



# Welcome to your CDP Climate Change Questionnaire 2021

## C0. Introduction

### C0.1

#### **(C0.1) Give a general description and introduction to your organization.**

[Pinnacle West Capital Corp.](#), an energy holding company based in Phoenix, has consolidated assets of approximately \$20 billion, about 6,300 megawatts of generating capacity and slightly more than 6,000 employees in Arizona and New Mexico. Through its principal subsidiary, Arizona Public Service, the company provides retail electricity service to more than 1.3 million Arizona homes and businesses. For more information about Pinnacle West, visit the company's website at [pinnaclewest.com](#). This presentation contains forward-looking statements based on current expectations, including statements regarding our earnings guidance and financial outlook and goals. These forward-looking statements are often identified by words such as "estimate," "predict," "may," "believe," "plan," "expect," "require," "intend," "assume," "project," "anticipate," "goal," "seek," "strategy," "likely," "should," "will," "could," and similar words. Because actual results may differ materially from expectations, we caution you not to place undue reliance on these statements. A number of factors could cause future results to differ materially from historical results, or from outcomes currently expected or sought by Pinnacle West or APS. These factors include, but are not limited to: the potential effects of the continued COVID-19 pandemic; our ability to manage capital expenditures and operations and maintenance costs while maintaining reliability and customer service levels; variations in demand for electricity, including those due to weather seasonality, the general economy or social conditions, customer and sales growth (or decline), the effects of energy conservation measures and distributed generation, and technological advancements; power plant and transmission system performance and outages; competition in retail and wholesale power markets; regulatory and judicial decisions, developments and proceedings; new legislation, ballot initiatives and regulation, including those relating to environmental requirements, regulatory and energy policy, nuclear plant operations and potential deregulation of retail electric markets; fuel and water supply availability; our ability to achieve timely and adequate rate recovery of our costs through our rates and adjustor recovery mechanisms, including returns on and of debt and equity capital investments; our ability to meet renewable energy and



energy efficiency mandates and recover related costs; the ability of APS to achieve its clean energy goals (including a goal by 2050 of 100% clean, carbon-free electricity) and, if these goals are achieved, the impact of such achievement on APS, its customers, and its business, financial condition and results of operations; risks inherent in the operation of nuclear facilities, including spent fuel disposal uncertainty; current and future economic conditions in Arizona, including in real estate markets; the direct or indirect effect on our facilities or business from cybersecurity threats or intrusions, data security breaches, terrorist attack, physical attack, severe storms, droughts, or other catastrophic events, such as fires, explosions, pandemic health events, or similar occurrences; the development of new technologies which may affect electric sales or delivery; the cost of debt and equity capital and the ability to access capital markets when required; environmental, economic and other concerns surrounding coal-fired generation, including regulation of greenhouse gas emissions; volatile fuel and purchased power costs; the liquidity of wholesale power markets and the use of derivative contracts in our business; generation, transmission and distribution facility and system conditions and operating costs; the ability to meet the anticipated future need for additional generation and associated transmission facilities in our region; the willingness or ability of our counterparties, power plant participants and power plant land owners to meet contractual or other obligations or extend the rights for continued power plant operations; and restrictions on dividends or other provisions in our credit agreements and ACC orders. These and other factors are discussed in Risk Factors described in Part I, Item 1A of the Pinnacle West/APS Annual Report on Form 10-K for the fiscal year ended December 31, 2020, which you should review carefully before placing any reliance on our financial statements, disclosures or earnings outlook. Neither Pinnacle West nor APS assumes any obligation to update these statements, even if our internal estimates change, except as required by law.

## C0.2

**(C0.2) State the start and end date of the year for which you are reporting data.**

	Start date	End date	Indicate if you are providing emissions data for past reporting years
Reporting year	January 1, 2020	December 31, 2020	No

## C0.3

**(C0.3) Select the countries/areas for which you will be supplying data.**

United States of America



## C0.4

**(C0.4) Select the currency used for all financial information disclosed throughout your response.**

USD

## C0.5

**(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.**

Financial control

## C-EU0.7

**(C-EU0.7) Which part of the electric utilities value chain does your organization operate in? Select all that apply.**

Row 1

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### **Electric utilities value chain**

Electricity generation

Transmission

Distribution

### **Other divisions**

Smart grids / demand response

Battery storage

Micro grids



## C1. Governance

### C1.1

**(C1.1) Is there board-level oversight of climate-related issues within your organization?**

Yes

#### C1.1a

**(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.**

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	<p>Chairman of the Board, President and Chief Executive Officer (CEO) of Pinnacle West and Chairman of the Board and CEO of Arizona Public Service Company, provides the vision and leadership to execute the Company’s strategy and create shareholder value. Additionally, he has overarching responsibility for managing risk, including climate change and greenhouse gas risks that directly or indirectly affects our Company’s mission and vision. The Board oversees the Company’s risk management function. The Board focuses on fostering a culture of risk awareness and risk-adjusted decision-making. They discuss a listing of the Company’s top risks and a suggested allocation of responsibilities for such risks among the Board and the Board committees. As an example, one of the physical risks in Arizona related to climate change that the Board reviewed in 2020 was wildfire risk. Catastrophic fire events were identified as an enterprise top risk in 2020. Due to extended drought over the past decade, forests and vegetation have been stressed from the lack of regular and sufficient moisture, compounded by shorter, drier winters and longer, warmer summers. The CEO supported the Company's decision to use a proactive, multi-faceted approach to wildfire mitigation in our service territory, with a central focus on risk assessment, readiness and compliance. Main components of the mitigation strategy include: disabling of automatic reclosers on high risk feeders during fire season, wildland-urban/forestry fire risk assessments and prevention measures, wildland-urban interface/defensible space around poles program; vegetation management right-of-way program; and transmission line clearance program. Responsibility for oversight of wildfire risk was allocated to the Pinnacle West Board’s Finance Committee.</p>



<p>Board Chair</p>	<p>Chairman of the Board, President and CEO of Pinnacle West and Chairman of the Board and CEO of Arizona Public Service Company, provides the vision and leadership to execute the Company’s strategy and create shareholder value. Additionally, he has overarching responsibility for managing risk including climate change and greenhouse gas risk that directly or indirectly affects our Company's mission and vision. The Board oversees the Company’s risk management function. The Board focuses on fostering a culture of risk awareness and risk-adjusted decision-making. They discuss a listing of the Company’s top risks and a suggested allocation of responsibilities for such risks among the Board and the Board Committees. One of the physical risks in Arizona related to climate change that the Board monitored in 2020 was wildfire risk. Catastrophic fire events were identified as an enterprise top risk in 2020. Due to extended drought over the past decade, forests and vegetation have been stressed from the lack of regular and sufficient moisture, compounded by shorter, drier winters and longer, warmer summers. The CEO supported the Company's decision to use a proactive, multi-faceted approach to wildfire mitigation in our service territory, with a central focus on risk assessment, readiness and compliance. Main components of the mitigation strategy include: disabling of automatic reclosers on high risk feeders during fire season, wildland-urban/forestry fire risk assessments and prevention measures, wildland-urban interface/defensible space around poles program; vegetation management right-of-way program; and transmission line clearance program. Responsibility for oversight of wildfire risk was allocated to the Pinnacle West Board’s Finance Committee.</p>
<p>Board-level committee</p>	<p>In 2020, the Nuclear and Operating Committee has primary responsibility over environmental matters. The Committee reports regularly to the Board on the Committee’s activities. As an electric utility, environmental matters are at the forefront of our discussions on operations, strategy, and risk. The Nuclear Operating Committee has primary responsibility over environmental matters, though the Board also receives reports on matters of environmental importance, sustainability initiatives and strategy. The Committee periodically reviews, with management, principal risks related to the Company’s nuclear; fossil generation; transmission and distribution; environmental, health and safety (EH&amp;S) operations; or other matters addressed by the Committee, including oversight of security policies, programs and controls for protection of cyber and physical assets. Our Board dedicates a great amount of time to environmental, social and governance matters at the Board and Committee level. Another key focus of the Board is the adoption and maintenance of good governance practices, which is a primary responsibility of the Corporate Governance and Public Responsibility Committee. One of the physical risks in Arizona related to climate change that the Board reviewed in 2020 was wildfire risk. Catastrophic fire events were identified as an enterprise top risk in 2020. Due to extended drought over the past decade, forests and vegetation have been stressed from the lack of regular and sufficient moisture, compounded by shorter, drier winters and longer, warmer summers. The Company uses a proactive, multi-faceted approach to wildfire mitigation in our service territory, with a central focus on risk assessment, readiness and compliance.</p>



## C1.1b

**(C1.1b) Provide further details on the board’s oversight of climate-related issues.**

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	Reviewing and guiding risk management policies	The Nuclear and Operating Committee is responsible for the oversight of the Company’s sustainability initiatives and strategy and environmental, health and safety (EH&S) policies and practices. The Committee periodically reviews, with management, principal risks related to or arising out of the Company’s nuclear, fossil generation, transmission and distribution, EH&S operations or other matters addressed by the Committee. The Executive Risk Committee is comprised of Presidents across several business units of the Company and is chaired by the Chief Administration Officer. Among other responsibilities, this Committee is responsible for ensuring that the Board receives timely information concerning the Company’s material risks and risk management processes. The Executive Risk Committee provides the Board with a list of the Company’s top risks on an annual basis and each Board Committee receives periodic presentations from management about its assigned risk areas and discusses their risk reviews with the Board at least annually.

## C1.2

**(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.**

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Chief Operating Officer (COO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly



Other, please specify Senior Vice President of Public Policy	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Chief Sustainability Officer (CSO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other, please specify Director ESG Policy and Reporting	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly

## C1.2a

**(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).**

CEO. The CEO's full title is Chairman of the Board, President and Chief Executive Officer of Pinnacle West, and Chairman of the Board and CEO of APS. The CEO and other Senior Officers participate in a Senior Officer meeting forum. The Senior Officer meeting forum consists of a group of senior executive members who review, debate and decide strategic points of view on energy-related issues, inclusive of ESG and climate-related issues, risks and opportunities, while establishing policies that support our long-term corporate strategy. The CEO is responsible for leading the Senior Officer meeting forum and is responsible for any final ESG/climate-related decisions that are made as a result of this forum, and oversees the implementation of strategies, policies and projects.

COO. The full title is President and Chief Operating Officer (COO). This position reports directly to the CEO. The COO, as a member of the Executive Risk Committee (ERC), has the responsibility for both assessing and managing climate-related risks and opportunities as they are presented to the members of the Senior Officer meeting and/or to the ERC. In addition, the COO meets regularly with the CS) to review climate-related issues that are being monitored by the Corporate Environmental business unit. The COO is also tasked with making sure the CEO is informed of material climate-related risks and that mitigation measures are in place for business continuity.

Senior Vice President Public Policy (SVP). This position reports directly to the CEO. The SVP is the sponsor of the ESG Executive Council that was formed in 2020. The ESG Executive Council provides governance and oversight for ESG related activities and initiatives. The SVP has responsibility to ensure ESG strategies align with the overall corporate strategic direction including the consideration of climate-related risks and opportunities. The SVP also participates in the Senior Officer meeting forum where members review, debate and decide strategic points of view on energy-related issues, inclusive of ESG/ climate-related issues and risks and opportunities while establishing policies that support our long-term corporate strategy.



CSO. The CSO’s full title is the Vice President of Sustainability of APS. This position reports directly to the SVP. The CSO has responsibility for both assessing and managing ESG policy and climate-related risks and opportunities. As a member and Chair of the ESG Executive Council, the CSO ensures cross functional oversight and alignment on ESG policy and reporting, ESG emergent issues and climate related risks and opportunities. The Council meets at least quarterly. The CSO also meets monthly with the Director to discuss and assess climate-related issues. The CSO is tasked with making sure the SVP and COO are informed of material climate-related risks and that mitigation measures are in place for business continuity.

Director of ESG Policy and Reporting (Director). The Director’s full title is Director of ESG Policy and Reporting. This position reports directly to the CSO. The Director is responsible for both assessing and managing climate-related risks and opportunities. The Director has the responsibility of making sure the CSO is informed of material climate-related risks and that mitigation measures are set in place for business continuity. The Director has a team of employees that have the responsibility of monitoring any climate elated issues, risk or opportunities and briefing the Director at least monthly or as issues and concerns arise. Periodically, the Director provides updates on any climate-related issues including risks and opportunities to the ESG Executive Council and/or the Senior Officer meeting forum.

An example of the application of this organizational structure in 2020 is the development and implementation of strategies to mitigate impacts of APS’s Clean Energy Commitment (to exit coal by 2031) on communities supported by coal-fired plants. APS calls this its coal communities transition plan (Plan). The transition away from coal-fired power plants will pose unique economic challenges for the communities around these plants. The ESG Policy and Reporting team worked collaboratively with stakeholders and leaders to consider the impacts of ceasing operation of APS coal-fired power plants. Based upon the information collected from stakeholders, and at the direction of the EVP the ESG Policy and Reporting team developed the Plan. The Director presented the Plan to the CSO, the EVP and ultimately the Regulatory Council which includes the CEO, COO, and SVP to get feedback, alignment, and support for the decisions required to adopt our coal community transition plan. The Regulatory Council provides governance and oversight for Regulatory matters elevating visibility and decision making to senior levels of the Company including alignment of regulatory decisions with long term corporate strategy. The plan is pending regulatory approval.

### C1.3

**(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?**

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

## C1.3a

**(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).**

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Corporate executive team	Monetary reward	Emissions reduction target	Our compensation programs focus on transparency with an emphasis on incentivizing performance. APS's compensation philosophy incorporates multiple business performance metrics, including nuclear capacity factor to assess executive performance. The Palo Verde Generation Station's capacity factor is an example. Palo Verde Generating Station was the nation's largest single source of clean power for the 25th straight year, and the company's non-nuclear fleet had its best reliability performance since 2007. In 2020, Palo Verde's capacity factor target was set at 98.7 percent, and we exceeded this target with a capacity factor of 100 percent. As a result, Palo Verde generated more than 32 million megawatt-hours of carbon-free electricity in 2020. APS operates the Palo Verde Generating Station and owns or leases 29.1 percent of the facility.
Business unit manager	Monetary reward	Emissions reduction target	Our Business Unit Managers' compensation programs focus on transparency with an emphasis on incentivizing performance. APS's compensation philosophy incorporates multiple business performance metrics, including nuclear capacity factor to assess executive performance. The Palo Verde Generation Station's capacity factor is an example. Palo Verde Generating Station was the nation's largest single source of clean power for the 25th straight year, and the company's non-nuclear fleet had its best reliability performance since 2007. In 2020, Palo Verde's capacity factor target was set at 98.7 percent, and we exceeded this target with a capacity factor of 100 percent. As a result, Palo Verde generated more than 32 million megawatt-hours of carbon-free electricity in 2020. APS operates the Palo Verde Generating Station and owns or leases 29.1 percent of the facility.
All employees	Monetary reward	Emissions reduction target	Eligible employees receive annual cash incentives based on the achievement of performance with a focus on transparency and with an emphasis on incentivizing performance. APS's compensation philosophy incorporates multiple business performance metrics, including nuclear capacity factor to assess performance.



Business unit manager	Non-monetary reward	Other (please specify) All of the above, based on business unit.	As part of the formula to determine performance rating, Business Unit Managers receive ratings based on the achievement of performance of metrics. Some Business Unit Managers may have metrics that are related to climate change issues, for example: carbon avoidance goals, energy efficiency, and others. Each Business Unit has designated metrics in their annual Business Unit business plans, of which some may include climate related metrics. We believe the performance of each Business Unit is important to the success of the Company.
All employees	Non-monetary reward	Other (please specify) All of the above, based on business unit.	As part of the formula to determine performance rating, all eligible employees receive ratings based on the achievement of performance of metrics. Some employees may have metrics that are related to climate change issues, for example: carbon avoidance goals, paperless billing adoption, energy efficiency and others. Each Business Unit has designated metrics in their annual Business Unit business plans, of which some may include climate related metrics and are cascaded to the employees within the Business Unit. We believe the performance of each Business Unit is important to the success of the Company.

## C2. Risks and opportunities

### C2.1

**(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?**

Yes

#### C2.1a

**(C2.1a) How does your organization define short-, medium- and long-term time horizons?**

	From (years)	To (years)	Comment



Short-term	0	1	Short-term horizons are used to plan for the upcoming fiscal year to track to short-term goals from each business unit. Emergent risks are often identified in short-term time horizons with ultimate longer-term implications.
Medium-term	1	5	Medium-term horizons are typically used for the business planning process and by the Integrated Resource Planning team.
Long-term	5	30	Long-term horizons are used by the Integrated Resource Planning team, Enterprise Risk Management and Corporate Strategy to ensure the business is planning and assessing for future risks and opportunities and to support a sustainable future for Arizona.

## C2.1b

### (C2.1b) How does your organization define substantive financial or strategic impact on your business?

APS defines substantive or strategic impact based on whether an observed effect is large enough to be meaningful within the context of financial, operational, reputational or safety assessments. To determine whether a risk will result in substantive or strategic impact, the Enterprise Risk Management (ERM) department has established a formal process by which business units identify and assess risks, including climate-related risks, consistent with our overall enterprise risk framework. The ERM framework is a depiction of the Company’s efforts to identify, assess, mitigate and control risks. Under the ERM framework, business units assign values to each risk for financial, operational, reputational and safety impacts utilizing a 0-4 threshold; levels 3-4 are considered substantive.

For financial impact, the thresholds are described as follows:

- (04) - Major means an impact of greater than \$25M;
- (03) - Significant means an impact between \$15M and \$25M;
- (02) - Moderate means an impact between \$5M and \$15M;
- (01) - Limited means an impact between \$2M and \$5M;
- (00) - Very limited means an impact between \$0 and \$2M.

