

To: PSC Staff  
From: Adam Bickford, MDNR Division of Energy

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Subject: MDNR's Proposed Definition for Shared Net Benefits

This memo provides a definition of “Shared Net Benefits” for inclusion in the SB376/MEEIA rule. The background information provides definitions of “Shared Net Benefits” from three sources and shows the linkage between the incentive graph featured in the June 9 draft rule and the calculations from Stoft, Eto and Kito (1995).

Proposed definition of “shared net benefits” for the SB376/MEEIA rule:

**“Shared Net Benefits means the difference between a utility’s avoided energy and capacity costs due to DSM programs and the sum of the utility DSM program costs and any participant costs for participation in the DSM program(s).”**

Background on the definition of “Shared Net Benefits” and “Shared Savings”

1. Cappers, P. 2009. “Financial Analysis of Incentive Mechanisms to Promote Energy Efficiency: Case Study of a Prototypical Southwest Utility.” Lawrence Berkeley National Laboratory Paper LBNL-1598E

#### 2.2.3.2 Shared Net Benefits (From Page 9)

Another way to reward utilities for aggressively pursuing energy efficiency is to allow them to retain a pre-determined share of the forecasted net resource benefits which occur through successful implementation of energy efficiency programs and measures (Jensen, 2007<sup>1</sup>). **Resource benefits are typically derived by multiplying lifetime energy and peak demand savings from installed measures by forecasted current and future avoided energy and generation (and T&D) capacity costs (and possibly environmental externalities). Program costs (or total resource costs) are subtracted to determine net resource benefits.** Key design features of a shared net benefits incentive mechanism include the sharing formula for benefits (e.g. % of net benefits retained by the utility), method used to determine avoided cost benefits, whether or not to cap the amount of allowed earnings, minimum performance levels that must be achieved for additional earnings, and extent to which there are penalties if a utility fails to achieve a minimum performance target (Jensen 2007).

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<sup>1</sup> “Jensen 2007” refers to the NAPEE “Aligning Utility Incentives with Investment in Energy Efficiency” report cited below.

2. *National Action Plan for Energy Efficiency 2007. Aligning Utility Incentives with Investment in Energy Efficiency. Prepared by Val R. Jensen, ICF International.*  
[www.epa.gov/eeactionplan](http://www.epa.gov/eeactionplan)

### 6.3 Shared Savings

With a shared savings mechanism, utilities share the net benefits resulting from successful implementation of energy efficiency programs with ratepayers. Implicitly, net benefits are tied to the utility's avoided costs, as these costs determine the level of economic benefit achieved. Therefore, the potential upside to a utility from use of a shared savings mechanism will be greater in jurisdictions with higher avoided costs. Key elements in fashioning a shared savings mechanism include:

- The degree of sharing (the percentage of net benefits retained by a utility).
- The amount to be shared (maximum dollar amount of the incentive irrespective of the sharing percentage).
- The extent to which there are penalties for failing to reach performance targets.
- The manner in which avoided costs are determined for purposes of calculating net benefits.
- The threshold values above which the sharing will begin.

(Page 6-4)

3. *Stoft, S., Eto, J. and Kito, S. (1995) DSM Shareholder Incentives: Current designs and Economic Theory. Berkeley, CA: Lawrence Berkeley National Laboratory. LBL-36580. Retrieved October 28, 2009 from <http://eetd.lbl.gov/ea/EMP/reports/36580.pdf>*

Stoft, Eto and Kito define a "Shared Savings Incentive" as:

$$I = \lambda(AQ - C_u - C_p) - F$$

Where:

I = Incentive Payment

$\lambda$  = Incentive rate

A = Per-unit avoided energy and capacity costs

Q = Quantity of energy saved (units)

$C_u$  = Utility program costs

$C_p$  = Participant costs

F = Fixed Payment

The "fixed payment" term (F) "sets the magnitude of the incentive payment as an expected level of performance and may result in penalties if the utility fails to undertake a DSM program..." (9-10)

The "shared net benefits" portion of this equation,  $(AQ - C_u - C_p)$ , can also be expressed as  $(AQ - (C_u + C_p))$ .

MDNR application of the Stoft, Eto, and Kito equation.

The equation represented in the graph presented in the draft rule is:

$$A\% = -0.10 + 0.20(G\%)$$

Where:

A% = Percentage of net savings returned to utility, which is equivalent to  $\lambda$  in the Stoft, Eto and Kito equation.

G% is the percentage of the utility savings goal achieved.

The values of the floor (a 5% penalty for performance less or equal to than 25% of goal) and ceiling (a 20% award for performance greater than or equal to 150% of goal) are arbitrary limits.

So, using the MDNR equation above,

$$\lambda = A\%$$

$$I = \lambda(AQ - (C_u + C_p))$$

The “fixed portion” (F) is accounted for in the calculation of the “A%” term. It is the intercept term (-0.10).