
75TH ANNIVERSARY
EST. 1950
Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT
2025
IEUA
Annual Energy Report

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# IEUA Energy Portfolio

## Executive Summary

The 2024/25 Energy Report tracks IEUA's energy consumption and portfolio, renewable generation performance and savings, and energy efficiency projects for the fiscal year. The report includes a brief description of upcoming projects and initiatives that will be implemented over the next few years.

IEUA's energy portfolio included:

- Imported Electricity
- Solar Energy
- Wind Power
- Battery Storage
- Biogas
- Natural gas

### 2024/25 IEUA's energy use

- Total Electricity consumption: 87,146 MWh of electricity
- Renewable Energy: 3,934 MWh (5% of total electricity)
- Annual energy expenses [imported electricity, renewable energy, natural gas, and energy management services]: $15.4 million (IEUA), $1.9 million (IERCF)
- Renewable energy Power Purchase Agreement (PPA) savings since 2008: $2,523,000
- Energy storage and solar Energy Management Services Agreement (EMSA) savings since 2019: $750,000

***Did you know?***

*In 2022 a typical U.S. household used 10,500 kWh**

*The renewable energy generated by IEUA would be able to provide electricity to at least 376 homes.*

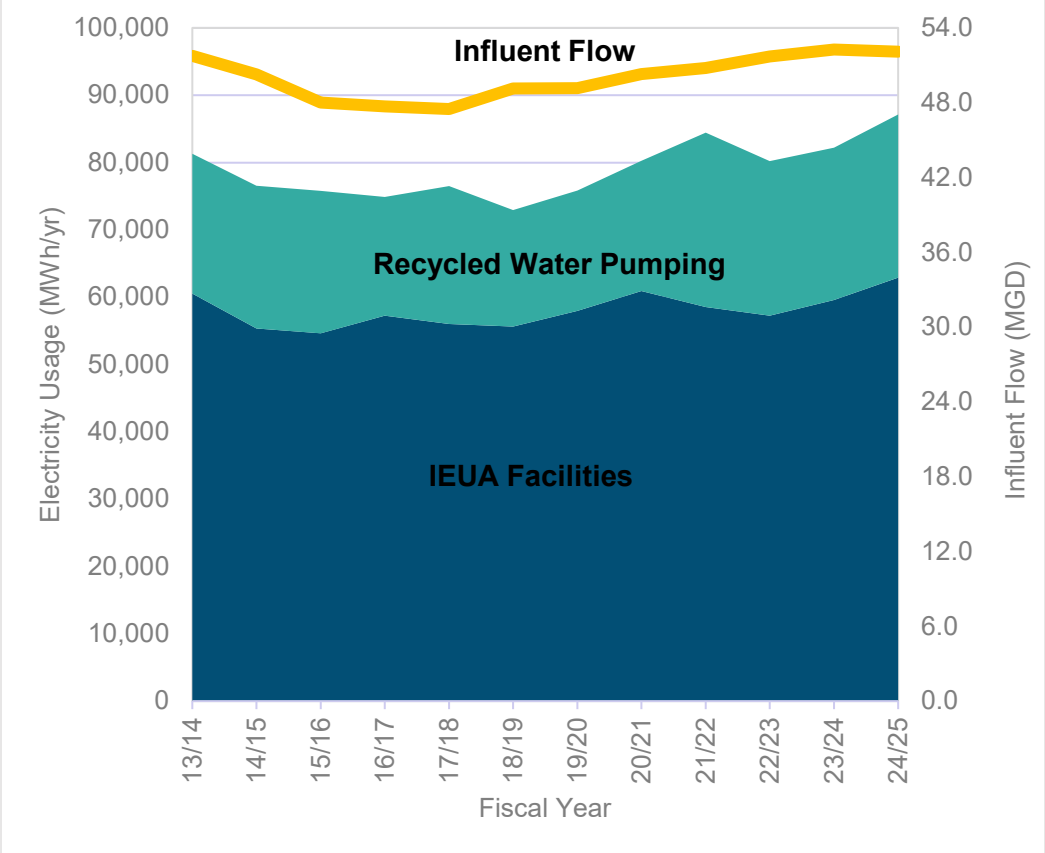
*Source: U.S. Energy Information Administration (2023)*

Disclaimer: The data presented in this report is subject to change as it may undergo reconciliation.

