

**Big Chino Valley Pumped Storage Project
Joint Meeting Stakeholder Comment Response Matrix¹**

	Comment	Response
1.	Can ITC build wind, solar, or natural gas facilities instead of developing the pumped storage project?	Wind, solar, and natural gas generation facilities do not have the same attributes as a pumped storage project because they only <i>generate</i> electricity. A pumped storage project such as the Big Chino Valley Pumped Storage Project (Project) operates like a giant battery. Specifically, the Project will have the ability to take excess electricity, use it to pump water uphill, and release that water to generate “stored” electricity when it is needed (<i>e.g.</i> , at night when solar facilities do not generate electricity). Given the unique operational characteristics of a pumped storage project, in particular its ability to absorb excess electricity, renewable or gas-fired facilities cannot provide the same type of benefits to the electric grid that a storage facility can.
2.	Have you considered advanced rail energy storage as an alternative to pumped water storage?	ITC considered various energy storage technologies before deciding on pumped storage two years ago. ITC determined that the Project area is not conducive to advanced rail energy storage. Specifically, the elevation change of the Project area is about 1,200 feet, and there is insufficient space for storage at the top of the ridge. In addition, there is insufficient length for the tracks—only two miles are available at the Project site, but eight miles would be needed for the technology to be implemented successfully. Moreover, an advanced rail energy storage facility would not provide the same benefits to the grid as a pumped storage facility, as it cannot provide frequency stability or ancillary services.

¹ To increase the utility of this chart for stakeholders, ITC has consolidated comments to the extent they raise overlapping issues.

August 6, 2018

	Comment	Response
		<p>ITC also investigated the feasibility of other storage technologies. For example, ITC investigated the possibility of utilizing chemical batteries, such as lithium ion batteries. Unfortunately, chemical batteries are not viable at this scale (2,000 MW) and they generally have limited duration (<i>i.e.</i>, they can operate no longer than 4 hours at a time). ITC considered using compressed air storage but determined that it is not financially viable and would have too great an environmental impact. Compressed air requires a great deal of heat, which dissipates into the rock. In addition, ITC determined that approximately 27 cubic miles of storage caverns would be required to achieve the necessary volume of storage. Such a project would therefore have a significant impact and cost.</p>
3.	<p>Has ITC considered co-locating a wind turbine on the ridge above the upper reservoir?</p>	<p>Development of generation facilities has never been part of ITC's core business and ITC does not intend to co-locate any generation facility other than the Project itself on Project lands. ITC is focused on developing an energy storage asset and associated transmission lines to enhance the reliability and resiliency of the regional electric grid.</p>
4.	<p>How much water will be needed for the initial infill of the reservoir?</p>	<p>Approximately 27,000 acre-feet or 8,797,977,000 gallons (one acre-foot is the equivalent of 325,851 gallons).</p>
5.	<p>How much water will be lost due to evaporation each year?</p>	<p>The current estimate of evaporative loss is 925 acre-feet per year or 301,412,175 gallons (one acre-foot is the equivalent of 325,851 gallons). The Project team is working to reduce that amount to as minimal an amount as feasible.</p>
6.	<p>What is the current usage of water out of the Big Chino Aquifer on an annual basis from the area?</p>	<p>Recent agricultural use (<i>i.e.</i>, net use or pumped-transpired and evaporated) has been about 3,000-4,000 acre-feet per year or 977,553,000-1,303,404,000 gallons (one acre-foot is the equivalent of 325,851 gallons). Additional municipal,</p>

	Comment	Response
		<p>industrial, stock, and domestic use has not been recently updated.</p>
7.	<p>What is the impact on the baseflow of the Verde River, the impacts on headwater springs, and eventually the long-term impacts to downstream water users and water rights holders?</p>	<p>ITC is currently undertaking an evaluation of the potential impacts of its proposed groundwater withdrawal to the Big Chino Aquifer and the Verde River. This evaluation is being undertaken by modifying, updating, and improving the Northern Arizona Groundwater Flow Model with input from both state and federal agencies, local municipalities, as well as local and national environmental groups including Sierra Club, the Citizens Water Advocacy Group, and the Yavapai-Apache Nation.</p> <p>ITC’s goal is to produce a conservative estimate of the Project’s effects on the aquifer system. Where assumptions must be made, ITC will make assumptions that will overestimate the Project effects rather than underestimate them. If studies identify any adverse impact to the Verde River, ITC is committed to undertake mitigation efforts to ensure that the Project will not have a negative impact to the river or the community.</p> <p>ITC will build the Project only if it can do so without adversely impacting the base flow of the Verde River, the surface flow of the Verde River, the flood flow cycles of the Big Chino Aquifer and the Verde River, and residential wells.</p>
8.	<p>What does ITC mean by “mitigation”?</p>	<p>Mitigation means identification and implementation of measures to avoid any adverse short-term or long-term impacts that could result from the construction and operation of the Project, including the groundwater withdrawal for the initial fill. Short-term mitigation could include measures such as temporarily suspending irrigation in the area. Long-term mitigation could include measures such as commitments to</p>

