Synapse
Energy Economics, Inc.

Presentation to Florida Public Service Commission

Energy Efficiency Workshop
Tallahassee, Florida

April 25 , 2008

Presented by Chris James

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Presentation Overview

- Cost of new generation has escalated substantially
- The factors driving these increases are not temporary
- Domestic coal suppliers are accessing international markets to increase profits
- Materials and labor costs have risen dramatically since 2003

Supply Side Focus Will Continue to Lead to Rate and Bill Increases

- Focus on rates only misses THE point: consumers pay bills not rates.
- Energy efficiency benefits are cumulative over 8-14 years. Snapshot of certain tests misses these benefits.

There is Good news…

- New England's Forward Capacity Market shows how demand resources compete with supply resources and work to lower costs.
- EE programs are achieving savings at less than half the cost of new generation
- Leading states: CT, VT, CA are close to or at EE savings at 1% of sales. CT, VT on trajectory to achieve 2% this year.
- Trend is to achieve all cost effective EE
- Florida could be eligible for additional GHG allowances under national GHG bills

Supply Side Economic Influences

- Cost of New Generation
- Fuel, materials and labor cost increases
- Supply side resources are exposed to higher risk from greenhouse gas regulations
- Supply side resources exposed to higher fuel price volatility
- Supply side resources also increase risk to energy security and climate change

Cost of New Generation

- New Coal is 9-11 ¢/kWh. Recent BGE filing reflected 10-12c/kWh. New nuclear is higher.
- Costs are increasing due to:
  - Global demand for commodities
  - Material and equipment supply
  - Relative inexperience of new labor force, and
  - Contractor availability

June 2007 report by Standard & Poor's, *Increasing Construction Costs Could Hamper U.S. Utilities' Plan to Build New Power Generation*,

Table 6: Average Annual Escalation in Power Plant Commodities

Commodity/ Construction Material	Average Annual Escalation from ~1986-2003	Average Annual Escalation Dec. 2003-April 2007	Escalation during Dec. 2003 – April 2007 As Ratio of Recent Historic Average
Nickel	3.80%	60.30%	15.9x
Copper	3.30%	69.20%	21x
Cement	2.70%	11.60%	4.3x
Iron & Steel	1.20%	19.60%	16.3x
Heavy Construction	2.20%	10.50%	4.8x

Apr 2008 report by Synapse, *Don't Get Burned, the Risks of Investing in New Coal*

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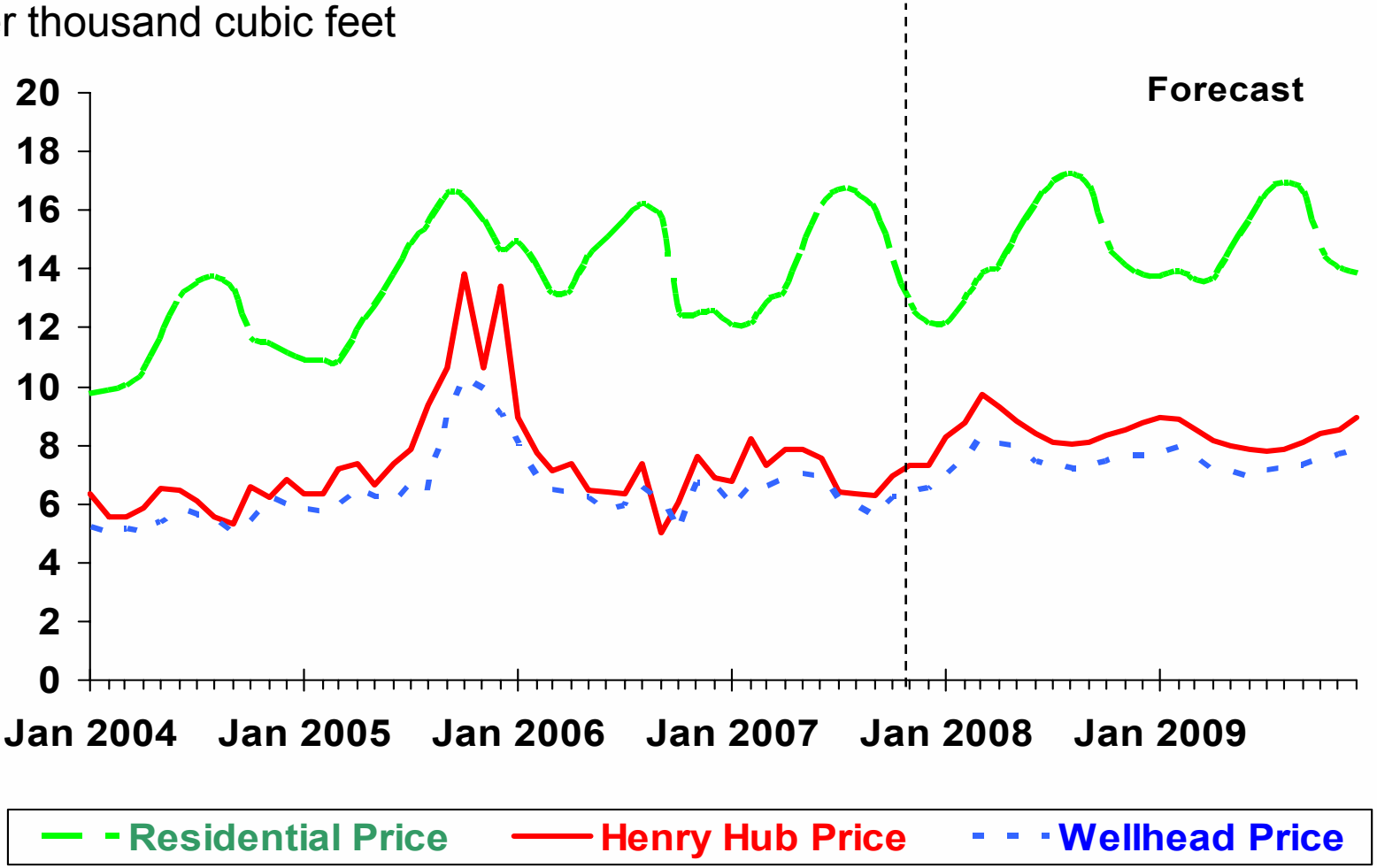
Fuel prices are driving rate increases at existing plants