For operational impact, the thresholds are described as follows:

- (04) - Major means potential for grid instability leading to large-scale blackouts due to generation or transmission related voltage and frequency instabilities;
- (03) - Significant means potential for rolling blackouts at times when the demand exceeds supply (large geographical area effects) or an event which has reasonable probability of significantly negatively impacting the Company’s operational objectives;



- (02) - Moderate means outages arising from a major line or circuit outage impacting greater than 50,000 customers or an event which has a reasonable probability of moderate negative impact to the Company's operational objective;
- (01) - Limited means local outages caused by pole collapse, pole fires and transformer problems usually impacting a smaller geographical area or an event which has a reasonable probability of limited negative impact to the Company's operational objective.
- (00) - Very limited means no outages or local outages of a very small duration.

For reputational impact, the thresholds are described as follows:

- (04) - Major means an event that generates local/national media coverage or causes a dramatic change in confidence with public, employees and/or stakeholders and/or results in negative action by regulators, with the impact lasting more than twelve months;
- (03) - Significant means an event that generates local/national media coverage or causes a significant change in confidence with public, employees and/or stakeholders and/or attracts attention of regulators, with the impact lasting more than three months;
- (02) - Moderate means an event that generates local/national media coverage or causes a moderate change in confidence with public, employees and/or stakeholders, with the impact lasting between one and three months;
- (01) - Limited means a complaint or recognition at localized (contained) level with minimal change to stakeholder confidence, with impact lasting less than one month;
- (00) - Very limited means little or no impact.

For safety impact, the thresholds are described as follows:

- (04) - Major means life-impacting injuries and/or fatalities to employees may result, significant impact to public health may result or evacuation is necessary;
- (03) - Significant means lost-time injuries to employees may result and/or moderate impact to public health may result;
- (02) - Moderate means moderate injuries, including OSHA Recordables, with short-term impacts to employees or minor impact to public health may result;
- (01) - Limited means minor injuries to employees may result or no impact to public health or impact to public is immediately correctable;
- (00) - Very limited means no resulting injuries to employees or the public. This would include "close calls."

## C2.2

**(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.**

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**Value chain stage(s) covered**

Direct operations  
Upstream  
Downstream

**Risk management process**

Integrated into multi-disciplinary company-wide risk management process

**Frequency of assessment**

More than once a year

**Time horizon(s) covered**

Short-term  
Medium-term  
Long-term

**Description of process**

The Enterprise Risk Management (ERM) department facilitates the establishment and implementation of committee(s) and process(es) for the identification, assessing and reporting of material risks inherent to the Company's business, inclusive of climate-related risks - physical and transitional. Risks are identified, defined, assessed and prioritized based on the likelihood and impact of their occurrence. Due to the complexity of operational, financial and regulatory environments, APS has numerous risk objectives and obligations, which are addressed by policies, controls, processes and programs. Risks are identified, defined, assessed and mitigated at an asset level.

APS identifies and assesses climate-related risks in a manner consistent with our overall enterprise risk management framework. The ERM framework is a depiction of the Company's efforts to identify, assess, mitigate and control risks. The ERM process is one of the Company's efforts within this framework.

The ERM process at APS is a formal process by which business units and the ERM group support the Executive Risk Committee (ERC) as it carries out responsibilities set forth in the ERC charter. This includes the following, which can all be applied to climate-related risks:



No less than annually, the ERC in conjunction with the ERM group, develop an enterprise risk management profile of the organization based on risk identification and assessments from the organization's business units and ERM group. The chairperson of the ERC or his designee shall present that profile to the Chairman of the Board & Chief Executive Officer (CEO).

No less than twice per year, the ERC presents and monitors highly critical risks, including climate risks, to its Board of Directors. No less than quarterly, or as often as the Chairperson determines to be necessary, the ERC reviews and monitors relevant material organizational risks, with members, participants and delegates of the ERC.

Business units maintain an inventory of their most significant risks and associated risk response plans. Annually, business units record this information in a prescribed format, for analysis, categorization and prioritization of risks to support development of an enterprise risk profile. Risk prioritization can include an assessment of likelihood, impact, risk direction, velocity, external evidence, feasibility and cost of mitigation. Quantitative correlation analysis is used for Company projects and business scenarios to provide probability distributions of cost contingencies and schedule uncertainties for multiple risk drivers. This type of sensitivity analysis is used to identify factors affecting the budget and timing of projects, leading to more effective and efficient mitigation strategies. Opportunities are prioritized based on their ability to assist in meeting or exceeding targets.

While the ERM process receives input from and provides output to the execution and implementation of the Company's risk policies and controls, the business planning process and business units' specific risk management programs, the ERM process does not direct or control these policies, processes or programs, as they are exclusively within the control and purview of the responsible business units.

Transitional Risk: In 2020, the ERM identified and assessed the potential transitional risks of emerging decarbonization regulations and policies, by both state and federal regulators. During 2020, an emerging climate-related regulation risk is the potential of a carbon tax or cap and trade program. Carbon tax costs are challenging to forecast because, despite numerous efforts, the federal government has not reached policy consensus on the magnitude, timing or need for a carbon tax. It is difficult to forecast what final form that regulation may take; nonetheless, APS included in its analysis the potential for carbon pricing in its 2020 Integrated Resource Plan (IRP). The CO<sub>2</sub> cost included in the IRP analysis was based on the California market cap and trade 2020 CO<sub>2</sub> cost of \$16.68, escalated at 2.5 percent beginning in 2025. Prior to 2025, APS's analysis assumed the CO<sub>2</sub> cost to be \$0. The resulting potential impact based on these assumptions and projected carbon emissions from 2020 thru 2035 is \$1,278M-\$1,658M. To mitigate this transitional risk, APS maintains specialized environmental and public policy consultants who review and track local, state and federal environmental regulations which may impact APS's current and future operational goals.



Physical Risk: In 2020, the ERM also identified heightened wildfire risk as a climate-related physical risk resulting from changes in precipitation patterns and extreme variability in weather patterns with a potential financial impact to operating costs. Catastrophic fire events were identified as an enterprise top risk in 2020. Due to extended drought over the past decade, forests and vegetation have been stressed from lack of regular and sufficient moisture, compounded by shorter, drier winters and longer, warmer summers. These changes in weather patterns pose a fire risk to the communities we serve. Wildfire risks have the potential to cause damage to our facilities including transmission, generation, or distribution, which may increase operating costs for cost of repairing damaged facilities and decreased revenues. To effectively respond to this risk, we work to create defensible space throughout Arizona. With approximately 5,667 miles of overhead transmission lines and approximately 11,038 miles of overhead distribution lines throughout Arizona, the potential threat to our system from wildfires is very real. Responsibility for oversight of wildfire risk is allocated to the Pinnacle West Board’s Finance Committee.

## C2.2a

### (C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	<p>One example of a current regulation climate-related risk is compliance with regional and national regulation. This risk is considered in our ERM process based on assessments conducted by the business unit manager and the ERM group. There are numerous financial and operational risks inherent in managing mandatory compliance with the Company’s vast and continually evolving regional and federal regulatory requirements. The risk is recorded and monitored to determine the magnitude of the risk and the associated mitigated measures. This risk is considered a (03) rating in terms of reputational significance and a (01) rating in terms of financial significance.</p> <p>An example in 2020 of a current regulation of a climate-related risk are national and regional reporting requirements of greenhouse gas emissions, such as U.S. EPA Part 98 reporting. APS maintains an internal system that tracks reporting requirements and assigns tasks to individuals responsible for reporting to keep in compliance. In addition, the environmental policy consultant monitors for changes in regulation so that we are in compliance and do not miss updates to potential rule changes. Potential financial impact for not remaining in compliance can be up to \$100k per day per violation.</p>



		<p>In 2019 EPA finalized the Affordable Clean Energy (ACE) Rule. The policy consultant reviewed the proposed ACE Rule with the operations, engineering, environmental and legal teams to assess the risk of potential financial and operating impacts. During 2020, APS developed a comprehensive compliance plan for its anticipated ACE Rule obligations at the Company's facilities. The Company is taking all the necessary steps to comply with the requirements of the ACE Rule and any potential impacts at this stage appear to be minimal. This includes compliance with all reporting and monitoring at APS-owned and operated facilities.</p>
Emerging regulation	Relevant, always included	<p>One example of an emerging climate-related regulation risk is from climate change litigation and legislative and regulatory efforts to limit greenhouse gas emissions. This risk is considered in our ERM process based on assessments conducted by the business unit director and the ERM group. The risk is recorded and monitored to determine the magnitude of the risk and the associated mitigated measures. This risk is considered a (03) rating in terms of reputational significance and a (04) rating in terms of financial significance.</p> <p>Another example in 2020 of an emerging climate-related regulation risk is the potential of a carbon tax or cap and trade program. Carbon tax costs are challenging to forecast because, despite numerous efforts, the federal government has not reached policy consensus on the magnitude, timing or need for a carbon tax. It is difficult to forecast what final form that regulation may take; nonetheless, APS included in its analysis the potential for carbon pricing in its 2020 Integrated Resource Plan (IRP). The CO2 cost included in the IRP analysis was based on the California market cap and trade 2020 CO2 cost of \$16.68, escalated at 2.5 percent beginning in 2025. Prior to 2025, APS's analysis assumed the CO2 cost to be \$0. The resulting potential impact based on these assumptions and projected carbon emissions from 2020 thru 2035 is \$1,278M-\$1,658M</p> <p>APS maintains a specialized environmental policy consultant who works with the various APS business units to ascertain, review and track local, state and federal environmental regulations that have the potential to impact APS's current and future operational goals. APS engages with the regulatory community in order to understand and become aware of environmental regulations that may impact our current and future operational goals.</p>
Technology	Relevant, always included	<p>The technology risk of the impact of disruptive technologies is considered in our ERM process based on assessments conducted by the business unit manager and the ERM group. The risk is recorded and monitored to determine the magnitude of the risk and the associated mitigated measures. This risk is considered a (04) rating in terms of financial significance, a (03) rating in terms of operational significance and a (04) rating in terms of reputational significance.</p>



		<p>Risk associated with new technologies remains a particularly acute concern for APS. As more emerging technologies, such as energy storage devices, become commercially viable, they will continue to change how our customers interact with us. This may require us to make changes to our energy delivery and generation to be more responsive to meeting customers needs while balancing grid efficiency, reliability, and affordability. By being proactive and working with our customers to identify and respond to their changing needs, we remain well positioned to deliver value.</p> <p>These technology risks may cause potential resource substitutions and diversification that may impact our ability to operate in various conditions as demand for electricity shifts and diversifies. To address this shift to new technologies, APS is deploying a wide array of new distributed energy resource (DER) technologies to provide clean, reliable, affordable energy to its customers. These include battery storage, thermal storage, load management, electric vehicles and other beneficial electrification technologies that have the potential to increase the value of intermittent generation resources as well as increase grid reliability and stability.</p> <p>APS has a number of current and future planned initiatives that utilize DER technologies. Given the array of potential applications for energy storage, APS evaluates storage technologies on an ongoing basis. We currently plan to install at least 850 MW of energy storage by 2025, including 150 MW of energy storage projects under power purchase agreements. The additional 700 MW of APS-owned energy storage is expected to be made up of energy storage that will be added to our existing AZ Sun solar sites, along with current and future RFPs for energy storage and solar-plus-energy-storage projects.</p>
Legal	Relevant, always included	<p>The legal risk of increased litigation, including the cumulative effects of the legal/compliance requirements, is considered in our ERM process based on assessments conducted by the business unit manager and the ERM group. The risk is recorded and monitored to determine the magnitude of the risk and the associated mitigation measures. This risk is considered a (04) rating in terms of financial significance and a (03) rating in terms of reputational significance.</p> <p>There are several legislative and regulatory carbon-related actions that may impact future strategic resource decisions and are considered potential transitional risks that may impact operating costs. As an example, depending on the outcome of anticipated U.S. EPA actions to replace the Affordable Clean Energy (ACE) Rule with an alternative standards or regulations targeting existing fossil-fuel powered electric generating facilities (based on the outcome of the 2020 U.S.</p>



		<p>presidential election), the utility industry may face alternative efforts from private parties seeking to establish judicially-imposed greenhouse gas (GHG) emission limitations from power plants. EPA took action in October 2017 to initiate a repeal of prior regulations targeting existing power plants (i.e., the Clean Power Plan (CPP)), and in July 2019, EPA published final regulations, the ACE Rule, to replace the CPP with a new set of regulations. In addition, EPA's action in 2019 to repeal the CPP and replace it with the ACE regulations is currently subject to pending judicial review in the U.S. Court of Appeals for the District of Columbia</p> <p>During 2020, the Arizona Corporation Commission was actively engaged in revising their energy rules for Arizona, which would include updated goals for both clean and renewable energy for regulated utilities in the state. Accordingly, the future of GHG limitations is far from settled. However, for years APS has been transitioning its energy assets away from high carbon intensity assets (coal) to low or no carbon intensity assets (natural gas, renewables, storage). This is driven by many different factors, including the market forces of fuel and energy prices, and the cost of technology.</p>
Market	Relevant, always included	<p>The market risk of a potential water supply shortage and increased demand is considered in our ERM process based on assessments conducted by business area manager and the ERM group. The risk is recorded and monitored to determine the magnitude of the risk and the associated mitigation measures. This risk is considered a (04) rating in terms of financial significance, a (03) rating in terms of operational significance, and a (04) rating in terms of reputational significance.</p> <p>One potential shift in the market in the desert Southwest is potential water supply shortage and increased demand. Water in the Southwest is a very limited resource. However, APS has been diligent and forward-looking in its efforts to find and secure sufficient water for current and future power generation.</p> <p>Although there could be both financial and operational risk if sufficient water was not available to meet APS power plant water needs, the probability of this happening is low. Three APS plants have water risk if surface water supplies are lost in a shortage, Yucca, Sundance, and Four Corners. Yucca is protected by a well that can meet 100% of generation water needs if surface water is lost. Sundance is protected by a water contract with the Gila River Indian Community. Indian priority water rights are high priority rights, with very low risk of curtailment. Four Corners is protected by new management strategies employed by the USBR to keep more water in Navajo Reservoir, and by a Shortage Sharing Agreement that ensures that all San Juan water users would share equally in cuts.</p>



		<p>APS investment in water for the future includes purchase of effluent under contract through 2050 for Palo Verde to be extended if needed. It also includes purchase of long-term storage credits from the Gila River Indian Community to supply high priority water to the Sundance Power Plant. These long-duration contracts provide assured water at a known price and ensure reliable, continuous availability of water for power generation.</p>
<p>Reputation</p>	<p>Relevant, always included</p>	<p>The reputation risk of wildfire safety is considered in our ERM process based on assessments conducted by the business unit manager and the ERM group. The risk is recorded and monitored to determine the magnitude of the risk and the associated mitigation measures. This risk is considered a (04) rating in terms of financial significance, a (04) rating in terms of reputational significance and a (04) rating in terms of safety significance.</p> <p>APS has taken great care to build our reputation over many years. Our commitment to our mission of creating a sustainable energy future for Arizona is a driving force in maintaining our reputational risk. For this reason, reputational risk is always considered when evaluating enterprise risks. We pride ourselves on delivering clean, reliable and affordable energy for our customers.</p> <p>Catastrophic fire events were identified as an enterprise risk in 2020. Fire risk is a climate-related reputational risk due to precipitation patterns and extreme variability in weather patterns, with a potential financial impact to operating costs. Many of our facilities, including transmission, generation, or distribution equipment are located in areas prone to wildfire risk in Arizona and New Mexico. Fire events may increase operating costs for cost of repairing damaged facilities, impact the reliability of services, resulting in decreased revenues and hurting our reputation.</p> <p>In addition, a fire related to equipment failure or environmental fire event could negatively impact the Company's reputation or standing in the community. Through proactive fire-mitigation measures, APS works to reduce the likelihood of fire in and around electrical equipment. Mitigation initiatives include the deployment of infrastructure systems technology as well as mobile technology to track and report fires. These technological innovations allow us to be more proactive and nimble in our efforts to provide for first responders and the safety of our customers.</p>



<p>Acute physical</p>	<p>Relevant, always included</p>	<p>The physical risk of wildfires due to changes in physical climate parameters are considered in our ERM process based on assessments conducted by the business unit manager and the ERM group. The risk is recorded and monitored to determine the magnitude of the risk and the associated mitigation measures. This risk is considered a (04) rating in terms of financial significance, a (04) rating in terms of reputational significance and a (04) rating in terms of safety significance.</p> <p>Catastrophic fire events were identified as an enterprise top risk in 2020. Due to extended drought over the past decade, forests and vegetation have been stressed from lack of regular and sufficient moisture, compounded by shorter, drier winters and longer, warmer summers. These changes in weather patterns pose a fire risk to the communities we serve. Wildfire risks have the potential to cause damage to our facilities including transmission, generation, or distribution lines throughout Arizona, which may increase operating costs for cost of repairing damaged facilities and decrease revenues. To effectively respond to this risk, we work to create defensible space throughout Arizona. With approximately 5,667 miles of overhead transmission lines and approximately 11,038 miles of overhead distribution lines throughout Arizona, the potential threat to our system from wildfires is very real. APS is focused on wildfires at all times, planning year-round and continually strengthening the system so that customers can feel confident in our ability to serve them. Through proactive fire-mitigation measures, APS works to reduce the likelihood of fire in and around electrical equipment. Mitigation initiatives include the deployment of infrastructure systems technology as well as mobile technology to track and report fires.</p> <p>We also have proactively increased our system resiliency, implemented forest management programs to mitigate the risk of wildfires and developed rapid-response plans to promptly restore power after storms. We also work to mitigate the threat of fire to our transmission system. To reduce risk to our power lines and first responders working during wildfires, we make a priority of creating defensible space to address vegetation around equipment poles. Our goal is to remove combustible material within a minimum of 10-foot radius around equipment poles. Our right-of-way, which is cleared of vegetation, is used by firefighters to stop, anchor and suppress wildfires.</p>
<p>Chronic physical</p>	<p>Relevant, always included</p>	<p>The risk of water supply is considered in our ERM process based on assessments conducted by the business unit manager and the ERM group. The risk is recorded and monitored to determine the magnitude of the risk and the associated mitigated measures. This risk is considered (02) rating in terms of financial impact, a (01) as operational impact and (01) as reputational impact. In the long term, water supply may be at risk due to climate change. Declining water reservoirs will require adaptation and new technological and policy solutions for water management. 2020 was one of the driest monsoon seasons on record for the region, further expanding extreme and exceptional drought conditions. In the Western U.S.,</p>