August 6, 2018

	Comment	Response
		fallow land or permanently suspend irrigation. No party would be required or compelled to participate in such reductions. Rather, ITC would approach landowners, agricultural concerns, and other counterparties to see if they are interested in engaging in such reductions for compensation. Improvements to irrigation equipment, water resource educational initiatives, and other potential water saving measures also will be considered.
9.	What will the impact be if people do not agree to stop doing their irrigating as requested during the Project's withdrawal of groundwater?	ITC will investigate other mitigation options.
10.	ITC indicated that it had analyzed other water sources and other available water sources either to use for additional fill or mitigation. Can ITC provide information on those other sources and why they were not pursued?	At this time, ITC has not ruled out any specific mitigation options including other water sources. Potential mitigation measures will be studied as part of the groundwater modeling study to assess the feasibility and utility of those measures. As part of the groundwater modeling study, ITC will work with stakeholders to assess possible mitigation options and develop a mitigation plan.
11.	How can the withdrawal of 9 billion gallons of water for the initial fill not have a negative impact on the Verde River?	ITC is currently undertaking an evaluation of the potential impacts of our proposed groundwater withdrawal to the Big Chino Aquifer and the Verde River. If ITC's studies indicate the initial groundwater withdrawal will have an adverse impact on the Big Chino Aquifer or the Verde River, ITC will utilize a variety of mitigation measures to eliminate or suspend existing groundwater withdrawals to avoid that adverse impact. The groundwater model study will help determine whether it is possible, with appropriate mitigation measures, to construct the Project without adversely affecting the river and water levels at wells across the aquifer.
12.	ITC acknowledges that the withdrawal of ground water for the initial fill and continuing operation could have an	ITC is currently undertaking an evaluation of the potential impacts of its proposed groundwater withdrawal to the Big

August 6, 2018

	Comment	Response
	adverse effect on the Verde River. Given that, why is ITC continuing to pursue a license?	Chino Aquifer and the Verde River. If ITC's studies indicate the initial groundwater withdrawal will have an adverse impact on the Big Chino Aquifer or the Verde River, ITC will propose a variety of mitigation measures to eliminate or suspend existing groundwater withdrawals in cooperation with local land owners to avoid that adverse impact. The groundwater model study will help determine whether it is possible to construct the Project without adversely affecting the river and water levels in the aquifer. If the groundwater modeling study indicates that it is not possible to construct the Project without adversely impacting the community, it is unlikely that ITC will proceed with the Project.
13.	Given that the question of water impacts is a threshold question, why isn't that issue addressed first before you undertake habitat-type studies?	Given the timeframe associated with the Federal Energy Regulatory Commission (FERC) licensing process, it is important to proceed with all of the licensing studies in parallel to be in a position to file a license application in a timely manner. Therefore, ITC is undertaking other studies, including habitat studies, at its own risk.
14.	How willing is ITC to walk away from the Project if the studies show that there will be an adverse impact to the local community?	ITC has terminated development of numerous projects in the past based on a number of factors. Indeed, ITC walks away from more projects than are actually developed. That is the reality of project development.
15.	Who will make the decision of whether the project should be approved and built?	The decision will be a combination of state and federal approvals. ITC anticipates filing its application with FERC in 2020 and anticipates receiving its license in 2021.
16.	When calculating the amount of water available for mitigation by virtue of avoiding agricultural use, will ITC's groundwater study model account for the amount of water that would have returned to the aquifer during agricultural use?	Yes. Total withdrawals for agriculture include portions transpired by the crops, evaporated through the distribution system, and a portion that is returned to the aquifer through infiltration. All are considered in the modeling efforts.

