

# Policies for Stimulating Rural Economies with Biomass

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Local Energy



**HOME HEATING,  
WINTER, 1999:**

~~\$273.00~~

*this winter*

**\$813.00**



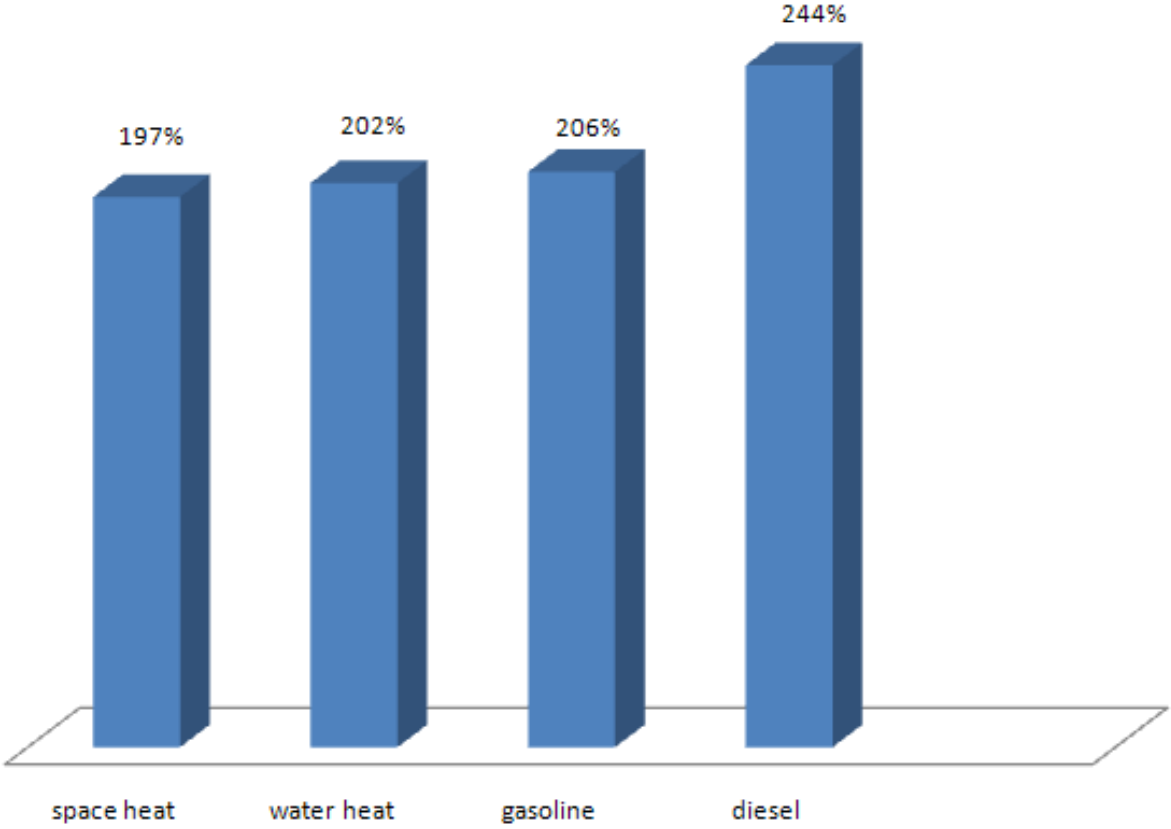
HOT WATER AND  
COOKING, 1999:

~~\$ 147.00~~

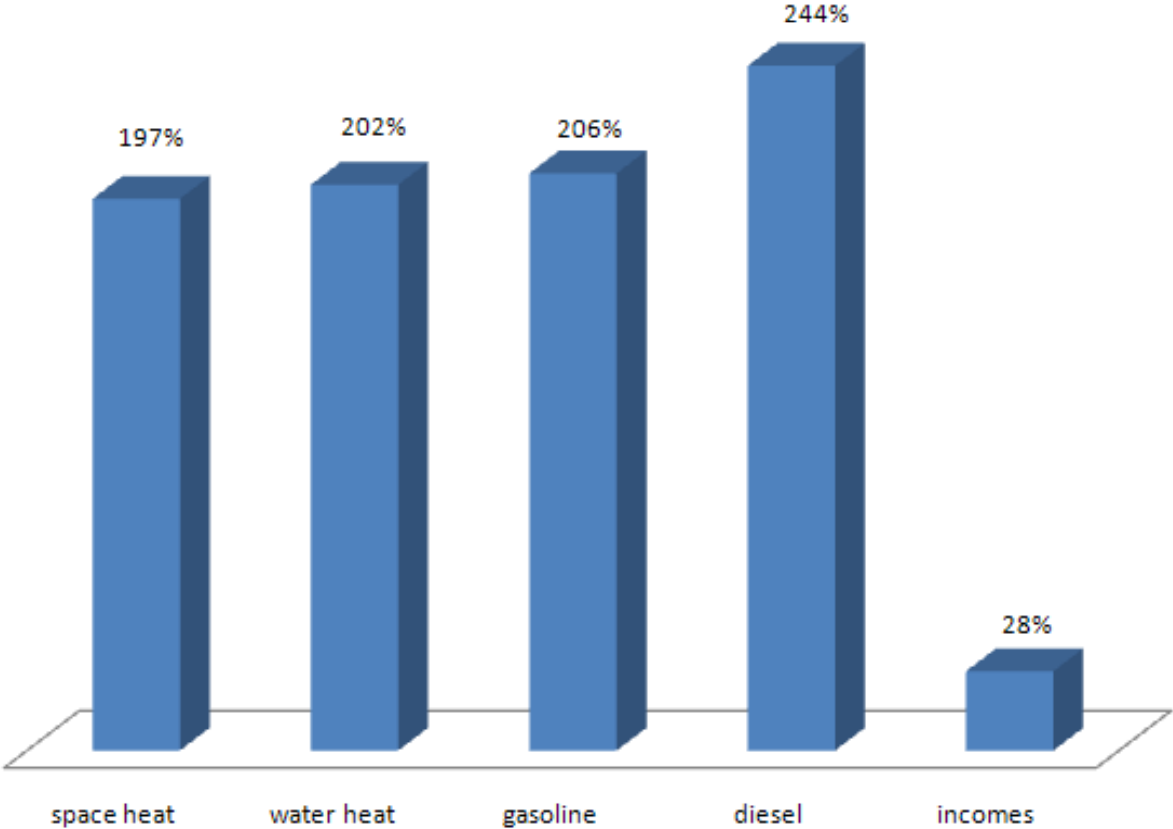
*this year*  
**\$442.00**



# Increases over last 9 years in New Mexico:



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“The price of oil rising even from \$80 to \$100 per barrel is like adding \$150 billion in taxes.”

*Dr. Kenneth Rogoff  
Harvard University Professor  
January 11, 2008*



# Sort of a Tax!

One dollar paid...



to a non-local utility...



leaves 14 ½ cents...



in the local economy.



Rules that empower  
communities:

1. Bid Against Propane



# Rule of Thumb:

Commercial propane @ \$2.20 per gallon  
means a cord of wood is worth about \$400.

Residential propane @ \$3.25 per gallon  
means a cord of wood is worth about \$600.