	<p>water resources and availability are long-term issues. The United States Bureau of Reclamation has predicted that there is a 97% probability in 2022 and an 92% probability in 2023 that the first ever Tier 1 shortage will be declared on the Colorado River, resulting in a loss of approximately 1/3 of the water delivered to Arizona through the Central Arizona Project canal. Impacts to APS power plants would be minimal due to robust planning to secure water contracts, water rights, and contingent supplies. However, perceptions of water shortages could result in unfavorable press, loss of investor confidence, and possible limits in municipal, commercial, or industrial growth. APS Water Resource Management (WRM) is responsible for securing primary, secondary and contingent water supplies for nine power plants, through a combination of water rights (groundwater and surface water), water contracts and agreements. WRM also constructs and maintains reliable pumping, delivery and water storage infrastructure. The APS generation fleet consists of the Palo Verde Generating Station (nuclear), Cholla and Four Corners Power Plants (coal), and six natural gas-fired plants: Redhawk, West Phoenix, Ocotillo, Sundance, Yucca and Saguaro Power Plants. These plants use three sources of water primarily for cooling water, but also for drinking water and high-purity process water: treated effluent (69 percent), surface water (16 percent) and groundwater (15 percent). WRM manages water conservation programs and strategy for all plants, designed to reduce water consumption and improve efficiency over time, and manages other programs such as the well and pumping equipment reliability program that ensures the water supplies can be reliably delivered to the plants, when needed.</p>
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### C2.3

**(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?**

Yes

### C2.3a

**(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.**

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**Identifier**

Risk 1

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type & Primary climate-related risk driver**

Emerging regulation

Carbon pricing mechanisms

**Primary potential financial impact**

Increased indirect (operating) costs

**Company-specific description**

A potential transition risk for APS in 2020 that may have financial impact on our operating costs are climate change litigation and legislative and regulatory efforts to limit greenhouse gas (GHG) emissions. Although there are no current or planned congressional attempts to pass cap and trade legislation to regulate GHG emissions, in the event cap and trade legislation ultimately passes, the actual economic and operational impact of such legislation on APS depends on a variety of factors, none of which can be fully known at this time. Factors include allowable GHG emissions; cost to reduce emissions; how any allowable emissions will be allocated to sources; the associated cost; and whether offsets and other measures to moderate the costs of compliance will be available. However, for numerous years the APS Integrated Resource Plan has included a “cost of carbon,” which is factored into resource allocation decisions to address this potential cost to operations. Carbon tax costs are challenging to forecast because, despite numerous efforts, the federal government has not reached policy consensus on the magnitude, timing or need for a carbon tax. It is difficult to forecast what final form that regulation may take; nonetheless, during 2020, the EPA took action to repeal the Clean Power Plan and replace it with the Affordable Clean Energy regulations (which was subsequently vacated and remanded back to the EPA). While the outcome is still unpredictable, APS evaluated carbon costs in our resource planning effort, assuming that carbon legislation will occur at either the state or federal level and carbon pricing will take effect in 2025. APS has included in its analysis the potential for carbon pricing in its 2020 Integrated Resource Plan (IRP). The CO<sub>2</sub> cost included in the IRP analysis was based on the California market cap and trade 2020 CO<sub>2</sub> cost of \$16.68, escalated at 2.5 percent beginning in 2025. Prior to 2025, APS’s analysis assumed the CO<sub>2</sub> cost to be \$0. Based on financial modeling, the resulting potential impact based on these assumptions and projected carbon emissions from 2020 thru 2035 is \$1,278M-\$1,658M. These costs would result in higher revenue requirements recovered through a rate review or adjustor mechanisms. A carbon cost will continue to be integrated into future scenarios as we work with stakeholders on future resource plans.

**Time horizon**

Medium-term



**Likelihood**

Likely

**Magnitude of impact**

Medium-high

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

**Potential financial impact figure – minimum (currency)**

1,278,000,000

**Potential financial impact figure – maximum (currency)**

1,658,000,000

**Explanation of financial impact figure**

One of the most likely but unpredictable outcomes is a carbon tax. Carbon tax costs are challenging to forecast because, despite numerous efforts, the federal government has not reached policy consensus on the magnitude, timing or need for a carbon tax. It is difficult to forecast what final form that regulation may take; nonetheless, APS has included in its analysis the potential for carbon pricing in its 2020 Integrated Resource Plan (IRP). The CO2 cost included in the IRP analysis was based on the California market cap and trade 2020 CO2 cost of \$16.68, escalated at 2.5 percent beginning in 2025. Prior to 2025, APS's analysis assumed the CO2 cost to be \$0. The resulting potential impact based on these assumptions and projected carbon emissions from 2020 thru 2025 is \$1,278M-\$1,658M. These costs would result in higher revenue requirements recovered through a rate review or adjustor mechanisms.

**Cost of response to risk**

500,000

**Description of response and explanation of cost calculation**



There is a yearly management cost of about \$500,000, approximately 50 percent for personnel costs and 50 percent for various trade group memberships, tracking tools and services as needed to address the risk of emerging carbon-related regulation. (\$250K +\$250k = \$500k).

The Sustainability Department at APS has three Policy Consultants and one Director, with one Policy Analyst focused on environmental issues. The Consultant and Director work with the various APS business units to ascertain, review and track local, state, and federal environmental regulations that have the potential to impact APS's current and future operational goals. Memberships in various trade groups and subscriptions to various tracking tools keep the team alerted to proposed regulations and help us understand potential impacts to the industry.

APS engages with the regulatory community to understand and become aware of environmental regulations that may impact our current and future operational goals. The Consultant and Director meet monthly with the environmental support team and leadership to make sure that any regulations that have changed or are potentially being proposed are assessed for potential risks or opportunities. For example, in 2019 EPA finalized the Affordable Clean Energy Rule (ACE). The Consultant and Director reviewed the proposed ACE Rule with the operations, engineering, environmental and legal teams to assess the risk of potential financial and operating impacts. The review process led to the environmental and legal team working together to take all necessary steps to comply with the requirements of the EPA's ACE Rule which EPA enacted to provide existing coal-fired electric utility generating units (EGUs) with standards for reducing greenhouse gas (GHG) emissions. For example, starting in 2019 the Company began the required analysis of the Cholla Power Plant, and is required by Arizona Department of Environmental Quality (ADEQ) to submit its analysis for review by the December 1, 2020 deadline.

## **Comment**

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### **Identifier**

Risk 2

### **Where in the value chain does the risk driver occur?**

Direct operations

### **Risk type & Primary climate-related risk driver**



Chronic physical

Changes in precipitation patterns and extreme variability in weather patterns

**Primary potential financial impact**

Increased capital expenditures

**Company-specific description**

One of the largest physical risks driven by change in physical climate parameters is water supply, which may result in increasing capital expenditures to address this risk. Since water can be a scarce resource in the Southwest, any change in precipitation or extended droughts driven by climate change bring with it inherent risks for APS and could materially impact on our business and operations. However, since its inception over a century ago, APS has been diligent and forward-looking in its efforts to find and secure sufficient water for current and future power generation. APS has an entire business unit dedicated to assessing and addressing our current and future water needs.

In 2020, water risk is considered in our Enterprise Risk Management (ERM) process based on assessments conducted by the business unit manager and the ERM group. The risk is recorded and monitored to determine the magnitude of the risk and the associated mitigated measures. In 2020, this risk is considered (02) rating in terms of financial impact, which is a moderate potential impact of \$5M to \$25M. 2019 was an unusual year for water availability in the state due to significant amounts of rain and above-average snowpack. This was considered an isolated occurrence as 2020 was one of the driest monsoon seasons on record for the region, further expanding extreme and exceptional drought conditions. In the Western U.S., water resources and availability are long-term issues, and full drought recorder requires several years of above average precipitation to replenish reservoirs or aquifers.

Two potential drought-related projects could result in expenditures of \$4-6M in capital costs. If drought results in loss of surface water due to a shortage declaration on the Colorado River, agricultural users near the Sundance Power Plant could revert to pumping groundwater. This new groundwater pumping could lower the water table to levels that require drilling a new, deeper well at a cost of \$2-3M. A similar drought-related issue could occur at the Yucca Power Plant where a shortage declaration on the Colorado River would result in loss of all but one well supporting the plant. Although APS maintains a stock of spare parts on-site in case of well failure, it is possible we would drill a well to avoid having a single point of failure, at a cost of \$2-3M.

**Time horizon**

Medium-term



**Likelihood**

Likely

**Magnitude of impact**

Medium-high

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

**Potential financial impact figure – minimum (currency)**

4,000,000

**Potential financial impact figure – maximum (currency)**

6,000,000

**Explanation of financial impact figure**

The financial implication related to drought is difficult to quantify in an exact financial figure. However, two potential drought-related projects could result in expenditures of \$4-6M in capital costs. If drought results in loss of surface water due to a shortage declaration on the Colorado River, agricultural users near the Sundance Power Plant could revert to pumping groundwater. This new groundwater pumping could lower the water table to levels that require drilling a new, deeper well at a cost of \$2-3M. A similar drought-related issue could occur at the Yucca Power Plant, where a shortage declaration on the Colorado River could result in loss of all but one well supporting the plant. Although APS maintains a stock of spare parts on-site in case of well failure, it is possible we would drill a well to avoid having a single point of failure, at a cost of \$2-3M. In the event that a replacement well had to be drilled at Sundance (\$2-3 M) and a new well had to be drilled at Yucca (\$2-3 M), the total cost range could be  $(\$2-3M) + (\$2-3M) = (\$4-6M)$ .

**Cost of response to risk**

1,500,000

**Description of response and explanation of cost calculation**



Because water supplies are so integral to the operations at APS, we have an entire Water Resource Management (WRM) department comprised of six employees, with an operations and maintenance budget of approximately \$1.5M a year. The budget is primarily personnel costs, about \$1M, and about \$500k for outside services contracts to support the business. This management team assesses and manages current as well as future risk associated with drought and extreme weather. (\$1M + \$0.5M = \$1.5M)

APS has identified both primary water supplies and contingencies for each power plant in order to ensure reliable long-term operation, even in times of possible shortage, such as extended drought. APS owns and operates 44 production wells that provide cooling water and supplemental water to support generation at eight of nine power plants. Unplanned well and pumping equipment failures can occur as a result of pumping equipment failure, electrical/mechanical issues, well casing problems, or human performance errors. These failures disrupt scheduled maintenance plans, result in unplanned/unbudgeted costs, and could result in loss of water necessary to support generation. The reliability rate in 2015 was 90%, equating to 5 unplanned failures. In 2020, the reliability rate increased to 98%, equating to one unplanned failure. It is WRM's goal to achieve 98% reliability, or better, in future years.

## Comment

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### Identifier

Risk 3

### Where in the value chain does the risk driver occur?

Direct operations

### Risk type & Primary climate-related risk driver

Chronic physical

Changes in precipitation patterns and extreme variability in weather patterns

### Primary potential financial impact

Other, please specify

Increased capital expenditures and operating costs.

### **Company-specific description**

In 2020, a climate-related physical risk, due to changes in precipitation patterns and extreme variability in weather patterns with a potential financial impact to operating costs, is heightened wildfire risk due to drought. The risk was assessed through the ERM process and identified as a level (04) risk (meaning an impact of greater than \$25M) as it relates to financial impact. Catastrophic fire events were identified as an enterprise top risk for the last three years (2017-2020). In Arizona, about half of primary residential and commercial structures are located near the wildland-urban interface. Due to extended drought over the past decade, forests and vegetation have been stressed from the lack of regular and sufficient moisture, compounded by shorter, drier winters and longer, warmer summers. These changes in weather patterns pose a fire risk to the communities we serve. To effectively respond to this risk, we collaborate with key stakeholders to reduce wildland fire risk and create defensible space throughout Arizona. With approximately 5,667 miles of overhead transmission lines and approximately 11,038 miles of overhead distribution lines throughout Arizona, the potential threat to our system from wildfires is very real. APS is focused on wildfires at all times, planning year-round and continually strengthening the system so that customers can feel confident in our ability to serve them power.

The financial implication related to catastrophic fire is difficult to equate to an exact financial figure. However, a potential capital project that could result in expenditures of \$1-2M is the minimal investment in new technology that would assist in earlier fire detection and prevention to address fire risk. Due to the growing risk and occurrence of fire, APS is assessing investment in new technologies that would assist in earlier fire detection and prevention. The cost is mostly associated with purchasing and implementing the new technology.

We use a three-pronged approach to mitigate fire risk. First, we assess site-specific fire risk and develop a model to prioritize resources. Second, we educate and inform the communities we serve about fire mitigation. Third, we implement a proactive program to create defensible space around poles (DSAP) to address vegetation at the base of utility poles. The goal of the DSAP program is to remove combustible material inside a minimum 10-foot radius around equipment poles on a three-year cycle.

### **Time horizon**

Short-term

### **Likelihood**



Likely

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

**Potential financial impact figure – minimum (currency)**

1,000,000

**Potential financial impact figure – maximum (currency)**

2,000,000

**Explanation of financial impact figure**

The financial implication related to catastrophic fire is difficult to equate to an exact financial figure. However, a potential capital project that could result in expenditures of \$1-2M is the minimal investment in new technology that would assist in earlier fire detection and prevention to address fire risk. Due to the growing risk and occurrence of fire, APS is assessing investment in new technologies that would assist in earlier fire detection and prevention. The cost is mostly associated with purchasing and implementing the new technology.

The cost is mostly associated with purchasing (\$500k-1M) and implementing the new technology (\$500k-1M). On the low end, \$500k+\$500k=\$1 million. On the higher end \$1million+\$1million=\$2million. This results in a range is costs of \$1M-\$2M.”

**Cost of response to risk**

20,500,000

**Description of response and explanation of cost calculation**

The cost of management is a yearly cost of approximately \$20.5M to support the forestry business unit, which is dedicated to management of rights-of-way and helping to harden assets against the threat of forest fires related to changes in physical climate parameters, including forest



fires. The management costs are an approximate yearly cost to maintain the personnel in the department and all associated projects. Of the \$20.5M, approximately \$18.5M is for outside services and operations and \$2M for the management of the department. (\$18.5M + \$2M = \$20.5M)

We use a three-pronged approach to mitigate fire risk. First, we assess site-specific fire risk and develop a model to prioritize resources. Second, we educate and inform the communities we serve about fire mitigation. Third, we implement a proactive program to create defensible space around poles (DSAP) to address vegetation at the base of utility poles. The goal of the DSAP program is to remove combustible material inside a minimum 10-foot radius around equipment poles on a three-year cycle. In 2020, we treated over 21,160 DSAP poles in the wildland-urban interface. Our rights-of-way, which are cleared of vegetation, are used by firefighters to suppress wildfires across Arizona. Since 2000, APS rights-of-way have been used to suppress 52 large fires of 100 acres or more.

### **Comment**

The effectiveness of our fire mitigation efforts is evident during events such as the Bush Fire and Woodbury Fire on the Tonto National Forest during the summer of 2020. During these events, our crews collaborated with state and local officials to de-energize power lines and ensure the safety of homes and residents in the affected area. As a result of the defensible space created in our utility corridor, the fire was prevented from reaching many of our poles and damaging our lines. This greatly improved our ability to quickly restore service after the fire was contained.

The Company has taken several steps to mitigate the risk of wildfires, including collaborations with state and local agencies and updating the Company's fire mitigation plan.

## **C2.4**

**(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?**

Yes

### **C2.4a**

**(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.**

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**Identifier**

Opp1

**Where in the value chain does the opportunity occur?**

Direct operations

**Opportunity type**

Energy source

**Primary climate-related opportunity driver**

Use of supportive policy incentives

**Primary potential financial impact**

Reduced indirect (operating) costs

**Company-specific description**

The energy efficiency standard (EES) set by the Arizona Corporation Commission, which is one of the more aggressive standards in the nation, requires utilities to achieve cumulative savings equivalent to 22% of 2019 retail sales. APS achieved and exceeded this goal in 2020. Through 2020, we achieved 23% of the EES goal. Our portfolio of energy efficiency programs provided about 585,637 MWh of energy savings for 2020. That is enough energy to power more than 50,000 typical Arizona households for an entire year. Since 2005, the lifetime energy savings from our energy efficiency programs have avoided approximately 22 million metric tons of carbon emissions.

To best support customers impacted by this rare global health and economic crisis, APS proposed additional DSM measures in its 2020 DSM Implementation Plan to help customers adversely affected by the economic impacts of the COVID-19 pandemic. The plan was approved by the Arizona Corporation Commission in October 2020 to help:

- Limited-income customers, including those recently unemployed by the crisis
- Customers who face unexpected costs due to HVAC failures and other related equipment emergencies
- Non-profit organizations and agencies that provide community health and human services



- Schools, historic facilities and other cultural sites that are important to the quality of life for Arizonans
- APS's Trade Allies that provide energy services, as long as they can do the work in a safe manner
- Local small businesses continue operating through the economic impacts of this pandemic

There is a cost to implement DSM programs, but ultimately the savings from demand side management (DSM) potentially reduce our indirect (operating) costs by helping to reduce demand on our fleet. APS offers a comprehensive portfolio of DSM programs to achieve the required EES. The APS DSM portfolio also includes a focus on demand response, load shifting, energy storage and load management programs designed to help flatten system load shapes and shift energy use into the middle of the day during peak solar production when APS's generation mix has the lowest carbon intensity. These programs are essential to us reaching our 2050 of 100% clean, carbon-free electricity by 2050.