August 6, 2018

	Comment	Response
17.	Has ITC drilled any test wells?	ITC has not drilled any test wells.
18.	Will ITC's calculations and study results be made available in a timely manner?	ITC's assumptions and calculations regarding the groundwater model will be shared with stakeholders in a timely manner. With all of the licensing studies, ITC's goal is to be transparent and share information to the greatest extent possible while also allowing sufficient time for review.
19.	The time provided in the study schedule does not seem sufficient to review the input files and all the things that go into groundwater modeling.	ITC's goal is to get stakeholder input prior to running the groundwater model so that stakeholder feedback can be used to address any potential weaknesses in the model. Stakeholders will also have opportunities to comment on the model during the model modification, calibration, and scenario simulation process. This should enable efficient development of the model and review of the modeling results.
20.	Would it be possible to see what resources have been researched and then provide those to stakeholders, as well, and any other comments concerning groundwater modeling to help stakeholders fully vet the proposal?	One of the goals of Stakeholder interactions during the model development process is to be assured that all pertinent information has been considered. Summaries of Stakeholder interactions will include references to resources provided by Stakeholders. All of the resources reviewed by ITC and the stakeholder working group in support of the development of the groundwater model, and all of the assumptions and data inputs to the model, will be made available to Stakeholders in the final report documenting the model results.
21.	Who is involved in the groundwater modeling stakeholders group?	The groundwater modeling stakeholders group is a technical group comprised primarily of hydrologists and other experts from the Salt River Project, the City of Prescott, Town of Prescott Valley, Citizens Water Advocacy Group, Sierra Club, the Yavapai Apache Nation, U.S. Forest Service – Prescott National Forest, and several hydrologists retained by Stakeholders.

August 6, 2018

	Comment	Response
22.	Why hasn't my community organization been invited to participate in the groundwater modeling stakeholders group?	The groundwater modeling stakeholders group is focused on refining the inputs to the Northern Arizona Groundwater Flow Model. If a local community organization is interested in participating in efforts to refine the Northern Arizona Groundwater Flow Model, it is welcome to designate a representative to participate in the group and should contact Brian Studenka or the Project email address available on the website for more information.
23.	Will the water withdrawals affect arsenic levels in wells in Paulden?	ITC is currently studying the potential impacts of proposed groundwater withdrawals to the Big Chino Aquifer and the Verde River. If ITC's studies identify any potential adverse impacts, ITC will utilize a variety of mitigation measures to eliminate or suspend existing groundwater withdrawals to ensure proposed Project withdrawals do not have adverse impacts to the community or to the Verde River. The exact nature of those mitigation measures will be determined over the course of the evaluation and will be shared with stakeholders for their feedback when the evaluation is completed. ITC's objective is to minimize or eliminate changes in the well water levels in the Paulden area, so the Project will not have any influence on the geochemistry of the local wells.
24.	Will the water withdrawals affect water levels in my well?	ITC's objective is to implement mitigation measures so there would be no or minimal changes in the water levels in wells in surrounding communities.
25.	If the water levels in my well decrease, and I have to pay someone to come drill a deeper well or the water in my well dries up, will ITC compensate me for that?	ITC intends to ensure that the Project will not have a negative impact on the community and the Verde River. ITC is committed to build the Project without impact to the flood flow and base flow of the Verde River, or other groundwater users including those with residential wells.

