

Power with Purpose Update Back-up Natural Gas Plant Sites

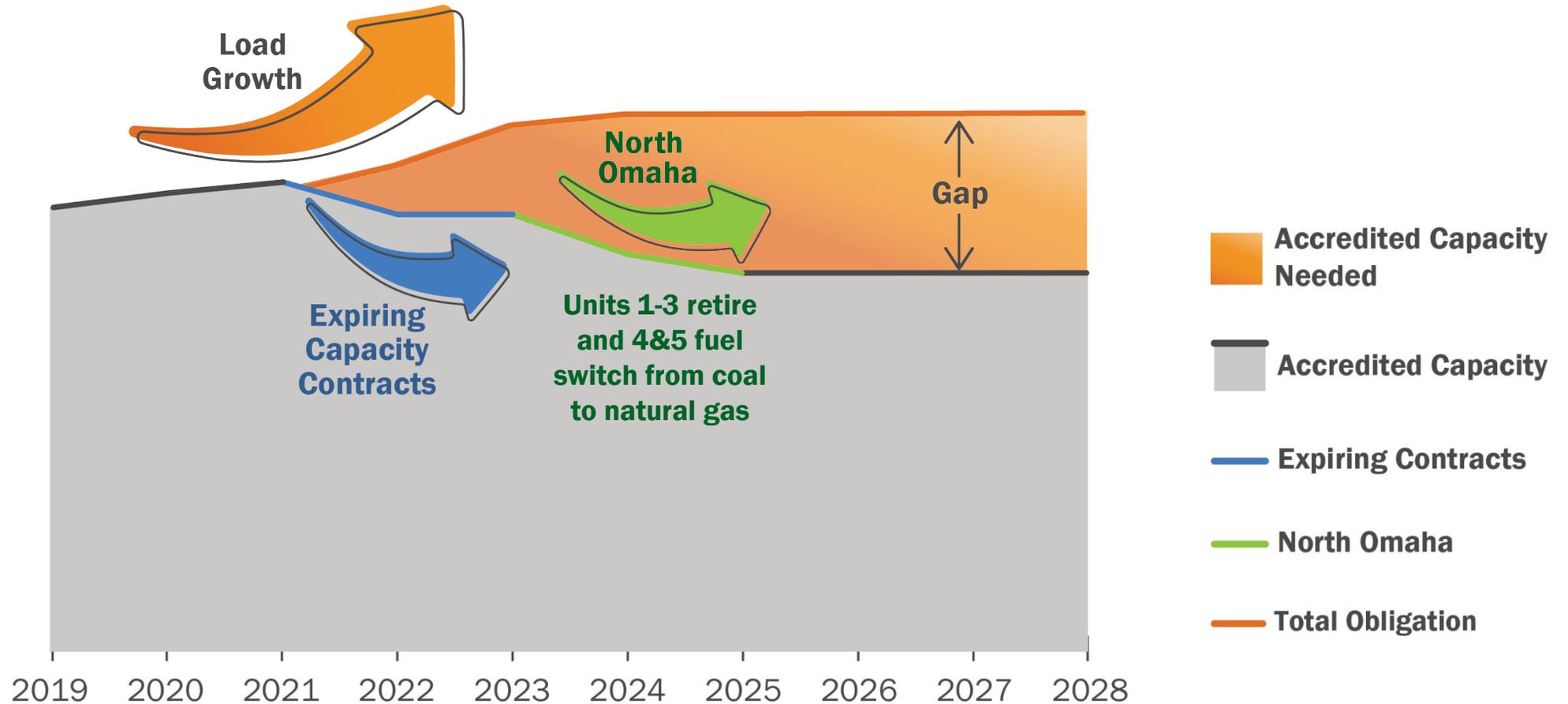
September 15, 2020



Agenda

- Power with Purpose Overview
- Schedule
- Solar Update
- Gas Sites
- Layouts and renderings
- Stakeholder Engagement Update
- Next steps

Define the Problem - OPPD Load & Capability



Power with Purpose Solution

Challenges

- Changing generation landscape
- Supporting the needs of our growing communities
- Maintaining reliability and resiliency

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Framework

- OPPD's Mission
Affordable, Reliable
& Environmentally Sensitive
- Strategic Directives
- Legal and Regulatory Obligations

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Solution

- **Large utility scale solar** with natural gas backup
- Modernized natural gas assets; replacement for North Omaha Units 1-3 retirements and Units 4 & 5 refuel to natural gas
- Voltage support device(s)
- Request for Proposal (RFP) results will finalize the modeling conclusions

