Steering Meeting #7:
Grid Modernization
PNM RFI Responses: Future Projects & Emerging Technologies

OCTOBER 17, 2022

DISCLOSURE REGARDING FORWARD LOOKING STATEMENTS

The information provided in this presentation contains scenario planning assumptions to assist in the Integrated Resource Plan public process and should not be considered statements of the company's actual plans. Any assumptions and projections contained in the presentation are subject to a variety of risks, uncertainties and other factors, most of which are beyond the company's control, and many of which could have a significant impact on the company's ultimate conclusions and plans. For further discussion of these and other important factors, please refer to reports filed with the Securities and Exchange Commission. The reports are available online at www.pnmresources.com.

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MEETING GROUND RULES

THE FOCUS OF THE MEETING IS THE DEVELOPMENT OF THE 2023 IRP

01

- Questions and comments are welcome – One Person Speaks at a Time

02

- Reminder; today's presentation is not PNM's plan or a financial forecast, it is an illustration of the IRP process

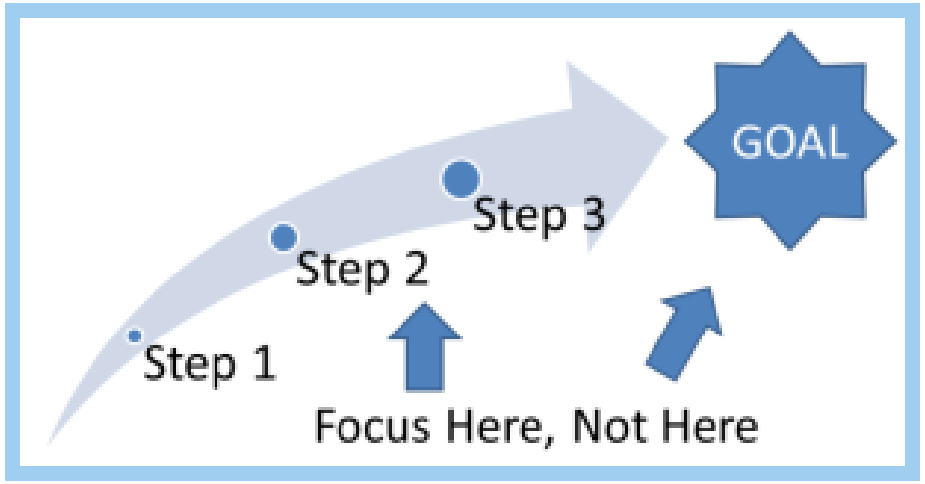
03

- When asking a question, please speak clearly and slowly as all questions will be logged and labeled with the person and organization responsible for asking the question

04

- These meetings are about the 2023 IRP, questions and comments should relate to this IRP. Any questions or comments related to other regulator proceedings should be directed towards the specific filing.

THE FOCUS OF THE MEETING IS THE DEVELOPMENT OF THE 2023 IRP



The technical sessions are about discussing the advantages and disadvantages regarding the application of different technical methodologies within the IRP modeling framework.

We are not here to focus on the results or drive towards a specific result. **We all know where we are going: 100% Carbon Free by 2040. The focus in the IRP development is how do we get there in the best way possible for PNM's customers and New Mexico.**

MEETING AGENDA

- Welcome and Introductions
- PNM Grid Modernization
    - Grid Mod filing
    - Future PNM
- Preliminary RFI Responses
    - Future resources
    - Emerging Technologies
- Next steps and Near-Term Schedule

OUR CUSTOMER FOCUS SETS US APART

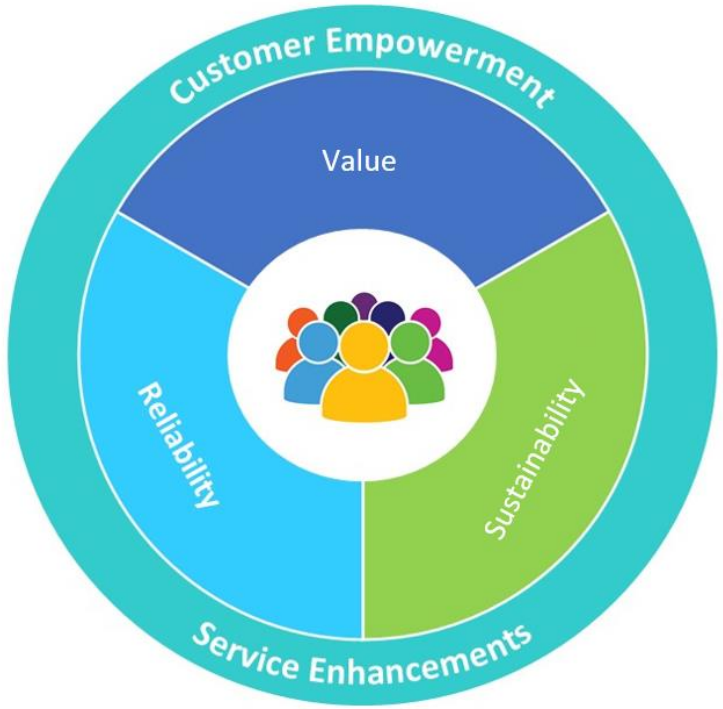
We have a Holistic Grid Mod Strategy Driven by Customer Need:

Customer Needs Driven Strategy

- **Value:** Addressing customer needs regarding service value (as opposed to "affordability")
- **Reliability:** Combined with resilience, #1 in customers surveys
- **Sustainability:** Enabling customer options for clean energy and electrification

These 3 needs translate into a set of grid mod objectives:

- **Customer Empowerment:** Enabling customers to manage their energy bill, make informed decisions on pricing, clean energy options and electrification, and provide relevant service information
- **Customer Service Enhancements:** Improving service quality and integration of distributed resources and electrification
- **Reliability Enhancements:** Improving the reliability and sustainability of a more heavily renewable portfolio



HOW DOES GRID MOD BENEFIT CUSTOMERS?

Customer Empowerment	
Customer Energy Management	Detailed usage and price information so customers have more control over when and how they use energy
Service Information	New billing and rate options, like time-of-day, pick-your-own-due-date, and bill alerts. Timely information about power service and status (i.e., outage restoration)

HOW DOES GRID MOD BENEFIT CUSTOMERS?

Customer Empowerment	
Distributed Energy Resources (DER)	Support customers' ability to install onsite renewable energy resources, energy storage, or battery back-up systems
Customer GHG Goals	Make it easier for customers to connect their renewable energy and reduce greenhouse gas emissions
Electrification	Be ready to meet the needs of more electric technologies on the grid, like electric vehicles, HVAC/refrigerated air, and heat pump water heaters

HOW DOES GRID MOD BENEFIT CUSTOMERS?