**Time horizon**

Short-term

**Likelihood**

Virtually certain

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

1,200,000,000

**Potential financial impact figure – minimum (currency)**

**Potential financial impact figure – maximum (currency)**



### **Explanation of financial impact figure**

Each year APS files an annual DSM implementation plan with the Arizona Corporation Commission (ACC) that includes detailed information about DSM program goals, estimated participation, energy savings, emissions reductions and proposed budgets. This investment has resulted in creating almost \$1.2B of net economic benefits (present value of societal benefits created by avoiding energy generation less the present value of societal costs from installing energy efficient measures) for APS customers. One of these energy efficient measures is DSM initiatives that included energy storage and load management rewards program, an energy and demand education pilot, online marketplace, and the codes and standards program, which was implemented in 2019.

The APS DSM portfolio is measured for cost effectiveness using the Societal Benefits Test. These net benefits are the result of avoided generation capacity, fuel savings and operations and maintenance savings due to APS DSM programs. These net benefits do not include any monetary value for the carbon emission savings resulting from programs – these savings are quantified but not monetized.

Based on portfolio cost effectiveness results reported to the Arizona Corporation Commission, the APS DSM portfolio has produced over \$1.17 billion in net benefits (total benefits minus costs) for APS customers from 2005-2020. Of the \$1.17billion, \$467M is from implemented residential energy efficiency programs, \$747.7Mis from implemented business energy efficiency programs, \$45.1M from implemented codes and standards and additional DSM initiatives (rewards program, measurement and evaluation, and performance incentives) deducted \$82.6 from overall benefits. Energy efficiency measures implemented, totaling 585,637 MWh annual savings, by our customers in 2020 contributed \$4,184,369 net benefits to the over \$1.1 billion in net benefits from 2005-2020. ( $\$46.7M + \$747.7M + \$45.1M - \$81.2M = \$1.17B$ )

### **Cost to realize opportunity**

698,000,000

### **Strategy to realize opportunity and explanation of cost calculation**

During the time period from 2005 through 2020, APS has spent a total of over \$698M in customer-focused demand side management (DSM) programs. This investment has resulted in creating almost \$1.2B of net economic benefits (present value of societal benefits created by avoiding energy generation less the present value of societal costs from installing energy efficient measures) for APS customers. Of the \$698M, \$304.1M was for the implementation of residential energy efficiency program, \$263.7M for the implementation of non-residential programs, \$21.2M for other initiatives including Energy Storage and Load Management programs, an energy and demand education pilot, online market place, and codes and standards, \$28M for measurement, evaluation, and research, \$55.4M for performance incentives, and



\$25.6M for Demand Response programs. ( $\$304.1\text{M} + \$263.7\text{M} + \$21.2\text{M} + \$28\text{M} + \$55.4\text{M} + \$25.6\text{M} = \$698\text{M}$ )

Each year APS files an annual DSM implementation plan with the Arizona Corporation Commission (ACC) that includes detailed information about DSM program goals, estimated participation, energy savings, emissions reductions and proposed budgets. This annual plan is reviewed by ACC staff, commented on by stakeholders and intervenors and must receive a majority of Commissioner votes at an open meeting to proceed.

### **Comment**

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#### **Identifier**

Opp2

#### **Where in the value chain does the opportunity occur?**

Direct operations

#### **Opportunity type**

Energy source

#### **Primary climate-related opportunity driver**

Use of lower-emission sources of energy

#### **Primary potential financial impact**

Increased diversification of financial assets

#### **Company-specific description**

In January 2020, APS announced its Clean Energy Commitment, an ambitious goal to deliver 100% clean, carbon-free and affordable electricity to our customers by 2050, with an interim target in 2030 of achieving a resource mix that is 65% clean energy, with 45% of customers' electricity needs served by renewable energy.



The financial impacts of increasing renewables as part of our resource mix reduce our exposure to future fossil fuel price increases as we do not need to purchase additional fossil fuels. The Arizona Corporate Commission (ACC) has adopted a renewable energy standard (RES), in which electric utilities under its jurisdiction must supply an increasing percentage of their retail electric energy sales from eligible renewable resources, including solar, wind, biomass, biogas and geothermal technologies. In 2020, the Company's total RES resources were 2,982,329 MWh, which is 10.2 percent of APS's total 2020 retail sales. The RES rules further mandate that 30 percent of an affected utility's total requirement be fulfilled with energy produced from distributed energy (DE) sources, one-half of which may come from residential applications and the remaining one-half from non-residential, non-utility applications. APS requested and received a waiver from the residential distributed generation (DG) requirement as APS did not meet the residential DE requirement. However, APS did meet the non-DE RES compliance requirement in 2020. Renewable energy resources installed in APS's service territory produced 4,402,776 MWh in 2020, which includes energy from rooftop solar installations for which an incentive was not provided. The renewable energy standard increases annually until reaching 15 percent in 2025. This regulatory driver is having a large impact on APS's generation mix.

**Time horizon**

Short-term

**Likelihood**

Virtually certain

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

**Potential financial impact figure – minimum (currency)**

15,292,000,000

**Potential financial impact figure – maximum (currency)**

21,397,000,000

### **Explanation of financial impact figure**

\$15,292M-\$21,397M nominal (\$7,270M-\$9,706M net present value). Potential financial impact reflects assumptions and models included in APS's 2020 Integrated Resource Plan for 2020-2035. The above financial impacts include the ongoing capital and operation and maintenance costs for owned renewables, purchased power agreement payments, integration costs and future liabilities on incentivized rooftop solar. The financial impacts of increasing renewables as part of our resource mix reduce our exposure to future fossil fuel price increases as we do not need to purchase additional fossil fuels.

### **Cost to realize opportunity**

384,800,000

### **Strategy to realize opportunity and explanation of cost calculation**

In July of 2020, APS submitted a renewable energy standard (RES) implementation plan to the Arizona Corporation Commission (ACC) requesting funding approval for existing program commitments and deployment of previously authorized programs. The requested budget for APS's 2021 plan consists of funding for previously authorized programs, including legacy production-based incentive (PBI) subsidy payments, purchased power agreement (PPA) and revenue requirement costs, educational outreach and administration of prior initiatives currently being implemented. The budget for APS's 2021 Plan consists of funding for previously authorized programs including PBI legacy payments, PPA and revenue requirement costs and prior initiatives currently being implemented. APS expects the total base budget for PBI, other distributed generation (DG) legacy programs and PPA projects in 2021 to be \$84.7 million, and the total request for the 2021-2025 plan years to be \$384.8 million, not including any funding offsets. This equates to a total RES budget of \$84.7M for 2021, \$85.2M for 2022, \$72.4 for 2023, \$71.1 for 2024 and \$71.3M for 2025. One example within the RES implementation plan are renewable generation (RG) resources, which are larger-scale renewable energy resources that serve the energy demand of all APS customers. These resources are part of the Company's energy portfolio and are applied to APS's overall RES requirements. APS's targeted RG resources for 2021 are 2,579 GWh.  
(\$84.7M +\$85.2M +\$72.4 +\$71.1M +\$71.3M = \$384.8M)

As of December 31, 2020, there were a total of 117,936 residential and non-residential solar grid-tied DG systems, with an associated capacity of 1,070 MW-AC. Of those systems, 22,111 were residential installations and 996 were non-residential installations that received incentives to interconnect solar grid-tied DG systems, with associated capacity of 129 MW-AC and 187 MW-AC, respectively. The above DG projection does not include Renewable Energy Credits (RECs) associated with non-incented installations. Through June 1, 2021, 101,054 residential solar grid-tied DG systems (741 MW-AC) and 833 non-residential solar grid-tied DG systems (72 MW-AC) have been installed across the APS service territory and interconnected to APS's grid without receiving incentives.

## Comment

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### Identifier

Opp3

### Where in the value chain does the opportunity occur?

Direct operations

### Opportunity type

Energy source

### Primary climate-related opportunity driver

Use of lower-emission sources of energy

### Primary potential financial impact

Reduced indirect (operating) costs

### Company-specific description

APS is deploying a wide array of new distributed energy resource (DER) technologies to provide clean, reliable, affordable energy to its customers. These include battery storage, thermal storage, load management, electric vehicles and other beneficial electrification technologies that have the potential to increase the value of intermittent generation resources as well as increase grid reliability and stability while also reducing carbon emissions. Besides simply storing and dispatching power, they have the ability to provide other ancillary services such as voltage regulation, frequency response, and support for intermittent renewable resources. DERs can also potentially help defer investments in more traditional transmission and distribution infrastructure, allowing system reliability to be maintained at lower overall cost. With respect to renewable resources, energy storage makes these intermittent resources more useful for the utility system by better aligning the availability of power with the system's peak energy demand.

In 2020, we expanded certain Rewards distributed energy resource (DER) storage programs. Launched in 2018 and 2019, these industry-leading and award-winning programs incentivize customers to adopt advanced technologies in their homes to help consume electricity at



midday when solar energy is plentiful and to conserve power in the late afternoon and early evening when it is in greatest demand and thus costs more. The APS Rewards initiative goes beyond using traditional batteries and helps to harness the use of thermal storage through smart water heaters and thermostats. Through our Cool Rewards program, focused on connected residential smart thermostats for demand response with pre-cooling, we had 31,208 smart thermostats enrolled in 2020 and a goal to install an additional 40,000 smart thermostats in 2021, providing about 50MW of demand response peak capacity. Through Storage Rewards, focused on residential and commercial battery systems installed on specific feeders, we have 33 residential sites for batteries in 2020. Through the Reserve Rewards program, 226 grid-interactive water heaters were installed in homes on specific feeders in 2020.

**Time horizon**

Short-term

**Likelihood**

Very likely

**Magnitude of impact**

Medium-high

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

**Potential financial impact figure – minimum (currency)**

13,200

**Potential financial impact figure – maximum (currency)**

19,800

**Explanation of financial impact figure**

It is still too early to know the full financial impact these systems may provide to our operations, but we expect that they will be providing direct savings to our customers. Most of the proposed projects are research and development projects to determine their ability to provide voltage



regulations, power factor improvements, load balancing and peak shaving. One of the objectives of the energy storage and load management program is to develop better information about the costs and benefits of these emerging distributed energy management technologies. Some of these technologies, such as residential battery storage, are not currently cost effective, but this project provides valuable learnings about how to connect to and manage distributed storage technologies while also offering participant benefits. Ongoing savings on average range \$400-\$600 per year on energy costs on peak demand. There were a total of 33 participants in the residential storage battery storage program in 2020 for a total of approximately \$13,200 - \$19,800 potential savings for 2020. ( $\$400 \times 33 = \$13,200$ ,  $\$600 \times 33 = \$19,800$ )

**Cost to realize opportunity**

5,726,116

**Strategy to realize opportunity and explanation of cost calculation**

A total of \$5,726,116 was spent for the implementation of the Rewards program in 2020. This includes \$3,285,844 for rebates and incentives, \$2,223,477 for program implementation, \$72,888 for program marketing and \$143,907 for planning and administration. ( $\$3,285,844 + \$2,223,477 + \$72,888 + \$143,907 = \$5,726,116$ )

The program includes emerging technologies for managing system load shapes and helping customers shift energy use to lower cost off-peak hours including battery storage, connected water heaters and demand response with smart thermostats. It is being marketed to APS customers as the Rewards program, which includes Storage Rewards (battery storage), Reserve Rewards (connected water heaters) and Cool Rewards (smart thermostats). The programs, resulting in 212,390 annual gross MWh saving and 48.5 MW peak demand savings. For the Storage Rewards program, 33 residential scale batteries were installed and operating during this reporting period. For the Reserve Rewards program, a total of 226 connected water heaters were installed and operating during the reporting period.

**Comment**

## **C3. Business Strategy**

### **C3.1**

**(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?**



Yes, and we have developed a low-carbon transition plan

### C3.1a

**(C3.1a) Is your organization’s low-carbon transition plan a scheduled resolution item at Annual General Meetings (AGMs)?**

	Is your low-carbon transition plan a scheduled resolution item at AGMs?	Comment
Row 1	No, and we do not intend it to become a scheduled resolution item within the next two years	

### C3.2

**(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?**

No, but we anticipate using qualitative and/or quantitative analysis in the next two years

### C3.2b

**(C3.2b) Why does your organization not use climate-related scenario analysis to inform its strategy?**

The Company has not yet completed a climate- related scenario analysis primarily due to on-going uncertainty in carbon regulation. On November 3, 2020, Joe Biden was selected as the forty-sixth President of the United States of America. Among President Biden’s many campaign promises were commitments to root policy and regulatory decisions in data and science, re-establish the United States as a leader in climate change, both at home and abroad, and to re-enter the Paris Climate Accords.

Because of the uncertainties regarding potential regulation of carbon emissions by either Congress, the Biden Administration, or both, APS may need to revise or update its Clean Energy Commitment. This uncertainty is expected to be resolved in the next two years, during which APS will reconsider conducting a carbon scenario analysis. Until resolution, APS will continue monitoring climate science developments to stay aligned with new research and recommendations.

On June 26, 2020 APS filed its 2020 Integrated Resource Plan (IRP) a document that provides customers, stakeholders and regulators with a 15-year outlook of the utility landscape, including the challenges that lie ahead and the paths that can navigate APS toward success. The 2020 IRP was guided by planning principles that are core to APS: Clean, Reliable, Affordable and Customer Focused. It was also the first IRP based on the company’s Clean Energy Commitment, announced in 2020 an ambitious goal to deliver 100 percent, clean energy to customers by 2050, to exit coal by 2031, and



achieve 65 percent clean energy with 45 percent of our generation coming from renewables by 2030. APS’s Clean Energy Commitment is informed by consultations with Arizona universities and non-governmental organization experts. Their input is grounded in current, globally recognized climate science, and provides a greater understanding of the impacts of our changing climate across the state. Our 2050 target is consistent with the Intergovernmental Panel on Climate Change’s recommended timeframe for limiting global warming this century to 1.5 degrees Celsius above pre-industrial levels. Resource decisions and IRP assumptions could also be impacted as because of the uncertainties regarding potential regulation of carbon emissions by either Congress, the Biden Administration, or both.

Although a formal climate-related scenario analysis has not been used to inform our business strategy in the past, we have successfully implemented strategies for reducing the carbon intensity of our electricity generation through our IRP. Advancing technologies, growing renewable energy resources and increasing customer sentiment for cleaner energy are accelerating change in the electric utility industry. The IRP details our blueprint to provide customers with clean, reliable and affordable energy, fulfil regulatory targets and manage environmental impacts. These trends are shaping the current planning objectives:

- Developing cleaner energy resources;
- Increasing investment in the energy grid;
- Participating in energy markets to lower customer bills; and
- Increasing system flexibility to maintain reliable service that our customers require.

### C3.3

**(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.**

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	A climate related risk and opportunity the Company has addressed in 2020 is our strategic decision to implement a new online marketplace to reach customers digitally and provide access to educational information, APS rebates and special discounts on energy efficient devices and appliances. This strategy was influenced by APS’s plan to mitigate climate-related technology risks by providing customers with the necessary resources to understand and manage their own energy and peak demand. This strategy is anticipated to cover both short- and medium-term time horizon (0-5 years).



		<p>As part of a Marketplace launch promotion, APS offered energy efficient LED light bulb kits to customers at no cost and saw significant participation. In November, APS offered zero cost Nest thermostats through Marketplace for customers who agreed to have their thermostat pre enrolled to participate in one season of the Cool Rewards demand response program. Customers were able to receive their EE thermostat rebate and Cool Rewards participation incentive along with a special Google discount at checkout resulting in a net zero cost (taxes and shipping were paid by the customer). In 2020, APS spent \$158,725 on the program.</p>
Supply chain and/or value chain	Yes	<p>A climate related risk and opportunity the Company has addressed in our value chain is the adoption of a Fleet vehicle standard that will impact our procurement strategy and value chain. In 2020, we set a goal of transitioning 30% of our light-duty vehicles and equipment (comprised of forklifts, all-terrain vehicles, golf carts and light-duty passenger vehicles) to electric by 2025 with an aspirational goal of achieving a 100% clean, carbon-free fleet by 2050. Our strategic decision to adopt a fleet vehicle standard was influenced by the climate-related risk of emerging regulation surrounding GHG emissions reductions. The standard will ultimately reduce our Scope 1 emissions and is anticipated to span both medium- and long-term time horizons (1-30 years). Our transportation fleet's conversion to more fuel-efficient vehicles and electrification continues through market research and updates to our electrification strategy. We are monitoring medium and heavy-duty options and will adopt them once there is more commercial availability. Through this ongoing conversion and by using our fleet more efficiently, we are working to reduce carbon emissions and operating costs.</p>
Investment in R&D	Yes	<p>Electric vehicle (EV) adoption in Arizona represents a climate related opportunity. A substantial strategic decision to invest in EV adoption was influenced by the climate-related opportunity to implement the use of lower-emission sources of energy. APS is planning to continue to expand and develop this technology across an anticipated medium and long-term time horizons (1-30 years). The transportation sector represents a significant emissions source, and the electrification of that economic sector can help achieve overall air quality goals and our goal of providing 100% clean, carbon free energy by 2050. We launched an innovative pilot program encouraging electric vehicle (EV) adoption by providing charging stations throughout Arizona, install and own EV charging equipment located at various businesses,</p>



		<p>government agencies, non-profits and multifamily communities within the Company’s service territory. Through the program, APS is gaining valuable knowledge to better understand the needs of Arizona with regards to the electrification of the transportation sector. Under the program, 86 commercial Level 2 charging plugs have been installed at 43 locations. This has enabled charging at hotels, workplaces and municipalities. We expect to install more than 250 chargers through 2021. The Take Charge AZ program also includes a research study that will look at EV growth and load impacts specific to Arizona. As of July 2019, APS has invested \$239,000 in the program. In 2020, spending has significantly increased as the program continues to be developed and expanded.</p>
Operations	Yes	<p>A climate related risk and opportunity for our Operations is to invest capital in clean generation. A substantial strategic decision was to invest in capital in clean generation that was influenced by the climate-related risk of emerging regulations surrounding carbon reduction. Our planned investments and clean energy expenditures are anticipated to span short medium- and long-term time horizons (1-30 years). A key driver of the Company’s strategic plan is to take steps to reduce carbon emissions with a long-term goal of reaching 100 percent clean, carbon free energy by 2050 through the Company’s clean energy commitment. This goal includes a nearer-term 2030 target of 65 percent clean energy, with 45 percent of our resource mix coming from renewable energy. We also will cease reliance on coal-fired generation by 2031. The commitment is informed by consultations with Arizona universities and non-governmental organization experts. This will impact the operations of the Company as it adopts resources and technologies to achieve this plan. The Company projects it will spend over \$1.9 billion for the period 2020-2023 on clean generation and environmental capital expenditures.</p>

### C3.4

**(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.**

Financial planning elements that have been influenced	Description of influence
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<p>Row 1</p>	<p>Capital allocation</p>	<p>APS currently allocates its capital based on clean generation and other environmental expenditures. These expenditures are influenced by climate-related technology opportunities. We have planned environmental expenditures that span the short (0-1 years), medium (1-5 years), and long-term (5-30 years) time horizons, and are constantly monitoring the status of related environmental matters. Capital expenditures are comprised of various additions and improvements to APS’s clean generation resources, including nuclear plants, renewables and energy storage systems. Examples of the types of projects included in the forecast of generation capital expenditures are additions of renewables and energy storage and upgrades and capital replacements of our various nuclear and fossil power plant equipment, such as turbines, boilers and environmental equipment. We are monitoring the status of environmental matters, which, depending on their final outcome, could require modification to our planned environmental expenditures. As an example, in 2020 we allocated \$136M in capital investment in clean (nuclear and renewable) generation, \$146M in environmental upgrades and \$199M in traditional (oil, coal, gas) generation. APS currently reports forecasts for these capital allocations from 2021 - 2022 totaling \$4.5 billion.</p>
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### C3.4a

**(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).**

The key driver of the Company’s strategic plan is to take steps to reduce the amount of carbon the Company produces. As announced in 2020, by 2050, the Company will deliver 100 percent clean, carbon-free and affordable electricity to our customers. This goal includes a nearer-term 2030 target of 65 percent clean energy, with 45 percent of our generation portfolio coming from renewable energy. We also will cease reliance on coal-fired generation by 2031. We will make this transition in a responsible manner, working closely with the affected communities to minimize impacts and help identify new opportunities. The Company is including efforts to achieve this commitment within its financial planning process.

