

## DOCKETED

<b>Docket Number:</b>	17-IEPR-06
<b>Project Title:</b>	Doubling Energy Efficiency Savings
<b>TN #:</b>	221284
<b>Document Title:</b>	Lynn Phebe Brown Comments Domestic Hot Water Electric Alternatives
<b>Description:</b>	N/A
<b>Filer:</b>	System
<b>Organization:</b>	Lynn Phebe Brown
<b>Submitter Role:</b>	Public
<b>Submission Date:</b>	9/21/2017 11:20:55 AM
<b>Docketed Date:</b>	9/21/2017

*Comment Received From: Lynn Phebe Brown*

*Submitted On: 9/21/2017*

*Docket Number: 17-IEPR-06*

**Domestic Hot Water Electric Alternatives**





*Additional submitted attachment is included below.*

# Introduction




The purpose of this document is to provide alternative choices to gas water heaters. This is a list of example domestic hot water products for fuel switching from gas to electric. This includes tankless water heaters, heat pump water heaters, residential and commercial hot water heaters, from various companies. This document was assembled by Redwood Energy Interns: Lynn Brown, Chelsea Hernandez, Emily Higbee and Kaileigh Vincent-Welling, under the direction of Sean Armstrong and Jenna Bader.

## Domestic Hot Water Product Specifications

Voltage Required: 110-120V



(MODEL)	Stiebel Eltron Mini™ 2-1 120 Volt (110 V) Point-of-Use Tankless Water Heater	Stiebel Eltron SHC-2.5 Mini-Tank Point-of-Use Water Heater	Stiebel Eltron SHC-4 Mini Tank Point-of-Use Water Heater	Stiebel Eltron SHC-6 Mini Tank Point-of-Use Water Heater
PICTURE				
POWER(VOLTAGE, AMPERAGE, POWER(v*amp))	1.8 KW 110 to 120 volts / single phase / 50 - 60 Hz 15 AMPS	Watts: 1300 Voltage: 110 - 120 volts / single phase / 50 - 60 Hz	Watts: 1300 Voltage: 110 - 120 volts / single phase / 50 - 60 Hz	Watts: 1300 Voltage: 110 - 120 volts / single phase / 50 - 60 Hz
MAXIMUM AMPERAGE	15	11.3	11.3	11.3
COEFFICIENT OF PERFORMANCE, COP(EFFICIENCY)	0.98			

NCY FACTOR,EF)				
TYPE OF WATER HEATER	TANKLESS WATER HEATER	MINI-TANK WATER HEATER	MINI-TANK WATER HEATER	MINI-TANK WATER HEATER
DIMENSION [H,W,LorD]	6.5 x 3.25 x 7.5" (16.5 x 8.2 x 19 cm)	18.7H x 11W x 10.6" (47.5 x 28 x 27 cm)	19.75H x 12.6W x 12.5D" (50 x 32 x 31.8 cm)	20 1/2"H x 15 1/8"W x 15"D (50 x 32 x 31.8 cm)
TANK CAPACITY[gallons][for tankless systems gallons per minute]	0.21 GPM	2.65 gal	4.0 gal	6.0 gal
LINK TO SPEC SHEET OR COMPANY SITE	<a href="http://www.stiebel-el-eltron-usa.com">http://www.stiebel-el-eltron-usa.com</a>	<a href="http://www.stiebel-eltron-usa.com/sites/default/files/pdf/tech-specs-shc.pdf">http://www.stiebel-eltron-usa.com/sites/default/files/pdf/tech-specs-shc.pdf</a>		



COMPANY(MODEL)	<b>Bosch Tronic 3000T Mini-Tank ES8</b>	<b>Bosch Tronic 3000T Mini-Tank ES4</b>	<b>Bosch Tronic 3000T Mini-Tank ES2.5</b>
PICTURE			
POWER(VOLTAGE, AMPERAGE,POWER (v*amp))	12A / 120V	12A / 120V	12A / 120V
COEFFICIENT OF PERFORMANCE,COP(EFFICIENCY FACTOR,EF)	Thermal Efficiency 98%	Thermal Efficiency 98%	Thermal Efficiency 98%
REFRIGERANT TYPE			
TYPE OF WATER HEATER	MINI-TANK WATER HEATER	MINI-TANK WATER HEATER	MINI-TANK WATER HEATER




