

## Summary of Residential ACM Tests (kTDV/ft2 efficiency)

Comparison Date:	6/2/2022
Comparison Author:	Alea German
Candidate Software:	CBECC-Res 2022_0_1
Reference Software:	CBECC-Res 2022 SVN2215
Type of Software:	Reference
Single Family:	Yes
Multi Family:	No
Newly Constructed:	Yes
Additions Alterations:	Yes
Units for Summary:	kTDV/ft2 efficiency
Tolerance:	0.04

Test	Pass/ Fail	Average Reference kTDV/ft2 efficiency	Average Candidate kTDV/ft2 efficiency	Description
W01	Pass	58.35	58.35	Standard Design in All CZs for Prototype S2100ft2
W02	Pass	54.18	54.18	Standard Design in All CZs for Prototype S2700ft2
W04	Pass	54.58	54.58	Proposed Design in All CZs for Prototype P2100ft2
W05	Pass	50.41	50.41	Proposed Design in All CZs for Prototype P2700ft2
W07	Pass	59.99	59.99	Common Measures in CZ12 for Prototype P2100ft2
W08	Pass	64.31	64.31	Water Heating in CZ12 for Prototype P2100ft2
W09	Pass	63.92	63.92	Multiple Orientation in CZ12 for Prototype S2100ft2/P2100ft2
W11	Pass	46.44	46.44	Source Energy & Baseline in CZ03 for Prototype P2100ft2
W12	Pass	225.19	225.19	E+A+A Base & Windows in CZ12 for Prototype P1665ft2
W13	Pass	168.11	168.11	E+A+A Walls & HVAC in CZ12 for Prototype P1665ft2
W14	Pass	55.22	55.22	Standard Design All Electric in All CZs for Prototype S2100ft2
W15	Pass	51.63	51.63	Standard Design All Electric in All CZs for Prototype S2700ft2
W17	Pass	51.81	51.81	Proposed Design All Electric in All CZs for Prototype P2100ft2
W18	Pass	48.16	48.16	Proposed Design All Electric in All CZs for Prototype P2700ft2
W20	Pass	57.91	57.91	PV in CZ12 for Prototype P2100ft2
W21	Pass	55.92	55.92	PV, Battery and Target EDR in CZ12 for Prototype P2100ft2
W22	Pass	56.47	56.47	Verified and Buried Ducts in CZ12 for Prototype P2100ft2

## Comparison between Reference & Candidate Software (kTDV/ft2 efficiency)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W01 Standard Design in All CZs for Prototype S2100ft2</b>								<b>Standard = Proposed for this test</b>				
W01	R01	Zone 01	Pass	92.19	92.19	0.00%	Yes	92.19	92.19	92.19	0.00%	Yes
W01	R02	Zone 02	Pass	65.12	65.12	0.00%	Yes	65.12	65.12	65.12	0.00%	Yes
W01	R03	Zone 03	Pass	42.58	42.58	0.00%	Yes	42.58	42.58	42.58	0.00%	Yes
W01	R04	Zone 04	Pass	52.32	52.32	0.00%	Yes	52.32	52.32	52.32	0.00%	Yes
W01	R05	Zone 05	Pass	37.17	37.17	0.00%	Yes	37.17	37.17	37.17	0.00%	Yes
W01	R06	Zone 06	Pass	27.61	27.61	0.00%	Yes	27.61	27.61	27.61	0.00%	Yes
W01	R07	Zone 07	Pass	22.81	22.81	0.00%	Yes	22.81	22.81	22.81	0.00%	Yes
W01	R08	Zone 08	Pass	36.16	36.16	0.00%	Yes	36.16	36.16	36.16	0.00%	Yes
W01	R09	Zone 09	Pass	39.52	39.52	0.00%	Yes	39.52	39.52	39.52	0.00%	Yes
W01	R10	Zone 10	Pass	46.63	46.63	0.00%	Yes	46.63	46.63	46.63	0.00%	Yes
W01	R11	Zone 11	Pass	80.77	80.77	0.00%	Yes	80.77	80.77	80.77	0.00%	Yes
W01	R12	Zone 12	Pass	63.86	63.86	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W01	R13	Zone 13	Pass	79.89	79.89	0.00%	Yes	79.89	79.89	79.89	0.00%	Yes
W01	R14	Zone 14	Pass	74.86	74.86	0.00%	Yes	74.86	74.86	74.86	0.00%	Yes
W01	R15	Zone 15	Pass	83.34	83.34	0.00%	Yes	83.34	83.34	83.34	0.00%	Yes
W01	R16	Zone 16	Pass	88.82	88.82	0.00%	Yes	88.82	88.82	88.82	0.00%	Yes
<b>Result W01</b>			<b>Pass</b>	<b>58.35</b>	<b>58.35</b>	<b>0.00%</b>		<b>58.35</b>	<b>58.35</b>	<b>58.35</b>	<b>0.00%</b>	<b>Ave</b>
												<b>Min</b>
												<b>Max</b>
<b>W02 Standard Design in All CZs for Prototype S2700ft2</b>								<b>Standard = Proposed for this test</b>				
W02	R01	Zone 01	Pass	71.73	71.73	0.00%	Yes	71.73	71.73	71.73	0.00%	Yes
W02	R02	Zone 02	Pass	60.42	60.42	0.00%	Yes	60.42	60.42	60.42	0.00%	Yes
W02	R03	Zone 03	Pass	35.92	35.92	0.00%	Yes	35.92	35.92	35.92	0.00%	Yes
W02	R04	Zone 04	Pass	49.47	49.47	0.00%	Yes	49.47	49.47	49.47	0.00%	Yes
W02	R05	Zone 05	Pass	31.37	31.37	0.00%	Yes	31.37	31.37	31.37	0.00%	Yes
W02	R06	Zone 06	Pass	27.49	27.49	0.00%	Yes	27.49	27.49	27.49	0.00%	Yes
W02	R07	Zone 07	Pass	22.09	22.09	0.00%	Yes	22.09	22.09	22.09	0.00%	Yes
W02	R08	Zone 08	Pass	36.25	36.25	0.00%	Yes	36.25	36.25	36.25	0.00%	Yes
W02	R09	Zone 09	Pass	39.53	39.53	0.00%	Yes	39.53	39.53	39.53	0.00%	Yes
W02	R10	Zone 10	Pass	46.06	46.06	0.00%	Yes	46.06	46.06	46.06	0.00%	Yes
W02	R11	Zone 11	Pass	77.88	77.88	0.00%	Yes	77.88	77.88	77.88	0.00%	Yes
W02	R12	Zone 12	Pass	62.75	62.75	0.00%	Yes	62.75	62.75	62.75	0.00%	Yes
W02	R13	Zone 13	Pass	76.52	76.52	0.00%	Yes	76.52	76.52	76.52	0.00%	Yes
W02	R14	Zone 14	Pass	71.29	71.29	0.00%	Yes	71.29	71.29	71.29	0.00%	Yes
W02	R15	Zone 15	Pass	78.59	78.59	0.00%	Yes	78.59	78.59	78.59	0.00%	Yes
W02	R16	Zone 16	Pass	79.57	79.57	0.00%	Yes	79.57	79.57	79.57	0.00%	Yes
<b>Result W02</b>			<b>Pass</b>	<b>54.18</b>	<b>54.18</b>	<b>0.00%</b>		<b>54.18</b>	<b>54.18</b>	<b>54.18</b>	<b>0.00%</b>	<b>Ave</b>
												<b>Min</b>
												<b>Max</b>
<b>Page 2 of 11</b>												
<b>W04 Proposed Design in All CZs for Prototype P2100ft2</b>								<b>Standard = V01 Standard for this test</b>				
W04	R01	Zone 01	Pass	91.74	91.74	0.00%	Yes	92.19	92.19	92.19	0.00%	Yes
W04	R02	Zone 02	Pass	56.82	56.82	0.00%	Yes	65.12	65.12	65.12	0.00%	Yes
W04	R03	Zone 03	Pass	40.00	40.00	0.00%	Yes	42.58	42.58	42.58	0.00%	Yes
W04	R04	Zone 04	Pass	48.08	48.08	0.00%	Yes	52.32	52.32	52.32	0.00%	Yes
W04	R05	Zone 05	Pass	34.13	34.13	0.00%	Yes	37.17	37.17	37.17	0.00%	Yes
W04	R06	Zone 06	Pass	25.38	25.38	0.00%	Yes	27.61	27.61	27.61	0.00%	Yes
W04	R07	Zone 07	Pass	21.05	21.05	0.00%	Yes	22.81	22.81	22.81	0.00%	Yes

## Comparison between Reference & Candidate Software (kTDV/ft2 efficiency)

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Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
W04	R08	Zone 08	Pass	33.33	33.33	0.00%	Yes	36.16	36.16	36.16	0.00%	Yes
W04	R09	Zone 09	Pass	36.03	36.03	0.00%	Yes	39.52	39.52	39.52	0.00%	Yes
W04	R10	Zone 10	Pass	42.82	42.82	0.00%	Yes	46.63	46.63	46.63	0.00%	Yes
W04	R11	Zone 11	Pass	75.44	75.44	0.00%	Yes	80.77	80.77	80.77	0.00%	Yes
W04	R12	Zone 12	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W04	R13	Zone 13	Pass	75.76	75.76	0.00%	Yes	79.89	79.89	79.89	0.00%	Yes
W04	R14	Zone 14	Pass	69.25	69.25	0.00%	Yes	74.86	74.86	74.86	0.00%	Yes
W04	R15	Zone 15	Pass	80.36	80.36	0.00%	Yes	83.34	83.34	83.34	0.00%	Yes
W04	R16	Zone 16	Pass	85.18	85.18	0.00%	Yes	88.82	88.82	88.82	0.00%	Yes
<b>Result W04</b>			<b>Pass</b>	<b>54.58</b>	<b>54.58</b>	<b>0.00%</b>		<b>58.35</b>	<b>58.35</b>	<b>58.35</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>

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Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W05 Proposed Design in All CZs for Prototype P2700ft2</b>								<b>Standard = V02 Standard for this test</b>				
W05	R01	Zone 01	Pass	70.97	70.97	0.00%	Yes	71.73	71.73	71.73	0.00%	Yes
W05	R02	Zone 02	Pass	55.52	55.52	0.00%	Yes	60.42	60.42	60.42	0.00%	Yes
W05	R03	Zone 03	Pass	32.56	32.56	0.00%	Yes	35.92	35.92	35.92	0.00%	Yes
W05	R04	Zone 04	Pass	45.45	45.45	0.00%	Yes	49.47	49.47	49.47	0.00%	Yes
W05	R05	Zone 05	Pass	28.76	28.76	0.00%	Yes	31.37	31.37	31.37	0.00%	Yes
W05	R06	Zone 06	Pass	25.01	25.01	0.00%	Yes	27.49	27.49	27.49	0.00%	Yes
W05	R07	Zone 07	Pass	20.25	20.25	0.00%	Yes	22.09	22.09	22.09	0.00%	Yes
W05	R08	Zone 08	Pass	33.09	33.09	0.00%	Yes	36.25	36.25	36.25	0.00%	Yes
W05	R09	Zone 09	Pass	35.88	35.88	0.00%	Yes	39.53	39.53	39.53	0.00%	Yes
W05	R10	Zone 10	Pass	41.94	41.94	0.00%	Yes	46.06	46.06	46.06	0.00%	Yes
W05	R11	Zone 11	Pass	72.24	72.24	0.00%	Yes	77.88	77.88	77.88	0.00%	Yes
W05	R12	Zone 12	Pass	57.25	57.25	0.00%	Yes	62.75	62.75	62.75	0.00%	Yes
W05	R13	Zone 13	Pass	71.87	71.87	0.00%	Yes	76.52	76.52	76.52	0.00%	Yes
W05	R14	Zone 14	Pass	65.41	65.41	0.00%	Yes	71.29	71.29	71.29	0.00%	Yes
W05	R15	Zone 15	Pass	74.79	74.79	0.00%	Yes	78.59	78.59	78.59	0.00%	Yes
W05	R16	Zone 16	Pass	75.54	75.54	0.00%	Yes	79.57	79.57	79.57	0.00%	Yes
<b>Result W05</b>			<b>Pass</b>	<b>50.41</b>	<b>50.41</b>	<b>0.00%</b>		<b>54.18</b>	<b>54.18</b>	<b>54.18</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>

