



Platte River
Power Authority

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IRP work session

Kickoff – Chair Wade Troxell

- Following the August board meeting chair and vice chair met with the CEO to discuss the next steps regarding the IRP
- Decision was made to have an in-person work session following the Sept. board meeting facilitated by Tim Blodgett of Hometown Connections
- Tim contacted all board members to get thoughts and questions on IRP
- Work session for board to get more information, ask questions, collaborate and level set on IRP
- At the end of the work session – give direction to CEO regarding IRP next steps

Agenda

- Kick off – Tim Blodgett
 - Summary of board conversations
 - Board expectations
- IRP overview – Andy Butcher
- Portfolio 2 (P2) vs. portfolio 3 (P3) – Andy Butcher and Dave Smalley
- Community survey results – Alyssa Clemens Roberts
- Resource Diversification Policy – Tim Blodgett
- Staff recommendation – Jason Frisbie
- Proposed resolution content – Sarah Leonard
- Board deliberation – Tim Blodgett
- Next steps – Jason Frisbie

Overall summary of board discussion

- Confusion exists on IRP purpose, process and Platte River's commitment
- Prefer more direct side by side comparison of P2 and P3
- Clarity on purpose and timing of RICE units
- Believe consensus can be reached on P2, with a resolution stating:
 - Platte River continues to be committed to goal of 100% noncarbon energy by 2030
 - Platte River is not taking action or committing to RICE units in P2

Board expectations on IRP work session

- More time for board discussion
- Some are ready to move forward with P2
- Consensus gained on how to be responsible to Northern Colorado customers
- Clarification on intent of more renewables, frequency of IRP and on need and timing of RICE units

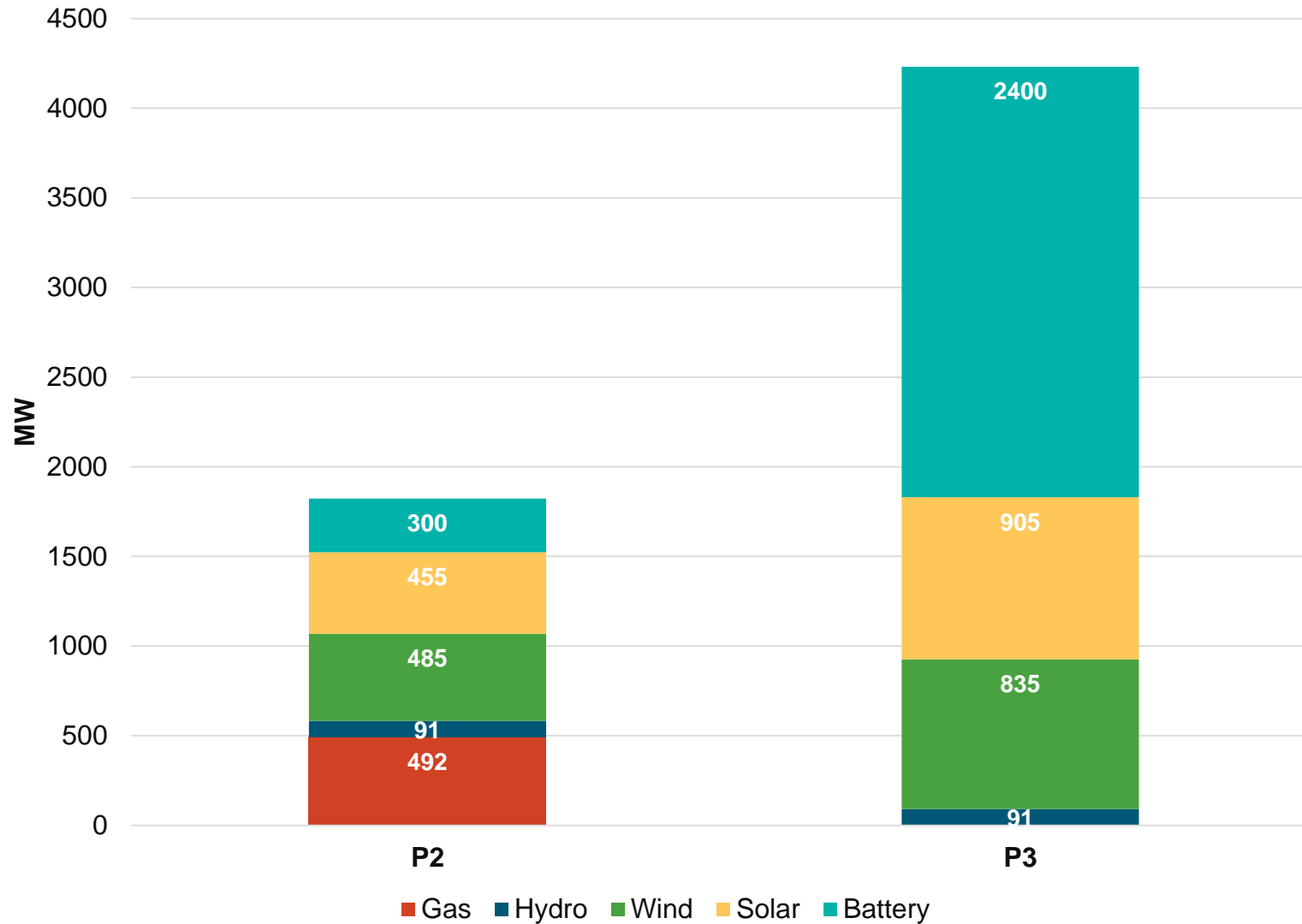
IRP overview

- WAPA requires a submittal of formal IRP every five years to receive federal hydro allocations
 - Must include action plan
 - Typically includes modeling out to 20 years
- Developed in alignment with Resource Diversification Policy
- A “snapshot,” may not represent exact path the future dictates
- IRP: predictive plan based on current technology, system capabilities
- Platte River continually performs resource modeling outside of IRP process

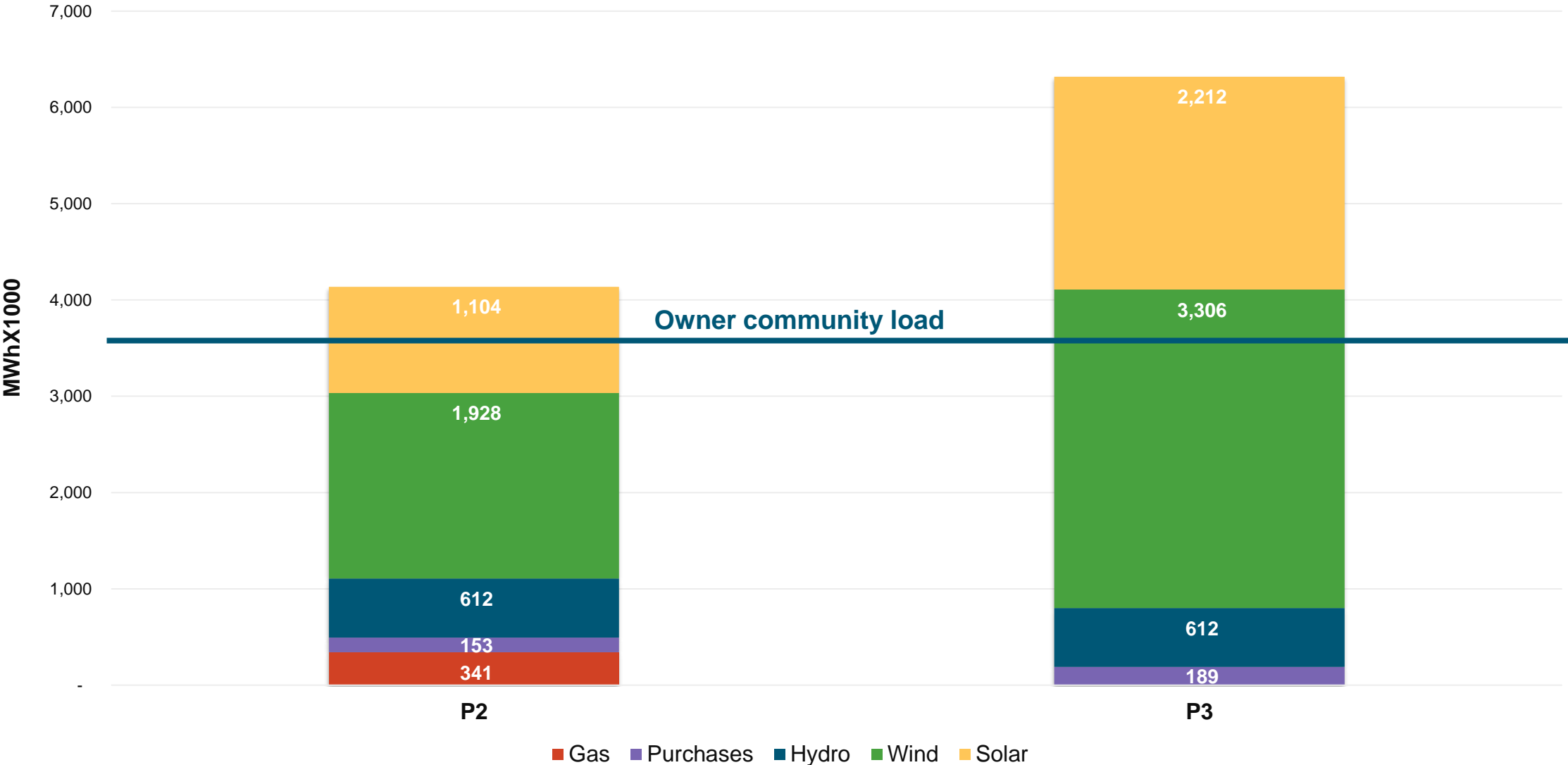


P2 vs. P3

2030 P2 v P3 nameplate capacity

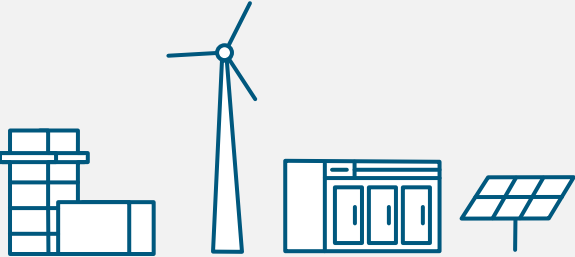



2030 P2 v P3 energy generated



Summary

Based on 2020 technology

Portfolio	Summary
<p data-bbox="224 535 489 578">P2: zero coal</p> 	<ul data-bbox="917 514 1987 906" style="list-style-type: none">• All coal retires by 2030• Adds substantial renewables and batteries• Significant excess renewable energy sales risk• Adds RICE to maintain system reliability• 90%+ CO₂ reduction by 2030• 29% rate increase through 2030• Allows for technology maturation before RICE needed
<p data-bbox="224 959 540 1002">P3: zero carbon</p> 	<ul data-bbox="917 942 2051 1278" style="list-style-type: none">• All thermal generation retires by 2030• Adds three times the P2 renewables and battery capacity• Reliability risk• Triples the excess energy sales risk from P2• 100% CO₂ reduction by 2030• 130% rate increase through 2030

