

INTERNAL STAFF MEMORANDUM**Automated Heat-Cable Control Measure - Cost-Effectiveness and Incentive Parity**

TO:	Commission / Division Staff
FROM:	Staff Analyst
DATE:	March 27, 2026
RE:	Internal characterization of submitted cost-effectiveness test and minimum incentive parity level

Purpose

This memorandum restates the internal Staff position after receipt of the submitted cost-effectiveness materials for the automated heat-cable control measure. The issue is no longer whether the measure should be rejected on cost-effectiveness grounds. The submitted screen shows that the measure remains low-cost on a lifetime utility acquisition-cost basis at the current incentive and at materially higher incentive levels.

The remaining internal question is incentive parity. Based on the submitted arithmetic, a residential incentive of approximately \$2,000 per controlled switch should be treated as the minimum parity level. At that level, the measure falls within the range of incentives already used for other accepted efficiency measures on a first-year kWh basis and remains below major portfolio cost benchmarks on a lifetime kWh basis.

Staff Summary Position

Staff should characterize the cost-effectiveness issue as settled for purposes of program-level review. A \$2,000 per-switch residential incentive is not an aggressive premium incentive. It is the first administratively practical level that moves the measure into reasonable parity with other approved efficiency incentives while preserving strong lifetime cost-effectiveness.

Recommended internal characterization:

The submitted cost-effectiveness analysis supports a minimum residential incentive of \$2,000 per controlled switch for the automated heat-cable control measure. At that level, the measure remains cost-effective relative to accepted lifetime cost benchmarks and falls within the incentive-per-first-year-kWh range already used for other accepted efficiency measures. Staff should treat \$2,000 per switch as the parity floor for program design, subject to ordinary tariff and implementation procedures.

Basis for Parity Finding

The reviewed materials compare the automated heat-cable control measure against accepted efficiency incentive structures in two ways. First, the measure is screened on lifetime utility acquisition cost per kWh saved. Second, the current residential incentive is compared against the first-year incentive dollars per verified kWh already used for other accepted measures.

The second comparison is the more relevant internal point for this memorandum. At the current \$500 per-switch incentive, the measure is being acquired at approximately \$0.066 per first-year kWh in the primary-home case. That is materially below accepted incentive levels for other measures, including \$0.23 per first-year kWh for certain building shell and new-construction non-lighting measures and \$0.35 per first-year kWh for HVAC measures. A \$2,000 incentive equals approximately \$0.263 per first-year kWh in the primary-home case, which places the measure inside that accepted parity range.

Table 1 - Submitted Cost-Effectiveness Screen

Customer segment	First-year kWh saved / switch	Current incentive / switch	Current lifetime cost	\$2,000 lifetime cost	Staff use
Winter-only residential	6,566	\$500	0.81 cents/kWh	3.25 cents/kWh	Conservative case; excludes non-winter operation.
Primary-home residential	7,603	\$500	0.70 cents/kWh	2.80 cents/kWh	Base residential parity case.
Second-home residential	8,640	\$500	0.62 cents/kWh	2.47 cents/kWh	Includes higher non-winter accidental operation.

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Commercial / multifamily	10,195	\$1,529.25	1.60 cents/kWh	2.09 cents/kWh	Current incentive basis equals \$0.15 per first-year kWh.
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Source assumptions: 11-year measure life, 98 percent realization rate, 87 percent net-to-gross, and reviewed per-switch savings by customer segment. Lifetime cost is calculated as incentive divided by adjusted lifetime kWh.

Interpretation of Table 1

The \$2,000 incentive level does not cause a cost-effectiveness problem. In the primary-home case, the \$2,000 level produces approximately 2.80 cents per lifetime kWh saved. In the conservative winter-only case, it produces approximately 3.25 cents per lifetime kWh saved. Both results remain below the approximate 3.5 cents per kWh portfolio benchmark used in the reviewed comparison materials and well below the submitted lighting and HVAC lifetime cost benchmarks.

Because the conservative winter-only case still screens below the comparison benchmark at \$2,000, Staff does not need to rely on the higher second-home or commercial savings cases to support the minimum parity finding. Those higher-savings segments strengthen the result, but they are not necessary for the residential parity conclusion.

