VIA E-FILING

April 22, 2025

Rosemary Chiavetta, Esq., Secretary
Pennsylvania Public Utility Commission

Re: Act 129 Phase V Energy Efficiency & Conservation (EE&C) Implementation Order, Docket M-2025-3052826

Dear Secretary Chiavetta,

EnergyHub appreciates the opportunity to submit the following comments regarding the Commission's Tentative Implementation Order for Phase V of Act 129 programs and subsequent stakeholder comments.

Respectfully submitted,

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Introduction

As recognized in Chair DeFrank's statement at the start of this proceeding, the state of Pennsylvania faces challenges in guaranteeing adequate electric supply and in mitigating rising costs of electricity. Act 129 programs are a vital tool to ensure reliable and affordable service for ratepayers. Thankfully, there are many proven demand response and load flexibility programs that the Commission can look to for scalable and successful program design. EnergyHub has considerable experience in implementing these programs, with over 80 VPP and demand response programs under management across the country. In these comments, we share program design suggestions to maximize impact, support the need for robust demand response targets, and share additional lessons learned for successful load flexibility programs.

EnergyHub is a leading provider of clean energy software and services that unlock the full potential of distributed energy resources (DERs), with over 1.6 million devices and more than 2GW of flexible capacity under management. EnergyHub's grid-edge Distributed Energy Resource Management System (Edge-DERMS) and program services enable utilities and grid operators to leverage and control customer-owned distributed energy resources (DERs) including residential batteries, connected thermostats, commercial and industrial ("C&I") load flexibility, and electric vehicles.

As a member of Advanced Energy United ("United"), EnergyHub supports the initial comments filed by United regarding the Phase V programs. We add our separate reply comments given our targeted experience as a provider and implementor of the types of demand response programs that the Commission and stakeholders are discussing for Phase V.

I. An event-based DR program design will maximize impacts

EnergyHub agrees with stakeholders, including the Energy Association of Pennsylvania (EAP) and PPL Electric (PPL) , that utilities should have a greater degree of flexibility in deciding program designs that are appropriate for their territories. EnergyHub works with utilities to design programs that best fit their unique needs and best ensure that goals are met.

In particular, EnergyHub agrees with PECO Energy Company's (PECO) recommendation that the Final Implementation Order allow for event-based DR resources to provide eligible demand reduction in addition to daily load shifting measures. EnergyHub has implemented event-based DR programs for over a decade and can attest to their ability to reliably provide targeted, measurable demand reduction in the most valuable hours

of the year. Allowing use of these proven methods will better ensure that targets are met and better address the state's urgent peak load issue.

EnergyHub agrees with United's recommendation that the Commission employ an event-based program dispatched on the basis of a projected peak demand threshold, available in coincident peak demand windows with uncapped event hours. This design would ensure that the resource is available when needed and would not require daily load shifting by participants, therefore resulting in higher kW/device value. This is a proven program design for smart thermostats. As PECO has recognized, daily load shifting will limit the types of measures C&I customers can employ as well as the degree to which shifting is feasible. Even batteries, which have high degrees of flexibility, benefit from event-based triggers that enable them to make the best economic decisions about when to charge and discharge.

For smart thermostats in particular, this program design would result in significantly more load shift per device. As described by United, 0.75kW/device is a more accurate RAP assumption for event-based DR.

II. Peak load reduction targets should remain and can be strengthened

The urgent resource adequacy issue that the state currently faces underscores the importance of keeping peak load reduction targets intact. In EnergyHub's long experience implementing DR programs, we have seen success that supports the assertion that these peak load reduction targets and participation assumptions are reasonable. EnergyHub has found that mature, event-based BYOT programs can enroll up to 20-30% of potential devices in their territory.

Examples of existing, mature programs include:

1. APS's "Cool Rewards" program, which currently enrolls 10% of total ratepayers, resulting in approximately 100,000 participants. [1]
2. The ConnectedSolutions program in Massachusetts, which has 100k participants in their residential active demand reduction program across both participating utilities, Eversource and National Grid. [2]

Combined with a higher RAP assumption of 0.75 kW per smart thermostat, EnergyHub agrees that an increase to the overall peak load reduction target of 50 MW or more is

[1] Arizona Public Service ("APS"), Demand Side Management (DSM) 2024 Annual Progress Report, February 2025, available at https://docket.images.azcc.gov/E000041930.pdf?i=1742325554285

[2] Massachusetts Energy Efficiency Advisory Council, Energy Efficiency Program Results and Reporting – 2023 Electric Statewide Summary, available at https://ma-eeac.org/results-reporting/

feasible. We emphasize that this is a realistic per device savings assumption that can be achieved with good program design and implementation.

III. New demand response programs can be built and scaled rapidly

EnergyHub recognizes the concern from PPL that utilities in Pennsylvania do not have existing programs to build from, and therefore, that the Commission should reduce or eliminate the peak demand reduction targets and not subject EDCs to penalties. However, new demand response programs can be built and scaled rapidly.