Why P2 selects RICE

Cost effective

Capital

- 104 MW of RICE \$162 million
- P3 adds additional 2100 MW batteries for \$1.83 billion

Operating (fixed, variable, fuel)

Reliable

Proven commercial technology

Flexible

- Complements variability of renewables with quick response
- Used only when needed
- Minimum time running after starting
- Potential to run on multiple fuels

Scalable

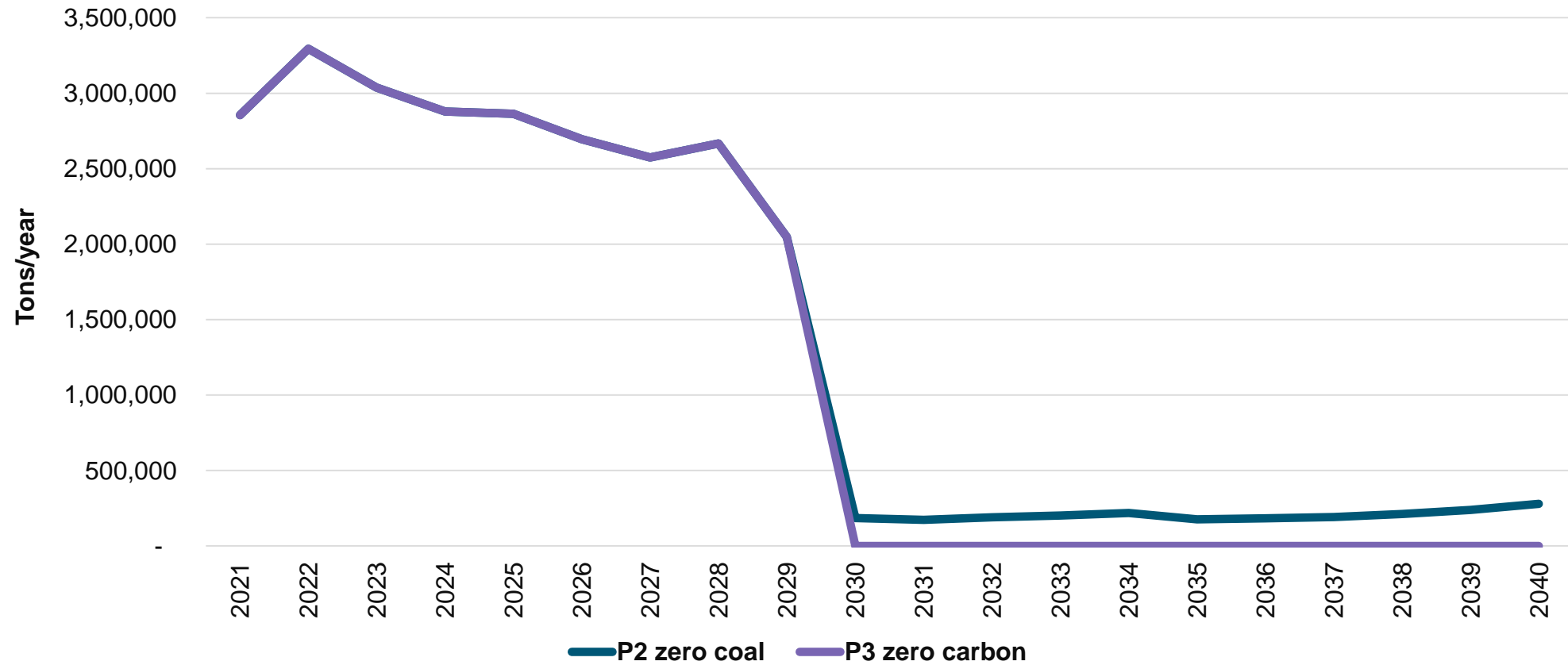
- Add units in small increments
- Adds only if and what's needed