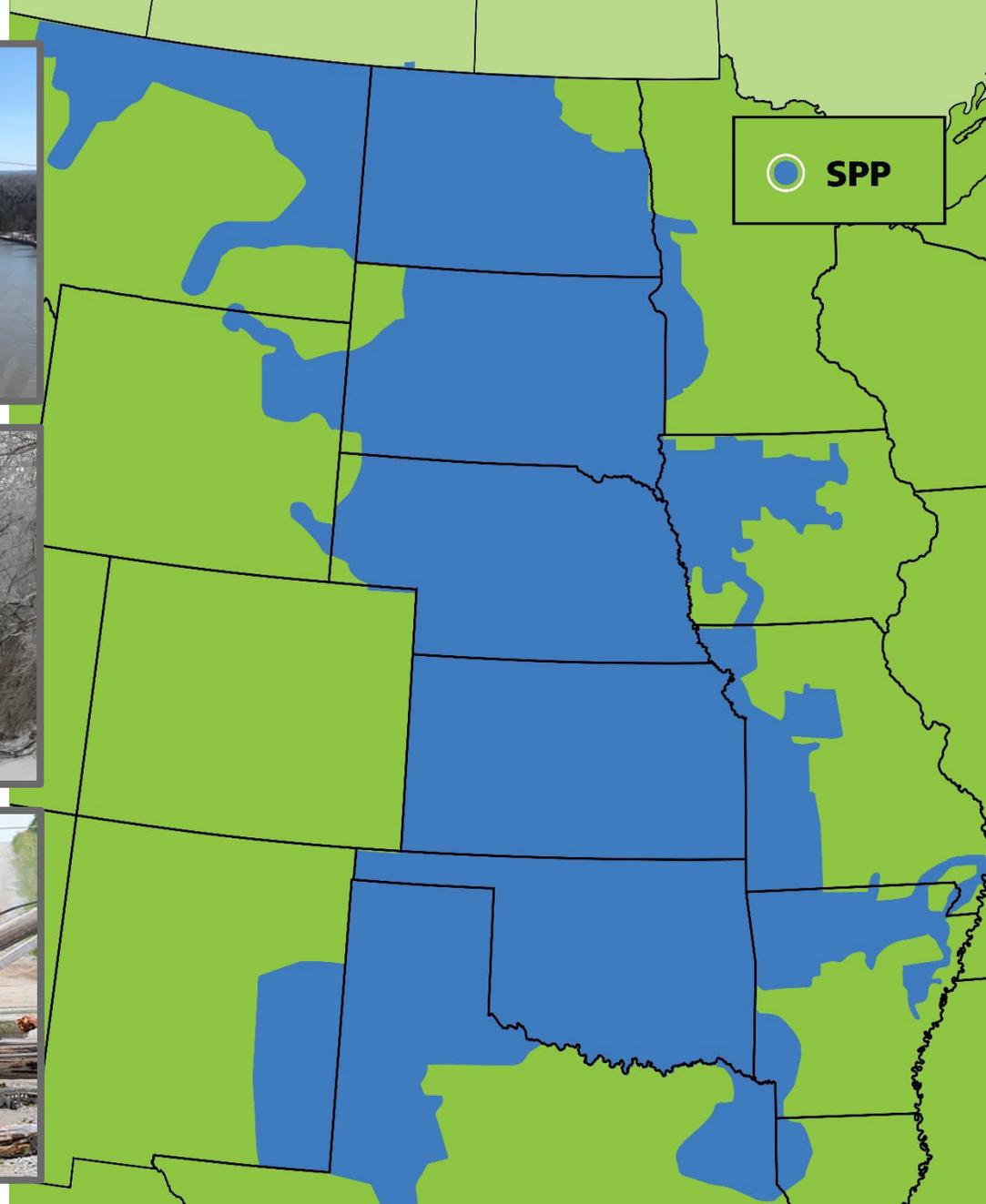
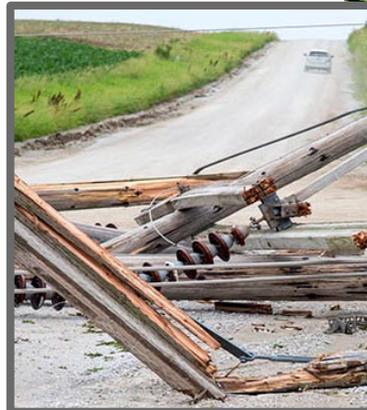
Benefits

- Ensures OPPD is able to meet the needs of our customer-owners while maintaining affordability, reliability and resiliency.
- Carbon dioxide (CO₂) emissions are expected to be reduced by 80-90% over current North Omaha emissions.
- In total, over our journey from 2010-2024, we estimate a 30% reduction in CO₂ emissions.
- OPPD expects to maintain no general rate increase from these solutions.

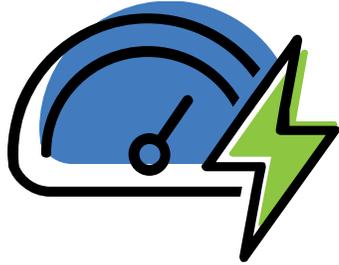
Solution: Energy in Harmony Solar + Gas

Backup Natural Gas

- Allows for quick response to reliability and resiliency needs caused by weather and other emergent events
 - Startup time ~20 minutes
- Allows refueling of coal assets with natural gas at North Omaha Station



Why Natural Gas?



