Xcel included a fuel cost adjustment exemption through Jan 2007

Source: Xcel

# Impact of Fuel Cost Adjustments on Base Rates

Theoretical electricity rate (c/kWh)



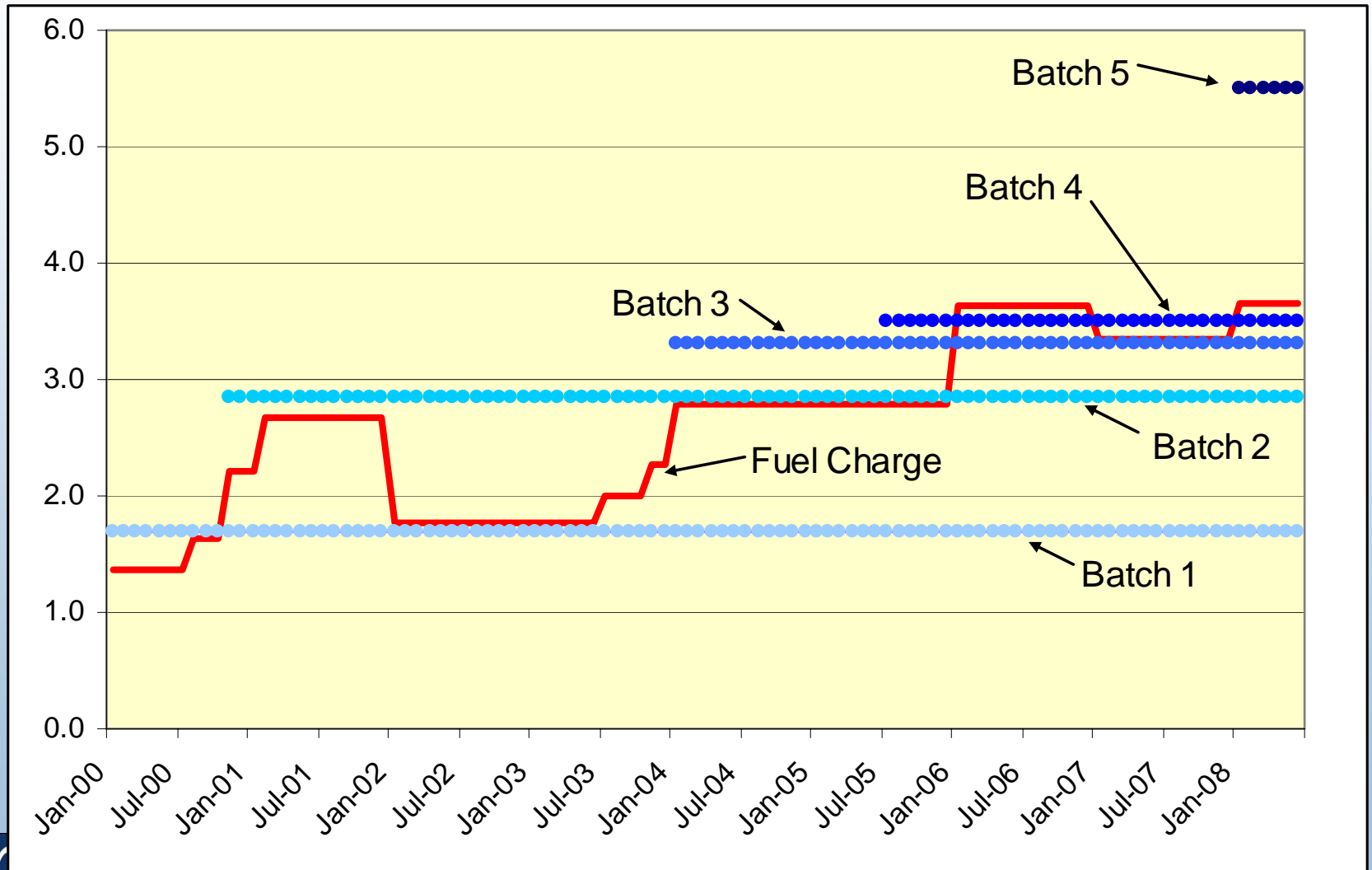
Typical customer - base rate    Typical customer - with fuel cost adjustment (FCA)    Typical customer - new rate (after rate case incorporates FCA into base rate)    Green power (GP) customer    GP customer exempt from FCA    GP exempt from FCA - revised rate (after rate case)

- Base rate
- Fuel cost adjustment
- FCA exemption
- Base rate increase
- Green premium
- Green premium overpayment

# Austin Energy's *GreenChoice* Program: Fixed Green Rate

- Customers pay green charge rather than fuel charge
  - *GreenChoice* customers are exempt from paying the fuel charge
  - Green charge is fixed and is determined by renewable PPAs, ancillary services and program implementation
  - *GreenChoice* customers pay all other base rate cost
  - Requires unbundled rate structure with separate energy rate or fuel charges (not common in regulated utility markets)
- Austin offers a 10- to 20-year fixed price for green power
  - Price depends on associated supply contracts for each “batch”
  - Large customers are required to sign up for 15 years
    - Originally was 10 years.
- Non-residential customer demand is high
  - Leading program in terms of overall sales since 2001
  - ~13% of all green pricing sales nationally in 2007

# Effective Premium for Austin's GreenChoice Program



# Select Utilities Offering Green Power Premium Adjustments

Adjustment type	Utilities
Static	Madison Gas & Electric, Tri-State Electric Cooperative, Wisconsin Public Power, Alabama Power, Puget Sound Energy, Loveland Water and Power, Mason County PUD #3, Minnkota Power Cooperative, Otter Tail Power, TECO, WE Energies, Wisconsin Public Service, Basin Electric Power Cooperative, Lower Valley Energy, Avista Utilities, Fort Collins Utilities, Portland General Electric, and Pacificorp
Dynamic – exempt from FCA	Alliant Energy (WI), Edmond Electric, Madison Gas & Electric, WE Energies and Xcel Energy (MN).
Dynamic – fixed green rates	Austin Energy, and Clallum County PUD; <u>previously</u> : Eugene Water and Electric Board.

# Summary and Observations

- Price stability is an important value for customers
  - Could increase demand for green power
  - Most effective if a dynamic green power price adjustment used
- Fuel cost adjustment benefits may be temporary
  - If base rate for all customers absorbs the fuel cost adjustment and
  - Green power premium is not adjusted during rate case
- Utilities with a separate energy or fuel charge can substitute a fixed-rate product or “green rate”
- Most utilities can offer fixed-price benefits to customers:  
➔ **Revisit the green power price premium frequently**

# Green Power Fuel Price Stability

## Benefits: Program Design Challenges

- What if customers drop the green power product when conventional fuel costs decline?
- Risk allocation if customers do not sign up to participate for the length of the supply contracts
  - Austin requires C&I customers to sign up for 15 years
- Concerns if green power rate falls below the base rate
  - Problematic to offer lower rate to only some customers?
- Utility billing can pose challenges
  - Technical challenges with updating system software
  - Substitution of green rate for energy of fuel charges, if bundled rate
- Possible, but challenging, to structure with REC contracts
- Adjustments should be considered for environmental, carbon and RPS policy costs

**Full report:**

**<http://apps3.eere.energy.gov/greenpower/resources/pdfs/43532.pdf>**

**Thank you for your attention!**

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