BCHP Screening Tool

- Under development by DOE/ORNL.
- Primary use: Screening of CHP applications in commercial buildings using DOE-2 simulation engine
- Data libraries: Generation equipment, HVAC equipment, utility rates, weather, 14 specific building types (e.g., hospital, office, hotel, school, retail)
- CHP applications: Hot water, chilled water, space heating
- Analysis duration/time step: 1 year; monthly
- Economic analyses: not available at this time
- Cost: TBD (currently in beta test)

Input to BCHP Screening Tool Is Through On-screen Spreadsheet

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INPUT

Parameter	Units	A	B
Building Type		Hospital	Hospital
Location		Illinois Chicago 41.98 87.9	Illinois Chicago 41.98 87.9
Length of Building	feet	150	150
Width of Building	feet	150	150
Number of Floors		1	1
Basement Present		No	No
Story Height	feet	12	12
Building Rotation	degrees	0	0
Equipment			
Lead Space Cooling		centrifChill York YK_850_	sfseAbs Trane ABSC-11A-6psig 945
Lag Space Cooling		centrifChill York YK_850_	sfseAbs Trane ABSC-11A-6psig 945
Desiccant System		None	None
Heating Boiler		Steam Firetube Cleaver-Brooks CB-Stm10-800 8	Steam Firetube Cleaver-Brooks CB-Stm10-800 8
Service Water Heater		Gas Gas-fired hot water boiler Generic 203000	Gas Gas-fired hot water boiler Generic 203000
Generator		None Non _None 0	Engine Caterpillar G3412 NA 250
Chilled Water Pumps		Constant Speed	Constant Speed
Hot Water Pumps		Constant Speed	Constant Speed
Cooling Tower		TwoSpeed Generic Approach12 200	TwoSpeed Generic Approach12 200
Cool Storage		None 0	None 0
Hot Storage		None 0	Chilled water Generic 36 Thermal energy storag
Equipment Sizing			

RESULT

Annual Electricity Consumption			
Lights	kWh	-	-
Equipment	kWh	-	-
Heating	kWh	-	-
Cooling	kWh	-	-
Tower	kWh	-	-

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Table | Graph | Text

	Parameter	Units	A	B
INPUT	**Building Description**			
	Building Type		Hospital	Hospital
	Location		Illinois Chicago 41.98 87.9	Illinois Chicago 41.98 87.9
RESULT	**Annual Electricity Consumption**			
	Lights	kWh	323663.	323663.
	Equipment	kWh	166075.	166075.
	Heating	kWh		
	Cooling	kWh	44984.	3108.
	Tower	kWh	18024.	42635.
	Pump and Misc	kWh	4496.	4496.
	Ventilation Fans	kWh	97928.	97928.
	Refrigeration	kWh		
	Supplemental Heat	kWh		
	Service Water Heat	kWh		
	Total	kWh	655169.	637905.
	Annual Gas Consumption			
	Heating	MMBtu	3143.8	679.6
	Cooling	MMBtu		13229.3
	Supplemental Heat	MMBtu		
	Service Water Heat	MMBtu		
	Miscellaneous	MMBtu		
	Generator	MMBtu		2292.5
	Total	MMBtu	3143.8	16201.3
	Annual Generation Details			
	Utility Supplied	kWh	655168.9	399789.3
	On-site Generation	kWh		238115.5
	Boiler Heat	MMBtu	764.5	6246.9

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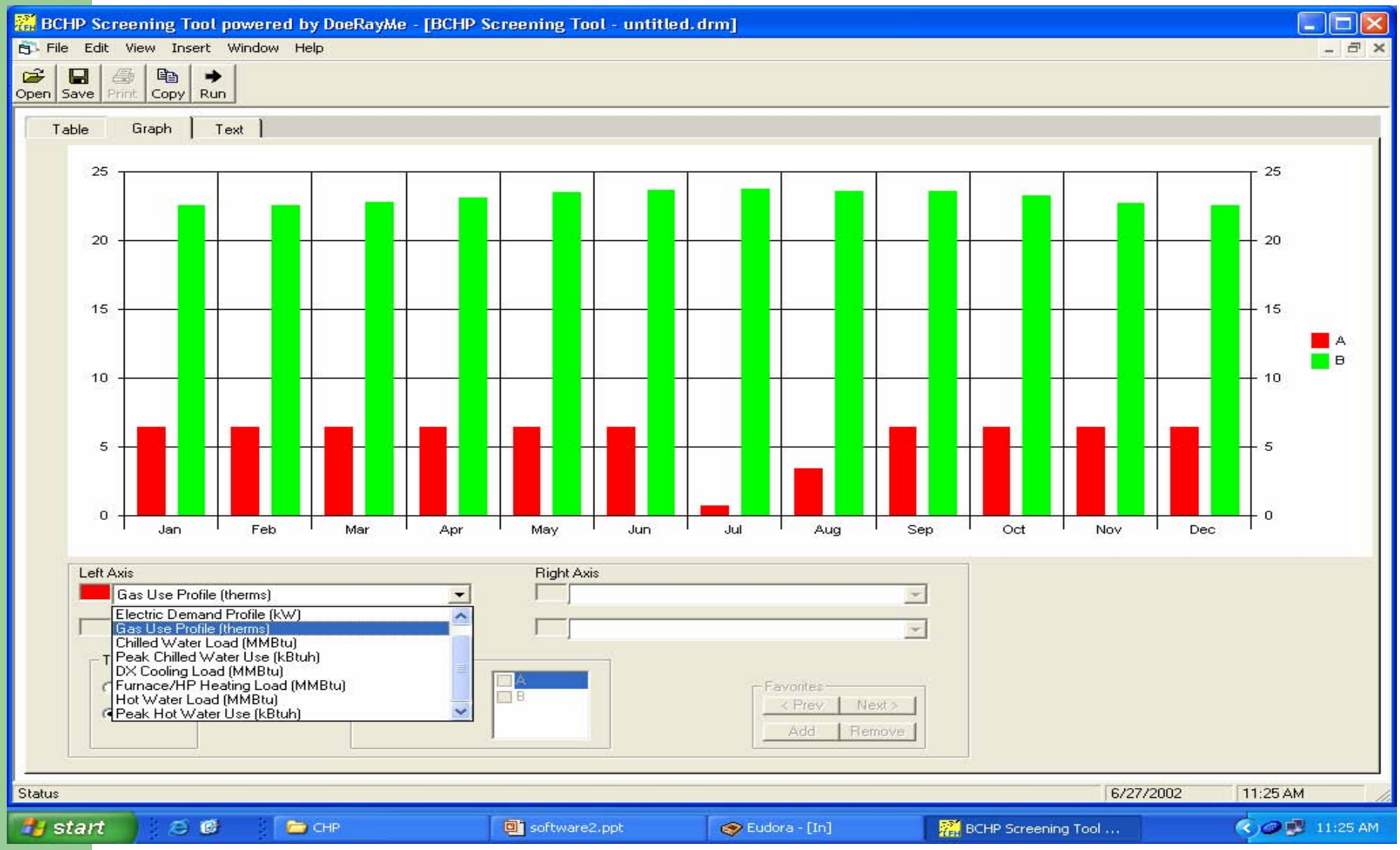
. . . And A Selection of Graphs



BCHP Screening Tool Output

- Annual and monthly electricity and gas demand and consumption
- Building energy loads
- Economic analysis results not available at this time - under development