

Maryland Buildi



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Device Stocks by Scenario, Sector, and End Use (Space Heating and Water Heating)

* Residential calculations assume one device of each type per household

* Commercial results shown as thousands of square feet where device is used

Scenario	Sector	End Use	Device	Fuel
High Decarbonized Methane	Residential	SH	Air Source Heat Pump	Gas
High Decarbonized Methane	Residential	SH	Heat Pump with Fuel Backup	Gas
High Decarbonized Methane	Residential	SH	Ground Source Heat Pump	Gas
High Decarbonized Methane	Residential	SH	Gas	Gas
High Decarbonized Methane	Residential	SH	Gas	Gas
High Decarbonized Methane	Residential	WH	Air Source Heat Pump	Gas
High Decarbonized Methane	Residential	WH	Gas	Gas
High Decarbonized Methane	Residential	WH	Gas	Gas
High Decarbonized Methane	Commercial	SH	Air Source Heat Pump	Gas
High Decarbonized Methane	Commercial	SH	Heat Pump with Fuel Backup	Gas
High Decarbonized Methane	Commercial	SH	Ground Source Heat Pump	Gas
High Decarbonized Methane	Commercial	SH	Gas	Gas
High Decarbonized Methane	Commercial	SH	Gas	Gas
High Decarbonized Methane	Commercial	WH	Air Source Heat Pump	Gas
High Decarbonized Methane	Commercial	WH	Gas	Gas
High Decarbonized Methane	Commercial	WH	Gas	Gas
High Decarbonized Methane	Residential	SH	Air Source Heat Pump	Fuel Oil
High Decarbonized Methane	Residential	SH	Other	Fuel Oil
High Decarbonized Methane	Residential	WH	Air Source Heat Pump	Fuel Oil
High Decarbonized Methane	Residential	WH	Other	Fuel Oil
High Decarbonized Methane	Commercial	SH	Air Source Heat Pump	Fuel Oil
High Decarbonized Methane	Commercial	SH	Other	Fuel Oil
High Decarbonized Methane	Commercial	WH	Air Source Heat Pump	Fuel Oil
High Decarbonized Methane	Commercial	WH	Other	Fuel Oil
High Decarbonized Methane	Residential	SH	Air Source Heat Pump	Electric
High Decarbonized Methane	Residential	SH	Electric Resistance	Electric
High Decarbonized Methane	Residential	WH	Air Source Heat Pump	Electric
High Decarbonized Methane	Residential	WH	Electric Resistance	Electric
High Decarbonized Methane	Commercial	SH	Air Source Heat Pump	Electric
High Decarbonized Methane	Commercial	SH	Electric Resistance	Electric
High Decarbonized Methane	Commercial	WH	Air Source Heat Pump	Electric
High Decarbonized Methane	Commercial	WH	Electric Resistance	Electric
High Decarbonized Methane	Residential	SH	Air Source Heat Pump	Other
High Decarbonized Methane	Residential	SH	Other	Other
High Decarbonized Methane	Residential	WH	Air Source Heat Pump	Other
High Decarbonized Methane	Residential	WH	Other	Other
High Decarbonized Methane	Commercial	SH	Air Source Heat Pump	Other
High Decarbonized Methane	Commercial	SH	Other	Other
High Decarbonized Methane	Commercial	WH	Air Source Heat Pump	Other
High Decarbonized Methane	Commercial	WH	Other	Other
Electrification with Fuel Backup	Residential	SH	Air Source Heat Pump	Gas
Electrification with Fuel Backup	Residential	SH	Heat Pump with Fuel Backup	Gas
Electrification with Fuel Backup	Residential	SH	Ground Source Heat Pump	Gas
Electrification with Fuel Backup	Residential	SH	Gas	Gas
Electrification with Fuel Backup	Residential	SH	Gas	Gas
Electrification with Fuel Backup	Residential	WH	Air Source Heat Pump	Gas
Electrification with Fuel Backup	Residential	WH	Gas	Gas
Electrification with Fuel Backup	Residential	WH	Gas	Gas
Electrification with Fuel Backup	Commercial	SH	Air Source Heat Pump	Gas
Electrification with Fuel Backup	Commercial	SH	Heat Pump with Fuel Backup	Gas
Electrification with Fuel Backup	Commercial	SH	Ground Source Heat Pump	Gas
Electrification with Fuel Backup	Commercial	SH	Gas	Gas
Electrification with Fuel Backup	Commercial	SH	Gas	Gas
Electrification with Fuel Backup	Commercial	WH	Air Source Heat Pump	Gas

Electrification with Fuel Backup	Commercial	WH	Gas	Gas
Electrification with Fuel Backup	Commercial	WH	Gas	Gas
Electrification with Fuel Backup	Residential	SH	Air Source Heat Pump	Fuel Oil
Electrification with Fuel Backup	Residential	SH	Other	Fuel Oil
Electrification with Fuel Backup	Residential	WH	Air Source Heat Pump	Fuel Oil
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Electrification with Fuel Backup	Commercial	SH	Air Source Heat Pump	Fuel Oil
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Electrification with Fuel Backup	Residential	SH	Electric Resistance	Electric
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Electrification with Fuel Backup	Commercial	SH	Air Source Heat Pump	Electric
Electrification with Fuel Backup	Commercial	SH	Electric Resistance	Electric
Electrification with Fuel Backup	Commercial	WH	Air Source Heat Pump	Electric
Electrification with Fuel Backup	Commercial	WH	Electric Resistance	Electric
Electrification with Fuel Backup	Residential	SH	Air Source Heat Pump	Other
Electrification with Fuel Backup	Residential	SH	Other	Other
Electrification with Fuel Backup	Residential	WH	Air Source Heat Pump	Other
Electrification with Fuel Backup	Residential	WH	Other	Other
Electrification with Fuel Backup	Commercial	SH	Air Source Heat Pump	Other
Electrification with Fuel Backup	Commercial	SH	Other	Other
Electrification with Fuel Backup	Commercial	WH	Air Source Heat Pump	Other
Electrification with Fuel Backup	Commercial	WH	Other	Other
High Electrification	Residential	SH	Air Source Heat Pump	Gas
High Electrification	Residential	SH	Heat Pump with Fuel Backup	Gas
High Electrification	Residential	SH	Ground Source Heat Pump	Gas
High Electrification	Residential	SH	Gas	Gas
High Electrification	Residential	SH	Gas	Gas
High Electrification	Residential	WH	Air Source Heat Pump	Gas
High Electrification	Residential	WH	Gas	Gas
High Electrification	Residential	WH	Gas	Gas
High Electrification	Commercial	SH	Air Source Heat Pump	Gas
High Electrification	Commercial	SH	Heat Pump with Fuel Backup	Gas
High Electrification	Commercial	SH	Ground Source Heat Pump	Gas
High Electrification	Commercial	SH	Gas	Gas
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High Electrification	Commercial	WH	Air Source Heat Pump	Gas
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High Electrification	Commercial	WH	Gas	Gas
High Electrification	Residential	SH	Air Source Heat Pump	Fuel Oil
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High Electrification	Residential	SH	Air Source Heat Pump	Electric
High Electrification	Residential	SH	Electric Resistance	Electric
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High Electrification	Commercial	SH	Electric Resistance	Electric
High Electrification	Commercial	WH	Air Source Heat Pump	Electric
High Electrification	Commercial	WH	Electric Resistance	Electric
High Electrification	Residential	SH	Air Source Heat Pump	Other
High Electrification	Residential	SH	Other	Other
High Electrification	Residential	WH	Air Source Heat Pump	Other

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High Electrification	Commercial	SH	Air Source Heat Pump	Other
High Electrification	Commercial	SH	Other	Other
High Electrification	Commercial	WH	Air Source Heat Pump	Other
High Electrification	Commercial	WH	Other	Other
Modified Fuel Backup	Residential	SH	Air Source Heat Pump	Gas
Modified Fuel Backup	Residential	SH	Heat Pump with Fuel Backup	Gas
Modified Fuel Backup	Residential	SH	Ground Source Heat Pump	Gas
Modified Fuel Backup	Residential	SH	Gas	Gas
Modified Fuel Backup	Residential	SH	Gas	Gas
Modified Fuel Backup	Residential	WH	Air Source Heat Pump	Gas
Modified Fuel Backup	Residential	WH	Gas	Gas
Modified Fuel Backup	Residential	WH	Gas	Gas
Modified Fuel Backup	Commercial	SH	Air Source Heat Pump	Gas
Modified Fuel Backup	Commercial	SH	Heat Pump with Fuel Backup	Gas
Modified Fuel Backup	Commercial	SH	Ground Source Heat Pump	Gas
Modified Fuel Backup	Commercial	SH	Gas	Gas
Modified Fuel Backup	Commercial	SH	Gas	Gas
Modified Fuel Backup	Commercial	WH	Air Source Heat Pump	Gas
Modified Fuel Backup	Commercial	WH	Gas	Gas
Modified Fuel Backup	Commercial	WH	Gas	Gas
Modified Fuel Backup	Residential	SH	Air Source Heat Pump	Fuel Oil
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Modified Fuel Backup	Commercial	WH	Other	Fuel Oil
Modified Fuel Backup	Residential	SH	Air Source Heat Pump	Electric
Modified Fuel Backup	Residential	SH	Electric Resistance	Electric
Modified Fuel Backup	Residential	WH	Air Source Heat Pump	Electric
Modified Fuel Backup	Residential	WH	Electric Resistance	Electric
Modified Fuel Backup	Commercial	SH	Air Source Heat Pump	Electric
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Modified Fuel Backup	Commercial	WH	Air Source Heat Pump	Electric
Modified Fuel Backup	Commercial	WH	Electric Resistance	Electric
Modified Fuel Backup	Residential	SH	Air Source Heat Pump	Other
Modified Fuel Backup	Residential	SH	Other	Other
Modified Fuel Backup	Residential	WH	Air Source Heat Pump	Other
Modified Fuel Backup	Residential	WH	Other	Other
Modified Fuel Backup	Commercial	SH	Air Source Heat Pump	Other
Modified Fuel Backup	Commercial	SH	Other	Other
Modified Fuel Backup	Commercial	WH	Air Source Heat Pump	Other
Modified Fuel Backup	Commercial	WH	Other	Other

Device Replacements by Scenario, Sector, and End Use (Space Heating ar

** Annual replacements are calculated as 1 over the average device lifetime, multiplied by the previous year's device*

Scenario	Sector	End Use	Device	Fuel
High Decarbonized Methane	Residential	SH	Air Source Heat Pump	Gas
High Decarbonized Methane	Residential	SH	Heat Pump with Fuel Backup	Gas
High Decarbonized Methane	Residential	SH	Ground Source Heat Pump	Gas
High Decarbonized Methane	Residential	SH	Gas	Gas
High Decarbonized Methane	Residential	SH	Gas	Gas
High Decarbonized Methane	Residential	WH	Air Source Heat Pump	Gas
High Decarbonized Methane	Residential	WH	Gas	Gas
High Decarbonized Methane	Residential	WH	Gas	Gas
High Decarbonized Methane	Commercial	SH	Air Source Heat Pump	Gas

High Decarbonized Methane	Commercial	SH	Heat Pump with Fuel Backup	Gas
High Decarbonized Methane	Commercial	SH	Ground Source Heat Pump	Gas
High Decarbonized Methane	Commercial	SH	Gas	Gas
High Decarbonized Methane	Commercial	SH	Gas	Gas
High Decarbonized Methane	Commercial	WH	Air Source Heat Pump	Gas
High Decarbonized Methane	Commercial	WH	Gas	Gas
High Decarbonized Methane	Commercial	WH	Gas	Gas
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High Decarbonized Methane	Commercial	SH	Air Source Heat Pump	Fuel Oil
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High Decarbonized Methane	Commercial	WH	Air Source Heat Pump	Fuel Oil
High Decarbonized Methane	Commercial	WH	Other	Fuel Oil
High Decarbonized Methane	Residential	SH	Air Source Heat Pump	Electric
High Decarbonized Methane	Residential	SH	Electric Resistance	Electric
High Decarbonized Methane	Residential	WH	Air Source Heat Pump	Electric
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High Decarbonized Methane	Commercial	SH	Air Source Heat Pump	Electric
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High Decarbonized Methane	Commercial	WH	Air Source Heat Pump	Electric
High Decarbonized Methane	Commercial	WH	Electric Resistance	Electric
High Decarbonized Methane	Residential	SH	Air Source Heat Pump	Other
High Decarbonized Methane	Residential	SH	Other	Other
High Decarbonized Methane	Residential	WH	Air Source Heat Pump	Other
High Decarbonized Methane	Residential	WH	Other	Other
High Decarbonized Methane	Commercial	SH	Air Source Heat Pump	Other
High Decarbonized Methane	Commercial	SH	Other	Other
High Decarbonized Methane	Commercial	WH	Air Source Heat Pump	Other
High Decarbonized Methane	Commercial	WH	Other	Other
Electrification with Fuel Backup	Residential	SH	Air Source Heat Pump	Gas
Electrification with Fuel Backup	Residential	SH	Heat Pump with Fuel Backup	Gas
Electrification with Fuel Backup	Residential	SH	Ground Source Heat Pump	Gas
Electrification with Fuel Backup	Residential	SH	Gas	Gas
Electrification with Fuel Backup	Residential	SH	Gas	Gas
Electrification with Fuel Backup	Residential	WH	Air Source Heat Pump	Gas
Electrification with Fuel Backup	Residential	WH	Gas	Gas
Electrification with Fuel Backup	Residential	WH	Gas	Gas
Electrification with Fuel Backup	Commercial	SH	Air Source Heat Pump	Gas
Electrification with Fuel Backup	Commercial	SH	Heat Pump with Fuel Backup	Gas
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Electrification with Fuel Backup	Commercial	SH	Gas	Gas
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Electrification with Fuel Backup	Commercial	WH	Air Source Heat Pump	Gas
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Electrification with Fuel Backup	Residential	SH	Air Source Heat Pump	Fuel Oil
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Electrification with Fuel Backup	Commercial	WH	Other	Fuel Oil
Electrification with Fuel Backup	Residential	SH	Air Source Heat Pump	Electric
Electrification with Fuel Backup	Residential	SH	Electric Resistance	Electric
Electrification with Fuel Backup	Residential	WH	Air Source Heat Pump	Electric
Electrification with Fuel Backup	Residential	WH	Electric Resistance	Electric
Electrification with Fuel Backup	Commercial	SH	Air Source Heat Pump	Electric
Electrification with Fuel Backup	Commercial	SH	Electric Resistance	Electric

Electrification with Fuel Backup	Commercial	WH	Air Source Heat Pump	Electric
Electrification with Fuel Backup	Commercial	WH	Electric Resistance	Electric
Electrification with Fuel Backup	Residential	SH	Air Source Heat Pump	Other
Electrification with Fuel Backup	Residential	SH	Other	Other
Electrification with Fuel Backup	Residential	WH	Air Source Heat Pump	Other
Electrification with Fuel Backup	Residential	WH	Other	Other
Electrification with Fuel Backup	Commercial	SH	Air Source Heat Pump	Other
Electrification with Fuel Backup	Commercial	SH	Other	Other
Electrification with Fuel Backup	Commercial	WH	Air Source Heat Pump	Other
Electrification with Fuel Backup	Commercial	WH	Other	Other
High Electrification	Residential	SH	Air Source Heat Pump	Gas
High Electrification	Residential	SH	Heat Pump with Fuel Backup	Gas
High Electrification	Residential	SH	Ground Source Heat Pump	Gas
High Electrification	Residential	SH	Gas	Gas
High Electrification	Residential	SH	Gas	Gas
High Electrification	Residential	WH	Air Source Heat Pump	Gas
High Electrification	Residential	WH	Gas	Gas
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High Electrification	Commercial	SH	Heat Pump with Fuel Backup	Gas
High Electrification	Commercial	SH	Ground Source Heat Pump	Gas
High Electrification	Commercial	SH	Gas	Gas
High Electrification	Commercial	SH	Gas	Gas
High Electrification	Commercial	WH	Air Source Heat Pump	Gas
High Electrification	Commercial	WH	Gas	Gas
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High Electrification	Residential	SH	Air Source Heat Pump	Electric
High Electrification	Residential	SH	Electric Resistance	Electric
High Electrification	Residential	WH	Air Source Heat Pump	Electric
High Electrification	Residential	WH	Electric Resistance	Electric
High Electrification	Commercial	SH	Air Source Heat Pump	Electric
High Electrification	Commercial	SH	Electric Resistance	Electric
High Electrification	Commercial	WH	Air Source Heat Pump	Electric
High Electrification	Commercial	WH	Electric Resistance	Electric
High Electrification	Residential	SH	Air Source Heat Pump	Other
High Electrification	Residential	SH	Other	Other
High Electrification	Residential	WH	Air Source Heat Pump	Other
High Electrification	Residential	WH	Other	Other
High Electrification	Commercial	SH	Air Source Heat Pump	Other
High Electrification	Commercial	SH	Other	Other
High Electrification	Commercial	WH	Air Source Heat Pump	Other
High Electrification	Commercial	WH	Other	Other
Modified Fuel Backup	Residential	SH	Air Source Heat Pump	Gas
Modified Fuel Backup	Residential	SH	Heat Pump with Fuel Backup	Gas
Modified Fuel Backup	Residential	SH	Ground Source Heat Pump	Gas
Modified Fuel Backup	Residential	SH	Gas	Gas
Modified Fuel Backup	Residential	SH	Gas	Gas
Modified Fuel Backup	Residential	WH	Air Source Heat Pump	Gas
Modified Fuel Backup	Residential	WH	Gas	Gas
Modified Fuel Backup	Residential	WH	Gas	Gas
Modified Fuel Backup	Commercial	SH	Air Source Heat Pump	Gas
Modified Fuel Backup	Commercial	SH	Heat Pump with Fuel Backup	Gas
Modified Fuel Backup	Commercial	SH	Ground Source Heat Pump	Gas

Modified Fuel Backup	Commercial	SH	Gas	Gas
Modified Fuel Backup	Commercial	SH	Gas	Gas
Modified Fuel Backup	Commercial	WH	Air Source Heat Pump	Gas
Modified Fuel Backup	Commercial	WH	Gas	Gas
Modified Fuel Backup	Commercial	WH	Gas	Gas
Modified Fuel Backup	Residential	SH	Air Source Heat Pump	Fuel Oil
Modified Fuel Backup	Residential	SH	Other	Fuel Oil
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Modified Fuel Backup	Commercial	SH	Other	Fuel Oil
Modified Fuel Backup	Commercial	WH	Air Source Heat Pump	Fuel Oil
Modified Fuel Backup	Commercial	WH	Other	Fuel Oil
Modified Fuel Backup	Residential	SH	Air Source Heat Pump	Electric
Modified Fuel Backup	Residential	SH	Electric Resistance	Electric
Modified Fuel Backup	Residential	WH	Air Source Heat Pump	Electric
Modified Fuel Backup	Residential	WH	Electric Resistance	Electric
Modified Fuel Backup	Commercial	SH	Air Source Heat Pump	Electric
Modified Fuel Backup	Commercial	SH	Electric Resistance	Electric
Modified Fuel Backup	Commercial	WH	Air Source Heat Pump	Electric
Modified Fuel Backup	Commercial	WH	Electric Resistance	Electric
Modified Fuel Backup	Residential	SH	Air Source Heat Pump	Other
Modified Fuel Backup	Residential	SH	Other	Other
Modified Fuel Backup	Residential	WH	Air Source Heat Pump	Other
Modified Fuel Backup	Residential	WH	Other	Other
Modified Fuel Backup	Commercial	SH	Air Source Heat Pump	Other
Modified Fuel Backup	Commercial	SH	Other	Other
Modified Fuel Backup	Commercial	WH	Air Source Heat Pump	Other
Modified Fuel Backup	Commercial	WH	Other	Other

Device Sales by Scenario, Sector, and End Use (Space Heating and Water

** Calculated as the year-over-year difference in device population (greater than or equal to zero) plus the number o*

Scenario	Sector	End Use	Device	Fuel
High Decarbonized Methane	Residential	SH	Air Source Heat Pump	Gas
High Decarbonized Methane	Residential	SH	Heat Pump with Fuel Backup	Gas
High Decarbonized Methane	Residential	SH	Ground Source Heat Pump	Gas
High Decarbonized Methane	Residential	SH	Gas	Gas
High Decarbonized Methane	Residential	SH	Gas	Gas
High Decarbonized Methane	Residential	WH	Air Source Heat Pump	Gas
High Decarbonized Methane	Residential	WH	Gas	Gas
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High Decarbonized Methane	Commercial	SH	Gas	Gas
High Decarbonized Methane	Commercial	SH	Gas	Gas
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High Decarbonized Methane	Residential	SH	Air Source Heat Pump	Electric
High Decarbonized Methane	Residential	SH	Electric Resistance	Electric

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High Decarbonized Methane	Commercial	WH	Air Source Heat Pump	Electric
High Decarbonized Methane	Commercial	WH	Electric Resistance	Electric
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High Decarbonized Methane	Residential	WH	Other	Other
High Decarbonized Methane	Commercial	SH	Air Source Heat Pump	Other
High Decarbonized Methane	Commercial	SH	Other	Other
High Decarbonized Methane	Commercial	WH	Air Source Heat Pump	Other
High Decarbonized Methane	Commercial	WH	Other	Other
Electrification with Fuel Backup	Residential	SH	Air Source Heat Pump	Gas
Electrification with Fuel Backup	Residential	SH	Heat Pump with Fuel Backup	Gas
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Electrification with Fuel Backup	Residential	SH	Gas	Gas
Electrification with Fuel Backup	Residential	SH	Gas	Gas
Electrification with Fuel Backup	Residential	WH	Air Source Heat Pump	Gas
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Electrification with Fuel Backup	Commercial	SH	Heat Pump with Fuel Backup	Gas
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Electrification with Fuel Backup	Commercial	SH	Gas	Gas
Electrification with Fuel Backup	Commercial	SH	Gas	Gas
Electrification with Fuel Backup	Commercial	WH	Air Source Heat Pump	Gas
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Electrification with Fuel Backup	Residential	SH	Air Source Heat Pump	Fuel Oil
Electrification with Fuel Backup	Residential	SH	Other	Fuel Oil
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Electrification with Fuel Backup	Residential	WH	Electric Resistance	Electric
Electrification with Fuel Backup	Commercial	SH	Air Source Heat Pump	Electric
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Electrification with Fuel Backup	Commercial	WH	Air Source Heat Pump	Electric
Electrification with Fuel Backup	Commercial	WH	Electric Resistance	Electric
Electrification with Fuel Backup	Residential	SH	Air Source Heat Pump	Other
Electrification with Fuel Backup	Residential	SH	Other	Other
Electrification with Fuel Backup	Residential	WH	Air Source Heat Pump	Other
Electrification with Fuel Backup	Residential	WH	Other	Other
Electrification with Fuel Backup	Commercial	SH	Air Source Heat Pump	Other
Electrification with Fuel Backup	Commercial	SH	Other	Other
Electrification with Fuel Backup	Commercial	WH	Air Source Heat Pump	Other
Electrification with Fuel Backup	Commercial	WH	Other	Other
High Electrification	Residential	SH	Air Source Heat Pump	Gas
High Electrification	Residential	SH	Heat Pump with Fuel Backup	Gas
High Electrification	Residential	SH	Ground Source Heat Pump	Gas
High Electrification	Residential	SH	Gas	Gas
High Electrification	Residential	SH	Gas	Gas
High Electrification	Residential	WH	Air Source Heat Pump	Gas
High Electrification	Residential	WH	Gas	Gas

High Electrification	Residential	WH	Gas	Gas
High Electrification	Commercial	SH	Air Source Heat Pump	Gas
High Electrification	Commercial	SH	Heat Pump with Fuel Backup	Gas
High Electrification	Commercial	SH	Ground Source Heat Pump	Gas
High Electrification	Commercial	SH	Gas	Gas
High Electrification	Commercial	SH	Gas	Gas
High Electrification	Commercial	WH	Air Source Heat Pump	Gas
High Electrification	Commercial	WH	Gas	Gas
High Electrification	Commercial	WH	Gas	Gas
High Electrification	Residential	SH	Air Source Heat Pump	Fuel Oil
High Electrification	Residential	SH	Other	Fuel Oil
High Electrification	Residential	WH	Air Source Heat Pump	Fuel Oil
High Electrification	Residential	WH	Other	Fuel Oil
High Electrification	Commercial	SH	Air Source Heat Pump	Fuel Oil
High Electrification	Commercial	SH	Other	Fuel Oil
High Electrification	Commercial	WH	Air Source Heat Pump	Fuel Oil
High Electrification	Commercial	WH	Other	Fuel Oil
High Electrification	Residential	SH	Air Source Heat Pump	Electric
High Electrification	Residential	SH	Electric Resistance	Electric
High Electrification	Residential	WH	Air Source Heat Pump	Electric
High Electrification	Residential	WH	Electric Resistance	Electric
High Electrification	Commercial	SH	Air Source Heat Pump	Electric
High Electrification	Commercial	SH	Electric Resistance	Electric
High Electrification	Commercial	WH	Air Source Heat Pump	Electric
High Electrification	Commercial	WH	Electric Resistance	Electric
High Electrification	Residential	SH	Air Source Heat Pump	Other
High Electrification	Residential	SH	Other	Other
High Electrification	Residential	WH	Air Source Heat Pump	Other
High Electrification	Residential	WH	Other	Other
High Electrification	Commercial	SH	Air Source Heat Pump	Other
High Electrification	Commercial	SH	Other	Other
High Electrification	Commercial	WH	Air Source Heat Pump	Other
High Electrification	Commercial	WH	Other	Other
Modified Fuel Backup	Residential	SH	Air Source Heat Pump	Gas
Modified Fuel Backup	Residential	SH	Heat Pump with Fuel Backup	Gas
Modified Fuel Backup	Residential	SH	Ground Source Heat Pump	Gas
Modified Fuel Backup	Residential	SH	Gas	Gas
Modified Fuel Backup	Residential	SH	Gas	Gas
Modified Fuel Backup	Residential	WH	Air Source Heat Pump	Gas
Modified Fuel Backup	Residential	WH	Gas	Gas
Modified Fuel Backup	Residential	WH	Gas	Gas
Modified Fuel Backup	Commercial	SH	Air Source Heat Pump	Gas
Modified Fuel Backup	Commercial	SH	Heat Pump with Fuel Backup	Gas
Modified Fuel Backup	Commercial	SH	Ground Source Heat Pump	Gas
Modified Fuel Backup	Commercial	SH	Gas	Gas
Modified Fuel Backup	Commercial	SH	Gas	Gas
Modified Fuel Backup	Commercial	WH	Air Source Heat Pump	Gas
Modified Fuel Backup	Commercial	WH	Gas	Gas
Modified Fuel Backup	Commercial	WH	Gas	Gas
Modified Fuel Backup	Residential	SH	Air Source Heat Pump	Fuel Oil
Modified Fuel Backup	Residential	SH	Other	Fuel Oil
Modified Fuel Backup	Residential	WH	Air Source Heat Pump	Fuel Oil
Modified Fuel Backup	Residential	WH	Other	Fuel Oil
Modified Fuel Backup	Commercial	SH	Air Source Heat Pump	Fuel Oil
Modified Fuel Backup	Commercial	SH	Other	Fuel Oil
Modified Fuel Backup	Commercial	WH	Air Source Heat Pump	Fuel Oil
Modified Fuel Backup	Commercial	WH	Other	Fuel Oil
Modified Fuel Backup	Residential	SH	Air Source Heat Pump	Electric
Modified Fuel Backup	Residential	SH	Electric Resistance	Electric
Modified Fuel Backup	Residential	WH	Air Source Heat Pump	Electric
Modified Fuel Backup	Residential	WH	Electric Resistance	Electric

