Distributed Generation Proposal

PREPARED FOR:
The Ahwahnee/The Majestic Yosemite Hotel,
Yosemite Valley, CA 95389, USA

PREPARED BY:
Karl Oleson, Engineer

This proposal has been generated using HOMER Grid, a dynamic software engine that runs complex simulations and sensitivity analyses with your energy data. It evaluates thousands of variables to compare value streams, assess system options, and provide risk-mitigation and cost reduction strategies. Originally developed at the US Department of Energy's National Renewable Energy Laboratory, the HOMER software is a risk-mitigation tool trusted by over 200,000 project developers and financial institutions to produce informed economic feasibility studies, system design and engineering insight, as well as energy cost savings.

PREPARED BY:
Karl Oleson,
Engineer, Your Company Name,
Email,
Phone Number

HOMER Grid

Table of Contents

Project Summary 3
Consumption Summary 4
EV Charging 5
Engineering Details 7
Utility Bill Details 8
Glossary Section 9
HOMER Energy Section 10

PREPARED BY:
Karl Oleson,
Engineer, Your Company Name,
Email,
Phone Number

Project Summary

CURRENT SYSTEM

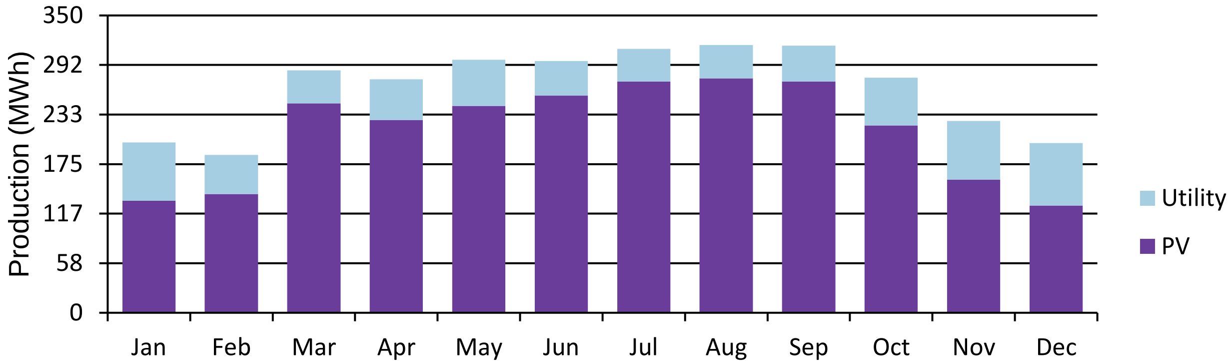
The electric needs of The Ahwahnee, The Majestic Yosemite Hotel, Yosemite Valley, CA 95389, USA are met with a grid connection and 1,600 kW of PV. The station currently spend $47,914 on the utility bill per year. 0% of your utility bill is demand charges.

PREPARED BY:
Karl Oleson,
Engineer, Your Company Name,
Email,
Phone Number

Consumption Summary

Electric Consumption

This facility uses 5755 kWh/day and has a peak of 1183 kW. In the proposed system, the following generation sources serve the electrical load.



EV Charging Load: Highway Charger (Level 3, On-Demand)

The annual energy consumption of this EV depot is 2,103,399 kWh and the peak load is 1,183 kW.

