# APPENDIX 15-A. REGULATORY IMPACT ANALYSIS: SUPPORTING MATERIALS

# TABLE OF CONTENTS

15-A.1	INT	15-A-1									
15-A.2	MA	RKET SHARE ANNUAL INCREASES FOR REBATE, TAX									
	CRE	EDIT, VOLUNTARY EFFICIENCY TARGETS, AND BULK									
	GOV	VERNMENT PURCHASES POLICIES	15-A-1								
15-A.3	BAC	CKGROUND ON XENERGY PENETRATION CURVES	15-A-5								
15-A.3.1	Intro	Introduction									
15-A.3.2	Adjı	Adjustment of Xenergy Curves									
15-A.4	UTI	JTILITY REBATE PROGRAMS15-A-									
15-A.4.1	Reb	ate Programs for Gas-Fired Water Heaters	15-A-7								
15-A.4.2	Reb	ate Programs for Electric Water Heaters	15-A-13								
15-A.4.3	Reb	ates for Gas Space Heaters	15-A-24								
15-A.4.4	Reb	ates for Hearth Products	15-A-25								
15-A.4.5	Reb	ates for Gas-Fired Pool Heaters	15-A-26								
15-A.5	FED	DERAL AND STATE TAX CREDITS	15-A-27								
15-A.5.1	Fede	eral Tax Credits for Residential Appliances	15-A-27								
15-A.5.2	Federal Tax Credits for Manufacturers										
15-A.5.3	State	e Tax Credits	15-A-29								
		LIST OF TABLES									
T-1-1- 15 A	2.1	Annual Language in Madest Change Attailertable to Debate and Tana									
Table 15-A.	2.1	Annual Increases in Market Shares Attributable to Rebate and Tax	15 1 2								
T-1-1- 15 A	2.2	Credit Policies for Water Heaters									
Table 15-A.	2.2	Annual Increases in Market Shares Attributable to a Voluntary Ene									
T-1-1- 15 A	2.2	Efficiency Targets Policy for Heating Products									
Table 15-A.	2.3	Annual Increases in Market Shares Attributable to Bulk Governmen									
Table 15 A	1 1	Purchases for Gas-Fired and Electric Storage Water Heaters									
Table 15-A.		Rebates for Gas-Fired Water Heaters									
Table 15-A.		Rebates for Electric Water Heaters									
Table 15-A.		Rebates for Gas Space Heaters									
Table 15-A.		Rebates for Hearth Products									
Table 15-A.4.5 Rebates for Gas-Fired Pool Heaters											
Table 15-A.	5.1										
		Pumps	15-A-28								
		LIST OF FIGURES									
Figure 15-A	.3.1	S-Curves Showing Effects of External and Internal Sources on									
<i>5</i>		Adoption of New Technologies	15-A-6								

#### APPENDIX 15-A. REGULATORY IMPACT ANALYSIS: SUPPORTING MATERIALS

#### 15-A.1 INTRODUCTION

This appendix contains sections discussing the following topics:

- Projections of annual market share increases for the consumer rebates, consumer tax credits, manufacturer tax credits, voluntary energy efficiency targets and bulk government purchases policies
- Background material on the Xenergy penetration curves used to analyze consumer rebates and DOE's adjustment of these curves for this analysis
- Detailed tables of rebates offered for the five considered products
- Background material on Federal and state tax credits for appliances

# 15-A.2 MARKET SHARE ANNUAL INCREASES FOR REBATE, TAX CREDIT, VOLUNTARY EFFICIENCY TARGETS, AND BULK GOVERNMENT PURCHASES POLICIES

For the consumer rebate, consumer tax credit, and manufacturer tax credit policies, Table 15-A.2.1 shows the annual increases in market shares for gas-fired and electric storage water heaters meeting target efficiency levels. For water heaters, these market shares are the weighted averages of the projected 2015 shipment market shares by volume type. For gas-fired storage water heaters, the market share of small rated volume units is 96 percent and the share of large rated volume is 4 percent. For electric storage water heaters, the market share of small rated volume units is 91 percent and the share of large rated volume is 9 percent.

For these policies, the market shares under the policy case for direct heating equipment and pool heaters are assumed to be constant from the start year to the end year of the analysis (as reported in chapter 15 of the TSD).

DOE used these market share increases as inputs to the RIA spreadsheet model.

Table 15-A.2.1 Annual Increases in Market Shares Attributable to Rebate and Tax Credit Policies for Water Heaters

Year of	Cons Reb		Cons Tax C	umer redits	Manufacturer Tax Credits		
Program	Gas-Fired Storage	Electric Storage	Gas-Fired Storage	Electric Storage	Gas-Fired Storage	Electric Storage	
2015	27.3%	36.9%	16.4%	22.2%	8.2%	11.1%	
2016	27.1%	36.5%	16.3%	21.9%	8.1%	10.9%	
2017	27.0%	36.0%	16.2%	21.6%	8.1%	10.8%	
2018	26.8%	35.5%	16.1%	21.3%	8.1%	10.7%	
2019	26.7%	35.1%	16.0%	21.1%	8.0%	10.5%	
2020	26.5%	34.6%	15.9%	20.8%	8.0%	10.4%	
2021	26.4%	34.2%	15.8%	20.5%	7.9%	10.2%	
2022	26.2%	33.7%	15.7%	20.2%	7.9%	10.1%	
2023	26.1%	33.2%	15.7%	19.9%	7.8%	10.0%	
2024	25.9%	32.8%	15.6%	19.7%	7.8%	9.8%	
2025	25.8%	32.3%	15.5%	19.4%	7.7%	9.7%	
2026	25.6%	31.9%	15.4%	19.1%	7.7%	9.6%	
2027	25.5%	31.4%	15.3%	18.8%	7.6%	9.4%	
2028	25.3%	30.9%	15.2%	18.6%	7.6%	9.3%	
2029	25.2%	30.5%	15.1%	18.3%	7.6%	9.1%	
2030	25.0%	30.0%	15.0%	18.0%	7.5%	9.0%	
2031	24.9%	29.6%	14.9%	17.7%	7.5%	8.9%	
2032	24.7%	29.1%	14.8%	17.5%	7.4%	8.7%	
2033	24.6%	28.6%	14.8%	17.2%	7.4%	8.6%	
2034	24.4%	28.2%	14.7%	16.9%	7.3%	8.5%	
2035	24.3%	27.7%	14.6%	16.6%	7.3%	8.3%	
2036	24.1%	27.2%	14.5%	16.3%	7.2%	8.2%	
2037	24.0%	26.8%	14.4%	16.1%	7.2%	8.0%	
2038	23.8%	26.3%	14.3%	15.8%	7.2%	7.9%	
2039	23.7%	25.9%	14.2%	15.5%	7.1%	7.8%	
2040	23.5%	25.4%	14.1%	15.2%	7.1%	7.6%	
2041	23.4%	24.9%	14.0%	15.0%	7.0%	7.5%	
2042	23.2%	24.5%	13.9%	14.7%	7.0%	7.3%	
2043	23.1%	24.0%	13.9%	14.4%	6.9%	7.2%	
2044	22.9%	23.6%	13.8%	14.1%	6.9%	7.1%	

Table 15-A.2.2 shows the annual increases in market shares for the five considered heating products that meet target efficiency levels for the voluntary energy efficiency targets policy.

**Table 15-A.2.2 Annual Increases in Market Shares Attributable to a Voluntary Energy Efficiency Targets Policy for Heating Products** 

		iency Targets Pol				
Year	Gas-Fired	Electric	Year	Gas Wall	Gas Hearth	Pool
	Storage Water	Storage Water		Fan DHE	DHE	Heaters
	Heaters	Heaters				
2015	13.7%	0.3%	2013	2.1%	2.4%	2.0%
2016	13.5%	3.0%	2014	3.2%	3.7%	3.1%
2017	13.6%	5.4%	2015	4.3%	4.9%	4.2%
2018	14.0%	6.2%	2016	5.4%	6.1%	5.2%
2019	14.1%	7.9%	2017	5.3%	6.1%	5.2%
2020	14.2%	8.7%	2018	5.3%	6.1%	5.1%
2021	14.2%	9.2%	2019	5.8%	6.7%	5.6%
2022	14.3%	9.4%	2020	6.4%	7.3%	6.1%
2023	14.4%	9.7%	2021	7.0%	8.0%	6.7%
2024	14.5%	10.3%	2022	7.6%	8.7%	7.4%
2025	14.6%	10.6%	2023	8.3%	9.6%	8.1%
2026	14.7%	11.0%	2024	9.1%	10.5%	8.8%
2027	14.8%	11.3%	2025	10.0%	11.4%	9.7%
2028	14.8%	11.7%	2026	10.9%	12.5%	10.6%
2029	14.9%	12.1%	2027	12.0%	13.7%	11.6%
2030	15.0%	12.4%	2028	13.1%	15.0%	12.7%
2031	15.1%	12.8%	2029	13.1%	15.1%	12.7%
2032	15.2%	13.2%	2030	13.2%	15.2%	12.8%
2033	15.3%	13.5%	2031	13.3%	15.2%	12.8%
2034	15.3%	13.9%	2032	13.3%	15.3%	12.9%
2035	15.4%	14.3%	2033	13.4%	15.4%	13.0%
2036	15.5%	14.7%	2034	13.5%	15.5%	13.0%
2037	15.6%	15.0%	2035	13.5%	15.5%	13.1%
2038	15.7%	15.4%	2036	13.6%	15.6%	13.2%
2039	15.7%	15.8%	2037	13.7%	15.7%	13.2%
2040	15.8%	16.2%	2038	13.7%	15.8%	13.3%
2041	15.9%	16.6%	2039	13.8%	15.8%	13.4%
2042	15.9%	17.0%	2040	13.9%	15.9%	13.4%
2043	16.0%	17.3%	2041	14.0%	16.0%	13.5%
2044	16.1%	17.7%	2042	14.0%	16.1%	13.6%

Table 15-A.2.3 shows the annual increases in market shares for gas-fired and electric storage water heaters that meet target efficiency levels for the bulk government purchases policy. DOE did not consider this policy for direct heating equipment because of the low saturation of these products in federal housing and the resulting minimal energy savings. DOE did not analyze this policy nor for the pool heaters policy because these products are not present in federal housing.