Modified Fuel Backup	Commercial	SH	Air Source Heat Pump	Electric
Modified Fuel Backup	Commercial	SH	Electric Resistance	Electric
Modified Fuel Backup	Commercial	WH	Air Source Heat Pump	Electric
Modified Fuel Backup	Commercial	WH	Electric Resistance	Electric
Modified Fuel Backup	Residential	SH	Air Source Heat Pump	Other
Modified Fuel Backup	Residential	SH	Other	Other
Modified Fuel Backup	Residential	WH	Air Source Heat Pump	Other
Modified Fuel Backup	Residential	WH	Other	Other
Modified Fuel Backup	Commercial	SH	Air Source Heat Pump	Other
Modified Fuel Backup	Commercial	SH	Other	Other
Modified Fuel Backup	Commercial	WH	Air Source Heat Pump	Other
Modified Fuel Backup	Commercial	WH	Other	Other

er Heating)

Device Lifetime (Unit		2021	2022	2023	2024
16	Number of Devices	-	-	-	-
16	Number of Devices	-	-	-	-
16	Number of Devices	-	-	-	-
16	Number of Devices	58,733	87,478	122,380	163,677
16	Number of Devices	1,049,185	1,028,970	1,002,666	970,031
10	Number of Devices	-	-	-	-
10	Number of Devices	72,633	116,204	169,953	232,194
10	Number of Devices	957,866	922,231	876,477	822,294
16	Devices Per Thousand Ft2	-	-	-	-
16	Devices Per Thousand Ft2	-	-	-	-
16	Devices Per Thousand Ft2	-	-	-	-
16	Devices Per Thousand Ft2	95,940	142,896	199,907	267,366
16	Devices Per Thousand Ft2	1,713,842	1,680,822	1,637,854	1,584,546
10	Devices Per Thousand Ft2	-	-	-	-
10	Devices Per Thousand Ft2	92,761	148,405	217,049	296,537
10	Devices Per Thousand Ft2	1,223,300	1,177,789	1,119,358	1,050,159
16	Number of Devices	-	-	-	-
16	Number of Devices	222,575	224,289	226,016	227,756
10	Number of Devices	-	-	-	-
10	Number of Devices	77,852	78,451	79,055	79,664
16	Devices Per Thousand Ft2	-	-	-	-
16	Devices Per Thousand Ft2	175,367	177,472	179,602	181,757
10	Devices Per Thousand Ft2	-	-	-	-
10	Devices Per Thousand Ft2	121,136	122,590	124,061	125,550
16	Number of Devices	78,180	96,243	114,297	132,561
16	Number of Devices	465,850	454,304	442,817	431,170
10	Number of Devices	207,094	266,173	325,417	382,256
10	Number of Devices	936,069	885,793	835,419	787,519
16	Devices Per Thousand Ft2	30,928	38,236	45,601	53,112
16	Devices Per Thousand Ft2	184,292	180,490	176,672	172,752
10	Devices Per Thousand Ft2	136,222	175,961	216,202	255,233
10	Devices Per Thousand Ft2	615,726	585,576	555,039	525,828
16	Number of Devices	-	-	-	-
16	Number of Devices	117,182	118,085	118,994	119,910
10	Number of Devices	-	-	-	-
10	Number of Devices	66,916	67,431	67,950	68,473
16	Devices Per Thousand Ft2	-	-	-	-
16	Devices Per Thousand Ft2	-	-	-	-
10	Devices Per Thousand Ft2	-	-	-	-
10	Devices Per Thousand Ft2	-	-	-	-
16	Number of Devices	3,687	5,502	7,734	10,433
16	Number of Devices	36,874	55,025	77,338	104,328
16	Number of Devices	410	611	859	1,159
16	Number of Devices	14,140	20,672	28,258	36,735
16	Number of Devices	1,052,806	1,034,638	1,010,857	981,053
10	Number of Devices	68,819	102,420	142,003	187,279
10	Number of Devices	16,946	26,186	36,723	47,739
10	Number of Devices	944,735	909,828	867,705	819,470
16	Devices Per Thousand Ft2	6,023	8,988	12,633	17,042
16	Devices Per Thousand Ft2	60,234	89,883	126,331	170,420
16	Devices Per Thousand Ft2	669	999	1,404	1,894
16	Devices Per Thousand Ft2	23,098	33,768	46,160	60,007
16	Devices Per Thousand Ft2	1,719,758	1,690,080	1,651,234	1,602,549
10	Devices Per Thousand Ft2	87,890	130,802	181,353	239,176

10	Devices Per Thousand Ft2	21,642	33,442	46,899	60,968
10	Devices Per Thousand Ft2	1,206,530	1,161,950	1,108,155	1,046,553
16	Number of Devices	8,231	12,282	17,263	23,288
16	Number of Devices	214,344	212,006	208,753	204,468
10	Number of Devices	5,199	7,738	10,728	14,149
10	Number of Devices	72,653	70,714	68,327	65,516
16	Devices Per Thousand Ft2	6,485	9,719	13,718	18,584
16	Devices Per Thousand Ft2	168,882	167,753	165,884	163,172
10	Devices Per Thousand Ft2	8,090	12,091	16,835	22,298
10	Devices Per Thousand Ft2	113,046	110,499	107,226	103,252
16	Number of Devices	78,180	96,243	114,297	132,561
16	Number of Devices	465,850	454,304	442,817	431,170
10	Number of Devices	207,094	266,173	325,417	382,256
10	Number of Devices	936,069	885,793	835,419	787,519
16	Devices Per Thousand Ft2	30,928	38,236	45,601	53,112
16	Devices Per Thousand Ft2	184,292	180,490	176,672	172,752
10	Devices Per Thousand Ft2	136,222	175,961	216,202	255,233
10	Devices Per Thousand Ft2	615,726	585,576	555,039	525,828
16	Number of Devices	4,333	6,467	9,089	12,261
16	Number of Devices	112,849	111,618	109,905	107,649
10	Number of Devices	4,469	6,651	9,221	12,161
10	Number of Devices	62,447	60,780	58,729	56,312
16	Devices Per Thousand Ft2	-	-	-	-
16	Devices Per Thousand Ft2	-	-	-	-
10	Devices Per Thousand Ft2	-	-	-	-
10	Devices Per Thousand Ft2	-	-	-	-
16	Number of Devices	36,874	55,025	77,338	104,328
16	Number of Devices	-	-	-	-
16	Number of Devices	4,097	6,114	8,593	11,592
16	Number of Devices	14,140	20,672	28,258	36,735
16	Number of Devices	1,052,806	1,034,638	1,010,857	981,053
10	Number of Devices	68,819	102,420	142,003	187,279
10	Number of Devices	16,946	26,186	36,723	47,739
10	Number of Devices	944,735	909,828	867,705	819,470
16	Devices Per Thousand Ft2	60,234	89,883	126,331	170,420
16	Devices Per Thousand Ft2	-	-	-	-
16	Devices Per Thousand Ft2	6,693	9,987	14,037	18,936
16	Devices Per Thousand Ft2	23,098	33,768	46,160	60,007
16	Devices Per Thousand Ft2	1,719,758	1,690,080	1,651,234	1,602,549
10	Devices Per Thousand Ft2	87,890	130,802	181,353	239,176
10	Devices Per Thousand Ft2	21,642	33,442	46,899	60,968
10	Devices Per Thousand Ft2	1,206,530	1,161,950	1,108,155	1,046,553
16	Number of Devices	8,231	12,282	17,263	23,288
16	Number of Devices	214,344	212,006	208,753	204,468
10	Number of Devices	5,199	7,738	10,728	14,149
10	Number of Devices	72,653	70,714	68,327	65,516
16	Devices Per Thousand Ft2	6,485	9,719	13,718	18,584
16	Devices Per Thousand Ft2	168,882	167,753	165,884	163,172
10	Devices Per Thousand Ft2	8,090	12,091	16,835	22,298
10	Devices Per Thousand Ft2	113,046	110,499	107,226	103,252
16	Number of Devices	120,326	144,328	169,862	197,207
16	Number of Devices	423,704	406,218	387,252	366,523
10	Number of Devices	207,094	266,173	325,417	382,256
10	Number of Devices	936,069	885,793	835,419	787,519
16	Devices Per Thousand Ft2	47,602	57,340	67,770	79,013
16	Devices Per Thousand Ft2	167,619	161,386	154,503	146,851
10	Devices Per Thousand Ft2	136,222	175,961	216,202	255,233
10	Devices Per Thousand Ft2	615,726	585,576	555,039	525,828
16	Number of Devices	4,333	6,467	9,089	12,261
16	Number of Devices	112,849	111,618	109,905	107,649
10	Number of Devices	4,469	6,651	9,221	12,161

10	Number of Devices	62,447	60,780	58,729	56,312
16	Devices Per Thousand Ft2	-	-	-	-
16	Devices Per Thousand Ft2	-	-	-	-
10	Devices Per Thousand Ft2	-	-	-	-
10	Devices Per Thousand Ft2	-	-	-	-
16	Number of Devices	36,874	55,025	77,338	104,328
16	Number of Devices	-	-	-	-
16	Number of Devices	4,097	6,114	8,593	11,592
16	Number of Devices	14,140	20,672	28,258	36,735
16	Number of Devices	1,052,806	1,034,638	1,010,857	981,053
10	Number of Devices	68,819	102,420	142,003	187,279
10	Number of Devices	16,946	26,186	36,723	47,739
10	Number of Devices	944,735	909,828	867,705	819,470
16	Devices Per Thousand Ft2	6,023	8,988	12,633	17,042
16	Devices Per Thousand Ft2	60,234	89,883	126,331	170,420
16	Devices Per Thousand Ft2	669	999	1,404	1,894
16	Devices Per Thousand Ft2	23,098	33,768	46,160	60,007
16	Devices Per Thousand Ft2	1,719,758	1,690,080	1,651,234	1,602,549
10	Devices Per Thousand Ft2	87,890	130,802	181,353	239,176
10	Devices Per Thousand Ft2	21,642	33,442	46,899	60,968
10	Devices Per Thousand Ft2	1,206,530	1,161,950	1,108,155	1,046,553
16	Number of Devices	8,231	12,282	17,263	23,288
16	Number of Devices	214,344	212,006	208,753	204,468
10	Number of Devices	5,199	7,738	10,728	14,149
10	Number of Devices	72,653	70,714	68,327	65,516
16	Devices Per Thousand Ft2	6,485	9,719	13,718	18,584
16	Devices Per Thousand Ft2	168,882	167,753	165,884	163,172
10	Devices Per Thousand Ft2	8,090	12,091	16,835	22,298
10	Devices Per Thousand Ft2	113,046	110,499	107,226	103,252
16	Number of Devices	120,326	144,328	169,862	197,207
16	Number of Devices	423,704	406,218	387,252	366,523
10	Number of Devices	207,094	266,173	325,417	382,256
10	Number of Devices	936,069	885,793	835,419	787,519
16	Devices Per Thousand Ft2	30,928	38,236	45,601	53,112
16	Devices Per Thousand Ft2	184,292	180,490	176,672	172,752
10	Devices Per Thousand Ft2	136,222	175,961	216,202	255,233
10	Devices Per Thousand Ft2	615,726	585,576	555,039	525,828
16	Number of Devices	4,333	6,467	9,089	12,261
16	Number of Devices	112,849	111,618	109,905	107,649
10	Number of Devices	4,469	6,651	9,221	12,161
10	Number of Devices	62,447	60,780	58,729	56,312
16	Devices Per Thousand Ft2	-	-	-	-
16	Devices Per Thousand Ft2	-	-	-	-
10	Devices Per Thousand Ft2	-	-	-	-
10	Devices Per Thousand Ft2	-	-	-	-

and Water Heating)

population

Device Lifetime (Unit	2021	2022	2023	2024	
16	Number of Devices	-	-	-	
16	Number of Devices	-	-	-	
16	Number of Devices	-	-	-	
16	Number of Devices	-	3,671	5,467	7,649
16	Number of Devices	-	65,574	64,311	62,667
10	Number of Devices	-	-	-	-
10	Number of Devices	-	7,263	11,620	16,995
10	Number of Devices	-	95,787	92,223	87,648
16	Devices Per Thousand Ft2	-	-	-	-

16	Devices Per Thousand Ft2	-	-	-
16	Devices Per Thousand Ft2	-	-	-
16	Devices Per Thousand Ft2	5,996	8,931	12,494
16	Devices Per Thousand Ft2	107,115	105,051	102,366
10	Devices Per Thousand Ft2	-	-	-
10	Devices Per Thousand Ft2	9,276	14,841	21,705
10	Devices Per Thousand Ft2	122,330	117,779	111,936
16	Number of Devices	-	-	-
16	Number of Devices	13,911	14,018	14,126
10	Number of Devices	-	-	-
10	Number of Devices	7,785	7,845	7,906
16	Devices Per Thousand Ft2	-	-	-
16	Devices Per Thousand Ft2	10,960	11,092	11,225
10	Devices Per Thousand Ft2	-	-	-
10	Devices Per Thousand Ft2	12,114	12,259	12,406
16	Number of Devices	4,886	6,015	7,144
16	Number of Devices	29,116	28,394	27,676
10	Number of Devices	20,709	26,617	32,542
10	Number of Devices	93,607	88,579	83,542
16	Devices Per Thousand Ft2	1,933	2,390	2,850
16	Devices Per Thousand Ft2	11,518	11,281	11,042
10	Devices Per Thousand Ft2	13,622	17,596	21,620
10	Devices Per Thousand Ft2	61,573	58,558	55,504
16	Number of Devices	-	-	-
16	Number of Devices	7,324	7,380	7,437
10	Number of Devices	-	-	-
10	Number of Devices	6,692	6,743	6,795
16	Devices Per Thousand Ft2	-	-	-
16	Devices Per Thousand Ft2	-	-	-
10	Devices Per Thousand Ft2	-	-	-
10	Devices Per Thousand Ft2	-	-	-
16	Number of Devices	230	344	483
16	Number of Devices	2,305	3,439	4,834
16	Number of Devices	26	38	54
16	Number of Devices	884	1,292	1,766
16	Number of Devices	65,800	64,665	63,179
10	Number of Devices	6,882	10,242	14,200
10	Number of Devices	1,695	2,619	3,672
10	Number of Devices	94,473	90,983	86,771
16	Devices Per Thousand Ft2	376	562	790
16	Devices Per Thousand Ft2	3,765	5,618	7,896
16	Devices Per Thousand Ft2	42	62	88
16	Devices Per Thousand Ft2	1,444	2,110	2,885
16	Devices Per Thousand Ft2	107,485	105,630	103,202
10	Devices Per Thousand Ft2	8,789	13,080	18,135
10	Devices Per Thousand Ft2	2,164	3,344	4,690
10	Devices Per Thousand Ft2	120,653	116,195	110,815
16	Number of Devices	514	768	1,079
16	Number of Devices	13,396	13,250	13,047
10	Number of Devices	520	774	1,073
10	Number of Devices	7,265	7,071	6,833
16	Devices Per Thousand Ft2	405	607	857
16	Devices Per Thousand Ft2	10,555	10,485	10,368
10	Devices Per Thousand Ft2	809	1,209	1,684
10	Devices Per Thousand Ft2	11,305	11,050	10,723
16	Number of Devices	4,886	6,015	7,144
16	Number of Devices	29,116	28,394	27,676
10	Number of Devices	20,709	26,617	32,542
10	Number of Devices	93,607	88,579	83,542
16	Devices Per Thousand Ft2	1,933	2,390	2,850
16	Devices Per Thousand Ft2	11,518	11,281	11,042

10	Devices Per Thousand Ft2	13,622	17,596	21,620
10	Devices Per Thousand Ft2	61,573	58,558	55,504
16	Number of Devices	271	404	568
16	Number of Devices	7,053	6,976	6,869
10	Number of Devices	447	665	922
10	Number of Devices	6,245	6,078	5,873
16	Devices Per Thousand Ft2	-	-	-
16	Devices Per Thousand Ft2	-	-	-
10	Devices Per Thousand Ft2	-	-	-
10	Devices Per Thousand Ft2	-	-	-
16	Number of Devices	2,305	3,439	4,834
16	Number of Devices	-	-	-
16	Number of Devices	256	382	537
16	Number of Devices	884	1,292	1,766
16	Number of Devices	65,800	64,665	63,179
10	Number of Devices	6,882	10,242	14,200
10	Number of Devices	1,695	2,619	3,672
10	Number of Devices	94,473	90,983	86,771
16	Devices Per Thousand Ft2	3,765	5,618	7,896
16	Devices Per Thousand Ft2	-	-	-
16	Devices Per Thousand Ft2	418	624	877
16	Devices Per Thousand Ft2	1,444	2,110	2,885
16	Devices Per Thousand Ft2	107,485	105,630	103,202
10	Devices Per Thousand Ft2	8,789	13,080	18,135
10	Devices Per Thousand Ft2	2,164	3,344	4,690
10	Devices Per Thousand Ft2	120,653	116,195	110,815
16	Number of Devices	514	768	1,079
16	Number of Devices	13,396	13,250	13,047
10	Number of Devices	520	774	1,073
10	Number of Devices	7,265	7,071	6,833
16	Devices Per Thousand Ft2	405	607	857
16	Devices Per Thousand Ft2	10,555	10,485	10,368
10	Devices Per Thousand Ft2	809	1,209	1,684
10	Devices Per Thousand Ft2	11,305	11,050	10,723
16	Number of Devices	7,520	9,021	10,616
16	Number of Devices	26,482	25,389	24,203
10	Number of Devices	20,709	26,617	32,542
10	Number of Devices	93,607	88,579	83,542
16	Devices Per Thousand Ft2	2,975	3,584	4,236
16	Devices Per Thousand Ft2	10,476	10,087	9,656
10	Devices Per Thousand Ft2	13,622	17,596	21,620
10	Devices Per Thousand Ft2	61,573	58,558	55,504
16	Number of Devices	271	404	568
16	Number of Devices	7,053	6,976	6,869
10	Number of Devices	447	665	922
10	Number of Devices	6,245	6,078	5,873
16	Devices Per Thousand Ft2	-	-	-
16	Devices Per Thousand Ft2	-	-	-
10	Devices Per Thousand Ft2	-	-	-
10	Devices Per Thousand Ft2	-	-	-
16	Number of Devices	2,305	3,439	4,834
16	Number of Devices	-	-	-
16	Number of Devices	256	382	537
16	Number of Devices	884	1,292	1,766
16	Number of Devices	65,800	64,665	63,179
10	Number of Devices	6,882	10,242	14,200
10	Number of Devices	1,695	2,619	3,672
10	Number of Devices	94,473	90,983	86,771
16	Devices Per Thousand Ft2	376	562	790
16	Devices Per Thousand Ft2	3,765	5,618	7,896
16	Devices Per Thousand Ft2	42	62	88

16	Devices Per Thousand Ft2	1,444	2,110	2,885
16	Devices Per Thousand Ft2	107,485	105,630	103,202
10	Devices Per Thousand Ft2	8,789	13,080	18,135
10	Devices Per Thousand Ft2	2,164	3,344	4,690
10	Devices Per Thousand Ft2	120,653	116,195	110,815
16	Number of Devices	514	768	1,079
16	Number of Devices	13,396	13,250	13,047
10	Number of Devices	520	774	1,073
10	Number of Devices	7,265	7,071	6,833
16	Devices Per Thousand Ft2	405	607	857
16	Devices Per Thousand Ft2	10,555	10,485	10,368
10	Devices Per Thousand Ft2	809	1,209	1,684
10	Devices Per Thousand Ft2	11,305	11,050	10,723
16	Number of Devices	7,520	9,021	10,616
16	Number of Devices	26,482	25,389	24,203
10	Number of Devices	20,709	26,617	32,542
10	Number of Devices	93,607	88,579	83,542
16	Devices Per Thousand Ft2	1,933	2,390	2,850
16	Devices Per Thousand Ft2	11,518	11,281	11,042
10	Devices Per Thousand Ft2	13,622	17,596	21,620
10	Devices Per Thousand Ft2	61,573	58,558	55,504
16	Number of Devices	271	404	568
16	Number of Devices	7,053	6,976	6,869
10	Number of Devices	447	665	922
10	Number of Devices	6,245	6,078	5,873
16	Devices Per Thousand Ft2	-	-	-
16	Devices Per Thousand Ft2	-	-	-
10	Devices Per Thousand Ft2	-	-	-
10	Devices Per Thousand Ft2	-	-	-

Heating)

f replacement devices

Device Lifetime (Unit	2021	2022	2023	2024
16 Number of Devices		-	-	-
16 Number of Devices		-	-	-
16 Number of Devices		-	-	-
16 Number of Devices		32,416	5,467	7,649
16 Number of Devices		65,574	64,311	62,667
10 Number of Devices		-	1	1
10 Number of Devices		50,834	11,620	16,995
10 Number of Devices		95,787	92,223	87,648
16 Devices Per Thousand Ft2		-	-	-
16 Devices Per Thousand Ft2		-	3,671	1,797
16 Devices Per Thousand Ft2		-	65,574	-
16 Devices Per Thousand Ft2		52,952	8,931	12,494
16 Devices Per Thousand Ft2		107,115	112,315	106,723
10 Devices Per Thousand Ft2		-	95,787	-
10 Devices Per Thousand Ft2		64,920	14,841	21,705
10 Devices Per Thousand Ft2		122,330	117,779	111,936
16 Number of Devices		-	-	-
16 Number of Devices		15,625	20,014	17,061
10 Number of Devices		-	107,115	-
10 Number of Devices		8,385	7,845	7,906
16 Devices Per Thousand Ft2		-	9,276	5,564
16 Devices Per Thousand Ft2		13,065	133,422	11,225
10 Devices Per Thousand Ft2		-	-	-
10 Devices Per Thousand Ft2		13,567	26,170	12,513
16 Number of Devices		22,949	6,015	7,144
16 Number of Devices		29,116	36,179	27,736

10 Number of Devices	79,789	26,617	32,542
10 Number of Devices	93,607	99,540	83,673
16 Devices Per Thousand Ft2	9,241	2,390	2,850
16 Devices Per Thousand Ft2	11,518	23,394	11,187
10 Devices Per Thousand Ft2	53,361	22,482	22,749
10 Devices Per Thousand Ft2	61,573	87,673	55,504
16 Number of Devices	-	20,709	5,908
16 Number of Devices	8,226	100,987	7,437
10 Number of Devices	-	1,933	457
10 Number of Devices	7,207	18,261	6,795
16 Devices Per Thousand Ft2	-	13,622	3,974
16 Devices Per Thousand Ft2	-	61,573	-
10 Devices Per Thousand Ft2	-	-	-
10 Devices Per Thousand Ft2	-	7,324	56
16 Number of Devices	2,046	344	483
16 Number of Devices	20,455	10,131	4,885
16 Number of Devices	227	38	54
16 Number of Devices	7,415	1,292	1,766
16 Number of Devices	65,800	64,665	63,179
10 Number of Devices	40,483	10,242	14,200
10 Number of Devices	10,935	2,849	3,786
10 Number of Devices	94,473	93,287	87,905
16 Devices Per Thousand Ft2	3,341	587	802
16 Devices Per Thousand Ft2	33,414	6,501	8,304
16 Devices Per Thousand Ft2	371	65,863	88
16 Devices Per Thousand Ft2	12,113	8,992	6,245
16 Devices Per Thousand Ft2	107,485	107,325	104,126
10 Devices Per Thousand Ft2	51,702	107,554	18,135
10 Devices Per Thousand Ft2	13,965	3,721	4,875
10 Devices Per Thousand Ft2	120,653	119,960	112,669
16 Number of Devices	4,566	809	1,100
16 Number of Devices	13,396	14,694	13,714
10 Number of Devices	3,058	108,259	1,073
10 Number of Devices	7,265	15,860	11,124
16 Devices Per Thousand Ft2	3,639	2,772	2,037
16 Devices Per Thousand Ft2	10,555	131,138	10,368
10 Devices Per Thousand Ft2	4,810	1,724	1,937
10 Devices Per Thousand Ft2	11,305	24,446	10,723
16 Number of Devices	22,949	6,535	7,397
16 Number of Devices	29,116	35,659	27,676
10 Number of Devices	79,789	27,023	32,744
10 Number of Devices	93,607	99,134	83,542
16 Devices Per Thousand Ft2	9,241	3,199	3,250
16 Devices Per Thousand Ft2	11,518	22,585	11,042
10 Devices Per Thousand Ft2	53,361	22,482	22,749
10 Devices Per Thousand Ft2	61,573	87,673	55,504
16 Number of Devices	2,404	21,114	6,476
16 Number of Devices	7,053	100,583	6,869
10 Number of Devices	2,629	2,598	1,379
10 Number of Devices	6,245	17,596	5,873
16 Devices Per Thousand Ft2	-	13,622	3,974
16 Devices Per Thousand Ft2	-	61,573	-
10 Devices Per Thousand Ft2	-	271	133
10 Devices Per Thousand Ft2	-	7,053	-
16 Number of Devices	20,455	3,886	5,052
16 Number of Devices	-	6,245	-
16 Number of Devices	2,273	382	537
16 Number of Devices	7,415	1,292	1,766
16 Number of Devices	65,800	64,665	63,179
10 Number of Devices	40,483	10,242	14,200
10 Number of Devices	10,935	4,923	4,807

10 Number of Devices	94,473	90,983	86,771
16 Devices Per Thousand Ft2	33,414	5,874	8,022
16 Devices Per Thousand Ft2	-	884	408
16 Devices Per Thousand Ft2	3,713	66,425	877
16 Devices Per Thousand Ft2	12,113	8,992	6,245
16 Devices Per Thousand Ft2	107,485	107,325	104,126
10 Devices Per Thousand Ft2	51,702	107,554	18,135
10 Devices Per Thousand Ft2	13,965	7,109	6,543
10 Devices Per Thousand Ft2	120,653	116,195	110,815
16 Number of Devices	4,566	1,186	1,285
16 Number of Devices	13,396	14,694	13,714
10 Number of Devices	3,058	108,259	1,073
10 Number of Devices	7,265	15,860	11,124
16 Devices Per Thousand Ft2	3,639	2,772	2,037
16 Devices Per Thousand Ft2	10,555	131,138	10,368
10 Devices Per Thousand Ft2	4,810	1,724	1,937
10 Devices Per Thousand Ft2	11,305	24,446	10,723
16 Number of Devices	31,523	9,540	10,870
16 Number of Devices	26,482	32,654	24,203
10 Number of Devices	79,789	27,023	32,744
10 Number of Devices	93,607	99,134	83,542
16 Devices Per Thousand Ft2	12,714	4,393	4,636
16 Devices Per Thousand Ft2	10,476	21,391	9,656
10 Devices Per Thousand Ft2	53,361	25,116	23,120
10 Devices Per Thousand Ft2	61,573	85,039	55,504
16 Number of Devices	2,404	21,114	6,476
16 Number of Devices	7,053	100,583	6,869
10 Number of Devices	2,629	3,640	1,531
10 Number of Devices	6,245	16,554	5,873
16 Devices Per Thousand Ft2	-	13,622	3,974
16 Devices Per Thousand Ft2	-	61,573	-
10 Devices Per Thousand Ft2	-	271	133
10 Devices Per Thousand Ft2	-	7,053	-
16 Number of Devices	20,455	3,886	5,052
16 Number of Devices	-	6,245	-
16 Number of Devices	2,273	382	537
16 Number of Devices	7,415	1,292	1,766
16 Number of Devices	65,800	64,665	63,179
10 Number of Devices	40,483	10,242	14,200
10 Number of Devices	10,935	4,923	4,807
10 Number of Devices	94,473	90,983	86,771
16 Devices Per Thousand Ft2	3,341	818	916
16 Devices Per Thousand Ft2	33,414	6,501	8,304
16 Devices Per Thousand Ft2	371	65,863	88
16 Devices Per Thousand Ft2	12,113	8,992	6,245
16 Devices Per Thousand Ft2	107,485	107,325	104,126
10 Devices Per Thousand Ft2	51,702	107,554	18,135
10 Devices Per Thousand Ft2	13,965	3,721	4,875
10 Devices Per Thousand Ft2	120,653	119,960	112,669
16 Number of Devices	4,566	809	1,100
16 Number of Devices	13,396	14,694	13,714
10 Number of Devices	3,058	108,259	1,073
10 Number of Devices	7,265	15,860	11,124
16 Devices Per Thousand Ft2	3,639	2,772	2,037
16 Devices Per Thousand Ft2	10,555	131,138	10,368
10 Devices Per Thousand Ft2	4,810	1,724	1,937
10 Devices Per Thousand Ft2	11,305	24,446	10,723
16 Number of Devices	31,523	9,540	10,870
16 Number of Devices	26,482	32,654	24,203
10 Number of Devices	79,789	27,023	32,744
10 Number of Devices	93,607	99,134	83,542