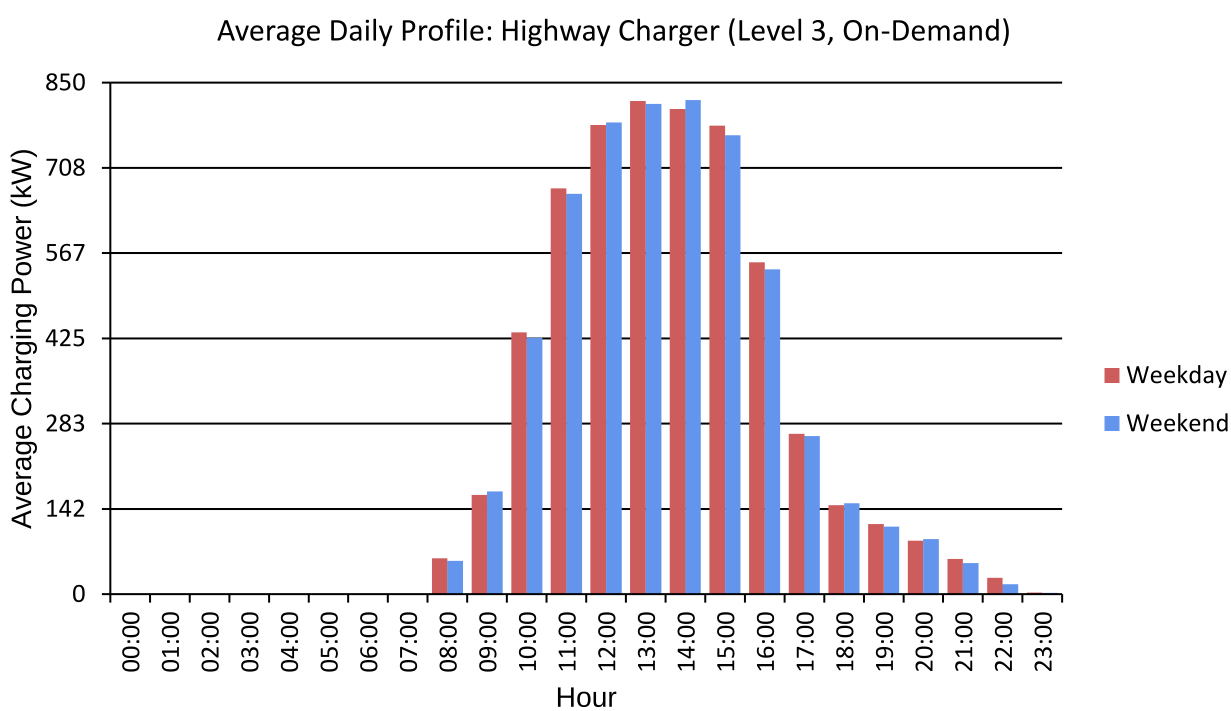
Annual Energy Served	2,103 MWh
Peak Load	1,183 kW
Energy per Session	47.0 kWh
Charging Sessions per Day	123
Charging Sessions per Year	44,725
Average Missed Sessions per Day	0
Utilization Factor	20.0 %

The 122.5 charging sessions per day are supplied through 24 chargers, each capable of providing 50.0 kW maximum power output.

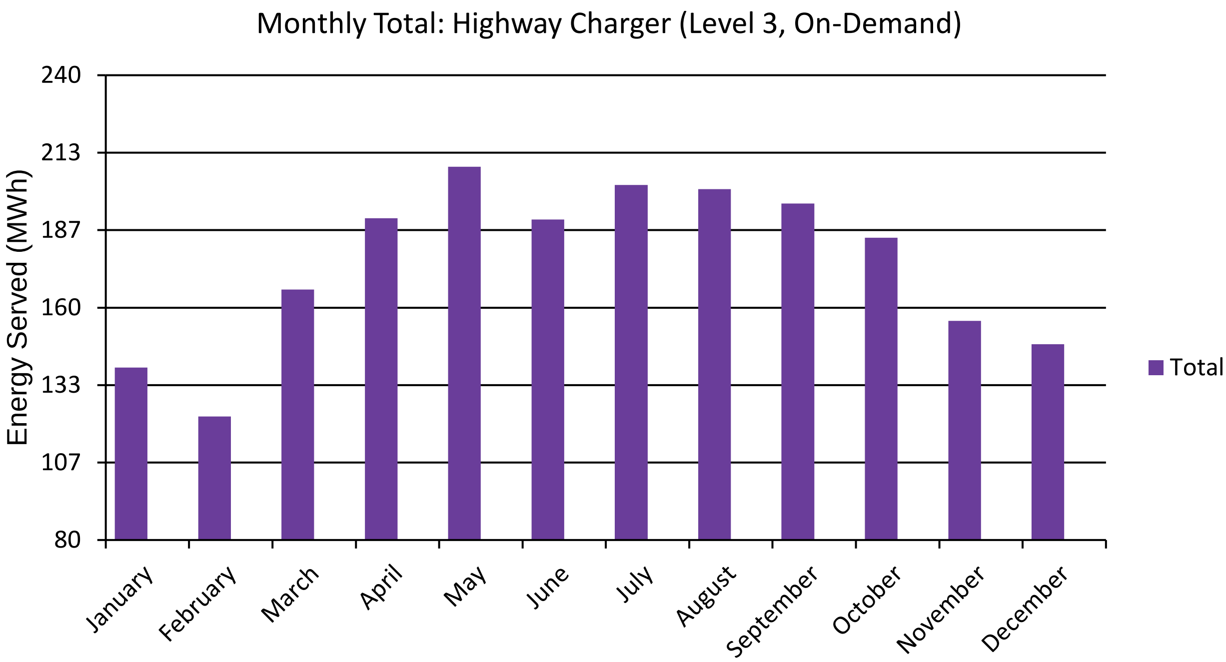
The electric vehicles served by this depot have the following charging characteristics:

Name	Percentage of EV Population	Maximum Charging Power per EV	Average Charging Duration
Large EVs	30.0 %	150 kW	90.0 min
Small EVs	70.0 %	50.0 kW	42.0 min

EV Load served: Highway



PREPARED BY:
Karl Oleson,
Engineer, Your Company Name,
Email,
Phone Number



PREPARED BY:
Karl Oleson,
Engineer, Your Company Name,
Email,
Phone Number

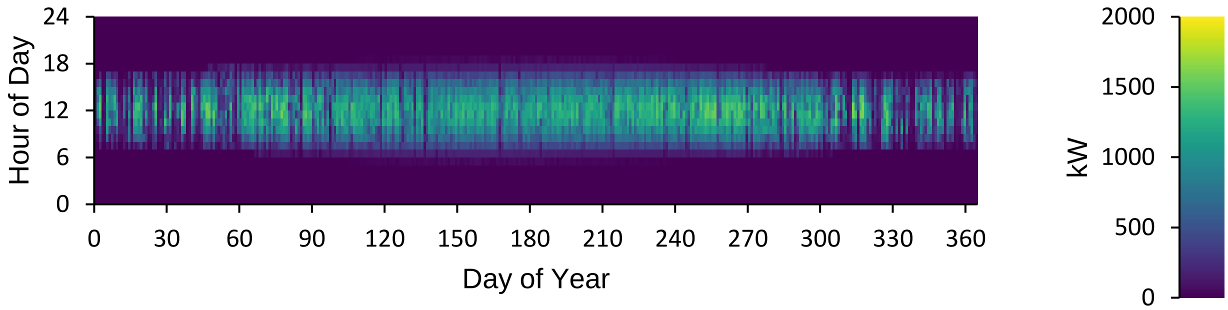
Engineering Details

PV: Generic flat plate PV

The Generic PV system has a nominal capacity of 1,600 kW. The annual production is 2,568,498 kWh/yr.

Rated Capacity	1,600 kW
Capital Cost	$2.93M
Specific Yield	1,605 kWh/kW
PV Penetration	0 %

Total Production	2,568,498 kW
Maintenance Cost	2,400 $/yr
LCOE	0.0893 $/kWh



Utility Bill Details

Utility Monthly Summary - Current System

Month	Energy Purchased (kWh)	Energy Sold (kWh)	Net Energy Purchased (kWh)	Peak Load (kW)	Energy Charge	Demand Charge	Demand Response	Fixed Charge	Minimum Charge	Taxes	Total
January	68,726	61,347	7,379	984	$8,829	$0.0	$0.0	$2,292	$0.0	$0.0	$11,121
February	46,044	63,321	-17,277	907	$2,790	$0.0	$0.0	$2,292	$0.0	$0.0	$5,082
March	39,062	119,244	-80,182	1,179	-$6,391	$0.0	$0.0	$2,292	$0.0	$0.0	-$4,099
April	47,807	84,040	-36,233	1,181	$2,820	$0.0	$0.0	$2,292	$0.0	$0.0	$5,112
May	54,107	89,266	-35,159	1,183	$3,829	$0.0	$0.0	$2,292	$0.0	$0.0	$6,121
June	40,437	105,818	-65,381	1,182	-$3,128	$0.0	$0.0	$2,292	$0.0	$0.0	-$836.34
July	38,480	108,361	-69,881	1,183	-$3,667	$0.0	$0.0	$2,292	$0.0	$0.0	-$1,375
August	39,242	114,503	-75,261	1,182	-$4,558	$0.0	$0.0	$2,292	$0.0	$0.0	-$2,266
September	42,364	118,824	-76,459	1,183	-$3,962	$0.0	$0.0	$2,292	$0.0	$0.0	-$1,670
October	56,183	92,478	-36,295	1,172	$4,298	$0.0	$0.0	$2,292	$0.0	$0.0	$6,590
November	68,796	70,162	-1,365	1,182	$7,946	$0.0	$0.0	$2,292	$0.0	$0.0	$10,238
December	73,473	52,457	21,016	1,002	$11,604	$0.0	$0.0	$2,292	$0.0	$0.0	$13,896
Annual	614,722	1,079,820	-465,098	1,183	$20,409	$0.0	$0.0	$27,505	$0.0	$0.0	$47,914

