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# Executive Summary

The Department of Water Resources (DWR) Power and Risk Office (PARO) Power Planning Branch was tasked by the Division of Statewide Integrated Water Management (DSIWM) to conduct a power planning study for the proposed North-of-Delta Offstream Storage (NODOS) Project. NODOS is in the planning phase, at a feasibility-level stage. The objective of the PARO power planning study is to analyze the proposed action alternatives, from a power planning perspective. NODOS's action alternatives were developed pursuant to National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) Notice of Intent and Notice of Preparation (that were filed and published in November 2001 by the Bureau of Reclamation [Reclamation] and DWR, respectively) to investigate surface storage opportunities north of the Delta. The study objective includes optimization of NODOS power operations, and a financial assessment of NODOS obligations and revenues resulting from its exposure to the energy market. Also, the power planning study will provide a roadmap for the transmission interconnection planning process for the proposed project facilities.

The PARO power planning study is being conducted in multiple phases, as NODOS planning and implementation processes evolve with time. A first phase was completed in 2009, in which the designed capacities and the corresponding operational scenarios for the project's components were analyzed, and some design modifications were recommended. The current (second) phase of the study analyzed the three action alternatives identified for NODOS relative to the "No Project" alternative to optimize power operations (with sustained water operations) to better capture power market opportunities and utilize the inherent excess capacities (resulting from hydrology swings) for the different components of the project. Also in this phase of the study, needed design and operational changes that will add valuable operational flexibilities were identified. Operational flexibilities will be crucial for NODOS to be able to participate in a complex and evolving energy market while sustaining intended water diversions and deliveries. A third phase of the power planning study will follow, subject to DSIWM's desire to explore additional market opportunities (such as renewables integration) that may enhance the NODOS project's viability and value.

The NODOS project is an off-stream seasonal storage facility proposed to be built 10 miles west of the town of Maxwell, California. NODOS will be composed of two main reservoirs (Sites and Holthouse/Funks), and a conveyance system that includes a number of physical components (intakes, pumps, canals, pipes, and terminal structures). NODOS is designed to capture the annual seasonal cycle of the Sacramento River, where flood water could be captured, stored, and re-delivered at a later time. The major storage component of NODOS is Sites Reservoir, ranging from a 1.27 (Alternative A) to a 1.81 (Alternatives B and C) million acre-foot (MAF) reservoir. Water would be delivered to and from Sites Reservoir through a network of pumping/generating plants and conveyances. Three diversion points (Alternative B will have two diversion points) along the Sacramento River would be used to capture and divert/pump water to NODOS storage facilities.

DSIWM supplied PARO's Power Planning Branch with the most recent available California Statewide Integrated System (CALSIM) II model runs that describe the intended operations of NODOS, based on the 82 years of historical hydrology record. The CALSIM II results are used

to identify a median case, 30-year time-series for NODOS diversions from the Sacramento River, which is the basis for the study analysis. Project operations, constraints, and assumptions, as envisioned by the NODOS Project team, are maintained and further optimized to maximize the value of the project's assets.

Daily pump-back operations are superimposed (where and when possible) to better utilize excess capacities of project facilities (resulting from hydrology swings) and to capture energy market opportunities. The intent is to generate an additional revenue stream that would enhance the project's viability and value. A dispatch profile for the daily pump-back operations is generated based on market opportunities, efficiency of Sites Reservoir pumping/generating plant, and available storage at Holthouse Reservoir.

## NODOS Energy Portfolio Value

Two operational scenarios are used to model each of the three action alternatives considered for the project: Incidental and Optimized. For the Incidental scenario, pumping and generating at the different NODOS facilities are driven by water diversions and releases. For the Optimized scenario, pumping and generating at the Sites Reservoir Pumping/Generating Plant are reshaped to minimize pumping costs obligations (pumping in off-peak hours) and to maximize energy generation revenues (generating in super-peak hours) for the project. Also, optimizing operations allowed for the project's excess capacity to be used to superimpose pump-back operations on NODOS operational modes.

For the 30-year planning period, optimizing NODOS operations resulted in additional revenues for the project in net present value (NPV) totaling $72,503,000 for Alternative A, $76,343,000 for Alternative B, and $77,003,000 for Alternative C. For all three action alternatives considered for NODOS, optimizing operations resulted in changing the net project cash flow from a negative to a positive cash flow – an improvement that would significantly enhance the economics of the project. For NODOS Incidental operations, the net total project's power portfolio value (generation revenues minus pumping costs) (for the median case of project diversions) in NPV is $-50,363,000, $-65,077,000, and $-54,206,000 for Alternatives A, B, and C, respectively. Whereas, for NODOS Optimized operations, the net project's power portfolio value in NPV is $22,140,000, $11,269,000, and $22,797,000 for Alternatives A, B, and C, respectively.

## Capacity, Ancillary Services, and Renewable Integration

A crucial element of reliable grid operations, and relevant to NODOS operations, is Resource Adequacy (RA). For NODOS, RA obligations are a pseudo financial obligation in pumping/diversion cycle, and a revenue opportunity in generation/ release cycle. For NODOS, RA obligations for the pumping cycle are met through the "self-provided" provisions of current California Independent System Operator (CAISO) tariff, provided that the project meets CAISO participating load requirements. For a generation asset, there are two different levels of participation in CAISO's capacity market – local RA, and system RA, based on the relative location of that specific asset to pre-identified congested local areas within the CAISO-managed grid. Monetizing potential revenues for NODOS from participation in the capacity market is a

difficult task. The uncertainty in projecting where and when RA products are needed will render any estimate worthless, at this time. So, a range of values is offered to describe potential revenues for NODOS from RA offerings, and was based on a $2/kilowatt (kW)-year (for System RA) to $25.40/kW-year (for local RA products).

CAISO procures ancillary services (AS) to ensure that it has adequate reserve generation capacity to maintain the electric system reliability and system frequency, by matching generation and load at all times under both normal and abnormal operating conditions. For NODOS pumping/generating facilities, if interconnected to CAISO grid, AS would be a significant operations and costs/revenues concern. A preliminary assessment for AS opportunities for NODOS is conducted using the median case CALSIM II deliveries, for the 30-year planning period. For the pumping cycle, NODOS will have the opportunity, as a participating load (meeting CAISO tariff definition), to sell Non-Spin AS into the CAISO market. For the generation cycle, NODOS will have the opportunity to sell Regulation Down AS into the CAISO market. The average values for the off-peak Non-Spin, and on-peak Regulation Down are calculated using, as basis, published clearing prices for the CAISO AS markets. For Alternative CNODOS, the total AS revenues from Non-Spin (the pump mode) for the 30-year planning period in NPV is $4,925,000. The corresponding total AS revenues from Regulation Down (in the generation mode) for the project in NPV is $9,198,000. The total AS revenues from the pump-back operations in NPV is $11,595,000. The NODOS total potential AS revenues in NPV is $25,718,000 for the 30-year planning period. It should be noted that the aforementioned AS revenues are only a measure of potential revenues based on current market trends – granted that the CAISO market will evolve over time to accommodate load growth, renewable integration, regulatory changes, etc.

The California Renewable Energy Resources Act (CRERA), signed by California Governor Brown on April 12, 2011, significantly increased the State's renewable portfolio standard (RPS) targets from 20 percent to 33 percent by 2020. CRERA also expanded the compliance obligations to include virtually all retail sales of electricity in California. In September 2010, CAISO undertook a multi-phase stakeholder process (Renewable Integration Market and Product Review Initiative [RIMPR]), aimed at identifying changes to the energy market structure and at introducing new market products to reliably mitigate the impact of renewable generation (intermittent generation) as it penetrates the market. Other potential breakthroughs in the power sector include developing energy storage technologies and their potential application to pump-storage hydroelectric facilities. Energy storage in hydroelectric facilities is being integrated with intermittent renewable energy facilities to create dispatchable resources and enhancing grid reliability and power quality. Other forces driving the need for energy storage technologies are climate change policies, smart grid initiatives, and the desire to improve utilization of generation and transmission capacities.

For NODOS, there is great potential for the project's generation and pumping assets to participate in providing renewable integration services as the market needs evolve. Although NODOS' potential in renewable energy integration is certain, it is difficult to monetize that potential at this time because of the absence of a clear tradable market for these services. The CAISO RIMPR may introduce new market products that NODOS can provide, yet sustain its primary water storage and delivery objectives.

## Conclusions-Second Phase

Under the median case deliveries of NODOS, the estimated NPV of the project's power portfolio (energy only) for the 30-year planning period in NPV is estimated to be $22,140,000, $11,269,000, and $22,797,000 for Alternatives A, B, and C, respectively. Additional revenues are expected for the project's power portfolio from participation in the Capacity, Resource Adequacy, and Energy Storage markets. However, monetary values for these services are not included in project economics to avoid speculation. More work is needed to improve on the findings of the current phase of the study.

# H1.1 Background

This report summarizes the second phase of the Department of Water Resources (DWR) Power and Risk Office (PARO) Power Planning Study (study) for the proposed NODOS Project, and recommends additional analyses that need to be performed in the next phase of the study. This document reports the assumptions, the modeling approach, and the results of the second phase of the study. Additional analyses and modeling will be needed to further explore operational scenarios and design adjustments for the different project components that would enhance its viability and value. Changes in design parameters and optimization of operational scenarios will add valuable operational flexibilities that will be needed for the project to participate in a complex energy market, yet, maintain water, flood, fish, environmental, and power objectives.

NODOS is an off-stream seasonal storage facility proposed to be built 10 miles west of the town of Maxwell, California. The project is in the planning, feasibility-level stage. NODOS is composed of two main reservoirs, Sites (a new offstream reservoir) and Holthouse (an expansion of the existing Funks Reservoir), and a conveyance system that includes a number of physical components (intakes, pumps, canals, pipes, and terminal structures). The project is designed to capture the annual seasonal cycle of the Sacramento River, where flood water could be stored during the high-flow season and would be released during the low-flow season.

Three alternatives are proposed for NODOS in terms of the configurations, size, and operations of the different project components. The alternatives were formulated to satisfy a set of water and environmental objectives. The assumptions for the three NODOS alternatives are summarized in a January 5, 2011, document titled *Definition of Proposed Alternatives for Evaluation in the North-of-the-Delta Off-stream Storage Administrative Draft Environmental Impact Report and Statement*.

The major storage component of NODOS, and common to all three alternatives, is Sites Reservoir, (a 1.27 MAF storage facility for Alternative A, and a 1.8 MAF storage facility for Alternatives B and C) that has up to an approximate 14,000-acre inundation footprint. For example, in Alternatives B and C, Sites Reservoir storage capacity is generated through the construction of two main dams, Golden Gate Dam (310 feet tall) and Sites Dam (290 feet tall), and 9 Saddle Dams (ranging from 40 to 130 feet tall), as shown in Figure H.1-1. Two lower reservoirs (Holthouse and the Terminal Regulating Reservoir [TRR]) are configured to complement the project complex, and to add the needed operational flexibility to the project operations. The existing Funks Reservoir would be enlarged to 6,500 acre-feet (AF) storage capacity by the addition of Holthouse Reservoir and integrated with the rest of the project components. A second reservoir would be a newly constructed, 2,000 AF capacity TRR for the Glenn-Colusa Irrigation District (GCID) canal, to the east of Holthouse Reservoir.

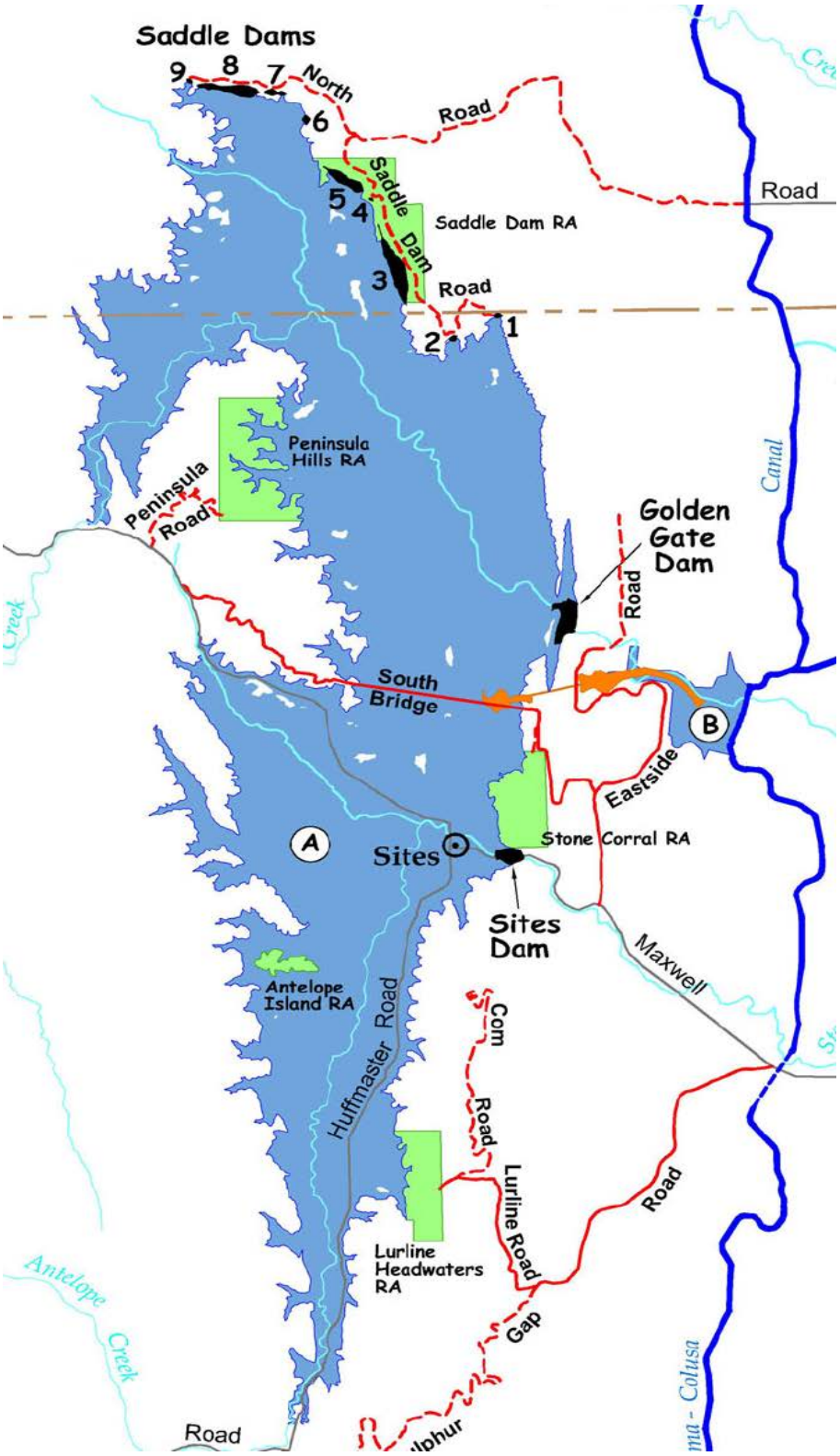


Figure H.1-1. Sites Reservoir Vicinity Map

Water would be delivered to and from Sites Reservoir through a network of pumping/generating plants and conveyances. Under Alternatives A and C, three pumping plants along the Sacramento River would be used to capture and divert water to NODOS. The pumping plants are either existing/modified or new. The Red Bluff Pumping Plant, and Tehama-Colusa (T-C) Canal, a 2,100 cubic feet per second (cfs) capacity plant, would be the project's upper most diversion point on the Sacramento River, near the city of Red Bluff. The project's second diversion point from the Sacramento River would be the GCID Pumping Plant and Canal, a 3,000 cfs capacity plant, and a 3,000 cfs to 1,800 cfs capacity canal. The third diversion point would be a newly constructed Sacramento River Pumping/Generating Plant and Delevan Pipeline, a 2,000 cfs pump, and a 1,500 cfs release capacity plant. Under Alternative B, the Sacramento River diversion pumps are eliminated; however, releases into the Sacramento River would occur with no power generation facilities.

Figure H.2-1 depicts the location of the three Sacramento River diversion points to Sites Reservoir. Holthouse Reservoir would be the lower elevation collection point for the project water diversions from the Sacramento River, and a distribution point for water releases from Sites Reservoir. For Alternative C, the hydraulic capacities of Sites Reservoir Pumping/ Generating Plant are 5,900 cfs in pumping mode and 5,100 cfs in generation mode. For Alternative B, the hydraulic capacity for pumping is 3,900 cfs. The TRR would have a 1,800 cfs pump and 1,500 cfs release capacity pumping/generating plant and pipeline to convey flows from the GCID Canal to Holthouse Reservoir.

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# H1.2 Study Objective

The objective of the study is to analyze the existing/designed components and operational scenarios of NODOS that resulted from the most recent California Statewide Integrated System (CALSIM) model studies from a power planning perspective. The study is aimed at optimizing NODOS operations to maximize its power portfolio's value (revenues-obligations). Also, the study will provide a transmission planning roadmap for NODOS interconnection with available power grid systems (California Independent System Operator [CAISO], Western Area Power Administration [WAPA], Pacific Gas and Electric (PG&E) and the Sacramento Municipal Utility District [SMUD]) in the area. The study results are meant to complement the work done by the Division of Statewide Integrated Water Management (DSIWM) and their consultants. The study is implemented using 2011 power market information and regulations, and available power portfolio models/tools to better evaluate energy costs and revenues of the project.

In light of the modeling results, the study makes recommendations for modifications in the design parameters and in the operational scenarios/assumptions that may enhance the project's value, and allow for better utilization of the project pumping/generating and storage facilities. Also, the study recommends further analysis needed to study the modified/optimized operational scenarios and design parameters of NODOS.

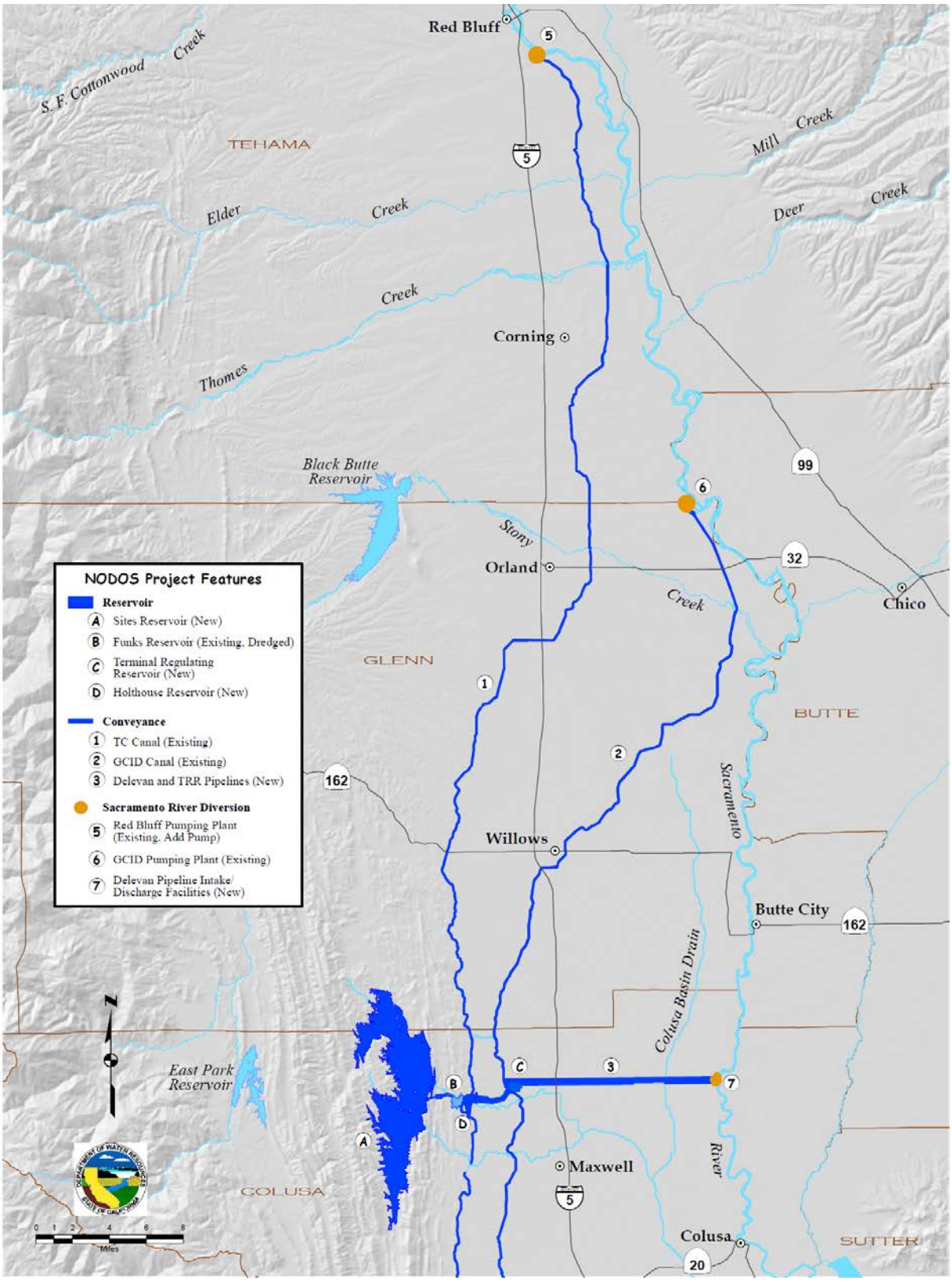


Figure H.2-1. NODOS Components and Interconnection

# H1.3 Modeling Approach

DSIWM supplied PARO's Power Planning Branch with the most recent available CALSIM II runs. The CALSIM II model runs include the No Project Alternative and the three NODOS action alternatives. The CALSIM II model for the No Project Alternative is dated July 5, 2010, with assumptions developed on the basis of the April 1, 2010, Bay Delta Conservation Plan (BDCP) No Project Alternative without climate change. CALSIM II runs describe the intended operations of NODOS, based on the 82 years of historical hydrology record, for each of the three action Alternatives contemplated for the project. PARO used the supplied CALSIM II model results to generate a median case 30-year outlook for NODOS operations. The corresponding high and low cases (30-year outlook) for NODOS diversions from the Sacramento River were also developed, to reflect the uncertainty or "bookends" in water deliveries resulting from natural hydrology swings. For each of the three action alternatives considered in this study, the resulting 30-year operational time-series for all project components are the basis for NODOS' power portfolio value and risk.

For this study, project operations, constraints, and assumptions, as envisioned by the NODOS team, are maintained and further optimized to maximize the power portfolio's value. Optimizing project operations is done to capture market opportunities and price differentials between on-peak and off-peak energy. Current and future power market structure and opportunities are focused on efficient and reliable market design. Optimization of NODOS operations is important to more efficiently and economically use different project assets. A pump-back operation could only be superimposed on NODOS operational modes (diversion and release modes) if pumping and generation for water delivery purpose are optimized (synced with market on-peak and off-peak cycles). Also, optimization of project operations will translate the inherent excess design capacities of the project's components (resulting from hydrology swings) to operational flexibility, and minimize operations and maintenance net costs of the project.

One of the challenges in modeling a proposed project (i.e., future construction of an energy market participating project) is in choosing an appropriate project operations start date, or when the project's assets will be online. The start date will determine the window of time for a price forecast (power and fuel) and the corresponding volatility term structure that the analysis will be based on. The further out the anticipated project operations start date is, the further the price basis used for the analysis would separate from actual market dynamics and current market trends. An alternative approach to overcome this problem is to assume that the project will be operational in the near future and to accordingly value all assets and power needs. Similarly, operational, maintenance, and construction costs would be valued on the same start date basis. Then, costs and revenues would be discounted to a present value consistent with the analysis date. Planned and anticipated future changes to the regulatory environment, power market structure, and market evolution can be reflected in the analysis, on a potential scenario basis. This approach will provide a good comparative framework, and minimize the inherent forecast errors (i.e., speculation) in both projects' power portfolio value and in its construction costs.

Figure H.3-1 is a flowchart depicting a summary of the different steps/tracks (roadmap) taken in translating CALSIM II model runs to an energy portfolio set of assets and contract instruments (time series of monthly pumping and/or generation for each project component). Figure H.3-1

also describes the general modeling approach that was adapted in performing the study on the three proposed action alternatives for NODOS.

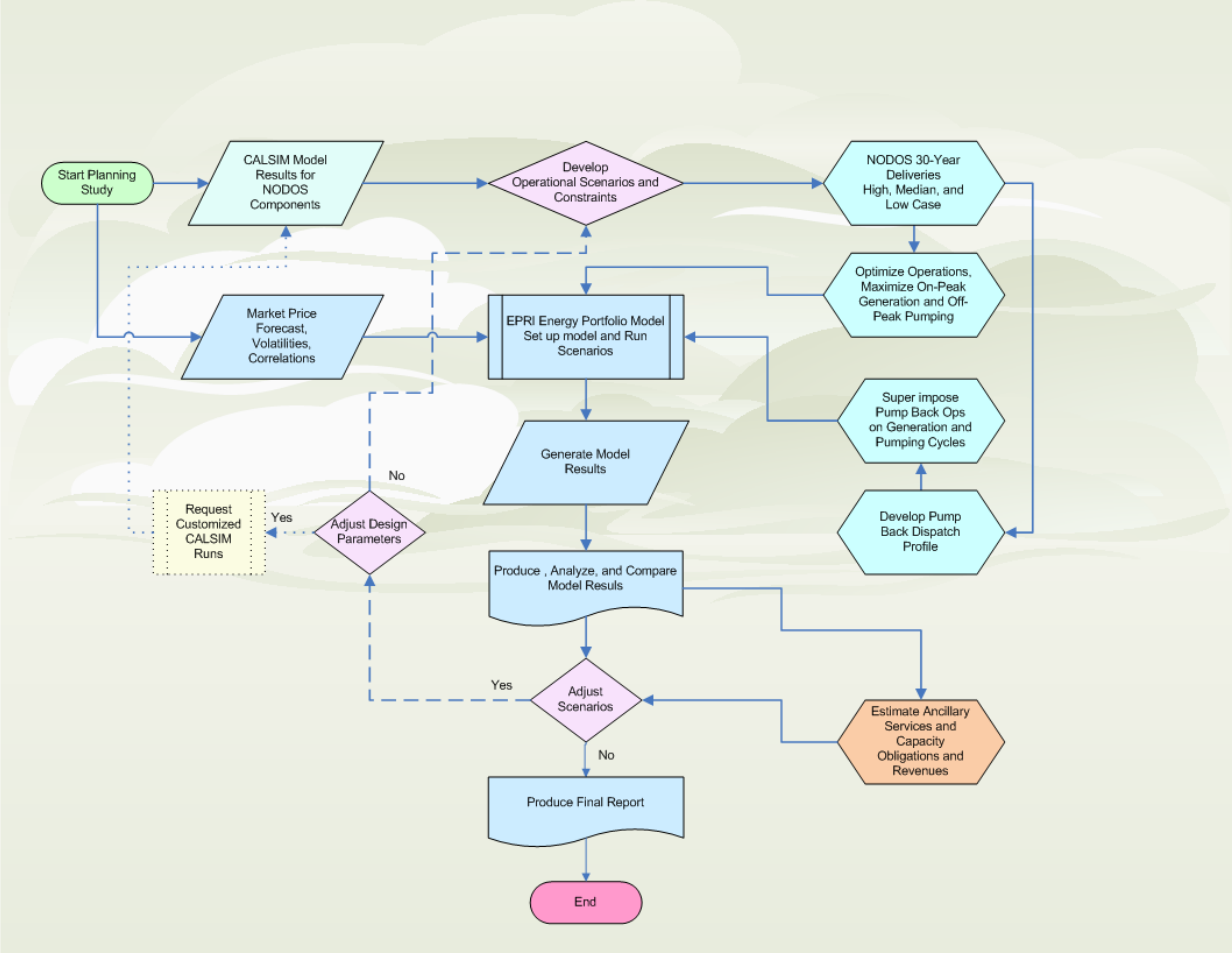


Figure H.3-1. NODOS Project Power Planning Study Flowchart

## EPRI Energy Portfolio Model

Current power portfolio models available to PARO are used to execute the analysis for NODOS. The Electric Power Research Institute (EPRI) Energy Portfolio Model (EPM), version 5, is used for this purpose. EPRI Fast Fit model, version 2.5, is used to describe the needed power and fuel price volatilities term structures, and the correlations between the different energy markets the project will be participating in, or exposed to.

The EPM is a computer software/model designed to help businesses manage value and risk in the energy markets. The EPM is used in the current study to value the different NODOS assets and energy needs. The EPM is a module of a larger suite of individual modules, called the Energy Book System (EBS). Other modules within EBS are EPRI Contract Evaluator, EPRI Risk Manager, EPRI Retail Product Mix, and EPRI Fossil Asset & Project Evaluator. These modules were designed to meet the valuation and risk management needs of a targeted segment of the energy industry. Specifically, businesses with exposure to the energy market with corresponding

exposure to a variety of financial risks. Financial risks, among other things, result from the extraordinary volatility in wholesale energy markets, especially price risk and uncertainty in the underlying fuel markets.

The EPM provides a set of templates that facilitates the description and evaluation of common types of power and fuel contracts, including supply contracts, standard and customized forward, and option contracts. It has the capabilities to model a number of physical assets, including full requirements contracts, power and fuel storage facilities, and generation assets. Many other assets can be modeled by combining two or more standard templates. The EPM requires the user to describe prices in the underlying commodity markets. The model characterizes each commodity market by a forward price curve and a term volatility structure. A correlation matrix characterizes the behavior of pairs of commodity markets is also needed by the model. The correlation matrix is an important concept in evaluating portfolio risk, and assets with two underlying markets, such as spread options or generating units. The model can also be used to assess the value and risk implications arising from uncertainty regarding the future level of load and stochastic generation (e.g., "run-of-river" hydroelectric generation).

The EPM calculates the current market value of any number of user specified assets. The EPM can also calculate and report portfolio value, cash flows, and risk exposures. This includes assessing portfolio's exposure to both underlying commodity markets and customer loads. EPM allows users to manage price and load risk by applying methods that reflect the volatility and correlations between load and price. The market value of a resource depends on the cash flows it is expected to generate over its remaining life. Therefore, the market value of a generating unit depends on the difference between the value of the energy it is expected to produce and the value of the resources required for production. Market values fluctuate over time as conditions in the underlying markets fluctuate. EPM reports the market value of a resource or asset as the value of what it is worth today. One of the benefits of the EPM is that it will allow users to "mark-to-market" periodically each position in their book and thereby track gains and losses as they arise. EPM can report value and risk exposures on a weekly, monthly, quarterly, or annual basis over a user-specified time horizon.

## Energy Forward and REC Price Curves

Three sources of data are used to generate the energy price forecast that would be the basis for energy values for the study. The three sources are forward energy "broker" quotations provided by Tullet Liberty (Tullet)[1], natural gas futures and natural gas futures basis as reported by the New York Mercantile Exchange (NYMEX), and forecasted spot electricity and natural gas prices as provided by Ventyx semi-annual structural forecast (formerly Global Energy Decisions [GED]).[2]

[1] Tullet is, among other things, an energy brokerage company that matches buyers and sellers.

[2] Ventyx is forecasting the actual day-ahead cash price that will occur in the sport markets in the future, not the price at which futures or forward contracts should be priced.

The derived natural gas price curve is made up of Henry Hub (HH) futures prices, adjusted for a specific local hub through using basis prices (for HH to Southern California (SoCal), or HH to the Pacific, Gas and Electric Company [PG&E] Citygate, in this case). Basis prices represent the mark-up or discount in natural gas prices (due to transmission fees, congestion, etc.) at a specific hub, relative to prices at HH. For HH futures, prices are obtained from the NYMEX website, and are current market closing prices for the date when the forward curve is being generated. There are 12 to 13 years of HH futures prices that are available through the NYMEX. These prices are extrapolated to cover the 25-year period that matches the Ventyx structural forecast period. The extrapolation is done through computing the growth/escalation rate of the last 4 years of the current market price quotations, and using the computed growth/escalation rate to extend the last year's available market prices.

For basis prices, there are two data sources: one is market basis prices, the other, a structural forecast of basis prices provided by Ventyx. Ventyx provides monthly basis prices for 25 years to match its structural forecast period, reflecting potential changes in the energy market and their impacts on a specific local hub prices (relative to HH prices). Market basis are available from the NYMEX website, with basis prices available for three to five years (depending on the hub location, whether it is SoCal or PG&E Citygate). The basis price forward curve is extrapolated to generate prices for a 25-year period by taking the last year's monthly quoted basis prices and repeating those prices for every month out to 25 years.

For SWP natural gas price forecast process, the average of the extended market basis and the structural basis (from Ventyx) is then taken and added to the Henry Hub extrapolated forward curve. The resulting natural gas forward curves for either SoCal or PG&E Citygate hubs will be used in the study, where appropriate. Figure H.3-2 shows the resulting natural gas forward curve for PG&E Citygate, which is used for the NODOS Power Planning Study.

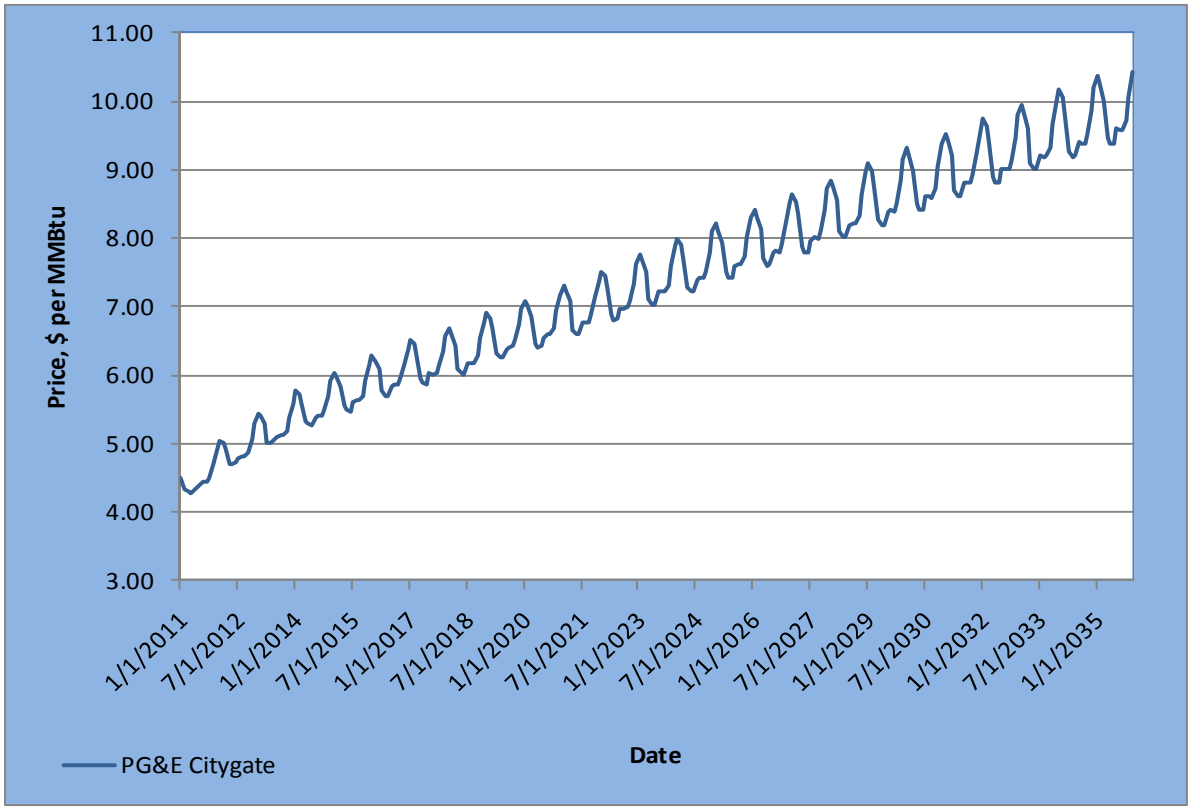


Figure H.3-2. Natural Gas Price Forecast, Forward Curve for 2011 through 2040

For the power price forecast, the derived power forward price curve is comprised of two segments: market forwards, and synthetic forwards. The first segment uses the most current Tullet energy forwards quotations, for NP-15 and SP-15 market's different products (on-peak, off-peak). This segment runs anywhere between 12 to 24 months (data availability is dependent on time of year that the power forecast is generated).

The second segment of the price curve is the "synthetic" portion. The synthetic segment continues where the first segment stops, to complete the 25-year period to match the natural gas forecast period. There are two approaches that are being used to derive the synthetic portion of the forward curve. One approach is to calculate power prices using the natural gas forecasted prices (as described above) multiplied by historical implied heat rates.[3] The other approach is to multiply the forecasted natural gas prices by a forecasted heat rate, reported as part of the structural forecast, by Ventyx. The average of those two generated power forward price curves yields the resulting synthetic forward curve that make up the second segment of the power price forward curve. The same process is repeated for each of the CAISO markets and its specific products (on-peak and off-peak), with the appropriate underlying fuel markets. The resulting

[3] Historical implied heat rates were calculated from 2004 - 2008 historical price data (five years). Daily prices were averaged into monthly prices. The heat rate is calculated as the respective period's power price divided by the respective period's gas price.

power forward curve for NP-15 is shown in Figure H.3-3, and is used for the NODOS Power Planning Study.

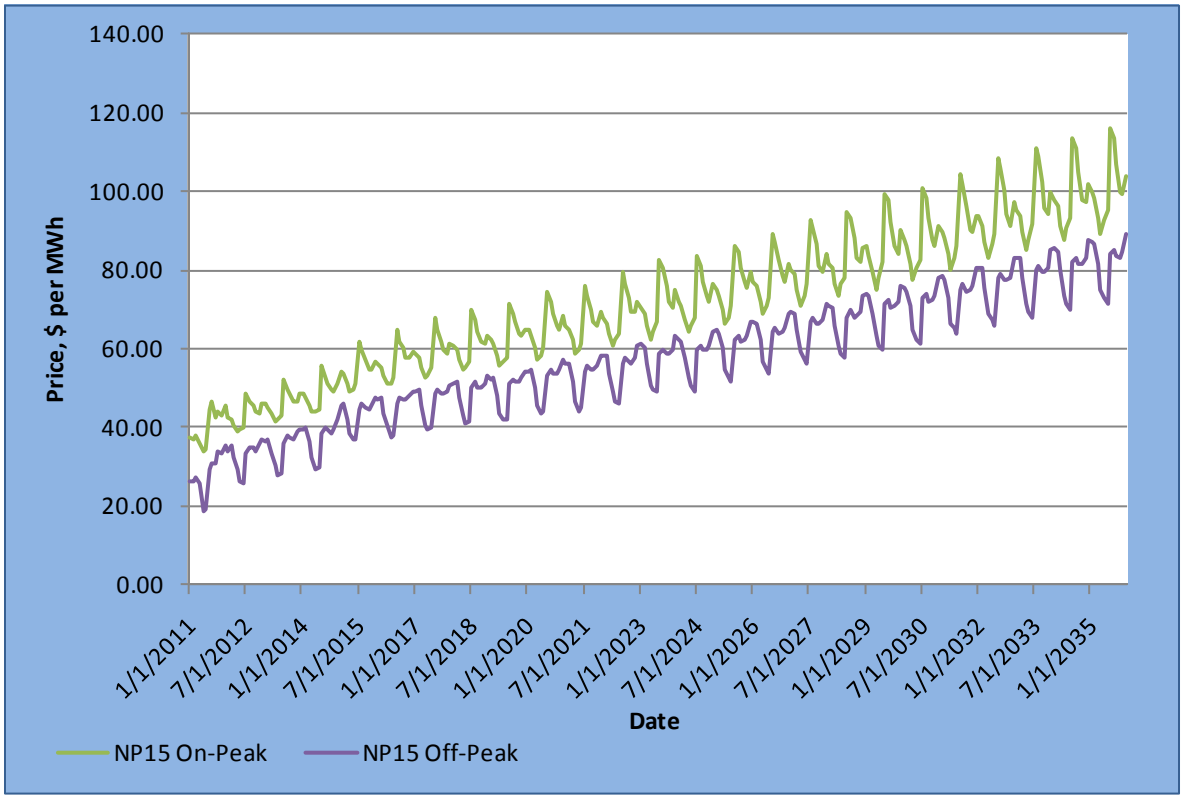


Figure H.3-3. Power Price Forecast, Forward Curve for 2010 through 2039

For the Sacramento River (Alternatives A and C) and TRR generating plants future planned capacity (less than 30 megawatts [MW]) qualify both plants to meet the RPS certification requirements, and allow both plants to participate in the Renewable Energy Credit market (REC), a product of the RPS and the Assemble Bill (AB) 32 greenhouse gas (GHG) mandates. For the purpose of this study, power generation for these two plants was valued based on the forecasted energy prices for the CAISO markets that the plants would participate in or have indirect exposure to (NP-15 market for power and PG&E Citygate market for natural gas), and the additional value that would be realized from the RECs that the two plants will produce. Hence, the power price forecast was adjusted to reflect the forecasted value of the RECs in Western Electricity Coordinating Council (WECC) region as reported by Ventyx Spring 2011 forecast. The reported REC values are used to generate a power curve adjusted to reflect the total value of a megawatt hour (MWh) (energy+REC) generated at the TRR and Sacramento River generating plants. Figure H.3-4 shows the REC values as reported in the Ventyx Spring 2011 forecast, and compared to the forecasted values from two previous Ventyx forecasts.

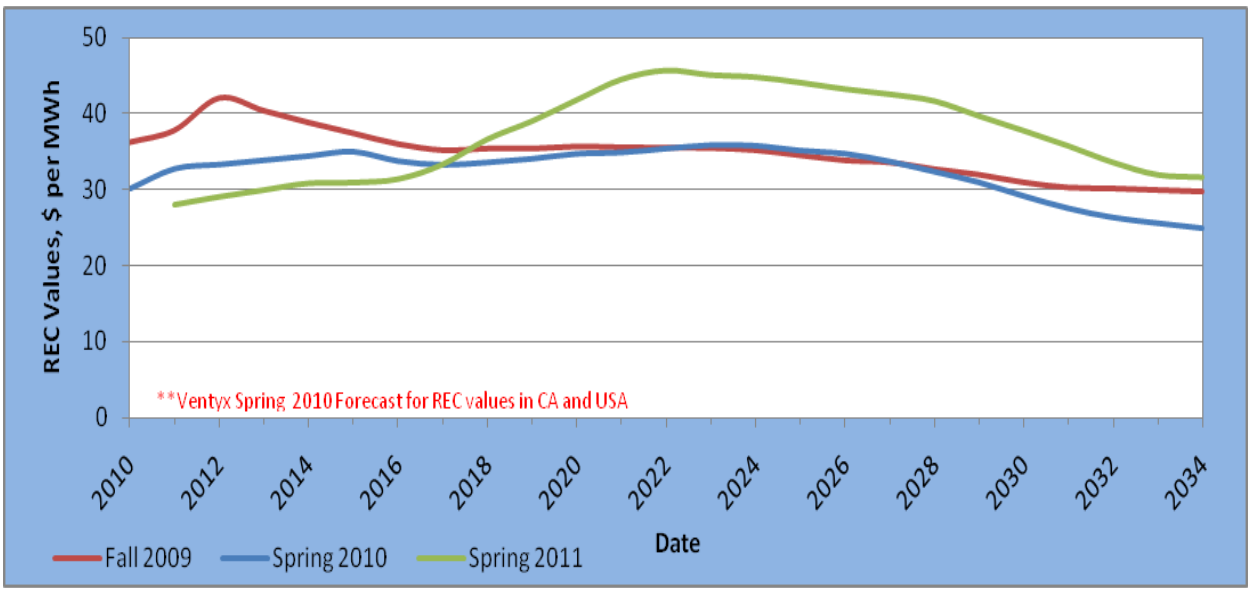


Figure H.3-4. Renewable Energy Credit Forecast for the WECC Region for 2011 through 2034

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# H1.4 NODOS Project Formulation, Alternatives, and Operations

## NODOS Project Alternatives

This section is a synopsis describing the NODOS development process, and is extracted from the main report titled *Definition of Proposed Alternatives for Evaluation in the North-of-the-Delta Offstream Storage Administrative Draft Environmental Impact Report and Statement*. More details on the evolution of NODOS are discussed in the aforementioned report.

Pursuant to NEPA and CEQA, a Notice of Intent and Notice of Preparation were filed and published in November 2001 by Reclamation and DWR respectively, to investigate surface storage opportunities north of the Delta. The purpose of including a reasonable range of alternatives in the environmental impact report (EIR) and or environmental impact statement (EIS) is to offer a clear basis for choice by the decision makers and the public as to whether to proceed with a proposed action or project. NEPA and CEQA require that EIS and EIRs consider a reasonable range of feasible alternatives that could meet the project objectives and accomplish the project purpose and need while avoiding or minimizing environmental impacts. NEPA and CEQA also require that a No Project (NEPA) and No Project (CEQA) Alternative be analyzed. NEPA and CEQA requirements are discussed in greater detail in Chapter 1 of the NODOS EIR/EIS.

Three different configurations for NODOS were combined with the anadromous fish measures and new hydropower facilities to develop the action alternatives summarized in Table H.4-1 (Table 2-8). The alternatives include a No Project Alternative plan and three Action Alternative plans. It was anticipated that these alternative plans and the No Project Alternative would provide a reasonable range of alternatives for further refinement and detailed analysis in the Feasibility Report and EIR/EIS, to meet the requirements of NEPA, CEQA, other pertinent Federal, State, and local laws, regulations, and policies; and the Principles and Guidelines (P&Gs) presented in the U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (U.S. Water Resources Council [WRC],1983).

The following sections provide further details on the components of the alternatives:

- No Project Alternative—The No Project Alternative assumes that no actions would be taken to provide storage north-of-the-Delta to improve water supply reliability, to enhance the survivability of anadromous fish or drinking water quality in the Delta, or to improve flexible generation.
- Alternative A: 1.27 MAF Sites Reservoir with Delevan Pipeline – Alternative A includes a 1.27 MAF Sites Reservoir with conveyance to and from the reservoir provided by the existing T-C and GCID canals and a new Delevan Pipeline (2,000 cfs diversion/1,500 cfs release). This alternative also includes new hydropower facilities and a program to address the three anadromous fish measures.