16 Devices Per Thousand Ft2	9,241	3,199	3,250
16 Devices Per Thousand Ft2	11,518	22,585	11,042
10 Devices Per Thousand Ft2	53,361	25,116	23,120
10 Devices Per Thousand Ft2	61,573	85,039	55,504
16 Number of Devices	2,404	21,114	6,476
16 Number of Devices	7,053	100,583	6,869
10 Number of Devices	2,629	2,598	1,379
10 Number of Devices	6,245	17,596	5,873
16 Devices Per Thousand Ft2	-	13,622	3,974
16 Devices Per Thousand Ft2	-	61,573	-
10 Devices Per Thousand Ft2	-	271	133
10 Devices Per Thousand Ft2	-	7,053	-

2025	2026	2027	2028	2029	2030	2031
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
210,998	263,433	319,968	379,720	442,948	511,829	585,197
930,760	886,431	838,060	786,530	731,583	669,631	603,234
-	-	-	-	-	-	-
300,677	373,308	448,772	526,391	605,974	686,777	761,551
761,297	696,207	628,336	558,364	486,484	412,126	343,836
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
344,664	430,318	522,668	620,273	723,555	836,073	955,919
1,520,396	1,447,984	1,368,970	1,284,796	1,195,040	1,093,842	985,382
-	-	-	-	-	-	-
383,998	476,755	573,131	672,259	773,895	877,090	972,583
972,260	889,132	802,454	713,093	621,293	526,330	439,116
-	-	-	-	-	-	-
229,373	231,002	232,642	234,294	235,957	237,349	238,750
-	-	-	-	-	-	-
80,230	80,799	81,373	81,951	82,533	83,020	83,509
-	-	-	-	-	-	-
183,938	186,145	188,379	190,639	192,927	194,278	195,637
-	-	-	-	-	-	-
127,056	128,581	130,124	131,685	133,266	134,199	135,138
151,044	169,823	188,761	207,555	225,870	243,055	259,471
418,836	406,248	393,547	381,033	369,044	357,152	346,061
433,849	478,499	515,566	545,348	568,749	586,208	599,409
744,230	707,945	679,301	658,003	643,147	632,837	626,829
60,827	68,739	76,792	84,865	92,818	99,910	106,691
168,670	164,435	160,103	155,796	151,654	146,811	142,296
291,300	323,070	350,035	372,313	390,443	403,027	412,715
499,699	477,987	461,200	449,223	441,517	435,086	431,594
-	-	-	-	-	-	-
120,761	121,619	122,482	123,352	124,228	124,961	125,698
-	-	-	-	-	-	-
68,959	69,449	69,942	70,439	70,939	71,357	71,778
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
13,641	17,290	21,358	25,808	30,627	35,831	41,587
136,414	172,896	213,583	258,078	306,268	358,315	415,867
1,516	1,921	2,373	2,868	3,403	3,981	4,621
45,747	54,855	63,599	71,589	78,653	84,838	89,417
944,440	902,902	857,114	807,908	755,580	698,494	636,940
237,829	291,929	349,196	409,177	471,342	534,467	598,591
58,335	67,853	75,820	81,958	86,131	88,188	87,289
765,811	709,733	652,092	593,621	534,984	476,248	419,507
22,283	28,243	34,889	42,157	50,029	58,531	67,932
222,831	282,426	348,888	421,570	500,288	585,307	679,318
2,476	3,138	3,877	4,684	5,559	6,503	7,548
74,727	89,606	103,889	116,941	128,480	138,583	146,062
1,542,742	1,474,889	1,400,095	1,319,716	1,234,239	1,140,990	1,040,441
303,733	372,825	445,962	522,564	601,955	682,572	764,466

74,500	86,656	96,831	104,670	109,999	112,626	111,477
978,024	906,407	832,793	758,119	683,233	608,221	535,757
30,450	38,593	47,675	57,607	68,364	79,982	92,828
198,923	192,408	184,966	176,686	167,593	157,367	145,921
17,967	22,055	26,381	30,912	35,609	40,378	45,222
62,262	58,745	54,992	51,038	46,924	42,642	38,287
24,418	31,099	38,605	46,874	55,897	65,467	76,066
159,520	155,046	149,774	143,766	137,030	128,810	119,572
28,454	35,097	42,186	49,673	57,498	65,269	73,180
98,602	93,484	87,938	82,013	75,768	68,929	61,958
151,044	169,823	188,761	207,555	225,870	243,055	259,471
418,836	406,248	393,547	381,033	369,044	357,152	346,061
433,849	478,499	515,566	545,348	568,749	586,208	599,409
744,230	707,945	679,301	658,003	643,147	632,837	626,829
60,827	68,739	76,792	84,865	92,818	99,910	106,691
168,670	164,435	160,103	155,796	151,654	146,811	142,296
291,300	323,070	350,035	372,313	390,443	403,027	412,715
499,699	477,987	461,200	449,223	441,517	435,086	431,594
16,031	20,319	25,100	30,329	35,993	42,109	48,873
104,730	101,300	97,382	93,023	88,235	82,852	76,825
15,443	18,956	22,675	26,570	30,607	34,706	38,870
53,516	50,493	47,267	43,869	40,332	36,652	32,909
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
136,414	172,896	213,583	258,078	306,268	358,315	415,867
-	-	-	-	-	-	-
15,157	19,211	23,731	28,675	34,030	39,813	46,207
45,747	54,855	63,599	71,589	78,653	84,838	89,417
944,440	902,902	857,114	807,908	755,580	698,494	636,940
237,829	291,929	349,196	409,177	471,342	534,467	598,591
58,335	67,853	75,820	81,958	86,131	88,188	87,289
765,811	709,733	652,092	593,621	534,984	476,248	419,507
222,831	282,426	348,888	421,570	500,288	585,307	679,318
-	-	-	-	-	-	-
24,759	31,381	38,765	46,841	55,588	65,034	75,480
74,727	89,606	103,889	116,941	128,480	138,583	146,062
1,542,742	1,474,889	1,400,095	1,319,716	1,234,239	1,140,990	1,040,441
303,733	372,825	445,962	522,564	601,955	682,572	764,466
74,500	86,656	96,831	104,670	109,999	112,626	111,477
978,024	906,407	832,793	758,119	683,233	608,221	535,757
30,450	38,593	47,675	57,607	68,364	79,982	92,828
198,923	192,408	184,966	176,686	167,593	157,367	145,921
17,967	22,055	26,381	30,912	35,609	40,378	45,222
62,262	58,745	54,992	51,038	46,924	42,642	38,287
24,418	31,099	38,605	46,874	55,897	65,467	76,066
159,520	155,046	149,774	143,766	137,030	128,810	119,572
28,454	35,097	42,186	49,673	57,498	65,269	73,180
98,602	93,484	87,938	82,013	75,768	68,929	61,958
226,349	257,344	289,883	323,353	357,042	389,776	420,729
343,530	318,728	292,425	265,236	237,872	210,431	184,803
433,849	478,499	515,566	545,348	568,749	646,113	726,554
744,230	707,945	679,301	658,003	643,147	632,837	626,829
91,154	104,164	117,930	132,212	146,722	160,221	172,998
138,344	129,010	118,965	108,449	97,750	86,500	75,989
291,300	323,070	350,035	372,313	390,443	444,213	500,259
499,699	477,987	461,200	449,223	441,517	393,900	344,051
16,031	20,319	25,100	30,329	35,993	42,109	48,873
104,730	101,300	97,382	93,023	88,235	82,852	76,825
15,443	18,956	22,675	26,570	30,607	34,706	38,870

53,516	50,493	47,267	43,869	40,332	36,652	32,909
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
136,414	172,896	213,583	258,078	306,268	358,315	415,867
-	-	-	-	-	-	-
15,157	19,211	23,731	28,675	34,030	39,813	46,207
45,747	54,855	63,599	71,589	78,653	84,838	89,417
944,440	902,902	857,114	807,908	755,580	698,494	636,940
237,829	291,929	349,196	409,177	471,342	534,467	598,591
58,335	67,853	75,820	81,958	86,131	88,188	87,289
765,811	709,733	652,092	593,621	534,984	476,248	419,507
22,283	28,243	34,889	42,157	50,029	58,531	67,932
222,831	282,426	348,888	421,570	500,288	585,307	679,318
2,476	3,138	3,877	4,684	5,559	6,503	7,548
74,727	89,606	103,889	116,941	128,480	138,583	146,062
1,542,742	1,474,889	1,400,095	1,319,716	1,234,239	1,140,990	1,040,441
303,733	372,825	445,962	522,564	601,955	682,572	764,466
74,500	86,656	96,831	104,670	109,999	112,626	111,477
978,024	906,407	832,793	758,119	683,233	608,221	535,757
30,450	38,593	47,675	57,607	68,364	79,982	92,828
198,923	192,408	184,966	176,686	167,593	157,367	145,921
17,967	22,055	26,381	30,912	35,609	40,378	45,222
62,262	58,745	54,992	51,038	46,924	42,642	38,287
24,418	31,099	38,605	46,874	55,897	65,467	76,066
159,520	155,046	149,774	143,766	137,030	128,810	119,572
28,454	35,097	42,186	49,673	57,498	65,269	73,180
98,602	93,484	87,938	82,013	75,768	68,929	61,958
226,349	257,344	289,883	323,353	357,042	389,776	420,729
343,530	318,728	292,425	265,236	237,872	210,431	184,803
433,849	478,499	515,566	545,348	568,749	646,113	726,554
744,230	707,945	679,301	658,003	643,147	572,933	499,684
60,827	68,739	76,792	84,865	92,818	99,910	106,691
168,670	164,435	160,103	155,796	151,654	146,811	142,296
291,300	323,070	350,035	372,313	390,443	403,027	412,715
499,699	477,987	461,200	449,223	441,517	435,086	431,594
16,031	20,319	25,100	30,329	35,993	42,109	48,873
104,730	101,300	97,382	93,023	88,235	82,852	76,825
15,443	18,956	22,675	26,570	30,607	34,706	38,870
53,516	50,493	47,267	43,869	40,332	36,652	32,909
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

2025	2026	2027	2028	2029	2030	2031
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
10,230	13,187	16,465	19,998	23,733	27,684	31,989
60,627	58,173	55,402	52,379	49,158	45,724	41,852
-	-	-	-	-	-	-
23,219	30,068	37,331	44,877	52,639	60,597	68,678
82,229	76,130	69,621	62,834	55,836	48,648	41,213
-	-	-	-	-	-	-

-	-	-	-	-	-	-
-	-	-	-	-	-	-
16,710	21,542	26,895	32,667	38,767	45,222	52,255
99,034	95,025	90,499	85,561	80,300	74,690	68,365
-	-	-	-	-	-	-
29,654	38,400	47,676	57,313	67,226	77,389	87,709
105,016	97,226	88,913	80,245	71,309	62,129	52,633
-	-	-	-	-	-	-
14,235	14,336	14,438	14,540	14,643	14,747	14,834
-	-	-	-	-	-	-
7,966	8,023	8,080	8,137	8,195	8,253	8,302
-	-	-	-	-	-	-
11,360	11,496	11,634	11,774	11,915	12,058	12,142
-	-	-	-	-	-	-
12,555	12,706	12,858	13,012	13,169	13,327	13,420
8,285	9,440	10,614	11,798	12,972	14,117	15,191
26,948	26,177	25,391	24,597	23,815	23,065	22,322
38,226	43,385	47,850	51,557	54,535	56,875	58,621
78,752	74,423	70,795	67,930	65,800	64,315	63,284
3,319	3,802	4,296	4,800	5,304	5,801	6,244
10,797	10,542	10,277	10,006	9,737	9,478	9,176
25,523	29,130	32,307	35,004	37,231	39,044	40,303
52,583	49,970	47,799	46,120	44,922	44,152	43,509
-	-	-	-	-	-	-
7,494	7,548	7,601	7,655	7,709	7,764	7,810
-	-	-	-	-	-	-
6,847	6,896	6,945	6,994	7,044	7,094	7,136
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
652	853	1,081	1,335	1,613	1,914	2,239
6,521	8,526	10,806	13,349	16,130	19,142	22,395
72	95	120	148	179	213	249
2,296	2,859	3,428	3,975	4,474	4,916	5,302
61,316	59,028	56,431	53,570	50,494	47,224	43,656
18,728	23,783	29,193	34,920	40,918	47,134	53,447
4,774	5,834	6,785	7,582	8,196	8,613	8,819
81,947	76,581	70,973	65,209	59,362	53,498	47,625
1,065	1,393	1,765	2,181	2,635	3,127	3,658
10,651	13,927	17,652	21,806	26,348	31,268	36,582
118	155	196	242	293	347	406
3,750	4,670	5,600	6,493	7,309	8,030	8,661
100,159	96,421	92,181	87,506	82,482	77,140	71,312
23,918	30,373	37,283	44,596	52,256	60,196	68,257
6,097	7,450	8,666	9,683	10,467	11,000	11,263
104,655	97,802	90,641	83,279	75,812	68,323	60,822
1,455	1,903	2,412	2,980	3,600	4,273	4,999
12,779	12,433	12,026	11,560	11,043	10,475	9,835
1,415	1,797	2,205	2,638	3,091	3,561	4,038
6,552	6,226	5,874	5,499	5,104	4,692	4,264
1,162	1,526	1,944	2,413	2,930	3,494	4,092
10,198	9,970	9,690	9,361	8,985	8,564	8,051
2,230	2,845	3,510	4,219	4,967	5,750	6,527
10,325	9,860	9,348	8,794	8,201	7,577	6,893
8,285	9,440	10,614	11,798	12,972	14,117	15,191
26,948	26,177	25,391	24,597	23,815	23,065	22,322
38,226	43,385	47,850	51,557	54,535	56,875	58,621
78,752	74,423	70,795	67,930	65,800	64,315	63,284
3,319	3,802	4,296	4,800	5,304	5,801	6,244
10,797	10,542	10,277	10,006	9,737	9,478	9,176

25,523	29,130	32,307	35,004	37,231	39,044	40,303
52,583	49,970	47,799	46,120	44,922	44,152	43,509
766	1,002	1,270	1,569	1,896	2,250	2,632
6,728	6,546	6,331	6,086	5,814	5,515	5,178
1,216	1,544	1,896	2,268	2,657	3,061	3,471
5,631	5,352	5,049	4,727	4,387	4,033	3,665
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
6,521	8,526	10,806	13,349	16,130	19,142	22,395
-	-	-	-	-	-	-
725	947	1,201	1,483	1,792	2,127	2,488
2,296	2,859	3,428	3,975	4,474	4,916	5,302
61,316	59,028	56,431	53,570	50,494	47,224	43,656
18,728	23,783	29,193	34,920	40,918	47,134	53,447
4,774	5,834	6,785	7,582	8,196	8,613	8,819
81,947	76,581	70,973	65,209	59,362	53,498	47,625
10,651	13,927	17,652	21,806	26,348	31,268	36,582
-	-	-	-	-	-	-
1,183	1,547	1,961	2,423	2,928	3,474	4,065
3,750	4,670	5,600	6,493	7,309	8,030	8,661
100,159	96,421	92,181	87,506	82,482	77,140	71,312
23,918	30,373	37,283	44,596	52,256	60,196	68,257
6,097	7,450	8,666	9,683	10,467	11,000	11,263
104,655	97,802	90,641	83,279	75,812	68,323	60,822
1,455	1,903	2,412	2,980	3,600	4,273	4,999
12,779	12,433	12,026	11,560	11,043	10,475	9,835
1,415	1,797	2,205	2,638	3,091	3,561	4,038
6,552	6,226	5,874	5,499	5,104	4,692	4,264
1,162	1,526	1,944	2,413	2,930	3,494	4,092
10,198	9,970	9,690	9,361	8,985	8,564	8,051
2,230	2,845	3,510	4,219	4,967	5,750	6,527
10,325	9,860	9,348	8,794	8,201	7,577	6,893
12,325	14,147	16,084	18,118	20,210	22,315	24,361
22,908	21,471	19,920	18,277	16,577	14,867	13,152
38,226	43,385	47,850	51,557	54,535	56,875	64,611
78,752	74,423	70,795	67,930	65,800	64,315	57,293
4,938	5,697	6,510	7,371	8,263	9,170	10,014
9,178	8,646	8,063	7,435	6,778	6,109	5,406
25,523	29,130	32,307	35,004	37,231	39,044	44,421
52,583	49,970	47,799	46,120	44,922	44,152	39,390
766	1,002	1,270	1,569	1,896	2,250	2,632
6,728	6,546	6,331	6,086	5,814	5,515	5,178
1,216	1,544	1,896	2,268	2,657	3,061	3,471
5,631	5,352	5,049	4,727	4,387	4,033	3,665
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
6,521	8,526	10,806	13,349	16,130	19,142	22,395
-	-	-	-	-	-	-
725	947	1,201	1,483	1,792	2,127	2,488
2,296	2,859	3,428	3,975	4,474	4,916	5,302
61,316	59,028	56,431	53,570	50,494	47,224	43,656
18,728	23,783	29,193	34,920	40,918	47,134	53,447
4,774	5,834	6,785	7,582	8,196	8,613	8,819
81,947	76,581	70,973	65,209	59,362	53,498	47,625
1,065	1,393	1,765	2,181	2,635	3,127	3,658
10,651	13,927	17,652	21,806	26,348	31,268	36,582
118	155	196	242	293	347	406

3,750	4,670	5,600	6,493	7,309	8,030	8,661
100,159	96,421	92,181	87,506	82,482	77,140	71,312
23,918	30,373	37,283	44,596	52,256	60,196	68,257
6,097	7,450	8,666	9,683	10,467	11,000	11,263
104,655	97,802	90,641	83,279	75,812	68,323	60,822
1,455	1,903	2,412	2,980	3,600	4,273	4,999
12,779	12,433	12,026	11,560	11,043	10,475	9,835
1,415	1,797	2,205	2,638	3,091	3,561	4,038
6,552	6,226	5,874	5,499	5,104	4,692	4,264
1,162	1,526	1,944	2,413	2,930	3,494	4,092
10,198	9,970	9,690	9,361	8,985	8,564	8,051
2,230	2,845	3,510	4,219	4,967	5,750	6,527
10,325	9,860	9,348	8,794	8,201	7,577	6,893
12,325	14,147	16,084	18,118	20,210	22,315	24,361
22,908	21,471	19,920	18,277	16,577	14,867	13,152
38,226	43,385	47,850	51,557	54,535	56,875	64,611
78,752	74,423	70,795	67,930	65,800	64,315	57,293
3,319	3,802	4,296	4,800	5,304	5,801	6,244
10,797	10,542	10,277	10,006	9,737	9,478	9,176
25,523	29,130	32,307	35,004	37,231	39,044	40,303
52,583	49,970	47,799	46,120	44,922	44,152	43,509
766	1,002	1,270	1,569	1,896	2,250	2,632
6,728	6,546	6,331	6,086	5,814	5,515	5,178
1,216	1,544	1,896	2,268	2,657	3,061	3,471
5,631	5,352	5,049	4,727	4,387	4,033	3,665
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

2025	2026	2027	2028	2029	2030	2031
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
10,230	13,187	16,465	19,998	23,733	27,684	31,989
60,627	58,173	55,402	52,379	49,158	45,724	41,852
1	1	1	1	1	1	1
23,219	30,068	37,331	44,877	52,639	60,597	68,678
82,229	76,130	69,621	62,834	55,836	48,648	41,213
-	-	-	-	-	-	-
2,181	2,581	2,958	3,277	3,533	3,735	3,952
-	-	-	-	-	-	-
16,710	21,542	26,895	32,667	38,767	45,222	52,255
104,409	101,249	97,347	92,824	87,846	82,452	76,323
-	-	-	-	-	-	-
29,654	38,400	47,676	57,313	67,226	77,389	87,709
105,016	97,226	88,913	80,245	71,309	62,129	52,633
-	-	-	-	-	-	-
17,798	18,552	19,269	19,893	20,415	20,848	21,289
-	-	-	-	-	-	-
7,966	8,023	8,080	8,137	8,195	8,253	8,302
6,864	7,949	8,746	9,276	9,638	9,913	10,164
11,360	11,496	11,634	11,774	11,915	12,058	12,142
-	-	-	-	-	-	-
12,663	12,814	12,959	13,114	13,271	13,430	13,524
8,285	9,440	10,614	11,798	12,972	14,117	15,191
27,009	26,238	25,447	24,654	23,872	23,123	22,380

38,226	43,385	47,850	51,557	54,535	56,875	58,621
78,885	74,558	70,931	68,068	65,940	64,456	63,427
3,319	3,802	4,296	4,800	5,304	5,801	6,244
10,944	10,691	10,428	10,159	9,892	9,635	9,334
26,652	30,271	33,462	36,177	38,415	40,219	41,447
52,583	49,970	47,799	46,120	44,922	44,152	43,509
5,924	5,684	5,159	4,465	3,707	2,978	2,340
7,494	7,548	7,601	7,655	7,709	7,764	7,810
460	469	482	494	503	505	497
6,847	6,896	6,945	6,994	7,044	7,094	7,136
4,024	3,903	3,607	3,177	2,696	2,228	1,813
-	-	-	-	-	-	-
-	-	-	-	-	-	-
57	57	53	54	54	54	55
652	853	1,081	1,335	1,613	1,914	2,239
6,572	8,578	10,855	13,398	16,179	19,191	22,445
72	95	120	148	179	213	249
2,296	2,859	3,428	3,975	4,474	4,916	5,302
61,316	59,028	56,431	53,570	50,494	47,224	43,656
18,728	23,783	29,193	34,920	40,918	47,134	53,447
4,913	6,002	6,986	7,810	8,450	8,891	9,120
83,342	78,268	72,979	67,489	61,905	56,279	50,637
1,081	1,411	1,787	2,206	2,663	3,158	3,692
11,125	14,457	18,215	22,375	26,895	31,767	37,023
118	155	196	242	293	347	406
7,709	9,198	10,655	11,903	13,036	14,028	14,878
101,213	97,523	93,240	88,458	83,279	77,754	71,729
23,918	30,373	37,283	44,596	52,256	60,196	68,257
6,325	7,726	8,993	10,056	10,882	11,454	11,755
106,933	100,558	93,916	87,004	79,966	72,866	65,742
1,481	1,934	2,448	3,021	3,647	4,323	5,054
13,554	13,298	12,946	12,490	11,936	11,290	10,557
1,415	1,797	2,205	2,638	3,091	3,561	4,038
11,607	12,009	12,330	12,408	12,417	12,353	12,203
2,507	2,933	3,297	3,628	3,947	4,277	4,625
10,198	9,970	9,690	9,361	8,985	8,564	8,051
2,541	3,222	3,957	4,728	5,535	6,371	7,199
10,325	9,860	9,348	8,794	8,201	7,577	6,893
8,584	9,782	10,996	12,206	13,405	14,570	15,661
26,948	26,177	25,391	24,597	23,815	23,065	22,322
38,476	43,689	48,214	51,974	55,004	57,392	59,185
78,752	74,423	70,795	67,930	65,800	64,315	63,284
3,794	4,348	4,912	5,464	6,013	6,550	7,027
10,797	10,542	10,277	10,006	9,737	9,478	9,176
26,652	30,271	33,462	36,177	38,415	40,219	41,447
52,583	49,970	47,799	46,120	44,922	44,152	43,509
6,691	6,686	6,429	6,034	5,602	5,228	4,972
6,728	6,546	6,331	6,086	5,814	5,515	5,178
1,676	2,014	2,378	2,762	3,160	3,565	3,968
5,631	5,352	5,049	4,727	4,387	4,033	3,665
4,024	3,903	3,607	3,177	2,696	2,228	1,813
-	-	-	-	-	-	-
164	198	236	268	299	327	354
-	-	-	-	-	-	-
6,778	8,820	11,134	13,700	16,502	19,531	22,798
-	-	-	-	-	-	-
725	947	1,201	1,483	1,792	2,127	2,488
2,296	2,859	3,428	3,975	4,474	4,916	5,302
61,316	59,028	56,431	53,570	50,494	47,224	43,656
18,728	23,783	29,193	34,920	40,918	47,134	53,447
6,168	7,520	8,791	9,862	10,739	11,394	11,831

81,947	76,581	70,973	65,209	59,362	53,498	47,625
10,806	14,114	17,874	22,059	26,631	31,577	36,916
474	530	563	569	546	499	441
1,183	1,547	1,961	2,423	2,928	3,474	4,065
7,709	9,198	10,655	11,903	13,036	14,028	14,878
101,213	97,523	93,240	88,458	83,279	77,754	71,729
23,918	30,373	37,283	44,596	52,256	60,196	68,257
8,375	10,206	11,941	13,408	14,621	15,543	16,182
104,655	97,802	90,641	83,279	75,812	68,323	60,822
1,709	2,209	2,776	3,394	4,062	4,777	5,546
13,554	13,298	12,946	12,490	11,936	11,290	10,557
1,415	1,797	2,205	2,638	3,091	3,561	4,038
11,607	12,009	12,330	12,408	12,417	12,353	12,203
2,507	2,933	3,297	3,628	3,947	4,277	4,625
10,198	9,970	9,690	9,361	8,985	8,564	8,051
2,541	3,222	3,957	4,728	5,535	6,371	7,199
10,325	9,860	9,348	8,794	8,201	7,577	6,893
12,624	14,489	16,466	18,526	20,642	22,768	24,831
22,908	21,471	19,920	18,277	16,577	14,867	13,152
38,476	43,689	48,214	51,974	55,004	57,392	65,175
78,752	74,423	70,795	67,930	65,800	64,315	57,293
5,413	6,243	7,126	8,035	8,972	9,919	10,796
9,178	8,646	8,063	7,435	6,778	6,109	5,406
27,119	30,839	34,128	36,941	39,265	41,136	46,527
52,583	49,970	47,799	46,120	44,922	44,152	39,390
6,691	6,686	6,429	6,034	5,602	5,228	4,972
6,728	6,546	6,331	6,086	5,814	5,515	5,178
1,868	2,247	2,654	3,081	3,517	3,953	4,377
5,631	5,352	5,049	4,727	4,387	4,033	3,665
4,024	3,903	3,607	3,177	2,696	2,228	1,813
-	-	-	-	-	-	-
164	198	236	268	299	327	354
-	-	-	-	-	-	-
6,778	8,820	11,134	13,700	16,502	19,531	22,798
-	-	-	-	-	-	-
725	947	1,201	1,483	1,792	2,127	2,488
2,296	2,859	3,428	3,975	4,474	4,916	5,302
61,316	59,028	56,431	53,570	50,494	47,224	43,656
18,728	23,783	29,193	34,920	40,918	47,134	53,447
6,168	7,520	8,791	9,862	10,739	11,394	11,831
81,947	76,581	70,973	65,209	59,362	53,498	47,625
1,220	1,580	1,988	2,434	2,917	3,436	3,993
11,125	14,457	18,215	22,375	26,895	31,767	37,023
118	155	196	242	293	347	406
7,709	9,198	10,655	11,903	13,036	14,028	14,878
101,213	97,523	93,240	88,458	83,279	77,754	71,729
23,918	30,373	37,283	44,596	52,256	60,196	68,257
6,325	7,726	8,993	10,056	10,882	11,454	11,755
106,933	100,558	93,916	87,004	79,966	72,866	65,742
1,481	1,934	2,448	3,021	3,647	4,323	5,054
13,554	13,298	12,946	12,490	11,936	11,290	10,557
1,415	1,797	2,205	2,638	3,091	3,561	4,038
11,607	12,009	12,330	12,408	12,417	12,353	12,203
2,507	2,933	3,297	3,628	3,947	4,277	4,625
10,198	9,970	9,690	9,361	8,985	8,564	8,051
2,541	3,222	3,957	4,728	5,535	6,371	7,199
10,325	9,860	9,348	8,794	8,201	7,577	6,893
12,624	14,489	16,466	18,526	20,642	22,768	24,831
22,908	21,471	19,920	18,277	16,577	14,867	13,152
38,476	43,689	48,214	51,974	55,004	57,392	65,175
78,752	74,423	70,795	67,930	65,800	64,315	57,293

