

# Monitoring Report SD-7 Environmental Stewardship

OPPD Board of Directors – All Committees Meeting October 19, 2021

Mary Fisher, Vice President – Energy Production & Nuclear Decommissioning

### SD-7: Where We've Been

#### **Resolution 6082, October 15, 2015**

First issuance as part of Board Policies

#### Resolution 6289, November 15, 2018

#### Major revisions:

- Long term goal: 20% reduction in carbon intensity from 2010 through 2030.
- Strive towards long-term goal of 50% of retail energy sales supplied from renewable energy sources.

#### Resolution 6347, November 14, 2019

Major revisions. Revised to form and language of current SD7. Replaced goals of 6289 with net-zero carbon goal.

#### Resolution 6434, May 20, 2021

Formally recognizes the scientific consensus that climate change is occurring and that greenhouse gas emissions, including carbon dioxide, from human activity contribute to climate change impacts.





## **SD-7: Environmental Stewardship**

Managing interactions with the environment is essential to OPPD's ability to serve customers, create value for stakeholders, and contribute to the well-being of the communities it serves and its employees.

The OPPD Board of Directors recognizes the scientific consensus that climate change is occurring and that greenhouse gas emissions, including carbon dioxide, from human activity contribute to climate change impacts.



Williams/Fisher

#### **RESOLUTION NO. 6434**

WHEREAS, the Board of Directors of Omaha Public Power District establishes policies through strategic directives to Management; and

WHEREAS, Strategic Directive 7: Environmental Stewardship (SD-7) has been adopted by the Board of Directors and revised most recently on November 14, 2019, pursuant to Resolution No. 6347; and

WHEREAS, consistent with the District's mission to provide affordable, reliable and environmentally sensitive energy services to its customer-owners, the Board of Directors recognizes the scientific consensus that climate change is occurring due to greenhouse gas emissions, including carbon dioxide, from human activity which affect the environment and our customer-owners; and

**WHEREAS,** work is underway at the District that will help address the effects of climate change, including large-scale renewable energy projects, the District's decarbonization strategic initiative, and emissions reductions across the District's generation fleet; and

**WHEREAS,** the Systems Management and Nuclear Oversight Committee of the Board of Directors recommends revision of SD-7 in the form attached hereto as Exhibit A.

**NOW, THEREFORE, BE IT RESOLVED** by the Board of Directors of the Omaha Public Power District that OPPD Strategic Directive 7: Environmental Stewardship is hereby approved, as amended, in the form attached hereto as Exhibit A.



## **SD-7: Environmental Stewardship**

#### Therefore, OPPD shall:



Operate in an environmentally responsible manner and strive for continuous improvement of its environmental performance.



Conduct all operations in a manner that strives for the goal of net zero carbon production by 2050.



Conduct its business in a manner that meets all environmental regulatory standards and go beyond compliance where practical.



## **SD-7: Environmental Stewardship**



Be transparent by measuring and reporting environmental performance on OPPD's website.



Engage customers and stakeholders to promote energy conservation and efficiency and minimize environmental impact.



Advocate and educate local, state, and federal governments to protect and promote OPPD's environmental impact.







## **Environmental Responsibility & Performance**

Operate in an environmentally responsible manner and strive for continuous improvement of its environmental performance.

## OPPD's Vehicle Fleet

- Passenger car fleet is now
   100% hybrid or fully electrified
  - 38 hybrid cars
  - 6 all electric cars
  - 4 extended range plug-in hybrids
- 282+ total vehicles that are all electric, hybrid, or flex fuel (~45% of fleet)
- Equipment
  - 45 all electric forklifts, yard carts, and man-lifts
  - 6 plug-in hybrid bucket trucks



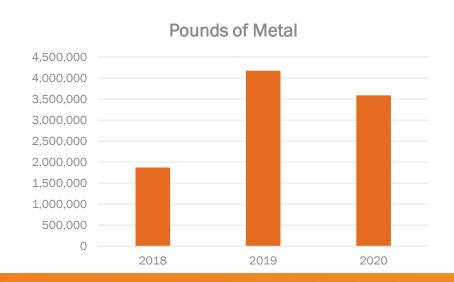


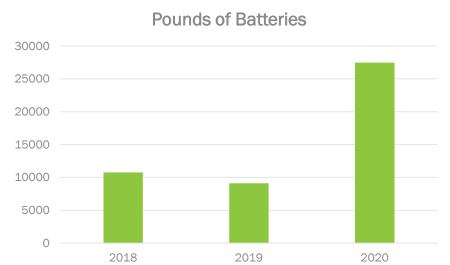
## 2020 Investment Recovery

OPPD focuses on finding avenues for recycling:

- Batteries 27,456 lbs.
- Metal 3,587,134 lbs.
- Oil 32,676 gallons
- Utility Poles 800 poles (additional utility pole repurposing vendor - 2021)

- Recycling materials returned over \$2M back to OPPD.
- ~86% of fly ash recycled from NOS and 26% from NCS.
- New oil recycler