- AEP filing in WV 2/29/08 requests to raise rates 17% due to increase in coal prices (WV PSC)
- Wisconsin Power and Light Company (WP&L), filed a $55.1 million (6.1%) fuel-only rate increase for electric service with the Public Service Commission of Wisconsin (PSCW). http://www.alliantenergy.com/docs/groups/public/documents/pub/p014619.hcsp
- Southern California Edison requested a rate increase of $858 million in Apr 2008 and estimated that 2009 bills could increase 12%, reflecting higher natural gas prices and the proposed rate increase.
  http://www.latimes.com/business/la-fi-edison16apr16,1,1373930.story
- Center Point Energy Minnesota Gas filed a general rate case in Nov 2005 to cover higher working capital costs due the increased cost of gas and increased bad debt expense due to higher gas bills.
  http://www.puc.state.mn.us/docs/briefing_papers/b05-0155.pdf

Higher 2008 Natural Gas Spot Prices Are Projected

Dollars per thousand cubic feet



Short term Energy and Summer Fuels Outlook http://www.eia.doe.gov/steo

Demand Side Measures Limit Risk and Are Cost Effective

- Energy efficiency, load management and demand response = rational portfolio
- DSM decrease: need to upgrade/install new transmission,peak hourly prices, imports
- Program screening tests include: total resource, participants and rate impact measures
- DSM most cost-effective means to reduce GHG emissions. No need to wait for new technology or fuel switching

Evaluation of Commercial Lighting Program shows that RIM Would Leave Savings on the Table

	Participant Test $/kW	Utility Test $/kW	Rate Impact Test $/kW	Total Resource Test $/kW	Societal Test $/kW
Avoided Revenue Requirements					
Generation	N/A	$721	$721	$721	$721
T & D	N/A	440	440	440	440
Marginal Energy	N/A	1,604	1,604	1,604	1,604
Externality Willingness	N/A	N/A	N/A	N/A	220
Subtotal	N/A	$2,765	$2,765	$2,765	$2,985
Xcel Energy's Project Costs	N/A	$329	$329	$329	$329
Subtotal	N/A	$329	$329	$329	$329
Revenue Reduction	$2,589	N/A	$2,589	$0	$0
Subtotal	$2,589	N/A	$2,589	$0	$0
Participants' Net Costs					
Incremental Capital	$1,264	N/A	N/A	$1,264	$1,264
Incremental O&M	527	N/A	N/A	527	527
Rebates	(268)	N/A	N/A	(268)	(268)
Subtotal	$1,523	N/A	N/A	$1,523	$1,523
Net Present Benefit (Cost)	$1,066	$2,435	($154)	$913	$1,133
Net Benefit (Cost) per kWh Lifetime	$0.013	$0.029	($0.002)	$0.011	$0.013
Net Present Benefit (Cost) per Generator	$1,212	$2,768	($175)	$1,037	$1,288
Cost Benefit Ratio	1.70	8.39	0.95	1.49	1.61