- Alternative B: 1.81 MAF Sites Reservoir with Release-only Delevan Pipeline – Alternative B includes a 1.81 MAF Sites Reservoir with conveyance to and from the reservoir provided by the existing T-C and GCID canals, and a new release-only Delevan Pipeline (1,500 cfs release). This alternative also includes new hydropower facilities and a program to address the three anadromous fish measures.
- Alternative C: 1.81 MAF Sites Reservoir with Delevan Pipeline – Alternative C includes a 1.81 MAF Sites Reservoir with conveyance to and from the reservoir provided by the existing T-C and GCID canals and a new Delevan Pipeline (2,000 cfs diversion/1,500 cfs release). This alternative also includes new hydropower facilities and a program to address the three anadromous fish measures.

Table H.4-1. NODOS Project Action Alternatives, Priorities, and Objectives

| Alternative | A | B | C |
|---|---|---|---|
| **Storage Capacity** | | | |
| Site Reservoir | 1.27 MAF | 1.81 MAF | 1.81 MAF |
| **Conveyance Capacities** *(to Site Reservoir)* [1] | | | |
| Tehama-Colusa Canal | 2,100 cfs | 2,100 cfs | 2,100 cfs |
| Glenn-Colusa Irrigation District Canal | 1,800 cfs | 1,800 cfs | 1,800 cfs |
| New Delevan Pipeline [2] | | | |
| Diversion | 2,000 cfs | 0 cfs [3] | 2,000 cfs |
| Release | 1,500 cfs | 1,500 cfs | 1,500 cfs |
| **Operations Priorities** *(Primary Planning Objectives)* | | | |
| Long Term *(All years)* | EESA [4]<br>Power [5] | EESA [4]<br>Power [5] | EESA [4]<br>Power [5] |
| Driest periods *(drought years)* | M&I | M&I | M&I |
| Average to Wet Periods *(non-drought years)* | Water Quality<br>Level 4 Refuge<br>Agricultural | Water Quality<br>Level 4 Refuge<br>Agricultural | Water Quality<br>Level 4 Refuge<br>Agricultural |
| **Nonoperational Actions** | | | |
| Ecosystem Enhancement Fund | ✓ | ✓ | ✓ |
| **Physical Features** | | | |
| Golden Gate and Sites Dams | ✓ | ✓ | ✓ |
| Number of Saddles Dams | 6 | 9 | 9 |
| Recreational Areas | Up to 5 | Up to 5 | Up to 5 |
| Road Relocations and South Bridge | ✓ | ✓ | ✓ |
| Sites PG Plant Capacities | 5,900 cfs pumping capacity<br>5,100 cfs generating capacity | 3,900 cfs pumping capacity<br>5,100 cfs generating capacity | 5,900 cfs pumping capacity<br>5,100 cfs generating capacity |
| Sites Electrical Switchyard | ✓ | ✓ | ✓ |
| Tunnel from Sites PG Plant to Sites Inlet/Outlet Structure | ✓ | ✓ | ✓ |
| Sites Reservoir Inlet/Outlet Structure | ✓ | ✓ | ✓ |
| Field Office Maintenance Yard | ✓ | ✓ | ✓ |
| Holthouse Reservoir Complex | ✓ | ✓ | ✓ |
| Pump Installation at the Red Bluff Pumping Plant | ✓ | ✓ | ✓ |
| GCID Canal Facilities Modifications | ✓ | ✓ | ✓ |
| GCID Connection to the TRR | ✓ | ✓ | ✓ |
| TRR | ✓ | ✓ | ✓ |
| TRR PG Plant | ✓ | ✓ | ✓ |
| TRR Pipeline | ✓ | ✓ | ✓ |
| Delevan Transmission Line | Sites Power Plant to PG&E line plus PG&E line to Sacramento River | Sites Power Plant to PG&E line | Sites Power Plant to PG&E line plus PG&E line to Sacramento River |
| Delevan Pipeline | ✓ | ✓ | ✓ |
| Delevan Pipeline Intake Facilities (Fish Screen and PG Plant) | 2,000 cfs diversion capacity;<br>1,500 cfs release capacity | | 2,000 cfs diversion capacity;<br>1,500 cfs release capacity |
| Delevan Pipeline Discharge Facility | | 1,500 cfs release capacity | |

Notes for Table H.4-1

[1] Diversions through the TC Canal, GCID Canal, and Delevan Pipeline area allowed in any month of the year, however, November through March is generally the season that Sites Reservoir will be filled.
[2] New Delevan Pipeline can be operated June through March (April and May are reserved for maintenance).
[3] A pump station, intake, and fish screens are not included for the Delevan Pipeline for Alternative B. For Alternative B, the Delevan Pipeline will be operated for releases only from Sites Reservoir to the Sacramento River year around.
[4] Ecosystem Enhancement Storage Account (EESA) related operations area a function of specific conditions, and operating criteria that are defined uniquely for each action.
[5] Includes dedicated pump/generation facilities with an additional dedicated after-bay/before-bay of 65 TAF in Holthouse Reservoir (enlarged Funks Reservoir) used for managing conveyance of water between Sites Reservoir and river diversion locations.

cfs = cubic feet per second
EESA = ecosystem enhancement storage account
GCID = Glenn-Colusa Irrigation District
M&I = municipal and industrial
MAF = million acre feet
PG Plant = pumping and generation plant
Power = Power Plant
TAF = thousand acre feet
TC Canal = Tehama-Colusa Canal
TRR = Terminal Regulating Reservoir

Figure H.4-1 illustrates the major features of the various action alternatives.

## NODOS Project Operations – Water Operations

For evaluation of the NODOS project action alternatives, the project team used a generally consistent operations strategy for each alternative. The operations strategy is reflected in the operations simulation modeling that is the primary planning tool to determine many of the project benefits and impacts. The ability of each action alternative to implement the strategy effectively is subject to the conveyance options included and the coordinated operation of Sites Reservoir with other existing facilities.

The strategy has four components: (1) operating criteria for diversion of flows from the Sacramento River to fill Sites Reservoir; (2) operating criteria to achieve benefits associated with the primary objectives in drought (driest periods) and other hydrologic conditions; (3) integration and (4) coordination of Sites Reservoir releases with releases from Trinity Lake, Shasta Lake, Lake Oroville, and Folsom Lake.

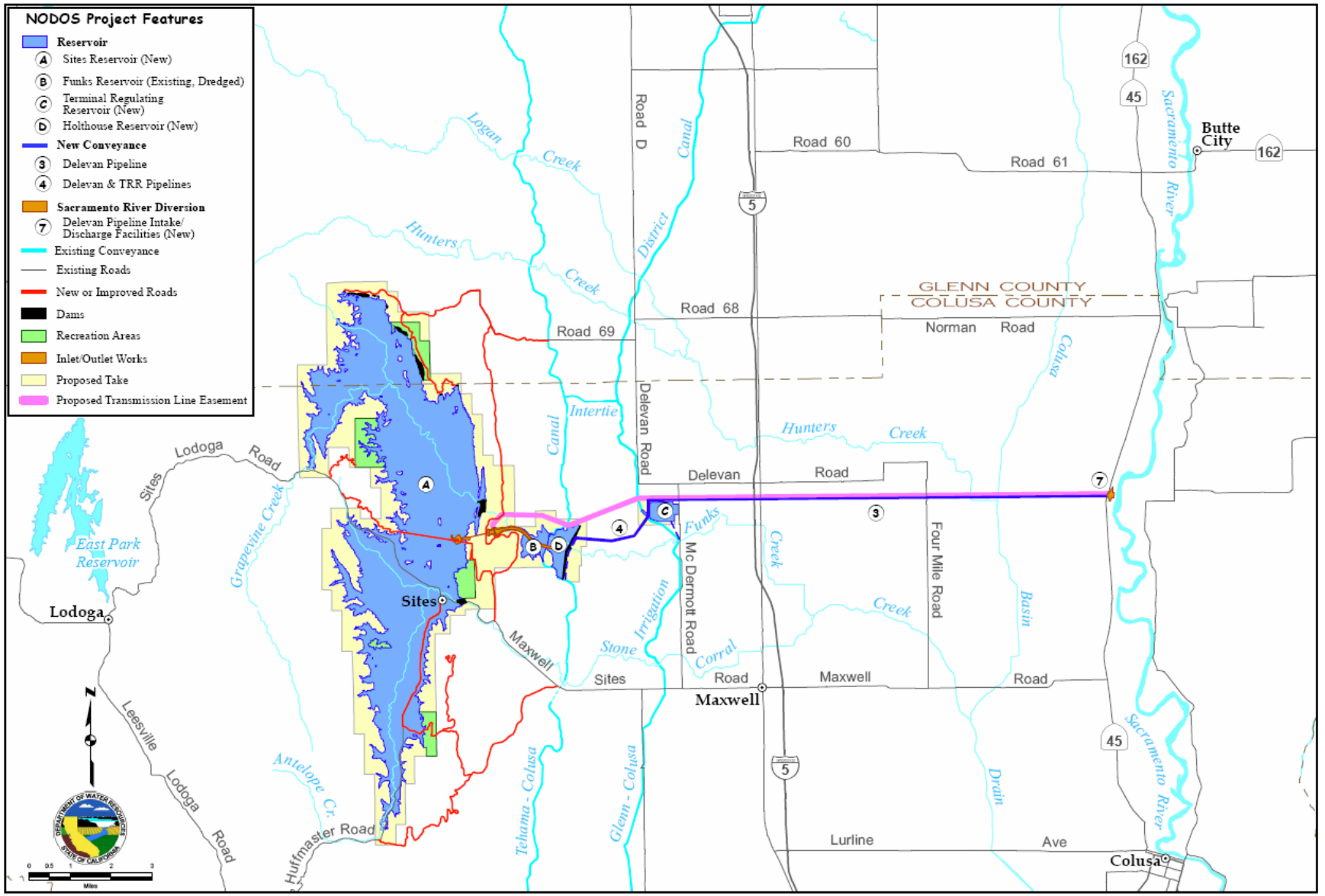



Figure H.4-1. Major Features of the Actions Alternatives

Each action alternative would be operated to divert Sacramento River flows to maximize the filling of Sites Reservoir as long as those flows were not needed to meet (1) existing Central Valley Project (CVP) and State Water Project (SWP) and other water rights diversions; (2) existing regulatory requirements including State Water Resources Control Board (SWRCB) Water Rights Decision 1641 (D-1641), Central Valley Project Improvement Act (CVPIA) 3406(b)(2), 2008 U.S. Fish and Wildlife Service (USFWS) Biological Opinion (BiOp) and 2009 National Marine Fisheries Service (NMFS) BiOp and other instream flow requirements; and (3) flow conditions to minimize the impact of diversion operations on achieving the primary objectives for anadromous fish survival and Delta water quality. A schedule of flow criteria for Sacramento River flows at Red Bluff, Hamilton City, Wilkens Slough, and Freeport are used to limit the impact of diversion operations. An additional set of criteria are used to identify and restrict diversions during potential pulse flow conditions to protect out-migrating anadromous fish.

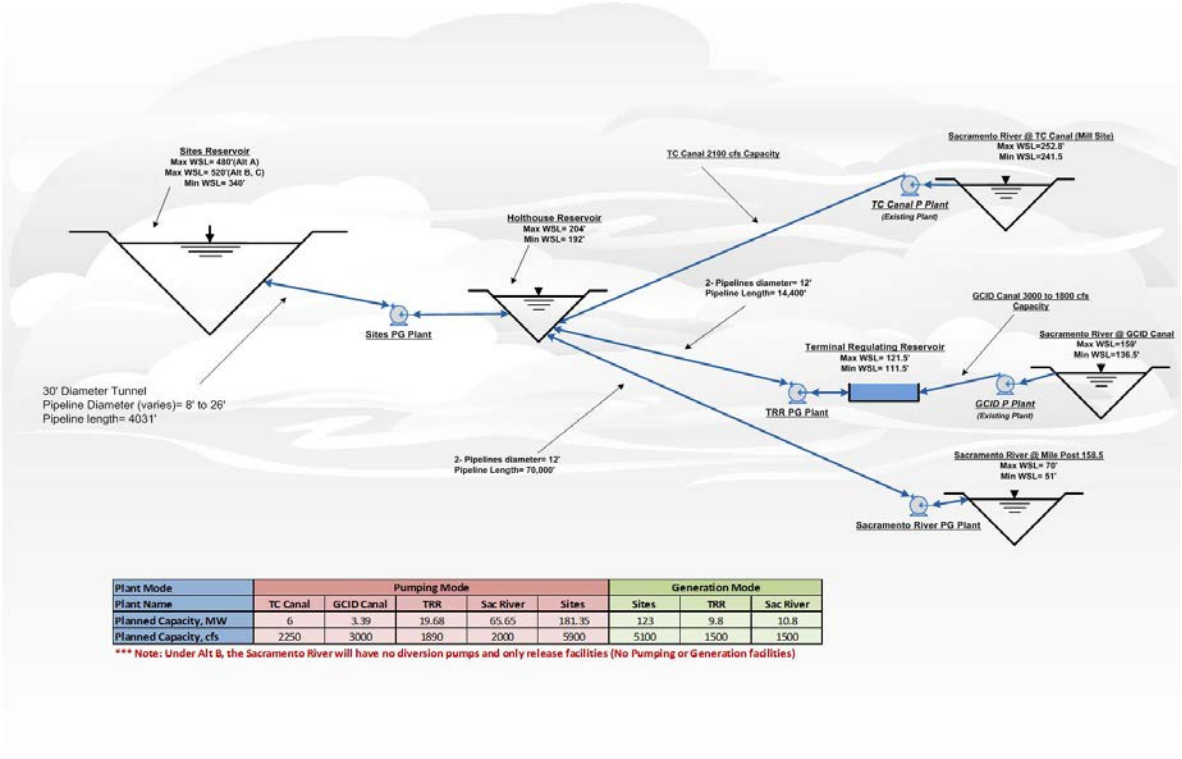
Each action alternative would be operated to achieve benefits associated with the primary objectives in drought (driest periods) and other hydrologic conditions. For purposes of Sites Reservoir operation, drought (driest periods) hydrologic conditions are identified as the sequence of years in which the Sacramento River 40-30-30 year type classification (SWRCB D-1641) in two consecutive years is Critical following Critical, Dry or Above Normal, or Dry following Critical or Dry, or Above Normal following Critical year types. In drought (driest periods) hydrologic conditions, the priority operation is coldwater pool conservation in Trinity Lake, Shasta Lake, Lake Oroville, and Folsom Lake and regulation of summer flows for best use of cold water for control of temperature conditions adverse to anadromous fish and increasing Delta export and SWP project allocations to improve water supply reliability to South-of-the-Delta municipal and industrial (M&I) water users. During these times, Sites Reservoir stored water is released into the system as rapidly as possible to meet these needs.

In other hydrologic conditions (non-drought), approximately one-third of Sites Reservoir stored water is used each summer and fall to manage Delta water quality to improve Delta water quality at M&I intakes, to improve flows for Delta fisheries habitat based on X2 position, and to stabilize fall flows for improving spawning and rearing success of anadromous fish. Water quality for M&I users is improved both by improving Delta water quality at M&I intakes in non-drought conditions as well as increasing Delta exports in drought conditions (Total dissolved solid [TDS] levels in exports from the Delta are often lower than other supplies such as from the Colorado River; therefore, there is a blending improvement by increased flows from the Delta).

Each action alternative would be operated to integrate and coordinate the releases from Sites Reservoir with releases from Trinity Lake, Shasta Lake, Lake Oroville, and Folsom Lake. Often, and especially in drought (driest periods) hydrologic conditions, releasing from Sites Reservoir allows releases from other reservoirs to be reduced while still meeting requirements for minimum instream flow objectives and Delta salinity control objectives. Through this reduction in releases, storage can be conserved in Trinity Lake, Shasta Lake, Lake Oroville, and Folsom Lake, providing greater flexibility for management of releases. This improvement in storage conditions throughout the system of reservoirs adds significantly to the operational flexibility to meet the primary objectives in the most effective way possible.

## NODOS Project Operations – Power Operations

The NODOS project team supplied PARO with the physical and operational attributes of the project components which are the basis for this study. The schematic drawing in Figure H.4-2 shows the different NODOS project components and the relative location and interconnection of the different components to each other and to the Sacramento River.




| Plant Mode | Pumping Mode | | | | | Generation Mode | | |
|---|---|---|---|---|---|---|---|---|
| Plant Name | TC Canal | GCID Canal | TRR | Sac River | Sites | Sites | TRR | Sac River |
| Planned Capacity, MW | 6 | 3.39 | 19.68 | 65.65 | 181.35 | 123 | 9.8 | 10.8 |
| Planned Capacity, cfs | 2250 | 3000 | 1890 | 2000 | 5900 | 5100 | 1500 | 1500 |

*** Note: Under Alt B, the Sacramento River will have no diversion pumps and only release facilities (No Pumping or Generation facilities)

Figure H.4-2. NODOS Project, Schematic of Conveyance and Storage Interconnection

For NODOS project operations and for the purpose of this study, the base assumptions and scenarios used in developing the CALSIM II model are maintained for the different project components. The CALSIM II model was used to simulate the operations of the NODOS project, as a component of the integrated CVP and SWP operations. More details on the CALSIM II model formulation are available in Appendix 6A and 6B of the NODOS EIR/EIS Appendix. The CALSIM II model is a tool that was setup to emulate the operations strategy set forth for the project, and to help determine many of the project benefits and impacts.

For the purpose of modeling the power operations of the NODOS project, three modes for project operations are identified: Diversion mode (pumping from the Sacramento River to fill up Sites Reservoir); Release mode (generation incidental to water releases from Sites Reservoir to meet the NODOS project water release objectives); and a Pump-back mode (to better utilize residual capacities of the different project components). NODOS project pump-back operations are meant to enhance the project economics by capturing opportunities offered by the energy market (energy price differentials between on-peak and off-peak hours, and ancillary services

[AS]), and to provide the support/products needed to integrate renewable energy (wind, solar, etc.).

In modeling the power needs for the diversion mode, an optimization strategy is developed to minimize the energy costs of pumping operations, yet, maintain NODOS project water operations objectives. Hence, flat monthly pumping operations are maintained (where/when applicable, 24 hours a day, 7 days a week), for all three diversion points along the Sacramento River. Once water is diverted from the Sacramento River into Holthouse Reservoir, the rest of the diversion operations (i.e., pumping into Sites Reservoir) could be optimized to better utilize Sites pumping plant capacity, and the available storage in Holthouse Reservoir. It would be more economical to retain the on-peak diversions from the Sacramento River in Holthouse Reservoir (as scheduled) and to pump that water into Sites Reservoir in the off-peak hours (on a daily basis). The intent of reshaping the diversion mode is to avoid high on-peak (and super peak) electricity prices. Therefore, all pumping operations into Sites Reservoir are optimized to occur (if possible) during the off-peak hours (including shoulder hours immediately before the transitions to on-peak occurs). Moreover, this shift in operations will provide an opportunity to superimpose pump-back operations cycle on the NODOS project diversion mode. In an optimized mode and in the on-peak (or super peak) hours, Sites Pumping/Generating Plant will be available for generation. In the off-peak hours, the residual pumping capacity will be available to pump the water back into Sites Reservoir.

For the water Release mode (Generation mode) of the NODOS project, an optimization strategy is developed to maximize generation revenues from the project's generation assets. For this strategy and to the extent physically possible, all intended daily water releases from Sites Reservoir into Holthouse Reservoir will occur during the on-peak (or super peak) hours to capture the most value the energy market offers for NODOS project generation. Incidental to the on-peak releases from Sites Reservoir into Holthouse Reservoir, water will be released into the TRR, T-C Canal, and the Sacramento River up to the capacities of these facilities (and within the planned limits for the water release). The residual water in Holthouse Reservoir (from the On-Peak Sites Reservoir releases) would be released during the Off-Peak hours to satisfy water delivery obligations of NODOS. A key requirement for this strategy to be effective is that Holthouse Reservoir active storage would be made available before the beginning of the next On-Peak cycle (i.e., next day's cycle). Optimizing the Release (generation) mode will better use Sites Reservoir generation capacity (maximize revenues), and provide an opportunity to superimpose a Pump-back mode on the Release mode.

A third component of the NODOS project power operations is a daily pump-back operations cycle. For periods when the NODOS project is in neither Diversion nor in Release modes, Sites Reservoir pumping and generation assets can operate in a pure Pump-back mode to take advantage of energy price differentials between the on-peak and off-peak hours, and AS market needs. Under a pure Pump-back mode, water would be released from Sites Reservoir into Holthouse Reservoir during the on-peak (or super peak) hours to generate energy and would be pumped back into Sites Reservoir in the off-peak hours to complete the pump-back cycle. The pump-back operations could be a standalone operation and/or superimposed on the Diversion and Release modes when the energy market economics relative to the Sites Reservoir Plant's efficiency (cycle efficiency) are conducive to do that. At Sites Reservoir, the extent of the pure pump-back operations and pump-back operations incidental to NODOS Diversion and Release

modes are driven by market economics, pumping/generating cycle efficiency, residual pumping capacity, residual generation capacity, and residual storage capacity in Holthouse Reservoir.

# H1.5 Power Portfolio Model

Current power portfolio models available to PARO are used to execute the analysis for the NODOS project. The operations of the NODOS project's different assets are translated to a representative set of financial instruments and are input into the EPM model. The model is used to monetize the probabilistic value of NODOS power portfolio for each of the action alternatives and operational scenarios used in the study. EPRI Fast Fit model, version 2.5, is used to describe the needed power and fuel price volatilities term structures, and the correlations between the different energy markets the NODOS project will be participating in, or exposed to.

Using the most current CALSIM II model runs, a median case (seasonal cycle) operational time-series is defined for each of the three action alternatives considered for the project. The median case time-series (sequential) period matches the 30-year planning period for the project. The time-series is derived from the 82-year time-series from the most current CALSIM II runs. The total water diversions (in AF) from the Sacramento River into Sites Reservoir is used as a criteria for isolating the 30-year time-series that represents the median case project's operations, for each of the three action alternatives considered for the project. Moving averages and frequency analysis are used to reduce the 82-year record to 53 potential scenarios for the operations of the project. Then, the 53 scenarios are ranked, and the median of these scenarios is identified with the corresponding 30-year time-series that generated its value. The underlying 30-year time-series for all project's components is also identified and grouped, to represent NODOS project operations.

Time-series representing NODOS project water diversions and releases are translated into pumping and generation capacities and Energy (MW and MWh) for each of the project components, using the appropriate design parameters and the physical attributes of the system. Figures H.5-1 through Figure H5-7 show the median case time-series, for the 30-year planning period, for the Optimized operations of each NODOS project component, in terms of utilized capacity in MW (which is the input to the EPM model), for Alternative C.

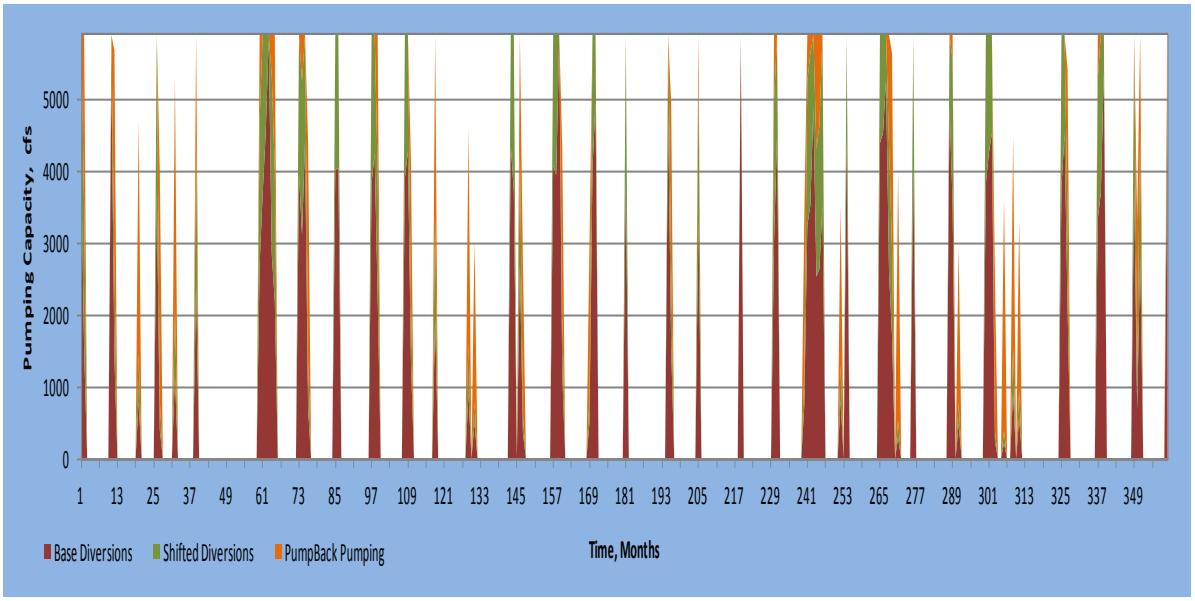



Figure H.5-1. NODOS Project, Sites Reservoir Operations - Diversion Mode, Alternative C

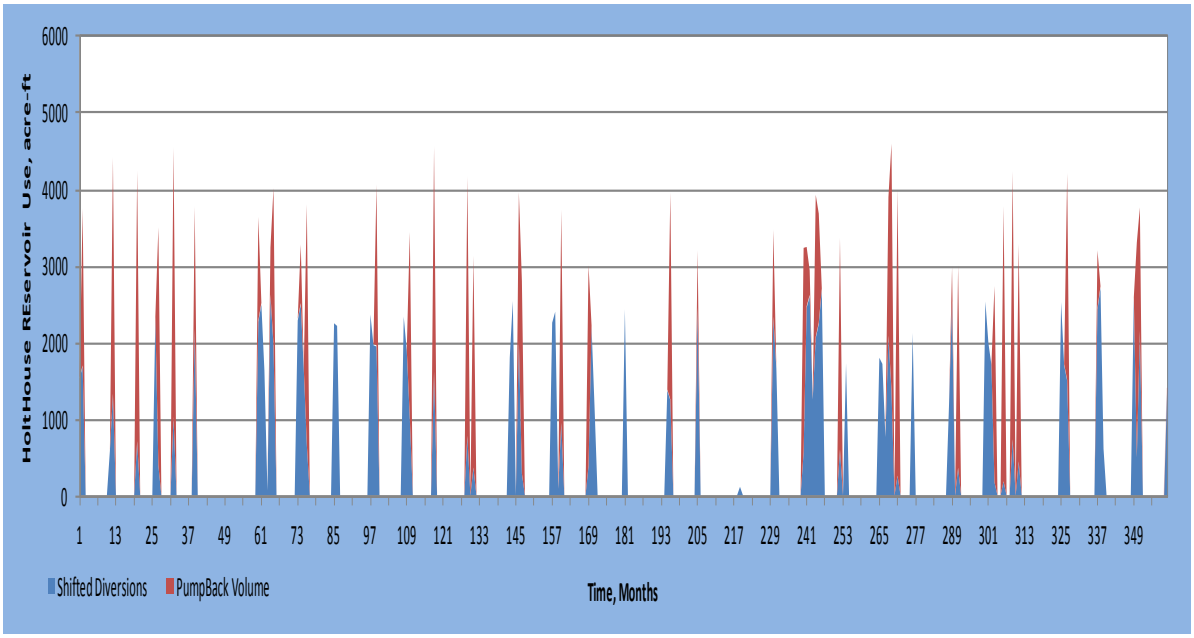



Figure H.5-2. NODOS Project, Holthouse Reservoir Operations - Diversion Mode, Alternative C

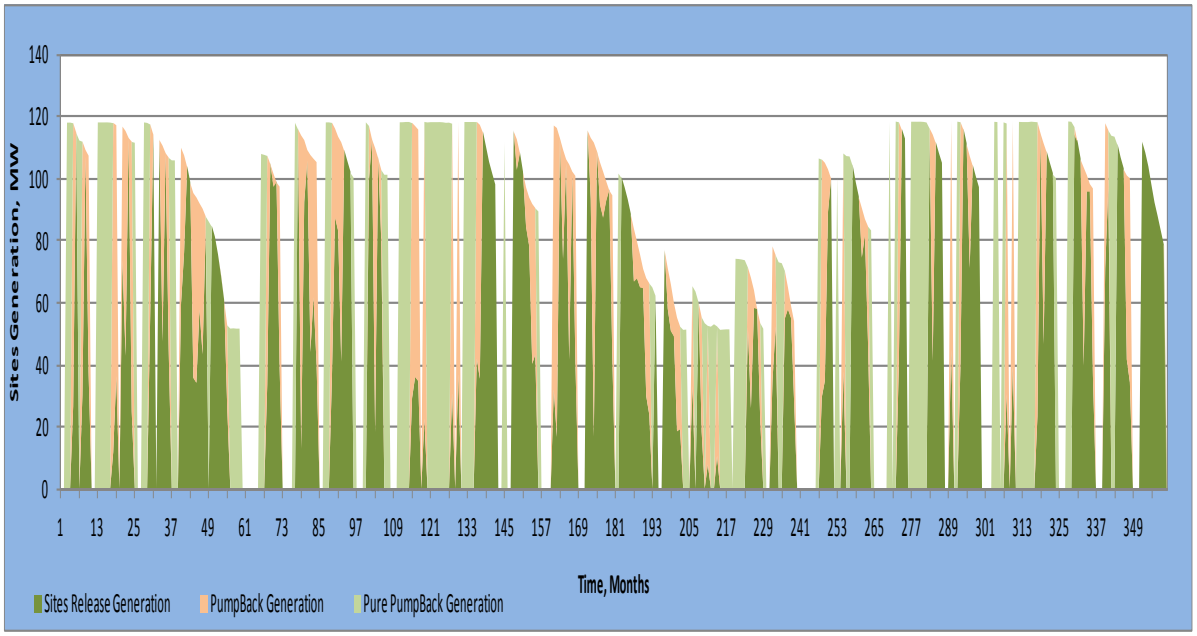



Figure H.5-3. NODOS Project, Sites Reservoir Operations - Release and Pump-Back Modes, Alternative C

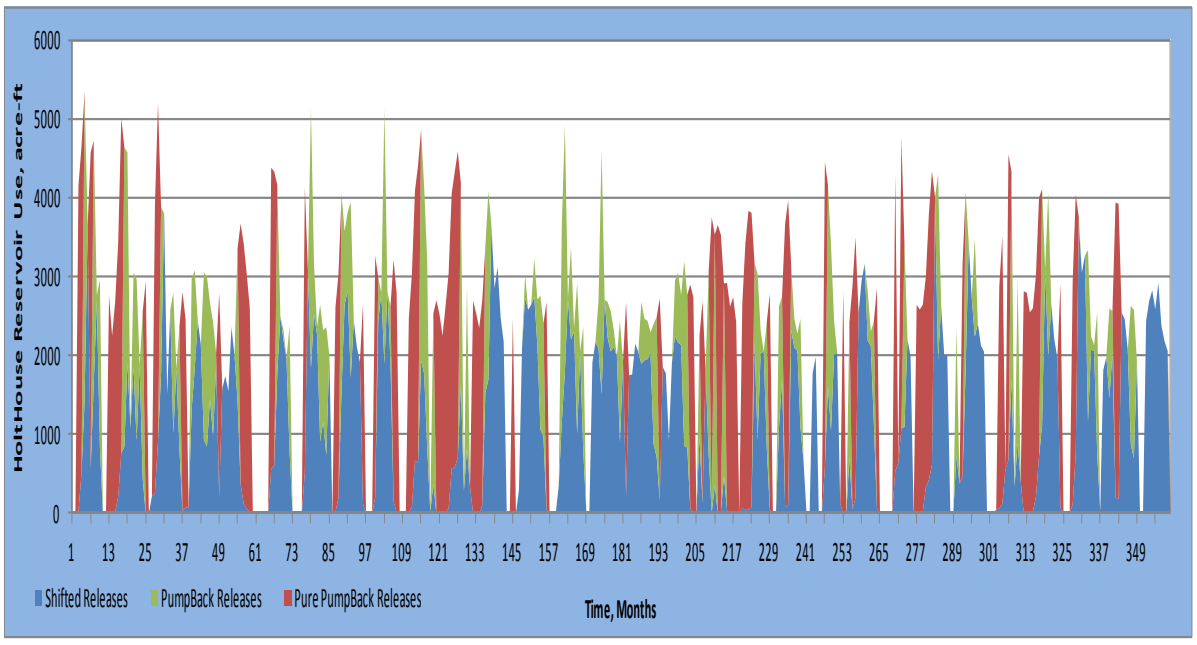



Figure H.5-4. NODOS Project, Holthouse Reservoir Operations - Diversion Mode, Alternative C

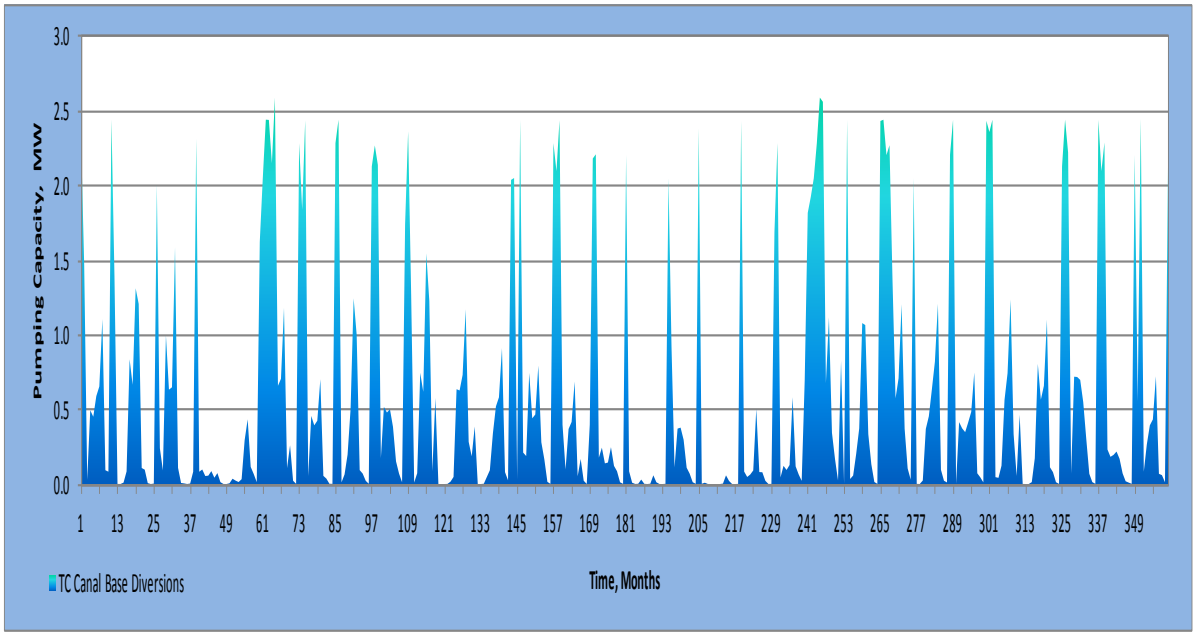



Figure H.5-5. NODOS Project, T-C Canal Pumping Plant Operations, Alternative C

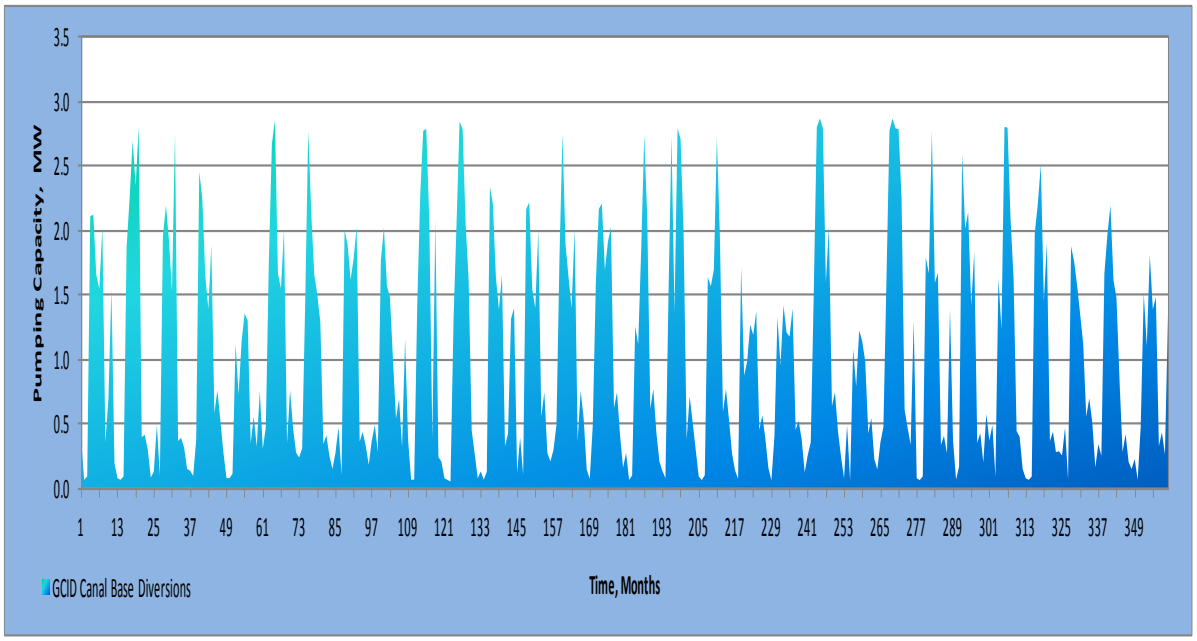



Figure H.5-6. NODOS Project, GCID Canal Pumping Plant Operations, Alternative C

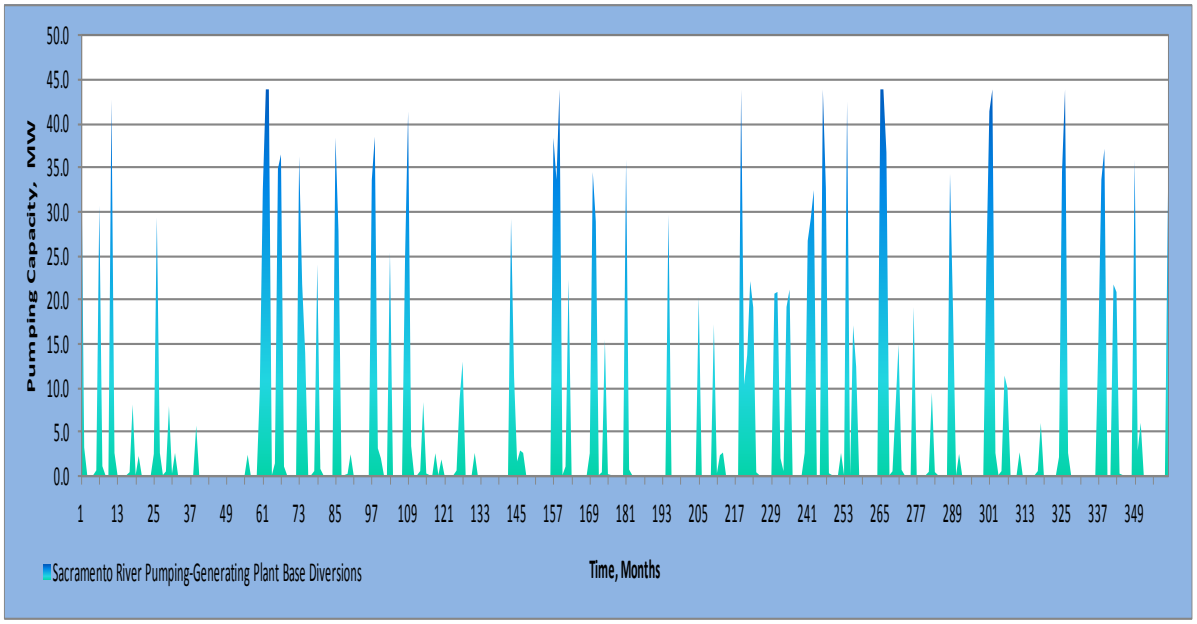



Figure H.5-7. NODOS Project, Sacramento River Pumping Plant Operations, Alternative C

Tables H.5-1 through H.5-4 summarize of the monthly, 30-year planning period pumping and generation capacities used to model the median case of NODOS project operations (See Appendix C for complete version of Tables H.5-1 through H.5-4) for Alternative C. Two operational scenarios are used to model each of the three action alternatives considered for the project: Incidental and Optimized. For the Incidental scenario, pumping and generating at the different NODOS project facilities are driven by water diversions and releases. For the Optimized scenario, pumping and generating at the Sites Reservoir Pumping/Generating Plant are optimized to minimize pumping costs obligations and maximize energy generation revenues for the project. The modeling results are presented for both the Incidental and the Optimized operational scenarios to report the energy portfolio value and describe the gain (monetary value) from optimizing NODOS project operations. The information in the aforementioned tables is the input data needed to run the EPM model. Different financial instruments were used in the EPM model to represent the power portfolio and to estimate the value of energy and risk associated with the operations of the project.