# Flow and Energy Consumption

- In 2024/25, the annual average influent flow to the regional water recycling plants was 52.1 MGD which was a decrease of 0.3% as compared to the previous fiscal year of 52.3 MGD. This slight decrease reflects stable influent flows. (Figure 1).
- In 2024/25, IEUA facilities, which include the regional water recycling plants, composting facility, and recycled water pumping, used approximately 87,146 MWh of electricity (Figure 1). The electricity consumption for 2024/25 increased by 6.0% as compared to the previous fiscal year of 82,212 MWh mainly due to increased recycled water pumping.

***Figure 1: IEUA Electricity Use and Regional Influent Flows***



# Expenditure

- The cost of electricity remains the highest non-labor operations and maintenance (O&M) expenditure for IEUA. In 2024/25, the annual cost for energy related utilities and energy management was $15.4 million compared to the previous fiscal year of $15.2 million due to rising energy cost in California, including Southern California Edison rates. IEUA has a diversified energy procurement approach, that includes on-site generation Power Purchase Agreements (PPA), energy demand management, electricity purchase from Southern California Edison, and a direct access contract with Shell Energy North America, which continues to provide rate stabilization and cost effectiveness.

# Renewable Energy Production and Storage

- IEUA's diverse renewable portfolio consists of 5.0 MW solar, 1.0 MW of wind, 3.0 MW of engines, and 4.0 MW battery (Figure 2). The battery storage optimizes energy management by charging from the grid during off-peak periods and discharging during on-peak periods, therefore it is not considered as onsite generation. In order to increase onsite renewable generation, IEUA is currently developing an Agency-wide Energy Plan. In addition to the existing solar arrays and wind turbine, the plan will evaluate opportunities to incorporate emerging renewable technologies and to expand the beneficial use of biogas produced at IEUA facilities.

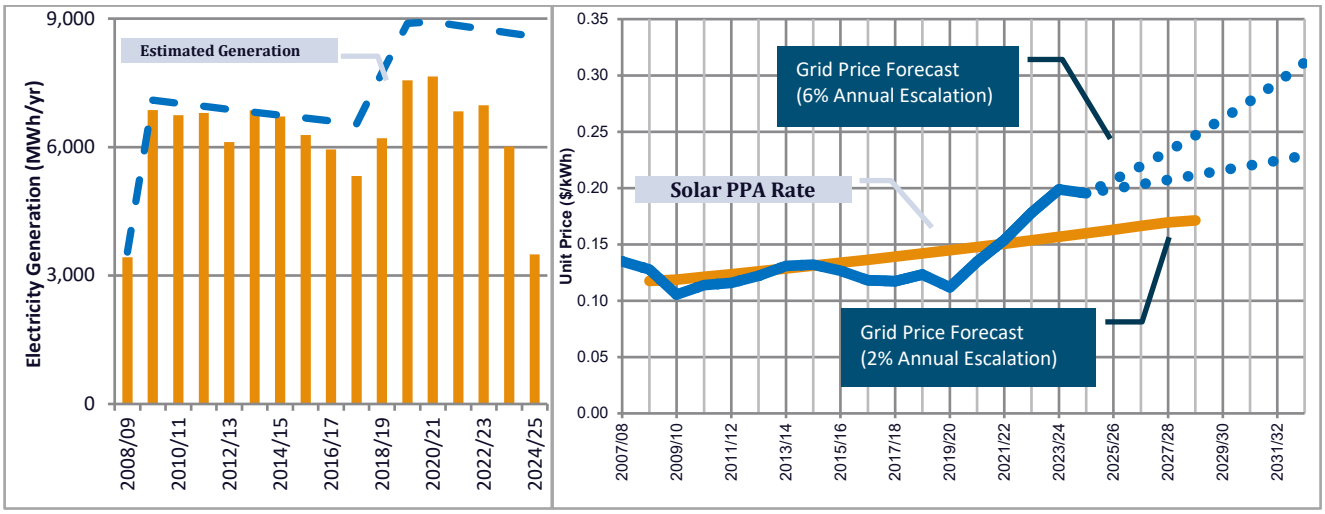
***Figure 2: IEUA's Diverse Renewable Portfolio***