3,794	4,348	4,912	5,464	6,013	6,550	7,027
10,797	10,542	10,277	10,006	9,737	9,478	9,176
27,119	30,839	34,128	36,941	39,265	41,136	42,408
52,583	49,970	47,799	46,120	44,922	44,152	43,509
6,691	6,686	6,429	6,034	5,602	5,228	4,972
6,728	6,546	6,331	6,086	5,814	5,515	5,178
1,676	2,014	2,378	2,762	3,160	3,565	3,968
5,631	5,352	5,049	4,727	4,387	4,033	3,665
4,024	3,903	3,607	3,177	2,696	2,228	1,813
-	-	-	-	-	-	-
164	198	236	268	299	327	354
-	-	-	-	-	-	-

2032	2033	2034	2035	2036	2037	2038
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
662,229	739,360	813,935	883,312	946,826	1,004,429	1,056,499
533,214	463,135	395,655	332,568	275,377	224,130	178,448
-	-	-	-	-	-	-
830,155	892,345	947,853	995,802	1,036,823	1,071,153	1,099,277
281,753	226,124	177,215	135,116	99,976	71,557	49,375
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
1,081,750	1,207,745	1,329,563	1,442,889	1,546,639	1,640,733	1,725,791
871,004	756,531	646,302	543,250	449,829	366,116	291,494
-	-	-	-	-	-	-
1,060,199	1,139,622	1,210,511	1,271,748	1,324,136	1,367,980	1,403,897
359,830	288,785	226,323	172,558	127,681	91,386	63,058
-	-	-	-	-	-	-
240,158	241,575	243,000	244,264	245,534	246,811	248,094
-	-	-	-	-	-	-
84,002	84,498	84,996	85,438	85,883	86,329	86,778
-	-	-	-	-	-	-
197,007	198,386	199,775	201,173	202,581	203,999	205,427
-	-	-	-	-	-	-
136,084	137,036	137,996	138,962	139,934	140,914	141,900
275,055	289,326	301,211	309,469	314,631	317,920	320,518
335,832	326,949	320,484	317,030	316,698	318,263	320,546
609,191	616,465	622,128	626,409	630,171	633,675	637,063
624,282	624,285	625,943	628,152	630,913	633,967	637,170
113,135	119,043	123,973	127,546	129,851	131,387	132,642
138,133	134,523	131,905	130,662	130,703	131,529	132,653
420,072	425,717	430,261	434,163	437,717	441,104	444,422
430,478	431,117	432,900	435,371	438,232	441,307	444,496
-	-	-	-	-	-	-
126,440	127,186	127,936	128,601	129,270	129,942	130,618
-	-	-	-	-	-	-
72,202	72,628	73,056	73,436	73,818	74,202	74,588
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
47,954	54,775	61,648	68,155	73,921	79,104	83,855
479,536	547,746	616,475	681,550	739,211	791,045	838,555
5,328	6,086	6,850	7,573	8,213	8,789	9,317
91,767	91,289	88,254	83,291	77,635	71,459	64,851
570,857	502,600	436,364	375,311	323,222	278,161	238,368
663,134	727,643	791,840	855,042	911,705	962,034	1,006,302
83,764	77,953	70,185	60,729	51,324	42,341	34,058
365,010	312,873	263,043	215,147	173,769	138,336	108,292
78,332	89,474	100,701	111,331	120,750	129,217	136,978
783,322	894,743	1,007,011	1,113,312	1,207,501	1,292,171	1,369,779
8,704	9,942	11,189	12,370	13,417	14,357	15,220
149,901	149,120	144,163	136,056	126,816	116,729	105,934
932,495	820,997	712,800	613,070	527,984	454,375	389,374
846,894	929,279	1,011,267	1,091,982	1,164,348	1,228,623	1,285,158

106,976	99,554	89,634	77,558	65,547	54,073	43,496
466,158	399,573	335,934	274,766	221,922	176,670	138,301
107,040	122,266	137,607	152,133	165,004	176,574	187,179
133,118	119,309	105,393	92,131	80,530	70,237	60,915
50,098	54,972	59,822	64,596	68,877	72,679	76,024
33,904	29,526	25,175	20,842	17,005	13,650	10,754
87,808	100,407	113,129	125,295	136,139	145,946	154,988
109,199	97,979	86,645	75,878	66,442	58,054	50,439
81,159	89,152	97,124	105,063	112,226	118,634	124,315
54,924	47,885	40,872	33,898	27,708	22,280	17,585
275,055	289,326	301,211	309,469	314,631	317,920	320,518
335,832	326,949	320,484	317,030	316,698	318,263	320,546
609,191	616,465	622,128	626,409	630,171	633,675	637,063
624,282	624,285	625,943	628,152	630,913	633,967	637,170
113,135	119,043	123,973	127,546	129,851	131,387	132,642
138,133	134,523	131,905	130,662	130,703	131,529	132,653
420,072	425,717	430,261	434,163	437,717	441,104	444,422
430,478	431,117	432,900	435,371	438,232	441,307	444,496
56,355	64,371	72,448	80,096	86,872	92,964	98,547
70,084	62,814	55,488	48,505	42,398	36,979	32,071
43,061	47,250	51,418	55,522	59,202	62,470	65,344
29,141	25,378	21,638	17,914	14,616	11,732	9,244
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
479,536	547,746	616,475	681,550	739,211	791,045	838,555
-	-	-	-	-	-	-
53,282	60,861	68,497	75,728	82,135	87,894	93,173
91,767	91,289	88,254	83,291	77,635	71,459	64,851
570,857	502,600	436,364	375,311	323,222	278,161	238,368
663,134	727,643	791,840	855,042	911,705	962,034	1,006,302
83,764	77,953	70,185	60,729	51,324	42,341	34,058
365,010	312,873	263,043	215,147	173,769	138,336	108,292
783,322	894,743	1,007,011	1,113,312	1,207,501	1,292,171	1,369,779
-	-	-	-	-	-	-
87,036	99,416	111,890	123,701	134,167	143,575	152,198
149,901	149,120	144,163	136,056	126,816	116,729	105,934
932,495	820,997	712,800	613,070	527,984	454,375	389,374
846,894	929,279	1,011,267	1,091,982	1,164,348	1,228,623	1,285,158
106,976	99,554	89,634	77,558	65,547	54,073	43,496
466,158	399,573	335,934	274,766	221,922	176,670	138,301
107,040	122,266	137,607	152,133	165,004	176,574	187,179
133,118	119,309	105,393	92,131	80,530	70,237	60,915
50,098	54,972	59,822	64,596	68,877	72,679	76,024
33,904	29,526	25,175	20,842	17,005	13,650	10,754
87,808	100,407	113,129	125,295	136,139	145,946	154,988
109,199	97,979	86,645	75,878	66,442	58,054	50,439
81,159	89,152	97,124	105,063	112,226	118,634	124,315
54,924	47,885	40,872	33,898	27,708	22,280	17,585
450,363	479,020	506,342	531,019	553,215	573,140	591,128
160,525	137,255	115,353	95,481	78,114	63,044	49,936
807,532	883,689	953,542	1,016,882	1,074,397	1,125,626	1,170,036
425,941	357,061	294,528	237,678	186,687	142,015	104,198
185,242	197,092	208,401	218,856	228,316	236,862	244,630
66,026	56,473	47,477	39,352	32,238	26,054	20,665
556,839	610,255	659,466	704,799	746,277	783,554	816,229
293,710	246,578	203,695	164,734	129,673	98,858	72,689
56,355	64,371	72,448	80,096	86,872	92,964	98,547
70,084	62,814	55,488	48,505	42,398	36,979	32,071
43,061	47,250	51,418	55,522	59,202	62,470	65,344

29,141	25,378	21,638	17,914	14,616	11,732	9,244
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
479,536	547,746	616,475	681,550	739,211	791,045	838,555
-	-	-	-	-	-	-
53,282	60,861	68,497	75,728	82,135	87,894	93,173
91,767	91,289	88,254	83,291	77,635	71,459	64,851
570,857	502,600	436,364	375,311	323,222	278,161	238,368
663,134	727,643	791,840	855,042	911,705	962,034	1,006,302
83,764	77,953	70,185	60,729	51,324	42,341	34,058
365,010	312,873	263,043	215,147	173,769	138,336	108,292
78,332	89,474	100,701	111,331	120,750	129,217	136,978
783,322	894,743	1,007,011	1,113,312	1,207,501	1,292,171	1,369,779
8,704	9,942	11,189	12,370	13,417	14,357	15,220
149,901	149,120	144,163	136,056	126,816	116,729	105,934
932,495	820,997	712,800	613,070	527,984	454,375	389,374
846,894	929,279	1,011,267	1,091,982	1,164,348	1,228,623	1,285,158
106,976	99,554	89,634	77,558	65,547	54,073	43,496
466,158	399,573	335,934	274,766	221,922	176,670	138,301
107,040	122,266	137,607	152,133	165,004	176,574	187,179
133,118	119,309	105,393	92,131	80,530	70,237	60,915
50,098	54,972	59,822	64,596	68,877	72,679	76,024
33,904	29,526	25,175	20,842	17,005	13,650	10,754
87,808	100,407	113,129	125,295	136,139	145,946	154,988
109,199	97,979	86,645	75,878	66,442	58,054	50,439
81,159	89,152	97,124	105,063	112,226	118,634	124,315
54,924	47,885	40,872	33,898	27,708	22,280	17,585
450,363	479,020	506,342	531,019	553,215	573,140	591,128
160,525	137,255	115,353	95,481	78,114	63,044	49,936
807,532	883,689	953,542	1,016,882	1,074,397	1,125,626	1,170,036
425,941	357,061	294,528	237,678	186,687	142,015	104,198
113,135	119,043	123,973	127,546	129,851	131,387	132,642
138,133	134,523	131,905	130,662	130,703	131,529	132,653
420,072	425,717	430,261	434,163	437,717	441,104	444,422
430,478	431,117	432,900	435,371	438,232	441,307	444,496
56,355	64,371	72,448	80,096	86,872	92,964	98,547
70,084	62,814	55,488	48,505	42,398	36,979	32,071
43,061	47,250	51,418	55,522	59,202	62,470	65,344
29,141	25,378	21,638	17,914	14,616	11,732	9,244
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

2032	2033	2034	2035	2036	2037	2038
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
36,575	41,389	46,210	50,871	55,207	59,177	62,777
37,702	33,326	28,946	24,728	20,786	17,211	14,008
-	-	-	-	-	-	-
76,155	83,016	89,234	94,785	99,580	103,682	107,115
34,384	28,175	22,612	17,722	13,512	9,998	7,156
-	-	-	-	-	-	-

-	-	-	-	-	-	-
-	-	-	-	-	-	-
59,745	67,609	75,484	83,098	90,181	96,665	102,546
61,586	54,438	47,283	40,394	33,953	28,114	22,882
-	-	-	-	-	-	-
97,258	106,020	113,962	121,051	127,175	132,414	136,798
43,912	35,983	28,878	22,632	17,256	12,768	9,139
-	-	-	-	-	-	-
14,922	15,010	15,098	15,188	15,267	15,346	15,426
-	-	-	-	-	-	-
8,351	8,400	8,450	8,500	8,544	8,588	8,633
-	-	-	-	-	-	-
12,227	12,313	12,399	12,486	12,573	12,661	12,750
-	-	-	-	-	-	-
13,514	13,608	13,704	13,800	13,896	13,993	14,091
16,217	17,191	18,083	18,826	19,342	19,664	19,870
21,629	20,990	20,434	20,030	19,814	19,794	19,891
59,941	60,919	61,647	62,213	62,641	63,017	63,367
62,683	62,428	62,428	62,594	62,815	63,091	63,397
6,668	7,071	7,440	7,748	7,972	8,116	8,212
8,893	8,633	8,408	8,244	8,166	8,169	8,221
41,272	42,007	42,572	43,026	43,416	43,772	44,110
43,159	43,048	43,112	43,290	43,537	43,823	44,131
-	-	-	-	-	-	-
7,856	7,902	7,949	7,996	8,038	8,079	8,121
-	-	-	-	-	-	-
7,178	7,220	7,263	7,306	7,344	7,382	7,420
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
2,599	2,997	3,423	3,853	4,260	4,620	4,944
25,992	29,971	34,234	38,530	42,597	46,201	49,440
289	333	380	428	473	513	549
5,589	5,735	5,706	5,516	5,206	4,852	4,466
39,809	35,679	31,413	27,273	23,457	20,201	17,385
59,859	66,313	72,764	79,184	85,504	91,171	96,203
8,729	8,376	7,795	7,018	6,073	5,132	4,234
41,951	36,501	31,287	26,304	21,515	17,377	13,834
4,246	4,896	5,592	6,294	6,958	7,547	8,076
42,457	48,958	55,921	62,938	69,582	75,469	80,761
472	544	621	699	773	839	897
9,129	9,369	9,320	9,010	8,504	7,926	7,296
65,028	58,281	51,312	44,550	38,317	32,999	28,398
76,447	84,689	92,928	101,127	109,198	116,435	122,862
11,148	10,698	9,955	8,963	7,756	6,555	5,407
53,576	46,616	39,957	33,593	27,477	22,192	17,667
5,802	6,690	7,642	8,600	9,508	10,313	11,036
9,120	8,320	7,457	6,587	5,758	5,033	4,390
4,522	5,010	5,497	5,982	6,460	6,888	7,268
3,829	3,390	2,953	2,517	2,084	1,701	1,365
4,754	5,488	6,275	7,071	7,831	8,509	9,122
7,473	6,825	6,124	5,415	4,742	4,153	3,628
7,318	8,116	8,915	9,712	10,506	11,223	11,863
6,196	5,492	4,788	4,087	3,390	2,771	2,228
16,217	17,191	18,083	18,826	19,342	19,664	19,870
21,629	20,990	20,434	20,030	19,814	19,794	19,891
59,941	60,919	61,647	62,213	62,641	63,017	63,367
62,683	62,428	62,428	62,594	62,815	63,091	63,397
6,668	7,071	7,440	7,748	7,972	8,116	8,212
8,893	8,633	8,408	8,244	8,166	8,169	8,221

41,272	42,007	42,572	43,026	43,416	43,772	44,110
43,159	43,048	43,112	43,290	43,537	43,823	44,131
3,055	3,522	4,023	4,528	5,006	5,430	5,810
4,802	4,380	3,926	3,468	3,032	2,650	2,311
3,887	4,306	4,725	5,142	5,552	5,920	6,247
3,291	2,914	2,538	2,164	1,791	1,462	1,173
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
25,992	29,971	34,234	38,530	42,597	46,201	49,440
-	-	-	-	-	-	-
2,888	3,330	3,804	4,281	4,733	5,133	5,493
5,589	5,735	5,706	5,516	5,206	4,852	4,466
39,809	35,679	31,413	27,273	23,457	20,201	17,385
59,859	66,313	72,764	79,184	85,504	91,171	96,203
8,729	8,376	7,795	7,018	6,073	5,132	4,234
41,951	36,501	31,287	26,304	21,515	17,377	13,834
42,457	48,958	55,921	62,938	69,582	75,469	80,761
-	-	-	-	-	-	-
4,717	5,440	6,213	6,993	7,731	8,385	8,973
9,129	9,369	9,320	9,010	8,504	7,926	7,296
65,028	58,281	51,312	44,550	38,317	32,999	28,398
76,447	84,689	92,928	101,127	109,198	116,435	122,862
11,148	10,698	9,955	8,963	7,756	6,555	5,407
53,576	46,616	39,957	33,593	27,477	22,192	17,667
5,802	6,690	7,642	8,600	9,508	10,313	11,036
9,120	8,320	7,457	6,587	5,758	5,033	4,390
4,522	5,010	5,497	5,982	6,460	6,888	7,268
3,829	3,390	2,953	2,517	2,084	1,701	1,365
4,754	5,488	6,275	7,071	7,831	8,509	9,122
7,473	6,825	6,124	5,415	4,742	4,153	3,628
7,318	8,116	8,915	9,712	10,506	11,223	11,863
6,196	5,492	4,788	4,087	3,390	2,771	2,228
26,296	28,148	29,939	31,646	33,189	34,576	35,821
11,550	10,033	8,578	7,210	5,968	4,882	3,940
72,655	80,753	88,369	95,354	101,688	107,440	112,563
49,968	42,594	35,706	29,453	23,768	18,669	14,202
10,812	11,578	12,318	13,025	13,679	14,270	14,804
4,749	4,127	3,530	2,967	2,459	2,015	1,628
50,026	55,684	61,026	65,947	70,480	74,628	78,355
34,405	29,371	24,658	20,369	16,473	12,967	9,886
3,055	3,522	4,023	4,528	5,006	5,430	5,810
4,802	4,380	3,926	3,468	3,032	2,650	2,311
3,887	4,306	4,725	5,142	5,552	5,920	6,247
3,291	2,914	2,538	2,164	1,791	1,462	1,173
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
25,992	29,971	34,234	38,530	42,597	46,201	49,440
-	-	-	-	-	-	-
2,888	3,330	3,804	4,281	4,733	5,133	5,493
5,589	5,735	5,706	5,516	5,206	4,852	4,466
39,809	35,679	31,413	27,273	23,457	20,201	17,385
59,859	66,313	72,764	79,184	85,504	91,171	96,203
8,729	8,376	7,795	7,018	6,073	5,132	4,234
41,951	36,501	31,287	26,304	21,515	17,377	13,834
4,246	4,896	5,592	6,294	6,958	7,547	8,076
42,457	48,958	55,921	62,938	69,582	75,469	80,761
472	544	621	699	773	839	897

9,129	9,369	9,320	9,010	8,504	7,926	7,296
65,028	58,281	51,312	44,550	38,317	32,999	28,398
76,447	84,689	92,928	101,127	109,198	116,435	122,862
11,148	10,698	9,955	8,963	7,756	6,555	5,407
53,576	46,616	39,957	33,593	27,477	22,192	17,667
5,802	6,690	7,642	8,600	9,508	10,313	11,036
9,120	8,320	7,457	6,587	5,758	5,033	4,390
4,522	5,010	5,497	5,982	6,460	6,888	7,268
3,829	3,390	2,953	2,517	2,084	1,701	1,365
4,754	5,488	6,275	7,071	7,831	8,509	9,122
7,473	6,825	6,124	5,415	4,742	4,153	3,628
7,318	8,116	8,915	9,712	10,506	11,223	11,863
6,196	5,492	4,788	4,087	3,390	2,771	2,228
26,296	28,148	29,939	31,646	33,189	34,576	35,821
11,550	10,033	8,578	7,210	5,968	4,882	3,940
72,655	80,753	88,369	95,354	101,688	107,440	112,563
49,968	42,594	35,706	29,453	23,768	18,669	14,202
6,668	7,071	7,440	7,748	7,972	8,116	8,212
8,893	8,633	8,408	8,244	8,166	8,169	8,221
41,272	42,007	42,572	43,026	43,416	43,772	44,110
43,159	43,048	43,112	43,290	43,537	43,823	44,131
3,055	3,522	4,023	4,528	5,006	5,430	5,810
4,802	4,380	3,926	3,468	3,032	2,650	2,311
3,887	4,306	4,725	5,142	5,552	5,920	6,247
3,291	2,914	2,538	2,164	1,791	1,462	1,173
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

2032	2033	2034	2035	2036	2037	2038
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
36,575	41,389	46,210	50,871	55,207	59,177	62,777
37,702	33,326	28,946	24,728	20,786	17,211	14,008
1	1	1	1	1	1	1
76,155	83,016	89,234	94,785	99,580	103,682	107,115
34,384	28,175	22,612	17,722	13,512	9,998	7,156
-	-	-	-	-	-	-
4,305	4,586	4,814	4,821	4,661	4,336	3,970
-	-	-	-	-	-	-
59,745	67,609	75,484	83,098	90,181	96,665	102,546
69,667	61,915	54,144	46,613	39,504	32,909	26,984
-	-	-	-	-	-	-
97,258	106,020	113,962	121,051	127,175	132,414	136,798
43,912	35,983	28,878	22,632	17,256	12,768	9,139
-	-	-	-	-	-	-
21,954	22,500	22,963	23,062	22,880	22,429	21,910
-	-	-	-	-	-	-
8,351	8,400	8,450	8,500	8,544	8,588	8,633
10,320	9,549	8,762	7,942	7,089	6,124	5,239
12,227	12,313	12,399	12,486	12,573	12,661	12,750
-	-	-	-	-	-	-
13,601	13,696	13,792	13,888	13,985	14,072	14,171
16,217	17,191	18,083	18,826	19,342	19,664	19,870
21,678	21,038	20,484	20,080	19,864	19,838	19,936

59,941	60,919	61,647	62,213	62,641	63,017	63,367
62,767	62,513	62,514	62,680	62,902	63,179	63,485
6,668	7,071	7,440	7,748	7,972	8,116	8,212
8,987	8,727	8,502	8,339	8,262	8,266	8,318
42,346	43,033	43,546	43,918	44,159	44,288	44,433
43,159	43,048	43,112	43,290	43,537	43,823	44,131
1,746	1,320	978	727	566	428	376
7,856	7,902	7,949	7,996	8,203	8,300	8,398
443	424	403	369	308	223	144
7,178	7,220	7,263	7,306	7,344	7,382	7,423
1,258	969	736	565	454	390	355
-	-	-	64	178	247	286
-	-	-	-	-	-	-
46	46	46	47	47	42	42
2,599	2,997	3,423	3,853	4,260	4,620	4,944
26,034	30,013	34,276	38,572	42,640	46,239	49,478
289	333	380	428	473	513	549
5,589	5,735	5,706	5,516	5,206	4,852	4,466
39,809	35,679	31,413	27,273	23,457	20,201	17,385
59,859	66,313	72,764	79,184	85,504	91,171	96,203
9,054	8,736	8,193	7,445	6,502	5,539	4,594
45,204	40,098	35,267	30,567	25,810	21,444	17,437
4,282	4,936	5,636	6,341	7,006	7,592	8,116
42,844	49,244	56,068	62,938	69,582	75,469	80,761
472	544	621	699	773	839	897
15,441	15,781	15,774	15,461	14,923	14,246	12,962
65,233	58,281	51,312	44,550	38,317	32,999	28,398
76,447	84,689	92,928	101,127	109,198	116,435	122,862
11,679	11,285	10,605	9,660	8,457	7,219	5,996
58,889	52,492	46,458	40,557	34,493	28,836	23,554
5,861	6,755	7,714	8,678	9,586	10,387	11,101
9,752	8,787	7,697	6,587	5,758	5,033	4,390
4,522	5,010	5,497	5,982	6,460	6,888	7,268
11,890	11,580	11,195	10,756	10,283	9,772	8,601
5,017	5,488	6,275	7,071	7,831	8,509	9,122
7,473	6,825	6,124	5,415	4,742	4,153	3,628
8,044	8,919	9,803	10,664	11,465	12,131	12,668
6,196	5,492	4,788	4,087	3,390	2,771	2,228
16,694	17,675	18,570	19,313	19,827	20,142	20,298
21,629	20,990	20,434	20,030	19,814	19,794	19,891
60,539	61,581	62,380	63,000	63,436	63,777	64,045
62,683	62,428	62,428	62,594	62,815	63,091	63,397
7,445	7,862	8,238	8,548	8,769	8,910	8,928
8,893	8,633	8,408	8,244	8,166	8,169	8,221
42,346	43,033	43,546	43,918	44,159	44,288	44,433
43,159	43,048	43,112	43,290	43,537	43,823	44,131
4,800	4,842	5,001	5,255	5,572	5,858	6,186
4,802	4,380	3,926	3,468	3,197	2,871	2,587
4,330	4,730	5,128	5,511	5,860	6,143	6,391
3,291	2,914	2,538	2,164	1,791	1,462	1,176
1,258	969	736	565	454	390	355
-	-	-	64	178	247	286
382	423	468	501	505	478	424
-	-	-	-	-	-	-
26,402	30,387	34,653	38,949	43,014	46,611	49,808
-	-	-	-	-	-	-
2,888	3,330	3,804	4,281	4,733	5,133	5,493
5,589	5,735	5,706	5,516	5,206	4,852	4,466
39,809	35,679	31,413	27,273	23,457	20,201	17,385
59,859	66,313	72,764	79,184	85,504	91,171	96,203
11,982	11,973	11,775	11,282	10,368	9,200	7,838

41,951	36,501	31,287	26,304	21,515	17,377	13,834
42,819	49,357	56,364	63,412	70,059	75,921	81,161
387	286	147	-	-	-	-
4,717	5,440	6,213	6,993	7,731	8,385	8,973
15,441	15,781	15,774	15,461	14,923	14,246	12,962
65,233	58,281	51,312	44,550	38,317	32,999	28,398
76,447	84,689	92,928	101,127	109,198	116,435	122,862
16,461	16,573	16,456	15,927	14,773	13,198	11,294
53,576	46,616	39,957	33,593	27,477	22,192	17,667
6,392	7,343	8,364	9,374	10,288	11,051	11,690
9,752	8,787	7,697	6,587	5,758	5,033	4,390
4,522	5,010	5,497	5,982	6,460	6,888	7,268
11,890	11,580	11,195	10,756	10,283	9,772	8,601
5,017	5,488	6,275	7,071	7,831	8,509	9,122
7,473	6,825	6,124	5,415	4,742	4,153	3,628
8,044	8,919	9,803	10,664	11,465	12,131	12,668
6,196	5,492	4,788	4,087	3,390	2,771	2,228
26,772	28,632	30,426	32,134	33,674	35,053	36,249
11,550	10,033	8,578	7,210	5,968	4,882	3,940
73,254	81,416	89,103	96,142	102,483	108,200	113,240
49,968	42,594	35,706	29,453	23,768	18,669	14,202
11,590	12,369	13,116	13,824	14,476	15,064	15,520
4,749	4,127	3,530	2,967	2,459	2,015	1,628
52,072	57,619	62,878	67,738	72,187	76,170	79,743
34,405	29,371	24,658	20,369	16,473	12,967	9,886
10,791	11,566	12,121	12,144	11,991	11,763	11,562
4,802	4,380	3,926	3,468	3,032	2,650	2,311
4,731	5,105	5,490	5,882	6,259	6,574	6,838
3,291	2,914	2,538	2,164	1,791	1,462	1,173
5,377	5,605	5,658	5,342	4,921	4,533	4,148
-	-	-	-	-	-	-
382	423	468	501	505	478	424
-	-	-	-	-	-	-
26,402	30,387	34,653	38,949	43,014	46,611	49,808
-	-	-	-	-	-	-
2,888	3,330	3,804	4,281	4,733	5,133	5,493
5,589	5,735	5,706	5,516	5,206	4,852	4,466
39,809	35,679	31,413	27,273	23,457	20,201	17,385
59,859	66,313	72,764	79,184	85,504	91,171	96,203
11,982	11,973	11,775	11,282	10,368	9,200	7,838
41,951	36,501	31,287	26,304	21,515	17,377	13,834
4,607	5,295	6,034	6,768	7,435	7,999	8,476
42,844	49,244	56,068	62,938	69,582	75,469	80,761
472	544	621	699	773	839	897
15,441	15,781	15,774	15,461	14,923	14,246	12,962
65,233	58,281	51,312	44,550	38,317	32,999	28,398
76,447	84,689	92,928	101,127	109,198	116,435	122,862
11,679	11,285	10,605	9,660	8,457	7,219	5,996
58,889	52,492	46,458	40,557	34,493	28,836	23,554
5,861	6,755	7,714	8,678	9,586	10,387	11,101
9,752	8,787	7,697	6,587	5,758	5,033	4,390
4,522	5,010	5,497	5,982	6,460	6,888	7,268
11,890	11,580	11,195	10,756	10,283	9,772	8,601
5,017	5,488	6,275	7,071	7,831	8,509	9,122
7,473	6,825	6,124	5,415	4,742	4,153	3,628
8,044	8,919	9,803	10,664	11,465	12,131	12,668
6,196	5,492	4,788	4,087	3,390	2,771	2,228
26,772	28,632	30,426	32,134	33,674	35,053	36,249
11,550	10,033	8,578	7,210	5,968	4,882	3,940
73,254	81,416	89,103	96,142	102,483	108,200	113,240
49,968	42,594	35,706	29,453	23,768	18,669	14,202

