



NorthWestern Energy

DSM Disincentives: How Can We Overcome Them?

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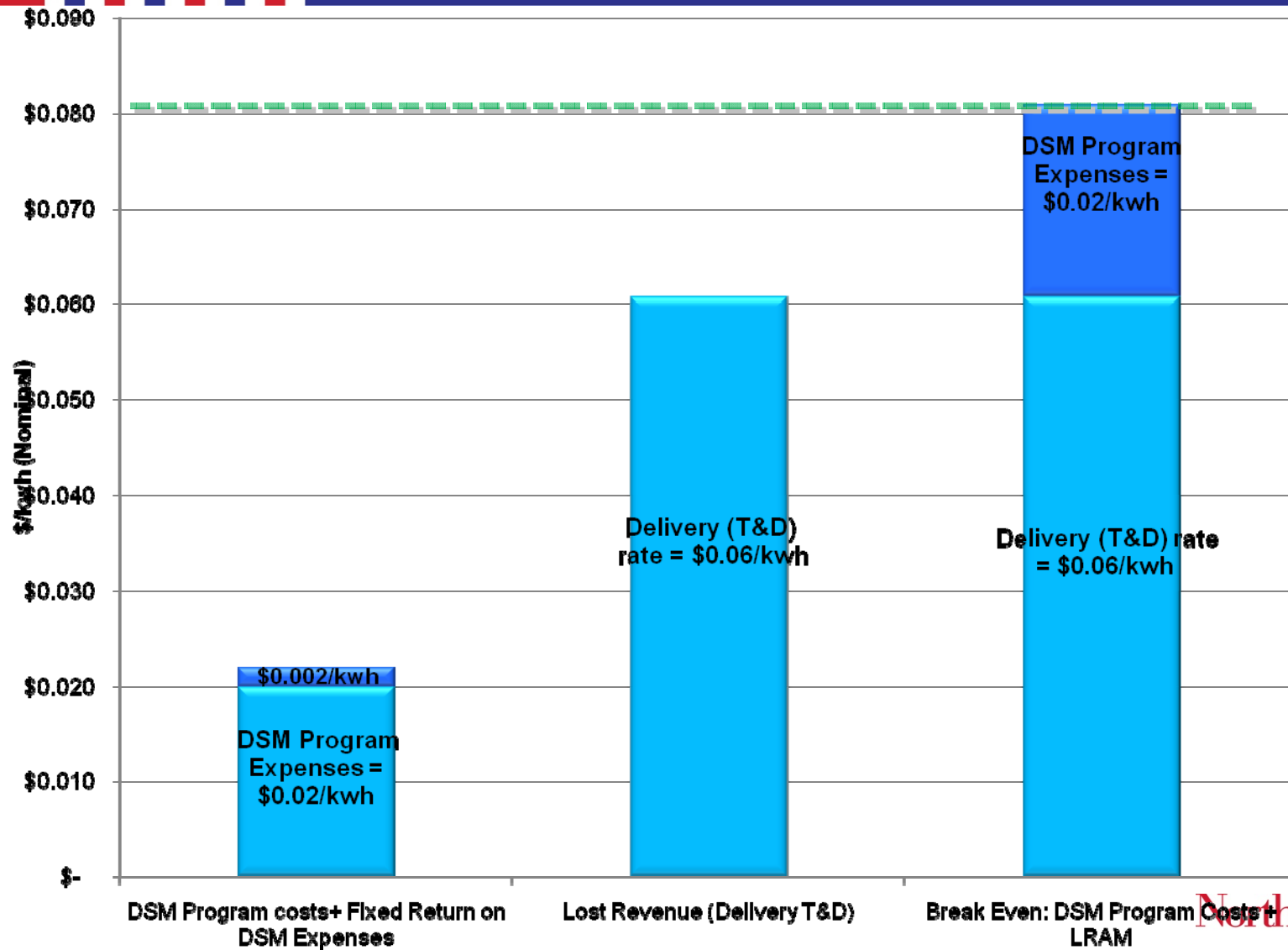
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Delivering a Bright Future

The Issues

- Front loaded DSM spending ... “DSM Program Costs”
 - » Expense (investment) happens at beginning (Year 0)
 - » Energy savings occur over lifetime of DSM measures
 - » Treatment of DSM Program Costs as expense (\$-for-\$ pass through) is break even
- Traditional Ratemaking: Revenues depend on sales, creating a “Throughput Incentive / Disincentive”
 - » Volumetric rates and the “revenue-sales link” creates “DSM Lost Revenues”
 - » Fixed costs are recovered through unit rates (\$/kwh, \$/dKt)
 - » Fixed Cost Recovery depends on energy sales volumes used (test period) when rates were established
- More DSM = less sales volume = less fixed cost recovery = Lost Revenues
- *“The Faster I Run, the Behinder I Get”*, Planck, M.S.M.E. Rivhard Everett

