



# Homer for Village Power

Engr. Silver Navarro, Jr.

Renewable Energy Consultant

# Project Flow

Energy Demand Survey

Design Phase:  
Resources  
Technologies  
System Configuration  
Delivery Mechanism  
(Business Model)



Implementation:  
Consultation  
Financing  
Permitting  
Construction  
Commissioning  
Operation  
Maintenance  
Monitoring

# Energy Demand

- Lights
  - Households, Streetlights, School, Church
- Communications
  - Cellular Phone/Radio
- Small tools
  - Soldering, carpentry, food processing
- Entertainment
  - Audio equipment (No TV signal)



# Renewable Energy Resources



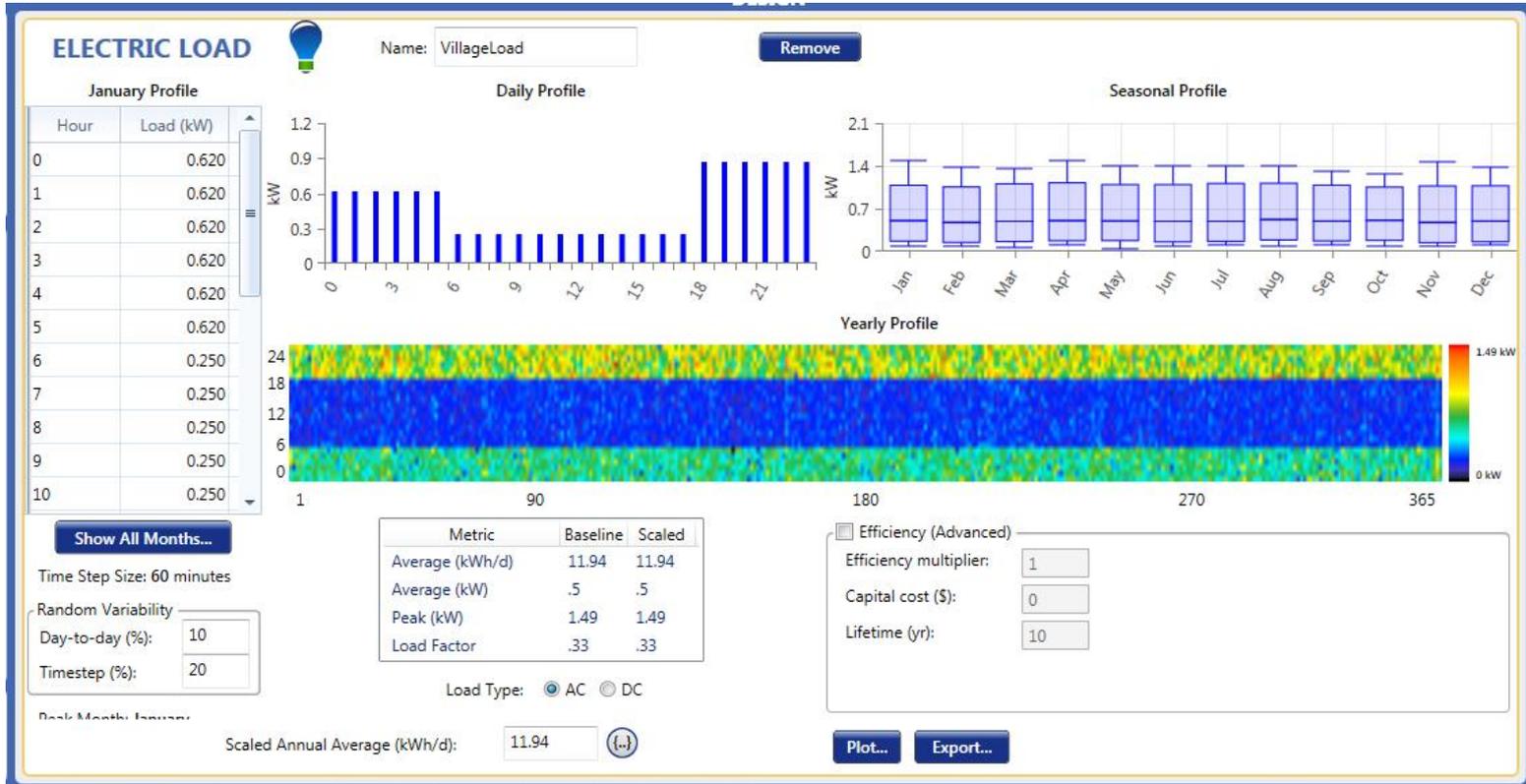
- Solar
- Wind
- Hydro
- Biomass



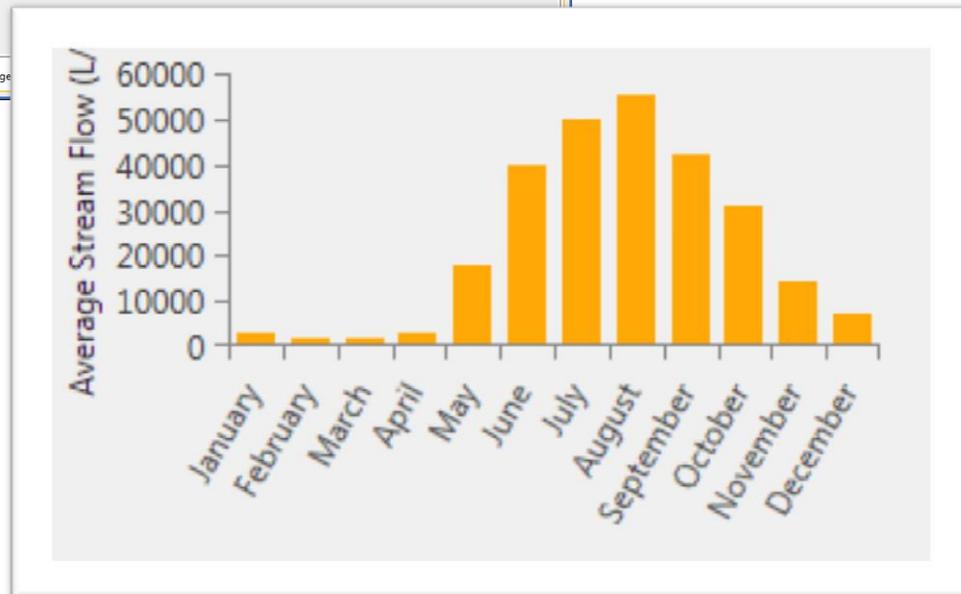