- In 2024/25, 3,934 MWh of electricity was generated onsite, 38% less than 2023/24. The decrease is due to the solar arrays being offline due to needed repairs.
- IEUA's renewable portfolio generated 4% of the electricity used in 2024/25. Of the electricity consumed by IEUA;
    - 3,491 MWh was produced by the solar across IEUA facilities; and
    - 443 MWh was produced by the wind turbine at RP-4.
- In 2024/25, renewable energy projects provided overall $366,000 in savings, as a result of PPA rates being lower than the average grid price and lower standby charges compared to the facility demand charge rate.
- Generated solar electricity varies throughout the year due to the different number of sunlight hours, solar generation is usually higher in the summer and lower in the winter.
- The REEP engine has been offline since August 2017: Asset Management is currently assessing the condition of the engine to determine the most appropriate course of action, which may

include repair, refurbishment, or replacement with updated equipment or alternative technologies. As part of this evaluation, IEUA will consider potential integration with the agency-wide Energy Management Plan to ensure that any future investment aligns with long-term goals and objectives.

- In 2015, IEUA partnered with Advanced Microgrid Solutions (AMS) through an energy management services (EMS) agreement to install 4 MW of battery storage and 1.5 MW of solar to optimize energy management and achieve cost savings through strategic procurement. The Regional Water Recycling Plant No. 1 (RP-1), RP-5, and Carbon Canyon Water Recycling Facility (CCWRF) battery storage systems started commercial operation in November 2018, and the Regional Water Recycling Plant No. 4 (RP-4) and Inland Empire Regional Composting Facility (IERCF) battery storage and solar system began commercial operation in March 2019. All facilities have completed their sixth year of operation.

Solar across IEUA facilities generated 3,491 MWh of renewable energy, **41.9% less than 2023/24.** The decrease in production is attributed to several sites going offline due to system components needing repairs.

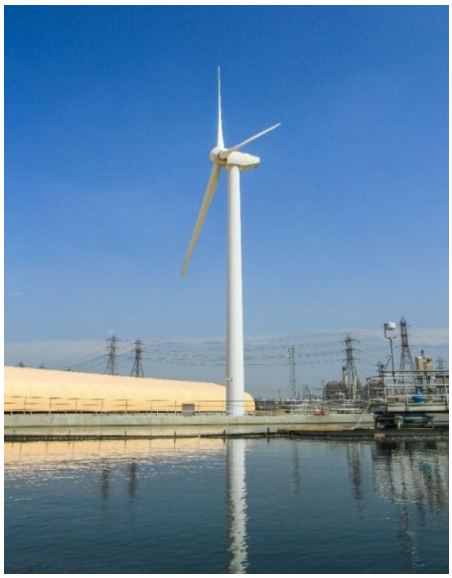



For 2024/25, the average SunPower PPA rate for the solar was lower than the average grid price. The solar PPA projects provided approximately $366,000 in savings, which also includes savings from lower standby charges compared to the facility demand charge rate. The current SunPower PPA will expire in 2029. Staff will evaluate available options and negotiate with the provider to determine the most cost-effective path forward for the Agency. These options may include extending the existing contract, purchasing the solar assets, or terminating the agreement if cost-effective for the Agency.