Service Enhancements	
Service Reliability	Better prevent outages, reduce outage duration, and more-rapidly restore outages when they happen
Service Resilience	Enhance ability to protect against and recover from high impact natural disasters and cyber-terrorism
Safety, Service Quality & Efficiency	Ensure service safety and power quality meets performance standards

DISTRIBUTION SYSTEM UPGRADES

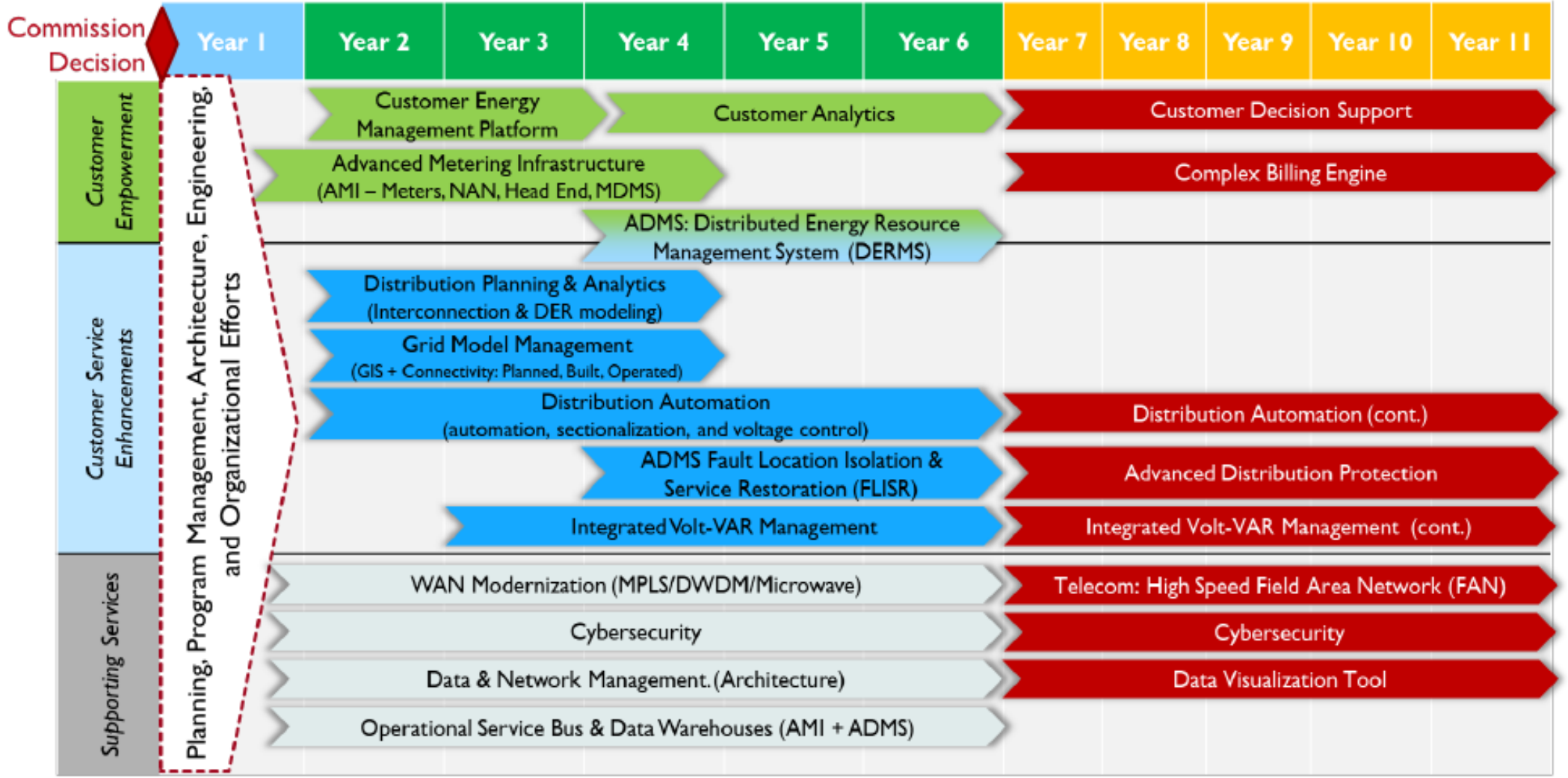
Distribution upgrades in PNM's grid modernization plan will transition the Company's largely aging system into a more advanced digitalized and flexible system commensurate with customer needs and expectations today and into the future.

The specific objectives, include:

- Distributed Energy Resource Adoption
- Reliability
- Resilience
- Decarbonization
- Cost-Effective Deployment

These objectives track the concerns customers highlighted in their feedback.

HIGH-LEVEL GRID MODERNIZATION PLAN



REQUEST FOR INFORMATION SOLICITATION

- The 2023 IRP modeling will be centered around exploring technology options that enable a carbon-free grid by 2040 – analysis will seek to identify trends given system operational needs and how these align with available and emerging technologies
- In July PNM issued two RFIs requesting proposals for technologies to be considered for modeling in PNM's 2023 IRP
    1. Future Resources – projects with a longer development lead-time that could bridge the gap between near-term RFP responses and post 2030 emerging technologies; these projects have an approximate timeframe of 2025-2030
    2. Emerging Technologies – Technologies that meet PNM's decarbonization goal and that can be fully implemented after 2030 and beyond
- The solicitation concluded on Sept 15, and PNM received approximately 26 proposals
- The following presents a high-level description of each RFI response

RFI DISCLAIMER

The information contained on proposal slides are based on the submittals received or claims made by the developer. The information contained on these slides are for informational purposes only and should not be considered an endorsement or statement of position by PNM and is not intended to reflect the views, positions or responses of PNM. PNM retains the right to determine if the claims are within the scope of RFI and relevant to PNM's IRP. PNM is still undergoing its analysis of these proposals and has not vetted all claims or benefits. Final determination regarding which proposals will be included in the IRP will occur when PNM has concluded its analysis.