#### **FCS Focused Efforts**

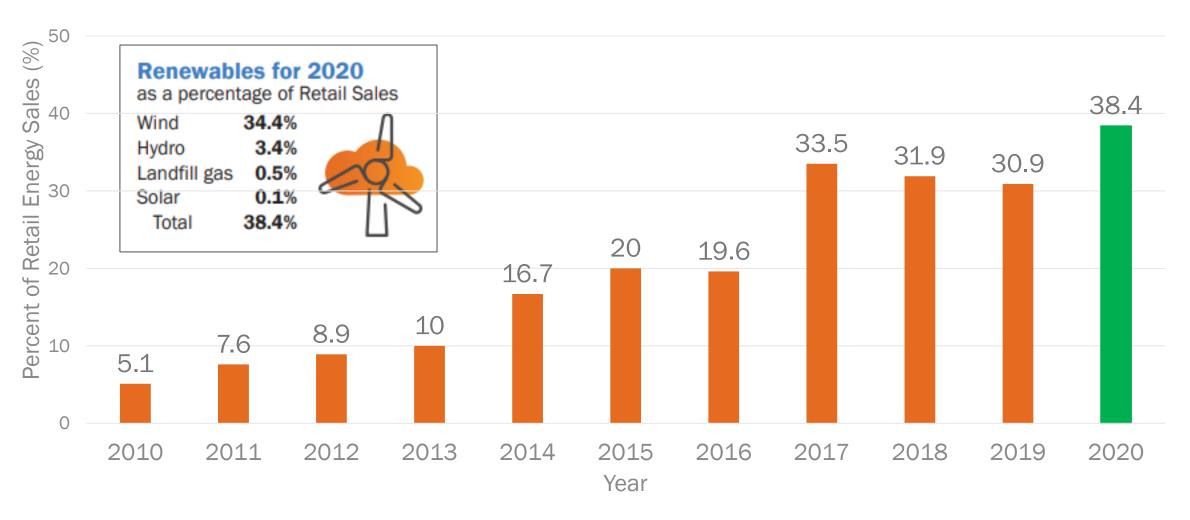
- Pre-demolition sales of over 150,000 lbs. of material: diesel generators, breakers, boiler, etc.
- Over 4,000 gallons of paint, oil and grease sold for reuse avoiding hazmat disposal costs
- Large portion of battery recycling was from the Fort Calhoun battery rooms







#### **OPPD Renewable Generation Over Time**





### **OPPD's Renewable Portfolio**





**HYDRO** - 81.3MW



WIND FARMS - 972MW

Ainsworth (10MW)

Broken Bow I (18MW)

Broken Bow II (43.9MW)

Petersburg (40.5MW)

Elkhorn Ridge (25MW)

Crofton Bluffs (13.6MW)

Prairie Breeze (200.6MW)

Flat Water (60MW)

Grand Prairie (400MW)

Sholes (160MW)



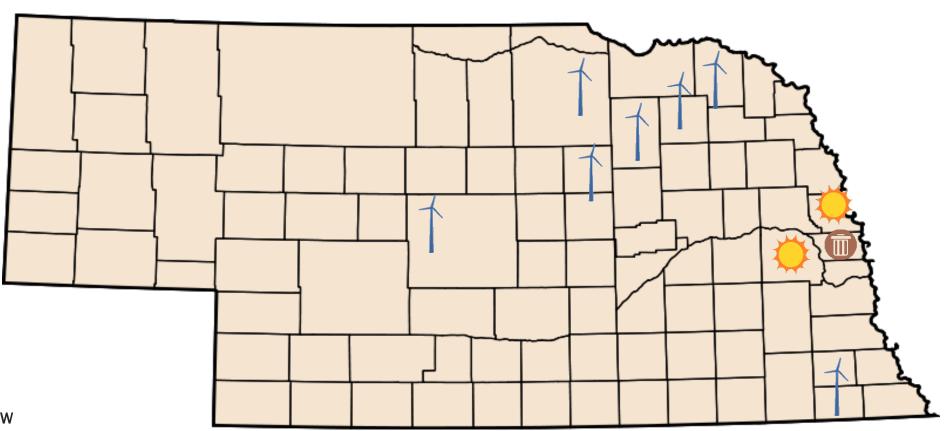
UTILITY-SCALE SOLAR\* - 5MW

Fort Calhoun Solar (5MW)



LANDFILL GAS - 6.3MW

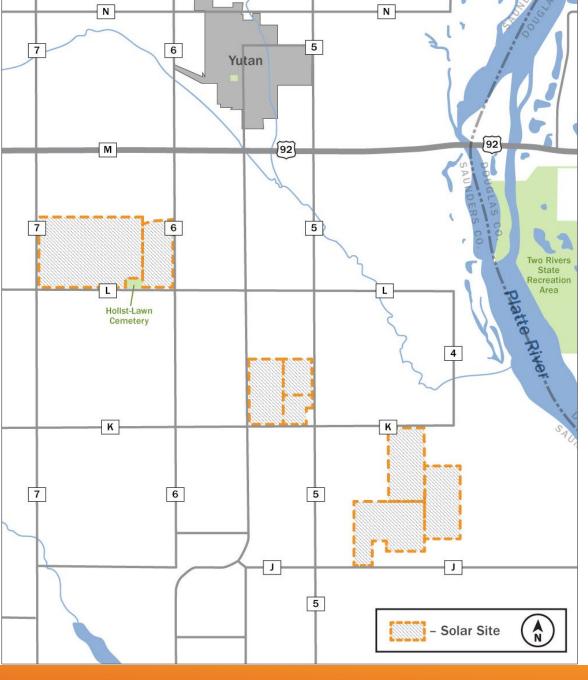
Elk City Station (6.3MW)



Installed Capacity: 1064.2 MW nameplate

\*Planned Addition for 2023: Platteview Solar (81MW)





## Power with Purpose Solar Announcement: Platteview Solar



- Size: 81 MWAC
- Location: South of Yutan in Saunders County, NE
- Planned operation date: Spring 2023
- Contract term: 20 years





## **BRIGHT Grant & Project Scoping**

(Battery Research Innovation Guided by High Potential Technologies)

- Nebraska Environmental Trust (NET) Air Quality Category
  - OPPD application submitted September 2019
  - NET funds approved June 2020
  - Grant project funding: \$600,000
- Project to facilitate OPPD technology and operational learning
  - Allows OPPD to learn about interconnection, permitting, engineering, construction, operations, and safety requirements
- Project specifics based on grant application
  - Size: ~1MW
  - Location: OPPD substation in Cass County
  - Technology: not specified





