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Date	Ver.	Action By	Action	Result
12/7/2021	1	City Council	approved	Pass

CITY COUNCIL AGENDA ITEM

ACTION REQUESTED:

Approve the recommended changes to the voluntary Renewable Energy Program

DEPARTMENT: Electric Utility

SUBMITTED BY: Brian Groth, Director

BOARD/COMMISSION REVIEW:

At its November 18, 2021 meeting, the Public Utilities Advisory Board (PUAB) reviewed and unanimously approved the recommended changes.

BACKGROUND:

In 2004 the City Council approved the creation of a voluntary Renewable Energy Program (REP) as a mechanism for Electric Utility customers to monetarily support renewable energy. Various changes to the program have occurred over the past 17 years, including an increase in Renewable Energy Certificates (RECs) purchases and offering commercial and residential energy efficiency grants.

A significant turning point in the program occurred in March 2020 when the Council approved expanding the program to include residential energy efficiency programs such as window and attic insulation upgrades. The solar incentive provided to residential customers wishing to install roof solar panels was increased from a flat \$1,000 per installation to \$300/kilowatt (kW), with a maximum grant of \$3,000 for a homeowner installing a 10kW system. This change alone has grown the number of residential solar installations by over 400 since the changes in reimbursement were implemented. Finally, those customers installing Level 2 or Level 3 electric vehicle chargers now qualify for a \$500 grant if the participant agreed to charge their vehicle between the hours of 11 p.m. and 7 a.m.

These changes in 2020 were targeted at removing load from the electric grid by improving the

efficiency of homes within Naperville. The increase in solar incentive dollars were expected to increase solar power system installation in the City while also reducing the REP fund balance which had accrued over the years.

The program currently has just over 3,000 participants with annual revenue of approximately \$260,000. The fund’s cash balance is expected to be approximately \$900,000 at the end of 2021.

DISCUSSION:

Renewable Energy Program Update

The City Council implemented changes to the REP in 2020 with the goals of making meaningful progress in community-generated renewable energy, increasing energy efficiency of homes, and reducing the large REP fund balance that had accrued. Significant progress has been made on these goals to date. The REP budget as well as current spend since March 2020 can be seen in the chart below.

Program *	Budgeted CY2020	Awarded CY2020	Projects Awarded-2020	Budgeted CY2021	Awarded CY2021	Projects Awarded-2021	
Residential Solar	\$150,000	\$245,890	114	\$150,000	\$334,555	160	
Residential Energy Efficiency Program	Attic Insulation	\$30,000	\$78,544	73	\$35,000	\$128,841	106
	Window Replacement	\$70,000	\$67,352	26	\$65,000	\$144,579	56
Electric Vehicle Charging Station	\$10,000	\$ 4,198	9	\$10,000	\$16,136	36	
Non-Residential Solar/ Energy Efficiency Projects	\$150,000	\$50,000	1	\$150,000	\$50,000	1	
Total	\$410,000	\$445,984	223	\$410,000	\$674,111	359	

* Data as of 10/31/2021 for residential and non-residential rebates

Recommended Renewable Energy Program Changes

The Electric Utility, the City’s Sustainability Coordinator, and members from PUAB, and the Naperville Environment and Sustainability Task Force (NEST) have collaborated on recommended enhancements and modifications to the REP. These include the following:

- 1) *Discontinue REC purchases*
At the request of all stakeholders, REC purchases have been discontinued. The approximately \$200,000 in 2021 funds allocated for purchases have been transferred for use in 2022 for residential solar and residential energy efficiency program grants.
- 2) *Expand the scope of the residential energy efficiency program*
Include furnace blower motor upgrade and air conditioning unit tune-up (once every three years) as eligible work through the program.
- 3) *Revise residential energy efficiency program requirements*
Attic insulation requirements will be revised to include Building Performance Institute (BPI) best practices of attic sealing.

4) *Continue efforts to draw down REP cash reserves*

Staff strongly believes that the REP cash balance should be drawn down over time to a reserve of \$200,000 which can be used, with Council direction, on utility specific sustainability projects such as battery storage pilots as they become more technologically advanced and fiscally responsible.

In 2022, the Electric Utility's recommendation is to use \$50,000 of this cash balance to install solar panels on three of its utility substations in tandem with researching additional locations throughout the City for solar and wind installations. Should federal or state grants become viable, staff will come back to Council with additional opportunities in this area.

5) *Continue to reimburse renewable energy project customers at the retail rate for all energy received until the results of the Utility's hosting capacity study are analyzed*

As part of the utility's 2021 rate study, the utility's consultant identified the value of electricity produced for each type of distributed generation resource, such as wind, solar, or battery. The study utilized Illinois Municipal Electric Agency (IMEA) power pricing, utility load curves, and additional information related to the standard production of solar and other renewable energy sources as available from the National Renewable Energy Laboratories (NREL).

The study concluded that the annual average avoided cost of energy for these resources is \$0.04374 per Kilowatt Hour (kWh). Electric Utility policy has been to reimburse at the retail rate of \$0.1068 per kWh to incentivize the installation of renewable energy projects within the City. When spread across the rate base, it is estimated that each residential utility customer (844kWh per month) is subsidizing renewable energy production within the City by approximately \$8 per year, or \$438,000. Additional avoided cost values were provided to the Utility for wind and battery storage as well.

Many utilities across the country are moving to avoided cost reimbursement structures for renewable energy production facilities. Staff believes that Naperville should continue to lead by example in renewable energy projects and recommends that Council continue to reimburse at the retail rate for all energy received from these resources until the Utility's hosting capacity study is completed in the first quarter of 2022 and the Utility can fully analyze the impact of small and large distributed generation installations on its system. PUAB has expressed interest in this topic and asked staff to investigate potential solutions for further discussion at the hosting capacity study's conclusion; staff is examining PUAB's request in tandem with the final months of the study.

Proposed Budget

The proposed budget, including funding source, for the Renewable Energy Fund in 2022 is below. Applications for grants under the proposed changes will be accepted and evaluated on a first-come basis beginning January 1, 2022. The Utility will seek Council guidance when all funds for 2022 have been depleted.

Program *		Renewable Energy Fund 2021 collection	Renewable Energy Certificate contribution	Fund Cash balance	Total 2022 budget
Residential Solar		\$100,000	\$100,000	\$45,000	\$245,000
Residential Energy Efficiency Program	Attic Insulation	\$100,000	\$100,000	\$45,000	\$245,000
	Window Replacement				
	Furnace Blower Motor Upgrade				
	AC Tune Up				
Electric Vehicle Charging Station		\$10,000	\$0	\$0	\$10,000
Non-residential Solar/Energy Efficiency Projects		\$50,000	\$0	\$0	\$50,000
Utility solar installations		\$0	\$0	\$50,000	\$50,000
Total		\$260,000	\$200,000	\$140,000	\$600,000

FISCAL IMPACT:

The current Renewable Energy Fund balance is just over \$900,000; revenue from the fund brings in about \$260,000 per year. It is expected that at the end of 2022 the fund will have approximately \$560,000 available for utility projects and future program funding.