P2 vs. P3 emissions

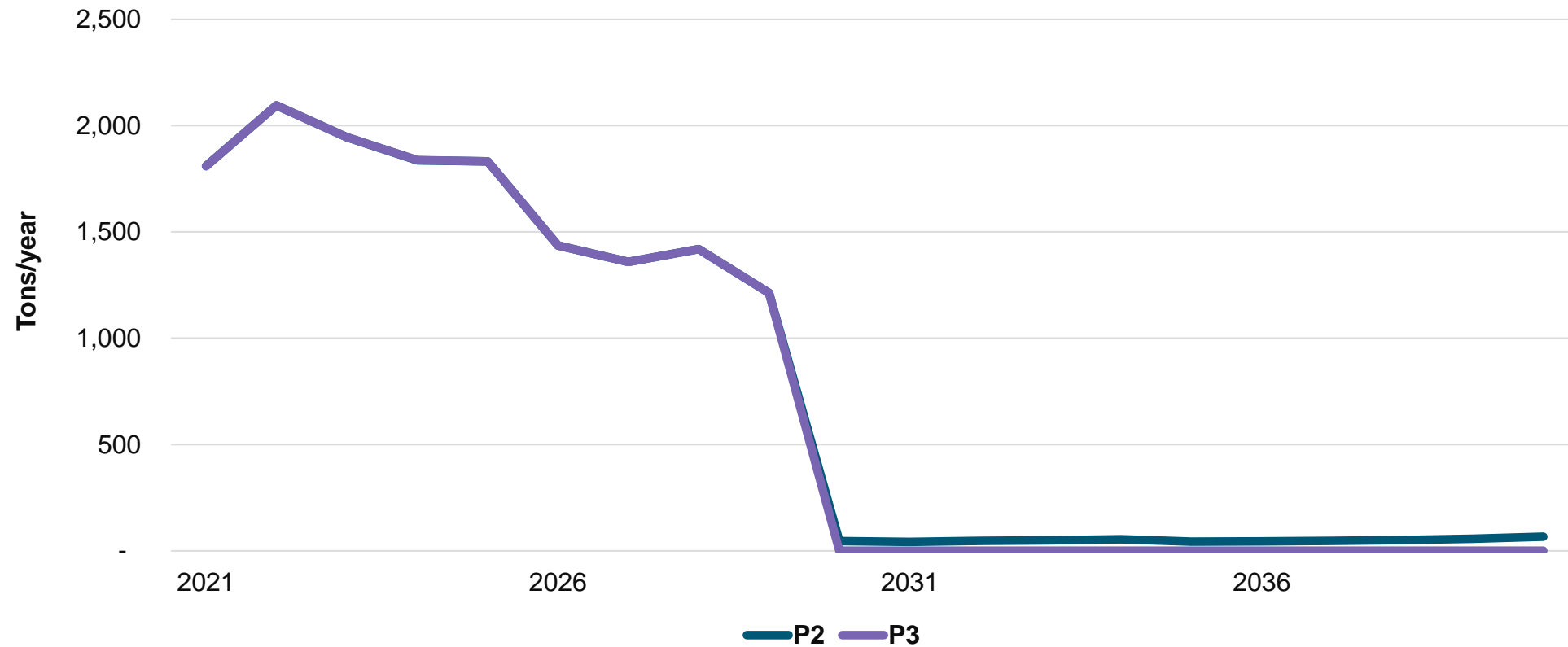
Annual CO₂ emissions

P2 emissions are 94% below 2005 level; P3 has no emissions



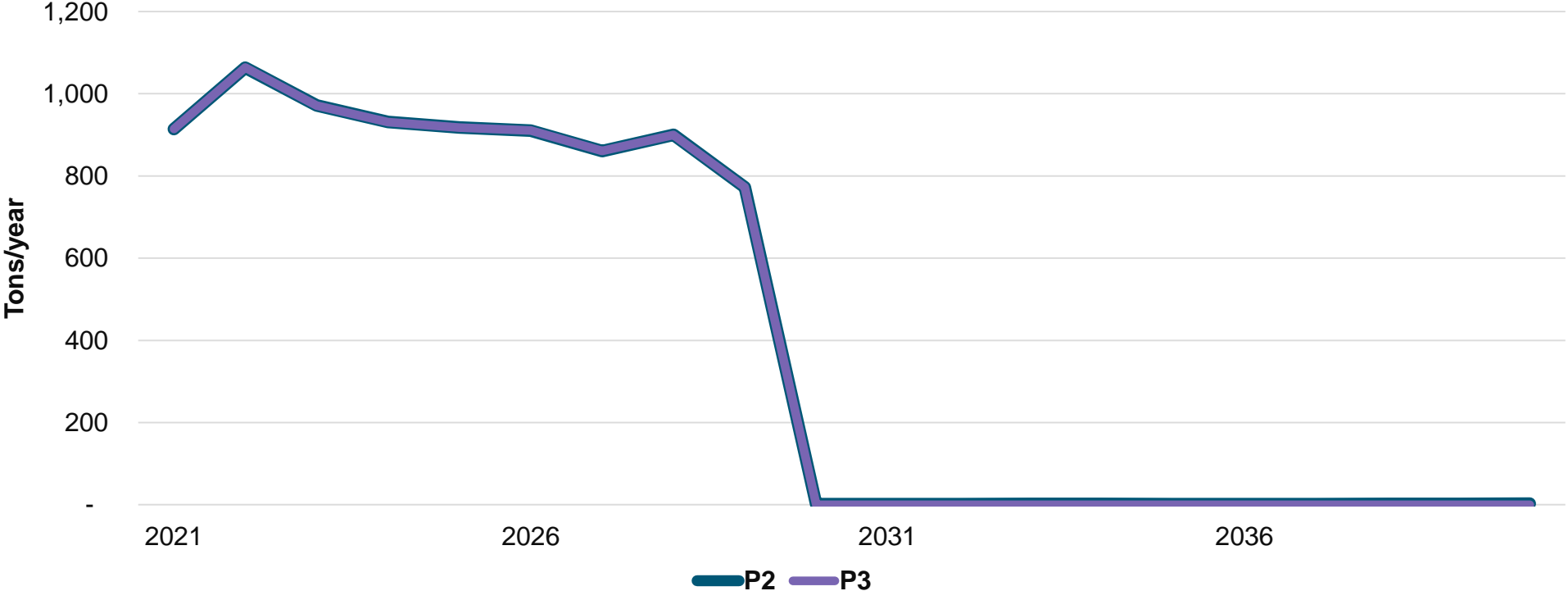
Annual NOx emissions

P2 emissions are reduced 97.5% from 2020 levels; P3 has no emissions



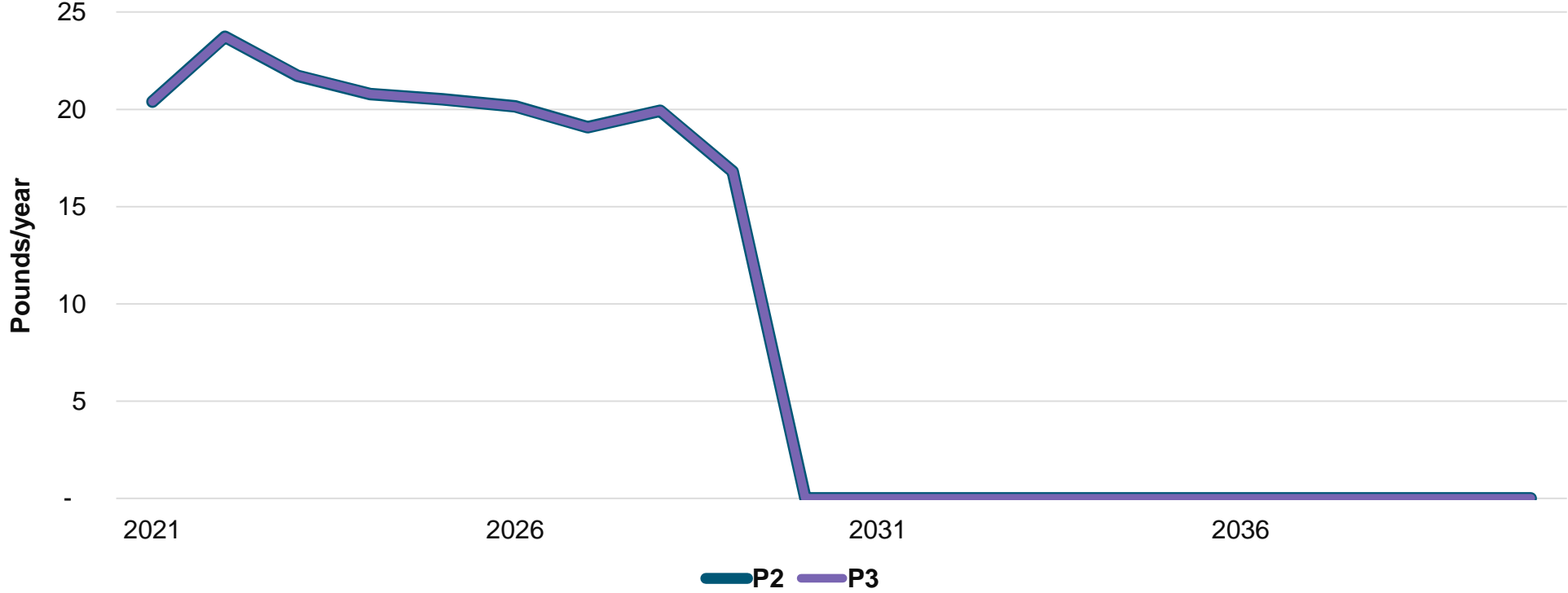
Annual SOx emissions

P2 emissions nearly eliminated (2 tons per year); P3 has no emissions



Annual mercury emissions

P2 and P3 emissions are eliminated





P2 vs. P3 reliability

P2 and P3 reliability

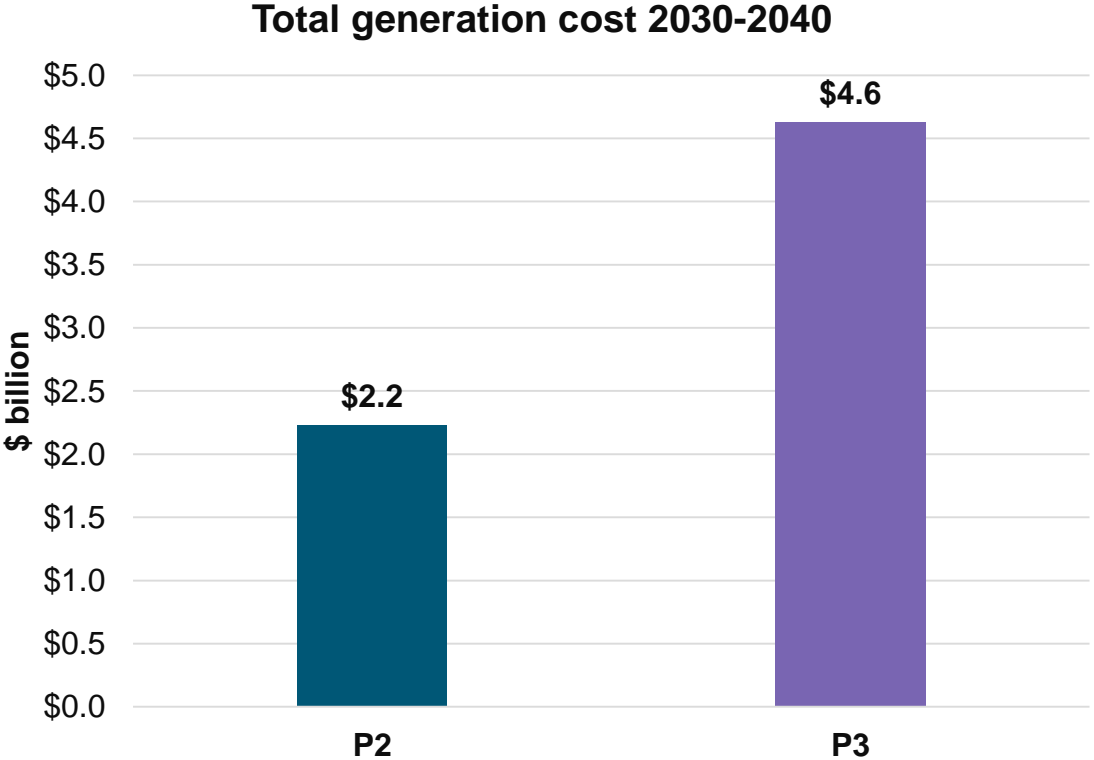
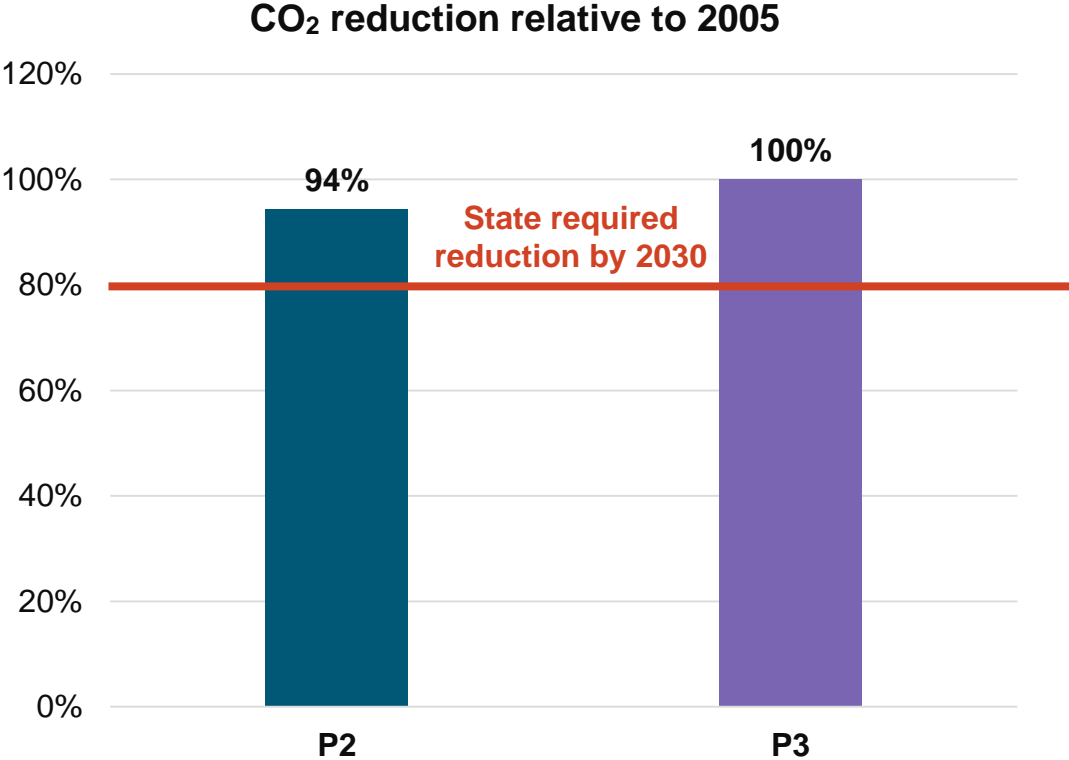
Reliability	P2	P3
Supply	✓	Uncertain – dark calms
Transmission	✓	✓
Distribution	✓	✓



