

# PROSPIANT

## ENERGY COST COMPARISON

15,000 square foot sealed, environmentally controlled greenhouse vs indoor grow in Minnesota

We have built more than 250 cannabis facilities across North America – our experience ensures you will get a properly designed facility that produces the top A-flower possible!

The information was prepared by our in-house MEP Systems Manager, Jared Freyer, PE.

### Assumptions:

Five Flower rooms, two Veg rooms, and an indoor Mom and Prop (Mom and Prop are indoor on both models). 21,015 sq ft of overall grow space (or around 15,000 sq ft canopy).

Greenhouse: economization at the AHUs in the winter. Indoor Grow: this would use indoor ductless FCUs instead. This addition/removal of economization makes a bigger difference in the energy use cases between the two models.

### Electricity and gas price inputs (industrial averages for Minnesota):

Electricity Cost (\$/kWh)	\$0.0925
Natural Gas Cost (\$1000 ft <sup>3</sup> )	\$5.15

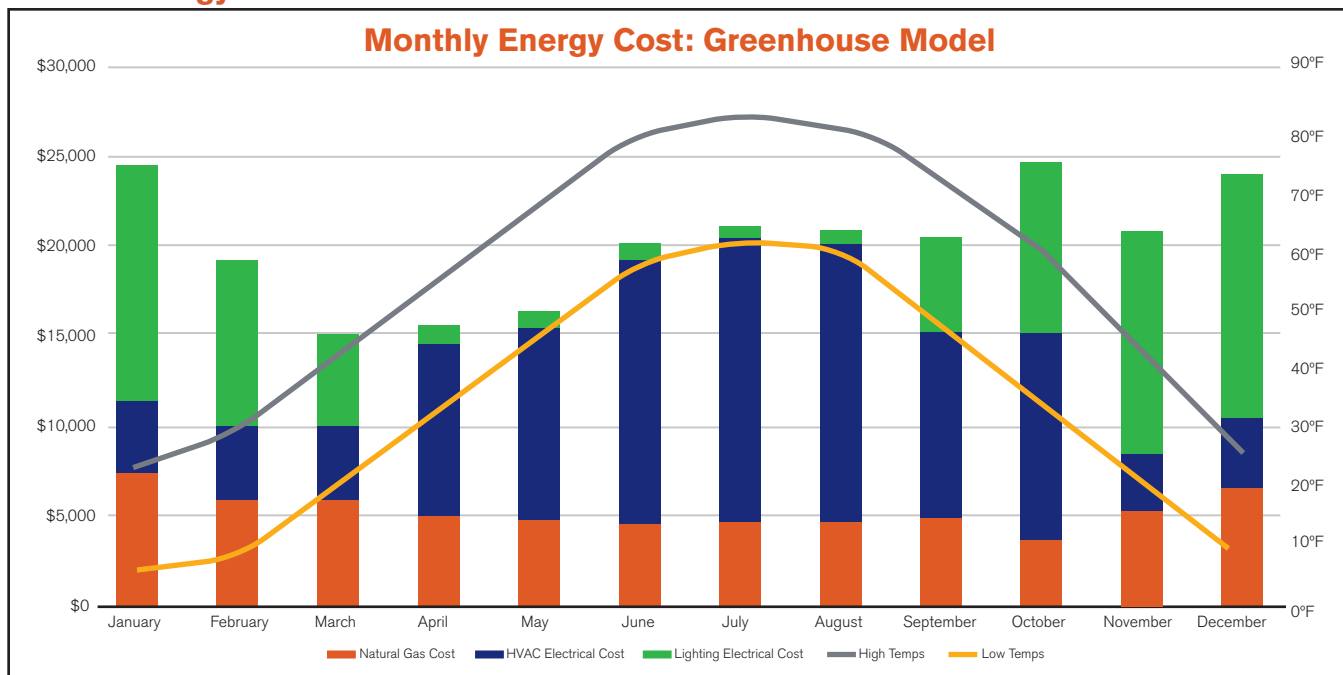
### Both facilities are operating at the following for Flower and Veg rooms:

Room Type	Bench/Floor %	Canopy Tiers	Default Light	Target DLI	Bench SqFt/plant	Water Gallon/Plant	Runoff	Daytime Evaporatio	Daytime Hours	Daytime Temp	Daytime RH	Nighttime Temp	Nighttime RH
Flower	75%	1	LED Full	35	3	0.65	10%	0.75	12	80°F	55%	75°F	50%
Veg	75%	1	LED Full	35	1	0.15	5%	0.875	18	80°F	70%	75°F	65%

### Annual average high and low temps:

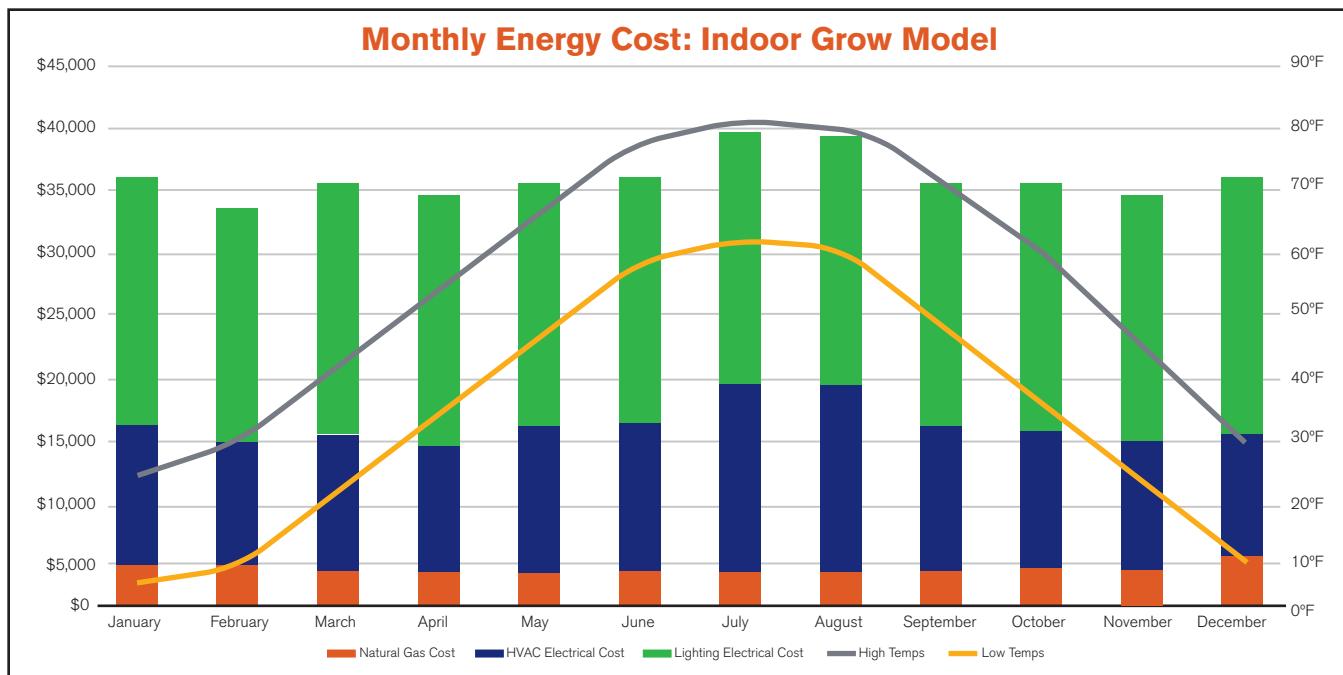
Monthly Energy Usage	January	February	March	April	May	June	July	August	September	October	November	December
Outdoor Daytime Dry Bulb Temp	25°F	29°F	42°F	58°F	70°F	80°F	83°F	80°F	73°F	60°F	43°F	29°F
Outdoor Nighttime Dry Bulb Temp	6°F	10°F	22°F	35°F	47°F	57°F	61°F	59°F	49°F	37°F	24°F	11°F

### Annual Energy Costs: Greenhouse Model:



Total Annual Lighting Energy Cost	\$73,566	<b>Total Annual Energy Cost: \$246,431</b>
Total Annual HVAC Electrical Cost	\$104,672	
Total Annual Natural Gas Cost	\$68,193	

### Annual Energy Costs: Indoor Grow:



Total Annual Lighting Energy Cost	\$233,789	<b>Total Annual Energy Cost: \$433,285</b>
Total Annual HVAC Electrical Cost	\$147,670	
Total Annual Natural Gas Cost	\$51,826	