August 6, 2018

	Comment	Response
26.	How much of the 45,000 acres of land to be purchased for the Project will benefit private citizens?	ITC is looking to purchase the private sections of that 45,000 acres. With regard to state-owned lands, ITC intends to pursue a lease with the State and that money would go to the State through an auction process and the beneficiary would be the State Land Trust. The primary beneficiary of the Arizona State Land Trust is K-12 education across the State of Arizona.
27.	Does the 45,000 acres include the land for the transmission lines needed for the Project?	No. ITC will acquire land for the transmission lines separately.
28.	Will ITC commit to a conservation easement on the 45,000 acres and, in conjunction with Arizona Game and Fish Department and the U.S. Fish and Wildlife, put together a habitat conservation plan.	ITC intends to coordinate with those agencies and work towards placing the majority of land under a conservation easement.
29.	How will the Project benefit me and my community?	The Project would significantly increase the tax base for the County, which would help the County pay for infrastructure and other investments. The project also would have significant positive impact on the local and regional economy. In addition, ITC supports numerous community initiatives in the communities in which it does business.
30.	Will Fortis allow ITC to continue to operate independently and maintain its commitment to be a responsible partner and neighbor?	Fortis acquired ITC for the benefit that ITC brings as an independent electric and transmission provider. ITC is an independent subsidiary of Fortis and will continue to maintain its independence and commitment to be a responsible partner with the local community.
31.	If ITC will have a partner in the project, who will the partner be and how can the community be sure it will be a similarly good partner as ITC?	ITC is meeting with potential local partners, including all of the utilities within the State of Arizona. However, those discussions are still in their preliminary stages.
32.	There are differences in opinion on the amount of water currently being used—will differing views be made available so that they can be discussed by stakeholders?	Yes, current water use will be one of the inputs to the groundwater model and those assumptions and the range of estimates will be made available to Stakeholders.

August 6, 2018

	Comment	Response
33.	Is there a long-term record of water use on the property that ITC might be retiring for the purposes of mitigation, and does ITC have a way to characterize how much water has been used in that period of time?	There are historical estimates that span several decades and ITC is assessing those records. As with all estimates of water used, the estimates for all properties have a range of uncertainty. The range of estimates will be provided to stakeholders as part of the groundwater model study. Because of uncertain historical water use, the current plan for groundwater model estimates of ITC effects on the aquifer and mitigations is to assume the lower estimates of any particular water use. This is consistent with our model strategy to not underestimate the effects of ITC groundwater use and to not overestimate effects of mitigation.
34.	If the groundwater models show an impact to the Upper Verde that can't be mitigated, will studies on threatened and endangered species and critical habitat be undertaken in 2019?	Yes. The geographic scope of the 2019 studies would be expanded to include the Upper Verde River and its surrounding environs.
35.	How much water is stored in the Big Chino aquifer?	According to the Arizona Department of Water Resources (ADWR) there are about 10 million acre-feet or 3,258,510,000,000 gallons (one acre-foot is the equivalent of 325,851 gallons) of accessible water stored in the aquifer to a depth of 1,200 feet.
36.	What measures are being taken by ITC to ensure that any of the Threatened or Endangered Species will not be adversely affected by construction and operation of the Project?	ITC will comply with all applicable state and federal requirements and will consult with the Arizona Game and Fish Department (AZGFD) and the U.S. Fish and Wildlife Service throughout the study process regarding habitat and species-related issues.
37.	If ITC purchases the land, would ITC then have to achieve a zoning change for it from the County?	ITC will follow all zoning requirements. ITC does anticipate a role for the County in the zoning process.

August 6, 2018

	Comment	Response
38.	ITC should include a study to assess the visual impacts on certain points in the Prescott National Forest, in particular the peaks in the western portion starting from Hyde and going west.	ITC anticipates studying visual impacts during 2019 studies. As part of those studies, ITC will assess the visual impacts of the transmission lines on the Prescott National Forest.
39.	Who will own the water once it is out of the ground?	Under Arizona law, all sources of water are public resources which private parties such as ITC can acquire the right to use under circumstances specified in statutes and cases decided by Arizona courts. ITC will follow all applicable legal requirements to secure the right to use water for the Project.
40.	To what extent will this project provide energy storage services to California and Nevada rather than to Arizona?	ITC is currently engaging in outreach to Arizona utilities regarding the benefits of the Project, and all of the electricity stored and released by the Project could potentially be contracted to Arizona utilities. Currently, Arizona's demand (load) is approximately 20,000 MW, and the Project could provide 2,000 MW of storage. ITC believes that 10% is an appropriate amount of storage versus overall demand and will help incorporate public policy requirements for renewable generation resources. Given the amount of change and future uncertainties in the broader electric system, this Project will provide an additional tool to help manage the unknowns. ITC will not discriminate against interested parties of the Project; however, any non-Arizona participation will benefit Arizonans through a variety of benefits including – but not limited to – tax contribution, jobs, and contribution toward Project costs.
41.	The plant will produce 2,000 MW for a period of only 10 hours, meaning 20,000 MWh will be available. The project is too small to replace a gas, coal, or nuclear plant and it appears to be an excuse to close the Salt River Project-Navajo Generating Station plant in Page, Arizona.	The purpose of the Project is to provide a facility that can store excess electricity to be used when the grid needs that electricity. There is no intent to displace any existing generation resources.