Accredited
capacity



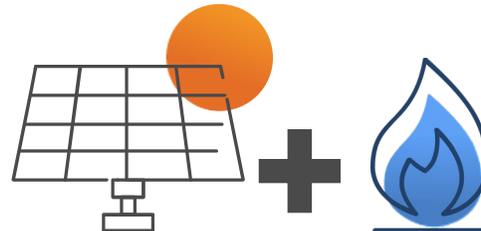
Cost effective



Cleaner energy,
efficient fuel



Supports renewable
energy integration

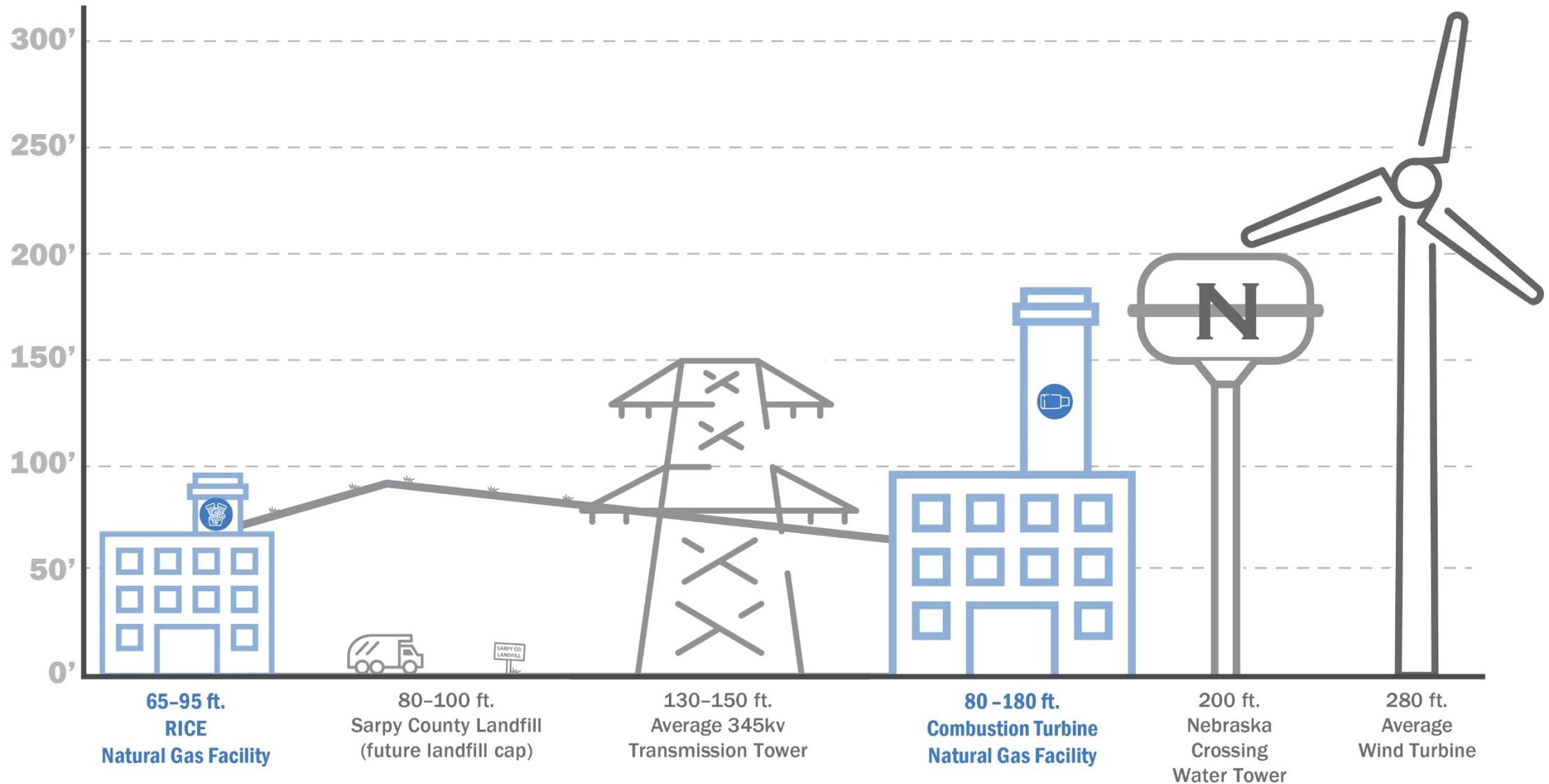


Complements up to
600 MW of planned
solar facilities

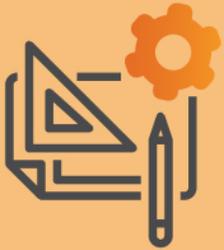


Important step in our
journey towards
decarbonization

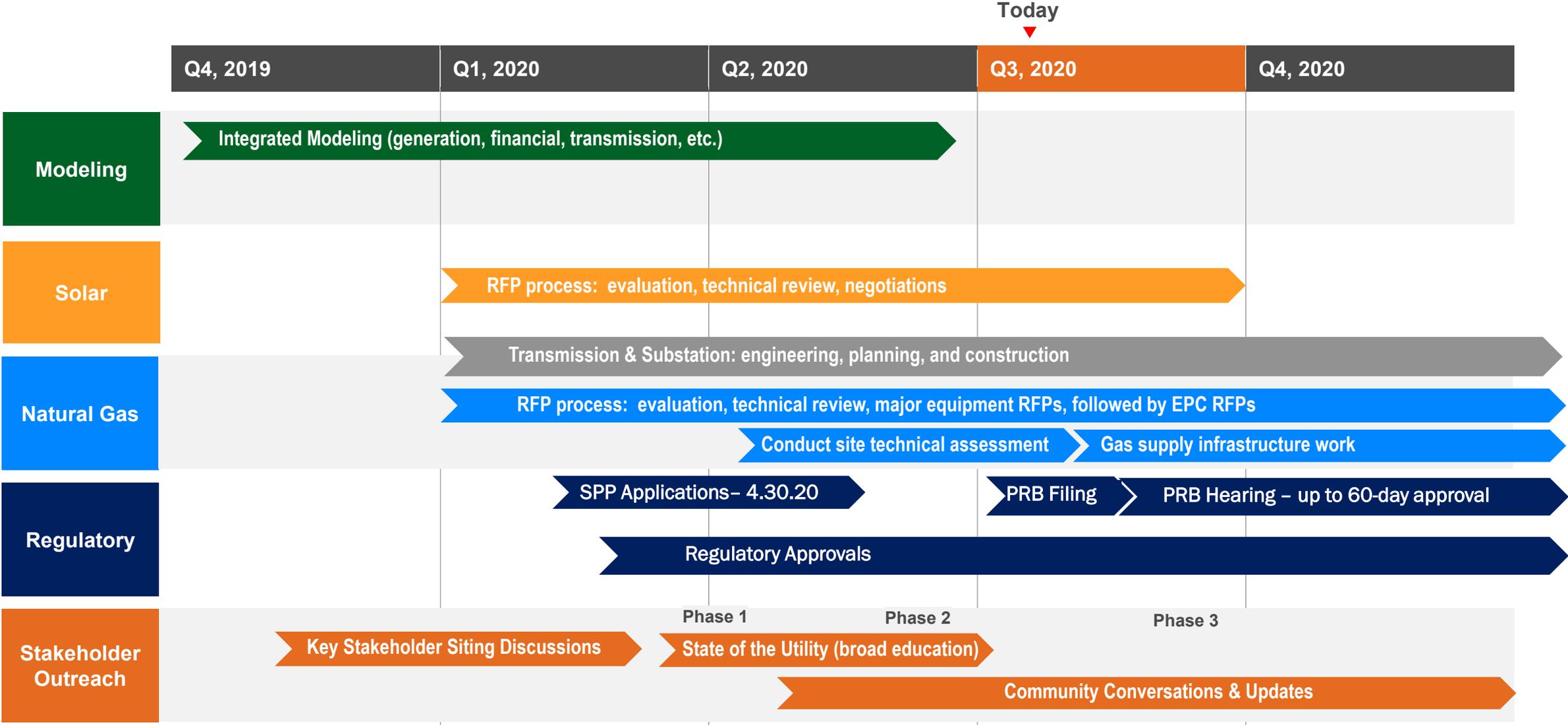
About how tall will the facilities be?