7,445	7,862	8,238	8,548	8,769	8,910	8,928
8,893	8,633	8,408	8,244	8,166	8,169	8,221
43,317	43,942	44,424	44,817	45,124	45,314	45,498
43,159	43,048	43,112	43,290	43,537	43,823	44,131
10,791	11,566	12,121	12,144	11,991	11,763	11,562
4,802	4,380	3,926	3,468	3,032	2,650	2,311
4,330	4,730	5,128	5,511	5,860	6,143	6,391
3,291	2,914	2,538	2,164	1,791	1,462	1,176
1,258	969	736	565	454	390	355
-	-	-	64	178	247	286
382	423	468	501	505	478	424
-	-	-	-	-	-	-

2039	2040	2041	2042	2043	2044	2045
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
1,103,281	1,144,778	1,180,875	1,211,466	1,236,592	1,256,541	1,271,915
138,088	103,046	73,438	49,369	30,800	17,440	8,691
-	-	-	-	-	-	-
1,121,893	1,139,852	1,154,080	1,165,482	1,174,869	1,182,914	1,190,125
32,733	20,777	12,584	7,250	3,960	2,046	996
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
1,802,208	1,869,994	1,928,958	1,978,928	2,019,971	2,052,559	2,077,672
225,567	168,325	119,960	80,645	50,311	28,489	14,198
-	-	-	-	-	-	-
1,432,779	1,455,716	1,473,887	1,488,447	1,500,436	1,510,710	1,519,920
41,803	26,535	16,072	9,259	5,058	2,612	1,272
-	-	-	-	-	-	-
249,384	250,681	251,985	253,295	254,612	255,936	257,267
-	-	-	-	-	-	-
87,229	87,683	88,139	88,597	89,058	89,521	89,986
-	-	-	-	-	-	-
206,865	208,313	209,772	211,240	212,719	214,208	215,707
-	-	-	-	-	-	-
142,894	143,894	144,901	145,915	146,937	147,965	149,001
322,984	325,450	327,928	330,419	332,923	335,441	337,971
322,985	325,450	327,928	330,419	332,923	335,441	337,971
640,412	643,755	647,106	650,472	653,855	657,255	660,673
640,448	643,765	647,109	650,473	653,855	657,255	660,673
133,845	135,051	136,266	137,489	138,721	139,961	141,210
133,845	135,051	136,266	137,489	138,721	139,961	141,210
447,723	451,030	454,355	457,702	461,071	464,463	467,879
447,748	451,038	454,358	457,702	461,071	464,463	467,879
-	-	-	-	-	-	-
131,297	131,980	132,666	133,356	134,049	134,747	135,447
-	-	-	-	-	-	-
74,976	75,366	75,757	76,151	76,547	76,945	77,346
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
88,265	92,380	96,220	99,790	103,083	106,084	108,782
882,650	923,797	962,204	997,905	1,030,825	1,060,840	1,087,823
9,807	10,264	10,691	11,088	11,454	11,787	12,087
57,913	50,775	43,588	36,525	29,766	23,492	17,856
202,733	170,608	141,608	115,527	92,264	71,779	54,058
1,044,823	1,077,944	1,106,068	1,129,650	1,149,214	1,165,341	1,178,640
26,672	20,301	14,986	10,704	7,379	4,896	3,118
83,130	62,384	45,611	32,378	22,236	14,723	9,364
144,181	150,902	157,176	163,008	168,385	173,288	177,696
1,441,808	1,509,021	1,571,760	1,630,076	1,683,852	1,732,882	1,776,958
16,020	16,767	17,464	18,112	18,709	19,254	19,744
94,601	82,941	71,202	59,663	48,623	38,373	29,169
331,165	278,687	231,317	188,714	150,713	117,251	88,303
1,334,353	1,376,653	1,412,570	1,442,687	1,467,672	1,488,267	1,505,252

34,064	25,927	19,138	13,670	9,424	6,253	3,982
106,166	79,671	58,250	41,350	28,398	18,802	11,959
197,022	206,207	214,780	222,749	230,097	236,797	242,820
52,363	44,475	37,205	30,546	24,515	19,139	14,447
78,934	81,436	83,561	85,342	86,820	88,039	89,044
8,295	6,247	4,578	3,255	2,237	1,482	943
163,430	171,355	178,799	185,765	192,237	198,189	203,594
43,435	36,958	30,972	25,475	20,481	16,019	12,113
129,305	133,643	137,375	140,555	143,245	145,516	147,440
13,589	10,251	7,526	5,360	3,691	2,450	1,561
322,984	325,450	327,928	330,419	332,923	335,441	337,971
322,985	325,450	327,928	330,419	332,923	335,441	337,971
640,412	643,755	647,106	650,472	653,855	657,255	660,673
640,448	643,765	647,109	650,473	653,855	657,255	660,673
133,845	135,051	136,266	137,489	138,721	139,961	141,210
133,845	135,051	136,266	137,489	138,721	139,961	141,210
447,723	451,030	454,355	457,702	461,071	464,463	467,879
447,748	451,038	454,358	457,702	461,071	464,463	467,879
103,729	108,565	113,078	117,274	121,143	124,670	127,841
27,568	23,415	19,588	16,082	12,907	10,077	7,606
67,846	69,996	71,823	73,354	74,624	75,671	76,535
7,130	5,369	3,935	2,797	1,923	1,274	810
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
882,650	923,797	962,204	997,905	1,030,825	1,060,840	1,087,823
-	-	-	-	-	-	-
98,072	102,644	106,912	110,878	114,536	117,871	120,869
57,913	50,775	43,588	36,525	29,766	23,492	17,856
202,733	170,608	141,608	115,527	92,264	71,779	54,058
1,044,823	1,077,944	1,106,068	1,129,650	1,149,214	1,165,341	1,178,640
26,672	20,301	14,986	10,704	7,379	4,896	3,118
83,130	62,384	45,611	32,378	22,236	14,723	9,364
1,441,808	1,509,021	1,571,760	1,630,076	1,683,852	1,732,882	1,776,958
-	-	-	-	-	-	-
160,201	167,669	174,640	181,120	187,095	192,542	197,440
94,601	82,941	71,202	59,663	48,623	38,373	29,169
331,165	278,687	231,317	188,714	150,713	117,251	88,303
1,334,353	1,376,653	1,412,570	1,442,687	1,467,672	1,488,267	1,505,252
34,064	25,927	19,138	13,670	9,424	6,253	3,982
106,166	79,671	58,250	41,350	28,398	18,802	11,959
197,022	206,207	214,780	222,749	230,097	236,797	242,820
52,363	44,475	37,205	30,546	24,515	19,139	14,447
78,934	81,436	83,561	85,342	86,820	88,039	89,044
8,295	6,247	4,578	3,255	2,237	1,482	943
163,430	171,355	178,799	185,765	192,237	198,189	203,594
43,435	36,958	30,972	25,475	20,481	16,019	12,113
129,305	133,643	137,375	140,555	143,245	145,516	147,440
13,589	10,251	7,526	5,360	3,691	2,450	1,561
607,400	622,069	635,197	646,823	656,994	665,791	673,360
38,569	28,831	20,660	14,015	8,853	5,090	2,581
1,207,370	1,237,831	1,262,083	1,281,123	1,296,085	1,308,060	1,317,979
73,489	49,689	32,132	19,822	11,625	6,450	3,367
251,707	258,139	263,947	269,146	273,752	277,798	281,341
15,983	11,964	8,585	5,832	3,689	2,124	1,079
844,093	867,255	886,152	901,456	913,944	924,368	933,375
51,378	34,814	22,561	13,948	8,197	4,558	2,384
103,729	108,565	113,078	117,274	121,143	124,670	127,841
27,568	23,415	19,588	16,082	12,907	10,077	7,606
67,846	69,996	71,823	73,354	74,624	75,671	76,535

7,130	5,369	3,935	2,797	1,923	1,274	810
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
882,650	923,797	962,204	997,905	1,030,825	1,060,840	1,087,823
-	-	-	-	-	-	-
98,072	102,644	106,912	110,878	114,536	117,871	120,869
57,913	50,775	43,588	36,525	29,766	23,492	17,856
202,733	170,608	141,608	115,527	92,264	71,779	54,058
1,044,823	1,077,944	1,106,068	1,129,650	1,149,214	1,165,341	1,178,640
26,672	20,301	14,986	10,704	7,379	4,896	3,118
83,130	62,384	45,611	32,378	22,236	14,723	9,364
144,181	150,902	157,176	163,008	168,385	173,288	177,696
1,441,808	1,509,021	1,571,760	1,630,076	1,683,852	1,732,882	1,776,958
16,020	16,767	17,464	18,112	18,709	19,254	19,744
94,601	82,941	71,202	59,663	48,623	38,373	29,169
331,165	278,687	231,317	188,714	150,713	117,251	88,303
1,334,353	1,376,653	1,412,570	1,442,687	1,467,672	1,488,267	1,505,252
34,064	25,927	19,138	13,670	9,424	6,253	3,982
106,166	79,671	58,250	41,350	28,398	18,802	11,959
197,022	206,207	214,780	222,749	230,097	236,797	242,820
52,363	44,475	37,205	30,546	24,515	19,139	14,447
78,934	81,436	83,561	85,342	86,820	88,039	89,044
8,295	6,247	4,578	3,255	2,237	1,482	943
163,430	171,355	178,799	185,765	192,237	198,189	203,594
43,435	36,958	30,972	25,475	20,481	16,019	12,113
129,305	133,643	137,375	140,555	143,245	145,516	147,440
13,589	10,251	7,526	5,360	3,691	2,450	1,561
607,400	622,069	635,197	646,823	656,994	665,791	673,360
38,569	28,831	20,660	14,015	8,853	5,090	2,581
1,207,370	1,237,831	1,262,083	1,281,123	1,296,085	1,308,060	1,317,979
73,489	49,689	32,132	19,822	11,625	6,450	3,367
133,845	135,051	136,266	137,489	138,721	139,961	141,210
133,845	135,051	136,266	137,489	138,721	139,961	141,210
447,723	451,030	454,355	457,702	461,071	464,463	467,879
447,748	451,038	454,358	457,702	461,071	464,463	467,879
103,729	108,565	113,078	117,274	121,143	124,670	127,841
27,568	23,415	19,588	16,082	12,907	10,077	7,606
67,846	69,996	71,823	73,354	74,624	75,671	76,535
7,130	5,369	3,935	2,797	1,923	1,274	810
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

2039	2040	2041	2042	2043	2044	2045
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
66,031	68,955	71,549	73,805	75,717	77,287	78,534
11,153	8,630	6,440	4,590	3,086	1,925	1,090
-	-	-	-	-	-	-
109,928	112,189	113,985	115,408	116,548	117,487	118,291
4,938	3,273	2,078	1,258	725	396	205
-	-	-	-	-	-	-

-	-	-	-	-	-	-
-	-	-	-	-	-	-
107,862	112,638	116,875	120,560	123,683	126,248	128,285
18,218	14,098	10,520	7,498	5,040	3,144	1,781
-	-	-	-	-	-	-
140,390	143,278	145,572	147,389	148,845	150,044	151,071
6,306	4,180	2,653	1,607	926	506	261
-	-	-	-	-	-	-
15,506	15,587	15,668	15,749	15,831	15,913	15,996
-	-	-	-	-	-	-
8,678	8,723	8,768	8,814	8,860	8,906	8,952
-	-	-	-	-	-	-
12,839	12,929	13,020	13,111	13,202	13,295	13,388
-	-	-	-	-	-	-
14,190	14,289	14,389	14,490	14,592	14,694	14,797
20,032	20,187	20,341	20,496	20,651	20,808	20,965
20,034	20,187	20,341	20,496	20,651	20,808	20,965
63,706	64,041	64,375	64,711	65,047	65,385	65,725
63,717	64,045	64,377	64,711	65,047	65,386	65,726
8,290	8,365	8,441	8,517	8,593	8,670	8,748
8,291	8,365	8,441	8,517	8,593	8,670	8,748
44,442	44,772	45,103	45,436	45,770	46,107	46,446
44,450	44,775	45,104	45,436	45,770	46,107	46,446
-	-	-	-	-	-	-
8,164	8,206	8,249	8,292	8,335	8,378	8,422
-	-	-	-	-	-	-
7,459	7,498	7,537	7,576	7,615	7,655	7,695
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
5,241	5,517	5,774	6,014	6,237	6,443	6,630
52,410	55,166	57,737	60,138	62,369	64,427	66,303
582	613	642	668	693	716	737
4,053	3,620	3,173	2,724	2,283	1,860	1,468
14,898	12,671	10,663	8,851	7,220	5,766	4,486
100,630	104,482	107,794	110,607	112,965	114,921	116,534
3,406	2,667	2,030	1,499	1,070	738	490
10,829	8,313	6,238	4,561	3,238	2,224	1,472
8,561	9,011	9,431	9,824	10,188	10,524	10,831
85,611	90,113	94,314	98,235	101,880	105,241	108,305
951	1,001	1,048	1,092	1,132	1,169	1,203
6,621	5,913	5,184	4,450	3,729	3,039	2,398
24,336	20,698	17,418	14,457	11,795	9,420	7,328
128,516	133,435	137,665	141,257	144,269	146,767	148,827
4,350	3,406	2,593	1,914	1,367	942	625
13,830	10,617	7,967	5,825	4,135	2,840	1,880
11,699	12,314	12,888	13,424	13,922	14,381	14,800
3,807	3,273	2,780	2,325	1,909	1,532	1,196
7,602	7,893	8,144	8,356	8,534	8,682	8,804
1,075	830	625	458	325	224	148
9,687	10,214	10,710	11,175	11,610	12,015	12,387
3,152	2,715	2,310	1,936	1,592	1,280	1,001
12,431	12,930	13,364	13,738	14,056	14,325	14,552
1,759	1,359	1,025	753	536	369	245
20,032	20,187	20,341	20,496	20,651	20,808	20,965
20,034	20,187	20,341	20,496	20,651	20,808	20,965
63,706	64,041	64,375	64,711	65,047	65,385	65,725
63,717	64,045	64,377	64,711	65,047	65,386	65,726
8,290	8,365	8,441	8,517	8,593	8,670	8,748
8,291	8,365	8,441	8,517	8,593	8,670	8,748

44,442	44,772	45,103	45,436	45,770	46,107	46,446
44,450	44,775	45,104	45,436	45,770	46,107	46,446
6,159	6,483	6,785	7,067	7,330	7,571	7,792
2,004	1,723	1,463	1,224	1,005	807	630
6,534	6,785	7,000	7,182	7,335	7,462	7,567
924	713	537	393	280	192	127
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
52,410	55,166	57,737	60,138	62,369	64,427	66,303
-	-	-	-	-	-	-
5,823	6,130	6,415	6,682	6,930	7,159	7,367
4,053	3,620	3,173	2,724	2,283	1,860	1,468
14,898	12,671	10,663	8,851	7,220	5,766	4,486
100,630	104,482	107,794	110,607	112,965	114,921	116,534
3,406	2,667	2,030	1,499	1,070	738	490
10,829	8,313	6,238	4,561	3,238	2,224	1,472
85,611	90,113	94,314	98,235	101,880	105,241	108,305
-	-	-	-	-	-	-
9,512	10,013	10,479	10,915	11,320	11,693	12,034
6,621	5,913	5,184	4,450	3,729	3,039	2,398
24,336	20,698	17,418	14,457	11,795	9,420	7,328
128,516	133,435	137,665	141,257	144,269	146,767	148,827
4,350	3,406	2,593	1,914	1,367	942	625
13,830	10,617	7,967	5,825	4,135	2,840	1,880
11,699	12,314	12,888	13,424	13,922	14,381	14,800
3,807	3,273	2,780	2,325	1,909	1,532	1,196
7,602	7,893	8,144	8,356	8,534	8,682	8,804
1,075	830	625	458	325	224	148
9,687	10,214	10,710	11,175	11,610	12,015	12,387
3,152	2,715	2,310	1,936	1,592	1,280	1,001
12,431	12,930	13,364	13,738	14,056	14,325	14,552
1,759	1,359	1,025	753	536	369	245
36,945	37,962	38,879	39,700	40,426	41,062	41,612
3,121	2,411	1,802	1,291	876	553	318
117,004	120,737	123,783	126,208	128,112	129,609	130,806
10,420	7,349	4,969	3,213	1,982	1,162	645
15,289	15,732	16,134	16,497	16,822	17,110	17,362
1,292	999	748	537	364	231	133
81,623	84,409	86,725	88,615	90,146	91,394	92,437
7,269	5,138	3,481	2,256	1,395	820	456
6,159	6,483	6,785	7,067	7,330	7,571	7,792
2,004	1,723	1,463	1,224	1,005	807	630
6,534	6,785	7,000	7,182	7,335	7,462	7,567
924	713	537	393	280	192	127
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
52,410	55,166	57,737	60,138	62,369	64,427	66,303
-	-	-	-	-	-	-
5,823	6,130	6,415	6,682	6,930	7,159	7,367
4,053	3,620	3,173	2,724	2,283	1,860	1,468
14,898	12,671	10,663	8,851	7,220	5,766	4,486
100,630	104,482	107,794	110,607	112,965	114,921	116,534
3,406	2,667	2,030	1,499	1,070	738	490
10,829	8,313	6,238	4,561	3,238	2,224	1,472
8,561	9,011	9,431	9,824	10,188	10,524	10,831
85,611	90,113	94,314	98,235	101,880	105,241	108,305
951	1,001	1,048	1,092	1,132	1,169	1,203

6,621	5,913	5,184	4,450	3,729	3,039	2,398
24,336	20,698	17,418	14,457	11,795	9,420	7,328
128,516	133,435	137,665	141,257	144,269	146,767	148,827
4,350	3,406	2,593	1,914	1,367	942	625
13,830	10,617	7,967	5,825	4,135	2,840	1,880
11,699	12,314	12,888	13,424	13,922	14,381	14,800
3,807	3,273	2,780	2,325	1,909	1,532	1,196
7,602	7,893	8,144	8,356	8,534	8,682	8,804
1,075	830	625	458	325	224	148
9,687	10,214	10,710	11,175	11,610	12,015	12,387
3,152	2,715	2,310	1,936	1,592	1,280	1,001
12,431	12,930	13,364	13,738	14,056	14,325	14,552
1,759	1,359	1,025	753	536	369	245
36,945	37,962	38,879	39,700	40,426	41,062	41,612
3,121	2,411	1,802	1,291	876	553	318
117,004	120,737	123,783	126,208	128,112	129,609	130,806
10,420	7,349	4,969	3,213	1,982	1,162	645
8,290	8,365	8,441	8,517	8,593	8,670	8,748
8,291	8,365	8,441	8,517	8,593	8,670	8,748
44,442	44,772	45,103	45,436	45,770	46,107	46,446
44,450	44,775	45,104	45,436	45,770	46,107	46,446
6,159	6,483	6,785	7,067	7,330	7,571	7,792
2,004	1,723	1,463	1,224	1,005	807	630
6,534	6,785	7,000	7,182	7,335	7,462	7,567
924	713	537	393	280	192	127
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

2039	2040	2041	2042	2043	2044	2045
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
66,031	68,955	71,549	73,805	75,717	77,287	78,534
11,153	8,630	6,440	4,590	3,086	1,925	1,090
1	1	1	1	1	1	1
109,928	112,189	113,985	115,408	116,548	117,487	118,291
4,938	3,273	2,078	1,258	725	396	205
-	-	-	-	-	-	-
3,600	3,254	2,924	2,594	2,256	1,912	1,570
-	-	-	-	-	-	-
107,862	112,638	116,875	120,560	123,683	126,248	128,285
21,651	16,910	12,782	9,293	6,463	4,285	2,719
-	-	-	-	-	-	-
140,390	143,278	145,572	147,389	148,845	150,044	151,071
6,306	4,180	2,653	1,607	926	506	261
-	-	-	-	-	-	-
21,387	20,903	20,444	19,986	19,516	19,036	18,561
-	-	-	-	-	-	-
8,678	8,723	8,768	8,814	8,860	8,906	8,952
4,384	3,592	2,888	2,294	1,817	1,456	1,199
12,839	12,929	13,020	13,111	13,202	13,295	13,388
-	-	-	-	-	-	-
14,270	14,370	14,470	14,571	14,673	14,776	14,879
20,032	20,187	20,341	20,496	20,651	20,808	20,965
20,079	20,231	20,386	20,541	20,697	20,854	21,011

63,706	64,041	64,375	64,711	65,047	65,385	65,725
63,806	64,134	64,466	64,801	65,138	65,477	65,818
8,290	8,365	8,441	8,517	8,593	8,670	8,748
8,389	8,464	8,540	8,617	8,694	8,771	8,850
44,648	44,935	45,257	45,590	45,925	46,263	46,603
44,547	44,917	45,256	45,590	45,925	46,263	46,603
350	339	335	334	335	337	338
8,469	8,526	8,576	8,623	8,669	8,714	8,760
96	78	75	75	76	76	77
7,510	7,568	7,611	7,651	7,691	7,731	7,772
339	332	330	331	332	335	337
308	319	325	329	332	334	337
-	-	-	-	-	-	-
42	42	42	43	43	43	43
5,241	5,517	5,774	6,014	6,237	6,443	6,630
52,448	55,204	57,776	60,177	62,408	64,466	66,342
582	613	642	668	693	716	737
4,053	3,620	3,173	2,724	2,283	1,860	1,468
14,898	12,671	10,663	8,851	7,220	5,766	4,486
100,630	104,482	107,794	110,607	112,965	114,921	116,534
3,730	2,964	2,306	1,756	1,310	961	695
14,069	11,282	8,994	7,133	5,638	4,455	3,530
8,597	9,044	9,462	9,852	10,215	10,549	10,853
85,611	90,113	94,314	98,235	101,880	105,241	108,305
951	1,001	1,048	1,092	1,132	1,169	1,203
11,654	10,339	9,036	7,762	6,541	5,397	4,355
24,336	20,698	17,418	14,457	11,795	9,420	7,328
128,516	133,435	137,665	141,257	144,269	146,767	148,827
4,879	3,891	3,043	2,334	1,759	1,307	961
19,122	15,467	12,469	10,026	8,056	6,485	5,241
11,757	12,368	12,938	13,470	13,965	14,422	14,837
3,807	3,273	2,780	2,325	1,909	1,532	1,196
7,602	7,893	8,144	8,356	8,534	8,682	8,804
7,503	6,483	5,544	4,688	3,917	3,235	2,647
9,687	10,214	10,710	11,175	11,610	12,015	12,387
3,152	2,715	2,310	1,936	1,592	1,280	1,001
13,155	13,593	13,979	14,312	14,591	14,823	15,011
1,759	1,359	1,025	753	536	369	245
20,413	20,521	20,632	20,746	20,864	20,986	21,113
20,034	20,187	20,341	20,496	20,651	20,808	20,965
64,319	64,606	64,903	65,206	65,512	65,821	66,130
63,717	64,045	64,377	64,711	65,047	65,386	65,726
8,931	8,933	8,940	8,950	8,966	8,988	9,017
8,291	8,365	8,441	8,517	8,593	8,670	8,748
44,648	44,935	45,257	45,590	45,925	46,263	46,603
44,547	44,917	45,256	45,590	45,925	46,263	46,603
6,510	6,822	7,120	7,402	7,665	7,908	8,130
2,310	2,043	1,791	1,556	1,339	1,143	968
6,630	6,863	7,075	7,258	7,411	7,539	7,644
976	783	611	469	356	269	204
339	332	330	331	332	335	337
308	319	325	329	332	334	337
381	349	324	302	282	262	242
-	-	-	-	-	-	-
52,736	55,453	57,987	60,353	62,552	64,580	66,430
-	-	-	-	-	-	-
5,823	6,130	6,415	6,682	6,930	7,159	7,367
4,053	3,620	3,173	2,724	2,283	1,860	1,468
14,898	12,671	10,663	8,851	7,220	5,766	4,486
100,630	104,482	107,794	110,607	112,965	114,921	116,534
6,645	5,637	4,786	4,070	3,471	2,969	2,547

10,829	8,313	6,238	4,561	3,238	2,224	1,472
85,971	90,443	94,620	98,521	102,146	105,489	108,534
-	-	-	-	-	-	-
9,512	10,013	10,479	10,915	11,320	11,693	12,034
11,654	10,339	9,036	7,762	6,541	5,397	4,355
24,336	20,698	17,418	14,457	11,795	9,420	7,328
128,516	133,435	137,665	141,257	144,269	146,767	148,827
9,641	8,257	7,095	6,115	5,288	4,587	3,986
13,830	10,617	7,967	5,825	4,135	2,840	1,880
12,287	12,853	13,388	13,890	14,357	14,786	15,173
3,807	3,273	2,780	2,325	1,909	1,532	1,196
7,602	7,893	8,144	8,356	8,534	8,682	8,804
7,503	6,483	5,544	4,688	3,917	3,235	2,647
9,687	10,214	10,710	11,175	11,610	12,015	12,387
3,152	2,715	2,310	1,936	1,592	1,280	1,001
13,155	13,593	13,979	14,312	14,591	14,823	15,011
1,759	1,359	1,025	753	536	369	245
37,326	38,297	39,170	39,950	40,639	41,240	41,760
3,121	2,411	1,802	1,291	876	553	318
117,616	121,302	124,311	126,704	128,578	130,044	131,210
10,420	7,349	4,969	3,213	1,982	1,162	645
15,930	16,300	16,633	16,930	17,195	17,428	17,631
1,292	999	748	537	364	231	133
82,868	85,534	87,742	89,532	90,966	92,121	93,072
7,269	5,138	3,481	2,256	1,395	820	456
11,282	10,924	10,519	10,113	9,755	9,475	9,288
2,004	1,723	1,463	1,224	1,005	807	630
7,069	7,270	7,442	7,584	7,698	7,787	7,855
924	713	537	393	280	192	127
3,728	3,267	2,786	2,316	1,890	1,530	1,249
-	-	-	-	-	-	-
381	349	324	302	282	262	242
-	-	-	-	-	-	-
52,736	55,453	57,987	60,353	62,552	64,580	66,430
-	-	-	-	-	-	-
5,823	6,130	6,415	6,682	6,930	7,159	7,367
4,053	3,620	3,173	2,724	2,283	1,860	1,468
14,898	12,671	10,663	8,851	7,220	5,766	4,486
100,630	104,482	107,794	110,607	112,965	114,921	116,534
6,645	5,637	4,786	4,070	3,471	2,969	2,547
10,829	8,313	6,238	4,561	3,238	2,224	1,472
8,921	9,341	9,738	10,109	10,455	10,772	11,059
85,611	90,113	94,314	98,235	101,880	105,241	108,305
951	1,001	1,048	1,092	1,132	1,169	1,203
11,654	10,339	9,036	7,762	6,541	5,397	4,355
24,336	20,698	17,418	14,457	11,795	9,420	7,328
128,516	133,435	137,665	141,257	144,269	146,767	148,827
4,879	3,891	3,043	2,334	1,759	1,307	961
19,122	15,467	12,469	10,026	8,056	6,485	5,241
11,757	12,368	12,938	13,470	13,965	14,422	14,837
3,807	3,273	2,780	2,325	1,909	1,532	1,196
7,602	7,893	8,144	8,356	8,534	8,682	8,804
7,503	6,483	5,544	4,688	3,917	3,235	2,647
9,687	10,214	10,710	11,175	11,610	12,015	12,387
3,152	2,715	2,310	1,936	1,592	1,280	1,001
13,155	13,593	13,979	14,312	14,591	14,823	15,011
1,759	1,359	1,025	753	536	369	245
37,326	38,297	39,170	39,950	40,639	41,240	41,760
3,121	2,411	1,802	1,291	876	553	318
117,616	121,302	124,311	126,704	128,578	130,044	131,210
10,420	7,349	4,969	3,213	1,982	1,162	645