Presentation to Coalition for Clean Affordable Energy in Santa Fe, New Mexico on October 29, 2007 by Wayne Shirley
www.raponline.org

RIM Does Not Test Equity of Programs

- Something that is free will fail RIM
- Even RIM ratios of 0.6 to 0.7 can have miniscule effects on bills of non-participants.
- Non-participants who choose to participate will almost certainly save more than if they chose not to.
- Following examples show cost effectiveness and savings from several leading programs

Portfolio of Energy Efficiency Programs

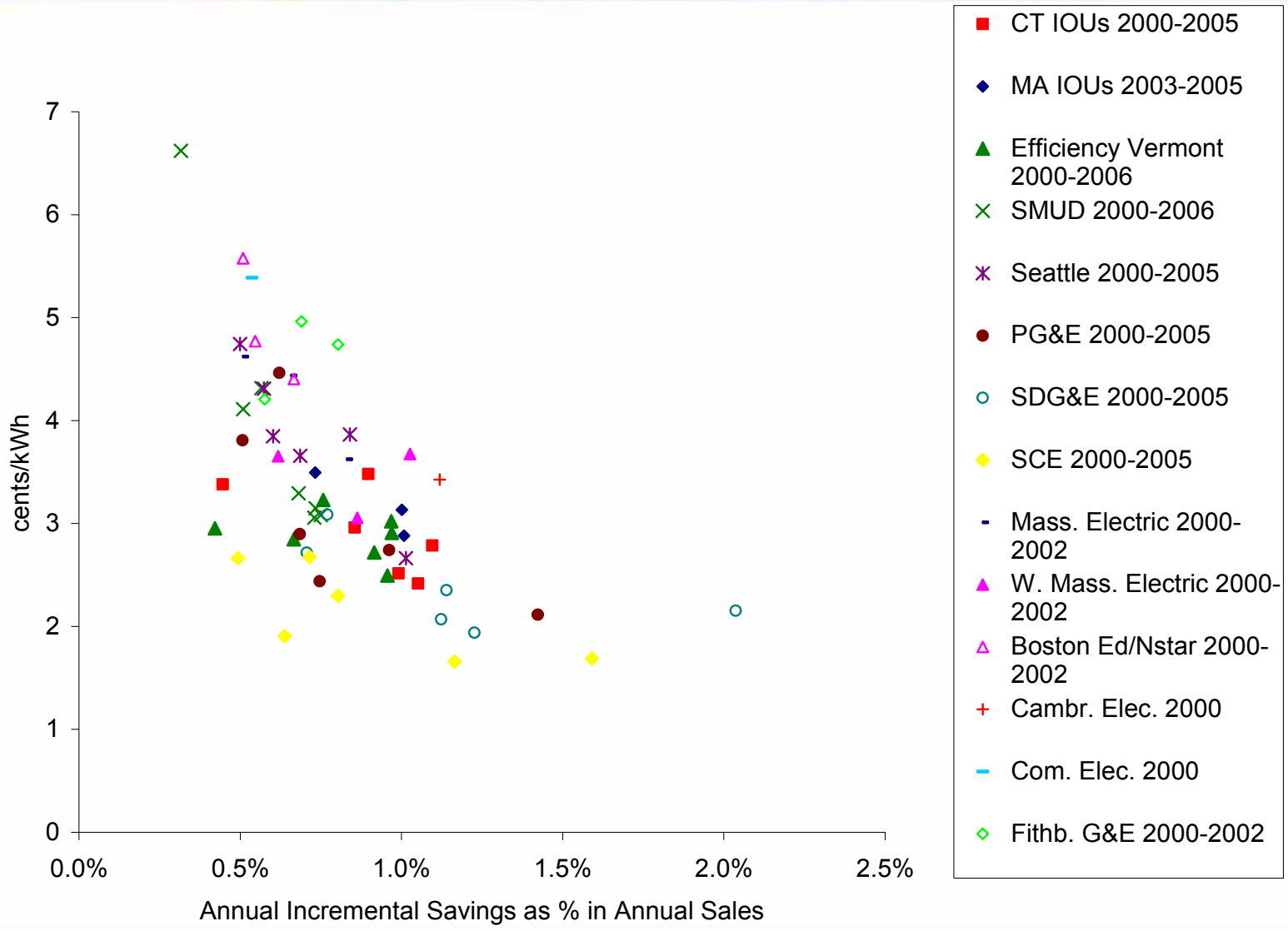
	Efficiency Vermont (VT)	CA Utilities (CA)	CT Utilities (CT)	SMUD (CA)
Policy Model	SBC w/3rd Party Admin	SBC w/Utility Admin & Portfolio Standard	SBC w/Utility Admin & Portfolio Standard	Municipal Utility
Period	2004	2004	2005	2004
Spending on Electric Energy Efficiency ($MM) 1	14	317	65	30
Budget as % of Electric Revenue 2	3.30%	1.50%	3.10%	1.50%
Avg Annual Budget Gas ($MM)	NA	NA	NA	NA
% of Gas Revenue	NA	NA	NA	NA
Annual MWh Saved / MWh Sales 3,4	0.90%	1.00%	1.00%	0.50%
Lifetime MWh Saved (000s MWh)5	700	22,130	4,400	630
Annual MW Reduction	15	377	135	14
Lifetime MMBtu Saved 5 (000s MMBtu)	470	43,410	NA	NA
Annual MMBtu Saved (000s MMBtu)	40	3,620	NA	NA
Non-Energy Benefits	37,200 CCF of water	NR	lifetime savings of $550M on bills	NR
Avoided Emissions (tons/yr for 1 program year) (could include benefits from load response, renewable, and DG programs)	Unspecified pollutants: 460,000 over lifetime	NR	NOX: 334 SO2: 123 CO2: 198,586	NOX:18