## **Electrical Vehicle Programs: NDEE Grant**



- This Program was made possible by a grant from the Nebraska Department of the Environment and Energy (NDEE)
- Applied to NDEE for multiple sites
- Each site will receive a Level 2 and DC Fast Charger (DCFC)
- DCFC's require dedicated electric service
- Five sites awarded all are located on major highway crossings
  - 1. City of Omaha 17<sup>th</sup> & Chicago
  - 2. Casey's North Bend
  - 3. Casey's Blair
  - 4. Casey's Syracuse
  - 5. Cabela's LaVista







Level 2 Charger ~4-6 hours

DC Fast Charger ~1 hour





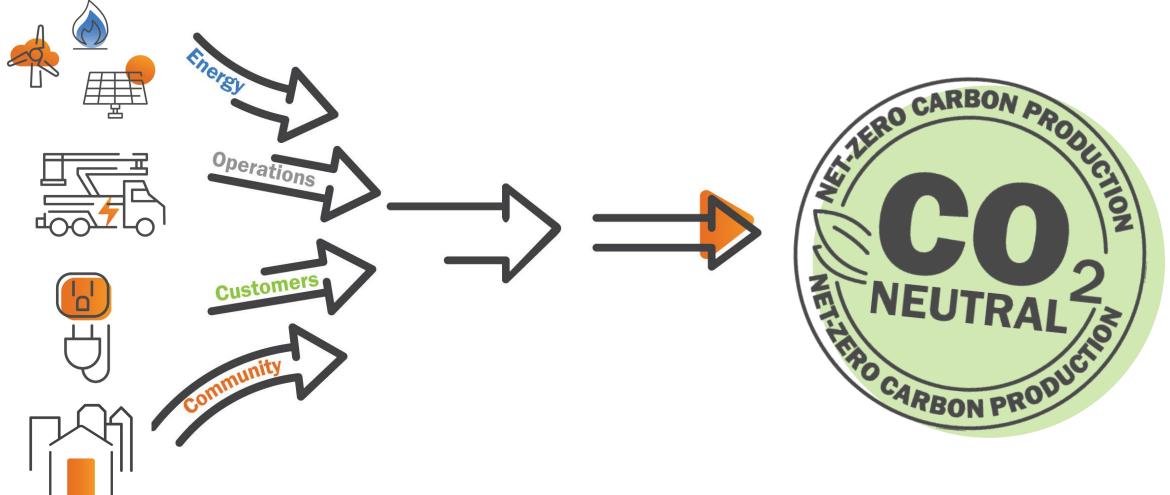


### **Net Zero Carbon Production Goal by 2050**

Conduct all operations in a manner that strives for the goal of net zero carbon production by 2050.

## **Pathways to Decarbonization**













- Completed multi-sector modeling to establish plausible economy-wide pathways to decarbonization and determine OPPD's potential future electric demand forecast
- Developed a reliability and resiliency analysis framework for utilization in Portfolio Optimization
- Analyzed a universe of potential technologies to support decarbonization. Technologies were then aggregated and screened into a list of 18 candidate technologies to be modeled.





## PATHWAY: INTERNAL OPERATIONS

- Developed a standardized carbon accounting framework
- Base year 2018 and 2019 GHG inventories







## PATHWAY: CUSTOMERS

- Developed and piloted repeatable product evaluation framework
- Completed Phase 1 Analysis of 228 concepts covering all aspects of decarbonization
- Completed detailed research and analysis on the 26 top scoring concepts from Phase 1







# PATHWAY: COMMUNITY

#### **Completed Objectives – Study focused on:**

- Understanding community decarbonization
- Identifying and cataloging community-scale decarbonization strategies (CAP catalog)
- Developing an evaluation framework based on GHG reduction potential,
   OPPD's degree of influence, and co-benefits
- Prioritizing potential decarbonization strategies where OPPD is well positioned to lead change







## PATHWAY: COMMUNITY

- Identified four areas of opportunity where OPPD is well positioned to lead change:
  - 1. Advocate for advanced energy codes and green building standards
  - 2. Accelerate transition to electric vehicles
  - 3. Support distributed generation
  - 4. Address the water-energy nexus







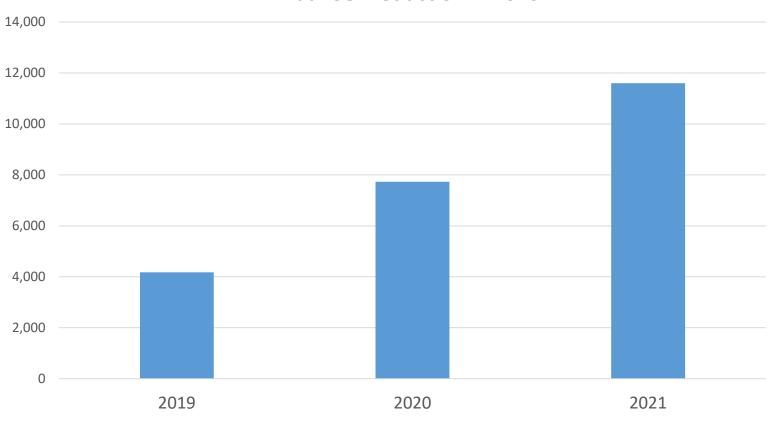
	2019 Actuals	2020 Actuals		2021 Goal	
	MW	MW	MWH	MW	MWH
Demand Response					
Smart Thermostat Program	6.560	5.244		6.089	
Cool Smart	63.330	64.415		64.650	
Business Interruptible	50.970	50.970		50.910	
Total Demand Response	120.860	120.629		121.649	
Energy Efficiency					
Smart Thermostat Program					386.17
HVAC Smart	1.415	1.756	1,610.39	1.5	925.50
Certified High-Performance Homes	0.145	0.121	30.49	0.125	348.50
Energy Efficiency Assistance Program (EEAP)	0.002	0.012	104.31	0.01	31.73
Business Prescriptive Rebates	3.679	2.629	8,836.28	4	15,332.00
Business Custom Rebates	0.653	0.241	2,224.36	0.4	2,203.20
Other Programs				0.41	852.59
Total Annual Energy Efficiency	5.894	4.759	12,805.83	6.445	20,079.69
Total Cumulative Energy Efficiency	36.282	41.041		48.226	
Total Annual Cumulative Demand Side Management	157.142	161.67		169.875	