8,931	8,933	8,940	8,950	8,966	8,988	9,017
8,291	8,365	8,441	8,517	8,593	8,670	8,748
45,687	45,897	46,120	46,352	46,591	46,834	47,082
44,450	44,775	45,104	45,436	45,770	46,107	46,446
11,282	10,924	10,519	10,113	9,755	9,475	9,288
2,004	1,723	1,463	1,224	1,005	807	630
6,630	6,863	7,075	7,258	7,411	7,539	7,644
976	783	611	469	356	269	204
339	332	330	331	332	335	337
308	319	325	329	332	334	337
381	349	324	302	282	262	242
-	-	-	-	-	-	-

2046	2047	2048	2049	2050
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
1,283,616	1,292,747	1,300,397	1,307,407	1,314,247
3,649	1,213	291	44	3
-	-	-	-	-
1,196,859	1,203,345	1,209,721	1,216,061	1,222,404
456	196	79	29	10
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
2,096,786	2,111,701	2,124,197	2,135,649	2,146,821
5,961	1,981	475	72	6
-	-	-	-	-
1,528,520	1,536,803	1,544,946	1,553,043	1,561,143
583	250	100	38	13
-	-	-	-	-
258,605	259,950	261,301	262,660	264,026
-	-	-	-	-
90,454	90,925	91,398	91,873	92,351
-	-	-	-	-
217,217	218,738	220,269	221,811	223,363
-	-	-	-	-
150,044	151,095	152,152	153,217	154,290
340,514	343,071	345,641	348,224	350,821
340,514	343,071	345,641	348,224	350,821
664,108	667,562	671,033	674,522	678,030
664,108	667,562	671,033	674,522	678,030
142,467	143,734	145,009	146,293	147,587
142,467	143,734	145,009	146,293	147,587
471,319	474,784	478,272	481,785	485,322
471,319	474,784	478,272	481,785	485,322
-	-	-	-	-
136,152	136,860	137,571	138,287	139,006
-	-	-	-	-
77,748	78,152	78,558	78,967	79,378
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
111,169	113,243	115,008	116,476	117,671
1,111,691	1,132,426	1,150,076	1,164,759	1,176,711
12,352	12,583	12,779	12,942	13,075
12,977	8,919	5,705	3,318	1,698
39,077	26,790	17,121	9,956	5,095
1,189,715	1,199,127	1,207,363	1,214,817	1,221,786
1,899	1,103	609	318	157
5,701	3,311	1,827	955	471
181,595	184,982	187,865	190,263	192,216
1,815,946	1,849,816	1,878,648	1,902,633	1,922,157
20,177	20,554	20,874	21,140	21,357
21,197	14,569	9,319	5,421	2,774
63,833	43,761	27,966	16,263	8,322
1,519,396	1,531,417	1,541,935	1,551,454	1,560,354

2,426	1,409	778	407	201
7,281	4,228	2,334	1,220	602
248,148	252,776	256,716	259,993	262,661
10,457	7,174	4,586	2,667	1,365
89,880	90,591	91,214	91,777	92,303
574	333	184	96	47
208,433	212,701	216,403	219,559	222,209
8,784	6,036	3,865	2,252	1,155
149,092	150,540	151,846	153,057	154,210
952	554	306	160	79
340,514	343,071	345,641	348,224	350,821
340,514	343,071	345,641	348,224	350,821
664,108	667,562	671,033	674,522	678,030
664,108	667,562	671,033	674,522	678,030
142,467	143,734	145,009	146,293	147,587
142,467	143,734	145,009	146,293	147,587
471,319	474,784	478,272	481,785	485,322
471,319	474,784	478,272	481,785	485,322
130,646	133,083	135,157	136,883	138,287
5,506	3,777	2,414	1,404	718
77,254	77,865	78,400	78,884	79,337
494	287	158	83	41
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
1,111,691	1,132,426	1,150,076	1,164,759	1,176,711
-	-	-	-	-
123,521	125,825	127,786	129,418	130,746
12,977	8,919	5,705	3,318	1,698
39,077	26,790	17,121	9,956	5,095
1,189,715	1,199,127	1,207,363	1,214,817	1,221,786
1,899	1,103	609	318	157
5,701	3,311	1,827	955	471
1,815,946	1,849,816	1,878,648	1,902,633	1,922,157
-	-	-	-	-
201,772	205,535	208,739	211,404	213,573
21,197	14,569	9,319	5,421	2,774
63,833	43,761	27,966	16,263	8,322
1,519,396	1,531,417	1,541,935	1,551,454	1,560,354
2,426	1,409	778	407	201
7,281	4,228	2,334	1,220	602
248,148	252,776	256,716	259,993	262,661
10,457	7,174	4,586	2,667	1,365
89,880	90,591	91,214	91,777	92,303
574	333	184	96	47
208,433	212,701	216,403	219,559	222,209
8,784	6,036	3,865	2,252	1,155
149,092	150,540	151,846	153,057	154,210
952	554	306	160	79
679,924	685,768	691,190	696,434	701,640
1,104	373	91	14	1
1,326,574	1,334,377	1,341,751	1,348,921	1,356,015
1,643	746	315	123	45
284,473	287,311	289,980	292,581	295,173
462	156	38	6	0
941,473	949,037	956,320	963,482	970,613
1,166	531	224	88	32
130,646	133,083	135,157	136,883	138,287
5,506	3,777	2,414	1,404	718
77,254	77,865	78,400	78,884	79,337

494	287	158	83	41
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
1,111,691	1,132,426	1,150,076	1,164,759	1,176,711
-	-	-	-	-
123,521	125,825	127,786	129,418	130,746
12,977	8,919	5,705	3,318	1,698
39,077	26,790	17,121	9,956	5,095
1,189,715	1,199,127	1,207,363	1,214,817	1,221,786
1,899	1,103	609	318	157
5,701	3,311	1,827	955	471
181,595	184,982	187,865	190,263	192,216
1,815,946	1,849,816	1,878,648	1,902,633	1,922,157
20,177	20,554	20,874	21,140	21,357
21,197	14,569	9,319	5,421	2,774
63,833	43,761	27,966	16,263	8,322
1,519,396	1,531,417	1,541,935	1,551,454	1,560,354
2,426	1,409	778	407	201
7,281	4,228	2,334	1,220	602
248,148	252,776	256,716	259,993	262,661
10,457	7,174	4,586	2,667	1,365
89,880	90,591	91,214	91,777	92,303
574	333	184	96	47
208,433	212,701	216,403	219,559	222,209
8,784	6,036	3,865	2,252	1,155
149,092	150,540	151,846	153,057	154,210
952	554	306	160	79
679,924	685,768	691,190	696,434	701,640
1,104	373	91	14	1
1,326,574	1,334,377	1,341,751	1,348,921	1,356,015
1,643	746	315	123	45
142,467	143,734	145,009	146,293	147,587
142,467	143,734	145,009	146,293	147,587
471,319	474,784	478,272	481,785	485,322
471,319	474,784	478,272	481,785	485,322
130,646	133,083	135,157	136,883	138,287
5,506	3,777	2,414	1,404	718
77,254	77,865	78,400	78,884	79,337
494	287	158	83	41
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

2046	2047	2048	2049	2050
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
79,495	80,226	80,797	81,275	81,713
543	228	76	18	3
-	-	-	-	-
119,012	119,686	120,335	120,972	121,606
100	46	20	8	3
-	-	-	-	-

-	-	-	-	-
-	-	-	-	-
129,854	131,049	131,981	132,762	133,478
887	373	124	30	4
-	-	-	-	-
151,992	152,852	153,680	154,495	155,304
127	58	25	10	4
-	-	-	-	-
16,079	16,163	16,247	16,331	16,416
-	-	-	-	-
8,999	9,045	9,092	9,140	9,187
-	-	-	-	-
13,482	13,576	13,671	13,767	13,863
-	-	-	-	-
14,900	15,004	15,109	15,215	15,322
21,123	21,282	21,442	21,603	21,764
21,123	21,282	21,442	21,603	21,764
66,067	66,411	66,756	67,103	67,452
66,067	66,411	66,756	67,103	67,452
8,826	8,904	8,983	9,063	9,143
8,826	8,904	8,983	9,063	9,143
46,788	47,132	47,478	47,827	48,178
46,788	47,132	47,478	47,827	48,178
-	-	-	-	-
8,465	8,509	8,554	8,598	8,643
-	-	-	-	-
7,735	7,775	7,815	7,856	7,897
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
6,799	6,948	7,078	7,188	7,280
67,989	69,481	70,777	71,880	72,797
755	772	786	799	809
1,116	811	557	357	207
3,379	2,442	1,674	1,070	622
117,864	118,971	119,913	120,736	121,482
312	190	110	61	32
936	570	331	183	96
11,106	11,350	11,561	11,742	11,891
111,060	113,497	115,614	117,416	118,915
1,234	1,261	1,285	1,305	1,321
1,823	1,325	911	582	339
5,519	3,990	2,735	1,748	1,016
150,525	151,940	153,142	154,193	155,145
398	243	141	78	41
1,196	728	423	233	122
15,176	15,509	15,799	16,045	16,250
903	654	448	287	167
8,904	8,988	9,059	9,121	9,178
94	57	33	18	10
12,725	13,027	13,294	13,525	13,722
757	549	377	242	141
14,744	14,909	15,054	15,185	15,306
156	95	55	31	16
21,123	21,282	21,442	21,603	21,764
21,123	21,282	21,442	21,603	21,764
66,067	66,411	66,756	67,103	67,452
66,067	66,411	66,756	67,103	67,452
8,826	8,904	8,983	9,063	9,143
8,826	8,904	8,983	9,063	9,143

46,788	47,132	47,478	47,827	48,178
46,788	47,132	47,478	47,827	48,178
7,990	8,165	8,318	8,447	8,555
475	344	236	151	88
7,654	7,725	7,787	7,840	7,888
81	49	29	16	8
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
67,989	69,481	70,777	71,880	72,797
-	-	-	-	-
7,554	7,720	7,864	7,987	8,089
1,116	811	557	357	207
3,379	2,442	1,674	1,070	622
117,864	118,971	119,913	120,736	121,482
312	190	110	61	32
936	570	331	183	96
111,060	113,497	115,614	117,416	118,915
-	-	-	-	-
12,340	12,611	12,846	13,046	13,213
1,823	1,325	911	582	339
5,519	3,990	2,735	1,748	1,016
150,525	151,940	153,142	154,193	155,145
398	243	141	78	41
1,196	728	423	233	122
15,176	15,509	15,799	16,045	16,250
903	654	448	287	167
8,904	8,988	9,059	9,121	9,178
94	57	33	18	10
12,725	13,027	13,294	13,525	13,722
757	549	377	242	141
14,744	14,909	15,054	15,185	15,306
156	95	55	31	16
42,085	42,495	42,861	43,199	43,527
161	69	23	6	1
131,798	132,657	133,438	134,175	134,892
337	164	75	31	12
17,584	17,780	17,957	18,124	18,286
67	29	10	2	0
93,337	94,147	94,904	95,632	96,348
238	117	53	22	9
7,990	8,165	8,318	8,447	8,555
475	344	236	151	88
7,654	7,725	7,787	7,840	7,888
81	49	29	16	8
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
67,989	69,481	70,777	71,880	72,797
-	-	-	-	-
7,554	7,720	7,864	7,987	8,089
1,116	811	557	357	207
3,379	2,442	1,674	1,070	622
117,864	118,971	119,913	120,736	121,482
312	190	110	61	32
936	570	331	183	96
11,106	11,350	11,561	11,742	11,891
111,060	113,497	115,614	117,416	118,915
1,234	1,261	1,285	1,305	1,321

1,823	1,325	911	582	339
5,519	3,990	2,735	1,748	1,016
150,525	151,940	153,142	154,193	155,145
398	243	141	78	41
1,196	728	423	233	122
15,176	15,509	15,799	16,045	16,250
903	654	448	287	167
8,904	8,988	9,059	9,121	9,178
94	57	33	18	10
12,725	13,027	13,294	13,525	13,722
757	549	377	242	141
14,744	14,909	15,054	15,185	15,306
156	95	55	31	16
42,085	42,495	42,861	43,199	43,527
161	69	23	6	1
131,798	132,657	133,438	134,175	134,892
337	164	75	31	12
8,826	8,904	8,983	9,063	9,143
8,826	8,904	8,983	9,063	9,143
46,788	47,132	47,478	47,827	48,178
46,788	47,132	47,478	47,827	48,178
7,990	8,165	8,318	8,447	8,555
475	344	236	151	88
7,654	7,725	7,787	7,840	7,888
81	49	29	16	8
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

2046	2047	2048	2049	2050
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
79,495	80,226	80,797	81,275	81,713
543	228	76	18	3
1	1	1	1	1
119,012	119,686	120,335	120,972	121,606
100	46	20	8	3
-	-	-	-	-
1,247	961	731	571	478
-	-	-	-	-
129,854	131,049	131,981	132,762	133,478
1,692	1,094	797	678	642
-	-	-	-	-
151,992	152,852	153,680	154,495	155,304
127	58	25	10	4
-	-	-	-	-
18,116	17,732	17,441	17,264	17,197
-	-	-	-	-
8,999	9,045	9,092	9,140	9,187
1,027	921	860	828	814
13,482	13,576	13,671	13,767	13,863
-	-	-	-	-
14,983	15,088	15,193	15,299	15,406
21,123	21,282	21,442	21,603	21,764
21,169	21,329	21,489	21,650	21,811

66,067	66,411	66,756	67,103	67,452
66,160	66,505	66,851	67,198	67,548
8,826	8,904	8,983	9,063	9,143
8,928	9,008	9,088	9,168	9,249
46,945	47,290	47,637	47,987	48,339
46,945	47,290	47,637	47,987	48,339
340	342	344	345	347
8,805	8,851	8,897	8,944	8,990
78	78	79	79	80
7,812	7,853	7,894	7,935	7,976
339	342	344	346	349
339	342	344	346	349
-	-	-	-	-
44	44	44	44	44
6,799	6,948	7,078	7,188	7,280
68,029	69,521	70,817	71,920	72,838
755	772	786	799	809
1,116	811	557	357	207
3,379	2,442	1,674	1,070	622
117,864	118,971	119,913	120,736	121,482
499	359	259	190	142
2,812	2,257	1,823	1,479	1,199
11,127	11,368	11,578	11,756	11,904
111,060	113,497	115,614	117,416	118,915
1,234	1,261	1,285	1,305	1,321
3,436	2,655	2,018	1,524	1,162
5,519	3,990	2,735	1,748	1,016
150,525	151,940	153,142	154,193	155,145
705	518	385	289	221
4,260	3,483	2,860	2,350	1,924
15,210	15,540	15,826	16,068	16,270
903	654	448	287	167
8,904	8,988	9,059	9,121	9,178
2,154	1,756	1,448	1,220	1,061
12,725	13,027	13,294	13,525	13,722
757	549	377	242	141
15,163	15,286	15,387	15,474	15,552
156	95	55	31	16
21,245	21,383	21,526	21,674	21,826
21,123	21,282	21,442	21,603	21,764
66,439	66,749	67,059	67,370	67,684
66,067	66,411	66,756	67,103	67,452
9,053	9,097	9,149	9,208	9,274
8,826	8,904	8,983	9,063	9,143
46,945	47,290	47,637	47,987	48,339
46,945	47,290	47,637	47,987	48,339
8,330	8,507	8,661	8,793	8,902
815	686	580	496	435
7,731	7,803	7,865	7,919	7,968
159	127	107	95	88
339	342	344	346	349
339	342	344	346	349
220	198	175	152	130
-	-	-	-	-
68,094	69,567	70,849	71,941	72,851
-	-	-	-	-
7,554	7,720	7,864	7,987	8,089
1,116	811	557	357	207
3,379	2,442	1,674	1,070	622
117,864	118,971	119,913	120,736	121,482
2,188	1,876	1,602	1,357	1,135

936	570	331	183	96
111,268	113,684	115,779	117,559	119,037
-	-	-	-	-
12,340	12,611	12,846	13,046	13,213
3,436	2,655	2,018	1,524	1,162
5,519	3,990	2,735	1,748	1,016
150,525	151,940	153,142	154,193	155,145
3,463	2,997	2,578	2,195	1,843
1,196	728	423	233	122
15,517	15,815	16,069	16,280	16,450
903	654	448	287	167
8,904	8,988	9,059	9,121	9,178
2,154	1,756	1,448	1,220	1,061
12,725	13,027	13,294	13,525	13,722
757	549	377	242	141
15,163	15,286	15,387	15,474	15,552
156	95	55	31	16
42,207	42,596	42,944	43,271	43,589
161	69	23	6	1
132,170	132,995	133,740	134,442	135,124
337	164	75	31	12
17,811	17,972	18,122	18,269	18,417
67	29	10	2	0
93,887	94,620	95,314	95,997	96,687
238	117	53	22	9
9,188	9,157	9,177	9,228	9,293
475	344	236	151	88
7,906	7,947	7,982	8,017	8,055
81	49	29	16	8
1,042	901	810	756	728
-	-	-	-	-
220	198	175	152	130
-	-	-	-	-
68,094	69,567	70,849	71,941	72,851
-	-	-	-	-
7,554	7,720	7,864	7,987	8,089
1,116	811	557	357	207
3,379	2,442	1,674	1,070	622
117,864	118,971	119,913	120,736	121,482
2,188	1,876	1,602	1,357	1,135
936	570	331	183	96
11,314	11,537	11,727	11,886	12,014
111,060	113,497	115,614	117,416	118,915
1,234	1,261	1,285	1,305	1,321
3,436	2,655	2,018	1,524	1,162
5,519	3,990	2,735	1,748	1,016
150,525	151,940	153,142	154,193	155,145
705	518	385	289	221
4,260	3,483	2,860	2,350	1,924
15,210	15,540	15,826	16,068	16,270
903	654	448	287	167
8,904	8,988	9,059	9,121	9,178
2,154	1,756	1,448	1,220	1,061
12,725	13,027	13,294	13,525	13,722
757	549	377	242	141
15,163	15,286	15,387	15,474	15,552
156	95	55	31	16
42,207	42,596	42,944	43,271	43,589
161	69	23	6	1
132,170	132,995	133,740	134,442	135,124
337	164	75	31	12

9,053	9,097	9,149	9,208	9,274
8,826	8,904	8,983	9,063	9,143
47,338	47,605	47,889	48,192	48,517
46,788	47,132	47,478	47,827	48,178
9,188	9,157	9,177	9,228	9,293
475	344	236	151	88
7,731	7,803	7,865	7,919	7,968
159	127	107	95	88
339	342	344	346	349
339	342	344	346	349
220	198	175	152	130
-	-	-	-	-

Final Energy Demand by Sector and End Use, 2020-2050

"Other fuel" includes liquid propane gas and other delivered fuels. "HVAC" includes both space

High Electrification

Sector	End Use	Demand Type	Unit	2020
Residential	HVAC	Natural Gas	MMBtu	45,322,986
Residential	WH	Natural Gas	MMBtu	21,163,483
Residential	CK	Natural Gas	MMBtu	6,558,092
Residential	CD	Natural Gas	MMBtu	1,484,606
Residential	OTH	Natural Gas	MMBtu	363,720
Residential	HVAC	Fuel Oil	MMBtu	9,137,227
Residential	WH	Fuel Oil	MMBtu	1,811,256
Residential	CK	Fuel Oil	MMBtu	-
Residential	CD	Fuel Oil	MMBtu	-
Residential	OTH	Fuel Oil	MMBtu	-
Residential	HVAC	Electricity	MMBtu	20,277,513
Residential	WH	Electricity	MMBtu	15,965,763
Residential	CK	Electricity	MMBtu	1,923,393
Residential	CD	Electricity	MMBtu	3,491,940
Residential	OTH	Electricity	MMBtu	39,454,016
Residential	HVAC	Other Fuel	MMBtu	5,101,280
Residential	WH	Other Fuel	MMBtu	1,472,750
Residential	CK	Other Fuel	MMBtu	618,265
Residential	CD	Other Fuel	MMBtu	-
Residential	OTH	Other Fuel	MMBtu	6,410,224
Commercial	HVAC	Natural Gas	MMBtu	54,157,956
Commercial	WH	Natural Gas	MMBtu	13,756,197
Commercial	CK	Natural Gas	MMBtu	7,743,633
Commercial	OTH	Natural Gas	MMBtu	2,810,501
Commercial	HVAC	Fuel Oil	MMBtu	1,703,525
Commercial	WH	Fuel Oil	MMBtu	-
Commercial	CK	Fuel Oil	MMBtu	1,703,525
Commercial	OTH	Fuel Oil	MMBtu	23,053
Commercial	HVAC	Electricity	MMBtu	7,786,679
Commercial	WH	Electricity	MMBtu	6,665,035
Commercial	CK	Electricity	MMBtu	767,644
Commercial	OTH	Electricity	MMBtu	81,305,593
Commercial	HVAC	Other Fuel	MMBtu	-
Commercial	WH	Other Fuel	MMBtu	-
Commercial	CK	Other Fuel	MMBtu	-
Commercial	OTH	Other Fuel	MMBtu	3,388,480

High Electrification with Fuel Backup

Sector	End Use	Demand Type	Unit	2020
Residential	HVAC	Natural Gas	MMBtu	45,564,398
Residential	WH	Natural Gas	MMBtu	21,163,483
Residential	CK	Natural Gas	MMBtu	6,711,597
Residential	CD	Natural Gas	MMBtu	1,520,202
Residential	OTH	Natural Gas	MMBtu	363,720
Residential	HVAC	Fuel Oil	MMBtu	9,137,227
Residential	WH	Fuel Oil	MMBtu	1,811,256
Residential	CK	Fuel Oil	MMBtu	-
Residential	CD	Fuel Oil	MMBtu	-
Residential	OTH	Fuel Oil	MMBtu	-
Residential	HVAC	Electricity	MMBtu	21,004,954
Residential	WH	Electricity	MMBtu	15,965,763
Residential	CK	Electricity	MMBtu	1,961,899
Residential	CD	Electricity	MMBtu	3,538,244

Residential	OTH	Electricity	MMBtu	39,454,016
Residential	HVAC	Other Fuel	MMBtu	5,101,280
Residential	WH	Other Fuel	MMBtu	1,472,750
Residential	CK	Other Fuel	MMBtu	618,265
Residential	CD	Other Fuel	MMBtu	-
Residential	OTH	Other Fuel	MMBtu	6,410,224
Commercial	HVAC	Natural Gas	MMBtu	54,701,729
Commercial	WH	Natural Gas	MMBtu	13,756,197
Commercial	CK	Natural Gas	MMBtu	8,074,188
Commercial	OTH	Natural Gas	MMBtu	2,810,501
Commercial	HVAC	Fuel Oil	MMBtu	1,703,525
Commercial	WH	Fuel Oil	MMBtu	17,106
Commercial	CK	Fuel Oil	MMBtu	1,686,419
Commercial	OTH	Fuel Oil	MMBtu	23,053
Commercial	HVAC	Electricity	MMBtu	7,926,324
Commercial	WH	Electricity	MMBtu	6,665,035
Commercial	CK	Electricity	MMBtu	780,562
Commercial	OTH	Electricity	MMBtu	81,305,593
Commercial	HVAC	Other Fuel	MMBtu	-
Commercial	WH	Other Fuel	MMBtu	-
Commercial	CK	Other Fuel	MMBtu	-
Commercial	OTH	Other Fuel	MMBtu	3,388,480

High Decarbonized Methane

Sector	End Use	Demand Type	Unit	2020
High Decarbonized Meth Residential	HVAC	Natural Gas	MMBtu	
High Decarbonized Meth Residential	WH	Natural Gas	MMBtu	
High Decarbonized Meth Residential	CK	Natural Gas	MMBtu	
High Decarbonized Meth Residential	CD	Natural Gas	MMBtu	
High Decarbonized Meth Residential	OTH	Natural Gas	MMBtu	
High Decarbonized Meth Residential	HVAC	Fuel Oil	MMBtu	
High Decarbonized Meth Residential	WH	Fuel Oil	MMBtu	
High Decarbonized Meth Residential	CK	Fuel Oil	MMBtu	
High Decarbonized Meth Residential	CD	Fuel Oil	MMBtu	
High Decarbonized Meth Residential	OTH	Fuel Oil	MMBtu	
High Decarbonized Meth Residential	HVAC	Electricity	MMBtu	
High Decarbonized Meth Residential	WH	Electricity	MMBtu	
High Decarbonized Meth Residential	CK	Electricity	MMBtu	
High Decarbonized Meth Residential	CD	Electricity	MMBtu	
High Decarbonized Meth Residential	OTH	Electricity	MMBtu	
High Decarbonized Meth Residential	HVAC	Other Fuel	MMBtu	
High Decarbonized Meth Residential	WH	Other Fuel	MMBtu	
High Decarbonized Meth Residential	CK	Other Fuel	MMBtu	
High Decarbonized Meth Residential	CD	Other Fuel	MMBtu	
High Decarbonized Meth Residential	OTH	Other Fuel	MMBtu	
High Decarbonized Meth Commercial	HVAC	Natural Gas	MMBtu	
High Decarbonized Meth Commercial	WH	Natural Gas	MMBtu	
High Decarbonized Meth Commercial	CK	Natural Gas	MMBtu	
High Decarbonized Meth Commercial	OTH	Natural Gas	MMBtu	
High Decarbonized Meth Commercial	HVAC	Fuel Oil	MMBtu	
High Decarbonized Meth Commercial	WH	Fuel Oil	MMBtu	
High Decarbonized Meth Commercial	CK	Fuel Oil	MMBtu	
High Decarbonized Meth Commercial	OTH	Fuel Oil	MMBtu	
High Decarbonized Meth Commercial	HVAC	Electricity	MMBtu	
High Decarbonized Meth Commercial	WH	Electricity	MMBtu	
High Decarbonized Meth Commercial	CK	Electricity	MMBtu	
High Decarbonized Meth Commercial	OTH	Electricity	MMBtu	
High Decarbonized Meth Commercial	HVAC	Other Fuel	MMBtu	
High Decarbonized Meth Commercial	WH	Other Fuel	MMBtu	

High Decarbonized Meth Commercial	CK	Other Fuel	MMBtu
High Decarbonized Meth Commercial	OTH	Other Fuel	MMBtu

Mitigation Working Group Scenario

Sector	End Use	Demand Type	Unit	2020
Modified Fuel Backup	Residential	HVAC	Natural Gas	MMBtu
Modified Fuel Backup	Residential	WH	Natural Gas	MMBtu
Modified Fuel Backup	Residential	CK	Natural Gas	MMBtu
Modified Fuel Backup	Residential	CD	Natural Gas	MMBtu
Modified Fuel Backup	Residential	OTH	Natural Gas	MMBtu
Modified Fuel Backup	Residential	HVAC	Fuel Oil	MMBtu
Modified Fuel Backup	Residential	WH	Fuel Oil	MMBtu
Modified Fuel Backup	Residential	CK	Fuel Oil	MMBtu
Modified Fuel Backup	Residential	CD	Fuel Oil	MMBtu
Modified Fuel Backup	Residential	OTH	Fuel Oil	MMBtu
Modified Fuel Backup	Residential	HVAC	Electricity	MMBtu
Modified Fuel Backup	Residential	WH	Electricity	MMBtu
Modified Fuel Backup	Residential	CK	Electricity	MMBtu
Modified Fuel Backup	Residential	CD	Electricity	MMBtu
Modified Fuel Backup	Residential	OTH	Electricity	MMBtu
Modified Fuel Backup	Residential	HVAC	Other Fuel	MMBtu
Modified Fuel Backup	Residential	WH	Other Fuel	MMBtu
Modified Fuel Backup	Residential	CK	Other Fuel	MMBtu
Modified Fuel Backup	Residential	CD	Other Fuel	MMBtu
Modified Fuel Backup	Residential	OTH	Other Fuel	MMBtu
Modified Fuel Backup	Commercial	HVAC	Natural Gas	MMBtu
Modified Fuel Backup	Commercial	WH	Natural Gas	MMBtu
Modified Fuel Backup	Commercial	CK	Natural Gas	MMBtu
Modified Fuel Backup	Commercial	OTH	Natural Gas	MMBtu
Modified Fuel Backup	Commercial	HVAC	Fuel Oil	MMBtu
Modified Fuel Backup	Commercial	WH	Fuel Oil	MMBtu
Modified Fuel Backup	Commercial	CK	Fuel Oil	MMBtu
Modified Fuel Backup	Commercial	OTH	Fuel Oil	MMBtu
Modified Fuel Backup	Commercial	HVAC	Electricity	MMBtu
Modified Fuel Backup	Commercial	WH	Electricity	MMBtu
Modified Fuel Backup	Commercial	CK	Electricity	MMBtu
Modified Fuel Backup	Commercial	OTH	Electricity	MMBtu
Modified Fuel Backup	Commercial	HVAC	Other Fuel	MMBtu
Modified Fuel Backup	Commercial	WH	Other Fuel	MMBtu
Modified Fuel Backup	Commercial	CK	Other Fuel	MMBtu
Modified Fuel Backup	Commercial	OTH	Other Fuel	MMBtu

» heating and air condition.