August 6, 2018

	Comment	Response
42.	Will the Project lower electricity rates for consumers?	Although ITC anticipates the Project will provide a benefit to ratepayers in Arizona, it is not possible to predict specific impacts on customers' rates at this time.
43.	Why did ITC choose to locate the Project in Arizona rather than some place with more water, such as Michigan?	ITC analyzed numerous areas within the southwest to assess where an energy storage project could have the best effect in terms of providing services to the electric grid. The site selected was a prime location after considering a number of factors, including access to the interstate transmission grid, opportunities to purchase property, and land elevations. Additionally, given the design of the electric grid, Michigan is not located in the same electricity interconnection as Arizona or many other states in the western United States.
44.	Are there any other sites successfully operating in the United States in similar high desert country?	<p>There are currently no other large (above 500 MW) pumped storage hydropower facilities constructed within United States' driest areas (below 20 inches of average annual precipitation). The closest large facility is the 1,500 MW Castaic pumped storage power plant, located north of Los Angeles in an area with about 25 - 30 inches of annual precipitation.</p> <p>In other countries, large pumped storage facilities in similar climates to the Big Chino Valley are found. For example:</p> <ul style="list-style-type: none"> • 1,800 MW La Muela II Pumped Storage Power Station in Spain; • 1,300 MW Ingula Pumped Storage Scheme in South Africa; and • 1,200 MW Hohhot Pumped Storage Power Station in China
45.	The annual precipitation is only 475 acre-feet (154,779,225 gallons) of water but after the initial fill the project is going	ITC's current estimate of the annual water loss from the reservoirs is 925 acre-feet or 301,412,175 gallons (one acre-foot

August 6, 2018

	Comment	Response
	to require 925 acre-feet (301,412,175 gallons) of water due to evaporation and leakage. But in Section 4.8 of the Pre-Application Document (PAD) you state 950 acre-feet (309,558,450 gallons).	is the equivalent of 325,851 gallons), including evaporation and precipitation. The Project team is working to reduce that amount to as minimal an amount as possible. Any refinements to this estimate will be shared with stakeholders as that information becomes available.
46.	ITC asserts that it encourages the participation of the Stakeholders to help facilitate and foster decision-making for a more effective review, but Stakeholders did not have the Pre-Application Document (PAD) available to us until June 2018 and the schedule limits the time to comment to April 30, 2018. How can we expect that our comments to be addressed when we only got the information in June 2018? Will our comments still be relevant to the Project?	<p>ITC filed the PAD with FERC on March 31, 2018 and attempted to ensure that all interested Stakeholders were aware of and had access to the PAD. To those ends, ITC distributed physical copies of the PAD to a list of over 100 Stakeholders, published notice regarding the filing in three area newspapers, and made an electronic version of the PAD available on the Project website.</p> <p>The April 2018 deadline was for comments on the initial 2018 studies and ITC's request to use the Traditional Licensing Process. Stakeholder comments on the PAD are still very much welcome and relevant to the Project—Stakeholder comments will help ITC develop a license application that appropriately considers and addresses Stakeholder concerns. Moreover, Stakeholders will have the opportunity to formally comment on the Project at numerous points before ITC files a license application with FERC. Specifically, Stakeholders can submit study requests in August 2018 to ITC, provide comments to FERC on the scope of the review under the National Environmental Policy Act, provide comments to ITC on study results, and provide comments to ITC on the Draft License Application.</p>
47.	Will the Stakeholders be given a formal response to their requests?	To the greatest extent possible, ITC will endeavor to respond to and address each stakeholder comment. However, some requests and comments may take longer to address than others

