

Appendix E: Potential Impact of AB 811 Program in Napa County

As part of this analysis, we addressed the question: “What would be the impact on GHG emissions in Napa County of implementing an AB 811 program?”

For this analysis, we made the following assumptions:

- Only owner-occupied residences would be affected
- An average of 40% improvement in end use efficiency would be cost-effective and therefore achieved
- Retrofits are completed by 2020

GHG emission reductions comparing 2005 with 2020 levels are projected to be:

- Electricity - 2.3 % reduction
- Natural gas - 12.6% reduction
- Overall - 3% reduction

The following table shows how the calculations were made.

End Use	% of total use	2005 MWh	Penetration	% improvement	2005 after retrofit	Served	Cost	Total
A/C (central)	16	58.8	60%	40%	45	29,574	\$1,000	\$29,574,000
Space Heat	10.1	37.1	60%	40%	28	29,574	\$5,000	\$147,870,000
Water Heat	9.1	33.4	60%	40%	25	29,574	\$600	\$17,744,400
Lighting	8.8	32.3	60%	10%	30	29,574	\$1,000	\$29,574,000
							\$8,100	\$224,762,400
Building Envelope and Heating/Hot Water Retrofit Program Effectiveness Estimate								
Efficiency								
End Use	% of total	2005 Therms	Penetration	% improve	Result			
Space Heating	44%	9,395,724	60%	40%	7,140,751			
Water Heat	44%	9,395,724	60%	40%	7,140,751			
Before Totals								
Compared to 2005		After Elec Retrofit		Difference	After Bldg Envelope/Furnace Retrofit			
Electricity	2.8%	Electricity	0.5%	2.3%	Electricity	2.8%	Difference	
Natural Gas	5.4%	Natural Gas	5.4%	0.0%	Natural Gas	-7.2%	12.6%	
Transportation	25.0%	Transportation	25.0%	0.0%	Transportation	25.0%	0.0%	
Total	16.9%	Total	16.5%	0.5%	Total	14.6%	2.3%	
				0.0%			0.0%	
Compared to 1990		Compared to 1990		0.0%	Compared to 1990			
Electricity	31.5%	Electricity	28.5%	3.0%	Electricity	31.5%	0.0%	
Natural Gas	-6.3%	Natural Gas	-6.3%	0.0%	Natural Gas	-17.4%	11.2%	
Transportation	28.4%	Transportation	28.4%	0.0%	Transportation	28.4%	0.0%	
Total	21.5%	Total	21.0%	0.5%	Total	19.1%	2.4%	

Electricity Retrofit Program Effectiveness Estimate

End Use	% of total use	MWh 2005	Penetration	% Improvement	MWh 2005 after retrofit	Served	Cost	Total
<i>A/C (central)</i>	16.0	58.8	60%	40%	45	29,574	\$1,000	\$29,574,000
<i>Space Heat</i>	10.1	37.1	60%	40%	28	29,574	5,000	147,870,000
<i>Water Heat</i>	9.1	33.4	60%	40%	25	29,574	600	17,744,400
<i>Lighting</i>	8.8	32.3	60%	10%	30	29,574	1,000	29,574,000
							\$8,100	\$224,762,400

Total Households 2005 = 49,290, 66% Owner Occupied

Building Envelope and Heating/Hot Water Retrofit Program Effectiveness Estimate Efficiency

End Use	% of total	2005 Therms	Penetration	% improvement	Result
Space Heating	44%	9,395,724	60%	40%	7,140,751
Water Heat	44%	9,395,724	60%	40%	7,140,751

2020 Emissions Estimates

Before Retrofit Totals	% of total use	After Elec Retrofit	% Improvement	Difference	After Bldg Envelope/Furnace Retrofit		
Compared to 2005		Compared to 2005			Compared to 2005		Difference
Electricity	2.8%	Electricity	0.5%	2.3%	Electricity	2.8%	0.0%
Natural Gas	5.4%	Natural Gas	5.4%	0.0%	Natural Gas	-7.2%	12.6%
Transportation	25.0%	Transportation	25.0%	0.0%	Transportation	25.0%	0.0%
Total	16.9%	Total	16.5%	0.5%	Total	14.6%	2.3%
				0.0%			0.0%
Compared to 1990		Compared to 1990			Compared to 1990		
Electricity	31.5%	Electricity	28.5%	3.0%	Electricity	31.5%	0.0%
Natural Gas	-6.3%	Natural Gas	-6.3%	0.0%	Natural Gas	-17.4%	11.2%
Transportation	28.4%	Transportation	28.4%	0.0%	Transportation	28.4%	0.0%
Total	21.5%	Total	21.0%	0.5%	Total	19.1%	2.4%