Table 15-A.2.3 Annual Increases in Market Shares Attributable to Bulk Government Purchases for Gas-Fired and Electric Storage Water Heaters

Year of	Gas-Fired	Electric
Program	Storage Water	Storage Water
	Heaters	Heaters
2015	0.0%	0.0%
2016	0.1%	0.0%
2017	0.1%	0.1%
2018	0.2%	0.1%
2019	0.2%	0.1%
2020	0.3%	0.1%
2021	0.3%	0.1%
2022	0.3%	0.2%
2023	0.4%	0.2%
2024	0.4%	0.2%
2025	0.4%	0.2%
2026	0.4%	0.2%
2027	0.4%	0.2%
2028	0.4%	0.2%
2029	0.4%	0.2%
2030	0.4%	0.2%
2031	0.4%	0.2%
2032	0.4%	0.2%
2033	0.4%	0.2%
2034	0.4%	0.2%
2035	0.4%	0.2%
2036	0.4%	0.2%
2037	0.4%	0.2%
2038	0.4%	0.2%
2039	0.4%	0.2%
2040	0.4%	0.2%
2041	0.4%	0.2%
2042	0.4%	0.2%
2043	0.4%	0.2%
2044	0.4%	0.2%

#### 15-A.3 BACKGROUND ON XENERGY PENETRATION CURVES

#### 15-A.3.1 Introduction

XENERGY, Inc., developed a re-parameterized, mixed-source information diffusion model to estimate market impacts induced by financial incentives for purchasing energy efficient appliances.<sup>a</sup> The basic premise of the mixed-source model is that information diffusion drives the adoption of technology.

Extensive economic literature describes the diffusion of new products as technologies evolve. Some research focuses primarily on developing analytical models of diffusion patterns applicable to individual consumers or to technologies from competing firms. <sup>1, 2, 3</sup> One study records researchers' attempts to investigate the factors that drive diffusion processes. <sup>4</sup> Because a new product generally has its own distinct characteristics, few studies have been able conclusively to develop a universally applicable model. Some key findings, however, generally are accepted in academia and industry.

One accepted finding is that, regardless of their economic benefits and technological merits, new technologies are unlikely to be adopted by all potential users. For many products, a ceiling must be placed on the adoption rate. A second conclusion is that not all adopters purchase new products at the same time: some act quickly after a new product is introduced; others wait for the product to mature. Third, diffusion processes can be characterized approximately by asymmetric S-curves that depict three stages of diffusion: starting, accelerating, and decreasing (as the adoption ceiling is approached).

A so-called epidemic model of diffusion is used widely in marketing and social studies. The epidemic model assumes that (1) all consumers place identical value on the benefits of a new product, and (2) the cost of a new product is constant or declines monotonically over time. What induces a consumer to purchase a new product is information about the availability and benefits of the product. In other words, information diffusion drives consumers' adoption of a new product.<sup>2</sup> The model incorporates information diffusion from both internal sources (spread by word of mouth from early adopters to prospective adopters) and external sources (the "announcement effect" produced by government agencies, institutions, or commercial advertising). The model incorporates both internal and external sources by combining a logistic function with an exponential function.<sup>5, 6</sup>

The relative degree of influence from the internal and external sources determines the general shape of the diffusion curve for a specific product.<sup>5, 6</sup> If adoption of a product is influenced primarily by external sources of information (the announcement effect), for instance, a high rate of diffusion occurs at the beginning of the process. In this scenario, external sources provide immediate information exposure to a significant number of prospective adopters. In contrast, internal sources (such as a network of prospective adopters) are relatively small in size

<sup>&</sup>lt;sup>a</sup> XENERGY is now owned by KEMA, Inc. (www.kema.com)

and reach, producing a more gradual exposure to prospective adopters. Graphically speaking, information diffusion dominated by external sources is represented by a concave curve (the exponential curve in Figure 15-A.3.1). If adoption of a new product is influenced most strongly by internal sources of information, the number of adopters increases gradually, forming a convex curve (the logistic curve in Figure 15-A.3.1).

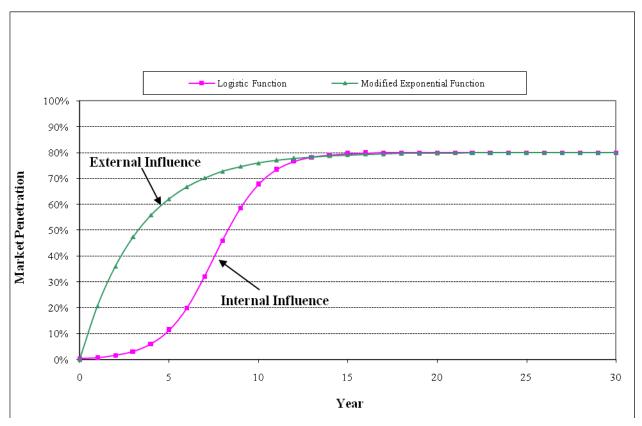


Figure 15-A.3.1 S-Curves Showing Effects of External and Internal Sources on Adoption of New Technologies

## 15-A.3.2 Adjustment of Xenergy Curves

After consulting with a primary author of the 2002 XENERGY study who later conducted similar California studies, DOE made some adjustments to XENERGY's original penetration curves.<sup>5</sup> The experiences of utility programs since the 2002 XENERGY study indicate that incentive programs have difficulty achieving penetration rates higher than 50 percent. Rates are limited by barriers created by consumer utility issues and other non-economic factors. DOE therefore adjusted the maximum penetration parameters from 80 percent to 50 percent for the XENERGY curves that represent *moderate barriers*, *high barriers*, and *extremely high barriers*. DOE also refrained from using what now is considered a theoretical curve that represents *no barriers*. Instead, DOE used a low barriers curve to analyze a product that faces few market barriers and/or has a high base-case-market share.

#### 15-A.4 UTILITY REBATE PROGRAMS

The following four tables summarize the values of rebates offered by programs nationwide for residential gas-fired and electric water heaters, gas space heaters, and gas pool heaters.

# 15-A.4.1 Rebate Programs for Gas-Fired Water Heaters

DOE found 47 organizations, comprising electric utilities, gas utilities, and municipal and regional agencies, that have rebate programs for gas water heaters. The organizations offer more than 100 rebates for models that meet various efficiency criteria. Table 15-A.4.1 provides the organizations' names, states, efficiency levels, rebate amounts, and program websites. If there is more than one entry for an organization, that organization offers different rebate amounts depending on water heater capacity. The average rebate amount for water heaters having an energy factor (EF) of 0.62 and of 0.80, given in 2009\$ at the end of the table, are simple averages of the individual amounts (rather than being population-weighted).

**Table 15-A.4.1 Rebates for Gas-Fired Water Heaters** 

Utility or Agency	State	Amount 2009\$	EF	Website
Cedarburg Light and Water Utility	WI	250	0.59	http://www.focusonenergy.com/Incentives/Residential/Cash-Back_Rewards/waterheater.aspx
Focus on Energy	WI	250	0.59	http://www.focusonenergy.com/Incentives/Residential/Cash-Back_Rewards/waterheater.aspx
Avista Utilities	ID	50	0.6	https://www.avistautilities.com/savings/rebates/Pages/ WashingtonandIdahoCustomerRebates.aspx#high
Avista Utilities	OR	50	0.6	https://www.avistautilities.com/savings/rebates/Documents/ EquipmentRebate04_09.pdf
Avista Utilities	WA	50	0.6	https://www.avistautilities.com/savings/rebates/Pages/ WashingtonandIdahoCustomerRebates.aspx#high
City of Palo Alto Utilities	CA	40	0.62	http://www.cpau.com/civica/filebank/blobdload.asp?BlobID=4365
City of Lompoc Utilities	CA	100	0.62	http://www.cityoflompoc.com/utilities/conservation/
PG&E	CA	30	0.62	http://www.pge.com/includes/docs/pdfs/shared/saveenergymoney/rebates/08_residential_appliance.pdf
San Diego Gas and Electric	CA	30	0.62	http://www.sdge.com/residential/waterHeaters.shtml
Southern California Gas Company	CA	30	0.62	http://www.socalgas.com/rebates/residential/waterheater/
Atmos Energy	СО	50	0.62	http://www.conservationrebates.com/programs/col/_documents/Colorado%20 Equipment%20Application20090225.pdf
Colorado Natural Gas	СО	50	0.62	http://www.conservationrebates.com/programs/col/_documents/Colorado%20 Equipment%20Application20090225.pdf
SourceGas	СО	50	0.62	http://www.conservationrebates.com/programs/col/_documents/Colorado%20 Equipment%20Application20090225.pdf
Xcel Energy	СО	40	0.62	http://www.xcelenergy.com/Residential/Programs_Resources/ HeatingandCoolingRebates/Pages/WaterHeaterRebates.aspx
Avista Utilities	ID	50	0.62	https://www.avistautilities.com/savings/rebates/Pages/ WashingtonandIdahoCustomerRebates.aspx#high
MidAmerican Energy Company - Illinois	IL	50	0.62	http://www.midamericanenergy.com/pdf/il_res_equip.pdf
Citizens Gas of Indiana	IN	100	0.62	http://www.citizensgas.com/forhomes/appliancerebates.html
Northern Indiana Public Service Corporation	IN	100	0.62	http://www.nipsco.com/energyprograms/
Vectren Energy Delivery	IN	100	0.62	https://www.vectrenenergy.com/selectState.do;jsessionid=q0qSJ3yTL2TWhb TGglLrbvvZghFHPT1NTvm2H4RDYF2W3gRkjpWx!1146985967
Black Hills Energy	IA	75	0.62	http://www.blackhillsenergy.com/services/programs/ homes-heateff-ia.php#appliance