DIMENSION [H,W,LorD]	17.5"x17.5"x14.5"	13.5" x 13.5" x 13.5"	13.75"x13.75"x10.75"
TANK CAPACITY [gal]	7.0 gal	4 gal	2.7 gal
LINK TO SPEC SHEET OR COMPANY SITE	<a href="https://www.bosch-climate.us/products-bosch-thermotechnology/electric-tankless-water-heaters/point-of-use-electric-mini-tank.html">https://www.bosch-climate.us/products-bosch-thermotechnology/electric-tankless-water-heaters/point-of-use-electric-mini-tank.html</a>		

## Voltage Required 220-240V




COMPANY(MODEL)	Stiebel Eltron ACC300 Accelera 300 Electric Water Heater, 80 Gallon	Stiebel Eltron Accelera 220 E Heat Pump Water Heater
PICTURE	 The image shows a white, cylindrical Stiebel Eltron Accelera 220 E water heater. It features a control panel on the top left and a blue Energy Star logo at the bottom. The text "STIEBEL ELTRON Accelera 220 E" is printed above the unit.	 The image shows a white, cylindrical Stiebel Eltron Accelera 220 E water heater. It features a control panel on the top left and a blue Energy Star logo at the bottom. The text "STIEBEL ELTRON Accelera 220 E" is printed above the unit.
POWER(VOLTAGE,AMPERAGE,POWER(v*amp))	Single Phase / 220-240V / 60 Hz 2.15 KW 15 AMPS*	Single Phase / 220-240V / 60 Hz 2.15 KW 15 AMPS*
MAXIMUM AMPERAGE	2.15 KW	2.15 KW
COEFFICIENT OF PERFORMANCE,COP(EFFICIENCY FACTOR,EF)	EF 3.39	EF 3.05
REFRIGERANT TYPE		
TYPE OF WATER HEATER	Heat pump water heater	(HEAT PUMP WATER HEATER
DIMENSION [H,W,LorD]	75 1/4" H x 26" Dia (191.3 x 66 cm)	60 13/16" H x 27 3/16" Dia (154.5 x 69 cm)
TANK	79.8 gallons / 302 L	58 gallons / 220 L

CAPACITY[gallons][**for tankless systems gallons per minute]		
LINK TO SPEC SHEET OR COMPANY SITE	<a href="http://www.stiebel-eltron-usa.com/sites/default/files/pdf/tech-specs-accelera-e.pdf">http://www.stiebel-eltron-usa.com/sites/default/files/pdf/tech-specs-accelera-e.pdf</a>	






COMPANY(MODEL)	Stiebel Eltron DHC 4-2 Point-of-Use Tankless Water Heater	Stiebel Eltron Mini™ 6-2 Point-of-Use Tankless Water Heater
PICTURE		
HEATING CAPACITY[BTU/HR]	3.8 KW	3.5 KW
POWER(VOLTAGE,AMPERAGE,POWER(v*amp))	3.8 KW 208 to 240 volts / single phase / 50 - 60 Hz	
MAXIMUM AMPERAGE	16 AMPS	24.7 AMPS
COEFFICIENT OF PERFORMANCE,COP(EFFICIENCY FACTOR,EF)	EF .99	EF .99
REFRIGERANT TYPE		
TYPE OF WATER HEATER	TANKLESS WATER HEATER	TANKLESS WATER HEATER
DIMENSION [H,W,LorD]	14.25 x 7.9 x 4.1" (36 x 20 x 11 cm)	6.5 x 3.25 x 7.5" (16.5 x 8.2 x 19 cm)
TANK CAPACITY[gallons][**for tankless systems gallons per minute]		
LINK TO SPEC SHEET OR COMPANY SITE		

