



Action Item

BOARD OF DIRECTORS

August 16, 2022

ITEM

Power with Purpose Reliability – North Omaha Station Extension

PURPOSE

Board of Directors Approval to Defer North Omaha Station Refuel and Retirement Dates

FACTS

1. The Board of Directors adopted Resolution No. 6006 on June 19, 2014, and Resolution No. 6122 on June 16, 2016, which direct the planned retirement of North Omaha Station (NOS) Units 1, 2 and 3 and the refueling of NOS Units 4 and 5 from coal to natural gas only, by the end of 2023.
2. On November 14, 2019, the Board adopted Resolution No. 6351, which authorizes the engineering, procurement and construction of the Power with Purpose solar and natural gas generation assets. These solar and natural gas generation assets are required to maintain system reliability and resiliency, serve growing customer load, and retire or refuel aging generation assets at the North Omaha Station.
3. The Power with Purpose natural gas generation assets, designated as Turtle Creek and Standing Bear Lake Stations, were scheduled to come online in fully accredited capability pursuant to Southwest Power Pool standards by the end of 2023, enabling the retirement and refueling of the NOS units.
4. Due to challenges with the federally-regulated generation interconnection process, supply chain, and other construction-related impacts to the Power with Purpose project, the District has experienced a delay in bringing online the Power with Purpose natural gas generation assets in fully accredited capability.
5. In accordance with the Board's Strategic Directive 4, addressing system reliability, and to maintain compliance with applicable federal reliability standards and assure the continued reliability and resiliency of the OPPD system, Management of the District has determined that it is necessary and prudent to extend the retirement of NOS Units 1, 2 and 3 and delay the refueling of Units 4 and 5 until the Power with Purpose natural gas units are able to generate electricity, have executed the required agreements and completed any potential required infrastructure or other obligations set forth in both the Generation Interconnection Agreement and Transmission Service Agreements and are able to operate in an unconditional, fully accredited capability.
6. The District will expand partnerships with interested customers to make significant and incremental investments in Demand Side Management programs to mitigate its short term energy and capacity requirements.

ACTION

Board of Directors approval of an extension to the retirement of North Omaha Station Units 1, 2, and 3 and the refueling to natural gas of North Omaha Station Units 4 and 5 until the District's Standing Bear Lake Station and Turtle Creek Station, currently under construction are completed, able to achieve full accreditation pursuant to achieving both the required executed agreements as well as satisfying all requirements of the Southwest Power Pool for generation interconnection and transmission service.

RECOMMENDED:

DocuSigned by:

Brad Underwood

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Brad Underwood

Vice President – Systems Transformation

APPROVED FOR BOARD CONSIDERATION:

DocuSigned by:

L. Javier Fernandez

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L. Javier Fernandez

President and Chief Executive Officer

BRU:mfh



Power With Purpose: Reliability / North Omaha Station Recommendation

August Committee Meeting

August 16, 2022



Agenda

- June 2022 Board Committee Meeting Recap
- Customer Outreach & Feedback Summary
- Response to Customer Feedback
- Recommendation



June 2022 Board Committee Meeting Recap

Power with Purpose: Reliability Update

Power With Purpose

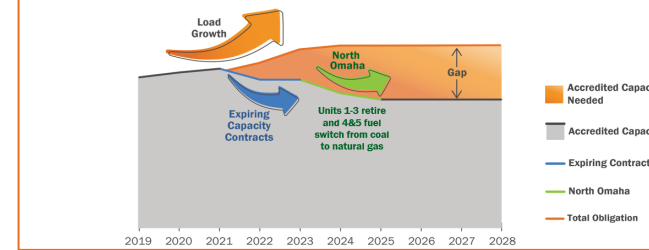
Background – Project Overview

- Power with Purpose (PwP) identified the need for both new natural gas and solar generation balancing affordability, reliability and environmental sensitivity
- The PwP projects:
 - Allow for the planned retirement of North Omaha (NO) Units 1-3 and refuel of NO Units 4 & 5 from Coal to Natural Gas
 - Facilitates large load growth
 - Maintains critical and historical reliability & resiliency
- Creates a scenario where a significant amount of bulk generation changes are set to occur where the coordination of “in service” dates is critical for successful project outcomes and maintaining system reliability & resiliency