Utility or Agency	State	Amount 2009\$	EF	Website
Interstate Power and Light (Alliant Energy)	IA	75	0.62	http://alliantenergy.com/UtilityServices/ForYourHome/RewardsIncentives/ IowaIncentivePrograms/014675
MidAmerican Energy Residential Equipment Rebate Program	IA	50	0.62	http://www.midamericanenergy.com/pdf/ee_resident_rebates.pdf
Berkshire Gas	MA	50	0.62	http://www.berkshiregas.com/UsageAndSafety/energyefficprog.html
Wakefield Municipal Gas and Light Department	MA	100	0.62	http://www.wakefield.ma.us/Public_Documents/WakefieldMA_MGLD/rcsprogram.htm
Hutchinson Utilities Commission	MN	50	0.62	http://www.hutchinsonutilities.com/rebateresident.html
Interstate Power and Light (Alliant Energy)	MN	25	0.62	http://www.alliantenergy.com/UtilityServices/ForYourHome/ RewardsIncentives/MinnesotaIncentivePrograms/014684
Xcel Energy	MN	40	0.62	http://www.xcelenergy.com/Residential/Programs_Resources/HeatingandCoolingRebates/Pages/HeatingandCoolingRebates.aspx
Missouri Gas Energy	MO	40	0.62	http://www.betterwaterheating.com/rebatequal.html
NorthWestern Energy	MT	100	0.62	http://www.northwesternenergy.com/documents/E+Programs/ E+NaturalGasRebate-Equipment.pdf
New Jersey Board of Public Utilities	NJ	25	0.62	http://www.njcleanenergy.com/residential/programs/ warmadvantage/warmadvantage
Avista Utilities	OR	50	0.62	https://www.avistautilities.com/savings/rebates/Documents/EquipmentRebate 04_09.pdf
Energy Trust of Oregon	OR	35	0.62	http://www.energytrust.org/residential/existinghomes/waterheater.html
PECO Natural Gas Energy Efficiency Rebates	PA	50	0.62	http://www.exeloncorp.com/ourcompanies/peco/pecores/natural_gas/energy_efficiency_rebate_prog/default.htm
Texas Gas Service	TX	40	0.62	http://www.oneok.com/tgs/about/conservation/tgs_residential.jsp
Questar Gas	UT	50	0.62	http://www.thermwise.com/home/ApplianceRebates.html
HomeBase Programs	VT	100	0.62	http://www.vermontgas.com/efficiency_programs/qa_rebates.html
Avista Utilities	WA	50	0.62	https://www.avistautilities.com/savings/rebates/Pages/ WashingtonandIdahoCustomerRebates.aspx#high
Cascade Natural Gas	WA	25	0.62	http://www.cngc.com/conservation/WA_Program_Incentives_Existing_ Homes_0209.pdf
Puget Sound Energy	WA	50	0.62	http://www.pse.com/solutions/foryourhome/Pages/rebatesOnWaterHeating.aspx
North Shore Gas (offered by Chicagoland Natural Gas Savings Program)	IL	75	0.62	http://www.conservationrebates.com/programs/chi/CHI_Index.aspx
Peoples Gas (offered by Chicagoland Natural Gas Savings Program)	IL	75	0.62	http://www.conservationrebates.com/programs/chi/CHI_Index.aspx

Utility or Agency	State	Amount 2009\$	EF	Website
Piedmont Natural Gas	NC	50	0.62	http://www.piedmontng.com/eprise/main/piedmontng/residential/aboutNaturalGasSection/efficiencyPrograms1a
Delaware Energy Office	DE	20% of cost	0.63	http://www.delaware-energy.com/home-performance-rebate-details.htm
Austin Utilities	MN	75	0.63	http://www.austinutilities.com/pages/residential_conserve_incentives.asp
Xcel Energy	СО	60	0.64	http://www.xcelenergy.com/Residential/Programs_Resources/ HeatingandCoolingRebates/Pages/WaterHeaterRebates.aspx
MidAmerican Energy Company - Illinois	IL	50	0.64	http://www.midamericanenergy.com/pdf/il_res_equip.pdf
MidAmerican Energy Residential Equipment Rebate Program	IA	50	0.64	http://www.midamericanenergy.com/pdf/ee_resident_rebates.pdf
Minnesota Energy Resources	MN	45	0.64	http://www.minnesotaenergyresources.com/home/rebates.aspx
Xcel Energy	MN	60	0.64	http://www.xcelenergy.com/Residential/Programs_Resources/ HeatingandCoolingRebates/Pages/HeatingandCoolingRebates.aspx
Cedarburg Light and Water Utility	WI	50	0.64	http://www.focusonenergy.com/Incentives/Residential/Cash-Back_Rewards/waterheater.aspx
Xcel Energy	CO	80	0.65	http://www.xcelenergy.com/Residential/Programs_Resources/ HeatingandCoolingRebates/Pages/WaterHeaterRebates.aspx
NorthWestern Energy	MT	100	0.80	http://www.northwesternenergy.com/documents/E+Programs/ E+NaturalGasRebate-Equipment.pdf
NorthWestern Energy	MT	80	0.80	http://www.northwesternenergy.com/documents/E+Programs/ E+NaturalGasRebate-Equipment.pdf
North Shore Gas (offered by Chicagoland Natural Gas Savings Program)	IL	400	0.80	http://www.conservationrebates.com/programs/chi/CHI_Index.aspx
Peoples Gas (offered by Chicagoland Natural Gas Savings Program)	IL	400	0.80	http://www.conservationrebates.com/programs/chi/CHI_Index.aspx
Black Hills Energy	IA	300	0.80	http://www.blackhillsenergy.com/services/programs/ homes-heateff-ia.php#appliance
Interstate Power and Light (Alliant Energy)	IA	300	0.80	http://alliantenergy.com/UtilityServices/ForYourHome/RewardsIncentives/ IowaIncentivePrograms/014675
Interstate Power and Light (Alliant Energy)	IA	300	0.80	http://alliantenergy.com/UtilityServices/ForYourHome/RewardsIncentives/ IowaIncentivePrograms/014675
Owatonna Public Utilities	MN	200	0.80	http://www.owatonnautilities.com/documents/ResidentialRebateAppl09_000.pdf
Xcel Energy	MN	100	0.80	http://www.xcelenergy.com/Residential/Programs_Resources/ HeatingandCoolingRebates/Pages/HeatingandCoolingRebates.aspx
Missouri Gas Energy	MO	200	0.80	http://www.betterwaterheating.com/rebatequal.html

Utility or Agency	State	Amount 2009\$	EF	Website
Energy Trust of Oregon	OR	200	0.80	http://www.energytrust.org/residential/existinghomes/waterheater.html
HomeBase Programs	VT	100	0.80	http://www.vermontgas.com/efficiency_programs/qa_rebates.html
Cedarburg Light and Water Utility	WI	100	0.80	http://www.focusonenergy.com/Incentives/Residential/Cash-Back_Rewards/waterheater.aspx
Cedarburg Light and Water Utility	WI	100	0.80	http://www.focusonenergy.com/Incentives/Residential/Cash-Back_Rewards/waterheater.aspx
Focus on Energy	WI	100	0.80	http://www.focusonenergy.com/Incentives/Residential/Cash-Back_Rewards/waterheater.aspx
Focus on Energy	WI	100	0.80	http://www.focusonenergy.com/Incentives/Residential/Cash-Back_Rewards/waterheater.aspx
City of Palo Alto Utilities	CA	300	0.80	http://www.cpau.com/civica/filebank/blobdload.asp?BlobID=4365
Cascade Natural Gas	WA	200	0.81	http://www.cngc.com/conservation/WA_Program_Incentives_Existing_ Homes_0209.pdf
Xcel Energy	СО	100	0.82	http://www.xcelenergy.com/Residential/Programs_Resources/ HeatingandCoolingRebates/Pages/WaterHeaterRebates.aspx
Delaware Energy Office	DE	20% of cost	0.82	http://www.delaware-energy.com/home-performance-rebate-details.htm
Avista Utilities	ID	200	0.82	https://www.avistautilities.com/savings/rebates/Pages/ WashingtonandIdahoCustomerRebates.aspx#high
Citizens Gas of Indiana	IN	150	0.82	http://www.citizensgas.com/forhomes/appliancerebates.html
Northern Indiana Public Service Corporation	IN	150	0.82	http://www.nipsco.com/energyprograms/
Vectren Energy Delivery	IN	150	0.82	https://www.vectrenenergy.com/selectState.do;jsessionid=q0qSJ3yTL2TWhb TGglLrbvvZghFHPT1NTvm2H4RDYF2W3gRkjpWx!1146985967
Cedar Falls Utilities	IA	200	0.82	http://www.cfu.net/pdf/rebates_08.pdf
Northern Utilities	MA	300	0.82	http://www.northernutilities.com/forhome/MEeneraudit.htm#mamf
Berkshire Gas	MA	300	0.82	http://www.berkshiregas.com/UsageAndSafety/energyefficprog.html
Hutchinson Utilities Commission	MN	150	0.82	http://www.hutchinsonutilities.com/rebateresident.html
Northern Utilities	NH	300	0.82	http://www.northernutilities.com/forhome/NHeneraudit.htm#mamf
New Jersey Board of Public Utilities	NJ	300	0.82	http://www.njcleanenergy.com/residential/programs/ warmadvantage/warmadvantage
Avista Utilities	OR	200	0.82	https://www.avistautilities.com/savings/rebates/Documents/EquipmentRebate 04_09.pdf
Texas Gas Service	TX	300	0.82	http://www.oneok.com/tgs/about/conservation/tgs_residential.jsp
Questar Gas	UT	300	0.82	http://www.thermwise.com/home/ApplianceRebates.html
Virginia Natural Gas	VA	250	0.82	http://vng.aglr.com/Universal/Promotions/GreenZoneRebates.aspx

Utility or Agency	State	Amount	EF	Website
		<u>2009\$</u>		
Avista Utilities	WA	200	0.82	https://www.avistautilities.com/savings/rebates/Pages/ WashingtonandIdahoCustomerRebates.aspx#high
Puget Sound Energy	WA	150	0.82	http://www.pse.com/solutions/foryourhome/Pages/rebatesOnAllRebates.aspx
Southern California Gas Company	CA	150	0.82	http://www.socalgas.com/rebates/residential/tanklesswaterheater/
Atmos Energy	CO	100	0.82	http://www.conservationrebates.com/programs/col/_documents/ Colorado%20Equipment%20Application20090225.pdf
Colorado Natural Gas	CO	100	0.82	http://www.conservationrebates.com/programs/col/_documents/ Colorado%20Equipment%20Application20090225.pdf
SourceGas	CO	100	0.82	http://www.conservationrebates.com/programs/col/_documents/ Colorado%20Equipment%20Application20090225.pdf
North Shore Gas (offered by Chicagoland Natural Gas Savings Program)	IL	400	0.82	http://www.conservationrebates.com/programs/chi/CHI_Index.aspx
Peoples Gas (offered by Chicagoland Natural Gas Savings Program)	IL	400	0.82	http://www.conservationrebates.com/programs/chi/CHI_Index.aspx
Piedmont Natural Gas	NC	250	0.82	http://www.piedmontng.com/eprise/main/piedmontng/residential/aboutNaturalGasSection/efficiencyPrograms1a
Minnesota Energy Resources	MN	250	0.84	http://www.minnesotaenergyresources.com/home/rebates.aspx
MidAmerican Energy Company - Illinois	IL	50	0.85	http://www.midamericanenergy.com/pdf/il_res_equip.pdf
MidAmerican Energy Residential Equipment Rebate Program	IA	50	0.85	http://www.midamericanenergy.com/pdf/ee_resident_rebates.pdf
Southern California Gas Company	CA	200	0.90	http://www.socalgas.com/rebates/residential/tanklesswaterheater/
Central Florida Gas	FL	525	NA	http://www.cfgas.com/index.cfm?fuseaction=residential.rebateshomes
Central Florida Gas	FL	350	NA	http://www.cfgas.com/index.cfm?fuseaction=residential.rebateshomes
Average Rebate Amount for EF = 0.62, 2009\$ Average Rebate Amount for EF = 0.80, 2009\$		56 241		

NA = Not applicable/available.
Websites were accessed most recently between March and June of 2009.