## Comparison between Reference & Candidate Software (kTDV/ft2 efficiency)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W07 Common Measures in CZ12 for Prototype P2100ft2</b>								<b>Standard = V01 Standard for this test</b>				
W07	R01	Proposed Design	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W07	R02	Fenestration U 0.40/S 0.40	Pass	61.57	61.57	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W07	R03	Wall R13/Roof Deck Above R6/Roof Deck Below R0	Pass	65.74	65.74	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W07	R04	Ceiling R49 /Roof Deck Below R0/Radiant Barrier	Pass	66.75	66.75	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W07	R05	Furnace AFUE 92	Pass	54.57	54.57	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W07	R06	Air Conditioner SEER 16/EER 14	Pass	56.08	56.08	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W07	R07	No Cool Vent	Pass	59.35	59.35	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W07	R08	Ducts 2% Leakage	Pass	57.11	57.11	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W07	R09	No Quality Insulation Installation	Pass	63.94	63.94	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W07	R10	Air Leakage ACH50 2.0	Pass	56.91	56.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W07	R11	Heat pump HSPF 9 SEER 16/EER 14	Pass	49.08	49.08	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
<b>Result W07</b>			Pass	59.99	59.99	0.00%		63.86	63.86	63.86	0.00%	Min Ave Max
<b>W08 Water Heating in CZ12 for Prototype P2100ft2</b>								<b>Standard = V01 Standard for this test</b>				
W08	R01	Proposed Design	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W08	R02	Basic Compact Distribution	Pass	57.11	57.11	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W08	R03	Gas Consumer Instantaneous (UEF)/UEF 0.96/0 gal	Pass	59.78	59.78	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W08	R04	Gas Consumer Storage (UEF)/UEF 0.61/50 gal	Pass	71.53	71.53	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W08	R05	Gas Commercial Instantaneous (TE)/TE 0.95/0 gal	Pass	58.65	58.65	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W08	R06	Gas Commercial Storage (TE & SBL)/TE 0.82/SBL 0.02/98 gal	Pass	76.26	76.26	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W08	R07	Electric Resistance Consumer Storage (UEF)/UEF 0.92/50 gal in Garage	Pass	75.28	75.28	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W08	R08	Heat Pump NEEA Rated/Sanden/43 gal	Pass	53.24	53.24	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W08	R09	2 Water Heaters Using Multiplier	Pass	66.68	66.68	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W08	R10	2 Water Heaters Using 2 Entries	Pass	66.68	66.68	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
<b>Result W08</b>			Pass	64.31	64.31	0.00%		63.86	63.86	63.86	0.00%	Min Ave Max
<b>W09 Multiple Orientation in CZ12 for Prototype S2100ft2/P2100ft2</b>								<b>Standard = V01 Standard for this test</b>				
W09	R01	Single Standard Front 45	Pass	65.72	65.72	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W09	R02	North Standard	Pass	63.86	63.86	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W09	R03	East Standard	Pass	63.86	63.86	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W09	R04	South Standard	Pass	63.86	63.86	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W09	R05	West Standard	Pass	63.86	63.86	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W09	R06	Single Proposed Front 45	Pass	64.32	64.32	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W09	R07	North Proposed	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W09	R08	East Proposed	Pass	68.62	68.62	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W09	R09	South Proposed	Pass	61.54	61.54	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W09	R10	West Proposed	Pass	65.61	65.61	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
<b>Result W09</b>			Pass	63.92	63.92	0.00%		63.86	63.86	63.86	0.00%	Min Ave Max
<b>Page 5 of 11</b>												
<b>W11 Source Energy &amp; Baseline in CZ03 for Prototype P2100ft2</b>								<b>Standard = Varies for this test</b>				
W11	R01	Proposed Design	Pass	40.00	40.00	0.00%	Yes	42.58	42.58	42.58	0.00%	Yes
W11	R02	Proposed Design Propane	Pass	55.65	55.65	0.00%	Yes	58.23	58.23	58.23	0.00%	Yes
W11	R03	Heatpump DHW	Pass	35.36	35.36	0.00%	Yes	41.37	41.37	41.37	0.00%	Yes
W11	R04	Heatpump DHW Propane	Pass	35.36	35.36	0.00%	Yes	57.81	57.81	57.81	0.00%	Yes
W11	R05	Gas Furnace	Pass	42.72	42.72	0.00%	Yes	42.58	42.58	42.58	0.00%	Yes

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 Candidate Software: CBECC-Res 2022\_0\_1

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W11	R06	Propane Furnace	Pass	72.11	72.11	0.00%	Yes	58.23	58.23	58.23	0.00%	Yes
W11	R07	Heatpump DHW & Gas Furnace	Pass	38.17	38.17	0.00%	Yes	41.37	41.37	41.37	0.00%	Yes
W11	R08	Heatpump DHW & Propane Furnace	Pass	52.12	52.12	0.00%	Yes	57.81	57.81	57.81	0.00%	Yes
<b>Result W11</b>			Pass	<b>46.44</b>	<b>46.44</b>	<b>0.00%</b>		<b>50.00</b>	<b>50.00</b>	<b>50.00</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>
<b>W12</b>	<b>E+A+A Base &amp; Windows in CZ12 for Prototype P1665ft2</b>							<b>Standard = Varies for this test</b>				
W12	R01	E 1440ft2 as New Construction	Pass	293.35	293.35	0.00%	Yes	67.94	67.94	67.94	0.00%	Yes
W12	R02	E 1440ft2 as Addition/Alteration	Pass	283.64	283.64	0.00%	Yes	276.82	276.82	276.82	0.00%	Yes
W12	R03	EA 1665ft2	Pass	254.00	254.00	0.00%	Yes	243.65	243.65	243.65	0.00%	Yes
W12	R04	EAA Ceiling R49 Verified	Pass	227.63	227.63	0.00%	Yes	243.65	243.65	243.65	0.00%	Yes
W12	R05	EAA Ceiling R49 Verified Wind U0.41/S0.36	Pass	199.52	199.52	0.00%	Yes	215.67	215.67	215.67	0.00%	Yes
W12	R06	EAA Ceiling R49 Verified Wind U0.41/S0.36 Verified	Pass	199.52	199.52	0.00%	Yes	215.67	215.67	215.67	0.00%	Yes
W12	R07	EAA Ceiling R49 Verified Wind U0.40/S0.35	Pass	198.85	198.85	0.00%	Yes	215.67	215.67	215.67	0.00%	Yes
W12	R08	EAA Ceiling R49 Verified Wind U0.40/S0.35 Verified	Pass	198.85	198.85	0.00%	Yes	243.65	243.65	243.65	0.00%	Yes
W12	R09	EAA Ceiling R49 Verified Wind U0.39/S0.34	Pass	198.26	198.26	0.00%	Yes	215.67	215.67	215.67	0.00%	Yes
W12	R10	EAA Ceiling R49 Verified Wind U0.39/S0.34 Verified	Pass	198.26	198.26	0.00%	Yes	243.65	243.65	243.65	0.00%	Yes
<b>Result W12</b>			Pass	<b>225.19</b>	<b>225.19</b>	<b>0.00%</b>		<b>218.20</b>	<b>218.20</b>	<b>218.20</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>

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Comparison Date: 6/2/2022

Comparison Author: Alea German

Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W13</b>	<b>E+A+A Walls &amp; HVAC in CZ12 for Prototype P1665ft2</b>							<b>Standard = Varies for this test</b>				
W13	R01	EAA Ceiling R49 Verified Wall R11	Pass	181.35	181.35	0.00%	Yes	198.14	198.14	198.14	0.00%	Yes
W13	R02	EAA Ceiling R49 Verified Wall R11 Verified	Pass	181.35	181.35	0.00%	Yes	198.14	198.14	198.14	0.00%	Yes
W13	R03	EAA Ceiling R49 Verified Wall R13	Pass	178.90	178.90	0.00%	Yes	198.14	198.14	198.14	0.00%	Yes
W13	R04	EAA Ceiling R49 Verified Wall R13 Verified	Pass	178.90	178.90	0.00%	Yes	243.65	243.65	243.65	0.00%	Yes
W13	R05	EAA Ceiling R49 Verified HVAC Worse	Pass	185.04	185.04	0.00%	Yes	169.10	169.10	169.10	0.00%	Yes
W13	R06	EAA Ceiling R49 Verified HVAC Worse Verified	Pass	185.04	185.04	0.00%	Yes	169.10	169.10	169.10	0.00%	Yes
W13	R07	EAA Ceiling R49 Verified HVAC Equal	Pass	156.17	156.17	0.00%	Yes	169.10	169.10	169.10	0.00%	Yes
W13	R08	EAA Ceiling R49 Verified HVAC Equal Verified	Pass	156.17	156.17	0.00%	Yes	243.65	243.65	243.65	0.00%	Yes
W13	R09	EAA Ceiling R49 Verified HVAC Better	Pass	139.08	139.08	0.00%	Yes	169.10	169.10	169.10	0.00%	Yes
W13	R10	EAA Ceiling R49 Verified HVAC Better Verified	Pass	139.08	139.08	0.00%	Yes	243.65	243.65	243.65	0.00%	Yes
<b>Result W13</b>			Pass	<b>168.11</b>	<b>168.11</b>	<b>0.00%</b>		<b>200.18</b>	<b>200.18</b>	<b>200.18</b>	<b>0.00%</b>	<b>Min Ave Max</b>

## Comparison between Reference & Candidate Software (kTDV/ft2 efficiency)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W14 Standard Design All Electric in All CZs for Prototype S2100ft2</b>								<b>Standard = Proposed for this test</b>				
W14	R01	Zone 01	Pass	83.91	83.91	0.00%	Yes	92.56	92.56	92.56	0.00%	Yes
W14	R02	Zone 02	Pass	57.90	57.90	0.00%	Yes	65.20	65.20	65.20	0.00%	Yes
W14	R03	Zone 03	Pass	37.85	37.85	0.00%	Yes	41.55	41.55	41.55	0.00%	Yes
W14	R04	Zone 04	Pass	45.95	45.95	0.00%	Yes	50.30	50.30	50.30	0.00%	Yes
W14	R05	Zone 05	Pass	36.57	36.57	0.00%	Yes	37.34	37.34	37.34	0.00%	Yes
W14	R06	Zone 06	Pass	26.17	26.17	0.00%	Yes	27.61	27.61	27.61	0.00%	Yes
W14	R07	Zone 07	Pass	21.90	21.90	0.00%	Yes	22.81	22.81	22.81	0.00%	Yes
W14	R08	Zone 08	Pass	35.64	35.64	0.00%	Yes	36.07	36.07	36.07	0.00%	Yes
W14	R09	Zone 09	Pass	38.49	38.49	0.00%	Yes	39.46	39.46	39.46	0.00%	Yes
W14	R10	Zone 10	Pass	45.27	45.27	0.00%	Yes	46.56	46.56	46.56	0.00%	Yes
W14	R11	Zone 11	Pass	74.32	74.32	0.00%	Yes	80.79	80.79	80.79	0.00%	Yes
W14	R12	Zone 12	Pass	57.65	57.65	0.00%	Yes	63.87	63.87	63.87	0.00%	Yes
W14	R13	Zone 13	Pass	73.75	73.75	0.00%	Yes	77.45	77.45	77.45	0.00%	Yes
W14	R14	Zone 14	Pass	70.28	70.28	0.00%	Yes	73.09	73.09	73.09	0.00%	Yes
W14	R15	Zone 15	Pass	83.38	83.38	0.00%	Yes	83.11	83.11	83.11	0.00%	Yes
W14	R16	Zone 16	Pass	94.45	94.45	0.00%	Yes	89.05	89.05	89.05	0.00%	Yes
<b>Result W14</b>			<b>Pass</b>	<b>55.22</b>	<b>55.22</b>	<b>0.00%</b>		<b>57.93</b>	<b>57.93</b>	<b>57.93</b>	<b>0.00%</b>	<b>Min Ave Max</b>
<b>W15 Standard Design All Electric in All CZs for Prototype S2700ft2</b>								<b>Standard = Proposed for this test</b>				
W15	R01	Zone 01	Pass	66.18	66.18	0.00%	Yes	72.00	72.00	72.00	0.00%	Yes
W15	R02	Zone 02	Pass	54.33	54.33	0.00%	Yes	60.52	60.52	60.52	0.00%	Yes
W15	R03	Zone 03	Pass	32.87	32.87	0.00%	Yes	36.18	36.18	36.18	0.00%	Yes
W15	R04	Zone 04	Pass	44.72	44.72	0.00%	Yes	48.45	48.45	48.45	0.00%	Yes
W15	R05	Zone 05	Pass	30.92	30.92	0.00%	Yes	31.48	31.48	31.48	0.00%	Yes
W15	R06	Zone 06	Pass	25.99	25.99	0.00%	Yes	27.48	27.48	27.48	0.00%	Yes
W15	R07	Zone 07	Pass	21.01	21.01	0.00%	Yes	22.04	22.04	22.04	0.00%	Yes
W15	R08	Zone 08	Pass	35.49	35.49	0.00%	Yes	36.17	36.17	36.17	0.00%	Yes
W15	R09	Zone 09	Pass	38.27	38.27	0.00%	Yes	39.47	39.47	39.47	0.00%	Yes
W15	R10	Zone 10	Pass	44.54	44.54	0.00%	Yes	46.01	46.01	46.01	0.00%	Yes
W15	R11	Zone 11	Pass	71.87	71.87	0.00%	Yes	77.90	77.90	77.90	0.00%	Yes
W15	R12	Zone 12	Pass	57.22	57.22	0.00%	Yes	62.75	62.75	62.75	0.00%	Yes
W15	R13	Zone 13	Pass	71.73	71.73	0.00%	Yes	75.50	75.50	75.50	0.00%	Yes
W15	R14	Zone 14	Pass	67.46	67.46	0.00%	Yes	70.11	70.11	70.11	0.00%	Yes
W15	R15	Zone 15	Pass	78.23	78.23	0.00%	Yes	78.29	78.29	78.29	0.00%	Yes
W15	R16	Zone 16	Pass	85.26	85.26	0.00%	Yes	79.76	79.76	79.76	0.00%	Yes
<b>Result W15</b>			<b>Pass</b>	<b>51.63</b>	<b>51.63</b>	<b>0.00%</b>		<b>54.01</b>	<b>54.01</b>	<b>54.01</b>	<b>0.00%</b>	<b>Min Ave Max</b>
<b>Page 8 of 11</b>												
<b>W17 Proposed Design All Electric in All CZs for Prototype P2100ft2</b>								<b>Standard = V14 Standard for this test</b>				
W17	R01	Zone 01	Pass	82.17	82.17	0.00%	Yes	92.56	92.56	92.56	0.00%	Yes
W17	R02	Zone 02	Pass	50.72	50.72	0.00%	Yes	65.20	65.20	65.20	0.00%	Yes
W17	R03	Zone 03	Pass	35.49	35.49	0.00%	Yes	41.55	41.55	41.55	0.00%	Yes
W17	R04	Zone 04	Pass	42.01	42.01	0.00%	Yes	50.30	50.30	50.30	0.00%	Yes
W17	R05	Zone 05	Pass	33.95	33.95	0.00%	Yes	37.34	37.34	37.34	0.00%	Yes
W17	R06	Zone 06	Pass	24.50	24.50	0.00%	Yes	27.61	27.61	27.61	0.00%	Yes
W17	R07	Zone 07	Pass	20.48	20.48	0.00%	Yes	22.81	22.81	22.81	0.00%	Yes