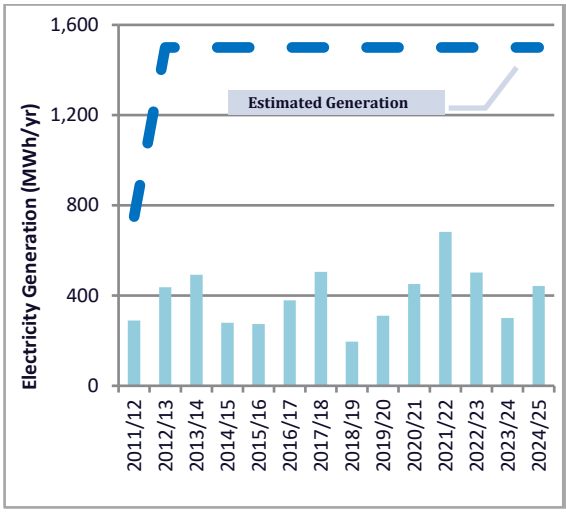
**Solar generated an overall savings of $1,665,000 from 2008/09 to 2024/25**

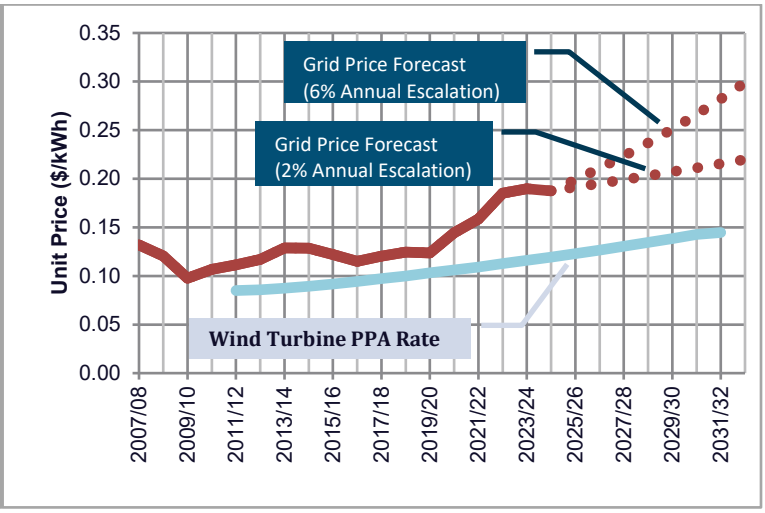
*Table 1: Savings from Solar Power PPA*

| | |
|---|---|
| **Savings**<br>FY 08/09 – FY 24/25 | $1,665,000 |
| **Range of Savings PPA Term**<br>(FY 08/09 – FY 28/29) | $3,628,000 (2% Esc)<br>$4,151,000 (6% Esc) |



Wind turbine at RP-4 generated 443 MWh of renewable energy, **47.6% higher than 23/24** due to favorable wind conditions. For 2024/25, the PPA rate for the wind turbine was 47.6% lower than the average grid price. The wind turbine provided approximately $20,000 in savings.




**Wind generated $214,000 in savings from 2011/12 to 2024/25.**

*Table 2: Savings from Wind Power*

| | |
|---|---|
| **Savings**<br>FY 11/12 – FY 24/25 | $214,000 |
| **Range of Savings PPA Term**<br>(FY 11/12 – FY 31/32) | $387,000 (2% Esc)<br>$475,000 (6% Esc) |

The REEP engines at RP-5 were taken offline in August 2017 because the RP-5 Solids Handling Facility was no longer operational. Renewable energy was not generated by the REEP engines in FY24/25. As part of the Energy Plan, IEUA is evaluating options for biogas utilization at RP-5, including the potential use of the existing REEP engines.

The AMS battery storage at RP-1, RP-5 and CCWRF (2.5 MW combined) started commercial operation in November 2018, and the 1.5 MW battery storage at RP-4 and 1.5 MW of solar at IERCF started commercial operation on March 2019. In the sixth year of commercial operation, **RP-1, RP-5, and CCWRF achieved an estimated reduction in average demand of 559 kW during peak hours.** This reduction in peak-hour demand led to total SCE bill savings of $223,000 resulting in net savings of $64,400 after the accounting of the Energy Management Services (EMS) fee. While the system at **IERCF and RP-4 achieved approximately an average demand reduction of 516 kW during on-peak hours and solar generation of 2,064 MWh** with a total SCE bill savings of $410,000 in the sixth term year, therefore yielding net savings of $87,500 following the EMS fee. Since the minimum guaranteed savings per the contracts were not met for the IERCF and RP-4 system, the battery system owners reconciled the remainder of the expected savings to the Agency. Since initial operation, the battery storage systems have accumulated a total of $750,000 in net savings.