## **LED Street Lighting**







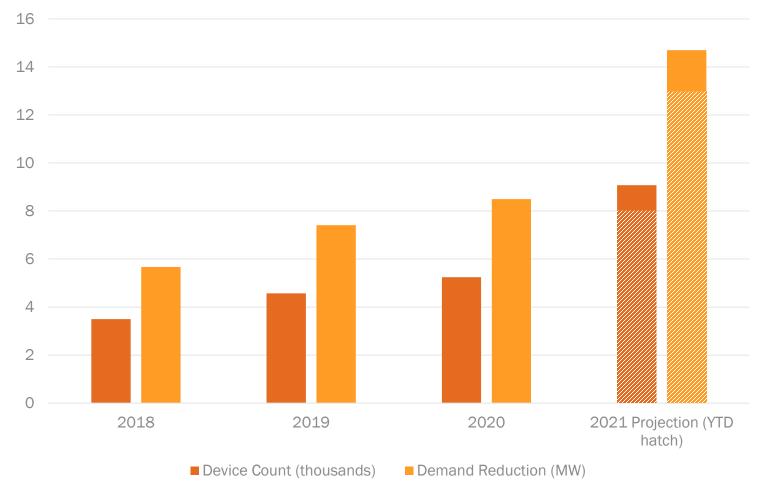
- LED street lighting replacements have created a projected annual energy savings of 23,000 MWH.
- LED street lighting has resulted in a 27.6% reduction in street light maintenance calls reducing the total truck rolls.





## **Smart Thermostat Program**





- May 2021 Added additional manufactured devices (Ecobee, Emerson, Honeywell)
- 46% increase in participation since expansion. 2021 YTD = 7,959 devices.
- 4.2MW demand response growth with expansion
- 12.9MW total demand reduction YTD.
- 3566MWh total annual energy efficiency\*
- 2623 tons total CO2 reduction annually\*\*

\*Per 2019 DSM Potential Study

\*\*Per 2020 Fleet Carbon Intensity Factor

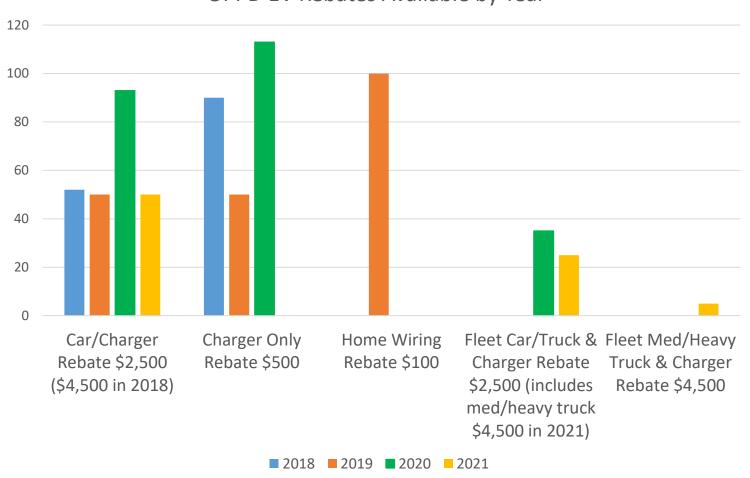




## **Electric Vehicle Rebate Program**







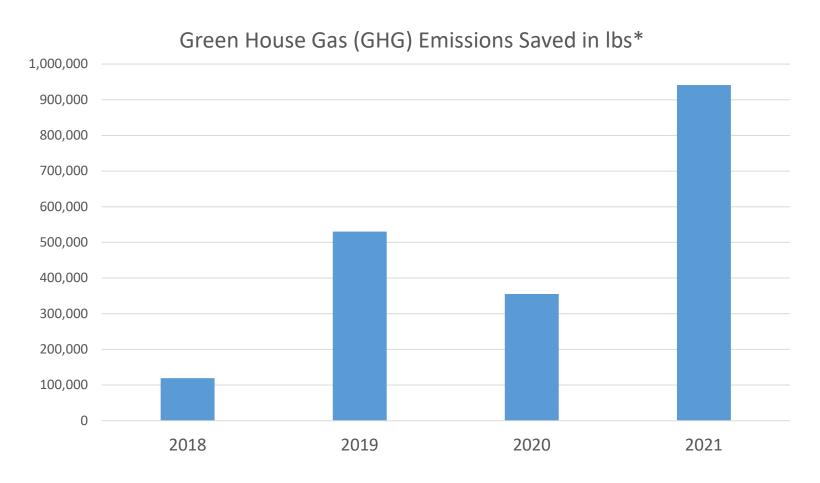
- All available rebates in 2018 and 2019 and 2020 were claimed
- 2021 residential rebate promotions began in August with 50 rebates available-11 rebates in approval process
- New in 2021 different Fleet rebate options including car/light truck and medium/heavy truck rebates with promotion beginning in September





## **Electric Vehicles Making an Impact**





- Since the rebate program began in 2019, OPPD has helped customers save over 1.8M lb. of GHG emissions.
- That's the equivalent of planting 13,636 trees and letting them grow for 10 years!



<sup>\*</sup>Emissions estimates supplied by ChargePoint





## Meet & Exceed Environmental Regulatory Standards

Conduct business in a manner that meets all environmental regulatory standards and go beyond compliance where practical.