## Comparison between Reference & Candidate Software (kTDV/ft2 efficiency)

Comparison Date: 6/2/2022

Comparison Author: Alea German

Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
W17	R08	Zone 08	Pass	33.10	33.10	0.00%	Yes	36.07	36.07	36.07	0.00%	Yes
W17	R09	Zone 09	Pass	35.43	35.43	0.00%	Yes	39.46	39.46	39.46	0.00%	Yes
W17	R10	Zone 10	Pass	41.94	41.94	0.00%	Yes	46.56	46.56	46.56	0.00%	Yes
W17	R11	Zone 11	Pass	70.01	70.01	0.00%	Yes	80.79	80.79	80.79	0.00%	Yes
W17	R12	Zone 12	Pass	52.57	52.57	0.00%	Yes	63.87	63.87	63.87	0.00%	Yes
W17	R13	Zone 13	Pass	69.94	69.94	0.00%	Yes	77.45	77.45	77.45	0.00%	Yes
W17	R14	Zone 14	Pass	65.35	65.35	0.00%	Yes	73.09	73.09	73.09	0.00%	Yes
W17	R15	Zone 15	Pass	80.39	80.39	0.00%	Yes	83.11	83.11	83.11	0.00%	Yes
W17	R16	Zone 16	Pass	90.90	90.90	0.00%	Yes	89.05	89.05	89.05	0.00%	Yes
<b>Result W17</b>			Pass	<b>51.81</b>	<b>51.81</b>	<b>0.00%</b>		<b>57.93</b>	<b>57.93</b>	<b>57.93</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>

## Comparison between Reference & Candidate Software (kTDV/ft2 efficiency)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W18 Proposed Design All Electric in All CZs for Prototype P2700ft2</b>								<b>Standard = V15 Standard for this test</b>				
W18	R01	Zone 01	Pass	64.12	64.12	0.00%	Yes	72.00	72.00	72.00	0.00%	Yes
W18	R02	Zone 02	Pass	50.49	50.49	0.00%	Yes	60.52	60.52	60.52	0.00%	Yes
W18	R03	Zone 03	Pass	29.80	29.80	0.00%	Yes	36.18	36.18	36.18	0.00%	Yes
W18	R04	Zone 04	Pass	40.78	40.78	0.00%	Yes	48.45	48.45	48.45	0.00%	Yes
W18	R05	Zone 05	Pass	28.62	28.62	0.00%	Yes	31.48	31.48	31.48	0.00%	Yes
W18	R06	Zone 06	Pass	24.04	24.04	0.00%	Yes	27.48	27.48	27.48	0.00%	Yes
W18	R07	Zone 07	Pass	19.57	19.57	0.00%	Yes	22.04	22.04	22.04	0.00%	Yes
W18	R08	Zone 08	Pass	32.61	32.61	0.00%	Yes	36.17	36.17	36.17	0.00%	Yes
W18	R09	Zone 09	Pass	35.05	35.05	0.00%	Yes	39.47	39.47	39.47	0.00%	Yes
W18	R10	Zone 10	Pass	40.86	40.86	0.00%	Yes	46.01	46.01	46.01	0.00%	Yes
W18	R11	Zone 11	Pass	67.10	67.10	0.00%	Yes	77.90	77.90	77.90	0.00%	Yes
W18	R12	Zone 12	Pass	52.42	52.42	0.00%	Yes	62.75	62.75	62.75	0.00%	Yes
W18	R13	Zone 13	Pass	67.28	67.28	0.00%	Yes	75.50	75.50	75.50	0.00%	Yes
W18	R14	Zone 14	Pass	62.21	62.21	0.00%	Yes	70.11	70.11	70.11	0.00%	Yes
W18	R15	Zone 15	Pass	74.68	74.68	0.00%	Yes	78.29	78.29	78.29	0.00%	Yes
W18	R16	Zone 16	Pass	80.95	80.95	0.00%	Yes	79.76	79.76	79.76	0.00%	Yes
<b>Result W18</b>			<b>Pass</b>	<b>48.16</b>	<b>48.16</b>	<b>0.00%</b>		<b>54.01</b>	<b>54.01</b>	<b>54.01</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>

## Comparison between Reference & Candidate Software (kTDV/ft2 efficiency)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W20 PV in CZ12 for Prototype P2100ft2</b>								<b>Standard = V04R12</b>				
W20	R01	Proposed Design	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W20	R02	Maximum PV	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W20	R03	2 kWdc PV	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W20	R04	Premium Module	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W20	R05	Tracking (one axis) Array	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W20	R06	Tracking (two axis) Array	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W20	R07	Microinverters	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W20	R08	DC Power Optimizers	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W20	R09	Maximum PV Premium Fixed Microinverter	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W20	R10	Maximum PV Premium Tracking (two axis) DC Power Optimizers	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
<b>Result W20</b>			<b>Pass</b>	<b>57.91</b>	<b>57.91</b>	<b>0.00%</b>		<b>63.86</b>	<b>63.86</b>	<b>63.86</b>	<b>0.00%</b>	<b>Min Ave</b>
<b>W21 PV, Battery and Target EDR in CZ12 for Prototype P2100ft2</b>								<b>Standard = V04R12</b>				
W21	R01	Proposed Design	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W21	R02	Two 1 kWdc PV	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W21	R03	Two 1 kWdc PV 90/270 Azm/18.43 Tilt/97 Eff	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W21	R04	Reduced PV 0 kWdc < 80 ft2 area	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W21	R05	14 kWh Battery Basic	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W21	R06	14 kWh Battery TOU	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W21	R07	14 kWh Battery Advanced	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W21	R08	Self Utilization Credit	Pass	48.97	48.97	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W21	R09	Self Utilization Credit Allow Excess PV	Pass	48.97	48.97	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
<b>Result W21</b>			<b>Pass</b>	<b>55.92</b>	<b>55.92</b>	<b>0.00%</b>		<b>63.86</b>	<b>63.86</b>	<b>63.86</b>	<b>0.00%</b>	<b>Min Ave</b>
<b>W22 Verified and Buried Ducts in CZ12 for Prototype P2100ft2</b>								<b>Standard = V04R12</b>				
W22	R01	Proposed Design	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W22	R02	Verified equal to default ducts	Pass	57.91	57.91	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W22	R03	Buried R-60	Pass	56.54	56.54	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W22	R04	Buried R-60/Ducts Half Length	Pass	55.27	55.27	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W22	R05	Buried R-60/Ducts R-6	Pass	56.54	56.54	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W22	R06	Buried R-60/Duct Diameters 8, 4, 7, 6	Pass	54.85	54.85	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W22	R07	Buried R-60/Duct Diameters 8, 4, 7, 6/Attic R-49, R-43, R-40, R-38	Pass	54.89	54.89	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W22	R08	Buried R-60/Duct Diameters 8, 4, 7, 6/Attic Cellulose	Pass	54.83	54.83	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W22	R09	Buried R-60/Ducts Half Length/Ceiling R-60	Pass	54.06	54.06	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
W22	R10	Buried R-60/Ducts Half Length/Ceiling R-60/No below Deck Ins	Pass	61.86	61.86	0.00%	Yes	63.86	63.86	63.86	0.00%	Yes
<b>Result W22</b>			<b>Pass</b>	<b>56.47</b>	<b>56.47</b>	<b>0.00%</b>		<b>63.86</b>	<b>63.86</b>	<b>63.86</b>	<b>0.00%</b>	<b>Min Ave</b>

## Summary of Residential ACM Tests (EDR1 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1  
 Reference Software: CBECC-Res 2022 SVN2215  
 Type of Software: Reference  
 Single Family: Yes  
 Multi Family: No  
 Newly Constructed: Yes  
 Additions Alterations: Yes  
 Units for Summary: **EDR1 total**  
 Tolerance: 0.04

Test	Pass/ Fail	Average Reference EDR1 total	Average Candidate EDR1 total	Description
W01	Pass	43.02	43.02	Standard Design in All CZs for Prototype S2100ft2
W02	Pass	40.59	40.59	Standard Design in All CZs for Prototype S2700ft2
W04	Pass	41.49	41.49	Proposed Design in All CZs for Prototype P2100ft2
W05	Pass	38.97	38.97	Proposed Design in All CZs for Prototype P2700ft2
W07	Pass	41.56	41.56	Common Measures in CZ12 for Prototype P2100ft2
W08	Pass	49.39	49.39	Water Heating in CZ12 for Prototype P2100ft2
W09	Pass	43.16	43.16	Multiple Orientation in CZ12 for Prototype S2100ft2/P2100ft2
W11	Pass	40.24	40.24	Source Energy & Baseline in CZ03 for Prototype P2100ft2
W12	Pass	0.00	0.00	E+A+A Base & Windows in CZ12 for Prototype P1665ft2
W13	Pass	0.00	0.00	E+A+A Walls & HVAC in CZ12 for Prototype P1665ft2
W14	Pass	31.16	31.16	Standard Design All Electric in All CZs for Prototype S2100ft2
W15	Pass	29.68	29.68	Standard Design All Electric in All CZs for Prototype S2700ft2
W17	Pass	30.25	30.25	Proposed Design All Electric in All CZs for Prototype P2100ft2
W18	Pass	28.61	28.61	Proposed Design All Electric in All CZs for Prototype P2700ft2
W20	Pass	40.27	40.27	PV in CZ12 for Prototype P2100ft2
W21	Fail	36.69	36.66	PV, Battery and Target EDR in CZ12 for Prototype P2100ft2
W22	Pass	40.49	40.49	Verified and Buried Ducts in CZ12 for Prototype P2100ft2