P2 vs. P3 cost comparison

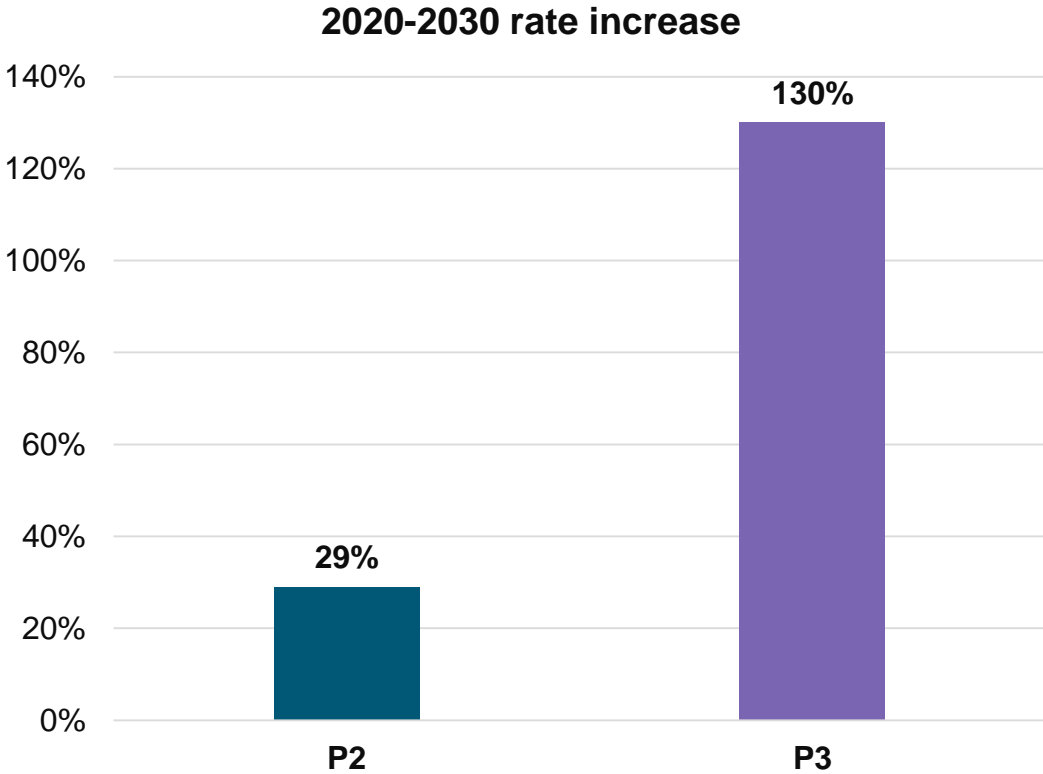
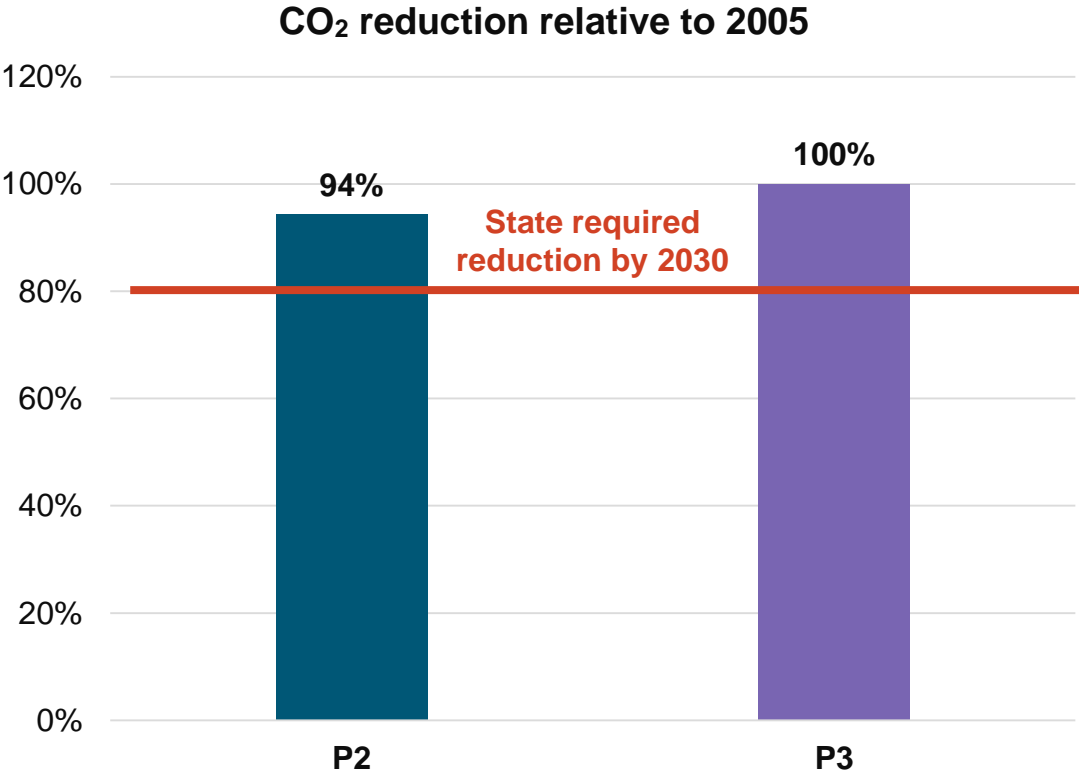
CO₂ reduction vs. generation cost