COMPANY(MODEL)	<b>SANDEN CO2 GUS-A45HPA 43-gal</b>	<b>SANDEN CO2 GUS-A45HPA 83-gal</b>	<b>VKIN Split-System Water Heater 40 Gallon (VRHA-09AN1DCTS40)</b>
PICTURE			
HEATING CAPACITY[BTU/HR]	15,400 BTU/HR	15,400 BTU/HR	8600 BTU
POWER(VOLTAGE, AMPERAGE, POWER (v*amp))	208/230v - 1P - 60Hz 15 Amps	208/230v - 1P - 60Hz 15 Amps	Single phase/ 230 V/ 60 Hz 1250 W 3.37 (2.06-5.72) A
MAXIMUM AMPERAGE	7.7 Amps	7.7 Amps	
COEFFICIENT OF PERFORMANCE, COP (EFFICIENCY FACTOR, EF)	EF 3.5 COP4.5	EF 3.4 COP4.5	COP 3.24-3.9
REFRIGERANT TYPE	CO2 R744	CO2 R744	
TYPE OF WATER HEATER	HEAT PUMP WATER HEATER INVERTER	HEAT PUMP WATER HEATER INVERTER	(HEAT PUMP WATER HEATER)
DIMENSION [H,W,LorD]			Tank dimension 31.2"W x 21.5"H x 9.8"D Heat pump 18.5"D x 57.5"
TANK CAPACITY[gallons][* *for tankless systems gallons per minute]	66 gal	97	9800 BTUG
LINK TO SPEC			


SHEET OR COMPANY SITE			
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COMPANY(MODEL)	Rheem Prestige PROPH50 T2 RH350 D	Rheem Prestige PROPH65 T2 RH350 D	Rheem Prestige PROPH80 T2 RH350 D
PICTURE			
HEATING CAPACITY[BTU/HR]			
POWER(VOLTAGE, AMPERAGE, POWER (v*amp))	240 V	240 V	240 V
MAXIMUM AMPERAGE			
EFFICIENCY FACTOR,EF)	EF 3.5	EF 3.5	EF 3.5
REFRIGERANT TYPE			
TYPE OF WATER HEATER	HYBRID WATER HEATER	HYBRID WATER HEATER	HYBRID WATER HEATER
DIMENSION [H,W,LorD]	61" H - 22-1/4" D	64" H - 24-1/4" D	74" H - 24-1/4" D
TANK CAPACITY[gallons]	50	65	80
LINK TO SPEC SHEET OR COMPANY SITE	<a href="http://cdn.globalimageserver.com/fetchdocument-rh.aspx?name=Professional-Prestige-Electric-Specification-Sheet-US&amp;id=586b20d0-ae8a-4d17-bdd1-6ac1983f7e4a">http://cdn.globalimageserver.com/fetchdocument-rh.aspx?name=Professional-Prestige-Electric-Specification-Sheet-US&amp;id=586b20d0-ae8a-4d17-bdd1-6ac1983f7e4a</a>		




COMPANY(MODEL)	A.O. Smith Voltex Hybrid HPTU-50N	A.O. Smith Voltex Hybrid HPTU-66N	A.O. Smith Voltex Hybrid HPTU-80N	A.O. Smith Voltex Hybrid PHPT-60	A.O. Smith Voltex Hybrid PHPT-80
PICTURE					
HEATING CAPACITY[B TU/HR]	0.490kW	0.490kW	0.490kW		
POWER(VOLTAGE,AMPERAGE,POWER(v*amp))	208/240 V 60 Hz	208/240 V 60 Hz	208/240 V 60 Hz		
MAXIMUM AMPERAGE	.05	.05	.05		
COEFFICIENT OF PERFORMANCE,COP(EFFICIENCY FACTOR,EF)	EF 3.61	EF 3.44	EF 3.27	EF 2.4	EF2.3
REFRIGERANT TYPE	R134a	R134a	R134a	R134a	R134a
TYPE OF WATER HEATER	HEAT PUMP WATER HEATER	HEAT PUMP WATER HEATER	HEAT PUMP WATER HEATER	HYBRID WATER HEATER	HYBRID WATER HEATER
DIMENSION [H,W,LorD]	63" H - 22" W	61" H - 27" W	69" H - 27" W	67-1/3" H - 24-1/2" D	81-1/2 H - 24-1/2 D
TANK CAPACITY[g allons]					
LINK TO SPEC SHEET OR COMPANY SITE			<a href="http://www.hotwater.com/resources/product-literature/spe">http://www.hotwater.com/resources/product-literature/spe</a>		