## Comparison between Reference & Candidate Software (EDR1 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W01 Standard Design in All CZs for Prototype S2100ft2</b>								<b>Standard = Proposed for this test</b>				
W01	R01	Zone 01	Pass	66.10	66.10	0.00%	Yes	66.10	66.10	66.10	0.00%	Yes
W01	R02	Zone 02	Pass	46.30	46.30	0.00%	Yes	46.30	46.30	46.30	0.00%	Yes
W01	R03	Zone 03	Pass	44.50	44.50	0.00%	Yes	44.50	44.50	44.50	0.00%	Yes
W01	R04	Zone 04	Pass	45.30	45.30	0.00%	Yes	45.30	45.30	45.30	0.00%	Yes
W01	R05	Zone 05	Pass	37.90	37.90	0.00%	Yes	37.90	37.90	37.90	0.00%	Yes
W01	R06	Zone 06	Pass	38.60	38.60	0.00%	Yes	38.60	38.60	38.60	0.00%	Yes
W01	R07	Zone 07	Pass	37.20	37.20	0.00%	Yes	37.20	37.20	37.20	0.00%	Yes
W01	R08	Zone 08	Pass	35.50	35.50	0.00%	Yes	35.50	35.50	35.50	0.00%	Yes
W01	R09	Zone 09	Pass	36.40	36.40	0.00%	Yes	36.40	36.40	36.40	0.00%	Yes
W01	R10	Zone 10	Pass	37.50	37.50	0.00%	Yes	37.50	37.50	37.50	0.00%	Yes
W01	R11	Zone 11	Pass	42.80	42.80	0.00%	Yes	42.80	42.80	42.80	0.00%	Yes
W01	R12	Zone 12	Pass	43.10	43.10	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W01	R13	Zone 13	Pass	43.50	43.50	0.00%	Yes	43.50	43.50	43.50	0.00%	Yes
W01	R14	Zone 14	Pass	42.40	42.40	0.00%	Yes	42.40	42.40	42.40	0.00%	Yes
W01	R15	Zone 15	Pass	33.40	33.40	0.00%	Yes	33.40	33.40	33.40	0.00%	Yes
W01	R16	Zone 16	Pass	57.80	57.80	0.00%	Yes	57.80	57.80	57.80	0.00%	Yes
<b>Result W01</b>			<b>Pass</b>	<b>43.02</b>	<b>43.02</b>	<b>0.00%</b>		<b>43.02</b>	<b>43.02</b>	<b>43.02</b>	<b>0.00%</b>	<b>Ave</b>
												<b>Min</b>
												<b>Max</b>
<b>W02 Standard Design in All CZs for Prototype S2700ft2</b>								<b>Standard = Proposed for this test</b>				
W02	R01	Zone 01	Pass	58.50	58.50	0.00%	Yes	58.50	58.50	58.50	0.00%	Yes
W02	R02	Zone 02	Pass	42.40	42.40	0.00%	Yes	42.40	42.40	42.40	0.00%	Yes
W02	R03	Zone 03	Pass	41.50	41.50	0.00%	Yes	41.50	41.50	41.50	0.00%	Yes
W02	R04	Zone 04	Pass	42.90	42.90	0.00%	Yes	42.90	42.90	42.90	0.00%	Yes
W02	R05	Zone 05	Pass	34.40	34.40	0.00%	Yes	34.40	34.40	34.40	0.00%	Yes
W02	R06	Zone 06	Pass	38.00	38.00	0.00%	Yes	38.00	38.00	38.00	0.00%	Yes
W02	R07	Zone 07	Pass	36.80	36.80	0.00%	Yes	36.80	36.80	36.80	0.00%	Yes
W02	R08	Zone 08	Pass	35.30	35.30	0.00%	Yes	35.30	35.30	35.30	0.00%	Yes
W02	R09	Zone 09	Pass	35.90	35.90	0.00%	Yes	35.90	35.90	35.90	0.00%	Yes
W02	R10	Zone 10	Pass	36.50	36.50	0.00%	Yes	36.50	36.50	36.50	0.00%	Yes
W02	R11	Zone 11	Pass	40.50	40.50	0.00%	Yes	40.50	40.50	40.50	0.00%	Yes
W02	R12	Zone 12	Pass	40.90	40.90	0.00%	Yes	40.90	40.90	40.90	0.00%	Yes
W02	R13	Zone 13	Pass	40.60	40.60	0.00%	Yes	40.60	40.60	40.60	0.00%	Yes
W02	R14	Zone 14	Pass	39.30	39.30	0.00%	Yes	39.30	39.30	39.30	0.00%	Yes
W02	R15	Zone 15	Pass	32.40	32.40	0.00%	Yes	32.40	32.40	32.40	0.00%	Yes
W02	R16	Zone 16	Pass	53.50	53.50	0.00%	Yes	53.50	53.50	53.50	0.00%	Yes
<b>Result W02</b>			<b>Pass</b>	<b>40.59</b>	<b>40.59</b>	<b>0.00%</b>		<b>40.59</b>	<b>40.59</b>	<b>40.59</b>	<b>0.00%</b>	<b>Ave</b>
												<b>Min</b>
												<b>Max</b>
<b>Page 2 of 11</b>												
<b>W04 Proposed Design in All CZs for Prototype P2100ft2</b>								<b>Standard = V01 Standard for this test</b>				
W04	R01	Zone 01	Pass	65.90	65.90	0.00%	Yes	66.10	66.10	66.10	0.00%	Yes
W04	R02	Zone 02	Pass	44.60	44.60	0.00%	Yes	46.30	46.30	46.30	0.00%	Yes
W04	R03	Zone 03	Pass	43.20	43.20	0.00%	Yes	44.50	44.50	44.50	0.00%	Yes
W04	R04	Zone 04	Pass	44.30	44.30	0.00%	Yes	45.30	45.30	45.30	0.00%	Yes
W04	R05	Zone 05	Pass	35.60	35.60	0.00%	Yes	37.90	37.90	37.90	0.00%	Yes
W04	R06	Zone 06	Pass	36.70	36.70	0.00%	Yes	38.60	38.60	38.60	0.00%	Yes
W04	R07	Zone 07	Pass	35.70	35.70	0.00%	Yes	37.20	37.20	37.20	0.00%	Yes

## Comparison between Reference & Candidate Software (EDR1 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
W04	R08	Zone 08	Pass	33.90	33.90	0.00%	Yes	35.50	35.50	35.50	0.00%	Yes
W04	R09	Zone 09	Pass	34.60	34.60	0.00%	Yes	36.40	36.40	36.40	0.00%	Yes
W04	R10	Zone 10	Pass	35.50	35.50	0.00%	Yes	37.50	37.50	37.50	0.00%	Yes
W04	R11	Zone 11	Pass	40.90	40.90	0.00%	Yes	42.80	42.80	42.80	0.00%	Yes
W04	R12	Zone 12	Pass	41.30	41.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W04	R13	Zone 13	Pass	42.60	42.60	0.00%	Yes	43.50	43.50	43.50	0.00%	Yes
W04	R14	Zone 14	Pass	40.90	40.90	0.00%	Yes	42.40	42.40	42.40	0.00%	Yes
W04	R15	Zone 15	Pass	32.80	32.80	0.00%	Yes	33.40	33.40	33.40	0.00%	Yes
W04	R16	Zone 16	Pass	55.40	55.40	0.00%	Yes	57.80	57.80	57.80	0.00%	Yes
<b>Result W04</b>			<b>Pass</b>	<b>41.49</b>	<b>41.49</b>	<b>0.00%</b>		<b>43.02</b>	<b>43.02</b>	<b>43.02</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>

## Comparison between Reference & Candidate Software (EDR1 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W05 Proposed Design in All CZs for Prototype P2700ft2</b>								<b>Standard = V02 Standard for this test</b>				
W05	R01	Zone 01	Pass	58.10	58.10	0.00%	Yes	58.50	58.50	58.50	0.00%	Yes
W05	R02	Zone 02	Pass	40.70	40.70	0.00%	Yes	42.40	42.40	42.40	0.00%	Yes
W05	R03	Zone 03	Pass	40.30	40.30	0.00%	Yes	41.50	41.50	41.50	0.00%	Yes
W05	R04	Zone 04	Pass	41.80	41.80	0.00%	Yes	42.90	42.90	42.90	0.00%	Yes
W05	R05	Zone 05	Pass	32.10	32.10	0.00%	Yes	34.40	34.40	34.40	0.00%	Yes
W05	R06	Zone 06	Pass	36.10	36.10	0.00%	Yes	38.00	38.00	38.00	0.00%	Yes
W05	R07	Zone 07	Pass	35.20	35.20	0.00%	Yes	36.80	36.80	36.80	0.00%	Yes
W05	R08	Zone 08	Pass	33.50	33.50	0.00%	Yes	35.30	35.30	35.30	0.00%	Yes
W05	R09	Zone 09	Pass	34.00	34.00	0.00%	Yes	35.90	35.90	35.90	0.00%	Yes
W05	R10	Zone 10	Pass	34.30	34.30	0.00%	Yes	36.50	36.50	36.50	0.00%	Yes
W05	R11	Zone 11	Pass	38.60	38.60	0.00%	Yes	40.50	40.50	40.50	0.00%	Yes
W05	R12	Zone 12	Pass	39.00	39.00	0.00%	Yes	40.90	40.90	40.90	0.00%	Yes
W05	R13	Zone 13	Pass	39.60	39.60	0.00%	Yes	40.60	40.60	40.60	0.00%	Yes
W05	R14	Zone 14	Pass	37.70	37.70	0.00%	Yes	39.30	39.30	39.30	0.00%	Yes
W05	R15	Zone 15	Pass	31.40	31.40	0.00%	Yes	32.40	32.40	32.40	0.00%	Yes
W05	R16	Zone 16	Pass	51.10	51.10	0.00%	Yes	53.50	53.50	53.50	0.00%	Yes
<b>Result W05</b>			<b>Pass</b>	<b>38.97</b>	<b>38.97</b>	<b>0.00%</b>		<b>40.59</b>	<b>40.59</b>	<b>40.59</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>

## Comparison between Reference & Candidate Software (EDR1 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W07 Common Measures in CZ12 for Prototype P2100ft2</b>								<b>Standard = V01 Standard for this test</b>				
W07	R01	Proposed Design	Pass	41.30	41.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W07	R02	Fenestration U 0.40/S 0.40	Pass	39.80	39.80	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W07	R03	Wall R13/Roof Deck Above R6/Roof Deck Below R0	Pass	44.30	44.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W07	R04	Ceiling R49 /Roof Deck Below R0/Radiant Barrier	Pass	43.20	43.20	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W07	R05	Furnace AFUE 92	Pass	38.90	38.90	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W07	R06	Air Conditioner SEER 16/EER 14	Pass	41.20	41.20	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W07	R07	No Cool Vent	Pass	41.40	41.40	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W07	R08	Ducts 2% Leakage	Pass	40.90	40.90	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W07	R09	No Quality Insulation Installation	Pass	43.90	43.90	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W07	R10	Air Leakage ACH50 2.0	Pass	40.70	40.70	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W07	R11	Heat pump HSPF 9 SEER 16/EER 14	Pass	30.70	30.70	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
<b>Result W07</b>			Pass	<b>41.56</b>	<b>41.56</b>	<b>0.00%</b>		<b>43.10</b>	<b>43.10</b>	<b>43.10</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>
<b>W08 Water Heating in CZ12 for Prototype P2100ft2</b>								<b>Standard = V01 Standard for this test</b>				
W08	R01	Proposed Design	Pass	41.30	41.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W08	R02	Basic Compact Distribution	Pass	41.00	41.00	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W08	R03	Gas Consumer Instantaneous (UEF)/UEF 0.96/0 gal	Pass	49.20	49.20	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W08	R04	Gas Consumer Storage (UEF)/UEF 0.61/50 gal	Pass	58.60	58.60	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W08	R05	Gas Commercial Instantaneous (TE)/TE 0.95/0 gal	Pass	48.80	48.80	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W08	R06	Gas Commercial Storage (TE & SBL)/TE 0.82/SBL 0.02/98 gal	Pass	62.20	62.20	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W08	R07	Electric Resistance Consumer Storage (UEF)/UEF 0.92/50 gal in Garage	Pass	45.30	45.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W08	R08	Heat Pump NEEA Rated/Sanden/43 gal	Pass	39.70	39.70	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W08	R09	2 Water Heaters Using Multiplier	Pass	53.90	53.90	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W08	R10	2 Water Heaters Using 2 Entries	Pass	53.90	53.90	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
<b>Result W08</b>			Pass	<b>49.39</b>	<b>49.39</b>	<b>0.00%</b>		<b>43.10</b>	<b>43.10</b>	<b>43.10</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>
<b>W09 Multiple Orientation in CZ12 for Prototype S2100ft2/P2100ft2</b>								<b>Standard = V01 Standard for this test</b>				
W09	R01	Single Standard Front 45	Pass	43.50	43.50	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W09	R02	North Standard	Pass	43.10	43.10	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W09	R03	East Standard	Pass	43.10	43.10	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W09	R04	South Standard	Pass	43.10	43.10	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W09	R05	West Standard	Pass	43.10	43.10	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W09	R06	Single Proposed Front 45	Pass	42.70	42.70	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W09	R07	North Proposed	Pass	41.30	41.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W09	R08	East Proposed	Pass	43.90	43.90	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W09	R09	South Proposed	Pass	44.00	44.00	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W09	R10	West Proposed	Pass	43.80	43.80	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
<b>Result W09</b>			Pass	<b>43.16</b>	<b>43.16</b>	<b>0.00%</b>		<b>43.10</b>	<b>43.10</b>	<b>43.10</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>
<b>Page 5 of 11</b>												
<b>W11 Source Energy &amp; Baseline in CZ03 for Prototype P2100ft2</b>								<b>Standard = Varies for this test</b>				
W11	R01	Proposed Design	Pass	43.20	43.20	0.00%	Yes	44.50	44.50	44.50	0.00%	Yes
W11	R02	Proposed Design Propane	Pass	42.30	42.30	0.00%	Yes	43.40	43.40	43.40	0.00%	Yes
W11	R03	Heatpump DHW	Pass	31.20	31.20	0.00%	Yes	40.80	40.80	40.80	0.00%	Yes
W11	R04	Heatpump DHW Propane	Pass	29.10	29.10	0.00%	Yes	40.10	40.10	40.10	0.00%	Yes
W11	R05	Gas Furnace	Pass	50.10	50.10	0.00%	Yes	44.50	44.50	44.50	0.00%	Yes