Table H.5-1. NODOS Project Pumping and Generation Time Series, Incidental, Alternative C

| | | Incidental Pumping and Generation to Water Releases (no shaping) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Plant Mode | | Incidental Pumping , MW | | | | | Incidental Generation, MW | | |
| Plant Name | | TC Canal | GCID Canal | TRR | Sac River | Sites | Sites | TRR | Sac River |
| Installed Capacity, MW | | 6.00 | 3.39 | 19.68 | 65.65 | 181.35 | 123.00 | 9.33 | 10.80 |
| Installed Capacity, cfs | | 2250 | 3000 | 1890 | 2000 | 5900 | 5100 | 1500 | 1500 |
| Month | # of Hours | All Hours | | | | | All Hours | | |
| 1 | 744 | 2.28 | 0.37 | 2.73 | 39.11 | 118.75 | 0.00 | 0.00 | 0.00 |
| 2 | 672 | 1.46 | 0.06 | 0.00 | 3.13 | 44.87 | 0.00 | 0.00 | 0.00 |
| 3 | 744 | 0.03 | 0.09 | 0.00 | 0.00 | 0.11 | 0.05 | 0.00 | 0.00 |
| 4 | 720 | 0.49 | 2.11 | 0.00 | 0.00 | 0.63 | 0.37 | 0.00 | 0.00 |
| 5 | 744 | 0.45 | 2.12 | 0.00 | 0.00 | 0.00 | 2.52 | 0.40 | 0.40 |
| 6 | 720 | 0.59 | 1.66 | 0.00 | 0.53 | 0.00 | 36.39 | 7.38 | 6.41 |
| 7 | 744 | 0.65 | 1.55 | 0.00 | 30.75 | 0.18 | 60.89 | 7.30 | 0.00 |
| 8 | 744 | 1.10 | 2.03 | 0.00 | 1.01 | 0.00 | 12.45 | 0.60 | 4.96 |
| 9 | 720 | 0.09 | 0.35 | 0.00 | 0.00 | 0.00 | 23.79 | 1.52 | 9.10 |
| 10 | 744 | 0.08 | 0.69 | 0.00 | 0.00 | 0.00 | 12.94 | 0.16 | 5.11 |
| 11 | 720 | 2.44 | 1.55 | 12.30 | 42.85 | 151.73 | 9.86 | 0.00 | 0.00 |
| 12 | 744 | 1.39 | 0.19 | 0.00 | 2.52 | 41.50 | 0.02 | 0.00 | 0.00 |
| 13 | 744 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 672 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 9.91 | 0.00 | 0.00 |
| 15 | 744 | 0.01 | 0.09 | 0.00 | 0.00 | 0.09 | 2.12 | 0.00 | 0.00 |
| 16 | 720 | 0.08 | 1.87 | 0.00 | 0.00 | 0.81 | 26.21 | 0.00 | 0.00 |
| 17 | 744 | 0.83 | 2.25 | 0.32 | 0.33 | 1.53 | 1.43 | 0.05 | 0.00 |
| 18 | 720 | 0.66 | 2.70 | 0.00 | 8.05 | 0.00 | 0.71 | 1.26 | 0.07 |
| 19 | 744 | 1.31 | 2.35 | 0.00 | 0.00 | 0.00 | 3.19 | 1.21 | 3.96 |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

**CALSIM II Model Results = Monthly Pumping- Generating Operations 82-yr**
**Power Planning Study Results= Incidental and Optimized Operations, 30-yr Median Case Deliveries**

Table H.5-2. NODOS Project Pumping and Generation T-Series, Optimized Pumping, Alternative C

| Plant Mode | | Optimized Pumping | | | | | |
|---|---|---|---|---|---|---|---|
| Plant Name | | Sites | | | | | |
| Installed Capacity, MW | | 181.35 | | | | | |
| Installed Capacity, cfs | | MaxQ=5900 cfs | | | | | |
| Month | # of Hours | On-Peak, MW | On-Peak, MWh | Off-Peak, MW | Off-Peak, MWh | On-Peak, cfs | Off-Peak, cfs |
| 1 | 744 | 79.00 | 32924 | 169.89 | 55732 | 2305 | 5900 |
| 2 | 672 | 0.00 | 0 | 104.73 | 30207 | 0 | 5900 |
| 3 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 4 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 5 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 6 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 7 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 8 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 9 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 10 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 11 | 720 | 110.00 | 45589 | 168.00 | 63794 | 3336 | 5900 |
| 12 | 744 | 0.00 | 0 | 80.24 | 30910 | 0 | 5680 |
| 13 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 14 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 15 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 16 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 17 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 18 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 19 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 20 | 744 | 0.00 | 0 | 42.96 | 17481 | 0 | 4695 |

**CALSIM II Model Results = Monthly Pumping- Generating Operations 82-yr**
**Power Planning Study Results= Incidental and Optimized Operations, 30-yr Median Case Deliveries**

Table H.5-3. NODOS Project Pumping and Generation T-Series, Optimized Generation, Alternative C

| Plant Mode | | Optimized Genration, MW | | | | |
|---|---|---|---|---|---|---|
| Plant Name | | Sites | | | | |
| Installed Capacity, MW | | 123.00 | | | | |
| Installed Capacity, cfs | | MaxQ=5100 cfs | | | | |
| Month | # of Hours | On-Peak, MW | On-Peak, MWh | Off-Peak, MW | On-Peak, cfs | Off-Peak, cfs |
| 1 | 744 | 0.00 | 0 | 0.00 | 0 | 0 |
| 2 | 672 | 0.00 | 0 | 0.00 | 0 | 0 |
| 3 | 744 | 0.00 | 0 | 0.00 | 0 | 0 |
| 4 | 720 | 0.00 | 0 | 0.00 | 0 | 0 |
| 5 | 744 | 26.47 | 9818 | 0.00 | 1141 | 0 |
| 6 | 720 | 114.95 | 39777 | 0.00 | 5100 | 0 |
| 7 | 744 | 0.00 | 0 | 0.00 | 0 | 0 |
| 8 | 744 | 30.10 | 9261 | 0.00 | 1366 | 0 |
| 9 | 720 | 107.43 | 28368 | 0.00 | 5009 | 0 |
| 10 | 744 | 37.38 | 8916 | 0.00 | 1771 | 0 |
| 11 | 720 | 0.00 | 0 | 0.00 | 0 | 0 |
| 12 | 744 | 0.00 | 0 | 0.00 | 0 | 0 |
| 13 | 744 | 0.00 | 0 | 0.00 | 0 | 0 |
| 14 | 672 | 0.00 | 0 | 0.00 | 0 | 0 |
| 15 | 744 | 0.00 | 0 | 0.00 | 0 | 0 |
| 16 | 720 | 0.00 | 0 | 0.00 | 0 | 0 |
| 17 | 744 | 0.00 | 0 | 0.00 | 0 | 0 |
| 18 | 720 | 11.70 | 3508 | 0.00 | 503 | 0 |
| 19 | 744 | 36.38 | 10349 | 0.00 | 1579 | 0 |
| 20 | 744 | 0.00 | 0 | 0.00 | 0 | 0 |

**CALSIM II Model Results = Monthly Pumping- Generating Operations 82-yr**
**Power Planning Study Results= Incidental and Optimized Operations, 30-yr Median Case Deliveries**

Table H.5-4. NODOS Project Pumping and Generation T-Series, Pump-Back Operations, Alternative C

| Plant Mode | | Pump Back Operations, MW | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Plant Name | | With Pump cycle | | | With Gen Cycle | | | Pure Pump Back | | |
| Installed Capacity, MW | | 123.00 | | | 123.00 | | | 123.00 | | |
| Installed Capacity, cfs | | MaxQ=5100 cfs | | | MaxQ=5100 cfs | | | MaxQ=5100 cfs | | |
| Month | # of Hours | On-Peak | On-Peak, MWh | PumpBack Q cfs | On-Peak | On-Peak, MWh | PumpBack Q cfs | On-Peak | On-Peak, MWh | PumpBack Q cfs |
| 1 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 2 | 672 | 51.61 | 16049 | 2226 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 3 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.32 | 35905 | 5100 |
| 4 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.34 | 34870 | 5100 |
| 5 | 744 | 0.00 | 0 | 0 | 91.65 | 33991 | 3959 | 0.00 | 0 | 0 |
| 6 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 7 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 112.55 | 33216 | 5100 |
| 8 | 744 | 0.00 | 0 | 0 | 82.05 | 25251 | 3734 | 0.00 | 0 | 0 |
| 9 | 720 | 0.00 | 0 | 0 | 1.96 | 518 | 91 | 0.00 | 0 | 0 |
| 10 | 744 | 0.00 | 0 | 0 | 70.16 | 16733 | 3329 | 0.00 | 0 | 0 |
| 11 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 12 | 744 | 117.71 | 26633 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 13 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.39 | 24019 | 5100 |
| 14 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.39 | 17722 | 5100 |
| 15 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.39 | 23223 | 5100 |
| 16 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.41 | 27197 | 5100 |
| 17 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.34 | 36952 | 5100 |
| 18 | 720 | 0.00 | 0 | 0 | 106.45 | 31919 | 4597 | 0.00 | 0 | 0 |
| 19 | 744 | 0.00 | 0 | 0 | 81.00 | 23044 | 3521 | 0.00 | 0 | 0 |

**CALSIM II Model Results = Monthly Pumping- Generating Operations 82-yr**
**Power Planning Study Results= Incidental and Optimized Operations, 30-yr Median Case Deliveries**

Daily pump-back operations of NODOS project facilities are modeled in three components. The three components are pump-back operations incidental to its Diversion mode, incidental to its Release mode, and pure pump-back operations. For the purpose of this study, the pure Pump-back mode is limited to the months that the monthly average diversions into the NODOS project are less than 200 cfs. For each month of the 30-year planning period, the available generation and pumping capacities at the Sites Pumping/ Generating Plant are estimated based on the available head (level of storage) at Sites Reservoir (from the previous month's operations). Then a dispatch profile for the daily pump-back operations is generated based on market opportunities, pumping/ generation cycle efficiency, available pumping/generating capacities, and available storage at Holthouse Reservoir. Through the use of a complex modeling scheme, Sites Reservoir pumping/generating plant is economically dispatched in the NP-15 CAISO market. Ultimately, the model is set up to utilize NODOS project pump-back potential based on the plant's availability and market economics. The median case dispatch profile for the pump-back operations for Alternative C of the NODOS project is depicted in Figures H.5-1 and H.5-4.

Additional information needed to run the EPM model includes forward energy prices, volatility term structure, correlations (between different underlying energy markets), delivery hours, and generation blocks. All necessary information are either generated through the EPM model's graphic user interface, or externally developed and input into the model.

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# H1.6. Modeling Results

## Power Portfolio Energy Value

Table H.6-1 is a summary of the EPM modeling results (energy value and risk) for Alternatives A, B, and C considered in this study. The results in Table H.6-1 are in $1,000 of NPV, for the 30-years planning period, for each of the project's cycles and components. For the purposes of this study, NPV is defined as the current market value of the net portfolio's cash flows in $1,000 of present value. The results are grouped based on the operational cycle of the project facilities. The basic assumption is that pumping at all project diversion points along the Sacramento River is incidental to water operations (flat operations). Also assumed, pumping and generating at Sites Reservoir Pumping/Generating Plant can be optimized and may include a pump-back operations component. Optimizing operations is conditional to maintaining NODOS project water delivery objectives at all times. During pump-back operations, power generation is mainly driven by the plant's availability and energy market price signals. As mentioned previously, two operational scenarios are used to model each of the three action alternatives: Incidental and Optimized. For the Incidental scenario, pumping and generating at the different NODOS project facilities are driven by water diversions and releases (no reshaping). For the Optimized scenario, pumping and generating at the Sites Reservoir Pumping/Generating Plant are optimized to minimize pumping obligations (costs) and maximize project energy generation revenues. The modeling results are presented for both the Incidental and the Optimized operational scenarios in Table H.6-1 to report the energy portfolio value, and describe the monetary value of optimizing NODOS project operations. Revenues from pump-back operations are presented separately to allow for better breakdown of costs and revenues from project's water diversions and releases. In studying the modeling results, it is important to remember that modeling of project operations is meant to monetize the energy costs and revenues, and not the water use benefits of the project. It should be noted that pumping costs and generating revenues are impacted by water surface elevations at Sites Reservoir, resulting from the different configurations and system-wide water operations for each of the three action alternatives for the NODOS project (Alternative A compared to Alternative C). It is also noteworthy that pump-back operations will net more revenues under alternatives with less water deliveries (Alternative A compared to Alternative C) because of the fact that NODOS project assets would be less utilized, and more opportunity (percent of time) exist for pump-back operations.

Table H.6-1. NODOS Project, Summary Modeling Results, NPV ($1000)

| Portfolio NPV Comparison- Modeled CALSIM Deliveries Scenarios | | | | | | |
|---|---|---|---|---|---|---|
| Pumping-Generation Site | CALSIM Deliveries | | | | | |
| Planning Alternative | Alt A | | Alt B | | Alt C | |
| Operations Strategy | Incidental | Optimized | Incidental | Optimized | Incidental | Optimized |
| NODOS Pumping | Period Total, NPV ($1000) | | | | | |
| TC Canal Pumping | -6,085 | -6,085 | -7,511 | -7,511 | -5,786 | -5,786 |
| GCID Pumping | -10,083 | -10,083 | -11,519 | -11,519 | -9,964 | -9,964 |
| Sac River Pumping | -53,500 | -53,500 | N/A | N/A | -59,196 | -59,196 |
| TRR Pumping | -9,939 | -9,939 | -16,454 | -16,454 | -11,839 | -11,839 |
| Sites Pumping | -149,357 | -137,397 | -147,694 | -133,100 | -172,219 | -157,841 |
| Subtotal | -228,964 | -217,004 | -183,178 | -168,584 | -259,004 | -244,626 |
| | Preliminary Results | | | | | |
| NODOS Generation | Period Total, NPV ($1000) | | | | | |
| Sites Genereration | 109,077 | 121,405 | 111,262 | 125,493 | 134,216 | 149,580 |
| TRR Generation | 19,651 | 20,400 | 6,839 | 7,146 | 20,385 | 21,243 |
| Sac River Generation | 49,873 | 49,873 | N/A | N/A | 50,197 | 50,197 |
| Subtotal | 178,601 | 191,678 | 118,101 | 132,639 | 204,798 | 221,020 |
| | | | | | | |
| NODOS PumpBack Operations | Period Total, NPV ($1000) | | | | | |
| PumpBack during Diversion cycle | N/A | 7,031 | N/A | 13,999 | N/A | 7,444 |
| PumpBack During Release Cycle | N/A | 23,000 | N/A | 18,299 | N/A | 21,564 |
| Pure PumpBack Operations Cycle | N/A | 17,435 | N/A | 14,916 | N/A | 17,395 |
| Subtotal | | 47,466 | | 47,214 | | 46,403 |
| | | | | | | |
| NODOS Project Portfolio Value | -50,363 | 22,140 | -65,077 | 11,269 | -54,206 | 22,797 |
| | | | | | | |
| NODOS Project Optimization Potential | | 72,503 | | 76,346 | | 77,003 |
| | | | | | | |
| NODOS Risk Metrics | Period Total, NPV ($1000) | | | | | |
| Value-at-Risk | 1,863 | 2,336 | 1,523 | 2,425 | 1,644 | 2,504 |
| Cash-Flow-at-Risk | 94,976 | 96,161 | 112,192 | 117,079 | 107,668 | 113,228 |

**Notes**
Cash Flow reported pre-tax in PV($000).
Evaluation performed 06/17/2011
Report updated at 03:40:00 PM.
Sac River Generation is not optimized to minimize the impact of headloss at higher releases thru the plant

For Alternative A Incidental operations, the 30-year total pumping costs (for the median case of diversions) of the NODOS project in NPV are $228,964,000, whereas the corresponding energy generation revenues incidental to Project releases in NPV are $178,601,000. For Alternative A Optimized operations, the 30-year total pumping costs (for the median case diversions) of the NODOS project in NPV are $217,004,000, whereas the corresponding energy generation revenues from optimized project releases in NPV are $191,678,000. For the Optimized operations, additional revenues in NPV of $47,466,000 would be realized from the pump-back operations (daily operations). Pump-back operations and revenues are a combination of pump-back operations superimposed on the generation and pumping cycles, and pure pump-back operations in months that the project's average diversion is less than 200 cfs (i.e., project assets

are not in use). It should be noted that for the Incidental operations, the assumption was that no pump-back operations will take place (project assets are tied up in flat operations).

For Alternative B Incidental operations, the 30-year total pumping costs (for the median case of diversions) of the NODOS project in NPV are $183,178,000, whereas the corresponding generation revenues incidental to project releases in NPV are $118,101,000. For Alternative B Optimized operations, the 30-year total pumping costs (for the median case of diversions) of the NODOS project in NPV are $168,584,000, whereas the corresponding generation revenues from optimized project releases in NPV are $132,639,000. For the Optimized operations, additional revenues in NPV of $47,214,000 would be realized from the pump-back operations (daily operations).

For Alternative C Incidental operations, the 30-year total pumping costs (for the median case of diversions) of the NODOS project in NPV are $259,004,000, whereas the corresponding generation revenues incidental to project releases in NPV are $204,798,000. For Alternative C Optimized operations, the 30-year total pumping costs (for the median case of diversions) of the NODOS project in NPV are $244,626,000, whereas the corresponding generation revenues from optimized project releases in NPV are $221,020,000. For the Optimized operations, additional revenues in NPV of $46,403,000 would be realized from the pump-back operations (daily operations).

For the 30-year planning period, optimizing NODOS project operations (as described in the section titled “NODOS Project Operations – Power Operations,” below) resulted in additional revenues for the project in NPV totaling $72,503,000 for Alternative A, $76,343,000 for Alternative B, and $77,003,000 for Alternative C. For all three action alternatives considered for the NODOS project, optimizing operations resulted in changing the net project cash flow from a negative to a positive cash flow which would significantly enhance the economics of the project. For NODOS project Incidental operations, the net total project’s power portfolio value (generation revenues minus pumping costs) (for the median case of diversions) in NPV is $-50,363,000, $-65,077,000, and $-54,206,000 for Alternatives A, B, and C, respectively. Whereas, for NODOS project Optimized operations, the net project’s power portfolio value (generation revenues-pumping cost) (for the median case of diversions) in NPV is $22,140,000, $11,269,000, and $22,797,000 for Alternatives A, B, and C, respectively.

Table H.6-1 provides a summary breakdown of the contributions of each component, and in each operational mode (pumping, generating, and pump-back cycles).

Tables H.6-2 and H.6-3 show the NODOS project power portfolio annual cash flow present value, in present value in $1,000s for the median case of deliveries under Alternative C of the project (complete version of these tables for all three action alternatives are in Appendix B). The annual cash flows are reported, in present value, through the 30-year planning period of the project. The cumulative value of the cash flows in present value for each project component represents the NPV of that component. The sum of the NPV of all project components is the net total value of the project for that specific alternative and specific operational scenario.

Table H.6-2. NODOS Project, Modeling Results, Annual Cashflow, Incidental Ops, Alternative C

**Cash Flow Report for the NODOS Project, CALSIM 30-Yr Planning Period, Alt C (Incidental Operations) Deliveries Case**

| Pumping-Generation Site | NPV | Year Project in Service | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| NODOS Pumping | Period Total | Period Total, NPV ($1000) | | | | | | | |
| TC Canal Pumping | -5,788 | -279 | -128 | -180 | -80 | -82 | -411 | -251 | -238 |
| GCID Pumping | -9,968 | -306 | -375 | -347 | -349 | -231 | -431 | -355 | -335 |
| Sac River Pumping | -59,196 | -3,040 | -273 | -1,227 | -155 | -370 | -5,674 | -2,940 | -1,998 |
| TRR Pumping | -11,839 | -410 | -204 | -295 | -28 | -180 | -1,057 | -657 | -159 |
| Sites Pumping | -172,219 | -9,319 | -823 | -4,546 | -1,836 | -1,298 | -11,927 | -9,489 | -6,630 |
| Subtotal | -259,010 | -13,354 | -1,803 | -6,595 | -2,448 | -2,161 | -19,500 | -13,692 | -9,360 |
| | | | | | | | | | |
| NODOS Generation | Period Total | Period Total, NPV ($1000) | | | | | | | |
| Sites Genereration | 134,217 | 3,210 | 2,997 | 5,049 | 6,577 | 4,109 | 3,477 | 4,764 | 6,204 |
| TRR Generation | 20,385 | 723 | 438 | 981 | 765 | 1,128 | 807 | 1,246 | 963 |
| Sac River Genenration | 50,193 | 1,191 | 1,147 | 1,384 | 3,310 | 2,147 | 1,742 | 1,635 | 1,880 |
| Subtotal | 204,795 | 5,124 | 4,582 | 7,414 | 10,652 | 7,384 | 6,026 | 7,645 | 9,047 |
| | | | | | | | | | |
| PumpBack Operations | Period Total | Period Total, NPV ($1000) | | | | | | | |
| PumpBack during Diversion cycle | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| PumpBack During Release Cycle | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Pure PumpBack Operations Cycle | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Subtotal | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | | | | | | | | |
| NODOS Project Total | -54,215 | -8,230 | 2,779 | 819 | 8,204 | 5,223 | -13,474 | -6,047 | -313 |

30-year Planning Period

NPV, is the current market value of the Net Portfolio's Cash flows in $1000

**Notes**

Cash Flow reported pre-tax in PV($000).
Evaluation performed 07/07/2011
Report updated at 10:28:53 AM.

Table H.6-3. NODOS Project, Modeling Results, Annual Cashflow, Optimized Ops, Alternative C

**Cash Flow Report for the NODOS Project, CALSIM 30-Yr Planning Period, Alt C (Optimized Operations) Deliveries Case**

| Pumping-Generation Site | NPV | Year Project in Service | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| NODOS Pumping | Period Total | Period Total, NPV ($1000) | | | | | | | |
| TC Canal Pumping | -5,788 | -279 | -128 | -180 | -80 | -82 | -411 | -251 | -23 |
| GCID Pumping | -9,968 | -306 | -375 | -347 | -349 | -231 | -431 | -355 | -33 |
| Sac River Pumping | -59,196 | -3,040 | -273 | -1,227 | -155 | -370 | -5,674 | -2,940 | -1,9 |
| TRR Pumping | -11,839 | -410 | -204 | -295 | -28 | -180 | -1,057 | -657 | -15 |
| Sites Pumping | -157,842 | -8,578 | -627 | -3,872 | -1,587 | -1,105 | -10,846 | -8,646 | -5,9 |
| Subtotal | -244,633 | -12,613 | -1,607 | -5,921 | -2,199 | -1,968 | -18,419 | -12,849 | -8,6 |
| | | | | | | | | | |
| NODOS Generation | Period Total | Period Total, NPV ($1000) | | | | | | | |
| Sites Genereration | 149,578 | 4,268 | 3,456 | 5,915 | 7,547 | 4,251 | 4,017 | 5,702 | 7,13 |
| TRR Generation | 21,249 | 781 | 480 | 1,032 | 799 | 1,151 | 843 | 1,307 | 1,01 |
| Sac River Genenration | 50,193 | 1,191 | 1,147 | 1,384 | 3,310 | 2,147 | 1,742 | 1,635 | 1,880 |
| Subtotal | 221,020 | 6,240 | 5,083 | 8,331 | 11,656 | 7,549 | 6,602 | 8,644 | 10,03 |
| | | | | | | | | | |
| PumpBack Operations | Period Total | Period Total, NPV ($1000) | | | | | | | |
| PumpBack during Diversion cycle | 7,445 | 213 | 470 | 623 | 96 | 49 | 214 | 239 | 0 |
| PumpBack During Release Cycle | 21,566 | 1,717 | 1,412 | 563 | 824 | 276 | 401 | 1,371 | 998 |
| Pure PumpBack Operations Cycle | 17,395 | 323 | 1,571 | 775 | 278 | 642 | 1,054 | 0 | 410 |
| Subtotal | 46,406 | 2,253 | 3,453 | 1,961 | 1,198 | 967 | 1,669 | 1,610 | 1,408 |
| | | | | | | | | | |
| NODOS Project Total | 22,793 | -4,120 | 6,929 | 4,371 | 10,655 | 6,548 | -10,148 | -2,595 | 2,752 |

30-year Planning Period

NPV, is the current market value of the Net Portfolio's Cash flows in $1000

**Notes**

Cash Flow reported pre-tax in PV($000).
Evaluation performed 07/07/2011
Report updated at 10:28:53 AM.

Figures H.6-1 and H.6-2 graphically depict the Alternative C NODOS project power portfolio cash flows in each delivery period for the 30-year horizon modeled in EPM, for the median case of deliveries, and for both Incidental and Optimized operations. The solid diamond markers represent the present value of the portfolio's cash flow for a specific period. And the high and low error bars correspond to the upper and lower percentiles of the cash flow distribution

estimated using the Monte-Carlo simulation. The error bars correspond to the 95 percent and 5 percent confidence limits of the cash flow distribution for that specific period.

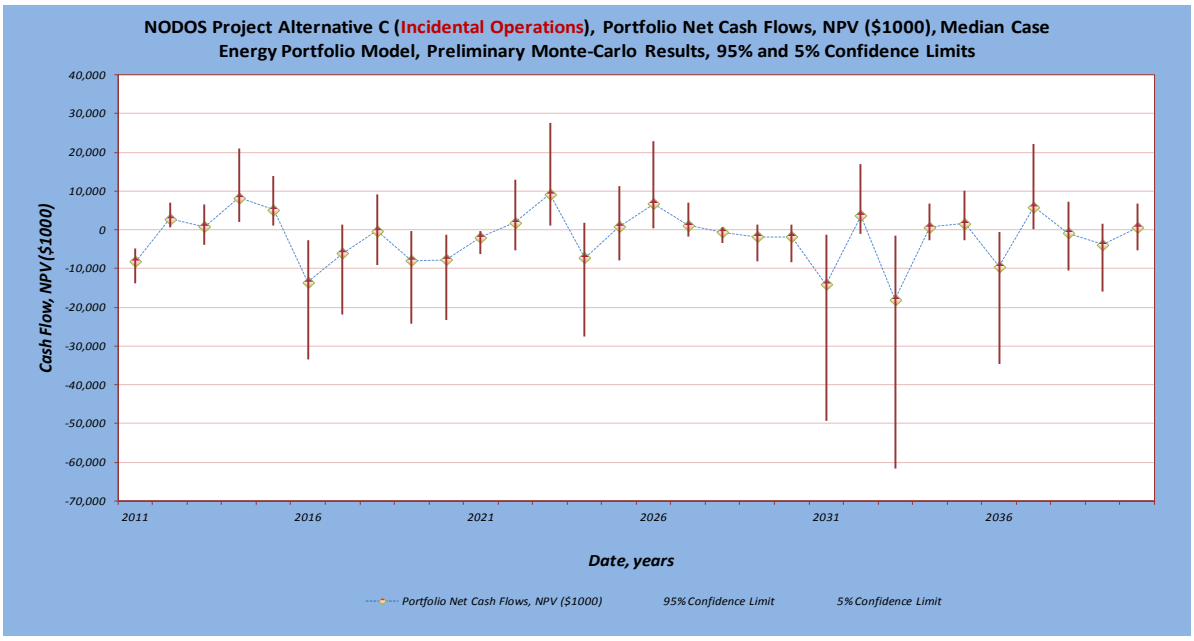


Figure H.6-1. NODOS Project, Portfolio Cash Flow at Risk, Incidental Operations, Alternative C

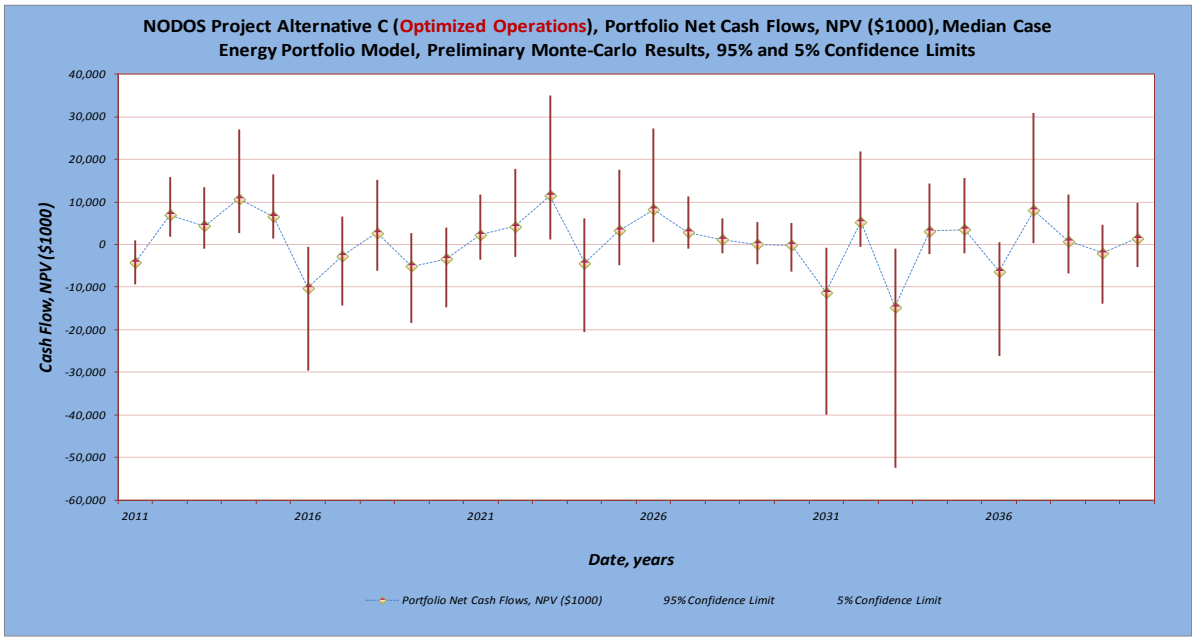


Figure H.6-2. NODOS Project, Portfolio Cash Flow at Risk, Optimized Operations, Alternative C

## Power Portfolio Risk Metrics

EPM model results also include a description of the financial risk resulting from uncertainty and volatility of the underlying fuel and power markets in which the NODOS project will be participating. The EPM model produces risk metrics associated with a portfolio of assets that correspond to the exposure of an individual asset in a portfolio, or risk metrics that describe the collective risk associated with the portfolio, as a whole. The EPM model uses a Monte-Carlo-based algorithm (random generation-based) to generate a pre-assumed log-normal distribution of the expected cash flow of an asset. The generated distribution is based on the specific period's marginal volatility, time to delivery, and the analysis date. The number of draws for the Monte-Carlo approximation (2,000 draws are being used for this study), the specified confidence level (95 percent is being used for this study), the volatility and correlations of the underlying markets, and the holding period (all are input parameters to EPM) are the basis for the Monte-Carlo generated distribution of the cash flow of an asset. Financial risk associated with an asset or a portfolio of assets could be measured from the Monte-Carlo generated distribution.

Two commonly used risk metrics in describing the financial risk associated with a portfolio are the Value-at-Risk and Cash-Flow-at-Risk. Value-at-Risk is a measure of the potential for loss on a portfolio of assets or an asset value, within a specified holding period. Value-at-Risk is a commonly used risk metric to describe the risk associated with the value of a portfolio of assets within a short period of time (days). A second risk metric is a Cash-Flow-at-Risk, and is defined as the maximum loss that could be realized over a specified holding period at a specified confidence level. Other risk metrics, such as Price Exposure, could also be reported as partial output of the EPM risk report. Price Exposure measures an asset exposure to a specific price risk, and reports how many dollars of the value of that asset is at stake.

For Alternative C, the power portfolio cumulative probability distribution is depicted in Figure H.6-3 for both the Incidental and Optimized operations. The Monte-Carlo simulation provides the cumulative probability distribution of the NODOS project power portfolio's cash flows around its mean value. On Figure H.6-3, the Cash-Flow-at-Risk could be measured from the difference in NPV of portfolio cash flows between the 50 percent and the zero percent probabilities for the pre-specified confidence level (95 percent in this case). Cash-Flow-at-Risk for a specific period could also be generated. The annual Cash-flow-at-Risk is graphically depicted on Figures H.6-1 and H.6-2 as the difference between the diamond markers and the lower end of the error bar for that specific period. Value-at-Risk and Cash-Flow-at-Risk of the NODOS project are summarized for the three action alternatives in Table H.6-1.

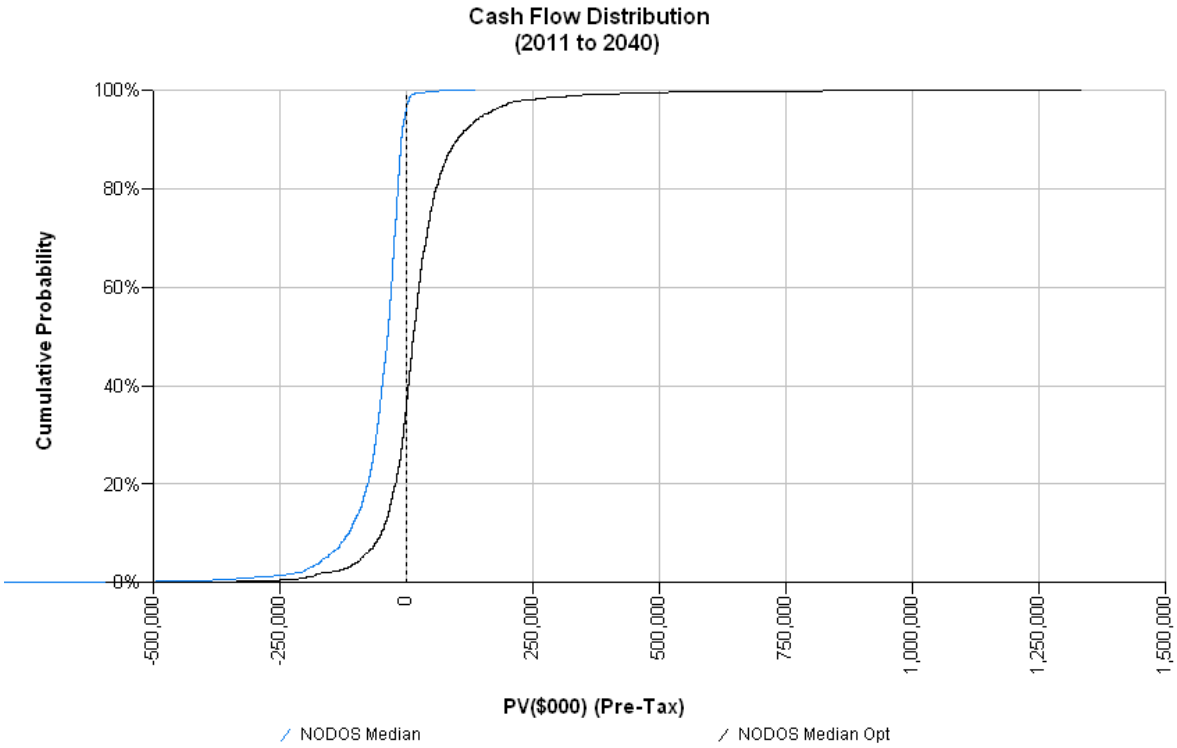


Figure H.6-3. NODOS Project, Cumulative Cash Flow Distribution Comparison

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# H1.7 NODOS Project Capacity and Ancillary Services

## Capacity Value Analysis

CAISO is charged, under both California law and by the Federal Energy Regulatory Commission (FERC), with the responsibility of maintaining and operating a reliable grid system (transmission system) – a system that is under their operational control. System reliability is a very complex subject, as it is inextricably intertwined with market economics (a subject that is beyond the scope of this study). Nevertheless, a crucial element of reliable grid operations relevant to NODOS project operations is resource adequacy (RA). CAISO, through their FERC-approved tariff, along with RA requirements adopted by California Public Utilities Commission (CPUC) mandates, intend to establish a process that ensures that capacity procured for RA purposes is available when and where it is needed. For the NODOS project, RA obligations are a pseudo financial obligation in pumping/diversion cycle (self-provided), and a revenue opportunity in generation/release cycle.

There are several ways through which capacity value of a power asset can be harnessed. One way is the consideration of RA capacity value utilization. The State of California has embraced an RA mandate/regime (AB 380) in order to make power resources available when and where they are needed, and to promote investment in new resources and maintenance of existing facilities. CPUC governs the RA program for entities under its jurisdiction and CAISO monitors the RA program implementation by utilities, including publicly owned utilities and government agencies. Currently, RA capacity is being traded bilaterally through a solicitation and bidding process and the price of capacity negotiation is opaque. However, the CAISO tariff requires CAISO to procure capacity as a backstop should a load serving entity fail to meet its RA obligation showings and for within the month exceptional dispatch requirements. The RA obligation showings take place in an annual showing, as well as monthly showings. FERC has authorized CAISO to charge or pay the default RA capacity procurement price of $67.5/kW-year (pending FERC approval). In terms of capacity rate determination needed to estimate RA revenues and/or obligations, three options can be considered:

1. Bilateral trade capacity value: It is not transparent and the rate at which the capacity is procured is unknown. It could be lower in some months and higher during summer months (seasonal trend).
2. Default Capacity Procurement Mechanism (CPM) procurement rate: The FERC-approved CAISO tariff rate of $67.5/kW-year (pending FERC approval) is the backstop procurement rate. It is constant for all the months, and represents an implied cap on RA value in the CAISO market. This default rate is subject to change in future stakeholder processes at CAISO and subsequent FERC approval. Also, there is little chance that an asset can realize this level of capacity payment because of the narrow CAISO capacity market at the CPM rate.
3. Based on escalated 2009 California Energy Commission (CEC) costs of generation technologies: Capacity value would be the revenue stream from selling capacity needed

to make an economic/feasible investment in a simple cycle generation unit. Modeling a 100 MW simple cycle generation unit using the escalated 2009 CEC costs of generation technologies revealed a capacity revenue requirement of $25.40/kW-year.

It is assumed that the NODOS project will offer capacity in the CAISO market to participants that need to secure capacity resource to meet their RA obligations. For a generation asset, there are two different levels of participation (local RA, and system RA) in CAISO's capacity market based on the relative location of that specific asset to pre-identified local congested areas within the CAISO-managed grid. The NODOS project facilities and their potential interconnection location to the CAISO grid do not currently fall in one of the congested local areas where the generation assets can sell local RA products. Moreover, the CAISO market currently has sufficient system RA with very little monetary value for assets to capture from capacity offerings. However, system RA needs, system configuration, and assets geographical distribution are changing all the time. There may be some future opportunities for the NODOS project to participate in the RA market as the CAISO market evolves to integrate the 33 percent Renewables target in 2020. Monetizing potential revenues for the NODOS project from participation in the Capacity market is a difficult task. The uncertainty in projecting where and when RA products are needed will render any estimate worthless at this time. A range of values is offered to describe potential revenues for NODOS project RA offerings, and was based on a $2/kW-year (from recent market offerings) to $25.40/kW-year (as described in #3 above).

NODOS project RA obligations resulting from its pumping load are met through the self-provided provisions of current CAISO tariff, providing that it meets CAISO participating load requirements. In reality, the NODOS project would meet its RA obligations in the pumping mode through a load dropping scheme and would satisfy CAISO's RA requirements. For the Alternative C pumping mode, the monetary value of meeting RA obligations, which can be described as avoided cost, has a range in NPV of $1,666,000 to $20,944,000 for the Incidental operations and $827,000 to $10,338,000 for the Optimized operations, for the median case deliveries and the 30-year planning period. The significant difference in the RA obligations between the Incidental and the Optimized operations is the result of avoiding pumping during the super peak hours (which determines an asset's RA obligations in CAISO) in the Optimized pumping mode.

For the NODOS project generation mode, the corresponding potential Capacity revenues are estimated at a NPV of $946,080 to $11,826,000 for the Incidental operations, and $2,572,000 to $32,149,000 for the Optimized operations. Optimizing NODOS project operations would result in a significant increase in generation assets utilization during the super peak hours (and enhance its RA offerings potential). The Pump-back mode for the NODOS project would be in sync with CAISO's Capacity market optimal values (super peak generation hours) and least obligations (off--peak load). The pump-back operations can add to the NODOS project RA potential revenues in NPV between $3,040,000 and $38,000,000. It should be noted that estimates for Capacity revenues are projections that are highly dependent (and uncertain) on whether the CAISO market will evolve with the need to secure RA resources (to integrate Renewables) from assets similar to the NODOS project.

## Ancillary Services Potential

CAISO procures AS to ensure that it has adequate reserve generation capacity to maintain the electric system reliability and system frequency, by matching generation and load at all times under both normal and abnormal operating conditions. In their restructured electricity market (Post MRTU), CAISO obtains AS services through a competitive bidding process. On a daily basis, CAISO procures four primary AS services (regulation, spinning reserves, non-spinning reserves, and replacement reserves), in day-ahead and in hour-ahead markets. The two additional AS that CAISO procures are black-start and voltage support services, which are procured on a long term basis. The four primary AS are procured on separate basis, in a competitive open market environment, designed as being an integral component of the energy market. The Primary AS markets are defined by CAISO, as follows:

1. Regulation: Generation that is online and synchronized with the CAISO-controlled grid so that the energy can be increased or decreased instantly through automatic generation control (AGC), directly by the CAISO monitoring system. Regulation is used to maintain continuous balancing of resources and loads within the CAISO-controlled grid, as well as maintains frequency during normal operating conditions.
2. Spinning Reserve: Generation that is online, or "spinning," with additional capacity that is capable of ramping over a specified range within 10 minutes and running for at least 2 hours.
3. Non-Spinning Reserve: Generation that is available but not online, that is capable of being synchronized and ramping to a specified level within 10 minutes, and capable of producing dispatched energy for at least 2 hours.
4. Replacement Reserves: Generation that is capable of starting up if not already operating, synchronized with CAISO controlled grid and ramping to a specified load within 1 hour, and running for at least 2 hours.

The two remaining AS (voltage support and black-start) are procured primarily through the Reliability Must Run (RMR) contracts. CAISO is responsible for conducting a competitive market of the four primary AS on behalf of the market participants.

For NODOS project pumping/generating facilities, if interconnected to the CAISO grid, AS would be a significant operations and costs/revenues concern. For the NODOS project to participate in the CAISO AS market, the CAISO tariff requires a participating generator to undergo a certification process- the process details are beyond the scope of this study. CAISO tariff states that a participating generator is a generator or other seller of energy or AS through a scheduling coordinator over the CAISO grid from a generating unit with a rated capacity of one MW or greater, or from a generating unit providing AS and/or Imbalance Energy through an aggregation arrangement approved by CAISO, a criteria that the NODOS project will clearly meet. CAISO accepts market bids for energy and AS only from scheduling coordinators on behalf of the participating generator.

A preliminary assessment for AS opportunities for the NODOS project is conducted using the median case CALSIM II deliveries for the 30-year planning period. Although the opportunity exists for NODOS project facilities to participate in providing AS in the CAISO day-ahead and

hour-ahead markets, analysis focuses on the day-ahead market opportunities. More thorough analysis will be conducted in the next phase of the study as the NODOS project evolves into an advanced stage and more granular details are developed through improved modeling efforts (daily, and hourly time steps) for project operations. In general, participation in the AS market is an opportunity to translate inherent operational flexibilities, and excess capacities into revenue opportunities. For the NODOS project, the ultimate priority is to maintain the intended seasonal water cycle diversions/deliveries that the project was designed to capture. Therefore, revenue opportunities from participation in the AS market will have to be designed as an incidental activity to satisfying the intended project's operations. More operational scenarios will be considered in the next phase of the study where operations would be optimized to capture the most revenues the market offers for both energy and AS, coincidently.

The restructured CAISO market (post MRTU) is still evolving and price signals have not necessarily matured to reflect long-term market trends for AS prices. Moreover, CAISO's renewable integration initiative and market redesign will have great impact on AS needs and prices. New CAISO AS products (such as fast ramping) may provide an exceptional opportunity for hydro installation, such as the NODOS project, to capture and participate in. For the current study, the best available approach to value the NODOS project potential revenues from AS markets is to use recent historical AS clearing prices for the CAISO market as a reference (available on CAISO's OASIS website).

For the pumping cycle, the NODOS project will have the opportunity as a participating load (meeting CAISO tariff definition) to sell Non-Spin AS (as described in #3 above) into the CAISO market. However, the AS participation will be limited to the Sites Reservoir pumping plant, so that water diversions from the Sacramento River could be maintained, at all times. The assumption is that when the pump load at Sites Reservoir pumping plant gets dropped by CAISO, water diversions from the Sacramento River could be stored temporarily in Holthouse Reservoir until CAISO needs the service. A two-hour maximum period is anticipated for a Non-Spin AS. Stored water at Holthouse Reservoir could then be pumped into Sites Reservoir at a later time within the same day. CALSIM II runs indicate that in months with potentially highest water diversions from the Sacramento River it is possible to use excess pumping capacity at Sites Reservoir to accommodate the Non-Spin AS participation. More detailed analysis is needed for the pumping cycle in the next phase of the study to develop AS participation strategies. Figure H.7-1 depicts the Non-Spin AS potential in MWh, for Sites Reservoir pumping plant, for Alternative C.

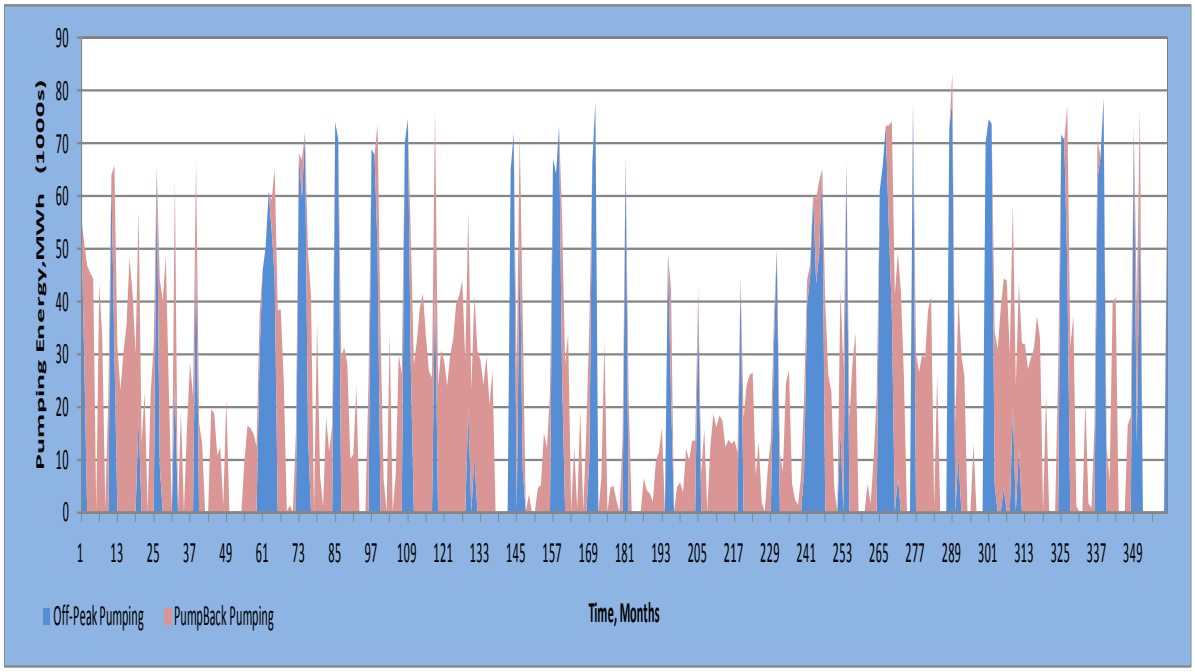


Figure H.7-1. Ancillary Service Potential, Sites Reservoir Pumping Cycle, Median Case

For the generation cycle, the NODOS project will have the opportunity to sell Regulation Down AS (as described in #1 above) in the CAISO market. NODOS project water Release mode was optimized (in this study) to capture the most value for its incidental generation that the market offers. Hence, water releases from Sites Reservoir are designed to occur in the on-peak (or super peak) hours. Accordingly, NODOS project generation facilities are assumed to sell Regulation Down AS, mostly in the on-peak (and super peak) hours and to a lesser extent in the off-peak hours. The assumption is that Regulation Down AS for the NODOS project, if called upon, represents a temporary delay in water releases and could be rectified within few hours. Also, it is assumed that NODOS project facilities will be equipped with an automatic generation control (AGC) system and that the generation units would be of the type that could quickly be ramped down to satisfy CAISO requirements for this type of AS support. Participating in the Regulation Down AS market may result in foregoing some of the on-peak generation revenues. More detailed analysis will be conducted in the next phase of the study to estimate the value of lost opportunity resulting from shifting generation needed by AS dispatch. The AS participation impact on NODOS project revenues need to be done in the context of the frequency at which CAISO calls upon this type of AS support. Figure H.7-2 depicts the Regulation Down AS potential for NODOS project generation facilities in MWh, for Alternative C.

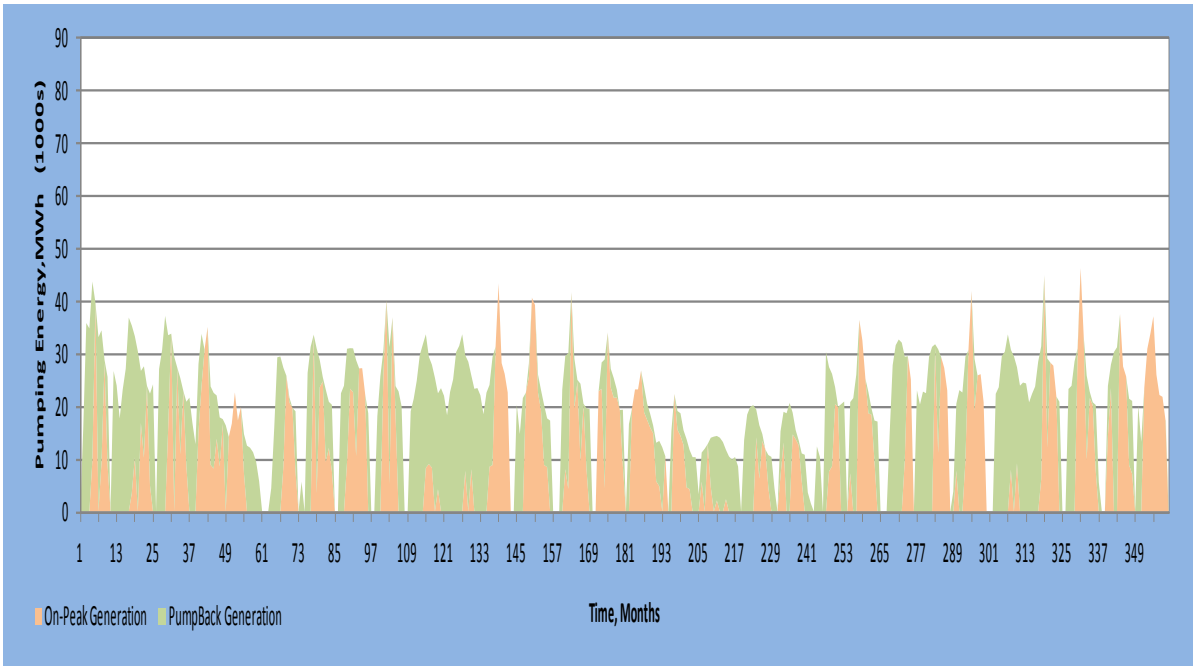


Figure H.7-2. Ancillary Service Potential, NODOS Project Generation Cycle, Median Case

The average values for the off-peak Non-Spin, and on-peak Regulation Down are calculated using published clearing prices for the CAISO AS markets. For the NODOS project, the total AS revenues from Non-Spin (the pump mode) for the 30-year planning period in NPV is $4,925,000. The corresponding total AS revenues from Regulation Down (in the generation mode) for the project in NPV is $9,198,000. The total AS revenues from the pump-back operations in NPV is $11,595,000. The NODOS project's total potential AS revenues in NPV is $25,718,000 for the 30-year planning period. It should be noted that the aforementioned AS revenues are only a measure of potential revenues based on current market trends, granted that the CAISO market will evolve overtime to accommodate load growth, renewable integration, regulatory changes, etc.

