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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						
Auto-sizing generator	✓						

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							✓
Scheduled and unscheduled grid outages							✓
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						S	

replacement cost							
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						✓	
Loads	HOMER Pro (main)	Add-on Modules					
		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, and custom user-defined						
Fuel price	S						
Solar GHI	Download from Internet or import						
Scaled annual average	S						
Solar DNI	Import						
Scaled annual average	S						
Wind	Download from Internet or import						
Scaled annual average	S						
Surface roughness	S						
Temperature	Download from Internet or import						
Scaled annual average	S						
Biomass			Import or enter				
Scaled annual average			S				
Average price			S				
			S				

Carbon content							
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)	✓						
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S – Sensitivity variable
V – Single value user-defined variable

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