## Comparison between Reference & Candidate Software (EDR1 total)

Comparison Date: 6/2/2022  
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Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
W11	R06	Propane Furnace	Pass	50.30	50.30	0.00%	Yes	43.40	43.40	43.40	0.00%	Yes
W11	R07	Heatpump DHW & Gas Furnace	Pass	38.30	38.30	0.00%	Yes	40.80	40.80	40.80	0.00%	Yes
W11	R08	Heatpump DHW & Propane Furnace	Pass	37.40	37.40	0.00%	Yes	40.10	40.10	40.10	0.00%	Yes
<b>Result W11</b>			Pass	<b>40.24</b>	<b>40.24</b>	<b>0.00%</b>		<b>42.20</b>	<b>42.20</b>	<b>42.20</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>
<b>W12</b>	<b>E+A+A Base &amp; Windows in CZ12 for Prototype P1665ft2</b>							<b>Standard = Varies for this test</b>				
W12	R01	E 1440ft2 as New Construction	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R02	E 1440ft2 as Addition/Alteration	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R03	EA 1665ft2	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R04	EAA Ceiling R49 Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R05	EAA Ceiling R49 Verified Wind U0.41/S0.36	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R06	EAA Ceiling R49 Verified Wind U0.41/S0.36 Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R07	EAA Ceiling R49 Verified Wind U0.40/S0.35	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R08	EAA Ceiling R49 Verified Wind U0.40/S0.35 Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R09	EAA Ceiling R49 Verified Wind U0.39/S0.34	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R10	EAA Ceiling R49 Verified Wind U0.39/S0.34 Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
<b>Result W12</b>			Pass	<b>0.00</b>	<b>0.00</b>	<b>0.00%</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>

## Comparison between Reference & Candidate Software (EDR1 total)

Comparison Date: 6/2/2022  
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Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W13</b>	<b>E+A+A Walls &amp; HVAC in CZ12 for Prototype P1665ft2</b>							<b>Standard = Varies for this test</b>				
W13	R01	EAA Ceiling R49 Verified Wall R11	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R02	EAA Ceiling R49 Verified Wall R11 Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R03	EAA Ceiling R49 Verified Wall R13	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R04	EAA Ceiling R49 Verified Wall R13 Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R05	EAA Ceiling R49 Verified HVAC Worse	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R06	EAA Ceiling R49 Verified HVAC Worse Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R07	EAA Ceiling R49 Verified HVAC Equal	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R08	EAA Ceiling R49 Verified HVAC Equal Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R09	EAA Ceiling R49 Verified HVAC Better	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R10	EAA Ceiling R49 Verified HVAC Better Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
<b>Result W13</b>			Pass	<b>0.00</b>	<b>0.00</b>	<b>0.00%</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00%</b>	<b>Min Ave Max</b>

## Comparison between Reference & Candidate Software (EDR1 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W14 Standard Design All Electric in All CZs for Prototype S2100ft2</b>								<b>Standard = Proposed for this test</b>				
W14	R01	Zone 01	Pass	37.30	37.30	0.00%	Yes	64.10	64.10	64.10	0.00%	Yes
W14	R02	Zone 02	Pass	30.50	30.50	0.00%	Yes	44.10	44.10	44.10	0.00%	Yes
W14	R03	Zone 03	Pass	29.80	29.80	0.00%	Yes	38.30	38.30	38.30	0.00%	Yes
W14	R04	Zone 04	Pass	29.90	29.90	0.00%	Yes	38.30	38.30	38.30	0.00%	Yes
W14	R05	Zone 05	Pass	29.40	29.40	0.00%	Yes	35.40	35.40	35.40	0.00%	Yes
W14	R06	Zone 06	Pass	31.50	31.50	0.00%	Yes	35.10	35.10	35.10	0.00%	Yes
W14	R07	Zone 07	Pass	31.20	31.20	0.00%	Yes	33.50	33.50	33.50	0.00%	Yes
W14	R08	Zone 08	Pass	30.50	30.50	0.00%	Yes	32.00	32.00	32.00	0.00%	Yes
W14	R09	Zone 09	Pass	30.40	30.40	0.00%	Yes	33.20	33.20	33.20	0.00%	Yes
W14	R10	Zone 10	Pass	30.60	30.60	0.00%	Yes	34.60	34.60	34.60	0.00%	Yes
W14	R11	Zone 11	Pass	29.90	29.90	0.00%	Yes	40.60	40.60	40.60	0.00%	Yes
W14	R12	Zone 12	Pass	30.00	30.00	0.00%	Yes	40.70	40.70	40.70	0.00%	Yes
W14	R13	Zone 13	Pass	30.80	30.80	0.00%	Yes	38.20	38.20	38.20	0.00%	Yes
W14	R14	Zone 14	Pass	31.10	31.10	0.00%	Yes	39.00	39.00	39.00	0.00%	Yes
W14	R15	Zone 15	Pass	30.40	30.40	0.00%	Yes	30.40	30.40	30.40	0.00%	Yes
W14	R16	Zone 16	Pass	35.30	35.30	0.00%	Yes	55.90	55.90	55.90	0.00%	Yes
<b>Result W14</b>			<b>Pass</b>	<b>31.16</b>	<b>31.16</b>	<b>0.00%</b>		<b>39.59</b>	<b>39.59</b>	<b>39.59</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>
<b>W15 Standard Design All Electric in All CZs for Prototype S2700ft2</b>								<b>Standard = Proposed for this test</b>				
W15	R01	Zone 01	Pass	34.80	34.80	0.00%	Yes	56.50	56.50	56.50	0.00%	Yes
W15	R02	Zone 02	Pass	28.50	28.50	0.00%	Yes	40.40	40.40	40.40	0.00%	Yes
W15	R03	Zone 03	Pass	27.70	27.70	0.00%	Yes	34.90	34.90	34.90	0.00%	Yes
W15	R04	Zone 04	Pass	28.70	28.70	0.00%	Yes	36.40	36.40	36.40	0.00%	Yes
W15	R05	Zone 05	Pass	27.30	27.30	0.00%	Yes	32.00	32.00	32.00	0.00%	Yes
W15	R06	Zone 06	Pass	30.80	30.80	0.00%	Yes	34.70	34.70	34.70	0.00%	Yes
W15	R07	Zone 07	Pass	30.70	30.70	0.00%	Yes	33.20	33.20	33.20	0.00%	Yes
W15	R08	Zone 08	Pass	29.90	29.90	0.00%	Yes	31.90	31.90	31.90	0.00%	Yes
W15	R09	Zone 09	Pass	29.60	29.60	0.00%	Yes	32.80	32.80	32.80	0.00%	Yes
W15	R10	Zone 10	Pass	29.40	29.40	0.00%	Yes	33.70	33.70	33.70	0.00%	Yes
W15	R11	Zone 11	Pass	28.40	28.40	0.00%	Yes	38.60	38.60	38.60	0.00%	Yes
W15	R12	Zone 12	Pass	28.50	28.50	0.00%	Yes	38.70	38.70	38.70	0.00%	Yes
W15	R13	Zone 13	Pass	29.40	29.40	0.00%	Yes	37.00	37.00	37.00	0.00%	Yes
W15	R14	Zone 14	Pass	29.20	29.20	0.00%	Yes	36.70	36.70	36.70	0.00%	Yes
W15	R15	Zone 15	Pass	29.00	29.00	0.00%	Yes	29.60	29.60	29.60	0.00%	Yes
W15	R16	Zone 16	Pass	32.90	32.90	0.00%	Yes	51.70	51.70	51.70	0.00%	Yes
<b>Result W15</b>			<b>Pass</b>	<b>29.68</b>	<b>29.68</b>	<b>0.00%</b>		<b>37.43</b>	<b>37.43</b>	<b>37.43</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>
<b>W17 Proposed Design All Electric in All CZs for Prototype P2100ft2</b>								<b>Standard = V14 Standard for this test</b>				
W17	R01	Zone 01	Pass	36.90	36.90	0.00%	Yes	64.10	64.10	64.10	0.00%	Yes
W17	R02	Zone 02	Pass	30.00	30.00	0.00%	Yes	44.10	44.10	44.10	0.00%	Yes
W17	R03	Zone 03	Pass	28.60	28.60	0.00%	Yes	38.30	38.30	38.30	0.00%	Yes
W17	R04	Zone 04	Pass	29.00	29.00	0.00%	Yes	38.30	38.30	38.30	0.00%	Yes
W17	R05	Zone 05	Pass	27.90	27.90	0.00%	Yes	35.40	35.40	35.40	0.00%	Yes
W17	R06	Zone 06	Pass	30.70	30.70	0.00%	Yes	35.10	35.10	35.10	0.00%	Yes
W17	R07	Zone 07	Pass	30.40	30.40	0.00%	Yes	33.50	33.50	33.50	0.00%	Yes

## Comparison between Reference & Candidate Software (EDR1 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
W17	R08	Zone 08	Pass	29.60	29.60	0.00%	Yes	32.00	32.00	32.00	0.00%	Yes
W17	R09	Zone 09	Pass	29.30	29.30	0.00%	Yes	33.20	33.20	33.20	0.00%	Yes
W17	R10	Zone 10	Pass	29.50	29.50	0.00%	Yes	34.60	34.60	34.60	0.00%	Yes
W17	R11	Zone 11	Pass	29.20	29.20	0.00%	Yes	40.60	40.60	40.60	0.00%	Yes
W17	R12	Zone 12	Pass	29.10	29.10	0.00%	Yes	40.70	40.70	40.70	0.00%	Yes
W17	R13	Zone 13	Pass	30.10	30.10	0.00%	Yes	38.20	38.20	38.20	0.00%	Yes
W17	R14	Zone 14	Pass	29.80	29.80	0.00%	Yes	39.00	39.00	39.00	0.00%	Yes
W17	R15	Zone 15	Pass	29.90	29.90	0.00%	Yes	30.40	30.40	30.40	0.00%	Yes
W17	R16	Zone 16	Pass	34.00	34.00	0.00%	Yes	55.90	55.90	55.90	0.00%	Yes
<b>Result W17</b>			<b>Pass</b>	<b>30.25</b>	<b>30.25</b>	<b>0.00%</b>		<b>39.59</b>	<b>39.59</b>	<b>39.59</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>

## Comparison between Reference & Candidate Software (EDR1 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W18</b>	<b>Proposed Design All Electric in All CZs for Prototype P2700ft2</b>			<b>Standard = V15 Standard for this test</b>								
W18	R01	Zone 01	Pass	34.10	34.10	0.00%	Yes	56.50	56.50	56.50	0.00%	Yes
W18	R02	Zone 02	Pass	27.80	27.80	0.00%	Yes	40.40	40.40	40.40	0.00%	Yes
W18	R03	Zone 03	Pass	26.50	26.50	0.00%	Yes	34.90	34.90	34.90	0.00%	Yes
W18	R04	Zone 04	Pass	27.60	27.60	0.00%	Yes	36.40	36.40	36.40	0.00%	Yes
W18	R05	Zone 05	Pass	25.80	25.80	0.00%	Yes	32.00	32.00	32.00	0.00%	Yes
W18	R06	Zone 06	Pass	29.80	29.80	0.00%	Yes	34.70	34.70	34.70	0.00%	Yes
W18	R07	Zone 07	Pass	29.80	29.80	0.00%	Yes	33.20	33.20	33.20	0.00%	Yes
W18	R08	Zone 08	Pass	28.90	28.90	0.00%	Yes	31.90	31.90	31.90	0.00%	Yes
W18	R09	Zone 09	Pass	28.40	28.40	0.00%	Yes	32.80	32.80	32.80	0.00%	Yes
W18	R10	Zone 10	Pass	28.10	28.10	0.00%	Yes	33.70	33.70	33.70	0.00%	Yes
W18	R11	Zone 11	Pass	27.40	27.40	0.00%	Yes	38.60	38.60	38.60	0.00%	Yes
W18	R12	Zone 12	Pass	27.60	27.60	0.00%	Yes	38.70	38.70	38.70	0.00%	Yes
W18	R13	Zone 13	Pass	28.50	28.50	0.00%	Yes	37.00	37.00	37.00	0.00%	Yes
W18	R14	Zone 14	Pass	27.70	27.70	0.00%	Yes	36.70	36.70	36.70	0.00%	Yes
W18	R15	Zone 15	Pass	28.30	28.30	0.00%	Yes	29.60	29.60	29.60	0.00%	Yes
W18	R16	Zone 16	Pass	31.40	31.40	0.00%	Yes	51.70	51.70	51.70	0.00%	Yes
<b>Result W18</b>			<b>Pass</b>	<b>28.61</b>	<b>28.61</b>	<b>0.00%</b>		<b>37.43</b>	<b>37.43</b>	<b>37.43</b>	<b>0.00%</b>	<b>Min Max</b>
<b>Ave</b>												