## No Violations of Environmental Permits Resulting in Fines or Enforcement Actions



#### **Standard Compliance**

30+ environmental regulated permits held

- Consists of Air, Water, Waste, Natural Resources
- Conducted monthly, quarterly, semiannual and annual internal inspections.
- Facilitated three virtual NPDES inspections by the NDEE (FCS, NCS, NOS).
- Facilitated multiple City of Omaha and NDEE air inspections (NOS, NCS, CCS, JSS, SCS).

#### **Beyond Compliance**

- Plant wide Applicability Limit (PAL)
   Permit
- Low Emitter Status
- Near zero opacity excursions
- Complying with stormwater requirements at SCS, CCS, JSS though not required.
- Prairie in Progress
- Avian Protection, working with NGPC to conduct bird surveys



### **Low Emitter Status**



Low Emitter Status						
UNIT	PM	HCI	Hg			
Nebraska City Unit 1	Obtained 1Q2019 Next Test: 1Q2022	1 of 12 Quarterly tests complete	Not Applicable*			
Nebraska City Unit 2	Obtained 1Q2018 Next Test: 1Q2024	SO2 as surrogate	Not Applicable*			
North Omaha Unit 4	Obtained 1Q2019 Next Test: 1Q2022	Obtained 3Q 2020 Next Test: 3Q2023	Obtained June 2016 Next Test: June 2022			
North Omaha Unit 5	Obtained 1Q2020 Next Test: 1Q2023	Obtained 1Q2019 Next Test: 1Q2022	Obtained June 2016 Next Test: June 2022			

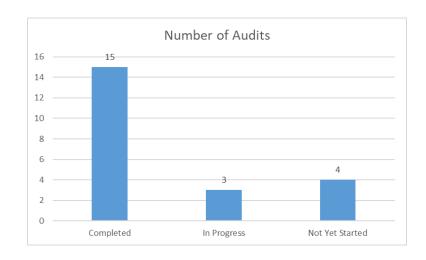
Low Emitter Status is achieved after 12 consecutive quarterly tests at 50% below the Mercury and Air Toxics Standard for that constituent, except for Hg, which requires annual testing.

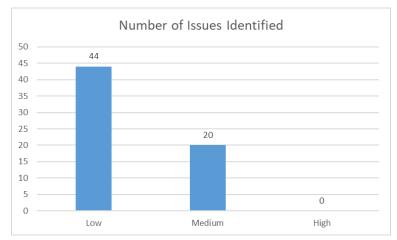


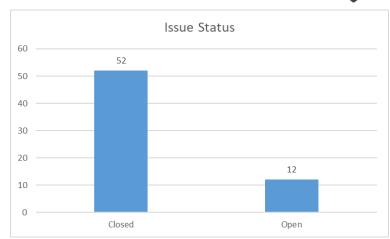
<sup>\*</sup> Continuous monitoring is used to demonstrate compliance

### **Environmental Audit**









- Advantages and improvements of moving the environmental audit function to corporate auditing:
  - Helped align the audit function with International Standards for the Professional Practice of Internal Auditing (Standard 1100–The internal audit activity must be independent, and internal auditors must be objective in performing their work)
  - Took advantage of existing corporate audit issue tracking and reporting structure (increased transparency and accountability)
    - Monthly reminders sent to issue owners on any open issues
    - Quarterly updates/reports to Senior Management Team
    - Annual presentation/report to the Board of Directors
- OPPD facilities are doing well complying with environmental regulations (i.e., there have been no high-risk issues identified to-date)
- Over 80% of identified issues have been corrected to-date



## **Transformer Oil PCB Sampling**





- A database of transformer PCB levels is being developed to assist in prioritization of replacement planning efforts.
- Total number of transformers in service territory: 90,770
- Transformers with unknown PCB levels: 21,000
- Work began in early 2020. Inspection 48% complete as of July 29, 2021
- Transformers Inspected: 10,123
- Transformers found 50-499 ppm = 1,217 (12%)
- Transformers found >500 ppm = 13 (0.13%)
- Additional benefits
  - Other maintenance items have been identified and fixed early.







## **Osprey Tower Project**





NEBRASKA - GAME ( PARKS -



- New, 65-foot tower provides Osprey habitat.
- Provided as potential replacement for FCS Meteorological Tower, removed as part of decommissioning.
- FCS tower removed during migratory birds non-nesting season, OPPD provided new habitat by the end of March.
- Osprey returned shortly after nest construction in March.
- Partnering with Nebraska Game and Parks to provide camera and live video feed. Expect to be available by the end of the year.



## Peregrine Falcons at North Omaha





## **Prairie in Progress (PIP)**

 After initial trial on 325 acres, OPPD recognized more intensive program was necessary to properly establish prairie

Three sites totaling 50 acres were targeted in 2020

 New seed mix used, sites tilled and re-seeded seed mix included 8 grass & sedge species and 38 forb/wildflower species

All sites being monitored in growing season for performance

 June Monitoring report from one of the improved sites - 12 species of insects observed, 27 plant species in bloom

• 2021 adding 6 acres on two new sites







## **Active Transparency**

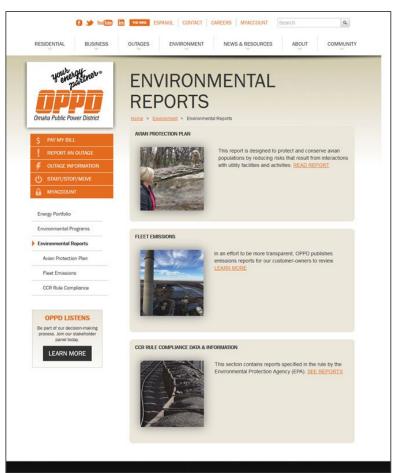
Be transparent by measuring and reporting environmental performance on OPPD's website.













## **Environmental Input Collected through OPPDCommunityConnect.Com**





### OPPD Board Feedback: SD-7

From time to time, OPPD's Board of Directors call on customers for feedback on specific topic. This feedback included: SD-7

Read more



### OPPD BRIGHT Project

OPPD's first battery storage project and we are excited to share the details with you.