## Renewable Integration

The California Renewable Energy Resources Act (CRERA), signed by California Governor Brown on April 12, 2011, significantly increased the State's renewable portfolio standard (RPS) targets from 20 percent to 33 percent by 2020. CRERA also expanded the compliance obligations to include virtually all retail sales of electricity in California. In September 2010, CAISO undertook a multi-phase stakeholder process (Renewable Integration Market and Product Review Initiative [RIMPR]), aimed at identifying changes to the energy market structure and at introducing new market products to reliably mitigate the impact of Renewable generation (Intermittent generation) as it penetrates the market. Recently CAISO has refocused its RIMPR from an expansive market design changes to a more incremental phased approach. CAISO is focused on developing a high-level roadmap addressing short-, medium-, and long-term market enhancement to meet renewable integration needs.

Other emerging developments in the power sector include energy storage technologies. This includes using pump-storage hydroelectric facilities to share off-peak energy for use during the on-peak periods or to provide AS. This includes supporting the use of intermittent renewable energy facilities into dispatchable resources and enhancing grid reliability and power quality. Other forces driving the need for energy storage technologies are climate change policies, smart grid initiatives, and the desire to improve utilization of generation and transmission capacities.

For the NODOS project, there is great potential for the project's generation and pumping assets to participate in providing renewable integration services as the market needs evolve. Hydropower assets have a unique feature that is not available from other energy storage technologies, fast ramping that can simultaneously provide both high capacity and energy. Although the NODOS project's potential in renewable energy integration is certain, it is difficult to monetize that potential at this time because of the absence of a clear tradable market for these services. CAISO RIMPR may introduce new market products that the NODOS project can provide, yet sustain its primary water storage and delivery objectives.

The inherent nature of excess capacity for hydropower installations resulting from hydrology swings provide the opportunity to participate in providing energy storage services and the need to better utilize the excess capacity of project's assets (to enhance project economics). NODOS project multi-purpose objectives will further enhance its chances in competing in the market as an energy storage asset (as project costs are socialized among multiple objectives) relative to more costly technologies. The limiting factors for NODOS project participation are the inherent priorities of meeting the water delivery obligations over market driven power operations of the project's assets.

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# H1.8 Recommendations and Next Steps

This NODOS Power Planning Study is meant to provide a feasibility-level assessment of the designed project components and operational scenarios from a power planning perspective. Three action alternatives, each with different configuration and components capacities, are considered and analyzed. Power planning perspective is important in capturing the impacts of the energy market economies and regulatory mandates and will be consequential to the costs and revenues for the NODOS project to be adopted and built. Although the NODOS project is envisioned to provide off-stream storage needed to support CVP and SWP operations and functions, its power portfolio is a major component in determining the project's ultimate viability. More work is needed to improve on the findings of the current phase of the study, including:

- Use anticipated CALSIM II modeling results (reflecting latest BiOp) for daily operations to refine the optimization of NODOS project operations.
- Use available market information (i.e., LMP prices and trends) to optimize NODOS project operations. Update the AS duration curves to reflect CAISO locational markets, and potential future markets resulting from the need to integrate Renewables.
- Integrate CAISO's RIMPR changes to the energy market in optimizing and valuing the NODOS project power portfolio.
- Explore and propose modifications to the physical and operational attributes of the power generation complex in light of the modeling results. Consider the change in designed capacities needed to correspond to the optimized operations, and needed project flexibilities.
- Identify operational scenarios and design modifications that could be modeled to optimize the project's operations and to enhance its value.
- Consider scenarios reflecting climate change impacts on NODOS project operations, design needs, and ultimate viability.
- Propose a sensitivity analysis process that would describe the impact of adjusting design parameters, operational and financial uncertainty, on the project's value.
- Look into trends in technologies and setups that represent current practice in designing hydropower projects. Many recently designed pump-storage facilities are using separate pumping and generating facilities to increase efficiency and add operational flexibility.
- Consider a 50-year planning period that is more consistent with the lifecycle of hydropower project components.

# Acronyms and Abbreviations

| | |
|---|---|
| AB | Assemble Bill |
| AF | acre-feet |
| AGC | automatic generation control |
| AS | ancillary services |
| BDCP | Bay Delta Conservation Plan |
| BiOp | Biological Opinion |
| CAISO | California Independent System Operator |
| CALSIM | California Statewide Integrated System |
| CEC | California Energy Commission |
| CEQA | California Environmental Quality Act |
| cfs | cubic feet per second |
| CPM | Capacity Procurement Mechanism |
| CPUC | California Public Utilities Commission |
| CRERA | California Renewable Energy Resources Act |
| CVP | Central Valley Project |
| CVPIA | Central Valley Project Improvement Act |
| D-1641 | Water Rights Decisoin 1641 |
| DSIWM | Division of Statewide Integrated Water Management |
| DWR | Department of Water Resources |
| EBS | Energy Book System |
| EIR | environmental impact report |
| EIS | environmental impact statement |
| EPM | Energy Portfolio Model |
| EPRI | Electric Power Research Institute |
| FERC | Federal Energy Regulatory Commission |
| GCID | Glenn-Colusa Irrigation District |
| GED | Global Energy Decisions |
| GHG | greenhouse gas |
| HH | Henry Hub |
| kW | kilowatt |

| | |
|---|---|
| M&I | municipal and industrial |
| MAF | million acre-foot |
| MW | megawatts |
| MWh | megawatt hour |
| NEPA | National Environmental Policy Act |
| NMFS | National Marine Fisheries Service |
| NODOS | North-of-Delta Offstream Storage |
| NPV | net present value |
| NYMEX | New York Mercantile Exchange |
| P&Gs | Principles and Guidelines |
| PARO | Power and Risk Office |
| PG&E | Pacific, Gas and Electric Company |
| RA | Resource Adequacy |
| REC | Renewable Energy Credit market |
| Reclamation | Bureau of Reclamation |
| RIMPR | Renewable Integration Market and Product Review Initiative |
| RMR | Reliability Must Run |
| RPS | renewable portfolio standard |
| SIS | System Impact Studies |
| SMUD | Sacramento Municipal Utility District |
| SoCal | Southern California |
| study | Power Planning Study |
| SWP | State Water Project |
| SWRCB | State Water Resources Control Board |
| T-C | Tehama-Colusa |
| TDS | Total dissolved solid |
| TRR | Terminal Regulating Reservoir |
| Tullet | Tullet Liberty |
| USFWS | U.S. Fish and Wildlife Service |
| WAPA | Western Area Power Administration |
| WECC | Western Electricity Coordinating Council |
| WRC | Water Resources Council |

# Attachment A –
# Transmission Interconnection Road Map

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# Transmission Interconnection Process

PARO's Transmission Planning Branch prepared a description of the normal process that DWR has taken when exploring transmission interconnection options for new or existing facilities. The discussion below should serve as a roadmap for the transmission interconnection process for the NODOS project.

## Preliminary Details

Before PARO can initiate its actions for obtaining physical interconnection and transmission service for DWR facilities, the following need to be ascertained:

1. Estimated peak capacity needs (MWs) at facilities' start-up and during construction
2. Planned load growth for future enlargements at said facilities
3. Probable location of Point of Interconnection to high-voltage system
4. Identification of all potential transmission providers

## Transmission Provider Studies

All of the major transmission service providers in California require various engineering studies which evaluate the impact of a proposed facility on the overall high-voltage system. These studies, usually known as System Impact Studies (SIS), are of value to DWR for two reasons. First, the reports resulting from these studies can be utilized in any EIR/EIS documentation for discussion of transmission impacts (i.e., line routing and substations). Second, the studies, a necessary first level of review required by any of the potential transmission service providers, give a good indication of which provider represents the preferred option. However, it must be noted that any cost estimates provided at the SIS stage are considered preliminary and non-binding.

Once DWR has reviewed the various SIS reports and validated their findings, DWR must initiate the second stage of the transmission planning studies (typically called a Facility Study). These studies build upon the SIS and identify specific hardware that will be needed to implement the transmission service interconnection. Typically, one can assume that the Facility Study will provide accurate cost estimates that could be used in determining the economics of the project.

## Transmission Service Request

Once the results of the various studies (i.e., SIS and Facility Study) are compiled, DWR can determine which provider it will seek an interconnection with, and subsequent transmission service. Typically, DWR will need to arrange for an interconnection service agreement and a transmission service agreement.

## Route and Construction

Once DWR completes the transmission interconnection agreements, actual construction-related activities begin. These activities include ordering and receiving equipment; land acquisition and permitting; and actual construction.

It is important to note that there must be adequate lead time for all of the activities described above before the new DWR facility is expected to be on-line. To illustrate this, Table H.A-1 represents a typical timeline.

## Table H.A-1. A Typical Timeline for New Transmission Interconnection

| Phase | Action | PARO's Role | Duration |
|---|---|---|---|
| Preliminary Details | | | |
| | Assessing Project Needs (e.g., location and loads) | Support DWR's project team where necessary | (unknown, but for purposes of this timeline, completion of Preliminary Details is $T_0$) |
| Transmission Provider Studies | | | |
| | Coordination with Transmission Providers | Prepare necessary letters and documentation. Facilitate groundwork discussions between DWR and Providers. | 2 months |
| | Formal Studies (System Impact Studies and Facility Studies) | Prepare necessary documentation. Negotiate study agreements. Facilitate payments for studies. Monitor process. Assist DOE-Electrical Engineering in reviewing results. Submit recommendations to management identifying which transmission option is preferable. | Up to 2 years |
| Transmission Service Requests | | | |
| | Formal Request to Preferred Transmission Provider | Prepare necessary documentation for request. Negotiate transmission interconnection agreement. Negotiate transmission service agreement. Facilitate upfront payments as required by agreements. | 1 year |
| Construction Phase | | | |
| | DWR to order required hardware for its side of interconnection and for Provider to order hardware for their side. | Assist DWR project team and Department of Energy-Electrical Engineering as necessary | 3 years |
| | Install DWR's hardware; Provider installs on their side of interconnection, per agreements | Assist DWR project team and Department of Energy-Electrical Engineering as necessary | 2 years |
| Online Date** Assuming no major obstacles to Timeline ** 8 years after preliminary project details are complete | | | |

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# Attachment B –
# NODOS Project Power Operations, Modeling Results

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## Table H.B-1. NODOS Project, Power Portfolio-Annual Cash Flow, "Incidental," Alternative A

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt A (Incidental Operations) Deliveries Cas**

| Pumping-Generation Site | NPV | Year Project in Service | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| **NODOS Pumping** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| TC Canal Pumping | -6,080 | -285 | -115 | -276 | -321 | -105 | -180 | -152 | -188 |
| GCID Pumping | -10,085 | -319 | -268 | -383 | -433 | -357 | -350 | -387 | -341 |
| Sac River Pumping | -53,500 | -2,821 | -2,867 | -1,926 | -1,689 | -667 | -1,109 | -2,531 | -1,383 |
| TRR Pumping | -9,937 | -530 | -85 | -204 | -1,254 | -190 | -81 | -552 | -597 |
| Sites Pumping | -149,355 | -8,238 | -3,209 | -5,500 | -10,489 | -848 | -4,019 | -4,825 | -5,680 |
| Subtotal | -228,957 | -12,193 | -6,544 | -8,289 | -14,186 | -2,167 | -5,739 | -8,447 | -8,189 |
| | | | | | | | | | |
| **NODOS Generation** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| Sites Geneneration | 109,079 | 3,825 | 3,961 | 4,215 | 4,083 | 3,420 | 5,604 | 2,330 | 7,173 |
| TRR Generation | 19,649 | 528 | 1,333 | 510 | 969 | 544 | 777 | 761 | 1,223 |
| Sac River Genenration | 49,875 | 2,395 | 2,591 | 2,465 | 1,448 | 1,662 | 2,706 | 1,821 | 3,621 |
| Subtotal | 178,603 | 6,748 | 7,885 | 7,190 | 6,500 | 5,626 | 9,087 | 4,912 | 12,017 |
| | | | | | | | | | |
| **PumpBack Operations** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| PumpBack during Diversion cycle | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| PumpBack During Release Cycle | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Pure PumpBack Operations Cycle | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Subtotal | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | | | | | | | | |
| NODOS Project Total | -50,354 | -5,445 | 1,341 | -1,099 | -7,686 | 3,459 | 3,348 | -3,535 | 3,828 |

**Notes**

Cash Flow reported pre-tax in PV($000).

Evaluation performed 07/07/2011

Report updated at 10:28:53 AM.

Incidental – Operations based on water diversions and releases.

## Table H.B-1. NODOS Project, Power Portfolio-Annual Cash Flow, "Incidental," Alternative A (Cont.)

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt A (Incidental Operations) Deliveries Case (Cont.)**

| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| -303 | -262 | -123 | -413 | -214 | -249 | -180 | -352 | -197 | -276 | -232 |
| -463 | -329 | -364 | -391 | -340 | -343 | -299 | -446 | -360 | -382 | -357 |
| -2,682 | -1,584 | -999 | -2,887 | -2,268 | -2,768 | -1,223 | -3,367 | -1,146 | -1,509 | -816 |
| -880 | -154 | -83 | -477 | -187 | -191 | -92 | -572 | -391 | -297 | -341 |
| -8,511 | -4,654 | -2,829 | -10,341 | -4,830 | -6,085 | -4,499 | -9,575 | -4,863 | -6,585 | -5,663 |
| **-12,839** | **-6,983** | **-4,398** | **-14,509** | **-7,839** | **-9,636** | **-6,293** | **-14,312** | **-6,957** | **-9,049** | **-7,409** |
| | | | | | | | | | | |
| | | | | | | | | | | |
| 3,016 | 4,255 | 5,263 | 5,063 | 4,476 | 3,517 | 4,900 | 4,016 | 5,829 | 4,217 | 3,911 |
| 448 | 793 | 757 | 673 | 1,071 | 679 | 1,019 | 326 | 708 | 539 | 618 |
| 1,478 | 2,033 | 2,996 | 2,191 | 1,879 | 1,508 | 1,645 | 2,011 | 2,255 | 1,494 | 1,424 |
| **4,942** | **7,081** | **9,016** | **7,927** | **7,426** | **5,704** | **7,564** | **6,353** | **8,792** | **6,250** | **5,953** |
| | | | | | | | | | | |
| | | | | | | | | | | |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | | | | | | | | | |
| **-7,897** | **98** | **4,618** | **-6,582** | **-413** | **-3,932** | **1,271** | **-7,959** | **1,835** | **-2,799** | **-1,456** |

## Table H.B-1. NODOS Project, Power Portfolio-Annual Cash Flow, "Incidental," Alternative A (Cont.)

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt A (Incidental Operations) Deliveries Case (Cont.)**

| 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|
| -248 | -118 | -158 | -71 | -61 | -266 | -159 | -168 | -240 | -83 | -85 |
| -342 | -356 | -313 | -306 | -182 | -332 | -242 | -252 | -272 | -300 | -276 |
| -2,973 | -261 | -1,142 | -558 | -1,338 | -3,348 | -2,035 | -1,064 | -3,502 | -529 | -508 |
| -401 | -197 | -255 | -13 | -145 | -735 | -137 | -121 | -350 | -259 | -166 |
| -6,740 | -679 | -3,443 | -1,224 | -1,016 | -7,681 | -4,392 | -3,731 | -7,159 | -1,220 | -827 |
| **-10,704** | **-1,611** | **-5,311** | **-2,172** | **-2,742** | **-12,362** | **-6,965** | **-5,336** | **-11,523** | **-2,391** | **-1,862** |
| 2,877 | 2,299 | 3,610 | 3,646 | 1,110 | 3,319 | 2,661 | 3,755 | 1,689 | 570 | 469 |
| 661 | 313 | 672 | 524 | 839 | 502 | 703 | 565 | 449 | 60 | 85 |
| 997 | 930 | 951 | 2,158 | 599 | 1,345 | 875 | 1,120 | 836 | 265 | 176 |
| **4,535** | **3,542** | **5,233** | **6,328** | **2,548** | **5,166** | **4,239** | **5,440** | **2,974** | **895** | **730** |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **-6,169** | **1,931** | **-78** | **4,156** | **-194** | **-7,196** | **-2,726** | **104** | **-8,549** | **-1,496** | **-1,132** |

Incidental – Operations based on water diversions and releases.

## Table H.B-2. NODOS Project, Power Portfolio-Annual Cash Flow, "Optimized," Alternative A

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt A (Optimized Operations) Deliveries Case**

| Pumping-Generation Site | NPV | Year Project in Service | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| **NODOS Pumping** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| TC Canal Pumping | **-6,080** | -285 | -115 | -276 | -321 | -105 | -180 | -152 | -188 |
| GCID Pumping | **-10,085** | -319 | -268 | -383 | -433 | -357 | -350 | -387 | -341 |
| Sac River Pumping | **-53,500** | -2,821 | -2,867 | -1,926 | -1,689 | -667 | -1,109 | -2,531 | -1,383 |
| TRR Pumping | **-9,937** | -530 | -85 | -204 | -1,254 | -190 | -81 | -552 | -597 |
| Sites Pumping | **-137,398** | -7,693 | -2,879 | -4,892 | -9,329 | -678 | -3,718 | -4,443 | -5,301 |
| **Subtotal** | **-217,000** | **-11,648** | **-6,214** | **-7,681** | **-13,026** | **-1,997** | **-5,438** | **-8,065** | **-7,810** |
| **NODOS Generation** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| Sites Geneneration | **121,405** | 4,764 | 4,397 | 4,861 | 4,493 | 3,786 | 6,027 | 2,731 | 7,921 |
| TRR Generation | **20,396** | 580 | 1,377 | 546 | 982 | 605 | 803 | 769 | 1,237 |
| Sac River Genenration | **49,875** | 2,395 | 2,591 | 2,465 | 1,448 | 1,662 | 2,706 | 1,821 | 3,621 |
| **Subtotal** | **191,676** | **7,739** | **8,365** | **7,872** | **6,923** | **6,053** | **9,536** | **5,321** | **12,779** |
| **PumpBack Operations** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| PumpBack during Diversion cycle | **7,031** | 101 | 0 | 0 | 366 | 384 | 152 | 0 | 368 |
| PumpBack During Release Cycle | **22,998** | 1,176 | 984 | 578 | 617 | 557 | 926 | 1,150 | 204 |
| Pure PumpBack Operations Cycle | **17,435** | 152 | 1,083 | 1,100 | 274 | 1,359 | 117 | 876 | 0 |
| **Subtotal** | **47,464** | 1,429 | 2,067 | 1,678 | 1,257 | 2,300 | 1,195 | 2,026 | 572 |
| **NODOS Project Total** | **22,140** | **-2,480** | **4,218** | **1,869** | **-4,846** | **6,356** | **5,293** | **-718** | **5,541** |

**Notes**

Cash Flow reported pre-tax in PV($000).
Evaluation performed 07/07/2011
Report updated at 10:28:53 AM.

Incidental – Operations based on water diversions and releases.

## Table H.B-2. NODOS Project, Power Portfolio-Annual Cash Flow, "Optimized," Alternative A (Cont.)

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt A (Optimized Operations) Deliveries Case (Cont.)**

| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|
| -303 | -262 | -123 | -413 | -214 | -249 | -180 | -352 | -197 | -276 | -232 |
| -463 | -329 | -364 | -391 | -340 | -343 | -299 | -446 | -360 | -382 | -357 |
| -2,682 | -1,584 | -999 | -2,887 | -2,268 | -2,768 | -1,223 | -3,367 | -1,146 | -1,509 | -816 |
| -880 | -154 | -83 | -477 | -187 | -191 | -92 | -572 | -391 | -297 | -341 |
| -7,979 | -4,007 | -2,701 | -9,343 | -4,431 | -5,506 | -4,200 | -8,921 | -4,680 | -6,060 | -5,222 |
| **-12,307** | **-6,336** | **-4,270** | **-13,511** | **-7,440** | **-9,057** | **-5,994** | **-13,658** | **-6,774** | **-8,524** | **-6,968** |
| 3,294 | 4,652 | 5,941 | 5,441 | 4,921 | 4,065 | 5,416 | 4,667 | 6,450 | 4,763 | 4,030 |
| 466 | 825 | 788 | 672 | 1,094 | 728 | 1,060 | 354 | 735 | 528 | 638 |
| 1,478 | 2,033 | 2,996 | 2,191 | 1,879 | 1,508 | 1,645 | 2,011 | 2,255 | 1,494 | 1,424 |
| **5,238** | **7,510** | **9,725** | **8,304** | **7,894** | **6,301** | **8,121** | **7,032** | **9,440** | **6,785** | **6,092** |
| 171 | 380 | 121 | 722 | 93 | 181 | 120 | 186 | 166 | 554 | 299 |
| 837 | 906 | 590 | 662 | 1,020 | 846 | 691 | 751 | 371 | 839 | 821 |
| 497 | 623 | 264 | 0 | 512 | 874 | 518 | 452 | 481 | 178 | 547 |
| 1,505 | 1,909 | 975 | 1,384 | 1,625 | 1,901 | 1,329 | 1,389 | 1,018 | 1,571 | 1,667 |
| **-5,564** | **3,083** | **6,430** | **-3,823** | **2,079** | **-855** | **3,456** | **-5,237** | **3,684** | **-168** | **791** |

Optimized – Operations shaped to minimize pumping costs and maximize revenue from energy generation.

## Table H.B-2. NODOS Project, Power Portfolio-Annual Cash Flow, "Optimized," Alternative A (Cont.)

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt A (Optimized Operations) Deliveries Case (Cont.)**

| 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|
| -248 | -118 | -158 | -71 | -61 | -266 | -159 | -168 | -240 | -83 | -85 |
| -342 | -356 | -313 | -306 | -182 | -332 | -242 | -252 | -272 | -300 | -276 |
| -2,973 | -261 | -1,142 | -558 | -1,338 | -3,348 | -2,035 | -1,064 | -3,502 | -529 | -508 |
| -401 | -197 | -255 | -13 | -145 | -735 | -137 | -121 | -350 | -259 | -166 |
| -6,354 | -543 | -3,073 | -1,125 | -986 | -7,247 | -4,139 | -3,517 | -6,784 | -1,018 | -629 |
| **-10,318** | **-1,475** | **-4,941** | **-2,073** | **-2,712** | **-11,928** | **-6,712** | **-5,122** | **-11,148** | **-2,189** | **-1,664** |
| 3,189 | 2,557 | 4,147 | 4,121 | 1,007 | 3,544 | 2,859 | 4,275 | 1,911 | 661 | 514 |
| 695 | 345 | 714 | 540 | 865 | 525 | 731 | 593 | 466 | 52 | 83 |
| 997 | 930 | 951 | 2,158 | 599 | 1,345 | 875 | 1,120 | 836 | 265 | 176 |
| **4,881** | **3,832** | **5,812** | **6,819** | **2,471** | **5,414** | **4,465** | **5,988** | **3,213** | **978** | **773** |
| 170 | 397 | 471 | 142 | 58 | 148 | 212 | 83 | 149 | 384 | 453 |
| 1,090 | 1,066 | 705 | 908 | 328 | 861 | 1,031 | 673 | 639 | 609 | 562 |
| 476 | 957 | 335 | 287 | 964 | 233 | 291 | 293 | 746 | 1,474 | 1,472 |
| 1,736 | 2,420 | 1,511 | 1,337 | 1,350 | 1,242 | 1,534 | 1,049 | 1,534 | 2,467 | 2,487 |
| **-3,701** | **4,777** | **2,382** | **6,083** | **1,109** | **-5,272** | **-713** | **1,915** | **-6,401** | **1,256** | **1,596** |

Optimized – Operations shaped to minimize pumping costs and maximize revenue from energy generation.

## Table H.B-3. NODOS Project, Power Portfolio-Annual Cash Flow, "Incidental," Alternative B

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt B (Incidental Operations)Deliveries Case**

| Pumping-Generation Site | NPV | Year Project in Service | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| **NODOS Pumping** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| TC Canal Pumping | -7,508 | -118 | -154 | -156 | -89 | -223 | -179 | -231 | -186 |
| GCID Pumping | -11,520 | -346 | -356 | -341 | -302 | -306 | -288 | -429 | -436 |
| Sac River Pumping | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| TRR Pumping | -16,451 | -69 | -576 | -357 | -71 | -45 | -158 | -763 | -443 |
| Sites Pumping | -147,695 | -1,167 | -4,894 | -1,321 | -1,747 | -1,645 | -2,469 | -4,482 | -4,074 |
| **Subtotal** | **-183,174** | **-1,700** | **-5,980** | **-2,175** | **-2,209** | **-2,219** | **-3,094** | **-5,905** | **-5,139** |
| **NODOS Generation** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| Sites Geneneration | 111,264 | 4,644 | 5,875 | 117 | 2,159 | 696 | 2,165 | 3,841 | 1,508 |
| TRR Generation | 6,840 | 1 | 824 | 0 | 0 | 43 | 0 | 429 | 3 |
| Sac River Genenration | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Subtotal** | **118,104** | **4,645** | **6,699** | **117** | **2,159** | **739** | **2,165** | **4,270** | **1,511** |
| **PumpBack Operations** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| PumpBack during Diversion cycle | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| PumpBack During Release Cycle | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Pure PumpBack Operations Cycle | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Subtotal** | **N/A** | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **NODOS Project Total** | **-65,070** | **2,945** | **719** | **-2,058** | **-50** | **-1,480** | **-929** | **-1,635** | **-3,628** |

**Notes**

Cash Flow reported pre-tax in PV($000).

Evaluation performed 07/07/2011

Report updated at 10:28:53 AM.

Incidental – Operations based on water diversions and releases.

## Table H.B-3. NODOS Project, Power Portfolio-Annual Cash Flow, "Incidental," Alternative B (Cont'd)

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt B (Incidental Operations)Deliveries Case (Cont.)**

| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|
| -342 | -367 | -117 | -438 | -538 | -395 | -230 | -164 | -271 | -197 | -227 |
| -524 | -478 | -436 | -529 | -541 | -386 | -305 | -412 | -405 | -406 | -413 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| -1,067 | -977 | 0 | -1,260 | -1,841 | -696 | -164 | -194 | -503 | -141 | -316 |
| -6,558 | -8,746 | 0 | -7,909 | -13,152 | -8,759 | -4,990 | -3,798 | -3,854 | -3,220 | -3,142 |
| **-8,491** | **-10,568** | **-553** | **-10,136** | **-16,072** | **-10,236** | **-5,689** | **-4,568** | **-5,033** | **-3,964** | **-4,098** |
| 1,152 | 5,084 | 6,489 | 3,551 | 4,164 | 5,899 | 8,109 | 4,598 | 3,151 | 3,845 | 3,936 |
| 5 | 282 | 42 | 5 | 261 | 716 | 1,033 | 10 | 382 | 8 | 5 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **1,157** | **5,366** | **6,531** | **3,556** | **4,425** | **6,615** | **9,142** | **4,608** | **3,533** | **3,853** | **3,941** |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **-7,334** | **-5,202** | **5,978** | **-6,580** | **-11,647** | **-3,621** | **3,453** | **40** | **-1,500** | **-111** | **-157** |

## Table H.B-3. NODOS Project, Power Portfolio-Annual Cash Flow, "Incidental," Alternative B (Cont.)

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt B (Incidental Operations)Deliveries Case (Cont.)**

| 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|
| -295 | -207 | -270 | -347 | -413 | -167 | -291 | -120 | -258 | -304 | -214 |
| -410 | -400 | -391 | -403 | -436 | -313 | -301 | -312 | -334 | -330 | -251 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| -766 | -295 | -732 | -723 | -1,216 | -333 | -742 | -64 | -692 | -956 | -291 |
| -6,095 | -2,066 | -6,661 | -6,706 | -10,470 | -2,796 | -7,128 | -1,787 | -6,679 | -7,579 | -3,801 |
| **-7,566** | **-2,968** | **-8,054** | **-8,179** | **-12,535** | **-3,609** | **-8,462** | **-2,283** | **-7,963** | **-9,169** | **-4,557** |
| 1,179 | 3,161 | 3,444 | 5,318 | 2,858 | 4,657 | 5,028 | 3,151 | 3,864 | 4,200 | 3,421 |
| 6 | 10 | 392 | 95 | 167 | 403 | 558 | 7 | 295 | 485 | 373 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **1,185** | **3,171** | **3,836** | **5,413** | **3,025** | **5,060** | **5,586** | **3,158** | **4,159** | **4,685** | **3,794** |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **-6,381** | **203** | **-4,218** | **-2,766** | **-9,510** | **1,451** | **-2,876** | **875** | **-3,804** | **-4,484** | **-763** |

Incidental – Operations based on water diversions and releases.

## Table H.B-4. NODOS Project, Power Portfolio-Annual Cash Flow, "Optimized," Alternative B

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt B (Optimized Operations) Deliveries Case**

| Pumping-Generation Site | NPV | Year Project in Service | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| **NODOS Pumping** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| TC Canal Pumping | **-7,508** | -118 | -154 | -156 | -89 | -223 | -179 | -231 | -186 |
| GCID Pumping | **-11,520** | -346 | -356 | -341 | -302 | -306 | -288 | -429 | -436 |
| Sac River Pumping | **0** | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| TRR Pumping | **-16,451** | -69 | -576 | -357 | -71 | -45 | -158 | -763 | -443 |
| Sites Pumping | **-133,104** | -947 | -4,203 | -1,078 | -1,537 | -1,439 | -2,190 | -3,949 | -3,520 |
| **Subtotal** | **-168,583** | **-1,480** | **-5,289** | **-1,932** | **-1,999** | **-2,013** | **-2,815** | **-5,372** | **-4,585** |
| **NODOS Generation** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| Sites Geneneration | **125,490** | 5,854 | 6,830 | 0 | 2,625 | 843 | 2,526 | 4,442 | 1,700 |
| TRR Generation | **7,145** | 0 | 841 | 0 | 0 | 56 | 0 | 441 | 0 |
| Sac River Genenration | **N/A** | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Subtotal** | **132,635** | **5,854** | **7,671** | **0** | **2,625** | **899** | **2,526** | **4,883** | **1,700** |
| **PumpBack Operations** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| PumpBack during Diversion cycle | **13,999** | 20 | 286 | 49 | 174 | 175 | 326 | 457 | 756 |
| PumpBack During Release Cycle | **18,298** | 1,192 | 546 | 0 | 672 | 270 | 376 | 284 | 666 |
| Pure PumpBack Operations Cycle | **14,916** | 362 | 0 | 1,663 | 435 | 1,072 | 540 | 83 | 663 |
| **Subtotal** | **47,213** | 1,574 | 832 | 1,712 | 1,281 | 1,517 | 1,242 | 824 | 2,085 |
| **NODOS Project Total** | **11,265** | **5,948** | **3,214** | **-220** | **1,907** | **403** | **953** | **335** | **-800** |

**Notes**

Cash Flow reported pre-tax in PV($000).
Evaluation performed 07/07/2011
Report updated at 10:28:53 AM.

Optimized – Operations shaped to minimize pumping costs and maximize revenue from energy generation.

## Table H.B-4. NODOS Project, Power Portfolio-Annual Cash Flow, "Optimized," Alternative B (Cont.)

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt B (Optimized Operations) Deliveries Case (Cont.)**

| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|
| -342 | -367 | -117 | -438 | -538 | -395 | -230 | -164 | -271 | -197 | -227 |
| -524 | -478 | -436 | -529 | -541 | -386 | -305 | -412 | -405 | -406 | -413 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| -1,067 | -977 | 0 | -1,260 | -1,841 | -696 | -164 | -194 | -503 | -141 | -316 |
| -5,845 | -7,775 | 0 | -7,060 | -11,879 | -7,992 | -4,511 | -3,456 | -3,406 | -2,878 | -2,904 |
| **-7,778** | **-9,597** | **-553** | **-9,287** | **-14,799** | **-9,469** | **-5,210** | **-4,226** | **-4,585** | **-3,622** | **-3,860** |
| 1,371 | 5,729 | 7,600 | 4,158 | 4,633 | 6,715 | 8,526 | 5,363 | 3,397 | 4,436 | 4,491 |
| 0 | 311 | 39 | 0 | 270 | 774 | 1,062 | 1 | 403 | 0 | 0 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **1,371** | **6,040** | **7,639** | **4,158** | **4,903** | **7,489** | **9,588** | **5,364** | **3,800** | **4,436** | **4,491** |
| 244 | 772 | 0 | 335 | 967 | 549 | 587 | 510 | 141 | 352 | 199 |
| 1,105 | 931 | 270 | 678 | 760 | 717 | 282 | 864 | 664 | 1,126 | 563 |
| 841 | 180 | 494 | 189 | 0 | 581 | 733 | 354 | 1,206 | 290 | 479 |
| 2,190 | 1,883 | 764 | 1,202 | 1,727 | 1,847 | 1,602 | 1,728 | 2,011 | 1,768 | 1,241 |
| **-4,217** | **-1,674** | **7,850** | **-3,927** | **-8,169** | **-133** | **5,980** | **2,866** | **1,226** | **2,582** | **1,872** |

Optimized – Operations shaped to minimize pumping costs and maximize revenue from energy generation.

## Table H.B-4. NODOS Project, Power Portfolio-Annual Cash Flow, "Optimized," Alternative B (Cont.)

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt B (Optimized Operations) Deliveries Case (Cont.)**

| 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|
| -295 | -207 | -270 | -347 | -413 | -167 | -291 | -120 | -258 | -304 | -214 |
| -410 | -400 | -391 | -403 | -436 | -313 | -301 | -312 | -334 | -330 | -251 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| -766 | -295 | -732 | -723 | -1,216 | -333 | -742 | -64 | -692 | -956 | -291 |
| -5,415 | -1,854 | -6,117 | -6,206 | -9,717 | -2,434 | -6,617 | -1,663 | -6,112 | -6,957 | -3,443 |
| **-6,886** | **-2,756** | **-7,510** | **-7,679** | **-11,782** | **-3,247** | **-7,951** | **-2,159** | **-7,396** | **-8,547** | **-4,199** |
| 1,372 | 3,690 | 3,635 | 5,951 | 3,120 | 5,035 | 5,321 | 3,539 | 4,283 | 4,557 | 3,748 |
| 0 | 1 | 413 | 100 | 179 | 427 | 599 | 0 | 330 | 498 | 400 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **1,372** | **3,691** | **4,048** | **6,051** | **3,299** | **5,462** | **5,920** | **3,539** | **4,613** | **5,055** | **4,148** |
| 685 | 267 | 420 | 767 | 1,251 | 1,066 | 415 | 323 | 694 | 540 | 672 |
| 1,015 | 832 | 534 | 381 | 502 | 328 | 376 | 894 | 519 | 399 | 552 |
| 512 | 783 | 656 | 0 | 371 | 344 | 437 | 548 | 345 | 174 | 581 |
| 2,212 | 1,882 | 1,610 | 1,148 | 2,124 | 1,738 | 1,228 | 1,765 | 1,558 | 1,113 | 1,805 |
| **-3,302** | **2,817** | **-1,852** | **-480** | **-6,359** | **3,953** | **-803** | **3,145** | **-1,225** | **-2,379** | **1,754** |

Optimized – Operations shaped to minimize pumping costs and maximize revenue from energy generation.

## Table H.B-5. NODOS Project, Power Portfolio-Annual Cash Flow, "Incidental," Alternative C

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt C (Incidental Operations) Deliveries Case**

| Pumping-Generation Site | NPV | Year Project in Service | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| **NODOS Pumping** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| TC Canal Pumping | -5,788 | -279 | -128 | -180 | -80 | -82 | -411 | -251 | -238 |
| GCID Pumping | -9,968 | -306 | -375 | -347 | -349 | -231 | -431 | -355 | -335 |
| Sac River Pumping | -59,196 | -3,040 | -273 | -1,227 | -155 | -370 | -5,674 | -2,940 | -1,998 |
| TRR Pumping | -11,839 | -410 | -204 | -295 | -28 | -180 | -1,057 | -657 | -159 |
| Sites Pumping | -172,219 | -9,319 | -823 | -4,546 | -1,836 | -1,298 | -11,927 | -9,489 | -6,630 |
| Subtotal | -259,010 | -13,354 | -1,803 | -6,595 | -2,448 | -2,161 | -19,500 | -13,692 | -9,360 |
| | | | | | | | | | |
| **NODOS Generation** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| Sites Geneneration | 134,217 | 3,210 | 2,997 | 5,049 | 6,577 | 4,109 | 3,477 | 4,764 | 6,204 |
| TRR Generation | 20,385 | 723 | 438 | 981 | 765 | 1,128 | 807 | 1,246 | 963 |
| Sac River Genenration | 50,193 | 1,191 | 1,147 | 1,384 | 3,310 | 2,147 | 1,742 | 1,635 | 1,880 |
| Subtotal | 204,795 | 5,124 | 4,582 | 7,414 | 10,652 | 7,384 | 6,026 | 7,645 | 9,047 |
| | | | | | | | | | |
| **PumpBack Operations** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| PumpBack during Diversion cycle | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| PumpBack During Release Cycle | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Pure PumpBack Operations Cycle | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Subtotal | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | | | | | | | | |
| NODOS Project Total | -54,215 | -8,230 | 2,779 | 819 | 8,204 | 5,223 | -13,474 | -6,047 | -313 |

**Notes**

Cash Flow reported pre-tax in PV($000).
Evaluation performed 07/07/2011
Report updated at 10:28:53 AM.

Incidental – Operations based on water diversions and releases.

## Table H.B-5. NODOS Project, Power Portfolio-Annual Cash Flow, "Incidental," Alternative C (Cont.)

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt C (Incidental Operations) Deliveries Case (Cont.)**

| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| -312 | -268 | -126 | -207 | -166 | -264 | -164 | -71 | -120 | -71 | -93 |
| -344 | -450 | -416 | -385 | -345 | -409 | -407 | -343 | -432 | -342 | -252 |
| -3,942 | -1,761 | -795 | -1,225 | -192 | -3,931 | -2,180 | -1,088 | -812 | -1,161 | -2,917 |
| -534 | -484 | -291 | -654 | -91 | -860 | -516 | -54 | -536 | -13 | -460 |
| -11,595 | -7,078 | -1,585 | -6,587 | -2,531 | -11,282 | -7,146 | -2,959 | -3,105 | -1,604 | -2,584 |
| **-16,727** | **-10,041** | **-3,213** | **-9,058** | **-3,325** | **-16,746** | **-10,413** | **-4,515** | **-5,005** | **-3,191** | **-6,306** |
| | | | | | | | | | | |
| | | | | | | | | | | |
| 5,826 | 1,414 | 806 | 7,843 | 8,524 | 6,353 | 7,552 | 6,942 | 3,492 | 1,109 | 2,006 |
| 1,135 | 114 | 166 | 1,136 | 764 | 906 | 534 | 719 | 246 | 525 | 956 |
| 1,788 | 725 | 300 | 1,965 | 3,199 | 2,232 | 3,166 | 3,548 | 2,462 | 955 | 1,542 |
| **8,749** | **2,253** | **1,272** | **10,944** | **12,487** | **9,491** | **11,252** | **11,209** | **6,200** | **2,589** | **4,504** |
| | | | | | | | | | | |
| | | | | | | | | | | |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | | | | | | | | | |
| **-7,978** | **-7,788** | **-1,941** | **1,886** | **9,162** | **-7,255** | **839** | **6,694** | **1,195** | **-602** | **-1,802** |

Incidental – Operations based on water diversions and releases.

## Table H.B-5. NODOS Project, Power Portfolio-Annual Cash Flow, "Incidental," Alternative C (Cont.)

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt C (Incidental Operations) Deliveries Case (Cont.)**

| 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|
| -153 | -413 | -149 | -386 | -145 | -186 | -195 | -79 | -212 | -164 | -195 |
| -252 | -419 | -182 | -460 | -289 | -278 | -321 | -251 | -219 | -232 | -211 |
| -2,317 | -4,387 | -1,716 | -4,178 | -1,078 | -1,082 | -2,570 | -174 | -1,728 | -2,664 | -1,621 |
| -419 | -899 | -96 | -1,227 | -307 | -145 | -359 | -11 | -123 | -425 | -345 |
| -3,603 | -11,419 | -2,922 | -14,986 | -3,397 | -5,246 | -7,031 | -153 | -6,238 | -7,077 | -6,223 |
| **-6,744** | **-17,537** | **-5,065** | **-21,237** | **-5,216** | **-6,937** | **-10,476** | **-668** | **-8,520** | **-10,562** | **-8,595** |
| 2,521 | 2,095 | 5,820 | 2,373 | 4,445 | 6,343 | 675 | 4,916 | 5,690 | 4,591 | 6,494 |
| 818 | 324 | 951 | 136 | 536 | 552 | 107 | 439 | 643 | 729 | 898 |
| 1,589 | 1,028 | 1,961 | 763 | 963 | 1,712 | 187 | 1,242 | 1,315 | 1,416 | 1,699 |
| **4,928** | **3,447** | **8,732** | **3,272** | **5,944** | **8,607** | **969** | **6,597** | **7,648** | **6,736** | **9,091** |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **-1,816** | **-14,090** | **3,667** | **-17,965** | **728** | **1,670** | **-9,507** | **5,929** | **-872** | **-3,826** | **496** |

Incidental – Operations based on water diversions and releases.

## Table H.B-6. NODOS Project, Power Portfolio-Annual Cash Flow, "Optimized," Alternative C

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt C (Optimized Operations) Deliveries Case**

| Pumping-Generation Site | NPV | Year Project in Service | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| **NODOS Pumping** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| TC Canal Pumping | **-5,788** | -279 | -128 | -180 | -80 | -82 | -411 | -251 | -238 |
| GCID Pumping | **-9,968** | -306 | -375 | -347 | -349 | -231 | -431 | -355 | -335 |
| Sac River Pumping | **-59,196** | -3,040 | -273 | -1,227 | -155 | -370 | -5,674 | -2,940 | -1,998 |
| TRR Pumping | **-11,839** | -410 | -204 | -295 | -28 | -180 | -1,057 | -657 | -159 |
| Sites Pumping | **-157,842** | -8,578 | -627 | -3,872 | -1,587 | -1,105 | -10,846 | -8,646 | -5,958 |
| **Subtotal** | **-244,633** | **-12,613** | **-1,607** | **-5,921** | **-2,199** | **-1,968** | **-18,419** | **-12,849** | **-8,688** |
| **NODOS Generation** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| Sites Genereration | **149,578** | 4,268 | 3,456 | 5,915 | 7,547 | 4,251 | 4,017 | 5,702 | 7,137 |
| TRR Generation | **21,249** | 781 | 480 | 1,032 | 799 | 1,151 | 843 | 1,307 | 1,015 |
| Sac River Genenration | **50,193** | 1,191 | 1,147 | 1,384 | 3,310 | 2,147 | 1,742 | 1,635 | 1,880 |
| **Subtotal** | **221,020** | **6,240** | **5,083** | **8,331** | **11,656** | **7,549** | **6,602** | **8,644** | **10,032** |
| **PumpBack Operations** | **Period Total** | **Period Total, NPV ($1000)** | | | | | | | |
| PumpBack during Diversion cycle | **7,445** | 213 | 470 | 623 | 96 | 49 | 214 | 239 | 0 |
| PumpBack During Release Cycle | **21,566** | 1,717 | 1,412 | 563 | 824 | 276 | 401 | 1,371 | 998 |
| Pure PumpBack Operations Cycle | **17,395** | 323 | 1,571 | 775 | 278 | 642 | 1,054 | 0 | 410 |
| **Subtotal** | **46,406** | 2,253 | 3,453 | 1,961 | 1,198 | 967 | 1,669 | 1,610 | 1,408 |
| **NODOS Project Total** | **22,793** | **-4,120** | **6,929** | **4,371** | **10,655** | **6,548** | **-10,148** | **-2,595** | **2,752** |

**Notes**

Cash Flow reported pre-tax in PV($000).
Evaluation performed 07/07/2011
Report updated at 10:28:53 AM.

Optimized – Operations shaped to minimize pumping costs and maximize revenue from energy generation.

