Date Filed: August 27, 2026

Witness: Matthew Nelson and Michael Goldman
Request from: Conservation Law Foundation

Question:

(SPACE HEATING RATE) See Exhibit CLP-IAP-1. Please provide copies of any papers, presentations, testimonies (whether pre-filed or delivered live) or opinion pieces prepared by Apex Analytics or, separately, by either Mr. Nelson or Mr. Goldman, within the last five years, on the subject of residential space heating rates and/or rate design, and/or residential heat pumps (including but not limited to heat pump cost, rate design, installation incentives, and tie-in with home energy audit and insulation programs.) If presented as live testimony, please include copies of transcripts of the direct, cross-examination, and redirect examination of the witness or witness panel.

Response:

Please refer to CLF-011, Attachments 1 through 42, for responsive materials prepared by Mr. Nelson, Mr. Goldman, and Apex Analytics, LLC. Apex Analytics is a consulting firm whose practice includes regulatory/rate design work and a substantial energy efficiency engineering practice. Over the past five years, Apex personnel have produced a significant body of work regarding heat pumps, the large majority of which are engineering and program-evaluation materials, studies of heat pump performance, sizing, building integration, and incorporation of heat pumps into energy efficiency plans, rather than heat pump rate design. Mr. Nelson and Mr. Goldman are the primary Apex personnel whose work concerns rates and rate design, while other Apex work is more technical and engineered focused, as described above. The engineering materials were prepared by other Apex staff and are not sponsored by the witnesses. In the interest of completeness, the Company is producing both categories, organized as described in the table below.

All responsive materials from Mr. Nelson and Mr. Goldman are included herein. For other staff, Apex has made a good faith effort to recall and produce all documents responsive to this question; however, given the focus on heat pumps during the requested time period and general staff turnover, Apex cannot guarantee that it located every potentially responsive item.

Attachment	Description
CLF-011 Attachment 1	Community-specific Cost-benefit Evaluation Framework for Beneficial Electrification presentation, co-presented by Apex Analytics on September 27, 2022

CLF-011 Attachment 2	Market Characterization and Assessment Report, co-prepared by Apex Analytics
CLF-011 Attachment 3	Community-specific Cost-benefit Evaluation Framework for Beneficial Electrification presentation, presented by Apex Analytics on October 11, 2022
CLF-011 Attachment 4	Platte River Power Authority Beneficial Buildings Electrification Forecast, submitted by Apex Analytics on March 12, 2022
CLF-011 Attachment 5	Evolving Electrification Policy and Program Design in Pursuit of Decarbonization paper, co-authored by Apex Analytics
CLF-011 Attachment 6	Legislating Heat Pumps: Assessing the costs and carbon savings from a state heat pump standard presentation, co-presented by Apex Analytics on August 4, 2026
CLF-011 Attachment 7	Legislating Heat Pumps: Assessing the costs and carbon savings from a state heat pump standard, co-authored by Apex Analytics
CLF-011 Attachment 8	Keeping the heat on: Assessing the potential for demand side management to alleviate natural gas shortages during extreme cold presentation, co-presented by Apex Analytics on August 4, 2026
CLF-011 Attachment 9	Keeping the heat on: Assessing the potential for demand side management to alleviate natural gas shortages during extreme cold, co-authored by Apex Analytics
CLF-011 Attachment 10	Realpolitik vs Wealth of Notions: Realizing the Benefits of Using Cost-Effectiveness Testing in Building Decarbonization, prepared by Apex Analytics
CLF-011 Attachment 11	Reimagining Quality Installation in Residential Heat Pump Programs: An Analysis of Energy Savings and Value Propositions, co-presented by Apex Analytics on August 5, 2026
CLF-011 Attachment 12	Reimagining Quality Installation in Residential Heat Pump Programs: An Analysis of Energy Savings and Value Propositions, co-authored by Apex Analytics
CLF-011 Attachment 13	Evolving Electrification Policy and Program Design in the Pursuit of Decarbonization, prepared by Apex Analytics
CLF-011 Attachment 14	Don't Freeze! The Heating Electrification Train is Barreling Toward Us?, co-presented by Apex Analytics on November 4, 2022
CLF-011 Attachment 15	Don't Freeze! The Heating Electrification Train is Barreling Toward Us, co-authored by Apex Analytics
CLF-011 Attachment 16	Switch talk on dual fuel heat pump carbon calculations, presentation by Apex Analytics
CLF-011 Attachment 17	The Mountain Energy Project: Non-Pipeline Alternative Report, which the Apex Analytics team performed an NPA Analysis for, in collaboration with other firms