P2 achieves a high level of CO₂ reduction at much lower generation cost

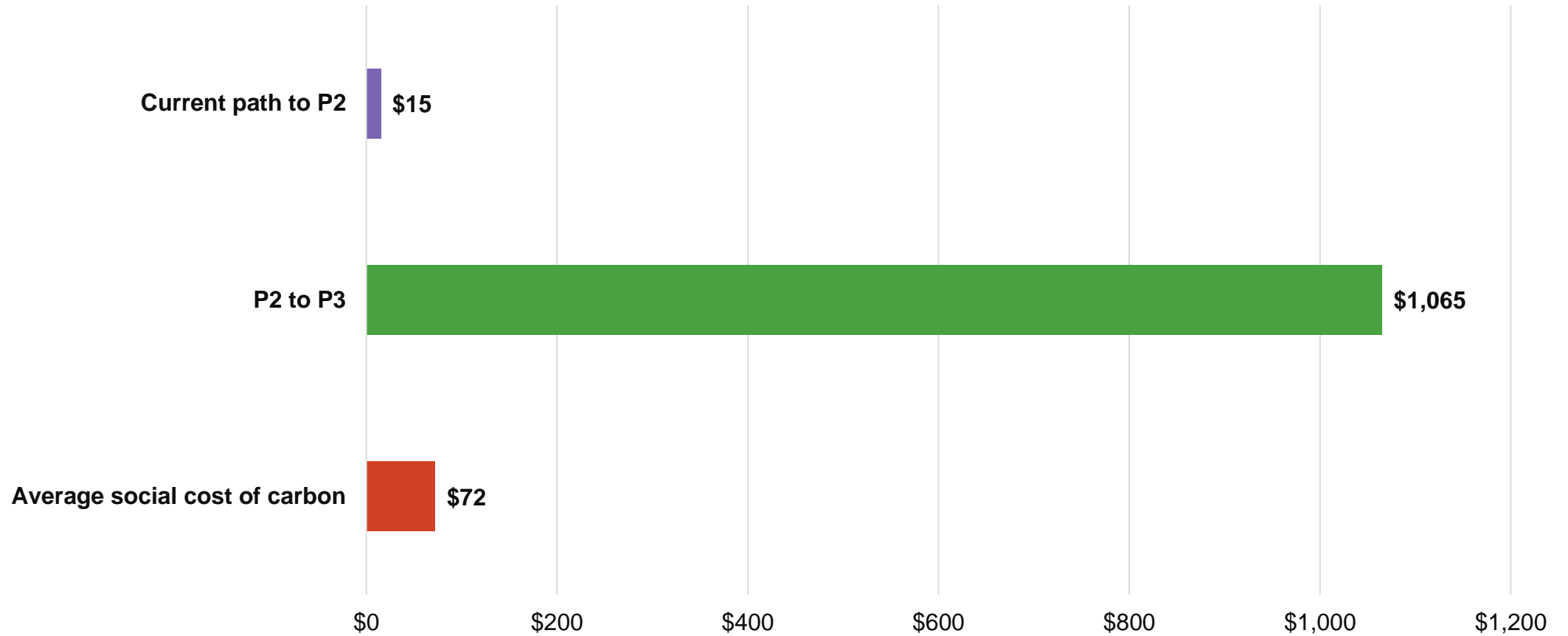


CO₂ reduction vs. rate increase

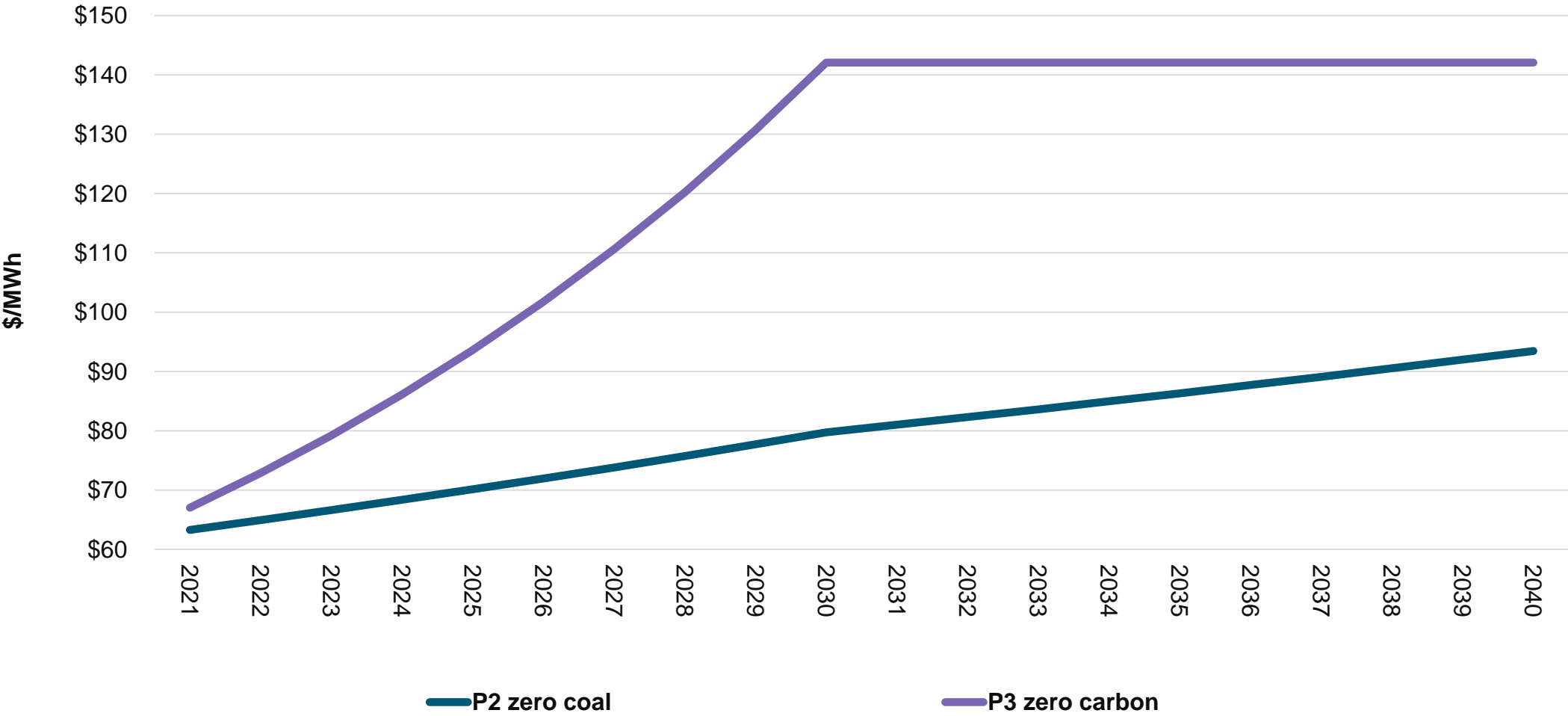
P2 surpasses state requirements at a fraction of the rate increase relative to P3