Power Generation Siting Considerations

 <p>Social</p>	 Businesses  Places of Worship  Agriculture  Schools  Parks & Recreation  Cemeteries  Commercial/ Industry  Residences/ Homes  New & Platted Developments
 <p>Environmental</p>	 Conservation Areas  Federal & State Lands  Floodplains  Historic & Archaeological Sites  Wooded Areas  Wetlands/Waterways  Threatened & Endangered Species
 <p>Engineering</p>	 Airports  Cost  Constructability  Highways  Railroads  Structures (other)  Irrigation/ Pivots  Existing/Planned Utilities  Wells  Site Topography (flat land)  Access to Transmission

Power with Purpose Timeline



Solar Update



Solar Progress Update

- Continued focus on evaluating best value projects that support accredited capacity and system resiliency
- Development of OPPD's first utility-scale solar form PPA in preparation of negotiations with high-potential projects
- Multiple projects and locations are being considered to meet the full 400-600 MW Board authorized amount



Photo: Fort Calhoun Community Solar drone footage

New Gas Generation Sites and Technologies



New Gas Generation Papillion (Sarpy County South) Site



Technology: Two simple-cycle combustion turbines

Location:

- Papillion
- Between 156th & 168th Streets
- Between Fairview and Platteview Roads

New Gas Generation Military Site

MILITARY ROAD SITE



Technology: Six to Nine Reciprocating Internal Combustion Engines

- Location:
- 120th & Military Ave.
 - Next to MUD facility

Technology Overview

Combustion Turbines (CTs)

- Simple-cycle
- Quantity: 2 units
- MW total: ~ 400 to 450 MW
- Dual fuel and hydrogen capable
- Peaking facility
- Noise compliance to meet local ordinances
- Visual screening for aesthetics
- Quick ramp capability with emissions compliance (~ 10-18 minutes)

Reciprocating Internal Combustion Engines (RICE)

- Quantity: 6 to 9 units
- MW total: ~ 100 to 150 MW
- Dual fuel capable
- Peaking facility
- Noise compliance to meet local ordinances
- Visual screening for aesthetics
- Quick ramp capability with emissions compliance (< 5 minutes)

Representative OPPD Facilities

Combustion Turbines (CTs)



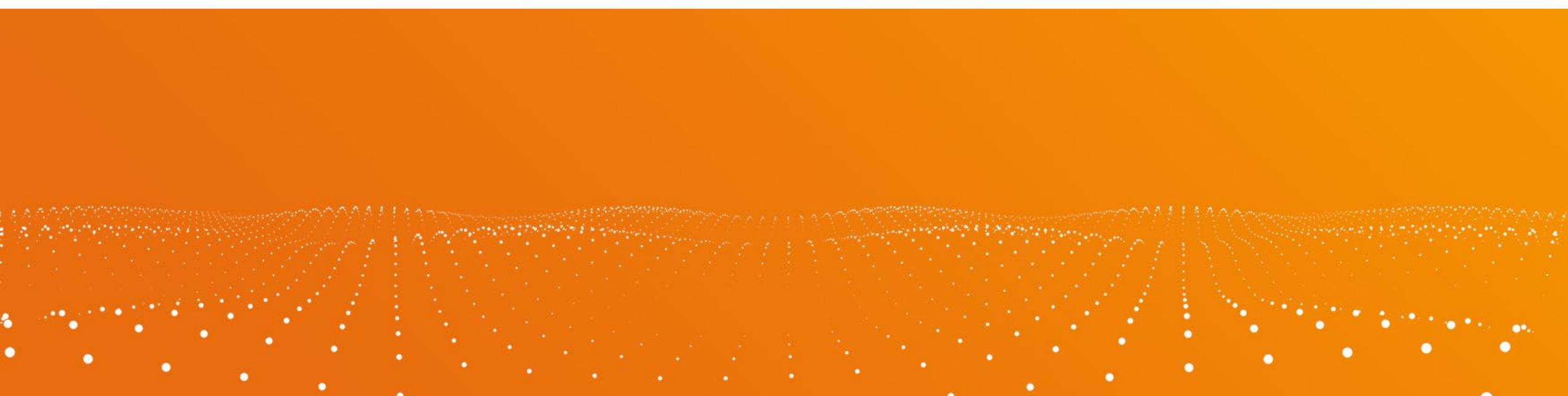
Cass County Simple Cycle CTs

Reciprocating Internal Combustion Engines (RICE)