	Comment	Response
		(e.g., requests that require additional study or modifications to proposed studies).
48.	What will be the effect on the environment if the 322 foot-wide emergency spillway has to release water due to over-pumping/flooding?	<p>The studies completed to date have assumed a concrete spillway with a downstream flow path over the steep rock slope. The spillway has been sized based on preliminary estimates of Probable Maximum Flood (PMF) and over-pumping flow rates that will be refined in next phase of engineering work. The expected environmental effect of spill flow over existing rock would be some level of erosion of the rock and vegetative cover in the path of the flow. The amount of erosion in the path of the flow would be a function of the flow rate and flow duration. The location and arrangement of the upper reservoir spillway will be refined in the upcoming phase of engineering work; as a result, details of potential flow durations and flow rates have not yet been determined.</p> <p>In the extremely unlikely event of a PMF event, we expect the flow rate of any spill to be small and its duration to be short, based on the anticipated available flood storage in the upper reservoir and the normal operation of the project, which would move water from the upper reservoir to the lower reservoir. The volume of water spilled would likely range from zero to less than 30 acre-feet or 9,775,830 gallons (one acre-foot is the equivalent of 325,851 gallons).</p> <p>In the extremely unlikely event of over-pumping, the expected flow rate is greater than the PMF, but with a significantly shorter duration as the pump-turbines will quickly be starved of water and automatically turn off as the lower reservoir water level drops below its normal minimum operating level. The volume and duration of spill in an over-pumping event will be estimated in the next phase of engineering work as the characteristics of the pump-turbines and the hydraulic conditions at the pump</p>

August 6, 2018

	Comment	Response
		intakes will be better known and defined. Note that there will be several redundant project operating control safe-guards to prevent an over-pumping event.
49.	In Oroville, California the dam released a vast amount of water due to flooding that caused extensive erosion that was never accounted for and caused a considerable amount of damage. Has ITC planned for this possible event, and what precautions are they taking to prevent/reduce any adverse effects on the environment?	Hydroelectric projects regulated by FERC are subject to extensive safety regulations and guidelines. Before such projects are constructed, FERC staff reviews and approves the designs, plans, and specifications of all dams, powerhouses, and other project-related structures. FERC engineers frequently inspect the project during construction and, once construction is complete, FERC engineers continue to inspect the project on a regular basis. As a FERC-regulated hydroelectric project, the Project will be subject to these rigorous safety requirements and FERC's ongoing oversight.
50.	Are there any plans to collect the excessive run-off from the Lower Dam and Reservoir for future use?	ITC does not intend to capture and use the limited amount of surface water that may occur within the small drainage areas above the reservoirs because that water is potentially subject to the claims of downstream surface water users. ITC will allow any such water to flow downstream through existing natural channels.
51.	What is the seismic consideration given to the powerhouse in the event of an earthquake?	As part of the FERC licensing process, ITC will be required to prepare a supporting design report that must include, among other things stability and stress analyses for all major structures and critical abutment slopes under all probable loading conditions, including seismic and hydrostatic forces induced by water loads up to the Probable Maximum Flood. The supporting design report also must provide the bases for ITC's determination of seismic loading and the spillway design flood in sufficient detail to permit an independent review by FERC staff.

	Comment	Response
52.	Given the proximity of the Big Chino and Little Chino Faults, has ITC considered potential risks to the underground pump due to earthquakes?	ITC’s design consultant is aware of the two faults, as well as others, and is designing the Project to avoid issues posed by the faults. Indeed, the initial routing of the proposed tunnels was modified to account for a fault. In addition, Terracon, a Geotechnical company located in Phoenix, will conduct soil borings in the fall of 2018 and additional borings, as necessary, to confirm geological conditions. ITC will design the Project so that it can handle any foreseeable earthquake risk.
53.	Will the water be captured for continuing use after the initial fill? What consideration has been given that, should the initial fill fail its test, water will be released back to the aquifer? What will be the effects if a second test is required?	<p>After the initial fill, the only water required will be for evaporative losses. The facility is being designed so that only one fill of the reservoirs will be required. Water will not be withdrawn from the aquifer until the construction of the lower reservoir is complete to a point that will allow for a safe fill.</p> <p>During operations, water will be withdrawn from the aquifer to compensate for the loss of reservoir water, mostly due to evaporation. The design operation period (lifespan of the project) is 60 years. Near the end of the 50-year license issued by FERC, an evaluation of the plant will be conducted to determine whether the benefits from the plant exceed the upgrade/refurbishment costs of the plant.</p> <ul style="list-style-type: none"> • If it is deemed beneficial to refurbish the plant, the plant will continue operations until another evaluation is made. • If it is not beneficial, the plant will be decommissioned. <p>Once the plant is decommissioned, the reservoir water will be gradually releasing the water back into the aquifer.</p>