Breakeven: DSM Program Costs + Lost Revenue Recovery



Options for mitigating disincentives

- Lost revenue adjustment mechanisms (**LRAM**)
 - » allow utilities to recover contributions to authorized fixed costs as well as profits that are lost due to sales-reducing effects of energy-efficiency programs.
- **Decoupling** sales from profit and recovery of fixed costs
 - » Decoupling mechanisms also seek to reduce the linkage of revenue requirement to sales,
 - » Unlike LRAM, decoupling is applied to *all changes in utilities' sales, whether from energy-efficiency programs or other causes.*
 - » Decoupling methods include, for example, mechanisms to determine revenue per customer or revenue requirement in regular rate cases.
- Shifting more utility fixed costs into fixed **customer charges**.
 - » Retail rates traditionally recover a portion of utilities' fixed costs in volumetric charges.
 - » A shift of such costs toward fixed customer charges can mitigate concerns regarding lost revenues due to energy efficiency programs
 - » As this option is not a regulatory mechanism, *per se*, *but* is instead a matter of rate design, the evaluation team did not closely investigate.
- **Capitalizing** DSM Program Costs
- **Performance Incentives** ... ROR adder, Shared Savings, Annual Targets

Around the U.S.

- States with LRAM
 - » Ohio
 - » Kentucky
 - » Montana

- States with Decoupling
 - » California
 - » Connecticut
 - » Delaware
 - » Maryland
 - » Massachusetts
 - » Minnesota
 - » New Hampshire
 - » New York
 - » Oregon
 - » Vermont
 - » Wisconsin

Source: Lost Revenue Adjustment & Revenue Decoupling Mechanisms for Electric Utilities by State; The Edison Foundation Institute for Electric Efficiency, May 2009

NorthWestern's LRAM in Montana

- Reported Energy Savings
- Adjustment Factor(s): (15-17% reduction in Reported Energy Savings)
 - » Factors to be applied to reported energy savings to adjust for Free Riders, Spillover, lack of persistence.
 - » These factors are taken from the findings and conclusions of the 2007 DSM Evaluation.
- T&D rates that are in effect at time of calculation (annual tracker filing)
- Accumulating Energy Savings and Lost Revenues each year until new rates are set
- Lost Revenue amount is added as a line item to the energy supply tracker each year ... added to the energy supply rate

Basic LRAM formula:

$$[(\text{MWH savings}) * (\text{Adjustment Factor}) * (\text{Rate})] = \text{Lost Revenue}$$

Example calculation

SD DSM Electric DSM Lost Revenues								
Year 1								
Residential								
			Gross Program Savings		Adjustment Factor	Net Savings		Estimated Lost Revenue
Bill Line Item	Rate¹		(kwh)			(kwh)		(\$)
Transmission Energy	0.025		2,190,000		0.87	1,909,680		47,742
Distribution Energy	0.025		2,190,000		0.87	1,909,680		47,742
				Sub Total Residential:		1,909,680		\$ 95,484
Commercial & Industrial								
			Gross Program Savings	Gross Program Savings	Adjustment Factor	Net Savings	Net Savings	Estimated Lost Revenue
Bill Line Item	Rate¹	Rate¹	(kwh)	(kw-mth)		(kwh)	(kw-mth)	(\$)
GS-1Secondary, non demand, TX Energy	0.025		0		0.82	0		0
GS-1Secondary, non demand, Dist. Energy	0.025		0		0.82	0		0
GS-1Secondary, demand, TX Demand		2.870244		0	0.82		0	0
GS-1Secondary, demand, Dist. Energy	0.004641		0		0.82	0		0
GS-1Secondary, demand, Dist. Demand		5.850929		0	0.82		0	0
GS-1Primary, non demand, TX Energy	0.025		0		0.82	0		0
GS-1Primary, non demand, Dist. Energy	0.004641		0		0.82	0		0
GS-1Primary, demand, TX Demand		3.683143		0	0.82		0	0
GS-1Primary, demand, Dist. Energy	0.007084		0		0.82	0		0
GS-1Primary, demand, Dist. Demand		4.044304		0	0.82		0	0
			Sub Total Commercial & Industrial:			0		\$ -
			Year 1 Totals:			1,909,680		\$ 95,484

Note 1: using rates in effect at the time (see Rates tab)

Readings & Sources

- *Decoupling and Other Mechanisms to Encourage Utility Investment in Energy Efficiency; State Technical Forum on Renewable Energy and Energy Efficiency*, May 12, 2005, Keystone Conference (Call # 8 Summary).
- Harrington, Moskowitz, Austin, et al., *Regulatory Reform: Removing the Disincentives*. June 1994. Regulatory Assistance Project
- Kushler, York, and Witte. *Aligning Utility Interests with Energy Efficiency Objectives*. October 2006. American Council for Energy Efficient Economy. Report No. U061
- *Lost Revenue Adjustment & Revenue Decoupling Mechanisms for Electric Utilities by State*, The Edison Foundation, Institute for Electric Efficiency, May 2009

Contact Information

Questions & Comments

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