Elk City RICE

Papillion (Sarpy County South) Site Layout and Rendering Perspective I

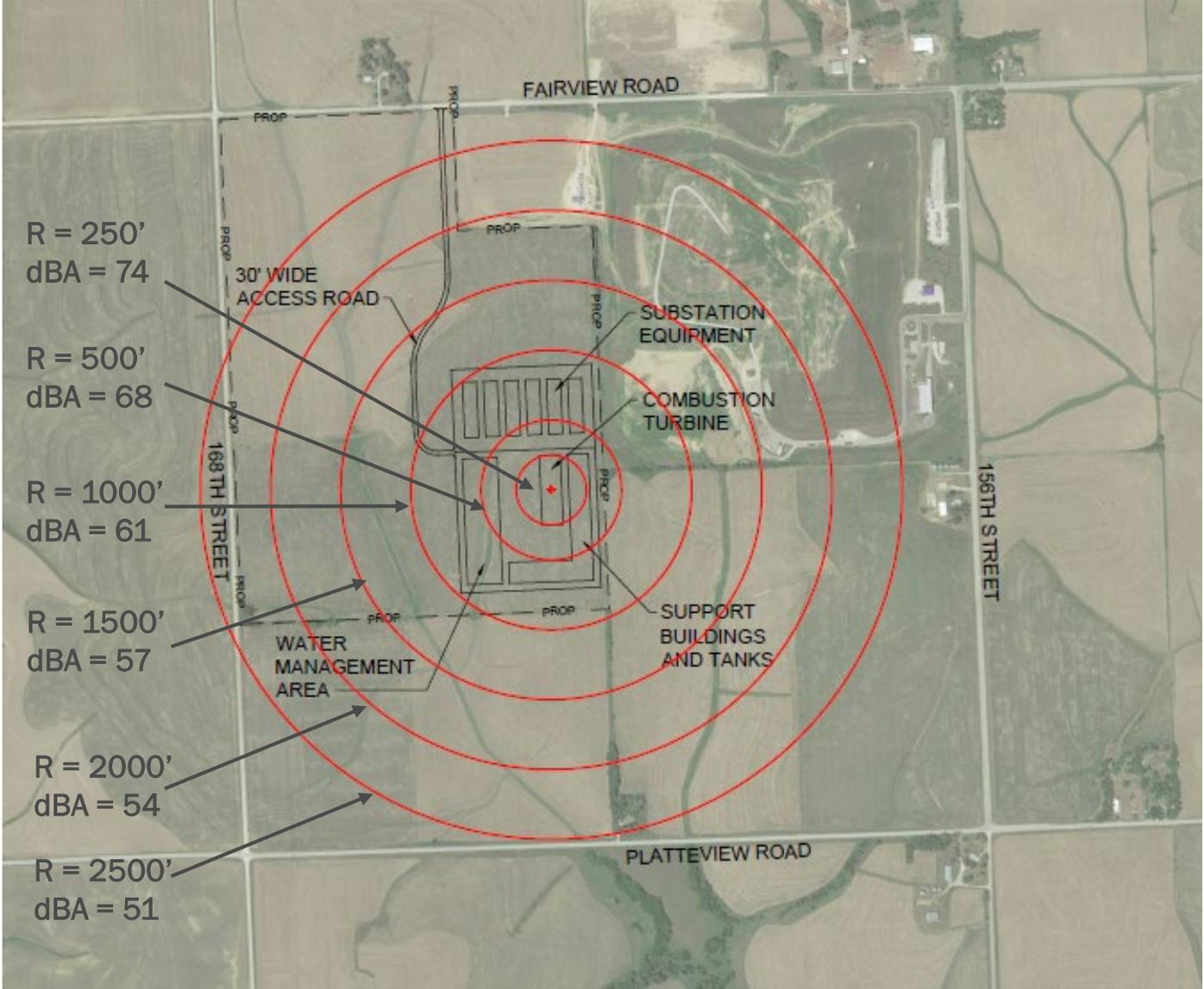


Noise Levels

Noise Level	dB (in decibels) / Example	Note
Painful/dangerous	140, Fireworks	Use hearing protection
Uncomfortable	120, Jet planes	Dangerous > 30 secs
Very loud	110, Sporting event/concert 90, Blender/hairdryer	
Over 85dB for extended periods can cause permanent hearing loss		
Loud	80, Alarm clocks 70, Traffic	
Moderate	60, Normal conversation/dishwasher 50, Moderate rainfall	
Soft	40, Quiet library 30, Whisper	
Faint	20, Leaves rustling	

Source: American Academy of Audiology

Papillion (Sarpy County South) Site Concept Plan



City of Papillion Code:
Max: 55 dBA from 10 pm to 7 am
70 dBA from 7 am to 10 pm

Papillion (Sarpy County South) Site, Current



Site

- West of SC Landfill
- Between Fairview & Platteview
- Between 156th & 168th Streets

