

Going Green: Will the Benefits Exceed the Costs to Consumers

Colorado's New Energy Economy – Denver, CO – Oct. 30, 2007

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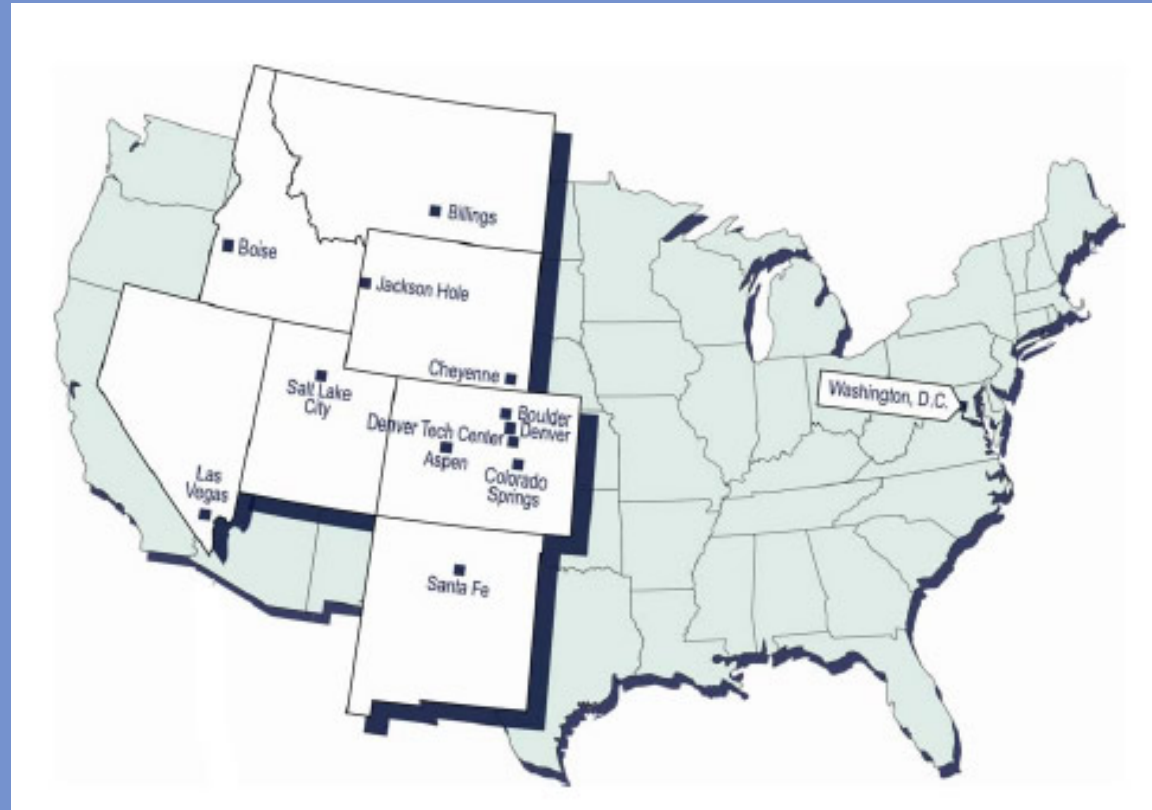


Who is Holland & Hart?

Rocky Mountain
Based Law Firm

Over 350
Lawyers

13 Offices Across
7 Western States
(plus Wash DC)



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Whom Do We Represent?

- **Large Electric Consumers/Coalitions, e.g.:**
 - Colo. Energy Consumers
 - Wyo. Indus. Energy Cons.
 - Mont. Large Cust. Group
- **Independent Transmission Companies**
- **Independent Power Producers, e.g.:**
 - Colo. Indep. Energy Association
 - Wind, Solar, Gas & Coal Power Plant
Developers



Whose Views Expressed Here?

- A composite of views expressed by consumer groups and organizations
- Remarks do not apply universally—the specifics and the context always matter
- Not necessarily my own views, or views of Holland & Hart, or views of any or all specific Holland & Hart Clients

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What's My Topic Today?