# 15-A.4.2 Rebate Programs for Electric Water Heaters

DOE found 101 organizations, comprising electric utilities and municipal and regional agencies that have rebate programs for electric water heaters. The organizations offer rebates for units that meet a range of efficiency criteria. Table 15-A.4.2 lists the organizations' names, states, efficiency levels, rebate amounts, and program websites. If there is more than one entry for an organization, that organization offers different rebates based on water heater size. The average rebate amounts, given in 2008\$ and 2009\$ at the end of the table, are simple averages of the individual amounts (rather than being population-weighted).

**Table 15-A.4.2 Rebates for Electric Water Heaters** 

Utility or Agency	State	Amount	EF	Website
		<u>2009\$</u>		
Carbon Power & Light, Inc.	WY	286	0.78	http://www.carbonpower.com/rebates.htm
Carbon Power & Light, Inc.	WY	241	0.81	http://www.carbonpower.com/rebates.htm
Carbon Power & Light, Inc.	WY	196	0.83	http://www.carbonpower.com/rebates.htm
Poudre Valley REA	CO	70	0.84	http://www.pvrea.com/programs/rebates.htm
Central New Mexico Electric Cooperative	NM	70	0.84	http://www.cnmec.coop/water_heater_rebate_guidelines.htm#
Central New Mexico Electric Cooperative	NM	120	0.84	http://www.cnmec.coop/water_heater_rebate_guidelines.htm#
Carbon Power & Light, Inc.	WY	350	0.84	http://www.carbonpower.com/rebates.htm
Kootenai Electric Cooperative	ID	100	0.85	http://www.kec.com/rebates.php
Forest Grove Light & Power	OR	40	0.85	http://www.forestgrove-or.gov/images/stories/services/lightandpower/pdf/march2009appliancerebateform.pdf
Franklin County PUD	WA	25	0.85	http://www.franklinpud.com/html/res_rebates.html
Inland Power & Light Company	WA	25	0.85	http://www.inlandpower.com/customer_carec.php?id=177
Orcas Power and Light Cooperative	WA	40	0.85	http://www.opalco.com/energy-efficiency/rebates/
Orcas Power and Light Cooperative	WA	25	0.85	http://www.opalco.com/energy-efficiency/rebates/
Port Angeles Public Works and Utilities	WA	25	0.85	https://www.cityofpa.us/PDFs/Conservation/2007/ APPLIANCEREBATESResident.pdf
City of Richland	WA	25	0.85	http://www.ci.richland.wa.us/RICHLAND/Electric/index.cfm?PageNum=89
Carbon Power & Light, Inc.	WY	167	0.85	http://www.carbonpower.com/rebates.htm
Poudre Valley REA	CO	70	0.86	http://www.pvrea.com/programs/rebates.htm
North Georgia Electric Membership Corporation	GA	25	0.86	http://www.ngemc.com/waterHeater.htm
Central New Mexico Electric Cooperative	NM	70	0.86	http://www.cnmec.coop/water_heater_rebate_guidelines.htm#

Utility or Agency	State	Amount	EF	Website
		<u>2009\$</u>		
Central New Mexico Electric Cooperative	NM	120	0.86	http://www.cnmec.coop/water_heater_rebate_guidelines.htm#
Carbon Power & Light, Inc.	WY	290	0.86	http://www.carbonpower.com/rebates.htm
Carbon Power & Light, Inc.	WY	163	0.86	http://www.carbonpower.com/rebates.htm
Carbon Power & Light, Inc.	WY	140	0.87	http://www.carbonpower.com/rebates.htm
Hawaiian Electric Company, Inc.	НІ	70	0.88	http://www.heco.com/portal/site/heco/menuitem.508576f78baa14340b4c0610 c510b1ca/?vgnextoid =2cd95e658e0fc010VgnVCM1000008119fea9RCRD&vgnextfmt=default
Poudre Valley REA	CO	70	0.89	http://www.pvrea.com/programs/rebates.htm
Black Hills Power	MT	1 per gallon	0.89	http://www.blackhillspower.com/rebprog.htm
Central New Mexico Electric Cooperative	NM	70	0.89	http://www.cnmec.coop/water_heater_rebate_guidelines.htm#
Central New Mexico Electric Cooperative	NM	120	0.89	http://www.cnmec.coop/water_heater_rebate_guidelines.htm#
Black Hills Power	SD	1 per gallon	0.89	http://www.blackhillspower.com/rebprog.htm
Modern Electric Water Company	WA	75	0.89	http://www.mewco.com/PDFs/Water%20Heater.pdf
Black Hills Power	MT	1 per gallon	0.89	http://www.blackhillspower.com/rebprog.htm
Carbon Power & Light, Inc.	WY	230	0.89	http://www.carbonpower.com/rebates.htm
Carbon Power & Light, Inc.	WY	118	0.89	http://www.carbonpower.com/rebates.htm
Sulphur Springs Valley Electric Cooperative	AZ	150	0.90	http://www.ssvec.org/documents/Water_Heater_Rebate_Form_2008.doc
Poudre Valley REA	CO	70	0.90	http://www.pvrea.com/programs/rebates.htm
Poudre Valley REA	CO	70	0.90	http://www.pvrea.com/programs/rebates.htm
North Georgia Electric Membership Corporation	GA	50	0.90	http://www.ngemc.com/waterHeater.htm
Bartholomew County Rural Electric Membership Cooperative	IN	250	0.90	http://www.bcremc.com/heater.html
Bartholomew County Rural Electric Membership Cooperative	IN	150	0.90	http://www.bcremc.com/heater.html
Carroll County REMC	IN	150	0.90	http://www.carrollcountyremc.com/index.php?page=services
Clark County REMC	IN	100	0.90	http://www.theremc.com/rebates.html#anchor1
Clark County REMC	IN	100	0.90	http://www.theremc.com/rebates.html#anchor1
Clark County REMC	IN	100	0.90	http://www.theremc.com/rebates.html#anchor1

Utility or Agency	State	Amount	EF	Website
		<u>2009\$</u>		
Clark County REMC	IN	200	0.90	http://www.theremc.com/rebates.html#anchor1
Dubois REC	IN	50	0.90	http://www.duboisrec.com/rebates.html
Dubois REC	IN	150	0.90	http://www.duboisrec.com/rebates.html
Rush Shelby Energy	IN	150	0.90	http://www.rse.coop/waterheater.html
Rush Shelby Energy	IN	50	0.90	http://www.rse.coop/waterheater.html
Southern Indiana Rural Electric Cooperative	IN	50	0.90	http://www.sirec.com/Forms/2009RebateTable_Form_Southern_flds.pdf
Southern Indiana Rural Electric Cooperative	IN	150	0.90	http://www.sirec.com/Forms/2009RebateTable_Form_Southern_flds.pdf
WIN Energy REMC	IN	50	0.90	http://www.winenergyremc.com/rebates.html
WIN Energy REMC	IN	150	0.90	http://www.winenergyremc.com/rebates.html
Linn County Rural Electric Cooperative Association	IA	250	0.90	http://www.linncountyrec.com/cgi-script/csarticles/000003/000329.htm
Owen Electric Cooperative, Inc	KY	100	0.90	http://www.owenelectric.com/pdfs/forms/Water%20Heater.pdf
Pearl River Valley Electric Power Association	MS	150	0.90	http://www.prvepa.com/comfadv.html
Independence Power & Light	MO	75	0.90	http://www.ci.independence.mo.us/pl/pdf/rebate_ewh.pdf
Independence Power & Light	MO	100	0.90	http://www.ci.independence.mo.us/pl/pdf/rebate_ewh.pdf
Independence Power & Light	MO	125	0.90	http://www.ci.independence.mo.us/pl/pdf/rebate_ewh.pdf
Independence Power & Light	MO	150	0.90	http://www.ci.independence.mo.us/pl/pdf/rebate_ewh.pdf
Black Hills Power	MT	2 per gallon	0.90	http://www.blackhillspower.com/rebprog.htm
Central New Mexico Electric Cooperative	NM	70	0.90	http://www.cnmec.coop/water_heater_rebate_guidelines.htm#
Central New Mexico Electric Cooperative	NM	120	0.90	http://www.cnmec.coop/water_heater_rebate_guidelines.htm#
Black Hills Power	SD	2 per gallon	0.90	http://www.blackhillspower.com/rebprog.htm
Tri-County Electric Cooperative	TX	75	0.90	http://www.tcectexas.com/waterheaterrebate.htm
Black Hills Power	MT	2 per gallon	0.90	http://www.blackhillspower.com/rebprog.htm
Carbon Power & Light, Inc.	WY	200	0.90	http://www.carbonpower.com/rebates.htm
Ozark Border Electric Cooperative	MO	75	0.90	http://www.ozarkborder.org/rebates.html
Ozark Border Electric Cooperative	MO	50	0.90	http://www.ozarkborder.org/rebates.html
Truckee Donner Public Utility District	CA	2	0.91	http://www.tdpud.org/pdf/Rebate%20program%20pamphlet,May07.pdf