RFI RESPONSES – RESOURCES

16 responses from 15 developers

- Aequatis, LLC
- Black Forest Partners
- CSOL Power LLC
- EDF Renewables
- Engie Renewables
- Escalante H2 Power LLC
- Grid United LLC
- K-TEK International
- Kinetic Power
- Morse Associates, Inc.
- Plus Power, LLC
- ReneSola Power
- rPlus Hydro LLP
- Uplight Inc
- Wallis Energy Corporation

Resources Types

- Concentrated solar power
- Demand response software
- Parts fabrication and services
- Pumped hydro storage
- Solar + battery hybrid
- Thermal energy storage
- Transmission

BLACK FOREST PARTNERS

Technology Type: Transmission

Description: Double circuit high voltage transmission line connecting southern NM to Southern AZ

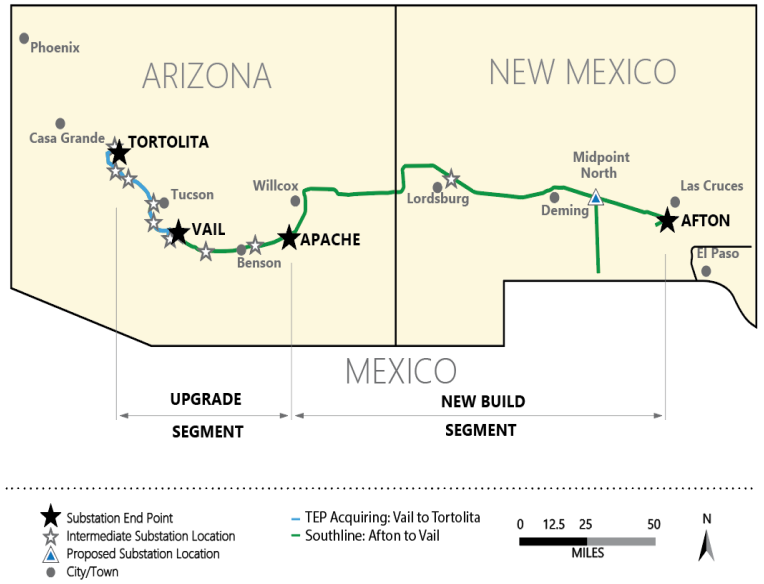
Project development status: development ongoing

Details:

- New 345kV bidirectional transmission line from Afton, NM to Tucson, AZ
- Fully permitted with estimated operational date Q4 2027
- Two sections:
  - 240 miles new 345 kV double circuit transmission lines between Afton and Apache substation
  - 120 miles transmission upgrades to 230 kV double circuit lines between Apache and Tortolita substations

Provides:

- Access to high quality renewable projects
- Improves connections for EIM
- Connects PNM southern resources to 4C
- Expands PNM access to long term corridor



Source: www.southlinetransmissionproject.com

CSOL LLC

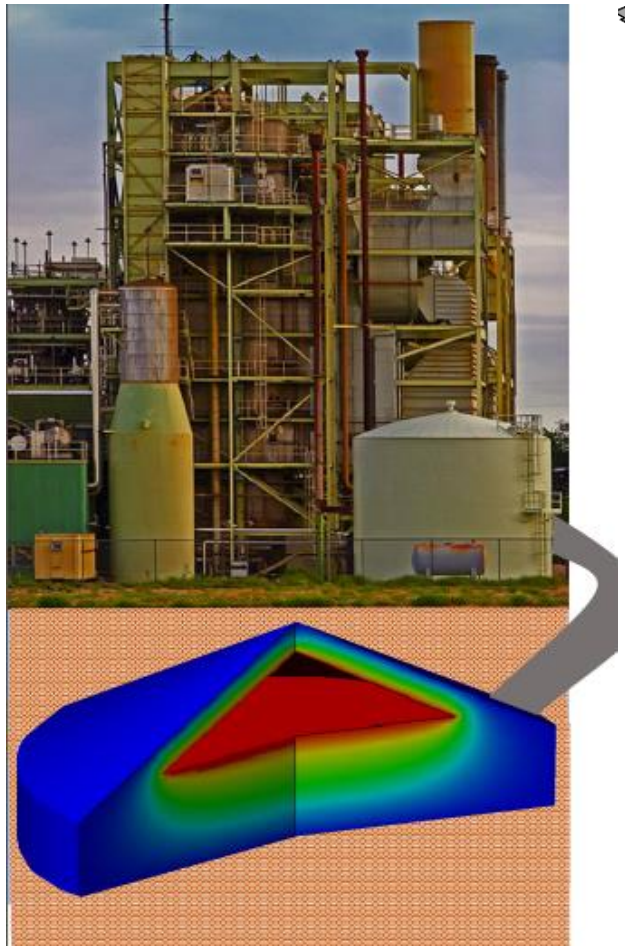
Technology Type: Thermal Storage

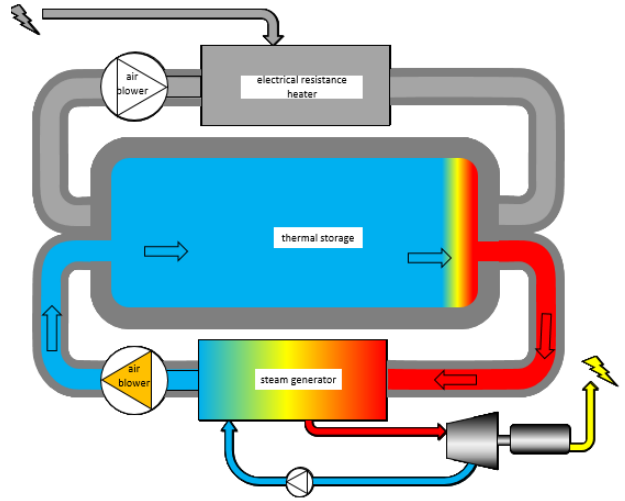
Description: Underground thermal storage that stores a high temperature (650 C) using geomaterials (such as basalt and quartzite gravel, or fabricated refractory materials); facility will use blown air to transfer heat to steam generator for use in a pre-existing steam turbine

Technology Readiness: proven, though this particular design has not been implemented

Benefits:

- No emissions
- Developer claims it is more efficient that battery storage
- Repurposes fossil fuel power plants for generating power
- Can provide steam for industrial process/residential heating applications depending on where it is sited
- Doesn't require additional transmission infrastructure





Source: www.csolpower.com

EDF RENEWABLES (I)

Technology Type: Solar/Energy Storage

Description: three new large scale solar hybrid/battery projects located in southwestern US

Project development status: development ongoing

Details:

Project 1 – 200 MW solar/200 MW Battery energy Storage
- Sited in McKinley County, NM
- Estimated COD Q4 2026

Project 2 – 500 MW/500 MW Battery energy Storage
- Greenfield site in southern NM, Hildalgo County
- Estimated COD Q4 2027

Project 3 – 500 MW Solar
- Sited in Apache County, AZ; phased project
- COD: Phase I Q4 2024; Phase II Q4 2026

Maverick 6 &7 under construction *Source: EDF Renewables*

EDF RENEWABLES (II)