**The battery storage systems incurred a $152,000 in net savings during year 6 of operation.**

# Energy Efficiency Projects

- IEUA continues to work with Southern California Edison and Southern California Regional Energy Network (SoCalREN) to conduct comprehensive energy audits and to implement projects to reduce electricity consumption and demand throughout its facilities and operations.
- Since the start of the partnership in 2015, the Agency's implementation of energy efficiency projects has resulted in:
    - Estimated annual savings: 6,179,000 kWh and $1,249,000 (based on FY 24/25 average rate of $0.20/kWh for imported power)
    - Incentive: $623,000
    - Avoided power usage: 600 kW

## Aeration Blower Replacement

- These projects consist of replacing the existing aeration blowers with energy efficient blowers at CCWRF. The CCWRF project is scheduled to be completed December 2025 and is anticipated to provide about 1,271 MWh or $257,000 in energy savings annually.

## CCWRF Odor Control Equipment Replacement

- The CCWRF Improvements project will replace the existing odor control system with biotrickling filters by November 2025. In addition to continuing to address plant odor, the measure will also provide energy savings of about 247 MWh/year or $50,000/year. The measure is also eligible for a potential one-time incentive of about $104,000.

## Pump Overhaul

- A pump at the RP-4 Intermediate Pump Station was rebuilt in June 2025. During the rebuild, energy efficiency improvements were implemented, which can result in an estimated savings of 33 MWh and $6,500 per year along with an estimated one-time incentive of $4,600. The Installation Report is currently under review by California Public Utilities Commission (CPUC).
- Three pumps are eligible for an energy efficiency measure as part of the RP-1 Intermediate Pump Station Project. Replacing these pumps is estimated to save approximately 171 MWh per

year, equivalent to about $34,000 in annual savings. The measure qualifies for a one-time incentive of approximately $18,000. Construction is expected to be completed by Spring 2027.

### Process Optimization

- Automated ammonia controls will optimize operation and reduce power consumption of the aeration blowers at CCWRF. CCWRF ammonia controls are expected to be installed by December 2025. This project would result in an estimated savings of 774 MWh/year or $156,000/year.

# Other Projects

### SCE Charge Ready 2 Program

- Through the Charge Ready 2 Program, SCE designed, constructed, and installed electric vehicle (EV) charging infrastructure at no cost to IEUA. The Agency was only required to purchase and install the EV chargers. At RP-1, a total of 35 ports were approved and installed under this program. Construction was completed in October 2025.

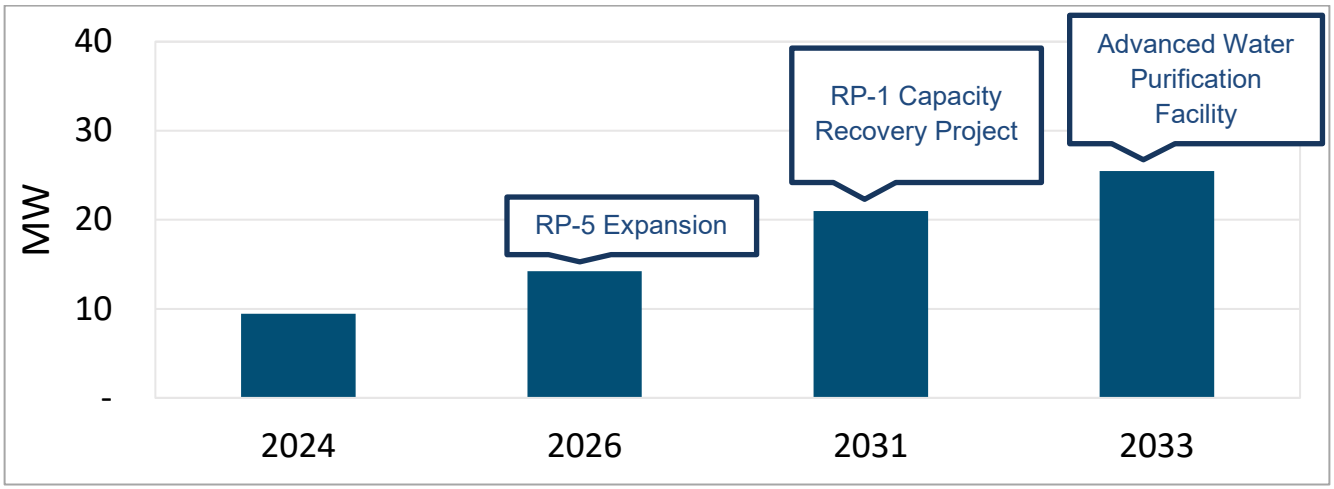
### Energy Service Provider (ESP) Contract