Utility or Agency	State	Amount 2009\$	EF	Website
		per gallon		
Groton Utilities	СТ	60	0.91	http://www.grotonutilities.com/files/conservation_forms/ Appliance_Rebate.pdf
Norwich Public Utilities	CT	60	0.91	http://www.norwichpublicutilities.com/pdfs/ 2009%20Appliance%20Rebate%20Form.pdf
Blue Ridge Mountain EMC and TVA	GA	150	0.91	http://www.brmemc.com/Products/EnergyRight /EnergyRight.html#Requirements: http://www.heco.com/portal/site/heco/menuitem.508576f78baa14340b4c0610
Hawaiian Electric Company, Inc.	HI	50	0.91	c510b1ca/?vgnextoid= 2cd95e658e0fc010VgnVCM1000008119fea9RCRD&vgnextfmt=default
Kootenai Electric Cooperative	ID	100	0.91	http://www.kec.com/rebates.php
Kootenai Electric Cooperative	ID	100	0.91	http://www.kec.com/rebates.php
Kootenai Electric Cooperative	ID	100	0.91	http://www.kec.com/rebates.php
Kansas City Board of Public Utilities Energy	KS	220	0.91	http://www.bpu.com/documents/ResidentialHPRebateScheduleeffJan2007 withIncentives.pdf
Kansas City Board of Public Utilities Energy	KS	225	0.91	http://www.bpu.com/documents/ResidentialHPRebateScheduleeffJan2007 withIncentives.pdf
Kansas City Board of Public Utilities Energy	KS	100	0.91	http://www.bpu.com/documents/ResidentialHPRebateScheduleeffJan2007 withIncentives.pdf
Co-Mo Electric Cooperative	МО	50	0.91	http://www.co-mo.coop/Website%20Rebate%20Application- Home%20Appliances.pdf
Flathead Electric Cooperative	MT	60	0.91	http://www.flatheadelectric.com/energy/Rebates.html
City of Ashland Conservation District	OR	65	0.91	http://www.ashland.or.us/Files/waterheaterrebate_1.pdf
Central Electric Cooperative	OR	25	0.91	http://www.cec-co.com/prodserv/residential/water_heater/water_heater.html
Douglas Electric Cooperative	OR	25	0.91	http://www.douglaselectric.com/programs/rebate_credits.php#water
Eugene Water and Electric Board	OR	25	0.91	http://www.eweb.org/content.aspx/34350f11-4e37-4650-9ce3-0aa933fd6c61
Eugene Water and Electric Board	OR	25	0.91	http://www.eweb.org/content.aspx/34350f11-4e37-4650-9ce3-0aa933fd6c61
Forest Grove Light & Power	OR	40	0.91	http://www.forestgrove-or.gov/images/stories/services/lightandpower/pdf/march2009appliancerebateform.pdf
Forest Grove Light & Power	OR	45	0.91	http://www.forestgrove-or.gov/images/stories/services/lightandpower/pdf/march2009appliancerebateform.pdf
Midstate Electric Cooperative	OR	50	0.91	http://www.midstateelectric.coop/ProductsAndServices/PSResidential/ ConservationPrograms/reswaterheater/default.aspx

Utility or Agency	State	Amount 2009\$	EF	Website
Monmouth Power & Light	OR	25	0.91	http://www.ci.monmouth.or.us/vertical/Sites/%7BCE78EAE1-6CA4-4610-BDB0-A9B3B0A8BB71 %7D/uploads/%7B75B91CB0-E22B-4032-A232-C3DC21796769%7D.PDF
Monmouth Power & Light	OR	45	0.91	http://www.ci.monmouth.or.us/vertical/Sites/%7BCE78EAE1-6CA4-4610-BDB0-A9B3B0A8BB71% 7D/uploads/%7B75B91CB0-E22B-4032-A232-C3DC21796769%7D.PDF
Salem Electric	OR	60	0.91	http://www.salemelectric.com/PDFs/rebatebrochure.pdf
Tillamook County PUD	OR	50	0.91	http://www.tpud.org/nrg_appliance.html
Tillamook County PUD	OR	200	0.91	http://www.tpud.org/nrg_appliance.html
PUD #1 of Clallam County	WA	50	0.91	http://www.clallampud.net/conservation/res_Water_Heaters.asp
Franklin County PUD	WA	25	0.91	http://www.franklinpud.com/html/res_rebates.html
Franklin County PUD	WA	25	0.91	http://www.franklinpud.com/html/res_rebates.html
Franklin County PUD	WA	25	0.91	http://www.franklinpud.com/html/res_rebates.html
Grays Harbor PUD	WA	25	0.91	https://www.ghpud.org/index.php?option=com_docman&task=doc_download &gid=61&Itemid=121
Inland Power & Light Company	WA	25	0.91	http://www.inlandpower.com/customer_carec.php?id=177
Modern Electric Water Company	WA	75	0.91	http://www.mewco.com/PDFs/Water%20Heater.pdf
Orcas Power and Light Cooperative	WA	40	0.91	http://www.opalco.com/energy-efficiency/rebates/
Orcas Power and Light Cooperative	WA	25	0.91	http://www.opalco.com/energy-efficiency/rebates/
Port Angeles Public Works and Utilities	WA	25	0.91	https://www.cityofpa.us/PDFs/Conservation/2007/ APPLIANCEREBATESResident.pdf
Port Angeles Public Works and Utilities	WA	25	0.91	https://www.cityofpa.us/PDFs/Conservation/2007/ APPLIANCEREBATESResident.pdf
Port Angeles Public Works and Utilities	WA	50	0.91	https://www.cityofpa.us/PDFs/Conservation/2007/ APPLIANCEREBATESResident.pdf
City of Richland	WA	25	0.91	http://www.ci.richland.wa.us/RICHLAND/Electric/index.cfm?PageNum=89
City of Richland	WA	25	0.91	http://www.ci.richland.wa.us/RICHLAND/Electric/index.cfm?PageNum=89
Eau Claire Energy Cooperative	WI	420	0.91	http://www.ecec.com/programs/incentives/index.cfm
Orcas Power and Light Cooperative	WA	100	0.91	http://www.opalco.com/wp-content/uploads/2009/03/marathonrebate09.pdf
Holy Cross Energy	CO	75	0.92	http://www.holycross.com/
Poudre Valley REA	CO	70	0.92	http://www.pvrea.com/programs/rebates.htm

Utility or Agency	State	Amount 2009\$	EF	Website
Hawaiian Electric Company, Inc.	НІ	50	0.92	http://www.heco.com/portal/site/heco/menuitem.508576f78baa14340b4c0610 c510b1ca/?vgnextoid= 2cd95e658e0fc010VgnVCM1000008119fea9RCRD&vgnextfmt=default
Kootenai Electric Cooperative	ID	100	0.92	http://www.kec.com/rebates.php
Linn County Rural Electric Cooperative Association	IA	250	0.92	http://www.linncountyrec.com/cgi-script/csarticles/000003/000329.htm
Intercounty Electric Cooperative	MO	50	0.92	http://www.ieca.coop/PROGRAMS/REBATES/tabid/116/Default.aspx
Central New Mexico Electric Cooperative	NM	70	0.92	http://www.cnmec.coop/water_heater_rebate_guidelines.htm#
Central New Mexico Electric Cooperative	NM	120	0.92	http://www.cnmec.coop/water_heater_rebate_guidelines.htm#
Columbia River PUD	OR	250	0.92	http://www.crpud.net/residential/efficiency/water-heaters
Eugene Water and Electric Board	OR	50	0.92	http://www.eweb.org/content.aspx/34350f11-4e37-4650-9ce3-0aa933fd6c61
Forest Grove Light & Power	OR	65	0.92	http://www.forestgrove- or.gov/images/stories/services/lightandpower/pdf/march2009appliancerebatef orm.pdf
Forest Grove Light & Power	OR	75	0.92	http://www.forestgrove- or.gov/images/stories/services/lightandpower/pdf/march2009appliancerebatef orm.pdf
Forest Grove Light & Power	OR	100	0.92	http://www.forestgrove-or.gov/images/stories/services/lightandpower/pdf/march2009appliancerebateform.pdf
Monmouth Power & Light	OR	50	0.92	http://www.ci.monmouth.or.us/vertical/Sites/%7BCE78EAE1-6CA4-4610-BDB0-A9B3B0A8BB71%7D/uploads/%7B75B91CB0-E22B-4032-A232-C3DC21796769%7D.PDF
Tillamook County PUD	OR	50	0.92	http://www.tpud.org/nrg_appliance.html
Tillamook County PUD	OR	50	0.92	http://www.tpud.org/nrg_appliance.html
Tillamook County PUD	OR	175	0.92	http://www.tpud.org/nrg_appliance.html
Tillamook County PUD	OR	180	0.92	http://www.tpud.org/nrg_appliance.html
Farmers Electric Cooperative	TX	100	0.92	http://www.fecelectric.com/fecinternet2005/01-MyAccount/07-Residential.asp
United Cooperative Services	TX	75	0.92	http://www.united-cs.com/rebates.htm
Columbia REA	WA	200	0.92	http://www.columbiarea.com/programs/ Res%20Rebate%20Application_updated_081001.pdf
Port Angeles Public Works and Utilities	WA	50	0.92	https://www.cityofpa.us/PDFs/Conservation/2007/ APPLIANCEREBATESResident.pdf
Eau Claire Energy Cooperative	WI	250	0.92	http://www.ecec.com/programs/incentives/index.cfm

<b>Utility or Agency</b>	State	Amount	EF	Website
		<u>2009\$</u>		
Carbon Power & Light, Inc.	WY	170	0.92	http://www.carbonpower.com/rebates.htm
Orcas Power and Light Cooperative	WA	100	0.92	http://www.opalco.com/wp-content/uploads/2009/03/marathonrebate09.pdf
Orcas Power and Light Cooperative	WA	100	0.92	http://www.opalco.com/wp-content/uploads/2009/03/marathonrebate09.pdf
Lassen Municipal Utility District	CA	350	0.92	http://www.lmud.org/rebate.htm
City of Palo Alto Utilities	CA	40	0.93	http://www.cpau.com/civica/filebank/blobdload.asp?BlobID=4365
Modesto Irrigation District	CA	25	0.93	http://www.mid.org/rebates/home/appliance.htm
Pacific Power	CA	40	0.93	http://homeenergysavingspp.net/california/waterheaters.html
PG&E	CA	30	0.93	http://www.pge.com/includes/docs/pdfs/shared/saveenergymoney/rebates/08_residential_appliance.pdf
Southern California Edison	CA	30	0.93	http://www.sce.com/residential/rebates-savings/appliance/electric-water-heater.htm
San Diego Gas and Electric	CA	30	0.93	http://www.sdge.com/residential/waterHeaters.shtml
Truckee Donner Public Utility District	CA	2 per gallon	0.93	http://www.tdpud.org/pdf/Rebate%20program%20pamphlet,May07.pdf
Poudre Valley REA	CO	70	0.93	http://www.pvrea.com/programs/rebates.htm
Groton Utilities	CT	60	0.93	http://www.grotonutilities.com/files/conservation_forms/ Appliance_Rebate.pdf
Norwich Public Utilities	CT	60	0.93	http://www.norwichpublicutilities.com/pdfs/ 2009%20Appliance%20Rebate%20Form.pdf
Hawaiian Electric Company, Inc.	НІ	40	0.93	http://www.heco.com/portal/site/heco/menuitem.508576f78baa14340b4c0610 c510b1ca/?vgnextoid= 2cd95e658e0fc010VgnVCM1000008119fea9RCRD&vgnextfmt=default
Avista Utilities	ID	50	0.93	https://www.avistautilities.com/savings/rebates/Pages/WashingtonandIdaho CustomerRebates.aspx#high
Kootenai Electric Cooperative	ID	100	0.93	http://www.kec.com/rebates.php
Rocky Mountain Power	ID	50	0.93	http://www.homeenergysavings.net/idaho/waterheaters.html
Interstate Power and Light (Alliant Energy)	IA	50	0.93	http://alliantenergy.com/UtilityServices/ForYourHome/RewardsIncentives/owaIncentivePrograms/014675
Kansas City Board of Public Utilities Energy	KS	175	0.93	http://www.bpu.com/documents/ResidentialHPRebateScheduleeffJan2007 withIncentives.pdf
Flathead Electric Cooperative	MT	60	0.93	http://www.flatheadelectric.com/energy/Rebates.html
Central New Mexico Electric Cooperative	NM	70	0.93	http://www.cnmec.coop/water_heater_rebate_guidelines.htm#
Central New Mexico Electric Cooperative	NM	120	0.93	http://www.cnmec.coop/water_heater_rebate_guidelines.htm#
City of Ashland Conservation District	OR	65	0.93	http://www.ashland.or.us/Files/waterheaterrebate_1.pdf