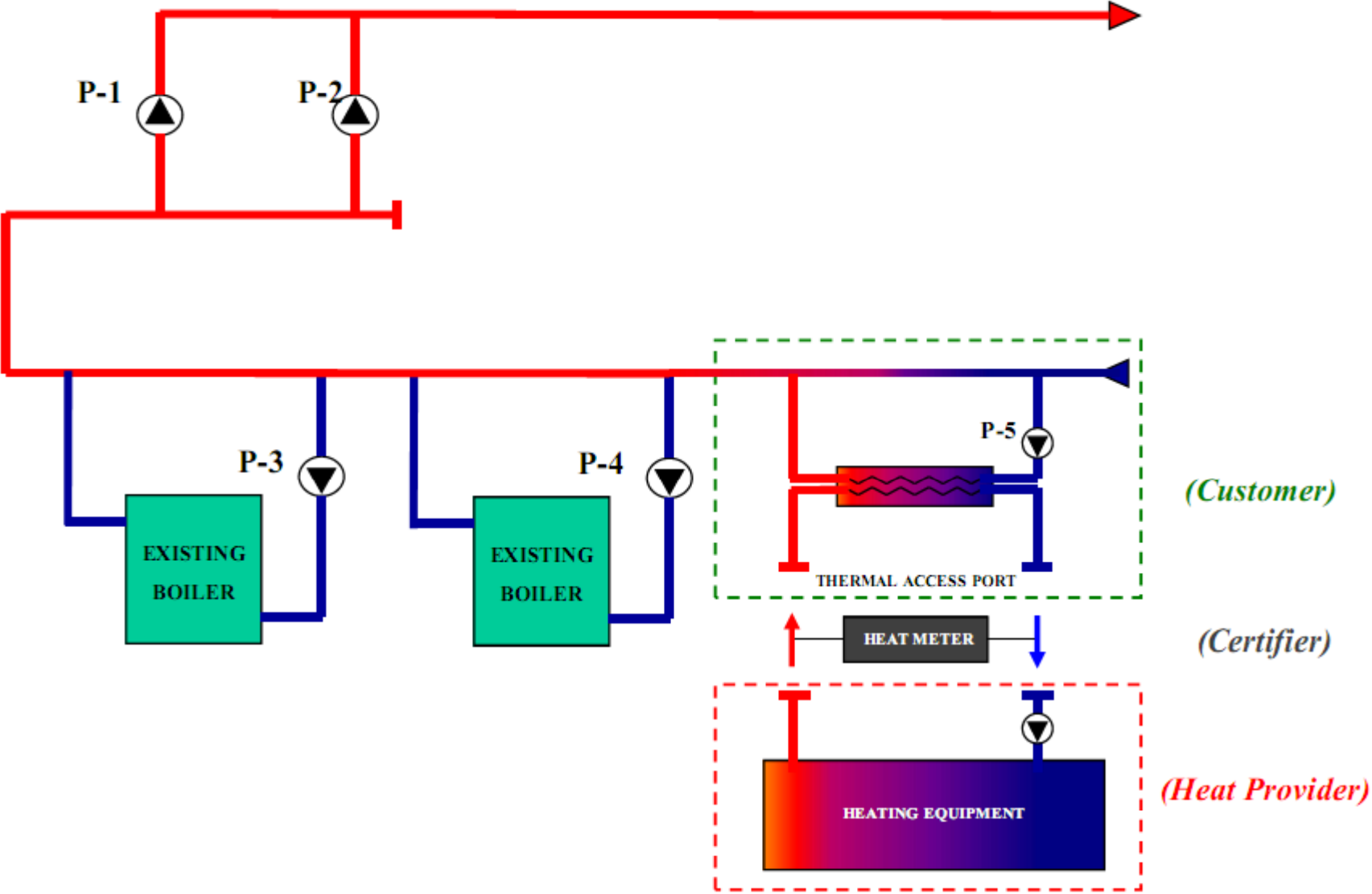


# Rules that empower communities:

1. Bid Against Propane
2. Thermal Access Ports



# Interconnection to the THERMAL ACCESS PORT™



# Rules that empower communities:

1. Bid Against Propane
2. Thermal Access Ports
3. Feed-In Tariffs



# How Feed-In Tariffs Work:

- 1 A small company builds a renewable energy system.



- 2 The utility interconnects the system, by mandate.



- 3 The utility signs a mandatory 20-year purchase contract at the tariff rate.



- 4 The small business leverages the purchase contract to build more systems.



What are the economic benefits of a community-based biomass project?



## Economic Comparison: Propane vs. Community Biomass

Rural School with 150,000 sq. ft. campus

### Input Parameters:

Annual Heat Needed in School	4,350	MMBTU/yr	
Avg. Efficiency of Gas Boilers	75%		
Commercial Propane Fuel Price	\$25.00	\$/MMBTU	(\$2.20 per gal. delivered, 88,000 BTU per gal.)
Commercial Propane Heat Price	\$33.33		
Annual Price Escalation	10.00%		
Economic Retention Rate, Propane	0.20		
Biomass Heat Price	\$33.33	\$/MMBTU	
Biomass Heat Price Escalation	0.00%		
Economic Retention Rate, Biomass	0.80		

### Stick with Propane

Year:	1	2	3	4	5	6	7
expenditure	145,000	159,500	175,450	192,995	212,295	233,524	256,876
leaked/year	116,000	127,600	140,360	154,396	169,836	186,819	205,501
retained/year	29,000	31,900	35,090	38,599	42,459	46,705	51,375
cumulated leakage	116,000	243,600	383,960	538,356	708,192	895,011	1,100,512
cumulated retention	29,000	60,900	95,990	134,589	177,048	223,753	275,128

### Switch to Biomass

Year:	1	2	3	4	5	6	7
expenditure	144,986	144,986	144,986	144,986	144,986	144,986	144,986
leaked/year	28,997	28,997	28,997	28,997	28,997	28,997	28,997
retained/year	115,988	115,988	115,988	115,988	115,988	115,988	115,988
cumulated leakage	28,997	57,994	86,991	115,988	144,986	173,983	202,980
cumulated retention	115,988	231,977	347,965	463,954	579,942	695,930	811,919

### Net Gain from Switching

Year:	1	2	3	4	5	6	7
increased cumulated retention	86,988	171,077	251,975	329,365	402,894	472,178	536,791
economic gain at 2.2 multiplier	191,374	376,369	554,345	724,602	886,367	1,038,791	1,180,940
total economic gain	278,363	547,446	806,321	1,053,967	1,289,261	1,510,969	1,717,731



Thank You!

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