Glossary Section

Annualized Savings

The difference in annualized cost between the base case system and the proposed system. The annualized cost is the cost that, if it were to repeat in every year of the project lifetime, would give the same net present cost as the actual cash flow sequence.

Capital Investment

The capital investment is the additional installed cost of the proposed system relative to the base case system at the start of the project.

Internal rate of return

Internal rate of return (IRR) is the discount rate at which the base case and proposed system have the same net present cost. HOMER calculates the IRR by determining the discount rate that makes the present value of the difference of the two cash flow sequences equal to zero.

Net Present Cost

The total net present cost (NPC) of a system is the present value of all the costs the system incurs over its lifetime, minus the present value of all the revenue it earns over its lifetime. Costs include capital costs, replacement costs, O & M costs, fuel costs, emissions penalties, and the costs of buying power from the grid. Revenues include salvage value and grid sales revenue. HOMER calculates the total NPC by summing the total discounted cash flows in each year of the project lifetime.

Net Present Value

Net Present Value (NPV), also referred to as net present worth, is the difference between the net present costs of the base case system and the proposed system.

Return on Investment

Return on Investment (ROI) is the yearly cost savings relative to the initial investment. The ROI is the average yearly difference in nominal cash flows over the project lifetime, divided by the difference in capital cost.

Simple payback

Simple payback is the number of years at which the cumulative cash flow of the difference between the proposed system and base case system switches from negative to positive. The payback is an indication of how long it would take to recover the difference in investment costs between the proposed system and the base case system.

Total Annualized Cost

Total Annualized Cost is the annualized value of the total net present cost. The annualized cost of a component is the cost that, if it were to occur equally in every year of the project lifetime, would give the same net present cost as the actual cash flow sequence associated with that component. HOMER calculates annualized cost by first calculating the net present cost, then multiplying it by the capital recovery factor.

PREPARED BY:
Karl Oleson,
Engineer, Your Company Name,
Email,
Phone Number

HOMER Grid

HOMER Energy

ABOUT HOMER ENERGY

HOMER software is used by more than 200,000 users in 193 different countries.

HOMER Energy is the world's leading microgrid modeling software company. The Hybrid Optimization of Multiple Energy Resources (HOMER) software helps engineers and project developers navigate the complexities of designing cost-effective and reliable microgrids that combine traditional and renewable generation sources.

HOMER evaluates thousands of variables to compare value streams, assess system options, and provide risk-mitigation and cost reduction strategies. The software includes hundreds of preconfigured components to offer detailed insight, while addressing the modeling requirements of all major microgrid segments.

HOMER software is utilized by over 200,000 users in 193 countries and is trusted by governments, financial institutions, military agencies, utilities, energy systems integrators, and NGOs to design hybrid power systems. In the last decade, HOMER has demonstrated its effectiveness for analyzing complex distributed energy systems, including grid-tied hybrid renewable microgrids and situations where the grid is insufficiently reliable, such as islands and remote communities.

ABOUT HOMER GRID

HOMER Grid is a powerful software solution for modeling hybrid energy systems and evaluating options to reduce electricity expenditures. It is a robust tool that combines engineering and economics information in one comprehensive model while rapidly performing complex calculations to determine the value of self-consumption, demand charge reduction, and energy arbitrage.

HOMER Grid allows users to compare multiple components and design outcomes, identify points at which different technologies become cost-competitive, and consider options for minimizing project risk and determining the most economic design. With integrated access to more than 20k tariffs in the US, Canada, and Mexico, and the ability to model any tariff, HOMER Grid simulates real-world performance to deliver informed choices for system design and optimization.

PREPARED BY:
Karl Oleson,
Engineer, Your Company Name,
Email,
Phone Number

HOMER Grid