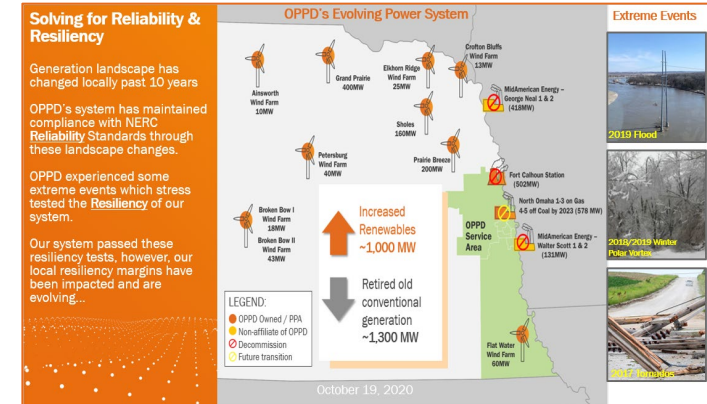
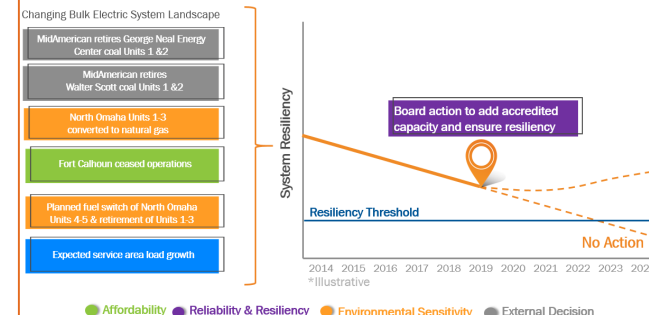
Working Towards Solutions



Why Now: Continued Capability to Serve Our Growing Communities



Maintaining Optimal Resiliency Attributes



Industry Events & Challenges

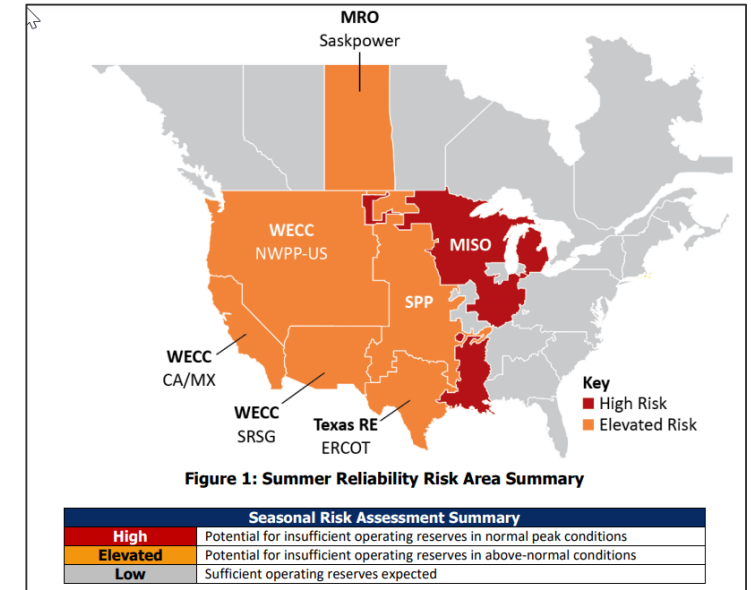
- **Changing Resource Mix** continues to remain the North American Electric Reliability Corporation's (NERC) top **Grid Reliability Risk** – growing concerns for potential of large scale blackouts
- **Solar generation challenges** – federal investigation into solar panel imports and zoning challenges for siting solar causing significant delays
- **Regulated Grid Interconnection Study Backlogs** - Federally regulated Generation Interconnection (GI) request evaluation study process is severely backlogged across entire country causing major multi-year delays in interconnecting new generation to the 'open access' transmission grid

Impacts on Industry

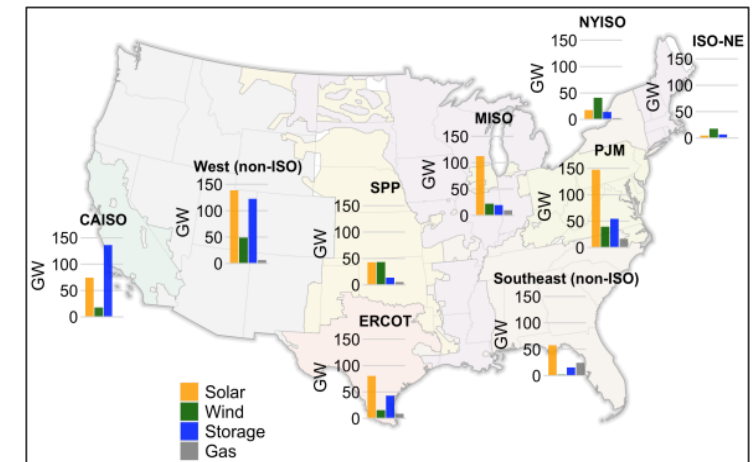
- As a result of these industry challenges, there are numerous examples of electric utilities across the country deferring conventional generation retirement plans and generation expansion plans in order to maintain grid reliability and resiliency

