

Jurisdictional Review: Smart Thermostat In-Service Rate (ISR)

Objective

To conduct a jurisdictional review of the in-service rate (ISR) (or installation rate) for self-install smart thermostat energy efficiency utility programs in other North American jurisdictions. Considering the challenges identified with Enbridge Gas's current ISR approach ("the ping"), jurisdictional ISRs may be used to determine a more appropriate ISR to apply to Enbridge Gas's self-install smart thermostat measure. The ISR using Enbridge Gas's current approach is 84.15%, which was applied as a gross savings adjustment factor to the 2023 self-install smart thermostats results of the Smart Home program offering. Enbridge Gas's Smart Home program offering has an instant rebate delivery approach and a post-purchase rebate delivery approach. The table below shows the ISRs studied by relevant jurisdictions. The instant rebate delivery approach is most similar to the Online Marketplace approach and the post-purchase rebate is in line with the Rebate approach, listed below.

Table of Smart Thermostat Self-Install ISRs

Jurisdiction (Utility)	Utility Type	Program	ISR (%)
Illinois (ComEd)	Electric	Rebate	90%
Colorado (Atmos Energy)	Gas	Rebate / Online Marketplace	90%
Washington (Puget Sound Energy)	Dual	Rebate	80%
Indiana (Vectren)	Gas	Rebate	97.6%
New York (National Grid)	Dual	Rebate / Online Marketplace	82%
New Jersey (multiple utilities)	All	Rebate / Online Marketplace	90.8%
Gross Average*			88.4%

*Average weights each jurisdiction equally.

Findings

Overall in other jurisdictions, it was found the in-service rates (ISR) for self-install smart thermostat rebate programs are around 88.4%, ranging from low 80s to high 90s. These measures are generally delivered through a post-purchase rebate or instant rebate as part of an online utility marketplace delivery channel. The in-service rates were generally studied using online participant surveys, but there was one instance where device activation from a singular manufacturer was considered. Further details of other jurisdictions are noted in Appendices A & B.

Appendix A: Utility ISR Overviews

Illinois: ComEd

- Utility type: Electric
- Utility Number of Customers: 4,000,000
- Program: Self-install post-purchase rebate program
- ISR: 90%
- ISR Details: Customer Install (e.g., leave behind or self install through rebate). It is reflecting a leakage rate of 6-7% and an assumed percentage of devices that are never installed (3-4%). Leakage rate is determined through Google Nest data where the device is activated in Illinois but match with devices out of state. ComEd participant surveys indicated a 97-100% installation rate.
- Program Year Studied: 2020
- Study Author: Guidehouse
- Study Approach: Mix of participant surveys and a single OEM¹ device activation data (Nest)
- Sample Size: 1,086 (participant survey)
- Study Source: ComEd Advanced Thermostat Evaluation - Final Research Report. Nov 10, 2020. (<https://www.ilsag.info/wp-content/uploads/ComEd-Adv-Thermostat-Research-Report-Final-2020-11-10.pdf>)

Colorado: Atmos Energy

- Utility type: Gas
- Utility Number of Customers: 129,000
- Program: Self-install post-purchase rebate program; Online marketplace thermostat program
- ISR: 90%
- ISR Details: For both types of thermostats, the ISR was higher for the rebate channel than the marketplace channel. When aggregating the in-service rates of these two channels, the advanced thermostat has an in-service rate of 90% and the programmable thermostat has an in-service rate of 93%.
- Program Year Studied: 2020 & 2021
- Study Author: Demand Side Analytics
- Study Approach: Online participant survey
- Sample Size: 60
- Study Source: Atmos Energy Colorado DSM Portfolio M&V 2020-2021. March 2022. (https://www.dora.state.co.us/pls/efi/efi_p2_v2_demo.show_document?p_dms_document_id=993577&p_session_id=)

Washington: Puget Sound Energy

- Utility type: Dual electric/gas
- Utility Number of Customers: 1,100,000 (electric), 860,000 (gas)
- Program: Self-install post-purchase rebate program
- ISR: 80%
- ISR Details: To understand installation rates, DNV GL asked participants if their program-rebated thermostat is currently installed in their home. The majority of respondents (80%) indicated that the smart thermostat was currently installed in their home. DNV GL then asked participants why their thermostat is not currently installed. Compatibility issues with the HVAC

¹ Original Equipment Manufacturer

system and dealing with challenging installations were the most often reported reasons that the program-rebated thermostat was not installed.