2021	2022	2023	2024	2025	2026	2027	2028	2029
44,587,063	43,667,536	42,559,331	41,242,920	39,695,336	37,938,338	35,990,654	33,885,012	31,644,236
20,334,222	19,402,542	18,388,628	17,309,395	16,178,101	15,027,136	13,866,382	12,705,414	11,553,162
6,508,409	6,432,588	6,327,999	6,191,328	6,019,444	5,815,237	5,580,555	5,318,665	5,030,954
1,471,099	1,451,645	1,425,663	1,392,442	1,351,344	1,303,120	1,248,292	1,187,686	1,121,670
366,520	369,342	372,186	375,052	377,715	380,397	383,098	385,818	388,557
9,201,468	9,184,625	9,084,118	8,905,427	8,658,069	8,356,996	8,008,323	7,616,869	7,184,279
1,751,022	1,684,738	1,609,828	1,525,530	1,432,393	1,333,783	1,231,616	1,127,858	1,024,219
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
19,864,010	19,447,678	19,012,313	18,543,090	18,029,174	17,488,193	16,901,359	16,283,210	15,650,272
15,666,820	15,337,121	14,995,448	14,666,249	14,374,569	14,134,038	13,950,642	13,820,204	13,731,984
1,928,789	1,933,582	1,937,657	1,940,917	1,943,301	1,944,078	1,943,391	1,941,499	1,938,692
3,506,575	3,519,966	3,531,956	3,542,394	3,551,171	3,556,909	3,559,793	3,560,170	3,558,402
39,417,754	39,428,114	39,469,283	39,566,390	39,681,645	39,808,778	39,941,691	40,081,471	40,228,827
5,017,536	4,908,439	4,770,981	4,620,323	4,435,458	4,220,009	3,977,516	3,713,178	3,431,016
1,385,001	1,294,885	1,203,908	1,117,632	1,031,715	947,802	866,095	786,771	709,927
622,180	626,035	629,806	633,509	637,179	640,516	643,520	646,202	648,545
-	-	-	-	-	-	-	-	-
6,459,583	6,509,322	6,559,444	6,609,951	6,656,882	6,704,146	6,751,745	6,799,683	6,847,960
53,572,243	52,779,644	51,754,760	50,468,362	48,894,975	47,059,747	44,979,754	42,683,094	40,181,640
13,459,048	13,069,633	12,594,782	12,041,534	11,416,627	10,742,657	10,026,880	9,276,906	8,500,954
7,584,416	7,374,723	7,117,396	6,815,251	6,471,048	6,096,926	5,696,722	5,274,782	4,836,011
2,844,227	2,878,358	2,912,898	2,947,853	2,983,227	3,019,026	3,055,254	3,091,917	3,129,020
1,699,767	1,688,817	1,669,622	1,640,853	1,601,214	1,551,154	1,490,967	1,421,527	1,343,405
-	-	-	-	-	-	-	-	-
1,699,767	1,688,817	1,669,622	1,640,853	1,601,214	1,551,154	1,490,967	1,421,527	1,343,405
22,585	21,969	21,210	20,318	19,299	18,190	17,001	15,745	14,437
7,708,458	7,604,135	7,473,179	7,315,444	7,131,558	6,929,716	6,707,947	6,473,494	6,233,730
6,469,904	6,264,838	6,058,786	5,863,062	5,688,968	5,542,570	5,426,838	5,340,565	5,279,822
768,397	768,884	769,281	769,810	770,693	771,785	773,142	774,742	776,506
80,781,681	80,365,034	80,031,863	79,890,186	79,872,429	79,957,204	80,123,732	80,351,479	80,624,795
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
3,429,142	3,470,292	3,511,935	3,554,078	3,596,727	3,639,888	3,683,567	3,727,769	3,772,503

2021	2022	2023	2024	2025	2026	2027	2028	2029
44,980,822	44,254,665	43,386,550	42,362,893	41,165,304	39,805,410	38,297,162	36,665,991	34,929,960
20,334,222	19,402,542	18,388,628	17,309,395	16,178,101	15,027,136	13,866,382	12,705,414	11,553,162
6,760,062	6,807,777	6,854,743	6,900,958	6,946,423	6,988,327	7,026,668	7,061,446	7,092,663
1,529,347	1,538,309	1,547,057	1,555,569	1,563,837	1,571,247	1,577,840	1,583,672	1,588,793
366,520	369,342	372,186	375,052	377,715	380,397	383,098	385,818	388,557
9,201,706	9,186,015	9,088,152	8,914,051	8,673,543	8,381,671	8,044,507	7,666,662	7,249,386
1,751,022	1,684,738	1,609,828	1,525,530	1,432,393	1,333,783	1,231,616	1,127,858	1,024,219
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
20,643,110	20,315,575	20,006,818	19,703,107	19,394,220	19,095,173	18,782,926	18,464,724	18,148,343
15,666,820	15,337,121	14,995,448	14,666,249	14,374,569	14,134,038	13,950,642	13,820,204	13,731,984
1,976,066	1,990,014	2,003,743	2,017,252	2,030,542	2,042,791	2,053,999	2,064,165	2,073,290
3,563,421	3,587,806	3,611,375	3,634,089	3,655,906	3,675,330	3,692,372	3,707,060	3,719,406

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 3,388,480 3,429,142 3,470,292 3,511,935 3,554,078 3,596,727 3,639,888 3,683,567 3,727,769

2021	2022	2023	2024	2025	2026	2027	2028	2029
45,322,986	44,587,063	43,667,536	42,559,331	41,242,920	39,695,336	37,938,338	35,990,654	33,885,012
21,163,483	20,334,222	19,402,542	18,388,628	17,309,395	16,178,101	15,027,136	13,866,382	12,705,414
6,558,092	6,508,409	6,432,588	6,327,999	6,191,328	6,019,444	5,815,237	5,580,555	5,318,665
1,484,606	1,471,099	1,451,645	1,425,663	1,392,442	1,351,344	1,303,120	1,248,292	1,187,686
363,720	366,520	369,342	372,186	375,052	377,715	380,397	383,098	385,818
9,137,227	9,201,468	9,184,625	9,084,118	8,905,427	8,658,069	8,356,996	8,008,323	7,616,869
1,811,256	1,751,022	1,684,738	1,609,828	1,525,530	1,432,393	1,333,783	1,231,616	1,127,858
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
20,277,513	19,864,010	19,447,678	19,012,313	18,543,090	18,029,174	17,488,193	16,901,359	16,283,210
15,965,763	15,666,820	15,337,121	14,995,448	14,666,249	14,374,569	14,134,038	13,950,642	13,820,204
1,923,393	1,928,789	1,933,582	1,937,657	1,940,917	1,943,301	1,944,078	1,943,391	1,941,499
3,491,940	3,506,575	3,519,966	3,531,956	3,542,394	3,551,171	3,556,909	3,559,793	3,560,170
39,454,016	39,417,754	39,428,114	39,469,283	39,566,390	39,681,645	39,808,778	39,941,691	40,081,471
5,101,280	5,017,536	4,908,439	4,770,981	4,620,323	4,435,458	4,220,009	3,977,516	3,713,178
1,472,750	1,385,001	1,294,885	1,203,908	1,117,632	1,031,715	947,802	866,095	786,771
618,265	622,180	626,035	629,806	633,509	637,179	640,516	643,520	646,202
-	-	-	-	-	-	-	-	-
6,410,224	6,459,583	6,509,322	6,559,444	6,609,951	6,656,882	6,704,146	6,751,745	6,799,683
54,701,729	54,462,519	54,110,052	53,631,382	53,011,372	52,237,164	51,314,144	50,252,616	49,068,000
13,756,197	13,459,048	13,069,633	12,594,782	12,041,534	11,416,627	10,742,657	10,026,880	9,276,906
8,074,188	8,132,515	8,189,940	8,246,462	8,302,081	8,356,798	8,407,228	8,453,370	8,495,226
2,810,501	2,844,227	2,878,358	2,912,898	2,947,853	2,983,227	3,019,026	3,055,254	3,091,917
1,703,525	1,699,819	1,689,117	1,670,491	1,642,717	1,604,570	1,556,527	1,498,873	1,432,437
17,106	28,213	42,319	59,775	81,010	106,427	135,396	167,703	202,954
1,686,419	1,671,606	1,646,798	1,610,716	1,561,706	1,498,143	1,421,131	1,331,170	1,229,483
23,053	22,585	21,969	21,210	20,318	19,299	18,190	17,001	15,745
7,926,324	7,837,981	7,734,950	7,616,306	7,481,614	7,331,110	7,171,977	7,000,808	6,822,775
6,665,035	6,469,904	6,264,838	6,058,786	5,863,062	5,688,968	5,542,570	5,426,838	5,340,565
780,562	786,201	791,752	797,216	802,593	807,883	812,758	817,219	821,265
81,305,593	80,781,681	80,365,034	80,031,863	79,890,186	79,872,429	79,957,204	80,123,732	80,351,479
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
3,388,480	3,429,142	3,470,292	3,511,935	3,554,078	3,596,727	3,639,888	3,683,567	3,727,769

2030	2031	2032	2033	2034	2035	2036	2037	2038
29,262,343	26,726,722	24,028,004	21,238,876	18,516,770	15,995,553	13,819,838	11,914,484	10,212,747
10,416,900	9,305,109	8,217,055	7,149,537	6,097,790	5,056,470	4,131,744	3,319,689	2,616,383
4,714,138	4,361,992	3,970,742	3,551,186	3,130,171	2,732,168	2,384,444	2,076,338	1,797,798
1,049,516	969,889	881,977	788,200	694,472	606,118	529,048	460,816	399,143
390,849	393,155	395,475	397,808	400,155	402,236	404,328	406,430	408,544
6,705,928	6,174,576	5,586,459	4,959,131	4,332,942	3,744,487	3,233,124	2,785,192	2,387,211
921,950	821,956	724,367	628,956	535,303	442,928	361,207	289,693	227,952
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
15,012,924	14,410,610	13,832,818	13,275,400	12,752,960	12,286,639	11,885,547	11,539,228	11,236,730
13,095,978	12,415,807	11,720,153	11,065,854	10,472,097	9,937,849	9,464,590	9,057,224	8,720,174
1,935,163	1,932,327	1,930,003	1,928,056	1,926,614	1,929,522	1,936,355	1,943,100	1,949,758
3,554,674	3,551,568	3,548,825	3,546,400	3,544,706	3,544,275	3,545,272	3,547,536	3,550,873
40,353,616	40,488,577	40,631,086	40,779,964	40,935,015	41,077,702	41,225,439	41,377,650	41,533,782
3,132,960	2,814,810	2,478,608	2,135,924	1,807,086	1,508,541	1,254,891	1,038,386	852,016
635,762	564,192	495,011	427,886	362,468	298,458	242,123	193,102	151,041
650,646	652,706	654,740	656,742	658,711	660,692	662,640	664,556	666,439
-	-	-	-	-	-	-	-	-
6,888,363	6,929,005	6,969,886	7,011,008	7,052,373	7,089,046	7,125,909	7,162,963	7,200,211
37,449,358	34,454,417	31,174,962	27,704,137	24,255,148	21,017,921	18,198,573	15,712,434	13,481,000
7,707,757	6,908,167	6,108,649	5,314,092	4,527,191	3,748,303	3,058,292	2,454,416	1,933,097
4,385,724	3,929,986	3,473,222	3,018,861	2,568,971	2,124,183	1,730,904	1,387,426	1,091,515
3,150,923	3,172,980	3,195,191	3,217,557	3,240,080	3,262,760	3,285,600	3,308,599	3,331,759
1,256,099	1,158,707	1,050,767	935,620	820,684	712,518	618,196	534,802	459,645
-	-	-	-	-	-	-	-	-
1,256,099	1,158,707	1,050,767	935,620	820,684	712,518	618,196	534,802	459,645
13,093	11,732	10,367	9,009	7,664	6,335	5,160	4,135	3,252
5,993,352	5,765,917	5,548,314	5,339,586	5,144,769	4,970,619	4,821,165	4,692,556	4,580,406
4,981,344	4,670,778	4,359,164	4,069,525	3,808,116	3,572,673	3,362,807	3,180,389	3,027,586
773,251	769,726	766,149	762,974	760,324	758,154	756,457	755,269	754,634
80,649,256	80,711,048	80,808,937	80,944,150	81,118,136	81,331,055	81,581,506	81,866,659	82,182,558
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
3,798,910	3,825,503	3,852,281	3,879,247	3,906,402	3,933,747	3,961,283	3,989,012	4,016,935

2030	2031	2032	2033	2034	2035	2036	2037	2038
33,084,586	31,122,688	29,036,568	26,881,708	24,779,052	22,831,426	21,151,385	19,678,706	18,359,549
10,416,900	9,305,109	8,217,055	7,149,537	6,097,790	5,056,470	4,131,744	3,319,689	2,616,383
7,120,317	7,147,643	7,174,641	7,201,311	7,227,653	7,253,667	7,279,352	7,304,710	7,329,739
1,593,227	1,597,707	1,602,247	1,606,912	1,611,798	1,616,954	1,622,327	1,627,819	1,633,341
390,849	393,155	395,475	397,808	400,155	402,236	404,328	406,430	408,544
6,787,387	6,271,212	5,695,831	5,077,835	4,457,447	3,871,732	3,361,446	2,912,954	2,512,639
921,950	821,956	724,367	628,956	535,303	442,928	361,207	289,693	227,952
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
17,837,623	17,539,765	17,255,275	16,998,448	16,801,100	16,689,245	16,658,255	16,671,814	16,697,565
13,673,295	13,639,261	13,623,672	13,621,609	13,629,473	13,645,748	13,670,033	13,701,932	13,740,584
2,081,374	2,089,362	2,097,254	2,105,050	2,112,750	2,120,354	2,127,863	2,135,275	2,142,591
3,729,354	3,738,943	3,748,127	3,757,031	3,765,932	3,775,062	3,784,460	3,794,072	3,803,862

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 3,772,503 3,798,910 3,825,503 3,852,281 3,879,247 3,906,402 3,933,747 3,961,283 3,989,012

2030	2031	2032	2033	2034	2035	2036	2037	2038
31,644,236	29,262,343	26,726,722	24,028,004	21,238,876	18,516,770	15,995,553	13,819,838	11,914,484
11,553,162	10,416,900	9,305,109	8,217,055	7,149,537	6,097,790	5,056,470	4,131,744	3,319,689
5,030,954	4,714,138	4,361,992	3,970,742	3,551,186	3,130,171	2,732,168	2,384,444	2,076,338
1,121,670	1,049,516	969,889	881,977	788,200	694,472	606,118	529,048	460,816
388,557	390,849	393,155	395,475	397,808	400,155	402,236	404,328	406,430
7,184,279	6,705,928	6,174,576	5,586,459	4,959,131	4,332,942	3,744,487	3,233,124	2,785,192
1,024,219	921,950	821,956	724,367	628,956	535,303	442,928	361,207	289,693
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
15,650,272	15,012,924	14,410,610	13,832,818	13,275,400	12,752,960	12,286,639	11,885,547	11,539,228
13,731,984	13,095,978	12,415,807	11,720,153	11,065,854	10,472,097	9,937,849	9,464,590	9,057,224
1,938,692	1,935,163	1,932,327	1,930,003	1,928,056	1,926,614	1,929,522	1,936,355	1,943,100
3,558,402	3,554,674	3,551,568	3,548,825	3,546,400	3,544,706	3,544,275	3,545,272	3,547,536
40,228,827	40,353,616	40,488,577	40,631,086	40,779,964	40,935,015	41,077,702	41,225,439	41,377,650
3,431,016	3,132,960	2,814,810	2,478,608	2,135,924	1,807,086	1,508,541	1,254,891	1,038,386
709,927	635,762	564,192	495,011	427,886	362,468	298,458	242,123	193,102
648,545	650,646	652,706	654,740	656,742	658,711	660,692	662,640	664,556
-	-	-	-	-	-	-	-	-
6,847,960	6,888,363	6,929,005	6,969,886	7,011,008	7,052,373	7,089,046	7,125,909	7,162,963
47,764,656	46,322,900	44,730,483	42,970,991	41,094,648	39,220,120	37,454,136	35,914,898	34,554,479
8,500,954	7,707,757	6,908,167	6,108,649	5,314,092	4,527,191	3,748,303	3,058,292	2,454,416
8,532,794	8,566,076	8,598,962	8,631,454	8,663,551	8,695,252	8,726,559	8,757,472	8,787,989
3,129,020	3,150,923	3,172,980	3,195,191	3,217,557	3,240,080	3,262,760	3,285,600	3,308,599
1,357,707	1,274,035	1,180,040	1,074,988	962,013	848,504	741,115	647,211	563,851
240,967	282,123	327,559	377,785	431,607	485,907	537,794	583,957	625,548
1,116,739	991,911	852,481	697,203	530,406	362,597	203,321	63,253	-
14,437	13,093	11,732	10,367	9,009	7,664	6,335	5,160	4,135
6,642,898	6,464,191	6,291,153	6,124,632	5,970,216	5,839,500	5,741,610	5,676,022	5,629,826
5,279,822	5,239,609	5,217,806	5,210,708	5,214,315	5,224,738	5,239,084	5,255,488	5,272,837
824,897	828,115	831,294	834,435	837,538	840,603	843,629	846,618	849,568
80,624,795	80,649,256	80,711,048	80,808,937	80,944,150	81,118,136	81,331,055	81,581,506	81,866,659
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
3,772,503	3,798,910	3,825,503	3,852,281	3,879,247	3,906,402	3,933,747	3,961,283	3,989,012

2039	2040	2041	2042	2043	2044	2045	2046	2047
8,674,308	7,277,558	6,011,659	4,872,180	3,858,385	2,971,154	2,211,107	1,577,081	1,065,452
2,017,499	1,517,830	1,110,847	788,453	541,016	357,719	227,155	138,061	80,037
1,542,750	1,308,048	1,092,304	895,216	717,168	558,883	421,092	304,233	208,307
342,656	290,649	242,813	199,082	159,549	124,379	93,744	67,747	46,397
410,668	412,804	414,950	417,108	419,277	421,457	423,649	425,852	428,066
2,029,871	1,706,723	1,413,316	1,147,348	908,783	699,026	519,297	369,692	249,306
175,529	131,899	96,437	68,395	46,903	30,998	19,678	11,957	6,931
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
10,972,304	10,743,900	10,551,711	10,395,783	10,274,949	10,185,857	10,123,400	10,055,423	10,001,730
8,454,572	8,257,078	8,120,364	8,033,898	7,986,115	7,966,137	7,964,848	7,975,280	7,992,530
1,956,329	1,962,812	1,969,296	1,975,779	1,982,263	1,988,746	1,995,230	2,001,713	2,008,196
3,555,173	3,560,383	3,566,628	3,573,887	3,582,133	3,591,316	3,601,341	3,612,057	3,623,274
41,693,524	41,856,159	42,021,733	42,189,685	42,359,407	42,530,218	42,701,536	42,872,214	43,041,128
691,089	552,421	433,522	332,580	248,367	179,842	125,681	84,147	53,400
115,571	86,268	62,641	44,114	30,039	19,716	12,434	7,509	4,328
668,299	670,126	671,951	673,773	675,593	677,410	679,234	681,056	682,875
-	-	-	-	-	-	-	-	-
7,237,652	7,275,288	7,313,119	7,351,147	7,389,373	7,427,798	7,466,423	7,505,248	7,544,275
11,456,762	9,614,473	7,941,828	6,434,351	5,092,155	3,917,300	2,911,288	2,072,957	1,397,587
1,490,256	1,121,304	820,935	582,952	400,193	264,707	168,132	102,197	59,243
840,635	631,979	462,365	328,145	225,173	148,893	94,550	57,462	33,307
3,355,082	3,378,567	3,402,217	3,426,033	3,450,015	3,474,165	3,498,484	3,522,973	3,547,634
391,132	328,478	271,366	219,755	173,746	133,478	99,040	70,401	47,386
-	-	-	-	-	-	-	-	-
391,132	328,478	271,366	219,755	173,746	133,478	99,040	70,401	47,386
2,504	1,882	1,377	977	670	443	281	171	99
4,481,785	4,395,017	4,319,296	4,254,020	4,198,684	4,152,635	4,114,891	4,076,484	4,043,259
2,905,350	2,812,686	2,746,756	2,703,220	2,677,182	2,663,964	2,659,589	2,660,952	2,665,795
754,569	755,056	756,069	757,524	759,323	761,374	763,600	765,939	768,346
82,524,552	82,887,789	83,271,531	83,671,929	84,086,082	84,512,077	84,948,834	85,395,853	85,852,919
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
4,045,053	4,073,369	4,101,882	4,130,595	4,159,510	4,188,626	4,217,947	4,247,472	4,277,205

2039	2040	2041	2042	2043	2044	2045	2046	2047
17,161,262	16,066,522	15,067,440	14,161,120	13,347,919	12,629,720	12,008,387	11,484,547	11,057,011
2,017,499	1,517,830	1,110,847	788,453	541,016	357,719	227,155	138,061	80,037
7,354,441	7,378,814	7,403,187	7,427,560	7,451,934	7,476,307	7,500,680	7,525,053	7,549,427
1,638,833	1,644,265	1,649,699	1,655,134	1,660,568	1,666,003	1,671,437	1,676,872	1,682,306
410,668	412,804	414,950	417,108	419,277	421,457	423,649	425,852	428,066
2,151,089	1,821,782	1,520,251	1,244,277	994,114	771,678	578,820	416,273	283,734
175,529	131,899	96,437	68,395	46,903	30,998	19,678	11,957	6,931
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
16,721,904	16,744,090	16,768,694	16,800,081	16,840,630	16,889,415	16,943,862	16,975,927	17,010,962
13,784,664	13,832,579	13,883,192	13,934,960	13,986,587	14,037,120	14,086,004	14,133,078	14,178,529
2,149,812	2,156,937	2,164,061	2,171,186	2,178,311	2,185,435	2,192,560	2,199,685	2,206,809
3,813,828	3,823,977	3,834,486	3,845,358	3,856,599	3,868,200	3,880,133	3,892,344	3,904,759

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 4,016,935 4,045,053 4,073,369 4,101,882 4,130,595 4,159,510 4,188,626 4,217,947 4,247,472

2039	2040	2041	2042	2043	2044	2045	2046	2047
10,212,747	8,674,308	7,277,558	6,011,659	4,872,180	3,858,385	2,971,154	2,211,107	1,577,081
2,616,383	2,017,499	1,517,830	1,110,847	788,453	541,016	357,719	227,155	138,061
1,797,798	1,542,750	1,308,048	1,092,304	895,216	717,168	558,883	421,092	304,233
399,143	342,656	290,649	242,813	199,082	159,549	124,379	93,744	67,747
408,544	410,668	412,804	414,950	417,108	419,277	421,457	423,649	425,852
2,387,211	2,029,871	1,706,723	1,413,316	1,147,348	908,783	699,026	519,297	369,692
227,952	175,529	131,899	96,437	68,395	46,903	30,998	19,678	11,957
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
11,236,730	10,972,304	10,743,900	10,551,711	10,395,783	10,274,949	10,185,857	10,123,400	10,055,423
8,720,174	8,454,572	8,257,078	8,120,364	8,033,898	7,986,115	7,966,137	7,964,848	7,975,280
1,949,758	1,956,329	1,962,812	1,969,296	1,975,779	1,982,263	1,988,746	1,995,230	2,001,713
3,550,873	3,555,173	3,560,383	3,566,628	3,573,887	3,582,133	3,591,316	3,601,341	3,612,057
41,533,782	41,693,524	41,856,159	42,021,733	42,189,685	42,359,407	42,530,218	42,701,536	42,872,214
852,016	691,089	552,421	433,522	332,580	248,367	179,842	125,681	84,147
151,041	115,571	86,268	62,641	44,114	30,039	19,716	12,434	7,509
666,439	668,299	670,126	671,951	673,773	675,593	677,410	679,234	681,056
-	-	-	-	-	-	-	-	-
7,200,211	7,237,652	7,275,288	7,313,119	7,351,147	7,389,373	7,427,798	7,466,423	7,505,248
33,328,364	32,209,726	31,184,404	30,246,724	29,394,347	28,627,747	27,948,832	27,359,557	26,860,686
1,933,097	1,490,256	1,121,304	820,935	582,952	400,193	264,707	168,132	102,197
8,818,111	8,847,839	8,877,172	8,906,504	8,935,837	8,965,170	8,994,503	9,023,835	9,053,168
3,331,759	3,355,082	3,378,567	3,402,217	3,426,033	3,450,015	3,474,165	3,498,484	3,522,973
488,283	418,873	354,823	295,837	241,925	193,267	150,115	112,687	81,091
663,619	698,745	731,167	760,991	788,196	812,727	834,530	853,580	869,914
-	-	-	-	-	-	-	-	-
3,252	2,504	1,882	1,377	977	670	443	281	171
5,591,069	5,553,798	5,516,210	5,478,113	5,439,513	5,400,601	5,361,639	5,322,882	5,276,943
5,290,511	5,308,193	5,325,737	5,343,317	5,360,908	5,378,503	5,396,099	5,413,695	5,431,291
852,480	855,354	858,190	861,025	863,861	866,697	869,532	872,368	875,204
82,182,558	82,524,552	82,887,789	83,271,531	83,671,929	84,086,082	84,512,077	84,948,834	85,395,853
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
4,016,935	4,045,053	4,073,369	4,101,882	4,130,595	4,159,510	4,188,626	4,217,947	4,247,472

2048	2049	2050
670,324	383,434	192,871
44,102	23,016	11,337
132,901	77,139	39,398
29,606	17,187	8,779
430,292	432,530	434,779
156,591	89,442	44,934
3,819	1,993	982
-	-	-
-	-	-
-	-	-
9,956,346	9,914,663	9,874,003
8,013,451	8,036,248	8,060,053
2,014,680	2,021,163	2,027,647
3,634,790	3,646,443	3,658,139
43,206,958	43,368,215	43,523,368
31,603	17,039	8,098
2,372	1,232	604
684,691	686,505	688,317
-	-	-
7,583,505	7,622,940	7,662,579
877,178	500,382	250,921
32,640	17,031	8,387
18,349	9,574	4,715
3,572,468	3,597,475	3,622,657
29,696	16,919	8,476
-	-	-
29,696	16,919	8,476
55	28	14
4,013,499	3,985,798	3,959,206
2,672,590	2,680,389	2,688,661
770,792	773,257	775,732
86,319,842	86,796,293	87,281,734
-	-	-
-	-	-
-	-	-
4,307,145	4,337,295	4,367,656