## Table H.B-6. NODOS Project, Power Portfolio-Annual Cash Flow, "Optimized," Alternative C (Cont.)

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt C (Optimized Operations) Deliveries Case (Cont.)**

| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|
| -312 | -268 | -126 | -207 | -166 | -264 | -164 | -71 | -120 | -71 | -93 |
| -344 | -450 | -416 | -385 | -345 | -409 | -407 | -343 | -432 | -342 | -252 |
| -3,942 | -1,761 | -795 | -1,225 | -192 | -3,931 | -2,180 | -1,088 | -812 | -1,161 | -2,917 |
| -534 | -484 | -291 | -654 | -91 | -860 | -516 | -54 | -536 | -13 | -460 |
| -10,672 | -6,153 | -1,130 | -6,082 | -2,220 | -10,507 | -6,726 | -2,694 | -2,811 | -1,345 | -2,474 |
| **-15,804** | **-9,116** | **-2,758** | **-8,553** | **-3,014** | **-15,971** | **-9,993** | **-4,250** | **-4,711** | **-2,932** | **-6,196** |
| 6,177 | 1,648 | 894 | 8,639 | 9,115 | 7,129 | 8,656 | 7,731 | 3,916 | 1,161 | 2,323 |
| 1,176 | 124 | 173 | 1,185 | 795 | 946 | 556 | 716 | 248 | 528 | 974 |
| 1,788 | 725 | 300 | 1,965 | 3,199 | 2,232 | 3,166 | 3,548 | 2,462 | 955 | 1,542 |
| **9,141** | **2,497** | **1,367** | **11,789** | **13,109** | **10,307** | **12,378** | **11,995** | **6,626** | **2,644** | **4,839** |
| 160 | 473 | 681 | 0 | 333 | 208 | 186 | 0 | 131 | 32 | 0 |
| 1,140 | 1,322 | 740 | 383 | 594 | 1,073 | 655 | 487 | 619 | 606 | 645 |
| 221 | 1,453 | 2,318 | 598 | 394 | 0 | 0 | 0 | 190 | 803 | 738 |
| 1,521 | 3,248 | 3,739 | 981 | 1,321 | 1,281 | 841 | 487 | 940 | 1,441 | 1,383 |
| **-5,142** | **-3,371** | **2,348** | **4,217** | **11,416** | **-4,383** | **3,226** | **8,232** | **2,855** | **1,153** | **26** |

Optimized – Operations shaped to minimize pumping costs and maximize revenue from energy generation.

## Table H.B-6 NODOS Project, Power Portfolio-Annual Cash Flow, "Optimized," Alternative C (Cont.)

**Cash Flow Report for the NODOS Project, CALSIM 30-Year Planning Period, Alt C (Optimized Operations) Deliveries Case (Cont.)**

| 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|
| -153 | -413 | -149 | -386 | -145 | -186 | -195 | -79 | -212 | -164 | -195 |
| -252 | -419 | -182 | -460 | -289 | -278 | -321 | -251 | -219 | -232 | -211 |
| -2,317 | -4,387 | -1,716 | -4,178 | -1,078 | -1,082 | -2,570 | -174 | -1,728 | -2,664 | -1,621 |
| -419 | -899 | -96 | -1,227 | -307 | -145 | -359 | -11 | -123 | -425 | -345 |
| -3,457 | -10,359 | -2,867 | -13,926 | -3,286 | -4,787 | -6,582 | 0 | -5,916 | -6,730 | -5,899 |
| **-6,598** | **-16,477** | **-5,010** | **-20,177** | **-5,105** | **-6,478** | **-10,027** | **-515** | **-8,198** | **-10,215** | **-8,271** |
| 2,884 | 2,361 | 6,410 | 2,476 | 5,053 | 6,876 | 724 | 5,207 | 6,100 | 5,010 | 6,795 |
| 846 | 343 | 977 | 142 | 575 | 587 | 116 | 470 | 671 | 766 | 927 |
| 1,589 | 1,028 | 1,961 | 763 | 963 | 1,712 | 187 | 1,242 | 1,315 | 1,416 | 1,699 |
| **5,319** | **3,732** | **9,348** | **3,381** | **6,591** | **9,175** | **1,027** | **6,919** | **8,086** | **7,192** | **9,421** |
| 127 | 440 | 0 | 1,007 | 0 | 213 | 1,080 | 0 | 174 | 47 | 249 |
| 521 | 552 | 502 | 253 | 633 | 417 | 659 | 663 | 538 | 1,002 | 0 |
| 483 | 559 | 496 | 853 | 1,007 | 166 | 921 | 973 | 169 | 0 | 0 |
| 1,131 | 1,551 | 998 | 2,113 | 1,640 | 796 | 2,660 | 1,636 | 881 | 1,049 | 249 |
| **-148** | **-11,194** | **5,336** | **-14,683** | **3,126** | **3,493** | **-6,340** | **8,040** | **769** | **-1,974** | **1,399** |

Optimized – Operations shaped to minimize pumping costs and maximize revenue from energy generation.

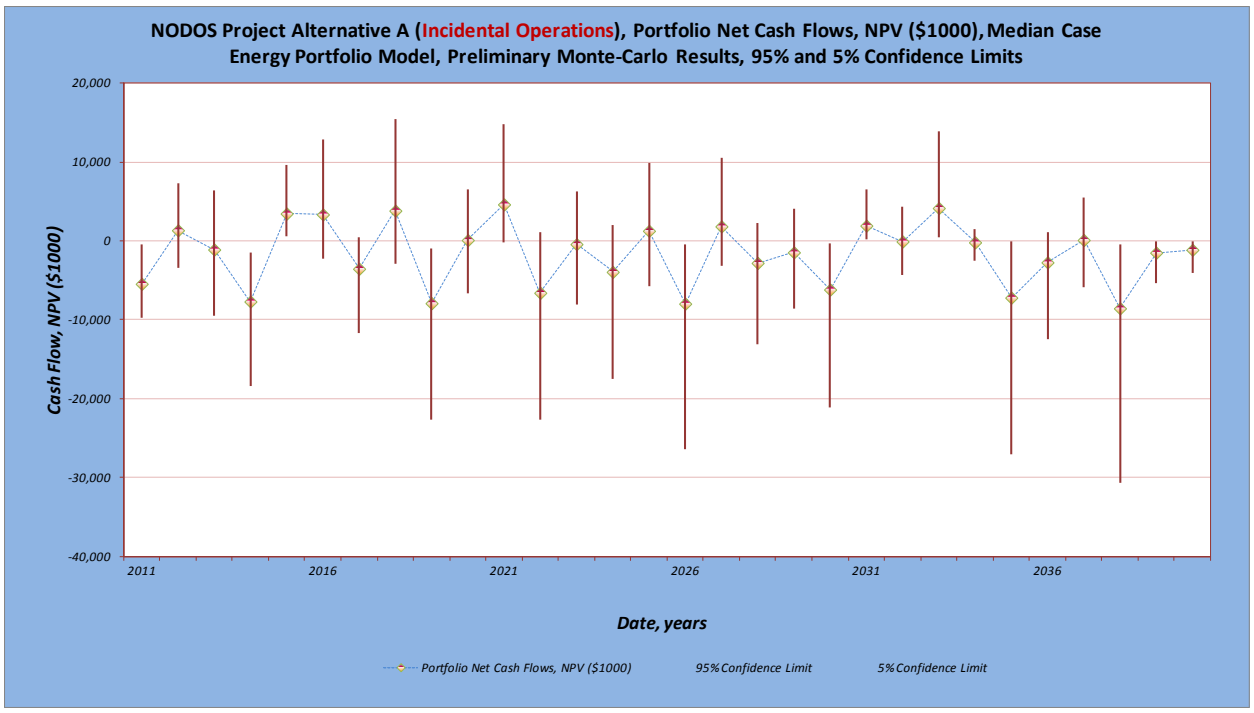


Figure H.B-1. NODOS Project, Power Portfolio-Annual Cash Flow, "Incidental," Alternative A

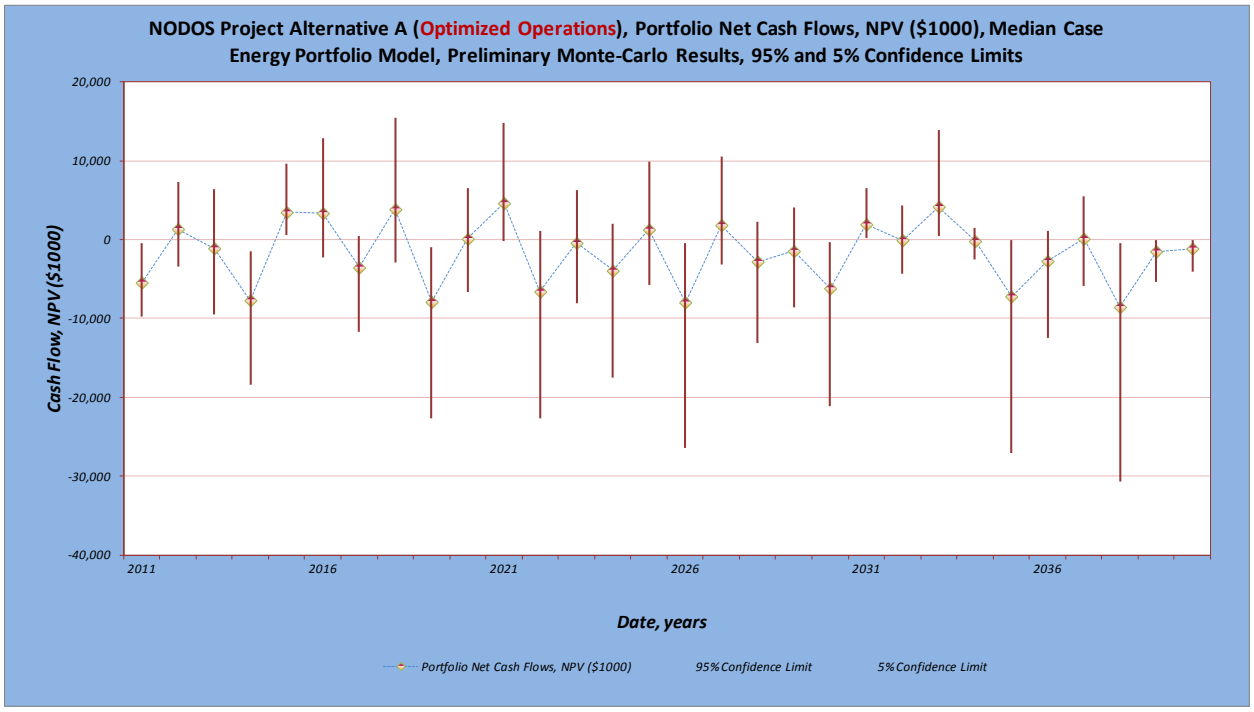


Figure H.B-2. NODOS Project, Power Portfolio-Annual Cash Flow, "Optimized," Alternative A

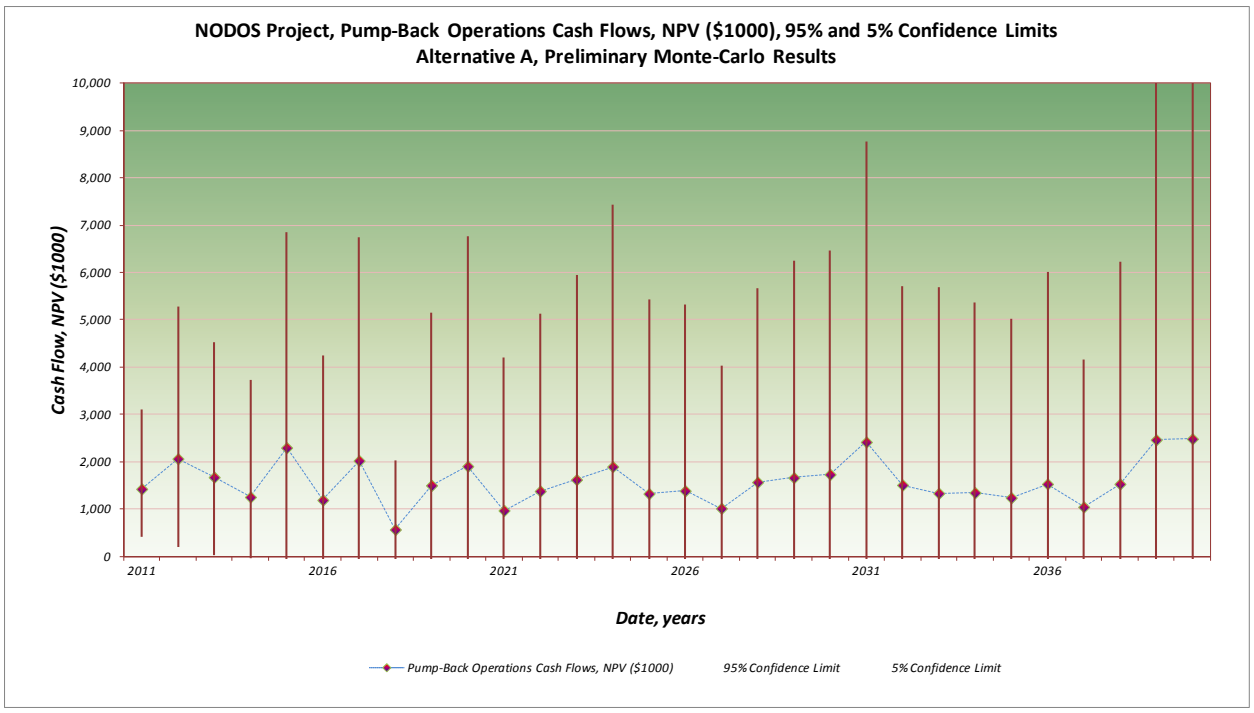


Figure H.B-3. NODOS Project, Power Portfolio-Annual Cash Flow, "Pump-Back," Alternative A

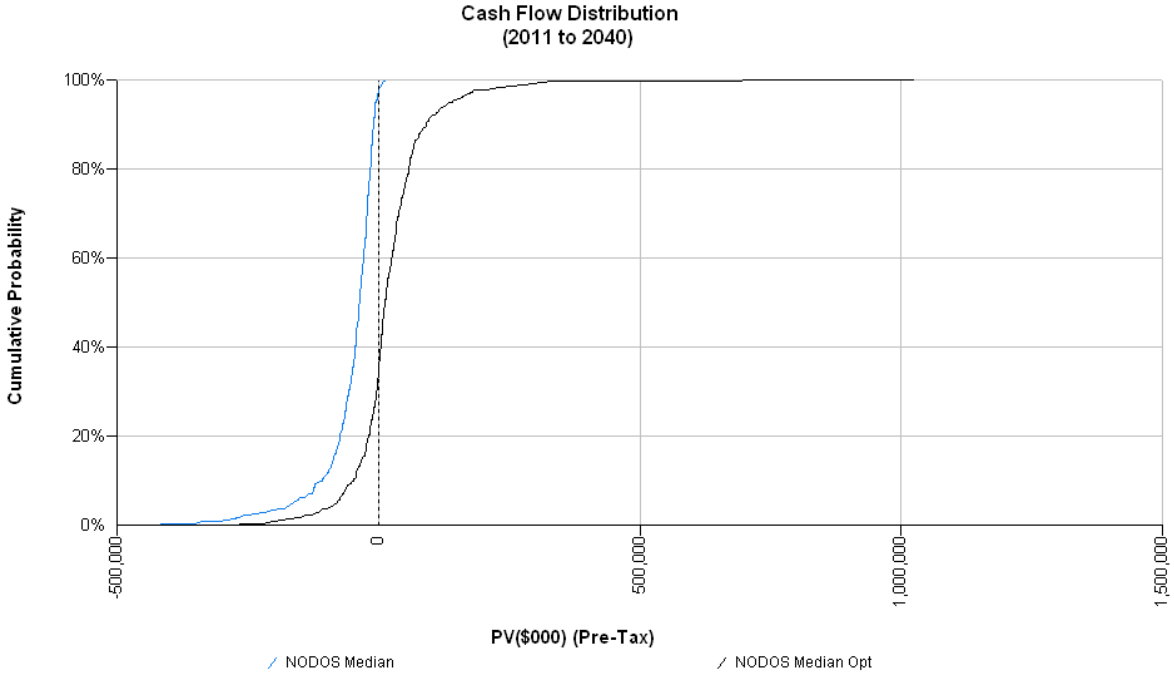


Figure H.B-4. NODOS Project, Power Portfolio Cumulative Probability Distribution, Alternative A "Incidental" vs. "Optimized"

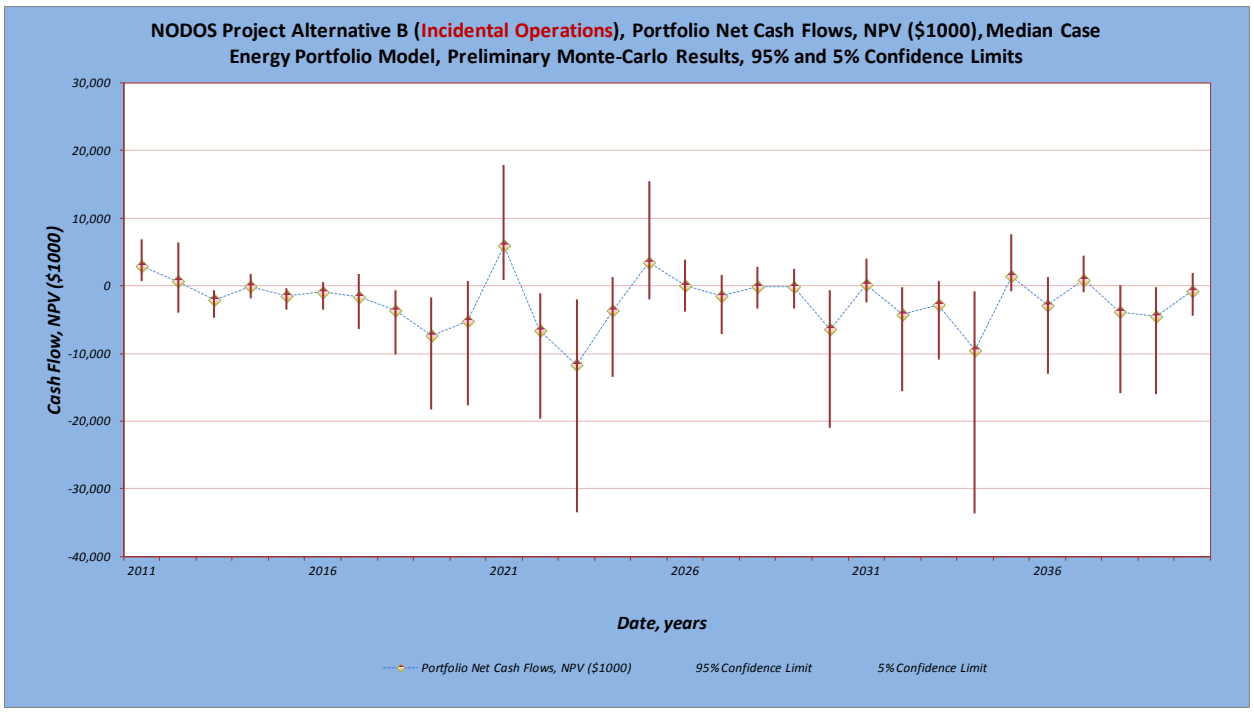


Figure H.B-5. NODOS Project, Power Portfolio-Annual Cash Flow, "Incidental," Alternative B

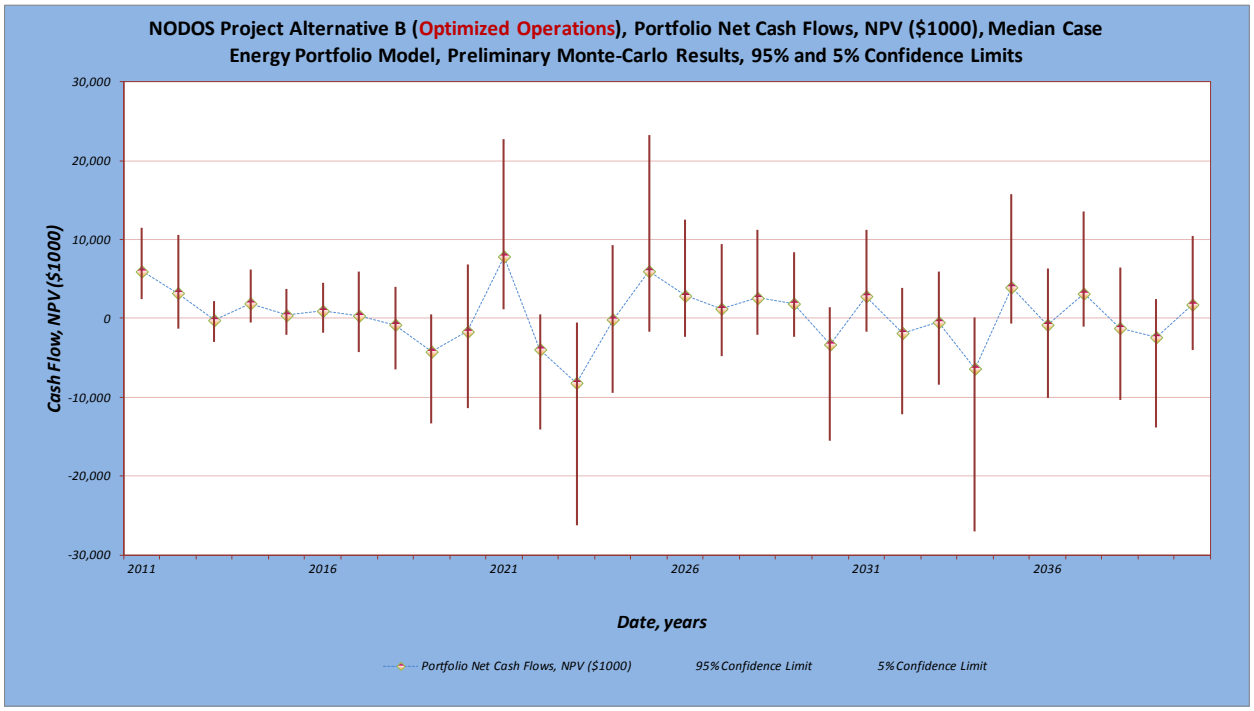


Figure H.B-6. NODOS Project, Power Portfolio-Annual Cash Flow, "Optimized," Alternative B

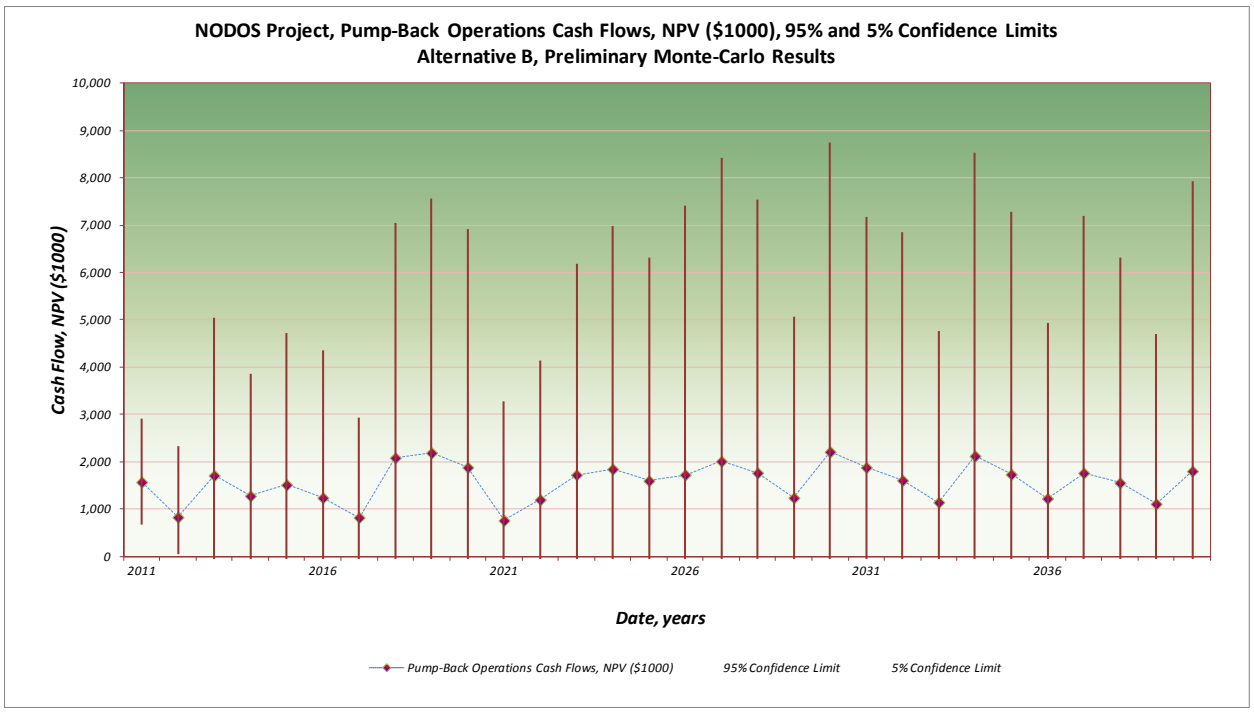


Figure H.B-7. NODOS Project, Power Portfolio-Annual Cash Flow, "Pump-Back," Alternative B

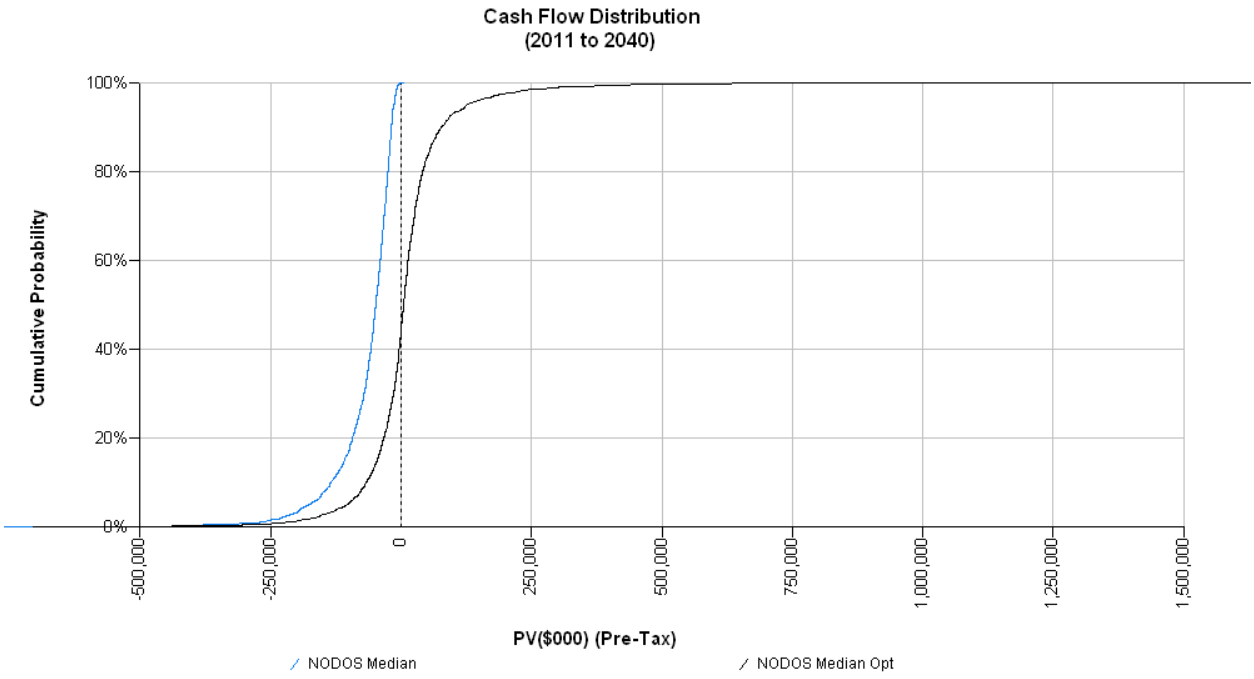


Figure H.B-8. NODOS Project, Power Portfolio Cumulative Probability Distribution, Alternative B "Incidental" vs. "Optimized"

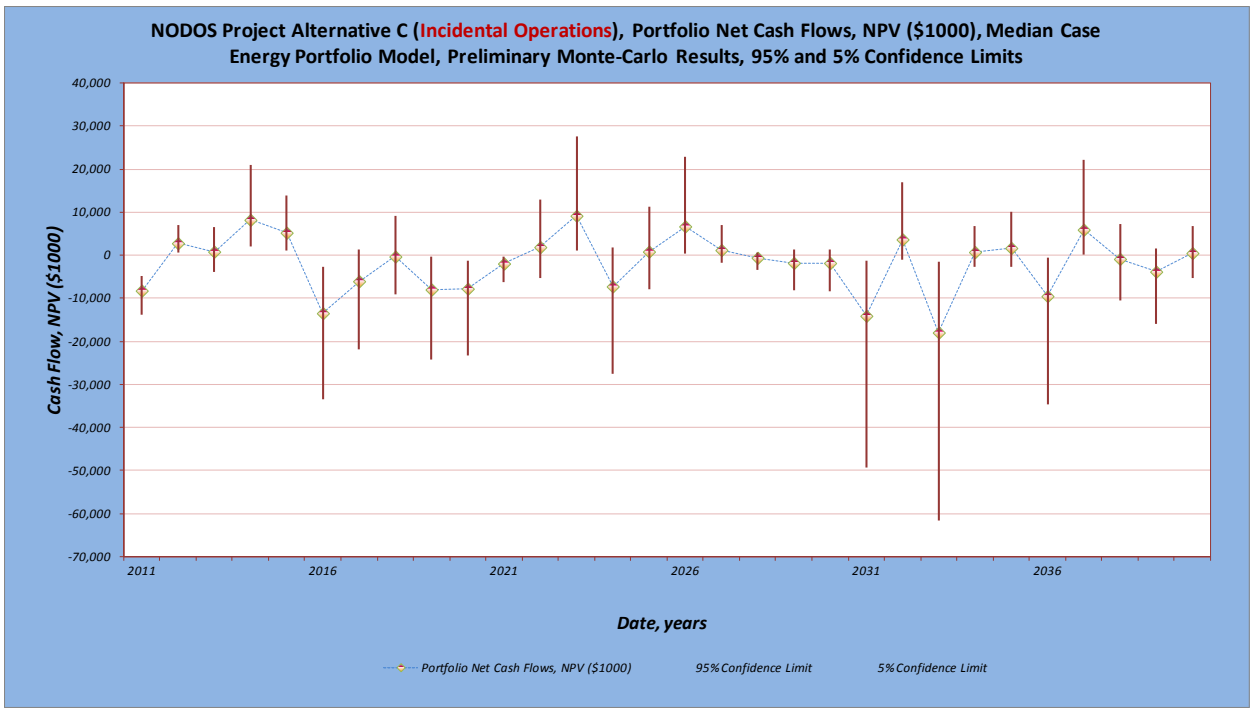


Figure H.B-9. NODOS Project, Power Portfolio-Annual Cash Flow, "Incidental," Alternative B

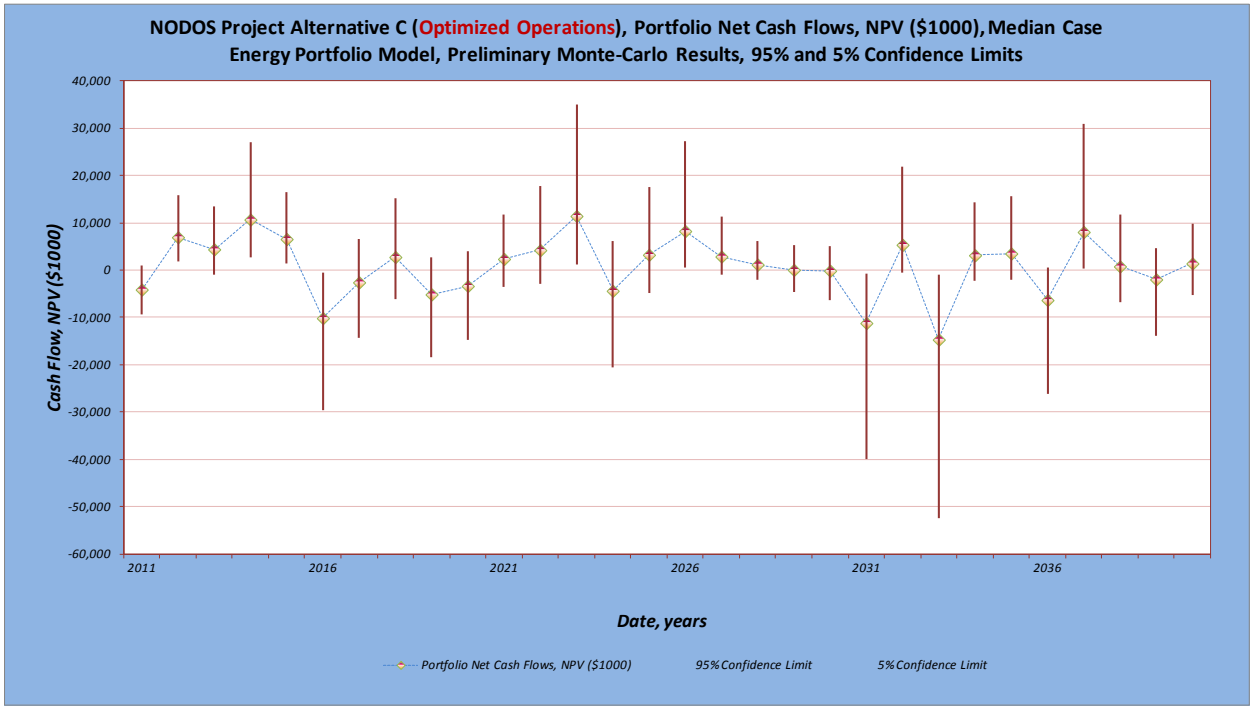


Figure H.B-10. NODOS Project, Power Portfolio-Annual Cash Flow, "Optimized," Alternative C

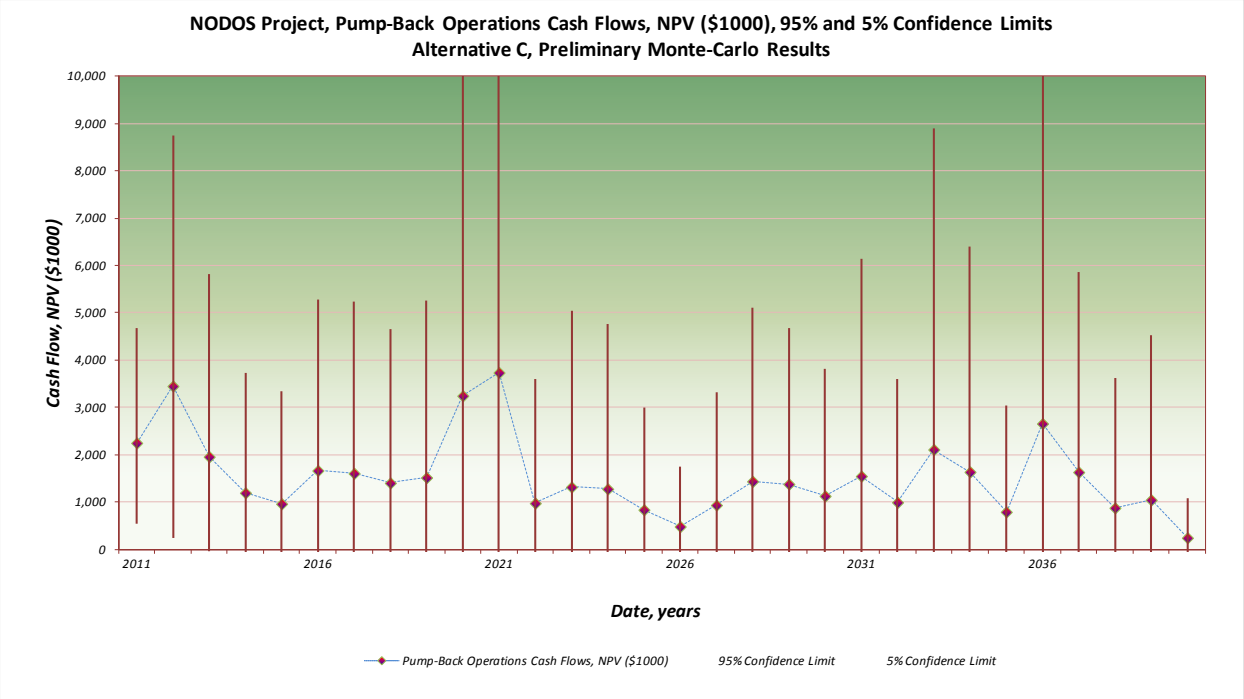


Figure H.B-11. NODOS Project, Power Portfolio-Annual Cash Flow, "Pump-Back," Alternative C

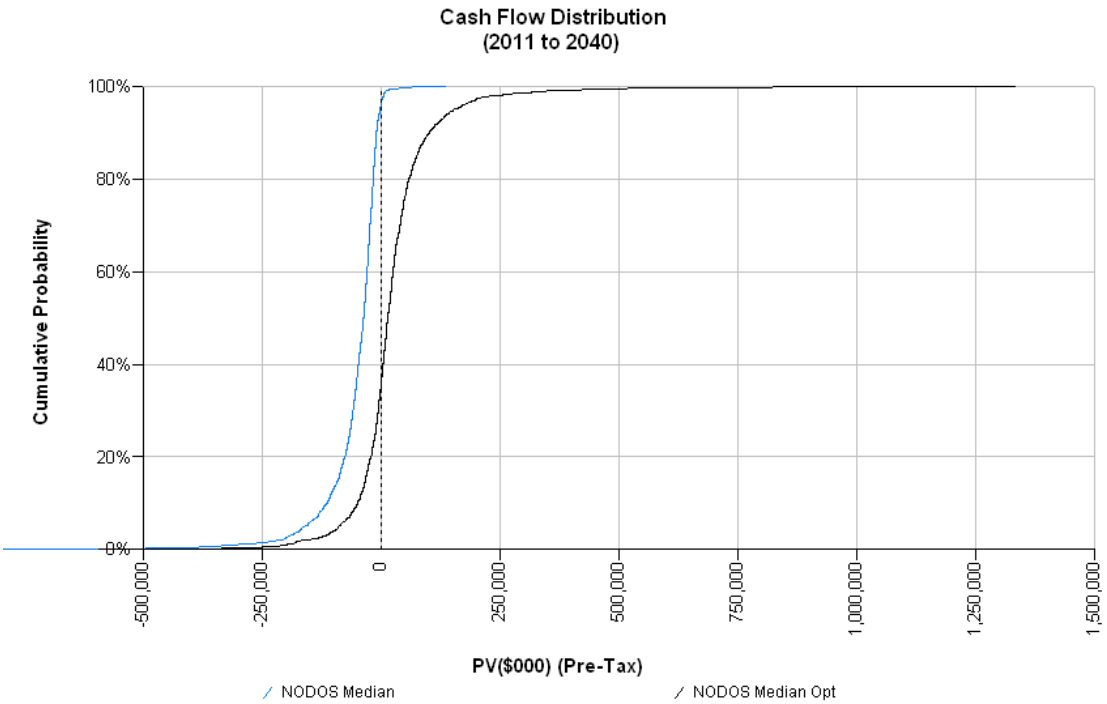


Figure H.B-12 NODOS Project, Power Portfolio Cumulative Probability Distribution, Alternative C "Incidental" vs. "Optimized"

# Attachment C –
# NODOS Project Power Operations

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Table H.C-1. NODOS Project, Power Operations, "Incidental," Alternative C

| NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period (Cont.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Incidental Pumping and Generation to Water Releases (no shaping) | | | | | | | |
| | | Incidental Pumping , MW | | | | | Incidental Generation, MW | | |
| | | TC Canal | GCID Canal | TRR | Sac River | Sites | Sites | TRR | Sac River |
| Plant Capacity, MW | | 6.00 | 3.39 | 19.68 | 65.65 | 181.35 | 123.00 | 9.33 | 10.80 |
| Plant Capacity, cfs | | 2250 | 3000 | 1890 | 2000 | 5900 | 5100 | 1500 | 1500 |
| Month | # of Hours | All Hours | | | | | All Hours | | |
| 1 | 744 | 2.28 | 0.37 | 2.73 | 39.11 | 118.75 | 0.00 | 0.00 | 0.00 |
| 2 | 672 | 1.46 | 0.06 | 0.00 | 3.13 | 44.87 | 0.00 | 0.00 | 0.00 |
| 3 | 744 | 0.03 | 0.09 | 0.00 | 0.00 | 0.11 | 0.05 | 0.00 | 0.00 |
| 4 | 720 | 0.49 | 2.11 | 0.00 | 0.00 | 0.63 | 0.37 | 0.00 | 0.00 |
| 5 | 744 | 0.45 | 2.12 | 0.00 | 0.00 | 0.00 | 2.52 | 0.40 | 0.40 |
| 6 | 720 | 0.59 | 1.66 | 0.00 | 0.53 | 0.00 | 36.39 | 7.38 | 6.41 |
| 7 | 744 | 0.65 | 1.55 | 0.00 | 30.75 | 0.18 | 60.89 | 7.30 | 0.00 |
| 8 | 744 | 1.10 | 2.03 | 0.00 | 1.01 | 0.00 | 12.45 | 0.60 | 4.96 |
| 9 | 720 | 0.09 | 0.35 | 0.00 | 0.00 | 0.00 | 23.79 | 1.52 | 9.10 |
| 10 | 744 | 0.08 | 0.69 | 0.00 | 0.00 | 0.00 | 12.94 | 0.16 | 5.11 |
| 11 | 720 | 2.44 | 1.55 | 12.30 | 42.85 | 151.73 | 9.86 | 0.00 | 0.00 |
| 12 | 744 | 1.39 | 0.19 | 0.00 | 2.52 | 41.50 | 0.02 | 0.00 | 0.00 |
| 13 | 744 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 672 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 9.91 | 0.00 | 0.00 |
| 15 | 744 | 0.01 | 0.09 | 0.00 | 0.00 | 0.09 | 2.12 | 0.00 | 0.00 |
| 16 | 720 | 0.08 | 1.87 | 0.00 | 0.00 | 0.81 | 26.21 | 0.00 | 0.00 |
| 17 | 744 | 0.83 | 2.25 | 0.32 | 0.33 | 1.53 | 1.43 | 0.05 | 0.00 |
| 18 | 720 | 0.66 | 2.70 | 0.00 | 8.05 | 0.00 | 0.71 | 1.26 | 0.07 |
| 19 | 744 | 1.31 | 2.35 | 0.00 | 0.00 | 0.00 | 3.19 | 1.21 | 3.96 |
| 20 | 744 | 1.20 | 2.81 | 6.01 | 2.17 | 23.49 | 49.02 | 0.00 | 0.31 |
| 21 | 720 | 0.11 | 0.39 | 0.00 | 0.00 | 0.00 | 21.02 | 1.70 | 5.27 |
| 22 | 744 | 0.10 | 0.41 | 0.00 | 0.00 | 0.00 | 13.78 | 2.46 | 2.36 |
| 23 | 720 | 0.01 | 0.30 | 0.00 | 0.00 | 0.00 | 6.01 | 1.54 | 9.11 |
| 24 | 744 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.32 | 0.71 | 2.00 |
| 25 | 744 | 0.00 | 0.13 | 0.00 | 2.41 | 5.12 | 0.00 | 0.04 | 0.00 |
| 26 | 696 | 2.00 | 0.49 | 3.95 | 29.40 | 108.94 | 0.00 | 0.00 | 0.00 |
| 27 | 744 | 0.24 | 0.10 | 0.00 | 2.52 | 11.82 | 0.12 | 0.00 | 0.00 |
| 28 | 720 | 0.09 | 1.95 | 0.00 | 0.00 | 0.86 | 0.32 | 0.00 | 0.00 |
| 29 | 744 | 0.99 | 2.20 | 0.00 | 0.41 | 0.88 | 0.16 | 0.31 | 0.00 |
| 30 | 720 | 0.63 | 1.93 | 0.00 | 7.86 | 0.00 | 1.48 | 5.96 | 0.00 |
| 31 | 744 | 0.65 | 1.53 | 0.00 | 0.16 | 0.00 | 24.09 | 7.18 | 2.93 |
| 32 | 744 | 1.58 | 2.76 | 5.85 | 2.52 | 33.19 | 12.00 | 0.08 | 1.01 |
| 33 | 720 | 0.11 | 0.37 | 0.00 | 0.00 | 0.00 | 34.96 | 1.71 | 9.09 |
| 34 | 744 | 0.01 | 0.39 | 0.00 | 0.00 | 0.00 | 34.33 | 2.41 | 2.74 |
| 35 | 720 | 0.00 | 0.31 | 0.00 | 0.00 | 0.00 | 28.76 | 1.59 | 9.11 |
| 36 | 744 | 0.00 | 0.15 | 0.00 | 0.00 | 0.00 | 6.54 | 1.06 | 3.97 |
| 37 | 744 | 0.00 | 0.13 | 0.00 | 0.00 | 0.00 | 0.36 | 0.06 | 0.20 |
| 38 | 672 | 0.08 | 0.09 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 |
| 39 | 744 | 2.31 | 0.37 | 1.01 | 5.64 | 66.64 | 0.00 | 0.00 | 0.56 |
| 40 | 720 | 0.08 | 2.46 | 0.00 | 0.00 | 0.00 | 0.29 | 0.00 | 8.07 |
| 41 | 744 | 0.10 | 2.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.51 | 9.07 |
| 42 | 720 | 0.05 | 1.65 | 0.00 | 0.00 | 0.00 | 14.39 | 7.29 | 8.00 |
| 43 | 744 | 0.06 | 1.39 | 0.00 | 0.00 | 0.00 | 58.89 | 7.39 | 9.10 |
| 44 | 744 | 0.09 | 1.89 | 0.00 | 0.00 | 0.00 | 35.51 | 0.43 | 5.36 |
| 45 | 720 | 0.04 | 0.58 | 0.00 | 0.00 | 0.00 | 9.79 | 0.05 | 5.68 |
| 46 | 744 | 0.07 | 0.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 | 8.31 |
| 47 | 720 | 0.01 | 0.52 | 0.00 | 0.00 | 0.00 | 8.93 | 0.05 | 6.11 |
| 48 | 744 | 0.00 | 0.27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 9.06 |
| 49 | 744 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.42 |
| 50 | 672 | 0.01 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 9.10 |
| 51 | 744 | 0.04 | 0.11 | 0.00 | 0.00 | 0.00 | 0.03 | 0.39 | 9.00 |
| 52 | 720 | 0.02 | 1.12 | 0.00 | 0.00 | 0.00 | 0.12 | 7.07 | 9.05 |
| 53 | 744 | 0.01 | 0.73 | 0.00 | 0.00 | 0.00 | 0.21 | 5.26 | 7.61 |
| 54 | 720 | 0.03 | 1.14 | 0.00 | 0.00 | 0.00 | 1.12 | 7.40 | 9.11 |
| 55 | 744 | 0.29 | 1.36 | 0.00 | 0.00 | 0.00 | 11.20 | 4.49 | 2.76 |
| 56 | 744 | 0.43 | 1.30 | 0.00 | 2.31 | 2.02 | 0.54 | 0.26 | 0.00 |
| 57 | 720 | 0.12 | 0.35 | 0.00 | 0.00 | 0.05 | 24.83 | 0.00 | 0.00 |
| 58 | 744 | 0.07 | 0.56 | 0.00 | 0.00 | 0.02 | 36.54 | 0.00 | 0.00 |
| 59 | 720 | 0.01 | 0.32 | 0.00 | 0.00 | 0.01 | 30.75 | 0.00 | 0.00 |
| 60 | 744 | 1.62 | 0.75 | 5.83 | 9.62 | 39.96 | 10.00 | 0.00 | 0.00 |