- IEUA currently participates in a program known as Direct Access (DA) that allows the purchase of electricity from an ESP instead of the local utility, SCE. Purchases of electricity through DA has consistently reduced overall IEUA costs and are an integral part of the IEUA Energy Management Plan and diversified portfolio strategy. The Agency purchases electricity for the power needed at the RP-1, RP-2, and CCWRF from Shell Energy North America (US), L.P. under a Master Energy Sales Agreement (MESA), which was set to expire July 1, 2025.
- In July 2024, IEUA issued a Request for Proposal to enter into a new ESP contract starting FY 2026 and four proposals were received. The Agency held an extended bidding period and in collaboration with an energy market consultant, monitored the energy market and entered into a new 4- year contract with Shell Energy North America (US), L.P., the energy service provider who offered the most competitive price and terms for the Agency.

# Upcoming Projects

## Energy Plan

- Agency load is expected to more than double in the next 10 years due to the RP-5 Expansion, RP-1 Capacity Recovery Project, and Chino Basin Project Advanced Water Purification. Staff will develop a new Energy Plan to outline steps to manage and optimize the Agency's energy usage. The plan will use scenario planning to assess future regulatory, financial, and operational conditions. It will define energy management goals, evaluate infrastructure and procurement needs. A key component of the planning effort includes coordination across departments and early engagement with the Board to ensure alignment with strategic objectives. Development of this plan started October 2025 and should be completed by September 2027.




## RP-1 Energy Recovery Plan

- The RP-1 Energy Recovery Project will begin following the selection of a preferred biogas utilization technology, as identified through the Agencywide Energy Plan. Once the recommended approach is confirmed, IEUA will move forward with developing a Preliminary Design Report (PDR) to evaluate design requirements, costs, operational considerations, and constructability for implementation. The PDR will support development of near-term energy recovery infrastructure that aligns with the Agency's broader energy goals.

## RP-5 Beneficial Use of Biogas

- As part of the Agencywide Energy Plan, IEUA will be evaluating opportunities for the beneficial use of biogas generated at Regional Plant No. 5 (RP-5). The evaluation will consider future digester gas production from the RP-5 Solids Facility and assess its potential to support energy generation through the existing REEP (Renewable Energy Efficiency Project) engines and other alternatives. This effort will be incorporated into the scenario planning, infrastructure assessment, and business case evaluations within the Energy Plan to determine the most cost-effective and regulatory-compliant pathway for biogas utilization at RP-5. The findings will inform future capital planning and energy recovery strategies consistent with the Agency's energy goals.