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<p>Mitsubishi CityMulti Y-Series K-Generation Outdoor Units (Air Source Heat Pump)</p> 	PUHY-P72TKMU (-BS)	PUHY-P96TKMU (-BS) 230V	PUHY-P120TKMU (-BS)	PUHY-P144TKMU (-BS)
Heating Capacity (Btu/hr)	80,000	108,000	135,000	160,000
POWER (V)	208/230V	208/230V	208/230V	208/230V
Dimensions (in/ mm) H x W x D	64-31/32 x 36-1/4 x 29-5/32 / 1,650 x 920 x 740	65 x 48-1/16 x 29-5/32 / 1,650 x 1,220 x 740	65 x 68-29/32 x 29-5/32 / 1,650 x 1,750 x 740	64-31/32 x 68-29/32 x 29-5/32 / 1,650 x 1,750 x 740
Refrigerant type	R410A; 19 lbs. + 13 oz. (9.0 kg)	R410A	R410A	R410A; 26 lbs. + 1 oz. (11.8 kg)
Operating Temperature Range	13~60° F (-25~15.5° C) WB	-13~60° F (-25~15.5° C) WB	-13~60° F (-25~15.5° C) WB	-13~60° F (-25~15.5° C) WB
Airflow Rate (CFM)	6,200	6,200	11,300	11,300
Compressor Motor Output (kW)	5.5	7.1	8.1	10.6
Coefficient of Performance (COP)	3.83 / 4.19	3.95 / 4.22	3.66 / 3.83	3.56 / 3.72

TANK CAPACITY[gallons]**f or tankless systems gallons per minute]				
MAXIMUM AMPERAGE	25 / 23	34 / 31	45 / 42	53 / 49
LINK TO SPEC SHEET OR COMPANY SITE	<a href="http://mitsubishielectric.ca/en/hvac/PDF/city_multi/CM_SB/SB_PUHY-P72TKMU-A_208-230V_201206.pdf">http://mitsubishielectric.ca/en/hvac/PDF/city_multi/CM_SB/SB_PUHY-P72TKMU-A_208-230V_201206.pdf</a>			




Mitsubishi CityMulti W-Series (Water Source Heat Pump) City MULTI Catalog.pdf 	PQRY-P72TLMU-A	PQRY-P96TLMU-A	PQRY-P120TLMU-A	PQRY-P144TLMU-A
Heating Capacity (Btu/hr)	80,000	108,000	114,000	137,000
POWER (VOLTAGE,AMPERAGE,POWER(v*amp))	230 V 3 Phase	230 V 3 Phase	230 V 3 Phase	230 V 3 Phase
Dimensions (in/ mm) H x W x D	43-5/16 x 34-11/16 x 21-11/16 (1100 x 880 x 550)	43-5/16 x 34-11/16 x 21-11/16 (1100 x 880 x 550)	43-5/16 x 34-11/16 x 21-11/16 / 1,100 x 880 x 550	57-1/8 x 34-11/16 x 21-11/16 (1450 x 880 x 550)
Refrigerant type	R410A	R410A	R410A	R410A
Operating Temperature Range	Indoor: 50 to 113° F WB	Indoor: 50 to 113° F WB	Indoor: 50 to 113° F WB	Indoor: 50 to 113° F WB