Utility or Agency	State	Amount	EF	Website
		<u>2009\$</u>		
Central Electric Cooperative	OR	25	0.93	http://www.cec-co.com/prodserv/residential/water_heater/water_heater.html
Douglas Electric Cooperative	OR	25	0.93	http://www.douglaselectric.com/programs/rebate_credits.php#water
Energy Trust of Oregon	OR	35	0.93	http://www.energytrust.org/residential/existinghomes/waterheater.html
Eugene Water and Electric Board	OR	25	0.93	http://www.eweb.org/content.aspx/34350f11-4e37-4650-9ce3-0aa933fd6c61
Forest Grove Light & Power	OR	25	0.93	http://www.forestgrove-or.gov/images/stories/services/lightandpower/pdf/march2009appliancerebateform.pdf
Midstate Electric Cooperative	OR	50	0.93	http://www.midstateelectric.coop/ProductsAndServices/PSResidential/ ConservationPrograms/reswaterheater/default.aspx
Monmouth Power & Light	OR	25	0.93	http://www.ci.monmouth.or.us/vertical/Sites/%7BCE78EAE1-6CA4-4610-BDB0-A9B3B0A8BB71%7D/uploads/%7B75B91CB0-E22B-4032-A232-C3DC21796769%7D.PDF
Oregon Trail Electric Cooperative	OR	100	0.93	http://www.otec.coop/waterHeater.aspx
Salem Electric	OR	60	0.93	http://www.salemelectric.com/PDFs/rebatebrochure.pdf
Springfield Utility Board	OR	25	0.93	http://www.subutil.com/files/static_page_files/B9F7D628-9114-89A9-AE0AD52296FE251E/RebateForm09.pdf
Tillamook County PUD	OR	50	0.93	http://www.tpud.org/nrg_appliance.html
Tillamook County PUD	OR	150	0.93	http://www.tpud.org/nrg_appliance.html
Rocky Mountain Power	UT	50	0.93	http://www.homeenergysavings.net/utah/waterheaters.html
Avista Utilities	WA	50	0.93	https://www.avistautilities.com/savings/rebates/Pages/WashingtonandIdaho CustomerRebates.aspx#high
Benton PUD	WA	25	0.93	http://www.bentonpud.org/conservation/res_energy.php
PUD #1 of Clallam County	WA	50	0.93	http://www.clallampud.net/conservation/res_Water_Heaters.asp
Franklin County PUD	WA	25	0.93	http://www.franklinpud.com/html/res_rebates.html
Grays Harbor PUD	WA	25	0.93	https://www.ghpud.org/index.php?option=com_docman&task=doc_download &gid=61&Itemid=121
Mason County PUD 3	WA	25	0.93	http://www.masonpud3.org/powerSupply/applianceRebates.aspx
Modern Electric Water Company	WA	75	0.93	http://www.mewco.com/PDFs/Water%20Heater.pdf
Orcas Power and Light Cooperative	WA	40	0.93	http://www.opalco.com/energy-efficiency/rebates/
Orcas Power and Light Cooperative	WA	25	0.93	http://www.opalco.com/energy-efficiency/rebates/
Pacific Power	WA	50	0.93	http://www.homeenergysavingspp.net/washington/waterheaters.html
Port Angeles Public Works and Utilities	WA	25	0.93	https://www.cityofpa.us/PDFs/Conservation/2007/ APPLIANCEREBATESResident.pdf
City of Richland	WA	25	0.93	http://www.ci.richland.wa.us/RICHLAND/Electric/index.cfm?PageNum=89

Utility or Agency	State	Amount	EF	Website
Vera Conservation Department	WA	2009\$ 100	0.93	http://www.verawaterandpower.com/Energy_Rebates.htm
•				http://www.focusonenergy.com/Incentives/Residential/Cash-
Cedarburg Light and Water Utility	WI	50	0.93	Back_Rewards/waterheater.aspx
Focus on Energy	WI	50	0.93	http://www.focusonenergy.com/Incentives/Residential/Cash-Back_Rewards/waterheater.aspx
Carbon Power & Light, Inc.	WY	140	0.93	http://www.carbonpower.com/rebates.htm
Rocky Mountain Power	WY	50	0.93	http://www.homeenergysavings.net/utah/waterheaters.html
Lassen Municipal Utility District	CA	250	0.94	http://www.lmud.org/rebate.htm
Redding Electric Utility	CA	75	0.94	http://www.reupower.com/energysvc/documents/Jan09EnergyStarpb.pdf
Muscatine Power and Water	IA	200	0.94	http://www.mpw.org/pdf/2009ResRebateForm.pdf
Columbia River PUD	OR	250	0.94	http://www.crpud.net/residential/efficiency/water-heaters
Energy Trust of Oregon	OR	75	0.94	http://www.energytrust.org/residential/existinghomes/waterheater.html
Eugene Water and Electric Board	OR	50	0.94	http://www.eweb.org/content.aspx/34350f11-4e37-4650-9ce3-0aa933fd6c61
Forest Grove Light & Power	OR	50	0.94	http://www.forestgrove- or.gov/images/stories/services/lightandpower/pdf/march2009appliancerebatef orm.pdf
Midstate Electric Cooperative	OR	250	0.94	http://www.midstateelectric.coop/ProductsAndServices/PSResidential/ ConservationPrograms/reswaterheater/default.aspx
Monmouth Power & Light	OR	40	0.94	http://www.ci.monmouth.or.us/vertical/Sites/%7BCE78EAE1-6CA4-4610-BDB0-A9B3B0A8BB71%7D/
Columbia REA	WA	200	0.94	uploads/%7B75B91CB0-E22B-4032-A232-C3DC21796769%7D.PDF http://www.columbiarea.com/programs/Res%20Rebate%20Application_ updated_081001.pdf
Inland Power & Light Company	WA	25	0.94	http://www.inlandpower.com/customer_carec.php?id=177
Orcas Power and Light Cooperative	WA	50	0.94	http://www.opalco.com/energy-efficiency/rebates/
Orcas Power and Light Cooperative	WA	100	0.94	http://www.opalco.com/wp-content/uploads/2009/03/marathonrebate09.pdf
Sevierville County Electric System	TN	120	0.94	http://www.electric.seviervilletn.org/special.htm
Plumas-Sierra REC	CA	150	0.94	http://www.psrec.coop/energy_rebates.php?sec=enersol&pag=enerreb
Consumers Power, Inc.	OR	100	0.94	http://www.cpi.coop/rebates/wh_electric.php

Utility or Agency	State	Amount 2009\$	EF	Website
Farmers Electric Cooperative	TX	100	0.94	http://www.fecelectric.com/fecinternet2005/01-MyAccount/07-Residential.asp
United Power	CO	475 <sup>b</sup>	0.94	http://www.unitedpower.com/rebate.aspx#h2o
Hawaiian Electric Company, Inc.	HI	40	0.94	http://www.heco.com/portal/site/heco/menuitem.508576f78baa14340b4c0610 c510b1ca/?vgnextoid= 2cd95e658e0fc010VgnVCM1000008119fea9RCRD&vgnextfmt=default
Modern Electric Water Company	WA	75	0.94	http://www.mewco.com/PDFs/Water%20Heater.pdf
Orcas Power and Light Cooperative	WA	40	0.94	http://www.opalco.com/energy-efficiency/rebates/
Orcas Power and Light Cooperative	WA	25	0.94	http://www.opalco.com/energy-efficiency/rebates/
Port Angeles Public Works and Utilities	WA	50	0.94	https://www.cityofpa.us/PDFs/Conservation/2007/ APPLIANCEREBATESResident.pdf
Eugene Water and Electric Board	OR	50	0.94	http://www.eweb.org/content.aspx/34350f11-4e37-4650-9ce3-0aa933fd6c61
Forest Grove Light & Power	OR	75	0.94	http://www.forestgrove- or.gov/images/stories/services/lightandpower/pdf/march2009appliancerebatef orm.pdf
Monmouth Power & Light	OR	50	0.94	http://www.ci.monmouth.or.us/vertical/Sites/%7BCE78EAE1-6CA4-4610-BDB0-A9B3B0A8BB71%7D /uploads/%7B75B91CB0-E22B-4032-A232-C3DC21796769%7D.PDF
Port Angeles Public Works and Utilities	WA	50	0.94	https://www.cityofpa.us/PDFs/Conservation/2007/ APPLIANCEREBATESResident.pdf
Austin Energy	TX	100	2.0	http://www.austinenergy.com/Energy%20Efficiency/Programs/Rebates/Residential/Air%20Conditioner/rebateLevels.htm
Walton Electric Membership Corporation	GA	150	2.0	http://www.waltonemc.com/residential/index.php?page=rebates
Hawaiian Electric Company, Inc.	НІ	175	2.0	http://www.heco.com/portal/site/heco/menuitem.20516707928314340b4c061 0c510b1ca/?vgnextoid= 6558f2b154da9010VgnVCM10000053011bacRCRD&vgnextfmt=default
United Power	СО	70	Meet current standards	http://www.unitedpower.com/rebate.aspx#h2o
Electric Power Board of Chattanooga	TN	50	Meet current standards	http://www01.epb.net/index.php?page=yourhome_products&id=37
Lassen Municipal Utility District	CA	150	NA	http://www.lmud.org/rebate.htm

<sup>&</sup>lt;sup>b</sup> Outlier; not used.