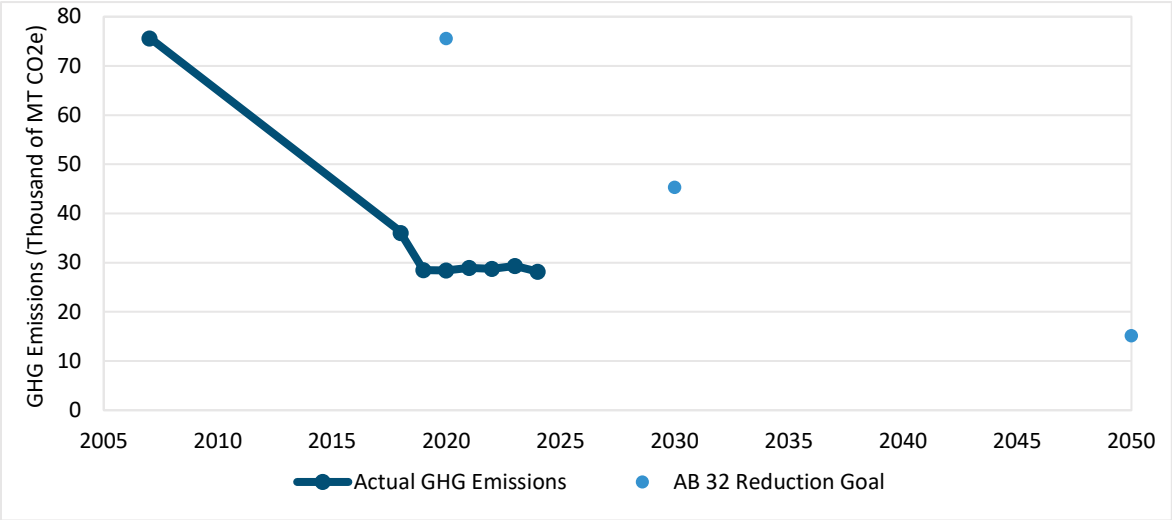
## SCE Dynamic Rate Expanded Pilot

- IEUA started participating in Southern California Edison's Dynamic Pricing Rate Pilot, a program that introduces flexible, hourly electricity pricing to encourage more efficient energy use. Under this pilot, electricity rates vary by the hour, allowing participants to shift energy use to times when prices are lower and potentially achieve meaningful cost savings. Each month, participants receive a detailed comparison showing how their costs would differ under the new pricing structure. The program also includes bill protection, ensuring that participants will not pay more than they would under their regular rate plan. Through this initiative, the Agency is exploring innovative ways to reduce energy expenses, improve operational efficiency, and support a more reliable and sustainable power grid.

# Climate Change Action Plan

- In 2018, IEUA staff developed a Climate Change Action Plan that described the vision and direction needed to bolster IEUA's water management system and minimize its carbon footprint. IEUA is following AB 32 standards using the oldest emission baseline data available to reduce GHG levels to 2007 levels by 2020, 40 percent below 2007 levels by 2030, and 80 percent below 2007 levels by 2050. 2024 greenhouse gas emissions (GHG) slightly decreased 3.8% from 2023, which is 63% below the 2007 baseline levels.

***Figure 3: Greenhouse Gas Emissions Actuals and Goals***




- IEUA is planning to implement capital projects and will continue to optimize operations and maintenance activities to mitigate potential climate change impacts including increasing the flood, drought, heat, and wildfire resilience of the Agency's sites. IEUA will also reduce energy consumption and increase the use of zero-carbon energy sources, including the enrollment into green rates, where available and cost effective. The majority of the projects being explored fall into four categories: solar, hydropower, biogas (renewable methane), and energy efficiency. The current list of projects being explored by IEUA, are in varying degrees of planning and review with some being feasible for construction as soon as end of 2025 while others are 10 or more years out.

- Potential projects
    - Solar:
        - Evaluated the feasibility for remote solar and battery storage system through a public private partnership to generate bill credits through the Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) program in FY 22/23. Due to the proposed project location being outside of the IEUA service area, the project was deemed ineligible for RES-BCT by SCE. Staff will re-evaluate potential locations within the IEUA territory.
        - Favorable outlook for the carport solar because of the forecasted SCE rate increase and higher facility load.

- Hydropower: A feasibility study conducted in FY 19/20 at two proposed locations deemed the project to be not feasible. Staff will re-evaluate in the future at other locations with lower interconnection costs.
- Biogas: Staff has started working with a consultant to prepare a new Energy Plan, which would evaluate cost effective beneficial use of the biogas alternatives at RP-1 and RP-5 consistent with Board direction and Agency Strategic Plan.
- Energy efficiency: Multiple ongoing projects expected to be completed by the end of 2025.