Coefficient of Performance (COP)	5.51 / 6.05	5.77 / 5.93	5.51 / 5.60	4.90 / 5.50
TANK CAPACITY[gallons][**f or tankless systems gallons per minute]	25.4 GPM	25.4 GPM	25.4 GPM	25.4 GPM
Maximum Amperage	13 / 12	19 / 17	29/26	35 / 32
LINK TO SPEC SHEET OR COMPANY SITE	<a href="http://meus1.mylinkdrive.com/files/PQRY-P72TLMU-A_208-230V_ProductDataSheet.pdf">http://meus1.mylinkdrive.com/files/PQRY-P72TLMU-A_208-230V_ProductDataSheet.pdf</a>			

## 480 V: 3 Phase Water Heaters

Mitsubishi CityMulti S Series Outdoor Units (Air Source Heat Pump)	PUMY-P36NHMU(-BS) 	PUMY-P48NHMU(-BS) 	PUMY-P60NKMU(-BS) 
Heating Capacity (Btu/hr)	40,000	54,000	66,000
POWER (VOLTAGE, AMPERAGE, POWER (v* amp))	460 VAC	460 VAC	460 VAC
Dimensions (in/mm) H x W x D	53-3/16 x 37-7/16 x 13 (+1-3/16) / 1,350 h x 950 w x 330 (+30)	53-3/16 x 37-7/16 x 13 (+1-3/16) / 1,350 x 950 x 330 (+30)	52-11/16 x 41-5/16 x 13 (+1-3/16) / 1,338 x 1050 x 330 (+30)
Refrigerant type	R410A	R410A	R410A
Operating Temperature Range	0° F ~ +60° F (-18° ~ +15° C) WB	0° F ~ +60° F (-18° ~ +15° C) WB	4° F ~ +60° F (-20° ~ +15° C) WB

Airflow Rate (CFM)	3,530	3,530	4,940
Compressor Motor Output (kW)	2.4	2.4	3.0
Coefficient of Performance (COP)	3.56 / 3.14	3.26 / 2.84	3.70 / 3.14
TANK CAPACITY[gallons]**for tankless systems gallons per minute]			
MAXIMUM AMPERAGE	26	26	35
LINK TO SPEC SHEET OR COMPANY SITE	<a href="http://www.mitsubishielectric.ca/en/hvac/PDF/city_multi/CM_SB/SB_PUMY-P36NHMU(-BS)_201605.pdf">http://www.mitsubishielectric.ca/en/hvac/PDF/city_multi/CM_SB/SB_PUMY-P36NHMU(-BS)_201605.pdf</a>		


COMPANY(MODEL)	Mayekawa unimo (UT or ETL) Eco Cute "unimo A/W" –air to water heat pump–	Mayekawa unimo (UT or ETL) Eco Cute "unimo W/W" –water to water heat pump–	Mayekawa Unimo AWW “Eco-Cute” HE-HWAW-2HTC
PICTURE			
HEATING CAPACITY[BTU/HR]	80 kW	100 kW (Cooling Capacity 70 kW)	86.8
POWER (VOLTAGE, AMPERAGE, POWER(v*amp))	79.2 3 phase 480 V AC 60 Hz	79.2 3 phase 480 V AC 60 Hz	79.2 3 phase 480 V AC 60 Hz
COP	COP 4.2	COP 8.0	COP 6.8
REFRIGERANT TYPE	R744 (CO2)	R744 (CO2)	R744 (CO2)

TYPE OF WATER HEATER	HEAT PUMP WATER HEATER	HEAT PUMP WATER HEATER	HEAT PUMP WATER HEATER
DIMENSION [H,W,LorD]	W1,250 × L1,900 × H2,082	W1,140 × L1,293 × H1,919	W83 × L44 × H83
FLOW RATE	8.7 GPM	1.5-9.2 GPM	
LINK	<a href="http://www.mayekawa.com/products/features/eco_cute/">http://www.mayekawa.com/products/features/eco_cute/</a>		