Portfolio of Energy Efficiency Programs Cont.

	Efficiency Vermont (VT)	CA Utilities (CA)	CT Utilities (CT)	SMUD (CA)
Policy Model	SBC w/3rd Party Admin	SBC w/Utility Admin & Portfolio Standard	SBC w/Utility Admin & Portfolio Standard	Municipal Utility
Period	2004	2004	2005	2004
Cost of Energy Efficiency				
$/lifetime (kWh) 6	0.02	0.01	0.01	0.03
$/lifetime (MMBtu)	NA	NA	NA	NA
Retail Electricity Prices ($/kWh)	0.11	0.13	0.1	0.1
Retail Gas Prices ($/mcf)	NA	NA	NA	NA
Avoided Costs (2005$) 7,8				
Energy ($/kWh)	0.07	0.06	0.07	
Capacity ($/kW)9	3.62		20.33	
On-Peak Energy ($/kWh)				0.08
Off-Peak Energy ($/kWh)				0.06
Cost of Energy Efficiency as % Avoided Energy Cost	29%	23%	21%	63%

Source: National Action Plan for Energy Efficiency, Department of Energy, pages 6-8 and 6-9, July 2006.

Utility Cost of DSM vs. Annual Savings as % of Annual Sales



Summary

- ***Oil and Gasoline:*** Growing world oil demand and supply uncertainty will maintain and escalate existing elevated crude oil prices (Pentagon has already acknowledged that peak oil has occurred)
  - Crude oil expected to remain above $100 for the rest of 2008;
  - Gasoline prices are expected to average $3.54 per gallon over this summer: Diesel prices expected to average $3.73.
  - Market uncertainties are many and may significantly impact prices and supplies during the rest of 2008.
- ***Natural Gas.*** Henry Hub spot price expected to average $8.59 per thousand cubic feet in 2008, $1.42 above the 2007 average.
- ***Electricity Prices.*** Residential electricity prices projected to grow at a slightly faster rate in 2008.

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Recommendations

- RIM is one of five tests that can be used to evaluate EE programs.
- Sole use of RIM will expose consumers to rate increases later, and miss opportunities now to achieve cost effective savings that are less than 1/2 that of the cost of new generation
- Energy efficiency, load management and demand response are all part of a diverse demand side resource portfolio

Recommendations continued

- Demand side benefits also include deferral of transmission and distribution system upgrades, air quality and greenhouse gas reductions, local economic development
- Legislation being considered in Congress rewards states with good demand side programs, with extra allowances. Florida is not currently eligible, but could be.

Recommendations continued

- Florida can ramp from existing demand savings to over 1% of sales or greater in next 5-7 years
- Think of demand side savings like bonds as part of a rational and diverse resource portfolio: reduce risk, reduce exposure to rate and bill increases, benefits accumulate over life of program.

Contact Information

Questions?

For further information see also:

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Thank You!