What are the potential rate impacts on electric customers from deciding to install renewable generation rather than fossil fuel generation?

- Educated Guesses
- Anybody's Guess
- Possible Policy Implications



The Educated Guesses

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EIA Energy Outlook 2007

- EIA Energy Outlook 2007 contains an analysis of forecasted energy prices by generation type.
- Analysis is conducted with a variety of assumptions and considers the likely price of generation in 2015 and 2030.



Cost of New Generation in 2015 (\$/MWh)

Coal	\$56.00
Gas	\$55.25
Wind	\$67.50
Solar (Thermal)	\$156.75
Solar (Photovoltaic)	\$208.25
Nuclear	\$62.50

Source – EIA Annual Energy Outlook 2007



Cost of New Generation in 2030 (\$/MWh)

Coal	\$53.75 (-\$2.25)
Gas	\$57.25 (+\$2.00)
Wind	\$67.50 (No change)
Solar (Thermal)	\$156.75 (No change)
Solar (Photovoltaic)	\$208.25 (No change)
Nuclear	\$57.50 (-\$5.00)

Source – EIA Annual Energy Outlook 2007



DOE Annual Report On Wind

- In May 2007 the U.S. DOE issued its “Annual Report on U.S. Wind Power Installation, Cost, and Performance Trends: 2006.”



Wind Prices Are Rising

Installed Year	Capacity-Weighted Price
1998-99	\$42.50
2000-01	\$35.00
2002-03	\$31.00
2004-05	\$35.00
2006	\$50.00
2007	Expected Higher Still



Integration Manageable, But Not Costless

- DOE Report discusses 9 integration studies conducted from 2003 through 2006 in the United States (including Xcel study).

<i>Penetration</i>	<i>Cost Range</i>
Up to 5%	\$.45-\$1.90
10-15%	\$3.72-\$4.97
20% and up	\$2.92-\$4.60



Berkeley National Laboratory

- In March 2007 Berkeley National Laboratory (part of U.S. DOE) published a report entitled “Weighing the Costs and Benefits of State Renewables Portfolio Standards: A Comparative Analysis of State-Level Policy Impact Projections.”
- The Berkeley report analyzed 28 studies conducted by a range of state utility commissions, private consultants, and environmental advocacy groups.



Impacts of RPS Legislation

Results of 28 studies from 18 states

1 study	Costs Decrease 5-10%
0 studies	Costs Decrease 1-5%
16 Studies	Costs Change < 1% (4 negative, 12 positive - Colorado at .9%)
9 Studies	Costs Increase 1-5%
2 Studies	Costs Increase 5-10%

Source: Berkeley National Laboratory

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Relationship Between RPS Goal And Cost

The report conducted a statistical regression analysis to measure the relationship between the RPS targets and rate impacts.

RPS Target	Rate Impact
< 5%	-1% to 0%
5% to 10%	0% to 3%
10% to 15%	3% to 6%
15% to 20%	6% to 9.5%



Anybody's Guess

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The Unknowns

- Carbon Taxes/Regulation
- Tax Incentives For Generation Types And Fuel Sources
- Future RPS legislation
 - Some say cost billions
 - Some say will save consumers billions
- Technology changes