## C4. Targets and performance

### C4.1

**(C4.1) Did you have an emissions target that was active in the reporting year?**

Absolute target

## C4.1a

**(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.**

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**Target reference number**

Abs 1

**Year target was set**

2020

**Target coverage**

Company-wide

**Scope(s) (or Scope 3 category)**

Scope 1+2 (market-based)

**Base year**

2005

**Covered emissions in base year (metric tons CO<sub>2</sub>e)**

16,557,441

**Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)**

99.5

**Target year**

2032

**Targeted reduction from base year (%)**

70



**Covered emissions in target year (metric tons CO2e) [auto-calculated]**

4,967,232.3

**Covered emissions in reporting year (metric tons CO2e)**

11,378,056

**% of target achieved [auto-calculated]**

44.6875904832

**Target status in reporting year**

Replaced

**Is this a science-based target?**

No, but we anticipate setting one in the next 2 years

**Target ambition**

**Please explain (including target coverage)**

In January 2020, the Company set the boldest clean-energy goal of all Arizona electric companies, as well as one of the most ambitious in the country, to reach 100 percent clean, carbon-free electricity by 2050. This goal includes a nearer-term 2030 target of 65 percent clean energy, with 45 percent of our generation portfolio coming from renewable energy. We also will cease reliance on coal-fired generation by 2031. The commitment is informed by consultations with Arizona universities and non-governmental organization experts. Their input is grounded in current, globally recognized climate science and provides a greater understanding of the impacts of our changing climate across the state. Our 2050 target is consistent with the Intergovernmental Panel on Climate Change's recommended timeframe for limiting global warming this century to 1.5°C above pre-industrial levels. We will continue to monitor climate science developments to stay aligned with new research and recommendations.

The target year of 2032 takes into account our first two milestones of our Clean Energy Commitment, 65% clean by 2030 and ceasing reliance on coal-fired generation. Our Integrated Resource Plan (IRP) includes an Action Plan that lays out the near-term actions we must take to progress rapidly to our 2030 interim target and ultimate 2050 goal. APS developed three portfolios for the 2020 IRP that meet both our reliability



and clean energy needs over the Planning Period. This target aligns with Path 2 - Shift, which build on our bridge plan but also moves APS away from natural gas more quickly by excluding any new natural gas generation.

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**Target reference number**

Abs 2

**Year target was set**

2020

**Target coverage**

Company-wide

**Scope(s) (or Scope 3 category)**

Scope 1+2 (market-based)

**Base year**

2005

**Covered emissions in base year (metric tons CO<sub>2</sub>e)**

16,557,441

**Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)**

99.5

**Target year**

2050

**Targeted reduction from base year (%)**

100

**Covered emissions in target year (metric tons CO<sub>2</sub>e) [auto-calculated]**



0

**Covered emissions in reporting year (metric tons CO2e)**

11,378,056

**% of target achieved [auto-calculated]**

31.2813133382

**Target status in reporting year**

Underway

**Is this a science-based target?**

No, but we anticipate setting one in the next 2 years

**Target ambition**

**Please explain (including target coverage)**

In January 2020, the Company set the boldest clean-energy goal of all Arizona electric companies, as well as one of the most ambitious in the country, to reach 100 percent clean, carbon-free electricity by 2050. This goal includes a nearer-term 2030 target of 65 percent clean energy, with 45 percent of our generation portfolio coming from renewable energy. We also will cease reliance on coal-fired generation by 2031. The commitment is informed by consultations with Arizona universities and non-governmental organization experts. Their input is grounded in current, globally recognized climate science and provides a greater understanding of the impacts of our changing climate across the state. Our 2050 target is consistent with the Intergovernmental Panel on Climate Change's recommended timeframe for limiting global warming this century to 1.5°C above pre-industrial levels. We will continue to monitor climate science developments to stay aligned with new research and recommendations.

## C4.2

**(C4.2) Did you have any other climate-related targets that were active in the reporting year?**

Target(s) to increase low-carbon energy consumption or production

## C4.2a

**(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.**

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**Target reference number**

Low 1

**Year target was set**

2007

**Target coverage**

Company-wide

**Target type: absolute or intensity**

Absolute

**Target type: energy carrier**

Electricity

**Target type: activity**

Production

**Target type: energy source**

Renewable energy source(s) only

**Metric (target numerator if reporting an intensity target)**

Percentage

**Target denominator (intensity targets only)**



**Base year**

2007

**Figure or percentage in base year**

1.1

**Target year**

2025

**Figure or percentage in target year**

15

**Figure or percentage in reporting year**

15

**% of target achieved [auto-calculated]**

100

**Target status in reporting year**

Underway

**Is this target part of an emissions target?**

Renewable energy resources installed in APS's service territory produced 4,402,776 MWh in 2020 (Include energy from rooftop solar installations for which an incentive was provided). This is equivalent to nearly 15.0% of APS's 2020 retail sales.

The Arizona Corporation Commission (Commission) requires through the Renewable Energy Standard and Tariff Rules (RES Rules) that 10.0% of the utility's 2020 retail kilowatt-hour (kWh) sales come from eligible renewable energy resources. In 2020, the Company's total RES resources were 2,982,329 MWh, which is 10.2 percent of APS's total 2020 retail sales. The RES Rules further mandate that 30 percent of an affected utility's total requirement be fulfilled with energy produced from Distributed Energy (DE) sources, one-half of which may come from residential applications and the remaining one-half from non-residential, non-utility applications. APS requested and received a waiver from the residential DG requirement as APS did not meet the residential DE requirement. However, APS did meet the non-DE RES compliance requirement in 2020.

Bold energy goals require ambitious plans and sound resource management. Together with our team of resource experts, energy planners and input from cross-sector stakeholders, we have developed a strategic road map on our path to a 100% carbon-free generation mix by 2050. Our Integrated Resource Plan (IRP) details how we plan to serve our customers' energy needs for the next 15 years, which includes an interim target of achieving a 65% clean energy mix by 2030. We are focused on integrating renewable resources, empowering customers with flexible energy efficiency options and incorporating advanced technology to produce 100% clean and affordable energy—all while providing reliable service and remaining good stewards of Arizona's diverse environment.

Here's how we plan to take our commitment to clean energy to the next level:

Eliminate the use of coal in energy generation by 2031.

Add renewables, including solar paired with storage to harness Arizona's sunshine.

Continue to invest in vital carbon-free resources such as nuclear energy from Palo Verde Generating Station.

Engage customers through expanded energy efficiency programs and smart energy choices.

**Is this target part of an overarching initiative?**

Other, please specify

Arizona Corporate Commission (ACC) Renewable Energy Standard (RES)

**Please explain (including target coverage)**

The Arizona Corporation Commission (Commission) requires through the Renewable Energy Standard and Tariff Rules (RES Rules) that 10.0% of the utility's 2020 retail kilowatt-hour (kWh) sales come from eligible renewable energy resources. In 2020, the Company's total RES resources were 2,982,329 MWh, which is 10.2 percent of APS's total 2020 retail sales. The RES Rules further mandate that 30 percent of an affected utility's total requirement be fulfilled with energy produced from Distributed Energy (DE) sources, one-half of which may come from residential applications and the remaining one-half from non-residential, non-utility applications. APS requested and received a waiver from the residential DG requirement as APS did not meet the residential DE requirement. However, APS did meet the non-DE RES compliance requirement in 2020.



### C4.3

**(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.**

Yes

### C4.3a

**(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.**

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	10	0
To be implemented*	6	65,000
Implementation commenced*	4	450,000
Implemented*	2	1,490
Not to be implemented	0	0

### C4.3b

**(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.**

**Initiative category & Initiative type**

Energy efficiency in buildings

Lighting

**Estimated annual CO2e savings (metric tonnes CO2e)**



876

**Scope(s)**

Scope 1

**Voluntary/Mandatory**

Mandatory

**Annual monetary savings (unit currency – as specified in C0.4)**

300

**Investment required (unit currency – as specified in C0.4)**

158,725

**Payback period**

<1 year

**Estimated lifetime of the initiative**

21-30 years

**Comment**

In September 2020, APS launched an online Marketplace site to reach customers digitally and provide access to educational information, APS rebates and special discounts on energy efficient devices and appliances. As part of a Marketplace launch promotion, APS offered energy efficient LED light bulb kits to customers at no cost and saw significant participation. In November, APS offered zero cost Nest thermostats through Marketplace for customers who agreed to have their thermostat pre-enrolled to participate in one season of the Cool Rewards demand response program. Customers were able to receive their EE thermostat rebate and Cool Rewards participation incentive along with a special Google discount at checkout resulting in a net zero cost (taxes and shipping were paid by the customer). In this promotion, APS was able to leverage incentives to secure special discounted pricing from the manufacturer that benefited APS customers, offering the ability to reach a cost of \$0 for the device.

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**Initiative category & Initiative type**



Energy efficiency in buildings

Other, please specify

1) Design Assistance and Feasibility Studies, 2) Custom measures, 3) Prescriptive measures, and 4) Whole Building applications.

**Estimated annual CO2e savings (metric tonnes CO2e)**

614

**Scope(s)**

Scope 1

**Voluntary/Mandatory**

Mandatory

**Annual monetary savings (unit currency – as specified in C0.4)**

90

**Investment required (unit currency – as specified in C0.4)**

43,072

**Payback period**

16-20 years

**Estimated lifetime of the initiative**

11-15 years

**Comment**

The Non-Residential New Construction and Major Renovations program includes four elements: 1) Design Assistance and Feasibility Studies, 2) Custom measures, 3) Prescriptive measures, and 4) Whole Building applications. Design incentives involve efforts to integrate Demand Side Management (DSM) into a customer's design process to influence equipment/systems selection and specification as early in the process as possible. Custom and prescriptive incentives are available for DSM improvements in HVAC, HVAC controls and VSDs. Whole Building applications are intended to promote integrated design strategies.



In April 2020, APS provided notice that it was going to offer the same cost effective DSM measures offered in the Schools Program to qualifying Non-profit community organizations effective April 1, 2020. Between April thru December, four Non-profit projects were paid. APS paid incentives on four Non-profit customer applications from three unique customers totalling \$43,072 in New Construction incentives during this Reporting Period. These projects resulted in 447 MWh of annual savings, 8,466 MWh of lifetime energy savings and a peak demand savings of 0.16 MW. Additionally, APS paid incentives on seven Non-profit customer applications from six unique customers totalling \$113,750 in prescriptive and custom incentives during this Reporting Period. These projects resulted in 1,705 MWh of annual savings, 31,289 MWh of lifetime energy savings and a peak demand savings of 0.58 MW.

### C4.3c

**(C4.3c) What methods do you use to drive investment in emissions reduction activities?**

Method	Comment
Compliance with regulatory requirements/standards	APS uses an integrated planning process to link our business strategy with resource planning. Benchmarking and continuous improvement are valued by the executive team and employees ensuring that the process keep APS focused on key objectives and will ultimately help them deliver reliable and affordable power to Arizona. The Arizona Corporation Commission (ACC) also has an electric energy efficiency standard (EES). Under the EES, Arizona’s public utilities under the ACC’s jurisdiction are required to achieve cumulative annual energy savings of at least 22 percent of retail sales in 2019 - measured in kWh - by 2020. The ACC has adopted a renewable energy standard (RES) in which electric utilities under its jurisdiction must supply an increasing percentage of their retail electric energy sales from eligible renewable resources, including solar, wind, biomass, biogas and geothermal technologies. The renewable energy standard increases annually until reaching 15 percent in 2025. This regulatory driver is having a large impact on APS’s generation mix.

### C4.5

**(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?**

Yes

## C4.5a

**(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.**

---

**Level of aggregation**

Group of products

**Description of product/Group of products**

APS offers customers a comprehensive portfolio of energy efficiency options.

**Are these low-carbon product(s) or do they enable avoided emissions?**

Avoided emissions

**Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions**

Other, please specify

Arizona Energy Efficiency Standard

**% revenue from low carbon product(s) in the reporting year**

0.31

**Comment**

In the 2020 Amended DSM Plan, APS forecasted estimated savings of 664,000 MWhs for the year, which is above the compliance target of 212,002 MWhs. In the Amended Plan, APS proposed modifications to its original 2020 DSM Plan based on informed estimates of current and expected market and economic impacts as a result of the COVID-19 pandemic. About a decade ago, the Arizona Energy Efficiency Standard (EES) created an aggressive goal for cumulative demand side management energy savings through 2020. As a result of extensive collaboration with ACC Staff, stakeholders and Trade Allies, and strong participation by customers, APS was able to achieve compliance with the cumulative 2020 standard. From 2010 through the end of 2020, APS achieved 6,368,200 cumulative MWh of energy savings, equivalent to 23.3% of 2019 retail sales. This exceeds the



cumulative compliance goal established in the EES for DSM savings during this period. As a result, APS exceeded the cumulative EES goal of 6,003,692 MWh or 22.0% DSM savings by 2020. The programs helped to avoid 2,182 millions pounds of CO2 in 2020 and a total of 48,730 million pounds of CO2 since January 2005.

---

**Level of aggregation**

Product

**Description of product/Group of products**

The APS Green Choice program allows customers to purchase up to 100 percent of their power from renewable energy from Arizona and New Mexico.

**Are these low-carbon product(s) or do they enable avoided emissions?**

Low-carbon product

**Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions**

Other, please specify  
Self-certified by APS

**% revenue from low carbon product(s) in the reporting year**

0.02

**Comment**

In 2020, 1,238 customers subscribed to these rated for 87,445 MWh of sales and gross revenue of \$891,939. In 2020 Green Choice block and percentage options were self-certified by APS. The renewable energy sources used in the APS Green Choice program were: Solar (6%) and Wind (94%).

## C-EU4.6

**(C-EU4.6) Describe your organization's efforts to reduce methane emissions from your activities.**

The natural gas consumed by APS is used as a fuel for our fleet of 37 natural gas-fired combustion turbines in Arizona and for start-up operations in certain coal units at our Four Corners and Cholla Power Plants in New Mexico and Arizona respectively. Due to the large amount of natural gas used by the facilities, APS works to properly manage and prevent inadvertent releases of methane to assure plant safety, environmental protection, and fiscal responsibility.

Our main emission reduction efforts regarding methane include ensuring methane leaks do not go undetected by plant personnel. To do so, APS uses third-party companies to conduct methane leak detection surveys on the underground and accessible above – ground natural gas pipelines, valves, and gas conditioning system. Our eight fossil plants all have their own frequency of third-party inspections depending on various requirements: Four Corners Power Plant gets an annual inspection; Cholla Power Plant, Ocotillo Power Plant, Saguaro Power Plant, West Phoenix Power Plant and Yucca Power Plant get semi-annual inspections; Redhawk Power Plant and Sundance Power Plant get quarterly inspections.

The surveys are conducted by a third party and any leaks identified are tagged and a report is generated. The detected leaks are classified using ASTM B31.8 Appendix G-11 (1983) to determine severity and action criteria. The reports are sent to the Corporate Engineer who creates a service request for each plant in our internal work management system. The plant then schedules the repairs to be completed by maintenance or an outside vendor. The surveys start at the APS gas yards at each plant and cover the underground and accessible above-ground piping up to the unit. The contractor uses methane-specific intrinsically safe detection equipment. In addition, to assure continual safety of personnel and equipment, plant operators monitor and inspect the natural gas supply lines and gas conditioning equipment regularly. Plant operators record any identified methane leaks and issue work orders for plant maintenance to repair leaks as quickly as possible. The daily monitoring by plant personnel and the third-party natural gas detection inspections provide a process for APS to ensure any methane leaks are promptly identified and repaired. In 2020, APS continued to do surveys at the plants during COVID-19 to meet our regulatory requirements and maintain our commitment to our leak detection program. Plant personnel worked with contractors to ensure COVID-19 protocols were implemented in order for contractors to enter our sites.