2030-2040 average cost of CO₂ reduction

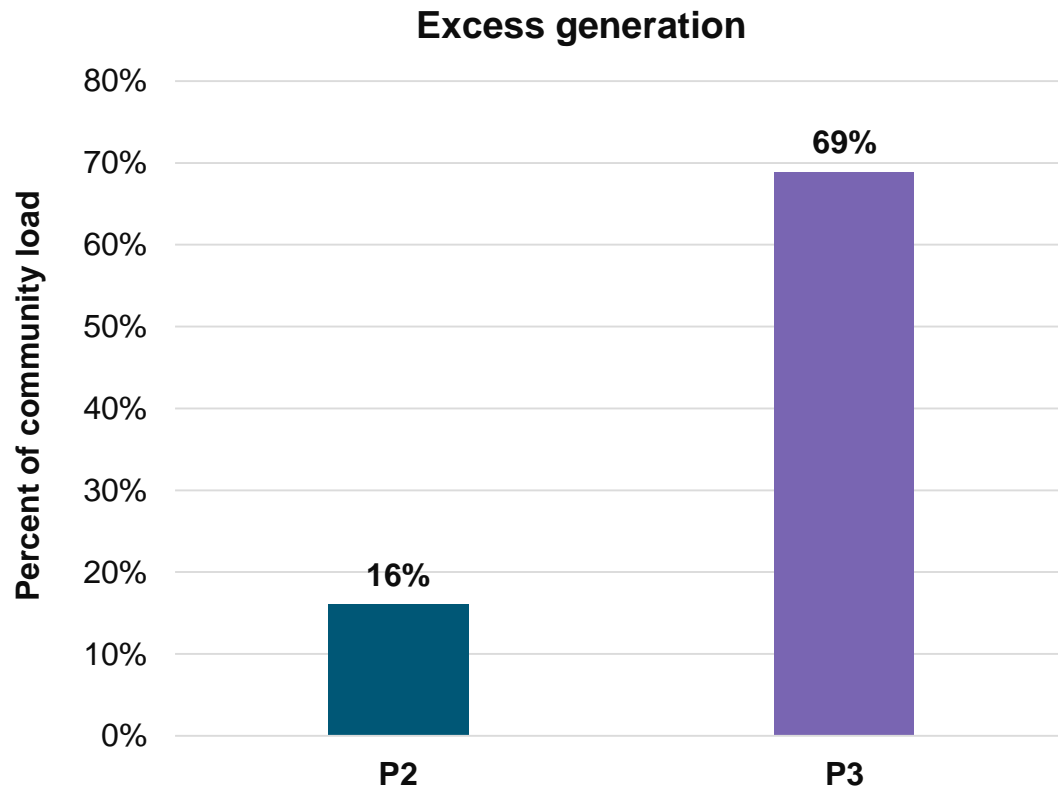


Projected wholesale rates



Excess energy sales

P3 has three times the market price risk between 2030-2040

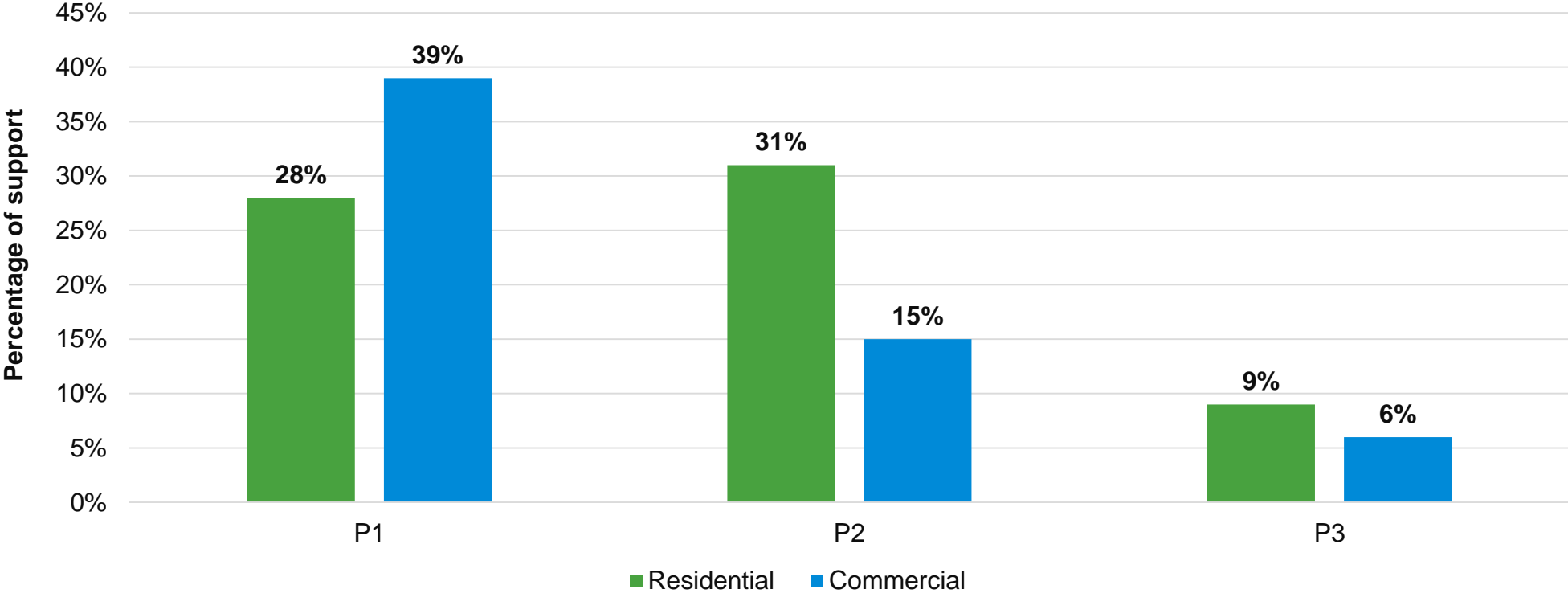




Community survey results

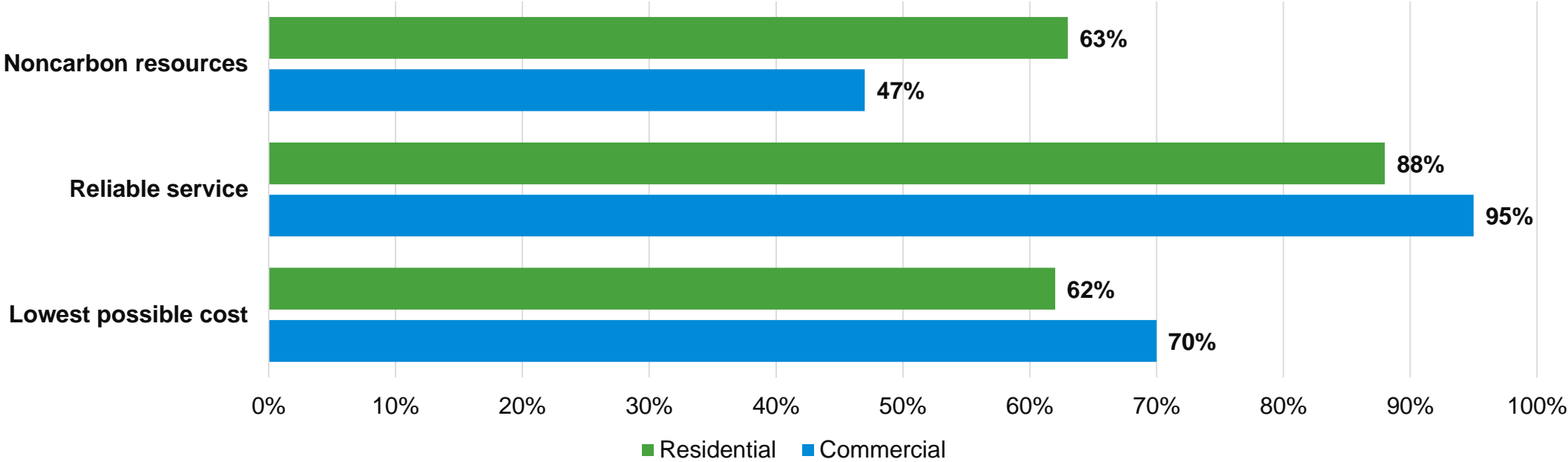
Community survey results

Scientific survey conducted by Inside Information



Community survey results

Service characteristics importance



Somewhat or very important (8-10 ratings)



Resource Diversification Policy

Resource Diversification Policy

In 2018, the board unanimously passes the Resource Diversification Policy (RDP)

- Policy directs the general manager/CEO to proactively work toward the goal of reaching a 100% noncarbon resource mix by 2030, while maintaining Platte River's three pillars of providing reliable, environmentally responsible and financially sustainable electricity and services.
- The board also recognizes several advancements must occur in the near term to achieve the 2030 goal and to successfully maintain Platte River's three pillars.

RDP caveats

Caveats	Status
Join organized market	Joining WEIM; working toward day ahead market
Improved battery storage	Testing 2 MWh battery
Other energy storage	Monitoring
Transmission/distribution investment	Monitoring
Transmission/distribution system integration	DER strategy initiated
Improved distributed generation performance	DER strategy initiated
Grid management technologies	DER strategy initiated
End user management systems	DER strategy initiated
Rate structures to support systems integration	Phase one complete

Board assessment of P2 vs. P3 alignment with three pillars

Pillar	P2	P3
Reliability		
Environmental responsibility		
Financial sustainability		



Staff recommendation

Working towards RDP

Adaptability has served us well

- Added several noncarbon resources:
 - Roundhouse PPA addition (225 MW)
 - Rawhide Prairie Solar PPA (22 MW, 2 MWh battery)
 - Current solar request for proposals issued (50-150 MW)
- Capacity sales to accommodate more noncarbon energy
- Announced closure dates for coal plants
- Joining WEIM
- Initiated DER strategy development with communities
- Rates remain stable; reliability maintained; significantly reducing emissions

Staff recommendation

Adopt P2 as new baseline for future planning

- Continue drive to meet RDP goals
- Maintain adherence to the three pillars
- Maintain adaptability and flexibility
- Surpasses legislative requirement of 80% CO₂ reduction by 2030
- Allows for technology maturation before RICE needed
- Complete two more IRPs before 2030



Resolution concepts

Resolution concepts

Proposed additions

- In 2018, the board adopted the Resource Diversification Policy, which:
 - Establishes a goal of 100% noncarbon resource mix by 2030 while maintaining the three pillars
 - Recognizes key advancements that must occur in the near term to achieve the 2030 goal
- Platte River remains committed to the Resource Diversification Policy
- The 2020 IRP reflects existing and potential future resources based on current information, technology and system capabilities and recognizes these and other factors (including Resource Diversification Policy caveats) will continue to evolve

Resolution concepts

Proposed additions

- The 2020 IRP, and the proposed P2, are consistent with the Resource Diversification Policy and surpass Colorado legislative goals for greenhouse gas reductions:
 - Platte River's adaptive and flexible resource procurement strategies have served its owner communities well
 - Platte River will continue to proactively pursue a 100% noncarbon energy mix by 2030
 - Staff will prepare an updated IRP no later than 2024 and complete at least one additional IRP between 2024 and 2030
 - Approving the IRP does not commit Platte River to any new resources
 - Staff will continue to inform and consult with the board about technological advancements and changes to Platte River's resource mix

Board deliberation



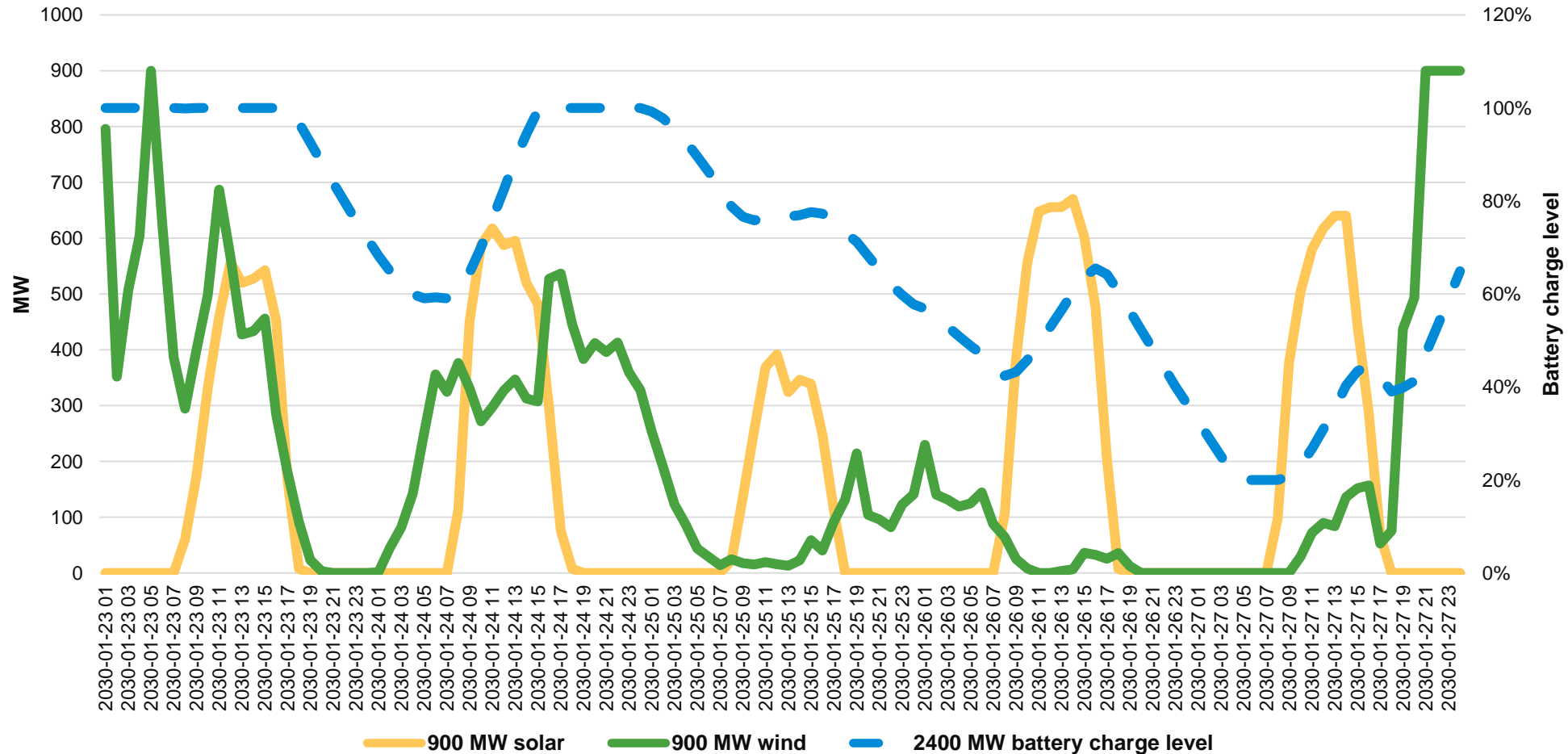
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Next steps