CLF-011 Attachment 18	The Mountain Energy Project: Non-Pipeline Alternative Implementation Plan
CLF-011 Attachment 19	Rebuttal Testimony of Jordan Mann (Apex Analytics) in Colorado proceeding no. 25A-0044EG
CLF-011 Attachment 20	Hearing transcript from Augst 13, 2025 in Colorado proceeding no. 25A-0044EG
CLF-011 Attachment 21	Hearing transcript from Augst 14, 2025 in Colorado proceeding no. 25A-0044EG
CLF-011 Attachment 22	VSHP Deep Dive Research Plan, co-presented by Apex Analytics on March 5, 2026
CLF-011 Attachment 23	Accelerated Adoption of Heat Pump Technology, jointly prepared by the Colorado Energy Office and Apex Analytics
CLF-011 Attachment 24	LinkedIn Article: Decarbonization Journey Part I: Why did I buy the most boring heat pump?
CLF-011 Attachment 25	LinkedIn Article: Decarb Journey Part II, What's the Big Idea?
CLF-011 Attachment 26	LinkedIn Article: Did the Inflation Reduction Act miss an opportunity for a true heat pump revolution?
CLF-011 Attachment 27	LinkedIn Article: Hold up! Keeping your gas furnace might be more environmentally beneficial than you think
CLF-011 Attachment 28	LinkedIn Article: What happens to EE/DSM when it stops being valuable to save electricity most of the time? And what does this mean for heating electrification?
CLF-011 Attachment 29	LinkedIn Article: Where are the methane leaks? And why that's critical for electrification policy.
CLF-011 Attachment 30	Dual Fuel Heat Pump Pilot Phase I Evaluation Report, submitted jointly by Apex Analytics and Ideal Community Strategies
CLF-011 Attachment 31	HVAC Market Actor Profile: Small-to-Medium Commercial HVAC Project Decision Making, prepared in-part by Apex Analytics
CLF-011 Attachment 32	Turning the Wrenches of Beneficial Electrification: Understanding HVAC Contractor Decision-Making, co-authored by Apex Analytics
CLF-011 Attachment 33	Colorado Hybrid Heating Study presentation by Apex Analytics
CLF-011 Attachment 34	Energy Efficiency Strategies Roundtable presentation, co-presented by Apex Analytics
CLF-011 Attachment 35	Direct Testimony and Attachments of Jane L. Colby (Apex Analytics) in the Matter of Atmos Energy Corporation's Application for Approval of its 2024-2028 Clean Heat Plan before the Colorado Public Utilities Commission
CLF-011 Attachment 36	Atmos Energy Colorado Natural Gas Market Potential Study – Clean Heat Plan, submitted by Apex Analytics with Brightline Group

CLF-011 Attachment 37	Direct Testimony and Attachment of Matthew H. Nelson (Apex Analytics) in the Matter of Atmos Energy Corporation's Application for Approval of its 2024-2028 Clean Heat Plan before the Colorado Public Utilities Commission
CLF-011 Attachment 38	Rebuttal Testimony of Matthew H. Nelson (Apex Analytics) in the Matter of Atmos Energy Corporation's Application for Approval of its 2024-2028 Clean Heat Plan before the Colorado Public Utilities Commission
CLF-011 Attachment 39	Renewable Energy World - Transforming utility customer service: Rates, incentives and decarbonization, authored by Michael Goldman (also available at Transforming utility customer service: Rates, incentives and decarbonization)
CLF-011 Attachment 40	Renewable Energy World - Transforming utility customer service: Residential heat pumps can help decarbonization efforts, authored by Michael Goldman (also available at Transforming utility customer service: Residential heat pumps can help decarbonization efforts)
CLF-011 Attachment 41	Renewable Energy World - Transforming utility customer service: Equity in decarbonization, authored by Michael Goldman (also available at Transforming utility customer service: Equity in decarbonization)
CLF-011 Attachment 42	Renewable Energy World - Transforming utility customer service: Helping decarbonize the residential sector, authored by Michael Goldman (also available at Transforming utility customer service: Helping decarbonize the residential sector)