Read more



### Pathways to Decarbonization

By partnering with customers and communities, OPPD is striving for net-zero carbon production by 2050.

Read more



### Decarbonization: Energy Portfolio Online Workshops

Recordings of all past workshops and updates are available to view. In addition, a summary video of past

Read more



### CCR Selection of Remedy for North Omaha Station

Register for the Public
Meeting held Sept. 22. Public
comment accepted Sept. 8 Oct. 8.

Read more



### CCR Selection of Remedy for Nebraska City Station 2

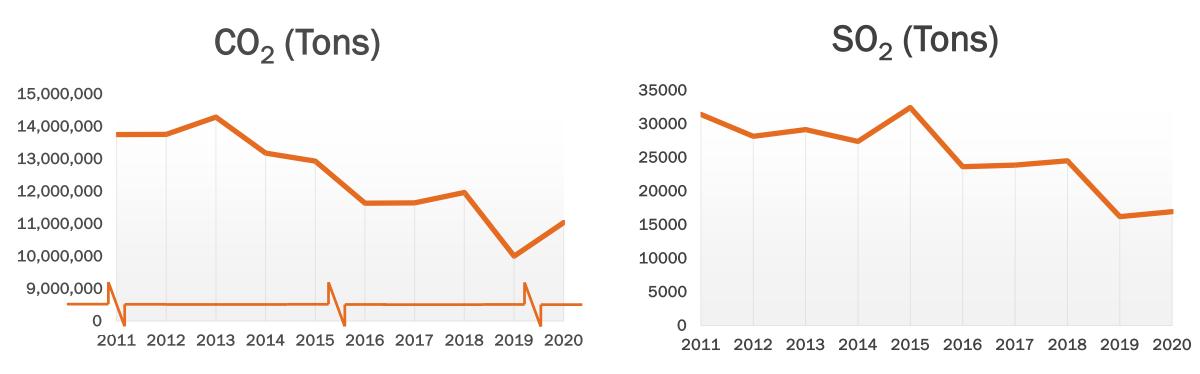
The public meeting was held August 25. You may watch the recording here.

Read more



### **Annual Emissions**





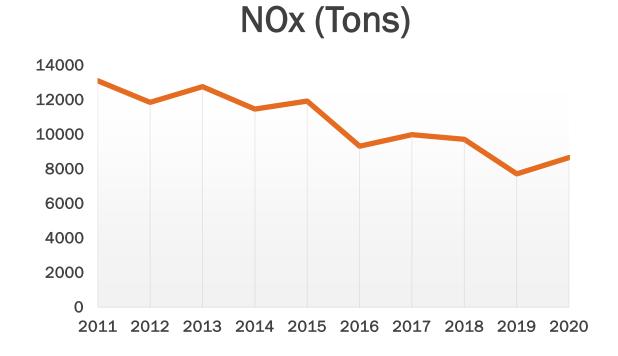
#### Notes:

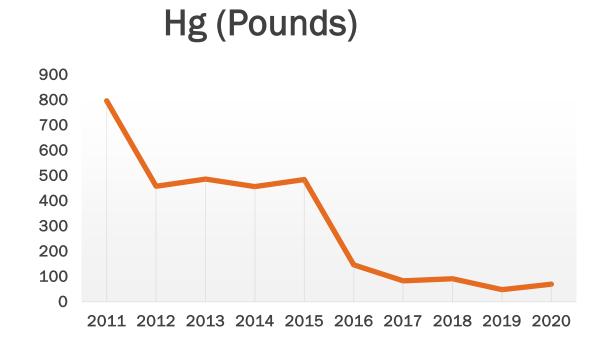
- 1. 2019 emissions drop due primarily to major unit outages at NCS units.
- 2. Emission data shown here through 2020. Emission data is updated annually and posted each spring (~February) at <a href="https://www.oppd.com/environment/environmental-reports/fleet-emissions/">https://www.oppd.com/environment/environmental-reports/fleet-emissions/</a>.



### **Annual Emissions**







#### Notes:

- 1. 2019 emissions drop due primarily to major unit outages at NCS units.
- 2. Emission data shown here through 2020. Emission data is updated annually and posted each spring (~February) at <a href="https://www.oppd.com/environment/environmental-reports/fleet-emissions/">https://www.oppd.com/environment/environmental-reports/fleet-emissions/</a>.

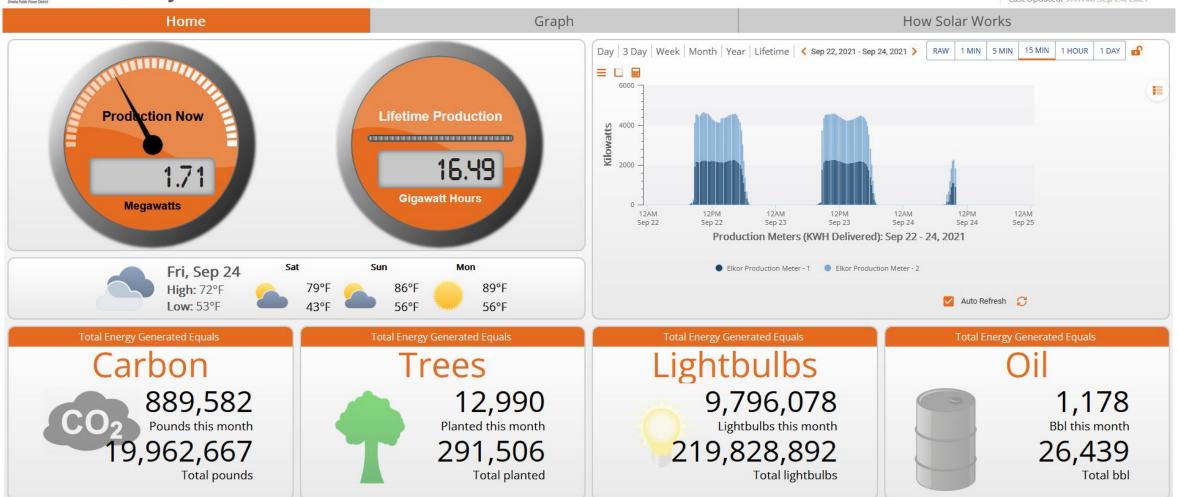


### **Community Solar Dashboard**

**Community Solar** 



System Size: 5 MW Generating Since: Dec 16, 2019 Last Updated: 9:47AM Sep 24, 2021









## Customer & Stakeholder Engagement

Engage customers and stakeholders to promote energy conservation and efficiency and minimize environmental impact.