EnergyHub has considerable experience launching new demand response programs, both as single point solutions (e.g., a smart thermostat program only) and as multi-DER offerings (e.g., a launch of a smart thermostat, battery, and EV program all at once). As an Edge DERMS provider, EnergyHub has a highly standardized process that supports the marketing, enrollment, data ingestion, and control of a wide ecosystem of DER OEMs and aggregators that enables participation from currently installed devices from about 80% of the thermostat market, 95% of the residential battery storage market, and all leading EV and EVSE manufacturers. Through our experience and process standardization, we are able to launch new programs in 90 to 120 days and scale them rapidly afterwards. For example, the Independent Electricity System Operator (IESO) in Ontario's "Peak Perks" program enrolled over 100,000 participants in just 6 months and has grown to over 230,000 participants in 2 years.[3]

EnergyHub appreciates the short timelines that are likely to exist between Commission approval of Phase V plans, likely in Q1 or Q2 or 2026, and the beginning of the Phase V cycle on June 1, 2026. We suggest that the EDCs can ensure readiness for the beginning of the Phase V cycle by beginning the RFP process for implementors of the Phase V demand response programs well ahead of Commission approval of the programs. This is a common practice, and final contracting can be made subject to Commission approval of the programs. The EDCs could even issue RFIs this summer to inform their Phase V plan filings in November, if desired.

However, even under optimistic scenarios EnergyHub recognizes that building a demand response portfolio in time to deliver peak load reductions for Y1 Summer will be challenging. EnergyHub therefore feels it is reasonable for mandated targets to be assessed in Y2 as opposed to Y1, as was the case in Phase III.[4] While it is reasonable to

[3] Independent Electricity System Operator (IESO), "Save on Energy's Peak Perks Program Reaches Milestone Enrollment", February 2024, available at https://www.ieso.ca/Corporate-IESO/Media/News-Releases

[4] Demand Side Analytics et al., *Phase V Demand Response Potential Study*, February 2025, available at https://www.puc.pa.gov/pcdocs/1867287.pdf. See page 13.

expect program launch within a few months and subsequent substantial growth within a year, program approval and contracting processes can extend these timelines.

IV. Advanced use cases for load flexibility are quickly evolving and can offer additional benefits

The commission should also support flexibility in program design to accommodate emerging advanced use cases for load flexibility including locational dispatch, distribution system benefits, dynamic load shaping, and forecasting capabilities. These use cases will grow in importance in the future. It is especially important that eventual program design utilize device-level telemetry and empower utility visibility and management of resources to support these use cases.

Daily optimization for thermostats

EnergyHub agrees with PECO that daily optimization is relatively unproven as a demand response program design governing all DER types. However, this method, in an additive manner, could bring about additional peak load reduction and would be an opportunity for Pennsylvania to lead in innovation. EnergyHub suggests exploring capturing additional benefits from daily load shifting on a pilot basis. This would provide an opportunity to collect data on scale and performance, as well as allow for learnings regarding customer compensation and enrollment pathways.

Enrollment friction is a persistent key barrier to scale, and as such, there are many more devices that could potentially deliver value to the grid than enroll in utility programs. As mentioned, 20-30% opt-in rates are reasonable to expect for mature utility program participation. However, many customers readily sign up for energy management features on their device but not their utility's demand response program. Engaging these customers through a daily optimization program design could significantly increase demand response potential, but the Commission should seek more data on the impact of this program design on total participation, opt-out rates, realized per device savings, and customer satisfaction before mandating it as the program design for all DER types.

EVs

Although not all EV managed charging programs were found to be cost effective in the DR potential study, EnergyHub encourages inclusion of EV managed charging in the final program design. Active managed charging will be critical to manage distribution system impacts of incoming EV load and can drive significant locational benefits. The Commission should not wait until the Phase VI program cycle to start developing EV

managed charging programs that can support the reliability and affordability of the bulk grid, and the distribution grid in particular.

Batteries

EnergyHub encourages inclusion of BTM batteries as an eligible resource, especially given that the potential study found that battery storage would be "among the lowest-cost ways" to achieve peak demand reduction goals. [5]

Battery programs across the country are currently providing valuable resilience and peak load reduction. For example, the ConnectedSolutions program in Massachusetts had 6,760 unique devices enrolled throughout the 2023 summer, with an aggregate load reduction potential of 56.5 MW.[6] Similar to EVs, the Phase V cycle represents an opportunity to pilot battery programs that are highly flexible and deliver significant savings, and EnergyHub therefore recommends that the Commission approve or direct the EDCs to begin developing such programs ahead of the Phase VI cycle.

Conclusion

EnergyHub appreciates the opportunity to comment on the Tentative Implementation Order and stakeholder comments, and thanks the Commission for its work to implement Phase V. We encourage the Commission to consider the above recommendations in a Final Implementation Order. We look forward to working with the Commission and stakeholders for successful Act 129 EE&C programs.

[5] Demand Side Analytics et al., Phase V Demand Response Potential Study, February 2025, available at https://www.puc.pa.gov/pcdocs/1867287.pdf. See page 118.

[6] Guidehouse Inc., *Massachusetts Residential Energy Storage Demand Reduction Offering Evaluation,* June 2024, DPU 24-65 2023 Energy Efficiency Plan-Year Report Appendix 4D, Study 23-34.