Table H.C-1. NODOS Project, Power Operations, "Incidental," Alternative C (Cont.)

| NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period (Cont.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Incidental Pumping and Generation to Water Releases (no shaping) | | | | | | | |
| | | Incidental Pumping , MW | | | | | Incidental Generation, MW | | |
| | | TC Canal | GCID Canal | TRR | Sac River | Sites | Sites | TRR | Sac River |
| Plant Capacity, MW | | 6.00 | 3.39 | 19.68 | 65.65 | 181.35 | 123.00 | 9.33 | 10.80 |
| Plant Capacity, cfs | | 2250 | 3000 | 1890 | 2000 | 5900 | 5100 | 1500 | 1500 |
| Month | # of Hours | All Hours | | | | | All Hours | | |
| 61 | 744 | 2.05 | 0.30 | 2.27 | 32.51 | 66.47 | 0.00 | 0.00 | 0.00 |
| 62 | 672 | 2.44 | 0.47 | 3.95 | 44.01 | 94.21 | 0.37 | 0.00 | 0.00 |
| 63 | 744 | 2.44 | 1.76 | 18.06 | 44.01 | 139.51 | 8.38 | 0.00 | 0.00 |
| 64 | 720 | 2.15 | 2.67 | 8.65 | 0.00 | 73.77 | 1.27 | 0.00 | 0.00 |
| 65 | 744 | 2.58 | 2.86 | 6.00 | 1.33 | 59.19 | 12.80 | 0.00 | 0.00 |
| 66 | 720 | 0.66 | 1.67 | 0.00 | 34.96 | 0.29 | 57.85 | 7.32 | 0.00 |
| 67 | 744 | 0.70 | 1.55 | 0.00 | 36.59 | 0.26 | 55.69 | 7.30 | 0.00 |
| 68 | 744 | 1.18 | 2.01 | 0.00 | 0.97 | 0.00 | 24.53 | 0.61 | 4.70 |
| 69 | 720 | 0.11 | 0.35 | 0.00 | 0.00 | 0.00 | 9.42 | 1.41 | 9.07 |
| 70 | 744 | 0.26 | 0.76 | 0.00 | 0.00 | 0.00 | 8.08 | 0.14 | 9.11 |
| 71 | 720 | 0.02 | 0.46 | 0.00 | 0.00 | 0.00 | 7.69 | 0.05 | 9.08 |
| 72 | 744 | 0.00 | 0.27 | 0.00 | 0.00 | 0.00 | 0.49 | 0.05 | 5.07 |
| 73 | 744 | 2.28 | 0.24 | 1.85 | 36.37 | 101.85 | 0.00 | 0.00 | 0.00 |
| 74 | 696 | 1.83 | 0.31 | 2.24 | 21.80 | 84.98 | 0.00 | 0.00 | 0.00 |
| 75 | 744 | 2.43 | 1.44 | 13.64 | 13.93 | 128.23 | 0.00 | 0.00 | 0.00 |
| 76 | 720 | 0.05 | 2.77 | 6.11 | 0.00 | 20.69 | 24.83 | 0.00 | 0.00 |
| 77 | 744 | 0.46 | 2.14 | 0.00 | 0.00 | 0.31 | 1.31 | 0.40 | 0.36 |
| 78 | 720 | 0.39 | 1.66 | 0.00 | 0.46 | 0.00 | 0.69 | 7.38 | 5.82 |
| 79 | 744 | 0.42 | 1.50 | 0.00 | 24.05 | 0.02 | 1.49 | 7.55 | 0.00 |
| 80 | 744 | 0.70 | 1.29 | 0.00 | 0.70 | 0.00 | 24.47 | 5.07 | 6.56 |
| 81 | 720 | 0.06 | 0.34 | 0.00 | 0.00 | 0.00 | 16.73 | 1.84 | 9.07 |
| 82 | 744 | 0.04 | 0.41 | 0.00 | 0.00 | 0.00 | 8.43 | 2.36 | 2.42 |
| 83 | 720 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | 0.54 | 1.21 | 5.86 |
| 84 | 744 | 0.00 | 0.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.09 | 4.70 |
| 85 | 744 | 2.28 | 0.27 | 1.81 | 38.52 | 110.89 | 0.00 | 0.00 | 0.15 |
| 86 | 672 | 2.44 | 0.47 | 3.81 | 27.81 | 118.63 | 0.00 | 0.00 | 0.00 |
| 87 | 744 | 0.01 | 0.10 | 0.00 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 |
| 88 | 720 | 0.06 | 2.00 | 0.00 | 0.00 | 0.65 | 22.95 | 0.02 | 0.00 |
| 89 | 744 | 0.20 | 1.89 | 0.00 | 0.14 | 0.00 | 18.21 | 0.69 | 0.00 |
| 90 | 720 | 0.50 | 1.62 | 0.00 | 2.37 | 0.00 | 51.29 | 7.19 | 0.18 |
| 91 | 744 | 1.24 | 1.78 | 0.00 | 0.00 | 0.00 | 53.56 | 5.96 | 4.41 |
| 92 | 744 | 1.00 | 2.03 | 0.00 | 0.00 | 0.00 | 33.01 | 0.44 | 5.38 |
| 93 | 720 | 0.09 | 0.36 | 0.00 | 0.00 | 0.00 | 22.72 | 1.72 | 9.08 |
| 94 | 744 | 0.07 | 0.43 | 0.00 | 0.00 | 0.00 | 20.96 | 2.56 | 9.00 |
| 95 | 720 | 0.02 | 0.33 | 0.00 | 0.00 | 0.00 | 18.60 | 1.56 | 9.10 |
| 96 | 744 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 | 0.13 | 0.09 | 0.83 |
| 97 | 744 | 2.12 | 0.37 | 2.73 | 33.66 | 102.75 | 0.00 | 0.00 | 0.00 |
| 98 | 672 | 2.26 | 0.49 | 3.95 | 38.61 | 120.06 | 0.00 | 0.00 | 0.00 |
| 99 | 744 | 2.13 | 0.28 | 1.83 | 3.05 | 66.87 | 0.00 | 0.05 | 0.00 |
| 100 | 720 | 0.17 | 1.77 | 0.00 | 1.92 | 0.31 | 0.81 | 0.67 | 0.44 |
| 101 | 744 | 0.52 | 2.02 | 0.00 | 0.00 | 0.00 | 8.85 | 0.51 | 9.10 |
| 102 | 720 | 0.48 | 1.57 | 0.00 | 0.00 | 0.00 | 11.56 | 7.32 | 9.07 |
| 103 | 744 | 0.50 | 1.48 | 0.00 | 25.43 | 0.00 | 50.55 | 7.64 | 0.05 |
| 104 | 744 | 0.38 | 1.00 | 0.00 | 0.00 | 0.00 | 10.53 | 5.80 | 9.11 |
| 105 | 720 | 0.15 | 0.54 | 0.00 | 0.00 | 0.00 | 7.69 | 0.44 | 8.86 |
| 106 | 744 | 0.07 | 0.69 | 0.00 | 0.00 | 0.01 | 0.47 | 0.00 | 0.69 |
| 107 | 720 | 0.01 | 0.32 | 0.00 | 0.00 | 0.01 | 0.02 | 0.00 | 0.00 |
| 108 | 744 | 1.74 | 1.16 | 9.45 | 24.98 | 104.10 | 0.00 | 0.00 | 0.00 |
| 109 | 744 | 2.36 | 0.37 | 2.73 | 41.51 | 122.79 | 0.00 | 0.00 | 0.00 |
| 110 | 672 | 1.27 | 0.06 | 0.00 | 3.30 | 40.30 | 0.00 | 0.00 | 0.00 |
| 111 | 744 | 0.01 | 0.07 | 0.00 | 0.00 | 0.06 | 0.01 | 0.00 | 0.00 |
| 112 | 720 | 0.07 | 1.41 | 0.00 | 0.00 | 0.49 | 0.15 | 0.00 | 0.00 |
| 113 | 744 | 0.74 | 2.28 | 0.82 | 0.45 | 3.38 | 0.25 | 0.00 | 0.00 |
| 114 | 720 | 0.62 | 2.78 | 0.00 | 8.31 | 3.58 | 5.01 | 0.00 | 0.00 |
| 115 | 744 | 1.54 | 2.79 | 0.00 | 0.17 | 0.00 | 61.68 | 0.03 | 4.53 |
| 116 | 744 | 1.22 | 2.07 | 0.00 | 0.00 | 0.00 | 13.23 | 0.12 | 4.81 |
| 117 | 720 | 0.09 | 0.38 | 0.00 | 0.00 | 0.00 | 24.86 | 1.27 | 2.75 |
| 118 | 744 | 0.58 | 2.08 | 12.35 | 2.48 | 57.67 | 10.14 | 0.00 | 0.19 |
| 119 | 720 | 0.00 | 0.24 | 0.00 | 0.00 | 0.00 | 9.07 | 0.86 | 1.32 |
| 120 | 744 | 0.00 | 0.20 | 0.00 | 1.78 | 3.96 | 0.08 | 0.06 | 0.04 |

Table H.C-1. NODOS Project, Power Operations, "Incidental," Alternative C (Cont.)

| NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period (Cont.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Incidental Pumping and Generation to Water Releases (no shaping) | | | | | | | |
| | | Incidental Pumping , MW | | | | | Incidental Generation, MW | | |
| | | TC Canal | GCID Canal | TRR | Sac River | Sites | Sites | TRR | Sac River |
| Plant Capacity, MW | | 6.00 | 3.39 | 19.68 | 65.65 | 181.35 | 123.00 | 9.33 | 10.80 |
| Plant Capacity, cfs | | 2250 | 3000 | 1890 | 2000 | 5900 | 5100 | 1500 | 1500 |
| Month | # of Hours | All Hours | | | | | All Hours | | |
| 121 | 744 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 122 | 696 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 123 | 744 | 0.02 | 0.05 | 0.00 | 0.00 | 0.08 | 1.70 | 0.00 | 0.00 |
| 124 | 720 | 0.05 | 1.31 | 0.00 | 0.00 | 0.40 | 26.04 | 0.00 | 0.00 |
| 125 | 744 | 0.63 | 2.06 | 0.00 | 0.51 | 0.64 | 26.32 | 0.00 | 0.00 |
| 126 | 720 | 0.63 | 2.85 | 0.00 | 8.60 | 0.40 | 20.96 | 0.02 | 0.00 |
| 127 | 744 | 0.73 | 2.79 | 0.00 | 12.94 | 5.98 | 47.01 | 0.00 | 0.06 |
| 128 | 744 | 1.17 | 2.05 | 0.00 | 0.00 | 0.00 | 23.16 | 0.03 | 4.06 |
| 129 | 720 | 0.28 | 1.61 | 9.01 | 0.00 | 27.36 | 16.57 | 0.10 | 0.35 |
| 130 | 744 | 0.19 | 0.45 | 0.00 | 0.00 | 0.00 | 7.31 | 2.36 | 1.31 |
| 131 | 720 | 0.39 | 0.26 | 0.00 | 2.52 | 14.65 | 0.36 | 0.20 | 0.03 |
| 132 | 744 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.61 | 0.00 |
| 133 | 744 | 0.00 | 0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 |
| 134 | 672 | 0.00 | 0.06 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 |
| 135 | 744 | 0.05 | 0.13 | 0.00 | 0.00 | 0.19 | 0.00 | 0.06 | 0.00 |
| 136 | 720 | 0.09 | 2.34 | 0.00 | 0.00 | 0.00 | 0.00 | 1.17 | 0.00 |
| 137 | 744 | 0.34 | 2.21 | 0.00 | 0.00 | 0.00 | 0.58 | 0.48 | 0.07 |
| 138 | 720 | 0.52 | 1.64 | 0.00 | 0.00 | 0.00 | 10.08 | 7.38 | 2.08 |
| 139 | 744 | 0.58 | 1.39 | 0.00 | 0.00 | 0.00 | 58.38 | 7.39 | 9.08 |
| 140 | 744 | 0.91 | 1.65 | 0.00 | 0.00 | 0.00 | 3.47 | 2.28 | 9.00 |
| 141 | 720 | 0.08 | 0.33 | 0.00 | 0.00 | 0.00 | 32.00 | 1.71 | 9.02 |
| 142 | 744 | 0.03 | 0.42 | 0.00 | 0.00 | 0.00 | 26.50 | 2.29 | 9.01 |
| 143 | 720 | 2.03 | 1.32 | 9.80 | 29.23 | 111.92 | 25.39 | 0.00 | 0.00 |
| 144 | 744 | 2.05 | 1.40 | 11.39 | 11.23 | 102.39 | 0.00 | 0.00 | 0.00 |
| 145 | 744 | 0.03 | 0.12 | 0.00 | 1.54 | 4.07 | 0.00 | 0.00 | 0.00 |
| 146 | 672 | 2.44 | 0.39 | 3.37 | 2.80 | 77.77 | 0.00 | 0.00 | 0.00 |
| 147 | 744 | 0.21 | 0.10 | 0.00 | 2.52 | 10.65 | 0.04 | 0.00 | 0.83 |
| 148 | 720 | 0.19 | 2.17 | 0.00 | 0.00 | 0.00 | 0.90 | 0.00 | 9.10 |
| 149 | 744 | 0.74 | 2.22 | 0.00 | 0.00 | 0.00 | 12.56 | 0.32 | 9.00 |
| 150 | 720 | 0.44 | 1.55 | 0.00 | 0.00 | 0.00 | 48.11 | 7.45 | 9.00 |
| 151 | 744 | 0.47 | 1.40 | 0.00 | 0.00 | 0.00 | 6.27 | 7.33 | 9.00 |
| 152 | 744 | 0.79 | 2.00 | 0.00 | 0.00 | 0.00 | 45.16 | 0.50 | 9.00 |
| 153 | 720 | 0.28 | 0.55 | 0.00 | 0.00 | 0.00 | 18.63 | 0.05 | 9.08 |
| 154 | 744 | 0.16 | 0.74 | 0.00 | 0.00 | 0.00 | 10.04 | 0.07 | 6.03 |
| 155 | 720 | 0.01 | 0.27 | 0.00 | 0.00 | 0.00 | 7.02 | 0.05 | 6.04 |
| 156 | 744 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 | 0.40 | 0.00 | 0.33 |
| 157 | 744 | 2.28 | 0.29 | 2.40 | 38.48 | 98.32 | 0.00 | 0.00 | 0.00 |
| 158 | 672 | 2.09 | 0.49 | 3.95 | 33.70 | 101.78 | 0.00 | 0.00 | 0.00 |
| 159 | 744 | 2.43 | 1.79 | 17.87 | 44.01 | 164.58 | 0.02 | 0.00 | 0.00 |
| 160 | 720 | 0.40 | 2.76 | 7.08 | 0.00 | 35.14 | 0.10 | 0.01 | 0.00 |
| 161 | 744 | 0.10 | 1.89 | 0.00 | 0.97 | 0.00 | 0.12 | 1.31 | 0.00 |
| 162 | 720 | 0.37 | 1.64 | 0.00 | 22.33 | 0.00 | 1.07 | 7.42 | 0.13 |
| 163 | 744 | 0.42 | 1.40 | 0.00 | 0.00 | 0.00 | 19.12 | 7.39 | 9.06 |
| 164 | 744 | 0.69 | 2.01 | 0.00 | 0.00 | 0.00 | 11.44 | 0.52 | 8.71 |
| 165 | 720 | 0.05 | 0.36 | 0.00 | 0.00 | 0.00 | 27.67 | 1.37 | 9.10 |
| 166 | 744 | 0.17 | 0.76 | 0.00 | 0.00 | 0.00 | 13.82 | 0.16 | 5.68 |
| 167 | 720 | 0.02 | 0.54 | 0.00 | 0.00 | 0.00 | 28.63 | 0.11 | 9.11 |
| 168 | 744 | 0.00 | 0.14 | 0.00 | 0.00 | 0.00 | 9.69 | 0.90 | 4.06 |
| 169 | 744 | 0.40 | 0.07 | 0.00 | 2.48 | 12.99 | 0.00 | 0.06 | 0.18 |
| 170 | 696 | 2.18 | 0.49 | 3.95 | 34.58 | 107.91 | 0.00 | 0.00 | 0.00 |
| 171 | 744 | 2.21 | 1.59 | 15.14 | 28.93 | 142.42 | 0.07 | 0.00 | 0.00 |
| 172 | 720 | 0.18 | 2.17 | 0.00 | 0.00 | 0.00 | 0.84 | 0.00 | 9.10 |
| 173 | 744 | 0.24 | 2.21 | 0.00 | 0.32 | 0.00 | 10.58 | 0.47 | 9.11 |
| 174 | 720 | 0.14 | 1.69 | 0.00 | 15.48 | 0.00 | 36.58 | 7.12 | 0.00 |
| 175 | 744 | 0.14 | 1.91 | 0.00 | 0.10 | 0.00 | 57.37 | 4.22 | 9.10 |
| 176 | 744 | 0.25 | 2.03 | 0.00 | 0.00 | 0.00 | 29.93 | 0.19 | 9.00 |
| 177 | 720 | 0.12 | 0.62 | 0.00 | 0.00 | 0.00 | 14.59 | 0.00 | 9.00 |
| 178 | 744 | 0.09 | 0.74 | 0.00 | 0.00 | 0.00 | 1.20 | 0.00 | 9.00 |
| 179 | 720 | 0.01 | 0.41 | 0.00 | 0.00 | 0.00 | 5.18 | 0.00 | 9.08 |
| 180 | 744 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | 0.27 | 0.00 | 5.83 |

Table H.C-1. NODOS Project, Power Operations, "Incidental," Alternative C (Cont.)

| NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period (Cont.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Incidental Pumping and Generation to Water Releases (no shaping) | | | | | | | |
| | | Incidental Pumping , MW | | | | | Incidental Generation, MW | | |
| | | TC Canal | GCID Canal | TRR | Sac River | Sites | Sites | TRR | Sac River |
| Plant Capacity, MW | | 6.00 | 3.39 | 19.68 | 65.65 | 181.35 | 123.00 | 9.33 | 10.80 |
| Plant Capacity, cfs | | 2250 | 3000 | 1890 | 2000 | 5900 | 5100 | 1500 | 1500 |
| Month | # of Hours | All Hours | | | | | All Hours | | |
| 181 | 744 | 2.20 | 0.27 | 1.81 | 36.03 | 96.72 | 0.00 | 0.00 | 0.06 |
| 182 | 672 | 0.09 | 0.06 | 0.00 | 0.62 | 3.12 | 0.00 | 0.00 | 0.97 |
| 183 | 744 | 0.01 | 0.10 | 0.00 | 0.00 | 0.00 | 0.06 | 0.30 | 9.11 |
| 184 | 720 | 0.00 | 1.25 | 0.00 | 0.00 | 0.00 | 0.31 | 5.66 | 8.43 |
| 185 | 744 | 0.00 | 1.12 | 0.00 | 0.00 | 0.00 | 0.46 | 5.64 | 7.74 |
| 186 | 720 | 0.03 | 1.86 | 0.00 | 0.00 | 0.00 | 6.87 | 5.94 | 9.06 |
| 187 | 744 | 0.00 | 2.74 | 0.00 | 0.00 | 0.00 | 24.34 | 0.31 | 9.00 |
| 188 | 744 | 0.00 | 2.09 | 0.00 | 0.00 | 0.00 | 26.02 | 0.00 | 9.00 |
| 189 | 720 | 0.00 | 0.61 | 0.00 | 0.00 | 0.00 | 34.04 | 0.00 | 9.00 |
| 190 | 744 | 0.06 | 0.77 | 0.00 | 0.00 | 0.00 | 11.53 | 0.00 | 9.08 |
| 191 | 720 | 0.01 | 0.43 | 0.00 | 0.00 | 0.00 | 27.28 | 0.00 | 5.60 |
| 192 | 744 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.77 |
| 193 | 744 | 0.00 | 0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.15 |
| 194 | 672 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 9.07 |
| 195 | 744 | 2.04 | 1.49 | 14.25 | 29.72 | 84.73 | 0.08 | 0.00 | 0.00 |
| 196 | 720 | 0.92 | 2.74 | 5.74 | 0.00 | 30.93 | 0.82 | 0.29 | 0.86 |
| 197 | 744 | 0.11 | 1.36 | 0.00 | 0.00 | 0.00 | 11.40 | 5.66 | 9.10 |
| 198 | 720 | 0.37 | 2.80 | 0.00 | 0.00 | 0.00 | 34.49 | 0.38 | 9.00 |
| 199 | 744 | 0.38 | 2.71 | 0.00 | 0.00 | 0.00 | 57.44 | 0.00 | 9.00 |
| 200 | 744 | 0.30 | 1.98 | 0.00 | 0.00 | 0.00 | 27.13 | 0.00 | 9.06 |
| 201 | 720 | 0.11 | 0.38 | 0.00 | 0.00 | 0.00 | 25.02 | 0.00 | 5.53 |
| 202 | 744 | 0.07 | 0.71 | 0.00 | 0.00 | 0.00 | 23.24 | 0.00 | 5.30 |
| 203 | 720 | 0.01 | 0.51 | 0.00 | 0.00 | 0.00 | 12.76 | 0.00 | 0.37 |
| 204 | 744 | 0.00 | 0.30 | 0.00 | 0.00 | 0.00 | 0.60 | 0.00 | 0.00 |
| 205 | 744 | 2.38 | 0.09 | 0.46 | 20.31 | 50.80 | 0.00 | 0.00 | 0.04 |
| 206 | 672 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.09 |
| 207 | 744 | 0.01 | 0.10 | 0.00 | 0.00 | 0.00 | 0.60 | 0.30 | 0.85 |
| 208 | 720 | 0.00 | 1.64 | 0.00 | 0.00 | 0.00 | 9.95 | 5.43 | 7.25 |
| 209 | 744 | 0.00 | 1.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.78 | 4.43 |
| 210 | 720 | 0.00 | 1.70 | 0.00 | 17.20 | 0.00 | 3.11 | 7.05 | 0.03 |
| 211 | 744 | 0.00 | 2.73 | 0.00 | 0.19 | 0.00 | 45.31 | 0.40 | 2.29 |
| 212 | 744 | 0.00 | 1.94 | 0.00 | 2.26 | 2.32 | 20.78 | 0.00 | 0.02 |
| 213 | 720 | 0.00 | 0.59 | 0.00 | 2.56 | 2.67 | 31.82 | 0.00 | 0.20 |
| 214 | 744 | 0.06 | 0.77 | 0.00 | 0.00 | 0.00 | 2.29 | 0.00 | 3.03 |
| 215 | 720 | 0.02 | 0.53 | 0.00 | 0.00 | 0.00 | 26.26 | 0.00 | 0.20 |
| 216 | 744 | 0.00 | 0.27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 217 | 744 | 0.00 | 0.14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 218 | 696 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 219 | 744 | 2.43 | 1.72 | 17.28 | 44.01 | 96.17 | 0.19 | 0.00 | 0.00 |
| 220 | 720 | 0.08 | 0.87 | 0.00 | 10.30 | 0.99 | 0.32 | 4.75 | 0.00 |
| 221 | 744 | 0.05 | 0.98 | 0.00 | 13.69 | 0.03 | 3.44 | 5.57 | 0.00 |
| 222 | 720 | 0.06 | 1.27 | 0.00 | 22.13 | 0.02 | 55.63 | 7.41 | 0.00 |
| 223 | 744 | 0.09 | 1.19 | 0.00 | 19.13 | 0.01 | 54.45 | 6.89 | 0.00 |
| 224 | 744 | 0.50 | 1.37 | 0.00 | 0.31 | 0.00 | 11.73 | 0.43 | 9.09 |
| 225 | 720 | 0.08 | 0.45 | 0.00 | 0.00 | 0.00 | 8.66 | 0.00 | 5.98 |
| 226 | 744 | 0.08 | 0.56 | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | 9.08 |
| 227 | 720 | 0.02 | 0.38 | 0.00 | 0.00 | 0.00 | 3.98 | 0.00 | 9.06 |
| 228 | 744 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | 0.13 | 0.00 | 5.42 |
| 229 | 744 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.34 |
| 230 | 672 | 1.68 | 0.40 | 3.25 | 20.69 | 45.79 | 0.01 | 0.00 | 0.00 |
| 231 | 744 | 2.28 | 1.33 | 13.03 | 20.89 | 84.23 | 0.05 | 0.32 | 0.00 |
| 232 | 720 | 0.04 | 0.95 | 0.00 | 1.92 | 0.00 | 0.72 | 4.84 | 0.18 |
| 233 | 744 | 0.12 | 1.42 | 0.00 | 0.44 | 0.00 | 10.76 | 2.65 | 7.32 |
| 234 | 720 | 0.09 | 1.21 | 0.00 | 19.18 | 0.01 | 43.30 | 6.99 | 0.00 |
| 235 | 744 | 0.13 | 1.18 | 0.00 | 21.16 | 0.00 | 2.84 | 6.97 | 0.00 |
| 236 | 744 | 0.58 | 1.40 | 0.00 | 0.00 | 0.00 | 10.17 | 0.29 | 9.11 |
| 237 | 720 | 0.12 | 0.45 | 0.00 | 0.00 | 0.00 | 33.12 | 0.00 | 9.00 |
| 238 | 744 | 0.06 | 0.52 | 0.00 | 0.00 | 0.00 | 10.00 | 0.00 | 9.05 |
| 239 | 720 | 0.02 | 0.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.81 |
| 240 | 744 | 0.69 | 0.12 | 0.00 | 2.52 | 10.43 | 0.00 | 0.00 | 0.47 |

Table H.C-1. NODOS Project, Power Operations, "Incidental," Alternative C (Cont.)

| NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period (Cont.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Incidental Pumping and Generation to Water Releases (no shaping) | | | | | | | |
| | | Incidental Pumping , MW | | | | | Incidental Generation, MW | | |
| | | TC Canal | GCID Canal | TRR | Sac River | Sites | Sites | TRR | Sac River |
| Plant Capacity, MW | | 6.00 | 3.39 | 19.68 | 65.65 | 181.35 | 123.00 | 9.33 | 10.80 |
| Plant Capacity, cfs | | 2250 | 3000 | 1890 | 2000 | 5900 | 5100 | 1500 | 1500 |
| Month | # of Hours | All Hours | | | | | All Hours | | |
| 241 | 744 | 1.81 | 0.25 | 1.81 | 26.74 | 52.44 | 0.00 | 0.00 | 0.00 |
| 242 | 672 | 1.92 | 0.35 | 2.80 | 29.25 | 66.46 | 0.00 | 0.00 | 0.00 |
| 243 | 744 | 2.05 | 1.53 | 14.45 | 32.51 | 106.44 | 0.06 | 0.00 | 0.00 |
| 244 | 720 | 2.28 | 2.80 | 6.38 | 0.00 | 59.97 | 0.95 | 0.00 | 0.00 |
| 245 | 744 | 2.58 | 2.87 | 9.43 | 0.00 | 66.00 | 0.43 | 0.00 | 0.00 |
| 246 | 720 | 2.56 | 2.80 | 2.00 | 44.01 | 93.44 | 4.15 | 0.37 | 0.00 |
| 247 | 744 | 0.68 | 1.60 | 0.00 | 32.69 | 0.14 | 11.56 | 7.01 | 0.00 |
| 248 | 744 | 1.12 | 2.03 | 0.00 | 0.19 | 0.00 | 0.20 | 0.43 | 4.06 |
| 249 | 720 | 0.34 | 0.63 | 0.00 | 0.00 | 0.00 | 20.20 | 0.05 | 5.40 |
| 250 | 744 | 0.17 | 0.74 | 0.00 | 0.00 | 0.00 | 12.75 | 0.07 | 9.11 |
| 251 | 720 | 0.02 | 0.44 | 0.00 | 0.00 | 0.00 | 30.24 | 0.05 | 9.10 |
| 252 | 744 | 0.83 | 0.24 | 0.00 | 2.52 | 20.73 | 5.62 | 0.00 | 0.90 |
| 253 | 744 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 254 | 672 | 2.44 | 0.49 | 3.95 | 42.65 | 119.89 | 0.00 | 0.00 | 0.00 |
| 255 | 744 | 0.03 | 0.06 | 0.00 | 0.00 | 0.00 | 0.07 | 0.33 | 3.98 |
| 256 | 720 | 0.06 | 1.08 | 0.00 | 17.08 | 0.10 | 1.34 | 6.18 | 0.04 |
| 257 | 744 | 0.20 | 0.79 | 0.00 | 12.36 | 0.21 | 1.34 | 5.03 | 0.17 |
| 258 | 720 | 0.37 | 1.22 | 0.00 | 0.00 | 0.00 | 18.91 | 7.47 | 9.10 |
| 259 | 744 | 1.08 | 1.14 | 0.00 | 0.00 | 0.00 | 39.28 | 6.38 | 9.00 |
| 260 | 744 | 1.06 | 0.98 | 0.00 | 0.00 | 0.00 | 1.13 | 2.81 | 9.00 |
| 261 | 720 | 0.33 | 0.42 | 0.00 | 0.00 | 0.00 | 33.79 | 0.16 | 9.08 |
| 262 | 744 | 0.13 | 0.54 | 0.00 | 0.00 | 0.00 | 11.90 | 0.00 | 9.06 |
| 263 | 720 | 0.01 | 0.22 | 0.00 | 0.00 | 0.00 | 28.11 | 0.00 | 7.09 |
| 264 | 744 | 0.00 | 0.14 | 0.00 | 0.00 | 0.00 | 0.31 | 0.00 | 0.45 |
| 265 | 744 | 2.43 | 0.35 | 2.73 | 44.01 | 99.98 | 0.00 | 0.00 | 0.00 |
| 266 | 696 | 2.44 | 0.47 | 3.95 | 44.01 | 112.93 | 0.02 | 0.00 | 0.00 |
| 267 | 744 | 2.20 | 1.61 | 15.84 | 36.81 | 143.24 | 0.00 | 0.00 | 0.00 |
| 268 | 720 | 2.27 | 2.78 | 6.95 | 0.00 | 74.96 | 18.05 | 0.00 | 0.00 |
| 269 | 744 | 1.36 | 2.87 | 9.14 | 0.42 | 50.75 | 26.97 | 0.00 | 0.00 |
| 270 | 720 | 0.57 | 2.80 | 0.00 | 7.66 | 0.47 | 33.72 | 0.00 | 0.00 |
| 271 | 744 | 0.71 | 2.79 | 0.00 | 14.90 | 8.70 | 2.39 | 0.00 | 0.00 |
| 272 | 744 | 1.20 | 2.25 | 1.24 | 0.59 | 4.76 | 8.10 | 0.00 | 0.25 |
| 273 | 720 | 0.37 | 0.61 | 0.00 | 0.00 | 0.00 | 9.73 | 0.18 | 5.24 |
| 274 | 744 | 0.10 | 0.47 | 0.00 | 0.00 | 0.00 | 19.11 | 2.42 | 9.06 |
| 275 | 720 | 0.03 | 0.33 | 0.00 | 0.00 | 0.00 | 15.15 | 1.64 | 9.09 |
| 276 | 744 | 2.05 | 1.31 | 11.27 | 19.16 | 120.51 | 19.86 | 0.00 | 0.00 |
| 277 | 744 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.76 | 0.00 | 0.00 |
| 278 | 672 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.80 | 0.00 | 0.00 |
| 279 | 744 | 0.02 | 0.09 | 0.00 | 0.00 | 0.08 | 12.16 | 0.00 | 0.00 |
| 280 | 720 | 0.37 | 1.79 | 0.00 | 0.00 | 0.21 | 29.75 | 0.00 | 0.00 |
| 281 | 744 | 0.45 | 1.67 | 0.00 | 0.36 | 0.54 | 5.83 | 0.01 | 0.00 |
| 282 | 720 | 0.63 | 2.77 | 0.00 | 9.40 | 0.53 | 0.31 | 0.79 | 0.00 |
| 283 | 744 | 0.82 | 1.60 | 0.00 | 0.33 | 0.00 | 0.02 | 7.09 | 1.23 |
| 284 | 744 | 1.21 | 1.67 | 0.00 | 0.00 | 0.00 | 0.08 | 2.73 | 2.30 |
| 285 | 720 | 0.10 | 0.33 | 0.00 | 0.00 | 0.00 | 0.08 | 1.85 | 9.08 |
| 286 | 744 | 0.02 | 0.40 | 0.00 | 0.00 | 0.00 | 0.01 | 2.44 | 9.00 |
| 287 | 720 | 0.01 | 0.27 | 0.00 | 0.00 | 0.00 | 0.01 | 1.34 | 9.09 |
| 288 | 744 | 2.20 | 1.39 | 12.30 | 34.39 | 134.95 | 0.00 | 0.00 | 0.00 |
| 289 | 744 | 2.44 | 0.37 | 2.73 | 18.72 | 104.81 | 0.00 | 0.00 | 0.20 |
| 290 | 672 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.76 |
| 291 | 744 | 0.41 | 0.17 | 0.00 | 2.41 | 14.36 | 0.00 | 0.00 | 0.12 |
| 292 | 720 | 0.37 | 2.60 | 0.00 | 0.00 | 0.41 | 0.00 | 0.02 | 0.00 |
| 293 | 744 | 0.35 | 2.01 | 0.00 | 0.00 | 0.00 | 0.49 | 0.52 | 0.34 |
| 294 | 720 | 0.41 | 2.14 | 0.00 | 0.00 | 0.00 | 6.26 | 4.46 | 6.54 |
| 295 | 744 | 0.48 | 1.42 | 0.00 | 0.00 | 0.00 | 59.33 | 7.20 | 9.09 |
| 296 | 744 | 0.75 | 1.83 | 0.00 | 0.00 | 0.00 | 12.49 | 0.92 | 8.47 |
| 297 | 720 | 0.07 | 0.35 | 0.00 | 0.00 | 0.00 | 10.00 | 1.60 | 9.04 |
| 298 | 744 | 0.05 | 0.43 | 0.00 | 0.00 | 0.00 | 13.76 | 2.50 | 9.00 |
| 299 | 720 | 0.01 | 0.20 | 0.00 | 0.00 | 0.00 | 24.50 | 0.94 | 9.10 |
| 300 | 744 | 2.43 | 0.57 | 3.27 | 23.77 | 97.81 | 9.17 | 0.00 | 0.00 |

Table H.C-1. NODOS Project, Power Operations, "Incidental," Alternative C (Cont.)

| NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period (Cont.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Incidental Pumping and Generation to Water Releases (no shaping) | | | | | | | |
| | | Incidental Pumping , MW | | | | | Incidental Generation, MW | | |
| | | TC Canal | GCID Canal | TRR | Sac River | Sites | Sites | TRR | Sac River |
| Plant Capacity, MW | | 6.00 | 3.39 | 19.68 | 65.65 | 181.35 | 123.00 | 9.33 | 10.80 |
| Plant Capacity, cfs | | 2250 | 3000 | 1890 | 2000 | 5900 | 5100 | 1500 | 1500 |
| Month | # of Hours | All Hours | | | | | All Hours | | |
| 301 | 744 | 2.35 | 0.37 | 2.67 | 41.51 | 116.77 | 0.00 | 0.00 | 0.00 |
| 302 | 672 | 2.44 | 0.49 | 3.95 | 44.01 | 132.32 | 0.00 | 0.00 | 0.00 |
| 303 | 744 | 0.05 | 0.09 | 0.00 | 2.52 | 6.79 | 0.05 | 0.00 | 0.00 |
| 304 | 720 | 0.04 | 1.63 | 0.00 | 0.00 | 0.43 | 0.07 | 0.00 | 0.00 |
| 305 | 744 | 0.12 | 1.23 | 0.00 | 0.44 | 0.57 | 3.25 | 0.00 | 0.00 |
| 306 | 720 | 0.56 | 2.81 | 0.00 | 11.35 | 6.40 | 56.59 | 0.00 | 0.00 |
| 307 | 744 | 0.74 | 2.80 | 0.00 | 9.88 | 0.02 | 4.18 | 0.00 | 0.00 |
| 308 | 744 | 1.23 | 2.09 | 0.00 | 0.00 | 0.00 | 19.96 | 0.03 | 4.24 |
| 309 | 720 | 0.34 | 1.63 | 9.01 | 0.00 | 27.49 | 17.67 | 0.15 | 0.41 |
| 310 | 744 | 0.05 | 0.44 | 0.00 | 0.00 | 0.00 | 9.66 | 2.32 | 1.30 |
| 311 | 720 | 0.46 | 0.40 | 0.00 | 2.59 | 16.87 | 9.01 | 0.19 | 0.06 |
| 312 | 744 | 0.00 | 0.15 | 0.00 | 0.00 | 0.00 | 0.35 | 0.94 | 0.00 |
| 313 | 744 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 |
| 314 | 696 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 315 | 744 | 0.01 | 0.09 | 0.00 | 0.00 | 0.12 | 0.07 | 0.00 | 0.00 |
| 316 | 720 | 0.17 | 1.98 | 0.55 | 0.00 | 2.44 | 0.83 | 0.00 | 0.00 |
| 317 | 744 | 0.80 | 2.20 | 0.00 | 0.45 | 0.58 | 10.90 | 0.08 | 0.00 |
| 318 | 720 | 0.56 | 2.51 | 0.00 | 5.94 | 0.00 | 27.20 | 1.64 | 0.22 |
| 319 | 744 | 0.66 | 1.45 | 0.00 | 0.00 | 0.00 | 25.47 | 7.07 | 9.10 |
| 320 | 744 | 1.10 | 1.90 | 0.00 | 0.00 | 0.00 | 12.09 | 0.54 | 5.80 |
| 321 | 720 | 0.11 | 0.36 | 0.00 | 0.00 | 0.00 | 33.38 | 1.70 | 9.08 |
| 322 | 744 | 0.08 | 0.44 | 0.00 | 0.00 | 0.00 | 33.47 | 2.53 | 9.00 |
| 323 | 720 | 0.01 | 0.28 | 0.00 | 0.00 | 0.00 | 24.74 | 1.33 | 9.10 |
| 324 | 744 | 0.00 | 0.29 | 0.00 | 2.04 | 3.96 | 1.42 | 0.08 | 0.54 |
| 325 | 744 | 2.12 | 0.25 | 2.02 | 34.58 | 101.13 | 0.00 | 0.00 | 0.00 |
| 326 | 672 | 2.44 | 0.47 | 3.81 | 44.01 | 128.19 | 0.00 | 0.00 | 0.00 |
| 327 | 744 | 2.22 | 0.07 | 0.00 | 2.52 | 62.50 | 0.00 | 0.00 | 0.00 |
| 328 | 720 | 0.07 | 1.88 | 0.00 | 0.00 | 0.57 | 1.59 | 0.00 | 0.00 |
| 329 | 744 | 0.72 | 1.76 | 0.00 | 0.00 | 0.62 | 26.42 | 0.46 | 0.08 |
| 330 | 720 | 0.72 | 1.57 | 0.00 | 0.00 | 0.00 | 2.41 | 7.32 | 1.93 |
| 331 | 744 | 0.70 | 1.35 | 0.00 | 0.00 | 0.00 | 0.99 | 7.60 | 9.10 |
| 332 | 744 | 0.55 | 1.12 | 0.00 | 0.00 | 0.00 | 26.88 | 5.91 | 8.00 |
| 333 | 720 | 0.30 | 0.56 | 0.00 | 0.00 | 0.00 | 18.20 | 0.36 | 5.62 |
| 334 | 744 | 0.07 | 0.70 | 0.00 | 0.00 | 0.00 | 1.03 | 0.07 | 9.06 |
| 335 | 720 | 0.01 | 0.51 | 0.00 | 0.00 | 0.00 | 0.03 | 0.11 | 9.08 |
| 336 | 744 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 3.86 |
| 337 | 744 | 2.44 | 0.34 | 2.40 | 15.21 | 84.68 | 0.00 | 0.00 | 0.20 |
| 338 | 672 | 2.09 | 0.25 | 1.68 | 33.70 | 100.03 | 0.00 | 0.00 | 0.00 |
| 339 | 744 | 2.28 | 1.67 | 16.46 | 37.23 | 156.42 | 0.04 | 0.00 | 0.00 |
| 340 | 720 | 0.23 | 1.97 | 0.00 | 0.00 | 0.47 | 0.15 | 0.00 | 7.61 |
| 341 | 744 | 0.18 | 2.20 | 0.00 | 0.00 | 0.00 | 0.18 | 0.40 | 9.09 |
| 342 | 720 | 0.20 | 1.62 | 0.00 | 21.74 | 0.00 | 0.21 | 7.38 | 0.26 |
| 343 | 744 | 0.22 | 1.47 | 0.00 | 20.87 | 0.00 | 0.50 | 7.60 | 0.00 |
| 344 | 744 | 0.17 | 0.83 | 0.00 | 0.16 | 0.00 | 9.80 | 6.01 | 9.10 |
| 345 | 720 | 0.07 | 0.28 | 0.00 | 0.00 | 0.00 | 9.92 | 1.84 | 9.00 |
| 346 | 744 | 0.02 | 0.42 | 0.00 | 0.00 | 0.00 | 0.00 | 2.44 | 9.08 |
| 347 | 720 | 0.01 | 0.20 | 0.00 | 0.00 | 0.00 | 5.08 | 1.03 | 4.50 |
| 348 | 744 | 0.00 | 0.15 | 0.00 | 0.00 | 0.00 | 0.14 | 0.08 | 4.61 |
| 349 | 744 | 2.20 | 0.22 | 1.36 | 36.01 | 100.53 | 0.00 | 0.00 | 0.08 |
| 350 | 672 | 0.55 | 0.06 | 0.00 | 2.80 | 18.81 | 0.00 | 0.00 | 0.00 |
| 351 | 744 | 2.44 | 0.48 | 3.54 | 5.95 | 79.66 | 0.02 | 0.42 | 0.18 |
| 352 | 720 | 0.08 | 1.51 | 0.00 | 0.00 | 0.00 | 0.14 | 6.66 | 3.39 |
| 353 | 744 | 0.26 | 1.10 | 0.00 | 0.00 | 0.00 | 0.15 | 5.54 | 8.32 |
| 354 | 720 | 0.39 | 1.81 | 0.00 | 0.00 | 0.00 | 0.36 | 6.56 | 8.80 |
| 355 | 744 | 0.43 | 1.39 | 0.00 | 0.00 | 0.00 | 0.67 | 7.39 | 9.03 |
| 356 | 744 | 0.72 | 1.48 | 0.00 | 0.00 | 0.00 | 8.98 | 3.19 | 9.00 |
| 357 | 720 | 0.07 | 0.33 | 0.00 | 0.00 | 0.00 | 0.26 | 1.74 | 9.00 |
| 358 | 744 | 0.06 | 0.43 | 0.00 | 0.00 | 0.00 | 9.34 | 2.49 | 9.00 |
| 359 | 720 | 0.01 | 0.26 | 0.00 | 0.00 | 0.00 | 0.17 | 1.25 | 9.09 |
| 360 | 744 | 2.13 | 1.35 | 11.80 | 32.29 | 100.44 | 1.74 | 0.00 | 0.00 |

Table H.C-1. NODOS Project, Power Operations, "Incidental," Alternative C (Cont.)

| | | NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period (Cont.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Optimized Pumping (for Sites Plant) | | | | | | | | | |
| | | Incidental Pumping , MW | | | | Optimized Pumping | | | | | |
| | | TC Canal | GCID Canal | TRR | Sac River | Sites | | | | | |
| Plant Capacity, MW | | 6.00 | 3.39 | 19.68 | 65.65 | 181.35 | | | | | |
| Plant Capacity, cfs | | 2250 | 3000 | 1890 | 2000 | MaxQ=5900 cfs | | | | | |
| Month | # of Hours | All Hours | | | | On-Peak, MW | On-Peak, MWh | Off-Peak, MW | Off-Peak, MWh | On-Peak, cfs | Off-Peak, cfs |
| 1 | 744 | 2.28 | 0.37 | 2.73 | 39.11 | 79.00 | 32924 | 169.89 | 55732 | 2305 | 5900 |
| 2 | 672 | 1.46 | 0.06 | 0.00 | 3.13 | 0.00 | 0 | 104.73 | 30207 | 0 | 5900 |
| 3 | 744 | 0.03 | 0.09 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 4 | 720 | 0.49 | 2.11 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 5 | 744 | 0.45 | 2.12 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 6 | 720 | 0.59 | 1.66 | 0.00 | 0.53 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 7 | 744 | 0.65 | 1.55 | 0.00 | 30.75 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 8 | 744 | 1.10 | 2.03 | 0.00 | 1.01 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 9 | 720 | 0.09 | 0.35 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 10 | 744 | 0.08 | 0.69 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 11 | 720 | 2.44 | 1.55 | 12.30 | 42.85 | 110.00 | 45589 | 168.00 | 63794 | 3336 | 5900 |
| 12 | 744 | 1.39 | 0.19 | 0.00 | 2.52 | 0.00 | 0 | 80.24 | 30910 | 0 | 5680 |
| 13 | 744 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 14 | 672 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 15 | 744 | 0.01 | 0.09 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 16 | 720 | 0.08 | 1.87 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 17 | 744 | 0.83 | 2.25 | 0.32 | 0.33 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 18 | 720 | 0.66 | 2.70 | 0.00 | 8.05 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 19 | 744 | 1.31 | 2.35 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 20 | 744 | 1.20 | 2.81 | 6.01 | 2.17 | 0.00 | 0 | 42.96 | 17481 | 0 | 4695 |
| 21 | 720 | 0.11 | 0.39 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 22 | 744 | 0.10 | 0.41 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 23 | 720 | 0.01 | 0.30 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 24 | 744 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 25 | 744 | 0.00 | 0.13 | 0.00 | 2.41 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 26 | 696 | 2.00 | 0.49 | 3.95 | 29.40 | 27.00 | 10797 | 172.65 | 65326 | 795 | 5900 |
| 27 | 744 | 0.24 | 0.10 | 0.00 | 2.52 | 0.00 | 0 | 24.06 | 8791 | 0 | 3985 |
| 28 | 720 | 0.09 | 1.95 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 29 | 744 | 0.99 | 2.20 | 0.00 | 0.41 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 30 | 720 | 0.63 | 1.93 | 0.00 | 7.86 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 31 | 744 | 0.65 | 1.53 | 0.00 | 0.16 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 32 | 744 | 1.58 | 2.76 | 5.85 | 2.52 | 0.00 | 0 | 60.36 | 24705 | 0 | 5308 |
| 33 | 720 | 0.11 | 0.37 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 34 | 744 | 0.01 | 0.39 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 35 | 720 | 0.00 | 0.31 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 36 | 744 | 0.00 | 0.15 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 37 | 744 | 0.00 | 0.13 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 38 | 672 | 0.08 | 0.09 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 39 | 744 | 2.31 | 0.37 | 1.01 | 5.64 | 0.00 | 0 | 122.47 | 49721 | 0 | 5900 |
| 40 | 720 | 0.08 | 2.46 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 41 | 744 | 0.10 | 2.26 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 42 | 720 | 0.05 | 1.65 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 43 | 744 | 0.06 | 1.39 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 44 | 744 | 0.09 | 1.89 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 45 | 720 | 0.04 | 0.58 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 46 | 744 | 0.07 | 0.76 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 47 | 720 | 0.01 | 0.52 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 48 | 744 | 0.00 | 0.27 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 49 | 744 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 50 | 672 | 0.01 | 0.08 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 51 | 744 | 0.04 | 0.11 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 52 | 720 | 0.02 | 1.12 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 53 | 744 | 0.01 | 0.73 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 54 | 720 | 0.03 | 1.14 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 55 | 744 | 0.29 | 1.36 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 56 | 744 | 0.43 | 1.30 | 0.00 | 2.31 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 57 | 720 | 0.12 | 0.35 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 58 | 744 | 0.07 | 0.56 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 59 | 720 | 0.01 | 0.32 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 60 | 744 | 1.62 | 0.75 | 5.83 | 9.62 | 0.00 | 0 | 69.90 | 29896 | 0 | 5900 |

Table H.C-2. NODOS Project, Power Operations, "Optimized," Alternative C

| | | NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period (Cont.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Optimized Pumping (for Sites Plant) | | | | | | | | | |
| | | Incidental Pumping , MW | | | | Optimized Pumping | | | | | |
| | | TC Canal | GCID Canal | TRR | Sac River | Sites | | | | | |
| Plant Capacity, MW | | 6.00 | 3.39 | 19.68 | 65.65 | 181.35 | | | | | |
| Plant Capacity, cfs | | 2250 | 3000 | 1890 | 2000 | MaxQ=5900 cfs | | | | | |
| Month | # of Hours | All Hours | | | | On-Peak, MW | On-Peak, MWh | Off-Peak, MW | Off-Peak, MWh | On-Peak, cfs | Off-Peak, cfs |
| 61 | 744 | 2.05 | 0.30 | 2.27 | 32.51 | 10.00 | 4113 | 106.95 | 45669 | 457 | 5900 |
| 62 | 672 | 2.44 | 0.47 | 3.95 | 44.01 | 34.00 | 13189 | 123.00 | 50360 | 1412 | 5900 |
| 63 | 744 | 2.44 | 1.76 | 18.06 | 44.01 | 104.00 | 43177 | 140.80 | 60633 | 3648 | 5900 |
| 64 | 720 | 2.15 | 2.67 | 8.65 | 0.00 | 0.00 | 0 | 138.53 | 53345 | 0 | 5900 |
| 65 | 744 | 2.58 | 2.86 | 6.00 | 1.33 | 0.00 | 0 | 108.93 | 44142 | 0 | 5900 |
| 66 | 720 | 0.66 | 1.67 | 0.00 | 34.96 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 67 | 744 | 0.70 | 1.55 | 0.00 | 36.59 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 68 | 744 | 1.18 | 2.01 | 0.00 | 0.97 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 69 | 720 | 0.11 | 0.35 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 70 | 744 | 0.26 | 0.76 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 71 | 720 | 0.02 | 0.46 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 72 | 744 | 0.00 | 0.27 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 73 | 744 | 2.28 | 0.24 | 1.85 | 36.37 | 20.00 | 8120 | 152.22 | 67971 | 635 | 5900 |
| 74 | 696 | 1.83 | 0.31 | 2.24 | 21.80 | 0.00 | 0 | 143.63 | 59366 | 0 | 5900 |
| 75 | 744 | 2.43 | 1.44 | 13.64 | 13.93 | 55.00 | 23698 | 172.10 | 71988 | 1638 | 5900 |
| 76 | 720 | 0.05 | 2.77 | 6.11 | 0.00 | 0.00 | 0 | 40.42 | 14898 | 0 | 4432 |
| 77 | 744 | 0.46 | 2.14 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 78 | 720 | 0.39 | 1.66 | 0.00 | 0.46 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 79 | 744 | 0.42 | 1.50 | 0.00 | 24.05 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 80 | 744 | 0.70 | 1.29 | 0.00 | 0.70 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 81 | 720 | 0.06 | 0.34 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 82 | 744 | 0.04 | 0.41 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 83 | 720 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 84 | 744 | 0.00 | 0.15 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 85 | 744 | 2.28 | 0.27 | 1.81 | 38.52 | 21.00 | 8845 | 163.33 | 73970 | 644 | 5900 |
| 86 | 672 | 2.44 | 0.47 | 3.81 | 27.81 | 24.00 | 9226 | 173.72 | 70772 | 699 | 5900 |
| 87 | 744 | 0.01 | 0.10 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 88 | 720 | 0.06 | 2.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 89 | 744 | 0.20 | 1.89 | 0.00 | 0.14 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 90 | 720 | 0.50 | 1.62 | 0.00 | 2.37 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 91 | 744 | 1.24 | 1.78 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 92 | 744 | 1.00 | 2.03 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 93 | 720 | 0.09 | 0.36 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 94 | 744 | 0.07 | 0.43 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 95 | 720 | 0.02 | 0.33 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 96 | 744 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 97 | 744 | 2.12 | 0.37 | 2.73 | 33.66 | 18.00 | 7913 | 158.32 | 68850 | 595 | 5900 |
| 98 | 672 | 2.26 | 0.49 | 3.95 | 38.61 | 34.00 | 13186 | 167.51 | 67759 | 1037 | 5900 |
| 99 | 744 | 2.13 | 0.28 | 1.83 | 3.05 | 0.00 | 0 | 119.48 | 49857 | 0 | 5900 |
| 100 | 720 | 0.17 | 1.77 | 0.00 | 1.92 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 101 | 744 | 0.52 | 2.02 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 102 | 720 | 0.48 | 1.57 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 103 | 744 | 0.50 | 1.48 | 0.00 | 25.43 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 104 | 744 | 0.38 | 1.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 105 | 720 | 0.15 | 0.54 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 106 | 744 | 0.07 | 0.69 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 107 | 720 | 0.01 | 0.32 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 108 | 744 | 1.74 | 1.16 | 9.45 | 24.98 | 19.00 | 7737 | 157.67 | 70028 | 584 | 5900 |
| 109 | 744 | 2.36 | 0.37 | 2.73 | 41.51 | 39.00 | 17062 | 170.19 | 74590 | 1193 | 5900 |
| 110 | 672 | 1.27 | 0.06 | 0.00 | 3.30 | 0.00 | 0 | 65.01 | 27098 | 0 | 4141 |
| 111 | 744 | 0.01 | 0.07 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 112 | 720 | 0.07 | 1.41 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 113 | 744 | 0.74 | 2.28 | 0.82 | 0.45 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 114 | 720 | 0.62 | 2.78 | 0.00 | 8.31 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 115 | 744 | 1.54 | 2.79 | 0.00 | 0.17 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 116 | 744 | 1.22 | 2.07 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 117 | 720 | 0.09 | 0.38 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 118 | 744 | 0.58 | 2.08 | 12.35 | 2.48 | 0.00 | 0 | 99.71 | 42968 | 0 | 5900 |
| 119 | 720 | 0.00 | 0.24 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 120 | 744 | 0.00 | 0.20 | 0.00 | 1.78 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |

Table H.C-2. NODOS Project, Power Operations, "Optimized," Alternative C (Cont.)

| | | NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period (Cont.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Optimized Pumping (for Sites Plant) | | | | | | | | | |
| | | Incidental Pumping , MW | | | | Optimized Pumping | | | | | |
| | | TC Canal | GCID Canal | TRR | Sac River | Sites | | | | | |
| Plant Capacity, MW | | 6.00 | 3.39 | 19.68 | 65.65 | 181.35 | | | | | |
| Plant Capacity, cfs | | 2250 | 3000 | 1890 | 2000 | MaxQ=5900 cfs | | | | | |
| Month | # of Hours | All Hours | | | | On-Peak, MW | On-Peak, MWh | Off-Peak, MW | Off-Peak, MWh | On-Peak, cfs | Off-Peak, cfs |
| 121 | 744 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 122 | 696 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 123 | 744 | 0.02 | 0.05 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 124 | 720 | 0.05 | 1.31 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 125 | 744 | 0.63 | 2.06 | 0.00 | 0.51 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 126 | 720 | 0.63 | 2.85 | 0.00 | 8.60 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 127 | 744 | 0.73 | 2.79 | 0.00 | 12.94 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 128 | 744 | 1.17 | 2.05 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 129 | 720 | 0.28 | 1.61 | 9.01 | 0.00 | 0.00 | 0 | 48.12 | 19704 | 0 | 4599 |
| 130 | 744 | 0.19 | 0.45 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 131 | 720 | 0.39 | 0.26 | 0.00 | 2.52 | 0.00 | 0 | 23.63 | 10551 | 0 | 3028 |
| 132 | 744 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 133 | 744 | 0.00 | 0.13 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 134 | 672 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 135 | 744 | 0.05 | 0.13 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 136 | 720 | 0.09 | 2.34 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 137 | 744 | 0.34 | 2.21 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 138 | 720 | 0.52 | 1.64 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 139 | 744 | 0.58 | 1.39 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 140 | 744 | 0.91 | 1.65 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 141 | 720 | 0.08 | 0.33 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 142 | 744 | 0.03 | 0.42 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 143 | 720 | 2.03 | 1.32 | 9.80 | 29.23 | 38.00 | 15959 | 152.23 | 64901 | 1289 | 5900 |
| 144 | 744 | 2.05 | 1.40 | 11.39 | 11.23 | 11.00 | 4597 | 162.87 | 71909 | 336 | 5900 |
| 145 | 744 | 0.03 | 0.12 | 0.00 | 1.54 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 146 | 672 | 2.44 | 0.39 | 3.37 | 2.80 | 0.00 | 0 | 125.48 | 52377 | 0 | 5900 |
| 147 | 744 | 0.21 | 0.10 | 0.00 | 2.52 | 0.00 | 0 | 17.85 | 7924 | 0 | 2727 |
| 148 | 720 | 0.19 | 2.17 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 149 | 744 | 0.74 | 2.22 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 150 | 720 | 0.44 | 1.55 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 151 | 744 | 0.47 | 1.40 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 152 | 744 | 0.79 | 2.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 153 | 720 | 0.28 | 0.55 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 154 | 744 | 0.16 | 0.74 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 155 | 720 | 0.01 | 0.27 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 156 | 744 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 157 | 744 | 2.28 | 0.29 | 2.40 | 38.48 | 15.00 | 6403 | 142.61 | 67053 | 534 | 5900 |
| 158 | 672 | 2.09 | 0.49 | 3.95 | 33.70 | 12.00 | 4496 | 152.64 | 64183 | 388 | 5900 |
| 159 | 744 | 2.43 | 1.79 | 17.87 | 44.01 | 114.00 | 49328 | 166.67 | 73136 | 3521 | 5900 |
| 160 | 720 | 0.40 | 2.76 | 7.08 | 0.00 | 0.00 | 0 | 59.05 | 25310 | 0 | 4340 |
| 161 | 744 | 0.10 | 1.89 | 0.00 | 0.97 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 162 | 720 | 0.37 | 1.64 | 0.00 | 22.33 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 163 | 744 | 0.42 | 1.40 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 164 | 744 | 0.69 | 2.01 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 165 | 720 | 0.05 | 0.36 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 166 | 744 | 0.17 | 0.76 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 167 | 720 | 0.02 | 0.54 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 168 | 744 | 0.00 | 0.14 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 169 | 744 | 0.40 | 0.07 | 0.00 | 2.48 | 0.00 | 0 | 21.23 | 9662 | 0 | 2982 |
| 170 | 696 | 2.18 | 0.49 | 3.95 | 34.58 | 23.00 | 9025 | 157.75 | 66366 | 728 | 5900 |
| 171 | 744 | 2.21 | 1.59 | 15.14 | 28.93 | 68.00 | 28352 | 169.64 | 77821 | 1988 | 5900 |
| 172 | 720 | 0.18 | 2.17 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 173 | 744 | 0.24 | 2.21 | 0.00 | 0.32 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 174 | 720 | 0.14 | 1.69 | 0.00 | 15.48 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 175 | 744 | 0.14 | 1.91 | 0.00 | 0.10 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 176 | 744 | 0.25 | 2.03 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 177 | 720 | 0.12 | 0.62 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 178 | 744 | 0.09 | 0.74 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 179 | 720 | 0.01 | 0.41 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 180 | 744 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |

Table H.C-2. NODOS Project, Power Operations, "Optimized," Alternative C (Cont.)

| | | NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period (Cont.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Optimized Pumping (for Sites Plant) | | | | | | | | | |
| | | Incidental Pumping , MW | | | | Optimized Pumping | | | | | |
| | | TC Canal | GCID Canal | TRR | Sac River | Sites | | | | | |
| Plant Capacity, MW | | 6.00 | 3.39 | 19.68 | 65.65 | 181.35 | | | | | |
| Plant Capacity, cfs | | 2250 | 3000 | 1890 | 2000 | MaxQ=5900 cfs | | | | | |
| Month | # of Hours | All Hours | | | | On-Peak, MW | On-Peak, MWh | Off-Peak, MW | Off-Peak, MWh | On-Peak, cfs | Off-Peak, cfs |
| 181 | 744 | 2.20 | 0.27 | 1.81 | 36.03 | 12.00 | 5037 | 147.63 | 67241 | 406 | 5900 |
| 182 | 672 | 0.09 | 0.06 | 0.00 | 0.62 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 183 | 744 | 0.01 | 0.10 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 184 | 720 | 0.00 | 1.25 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 185 | 744 | 0.00 | 1.12 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 186 | 720 | 0.03 | 1.86 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 187 | 744 | 0.00 | 2.74 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 188 | 744 | 0.00 | 2.09 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 189 | 720 | 0.00 | 0.61 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 190 | 744 | 0.06 | 0.77 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 191 | 720 | 0.01 | 0.43 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 192 | 744 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 193 | 744 | 0.00 | 0.13 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 194 | 672 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 195 | 744 | 2.04 | 1.49 | 14.25 | 29.72 | 34.00 | 14349 | 104.81 | 48925 | 1629 | 5900 |
| 196 | 720 | 0.92 | 2.74 | 5.74 | 0.00 | 0.00 | 0 | 52.69 | 22293 | 0 | 4927 |
| 197 | 744 | 0.11 | 1.36 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 198 | 720 | 0.37 | 2.80 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 199 | 744 | 0.38 | 2.71 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 200 | 744 | 0.30 | 1.98 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 201 | 720 | 0.11 | 0.38 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 202 | 744 | 0.07 | 0.71 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 203 | 720 | 0.01 | 0.51 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 204 | 744 | 0.00 | 0.30 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 205 | 744 | 2.38 | 0.09 | 0.46 | 20.31 | 0.00 | 0 | 81.44 | 38034 | 0 | 5900 |
| 206 | 672 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 207 | 744 | 0.01 | 0.10 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 208 | 720 | 0.00 | 1.64 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 209 | 744 | 0.00 | 1.57 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 210 | 720 | 0.00 | 1.70 | 0.00 | 17.20 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 211 | 744 | 0.00 | 2.73 | 0.00 | 0.19 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 212 | 744 | 0.00 | 1.94 | 0.00 | 2.26 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 213 | 720 | 0.00 | 0.59 | 0.00 | 2.56 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 214 | 744 | 0.06 | 0.77 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 215 | 720 | 0.02 | 0.53 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 216 | 744 | 0.00 | 0.27 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 217 | 744 | 0.00 | 0.14 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 218 | 696 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 219 | 744 | 2.43 | 1.72 | 17.28 | 44.01 | 63.00 | 27300 | 97.79 | 44276 | 3321 | 5900 |
| 220 | 720 | 0.08 | 0.87 | 0.00 | 10.30 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 221 | 744 | 0.05 | 0.98 | 0.00 | 13.69 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 222 | 720 | 0.06 | 1.27 | 0.00 | 22.13 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 223 | 744 | 0.09 | 1.19 | 0.00 | 19.13 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 224 | 744 | 0.50 | 1.37 | 0.00 | 0.31 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 225 | 720 | 0.08 | 0.45 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 226 | 744 | 0.08 | 0.56 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 227 | 720 | 0.02 | 0.38 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 228 | 744 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 229 | 744 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 230 | 672 | 1.68 | 0.40 | 3.25 | 20.69 | 0.00 | 0 | 74.99 | 30949 | 0 | 5900 |
| 231 | 744 | 2.28 | 1.33 | 13.03 | 20.89 | 30.00 | 13084 | 110.82 | 49858 | 1404 | 5900 |
| 232 | 720 | 0.04 | 0.95 | 0.00 | 1.92 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 233 | 744 | 0.12 | 1.42 | 0.00 | 0.44 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 234 | 720 | 0.09 | 1.21 | 0.00 | 19.18 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 235 | 744 | 0.13 | 1.18 | 0.00 | 21.16 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 236 | 744 | 0.58 | 1.40 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 237 | 720 | 0.12 | 0.45 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 238 | 744 | 0.06 | 0.52 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 239 | 720 | 0.02 | 0.38 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 240 | 744 | 0.69 | 0.12 | 0.00 | 2.52 | 0.00 | 0 | 16.90 | 7764 | 0 | 3385 |

Table H.C-2. NODOS Project, Power Operations, "Optimized," Alternative C (Cont.)

| NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period (Cont.) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Optimized Pumping (for Sites Plant) | | | | | | | | | |
| | | Incidental Pumping , MW | | | | Optimized Pumping | | | | | |
| | | TC Canal | GCID Canal | TRR | Sac River | Sites | | | | | |
| Plant Capacity, MW | | 6.00 | 3.39 | 19.68 | 65.65 | 181.35 | | | | | |
| Plant Capacity, cfs | | 2250 | 3000 | 1890 | 2000 | MaxQ=5900 cfs | | | | | |
| Month | # of Hours | All Hours | | | | On-Peak, MW | On-Peak, MWh | Off-Peak, MW | Off-Peak, MWh | On-Peak, cfs | Off-Peak, cfs |
| 241 | 744 | 1.81 | 0.25 | 1.81 | 26.74 | 0.00 | 0 | 85.64 | 39246 | 0 | 5900 |
| 242 | 672 | 1.92 | 0.35 | 2.80 | 29.25 | 0.00 | 0 | 106.79 | 44920 | 0 | 5900 |
| 243 | 744 | 2.05 | 1.53 | 14.45 | 32.51 | 46.00 | 19305 | 128.90 | 60108 | 1782 | 5900 |
| 244 | 720 | 2.28 | 2.80 | 6.38 | 0.00 | 0.00 | 0 | 102.39 | 43300 | 0 | 5900 |
| 245 | 744 | 2.58 | 2.87 | 9.43 | 0.00 | 0.00 | 0 | 116.26 | 49260 | 0 | 5900 |
| 246 | 720 | 2.56 | 2.80 | 2.00 | 44.01 | 7.00 | 2622 | 156.90 | 64975 | 205 | 5900 |
| 247 | 744 | 0.68 | 1.60 | 0.00 | 32.69 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 248 | 744 | 1.12 | 2.03 | 0.00 | 0.19 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 249 | 720 | 0.34 | 0.63 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 250 | 744 | 0.17 | 0.74 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 251 | 720 | 0.02 | 0.44 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 252 | 744 | 0.83 | 0.24 | 0.00 | 2.52 | 0.00 | 0 | 33.08 | 15429 | 0 | 3516 |
| 253 | 744 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 254 | 672 | 2.44 | 0.49 | 3.95 | 42.65 | 37.00 | 14399 | 157.61 | 66411 | 1203 | 5900 |
| 255 | 744 | 0.03 | 0.06 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 256 | 720 | 0.06 | 1.08 | 0.00 | 17.08 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 257 | 744 | 0.20 | 0.79 | 0.00 | 12.36 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 258 | 720 | 0.37 | 1.22 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 259 | 744 | 1.08 | 1.14 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 260 | 744 | 1.06 | 0.98 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 261 | 720 | 0.33 | 0.42 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 262 | 744 | 0.13 | 0.54 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 263 | 720 | 0.01 | 0.22 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 264 | 744 | 0.00 | 0.14 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 265 | 744 | 2.43 | 0.35 | 2.73 | 44.01 | 32.00 | 13717 | 134.70 | 60951 | 1211 | 5900 |
| 266 | 696 | 2.44 | 0.47 | 3.95 | 44.01 | 34.00 | 13163 | 147.37 | 65690 | 1136 | 5900 |
| 267 | 744 | 2.20 | 1.61 | 15.84 | 36.81 | 78.00 | 33497 | 160.62 | 73228 | 2481 | 5900 |
| 268 | 720 | 2.27 | 2.78 | 6.95 | 0.00 | 0.00 | 0 | 126.55 | 54101 | 0 | 5900 |
| 269 | 744 | 1.36 | 2.87 | 9.14 | 0.42 | 0.00 | 0 | 86.30 | 37793 | 0 | 5633 |
| 270 | 720 | 0.57 | 2.80 | 0.00 | 7.66 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 271 | 744 | 0.71 | 2.79 | 0.00 | 14.90 | 0.00 | 0 | 16.02 | 6471 | 0 | 3998 |
| 272 | 744 | 1.20 | 2.25 | 1.24 | 0.59 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 273 | 720 | 0.37 | 0.61 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 274 | 744 | 0.10 | 0.47 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 275 | 720 | 0.03 | 0.33 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 276 | 744 | 2.05 | 1.31 | 11.27 | 19.16 | 28.00 | 11987 | 173.34 | 77976 | 823 | 5900 |
| 277 | 744 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 278 | 672 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 279 | 744 | 0.02 | 0.09 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 280 | 720 | 0.37 | 1.79 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 281 | 744 | 0.45 | 1.67 | 0.00 | 0.36 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 282 | 720 | 0.63 | 2.77 | 0.00 | 9.40 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 283 | 744 | 0.82 | 1.60 | 0.00 | 0.33 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 284 | 744 | 1.21 | 1.67 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 285 | 720 | 0.10 | 0.33 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 286 | 744 | 0.02 | 0.40 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 287 | 720 | 0.01 | 0.27 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 288 | 744 | 2.20 | 1.39 | 12.30 | 34.39 | 64.00 | 27835 | 162.93 | 72784 | 2032 | 5900 |
| 289 | 744 | 2.44 | 0.37 | 2.73 | 18.72 | 0.00 | 0 | 164.67 | 78249 | 0 | 5900 |
| 290 | 672 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 291 | 744 | 0.41 | 0.17 | 0.00 | 2.41 | 0.00 | 0 | 23.32 | 10683 | 0 | 2935 |
| 292 | 720 | 0.37 | 2.60 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 293 | 744 | 0.35 | 2.01 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 294 | 720 | 0.41 | 2.14 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 295 | 744 | 0.48 | 1.42 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 296 | 744 | 0.75 | 1.83 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 297 | 720 | 0.07 | 0.35 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 298 | 744 | 0.05 | 0.43 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 299 | 720 | 0.01 | 0.20 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 300 | 744 | 2.43 | 0.57 | 3.27 | 23.77 | 7.00 | 3058 | 151.33 | 70031 | 240 | 5900 |

Table H.C-2. NODOS Project, Power Operations, "Optimized," Alternative C (Cont.)

| | | NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period (Cont.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Optimized Pumping (for Sites Plant) | | | | | | | | | |
| | | Incidental Pumping , MW | | | | Optimized Pumping | | | | | |
| | | TC Canal | GCID Canal | TRR | Sac River | Sites | | | | | |
| Plant Capacity, MW | | 6.00 | 3.39 | 19.68 | 65.65 | 181.35 | | | | | |
| Plant Capacity, cfs | | 2250 | 3000 | 1890 | 2000 | MaxQ=5900 cfs | | | | | |
| Month | # of Hours | All Hours | | | | On-Peak, MW | On-Peak, MWh | Off-Peak, MW | Off-Peak, MWh | On-Peak, cfs | Off-Peak, cfs |
| 294 | 720 | 0.41 | 2.14 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 295 | 744 | 0.48 | 1.42 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 296 | 744 | 0.75 | 1.83 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 297 | 720 | 0.07 | 0.35 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 298 | 744 | 0.05 | 0.43 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 299 | 720 | 0.01 | 0.20 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 300 | 744 | 2.43 | 0.57 | 3.27 | 23.77 | 7.00 | 3058 | 151.33 | 70031 | 240 | 5900 |
| 301 | 744 | 2.35 | 0.37 | 2.67 | 41.51 | 29.00 | 12669 | 162.28 | 74506 | 929 | 5900 |
| 302 | 672 | 2.44 | 0.49 | 3.95 | 44.01 | 40.00 | 15499 | 172.58 | 73664 | 1183 | 5900 |
| 303 | 744 | 0.05 | 0.09 | 0.00 | 2.52 | 0.00 | 0 | 11.15 | 5049 | 0 | 2490 |
| 304 | 720 | 0.04 | 1.63 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 305 | 744 | 0.12 | 1.23 | 0.00 | 0.44 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 306 | 720 | 0.56 | 2.81 | 0.00 | 11.35 | 0.00 | 0 | 11.49 | 4607 | 0 | 3631 |
| 307 | 744 | 0.74 | 2.80 | 0.00 | 9.88 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 308 | 744 | 1.23 | 2.09 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 309 | 720 | 0.34 | 1.63 | 9.01 | 0.00 | 0.00 | 0 | 46.15 | 19797 | 0 | 4496 |
| 310 | 744 | 0.05 | 0.44 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 311 | 720 | 0.46 | 0.40 | 0.00 | 2.59 | 0.00 | 0 | 28.13 | 12148 | 0 | 3318 |
| 312 | 744 | 0.00 | 0.15 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 313 | 744 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 314 | 696 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 315 | 744 | 0.01 | 0.09 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 316 | 720 | 0.17 | 1.98 | 0.55 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 317 | 744 | 0.80 | 2.20 | 0.00 | 0.45 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 318 | 720 | 0.56 | 2.51 | 0.00 | 5.94 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 319 | 744 | 0.66 | 1.45 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 320 | 744 | 1.10 | 1.90 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 321 | 720 | 0.11 | 0.36 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 322 | 744 | 0.08 | 0.44 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 323 | 720 | 0.01 | 0.28 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 324 | 744 | 0.00 | 0.29 | 0.00 | 2.04 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 325 | 744 | 2.12 | 0.25 | 2.02 | 34.58 | 9.00 | 3952 | 157.91 | 71608 | 298 | 5900 |
| 326 | 672 | 2.44 | 0.47 | 3.81 | 44.01 | 41.00 | 15731 | 167.78 | 70659 | 1235 | 5900 |
| 327 | 744 | 2.22 | 0.07 | 0.00 | 2.52 | 0.00 | 0 | 98.16 | 46553 | 0 | 5425 |
| 328 | 720 | 0.07 | 1.88 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 329 | 744 | 0.72 | 1.76 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 330 | 720 | 0.72 | 1.57 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 331 | 744 | 0.70 | 1.35 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 332 | 744 | 0.55 | 1.12 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 333 | 720 | 0.30 | 0.56 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 334 | 744 | 0.07 | 0.70 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 335 | 720 | 0.01 | 0.51 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 336 | 744 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 337 | 744 | 2.44 | 0.34 | 2.40 | 15.21 | 0.00 | 0 | 134.73 | 63240 | 0 | 5900 |
| 338 | 672 | 2.09 | 0.25 | 1.68 | 33.70 | 0.00 | 0 | 160.16 | 67438 | 0 | 5900 |
| 339 | 744 | 2.28 | 1.67 | 16.46 | 37.23 | 88.00 | 38029 | 171.22 | 78474 | 2642 | 5900 |
| 340 | 720 | 0.23 | 1.97 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 341 | 744 | 0.18 | 2.20 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 342 | 720 | 0.20 | 1.62 | 0.00 | 21.74 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 343 | 744 | 0.22 | 1.47 | 0.00 | 20.87 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 344 | 744 | 0.17 | 0.83 | 0.00 | 0.16 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 345 | 720 | 0.07 | 0.28 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 346 | 744 | 0.02 | 0.42 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 347 | 720 | 0.01 | 0.20 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 348 | 744 | 0.00 | 0.15 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 349 | 744 | 2.20 | 0.22 | 1.36 | 36.01 | 5.00 | 2152 | 155.47 | 72959 | 165 | 5900 |
| 350 | 672 | 0.55 | 0.06 | 0.00 | 2.80 | 0.00 | 0 | 29.63 | 12640 | 0 | 3312 |
| 351 | 744 | 2.44 | 0.48 | 3.54 | 5.95 | 0.00 | 0 | 129.66 | 59419 | 0 | 5900 |
| 352 | 720 | 0.08 | 1.51 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 353 | 744 | 0.26 | 1.10 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 354 | 720 | 0.39 | 1.81 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 355 | 744 | 0.43 | 1.39 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 356 | 744 | 0.72 | 1.48 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 357 | 720 | 0.07 | 0.33 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 358 | 744 | 0.06 | 0.43 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 359 | 720 | 0.01 | 0.26 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 360 | 744 | 2.13 | 1.35 | 11.80 | 32.29 | 43.00 | 18665 | 125.96 | 56310 | 1763 | 5900 |

Table H.C-2. NODOS Project, Power Operations, "Optimized," Alternative C (Cont.)

| NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Optimized Generation (except Sac River) | | | | | | | | | | | |
| | | Optimized Genration, MW | | | | | | | | | | | |
| | | Sites | | | | | TRR | | | | | | |
| Plant Capacity, MW | | 123.00 | | | | | 9.33 | | | | | | |
| Plant Capacity, cfs | | MaxQ=5100 cfs | | | | | MaxQ=1500 cfs | | | | | | |
| Month | # of Hours | On-Peak, MW | On-Peak, MWh | Off-Peak, MW | On-Peak, cfs | Off-Peak, cfs | On-Peak | On-Peak, MWh | Off-Peak | Off-Peak, MWh | On-Peak, cfs | Off-Peak, cfs |
| 1 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 2 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 3 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 4 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 5 | 744 | 26.47 | 9818 | 0.00 | 1141 | 0 | 0.81 | 300 | 0.00 | 0 | 116 | 0 |
| 6 | 720 | 114.95 | 39777 | 0.00 | 5100 | 0 | 9.18 | 3820 | 4.41 | 1341 | 1500 | 650 |
| 7 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3967 | 4.17 | 1301 | 1500 | 613 |
| 8 | 744 | 30.10 | 9261 | 0.00 | 1366 | 0 | 1.44 | 443 | 0.00 | 0 | 207 | 0 |
| 9 | 720 | 107.43 | 28368 | 0.00 | 5009 | 0 | 4.07 | 1074 | 0.00 | 0 | 597 | 0 |
| 10 | 744 | 37.38 | 8916 | 0.00 | 1771 | 0 | 0.49 | 117 | 0.00 | 0 | 70 | 0 |
| 11 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 12 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 13 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 14 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 15 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 16 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 17 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.12 | 36 | 0.00 | 0 | 17 | 0 |
| 18 | 720 | 11.70 | 3508 | 0.00 | 503 | 0 | 2.99 | 896 | 0.00 | 0 | 435 | 0 |
| 19 | 744 | 36.38 | 10349 | 0.00 | 1579 | 0 | 3.13 | 890 | 0.00 | 0 | 455 | 0 |
| 20 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 21 | 720 | 73.73 | 16890 | 0.00 | 3217 | 0 | 5.19 | 1188 | 0.00 | 0 | 772 | 0 |
| 22 | 744 | 42.77 | 10242 | 0.00 | 1886 | 0 | 7.19 | 1722 | 0.00 | 0 | 1108 | 0 |
| 23 | 720 | 113.26 | 23951 | 0.00 | 5100 | 0 | 5.57 | 1071 | 0.00 | 0 | 833 | 0 |
| 24 | 744 | 24.86 | 4980 | 0.00 | 1128 | 0 | 2.63 | 526 | 0.00 | 0 | 381 | 0 |
| 25 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.15 | 32 | 0.00 | 0 | 21 | 0 |
| 26 | 696 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 27 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 28 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 29 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.72 | 228 | 0.00 | 0 | 104 | 0 |
| 30 | 720 | 55.68 | 15888 | 0.00 | 2412 | 0 | 9.18 | 3820 | 0.51 | 154 | 1500 | 73 |
| 31 | 744 | 114.37 | 33872 | 0.00 | 5100 | 0 | 9.18 | 3820 | 4.13 | 1355 | 1500 | 607 |
| 32 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.23 | 58 | 0.00 | 0 | 32 | 0 |
| 33 | 720 | 112.59 | 27407 | 0.00 | 5100 | 0 | 5.20 | 1193 | 0.00 | 0 | 773 | 0 |
| 34 | 744 | 47.37 | 10873 | 0.00 | 2179 | 0 | 7.33 | 1683 | 0.00 | 0 | 1133 | 0 |
| 35 | 720 | 108.36 | 22980 | 0.00 | 5100 | 0 | 5.82 | 1100 | 0.00 | 0 | 873 | 0 |
| 36 | 744 | 44.75 | 8756 | 0.00 | 2133 | 0 | 3.95 | 772 | 0.00 | 0 | 579 | 0 |
| 37 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.22 | 45 | 0.00 | 0 | 32 | 0 |
| 38 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 39 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 40 | 720 | 59.31 | 15142 | 0.00 | 2748 | 0 | 0.01 | 2 | 0.00 | 0 | 1 | 0 |
| 41 | 744 | 76.05 | 23901 | 0.00 | 3604 | 0 | 1.20 | 378 | 0.00 | 0 | 173 | 0 |
| 42 | 720 | 103.82 | 30822 | 0.00 | 5100 | 0 | 9.18 | 3673 | 4.46 | 1428 | 1500 | 657 |
| 43 | 744 | 98.69 | 35142 | 0.00 | 5100 | 0 | 9.18 | 3967 | 4.40 | 1373 | 1500 | 648 |
| 44 | 744 | 35.70 | 8912 | 0.00 | 1906 | 0 | 1.28 | 321 | 0.00 | 0 | 185 | 0 |
| 45 | 720 | 34.10 | 8196 | 0.00 | 1847 | 0 | 0.15 | 37 | 0.00 | 0 | 22 | 0 |
| 46 | 744 | 57.88 | 13884 | 0.00 | 3205 | 0 | 0.22 | 52 | 0.00 | 0 | 31 | 0 |
| 47 | 720 | 43.29 | 8585 | 0.00 | 2441 | 0 | 0.19 | 38 | 0.00 | 0 | 27 | 0 |
| 48 | 744 | 83.43 | 16702 | 0.00 | 4838 | 0 | 0.17 | 34 | 0.00 | 0 | 25 | 0 |
| 49 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.01 | 2 | 0.00 | 0 | 2 | 0 |
| 50 | 672 | 84.60 | 14199 | 0.00 | 5100 | 0 | 0.10 | 15 | 0.00 | 0 | 15 | 0 |
| 51 | 744 | 81.09 | 16769 | 0.00 | 5100 | 0 | 1.58 | 287 | 0.00 | 0 | 229 | 0 |
| 52 | 720 | 75.45 | 22665 | 0.00 | 5100 | 0 | 9.18 | 3820 | 3.57 | 1085 | 1500 | 522 |
| 53 | 744 | 68.61 | 17346 | 0.00 | 5078 | 0 | 9.18 | 3640 | 0.00 | 0 | 1500 | 0 |
| 54 | 720 | 60.69 | 19927 | 0.00 | 5100 | 0 | 9.18 | 3673 | 4.75 | 1519 | 1500 | 702 |
| 55 | 744 | 26.07 | 7296 | 0.00 | 2520 | 0 | 9.18 | 3072 | 0.00 | 0 | 1500 | 0 |
| 56 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.80 | 194 | 0.00 | 0 | 115 | 0 |
| 57 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 58 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 59 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 60 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 61 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 62 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 63 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 64 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 65 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 66 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3820 | 4.26 | 1295 | 1500 | 626 |
| 67 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3967 | 4.17 | 1301 | 1500 | 613 |
| 68 | 744 | 33.53 | 8541 | 0.00 | 1588 | 0 | 1.77 | 450 | 0.00 | 0 | 255 | 0 |
| 69 | 720 | 104.80 | 25858 | 0.00 | 5100 | 0 | 4.25 | 997 | 0.00 | 0 | 624 | 0 |
| 70 | 744 | 97.44 | 20764 | 0.00 | 4885 | 0 | 0.49 | 105 | 0.00 | 0 | 71 | 0 |
| 71 | 720 | 98.93 | 19752 | 0.00 | 5100 | 0 | 0.20 | 38 | 0.00 | 0 | 28 | 0 |
| 72 | 744 | 39.29 | 7697 | 0.00 | 2053 | 0 | 0.17 | 34 | 0.00 | 0 | 25 | 0 |
| 73 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 74 | 696 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 75 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 76 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 77 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 1.11 | 295 | 0.00 | 0 | 160 | 0 |
| 78 | 720 | 116.08 | 33681 | 0.00 | 5100 | 0 | 9.18 | 3820 | 4.41 | 1341 | 1500 | 650 |
| 79 | 744 | 12.71 | 3456 | 0.00 | 566 | 0 | 9.18 | 3820 | 5.09 | 1671 | 1500 | 757 |
| 80 | 744 | 92.42 | 23688 | 0.00 | 4189 | 0 | 9.18 | 3510 | 0.00 | 0 | 1500 | 0 |
| 81 | 720 | 105.93 | 24806 | 0.00 | 4940 | 0 | 5.46 | 1278 | 0.00 | 0 | 815 | 0 |
| 82 | 744 | 43.98 | 9470 | 0.00 | 2080 | 0 | 7.60 | 1636 | 0.00 | 0 | 1182 | 0 |
| 83 | 720 | 61.83 | 12134 | 0.00 | 2960 | 0 | 4.36 | 856 | 0.00 | 0 | 642 | 0 |
| 84 | 744 | 40.16 | 7744 | 0.00 | 1940 | 0 | 0.34 | 65 | 0.00 | 0 | 48 | 0 |
| 85 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.01 | 1 | 0.00 | 0 | 1 | 0 |
| 86 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 87 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 88 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.07 | 14 | 0.00 | 0 | 10 | 0 |
| 89 | 744 | 36.08 | 9464 | 0.00 | 1554 | 0 | 1.96 | 513 | 0.00 | 0 | 283 | 0 |
| 90 | 720 | 87.47 | 23404 | 0.00 | 3838 | 0 | 9.18 | 3820 | 3.89 | 1183 | 1500 | 570 |

## Table H.C-3. NODOS Project, Power Operations, "Pump-Back," Alternative C

| NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Optimized Generation (except Sac River) | | | | | | | | | | | |
| | | Optimized Genration, MW | | | | | | | | | | | |
| | | Sites | | | | | TRR | | | | | | |
| Plant Capacity, MW | | 123.00 | | | | | 9.33 | | | | | | |
| Plant Capacity, cfs | | MaxQ=5100 cfs | | | | | MaxQ=1500 cfs | | | | | | |
| Month | # of Hours | On-Peak, MW | On-Peak, MWh | Off-Peak, MW | On-Peak, cfs | Off-Peak, cfs | On-Peak | On-Peak, MWh | Off-Peak | Off-Peak, MWh | On-Peak, cfs | Off-Peak, cfs |
| 91 | 744 | 83.15 | 22736 | 0.00 | 3733 | 0 | 9.18 | 3820 | 0.92 | 303 | 1500 | 133 |
| 92 | 744 | 40.92 | 10549 | 0.00 | 1864 | 0 | 1.26 | 324 | 0.00 | 0 | 181 | 0 |
| 93 | 720 | 109.03 | 27268 | 0.00 | 5100 | 0 | 5.24 | 1204 | 0.00 | 0 | 779 | 0 |
| 94 | 744 | 105.44 | 27309 | 0.00 | 5100 | 0 | 7.91 | 1762 | 0.00 | 0 | 1241 | 0 |
| 95 | 720 | 102.03 | 22247 | 0.00 | 5100 | 0 | 5.44 | 1084 | 0.00 | 0 | 811 | 0 |
| 96 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.36 | 67 | 0.00 | 0 | 51 | 0 |
| 97 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 98 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 99 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.18 | 33 | 0.00 | 0 | 25 | 0 |
| 100 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 2.19 | 476 | 0.00 | 0 | 317 | 0 |
| 101 | 744 | 99.28 | 25998 | 0.00 | 4321 | 0 | 1.43 | 375 | 0.00 | 0 | 206 | 0 |
| 102 | 720 | 112.81 | 40225 | 0.00 | 5100 | 0 | 9.18 | 3820 | 4.26 | 1295 | 1500 | 627 |
| 103 | 744 | 18.14 | 5165 | 0.00 | 838 | 0 | 9.18 | 3820 | 5.33 | 1749 | 1500 | 794 |
| 104 | 744 | 106.72 | 36952 | 0.00 | 5100 | 0 | 9.18 | 3964 | 0.00 | 0 | 1500 | 0 |
| 105 | 720 | 80.02 | 18565 | 0.00 | 3965 | 0 | 1.36 | 316 | 0.00 | 0 | 196 | 0 |
| 106 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.01 | 2 | 0.00 | 0 | 1 | 0 |
| 107 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 108 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 109 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 110 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 111 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 112 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 113 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 114 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 1 | 0.00 | 0 | 1 | 0 |
| 115 | 744 | 29.13 | 8322 | 0.00 | 1255 | 0 | 0.07 | 19 | 0.00 | 0 | 9 | 0 |
| 116 | 744 | 35.99 | 9057 | 0.00 | 1565 | 0 | 0.35 | 88 | 0.00 | 0 | 50 | 0 |
| 117 | 720 | 34.68 | 8364 | 0.00 | 1523 | 0 | 3.72 | 898 | 0.00 | 0 | 544 | 0 |
| 118 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 119 | 720 | 22.52 | 4280 | 0.00 | 967 | 0 | 3.20 | 608 | 0.00 | 0 | 466 | 0 |
| 120 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.22 | 43 | 0.00 | 0 | 31 | 0 |
| 121 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 122 | 696 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 123 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 124 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 125 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 1 | 0.00 | 0 | 1 | 0 |
| 126 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.05 | 14 | 0.00 | 0 | 7 | 0 |
| 127 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.01 | 2 | 0.00 | 0 | 1 | 0 |
| 128 | 744 | 30.78 | 7768 | 0.00 | 1328 | 0 | 0.09 | 24 | 0.00 | 0 | 13 | 0 |
| 129 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.31 | 73 | 0.00 | 0 | 44 | 0 |
| 130 | 744 | 36.97 | 8095 | 0.00 | 1590 | 0 | 7.49 | 1639 | 0.00 | 0 | 1161 | 0 |
| 131 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.74 | 146 | 0.00 | 0 | 107 | 0 |
| 132 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 2.27 | 451 | 0.00 | 0 | 329 | 0 |
| 133 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.13 | 24 | 0.00 | 0 | 19 | 0 |
| 134 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 135 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.24 | 47 | 0.00 | 0 | 35 | 0 |
| 136 | 720 | 42.00 | 8550 | 0.00 | 1806 | 0 | 4.05 | 825 | 0.00 | 0 | 595 | 0 |
| 137 | 744 | 35.37 | 8860 | 0.00 | 1533 | 0 | 1.43 | 358 | 0.00 | 0 | 206 | 0 |
| 138 | 720 | 114.97 | 31383 | 0.00 | 5100 | 0 | 9.18 | 3820 | 4.41 | 1341 | 1500 | 650 |
| 139 | 744 | 110.08 | 43424 | 0.00 | 5100 | 0 | 9.18 | 3967 | 4.42 | 1380 | 1500 | 651 |
| 140 | 744 | 105.18 | 28286 | 0.00 | 5100 | 0 | 6.15 | 1624 | 0.00 | 0 | 928 | 0 |
| 141 | 720 | 101.49 | 26228 | 0.00 | 5100 | 0 | 4.95 | 1201 | 0.00 | 0 | 734 | 0 |
| 142 | 744 | 97.90 | 22678 | 0.00 | 5100 | 0 | 7.20 | 1599 | 0.00 | 0 | 1109 | 0 |
| 143 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 144 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 145 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 146 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 147 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 148 | 720 | 115.33 | 22648 | 0.00 | 5100 | 0 | 0.01 | 2 | 0.00 | 0 | 1 | 0 |
| 149 | 744 | 102.85 | 25725 | 0.00 | 4649 | 0 | 0.95 | 237 | 0.00 | 0 | 137 | 0 |
| 150 | 720 | 108.36 | 40709 | 0.00 | 5100 | 0 | 9.18 | 3820 | 4.60 | 1400 | 1500 | 680 |
| 151 | 744 | 102.07 | 39357 | 0.00 | 5100 | 0 | 9.18 | 3820 | 4.53 | 1486 | 1500 | 668 |
| 152 | 744 | 84.45 | 22642 | 0.00 | 4429 | 0 | 1.38 | 369 | 0.00 | 0 | 198 | 0 |
| 153 | 720 | 78.32 | 19242 | 0.00 | 4249 | 0 | 0.15 | 37 | 0.00 | 0 | 22 | 0 |
| 154 | 744 | 40.20 | 8887 | 0.00 | 2228 | 0 | 0.23 | 52 | 0.00 | 0 | 34 | 0 |
| 155 | 720 | 43.23 | 8471 | 0.00 | 2433 | 0 | 0.18 | 36 | 0.00 | 0 | 26 | 0 |
| 156 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.01 | 2 | 0.00 | 0 | 1 | 0 |
| 157 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 158 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 159 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 160 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.04 | 8 | 0.00 | 0 | 6 | 0 |
| 161 | 744 | 31.99 | 8081 | 0.00 | 1389 | 0 | 3.81 | 962 | 0.00 | 0 | 557 | 0 |
| 162 | 720 | 16.58 | 4298 | 0.00 | 724 | 0 | 9.18 | 3820 | 4.52 | 1375 | 1500 | 667 |
| 163 | 744 | 113.17 | 41701 | 0.00 | 5100 | 0 | 9.18 | 3820 | 4.67 | 1532 | 1500 | 690 |
| 164 | 744 | 73.98 | 19663 | 0.00 | 3446 | 0 | 1.44 | 382 | 0.00 | 0 | 207 | 0 |
| 165 | 720 | 105.13 | 24772 | 0.00 | 5039 | 0 | 4.10 | 966 | 0.00 | 0 | 602 | 0 |
| 166 | 744 | 41.50 | 9651 | 0.00 | 2020 | 0 | 0.51 | 119 | 0.00 | 0 | 73 | 0 |
| 167 | 720 | 101.83 | 20423 | 0.00 | 5071 | 0 | 0.39 | 77 | 0.00 | 0 | 55 | 0 |
| 168 | 744 | 41.48 | 8087 | 0.00 | 2093 | 0 | 3.40 | 663 | 0.00 | 0 | 496 | 0 |
| 169 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.22 | 42 | 0.00 | 0 | 31 | 0 |
| 170 | 696 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 171 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 172 | 720 | 115.39 | 22937 | 0.00 | 5091 | 0 | 0.01 | 2 | 0.00 | 0 | 1 | 0 |
| 173 | 744 | 93.27 | 23388 | 0.00 | 4201 | 0 | 1.39 | 349 | 0.00 | 0 | 201 | 0 |
| 174 | 720 | 16.68 | 4325 | 0.00 | 759 | 0 | 9.18 | 3673 | 4.01 | 1282 | 1500 | 587 |
| 175 | 744 | 109.02 | 34042 | 0.00 | 5100 | 0 | 9.18 | 2851 | 0.00 | 0 | 1500 | 0 |
| 176 | 744 | 91.68 | 23640 | 0.00 | 4438 | 0 | 0.55 | 141 | 0.00 | 0 | 79 | 0 |
| 177 | 720 | 87.43 | 21680 | 0.00 | 4355 | 0 | 0.01 | 2 | 0.00 | 0 | 1 | 0 |
| 178 | 744 | 92.81 | 21708 | 0.00 | 4767 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 179 | 720 | 96.32 | 19354 | 0.00 | 5100 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 180 | 744 | 42.40 | 8678 | 0.00 | 2282 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |

Table H.C-3. NODOS Project, Power Operations, "Pump-Back," Alternative C (Cont.)

| NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Optimized Generation (except Sac River) | | | | | | | | | | | |
| | | Optimized Genration, MW | | | | | | | | | | | |
| | | Sites | | | | | TRR | | | | | | |
| Plant Capacity, MW | | 123.00 | | | | | 9.33 | | | | | | |
| Plant Capacity, cfs | | MaxQ=5100 cfs | | | | | MaxQ=1500 cfs | | | | | | |
| Month | # of Hours | On-Peak, MW | On-Peak, MWh | Off-Peak, MW | On-Peak, cfs | Off-Peak, cfs | On-Peak | On-Peak, MWh | Off-Peak | Off-Peak, MWh | On-Peak, cfs | Off-Peak, cfs |
| 181 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 182 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 183 | 744 | 100.32 | 19619 | 0.00 | 5100 | 0 | 1.26 | 225 | 0.00 | 0 | 181 | 0 |
| 184 | 720 | 96.97 | 23261 | 0.00 | 5100 | 0 | 9.18 | 3758 | 0.00 | 0 | 1500 | 0 |
| 185 | 744 | 93.13 | 23270 | 0.00 | 5100 | 0 | 9.18 | 3873 | 0.00 | 0 | 1500 | 0 |
| 186 | 720 | 88.48 | 26857 | 0.00 | 5100 | 0 | 9.18 | 3673 | 0.95 | 303 | 1500 | 136 |
| 187 | 744 | 66.82 | 18909 | 0.00 | 4062 | 0 | 0.82 | 233 | 0.00 | 0 | 118 | 0 |
| 188 | 744 | 67.84 | 17461 | 0.00 | 4336 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 189 | 720 | 64.94 | 15999 | 0.00 | 4385 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 190 | 744 | 64.71 | 14914 | 0.00 | 4653 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 191 | 720 | 29.84 | 5754 | 0.00 | 2237 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 192 | 744 | 23.80 | 4832 | 0.00 | 1828 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 193 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 194 | 672 | 62.34 | 10530 | 0.00 | 5100 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 195 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 196 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 1.09 | 210 | 0.00 | 0 | 157 | 0 |
| 197 | 744 | 76.82 | 22376 | 0.00 | 5100 | 0 | 9.18 | 3820 | 0.14 | 47 | 1500 | 20 |
| 198 | 720 | 57.92 | 15592 | 0.00 | 4155 | 0 | 1.02 | 273 | 0.00 | 0 | 146 | 0 |
| 199 | 744 | 50.86 | 14430 | 0.00 | 3934 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 200 | 744 | 49.13 | 12700 | 0.00 | 4184 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 201 | 720 | 18.46 | 4611 | 0.00 | 1700 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 202 | 744 | 19.15 | 4294 | 0.00 | 1862 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 203 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 204 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 205 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 206 | 672 | 33.15 | 5700 | 0.00 | 2584 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 207 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 1.19 | 224 | 0.00 | 0 | 171 | 0 |
| 208 | 720 | 60.15 | 12885 | 0.00 | 5100 | 0 | 9.18 | 3623 | 0.00 | 0 | 1500 | 0 |
| 209 | 744 | 18.31 | 4650 | 0.00 | 1683 | 0 | 2.26 | 575 | 0.00 | 0 | 328 | 0 |
| 210 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3820 | 3.49 | 1062 | 1500 | 510 |
| 211 | 744 | 7.76 | 2125 | 0.00 | 747 | 0 | 1.08 | 295 | 0.00 | 0 | 155 | 0 |
| 212 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 213 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 214 | 744 | 10.53 | 2361 | 0.00 | 1019 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 215 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 216 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 217 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 218 | 696 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 219 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 220 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3187 | 0.00 | 0 | 1500 | 0 |
| 221 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3833 | 0.00 | 0 | 1500 | 0 |
| 222 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3820 | 4.50 | 1369 | 1500 | 664 |
| 223 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3820 | 3.37 | 1104 | 1500 | 491 |
| 224 | 744 | 52.16 | 14166 | 0.00 | 3726 | 0 | 1.18 | 319 | 0.00 | 0 | 169 | 0 |
| 225 | 720 | 25.89 | 6264 | 0.00 | 1937 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 226 | 744 | 58.30 | 13450 | 0.00 | 4648 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 227 | 720 | 57.96 | 11828 | 0.00 | 5100 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 228 | 744 | 22.39 | 4505 | 0.00 | 2132 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 229 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 230 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 231 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 1.29 | 234 | 0.00 | 0 | 185 | 0 |
| 232 | 720 | 34.73 | 6786 | 0.00 | 2264 | 0 | 9.18 | 3241 | 0.00 | 0 | 1500 | 0 |
| 233 | 744 | 52.31 | 13170 | 0.00 | 3539 | 0 | 7.35 | 1852 | 0.00 | 0 | 1137 | 0 |
| 234 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3820 | 3.34 | 1015 | 1500 | 487 |
| 235 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3820 | 3.57 | 1171 | 1500 | 522 |
| 236 | 744 | 54.83 | 14690 | 0.00 | 3978 | 0 | 0.80 | 215 | 0.00 | 0 | 115 | 0 |
| 237 | 720 | 57.85 | 13805 | 0.00 | 4540 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 238 | 744 | 55.02 | 12624 | 0.00 | 4750 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 239 | 720 | 28.27 | 5799 | 0.00 | 2670 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 240 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 241 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 242 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 243 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 244 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 245 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 246 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 1.04 | 268 | 0.00 | 0 | 150 | 0 |
| 247 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3967 | 3.36 | 1048 | 1500 | 490 |
| 248 | 744 | 29.45 | 7625 | 0.00 | 1410 | 0 | 1.24 | 321 | 0.00 | 0 | 178 | 0 |
| 249 | 720 | 34.74 | 8655 | 0.00 | 1681 | 0 | 0.15 | 37 | 0.00 | 0 | 21 | 0 |
| 250 | 744 | 89.04 | 20474 | 0.00 | 4405 | 0 | 0.22 | 52 | 0.00 | 0 | 32 | 0 |
| 251 | 720 | 99.90 | 19911 | 0.00 | 5085 | 0 | 0.18 | 36 | 0.00 | 0 | 26 | 0 |
| 252 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.01 | 2 | 0.00 | 0 | 2 | 0 |
| 253 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 254 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 255 | 744 | 37.91 | 7301 | 0.00 | 1783 | 0 | 1.27 | 245 | 0.00 | 0 | 183 | 0 |
| 256 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3820 | 1.11 | 336 | 1500 | 159 |
| 257 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3485 | 0.00 | 0 | 1500 | 0 |
| 258 | 720 | 104.33 | 36480 | 0.00 | 5100 | 0 | 9.18 | 3673 | 4.94 | 1581 | 1500 | 732 |
| 259 | 744 | 98.74 | 32606 | 0.00 | 5100 | 0 | 9.18 | 3967 | 1.58 | 492 | 1500 | 227 |
| 260 | 744 | 94.07 | 25323 | 0.00 | 5100 | 0 | 7.51 | 1957 | 0.00 | 0 | 1166 | 0 |
| 261 | 720 | 74.53 | 18711 | 0.00 | 4198 | 0 | 0.45 | 114 | 0.00 | 0 | 65 | 0 |
| 262 | 744 | 81.87 | 18474 | 0.00 | 4797 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 263 | 720 | 46.93 | 9605 | 0.00 | 2827 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 264 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 265 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 266 | 696 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 267 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 268 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 269 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 270 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |

Table H.C-3. NODOS Project, Power Operations, "Pump-Back," Alternative C (Cont.)

| NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Optimized Generation (except Sac River) | | | | | | | | | | |
| | | Optimized Genration, MW | | | | | | | | | | |
| | | Sites | | | | | TRR | | | | | |
| Plant Capacity, MW | | 123.00 | | | | | 9.33 | | | | | |
| Plant Capacity, cfs | | MaxQ=5100 cfs | | | | | MaxQ=1500 cfs | | | | | |
| Month | # of Hours | On-Peak, MW | On-Peak, MWh | Off-Peak, MW | On-Peak, cfs | Off-Peak, cfs | On-Peak | On-Peak, MWh | Off-Peak | Off-Peak, MWh | On-Peak, cfs | Off-Peak, cfs |
| 271 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 272 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.01 | 2 | 0.00 | 0 | 1 | 0 |
| 273 | 720 | 39.49 | 9833 | 0.00 | 1699 | 0 | 0.51 | 126 | 0.00 | 0 | 73 | 0 |
| 274 | 744 | 115.77 | 29580 | 0.00 | 5100 | 0 | 7.53 | 1681 | 0.00 | 0 | 1168 | 0 |
| 275 | 720 | 112.68 | 25157 | 0.00 | 5100 | 0 | 5.51 | 1138 | 0.00 | 0 | 823 | 0 |
| 276 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 277 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 278 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 279 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 280 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 281 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.04 | 10 | 0.00 | 0 | 6 | 0 |
| 282 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 2.14 | 566 | 0.00 | 0 | 309 | 0 |
| 283 | 744 | 114.00 | 31223 | 0.00 | 4997 | 0 | 9.18 | 3820 | 3.87 | 1271 | 1500 | 567 |
| 284 | 744 | 41.12 | 11119 | 0.00 | 1832 | 0 | 7.08 | 1915 | 0.00 | 0 | 1088 | 0 |
| 285 | 720 | 111.58 | 29405 | 0.00 | 5100 | 0 | 5.22 | 1292 | 0.00 | 0 | 776 | 0 |
| 286 | 744 | 108.05 | 27368 | 0.00 | 5100 | 0 | 7.61 | 1690 | 0.00 | 0 | 1185 | 0 |
| 287 | 720 | 104.87 | 23057 | 0.00 | 5100 | 0 | 4.52 | 940 | 0.00 | 0 | 667 | 0 |
| 288 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 289 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 290 | 672 | 44.93 | 7777 | 0.00 | 1930 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 291 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 292 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.07 | 14 | 0.00 | 0 | 10 | 0 |
| 293 | 744 | 39.25 | 9773 | 0.00 | 1688 | 0 | 1.54 | 383 | 0.00 | 0 | 222 | 0 |
| 294 | 720 | 115.88 | 30744 | 0.00 | 5100 | 0 | 9.18 | 2951 | 0.00 | 0 | 1500 | 0 |
| 295 | 744 | 111.21 | 41959 | 0.00 | 5100 | 0 | 9.18 | 3820 | 4.17 | 1369 | 1500 | 613 |
| 296 | 744 | 71.02 | 19229 | 0.00 | 3373 | 0 | 2.50 | 677 | 0.00 | 0 | 363 | 0 |
| 297 | 720 | 104.21 | 25922 | 0.00 | 5100 | 0 | 4.71 | 1125 | 0.00 | 0 | 697 | 0 |
| 298 | 744 | 100.48 | 26170 | 0.00 | 5100 | 0 | 7.51 | 1739 | 0.00 | 0 | 1165 | 0 |
| 299 | 720 | 97.04 | 20826 | 0.00 | 5100 | 0 | 3.19 | 666 | 0.00 | 0 | 465 | 0 |
| 300 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 301 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 302 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 303 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 304 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 305 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 306 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 307 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 1 | 0.00 | 0 | 1 | 0 |
| 308 | 744 | 30.56 | 7977 | 0.00 | 1318 | 0 | 0.09 | 24 | 0.00 | 0 | 13 | 0 |
| 309 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.43 | 107 | 0.00 | 0 | 62 | 0 |
| 310 | 744 | 39.67 | 9216 | 0.00 | 1706 | 0 | 7.02 | 1630 | 0.00 | 0 | 1077 | 0 |
| 311 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.69 | 139 | 0.00 | 0 | 99 | 0 |
| 312 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 3.32 | 688 | 0.00 | 0 | 484 | 0 |
| 313 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.18 | 37 | 0.00 | 0 | 26 | 0 |
| 314 | 696 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 315 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 316 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 317 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.25 | 59 | 0.00 | 0 | 35 | 0 |
| 318 | 720 | 23.25 | 6178 | 0.00 | 999 | 0 | 4.35 | 1155 | 0.00 | 0 | 640 | 0 |
| 319 | 744 | 114.72 | 44921 | 0.00 | 5100 | 0 | 9.18 | 3967 | 3.53 | 1100 | 1500 | 515 |
| 320 | 744 | 46.49 | 12154 | 0.00 | 2125 | 0 | 1.52 | 397 | 0.00 | 0 | 219 | 0 |
| 321 | 720 | 108.60 | 28380 | 0.00 | 5100 | 0 | 4.80 | 1196 | 0.00 | 0 | 710 | 0 |
| 322 | 744 | 104.95 | 27788 | 0.00 | 5100 | 0 | 7.52 | 1754 | 0.00 | 0 | 1168 | 0 |
| 323 | 720 | 101.55 | 21904 | 0.00 | 5100 | 0 | 4.62 | 935 | 0.00 | 0 | 681 | 0 |
| 324 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.29 | 60 | 0.00 | 0 | 41 | 0 |
| 325 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 326 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 327 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 328 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 329 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 1.42 | 344 | 0.00 | 0 | 205 | 0 |
| 330 | 720 | 114.02 | 30329 | 0.00 | 4975 | 0 | 9.18 | 3820 | 4.26 | 1295 | 1500 | 626 |
| 331 | 744 | 111.93 | 46332 | 0.00 | 5100 | 0 | 9.18 | 3967 | 5.01 | 1562 | 1500 | 743 |
| 332 | 744 | 106.26 | 33580 | 0.00 | 5100 | 0 | 9.18 | 3820 | 0.77 | 254 | 1500 | 112 |
| 333 | 720 | 39.50 | 9862 | 0.00 | 1940 | 0 | 1.04 | 260 | 0.00 | 0 | 150 | 0 |
| 334 | 744 | 95.91 | 21612 | 0.00 | 4828 | 0 | 0.23 | 52 | 0.00 | 0 | 33 | 0 |
| 335 | 720 | 95.91 | 20290 | 0.00 | 4972 | 0 | 0.36 | 75 | 0.00 | 0 | 51 | 0 |
| 336 | 744 | 36.55 | 7652 | 0.00 | 1921 | 0 | 3.49 | 731 | 0.00 | 0 | 510 | 0 |
| 337 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 338 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 339 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 340 | 720 | 70.99 | 14394 | 0.00 | 3069 | 0 | 0.01 | 2 | 0.00 | 0 | 1 | 0 |
| 341 | 744 | 97.37 | 23550 | 0.00 | 4292 | 0 | 1.24 | 300 | 0.00 | 0 | 179 | 0 |
| 342 | 720 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3820 | 4.41 | 1341 | 1500 | 650 |
| 343 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 9.18 | 3967 | 5.01 | 1562 | 1500 | 743 |
| 344 | 744 | 110.95 | 37580 | 0.00 | 5100 | 0 | 9.18 | 3820 | 1.05 | 345 | 1500 | 151 |
| 345 | 720 | 106.59 | 27640 | 0.00 | 5100 | 0 | 5.13 | 1284 | 0.00 | 0 | 763 | 0 |
| 346 | 744 | 103.07 | 25765 | 0.00 | 5100 | 0 | 7.50 | 1696 | 0.00 | 0 | 1164 | 0 |
| 347 | 720 | 41.59 | 8835 | 0.00 | 2096 | 0 | 3.44 | 731 | 0.00 | 0 | 502 | 0 |
| 348 | 744 | 34.23 | 7200 | 0.00 | 1740 | 0 | 0.28 | 59 | 0.00 | 0 | 40 | 0 |
| 349 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 1 | 0.00 | 0 | 0 | 0 |
| 350 | 672 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| 351 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 1.56 | 313 | 0.00 | 0 | 226 | 0 |
| 352 | 720 | 111.64 | 23536 | 0.00 | 5100 | 0 | 9.18 | 3820 | 2.42 | 734 | 1500 | 350 |
| 353 | 744 | 108.17 | 30984 | 0.00 | 5100 | 0 | 9.18 | 3782 | 0.00 | 0 | 1500 | 0 |
| 354 | 720 | 103.69 | 33849 | 0.00 | 5100 | 0 | 9.18 | 3820 | 2.13 | 647 | 1500 | 308 |
| 355 | 744 | 97.74 | 37197 | 0.00 | 5100 | 0 | 9.18 | 3820 | 4.67 | 1533 | 1500 | 691 |
| 356 | 744 | 92.10 | 26094 | 0.00 | 5100 | 0 | 8.07 | 2198 | 0.00 | 0 | 1270 | 0 |
| 357 | 720 | 87.78 | 22203 | 0.00 | 5100 | 0 | 5.06 | 1220 | 0.00 | 0 | 752 | 0 |
| 358 | 744 | 83.17 | 21860 | 0.00 | 5100 | 0 | 7.37 | 1736 | 0.00 | 0 | 1139 | 0 |
| 359 | 720 | 78.59 | 17399 | 0.00 | 5100 | 0 | 4.14 | 883 | 0.00 | 0 | 608 | 0 |
| 360 | 744 | 0.00 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |

Table H.C-3. NODOS Project, Power Operations, "Pump-Back," Alternative C (Cont.)

| NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Pump Back Operations, MW | | | | | | | | |
| | | With Pump cycle | | | With Gen Cycle | | | Pure Pump Back | | |
| Plant Capacity, MW | | 123.00 | | | 123.00 | | | 123.00 | | |
| Plant Capacity, cfs | | MaxQ=5100 cfs | | | MaxQ=5100 cfs | | | MaxQ=5100 cfs | | |
| Month | # of Hours | On-Peak | On-Peak, MWh | PumpBack Q cfs | On-Peak | On-Peak, MWh | PumpBack Q cfs | On-Peak | On-Peak, MWh | PumpBack Q cfs |
| 1 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 2 | 672 | 51.61 | 16049 | 2226 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 3 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.32 | 35905 | 5100 |
| 4 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.34 | 34870 | 5100 |
| 5 | 744 | 0.00 | 0 | 0 | 91.65 | 33991 | 3959 | 0.00 | 0 | 0 |
| 6 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 7 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 112.55 | 33216 | 5100 |
| 8 | 744 | 0.00 | 0 | 0 | 82.05 | 25251 | 3734 | 0.00 | 0 | 0 |
| 9 | 720 | 0.00 | 0 | 0 | 1.96 | 518 | 91 | 0.00 | 0 | 0 |
| 10 | 744 | 0.00 | 0 | 0 | 70.16 | 16733 | 3329 | 0.00 | 0 | 0 |
| 11 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 12 | 744 | 117.71 | 26633 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 13 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.39 | 24019 | 5100 |
| 14 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.39 | 17722 | 5100 |
| 15 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.39 | 23223 | 5100 |
| 16 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.41 | 27197 | 5100 |
| 17 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.34 | 36952 | 5100 |
| 18 | 720 | 0.00 | 0 | 0 | 106.45 | 31919 | 4597 | 0.00 | 0 | 0 |
| 19 | 744 | 0.00 | 0 | 0 | 81.00 | 23044 | 3521 | 0.00 | 0 | 0 |
| 20 | 744 | 117.06 | 30336 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 21 | 720 | 0.00 | 0 | 0 | 43.21 | 9898 | 1883 | 0.00 | 0 | 0 |
| 22 | 744 | 0.00 | 0 | 0 | 72.76 | 17424 | 3214 | 0.00 | 0 | 0 |
| 23 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 24 | 744 | 0.00 | 0 | 0 | 87.23 | 17476 | 3972 | 0.00 | 0 | 0 |
| 25 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 111.82 | 24228 | 5100 |
| 26 | 696 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 27 | 744 | 118.37 | 27002 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 28 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.40 | 30783 | 5100 |
| 29 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.24 | 37268 | 5100 |
| 30 | 720 | 0.00 | 0 | 0 | 62.04 | 17703 | 2688 | 0.00 | 0 | 0 |
| 31 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 32 | 744 | 113.64 | 29327 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 33 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 34 | 744 | 0.00 | 0 | 0 | 63.44 | 14561 | 2921 | 0.00 | 0 | 0 |
| 35 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 36 | 744 | 0.00 | 0 | 0 | 62.19 | 12168 | 2967 | 0.00 | 0 | 0 |
| 37 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 106.12 | 21699 | 5100 |
| 38 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 106.12 | 16857 | 5100 |
| 39 | 744 | 64.59 | 12765 | 3023 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 40 | 720 | 0.00 | 0 | 0 | 50.80 | 12968 | 2352 | 0.00 | 0 | 0 |
| 41 | 744 | 0.00 | 0 | 0 | 31.64 | 9945 | 1496 | 0.00 | 0 | 0 |
| 42 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 43 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 44 | 744 | 0.00 | 0 | 0 | 59.76 | 14918 | 3194 | 0.00 | 0 | 0 |
| 45 | 720 | 0.00 | 0 | 0 | 59.96 | 14411 | 3253 | 0.00 | 0 | 0 |
| 46 | 744 | 0.00 | 0 | 0 | 34.29 | 8226 | 1895 | 0.00 | 0 | 0 |
| 47 | 720 | 0.00 | 0 | 0 | 47.15 | 9352 | 2659 | 0.00 | 0 | 0 |
| 48 | 744 | 0.00 | 0 | 0 | 4.54 | 909 | 262 | 0.00 | 0 | 0 |
| 49 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 86.32 | 16425 | 5100 |
| 50 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 51 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 52 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 53 | 744 | 0.00 | 0 | 0 | 0.30 | 75 | 22 | 0.00 | 0 | 0 |
| 54 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 55 | 744 | 0.00 | 0 | 0 | 26.69 | 7470 | 2580 | 0.00 | 0 | 0 |
| 56 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 51.71 | 12550 | 5100 |
| 57 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 51.80 | 12177 | 5100 |
| 58 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 51.69 | 11311 | 5100 |
| 59 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 51.71 | 9538 | 5100 |
| 60 | 744 | 29.78 | 5764 | 2614 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 61 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 62 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 63 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 64 | 720 | 21.65 | 4453 | 1078 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 65 | 744 | 62.20 | 15993 | 2967 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 66 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 108.19 | 29377 | 5100 |
| 67 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 107.90 | 29540 | 5100 |
| 68 | 744 | 0.00 | 0 | 0 | 74.02 | 18855 | 3512 | 0.00 | 0 | 0 |
| 69 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 70 | 744 | 0.00 | 0 | 0 | 4.31 | 918 | 215 | 0.00 | 0 | 0 |
| 71 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 72 | 744 | 0.00 | 0 | 0 | 58.24 | 11408 | 3047 | 0.00 | 0 | 0 |
| 73 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 74 | 696 | 37.40 | 5655 | 1771 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 75 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 76 | 720 | 117.98 | 26279 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 77 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.26 | 31364 | 5100 |
| 78 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 79 | 744 | 0.00 | 0 | 0 | 101.38 | 27565 | 4534 | 0.00 | 0 | 0 |
| 80 | 744 | 0.00 | 0 | 0 | 20.16 | 5168 | 911 | 0.00 | 0 | 0 |
| 81 | 720 | 0.00 | 0 | 0 | 3.45 | 808 | 160 | 0.00 | 0 | 0 |
| 82 | 744 | 0.00 | 0 | 0 | 63.77 | 13731 | 3020 | 0.00 | 0 | 0 |
| 83 | 720 | 0.00 | 0 | 0 | 44.73 | 8779 | 2140 | 0.00 | 0 | 0 |
| 84 | 744 | 0.00 | 0 | 0 | 65.31 | 12594 | 3160 | 0.00 | 0 | 0 |
| 85 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 86 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 87 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.39 | 22538 | 5100 |
| 88 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.41 | 23979 | 5100 |
| 89 | 744 | 0.00 | 0 | 0 | 82.14 | 21545 | 3546 | 0.00 | 0 | 0 |
| 90 | 720 | 0.00 | 0 | 0 | 28.84 | 7715 | 1262 | 0.00 | 0 | 0 |

Table H.C-3. NODOS Project, Power Operations, "Pump-Back," Alternative C (Cont.)

| | | NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Pump Back Operations, MW | | | | | | | | |
| | | With Pump cycle | | | With Gen Cycle | | | Pure Pump Back | | |
| Plant Capacity, MW | | 123.00 | | | 123.00 | | | 123.00 | | |
| Plant Capacity, cfs | | MaxQ=5100 cfs | | | MaxQ=5100 cfs | | | MaxQ=5100 cfs | | |
| Month | # of Hours | On-Peak | On-Peak, MWh | PumpBack Q cfs | On-Peak | On-Peak, MWh | PumpBack Q cfs | On-Peak | On-Peak, MWh | PumpBack Q cfs |
| 91 | 744 | 0.00 | 0 | 0 | 30.53 | 8348 | 1367 | 0.00 | 0 | 0 |
| 92 | 744 | 0.00 | 0 | 0 | 70.97 | 18295 | 3236 | 0.00 | 0 | 0 |
| 93 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 94 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 95 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 96 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 100.55 | 18718 | 5100 |
| 97 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 98 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 99 | 744 | 95.41 | 18075 | 4152 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 100 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.42 | 25780 | 5100 |
| 101 | 744 | 0.00 | 0 | 0 | 17.97 | 4706 | 779 | 0.00 | 0 | 0 |
| 102 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 103 | 744 | 0.00 | 0 | 0 | 91.90 | 26158 | 4262 | 0.00 | 0 | 0 |
| 104 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 105 | 720 | 0.00 | 0 | 0 | 22.98 | 5333 | 1135 | 0.00 | 0 | 0 |
| 106 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 101.46 | 22892 | 5100 |
| 107 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 101.47 | 20045 | 5100 |
| 108 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 109 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 110 | 672 | 118.01 | 19007 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 111 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.43 | 21487 | 5100 |
| 112 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.45 | 24925 | 5100 |
| 113 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.54 | 29803 | 5100 |
| 114 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.54 | 31824 | 5100 |
| 115 | 744 | 0.00 | 0 | 0 | 89.03 | 25433 | 3845 | 0.00 | 0 | 0 |
| 116 | 744 | 0.00 | 0 | 0 | 81.13 | 20414 | 3535 | 0.00 | 0 | 0 |
| 117 | 720 | 0.00 | 0 | 0 | 81.30 | 19606 | 3577 | 0.00 | 0 | 0 |
| 118 | 744 | 111.02 | 25316 | 4826 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 119 | 720 | 0.00 | 0 | 0 | 96.02 | 18245 | 4133 | 0.00 | 0 | 0 |
| 120 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.39 | 23505 | 5100 |
| 121 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.48 | 22043 | 5100 |
| 122 | 696 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.48 | 18349 | 5100 |
| 123 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.48 | 22796 | 5100 |
| 124 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.49 | 25175 | 5100 |
| 125 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.43 | 30376 | 5100 |
| 126 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.26 | 31548 | 5100 |
| 127 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.32 | 33758 | 5100 |
| 128 | 744 | 0.00 | 0 | 0 | 87.19 | 22001 | 3772 | 0.00 | 0 | 0 |
| 129 | 720 | 118.12 | 28386 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 130 | 744 | 0.00 | 0 | 0 | 81.45 | 17835 | 3510 | 0.00 | 0 | 0 |
| 131 | 720 | 118.46 | 23255 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 132 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.53 | 23522 | 5100 |
| 133 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.53 | 22136 | 5100 |
| 134 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.53 | 18531 | 5100 |
| 135 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.53 | 22646 | 5100 |
| 136 | 720 | 0.00 | 0 | 0 | 76.49 | 15569 | 3294 | 0.00 | 0 | 0 |
| 137 | 744 | 0.00 | 0 | 0 | 82.15 | 20579 | 3567 | 0.00 | 0 | 0 |
| 138 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 139 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 140 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 141 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 142 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 143 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 144 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 145 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 111.76 | 20366 | 5100 |
| 146 | 672 | 93.63 | 14687 | 4185 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 147 | 744 | 116.47 | 21510 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 148 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 149 | 744 | 0.00 | 0 | 0 | 10.02 | 2505 | 451 | 0.00 | 0 | 0 |
| 150 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 151 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 152 | 744 | 0.00 | 0 | 0 | 12.86 | 3447 | 671 | 0.00 | 0 | 0 |
| 153 | 720 | 0.00 | 0 | 0 | 15.76 | 3872 | 851 | 0.00 | 0 | 0 |
| 154 | 744 | 0.00 | 0 | 0 | 51.78 | 11447 | 2872 | 0.00 | 0 | 0 |
| 155 | 720 | 0.00 | 0 | 0 | 47.39 | 9286 | 2667 | 0.00 | 0 | 0 |
| 156 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 89.59 | 17327 | 5100 |
| 157 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 158 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 159 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 160 | 720 | 116.91 | 23091 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 161 | 744 | 0.00 | 0 | 0 | 85.31 | 21551 | 3711 | 0.00 | 0 | 0 |
| 162 | 720 | 0.00 | 0 | 0 | 99.92 | 25898 | 4376 | 0.00 | 0 | 0 |
| 163 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 164 | 744 | 0.00 | 0 | 0 | 35.56 | 9452 | 1654 | 0.00 | 0 | 0 |
| 165 | 720 | 0.00 | 0 | 0 | 1.28 | 302 | 61 | 0.00 | 0 | 0 |
| 166 | 744 | 0.00 | 0 | 0 | 63.22 | 14701 | 3080 | 0.00 | 0 | 0 |
| 167 | 720 | 0.00 | 0 | 0 | 0.59 | 117 | 29 | 0.00 | 0 | 0 |
| 168 | 744 | 0.00 | 0 | 0 | 59.55 | 11609 | 3007 | 0.00 | 0 | 0 |
| 169 | 744 | 101.06 | 19436 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 170 | 696 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 171 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 172 | 720 | 0.00 | 0 | 0 | 0.21 | 43 | 9 | 0.00 | 0 | 0 |
| 173 | 744 | 0.00 | 0 | 0 | 20.02 | 5019 | 899 | 0.00 | 0 | 0 |
| 174 | 720 | 0.00 | 0 | 0 | 95.12 | 24662 | 4341 | 0.00 | 0 | 0 |
| 175 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 176 | 744 | 0.00 | 0 | 0 | 13.74 | 3542 | 662 | 0.00 | 0 | 0 |
| 177 | 720 | 0.00 | 0 | 0 | 15.01 | 3723 | 745 | 0.00 | 0 | 0 |
| 178 | 744 | 0.00 | 0 | 0 | 6.52 | 1525 | 333 | 0.00 | 0 | 0 |
| 179 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 180 | 744 | 0.00 | 0 | 0 | 52.33 | 10708 | 2818 | 0.00 | 0 | 0 |

Table H.C-3. NODOS Project, Power Operations, "Pump-Back," Alternative C (Cont.)

| NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Pump Back Operations, MW | | | | | | | | |
| | | With Pump cycle | | | With Gen Cycle | | | Pure Pump Back | | |
| Plant Capacity, MW | | 123.00 | | | 123.00 | | | 123.00 | | |
| Plant Capacity, cfs | | MaxQ=5100 cfs | | | MaxQ=5100 cfs | | | MaxQ=5100 cfs | | |
| Month | # of Hours | On-Peak | On-Peak, MWh | PumpBack Q cfs | On-Peak | On-Peak, MWh | PumpBack Q cfs | On-Peak | On-Peak, MWh | PumpBack Q cfs |
| 181 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 182 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 101.85 | 16660 | 5100 |
| 183 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 184 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 185 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 186 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 187 | 744 | 0.00 | 0 | 0 | 17.15 | 4852 | 1038 | 0.00 | 0 | 0 |
| 188 | 744 | 0.00 | 0 | 0 | 12.02 | 3094 | 764 | 0.00 | 0 | 0 |
| 189 | 720 | 0.00 | 0 | 0 | 10.65 | 2625 | 715 | 0.00 | 0 | 0 |
| 190 | 744 | 0.00 | 0 | 0 | 6.26 | 1442 | 447 | 0.00 | 0 | 0 |
| 191 | 720 | 0.00 | 0 | 0 | 38.14 | 7357 | 2863 | 0.00 | 0 | 0 |
| 192 | 744 | 0.00 | 0 | 0 | 42.50 | 8628 | 3272 | 0.00 | 0 | 0 |
| 193 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 65.02 | 12235 | 5100 |
| 194 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 195 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 196 | 720 | 79.25 | 15231 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 197 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 198 | 720 | 0.00 | 0 | 0 | 13.25 | 3567 | 945 | 0.00 | 0 | 0 |
| 199 | 744 | 0.00 | 0 | 0 | 15.15 | 4297 | 1166 | 0.00 | 0 | 0 |
| 200 | 744 | 0.00 | 0 | 0 | 10.82 | 2797 | 916 | 0.00 | 0 | 0 |
| 201 | 720 | 0.00 | 0 | 0 | 36.78 | 9188 | 3400 | 0.00 | 0 | 0 |
| 202 | 744 | 0.00 | 0 | 0 | 33.21 | 7445 | 3238 | 0.00 | 0 | 0 |
| 203 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 51.30 | 10368 | 5100 |
| 204 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 51.40 | 10365 | 5100 |
| 205 | 744 | 17.27 | 3270 | 1464 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 206 | 672 | 0.00 | 0 | 0 | 32.27 | 5549 | 2516 | 0.00 | 0 | 0 |
| 207 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 63.68 | 11979 | 5100 |
| 208 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 209 | 744 | 0.00 | 0 | 0 | 37.06 | 9412 | 3417 | 0.00 | 0 | 0 |
| 210 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 53.44 | 14280 | 5100 |
| 211 | 744 | 0.00 | 0 | 0 | 44.83 | 12279 | 4353 | 0.00 | 0 | 0 |
| 212 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 52.33 | 14072 | 5100 |
| 213 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 53.12 | 13251 | 5100 |
| 214 | 744 | 0.00 | 0 | 0 | 41.90 | 9398 | 4081 | 0.00 | 0 | 0 |
| 215 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 51.31 | 10505 | 5100 |
| 216 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 51.40 | 9908 | 5100 |
| 217 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 51.47 | 10392 | 5100 |
| 218 | 696 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 51.47 | 8596 | 5100 |
| 219 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 220 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 74.29 | 13652 | 5100 |
| 221 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 74.22 | 18465 | 5100 |
| 222 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 74.05 | 19938 | 5100 |
| 223 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 73.82 | 20281 | 5100 |
| 224 | 744 | 0.00 | 0 | 0 | 19.31 | 5244 | 1374 | 0.00 | 0 | 0 |
| 225 | 720 | 0.00 | 0 | 0 | 42.18 | 10205 | 3163 | 0.00 | 0 | 0 |
| 226 | 744 | 0.00 | 0 | 0 | 5.72 | 1319 | 452 | 0.00 | 0 | 0 |
| 227 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 228 | 744 | 0.00 | 0 | 0 | 31.12 | 6263 | 2968 | 0.00 | 0 | 0 |
| 229 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 51.68 | 10410 | 5100 |
| 230 | 672 | 25.24 | 4430 | 2178 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 231 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 232 | 720 | 0.00 | 0 | 0 | 43.48 | 8496 | 2836 | 0.00 | 0 | 0 |
| 233 | 744 | 0.00 | 0 | 0 | 23.14 | 5827 | 1561 | 0.00 | 0 | 0 |
| 234 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 73.15 | 18731 | 5100 |
| 235 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 72.86 | 20686 | 5100 |
| 236 | 744 | 0.00 | 0 | 0 | 15.54 | 4163 | 1122 | 0.00 | 0 | 0 |
| 237 | 720 | 0.00 | 0 | 0 | 7.19 | 1715 | 560 | 0.00 | 0 | 0 |
| 238 | 744 | 0.00 | 0 | 0 | 4.08 | 937 | 350 | 0.00 | 0 | 0 |
| 239 | 720 | 0.00 | 0 | 0 | 25.75 | 5282 | 2430 | 0.00 | 0 | 0 |
| 240 | 744 | 54.87 | 10762 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 241 | 744 | 18.22 | 3630 | 1457 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 242 | 672 | 9.33 | 1571 | 641 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 243 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 244 | 720 | 61.66 | 12334 | 3363 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 245 | 744 | 42.02 | 10327 | 2171 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 246 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 247 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 106.74 | 30403 | 5100 |
| 248 | 744 | 0.00 | 0 | 0 | 76.89 | 19906 | 3690 | 0.00 | 0 | 0 |
| 249 | 720 | 0.00 | 0 | 0 | 70.51 | 17567 | 3419 | 0.00 | 0 | 0 |
| 250 | 744 | 0.00 | 0 | 0 | 14.12 | 3246 | 695 | 0.00 | 0 | 0 |
| 251 | 720 | 0.00 | 0 | 0 | 0.29 | 57 | 15 | 0.00 | 0 | 0 |
| 252 | 744 | 100.32 | 20345 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 253 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 100.75 | 20962 | 5100 |
| 254 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 255 | 744 | 0.00 | 0 | 0 | 70.43 | 13562 | 3317 | 0.00 | 0 | 0 |
| 256 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 107.50 | 21604 | 5100 |
| 257 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 107.39 | 26099 | 5100 |
| 258 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 259 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 260 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 261 | 720 | 0.00 | 0 | 0 | 16.08 | 4036 | 902 | 0.00 | 0 | 0 |
| 262 | 744 | 0.00 | 0 | 0 | 5.21 | 1175 | 303 | 0.00 | 0 | 0 |
| 263 | 720 | 0.00 | 0 | 0 | 37.77 | 7731 | 2273 | 0.00 | 0 | 0 |
| 264 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 83.46 | 17150 | 5100 |
| 265 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 266 | 696 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 267 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 268 | 720 | 74.13 | 14680 | 3311 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 269 | 744 | 117.66 | 27733 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 270 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.49 | 31685 | 5100 |

Table H.C-3. NODOS Project, Power Operations, "Pump-Back," Alternative C (Cont.)

| NODOS Project- Alternative C -CALSIM Model Run-Median Deliveries, 30-year Planning Period | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Pump Back Operations, MW | | | | | | | | |
| | | With Pump cycle | | | With Gen Cycle | | | Pure Pump Back | | |
| Plant Capacity, MW | | 123.00 | | | 123.00 | | | 123.00 | | |
| Plant Capacity, cfs | | MaxQ=5100 cfs | | | MaxQ=5100 cfs | | | MaxQ=5100 cfs | | |
| Month | # of Hours | On-Peak | On-Peak, MWh | PumpBack Q cfs | On-Peak | On-Peak, MWh | PumpBack Q cfs | On-Peak | On-Peak, MWh | PumpBack Q cfs |
| 271 | 744 | 118.69 | 32591 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 272 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.67 | 32172 | 5100 |
| 273 | 720 | 0.00 | 0 | 0 | 78.95 | 19656 | 3401 | 0.00 | 0 | 0 |
| 274 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 275 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 276 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 277 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.62 | 23092 | 5100 |
| 278 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.62 | 20383 | 5100 |
| 279 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.62 | 22845 | 5100 |
| 280 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.63 | 22549 | 5100 |
| 281 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.56 | 29457 | 5100 |
| 282 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.38 | 31368 | 5100 |
| 283 | 744 | 0.00 | 0 | 0 | 2.36 | 646 | 103 | 0.00 | 0 | 0 |
| 284 | 744 | 0.00 | 0 | 0 | 73.26 | 19810 | 3268 | 0.00 | 0 | 0 |
| 285 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 286 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 287 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 288 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 289 | 744 | 18.69 | 3804 | 815 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 290 | 672 | 0.00 | 0 | 0 | 73.68 | 12754 | 3170 | 0.00 | 0 | 0 |
| 291 | 744 | 118.60 | 23012 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 292 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.64 | 22677 | 5100 |
| 293 | 744 | 0.00 | 0 | 0 | 79.21 | 19725 | 3412 | 0.00 | 0 | 0 |
| 294 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 295 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 296 | 744 | 0.00 | 0 | 0 | 36.44 | 9866 | 1727 | 0.00 | 0 | 0 |
| 297 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 298 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 299 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 300 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 301 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 302 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 303 | 744 | 118.56 | 22303 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 304 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.59 | 23686 | 5100 |
| 305 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.51 | 29583 | 5100 |
| 306 | 720 | 118.67 | 30302 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 307 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.41 | 33734 | 5100 |
| 308 | 744 | 0.00 | 0 | 0 | 87.49 | 22840 | 3782 | 0.00 | 0 | 0 |
| 309 | 720 | 118.20 | 29401 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 310 | 744 | 0.00 | 0 | 0 | 78.78 | 18303 | 3394 | 0.00 | 0 | 0 |
| 311 | 720 | 118.28 | 23845 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 312 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.56 | 24576 | 5100 |
| 313 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.51 | 24408 | 5100 |
| 314 | 696 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.51 | 20799 | 5100 |
| 315 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.51 | 22455 | 5100 |
| 316 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.63 | 23824 | 5100 |
| 317 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.54 | 28545 | 5100 |
| 318 | 720 | 0.00 | 0 | 0 | 95.21 | 25295 | 4101 | 0.00 | 0 | 0 |
| 319 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 320 | 744 | 0.00 | 0 | 0 | 65.03 | 16998 | 2975 | 0.00 | 0 | 0 |
| 321 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 322 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 323 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 324 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 100.35 | 20908 | 5100 |
| 325 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 326 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 327 | 744 | 117.26 | 23227 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 328 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.71 | 23956 | 5100 |
| 329 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 118.60 | 28621 | 5100 |
| 330 | 720 | 0.00 | 0 | 0 | 2.87 | 764 | 125 | 0.00 | 0 | 0 |
| 331 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 332 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 333 | 720 | 0.00 | 0 | 0 | 64.27 | 16047 | 3160 | 0.00 | 0 | 0 |
| 334 | 744 | 0.00 | 0 | 0 | 5.44 | 1226 | 272 | 0.00 | 0 | 0 |
| 335 | 720 | 0.00 | 0 | 0 | 2.49 | 526 | 128 | 0.00 | 0 | 0 |
| 336 | 744 | 0.00 | 0 | 0 | 60.40 | 12644 | 3179 | 0.00 | 0 | 0 |
| 337 | 744 | 27.64 | 5544 | 1408 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 338 | 672 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 339 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 340 | 720 | 0.00 | 0 | 0 | 47.04 | 9537 | 2031 | 0.00 | 0 | 0 |
| 341 | 744 | 0.00 | 0 | 0 | 18.39 | 4448 | 808 | 0.00 | 0 | 0 |
| 342 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 114.08 | 30382 | 5100 |
| 343 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 113.78 | 31287 | 5100 |
| 344 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 345 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 346 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 347 | 720 | 0.00 | 0 | 0 | 59.57 | 12654 | 3004 | 0.00 | 0 | 0 |
| 348 | 744 | 0.00 | 0 | 0 | 65.97 | 13876 | 3360 | 0.00 | 0 | 0 |
| 349 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 350 | 672 | 107.78 | 20088 | 5100 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 351 | 744 | 65.83 | 13198 | 3012 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 352 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 353 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 354 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 355 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 356 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 357 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 358 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 359 | 720 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |
| 360 | 744 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 |