Fuel Switching Request Calculations Worksheet

Iowa Weatherization Program

This form should be used in conjunction with the Fuel Switching Request form when requesting approval to switch heating unit fuel sources for any reason. Complete one calculation sheet per heating unit.

Client Name: _____ File Number: _____

Address: _____ City, State: _____

SECTION A

(complete fields for existing unit efficiency and proposed unit efficiency)

Fuel Source

Existing	Proposed								
☐	☐	Electric	_____	x 292	=	$ 0.00	/	_____	= _____
		Fuel cost per kWh (see chart below or enter other cost)						*Efficiency as a decimal*	*Cost per Million Btu's*
☐	☐	Natural Gas	_____	x 10	=	$ 0.00	/	_____	= _____
		Fuel cost per therm (see chart below or enter other cost)						*Efficiency as a decimal*	*Cost per Million Btu's*
☐	☐	Fuel Oil	_____	x 7.14	=	$ 0.00	/	_____	= _____
		Fuel cost per gallon (see chart below or enter other cost)						*Efficiency as a decimal*	*Cost per Million Btu's*
☐	☐	Propane	_____	x 11.1	=	$ 0.00	/	_____	= _____
		Fuel cost per gallon (see chart below or enter other cost)						*Efficiency as a decimal*	*Cost per Million Btu's*
☐	☐	Air-to-Air Heat Pump	_____	x 292	=	$ 0.00	/	_____	= _____
		Fuel cost per kWh (see chart below or enter other cost)						*Efficiency as a decimal*	*Cost per Million Btu's*

Statewide Average Fuel Costs

Electric	$0.105	cost per kWh
Natural Gas	$0.930	cost per therm
Fuel Oil	$3.490	cost per gallon
Propane	$1.860	cost per gallon

SECTION B

1. **MILLION** Btu's used in the last 12 months* _____

(This information is obtained from the client utility usage report or bill AND converted into Million Btu's using the Btu Conversion Factors below)

*(Make sure the conversion is to **MILLION** Btu's)*

(**NOTE:** If this is an **ALL-ELECTRIC** home, only indicate Btu's used from the October through May)*

2. Fuel Cost *(existing system)* x **MILLION** Btu's _____

Existing system fuel cost per Million Btu's (from Section A above) x Million Btu's used last winter (from Section B Line 1)

3. Fuel Cost *(proposed system)* x **MILLION** Btu's _____

Proposed system fuel cost per Million Btu's (from Section A above) x Million Btu's used last winter (from Section B Line 1)

Savings: $ 0.00

_____ / $ 0.00 = _____ *(If the payback is less than 15 years, it is cost effective to switch fuels)*

**Total installation cost* — *Savings* — *Payback in years*

*Includes cost of appliance, ductwork, etc.

Appliance Efficiency Key

Appliance	Efficiency Range	Efficiency as a Decimal
Electric	100%	1
Natural Gas or Propane	70% - 98%	.70 - .98
Oil	70% - 80%	.70 - .80
Air-to-Air Heat Pump	100% - 180%+	1.0 - 1.8+

Btu Conversion Factors

Electric	1 kWh	=	3,400 Btu's
Natural Gas	1 CCF	=	100,000 Btu's
Natural Gas	1 therm	=	100,000 Btu's
Propane	1 gallon	=	91,300 Btu's
Fuel Oil	1 gallon	=	135,000 Btu's

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