## Comparison between Reference & Candidate Software (EDR1 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W20 PV in CZ12 for Prototype P2100ft2</b>								<b>Standard = V04R12</b>				
W20	R01	Proposed Design	Pass	41.30	41.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W20	R02	Maximum PV	Pass	40.50	40.50	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W20	R03	2 kWdc PV	Pass	42.30	42.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W20	R04	Premium Module	Pass	41.30	41.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W20	R05	Tracking (one axis) Array	Pass	38.50	38.50	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W20	R06	Tracking (two axis) Array	Pass	37.30	37.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W20	R07	Microinverters	Pass	41.30	41.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W20	R08	DC Power Optimizers	Pass	41.30	41.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W20	R09	Maximum PV Premium Fixed Microinverter	Pass	40.50	40.50	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W20	R10	Maximum PV Premium Tracking (two axis) DC Power Optimizers	Pass	38.40	38.40	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
<b>Result W20</b>			Pass	<b>40.27</b>	<b>40.27</b>	<b>0.00%</b>		<b>43.10</b>	<b>43.10</b>	<b>43.10</b>	<b>0.00%</b>	<b>Min Ave</b>
<b>W21 PV, Battery and Target EDR in CZ12 for Prototype P2100ft2</b>								<b>Standard = V04R12</b>				
W21	R01	Proposed Design	Pass	41.30	41.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W21	R02	Two 1 kWdc PV	Pass	42.30	42.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W21	R03	Two 1 kWdc PV 90/270 Azm/18.43 Tilt/97 Eff	Pass	42.40	42.40	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W21	R04	Reduced PV 0 kWdc < 80 ft2 area	Pass	44.70	44.70	0.00%	Yes	46.40	46.40	46.40	0.00%	Yes
W21	R05	14 kWh Battery Basic	Pass	32.80	32.80	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W21	R06	14 kWh Battery TOU	Fail	32.20	31.90	-0.93%	No	43.10	43.10	43.10	0.00%	Yes
W21	R07	14 kWh Battery Advanced	Pass	32.40	32.40	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W21	R08	Self Utilization Credit	Pass	32.80	32.80	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W21	R09	Self Utilization Credit Allow Excess PV	Pass	29.30	29.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
<b>Result W21</b>			Fail	<b>36.69</b>	<b>36.66</b>	<b>-0.09%</b>		<b>43.47</b>	<b>43.47</b>	<b>43.47</b>	<b>0.00%</b>	<b>Min Ave</b>
<b>W22 Verified and Buried Ducts in CZ12 for Prototype P2100ft2</b>								<b>Standard = V04R12</b>				
W22	R01	Proposed Design	Pass	41.30	41.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W22	R02	Verified equal to default ducts	Pass	41.30	41.30	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W22	R03	Buried R-60	Pass	40.70	40.70	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W22	R04	Buried R-60/Ducts Half Length	Pass	40.20	40.20	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W22	R05	Buried R-60/Ducts R-6	Pass	40.70	40.70	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W22	R06	Buried R-60/Duct Diameters 8, 4, 7, 6	Pass	40.00	40.00	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W22	R07	Buried R-60/Duct Diameters 8, 4, 7, 6/Attic R-49, R-43, R-40, R-38	Pass	40.00	40.00	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W22	R08	Buried R-60/Duct Diameters 8, 4, 7, 6/Attic Cellulose	Pass	40.00	40.00	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W22	R09	Buried R-60/Ducts Half Length/Ceiling R-60	Pass	39.60	39.60	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
W22	R10	Buried R-60/Ducts Half Length/Ceiling R-60/No below Deck Ins	Pass	41.10	41.10	0.00%	Yes	43.10	43.10	43.10	0.00%	Yes
<b>Result W22</b>			Pass	<b>40.49</b>	<b>40.49</b>	<b>0.00%</b>		<b>43.10</b>	<b>43.10</b>	<b>43.10</b>	<b>0.00%</b>	<b>Min Ave</b>

## Summary of Residential ACM Tests (EDR2 total)

Comparison Date:	6/2/2022
Comparison Author:	Alea German
Candidate Software:	CBECC-Res 2022_0_1
Reference Software:	CBECC-Res 2022 SVN2215
Type of Software:	Reference
Single Family:	Yes
Multi Family:	No
Newly Constructed:	Yes
Additions Alterations:	Yes
Units for Summary:	EDR2 total
Tolerance:	0.04

Test	Pass/ Fail	Average Reference EDR2 total	Average Candidate EDR2 total	Description
W01	Pass	34.50	34.50	Standard Design in All CZs for Prototype S2100ft2
W02	Pass	32.51	32.51	Standard Design in All CZs for Prototype S2700ft2
W04	Pass	32.75	32.75	Proposed Design in All CZs for Prototype P2100ft2
W05	Pass	30.69	30.69	Proposed Design in All CZs for Prototype P2700ft2
W07	Pass	32.87	32.87	Common Measures in CZ12 for Prototype P2100ft2
W08	Pass	34.83	34.83	Water Heating in CZ12 for Prototype P2100ft2
W09	Pass	34.52	34.52	Multiple Orientation in CZ12 for Prototype S2100ft2/P2100ft2
W11	Pass	34.38	34.38	Source Energy & Baseline in CZ03 for Prototype P2100ft2
W12	Pass	0.00	0.00	E+A+A Base & Windows in CZ12 for Prototype P1665ft2
W13	Pass	0.00	0.00	E+A+A Walls & HVAC in CZ12 for Prototype P1665ft2
W14	Pass	35.64	35.64	Standard Design All Electric in All CZs for Prototype S2100ft2
W15	Pass	33.46	33.46	Standard Design All Electric in All CZs for Prototype S2700ft2
W17	Pass	34.04	34.04	Proposed Design All Electric in All CZs for Prototype P2100ft2
W18	Pass	31.79	31.79	Proposed Design All Electric in All CZs for Prototype P2700ft2
W20	Pass	29.33	29.33	PV in CZ12 for Prototype P2100ft2
W21	Fail	27.63	27.70	PV, Battery and Target EDR in CZ12 for Prototype P2100ft2
W22	Pass	31.38	31.38	Verified and Buried Ducts in CZ12 for Prototype P2100ft2

## Comparison between Reference & Candidate Software (EDR2 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W01 Standard Design in All CZs for Prototype S2100ft2</b>								<b>Standard = Proposed for this test</b>				
W01	R01	Zone 01	Pass	57.00	57.00	0.00%	Yes	57.00	57.00	57.00	0.00%	Yes
W01	R02	Zone 02	Pass	39.50	39.50	0.00%	Yes	39.50	39.50	39.50	0.00%	Yes
W01	R03	Zone 03	Pass	37.20	37.20	0.00%	Yes	37.20	37.20	37.20	0.00%	Yes
W01	R04	Zone 04	Pass	34.90	34.90	0.00%	Yes	34.90	34.90	34.90	0.00%	Yes
W01	R05	Zone 05	Pass	34.60	34.60	0.00%	Yes	34.60	34.60	34.60	0.00%	Yes
W01	R06	Zone 06	Pass	31.30	31.30	0.00%	Yes	31.30	31.30	31.30	0.00%	Yes
W01	R07	Zone 07	Pass	30.80	30.80	0.00%	Yes	30.80	30.80	30.80	0.00%	Yes
W01	R08	Zone 08	Pass	25.70	25.70	0.00%	Yes	25.70	25.70	25.70	0.00%	Yes
W01	R09	Zone 09	Pass	27.80	27.80	0.00%	Yes	27.80	27.80	27.80	0.00%	Yes
W01	R10	Zone 10	Pass	28.40	28.40	0.00%	Yes	28.40	28.40	28.40	0.00%	Yes
W01	R11	Zone 11	Pass	33.50	33.50	0.00%	Yes	33.50	33.50	33.50	0.00%	Yes
W01	R12	Zone 12	Pass	34.50	34.50	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W01	R13	Zone 13	Pass	31.70	31.70	0.00%	Yes	31.70	31.70	31.70	0.00%	Yes
W01	R14	Zone 14	Pass	32.70	32.70	0.00%	Yes	32.70	32.70	32.70	0.00%	Yes
W01	R15	Zone 15	Pass	22.20	22.20	0.00%	Yes	22.20	22.20	22.20	0.00%	Yes
W01	R16	Zone 16	Pass	50.20	50.20	0.00%	Yes	50.20	50.20	50.20	0.00%	Yes
<b>Result W01</b>			<b>Pass</b>	<b>34.50</b>	<b>34.50</b>	<b>0.00%</b>		<b>34.50</b>	<b>34.50</b>	<b>34.50</b>	<b>0.00%</b>	<b>Ave</b>
												<b>Min</b>
												<b>Max</b>
<b>W02 Standard Design in All CZs for Prototype S2700ft2</b>								<b>Standard = Proposed for this test</b>				
W02	R01	Zone 01	Pass	51.00	51.00	0.00%	Yes	51.00	51.00	51.00	0.00%	Yes
W02	R02	Zone 02	Pass	37.10	37.10	0.00%	Yes	37.10	37.10	37.10	0.00%	Yes
W02	R03	Zone 03	Pass	34.00	34.00	0.00%	Yes	34.00	34.00	34.00	0.00%	Yes
W02	R04	Zone 04	Pass	33.00	33.00	0.00%	Yes	33.00	33.00	33.00	0.00%	Yes
W02	R05	Zone 05	Pass	32.20	32.20	0.00%	Yes	32.20	32.20	32.20	0.00%	Yes
W02	R06	Zone 06	Pass	30.80	30.80	0.00%	Yes	30.80	30.80	30.80	0.00%	Yes
W02	R07	Zone 07	Pass	30.30	30.30	0.00%	Yes	30.30	30.30	30.30	0.00%	Yes
W02	R08	Zone 08	Pass	25.10	25.10	0.00%	Yes	25.10	25.10	25.10	0.00%	Yes
W02	R09	Zone 09	Pass	27.10	27.10	0.00%	Yes	27.10	27.10	27.10	0.00%	Yes
W02	R10	Zone 10	Pass	27.40	27.40	0.00%	Yes	27.40	27.40	27.40	0.00%	Yes
W02	R11	Zone 11	Pass	31.50	31.50	0.00%	Yes	31.50	31.50	31.50	0.00%	Yes
W02	R12	Zone 12	Pass	33.10	33.10	0.00%	Yes	33.10	33.10	33.10	0.00%	Yes
W02	R13	Zone 13	Pass	29.70	29.70	0.00%	Yes	29.70	29.70	29.70	0.00%	Yes
W02	R14	Zone 14	Pass	30.40	30.40	0.00%	Yes	30.40	30.40	30.40	0.00%	Yes
W02	R15	Zone 15	Pass	21.20	21.20	0.00%	Yes	21.20	21.20	21.20	0.00%	Yes
W02	R16	Zone 16	Pass	46.30	46.30	0.00%	Yes	46.30	46.30	46.30	0.00%	Yes
<b>Result W02</b>			<b>Pass</b>	<b>32.51</b>	<b>32.51</b>	<b>0.00%</b>		<b>32.51</b>	<b>32.51</b>	<b>32.51</b>	<b>0.00%</b>	<b>Ave</b>
												<b>Min</b>
												<b>Max</b>
<b>W04 Proposed Design in All CZs for Prototype P2100ft2</b>								<b>Standard = V01 Standard for this test</b>				
W04	R01	Zone 01	Pass	56.80	56.80	0.00%	Yes	57.00	57.00	57.00	0.00%	Yes
W04	R02	Zone 02	Pass	35.70	35.70	0.00%	Yes	39.50	39.50	39.50	0.00%	Yes
W04	R03	Zone 03	Pass	35.70	35.70	0.00%	Yes	37.20	37.20	37.20	0.00%	Yes
W04	R04	Zone 04	Pass	32.90	32.90	0.00%	Yes	34.90	34.90	34.90	0.00%	Yes
W04	R05	Zone 05	Pass	32.90	32.90	0.00%	Yes	34.60	34.60	34.60	0.00%	Yes
W04	R06	Zone 06	Pass	29.80	29.80	0.00%	Yes	31.30	31.30	31.30	0.00%	Yes
W04	R07	Zone 07	Pass	29.50	29.50	0.00%	Yes	30.80	30.80	30.80	0.00%	Yes