¹ Berkeley Lab - Queued Up: Characteristics of Power Plants Seeking Transmission Interconnection As of the End of 2020, May 2021

NERC's 2022 Summer Resource Adequacy Assessment

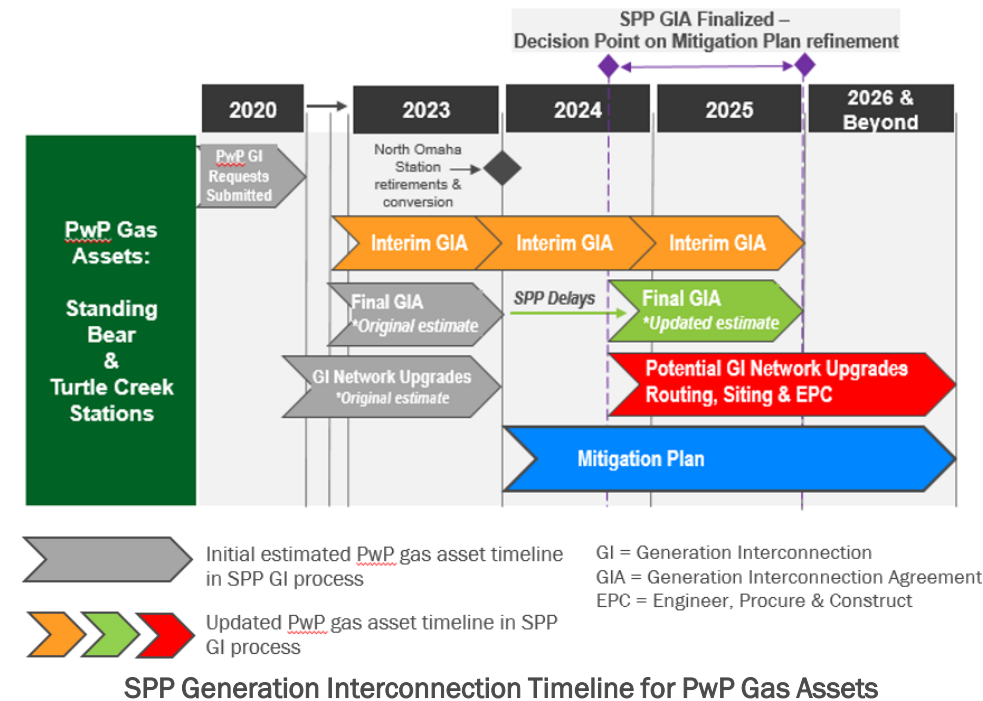
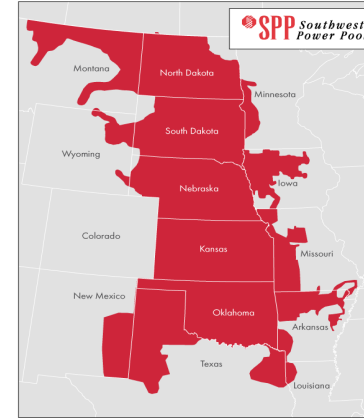


Regional Generation Interconnection Request Queues: Multi-Year Study Backlogs¹



Industry Challenges Impact on Power with Purpose

- North Omaha Station (NOS) unit retirements and fuel conversion from coal to natural gas were originally targeted by end of 2023, and Power with Purpose (PwP) generation assets were largely planned to be in service prior to these NOS changes occurring
- Regulated Generation Interconnection (GI) multi-year study backlog poses most significant risk and impact to the in-service dates for all of the PwP gas and solar generation
 - OPPD is part of the Southwest Power Pool (SPP) Regional Transmission Organization which is responsible for overseeing the regulated grid interconnection process in this region
 - Similar to every region across the country, SPP's GI process is significantly backlogged and delayed which is impacting our PwP generation in-service dates
 - Interconnection to the grid cannot be denied, but it requires a grid reliability impact study be completed first
- Numerous plans were put in motion to mitigate the federally regulated, SPP administered regional GI study backlog:
 - OPPD submitted PwP generation interconnection requests to SPP in early 2020 and strategically sited those resources to help minimize transmission upgrades
 - Since then, the SPP GI study backlog landscape drastically changed, request processing times doubled and massive regional transmission network upgrade buildout requirements are being identified
 - Interim interconnection service option being pursued for PwP but running into roadblocks based on initial study results provided Q2 2022 and growing concerns with the availability of this short-term annual product year over year
- Despite these mitigation efforts, the backlogged GI process has not been resolved for our PwP generation and a new mitigation plan needs to be considered while our applications are pending evaluation