Pedestrian View

- Platteview Road
- Looking north east

Papillion (Sarpy County South) Site, Future Rendering



Site

- Generation and substation
- 2 simple cycle Combustion Turbines

Rendering/Landscaping

- None applied

Papillion (Sarpy County South) Site Rendering/Landscaping



Site

- Generation and substation
- 2 simple cycle Combustion Turbines

Rendering/Landscaping

- Stacks color coordinated green
- Pine tree buffer around site

Papillion (Sarpy County South) Site Rendering Perspective II



Papillion (Sarpy County South) Site, Current



Site

- West of SC Landfill
- Between Fairview & Platteview
- Between 156th & 168th Streets

Pedestrian View

- 168th Street
- Looking east

Papillion (Sarpy County South) Site, Future Rendering

Site

- Generation and substation
- 2 simple cycle Combustion Turbines

Rendering

- Stacks color coordinated green



Papillion (Sarpy County South) Site Rendering/Landscaping

Site

- Generation and substation
- 2 simple cycle Combustion Turbines

Rendering/Landscaping

- Stacks color coordinated green
- Pine tree buffer around site



Military Site Layout and Rendering Perspective I



Military Site: 120th & Military Ave.



- MUD partnership
- Gas supply synergies
- Co-location with another utility

Military Site Concept Plan



Shown: Noise profile for 9 RICE

City of Omaha Code:
Max: 55 dBA from 9 pm to 7 am
60 dBA from 7 am to 9 pm

Military Site, Current



Site

- View from Rambleridge Road
- Existing Conditions, September 2020

Pedestrian View

- Looking northwest



Military Site Rendering/Landscaping

Site

- Generation and substation
- 6-9 Reciprocating Engines
- Transmission Line Routing

Rendering/Landscaping

- Without Tree buffer around site



Military Site Rendering/Landscaping

Site

- Generation and substation
- 6-9 Reciprocating Engines
- Transmission Line Routing

Rendering/Landscaping

- Tree buffer around site



Military Site Rendering Perspective II



Military Site, Current



Site

- Southwest view from Military Road
- Existing Conditions, September 2020



Military Site Rendering/Landscaping

Site

- Generation and substation
- 6-9 Reciprocating Engines
- Transmission Line Routing

Rendering/Landscaping

- Without Tree buffer around site



Military Site Rendering/Landscaping

Site

- Generation and substation
- 6-9 Reciprocating Engines
- Transmission Line Routing

Rendering/Landscaping

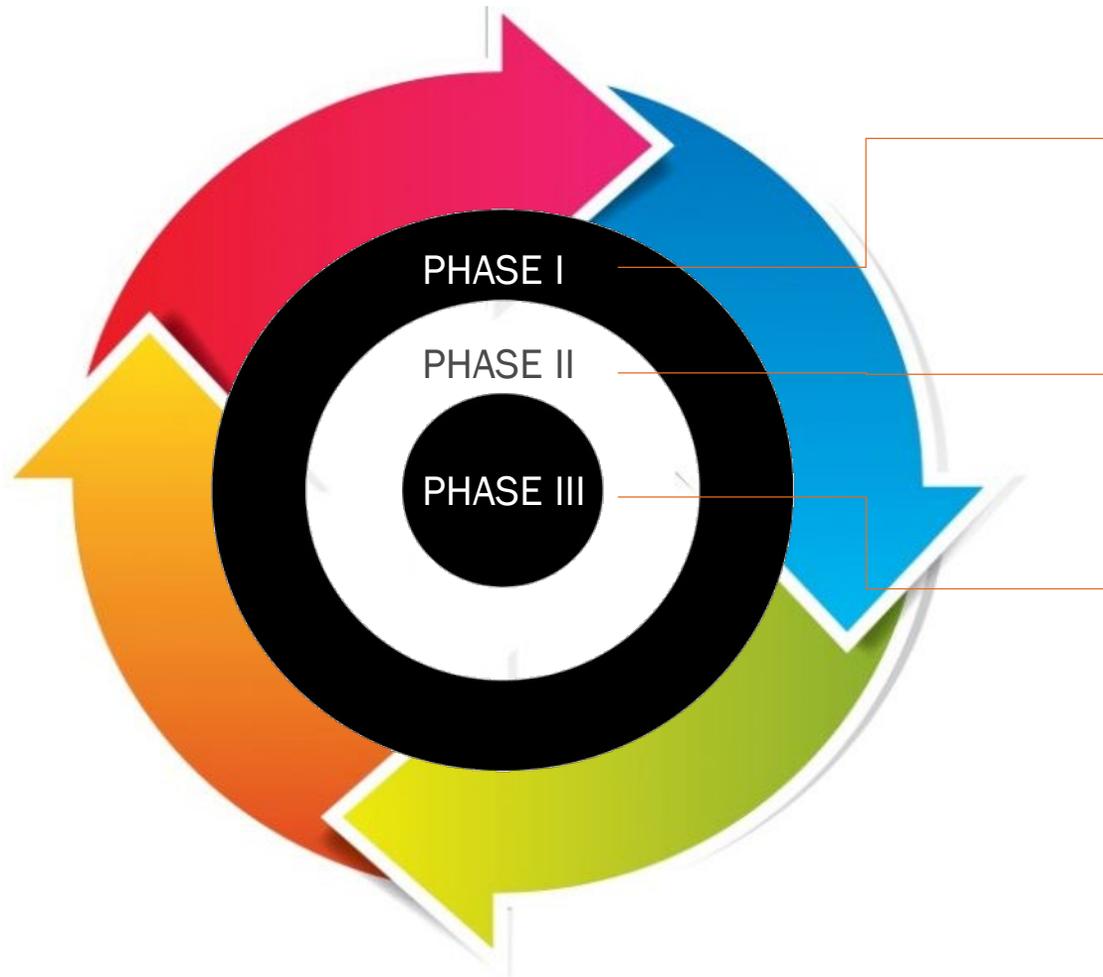
- Tree buffer around site



Stakeholder Outreach



A QUICK REVIEW OF OUR APPROACH



PHASE I -

(DELAYED SLIGHTLY DUE TO COVID-19)

