

Technology Type	Energy Savings	Cost		Life	CCE (incremental)	CCE (full cost)
	kWh	Incremental	Full	Years	\$/kWh	\$/kWh
Existing Building Envelope						
High-performance windows	6,560	\$400	\$3,300	15	\$0.01	\$0.05
Air leakage sealing	1,620	\$900		20	\$0.05	
Attic insulation	1,229	\$1,000		25	\$0.06	
Wall insulation	3,130	\$3,000		25	\$0.07	
Foundation insulation	8,549	\$2,000		25	\$0.02	
Crawl space insulation	8,549	\$2,000		25	\$0.02	
Comprehensive envelope upgrade	8,666	\$15,000		15	\$0.18	
New Building Design						
EnerGuide for Housing 80	8,436	\$10,000	\$180,000	50	\$0.08	\$0.40
Space Heating, Cooling and Ventilation						
Programmable thermostat	1,387	\$125		18	\$0.01	
Air source heat pump	9,444	\$8,000	\$15,000	20	\$0.07	\$0.14
Ground source heat pump	15,588	\$20,000	\$25,000	20	\$0.11	\$0.14
High-efficiency heat recovery ventilator	6,167	\$4,500		20	\$0.06	
Domestic Hot Water						
Low-flow shower heads and faucets	450	\$25		15	\$0.01	
Water tank insulation	270	\$20		20	\$0.01	
Pipe insulation	135	\$4		6	\$0.01	
Heat traps	225	\$65		20	\$0.03	
Major Appliances						
Microwave/convection oven	164	\$1,400		20	\$0.74	
EnergyStar® refrigerator	188	\$50	\$1,000	17	\$0.03	\$0.51
High-efficiency freezer	50	\$50	\$600	17	\$0.10	\$1.15
EnergyStar® dishwasher	371	\$50	\$800	10	\$0.02	\$0.29
EnergyStar® top loading clothes washer	379	\$250	\$1,200	15	\$0.07	\$0.33
Household Electronics						
Reduction in standby losses	400	\$0		10	\$0.00	
Flat screen computer monitor (LCD)	292	\$60	\$250	10	\$0.03	\$0.12
EnergyStar® compliant computer	287	\$100	\$1,000	5	\$0.08	\$0.83
EnergyStar® television	106	\$50	\$500	10	\$0.06	\$0.64
LCD television	212	\$400	\$2,000	10	\$0.26	\$1.28
Lighting and Controls						
CFLs	1,385	\$360		5	\$0.06	
LED holiday lighting	90	\$15		20	\$0.01	
Customer Side Renewable Energy						
Photovoltaics	-	\$30,000	\$30,000	20	-	\$0.90
Small Scale wind / hydro		Site dependent	Site dependent	20	-	Site dependent
Solar thermal/water heating		\$5,000	\$5,000	20		\$0.18

Demand Side Management Measures

Please review and provide input on the costs (i.e., are they representative of costs on the islands?). We have estimated based on conversations with local suppliers and research.

Table 1: Summary of Residential DSM Measures for Existing and New Buildings

Measure	Applicable Dwelling Type(s)	Vintage	Costs	Savings	Useful Life
Existing Building Envelope					
High-performance windows (EnergyStar®)	Single detached and attached	Existing and new	\$4 per square foot incremental cost in existing (\$400 for average dwelling) \$2 per square foot incremental cost in new	15% HVAC Energy in Existing SFD 20% HVAC Energy in new SFD	15 years
Air leakage sealing	Single detached and attached	Existing and new	\$900 incremental cost in existing \$600 incremental cost in new	10% of HVAC Energy	20 years
Attic insulation	Single detached and attached	Existing	\$1,000 incremental cost	3% - 4% of space heating energy	25 years
Wall insulation	Single detached and attached	Existing	\$3,000 incremental cost	12%-20% of space heating energy	25 years
Foundation insulation	Single detached and attached	Existing and new	\$40 per square meter \$2,000 incremental cost in existing	5% - 7% of space heating energy in existing and new	25 years
Crawl space insulation	Single detached and attached	Existing	\$2,000 incremental cost in existing	1% of space heating energy	25 years
Comprehensive envelope upgrade	Single detached and attached	Existing	\$15,000 incremental cost	25%– 40% savings	15 years
New Building Design					
EnerGuide for Houses 80	Single detached and attached	New	\$6,000 incremental cost \$180,000 full cost	38% of space heating energy	50 years

Measure	Applicable Dwelling Type(s)	Vintage	Costs	Savings	Useful Life
Space Heating, Cooling and Ventilation					
Programmable thermostat	Single detached and attached	Existing and new	\$125 incremental cost	6% of HVAC Energy	18 years
Air source heat pump	Single detached and attached	New	\$8,000 incremental cost	43% of space heating energy	20 years
Ground source heat pump	Single detached	New	\$20,000 incremental cost	68 % of space heating energy in new 45 % of space heating energy in existing	20 years
High-efficiency heat recovery ventilator	Single detached and attached	New	\$2,500 incremental cost	7% of HVAC energy	20 years
Domestic Hot Water					
Low-flow shower heads and faucets	Single detached and attached	Existing	\$25 incremental cost	11% of DHW energy in existing	15 years
Water tank insulation	Single detached and attached	Existing	\$20 full cost	6% of DHW energy	20 years
Hot water pipe insulation	Single detached and attached	Existing	\$4 incremental cost	3% of DHW energy	6 years
Heat traps	Single detached and attached	Existing, pre-2004	\$65 incremental cost	5% of DHW energy	20 years
Major Appliances					
Microwave/convection oven	All	Existing and new	\$1,400 incremental cost	25%	20 years
EnergyStar® refrigerator	All	Existing and new	\$50 incremental cost	15 – 20%	17 years
High-efficiency freezer	All	Existing and new	\$50 incremental cost	10%	17 years

Measure	Applicable Dwelling Type(s)	Vintage	Costs	Savings	Useful Life
EnergyStar® dishwasher	Single detached and attached	Existing and new	\$50 incremental cost	41% of DHW and Mechanical Dishwasher energy	10 years
EnergyStar® top loading clothes washer	Single detached and attached	Existing and new	\$250 incremental cost	60% of DHW used for clothes washing 50% of mechanical energy 35% of dryer energy	15 years
Household Electronics					
Reduction in Standby Losses	All	Existing and new	\$0 incremental cost	16% for computers, 8% for TVs and other electronics, 73% for TV peripherals	10 years
Flat screen computer monitor (LCD)	All	Existing and new	\$60 incremental cost	61% from conventional monitors	10 years
EnergyStar® compliant computer	All	Existing and new	\$100 incremental cost	60% from non EnergyStar® computers	5 years
EnergyStar® television	All	Existing and new	\$50 incremental cost	30% from non EnergyStar® televisions	10 years
LCD television	All	Existing and new	\$400 incremental cost	40% from conventional televisions	10 years
Lighting and Controls					
CFLs	All	Existing and new	\$9 incremental cost per bulb	75% from incandescent bulbs	5 years
LED holiday lighting	All	Existing and new	\$9 incremental cost per string	91% from non LED lights	20 years
Customer Side Renewable Energy					
Photovoltaics	All	Existing and new	\$30,000 incremental cost for a 3 kW system	Site dependent	20 years

Measure	Applicable Dwelling Type(s)	Vintage	Costs	Savings	Useful Life
Small scale wind/hydro	All	Existing and new	Site dependent	Site dependent	20 years
Solar thermal/water heating	All	Existing and new	\$5,000 for residential system	Site dependent	20 years

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