Possible Policy Implications

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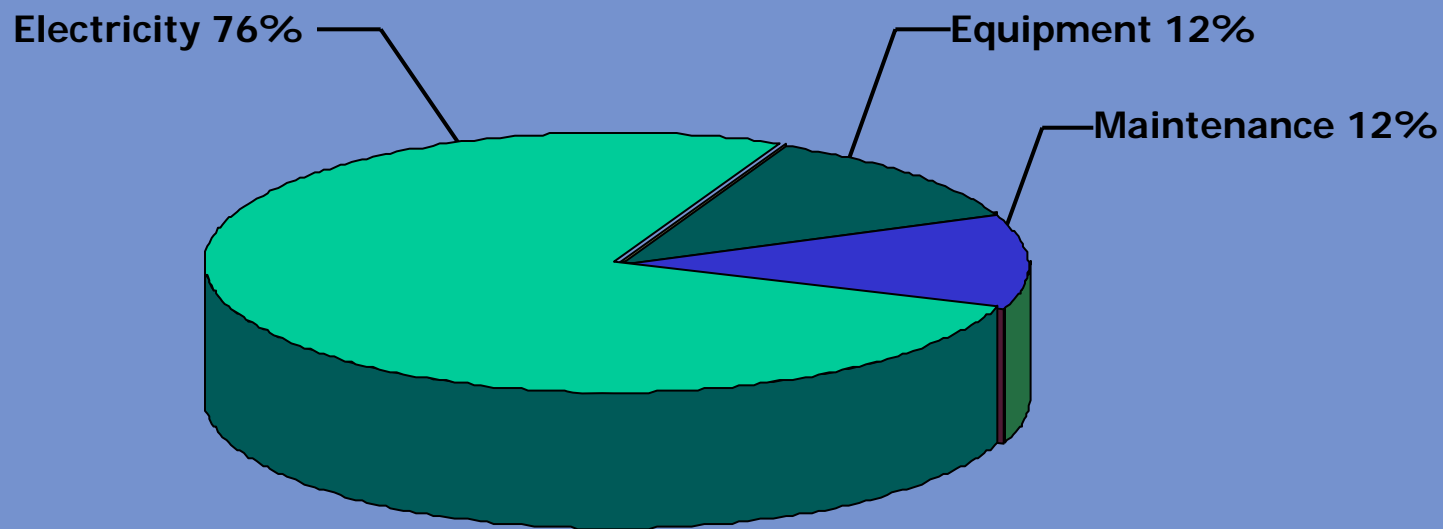
Electric Prices Matter

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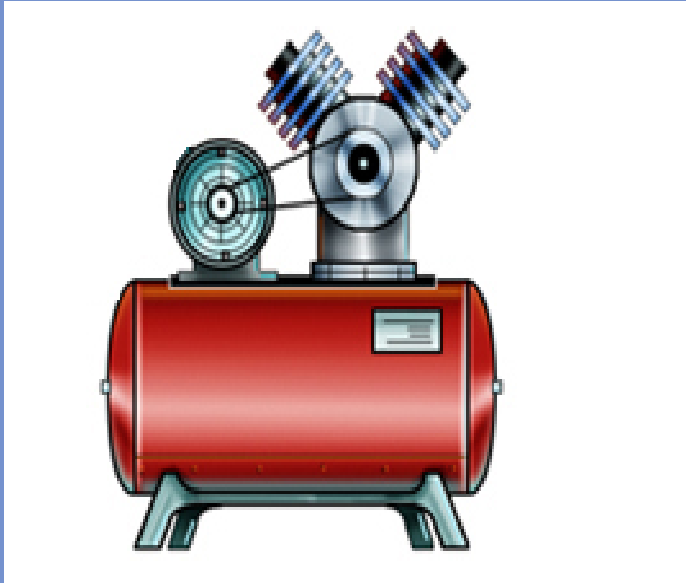
Impact of Rising Electric Rates?

- In increasingly global business competition, electric rates can make all the difference.
- For example, the relative costs for most motor driven systems (over 10 years) are:

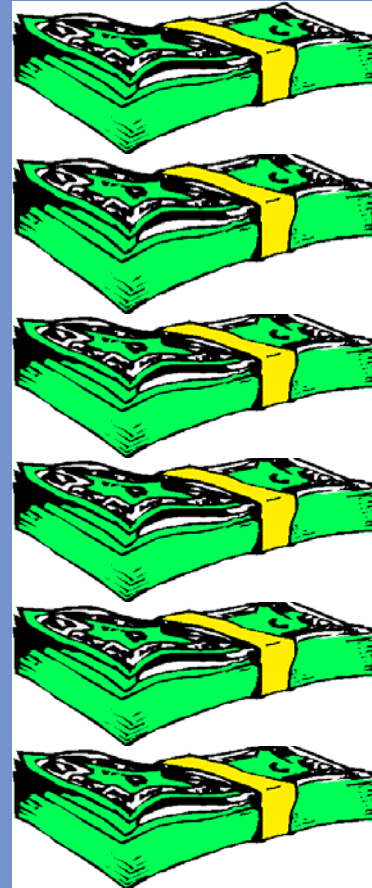


Impact of Rising Electric Rates?

