

COMMERCIAL PROPANE APPLICATIONS: CLOTHES DRYERS

FACT SHEET

Commercial applications for propane clothes dryers provide laundry functions for numerous building types, with a range of capacities and performance options to meet specific needs.

PERFORMANCE

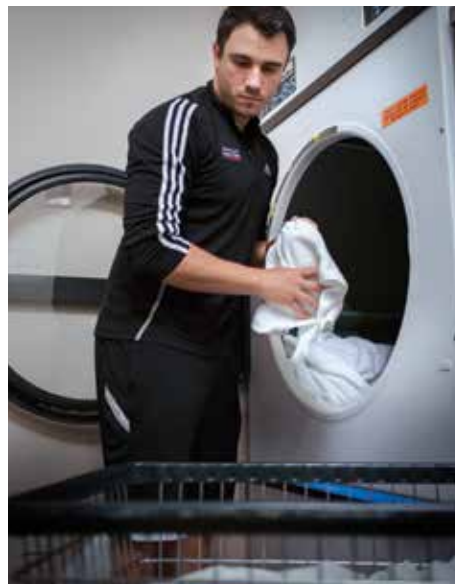
Propane commercial dryers are available in a wide range of burner capacities, generally ranging from 18,000 Btu/h to well over 550,000 Btu/h for inputs. For comparison, TABLE 1 depicts three different dryer models available as propane or electric, and illustrates how propane models outpace electric units for higher volume models. This translates to faster drying times and greater throughput for commercial operations.

Many dryers come equipped with perforated drums that allow for more balanced airflow, and recirculating air design helps reduce gas usage while promoting faster drying times. Pilotless ignition also helps save energy. Other features available on propane clothes dryers include:

- Moisture sensors to optimize dry cycle time and reduce energy use.
- Air temperature monitors along with multiple heating settings to provide the proper drying temperatures for clothes, bedding, towels, table clothes, or other fabrics.
- LED control displays with one-touch preprogrammed features.
- Steam cycles to help de-wrinkle fabrics.

TABLE 1 COMPARISON OF PROPANE AND ELECTRIC DRYER HEATING RATES

DRYER CAPACITY (LBS.)	PROPANE (INPUT)	ELECTRIC (INPUT)
22	26,000 Btu/h	5,400 Watts [18,430 Btu/h]
75	204,000 Btu/h	36,000 Watts [122,800 Btu/h]
170	550,000 Btu/h	126,000 Watts [429,900 Btu/h]



APPLICATIONS FOR USE

- Multifamily Buildings
- Hotels
- Laundromats
- Schools
- Restaurants
- Hospitals
- Health Clubs

AT A GLANCE

- Capacity from 18,000 Btu/h to more than 550,000 Btu/h.
- Faster drying times compared with electric units.
- Features such as moisture sensors, air temperature monitors, and steam cycles.



ENERGY CONSUMPTION AND COSTS

Operators of commercial laundry equipment are highly exposed to energy costs given the capacity and frequency of equipment use. With increasing use, the cost savings of propane clothes dryers compared with electric units becomes considerable. TABLE 2 illustrates that small differences in the cost per load can translate into larger annual differences due to the frequency of use in commercial settings. The 2.2 loads/day example is a modest estimate that would be much higher in most commercial settings.

ENVIRONMENTAL

Annual CO₂ output emission rates vary depending on fuel sources. Propane has the clear advantage to lower emission rates when compared with electricity. This is driven in large part by a significant portion of the nation's electricity being generated in coal-fired power plants that have a heavy carbon footprint.

Continuing with the multifamily laundry facility example, TABLE 3 illustrates that an electric dryer configuration would result in over 1,000 pounds of additional CO₂ emissions annually compared with propane units. And again, greater usage of laundry equipment will amplify these emissions differences. This type of performance benefit can factor significantly into a company's sustainability goals.

TABLE 2 CLOTHES DRYER OPERATING COST ESTIMATES IN MULTIFAMILY BUILDINGS WITH CENTRAL LAUNDRY FACILITIES^a

COST FACTORS	PROPANE	ELECTRIC
Dryer Capacity [lbs.]	Dryers for this application will often be in the 18 – 30 pound range	
Cycle Duration	45 minutes	
Loads Per Day	2.2	
Energy Rate ^b	\$2.00/gallon	\$0.15/kWh
Average BTUs/Cycle	17,000	N/A
Average kWh/Cycle	0.5	3.3
Cost per Cycle	\$0.45	\$0.50
Cost Per Year	\$359	\$397
Notes:		
a. Source for data averages for cycle duration, loads per day, and energy use per cycle: the Multi-Housing Laundry Association		
b. Energy rates vary. Please check eia.gov for the most up to date national energy cost. Commercial property owners should also consider the electric Demand Charge (\$/kW) in estimating their unit costs. Higher electric demand at any given time, as would be the case with multiple electric dryers operating, will increase Demand Charges.		

TABLE 3 CLOTHES DRYER CO₂ EMISSIONS ESTIMATES IN MULTIFAMILY BUILDINGS WITH CENTRAL LAUNDRY FACILITIES

EMISSIONS COMPONENTS	PROPANE	ELECTRIC
Annual Gallons of Propane	149	N/A
Annual kWh	402	2,650
Estimated Annual CO ₂ Emissions [lbs] ^a	2,423	3,511
Note:		
a. Energy usage converted to CO ₂ emissions through the use of "emissions factors" sourced from U.S. EPA's E-Grid database 2010 (for electricity) and the U.S. Energy Information Administration's "Carbon Dioxide Emission Factors for Stationary Combustion" (for propane).		

FOR MORE INFORMATION

To learn more about commercial clothes dryers and the Propane Education & Research Council, visit buildwithpropane.com.

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The Propane Education & Research Council was authorized by the U.S. Congress with the passage of Public Law 104-284, the Propane Education and Research Act (PERA), signed into law on October 11, 1996. The mission of the Propane Education & Research Council is to promote the safe, efficient use of odorized propane gas as a preferred energy source.