OPPD Impact of Power with Purpose Delay

Grid Reliability & Resiliency

- Power with Purpose (PwP) generation expansion plan was originally intended to largely be put in service by Fall 2023 to facilitate the North Omaha Station unit retirement / conversions, to support OPPD's growing communities and to maintain reliability & resiliency
- The same industry events and challenges that are impacting generation retirement and expansion plans across the country are also impacting OPPD's plans and causing delays with PwP
- In order to ensure OPPD's Reliability & Resiliency margins are preserved to help prevent large scale blackouts, a mitigation plan for PwP generation delays is recommended to be put in place
- Based on the magnitude of the generation portfolio changes and the local and national challenges, very few options are available

OPPD Impact of Power with Purpose Delay

Options Considered

- Option 1: Retire North Omaha Station (NOS) Units 1-3 and convert NOS Units 4-5 from coal to gas as previously planned by 12/31/2023
 - Beneficial environmental impact of reducing emissions from NOS
 - Voltage stability and import capability would reduce by approximately 60% of current levels leaving the OPPD system degraded and in unacceptable condition susceptible to large scale blackouts
- Option 2: Defer NOS retirement / conversion date for a temporary period until there is certainty for PwP gas generation grid injection and operation
 - Defers reduction of emissions from NOS for a temporary period
 - Maintains grid reliability & resiliency
 - The district will need to make additional investments for extending operation at NOS that are estimated to be less than the market revenues

Recommendation

Mitigation Plan – Extend North Omaha Station for Temporary Period

- To ensure grid reliability & resiliency, extend North Omaha Station (NOS) in its current capability for a temporary period until all conditions and milestones, including but not limited to transmission network upgrade requirements, as set forth in the executed Generation Interconnection and Transmission Service Agreements for Power with Purpose gas generation have been satisfied
 - NOS current capability: Units 1-3 primarily operate on gas and Units 4-5 primarily operate on coal
 - For planning purposes, prepare for extension of NOS in its current capability until 12/31/2026, but the extension could be terminated earlier or extended further pending Southwest Power Pool (SPP) service agreement milestones
 - SPP Transmission Service Agreements and SPP Generation Interconnection Agreements anticipated by 2024-2025
 - Upon issuance of these service agreements, will re-evaluate this NOS extension for potential termination or further extension pending final SPP transmission network upgrade requirements
 - Balance environmental impacts and reliability needs by exploring the possible options to minimize NOS coal unit emissions if system conditions allow along with pursuing interim grid interconnection service for PwP generation
 - Continue advocacy for energy regulatory policy reform for new grid interconnections regionally and nationally
- Expand large customer demand response programs, primarily commercial and industrial customers
- Continue to pursue critical Power with Purpose utility scale solar resources
- In accordance with Powering the Future 2050, OPPD intends to engage with local education and community organizations to pursue efforts to improve overall impacts for Omaha residents.

Extend North Omaha Station For Temporary Period

Long-lead Time Items Require Near-Term Action

- Staffing
- Additional maintenance and capital improvement work
- Additional fuel acquisition
- Permitting considerations