Technology Type: Solar PV

Description: new solar facility located in Albuquerque

Project development status: development ongoing

Details:

- 50 MW Solar PV facility
- Expected COD Q4 2025
- Sited in Bernalillo County
- Greenfield site

ENGIE

Project: Solar PV/Battery Storage

Technology Type: Solar/Energy Storage

Description: three new large scale solar hybrid/battery projects

Project development status: development ongoing

Details:

- Large-scale projects (200+ MW)
- Estimated COD in the targeted RFI timeframes

GRID UNITED LLC

Technology Type: Transmission intertie

Description: high voltage direct current transmission line

Project development status: expected COD in targeted timeframe; HVDC systems represent a relatively mature technology that have been successfully deployed around the world

Details:

- Fully controllable bi-directional resource

Benefits:

- Access to diverse renewable resources outside southwest region
- Increased interregional reserve capacity, reliability

DC transmission facilities in the US (various owners/operators)
Source: Grid United

K-TEK INTERNATIONAL

Technology Type: Parts fabrication, service provider

Description: K-Tek is a single point of contact for field service and engineering services, and a range of product supply capabilities including HRSG/boiler pressure and non-pressure parts, burners, igniters, flame scanners, controls, valves, pumps, fans, blowers, NOx catalysts, etc.

Project development status: N/A

Details: Marketing products and brochures

Benefits:

- Complete HRSG supply chain network with decades of fabrication experience and global supply record
- Applied Mechanics unit staff comprised of licensed P.E.s
- Offices in US and Korea – open 24/7

KINETIC POWER

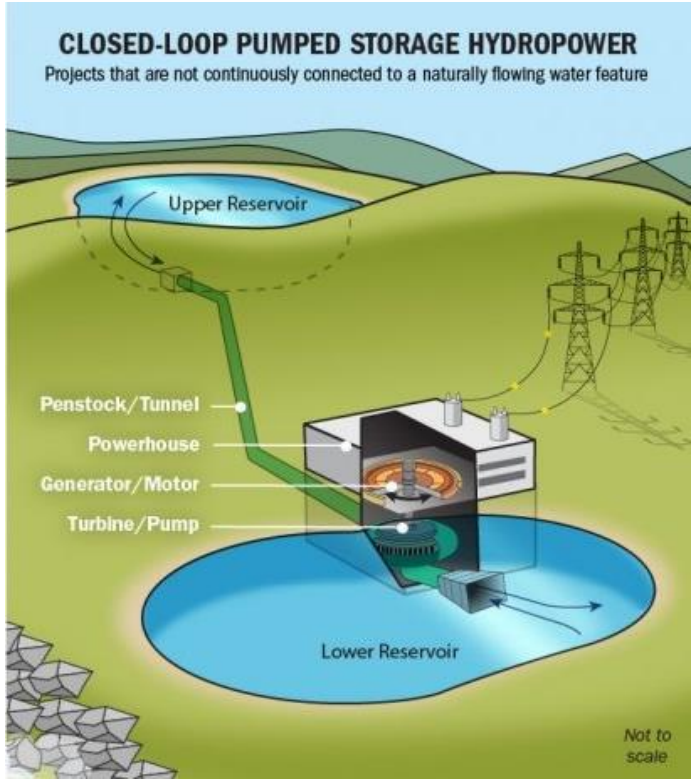
Technology Type: Pumped Hydro Storage

Description: new pumped storage project near the Four Corners

Project development status: development ongoing

Details:

- Sized at 1,500 MW with 70 hours of duration



Source: www.energy.gov

MORSE ASSOCIATES, INC.

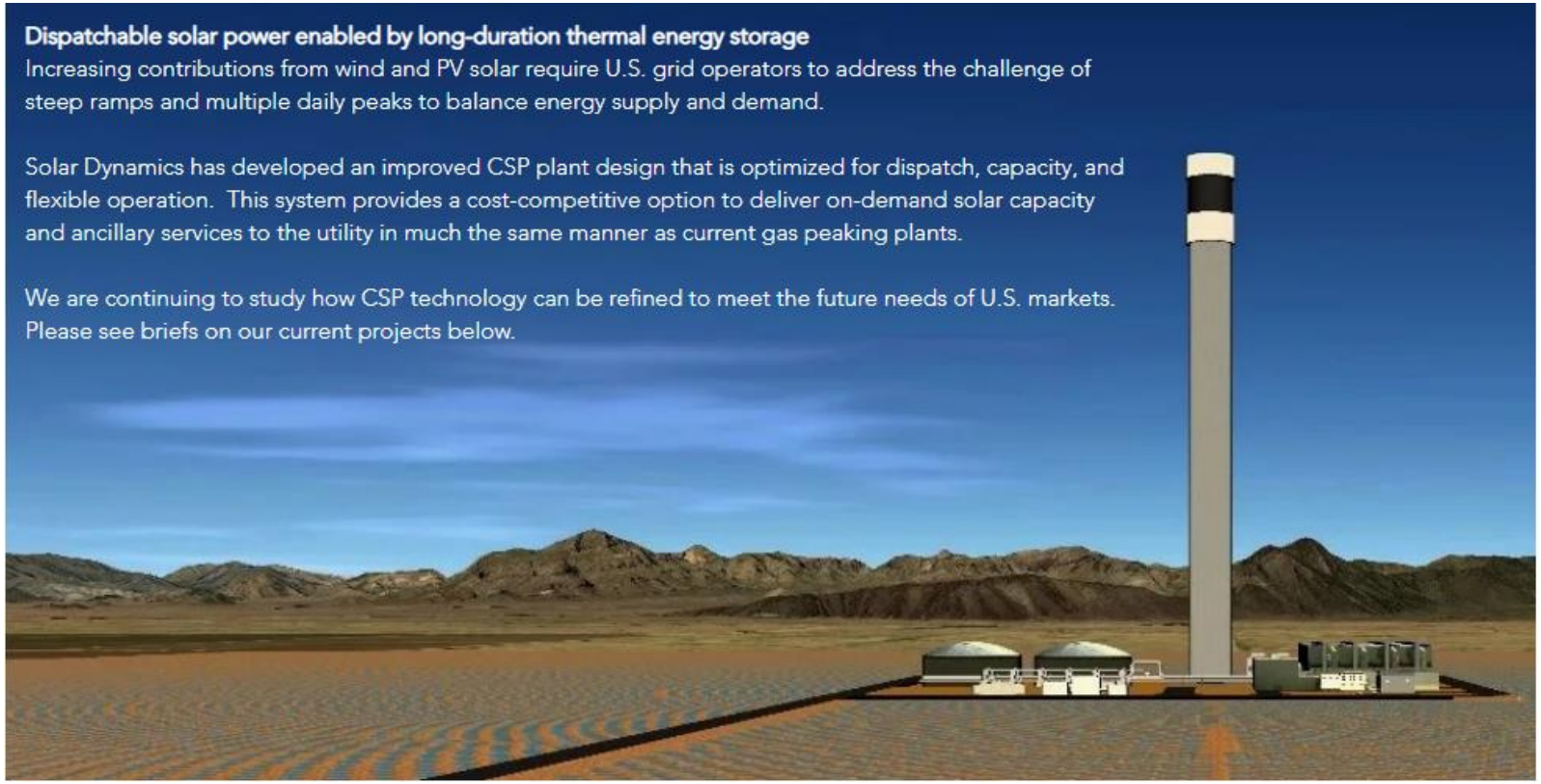
Technology Type: Concentrated Solar Power molten-salt tower with thermal energy storage