# Energy Technologies



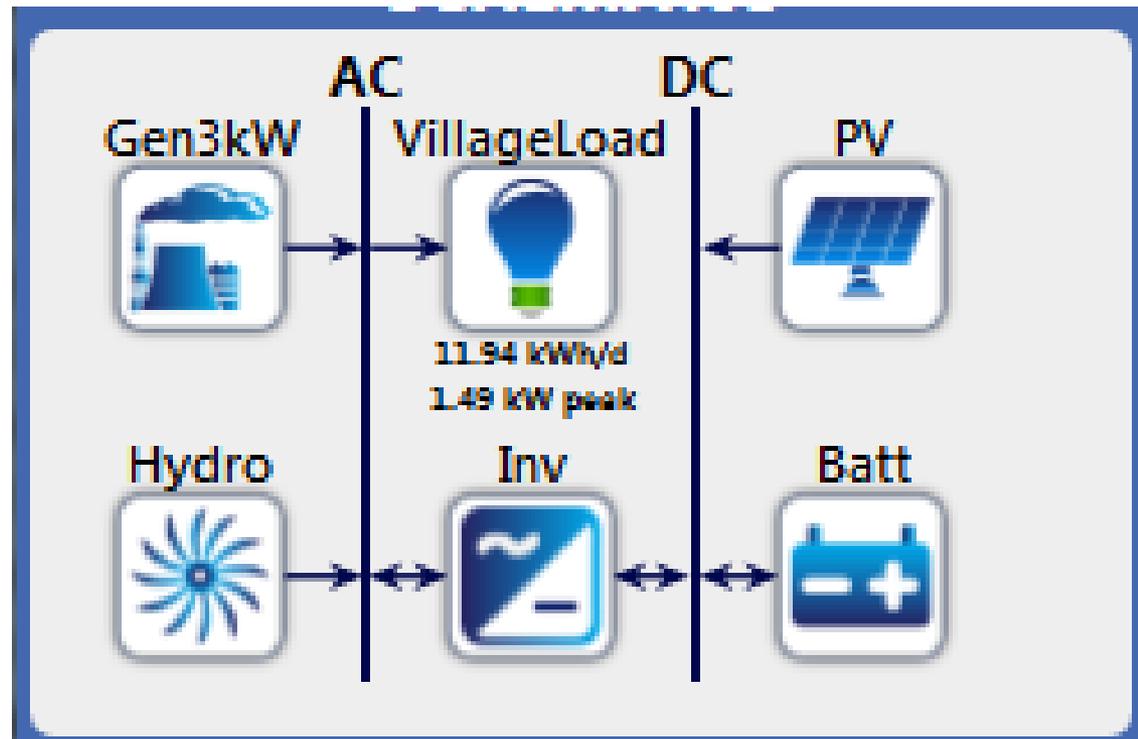
# Homer Modeling - Load



# Homer Modeling - Resources



# Homer Modeling - Schematic



# Homer Optimization

**RESULTS**

Tabular
  Graphical

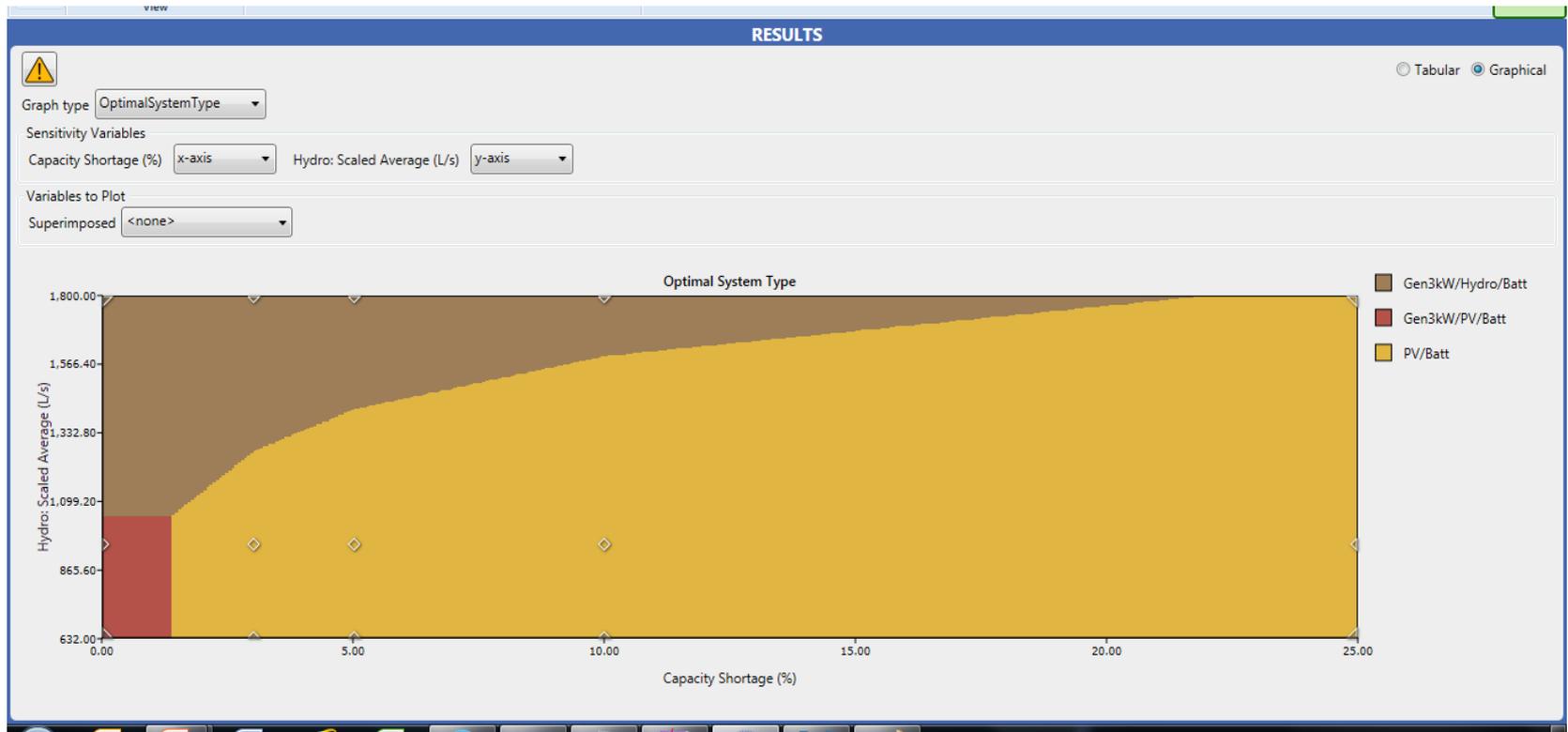
Export... Column Choices... Sensitivity Cases: Left Click on sensitivity case to see optimization cases.