External communications & customer feedback

June 13-August 14, 2022



Communication & Outreach

IAP2 Level: Inform

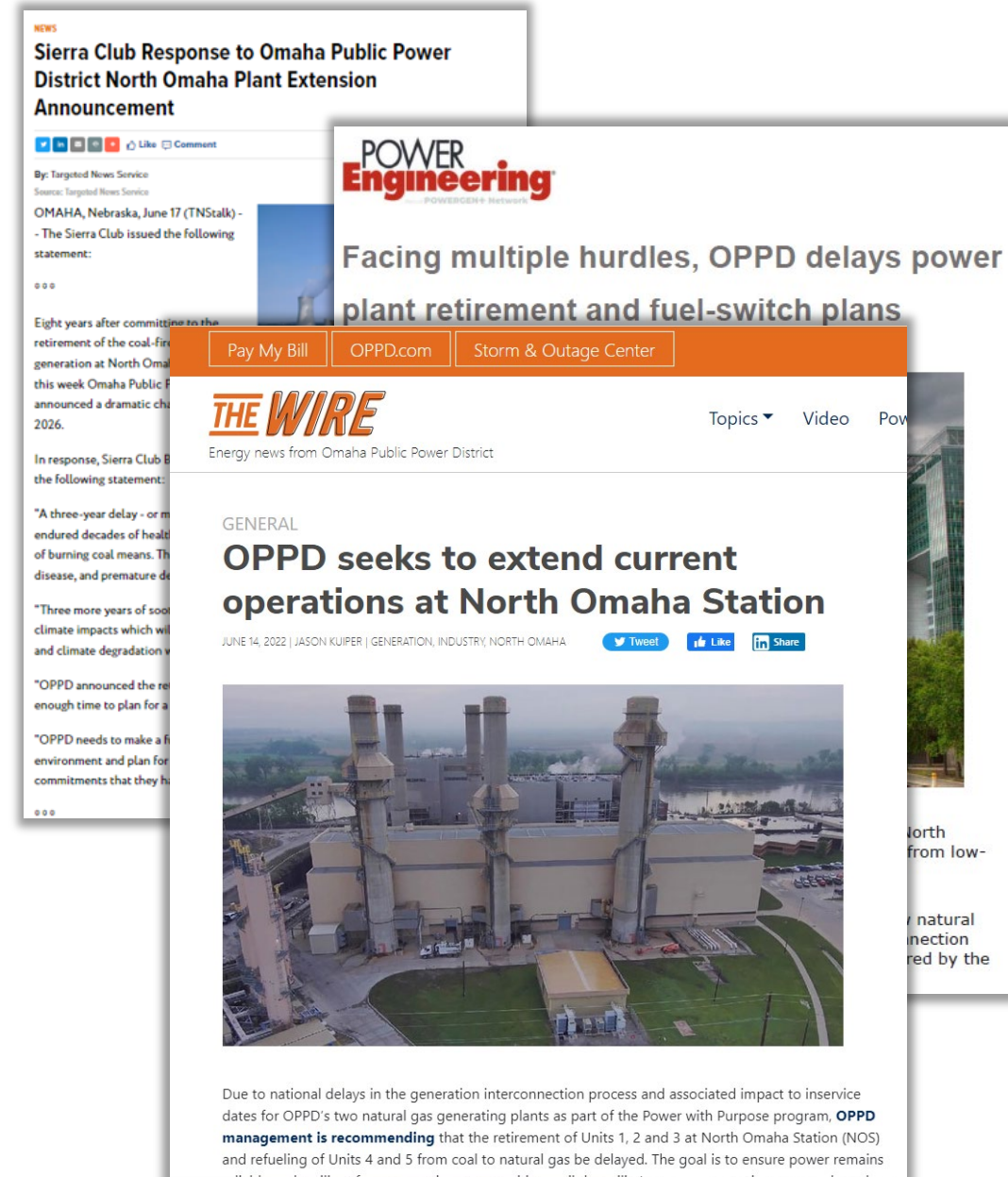
- **OBJECTIVE:** Communicate local, regional and national challenges and changes to the electrical system landscape.
- **MEASUREMENT:** Ensure stakeholders understand the problem(s) we are addressing.
- **TACTICS:** Various, internal communications, external 1:1s, videos, industry articles, Speakers Bureau, website education, FAQs, etc.

TIMELINE

- **Mon., June 13** Employee communication
- **Tues., June 14** Board Committee Meeting
- **June 14 – Aug. 12** - Stakeholder & Customer Outreach
- **Thurs., June 16** Board Meeting; Wire story posted
- **July** No Committee or Board Meeting
- **Tues., Aug. 16** August committee meeting
- **Thurs., Aug. 18** August board meeting—Board Action

External Communications

- Story on OPPDtheWire.com
 - 1,345 page views
 - 1,265 new visitors
 - Average time on post: 6 minutes, 7 seconds
- Media coverage
 - 23 media stories (TV, print and online outlets)
- OPPD Community Connect
 - One comment submitted
- In-person conversations
 - 1:1s with community, regulators, interest groups and elected officials.



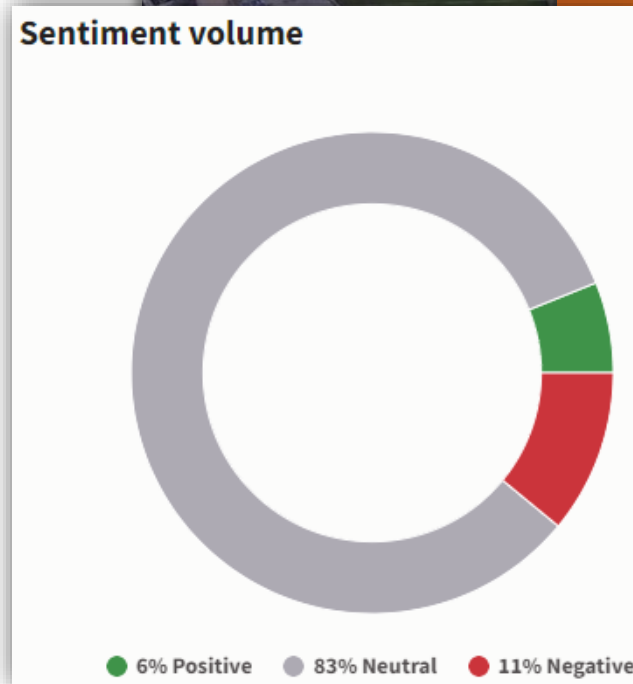
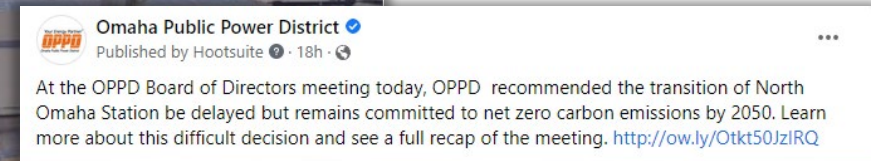
Social media