Description: 90-180 MW, depending on configuration

Project development status: operations expected to begin in 2028; concentrated solar power utilizing molten salt thermal storage is a commercially available technology

Details:

- 12-16 hours of energy storage possible
- No cycling limits



Source: Solar Dynamics, LLC (https://www.solardynllc.com/csp-plant-technologies)

RENESOLA POWER HOLDINGS, LLC

Technology Type: Photovoltaic solar energy-based electricity generating facility

Description: utility-scale generating capability from solar array and battery storage

Project development status: development ongoing

Details:

- Solar energy used in part to charge batteries with remainder delivered to grid
- Expected COD prior to targeted RFI timeframe

ReneSolar selected US projects
Source: www.renesolapower.com

RPLUS HYDRO, LLC/RPLUS ENERGIES, LLC

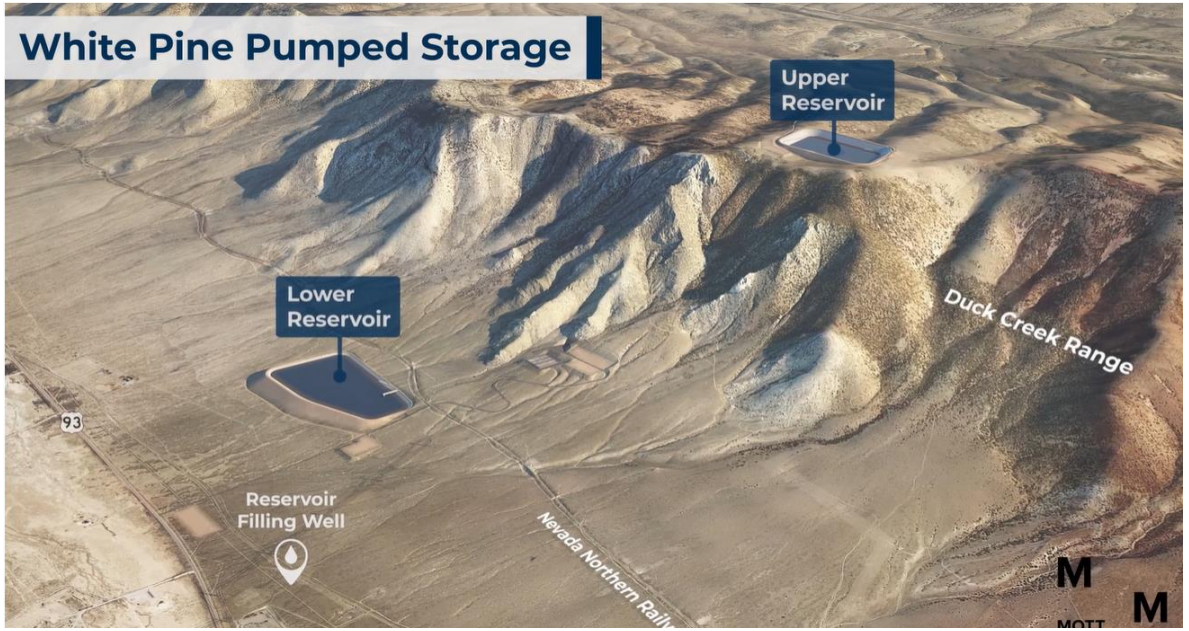
Technology Type: Pumped Hydroelectric Energy Storage

Description: A 600 MW closed-loop pumped hydroelectric storage facility

Project development: expected commissioning in 2030

Details:

- Located in San Juan County, NM
- Well-known and widely used technology



White Pine Pumped Storage project near Ely, Nevada (project still in development)
Source: RplusHydro (https://www.whitepinepumpedstorage.com/)

UPLIGHT INC

Technology Type: Software solutions/platform designed to achieve greater load flexibility

Description: Provides DR, energy efficiency, and active TOU rate management, and includes tools for both residential demand and EV load shifting

Project development status: actively deployed technology

Benefits:

- Greater load flexibility and DER management
- Programs can be simple or complex; programs are stackable

Source: Uplight Inc.
(https://uplight.com/solutions/digital-customer-activation/)
(https://uplight.com/solutions/electric-vehicle-adoption-and-experience/)

WALLIS ENERGY CORPORATION

Technology Type: Pumped Hydroelectric Energy Storage

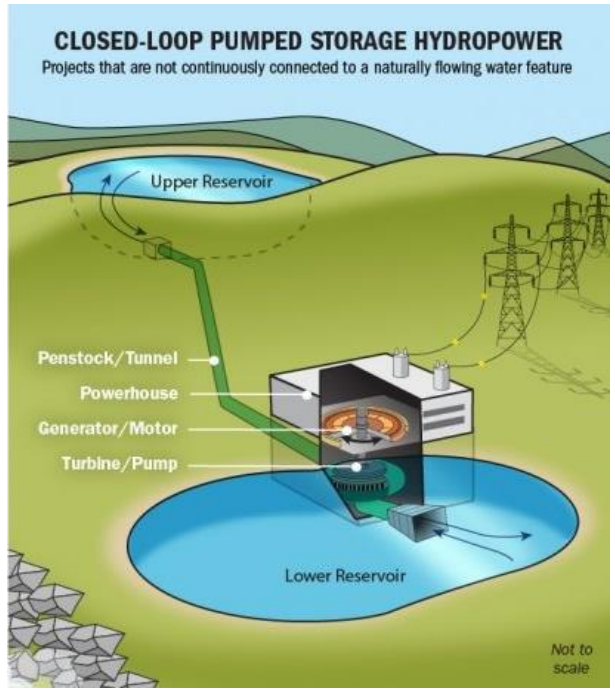
Description: A 600 MW project with 12+ hours of duration