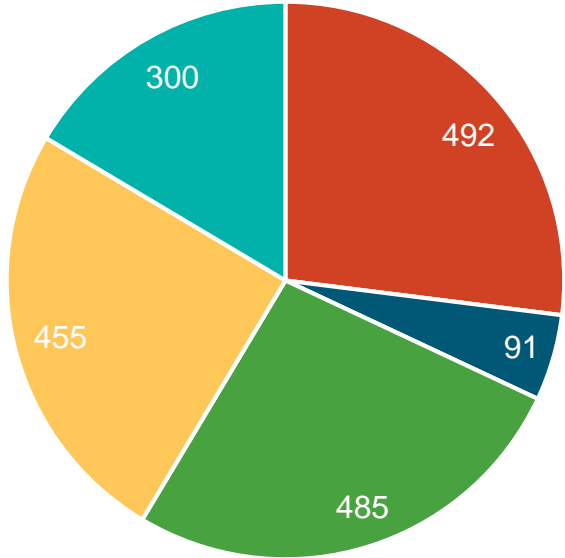
- Board deliberation
- October board meeting decision
- Filing with WAPA
- Present IRP results to communities

P3 challenges – reliability concerns



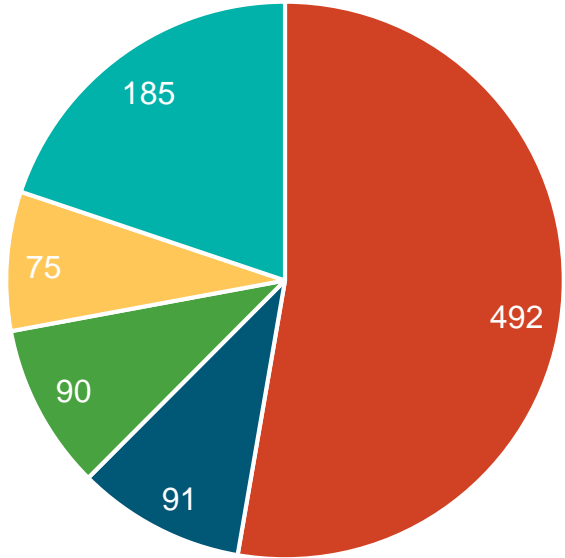
P2 – nameplate and firm capacities for 2030

Nameplate capacities



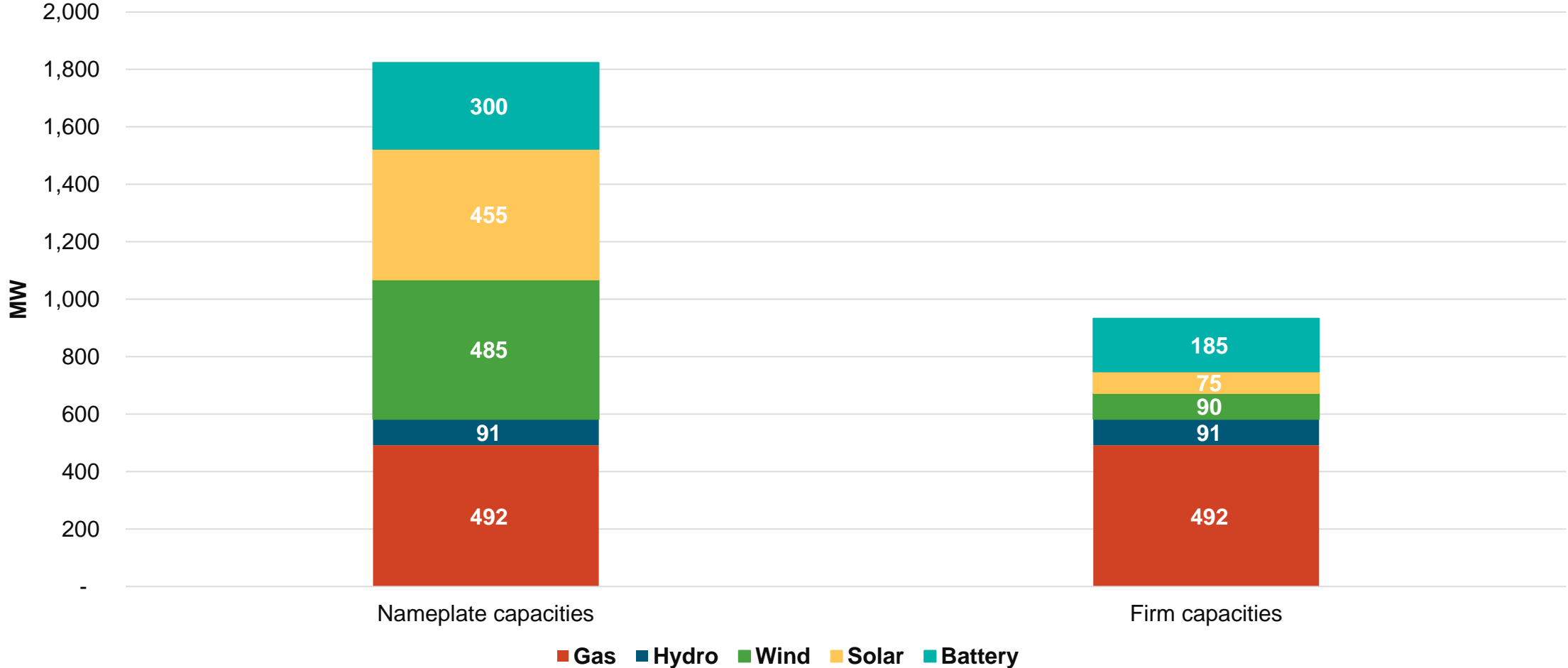
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Firm capacities

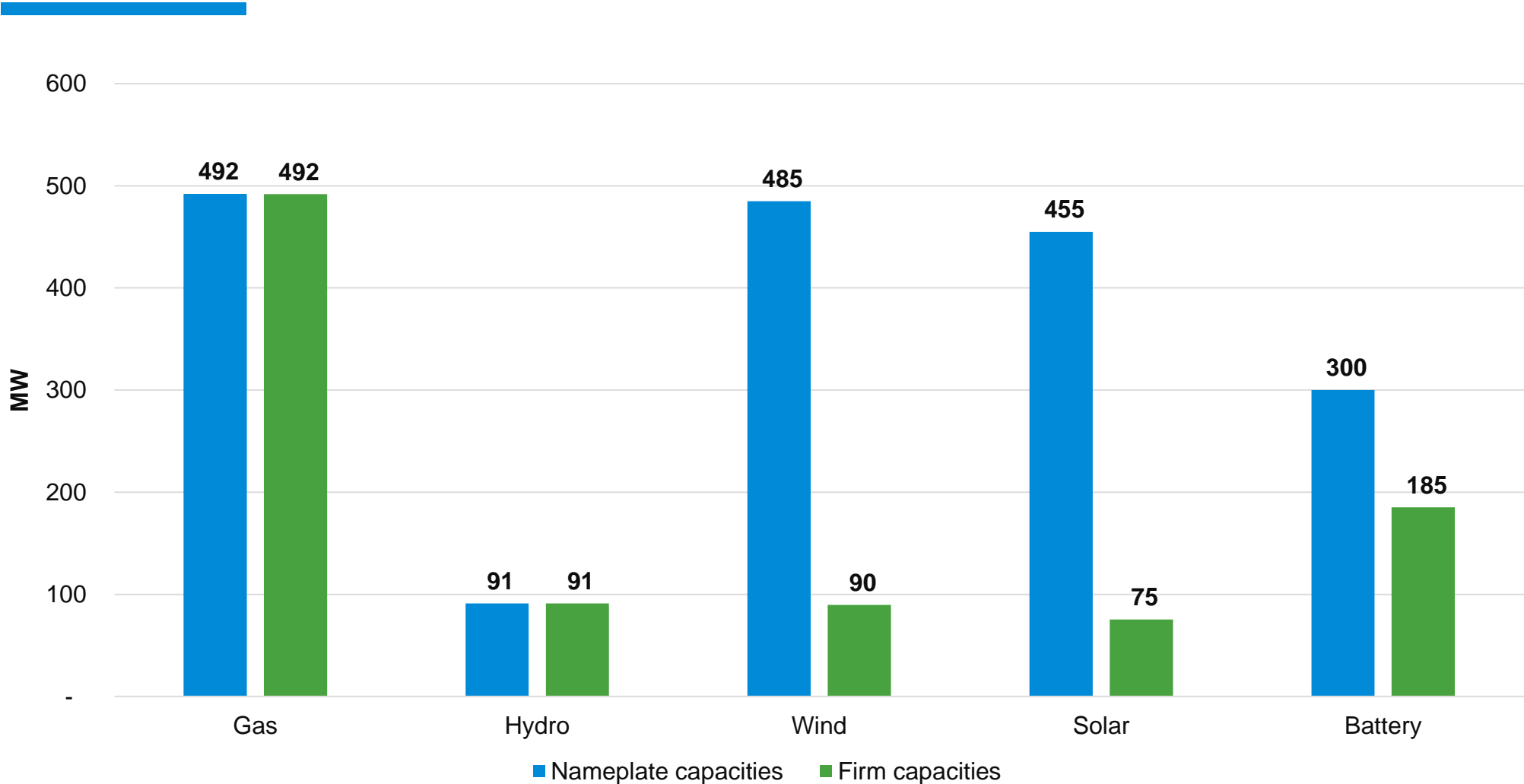


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P2 – nameplate and firm capacities for 2030