- Posts and engagement

- 14 organic posts on OPPD accounts
- Reach: more than 11,900
- Impressions: more than 24,800
- Link clicks: 238
- Engagements: 789
- 33 shares of OPPD posts by others

- Social media insights

- Total mentions: 164
- Total impressions: 1,700,000
- Total reach: 363,000



Board contacts and livestreams

- 59 board contacts
 - Board contacts received from districts 2, 3, 4, 5, 6, 7 & 8
- Zero phone calls through the call center
- 1 email via customer service email
- **Board meeting livestream attendance**
 - June board meeting
 - Customers: 49
 - In-person customers: 3
 - June all-committee meeting
 - Customers: 10
 - In-person customers: 0



Response to customer feedback

OPPD's Commitment to Environmentally Sensitive Energy

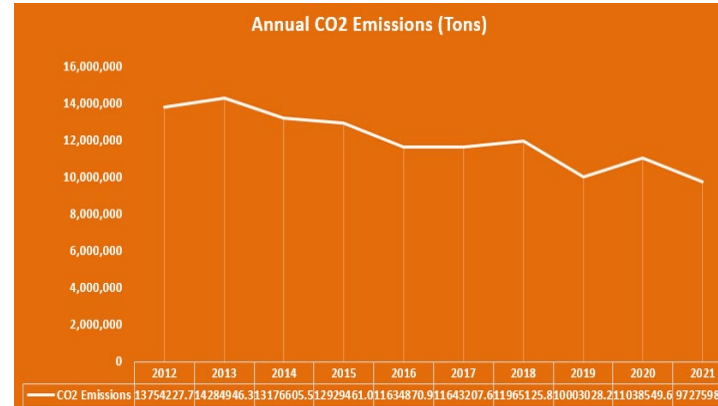


Commitment to Environmentally Sensitive Energy

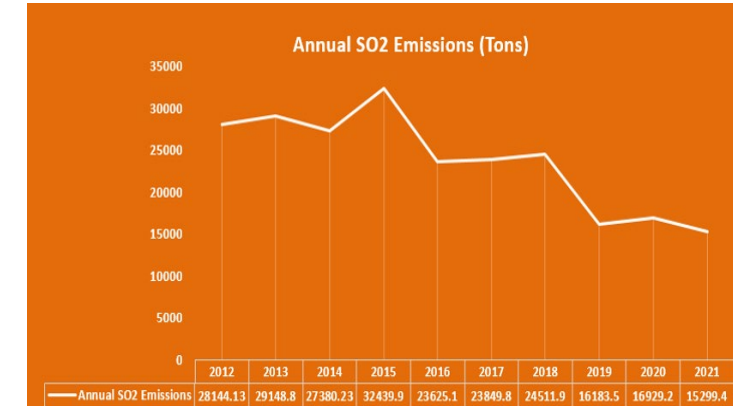
Past Performance

- Over the past decade, OPPD's generating fleet has significantly reduced emissions while maintaining reliability and affordability
- During the last decade, OPPD has integrated over 1,000 MW of new wind energy into our portfolio, converted three of our oldest coal units to natural gas and introduced new demand side management programs
- OPPD will continue efforts to try and reduce emissions while adhering to market rules and system needs