Sensitivity		Architecture								Cost				System	Gen3kW			
Capacity Shortage (%)	Hydro Scaled Average (L/s)					PV (kW)	Gen3kW (kW)	Batt	Hydro (kW)	Inv (kW)	Dispatch	COE (\$)	NPC (\$)	Operating cost (\$)	Initial capital (\$)	Ren Frac (%)	Fuel (L)	Hours
0.00	1,800.00							2	1	2	CC	\$0.616	\$34,686	\$622	\$26,640	100		
0.00	632.00					5.0	3	18		2	CC	\$0.720	\$40,544	\$1,052	\$26,940	96	70	148
0.00	950.00					5.0	3	18		2	CC	\$0.720	\$40,544	\$1,052	\$26,940	96	70	148
10.00	1,800.00								1		CC	\$0.616	\$32,880	\$571	\$25,500	100		
10.00	632.00					4.0		16		2	CC	\$0.698	\$36,349	\$921	\$24,440	100		
10.00	950.00					4.0		16		2	CC	\$0.698	\$36,349	\$921	\$24,440	100		

Export... Optimization Cases: Left Double Click on simulation to examine details.  Categorized  Overall

Architecture								Cost				System	Gen3kW			
				PV (kW)	Gen3kW (kW)	Batt	Hydro (kW)	Inv (kW)	Dispatch	COE (\$)	NPC (\$)	Operating cost (\$)	Initial capital (\$)	Ren Frac (%)	Fuel (L)	Hours
						2	1	2	CC	\$0.616	\$34,686	\$622	\$26,640	100		
					3	2	1	2	CC	\$0.617	\$34,776	\$606	\$26,940	100	0	0
				1.0		2	1	2	CC	\$0.649	\$36,541	\$634	\$28,340	100		
				1.0	3	2	1	2	CC	\$0.650	\$36,631	\$618	\$28,640	100	0	0
				5.0	3	18		2	CC	\$0.720	\$40,544	\$1,052	\$26,940	96	70	148
				6.0		24		2	CC	\$0.745	\$41,938	\$936	\$29,840	100		
					3		1		CC	\$0.813	\$45,829	\$1,549	\$25,800	66	716	1,997

# Homer Sensitivities





# End of Presentation

For more info, email:

[silvernavarro@yahoo.com](mailto:silvernavarro@yahoo.com)