Project development status: project currently in early development with earliest COD in 2028; well-known and widely used technology

Details:

- Located in Arizona and New Mexico on tribal land (Navajo Nation)
- POI at Shiprock, San Jose or Four Corners
- For 12-hour duration: 100 acres needed (increases with storage duration)
- At least one reservoir will be covered to reduce evaporation
- RTE of 80%

WALLIS ENERGY, INC.
Oil & Gas Exploration & Production



Source: www.energy.gov

RFI RESPONSES – EMERGING TECHNOLOGIES

10 Emerging Technologies from 10 developers

- Coyote Clean Power
- CSOL
- EDF Renewables
- Escalante H2 Power LLC
- Form Energy
- Mainspring
- Morse Associates, Inc.
- Motor EV LLC
- NextEra 360
- Wallis Energy Corp

Technology Types

- EV subscription service
- Hydrogen as fuel
- Geothermal steam service
- Green hydrogen as energy storage/fuel
- Iron air storage
- Linear generator
- Operations software
- Thermal generation with carbon capture

AEQUATIS ENERGY SOLUTIONS

Technology: H2 Storage Project

Technology Type: Fuel

Description: create hydrogen using excess renewable energy

Readiness: unclear

Details:

- Minimal information provided

COYOTE CLEAN POWER

Technology: NET Power Plant

Technology Type: Thermal Resource

Description: A 280 MW combined cycle plant utilizing advanced/norel supercritical CO2 power cycle. The design is based on the NET power system, which combusts fuel with oxygen and uses supercritical CO2 as a working fluid to drive a turbine (instead of steam).

Technology readiness: proven at small scale

Benefits:

- Provides firm, dispatchable capacity and energy
- Uses proprietary Allam-Fetvedt process that recycles CO2 as a working fluid and captures excess as pipeline- quality CO2
- Brownfield site on Southern Ute Indian Reservation using pre-existing mothballed equipment
- No NOx, SOx, VOC or particulate emissions
- Water-neutral

NETPOWER

NET Power Facility Operating in La Porte Texas
Source: www.netpower.com

EDF RENEWABLE

Technology: Hydrogen Production

Technology Type: Fuel

Description: Green H2 production for PNM's fossil fired generating stations

Technology Readiness:

Benefits:

- May decrease the need for large scale storage
- Will aid PNM in meeting carbon free goal while reducing the need for new transmission

Luna Energy Facility

ESCALANTE H2 POWER LLC

Technology: Hydrogen fueled power production

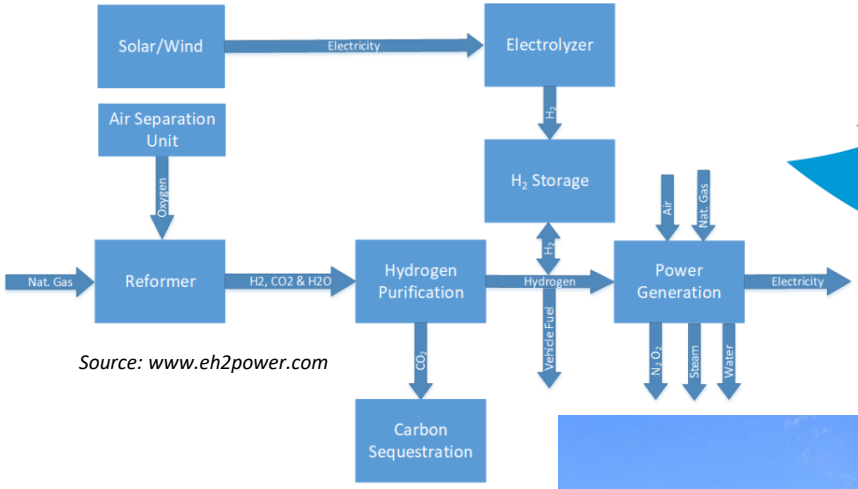
Technology Type: Fuel

Description: Proposes retrofit of Escalante Generating Station to use blue/green hydrogen

Technology Readiness: blue hydrogen commercial

Benefits:

- Utilizes carbon-capture technology for blue hydrogen production; uses renewables to produce green hydrogen
- Repurposes existing fossil fired generator
- Supports local economies – sited in Prewitt, NM
- Can use both natural gas or H2 as fuel



Source: www.eh2power.com

Escalante Generating Station

Source: www.gallupedc.com

FORM ENERGY

Technology: Steady State Iron-Air Storage

Technology Type: Energy Storage

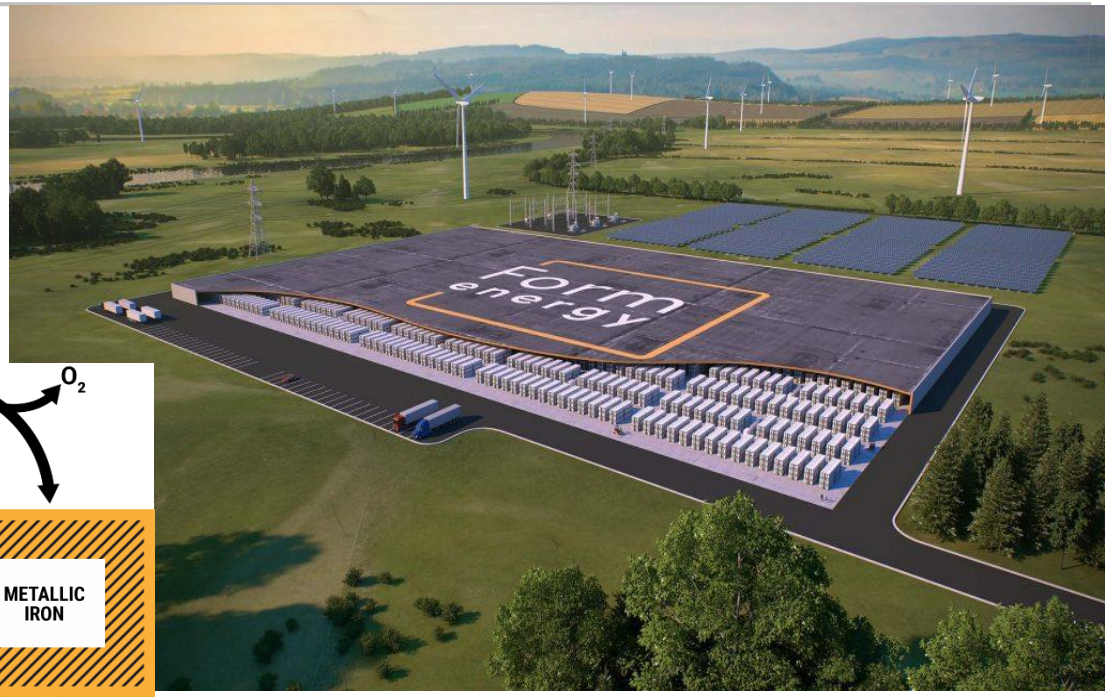
Description: energy storage using reversible rusting process

