

Cost per BTU Calculations

1 gallon for #1 Kerosene produces 135,000 BTUs.

http://wiki.answers.com/Q/How_many_btus_per_gallon_of_kerosene

1 US gallon = 3.78541178 liters

$$6.50 \frac{R}{L} \times \frac{3.785 L}{1 \text{ gallon}} \times \frac{1 \text{ gallon}}{135,000 \text{ BTU}} = 1.822 \times 10^{-4} \frac{R}{\text{BTU}}$$

Arivi:

If 60% efficient, it will use 60% of the BTU

$$6.50 \frac{R}{L} \times \frac{3.785 L}{1 \text{ gallon}} \times \frac{1 \text{ gallon}}{81,000 \text{ BTU}} = 3.037 \times 10^{-4} \frac{R}{\text{BTU}}$$

ParaSafe:

If 40% more efficient than flame stove, uses 140% of 54000 BTU

$$6.50 \frac{R}{L} \times \frac{3.785 L}{1 \text{ gallon}} \times \frac{1 \text{ gallon}}{75600 \text{ BTU}} = 3.254 \times 10^{-4} \frac{R}{\text{BTU}}$$

Current Flame:

If ~40% efficient

$$6.50 \frac{R}{L} \times \frac{3.785 L}{1 \text{ gallon}} \times \frac{1 \text{ gallon}}{54000 \text{ BTU}} = 4.556 \times 10^{-4} \frac{R}{\text{BTU}}$$

$$3.858 \times 10^{-5} = 1/\text{BTU}$$

$$X = 25920 \text{ BTU}$$

Stove	Cost (R) / BTU
Flame Stove	4.556×10^{-4}
ParaSafe Stove	3.254×10^{-4}
Arivi Stove	3.037×10^{-4}