Broad community listening & education
District-wide State of Utility (moved online)

PHASE II

Conversations and updates with potentially impacted areas as modeling continues

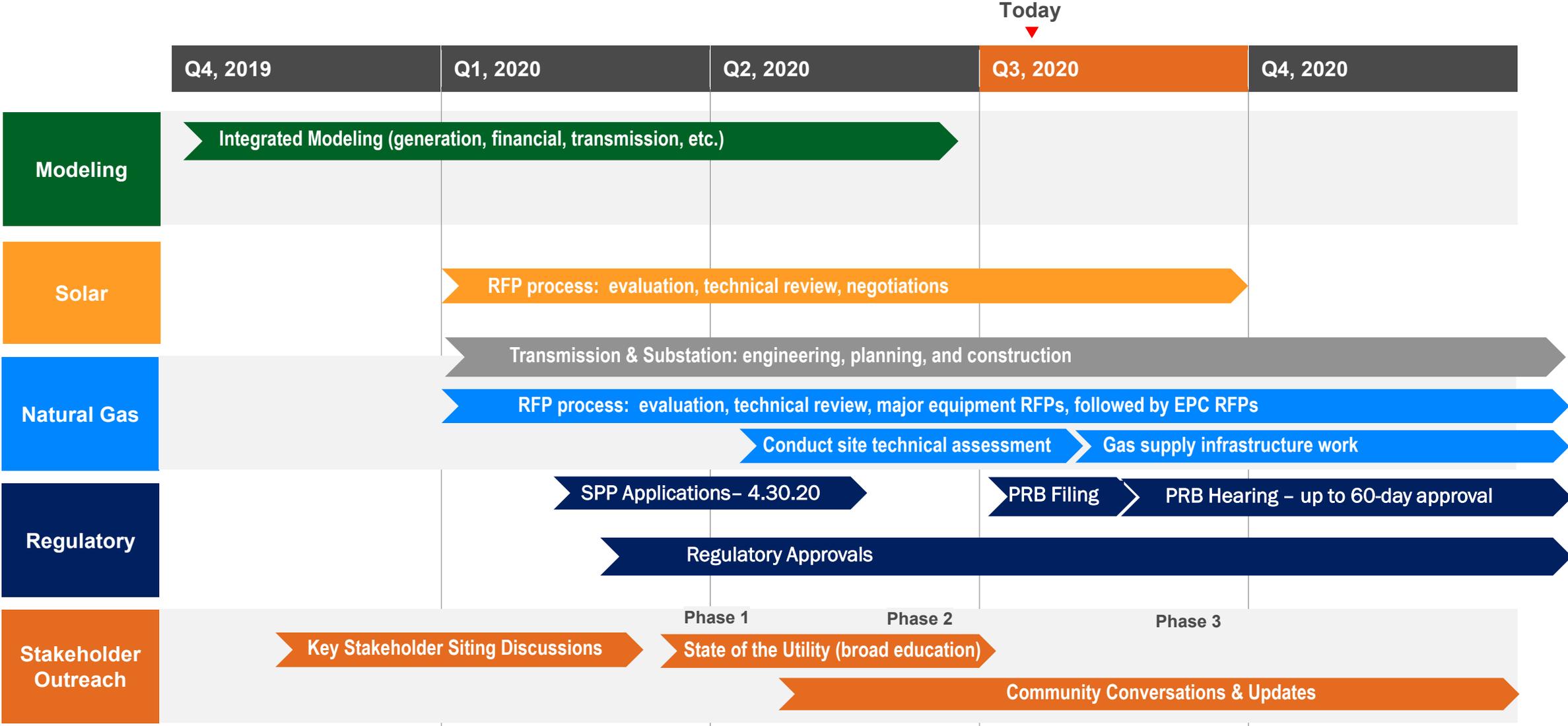
PHASE III

Engagement with those directly impacted, including community leaders

ONGOING

Outreach and communication to close the loop

Power with Purpose Timeline



EXECUTIVE SUMMARY

As Power with Purpose enters a new phase, OPPD will intensify its current communication and outreach efforts to achieve the following objectives:

- 1) Increase overall awareness of Power with Purpose across the service area, with a focus on those most impacted (messaging to include benefits of the plan and the need for both solar and natural gas)
- 2) Reinforce its core values of caring for one another, honoring our communities and a passion to serve
- 3) Deliver on Phase III of the current Power with Purpose outreach approach

With a strong, integrated effort across the district, and a commitment to the IAP2 methodology (inform), this effort will reinforce key messages: 1) Power with Purpose is the best way for us to serve our growing communities—it balances affordability, reliability/resiliency and environmental sensitivity 2) OPPD continues to lead, collaborate and innovate so our communities continue to thrive 3) The work we do today with Power with Purpose will serve us well in the future.

The team will use an integrated, multi-channel approach to accomplish these objectives.