- Program Year Studied: 2021/2022
- Study Author: DNV GL
- Study Approach: Online participant survey
- Sample Size: 3,488
- Study Source: Smart Thermostat Program Final Report 2022-2023 Impact and Process Evaluation. Feb 15, 2024. (<https://apiproxy.utc.wa.gov/cases/GetDocument?docID=56&year=2021&docketNumber=210823>)

Indiana: Vectren

- Utility type: Gas
- Utility Number of Customers: 680,000
- Program: Self-install post-purchase rebate program
- ISR: 97.6%
- ISR Details: Cadmus conducted telephone and/or online surveys with program participants to confirm customer participation status, the number and type of measures that received program incentives, and the persistence of installations. Cadmus calculated verified savings for the Residential Prescriptive Program by applying an installation rate by survey measure group. Within the survey measure group included programmable thermostats – that measure group was not included in the ISR shown in this jurisdictional review.
- Program Year Studied: 2018
- Study Author: Cadmus
- Study Approach: Online participant survey
- Sample Size: 711
- Study Source: 2018 Vectren Demand-Side Management Portfolio Natural Gas Impacts Evaluation. June 19, 2019. (https://iurc.portal.in.gov/_entity/sharepointdocumentlocation/e4057290-67b5-e911-a981-001dd80081ad/bb9c6bba-fd52-45ad-8e64-a444aef13c39?file=44598%20Vectren%20Quarter%20Ended%20063018%20and%202018%20Annual%20EMV%20Results%20Energy%20Efficiency.pdf)

New York: National Grid

- Utility type: Dual electric/gas
- Utility Number of Customers: 4,205,000
- Program: Self-install post-purchase rebate program; Online marketplace thermostat program
- ISR: 82%
- ISR Details: Survey results found an ISR for single-purchase thermostats of 82% for thermostats purchased through the online marketplace or their Rebate as a Service (RaaS) program. Respondents reported reasons such as not having gotten to it, difficulties installing wiring, and compatibility issues with existing heating or cooling systems. Participant survey responses indicating that most participants who had not yet installed their thermostats planned to do so in the future. Analysts adjusted the billing analysis-based results upward to account for delayed installations.
- Program Year Studied: 2019-2020
- Study Author: DNV & NMR
- Study Approach: Online participant survey
- Sample Size: 232
- Study Source: Online Marketplace Electric Residential Consumer Products Impact and Process Evaluation. June 9, 2023.



New Jersey: Multiple Utilities (Atlantic City Electric, Elizabeth Town Gas, Public Service Enterprise Group, South Jersey Gas, Jersey Central Power & Light, Rockland Electric)

- Utility type: Electric, gas, dual
- Utility Number of Customers: ~5,400,000 (combined both electric and gas customers)
- Program: Self-install post-purchase rebate program; Online marketplace thermostat program
- ISR: 90.8%
- ISR Details: A blended simple average of ISR was determined based on ISR values in the 2024 New Jersey Technical Reference Manual (TRM) across utilities. If a utility had multiple delivery approaches (e.g., online marketplace, post-purchase rebate), those values were averaged before including in the combined utility simple average (i.e., each utility weighted equally).
- Program Year Studied: 2023
- Study Author: Unknown
- Study Approach: Unknown
- Sample Size: N/A
- Study Source: New Jersey 2024 Triennial Technical Reference Manual. Feb 19, 2025. (<https://njcepfiles.s3.us-east-1.amazonaws.com/NJ+PY4+TRM+2025.02.19.pdf>)

Appendix B: Other states/utilities reviewed

- Reviewed smart, connected, and advanced thermostats measures in 25 statewide and utility-specific technical reference manuals (TRMs) across North America. 20 of the TRMs did not specify a custom, studied ISR.
- There were several other jurisdictions with evaluation reports/annual reports that were reviewed but not included in the summary above due to the reasons outlined below:
 - California – major gas/electric utilities (ISR not studied for self-install approach. California adjustment factor referenced in DNV Smart Thermostat Evaluation memo (dated May 29, 2025) applies to smart thermostats that were direct installed and were developed to determine a savings adjustment based on surveys and energy models, not to determine an in-service rate)
 - Colorado – Xcel Energy (ISR specific for smart thermostats only not studied)
 - Illinois – state-wide gas utilities (including Nicor Gas) (ISR for free self-install smart thermostat)
 - Maryland – state-wide EE (ISR not studied)
 - Massachusetts – state-wide EE (ISR not studied)
 - Michigan – Consumers Energy (ISR for free self-install smart thermostat)
 - Minnesota – Xcel Energy (ISR set at 100%, does not appear to have been studied)
 - Cadmus 2012 (A Consumers Energy (Michigan) Cadmus evaluation report noted a previous Cadmus study that found an ISR of 97% based on survey research of thermostats in the ENERGYSTAR Appliances Online store – conducted in 2012 – study cannot be found)