# FLOOR PLAN FOR HOME UTELTY SAVINOS Attic, Garage and Insulation Your allic, garage and basement are the main areas where insulation on suppose your home's energy efficiency. Look below for height lips to reduce the selection by all by properly insulating there areas.

### A PLAN TO CONSERVE ENERGY AND LOWER UTILITY BILLS CAN START ANYWHERE, ANYTIME

As your trusted energy partner, OPPD wants to empower you to take control of your energy use. This interactive floor plan lets you to choose where you would like to start your journey toward a more energy efficient way of living — and a lower interbird in But.

#### Attic, Garage and Insulation

Wondering from to save money on electricity bills? It starts with insulation throughout your home — especially in the affic. Insulation is measured by R-value. The higher the value, the better the insulation is a preventing the flow of healt from space to space. Flower these tips for conserving energy and watch this space to learn some process.

- Bown-in. loose-fit insutation is best for attics. The insutation should pile up high enough to cover the tops of the ceiling joists (on the "foor" of the attic) plus a few inches.
- Polyethylene- or reognere-toam pipe silenves are commonly used to insulate the cold and hot water pipes coming off the water heater. This can reduce the loss of convective heat through the hot and cold pipes heal the tank.
- 5. Be sure to insulate rim joists using batt or rigid foam board insulation
- 4. Insulate the attic hatch by using ball insulation and by adding weatherstripping where the hatch meets the
- 5. Install weatherstripping on windows and exterior doors, including the door to an attached garag
- 6. Consider installing plastic window covering on draffy windows.
- Apply cault to band joists and rim joists (the area that goes around the top perimeter of your basement) and other structural component gaps.
- 8. Install outlet and switch plate foam gasket seats for outlet and switch panels on exterior waits to help slow the flow of heat from those openings in the wats.

#### Bedroom

Your home consumes energy around the clock, Learn how to save on the electric bill even when you're sleeping.

- Fans cool people, not rooms. Consider raising the temperature of the thermostat in the summer and using a fan to help cool you off as you sitep.
- In the colder months, a ceiling fan spinning clockwise and on low can help distribute warm air more evently in a room that may otherwise have cold spots.
- Blackout curtains can not only help you sleep better, they can also help block the heat from the sun in the summer, keeping your bedroom cooler.
- 4. Glose any doors that attach to the bedroom such as a closef or bathroom. This reduces the size of the space needed for heating or cooling.
- In summer, stay cooler with breathable linens, then, in the winter, writch to a heavier slyle of linens and comforter. Any opportunity to cool off or warm up before touching the thermostal is a movement towards saving energy.
- Electronic devices such as computers, monitors and even televisions can add healt to your bedroom causing a potentially uncomfortable temperature. Consider removing any electronic devices from your bedroom to help manifals the temperature.

# **Energy Efficiency Webpages & Presentations**



### **New Webpages**

- Annual updates to the information: new tips, updated tips, more costoriented tips
- ~64,000 site visits in 2020
   (41% → interactive house)
- New Phantom Load video
- 3,440 views on EE videos

### **Presentations**

- Six Presentations to 220 customers (four in-person, two virtual)
- Presented for: Lewis & Clark Junior High science students, FHAS Post-Purchase Workshop, Bellevue Elementary