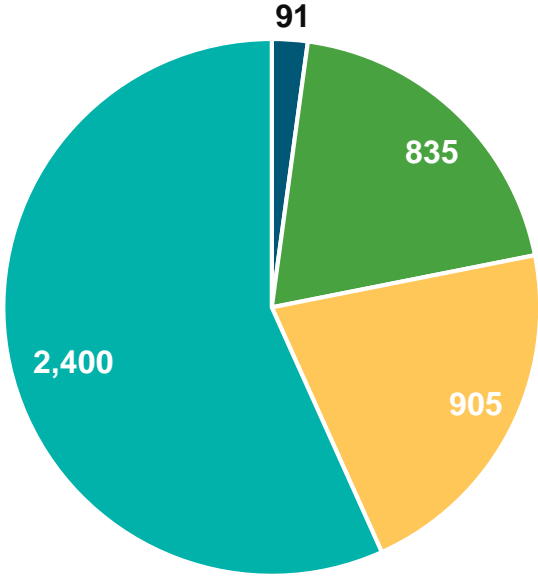


P2 – nameplate and firm capacities for 2030



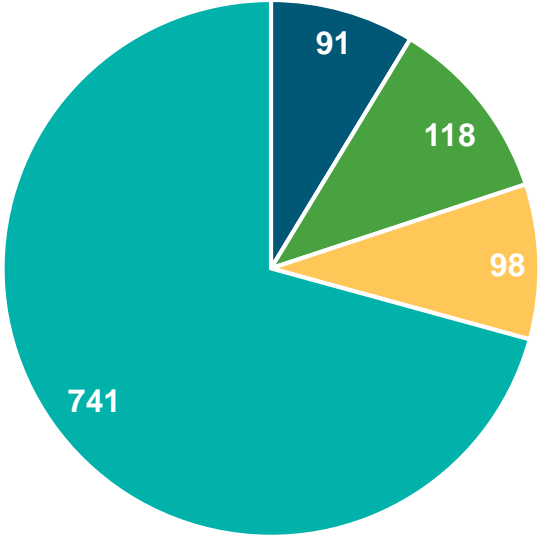
P3 – nameplate and firm capacities for 2030

Nameplate capacities



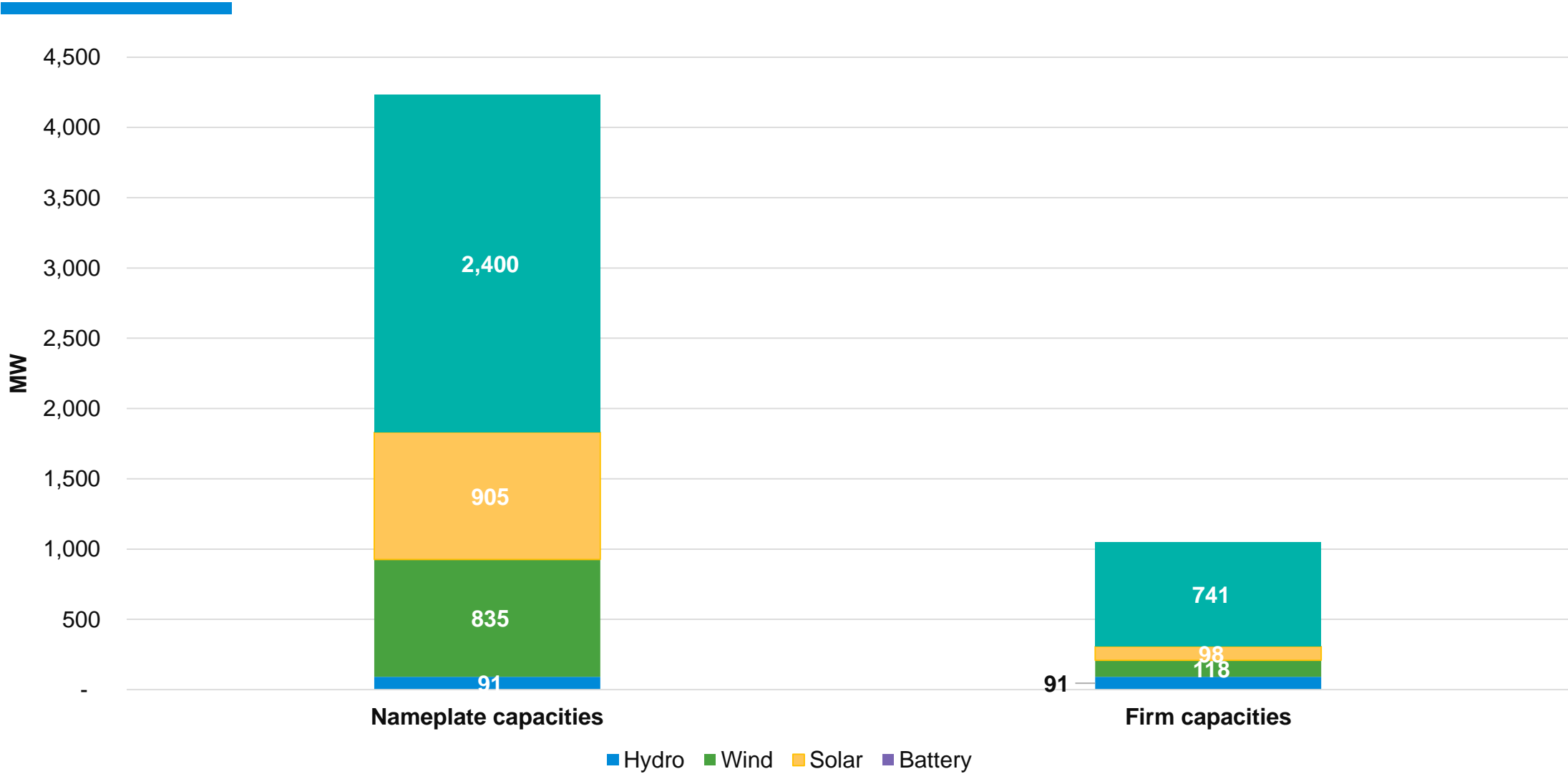
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Firm capacities

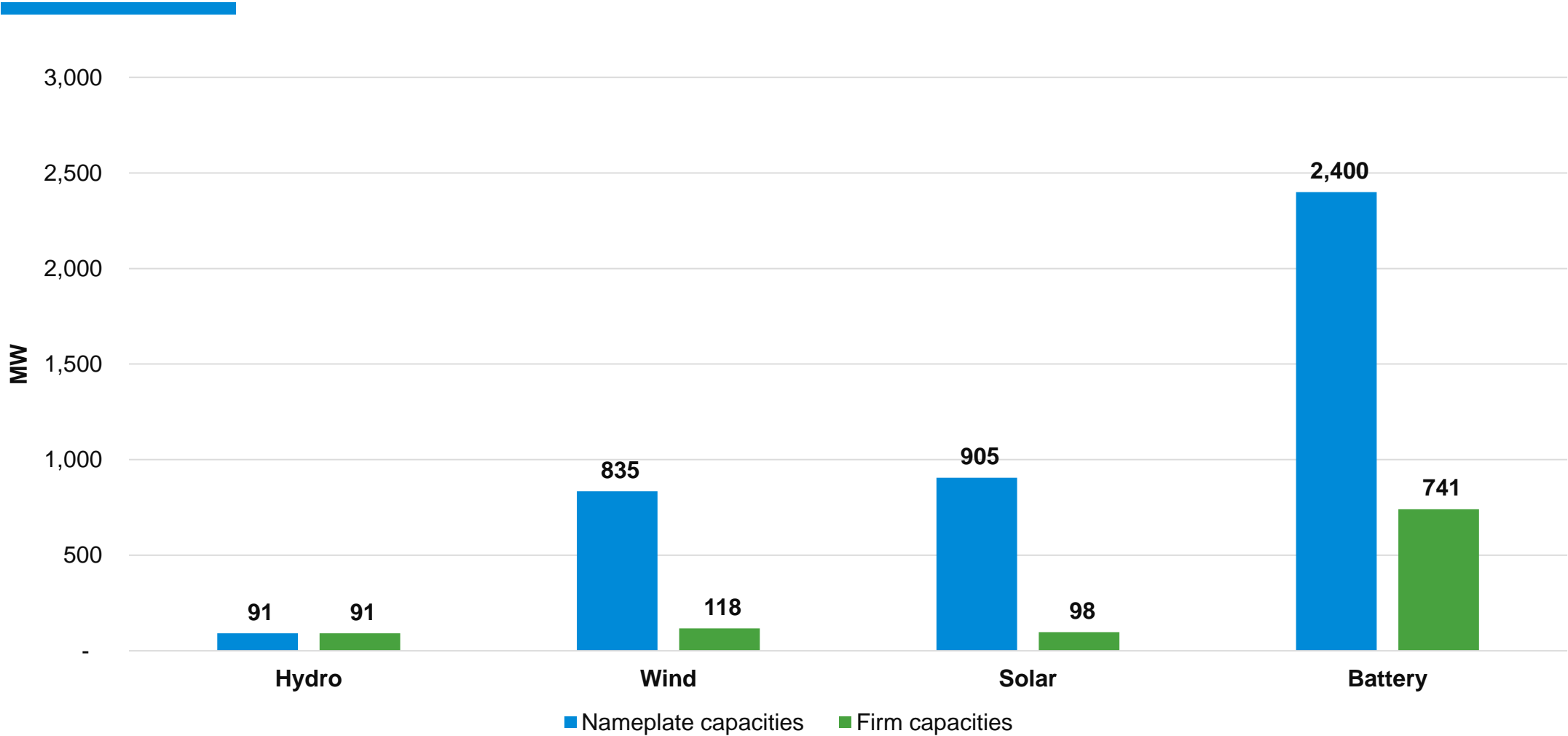


■ Hydro ■ Wind ■ Solar ■ Battery

P3 – nameplate and firm capacities for 2030



P3 – nameplate and firm capacities for 2030



Optional resolution concepts

Proposed additions

- Platte River will continue to communicate transparently with the public (during and outside of IRP processes) about new developments in long-term energy planning
- Platte River will continue to facilitate public input and engagement (during and outside of IRP processes) in its long-term energy planning activities