Because large Grade 1 or 2 methane leaks at the sites are rare, a specific methane reduction target has not been established. However, the methane identification and reduction actions taken by the plant ensures emissions are minimized to maintain the plant in a safe condition, protect the environment from greenhouse gas emissions and maintain fiscal responsibility by ensuring natural resources are not wasted. APS is currently becoming engaged with various organizations to understand the larger issue of methane emissions associated with natural gas exploration, production, and distribution emissions methodology.

## C5. Emissions methodology

### C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

#### Scope 1

---

**Base year start**

January 1, 2005

**Base year end**

December 31, 2005

**Base year emissions (metric tons CO<sub>2</sub>e)**

16,661,531

**Comment**

2005 is used as the Scope 1 baseline year to align our carbon emission reductions with the targets set at COP 21.

#### Scope 2 (location-based)

---

**Base year start**

January 1, 2020

**Base year end**

December 31, 2020

**Base year emissions (metric tons CO<sub>2</sub>e)**

116,939

**Comment**

2020 is used at the baseline year for Scope 2 carbon emissions because this is the first year we updated our methodology.

### **Scope 2 (market-based)**

---

**Base year start**

January 1, 2020

**Base year end**

December 31, 2020

**Base year emissions (metric tons CO<sub>2</sub>e)**

116,939

**Comment**

2020 is used at the baseline year for Scope 2 carbon emissions because this is the first year we updated our methodology.

## **C5.2**

**(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.**

The Climate Registry: Electric Power Sector (EPS) Protocol

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

US EPA Mandatory Greenhouse Gas Reporting Rule

## **C6. Emissions data**

### **C6.1**

**(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO<sub>2</sub>e?**

**Reporting year**

---



**Gross global Scope 1 emissions (metric tons CO2e)**

11,257,147

**Comment**

**C6.2**

**(C6.2) Describe your organization's approach to reporting Scope 2 emissions.**

**Row 1**

---

**Scope 2, location-based**

We are reporting a Scope 2, location-based figure

**Scope 2, market-based**

We have operations where we are able to access electricity supplier emission factors or residual emissions factors, but are unable to report a Scope 2, market-based figure

**Comment**

Due to this being the first year reporting line losses from purchased power, additional research is needed to accurately report a market-based figure.

**C6.3**

**(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?**

**Reporting year**

---

**Scope 2, location-based**

116,939

## Comment

### C6.4

**(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?**

No

### C6.5

**(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.**

#### Purchased goods and services

---

##### Evaluation status

Relevant, calculated

##### Metric tonnes CO<sub>2</sub>e

377

##### Emissions calculation methodology

The CO<sub>2</sub>e emissions are calculated by APS using the Greenhouse Gas Protocol Scope 3 evaluator web-based tool. APS supply chain supplied the total amount spent on paper in the calendar year (\$441,180). The spend was inputted into the calculator, and the result was a total of 376,559.31 kg CO<sub>2</sub>ekg/year. Converted to mtons (1kg =0.001 metric tons) for a total of 377 metric tons CO<sub>2</sub>e in 2020.

##### Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

##### Please explain

APS receives total dollars spent on paper purchased for printing from our Supply Chain department. The CO<sub>2</sub>e emissions are then calculated by APS Sustainability team using the Greenhouse Gas Protocol Scope 3 evaluator web-based tool.



## Capital goods

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### Evaluation status

Not relevant, explanation provided

### Please explain

We do not separate capital goods from overall purchased goods.

## Fuel-and-energy-related activities (not included in Scope 1 or 2)

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### Evaluation status

Relevant, calculated

### Metric tonnes CO<sub>2</sub>e

1,986,103

### Emissions calculation methodology

Purchased Power is electrical energy purchased by APS from merchant power plants or from transmission systems as source of energy for APS's electric utility customers. (ii) Data is provided by Fuel Analysis and Forecasting team. (iii) APS calculated this emission category based on CO<sub>2</sub>e emissions factor from our own fleet (0.421 metric tons/MWh). The total Purchased Power for 2020 was 6,984,664 MWh, of which 2,267,567 MWh were renewables. So the emission factor was applied to the total Purchased Power minus the renewables, for a total of 4,717,097 MWh.  $(6,984,664 \text{ MWh} - 2,267,567 \text{ MWh}) \times 0.421 \text{ metric tons CO}_2\text{e/MWh} = 1,986,103 \text{ metric tons CO}_2\text{e}$ .

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

### Please explain

CO<sub>2</sub>e emissions are associated with purchase power agreements from conventional sources such as gas units, marketing and trading purchases (resales) and renewable purchased power. APS joined the Energy Imbalance Market (EIM) in October of 2016. The EIM enables utilities across the western region to buy and sell energy more efficiently. The difference between participating in the EIM over traditional energy markets is that the EIM automatically finds the most efficient energy resources available if APS decides to buy or sell power in five-minute



increments. EIM's real-time market capabilities help APS respond quickly to variable renewable energy production (like solar) and better incorporate renewable resources by automatically adjusting to intermittency.

## Upstream transportation and distribution

---

### Evaluation status

Relevant, calculated

### Metric tonnes CO2e

7,447

### Emissions calculation methodology

The CO2e emissions are calculated by APS using the EPA Emission Factors for Greenhouse Inventories (April 2021) and the 5th Assessment of Global Warming Potentials. Specifically, the Product Transport Emission Factors for Medium and Heavy-Duty trucks. (CO2 1.407 kg/mile (GWP:1); CH4 0.013 g/mile (GWP:28); N2O 0.033g/mile (GWP:265)) In 2020, our logistics firm reported a total of 5,797,012 miles for their delivery trucks. The total miles were multiplied by the EPA Emission Factors for Greenhouse Inventories (April 2021) and the 5th Assessment of Global Warming Potentials. Specifically, the Product Transport Emission Factors for Medium and Heavy-Duty trucks.  $[(5,797,012 \times 1.407) \times 1] = 8,156,396$  kg of CO2. Converted to tons by dividing by 1,000  $(8,156,396/1000 = 8,156$  metric tons CO2.  $[(5,797,012 \times .033) \times 265]/1,000,000] + [(5,797,012 \times .013) \times 28]/1,000,000 = 51$  tons of N2O and 2 tons CH4. Total CO2e tons =  $51+3+8,156 = 8209$  tons CO2e. Convert 8,209 tons to metric tons by multiplying by 0.90718474, to equals a total of 7,447 metric tons of CO2e.

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

### Please explain

APS receives total miles from ours logistics firm that handles the majority of our shipping needs. The CO2e emissions are calculated by APS using the EPA Emission Factors for Greenhouse Inventories (March 2020) and the 5th Assessment of Global Warming Potentials. Specifically, the Product Transport Emission Factors for Medium and Heavy Duty trucks.

## Waste generated in operations

---

### Evaluation status



Relevant, calculated

**Metric tonnes CO2e**

1,685

**Emissions calculation methodology**

Recycling data is provided from our Investment Recovery team. Based on the type of materials recycled, the Scope 2 Waste Generated in Operations EPA emission factors are applied to the total lbs recycled in the reporting year. In 2020, a total of 19,583,316 lbs of materials were recycled. After emission factors were applied based on the materials, it resulted in 1,685 mtons of CO2e in 2020.

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

100

**Please explain**

Waste data includes the scrap metal, small pole and padmounted transformers, single stream (co-mingled) recycling, and other recycling as captured through Investment Recovery only. Investment Recovery receives data from vendors who recycle our waste.

**Business travel**

---

**Evaluation status**

Relevant, calculated

**Metric tonnes CO2e**

765

**Emissions calculation methodology**

i) Business travel encompasses GHG emissions from airline travel, rental cars, and vehicle reimbursement for miles drives for business by APS employees. ii) The source of the airline data is from BCD Travel's Decision Source Database, the rental car data is from our rental car agencies, and the reimbursement miles from internal accounting. iii) Travel emission calculations are based on the Greenhouse Gas Protocol for Business Travel Emission Factors and the 5th Assessment of Global Warming Potentials. (Passenger Cars; (CO2 0.341 kg/mile (GWP:1));CH4 0.009 g/mile (GWP:28); NO2 0.008g/mile (GWP:265))

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

75

**Please explain**

This business travel data about APS employees as recorded by our business travel agency, rental miles are provided by the approved rental car agencies for employee travel, and reimbursement miles are provided by our internal accounting based on a type of cost code. All APS travel must be approved at the Vice President's level for conference travel and at the leader level for local travel. Employees are asked to use teleconferencing as much as possible to reduce overall miles travelled by employees.

**Employee commuting**

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**Evaluation status**

Relevant, calculated

**Metric tonnes CO2e**

307.9

**Emissions calculation methodology**

This information was calculated based on the APS's employee responses to the 2019 Maricopa County Regional Travel Reduction Program survey. Emission calculations are based on the Greenhouse Gas Protocol using the distance-based method and Business Travel Emission Factors for passenger cars, buses, commuter train, and vans.

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

100

**Please explain**

We encourage employees to take part in the Trip Reduction Program. This program focuses on reducing the number of single-occupancy vehicles commuting to our work sites. Maricopa County is a customer of APS, but the survey is not performed as part of our value chain.

**Upstream leased assets**

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**Evaluation status**

Not relevant, explanation provided



**Please explain**

APS does not have any upstream leased assets.

**Downstream transportation and distribution**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

APS generates and distributes electricity. Transmission losses are accounted in our Scope 1 emissions at the point of generation and purchased power line losses are accounted for in Scope 2 emissions.

**Processing of sold products**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

APS generates and distributes electricity. There is no processing of our products to calculate processing of sold products.

**Use of sold products**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

APS generates and distributes electricity. Emissions are calculated in our Scope 1 response.

**End of life treatment of sold products**

---

**Evaluation status**

Not relevant, explanation provided



**Please explain**

APS generates and distributes electricity. Emissions are calculated in our Scope 1 response.

**Downstream leased assets**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

APS does not have downstream leased assets.

**Franchises**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

APS does not have any franchises.

**Investments**

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**Evaluation status**

Not relevant, explanation provided

**Please explain**

APS does not have a method presently of evaluating emissions by any of our investments.

**Other (upstream)**

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**Evaluation status**

Not relevant, explanation provided

**Please explain**



APS does not have any additional upstream sources in 2020.

**Other (downstream)**

**Evaluation status**

**Please explain**

**C6.7**

**(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?**

Yes

**C6.7a**

**(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.**

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	3,920	

**C6.10**

**(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.**

**Intensity figure**

0.338



**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)**

11,374,087

**Metric denominator**

megawatt hour generated (MWh)

**Metric denominator: Unit total**

33,668,000

**Scope 2 figure used**

Location-based

**% change from previous year**

8.35

**Direction of change**

Decreased

**Reason for change**

In 2020, gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e emissions per total MWh generated decreased by 8 percent. In 2020, we had a decrease in overall carbon emissions and a slight increase the amount of megawatts delivered to our customers resulting in a decrease change in intensity from 2019 to 2020. There was a total decrease of 938,409 mtons CO2e and an increase of 266,000 MWh delivered, resulting in a 8 percent change from 2019 to 2020.

The decrease in carbon is a result of our emission reduction initiatives to reach our goal of 100% clean, carbon-free generation by 2050. In 2020, APS stopped using coal fired generation from Navajo Generating Station. In addition, in 2020 the total renewable energy (purchased and generated) increased 0.5% in 2020 as part of our pathway to reach our nearer-term target of achieving a resource mix that is 65% clean energy, with 45% of our generation portfolio coming from renewable energy



**Intensity figure**

0.003

**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)**

11,374,087

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

3,586,982,000

**Scope 2 figure used**

Location-based

**% change from previous year**

11

**Direction of change**

Decreased

**Reason for change**

In 2020, gross global combined Scope 1 and 2 emissions in metric tons CO2e per dollar of revenue intensity decreased by 11% since last year. In 2020, we had an overall reduction in carbon emissions and increase the in revenue resulting in a decrease in intensity from 2019 to 2020. There was a total decrease of 938,409 mtons CO2e and an increase of \$119,982,000 in revenue, resulting in a 11 percent decrease from 2019 to 2020.

The decrease in carbon is a result of our emission reduction initiatives to reach our goal of 100% clean, carbon-free generation by 2050. In 2020, APS stopped using coal fire generation from Navajo Generating Station. In addition, in 2020 the total renewable energy (purchased and generated) increased 0.5% in 2020 as part of our pathway to reach our nearer-term target of achieving a resource mix that is 65% clean energy, with 45% of our generation portfolio coming from renewable energy



## C7. Emissions breakdowns

### C7.1

**(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?**

Yes

#### C7.1a

**(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).**

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	11,163,331	IPCC Fifth Assessment Report (AR5 – 100 year)
SF6	40,777	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	22,624	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	30,415	IPCC Fifth Assessment Report (AR5 – 100 year)

#### C-EU7.1b

**(C-EU7.1b) Break down your total gross global Scope 1 emissions from electric utilities value chain activities by greenhouse gas type.**

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Gross Scope 1 SF6 emissions (metric tons SF6)	Total gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives	0	0	1.79	40,777	Emissions from our own generation



Combustion (Electric utilities)	11,147,770	22,361	0	11,240,729	APS is not a gas utility.
Combustion (Gas utilities)	0	0	0	0	
Combustion (Other)	15,562	263.8	0	16,418	Diesel and gasoline from mobile fleet and generators.
Emissions not elsewhere classified	0	0	0	0	No additional emissions to report.

## C7.2

**(C7.2) Break down your total gross global Scope 1 emissions by country/region.**

Country/Region	Scope 1 emissions (metric tons CO2e)
United States of America	11,257,147

## C7.3

**(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.**

- By business division
- By facility
- By activity

### C7.3a

**(C7.3a) Break down your total gross global Scope 1 emissions by business division.**

Business division	Scope 1 emissions (metric ton CO2e)
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Generation. All emissions based on owned energy production.	11,240,729
Transmission and Distribution. All emissions based on fleet and mobile generators.	16,418

### C7.3b

**(C7.3b) Break down your total gross global Scope 1 emissions by business facility.**

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Four Corners Power Plant	4,770,910	40.929011	-121.544389
Cholla Power Plant	1,873,454	34.94	-110.33
Ocotillo Power Plant	389,884	33.4225	-111.9122
West Phoenix Power Plant	1,659,044	33.773441	-84.394931
Redhawk Power Plant	2,098,801	33.335833	-112.840528
Yucca Power Plant	114,805	32.715235	-114.710441
Saguaro Power Plant	81,109	32.552181	-111.298135
Douglas Power Plant	62	31.363622	-109.552532
Sundance Power Plant	252,846	53.5075	-114.557222

### C7.3c

**(C7.3c) Break down your total gross global Scope 1 emissions by business activity.**

Activity	Scope 1 emissions (metric tons CO2e)
Stationary Combustion	11,147,770
Mobile Combustion	16,418



Fugitive Combustion	40,777
---------------------	--------

### C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

**(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization’s total gross global Scope 1 emissions by sector production activity in metric tons CO2e.**

	Gross Scope 1 emissions, metric tons CO2e	Comment
Electric utility activities	11,257,147	

### C7.9

**(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?**

Decreased

### C7.9a

**(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.**

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	77,464	Decreased	0.63	APS consumes power from our own energy delivery grid, the mix of power delivered includes generated and purchased renewable energy. In 2020 the total RE (purchased and generated) was 2,857 GWH of a total of 33,668 GWH of energy sources to meet our delivery needs. Whereas in 2019 the total RE (generated and purchased) was 2673 GWH of the total 33,402 GWH of energy sources to meet our delivery needs.

				<p>This accounted for a .63% decrease in CO2e reductions as the increase in renewable generation of 184GWh is approximately 77,464 mtons CO2e.</p> <p><math>[77,464 \text{ mtons CO}_2\text{e (change in Scope 1+2 emissions attributed to renewable energy consumption)} / 12,312,682 \text{ mtons CO}_2\text{e (2019 Scope 1\&amp;2 emissions)}] \times 100 = 0.63\%</math>.</p>
Other emissions reduction activities	1,762,818	Decreased	14.3	<p>2020 was the first year APS ceased relying upon coal fire generation from Navajo Generating Station. <math>[1,762,818 \text{ mtons CO}_2 \text{ (change in Scope 1+2 emissions attributed to closure of Navajo Generating Station)} / 12,312,682 \text{ mtons CO}_2\text{e (2019 Scope 1\&amp;2 emissions)}] \times 100 = 14.3</math></p>
Divestment	0	No change		No divestment during 2020.
Acquisitions	0	No change		No acquisitions during 2020.
Mergers	0	No change		No mergers during 2020.
Change in output	1,038,339	Decreased	8.4	<p>In 2020, total generation from coal, gas, and oil was 16,913 GWh, this is 2,043 GWh less more than in 2019 (18,956 GWh), this resulted in a decrease of 1,038,339 mtons of CO2e for our owned generation fleet. (11,240,729 mtons CO2e in 2020 and 12,279,068 mtons CO2e in 2019). This accounted for a 8.43% decrease in CO2e emissions. 2020 was the first year APS ceased reliance on coal fired generation from Navajo Generating Station. This action comports with our overall commitment to ceased reliance all coal-fired generation by 2031, seven years sooner than previously projected.</p> <p><math>[-1,038,339 \text{ mtons CO}_2\text{e (change in Scope 1+2 emissions attributed to change in output)} / 12,279,068 \text{ mtons CO}_2\text{e (2019 Scope 1\&amp;2 emissions)}] \times 100 = 8.4\%</math></p>
Change in methodology	103,245	Increased	11	<p>Scope 2 Emissions increased by 103,245 mtons CO2e due to a change in methodology. Through further review, we were reporting emissions from our buildings using the power we generated - essentially double counting. Upon further review of The Climate Registry - Electric Power Sector Protocol, this is the first year reporting</p>



				line losses from purchased power. The total difference was an increase of 103,245 mtons CO2e. The percent of our total Scope 1 & 2 emissions for 2019 (12,312,682 mtons CO2e) was calculated using the following formula: $(103,245/12,312,682) * 100 = 11\%$
Change in boundary	0	No change		No changes in boundary in 2020.
Change in physical operating conditions	0	No change		Projections for the southwest United States from climate change models include an increase in the number of extreme hot days in the summer, less precipitation in the form of snow and the earlier runoff of snowmelt, increased wildfire potential, and the potential for increased water shortages. While 2020 exhibited record heat at times, overall it was not the hottest year on record for any individual state in the Southwest or for any individual local long-term climate station. For Phoenix, it was the second hottest year on record with an average temperature of 77.2 °F (record remains 77.3 °F). While 2020 was relatively cool for the first few months of the year, the spring became quite warm followed by a record-setting summer (Figure 9). Phoenix set a new record for hottest month ever, with an average temperature of 98.9 °F during July 2020. The record stood for one month, as it was eclipsed by August 2020 with an average temperature of 99.1 °F.
Unidentified				
Other				

### C7.9b

**(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?**

Location-based



## C8. Energy

### C8.1

**(C8.1) What percentage of your total operational spend in the reporting year was on energy?**

More than 65% but less than or equal to 70%

### C8.2

**(C8.2) Select which energy-related activities your organization has undertaken.**

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

### C8.2a

**(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.**

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	588,626	26,094,266	26,682,892



Consumption of purchased or acquired electricity		2,268,000	4,717,000	6,985,000
Consumption of self-generated non-fuel renewable energy		0		0
Total energy consumption		2,856,626	30,811,266	33,667,892

### C8.2b

**(C8.2b) Select the applications of your organization’s consumption of fuel.**

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

### C8.2c

**(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.**

**Fuels (excluding feedstocks)**

Bituminous Coal

**Heating value**

HHV (higher heating value)



**Total fuel MWh consumed by the organization**

6,298,000

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**Emission factor**

1.06

**Unit**

metric tons CO<sub>2</sub>e per MWh

**Emissions factor source**

APS Emissions Inventory Index is a reporting tool we use to calculate emissions for our generation fleet that are reported to the Clean Air Markets Division (CAMD), EPA Part 98 reporting, and other state emission inventory reporting.