Utility or Agency	State	Amount 2009\$	EF	Website
Central Alabama Electric Cooperative	AL	120 or 240	NA	http://www.caec.coop/cms/content/view/48/
Central Alabama Electric Cooperative	AL	118 or 235	NA	http://www.caec.coop/cms/content/view/48/
Central Alabama Electric Cooperative	AL	188 or 375	NA	http://www.caec.coop/cms/content/view/48/
City of Florence Utilities	AL	50	NA	http://www.florenceutilities.com/Utilities_Departments/Electricity/ Energy_Right/index.html
Sheffield Utilities	AL	50	NA	http://www.sheffieldutilities.org/PWCusService.htm
Diverse Power	GA	75	NA	http://www.diversepower.com/rebates_incentives.php
Energy Power Board	GA	50	NA	http://www01.epb.net/index.php?page=yourhome_products&id=37
Utilities District of Western Indiana REMC	IN	50	NA	http://www.udwiremc.com/inquiryhome_udi.nsf/pages/incentive-programs
Pennyrile RECC	KY	50	NA	http://www.precc.com/precc/res_existing_home.htm
Warren Rural Electric Cooperative Corporation	KY	50	NA	http://www.wrecc.com/resid.aspx
City of Statesville Electric Utility Department	NC	150	NA	http://www.ci.statesville.nc.us/index.php/content/?cgi-bin=0&session_id=c9d782b865c54ab96ef46c4b69020e34&id=161
Clinton Utilities Board	TN	50	NA	http://www.clintonutilities.com/ Water%20Heater%20Rebate%20Application.pdf
Middle Tennessee Electric Membership Corporation	TN	50	NA	http://www.mtemc.com/pages.cfm/name/r08_waterheating
Murfreesboro Electric Department	TN	25	NA	http://www.murfreesboroelectric.com/eright/waterheater.htm
Murfreesboro Electric Department	TN	50	NA	http://www.murfreesboroelectric.com/eright/waterheater.htm
Murfreesboro Electric Department	TN	25	NA	http://www.murfreesboroelectric.com/eright/waterheater.htm
Sevierville County Electric System	TN	100	NA	http://www.electric.seviervilletn.org/PEnergyRight.htm
Southwest Tennessee Electric Membership Corporation	TN	100	NA	http://www.stemc.com/FORMS/waterheater.pdf
Upper Cumberland Electric Membership Corporation	TN	100	NA	http://www.ucemc.com/pdf%20files/ WATER%20HEATER%20REBATE.pdf
Volunteer Energy Cooperative	TN	20	NA	http://www.vec.org/article.aspx?categID=6&articleID=791
Winchester Utilities	TN	100	NA	http://www.winchesterutilities.com/Services_files/ Energy%20Right%20Program_files/image006.PDF

Utility or Agency	State	Amount	EF	Website
		<b>2009\$</b>		
Carbon Power & Light, Inc.	WY	50 (+1.50/ gallon)	NA	http://www.carbonpower.com/rebates.htm
Kirkwood Electric	MO	100	NA	http://www.ci.kirkwood.mo.us/electric/rebateprogram.htm
Cowlitz County Public Utility District	WA	25	NA	http://www.cowlitzpud.org/pdf/EnergySharePlusBrochure.pdf
City Water, Light and Power	IL	200	NA	http://www.cwlp.com/energy_services/ESO_services_programs/water_heater _reb.htm
Average Rebate Amount for EF=0.95, 2009\$ Average Rebate Amount for EF=2.0, 2009\$		97 141		

NA = Not available

Websites were accessed most recently from March through June 2009.

# 15-A.4.3 Rebates for Gas Space Heaters

DOE found five organizations (gas utilities and municipal and state agencies) that have rebate programs for gas space heaters. DOE used those amounts in the regulatory impact analysis to represent rebate amounts for gas wall fan direct heating equipment. The organizations offer rebates for natural gas or propane space heaters. Table 15-A.4.3 lists the organizations' names, states, efficiency levels, rebate amounts, and program websites. The average rebate amount is a simple average of the individual amounts (rather than being population-weighted).

**Table 15-A.4.3** Rebates for Gas Space Heaters

Table 15-11.4.5 Repates 10							
Utility or Agency	State	AFUE	Amount	Website			
		<u>%</u>	<u>2009\$</u>				
Avista Utilities	OR	80	150	http://www.avistautilities.com/savings/rebates/Documents/ EquipmentRebate04_09.pdf			
Town of Smyrna	TN	NA	50	http://www.townofsmyrna.org/utilities/pdf/Natural-Gas-System%20-Rebates.pdf			
Georgia Cities Gas (Thomasville)	GA	NA	50	http://georgiacitiesnaturalgas.com/cms/Contact+Your+Provider/5.html			
Blue Star Gas	OR	NA	100	http://bluestargas.com/rebate.html			
Railroad Commission of Texas, Alternative Fuel Research Education Division (AFRED)	TX	NA	100	http://www.directpropaneservices.com/faqs/; http://www.propane.tx.gov/rebate_program/consumer.php			
Average Rebate Amount 2009\$			89				

NA = Not applicable/available.

Websites were accessed most recently in June 2009.

#### 15-A.4.4 Rebates for Hearth Products

DOE found six organizations (gas utilities and municipal and state agencies) that have rebate programs for hearth products. The organizations offer rebates for natural gas or propane logs. Table 15-A.4.4 lists the organizations' names, states, efficiency levels, rebate amounts, and program websites. The average rebate amount is a simple average of the individual amounts (rather than being population-weighted).

**Table 15-A.4.4 Rebates for Hearth Products** 

<b>Utility or Agency</b>	State	AFUE <u>%</u>	Amount <u>2009\$</u>	Website
Cascade Natural Gas	WA	80	70	http://www.sullivanheating.com/Rebate_Programs.phtml
City of Tallahassee	FL	NA	50	http://www.talgov.com/you/gas/gas_rebates.cfm
Town of Smyrna	TN	NA	50	http://www.townofsmyrna.org/utilities/pdf/Natural-Gas-System%20-Rebates.pdf
Georgia Cities Gas	GA	NA	50	http://georgiacitiesnaturalgas.com/cms/Contact+Your+Provider/5.html
Blue Star Gas	OR	NA	100	http://bluestargas.com/rebate.html
Railroad Commission of Texas, Alternative Fuel Research Education Division (AFRED)	TX	NA	100	http://www.directpropaneservices.com/faqs/; http://www.propane.tx.gov/rebate_program/consumer.php
Average Rebate Amount 2009\$			70	

NA = Not applicable/available.

Websites were accessed most recently in June 2009.

## 15-A.4.5 Rebates for Gas-Fired Pool Heaters

DOE found five organizations (gas utilities and municipal agencies) that have rebate programs for gas-fired pool heaters. Table 15-A.4.5 lists the organizations' names, states, rebate amounts, and program websites. The average rebate amount is a simple average of the individual amounts (rather than being population-weighted).

**Table 15-A.4.5** Rebates for Gas-Fired Pool Heaters

Utility or Agency	State	Amount 2009\$	Website
Metropolitan Utilities District	NE	100	http://www.livegreenthinkblue.com/rebate_forms/forms/pool.heat.rebate.pdf
KeySpan Energy Delivery	NY	100	http://www.bnl.gov/bera/linkable_files/poolheateroffer7.14.04.pdf
City of Tallahassee	FL	450	http://www.talgov.com/you/gas/gas_rebates.cfm
Town of Smyrna	TN	100	http://www.townofsmyrna.org/utilities/pdf/Natural-Gas-System%20-Rebates.pdf
NSTAR	MA	250	http://www.nstar.com/nstaronline3_search/
Average Rebate Amount 2009\$		200	

Websites were accessed most recently in June 2009.

#### 15-A.5 FEDERAL AND STATE TAX CREDITS

This section summarizes the Federal and State tax credits available to consumers who purchase energy efficient appliances. This section also describes tax credits available to manufacturers who produce certain energy efficient appliances.

# 15-A.5.1 Federal Tax Credits for Residential Appliances

EPACT 2005 included Federal tax credits for consumers who installed efficient air conditioners or heat pumps; gas or oil furnaces; furnace fans; and/or gas, oil, or electric heat pump water heaters in new or existing homes. <sup>6,7</sup>Those tax credits were in effect in 2006 and 2007, expired in 2008, and were reinstated for 2009–2010 by ARRA. <sup>8</sup>

Residential appliances must meet the following specifications, as applicable, to qualify for Federal tax credits.<sup>6</sup>

- Furnaces and boilers: Natural gas and propane furnaces must provide an Annual Fuel Utilization Efficiency (AFUE) of 95 or higher; oil furnaces and gas, oil, and propane boilers must provide an AFUE of 90 or higher.
- Central air conditioning units and air-source heat pumps must meet the highest tier (III) standards set by the Consortium for Energy Efficiency as of January 1, 2009. Table 15-A.5.1 below shows the requirements for those equipment types.
- Fans for heating and cooling systems may consume no more than 2 percent of total heating system energy, as defined by the DOE test procedure (may be revised because of the 2009 Federal stimulus legislation).
- Water heaters
  - Gas- or propane-fired water heaters: EF of at least 0.82 or a thermal efficiency of at least 90 percent.
  - Heat pump water heaters: EF of at least 2.0.

Table 15-A.5.1 Federal Tax Credits for Residential Central Air Conditioners and Heat Pumps

Heat I dilips				
Product	EER*	SEER <sup>†</sup>	HSPF‡	Available Tax Credit
	Required	Required	Required	
Central Air	≥ 13.0	≥16.0	N/A	30% of cost, up to
Conditioner–Split				\$1,500
System				
Central Air	≥12.0	≥ 14.0	N/A	30% of cost, up to
Conditioner–Single				\$1,500
Package				
Air Source Heat	≥ 12.5	≥15.0	≥ 8.5	30% of cost, up to
Pump–Split System				\$1,500
Air Source Heat	≥ 12.0	≥14.0	≥8.0	30% of cost, up to
Pump–Single Package				\$1,500

<sup>\*</sup> EER = energy efficiency rating.

#### 15-A.5.2 Federal Tax Credits for Manufacturers

EPACT 2005 provided Federal Energy Efficient Appliance Credits to manufacturers that produced high-efficiency refrigerators, clothes washers, and dishwashers in 2006 and 2007. The Emergency Economic Stabilization Act of 2008<sup>10, 11</sup> amended the credits and extended them through 2010. Manufacturers receive the credits for increasing their production of qualifying appliances relative to a two-year rolling baseline. Each manufacturer is limited to a certain amount for all credits. Manufacturers are eligible for Energy Efficient Appliance Credits for qualifying models of residential and commercial clothes washers, residential refrigerators, and residential dishwashers. The credits listed below are available for models produced in 2008, 2009, and 2010. These credit amounts and criteria apply to manufacturers who produce these appliances.<sup>12</sup> The amounts listed are for each unit manufactured. However, the maximum credit that a manufacturer can receive for qualifying equipment is \$75 million for 2008–2010, with the exceptions that the most efficient refrigerator (30 percent) and clothes washer (2.2 MEF/4.5 wcf) models are not subject to the cap.