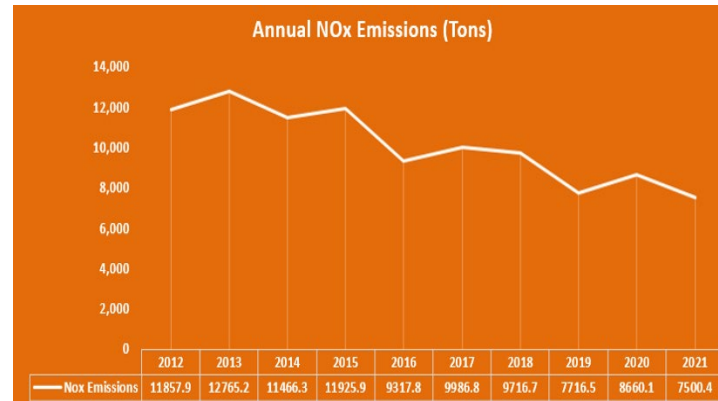
Annual CO2 Emissions (Tons)



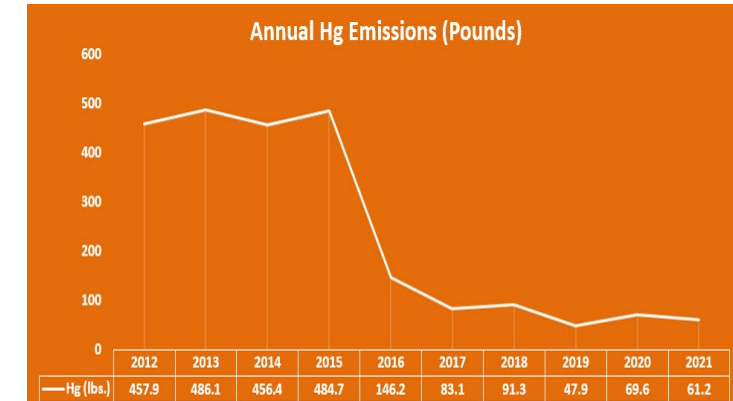
Annual SO2 Emissions (Tons)



Annual NOx Emissions (Tons)



Annual Hg Emissions (Pounds)



<https://www.oppd.com/environment/environmental-reports/fleet-emissions/>

Commitment to Environmentally Sensitive Energy

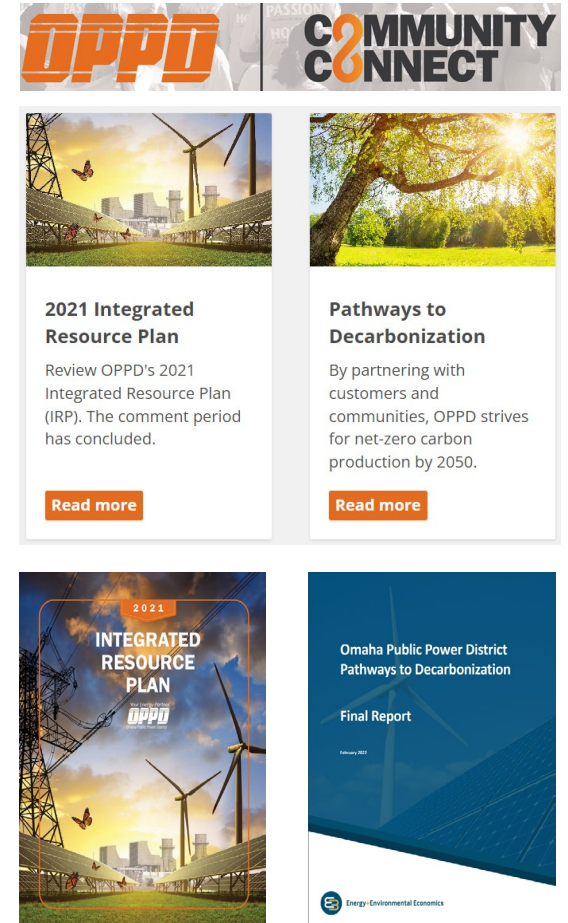
Net Zero Carbon by 2050: Pathways to Decarbonization

Key Findings from OPPD's Pathways to Decarbonization: Energy Portfolio study

- OPPD has a goal of being Net Zero Carbon by 2050
- OPPD recently completed its *Pathways to Decarbonization Energy Portfolio* study in 2021 and these study results were incorporated into OPPD's most recently published *Integrated Resource Plan (IRP)*
- OPPD remains committed to a sustainable path, achieving our net zero carbon goal by 2050 and building a cleaner world while continuing to maintain reliability and affordability

1. *OPPD can achieve net-zero while balancing affordability and reliability*
2. *Cessation of coal generation and reduced use of fossil generation*
3. *A mix of new low-carbon resources including renewable energy, energy storage and community-wide energy efficiency will be required*
4. *Firm, dispatchable generation is needed to maintain resource adequacy*
5. *Resources are consistent across a variety of pathways*
6. *Absolute-zero emissions scenarios are substantially higher cost and very dependent on future technology development*
7. *Accelerating decarbonization reduces cumulative emissions at a relatively low incremental cost, but poses implementation and integration challenges*
8. *The changing resource mix will pose new resiliency challenges that must be evaluated, understood and mitigated*

