

D-Gen Pro

- Developed by Architectural Energy Corporation and Gas Technology Institute
- Primary use: Preliminary screening of CHP heating applications in commercial buildings
- Provides baseline comparison (grid electricity and separate steam boiler)
- Data libraries: Generation equipment, HVAC equipment, utility rates, climate, 14 specific building types (e.g., hospital, office, hotel, apartment, school, retail)
- CHP applications: Hot water, space heating (no cooling options)
- Analysis duration/time step: unlimited; monthly
- Economic analyses: payback, lifecycle, IRR
- Cost: \$695 (<http://www.interenergysoftware.com/>)

Input to D-Gen Pro Is Through Pop-Up Windows

The screenshot displays the d-gen PRO software interface for a project titled "[Hospital-So.Calif. With Heat Recovery]". The main window is titled "Enter generator specifications" and contains several sections:

- Select generator (required):** A dropdown menu shows "Kawasaki IES 1200B (1235 kW)". Below it, there are options to sort by "size" or "manufacturer".
- Facility installation information (required):** A text box shows "Number of generators installed: 2". A checkbox "at least one generator can modulate" is unchecked.
- Deployment strategy:** A "Current setting:" box shows "Demand peak shaving". A button "Set/Modify deployment strategy" is visible.
- Details of selected generator:** A table lists specifications for the Kawasaki IES 1200B generator:

Manufacturer	Kawasaki
Model	IES 1200B
Net output	1235 kW
Heat rate	16378 Btu/kWh
Default installed cost	\$2247/kW
Fixed O&M costs	\$6/kW per year
Variable O&M costs	\$0.007/kWh
Rated temperature	59.5°F
Rated altitude	0.0 feet
CO2 emissions	not available
NOx emissions	2.3 g/kWh
SOx emissions	not available
Particulate emissions	not available
- Heat recovery:** A checkbox "heat recovery system is installed" is checked, with a "Configure" button next to it.

The "Generator Deployment Strategy" pop-up window is open, showing configuration options:

- Configure the deployment strategy by one of the following methods:
 - Automatic deployment strategy (minimize operation cost)
 - Demand peak shaving
 - Generator(s) run when the electric load is greater than kW
 - A slider control for "maximize run time" to "minimize run time" is shown.
 - Generators do not run on weekend
 - Generator(s) run in the selected time of use periods
 - Options: On Peak, Mid Peak 1, Mid Peak 2, Off Peak
 - To view time of use periods definition, a "Run Rate Wizard" button is present.
- For specific instructions, press F1
- A "Done" button is at the bottom.

The Windows taskbar at the bottom shows the date and time as 5/15/2002 11:29 AM, and several open applications including Eudora, D-Gen Pro Softw..., Microsoft Excel, and Microsoft PowerP...

D-Gen Pro Output Is Through On-screen Windows and Printed Reports

View Full Report

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d-gen PRO

d-gen PRO version 3.09
Hospital-So.Calif. With Heat Recovery
Date: 6/28/2002

ENERGY CONSUMPTION SUMMARY

Month	Base case		Distributed generation case	
	Electricity consumption (kWh)	Natural gas consumption (MMBtu)	Electricity consumption (kWh)	Natural gas consumption (MMBtu)
Jan	1,783,061	7,889	208,706	26,613
Feb	1,821,179	8,141	122,613	24,325
Mar	1,854,119	7,849	463,048	21,034
Apr	2,063,680	6,801	285,491	29,868
May	1,027,621	6,264	547,414	10,788
Jun	2,134,621	5,911	845,272	22,070
Jul	2,153,247	4,843	771,661	23,411
Aug	2,060,911	4,649	747,761	22,274
Sep	2,327,130	4,576	654,988	28,132
Oct	2,071,709	5,289	575,262	25,221
Nov	1,914,974	6,496	485,936	24,091
Dec	1,788,240	7,704	210,060	26,214
Total	22,890,511	75,782	5,916,291	284,050

Purchased Electricity (kWh)

Purchased Natural Gas (MMBtu)

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D-Gen Pro Output

Separately for baseline (benchmark) and DER case:

- Monthly and annual fuel flows
- Monthly and annual electricity usage
- Monthly and annual energy costs

In comparison of baseline to DER case:

- Waste heat utilization summary
- Internal rate of return (IRR)
- Simple payback
- Lifecycle savings