## Comparison between Reference & Candidate Software (EDR2 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
W04	R08	Zone 08	Pass	24.10	24.10	0.00%	Yes	25.70	25.70	25.70	0.00%	Yes
W04	R09	Zone 09	Pass	26.00	26.00	0.00%	Yes	27.80	27.80	27.80	0.00%	Yes
W04	R10	Zone 10	Pass	26.60	26.60	0.00%	Yes	28.40	28.40	28.40	0.00%	Yes
W04	R11	Zone 11	Pass	31.50	31.50	0.00%	Yes	33.50	33.50	33.50	0.00%	Yes
W04	R12	Zone 12	Pass	32.00	32.00	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W04	R13	Zone 13	Pass	30.30	30.30	0.00%	Yes	31.70	31.70	31.70	0.00%	Yes
W04	R14	Zone 14	Pass	30.50	30.50	0.00%	Yes	32.70	32.70	32.70	0.00%	Yes
W04	R15	Zone 15	Pass	21.20	21.20	0.00%	Yes	22.20	22.20	22.20	0.00%	Yes
W04	R16	Zone 16	Pass	48.50	48.50	0.00%	Yes	50.20	50.20	50.20	0.00%	Yes
<b>Result W04</b>			<b>Pass</b>	<b>32.75</b>	<b>32.75</b>	<b>0.00%</b>		<b>34.50</b>	<b>34.50</b>	<b>34.50</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>

## Comparison between Reference & Candidate Software (EDR2 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W05 Proposed Design in All CZs for Prototype P2700ft2</b>								<b>Standard = V02 Standard for this test</b>				
W05	R01	Zone 01	Pass	50.50	50.50	0.00%	Yes	51.00	51.00	51.00	0.00%	Yes
W05	R02	Zone 02	Pass	34.70	34.70	0.00%	Yes	37.10	37.10	37.10	0.00%	Yes
W05	R03	Zone 03	Pass	32.00	32.00	0.00%	Yes	34.00	34.00	34.00	0.00%	Yes
W05	R04	Zone 04	Pass	31.00	31.00	0.00%	Yes	33.00	33.00	33.00	0.00%	Yes
W05	R05	Zone 05	Pass	30.60	30.60	0.00%	Yes	32.20	32.20	32.20	0.00%	Yes
W05	R06	Zone 06	Pass	29.00	29.00	0.00%	Yes	30.80	30.80	30.80	0.00%	Yes
W05	R07	Zone 07	Pass	28.90	28.90	0.00%	Yes	30.30	30.30	30.30	0.00%	Yes
W05	R08	Zone 08	Pass	23.30	23.30	0.00%	Yes	25.10	25.10	25.10	0.00%	Yes
W05	R09	Zone 09	Pass	25.10	25.10	0.00%	Yes	27.10	27.10	27.10	0.00%	Yes
W05	R10	Zone 10	Pass	25.40	25.40	0.00%	Yes	27.40	27.40	27.40	0.00%	Yes
W05	R11	Zone 11	Pass	29.40	29.40	0.00%	Yes	31.50	31.50	31.50	0.00%	Yes
W05	R12	Zone 12	Pass	30.80	30.80	0.00%	Yes	33.10	33.10	33.10	0.00%	Yes
W05	R13	Zone 13	Pass	28.00	28.00	0.00%	Yes	29.70	29.70	29.70	0.00%	Yes
W05	R14	Zone 14	Pass	28.10	28.10	0.00%	Yes	30.40	30.40	30.40	0.00%	Yes
W05	R15	Zone 15	Pass	19.90	19.90	0.00%	Yes	21.20	21.20	21.20	0.00%	Yes
W05	R16	Zone 16	Pass	44.40	44.40	0.00%	Yes	46.30	46.30	46.30	0.00%	Yes
<b>Result W05</b>			<b>Pass</b>	<b>30.69</b>	<b>30.69</b>	<b>0.00%</b>		<b>32.51</b>	<b>32.51</b>	<b>32.51</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>

## Comparison between Reference & Candidate Software (EDR2 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W07 Common Measures in CZ12 for Prototype P2100ft2</b>								<b>Standard = V01 Standard for this test</b>				
W07	R01	Proposed Design	Pass	32.00	32.00	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W07	R02	Fenestration U 0.40/S 0.40	Pass	33.50	33.50	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W07	R03	Wall R13/Roof Deck Above R6/Roof Deck Below R0	Pass	35.30	35.30	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W07	R04	Ceiling R49 /Roof Deck Below R0/Radiant Barrier	Pass	35.70	35.70	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W07	R05	Furnace AFUE 92	Pass	30.60	30.60	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W07	R06	Air Conditioner SEER 16/EER 14	Pass	31.20	31.20	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W07	R07	No Cool Vent	Pass	32.60	32.60	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W07	R08	Ducts 2% Leakage	Pass	31.70	31.70	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W07	R09	No Quality Insulation Installation	Pass	34.50	34.50	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W07	R10	Air Leakage ACH50 2.0	Pass	31.60	31.60	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W07	R11	Heat pump HSPF 9 SEER 16/EER 14	Pass	28.30	28.30	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
<b>Result W07</b>			Pass	<b>32.87</b>	<b>32.87</b>	<b>0.00%</b>		<b>34.50</b>	<b>34.50</b>	<b>34.50</b>	<b>0.00%</b>	Min Ave Max
<b>W08 Water Heating in CZ12 for Prototype P2100ft2</b>								<b>Standard = V01 Standard for this test</b>				
W08	R01	Proposed Design	Pass	32.00	32.00	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W08	R02	Basic Compact Distribution	Pass	31.70	31.70	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W08	R03	Gas Consumer Instantaneous (UEF)/UEF 0.96/0 gal	Pass	33.00	33.00	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W08	R04	Gas Consumer Storage (UEF)/UEF 0.61/50 gal	Pass	38.00	38.00	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W08	R05	Gas Commercial Instantaneous (TE)/TE 0.95/0 gal	Pass	32.60	32.60	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W08	R06	Gas Commercial Storage (TE & SBL)/TE 0.82/SBL 0.02/98 gal	Pass	40.00	40.00	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W08	R07	Electric Resistance Consumer Storage (UEF)/UEF 0.92/50 gal in Garage	Pass	39.00	39.00	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W08	R08	Heat Pump NEEA Rated/Sanden/43 gal	Pass	30.20	30.20	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W08	R09	2 Water Heaters Using Multiplier	Pass	35.90	35.90	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W08	R10	2 Water Heaters Using 2 Entries	Pass	35.90	35.90	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
<b>Result W08</b>			Pass	<b>34.83</b>	<b>34.83</b>	<b>0.00%</b>		<b>34.50</b>	<b>34.50</b>	<b>34.50</b>	<b>0.00%</b>	Min Ave Max
<b>W09 Multiple Orientation in CZ12 for Prototype S2100ft2/P2100ft2</b>								<b>Standard = V01 Standard for this test</b>				
W09	R01	Single Standard Front 45	Pass	35.30	35.30	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W09	R02	North Standard	Pass	34.50	34.50	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W09	R03	East Standard	Pass	34.50	34.50	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W09	R04	South Standard	Pass	34.50	34.50	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W09	R05	West Standard	Pass	34.50	34.50	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W09	R06	Single Proposed Front 45	Pass	34.70	34.70	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W09	R07	North Proposed	Pass	32.00	32.00	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W09	R08	East Proposed	Pass	36.50	36.50	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W09	R09	South Proposed	Pass	33.50	33.50	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W09	R10	West Proposed	Pass	35.20	35.20	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
<b>Result W09</b>			Pass	<b>34.52</b>	<b>34.52</b>	<b>0.00%</b>		<b>34.50</b>	<b>34.50</b>	<b>34.50</b>	<b>0.00%</b>	Min Ave Max
<b>Page 5 of 11</b>												
<b>W11 Source Energy &amp; Baseline in CZ03 for Prototype P2100ft2</b>								<b>Standard = Varies for this test</b>				
W11	R01	Proposed Design	Pass	35.70	35.70	0.00%	Yes	37.20	37.20	37.20	0.00%	Yes
W11	R02	Proposed Design Propane	Pass	34.60	34.60	0.00%	Yes	35.70	35.70	35.70	0.00%	Yes
W11	R03	Heatpump DHW	Pass	32.80	32.80	0.00%	Yes	36.10	36.10	36.10	0.00%	Yes
W11	R04	Heatpump DHW Propane	Pass	26.10	26.10	0.00%	Yes	35.30	35.30	35.30	0.00%	Yes
W11	R05	Gas Furnace	Pass	37.30	37.30	0.00%	Yes	37.20	37.20	37.20	0.00%	Yes

## Comparison between Reference & Candidate Software (EDR2 total)

Comparison Date: 6/2/2022  
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Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
W11	R06	Propane Furnace	Pass	41.30	41.30	0.00%	Yes	35.70	35.70	35.70	0.00%	Yes
W11	R07	Heatpump DHW & Gas Furnace	Pass	34.30	34.30	0.00%	Yes	36.10	36.10	36.10	0.00%	Yes
W11	R08	Heatpump DHW & Propane Furnace	Pass	32.90	32.90	0.00%	Yes	35.30	35.30	35.30	0.00%	Yes
<b>Result W11</b>			Pass	<b>34.38</b>	<b>34.38</b>	<b>0.00%</b>		<b>36.08</b>	<b>36.08</b>	<b>36.08</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>
<b>W12</b>	<b>E+A+A Base &amp; Windows in CZ12 for Prototype P1665ft2</b>							<b>Standard = Varies for this test</b>				
W12	R01	E 1440ft2 as New Construction	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R02	E 1440ft2 as Addition/Alteration	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R03	EA 1665ft2	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R04	EAA Ceiling R49 Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R05	EAA Ceiling R49 Verified Wind U0.41/S0.36	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R06	EAA Ceiling R49 Verified Wind U0.41/S0.36 Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R07	EAA Ceiling R49 Verified Wind U0.40/S0.35	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R08	EAA Ceiling R49 Verified Wind U0.40/S0.35 Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R09	EAA Ceiling R49 Verified Wind U0.39/S0.34	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W12	R10	EAA Ceiling R49 Verified Wind U0.39/S0.34 Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
<b>Result W12</b>			Pass	<b>0.00</b>	<b>0.00</b>	<b>0.00%</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>

## Comparison between Reference & Candidate Software (EDR2 total)

Comparison Date: 6/2/2022  
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Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W13</b>	<b>E+A+A Walls &amp; HVAC in CZ12 for Prototype P1665ft2</b>							<b>Standard = Varies for this test</b>				
W13	R01	EAA Ceiling R49 Verified Wall R11	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R02	EAA Ceiling R49 Verified Wall R11 Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R03	EAA Ceiling R49 Verified Wall R13	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R04	EAA Ceiling R49 Verified Wall R13 Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R05	EAA Ceiling R49 Verified HVAC Worse	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R06	EAA Ceiling R49 Verified HVAC Worse Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R07	EAA Ceiling R49 Verified HVAC Equal	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R08	EAA Ceiling R49 Verified HVAC Equal Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R09	EAA Ceiling R49 Verified HVAC Better	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
W13	R10	EAA Ceiling R49 Verified HVAC Better Verified	Pass	0.00	0.00	0.00%	Yes	0.00	0.00	0.00	0.00%	Yes
<b>Result W13</b>			Pass	<b>0.00</b>	<b>0.00</b>	<b>0.00%</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00%</b>	<b>Min Ave Max</b>