<https://www.oppdcommunityconnect.com>



Commitment to Environmentally Sensitive Energy

Net Zero Carbon by 2050: Demand Side Management

YEAR	2018 and Prior	2019	2020	2021	2022	2023	2024 and beyond
HEADCOUNT	3 (or less)	6	5	6	6	8	8
MW SAVED	149.860	154.3	161.67	169.999	185.028 (target)	---	---
DEMAND RESPONSE	<ul style="list-style-type: none"> Business Curtailment Riders Cool Smart Smart Thermostat (1) 			<ul style="list-style-type: none"> Cool Smart Enhancements 	<ul style="list-style-type: none"> Business Curtailment Rider Update & More Smart Thermostat (+1) SMB Smart Thermostat 	<ul style="list-style-type: none"> SPP Cool Smart Changes 	<ul style="list-style-type: none"> Non-accredited DR Program SMB Load Management Managed EV charging
ENERGY EFFICIENCY / DEMAND REDUCTION	<ul style="list-style-type: none"> Business Custom Business Prescriptive Certified High Performance Homes CI Energy Monitoring & Consulting Services Digi (ARC, CRAC, RTU) ECO 24/7 EPA Energy Star Evaluations Geo-thermal HVAC Smart Irrigation Load Control Residential Conservation Rider Smart Steps Standby Service Rider TOU Rider 	<ul style="list-style-type: none"> Low Income Household Pilot 	<ul style="list-style-type: none"> CI Lighting & Controls 	<ul style="list-style-type: none"> Energy Efficiency Assistance ESCO Partnerships (3) Thermostat Program (+3) 	<ul style="list-style-type: none"> ECO SMB Advanced Technology Pilot Energy Education (elementary) EV 'off peak' Charging Mgmt. Pilot CI Outdoor Lighting --- SMB Building Mgmt. System (currently on hold) 	<ul style="list-style-type: none"> Energy Education (high school) Energy Star Appliance HVAC Tune-up Residential Lighting Weatherization 	<ul style="list-style-type: none"> CI New Construction CI Strategic Energy Management Commercial Food Service Rebates Small Business Direct Install
FOUNDATIONAL AND SUPPORTING	<ul style="list-style-type: none"> VisionDSM Implementation 	<ul style="list-style-type: none"> Energy Efficiency Webpage created DSM Potentiality Study Current Program Growth Strategy & Implementation 	<ul style="list-style-type: none"> Implemented DERMS solution Implemented PowerClerk® solution Customer-Owned Generation 	<ul style="list-style-type: none"> B2B lead generation process Emissions reporting created DSM Trade Ally Enhancements Pathways to Decarbonization SI Study 	<ul style="list-style-type: none"> Energy Star Tools Solar Rebate COG Trade Ally formed VisionDSM Enhancements Solar Potentiality Study Updated IRP DSM Plans 	<ul style="list-style-type: none"> Winter Peak Strategy & Plan CI Net Zero / Solar solution(s) New DSM Potentiality Study 	<ul style="list-style-type: none"> On Statement Billing Online Marketplace AMI Implementation

Future Board and Public Updates

- Periodic updates will be provided to the Board and public regarding:
 - Status of milestones in the SPP generation interconnection process for PwP gas assets, including the interim interconnection process
 - Any material SPP generation interconnection policy or process change which will impact the PwP gas assets

Summary

- Power with Purpose (PwP) generation expansion project is the key enabler to fulfill the transition plan at North Omaha Station (NOS) and must occur in the right technical sequence, at the right times in order to ensure grid reliability and resiliency is maintained to help avoid large scale blackouts.
- While the direction of net zero carbon remains unchanged as well as our intentions to refuel and retire the units at NOS, the timeliness of the generation changes is dependent upon variables not solely controlled by OPPD.
- Community feedback is they understand OPPD's commitment to reliability but some are disappointed that we can't make the change when we said. Accordingly, social media sentiment says 89% is neutral or positive regarding the recommendation. Additionally, in accordance with Powering the Future 2050, OPPD intends to engage with local education and community organizations to pursue efforts to improve overall impacts for Omaha residents.
- Updates will occur to the Board publicly on a monthly frequency during Power with Purpose project status meetings. The District will know more definitive timelines upon receipt of the generation interconnection study results published by the Southwest Power Pool, which is currently estimated in late 2024/early 2025.
- Staff's recommendation is to extend NOS for a temporary period until the Power with Purpose gas assets have completed and fulfilled all the regulated grid interconnection and delivery milestones which is currently estimated by 12/31/2026.