#### **Clothes Washers**

- \$75 for residential top-loading models manufactured in 2008 that meet/exceed a 1.72 modified energy factor (MEF) and do not exceed a 8.0 water consumption factor (wcf).
- \$125 for residential top-loading models manufactured in 2008 or 2009 that meet/exceed a 1.8 MEF and do not exceed a 7.5 wcf.
- \$150 for residential or commercial clothes washers manufactured in 2008, 2009, or 2010 that meet/exceed a 2.0 MEF and do not exceed a 6.0 wcf.
- \$250 each for residential or commercial models manufactured in 2008, 2009, or 2010 that meet/exceed a 2.2 MEF and do not exceed a 4.5 wcf.

<sup>†</sup> SEER = seasonal energy efficiency rating.

<sup>&</sup>lt;sup>‡</sup> HSPF = heating season performance factor.

#### Refrigerators

- \$50 for models manufactured in 2008 that consume at least 20 percent but not more than 22.9 percent fewer kilowatt hours per year than the 2001 energy conservation standards.
- \$75 for models manufactured in 2008 or 2009 that consume at least 23 percent but no more than 24.9 percent fewer kilowatt hours per year than the 2001 energy conservation standards.
- \$100 for models manufactured in 2008, 2009, or 2010 that consume at least 25 percent but not more than 29.9 percent fewer kilowatt hours per year than the 2001 energy conservation standards.
- \$200 for models manufactured in 2008, 2009, or 2010 that consume at least 30 percent less energy than the 2001 energy conservation standards.

#### **Dishwashers**

- \$45 for models manufactured in 2008 or 2009 that consume no more than 324 kilowatt hours per year and 5.8 gallons of water per cycle.
- \$ 75 for models manufactured in 2008, 2009, or 2010 that consume no more than 307 kilowatt hours per year and 5.0 gallons of water per cycle (5.5 gallons per cycle for models designed for more than 12 place settings).

#### 15-A.5.3 State Tax Credits

Oregon's Residential Energy Tax Credit (RETC) was created in 1977. After the Oregon legislature expanded the RETC program in 1997 to include residential refrigerators, clothes washers, and dishwashers, participation in the program increased significantly. The program subsequently added credits for high-efficiency heat pump systems, air conditioners, and water heaters (2001); furnaces and boilers (2002); and duct/air sealing, fuel cells, heat recovery, and renewable energy equipment. For heating, ventilating, and air conditioning equipment; residential appliances; and water heaters, the credit is \$0.40 per kilowatt saved in the first year, or 25 percent of the net purchase price, whichever is less. The credit limit for energy efficient appliances and heating and cooling systems is \$1,000 per calendar year; excess credit may be carried forward for 5 years. <sup>13</sup>

Montana has had an Energy Conservation Tax Credit for residential measures since 1998. 14, 15 The tax credit covers various residential energy and water efficient products, including ENERGY STAR heating/cooling equipment, water heaters, low-flow showerheads and faucets, and light fixtures and controls. In 2002 the amount of the credit was increased from 5 percent of product costs (up to \$150) to 25 percent (up to \$500) per taxpayer. The credit can be used for products installed in new construction or remodeling projects. The tax credit covers only that part of the cost and materials that exceed established standards of construction.

Beginning in 2009 Indiana offers a tax credit to individuals and small businesses for costs associated with purchasing ENERGY STAR-qualified central air conditioners, room air

conditioners, furnaces, programmable thermostats, and water heaters. The credit may be claimed against state income tax, insurance premium tax, or financial institutions tax. The amount of the credit is 20 percent of the expenditure for qualified heating and cooling equipment, to a maximum of \$100 per taxable year. The credit applies to expenditures made in 2009 and 2010; there is no carryover. <sup>16, 17</sup>

Beginning in 2009 Kentucky offers a 30 percent state income tax credit for taxpayers who install certain energy efficiency measures in their principal residence or residential rental property. The qualifying products include water heaters, heat pumps, central air conditioners, and advanced main air circulating fans. A product must meet the same energy efficiency guidelines as specified for the Federal tax credit for that residential product. The tax credit may not exceed \$250. The credit, which applies to products purchased in taxable years 2009–2015, may be carried forward for 1 year. <sup>18, 19</sup>

#### REFERENCES

- 1. Hall, B. H. and B. Khan, Adoption of New Technology. *Working Paper No. E03-330*, 2003. Department of Economics, University of California, Berkeley, CA.
- 2. Lekvall. P and C. Wahlbin, "A Study of Some Assumptions Underlying Innovation Diffusion Functions". *Swedish Journal of Economics*, 1973
- 3. Geroski, P. A., Models of Technology Diffusion. *Research Policy*, 2000. 29: pp. 603-625
- 4. Van den Bulte, C., "Want to Know How Diffusion Speed Varies Across Countries and Products? Try a Bass Model". *Product Development & Management Association*, 2002. XXVI(4)
- 5. Rufo, M., Personal communication. Telephone conversations with Barbara Atkinson, LBNL. Itron, Inc. Oakland, CA. January 2008 and March 2009.
- 6. Tax Incentives Assistance Project, Consumer Tax Incentives: Home Heating & Cooling Equipment., 2009. (Last accessed October 12, 2009.)

  <a href="https://www.energytaxincentives.org/consumers/heating-cooling.php">www.energytaxincentives.org/consumers/heating-cooling.php</a>
- 7. Energy Policy Act of 2005, 119 STAT. 594 Public Law 109–58. Section 1333, 26 USC 25C note, August 8, 2005. <a href="http://frwebgate3.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109\_cong\_public\_laws&docid=f:publ058.109.pdf">http://frwebgate3.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109\_cong\_public\_laws&docid=f:publ058.109.pdf</a>
- 8. Tax Incentives Assistance Project, General Information: Legislative Language & Pending Updates, 2009. (Last accessed October 12, 2009.) <a href="http://energytaxincentives.org/general/legislative.php">http://energytaxincentives.org/general/legislative.php</a>
- 9. Consortium for Energy Efficiency (CEE), CEE High-Efficiency Specification: Central Air Conditioners and Air Source Heat Pumps, (Last accessed July 14, 2009.) <a href="http://www.cee1.org/resid/rs-ac/res-ac\_specs.pdf">http://www.cee1.org/resid/rs-ac/res-ac\_specs.pdf</a>>
- 10. U.S. Department of the Treasury–Internal Revenue Service, *Form 8909*, (Last accessed July 10, 2009.) < <u>www.irs.gov/pub/irs-pdf/f8909.pdf</u>>
- 11. Emergency Economic Stabilization Act of 2008, (Last accessed July 12, 2009.) <a href="http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110\_cong\_bills&docid=f:h1424enr.txt.pdf">http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110\_cong\_bills&docid=f:h1424enr.txt.pdf</a>>
- 12. Tax Incentives Assistance Project, *Builders & Manufacturer Incentives*, (Last accessed July 14, 2009.) <a href="http://energytaxincentives.org/builders/appliances.php">http://energytaxincentives.org/builders/appliances.php</a>>

- 13. Oregon Department of Energy–Conservation Division, *Residential Energy Tax Credits*, (Last accessed July 8, 2009.) <a href="http://egov.oregon.gov/ENERGY/CONS/RES/RETC.shtml">http://egov.oregon.gov/ENERGY/CONS/RES/RETC.shtml</a>
- 14. Montana Department of Environmental Quality, *Tax Incentives*, (Last accessed July 8, 2009.) <www.deq.state.mt.us/Energy/EEHome/TaxIncentHome.asp>
- 15. Montana Department of Revenue, *Energy Related Tax Relief*, (Last accessed July 8, 2009.) <a href="http://mt.gov/REVENUE/energyconservation.asp">http://mt.gov/REVENUE/energyconservation.asp</a>>
- 16. Indiana Department of Revenue, *Information Bulletin #100: Income Tax*, 2007. (Last accessed July 8, 2009.) <<u>www.in.gov/dor/files/ib100.pdf</u>>
- 17. Database of State Incentives for Renewables and Efficiency (DSIRE), *Indiana Incentives* for Energy Efficiency, Energy Efficiency Tax Credits (Personal), (Last accessed July 8, 2009.)

  <a href="mailto:www.dsireusa.org/library/includes/incentive2.cfm?Incentive\_Code=IN50F&state=IN&CurrentPageID=1&RE=0&EE=1>">www.dsireusa.org/library/includes/incentive2.cfm?Incentive\_Code=IN50F&state=IN&CurrentPageID=1&RE=0&EE=1>">www.dsireusa.org/library/includes/incentive2.cfm?Incentive\_Code=IN50F&state=IN&CurrentPageID=1&RE=0&EE=1>">www.dsireusa.org/library/includes/incentive2.cfm?Incentive\_Code=IN50F&state=IN&CurrentPageID=1&RE=0&EE=1>">www.dsireusa.org/library/includes/incentive2.cfm?Incentive\_Code=IN50F&state=IN&CurrentPageID=1&RE=0&EE=1>">www.dsireusa.org/library/includes/incentive2.cfm?Incentive\_Code=IN50F&state=IN&CurrentPageID=1&RE=0&EE=1>">www.dsireusa.org/library/includes/incentive2.cfm?Incentive\_Code=IN50F&state=IN&CurrentPageID=1&RE=0&EE=1>">www.dsireusa.org/library/includes/incentive2.cfm?Incentive\_Code=IN50F&state=IN&CurrentPageID=1&RE=0&EE=1>">www.dsireusa.org/library/includes/incentive2.cfm?Incentive\_Code=IN50F&state=IN&CurrentPageID=1&RE=0&EE=1>">www.dsireusa.org/library/includes/incentive2.cfm?Incentive\_Code=IN50F&state=IN&CurrentPageID=1&RE=0&EE=1>">www.dsireusa.org/library/includes/incentive2.cfm?Incentive\_Code=IN50F&state=IN&CurrentPageID=1&RE=0&EE=1>">www.dsireusa.org/library/includes/incentive2.cfm?Incentive2.cfm?Incentive2.cfm?Incentive3.cfm?
- 18. Kentucky Department of Revenue, 2009 Energy Efficiency Credits, (Last accessed July 8, 2009.) <a href="http://revenue.ky.gov/NR/rdonlyres/E2DAFC0B-4F18-4D76-91F8-C6766A3843EE/0/2009EnergyEfficiencyCredits.pdf">http://revenue.ky.gov/NR/rdonlyres/E2DAFC0B-4F18-4D76-91F8-C6766A3843EE/0/2009EnergyEfficiencyCredits.pdf</a>>
- 19. DSIRE, Personal Income Tax Incentive: Kentucky, Energy Efficiency Tax Credits (Personal), (Last accessed July 8, 2009.)

  <a href="https://www.dsireusa.org/incentives/incentive.cfm?Incentive">www.dsireusa.org/incentives/incentive.cfm?Incentive</a> Code=KY29F&re=0&ee=1>