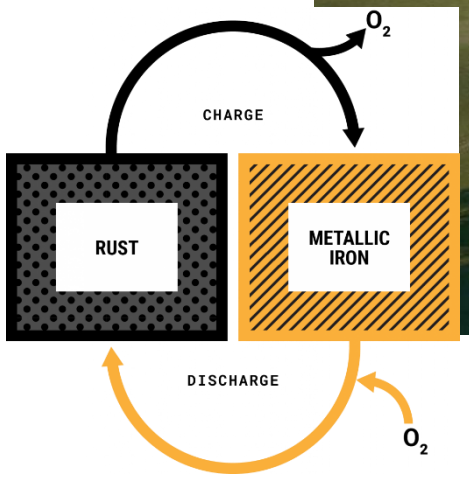
- When discharging, battery cycle breathes in oxygen from air to convert iron metal to rust
- When charging, the process is reserved when an electrical current converts the rust back to iron

Technology readiness: commercialized at small scale, large scale unproven

Benefits:

- Firms renewable resources and reduces curtailment
- Modular, scalable, reliable and clean
- Long duration storage
- Complimentary to lithium-ion battery storage





Source: www.formenergy.com

PLUS POWER, LLC

Technology Type: Steady-state Iron-air Energy Storage

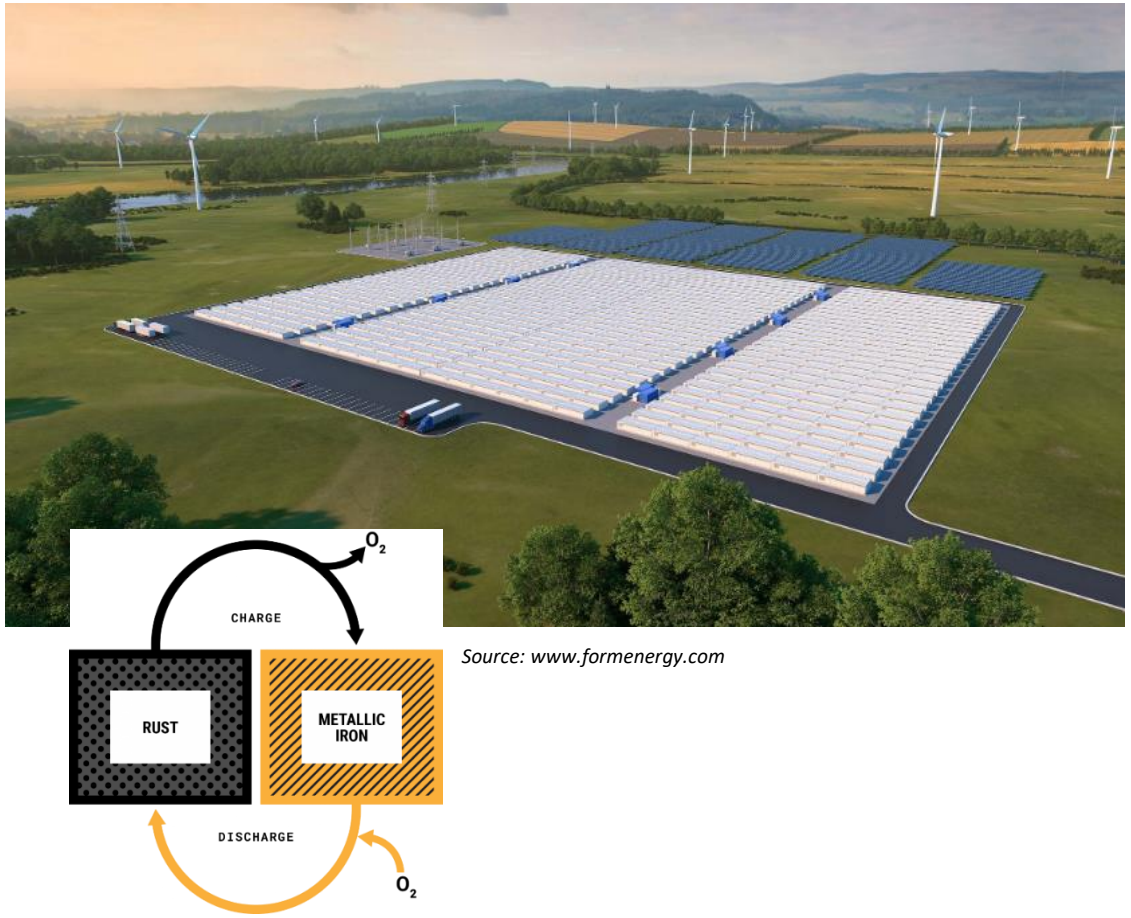
Description: energy storage using reversible rusting process

- When discharging, battery cycle breathes in oxygen from air to convert iron metal to rust
- When charging, the process is reserved when an electrical current converts the rust back to iron

Project development status: small scale proven

Details:

- Uses equipment/technology delivered by Form Energy
- Modular and scalable
- Can reduce renewable generation curtailment and firm variable renewable generation over days (100 hours of storage capability)



Source: www.formenergy.com

MAINSPRING ENERGY

Technology Name: Linear Generator Units

Technology Type: Thermal Resource

Description: Generator units that uses low temperature reaction of air and fuel to drive magnets through copper coils to efficiently produce energy

Technology readiness: commercialized at small scale, no large-scale installations at this point

Benefits:

- Near zero NOx emissions
- Fully dispatchable
- Fuel flexibility: allows seamless witch between natural gas, biogas, hydrogen & other fuels
- Modular – installed in 250 kW increments
- Majority of equipment can be repurposed at end of life
- Can be used to firm renewable energy similar to battery storage
- Can provide ancillary services
- Suitable to local applications reducing the need for transmission

Source: www.mainspringenergy.com

MOTOR EV LLC

Technology Name: Motor Drive/Motor Up Program

Technology Type: Service

Description: Consumer electric vehicle adoption platform designed to improve EV adoption rates; can implement utility-preferred EV rate or managed charging programs

Technology readiness: commercially available; AES Indiana has partnered with Motor

Program Details:

Motor Drive: bundled EV subscription service, with a low-commitment flat monthly fee includes:

- Electric Vehicle (priced by tier)
- Insurance, maintenance, and registration
- Roadside assistance and concierge services
- In-home Level 2 charger and installation (additional costs may apply)
- In addition to the vehicles, Motor handles all administrative components

Motor Up: digital EV purchase platform with bundled EV services

- Digital purchase experience, option to bundle additional services such as home charger installation and EV program enrollment to reduce the complexity of the EV purchase process
- Enables utility customers the ability to browse and purchase EV inventory available at Motor's local partner dealers

NEXTERA 360

Technology: NextEra 360 Software

Technology Type: Service

Description: software designed to forecast and model market conditions, predict and optimize asset performance to make utility operations more efficient

Technology readiness: implemented

Software details:

- Helps a utility analyze, plan, optimize solutions for decarbonization goals
- Can track/forecast energy, carbon emissions for sustainability goals, optimize asset performance, automate dispatch strategies

Source: https://www.nexteraenergyresources.com/nextera360/solutions.html

WALLIS ENERGY CORPORATION

Technology: Geothermal steam service

Technology Type: Fuel

Description: uses new drilling techniques to provide steam for use in:

a) existing coal or other steam electric plants or

b) a tolling agreement to provide steam or

c) the purchase of existing assets to sell power to PNM using steam produced through these methods

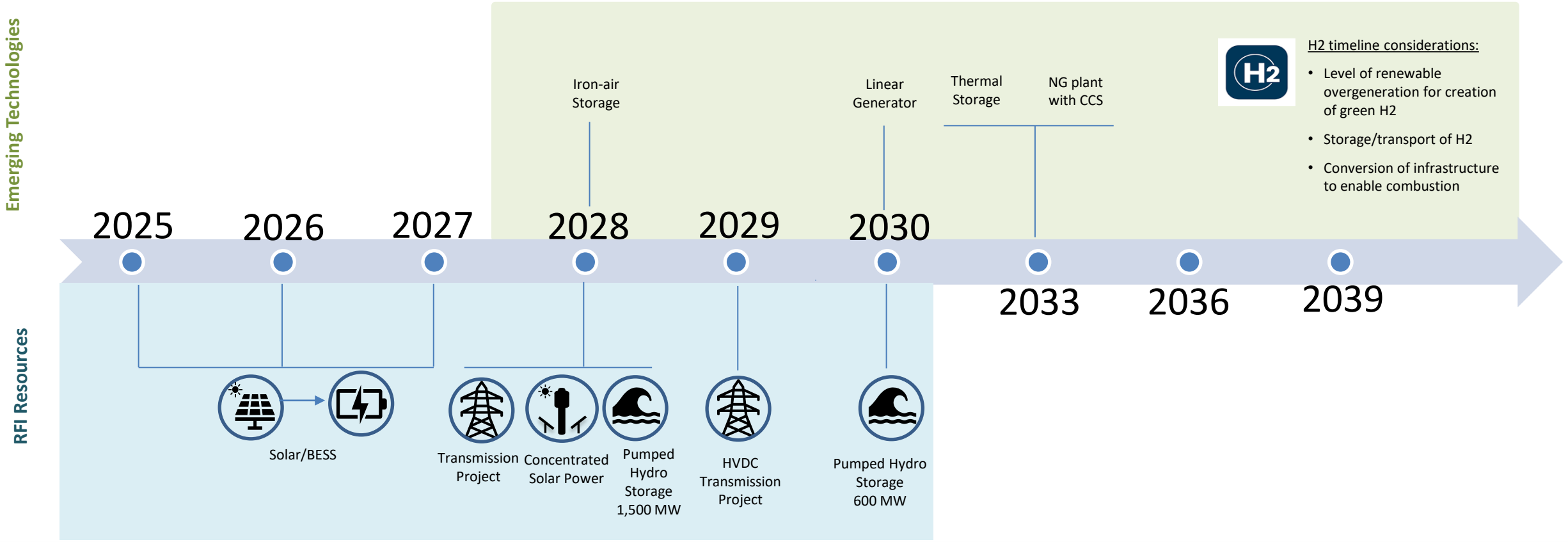
Technology readiness: developer reports TRL 6-7

Benefits:

- Will reduce waste streams through use of naturally occurring geothermal energy
- Closed loop system
- Repurposes existing fossil fuel generating stations

RFI RESPONSES SUMMARY: RESOURCES FOR 2028-2033

TIMELINE FOR POTENTIAL OPERATION



SUMMARY

DUE DILIGENCE ON RFI RESPONSES IS ONGOING

- We don’t yet have a conclusion about which technologies will be modeled and how they best fit in to the IRP analysis framework and timeline
- We are still analyzing responses, reaching out to developers for more information, and obtaining input from PNM Generation and Transmission teams and industry experts
- Through these efforts and our ongoing analysis, we aim to build a better understanding of:
    - Timeline for potential operation of these resources
    - More about feasibility/evolution of emerging technologies
    - Transmission implications
- To the extent that responses from earlier RFIs might inform the 2023 IRP analysis, we will evaluate those as well
- Results of our RFI response analysis will be presented to the Stakeholder group – please stay tuned for updates on this

NEAR TERM SCHEDULE

FUTURE MEETING TIME & LOCATION

When: November 2, 2022

Topic: Public Advisory Steering Meeting #8: Commodity & Pricing Forecasts

Start Time: 9:00 AM

Location: Virtual

PNM will continue to hold virtual meetings. If there is strong interest to resume in person meetings for future sessions, please email us at IRP@pnm.com. We will continue to notify everyone through the email service list regarding upcoming meeting dates, topics and locations (virtual or in person).

NEAR TERM SCHEDULE

FUTURE MEETING TIME & LOCATION

When: November 16, 2022

Topic: Public Advisory Steering Meeting #9: Modeling Input #3: Load Forecasting, PV DG Forecast, EE Bundles & PNM Existing System

Start Time: 9:00 AM

Location: Virtual

PNM will continue to hold virtual meetings. If there is strong interest to resume in person meetings for future sessions, please email us at IRP@pnm.com. We will continue to notify everyone through the email service list regarding upcoming meeting dates, topics and locations (virtual or in person).

NEXT MEETING

We encourage you to send in your thoughts ahead of time to IRP@pnm.com so that we can summarize them and distribute them for the next meeting. Please have your submissions in by October 28, 2022.

MAKE SURE WE HAVE UP TO DATE CONTACT INFORMATION FOR YOU

www.pnm.com/irp for documents

IRP@pnm.com for e-mails

Register your email on sign-in sheets to receive alerts of upcoming meetings and notices that we have posted to the website.

Thank you