**Comment**

---

**Fuels (excluding feedstocks)**

Natural Gas

**Heating value**

HHV (higher heating value)

**Total fuel MWh consumed by the organization**

10,592,000



**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**Emission factor**

0.43

**Unit**

metric tons CO2e per MWh

**Emissions factor source**

APS Emissions Inventory Index is a reporting tool we use to calculate emissions for our generation fleet that are reported to the Clean Air Markets Division (CAMD), EPA Part 98 reporting, and other state emission inventory reporting.

**Comment**

---

**Fuels (excluding feedstocks)**

Fuel Oil Number 2

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

23,000

**MWh fuel consumed for self-generation of electricity**

0



**MWh fuel consumed for self-generation of heat**

0

**Emission factor**

1.81

**Unit**

metric tons CO<sub>2</sub>e per MWh

**Emissions factor source**

APS Emissions Inventory Index is a reporting tool we use to calculate emissions for our generation fleet that are reported to the Clean Air Markets Division (CAMD), EPA Part 98 reporting, and other state emission inventory reporting.

**Comment**

---

**Fuels (excluding feedstocks)**

Other, please specify

Nuclear

**Heating value**

HHV (higher heating value)

**Total fuel MWh consumed by the organization**

9,182,000

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0



**Emission factor**

0

**Unit**

metric tons CO2 per MWh

**Emissions factor source**

Nuclear does not have any CO2 emissions

**Comment**

---

**Fuels (excluding feedstocks)**

Other, please specify

Solar

**Heating value**

HHV (higher heating value)

**Total fuel MWh consumed by the organization**

589,000

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**Emission factor**

0



**Unit**

metric tons CO2 per MWh

**Emissions factor source**

Solar does not have any CO2 emissions

**Comment**

**C-EU8.2d**

**(C-EU8.2d) For your electric utility activities, provide a breakdown of your total power plant capacity, generation, and related emissions during the reporting year by source.**

**Coal – hard**

---

**Nameplate capacity (MW)**

1,357

**Gross electricity generation (GWh)**

6,898

**Net electricity generation (GWh)**

6,298

**Absolute scope 1 emissions (metric tons CO2e)**

6,644,365

**Scope 1 emissions intensity (metric tons CO2e per GWh)**

1,055

**Comment**



## Lignite

---

**Nameplate capacity (MW)**

0

**Gross electricity generation (GWh)**

0

**Net electricity generation (GWh)**

0

**Absolute scope 1 emissions (metric tons CO2e)**

0

**Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

**Comment**

## Oil

---

**Nameplate capacity (MW)**

70

**Gross electricity generation (GWh)**

7.4

**Net electricity generation (GWh)**

23

**Absolute scope 1 emissions (metric tons CO2e)**

3,840



**Scope 1 emissions intensity (metric tons CO2e per GWh)**

167

**Comment**

**Gas**

---

**Nameplate capacity (MW)**

3,557

**Gross electricity generation (GWh)**

10,812

**Net electricity generation (GWh)**

10,592

**Absolute scope 1 emissions (metric tons CO2e)**

4,592,710

**Scope 1 emissions intensity (metric tons CO2e per GWh)**

434

**Comment**

**Biomass**

---

**Nameplate capacity (MW)**

0

**Gross electricity generation (GWh)**

0



**Net electricity generation (GWh)**

0

**Absolute scope 1 emissions (metric tons CO2e)**

0

**Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

**Comment**

**Waste (non-biomass)**

---

**Nameplate capacity (MW)**

0

**Gross electricity generation (GWh)**

0

**Net electricity generation (GWh)**

0

**Absolute scope 1 emissions (metric tons CO2e)**

0

**Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

**Comment**

**Nuclear**

---



**Nameplate capacity (MW)**

1,146

**Gross electricity generation (GWh)**

9,694

**Net electricity generation (GWh)**

9,182

**Absolute scope 1 emissions (metric tons CO2e)**

0

**Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

**Comment**

**Fossil-fuel plants fitted with CCS**

---

**Nameplate capacity (MW)**

0

**Gross electricity generation (GWh)**

0

**Net electricity generation (GWh)**

0

**Absolute scope 1 emissions (metric tons CO2e)**

0

**Scope 1 emissions intensity (metric tons CO2e per GWh)**



0

**Comment**

**Geothermal**

---

**Nameplate capacity (MW)**

0

**Gross electricity generation (GWh)**

0

**Net electricity generation (GWh)**

0

**Absolute scope 1 emissions (metric tons CO<sub>2</sub>e)**

0

**Scope 1 emissions intensity (metric tons CO<sub>2</sub>e per GWh)**

0

**Comment**

**Hydropower**

---

**Nameplate capacity (MW)**

0

**Gross electricity generation (GWh)**

0



**Net electricity generation (GWh)**

0

**Absolute scope 1 emissions (metric tons CO2e)**

0

**Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

**Comment**

**Wind**

---

**Nameplate capacity (MW)**

0

**Gross electricity generation (GWh)**

0

**Net electricity generation (GWh)**

0

**Absolute scope 1 emissions (metric tons CO2e)**

0

**Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

**Comment**

**Solar**

---



**Nameplate capacity (MW)**

245

**Gross electricity generation (GWh)**

553

**Net electricity generation (GWh)**

589

**Absolute scope 1 emissions (metric tons CO2e)**

0

**Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

**Comment**

**Marine**

---

**Nameplate capacity (MW)**

0

**Gross electricity generation (GWh)**

0

**Net electricity generation (GWh)**

0

**Absolute scope 1 emissions (metric tons CO2e)**

0

**Scope 1 emissions intensity (metric tons CO2e per GWh)**



0

**Comment**

**Other renewable**

---

**Nameplate capacity (MW)**

0

**Gross electricity generation (GWh)**

0

**Net electricity generation (GWh)**

0

**Absolute scope 1 emissions (metric tons CO2e)**

0

**Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

**Comment**

**Other non-renewable**

---

**Nameplate capacity (MW)**

0

**Gross electricity generation (GWh)**

0



**Net electricity generation (GWh)**

0

**Absolute scope 1 emissions (metric tons CO2e)**

0

**Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

**Comment**

**Total**

---

**Nameplate capacity (MW)**

6,375

**Gross electricity generation (GWh)**

27,965

**Net electricity generation (GWh)**

26,684

**Absolute scope 1 emissions (metric tons CO2e)**

11,240,915

**Scope 1 emissions intensity (metric tons CO2e per GWh)**

421

**Comment**



## C-EU8.4

**(C-EU8.4) Does your electric utility organization have a transmission and distribution business?**

Yes

### C-EU8.4a

**(C-EU8.4a) Disclose the following information about your transmission and distribution business.**

---

**Country/Region**

United States of America

**Voltage level**

Distribution (low voltage)

**Annual load (GWh)**

33,667

**Annual energy losses (% of annual load)**

4

**Scope where emissions from energy losses are accounted for**

Scope 1

**Emissions from energy losses (metric tons CO<sub>2</sub>e)**

14,140,140

**Length of network (km)**

26,884



**Number of connections**

1,288,751

**Area covered (km2)**

89,733

**Comment**

APS owns transmission (above 69kV) and distribution lines; however, the majority of the lines are distribution (over 75 percent), so both types of lines are included in this response. The number of connections shown is the number of electric customers served in 2019.

## C9. Additional metrics

### C9.1

**(C9.1) Provide any additional climate-related metrics relevant to your business.**

### C-EU9.5a

**(C-EU9.5a) Break down, by source, your total planned CAPEX in your current CAPEX plan for power generation.**

Primary power generation source	CAPEX planned for power generation from this source	Percentage of total CAPEX planned for power generation	End year of CAPEX plan	Comment
Nuclear	355,000,000	16	2023	Nuclear
Other, please specify Renewables and Energy Storage Systems	757,000,000	33	2023	APS solar communities programs, energy storage, renewable projects and other clean energy projects



Other, please specify Traditional Generation and Environmental Projects	580,000,000	26	2023	Traditional generation (Coal, Gas, Oil) and environmental upgrades
Other, please specify Information Systems and Facilities Upgrades	581,000,000	26	2023	Information systems and facilities upgrades

### C-EU9.5b

**(C-EU9.5b) Break down your total planned CAPEX in your current CAPEX plan for products and services (e.g. smart grids, digitalization, etc.).**

Products and services	Description of product/service	CAPEX planned for product/service	Percentage of total CAPEX planned products and services	End of year CAPEX plan
Other, please specify Renewables and Energy Storage	Solar communities programs, energy storage, renewable projects and other clean energy projects.	757,000,000	33	2023

### C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

**(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?**

	Investment in low-carbon R&D	Comment
Row 1	Yes	Take Charge AZ is an EV Pilot Program in which APS will install and own EV charging equipment located at various businesses, government agencies, non-profits, and multifamily communities. Through the program, APS will gain valuable knowledge to better understand the needs of Arizona with regards to the Electrification of the Transportation Sector. The program includes Fleet, workplace, and multifamily chargers and highway chargers to be included in the APS service territory. The program includes fleet,



		workplace and multifamily chargers and highway chargers to be included in the APS service territory. Under the program, 86 commercial Level 2 charging plugs have been installed at 43 locations. This has enabled charging at hotels, workplaces and municipalities. We expect to install more than 250 chargers through 2021. The Take Charge AZ Pilot Program also includes a research study that will look at EV growth and load impacts specific to Arizona.
--	--	---

### C-CO9.6a/C-EU9.6a/C-OG9.6a

**(C-CO9.6a/C-EU9.6a/C-OG9.6a) Provide details of your organization's investments in low-carbon R&D for your sector activities over the last three years.**

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Infrastructure	Pilot demonstration	81-100%		Take Charge AZ is an EV Pilot Program in which APS will install and own EV charging equipment located at various businesses, government agencies, non-profits, and multifamily communities. Through the program, APS will gain valuable knowledge to better understand the needs of Arizona with regards to the Electrification of the Transportation Sector. The program includes Fleet, workplace, and multifamily chargers and highway chargers to be included in the APS service territory. The program includes fleet, workplace and multifamily chargers and highway chargers to be included in the APS service territory. Under the program, 86 commercial Level 2 charging plugs have been installed at 43 locations. This has enabled charging at hotels, workplaces and municipalities. We expect to install more than 250 chargers through 2021. The Take Charge AZ Pilot Program also includes a research study that will look at EV growth and load impacts specific to Arizona.



## C10. Verification

### C10.1

**(C10.1) Indicate the verification/assurance status that applies to your reported emissions.**

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

### C10.1a

**(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.**

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Reasonable assurance

**Attach the statement**

 CDP Verification Report\_APS CY2020\_vCompiled Summary.pdf



**Page/ section reference**

p. 2 of 4 Link: [http://s22.q4cdn.com/464697698/files/doc\\_downloads/performance\\_summary/2021/2021-CDP-Third-Party-Verification.pdf](http://s22.q4cdn.com/464697698/files/doc_downloads/performance_summary/2021/2021-CDP-Third-Party-Verification.pdf)

**Relevant standard**

ISO14064-3

**Proportion of reported emissions verified (%)**

100

## C10.1b

**(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.**

---

**Scope 2 approach**

Scope 2 location-based

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Reasonable assurance

**Attach the statement**

 CDP Verification Report\_APS CY2020\_vCompiled Summary.pdf



**Page/ section reference**

p. 2 of 4 Link: [http://s22.q4cdn.com/464697698/files/doc\\_downloads/performance\\_summary/2021/2021-CDP-Third-Party-Verification.pdf](http://s22.q4cdn.com/464697698/files/doc_downloads/performance_summary/2021/2021-CDP-Third-Party-Verification.pdf)

**Relevant standard**

ISO14064-3

**Proportion of reported emissions verified (%)**

100

## C10.1c

**(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.**

---

**Scope 3 category**

Scope 3: Business travel

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Reasonable assurance

**Attach the statement**

 CDP Verification Report\_APS CY2020\_vCompiled Summary.pdf

**Page/section reference**

p. 2 of 4 (Link: [http://s22.q4cdn.com/464697698/files/doc\\_downloads/performance\\_summary/2021/2021-CDP-Third-Party-Verification.pdf](http://s22.q4cdn.com/464697698/files/doc_downloads/performance_summary/2021/2021-CDP-Third-Party-Verification.pdf))

**Relevant standard**

ISO14064-3

**Proportion of reported emissions verified (%)**

100

## C10.2

**(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?**

No, we are waiting for more mature verification standards and/or processes

## C11. Carbon pricing

### C11.1

**(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?**

Yes

### C11.1a

**(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.**

California CaT - ETS

### C11.1b

**(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.**

## California CaT

---

**% of Scope 1 emissions covered by the ETS**

1.1

**% of Scope 2 emissions covered by the ETS**

0

**Period start date**

January 1, 2020

**Period end date**

December 31, 2020

**Allowances allocated**

392,207

**Allowances purchased**

400,000

**Verified Scope 1 emissions in metric tons CO<sub>2</sub>e**

122,354

**Verified Scope 2 emissions in metric tons CO<sub>2</sub>e**

0

**Details of ownership**

Facilities we own and operate

**Comment**

## C11.1d

### **(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?**

Beginning in 2012, APS began purchasing carbon allowances in the secondary market to cover any compliance obligations related to net imports into the state of California. Our strategy to ensure compliance is that our Risk Management group maintains an internal hedge policy comparing obligations and allowances. Our trading allowances purchased and allocated are monitored weekly and reported to all key internal parties. In addition, our Settlements department fulfils our obligation by transferring allowances through Compliance Instrument Tracking System Service (CITSS) as required by the California Air Quality Board. CITSS is a management and tracking system for accounts and compliance instruments issued through participating Western Climate Initiative cap-and-trade programs. CITSS is administered by the Western Climate Initiative, Inc. (WCI, Inc.). CITSS tracks compliance instruments (emissions allowances and offsets) from the point of issuance by jurisdictional governments, to ownership, transfer by regulated greenhouse gas emitters and other voluntary or general market participants, and to final compliance retirement. This strategy has kept us in compliance with our participation in the California cap and trade program. In 2020, we were allocated 392,207 allowance and purchased a total of 400,000 allowances, resulting in a total of 122,354 metric tons of verified CO<sub>2</sub>e.

## C11.2

### **(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?**

No

## C11.3

### **(C11.3) Does your organization use an internal price on carbon?**

Yes

## C11.3a

### **(C11.3a) Provide details of how your organization uses an internal price on carbon.**



**Objective for implementing an internal carbon price**

Navigate GHG regulations  
Other, please specify  
Integrated Resource Planning

**GHG Scope**

Scope 1

**Application**

APS has included in its analysis the potential for carbon pricing in its 2020 Integrated Resource Plan (IRP). The CO2 cost included in the IRP analysis was based on the California market cap and trade 2020 CO2 cost of \$16.68, escalated at 2.5 percent beginning in 2025. Prior to 2025, APS's analysis assumed the CO2 cost to be \$0.

**Actual price(s) used (Currency /metric ton)**

16.68

**Variance of price(s) used**

The CO2 cost included in the IRP analysis was based on the California market cap and trade 2020 CO2 cost of \$16.68, escalated at 2.5 percent beginning in 2025.

**Type of internal carbon price**

Internal fee

**Impact & implication**

APS directly manages potential impacts from carbon cap and trade programs. For example, APS has included in its analysis the potential for carbon pricing in its 2020 Integrated Resource Plan (IRP). The CO2 cost included in the IRP analysis was based on the California market cap and trade 2020 CO2 cost of \$16.68, escalated at 2.5 percent beginning in 2025. Prior to 2025, APS's analysis assumed the CO2 cost to be \$0. The resulting potential impact based on these assumptions and projected carbon emissions from 2020 thru 2025 is \$1,278M-\$1,658M. These costs would result in higher revenue requirements recovered through a rate review or adjustor mechanisms. The carbon cost will continue to be integrated into future scenarios as we work with stakeholders on our new plan that is currently scheduled to be updated in 2021. In the IRP, annual revenue requirements steadily rise over the course of the planning period, regardless of the portfolio that was considered. Costs are



driven by increasing fuel prices, inclusion of assumed carbon cost, increased operation and maintenance costs and increased capital investment to meet load growth.