## Comparison between Reference & Candidate Software (EDR2 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W14 Standard Design All Electric in All CZs for Prototype S2100ft2</b>								<b>Standard = Proposed for this test</b>				
W14	R01	Zone 01	Pass	55.90	55.90	0.00%	Yes	60.20	60.20	60.20	0.00%	Yes
W14	R02	Zone 02	Pass	38.70	38.70	0.00%	Yes	42.00	42.00	42.00	0.00%	Yes
W14	R03	Zone 03	Pass	37.30	37.30	0.00%	Yes	39.40	39.40	39.40	0.00%	Yes
W14	R04	Zone 04	Pass	34.30	34.30	0.00%	Yes	36.50	36.50	36.50	0.00%	Yes
W14	R05	Zone 05	Pass	37.40	37.40	0.00%	Yes	37.90	37.90	37.90	0.00%	Yes
W14	R06	Zone 06	Pass	34.00	34.00	0.00%	Yes	34.90	34.90	34.90	0.00%	Yes
W14	R07	Zone 07	Pass	33.70	33.70	0.00%	Yes	34.30	34.30	34.30	0.00%	Yes
W14	R08	Zone 08	Pass	28.20	28.20	0.00%	Yes	28.40	28.40	28.40	0.00%	Yes
W14	R09	Zone 09	Pass	30.00	30.00	0.00%	Yes	30.50	30.50	30.50	0.00%	Yes
W14	R10	Zone 10	Pass	30.20	30.20	0.00%	Yes	30.90	30.90	30.90	0.00%	Yes
W14	R11	Zone 11	Pass	33.10	33.10	0.00%	Yes	35.50	35.50	35.50	0.00%	Yes
W14	R12	Zone 12	Pass	34.10	34.10	0.00%	Yes	36.80	36.80	36.80	0.00%	Yes
W14	R13	Zone 13	Pass	31.30	31.30	0.00%	Yes	32.70	32.70	32.70	0.00%	Yes
W14	R14	Zone 14	Pass	32.70	32.70	0.00%	Yes	33.80	33.80	33.80	0.00%	Yes
W14	R15	Zone 15	Pass	23.90	23.90	0.00%	Yes	23.80	23.80	23.80	0.00%	Yes
W14	R16	Zone 16	Pass	55.40	55.40	0.00%	Yes	53.00	53.00	53.00	0.00%	Yes
<b>Result W14</b>			<b>Pass</b>	<b>35.64</b>	<b>35.64</b>	<b>0.00%</b>		<b>36.91</b>	<b>36.91</b>	<b>36.91</b>	<b>0.00%</b>	<b>Min Ave Max</b>
<b>W15 Standard Design All Electric in All CZs for Prototype S2700ft2</b>								<b>Standard = Proposed for this test</b>				
W15	R01	Zone 01	Pass	50.60	50.60	0.00%	Yes	53.80	53.80	53.80	0.00%	Yes
W15	R02	Zone 02	Pass	36.20	36.20	0.00%	Yes	39.20	39.20	39.20	0.00%	Yes
W15	R03	Zone 03	Pass	34.40	34.40	0.00%	Yes	36.30	36.30	36.30	0.00%	Yes
W15	R04	Zone 04	Pass	32.60	32.60	0.00%	Yes	34.40	34.40	34.40	0.00%	Yes
W15	R05	Zone 05	Pass	34.80	34.80	0.00%	Yes	35.10	35.10	35.10	0.00%	Yes
W15	R06	Zone 06	Pass	32.60	32.60	0.00%	Yes	33.60	33.60	33.60	0.00%	Yes
W15	R07	Zone 07	Pass	32.60	32.60	0.00%	Yes	33.30	33.30	33.30	0.00%	Yes
W15	R08	Zone 08	Pass	27.00	27.00	0.00%	Yes	27.40	27.40	27.40	0.00%	Yes
W15	R09	Zone 09	Pass	28.60	28.60	0.00%	Yes	29.30	29.30	29.30	0.00%	Yes
W15	R10	Zone 10	Pass	28.70	28.70	0.00%	Yes	29.40	29.40	29.40	0.00%	Yes
W15	R11	Zone 11	Pass	30.80	30.80	0.00%	Yes	33.10	33.10	33.10	0.00%	Yes
W15	R12	Zone 12	Pass	32.60	32.60	0.00%	Yes	34.90	34.90	34.90	0.00%	Yes
W15	R13	Zone 13	Pass	29.40	29.40	0.00%	Yes	30.80	30.80	30.80	0.00%	Yes
W15	R14	Zone 14	Pass	30.30	30.30	0.00%	Yes	31.40	31.40	31.40	0.00%	Yes
W15	R15	Zone 15	Pass	22.50	22.50	0.00%	Yes	22.60	22.60	22.60	0.00%	Yes
W15	R16	Zone 16	Pass	51.60	51.60	0.00%	Yes	49.00	49.00	49.00	0.00%	Yes
<b>Result W15</b>			<b>Pass</b>	<b>33.46</b>	<b>33.46</b>	<b>0.00%</b>		<b>34.60</b>	<b>34.60</b>	<b>34.60</b>	<b>0.00%</b>	<b>Min Ave Max</b>
<b>Page 8 of 11</b>												
<b>W17 Proposed Design All Electric in All CZs for Prototype P2100ft2</b>								<b>Standard = V14 Standard for this test</b>				
W17	R01	Zone 01	Pass	55.00	55.00	0.00%	Yes	60.20	60.20	60.20	0.00%	Yes
W17	R02	Zone 02	Pass	35.30	35.30	0.00%	Yes	42.00	42.00	42.00	0.00%	Yes
W17	R03	Zone 03	Pass	36.00	36.00	0.00%	Yes	39.40	39.40	39.40	0.00%	Yes
W17	R04	Zone 04	Pass	32.40	32.40	0.00%	Yes	36.50	36.50	36.50	0.00%	Yes
W17	R05	Zone 05	Pass	35.90	35.90	0.00%	Yes	37.90	37.90	37.90	0.00%	Yes
W17	R06	Zone 06	Pass	32.90	32.90	0.00%	Yes	34.90	34.90	34.90	0.00%	Yes
W17	R07	Zone 07	Pass	32.70	32.70	0.00%	Yes	34.30	34.30	34.30	0.00%	Yes

## Comparison between Reference & Candidate Software (EDR2 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
W17	R08	Zone 08	Pass	26.80	26.80	0.00%	Yes	28.40	28.40	28.40	0.00%	Yes
W17	R09	Zone 09	Pass	28.30	28.30	0.00%	Yes	30.50	30.50	30.50	0.00%	Yes
W17	R10	Zone 10	Pass	28.60	28.60	0.00%	Yes	30.90	30.90	30.90	0.00%	Yes
W17	R11	Zone 11	Pass	31.50	31.50	0.00%	Yes	35.50	35.50	35.50	0.00%	Yes
W17	R12	Zone 12	Pass	32.00	32.00	0.00%	Yes	36.80	36.80	36.80	0.00%	Yes
W17	R13	Zone 13	Pass	29.90	29.90	0.00%	Yes	32.70	32.70	32.70	0.00%	Yes
W17	R14	Zone 14	Pass	30.70	30.70	0.00%	Yes	33.80	33.80	33.80	0.00%	Yes
W17	R15	Zone 15	Pass	22.90	22.90	0.00%	Yes	23.80	23.80	23.80	0.00%	Yes
W17	R16	Zone 16	Pass	53.70	53.70	0.00%	Yes	53.00	53.00	53.00	0.00%	Yes
<b>Result W17</b>			<b>Pass</b>	<b>34.04</b>	<b>34.04</b>	<b>0.00%</b>		<b>36.91</b>	<b>36.91</b>	<b>36.91</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>

## Comparison between Reference & Candidate Software (EDR2 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
<b>W18 Proposed Design All Electric in All CZs for Prototype P2700ft2</b>								<b>Standard = V15 Standard for this test</b>				
W18	R01	Zone 01	Pass	49.50	49.50	0.00%	Yes	53.80	53.80	53.80	0.00%	Yes
W18	R02	Zone 02	Pass	34.40	34.40	0.00%	Yes	39.20	39.20	39.20	0.00%	Yes
W18	R03	Zone 03	Pass	32.50	32.50	0.00%	Yes	36.30	36.30	36.30	0.00%	Yes
W18	R04	Zone 04	Pass	30.60	30.60	0.00%	Yes	34.40	34.40	34.40	0.00%	Yes
W18	R05	Zone 05	Pass	33.30	33.30	0.00%	Yes	35.10	35.10	35.10	0.00%	Yes
W18	R06	Zone 06	Pass	31.30	31.30	0.00%	Yes	33.60	33.60	33.60	0.00%	Yes
W18	R07	Zone 07	Pass	31.50	31.50	0.00%	Yes	33.30	33.30	33.30	0.00%	Yes
W18	R08	Zone 08	Pass	25.40	25.40	0.00%	Yes	27.40	27.40	27.40	0.00%	Yes
W18	R09	Zone 09	Pass	26.80	26.80	0.00%	Yes	29.30	29.30	29.30	0.00%	Yes
W18	R10	Zone 10	Pass	26.80	26.80	0.00%	Yes	29.40	29.40	29.40	0.00%	Yes
W18	R11	Zone 11	Pass	29.10	29.10	0.00%	Yes	33.10	33.10	33.10	0.00%	Yes
W18	R12	Zone 12	Pass	30.50	30.50	0.00%	Yes	34.90	34.90	34.90	0.00%	Yes
W18	R13	Zone 13	Pass	27.70	27.70	0.00%	Yes	30.80	30.80	30.80	0.00%	Yes
W18	R14	Zone 14	Pass	28.30	28.30	0.00%	Yes	31.40	31.40	31.40	0.00%	Yes
W18	R15	Zone 15	Pass	21.30	21.30	0.00%	Yes	22.60	22.60	22.60	0.00%	Yes
W18	R16	Zone 16	Pass	49.60	49.60	0.00%	Yes	49.00	49.00	49.00	0.00%	Yes
<b>Result W18</b>			<b>Pass</b>	<b>31.79</b>	<b>31.79</b>	<b>0.00%</b>		<b>34.60</b>	<b>34.60</b>	<b>34.60</b>	<b>0.00%</b>	<b>Min</b>
											<b>Ave</b>	<b>Max</b>



## Comparison between Reference & Candidate Software (EDR2 total)

Comparison Date: 6/2/2022  
 Comparison Author: Alea German  
 Candidate Software: CBECC-Res 2022\_0\_1

Test	Run	Description	Pass/Fail	Reference Proposed	Candidate Proposed	Percent Difference	Within Tolerance	Standard Equals	Reference Standard	Candidate Standard	Percent Difference	Within Tolerance
W20 PV in CZ12 for Prototype P2100ft2								Standard = V04R12				
W20	R01	Proposed Design	Pass	32.00	32.00	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W20	R02	Maximum PV	Pass	28.70	28.70	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W20	R03	2 kWdc PV	Pass	36.20	36.20	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W20	R04	Premium Module	Pass	31.90	31.90	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W20	R05	Tracking (one axis) Array	Pass	25.10	25.10	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W20	R06	Tracking (two axis) Array	Pass	21.70	21.70	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W20	R07	Microinverters	Pass	31.70	31.70	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W20	R08	DC Power Optimizers	Pass	31.90	31.90	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W20	R09	Maximum PV Premium Fixed Microinverter	Pass	28.70	28.70	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W20	R10	Maximum PV Premium Tracking (two axis) DC Power Optimizers	Pass	25.40	25.40	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
Result W20			Pass	29.33	29.33	0.00%		34.50	34.50	34.50	0.00%	Min Ave Max
W21 PV, Battery and Target EDR in CZ12 for Prototype P2100ft2								Standard = V04R12				
W21	R01	Proposed Design	Pass	32.00	32.00	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W21	R02	Two 1 kWdc PV	Pass	36.20	36.20	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W21	R03	Two 1 kWdc PV 90/270 Azm/18.43 Tilt/97 Eff	Pass	37.00	37.00	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W21	R04	Reduced PV 0 kWdc < 80 ft2 area	Pass	47.50	47.50	0.00%	Yes	50.00	50.00	50.00	0.00%	Yes
W21	R05	14 kWh Battery Basic	Pass	23.30	23.30	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W21	R06	14 kWh Battery TOU	Fail	20.20	20.80	2.97%	No	34.50	34.50	34.50	0.00%	Yes
W21	R07	14 kWh Battery Advanced	Pass	13.90	13.90	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W21	R08	Self Utilization Credit	Pass	23.30	23.30	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W21	R09	Self Utilization Credit Allow Excess PV	Pass	15.30	15.30	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
Result W21			Fail	27.63	27.70	0.24%		36.22	36.22	36.22	0.00%	Min Ave Max
W22 Verified and Buried Ducts in CZ12 for Prototype P2100ft2								Standard = V04R12				
W22	R01	Proposed Design	Pass	32.00	32.00	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W22	R02	Verified equal to default ducts	Pass	32.00	32.00	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W22	R03	Buried R-60	Pass	31.40	31.40	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W22	R04	Buried R-60/Ducts Half Length	Pass	30.90	30.90	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W22	R05	Buried R-60/Ducts R-6	Pass	31.40	31.40	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W22	R06	Buried R-60/Duct Diameters 8, 4, 7, 6	Pass	30.70	30.70	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W22	R07	Buried R-60/Duct Diameters 8, 4, 7, 6/Attic R-49, R-43, R-40, R-38	Pass	30.70	30.70	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W22	R08	Buried R-60/Duct Diameters 8, 4, 7, 6/Attic Cellulose	Pass	30.70	30.70	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W22	R09	Buried R-60/Ducts Half Length/Ceiling R-60	Pass	30.40	30.40	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
W22	R10	Buried R-60/Ducts Half Length/Ceiling R-60/No below Deck Ins	Pass	33.60	33.60	0.00%	Yes	34.50	34.50	34.50	0.00%	Yes
Result W22			Pass	31.38	31.38	0.00%		34.50	34.50	34.50	0.00%	Min Ave Max

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