Trees & Power Lines

Products & Services

LEARN MORE



## Celebrating 500 Customer-Owned Generation

**Customer-Owned Generation**Interconnection Applications



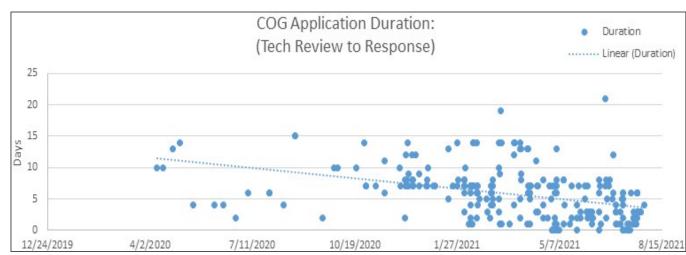
#### **OPPD.com/COG**



# **Customer-Owned Generation Increases**



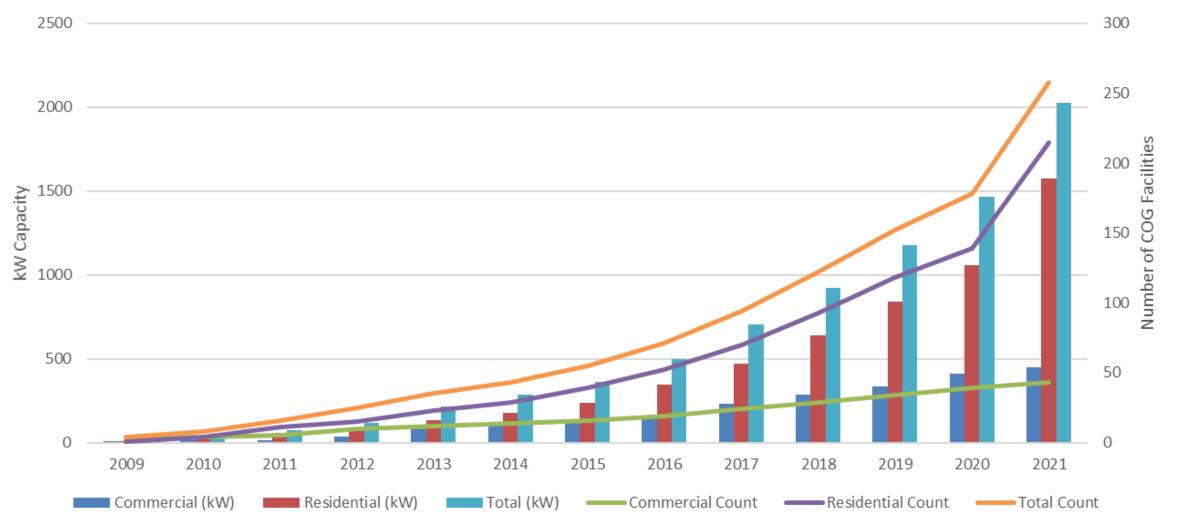
- OPPD received 500th application
- 500% Year over year Increase in applications
- 350 vs 59 applications
- 203 solar systems now online
- (157 Residential / 46 Commercial)
- 3,265 kW AC solar capacity
- Targeted marketing to educate customers





# Growth in Customer-Owned Generation (25 kW or Less)

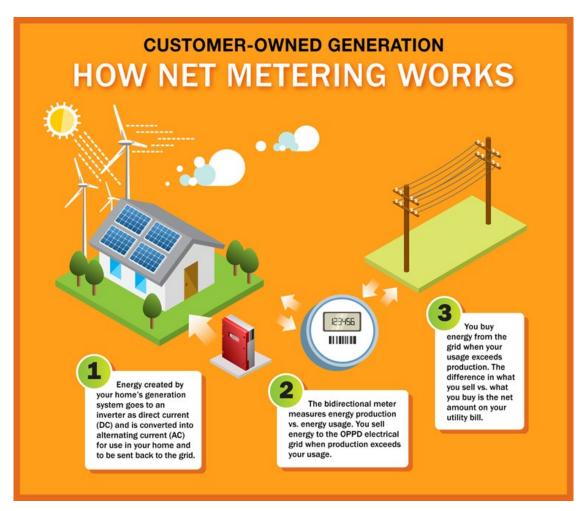






## Net Metering Changes (Schedule 483)





### What Changed:

- Clarified size basis on 25 kW limit to be AC nameplate capacity.
- Increased size limit from 25 kW to 100 kW

### **Benefits:**

- Increased options for customers
- Decreased load during periods of strong solar generation
- Increased levels of local renewable energy in support of environmental goals



**Alternative Energy Technology Customer Education** 

### **Virtual and In-Person Presentations**

- Careers in Energy
- Alternative Energy 101
- Battery Storage Overview
- Power with Purpose Solar
- Community Solar

### **Presentations to:**

- Nebraska Wind & Solar Conference
- Methodist Hospital
- Institute of Electrical and Electronics Engineers (IEEE)
- Society of Engineers
- Optimist Club
- Nebraskans for Solar









## **Educate, Protect & Promote**

Advocate and educate local, state, and federal governments to protect and promote OPPD's environmental impact.

### **Education Initiatives**



- Provided letters and testimony to support operational environment for solar in various jurisdictions:
  - Papillion
  - Springfield
  - Gretna
  - Bellevue
  - Burt County
  - Cass County
  - Sarpy County
  - Saunders County
  - Washington County

- Promoted speaker's bureau education to policymakers on renewable energy topics including sustainability and environmental plans:
  - Electric Vehicles
  - Decarbonization Plan
  - Solar
  - OPPD's Strategic Initiatives
  - Battery Storage
  - Renewable Energy Portfolio
  - Grant Opportunities
  - BRIGHT Project

- Attended AltEn (Mead, NE)
   meetings to assess
   downstream political
   impacts on Platteview Solar
   Project.
- Attended Ft. Calhoun town hall to discuss Community Solar installation and provide updates on repairs.
- Through Metro Smart Cities Initiative, support the City of Omaha Climate Action Plan development.

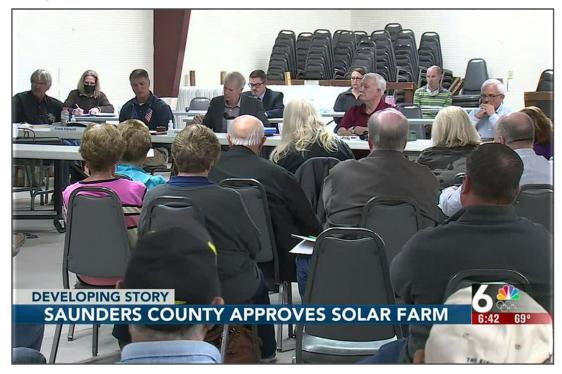






- Solar zoning regulation presentations to various elected officials and community leaders:
  - Sarpy County Commissioners
  - Sarpy County Wastewater Agency Representatives (Mayors of five Sarpy Cities)
  - City Administrators
     (Bellevue, La Vista, Papillion, Springfield, Gretna)
  - Gretna City Council members
  - Springfield Planning Commissioners
  - Springfield City Councilmembers
  - Bellevue City Council
  - Bellevue Planning Commission
  - Burt County Planning Commission
  - Burt County Board of Supervisors
  - Washington County Board of Supervisors
  - Dodge County Board of Supervisors

Platteview Solar team presenting
 "Shining a Light on Solar" at Nebraska
 Planning Zoning Conference,
 September 2021







### Recommendation

The System Management Committee has reviewed and accepted this Monitoring Report for SD-7 and recommends that the Board find OPPD to be sufficiently in compliance with Board Policy SD-7.