Electricity Over 10 Years:
\$300,000



Initial Investment Cost:
\$50,000



Over time,
**ELECTRICITY
BILL** may be
**SIX TIMES
LARGER** than
equipment or
maintenance
costs



All Voices Need To Be Heard

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Other Upward Rate Pressures

“Enviros, Xcel team up to stick it to ratepayers” - Rocky Mtn. News 5/5/07:

- **“Taxation by regulation...[makes it] very difficult for ratepayers to figure out...how much extra they’re paying.”**
- **New ratemaking incentives provided utilities in a single state legislative session to:**
 - **Build Remote Transmission for Wind Resources**
 - **Implement More Energy Efficiency Programs**
 - **Double Renewable Portfolio Standards**

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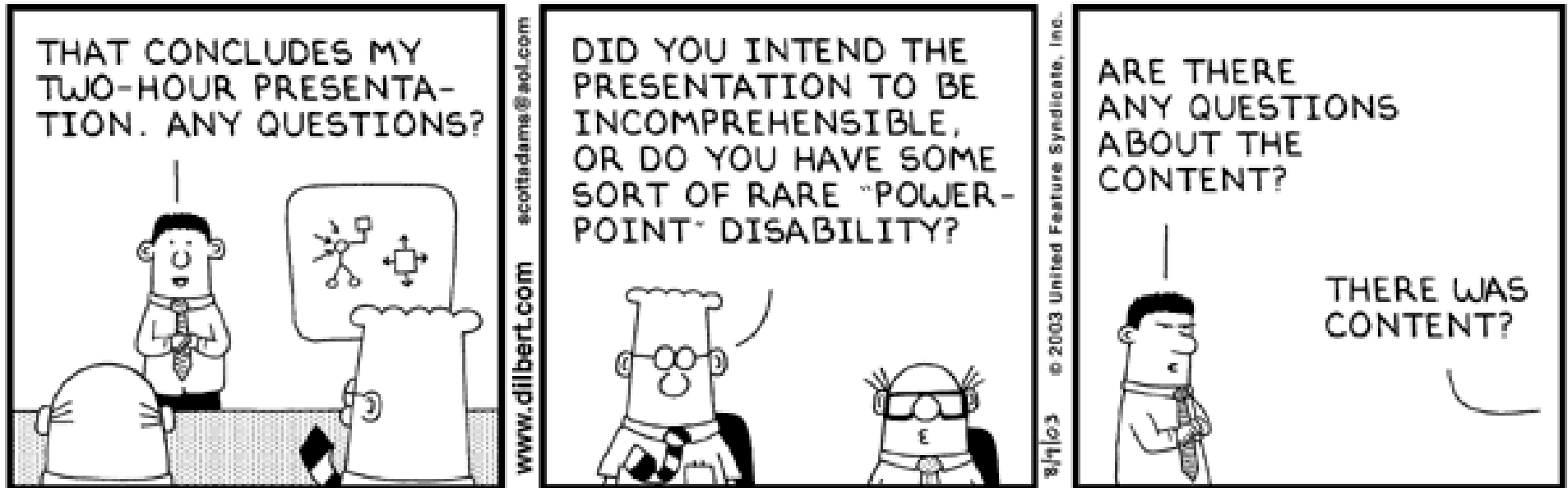


Ultimately - Need To Be Balanced

- Wholesale generation competition helps (Watch incentives)
- Flexibility helps (Guidelines not dictates, no one size fits all)
- Transparency helps (Taxes and subsidies openly considered and included in analysis)
- Holistic view helps (All impacts considered – Rates, Environment, Economic)
- Encourage study, tracking, and analysis
- Balance is key!



Questions?



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