Bold energy goals require ambitious plans and sound resource management. Together with our team of resource experts, energy planners and input from cross-sector stakeholders, we have developed a strategic road map on our path to a 100% carbon-free generation mix by 2050. Our Integrated Resource Plan (IRP) details how we plan to serve our customers' energy needs for the next 15 years, which includes an interim target of achieving a 65% clean energy mix by 2030. We are focused on integrating renewable resources, empowering customers with flexible energy efficiency options and incorporating advanced technology to produce 100% clean and affordable energy—all while providing reliable service and remaining good stewards of Arizona's diverse environment.

Here's how we plan to take our commitment to clean energy to the next level:

- Eliminate the use of coal in energy generation by 2031.
- Add renewables, including solar paired with storage to harness Arizona's sunshine.
- Continue to invest in vital carbon-free resources such as nuclear energy from Palo Verde Generating Station.
- Engage customers through expanded energy efficiency programs and smart energy choices.

## C12. Engagement

### C12.1

**(C12.1) Do you engage with your value chain on climate-related issues?**

Yes, our suppliers

Yes, our customers

### C12.1a

**(C12.1a) Provide details of your climate-related supplier engagement strategy.**

---

**Type of engagement**

Information collection (understanding supplier behavior)

**Details of engagement**

Collect climate change and carbon information at least annually from suppliers

**% of suppliers by number**

1

**% total procurement spend (direct and indirect)**

29

**% of supplier-related Scope 3 emissions as reported in C6.5**

100

**Rationale for the coverage of your engagement**

Annually, APS engages our top tier suppliers in a sustainability survey, with questions on how they are managing environmental impacts in their operations, including greenhouse gas emissions, energy and water usage, waste and materials management. In addition, proposal evaluations incorporate the importance of environmental stewardship and true supplier alignment to the APS core values, which includes environmental. Within APS's supply chain, we prioritize our top tier suppliers, our most critical and strategic suppliers and those with whom we spend significant dollars. APS evaluates these suppliers using key performance indicators such as safety, quality, operations and risk impact and supplier diversity. In 2019, we sent the surveys to 1 percent of our suppliers, representing 29 percent of our spend.

**Impact of engagement, including measures of success**

APS defines success in two ways: a year over year improvement in performance across the key performance indicators and increased engagement with suppliers. In 2019, we decreased the number of suppliers to 31 so we can focus on following up with our suppliers and increase engagement. Our response rate in 2018 was 17 percent vs 2019 which was 68 percent. In 2020, our response rate was 56% while increasing our survey population to 39. In doing so, successful supplier discussions have led to a number of improvement opportunities incorporating sustainable best practices into some of our construction projects. Survey results revealed that almost 85 percent of our key suppliers have implemented controls, improvement plans and measurement processes to address key environmental priorities such as



greenhouse gas emission reduction, up from 65% in the prior year. In addition, 75 percent of our key suppliers report on key issues and progress towards goals regarding environmental issues. APS recognizes exceptional supplier performance by hosting a Key Supplier Forum and Awards. Success stories are celebrated through our Supplier Excellence Awards nomination process, and awards are presented in five categories: Performance, Customer Service, Value-Added Relationship, Safety and Environmental Sustainability. To qualify for these awards, suppliers must excel in each of these categories. While APS is a huge proponent of supplier recognition, due to COVID and its unprecedented impacts, APS chose to cancel the yearly supplier excellence awards in which environmental sustainability is a key criteria in the evaluation of an award as well as an award category in of itself.

### Comment

## C12.1b

**(C12.1b) Give details of your climate-related engagement strategy with your customers.**

---

#### **Type of engagement**

Education/information sharing

#### **Details of engagement**

Share information about your products and relevant certification schemes (i.e. Energy STAR)

#### **% of customers by number**

100

#### **% of customer - related Scope 3 emissions as reported in C6.5**

0

#### **Please explain the rationale for selecting this group of customers and scope of engagement**

APS engages with 100 percent of our customers through messaging on our website, monthly newsletters (printed and email), emails, social media, trade allies, sponsorships and advertising in order to give all our customers the opportunity to achieve energy savings and greenhouse



gas (GHG) emission reductions as all customers are eligible to participate in our programs. In September, APS launched an online Marketplace site to reach customers digitally and provide access to educational information, APS rebates and special discounts on energy efficient devices and appliances. To help customers achieve energy savings and GHG reductions, we offer programs and financial incentives for energy efficiency, demand response, solar installation and more. Technologies such as rooftop solar, LED lighting and smart thermostats have given customers more power to control their energy usage, reduce GHG emissions and reduce their energy costs.

### **Impact of engagement, including measures of success**

There are various ways to measure success of messaging, but the most successful measurement for knowing we have reached our customers is when they participate in our programs. This means they have not only become aware of the program, but they have taken action to potentially reduce their energy use and GHG emissions. With over a million customers in a very transitory service area, the measure of success is participation in one or more of our programs. For instance, in 2020 the energy efficiency program focused on educating customers on energy management best practices and helping them make informed buying decisions. This was done through traditional marketing channels and free, onsite energy assessments for customers interested in learning how their facility uses energy. Our marketing program resulted in our energy efficiency programs providing 585,637 MWh of energy savings for our customers in 2020.

Some specific actions included:

- personalized home energy reports delivered to approximately 300,000 residential customers 5 times per year with custom tips for saving energy, with additional access to monthly email reports and an online portal with more in-depth information on home energy use and opportunities to save
- over 29,000 online Home Energy Analyzer audits that provide a free personalized energy audit that shows where your home uses energy and the best opportunities and programs for saving energy
- rebates for 13,964 smart thermostat devices
- rebates for 5,681 AC unit installations in the existing homes program
- rebates for 8,551 ENERGY STAR® new homes in the residential new home construction program
- Incentives of \$3,154,429 for various energy efficiency activities for non-residential customers, including existing facilities, new construction, energy information services, schools, and managed EV charging.

Energy efficiency program effectiveness is measured through our Measurement Evaluation and Verification (MER) process conducted by a third party. MER refers to activities that will identify current baseline efficiency levels and the market potential of demand side management

measures, perform process evaluations, verify that energy-efficient measures are installed, track savings and identify additional demand side management research.

### **C12.3**

**(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?**

Trade associations

### **C12.3b**

**(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?**

Yes

### **C12.3c**

**(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.**

---

**Trade association**

WEST Associates

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

Recognizes the potential impact of climate change on electric utilities and works to integrate the unique western conditions into viable solutions.

**How have you influenced, or are you attempting to influence their position?**

An APS representative serves on the Board of West Associates. In addition, we provide technical support and funding to the organization.

---

**Trade association**

Edison Electric Institute (EEI)

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

Global climate change presents one of the biggest current energy and environmental policy challenges. EEI member companies are committed to addressing the challenge of climate change and have undertaken a wide range of initiatives over the last 30 years to reduce, avoid or sequester greenhouse gas emissions. Policies to address climate change should seek to ensure energy reliability, minimize impacts on consumers and avoid harm to U.S. industry and the economy.

**How have you influenced, or are you attempting to influence their position?**

Our Chairman of the Board, President and Chief Executive Officer of Pinnacle West and Chairman of APS serves on the Board of the Edison Electric Institute.

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**Trade association**

Nuclear Energy Institute

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

The Nuclear Energy Institute reports that we need deep decarbonization to hit our climate goals. Nuclear power can get us there. As our largest source of clean energy, nuclear power is critical to reduce carbon emissions. Wind, solar and geothermal are on the rise, but the smartest policies will ensure these technologies complement, not replace, nuclear's clean energy production. Protecting and growing our use of nuclear



technologies are important ways to make a dent in greenhouse gases and help us make meaningful progress to address climate change. No other source, renewable or otherwise, contributes as much to meeting U.S. energy demand without emissions as nuclear. No other source, renewable or otherwise, contributes as much to meeting U.S. energy demand without emissions as nuclear. Every year, nuclear-generated electricity saves our atmosphere from more than 506 million metric tons of carbon dioxide emissions that would otherwise come from fossil fuels. That's the same as taking all 110 million passenger vehicles in the United States off the road. Clean energy sources—nuclear, hydropower, geothermal, wind and solar—work together to reduce greenhouse gases in our atmosphere. According to the Energy Information Administration, nuclear energy is the largest clean energy source in the United States, producing more carbon-free electricity than all other sources combined. 2019 figures show that nuclear energy generates nearly 55 percent of America's emission-free electricity. That is more than 2.5 times the amount generated by hydropower, nearly 3 times the amount generated by wind, and more than 12 times the amount generated by solar.

**How have you influenced, or are you attempting to influence their position?**

Our Chairman of the Board, President and Chief Executive Officer Pinnacle West, and Chairman and CEO of APS serves as the Nuclear Energy Institute.

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**Trade association**

Nature Conservancy

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

Climate change is one of the world's most urgent challenges and an immediate risk to our communities, economies and to our conservation mission. The Nature Conservancy is promoting practical, innovative solutions to create a prosperous, low-carbon future that is cleaner, healthier and more secure for everyone. In addition, the Nature Conservancy was a key partner to APS in the development of the Company's clean energy commitment.

**How have you influenced, or are you attempting to influence their position?**

An APS Executive Vice President serves on the Board of the Nature Conservancy in Arizona.

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**Trade association**

Center for Climate and Energy Solutions (C2ES)

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

The Center for Climate and Energy Solutions (C2ES) is the successor to the Pew Center on Global Climate Change, which was founded in 1998, and is widely recognized as an influential and pragmatic voice on climate issues. C2ES has a mission to advance strong policy and action to reduce greenhouse gas emissions, promote clean energy and strengthen resilience to climate impacts. A key objective is a national market-based program to reduce emissions cost-effectively. C2ES is a:

- trusted source of timely, impartial information and analysis on our pressing climate and energy challenges
- bridge-builder, bringing city, state and national policymakers together with businesses and other stakeholders to achieve common understanding and consensus solutions
- policy innovator with a reputation for developing market-based solutions and other practical policy approaches that deliver real and lasting climate progress
- catalyst for business action that works with Fortune 500 companies to strengthen business action and business support for effective climate policy

C2ES's work with the business community is facilitated through the Business Environmental Leadership Council (BELC), which was created with the belief that business engagement is critical for developing efficient, effective solutions to the climate problem. APS is a BELC member. BELC is currently comprised of 35 industry leading, mostly Fortune 500 companies across a range of sectors with combined revenues of nearly \$3 trillion and 3.7 million employees. Many different sectors are represented, from high technology to diversified manufacturing; from oil and gas to transportation; and from utilities to chemicals. C2ES and the BELC's members believe that companies taking early action on climate strategies and policy will gain sustained competitive advantage over their peers.

APS provided critical input and feedback on C2ES's recent publication titled Climate Innovation 2050. Climate Innovation 2050 examines



potential pathways toward substantially decarbonizing the U.S. economy, is developing a range of scenarios for reducing U.S. emissions and will later produce decarbonization roadmaps to achieve that goal.

**How have you influenced, or are you attempting to influence their position?**

APS participates on C2ES's BELC.

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**Trade association**

Arizona Forward

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

Arizona Forward brings business and civic leaders together to promote cooperative efforts to improve the environmental sustainability and economic vitality of Arizona and local regions. The organization is working to mobilize the state's business leaders and policy makers to leverage the collective power to influence how we best can grow our communities, stimulate our economy and enhance our environment.

**How have you influenced, or are you attempting to influence their position?**

An APS Director serves on the Board of Arizona Forward.

## **C12.3f**

**(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?**

In 2020, the Company continues to adopt strategies that align with its carbon-economy principles as part of our overall climate strategy. These principles in combination with our political participation policy work together to ensure that all of our direct and indirect activities are consistent with our overall climate change strategy. APS believes we have a responsibility to power a low-carbon economy with clean energy that can be used to support the transition of other sectors like transportation through increased electrification. A future powered by a low-carbon economy will achieve a healthier environment, greater social responsibility and allow APS and our customers to leverage future opportunities. To create a sustainable energy future for Arizona and a successful transition to a low-carbon economy, APS operates according to the following principles:



- Maintain appropriate governance to drive management practices and decisions to achieve cleaner air and a low-carbon economy.
- Continue to explore solutions to decarbonize our generation assets and provide the grid infrastructure that allows the adoption of low and zero carbon emission resources.
- Maintain a high level of transparency with respect to carbon metrics and emissions reporting.
- Participate in legislative and regulatory actions that address cleaner air and a low-carbon economy while ensuring reliable and affordable energy to our customers.
- Participate with non-governmental organizations, industry trade groups, think-tanks and other organizations to achieve attainable and meaningful carbon reductions and advancement of a low-carbon economy.
- Engage in and share research that may further reduce carbon emissions associated with supplying electrical energy.

APS has a political participation policy, which outlines our role in the political process as an advocate for a responsible and sustainable energy future for Arizona. The policy is posted on our website, [www.pinnaclewest.com](http://www.pinnaclewest.com). The purpose of the policy is to promote compliance with all applicable federal, state and local laws, rules and regulations surrounding political contributions by APS in a manner consistent with our values. The policy also describes our decision-making and oversight processes for political spending and for reporting of political contributions, in which processes both management and our Board of directors play important roles. As one of the largest and longest-serving local businesses in Arizona, APS takes its commitment to corporate citizenship seriously. Being a good corporate citizen may include being informed about issues, encouraging our employees to volunteer and participate in their communities, speaking publicly about the issues of the day, sponsoring a political action committee and, where permitted by law, considering the contribution of corporate funds to political candidates, political parties, political action committees and organizations that engage in political activities. These activities may also include independent expenditures or the sponsoring of a political action committee that engages in independent expenditures, in relation to elections of candidates to office, get-out-the-vote efforts and ballot initiatives and referenda. In general, a political expenditure is independent when it is not made in cooperation, consultation or at the request or suggestion of a candidate, a candidate's agent or authorized political committee or a political party. Our low carbon-economy principles in combination with our political participation policy work together to ensure that all of our direct and indirect activities are consistent with our overall climate change strategy.

Strategically, the Company has been on a trajectory of increasingly clean energy through solar power innovation, major investments in energy storage technology, carbon-free nuclear operations and advances in energy efficiency solutions. Now, the Company has set the boldest clean-energy goal of all Arizona electric companies, as well as one of the most ambitious in the country, to reach 100 percent clean, carbon-free electricity by 2050. This goal includes a nearer-term 2030 target of 65 percent clean energy, with 45 percent of our generation portfolio coming from renewable energy. In addition, we also will cease reliance on coal-fired generation by 2031.

## C12.4

**(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).**

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### Publication

In mainstream reports

### Status

Complete

### Attach the document

 Final-2021-Proxy-Statement.pdf

### Page/Section reference

p. v - ESG Governance

p. 3 - Strategy

p. 13 - Environmental Highlights

p. 14 - Clean Energy Commitment

p. 16 - Governance

p. 65 - Compensation Metrics

### Content elements

Governance

Strategy

Emission targets

Other metrics

**Comment**

See 2020 Proxy - [http://s22.q4cdn.com/464697698/files/doc\\_financials/2020/ar/Final-2021-Proxy-Statement.pdf](http://s22.q4cdn.com/464697698/files/doc_financials/2020/ar/Final-2021-Proxy-Statement.pdf)

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**Publication**

In mainstream reports

**Status**

Complete

**Attach the document**

 2020-PNW-Annual-Report-Final2.pdf

**Page/Section reference**

- p. 4 of letter - Renewable Procurement Target
- p. 5-6 attachment - Clean Energy Initiatives
- p. 11-12 attachment - Solar and Storage
- p. 20 attachment - Climate Change Legislation Risk
- p. 20 attachment - Company Culture and Strategy

**Content elements**

- Strategy
- Risks & opportunities
- Other, please specify
  - Solar and Storage Solutions

**Comment**

Annul Report - [http://s22.q4cdn.com/464697698/files/doc\\_financials/2020-PNW-Annual-Report-Final2.pdf](http://s22.q4cdn.com/464697698/files/doc_financials/2020-PNW-Annual-Report-Final2.pdf)

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**Publication**

In voluntary sustainability report

**Status**

Complete

**Attach the document**

 2020-ESG-Deck.pdf

**Page/Section reference**

p. 7 – Coal Exit Strategy

p. 9 – 3 Year Capital Plan for Clean

p. 32– ESG Governance Strengthened

**Content elements**

Governance

Strategy

Other, please specify

Capital Spend

**Comment**

Corporate Responsibility Report Overview - [http://s22.q4cdn.com/464697698/files/doc\\_downloads/2021/04/ESG/2020-ESG-Deck.pdf](http://s22.q4cdn.com/464697698/files/doc_downloads/2021/04/ESG/2020-ESG-Deck.pdf)

<http://www.pinnaclewest.com/corporate-responsibility/governance/business-framework/default.aspx>

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**Publication**

In voluntary sustainability report

**Status**

Complete



**Attach the document**

**Page/Section reference**

Webpage

**Content elements**

Governance

Strategy

**Comment**

See the section on the CRR - <http://www.pinnaclewest.com/corporate-responsibility/governance/business-framework/default.aspx>Clean

## C15. Signoff

### C-FI

**(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.**

### C15.1

**(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.**

	<b>Job title</b>	<b>Corresponding job category</b>
Row 1	Chairman of the Board, President and Chief Executive Officer of Pinnacle West, and Chairman of the Board and CEO of APS.	Chief Executive Officer (CEO)



## SC. Supply chain module

### SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

### SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	

### SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

### SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

### SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

## **SC1.3**

**(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?**

**Allocation challenges**

**Please explain what would help you overcome these challenges**

## **SC1.4**

**(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?**

## **SC2.1**

**(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.**

## **SC2.2**

**(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?**

## **SC4.1**

**(SC4.1) Are you providing product level data for your organization's goods or services?**



## Submit your response

### In which language are you submitting your response?

English

### Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain questions?
I am submitting my response	Investors Customers	Public	No, I will complete the Supply Chain questions and return to submit them by the deadline shown on my dashboard. I understand that if I do not return to submit my additional Supply Chain questions by the deadline, they will not be submitted to customers.

### Please confirm below

I have read and accept the applicable Terms