Table 2 - First-Year Incentive Parity

Measure / incentive basis	Incentive per first-year kWh	Equivalent per switch using 7,603 kWh	Staff interpretation
Current heat-cable control incentive	\$0.066/kWh	\$500	Below parity; substantially under-signals the measure relative to accepted incentive structures.
Weatherization / building shell - other	\$0.23/kWh	\$1,749	Lower bound of comparable accepted incentive range.
New construction - non-lighting	\$0.23/kWh	\$1,749	Same lower-bound parity reference.
Proposed heat-cable control parity floor	\$0.263/kWh	\$2,000	Within accepted range; recommended minimum administratively practical parity level.
HVAC measures	\$0.35/kWh	\$2,661	Upper comparison point; a \$2,000 incentive remains below HVAC parity.

The equivalency calculation uses the submitted primary-home savings value of 7,603 kWh per controlled switch-year. \$2,000 divided by 7,603 kWh equals approximately \$0.263 per first-year kWh.

Findings

- Cost-effectiveness is not the limiting issue. The submitted screen shows low lifetime acquisition cost at \$500, \$1,000, \$1,500, and \$2,000 per switch. A rejection based on cost-effectiveness would be inconsistent with the submitted arithmetic.
- The current \$500 incentive is materially below parity. In the primary-home case, \$500 equals approximately \$0.066 per first-year kWh. That is not comparable to the incentive-per-kWh levels used for accepted measures in the submitted comparison set.
- \$2,000 per switch is the appropriate minimum parity level. It moves the measure into the accepted incentive range on a first-year kWh basis while remaining below the submitted lifetime cost benchmarks.
- \$2,000 is not a ceiling. The parity analysis does not assign separate value for winter peak reduction, controllability, dispatchability, telemetry, or verification. Those attributes may support additional value, but they are not required to support the minimum \$2,000 conclusion.
- Prospective EM&V should not delay the parity correction. Any ongoing verification, persistence review, or installation-quality process can be handled through normal program administration and evaluation. Those items do not change the internal conclusion that the submitted cost-effectiveness test supports at least \$2,000 per switch.

Table 3 - Residential Incentive Sensitivity, Primary-Home Case

Residential incentive / switch	First-year \$/kWh	Lifetime cost	Position relative to parity	Staff interpretation
\$500	\$0.066/kWh	0.70 cents/kWh	Below parity	Current level; facially cost-effective but not incentive-parity.
\$1,000	\$0.132/kWh	1.40 cents/kWh	Below parity	Still materially below accepted first-year incentive range.
\$1,500	\$0.197/kWh	2.10 cents/kWh	Below parity	Improved, but still below the \$0.23/kWh lower-bound parity reference.

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\$2,000	\$0.263/kWh	2.80 cents/kWh	Parity floor	Recommended minimum parity floor.
\$2,500	\$0.329/kWh	3.51 cents/kWh	Within parity range	Near HVAC parity and still below the submitted HVAC lifetime-cost benchmark.

Primary-home case uses 7,603 kWh per switch-year, 11-year life, 98 percent realization, and 87 percent net-to-gross.

Internal Disposition

Staff should not frame the measure as requiring additional threshold cost-effectiveness review. The submitted cost-effectiveness package has already provided the necessary arithmetic for the limited issue addressed here: whether the measure can support a materially higher incentive without becoming non-cost-effective. It can.

Staff should instead frame the remaining issue as program alignment. The current \$500 incentive is an anomalously low acquisition price relative to other accepted efficiency incentives. A \$2,000 per-switch incentive is the minimum level that places the measure into reasonable parity, and it still leaves the utility acquiring lifetime savings at a low cost per kWh.

For internal communication, Staff should use the following conclusion:

The cost-effectiveness test supports a minimum \$2,000 per controlled switch incentive. The current \$500 level is cost-effective but materially below parity with other accepted measures. A \$2,000 level aligns the measure with existing incentive practice while maintaining a favorable lifetime cents-per-kWh result. Staff should treat \$2,000 per switch as the minimum reasonable incentive level for residential program design.