HOMER Pro Features

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Project information and setup	HOMER Pro (main)	Add-on Modules					
		Advanced Load	Biomass	Hydro	Combined Heat and Power	Hydrogen	Advanced Grid
Locate project on map	✓						
View system schematic	✓						
AC and DC buses	✓						
Copy component from model to library	✓						
Linked sensitivities	✓						

International currency and number formats	✓						
Paid license users can disable ads	✓						
Compare scenarios	✓						

Components	HOMER Pro (main)	Add-on Modules					
		Advanced Load	Biomass	Hydro	Combined Heat and Power	Hydrogen	Advanced Grid
Generators	Up to 20						
Capital and replacement cost	S						
Operations and maintenance cost	S						
Maintenance scheduling	✓						
Operational scheduling	✓						
Lifetime	S (hours)						
Fuel curve	✓						
Emissions factors	✓						
Solar PV Arrays	Up to 10						
Capital and replacement cost	S						
Type	Flat plate or concentrating						
Lifetime	S (years)						
Derating factor	V						
Dedicated converter	Inverter or maximum power point tracker						
Temperature effects	S						

Tracking, slope, azimuth	S						
Wind Turbine	2						
Improved wind turbine model builder	✔						
Capital and replacement cost	S						
Lifetime	S (years)						
Hub height	S						
Losses	V (7 types)						
Scheduled turbine maintenance	✔						
Batteries	Up to 10						
Improved battery model builder	✔						
Conventional	✔						
Zinc	✔						
Vanadium	✔						
Capital and replacement cost	S						
Initial state of charge	S						
Minimum state of charge	S						
Lifetime throughput	S						
Enforce or model minimum life	✔						
Flywheel	1						
Capital and replacement cost	S						
Lifetime	S						
DC/AC converter	1						

Capital and replacement cost	S						
Lifetime	S (years)						
Efficiency	S						
Grid	✔						
Grid power price	V						
Grid sellback price	V						
Sale capacity	V						
Net metering	✔						
Real-time rates							✔
Scheduled rates (time of use)							✔
Grid extension							✔
Hydrokinetic	✔						
Capital and replacement cost	S						
Lifetime	S (years)						
Power curve	✔						
Hydro				✔			
Capital and replacement cost				S			
Operations and maintenance cost				S			
Lifetime				S (years)			
Available turbine head				S			
Design flow rate				S			
Minimum flow rate				S			
Maximum flow							

rate				S			
Efficiency				S			
Pipe head loss				S			
Boiler					✓		
Fuel types					8		
Fuel price					S		
Efficiency					S		
Emissions					V		
Thermal load controller (dump load)					✓		
Capital and replacement cost					S		
Lifetime					S (years)		
Reformer						✓	
Capital and replacement cost						S	
Operations and maintenance cost						S	
Lifetime						S (years)	
Efficiency						S	
Hydrogen delivery cost						S ($/kg/km)	
Electrolyzer						✓	
Capital and replacement cost						S	
Operations and maintenance cost						S	
Lifetime						S (years)	
Efficiency						S	
Minimum load ratio						S	

Hydrogen tank						✓	
Capital and replacement cost						S	
Operations and maintenance cost						S	
Set initial tank level						S	
Option to require year-end tank level to equal or exceed initial level						✓	
Hydrogen fuel cell						✓	
Capital and replacement cost						S	
Operations and maintenance cost						S	
Maintenance scheduling						S	
Operational scheduling						S	
Lifetime						S (years)	
Fuel curve						✓	

		Add-on Modules					
Loads	**HOMER Pro (main)**	**Advanced Load**	**Biomass**	**Hydro**	**Combined Heat and Power**	**Hydrogen**	**Advanced Grid**
Electrical Load	1	2					
Scaled annual average	S						
Variability	V						
Deferrable Load		1					
Scaled annual average		S					

Storage capacity		S					
Peak		S					
Minimum load ratio		S					
Thermal Load					2		
Scaled annual average					S		
Variability					V		
Hydrogen Load						1	
Scaled annual average						S	
Variability						V	
Penalties for unmet load						✓	
Load inputs	✓						
Easy data entry with typical load profiles	✓				Thermal		
Import data	✓				Thermal		
Read from library	✓				Thermal		
Build from measured data	✓				Thermal		

Resources	**HOMER Pro (main)**	**Add-on Modules**					
		Advanced Load	**Biomass**	**Hydro**	**Combined Heat and Power**	**Hydrogen**	**Advanced Grid**
Fuels	Diesel, ethanol, methanol, natural gas, biogas, gasoline, propane, biodiesel, hydrogen						
Fuel price	S						
Solar GHI	Download from Internet						

	or import						
Scaled annual average	S						
Solar DNI	Import						
Scaled annual average	S						
Wind	Import or enter						
Scaled annual average	S						
Surface roughness	S						
Temperature	Import or enter						
Scaled annual average	S						
Biomass			Import or enter				
Scaled annual average			S				
Average price			S				
Carbon content			S				
Gasification ratio			S				
Lower heating value			S				
Hydro				Import or enter			
Scaled annual average				S			
Hydrokinetic	Import or enter						
Scaled annual average	S						

System Control	**HOMER Pro (main)**	**Add-on Modules**					
		Advanced Load	**Biomass**	**Hydro**	**Combined Heat and Power**	**Hydrogen**	**Advanced Grid**
Time step size	1 to 60 minutes						

Fuel minimization option	✓						
Weight minimization option	✓						
Dispatch strategies	2						

Results	HOMER Pro (main)	Add-on Modules					
		Advanced Load	Biomass	Hydro	Combined Heat and Power	Hydrogen	Advanced Grid
Results tables	✓						
Sensitivity table	✓						
Graphic display of sensitivity results	✓						
Optimization table	✓						
Sort results on any metric	✓						
Filter results on any metric	✓						
Choose results to display	✓						
Cost summary	✓						
Comparative economics for IRR and ROI	✓						
Cash flow - General electrical outputs	✓						
Outputs for each component	✓						
Summary report and export	✓						
Time series plot, scatter plot, delta plot, table, time series data export	✓						

Emissions	✓						
Results recycling	✓						

Economics sensitivity variables	HOMER Pro (main)	Add-on Modules					
		Advanced Load	Biomass	Hydro	Combined Heat and Power	Hydrogen	Advanced Grid
Annual nominal interest rate	✓						
Expected inflation rate	✓						
Project lifetime	✓						
System fixed capital costs	✓						
System fixed O&M costs	✓						
Capacity shortage penalty	✓						

Emissions	HOMER Pro (main)	Add-on Modules					
		Advanced Load	Biomass	Hydro	Combined Heat and Power	Hydrogen	Advanced Grid
Carbon dioxide	✓						
Carbon monoxide	✓						
Unburned hydrocarbons	✓						
Particulate matter	✓						
Sulfur dioxide	✓						
Nitrogen oxides	✓						

Constraints	HOMER Pro (main)	Add-on Modules					
		Advanced Load	Biomass	Hydro	Combined Heat and Power	Hydrogen	Advanced Grid
Maximum annual capacity shortage (%)	✓						

Minimum renewable fraction (%)	✓						
Operating reserve (as % of: current load, peak, solar, wind)	✓						

S – Sensitivity variable

V – Single value user-defined variable

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Get in touch

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Resources) software navigates the complexities of building cost effective and reliable microgrids that combine traditionally generated and renewable power, storage, and load management. With over 100,000 users in 193 countries, HOMER is the established global leader for microgrid design optimization and feasibility, and HOMER Energy is a nexus for the microgrid market.

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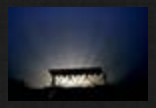

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