	Comment	Response
54.	<p>How much electrical energy is required to pump the water back up to the upper reservoir from the lower reservoir? While the cost may be reduced due to using power during off-peak time, the overall savings to the actual cost to produce the electricity may be very minimal.</p>	<p>The overall (roundtrip) efficiency of the facility is approximately 80% which means that approximately 20% of every MW put into the facility is lost to pump the water uphill, as well as other losses to transmission, heat, etc. The goal of the facility is to store electricity that is otherwise not used by the electrical grid which would be a 100% loss if the facility were not in use.</p>
55.	<p>The estimated loss due to evaporation is 950 acre-feet or 309,558,450 gallons (one acre-foot is the equivalent of 325,851 gallons); however, the annual rainfall only produces 350 acre-feet (114,047,850 gallons) of water, meaning that the delta is a negative 600 acre-feet (195,510,600 gallons) of water loss to the Verde River, and ITC will be withdrawing the difference from the aquifer. Where is that information provided to ensure the Verde River will continue to flow?</p>	<p>The groundwater modeling study is designed to identify the scope of impacts to the Big Chino Aquifer and the Verde River and potential measures to mitigate identified impacts. For example, the groundwater model study will consider a worst-case needs assessment to replace evaporative losses. Current estimates of evaporative losses are similar to the current agricultural uses on the private lands that ITC would purchase. Those agricultural uses would be terminated and replaced by uses that do not require water use to address evaporation. ITC is also investigating methods to reduce evaporation losses, which could result in Project long-term withdrawals that are less than current uses. The results of the groundwater model will be shared with stakeholders as soon as they are available.</p>
56.	<p>Will the Waters of the United States (WOTUS) be a consideration since the water withdrawal will affect the aquifer?</p>	<p>ITC's review of existing information indicates that development of the Project could result in impacts to potential WOTUS. ITC is currently engaged in a two-year study to prepare a baseline map of potential WOTUS in the study area. That mapping information will assist in the assessment of potential Project impacts to WOTUS, and development of protection, mitigation, and enhancement measures, as necessary.</p> <p>The definition of WOTUS is the subject of ongoing litigation and is under review by the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers. ITC will revise</p>

August 6, 2018

	Comment	Response
		the scope of its study, as necessary, to ensure that its preliminary jurisdictional determination is consistent with applicable law.
57.	Has ITC had discussions with various Indian Tribes regarding the potential impacts to the Verde River?	ITC continues to engage in outreach to, and plans to consult with, affected Indian Tribes. If the groundwater modeling study identifies Project impacts to the Big Chino Aquifer or the Verde River, ITC will develop additional study plans with stakeholders to further define those impacts and develop appropriate mitigation measures. These studies will include an assessment of impacts to tribal resources.
58.	Since there is no silt/clay plug to prevent the water from flowing down to the Verde River, that means that water flow can be reversed (away from the Verde River) when you drill deep into the aquifer to obtain the necessary water for the project. Where is that explained in the Pre-Application Document (PAD)?	Potential effects of any groundwater withdrawals, deep or shallow and with or without a clay plug are considered in the PAD (<i>see, e.g.,</i> section 5.3.1.2.) and also will be assessed through the groundwater model study.
59.	When will the results of Phase II of the study be published so that it can be reviewed for the negative impact the project will have on the Verde River?	ITC anticipates formally presenting the results of the 2018 studies and previewing the 2019 study plans in October 2018. Comments on the 2018 studies and 2019 study plans will be due in November 2018. ITC anticipates presenting the results of the 2019 studies in September 2019, with comments on those study results due in October 2019.
60.	Would it be possible to receive the data from the meteorological station ITC is setting up for the Project?	ITC is investigating the feasibility of posting the data from the meteorological station on the Project website.
61.	Will ITC communicate with stakeholders directly regarding the licensing process?	ITC will distribute information regarding the Project to Stakeholders by email to those who have provided their emails. Any other Stakeholder that does not wish to be added to the email distribution list can stay updated on developments

August 6, 2018

	Comment	Response
		relating to the Project by visiting the Project website at: https://www.bigchinovalleypumpedstorage.com/ .
62.	When does ITC anticipate commencing construction of the Project?	Given the current timeline, ITC anticipates commencing construction after 2021.
63.	Will ITC identify changes to study proposals made in response to stakeholder comments?	Yes. ITC will identify how it responded to Stakeholder comments.
64.	Comments were provided to ITC at the Prescott Resort in June 2018 with a promise that the comments would be reviewed, and replies provided. No replies have been received for comments submitted to ITC in June.	This document summarizes and responds to Stakeholder comments submitted during and in connection with the June 2018 Joint Meeting.

