

2024 CPCN

System year 1 is 2025

Electric Vehicle Off-Peak charging

Electric Vehicle ("EV") Off-Peak Charging Program is available to Residential end-use members in the service territories of EKPC owner-members and includes energy reporting from electric vehicles or compatible electric vehicle supply equipment. The program is designed to reduce growth in peak demand resulting from the adoption of EVs. EKPC provides a monthly incentive for registered EVs' charging energy (kWh) that occurs during the off-peak hours.

Assumption	Source
Load Impacts Before Participant 7,500 kWh, 1.83 kW (diversified, coincident with summer peak), 0.32 kW (winter). After Participant 7,500 kWh, 0.18 kW (diversified, coincident with summer peak), 0.03 kW (winter). 4.336 kWh shifted	Typical electric vehicle charging profile, diversified. Level 2 charging, 7,500 kWh per year. Peaks are diversified, coincident with system peak.. PJM summer, EKPC (hour 18 summer, hour 8 winter). Based on Duke Energy metered profile. Savings: 1.65 kW coincident Summer peak; 0.29 kW coincident Winter peak Same vehicle with 90% demand response. 90% of baseline on-peak EV kWh shifted to off-peak hours of 10 PM - 6 AM .
Lifetime of savings 10 Years.	Assumes that the vehicle participates for the program for 10 years
Discount rate for TRC and RIM Generation Capacity Cost - \$174.60 per kW-year (no escalation). 73% winter 27% summer. Avoided Electricity Energy Costs - PJM Market, AEP-Dayton hub, \$45.96 /MWh in 2025 Transmission Capacity Cost - OATT tariff \$ 44.34 per kW-year in 2025 Distribution Capacity Cost - \$ 4.93 per kW-year in 2025 Participant Costs \$ 0. 2% esc. Tax credit (benefit): \$0	5 percent per EKPC financial data ; 3.5 % societal test from Mercatus Center report Avoided costs of a RICE unit. Updated escalators to match. Allocation is 73% winter 27% summer. Summer values based on PJM capacity performance market December 2023 with IHS Markit forecast, start year is 2024. based on December 26, 2023 ACES Forward prices for AEP_Dayton hub. \$45.96 /MWh in 2025. DSMore Scenario 9, 0.53 esc in 2025 Point-to-point rate, 2023-24. OATT. 2.8 % escalation rate based on 10 yr PPI.. Applied to summer coincident peak. Based on marginal cost of distribution. 2.8 % escalation rate based on 10 yr PPI. . Applied to summer coincident peak. EKPC pays all costs for this program none for this program
Administrative Cost EK \$ 108 per participant per year, 2% esc Co-op \$0	Cost for API only. Based on 2022 quote EKPC pays all administrative costs for this program
Rate Schedule - Retail Median Residential Rate for Co-ops Cust chrg \$16.09 , Energy Rate \$.088229 Rate Schedule - Wholesale East Kentucky E-2 rate.	Current rates in effect as of January 2024.. includes Environmental Surcharge and FAC Current rates in effect as of January 2024. includes Environmental Surcharge and FAC
Participation -2025: 0 2026-2039: 500 per year.. 40% Free Riders	Based on 2024 budget projections. Free riders to account for the share of participants who would be charging off -peak anyway.
Rebates Co-op to Participant \$ \$140 per year, for all cumulative participants , 2% esc EK to Co-op \$70 per year, all cumulative participants , 2% esc	2 cents per kWh (all off-peak charging - assumed to be 7,000 kWh). EKPC pays 50% of the rebate to the end-use member.