WHEREAS, the Board of Directors has determined it is in the best interest of the District, its employees, and its customer-owners to establish written policies that describe and document OPPD's corporate governance principles and procedures; and

WHEREAS, each policy was evaluated and assigned to the appropriate Board Committee for oversight of the monitoring process; and

WHEREAS, the Board's System Management and Nuclear Oversight Committee (the “Committee”) is responsible for evaluating Board Policy SD-7: Environmental Stewardship on an annual basis. The Committee has reviewed the 2021 SD-7: Environmental Stewardship Monitoring Report and finds OPPD to be sufficiently in compliance with the policy as stated.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of Omaha Public Power District accepts the 2021 SD-7: Environmental Stewardship Monitoring Report, in the form as set forth on Exhibit A attached hereto and made a part hereof, and finds OPPD to be sufficiently in compliance with the policy as stated.
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.
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.
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.
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

Renewables for 2020 as a percentage of Retail Sales:
- Wind: 34.4%
- Hydro: 3.4%
- Landfill gas: 0.5%
- Solar: 0.1%
- Total: 38.4%

Year | Percent of Retail Energy Sales (%)
--- | ---
2010 | 5.1
2011 | 7.6
2012 | 8.9
2013 | 10
2014 | 16.7
2015 | 20
2016 | 19.6
2017 | 33.5
2018 | 31.9
2019 | 30.9
2020 | 38.4
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 – 17th & 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
Conduct all operations in a manner that strives for the goal of net zero carbon production by 2050.
Pathways to Decarbonization
**Completed Objectives**

- 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

Completed Objectives

• Developed a standardized carbon accounting framework
• Base year 2018 and 2019 GHG inventories
PATHWAY: CUSTOMERS

Completed Objectives

• 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
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
Completed Objectives

• 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
## Demand Side Management Portfolio Status

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<th>2019 Actuals</th>
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<td><strong>Total Annual Cumulative Demand Side Management</strong></td>
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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

OPPD EV Rebates Available by Year

- 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!

Green House Gas (GHG) Emissions Saved in lbs*

*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, semi-annual 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 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.

* 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

- 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

Volta, Watt, Ohm, Ampère (2021)

Flash, Flicker, Storm (2020)
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 topics. 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 workshops is available.
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 https://www.oppd.com/environment/environmental-reports/fleet-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 https://www.oppd.com/environment/environmental-reports/fleet-emissions/.
Community Solar Dashboard

Production Now: 1.71 Megawatts

Lifetime Production: 16.49 Gigawatt Hours

Fri, Sep 24
High: 72°F
Low: 53°F

Sat
79°F
43°F

Sun
86°F
56°F

Mon
89°F
56°F

Total Energy Generated Equals

Carbon: 889,582 Pounds this month
19,962,667 Total pounds

Trees: 12,990 Planted this month
291,506 Total planted

Lightbulbs: 9,796,078 Lightbulbs this month
219,828,892 Total lightbulbs

Oil: 1,178 Bbl this month
26,439 Total bbl

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

Engage customers and stakeholders to promote energy conservation and efficiency and minimize environmental impact.
Energy Efficiency Webpages & Presentations

**New Webpages**

- Annual updates to the information: new tips, updated tips, more cost-oriented 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

**Agenda**

- Efficiency vs. Conservation
- Insulation
- Lights
- HVAC
- Resources
- Income-Qualified EE Pilot
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
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.
Education Initiatives

- **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 Council members
  - 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.
Board Action

BOARD OF DIRECTORS

October 19, 2021

ITEM

SD-7: Environmental Stewardship Monitoring Report

PURPOSE

To ensure full Board review, discussion and acceptance of SD-7: Environmental Stewardship Monitoring Report.

FACTS

a. The first set of Board policies was approved by the Board on July 16, 2015. A second set of Board policies was approved by the Board on October 15, 2015.

b. Each policy was evaluated and assigned to the appropriate Board Committee for oversight of the monitoring process.

c. The System Management and Nuclear Oversight Committee is responsible for evaluating Board Policy SD-7: Environmental Stewardship.

d. The System Management and Nuclear Oversight Committee has reviewed the SD-7: Environmental Stewardship Monitoring Report as outlined on Exhibit A, and is recommending that OPPD be found to be sufficiently in compliance with the policy as stated.

ACTION

The System Management and Nuclear Oversight Committee recommends Board approval of the 2021 SD-7: Environmental Stewardship Monitoring Report.

RECOMMENDED:

Mary J. Fisher
Vice President – Energy Production and Nuclear Decommissioning

APPROVED FOR BOARD CONSIDERATION:

L. Javier Fernandez
President and Chief Executive Officer

Attachments: Exhibit A – Monitoring Report
Resolution