**Big Chino Valley Pumped Storage Project
Responses to Selected Comments Filed in FERC Docket**

	Comment	Response
65.	Arizona Game and Fish Department (AZGFD) seeks to protect the public interest in maintaining public access to the state trust lands in the vicinity of the project for the purpose of hunting and other outdoor recreational pursuits.	ITC will work with AZGFD to minimize the impact to the public's access to hunting and other recreational pursuits on state lands within the vicinity of the Project. Within the FERC-designated Project boundary, public access to state lands may be restricted by the conditions in the FERC license.
66.	The Project's lower reservoir will cover an Arizona Game and Fish Department (AZGFD) wildlife water catchment (Picacho Butte #1), meaning that the next permanent water source for wildlife would be 7.6 miles to the south.	ITC will work with the AZGFD to replace the wildlife water catchment and locate it in an area that is not affected by Project facilities, but which minimizes the distance between permanent water sources for wildlife.

August 6, 2018

	Comment	Response
67.	ITC should discuss the potential to manage the reservoirs as fisheries in the effects assessment and include measures to prevent non-native aquatic species from entering the Verde River.	The Project is a closed-loop pump storage facility located off-river. It will not be suitable for fisheries and will have no potential to introduce non-native species into the Verde River.
68.	ITC's study plan should address potential effects on cultural resources.	ITC will develop and implement, in consultation with interested Indian Tribes and the U.S. Department of the Interior, a Traditional Cultural Properties study as well as a cultural resources study. ITC will also consult with Indian Tribes and the Arizona State Historic Preservation Office to support FERC's compliance with the National Historic Preservation Act.
69.	ITC should assess the potential impact of project construction and operations on migratory bird species.	ITC will assess the potential impact of Project construction and operation on migratory bird species.
70.	It is not clear from the Pre-Application Document (PAD) what ITC means when it references the Project vicinity/boundary/area.	The FERC Project boundary delineates the area that encompasses the Project facilities and is needed for Project operations and maintenance. The Project vicinity is a broader geographic area that generally includes lands near the Project boundary.
71.	The Area of Potential Effects for the cultural resources study should be expanded to include areas within the Verde River and its corridor that may be directly or indirectly impacted by the Project.	If the groundwater modeling study identifies Project impacts to the Verde River, ITC will consult with the Indian Tribes and the Arizona State Historic Preservation Office regarding adjustments to the geographic scope of the cultural resources study plan.
72.	There are several National Forest System Roads and/or National Forest System Trails that are federally owned, operated, and maintained and fall within the Project	ITC is currently finalizing the routes for the three transmission corridors. Once these routes are finalized, ITC will conduct studies to assess the impacts of the transmission corridors on various resources. As part of this assessment, ITC will include

August 6, 2018

	Comment	Response
	boundary and should be incorporated when developing the application.	an evaluation of the Project's potential effects on National Forest System Roads and/or National Forest System Trails and will include this information in its license application.
73.	ITC should list all roads, either planned or already in existence, that could foreseeably be utilized by the Project.	As part of its ongoing feasibility studies, ITC will develop detailed information about planned and existing roads that will support Project construction and operation. Additional information will be shared with stakeholders when it becomes available.
74.	Any resource sampling/surveying field crews that will conduct work related to threatened and endangered species or their potential habitat should be licensed and permitted to do so through both the United States Fish and Wildlife Service and Arizona Game and Fish Department (AZGFD).	ITC will comply with all applicable state and federal requirements and will consult with resource agencies throughout the study process regarding habitat and species-related issues.
75.	Any field sampling/surveying crews intending to conduct work on national forest service lands should coordinate a pre-field survey meeting with the Forest Biologist to review the crews' proposed scope of work, survey/sampling methodologies, and any special conditioning the Forest may have for the crews.	For all work conducted on Forest Service lands, ITC will conduct a pre-survey meeting with a Forest Service representative.