COMPANY(MODEL)	Mitsubishi CityMulti H2i Y-Series K-Generation Outdoor Units (Air Source Heat Pump) PUHY-HP72TJMU (-BS)	Mitsubishi CityMulti H2i Y-Series K-Generation Outdoor Units (Air Source Heat Pump) PUHY-HP96TJMU (-BS)
PICTURE		
HEATING CAPACITY[BTU/HR]	80,000	108,000
POWER (VOLTAGE,AMPERAGE,POWER(v*amp))	208/230 3 Phase	208/230 3 phase
MAXIMUM AMPERAGE	59 / 54	34 / 31
COEFFICIENT OF PERFORMANCE,COP(EFFICIENCY FACTOR,EF)	3.66 / 3.35	3.39 / 3.35
REFRIGERANT TYPE	R140A	R140A
TYPE OF WATER HEATER	HEAT PUMP WATER HEATER	HEAT PUMP WATER HEATER
DIMENSION [H,W,LorD]	65 x 36-1/4 x 29-15/16 / 1,650 x 920 x 760	65 x 48-1/16 x 29-15/16 / 1,650 x 1220 x 760
TANK CAPACITY[gallons][**for tankless systems gallons per minute]		



MAXIMUM AMPERAGE						
COP Heating	4.8	5.9	5.3	5.1	5.5	5.2
COP Cooling	3.8	4.9	4.3	4.1	4.5	4.2
COP Combined	8.6	10.8	9.6	9.2	10.0	9.4
REFRIGERANT TYPE	R134a	R134a	R134a	R134a	R134a	R134a
TYPE	Heat Pump Water Heater					
DIMENSION [H,W,LorD]						
Hot Water Flow Rate [GPM]	1	2.1	3.4	3.9	6.3	8.3
LINK TO SPEC SHEET	<a href="http://colmacwaterheat.com/wp-content/uploads/2016/10/HPWH-Water-Source-One-Page.pdf">http://colmacwaterheat.com/wp-content/uploads/2016/10/HPWH-Water-Source-One-Page.pdf</a>					

COMPANY (MODEL)	COLMAC HEAT PUMP WATER HEATER HPW8M	COLMAC HEAT PUMP WATER HEATER HPW24M	COLMAC HEAT PUMP WATER HEATER HPW30M	COLMAC HEAT PUMP WATER HEATER HPW36M	COLMAC HEAT PUMP WATER HEATER HPW60M
PICTURE					
HEATING CAPACITY [BTU/HR]	146	438	578	657	1000
COOLING CAPACITY	121	357	467	536	800



POWER(VOLTAGE,AMPERAGE,POWER(v*amp))	60 Hz 208-230/60/1 25.0 A 144 A 208-230/60/3 19.9 A 128 A 460/60/3 11.1 A 63 A	60 Hz 208-230/60/1 25.0 A 144 A 208-230/60/3 19.9 A 128 A 460/60/3 11.1 A 63 A	60 Hz 208-230/60/1 25.0 A 144 A 208-230/60/3 19.9 A 128 A 460/60/3 11.1 A 63 A	60 Hz 208-230/60/1 25.0 A 144 A 208-230/60/3 19.9 A 128 A 460/60/3 11.1 A 63 A	60 Hz 208-230/60/1 25.0 A 144 A 208-230/60/3 19.9 A 128 A 460/60/3 11.1 A 63 A
COP (Heating, Cooling, Combined)	5.9 4.9 10.8	5.5 4.5 10.0	5.2 4.2 9.4	5.5 4.5 10.0	5.2 4.2 9.4
REFRIGERANT TYPE	R134a	R134a	R134a	R134a	R134a
TYPE	HEAT PUMP WATER HEATER				
DIMENSION [H,W,LorD]					
TANK CAPACITY[gallons]**for tankless systems gallons per minute]	4.2	12.6	16.6	18.9	33.2
LINK TO SPEC SHEET OR COMPANY SITE	<a href="http://colmacwaterheat.com/wp-content/uploads/2016/10/HPWH-Water-Source-One-Page.pdf">http://colmacwaterheat.com/wp-content/uploads/2016/10/HPWH-Water-Source-One-Page.pdf</a>				