WE CONTINUE TO USE AN INTEGRATED APPROACH TO KEEP EMPLOYEES AND STAKEHOLDERS UPDATED



Employees first

- Focus on leader communication
- Reinforce messages in videos, ON stories, all-employee town hall



Build broad awareness

- Use all available media to continue education about Power with Purpose
- Begin with digital and radio, continue conversation with out of home, print, the Wire, OPPD Community Connect and more



Connect 1:1 when possible

- Use multi-channel communication methods to inform and connect
- This will include continued community conversations, direct outreach to HOAs, influencers, etc. and dedicated public outreach meetings

KEY TACTICS INCLUDE:

- Employee town halls, videos, leader communication
- Digital, social, billboard and radio broad awareness campaign across service area
- Targeted social media and digital campaigns for those most likely impacted, as possible
- Updates on oppdcommunityconnect.com
- OPPD the Wire content, with outreach to media
- Direct mail and postcards to those living adjacent to sites
- Dedicated outreach meetings (Sept. 29-30)
- 1:1s with key stakeholders and elected officials
- Outreach to neighborhood associations
- Message to key stakeholders/interest groups
- Mapping of employees, retirees and influencers

Sample of Campaign/Awareness Items



We're planning for the future.



OPPD crews respond to windstorm challenge

A quality standard that OPPD crews are proud to maintain is the safety of the public. As part of our commitment to the community, OPPD crews respond to windstorm challenges by repairing and maintaining power lines and equipment. This ensures that our customers have reliable power when they need it most.

Power with Purpose

OPPD to bring Midwest's largest solar project to Nebraska

Our solar panels are made from high-quality materials and are designed to last for decades. They are also easy to install and maintain, making them a great choice for residential and commercial customers.

Outlets

OPPD is proud to offer a variety of outlets to our customers. Our outlets are made from high-quality materials and are designed to last for decades. They are also easy to install and maintain, making them a great choice for residential and commercial customers.

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meetings on:
Time
the meeting link at
yConnect.com
with your smartphone.

SCAN ME

OPPD
Omaha Public Power District

444 S. 16th St. Mail
Omaha, NE 68102-2247

POSTAGE
INDICIA

JOHN Q CUSTOMER
1234 APPLE LANE
OMAHA NE 68000-0000

Let's talk! We'd love to hear what matters most to you!

customer,

OPPD's mission is to provide affordable, reliable and environmentally sensitive energy services to customers. We also have a goal of net-zero carbon production by 2050.

Working toward that goal, OPPD is moving forward with our "Power with Purpose" project, which includes large-scale solar generation and backup natural gas. The project will also allow OPPD to retire three of its oldest coal-based generation units, and reduce overall carbon dioxide emissions by approximately 30%.

Why is OPPD doing this?

- Our communities are growing and we need to support the energy needs of a like you.
- Planning for growth also supports future economic development.
- Now is the time to add solar generation. Costs have fallen significantly. Specific plans on future solar investments are being developed.
- Our commitment is to always meet the energy needs of our customers as a great backup (when the sun isn't shining) only as needed, to help protect the environment.

Why is this important to you?

- OPPD plans to site a natural gas pipeline through the city of Omaha.
- As part of our public promise, we will be listening to you and your neighbors.
- This project will not affect your rates.
- We have decades of experience operating with cities to meet their standards.
- You have the satisfaction of knowing the project will be done right.
- You can have peace of mind knowing the project will be done right and ensuring the reliable and safe delivery of power to your home.

How can you learn more?

- Attend OPPD's online meeting on Wednesday, September 29th, 6-7pm for instructions on how to log in.
- Visit OPPDCommunityConnect.com to learn more, ask questions, and provide feedback and sign up for future meetings.

Thank you for hearing from you,

John Q Customer



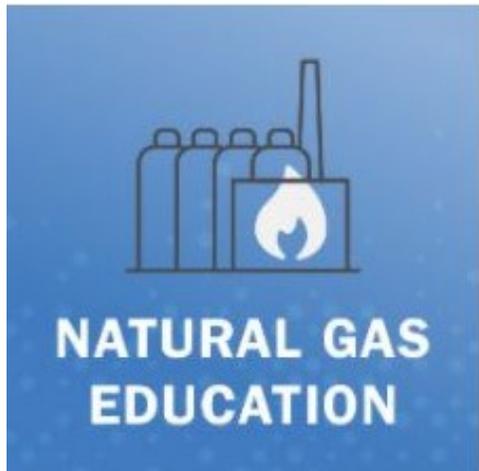
Virtual Public Information Meetings

168th & Fairview RD - Papillion
September 29th
6-7pm

120th & Military - Omaha
September 30th
6-7pm

More at
OPPDCommunityConnect.com

OPPDCommunityConnect.com



Current Conversations



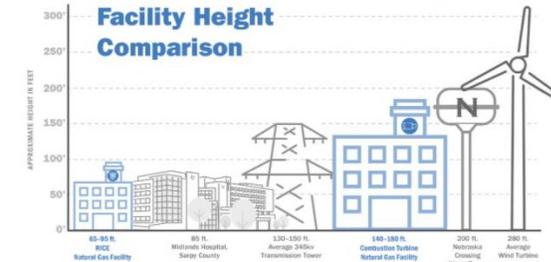
Solar + Natural Gas Backup

Power with Purpose, OPPD's utility-scale solar project, including natural gas backup, is the largest renewable investment of this type in the region.

[Read more](#)



This graphic shows the relative height of those facilities as compared to other well-known structures.



NEXT STEPS

- Launch stakeholder campaign, manage and measure
- Complete Nebraska Power Review Board Filing and Hearing
- Continue Solar Sourcing Activities
- Issue Natural Gas Equipment Asset RFPs
- Continue Natural Gas Fuel Supply Vendor Discussions
- Initiate Transmission and Substation Execution Phase
- Provide timely updates on progress