2048	2049	2050
10,722,850	10,477,206	10,312,000
44,102	23,016	11,337
7,573,800	7,598,173	7,622,546
1,687,741	1,693,175	1,698,610
430,292	432,530	434,779
180,228	104,163	52,982
3,819	1,993	982
-	-	-
-	-	-
-	-	-
17,048,699	17,089,000	17,131,668
14,222,790	14,266,421	14,309,977
2,213,934	2,221,059	2,228,183
3,917,295	3,929,888	3,942,498

43,206,958	43,368,215	43,523,368
36,374	19,844	9,549
2,372	1,232	604
684,691	686,505	688,317
-	-	-
7,583,505	7,622,940	7,662,579
26,128,374	25,887,581	25,721,082
32,640	17,031	8,387
9,111,834	9,141,166	9,170,499
3,572,468	3,597,475	3,622,657
35,128	20,304	10,327
894,861	903,806	910,718
-	-	-
55	28	14
5,882,057	5,892,075	5,904,558
5,466,483	5,484,079	5,501,675
880,875	883,711	886,547
86,319,842	86,796,293	87,281,734
-	-	-
-	-	-
-	-	-
4,307,145	4,337,295	4,367,656

2048	2049	2050	
33,240,482	32,871,132	32,490,658	32096195
17,245,320	17,302,889	17,361,666	17420660
7,398,580	7,422,358	7,446,215	7470096
1,531,041	1,535,878	1,540,795	1545736
428,066	430,292	432,530	434778.8
9,034,064	8,923,097	8,809,509	8693355
1,889,920	1,896,278	1,902,740	1909214
-	-	-	0
-	-	-	0
-	-	-	0
17,489,897	17,407,381	17,317,841	17221379
14,178,529	14,222,790	14,266,421	14309977
2,087,451	2,094,191	2,100,930	2107669
3,763,940	3,776,024	3,788,163	3800318
43,041,128	43,206,958	43,368,215	43523368
1,935,044	1,800,865	1,678,251	1566759
1,180,122	1,178,023	1,176,591	1175700
682,875	684,691	686,505	688316.6
-	-	-	0
7,544,275	7,583,505	7,622,940	7662579
41,589,761	41,023,287	40,433,890	39817876
13,087,847	13,129,811	13,171,949	13214163
8,719,260	8,747,384	8,775,528	8803682
3,547,634	3,572,468	3,597,475	3622657
1,717,102	1,692,197	1,666,414	1639847
-	-	-	0
1,717,102	1,692,197	1,666,414	1639847
27,028	27,116	27,203	27290.13
6,753,353	6,713,010	6,670,248	6625019
5,448,887	5,466,483	5,484,079	5501675
823,162	825,820	828,479	831137.4
85,852,919	86,319,842	86,796,293	87281734
-	-	-	0
-	-	-	0

-	-	-	0
4,277,205	4,307,145	4,337,295	4367656

	2048	2049	2050	
	1,065,452	670,324	383,434	192870.7
	80,037	44,102	23,016	11336.59
	208,307	132,901	77,139	39398.42
	46,397	29,606	17,187	8778.758
	428,066	430,292	432,530	434778.8
	249,306	156,591	89,442	44934.23
	6,931	3,819	1,993	981.5497
	-	-	-	0
	-	-	-	0
	-	-	-	0
	10,001,730	9,956,346	9,914,663	9874003
	7,992,530	8,013,451	8,036,248	8060053
	2,008,196	2,014,680	2,021,163	2027647
	3,623,274	3,634,790	3,646,443	3658139
	43,041,128	43,206,958	43,368,215	43523368
	53,400	31,603	17,039	8098.267
	4,328	2,372	1,232	604.4412
	682,875	684,691	686,505	688316.6
	-	-	-	0
	7,544,275	7,583,505	7,622,940	7662579
	26,451,197	26,128,365	25,887,575	25721079
	59,243	32,640	17,031	8386.89
	9,082,501	9,111,834	9,141,166	9170499
	3,547,634	3,572,468	3,597,475	3622657
	55,293	35,128	20,304	10327.27
	883,626	894,861	903,806	910718.2
	-	-	-	0
	99	55	28	14.03018
	5,231,474	5,186,503	5,141,961	5097626
	5,448,887	5,466,483	5,484,079	5501675
	878,039	880,875	883,711	886546.6
	85,852,919	86,319,842	86,796,293	87281734
	-	-	-	0
	-	-	-	0
	-	-	-	0
	4,277,205	4,307,145	4,337,295	4367656

Incremental Electric Loads by Scenario, Sector an

**** Note: loads are shown as incremental change from the 2020 Referen**

Scenario	Year	Device
High Electrification	2021	Residential Cooling Demand
High Electrification	2021	Residential SC Electric ASHP
High Electrification	2021	Residential Clothes Drying
High Electrification	2021	Residential Cooking
High Electrification	2021	Residential SH All Electric ASHP
High Electrification	2021	Residential SH Resistance
High Electrification	2021	Residential SH Hybrid
High Electrification	2021	Residential SH Ground Source HP
High Electrification	2021	Residential HPWH
High Electrification	2021	Residential Resistance WH
High Electrification	2022	Residential Cooling Demand
High Electrification	2022	Residential SC Electric ASHP
High Electrification	2022	Residential Clothes Drying
High Electrification	2022	Residential Cooking
High Electrification	2022	Residential SH All Electric ASHP
High Electrification	2022	Residential SH Resistance
High Electrification	2022	Residential SH Hybrid
High Electrification	2022	Residential SH Ground Source HP
High Electrification	2022	Residential HPWH
High Electrification	2022	Residential Resistance WH
High Electrification	2023	Residential Cooling Demand
High Electrification	2023	Residential SC Electric ASHP
High Electrification	2023	Residential Clothes Drying
High Electrification	2023	Residential Cooking
High Electrification	2023	Residential SH All Electric ASHP
High Electrification	2023	Residential SH Resistance
High Electrification	2023	Residential SH Hybrid
High Electrification	2023	Residential SH Ground Source HP
High Electrification	2023	Residential HPWH
High Electrification	2023	Residential Resistance WH
High Electrification	2024	Residential Cooling Demand
High Electrification	2024	Residential SC Electric ASHP
High Electrification	2024	Residential Clothes Drying
High Electrification	2024	Residential Cooking
High Electrification	2024	Residential SH All Electric ASHP
High Electrification	2024	Residential SH Resistance
High Electrification	2024	Residential SH Hybrid
High Electrification	2024	Residential SH Ground Source HP
High Electrification	2024	Residential HPWH
High Electrification	2024	Residential Resistance WH
High Electrification	2025	Residential Cooling Demand
High Electrification	2025	Residential SC Electric ASHP
High Electrification	2025	Residential Clothes Drying
High Electrification	2025	Residential Cooking
High Electrification	2025	Residential SH All Electric ASHP
High Electrification	2025	Residential SH Resistance
High Electrification	2025	Residential SH Hybrid
High Electrification	2025	Residential SH Ground Source HP
High Electrification	2025	Residential HPWH
High Electrification	2025	Residential Resistance WH
High Electrification	2026	Residential Cooling Demand
High Electrification	2026	Residential SC Electric ASHP
High Electrification	2026	Residential Clothes Drying
High Electrification	2026	Residential Cooking

High Electrification	2026 Residential SH All Electric ASHP
High Electrification	2026 Residential SH Resistance
High Electrification	2026 Residential SH Hybrid
High Electrification	2026 Residential SH Ground Source HP
High Electrification	2026 Residential HPWH
High Electrification	2026 Residential Resistance WH
High Electrification	2027 Residential Cooling Demand
High Electrification	2027 Residential SC Electric ASHP
High Electrification	2027 Residential Clothes Drying
High Electrification	2027 Residential Cooking
High Electrification	2027 Residential SH All Electric ASHP
High Electrification	2027 Residential SH Resistance
High Electrification	2027 Residential SH Hybrid
High Electrification	2027 Residential SH Ground Source HP
High Electrification	2027 Residential HPWH
High Electrification	2027 Residential Resistance WH
High Electrification	2027 Residential Cooling Demand
High Electrification	2028 Residential SC Electric ASHP
High Electrification	2028 Residential Clothes Drying
High Electrification	2028 Residential Cooking
High Electrification	2028 Residential SH All Electric ASHP
High Electrification	2028 Residential SH Resistance
High Electrification	2028 Residential SH Hybrid
High Electrification	2028 Residential SH Ground Source HP
High Electrification	2028 Residential HPWH
High Electrification	2028 Residential Resistance WH
High Electrification	2029 Residential Cooling Demand
High Electrification	2029 Residential SC Electric ASHP
High Electrification	2029 Residential Clothes Drying
High Electrification	2029 Residential Cooking
High Electrification	2029 Residential SH All Electric ASHP
High Electrification	2029 Residential SH Resistance
High Electrification	2029 Residential SH Hybrid
High Electrification	2029 Residential SH Ground Source HP
High Electrification	2029 Residential HPWH
High Electrification	2029 Residential Resistance WH
High Electrification	2030 Residential Cooling Demand
High Electrification	2030 Residential SC Electric ASHP
High Electrification	2030 Residential Clothes Drying
High Electrification	2030 Residential Cooking
High Electrification	2030 Residential SH All Electric ASHP
High Electrification	2030 Residential SH Resistance
High Electrification	2030 Residential SH Hybrid
High Electrification	2030 Residential SH Ground Source HP
High Electrification	2030 Residential HPWH
High Electrification	2030 Residential Resistance WH
High Electrification	2031 Residential Cooling Demand
High Electrification	2031 Residential SC Electric ASHP
High Electrification	2031 Residential Clothes Drying
High Electrification	2031 Residential Cooking
High Electrification	2031 Residential SH All Electric ASHP
High Electrification	2031 Residential SH Resistance
High Electrification	2031 Residential SH Hybrid
High Electrification	2031 Residential SH Ground Source HP
High Electrification	2031 Residential HPWH
High Electrification	2031 Residential Resistance WH
High Electrification	2032 Residential Cooling Demand
High Electrification	2032 Residential SC Electric ASHP
High Electrification	2032 Residential Clothes Drying
High Electrification	2032 Residential Cooking
High Electrification	2032 Residential SH All Electric ASHP

High Electrification	2038 Residential SH Hybrid
High Electrification	2038 Residential SH Ground Source HP
High Electrification	2038 Residential HPWH
High Electrification	2038 Residential Resistance WH
High Electrification	2039 Residential Cooling Demand
High Electrification	2039 Residential SC Electric ASHP
High Electrification	2039 Residential Clothes Drying
High Electrification	2039 Residential Cooking
High Electrification	2039 Residential SH All Electric ASHP
High Electrification	2039 Residential SH Resistance
High Electrification	2039 Residential SH Hybrid
High Electrification	2039 Residential SH Ground Source HP
High Electrification	2039 Residential HPWH
High Electrification	2039 Residential Resistance WH
High Electrification	2040 Residential Cooling Demand
High Electrification	2040 Residential SC Electric ASHP
High Electrification	2040 Residential Clothes Drying
High Electrification	2040 Residential Cooking
High Electrification	2040 Residential SH All Electric ASHP
High Electrification	2040 Residential SH Resistance
High Electrification	2040 Residential SH Hybrid
High Electrification	2040 Residential SH Ground Source HP
High Electrification	2040 Residential HPWH
High Electrification	2040 Residential Resistance WH
High Electrification	2041 Residential Cooling Demand
High Electrification	2041 Residential SC Electric ASHP
High Electrification	2041 Residential Clothes Drying
High Electrification	2041 Residential Cooking
High Electrification	2041 Residential SH All Electric ASHP
High Electrification	2041 Residential SH Resistance
High Electrification	2041 Residential SH Hybrid
High Electrification	2041 Residential SH Ground Source HP
High Electrification	2041 Residential HPWH
High Electrification	2041 Residential Resistance WH
High Electrification	2042 Residential Cooling Demand
High Electrification	2042 Residential SC Electric ASHP
High Electrification	2042 Residential Clothes Drying
High Electrification	2042 Residential Cooking
High Electrification	2042 Residential SH All Electric ASHP
High Electrification	2042 Residential SH Resistance
High Electrification	2042 Residential SH Hybrid
High Electrification	2042 Residential SH Ground Source HP
High Electrification	2042 Residential HPWH
High Electrification	2042 Residential Resistance WH
High Electrification	2043 Residential Cooling Demand
High Electrification	2043 Residential SC Electric ASHP
High Electrification	2043 Residential Clothes Drying
High Electrification	2043 Residential Cooking
High Electrification	2043 Residential SH All Electric ASHP
High Electrification	2043 Residential SH Resistance
High Electrification	2043 Residential SH Hybrid
High Electrification	2043 Residential SH Ground Source HP
High Electrification	2043 Residential HPWH
High Electrification	2043 Residential Resistance WH
High Electrification	2044 Residential Cooling Demand
High Electrification	2044 Residential SC Electric ASHP
High Electrification	2044 Residential Clothes Drying
High Electrification	2044 Residential Cooking
High Electrification	2044 Residential SH All Electric ASHP
High Electrification	2044 Residential SH Resistance
High Electrification	2044 Residential SH Hybrid

High Electrification	2044 Residential SH Ground Source HP
High Electrification	2044 Residential HPWH
High Electrification	2044 Residential Resistance WH
High Electrification	2045 Residential Cooling Demand
High Electrification	2045 Residential SC Electric ASHP
High Electrification	2045 Residential Clothes Drying
High Electrification	2045 Residential Cooking
High Electrification	2045 Residential SH All Electric ASHP
High Electrification	2045 Residential SH Resistance
High Electrification	2045 Residential SH Hybrid
High Electrification	2045 Residential SH Ground Source HP
High Electrification	2045 Residential HPWH
High Electrification	2045 Residential Resistance WH
High Electrification	2046 Residential Cooling Demand
High Electrification	2046 Residential SC Electric ASHP
High Electrification	2046 Residential Clothes Drying
High Electrification	2046 Residential Cooking
High Electrification	2046 Residential SH All Electric ASHP
High Electrification	2046 Residential SH Resistance
High Electrification	2046 Residential SH Hybrid
High Electrification	2046 Residential SH Ground Source HP
High Electrification	2046 Residential HPWH
High Electrification	2046 Residential Resistance WH
High Electrification	2047 Residential Cooling Demand
High Electrification	2047 Residential SC Electric ASHP
High Electrification	2047 Residential Clothes Drying
High Electrification	2047 Residential Cooking
High Electrification	2047 Residential SH All Electric ASHP
High Electrification	2047 Residential SH Resistance
High Electrification	2047 Residential SH Hybrid
High Electrification	2047 Residential SH Ground Source HP
High Electrification	2047 Residential HPWH
High Electrification	2047 Residential Resistance WH
High Electrification	2048 Residential Cooling Demand
High Electrification	2048 Residential SC Electric ASHP
High Electrification	2048 Residential Clothes Drying
High Electrification	2048 Residential Cooking
High Electrification	2048 Residential SH All Electric ASHP
High Electrification	2048 Residential SH Resistance
High Electrification	2048 Residential SH Hybrid
High Electrification	2048 Residential SH Ground Source HP
High Electrification	2048 Residential HPWH
High Electrification	2048 Residential Resistance WH
High Electrification	2049 Residential Cooling Demand
High Electrification	2049 Residential SC Electric ASHP
High Electrification	2049 Residential Clothes Drying
High Electrification	2049 Residential Cooking
High Electrification	2049 Residential SH All Electric ASHP
High Electrification	2049 Residential SH Resistance
High Electrification	2049 Residential SH Hybrid
High Electrification	2049 Residential SH Ground Source HP
High Electrification	2049 Residential HPWH
High Electrification	2049 Residential Resistance WH
High Electrification	2050 Residential Cooling Demand
High Electrification	2050 Residential SC Electric ASHP
High Electrification	2050 Residential Clothes Drying
High Electrification	2050 Residential Cooking
High Electrification	2050 Residential SH All Electric ASHP
High Electrification	2050 Residential SH Resistance
High Electrification	2050 Residential SH Hybrid
High Electrification	2050 Residential SH Ground Source HP

High Electrification	2027 Commercial SH Hybrid
High Electrification	2027 Commercial SH Ground Source HP
High Electrification	2027 Commercial HPWH
High Electrification	2027 Commercial Resistance WH
High Electrification	2028 Commercial Cooling Demand
High Electrification	2028 Commercial SC Electric ASHP
High Electrification	2028 Commercial Cooking
High Electrification	2028 Commercial SH All Electric ASHP
High Electrification	2028 Commercial SH Resistance
High Electrification	2028 Commercial SH Hybrid
High Electrification	2028 Commercial SH Ground Source HP
High Electrification	2028 Commercial HPWH
High Electrification	2028 Commercial Resistance WH
High Electrification	2029 Commercial Cooling Demand
High Electrification	2029 Commercial SC Electric ASHP
High Electrification	2029 Commercial Cooking
High Electrification	2029 Commercial SH All Electric ASHP
High Electrification	2029 Commercial SH Resistance
High Electrification	2029 Commercial SH Hybrid
High Electrification	2029 Commercial SH Ground Source HP
High Electrification	2029 Commercial HPWH
High Electrification	2029 Commercial Resistance WH
High Electrification	2030 Commercial Cooling Demand
High Electrification	2030 Commercial SC Electric ASHP
High Electrification	2030 Commercial Cooking
High Electrification	2030 Commercial SH All Electric ASHP
High Electrification	2030 Commercial SH Resistance
High Electrification	2030 Commercial SH Hybrid
High Electrification	2030 Commercial SH Ground Source HP
High Electrification	2030 Commercial HPWH
High Electrification	2030 Commercial Resistance WH
High Electrification	2031 Commercial Cooling Demand
High Electrification	2031 Commercial SC Electric ASHP
High Electrification	2031 Commercial Cooking
High Electrification	2031 Commercial SH All Electric ASHP
High Electrification	2031 Commercial SH Resistance
High Electrification	2031 Commercial SH Hybrid
High Electrification	2031 Commercial SH Ground Source HP
High Electrification	2031 Commercial HPWH
High Electrification	2031 Commercial Resistance WH
High Electrification	2032 Commercial Cooling Demand
High Electrification	2032 Commercial SC Electric ASHP
High Electrification	2032 Commercial Cooking
High Electrification	2032 Commercial SH All Electric ASHP
High Electrification	2032 Commercial SH Resistance
High Electrification	2032 Commercial SH Hybrid
High Electrification	2032 Commercial SH Ground Source HP
High Electrification	2032 Commercial HPWH
High Electrification	2032 Commercial Resistance WH
High Electrification	2033 Commercial Cooling Demand
High Electrification	2033 Commercial SC Electric ASHP
High Electrification	2033 Commercial Cooking
High Electrification	2033 Commercial SH All Electric ASHP
High Electrification	2033 Commercial SH Resistance
High Electrification	2033 Commercial SH Hybrid
High Electrification	2033 Commercial SH Ground Source HP
High Electrification	2033 Commercial HPWH
High Electrification	2033 Commercial Resistance WH
High Electrification	2034 Commercial Cooling Demand
High Electrification	2034 Commercial SC Electric ASHP
High Electrification	2034 Commercial Cooking

High Electrification	2034 Commercial SH All Electric ASHP
High Electrification	2034 Commercial SH Resistance
High Electrification	2034 Commercial SH Hybrid
High Electrification	2034 Commercial SH Ground Source HP
High Electrification	2034 Commercial HPWH
High Electrification	2034 Commercial Resistance WH
High Electrification	2035 Commercial Cooling Demand
High Electrification	2035 Commercial SC Electric ASHP
High Electrification	2035 Commercial Cooking
High Electrification	2035 Commercial SH All Electric ASHP
High Electrification	2035 Commercial SH Resistance
High Electrification	2035 Commercial SH Hybrid
High Electrification	2035 Commercial SH Ground Source HP
High Electrification	2035 Commercial HPWH
High Electrification	2035 Commercial Resistance WH
High Electrification	2036 Commercial Cooling Demand
High Electrification	2036 Commercial SC Electric ASHP
High Electrification	2036 Commercial Cooking
High Electrification	2036 Commercial SH All Electric ASHP
High Electrification	2036 Commercial SH Resistance
High Electrification	2036 Commercial SH Hybrid
High Electrification	2036 Commercial SH Ground Source HP
High Electrification	2036 Commercial HPWH
High Electrification	2036 Commercial Resistance WH
High Electrification	2037 Commercial Cooling Demand
High Electrification	2037 Commercial SC Electric ASHP
High Electrification	2037 Commercial Cooking
High Electrification	2037 Commercial SH All Electric ASHP
High Electrification	2037 Commercial SH Resistance
High Electrification	2037 Commercial SH Hybrid
High Electrification	2037 Commercial SH Ground Source HP
High Electrification	2037 Commercial HPWH
High Electrification	2037 Commercial Resistance WH
High Electrification	2038 Commercial Cooling Demand
High Electrification	2038 Commercial SC Electric ASHP
High Electrification	2038 Commercial Cooking
High Electrification	2038 Commercial SH All Electric ASHP
High Electrification	2038 Commercial SH Resistance
High Electrification	2038 Commercial SH Hybrid
High Electrification	2038 Commercial SH Ground Source HP
High Electrification	2038 Commercial HPWH
High Electrification	2038 Commercial Resistance WH
High Electrification	2039 Commercial Cooling Demand
High Electrification	2039 Commercial SC Electric ASHP
High Electrification	2039 Commercial Cooking
High Electrification	2039 Commercial SH All Electric ASHP
High Electrification	2039 Commercial SH Resistance
High Electrification	2039 Commercial SH Hybrid
High Electrification	2039 Commercial SH Ground Source HP
High Electrification	2039 Commercial HPWH
High Electrification	2039 Commercial Resistance WH
High Electrification	2040 Commercial Cooling Demand
High Electrification	2040 Commercial SC Electric ASHP
High Electrification	2040 Commercial Cooking
High Electrification	2040 Commercial SH All Electric ASHP
High Electrification	2040 Commercial SH Resistance
High Electrification	2040 Commercial SH Hybrid
High Electrification	2040 Commercial SH Ground Source HP
High Electrification	2040 Commercial HPWH
High Electrification	2040 Commercial Resistance WH
High Electrification	2041 Commercial Cooling Demand

High Electrification	2047 Commercial Resistance WH
High Electrification	2048 Commercial Cooling Demand
High Electrification	2048 Commercial SC Electric ASHP
High Electrification	2048 Commercial Cooking
High Electrification	2048 Commercial SH All Electric ASHP
High Electrification	2048 Commercial SH Resistance
High Electrification	2048 Commercial SH Hybrid
High Electrification	2048 Commercial SH Ground Source HP
High Electrification	2048 Commercial HPWH
High Electrification	2048 Commercial Resistance WH
High Electrification	2049 Commercial Cooling Demand
High Electrification	2049 Commercial SC Electric ASHP
High Electrification	2049 Commercial Cooking
High Electrification	2049 Commercial SH All Electric ASHP
High Electrification	2049 Commercial SH Resistance
High Electrification	2049 Commercial SH Hybrid
High Electrification	2049 Commercial SH Ground Source HP
High Electrification	2049 Commercial HPWH
High Electrification	2049 Commercial Resistance WH
High Electrification	2050 Commercial Cooling Demand
High Electrification	2050 Commercial SC Electric ASHP
High Electrification	2050 Commercial Cooking
High Electrification	2050 Commercial SH All Electric ASHP
High Electrification	2050 Commercial SH Resistance
High Electrification	2050 Commercial SH Hybrid
High Electrification	2050 Commercial SH Ground Source HP
High Electrification	2050 Commercial HPWH
High Electrification	2050 Commercial Resistance WH
Electrification with Fuel Backup	2021 Residential Cooling Demand
Electrification with Fuel Backup	2021 Residential SC Electric ASHP
Electrification with Fuel Backup	2021 Residential Clothes Drying
Electrification with Fuel Backup	2021 Residential Cooking
Electrification with Fuel Backup	2021 Residential SH All Electric ASHP
Electrification with Fuel Backup	2021 Residential SH Resistance
Electrification with Fuel Backup	2021 Residential SH Hybrid
Electrification with Fuel Backup	2021 Residential SH Ground Source HP
Electrification with Fuel Backup	2021 Residential HPWH
Electrification with Fuel Backup	2021 Residential Resistance WH
Electrification with Fuel Backup	2022 Residential Cooling Demand
Electrification with Fuel Backup	2022 Residential SC Electric ASHP
Electrification with Fuel Backup	2022 Residential Clothes Drying
Electrification with Fuel Backup	2022 Residential Cooking
Electrification with Fuel Backup	2022 Residential SH All Electric ASHP
Electrification with Fuel Backup	2022 Residential SH Resistance
Electrification with Fuel Backup	2022 Residential SH Hybrid
Electrification with Fuel Backup	2022 Residential SH Ground Source HP
Electrification with Fuel Backup	2022 Residential HPWH
Electrification with Fuel Backup	2022 Residential Resistance WH
Electrification with Fuel Backup	2023 Residential Cooling Demand
Electrification with Fuel Backup	2023 Residential SC Electric ASHP
Electrification with Fuel Backup	2023 Residential Clothes Drying
Electrification with Fuel Backup	2023 Residential Cooking
Electrification with Fuel Backup	2023 Residential SH All Electric ASHP
Electrification with Fuel Backup	2023 Residential SH Resistance
Electrification with Fuel Backup	2023 Residential SH Hybrid
Electrification with Fuel Backup	2023 Residential SH Ground Source HP
Electrification with Fuel Backup	2023 Residential HPWH
Electrification with Fuel Backup	2023 Residential Resistance WH
Electrification with Fuel Backup	2024 Residential Cooling Demand
Electrification with Fuel Backup	2024 Residential SC Electric ASHP
Electrification with Fuel Backup	2024 Residential Clothes Drying

Electrification with Fuel Backup	2045 Commercial SH Hybrid
Electrification with Fuel Backup	2045 Commercial SH Ground Source HP
Electrification with Fuel Backup	2045 Commercial HPWH
Electrification with Fuel Backup	2045 Commercial Resistance WH
Electrification with Fuel Backup	2046 Commercial Cooling Demand
Electrification with Fuel Backup	2046 Commercial SC Electric ASHP
Electrification with Fuel Backup	2046 Commercial Cooking
Electrification with Fuel Backup	2046 Commercial SH All Electric ASHP
Electrification with Fuel Backup	2046 Commercial SH Resistance
Electrification with Fuel Backup	2046 Commercial SH Hybrid
Electrification with Fuel Backup	2046 Commercial SH Ground Source HP
Electrification with Fuel Backup	2046 Commercial HPWH
Electrification with Fuel Backup	2046 Commercial Resistance WH
Electrification with Fuel Backup	2047 Commercial Cooling Demand
Electrification with Fuel Backup	2047 Commercial SC Electric ASHP
Electrification with Fuel Backup	2047 Commercial Cooking
Electrification with Fuel Backup	2047 Commercial SH All Electric ASHP
Electrification with Fuel Backup	2047 Commercial SH Resistance
Electrification with Fuel Backup	2047 Commercial SH Hybrid
Electrification with Fuel Backup	2047 Commercial SH Ground Source HP
Electrification with Fuel Backup	2047 Commercial HPWH
Electrification with Fuel Backup	2047 Commercial Resistance WH
Electrification with Fuel Backup	2048 Commercial Cooling Demand
Electrification with Fuel Backup	2048 Commercial SC Electric ASHP
Electrification with Fuel Backup	2048 Commercial Cooking
Electrification with Fuel Backup	2048 Commercial SH All Electric ASHP
Electrification with Fuel Backup	2048 Commercial SH Resistance
Electrification with Fuel Backup	2048 Commercial SH Hybrid
Electrification with Fuel Backup	2048 Commercial SH Ground Source HP
Electrification with Fuel Backup	2048 Commercial HPWH
Electrification with Fuel Backup	2048 Commercial Resistance WH
Electrification with Fuel Backup	2049 Commercial Cooling Demand
Electrification with Fuel Backup	2049 Commercial SC Electric ASHP
Electrification with Fuel Backup	2049 Commercial Cooking
Electrification with Fuel Backup	2049 Commercial SH All Electric ASHP
Electrification with Fuel Backup	2049 Commercial SH Resistance
Electrification with Fuel Backup	2049 Commercial SH Hybrid
Electrification with Fuel Backup	2049 Commercial SH Ground Source HP
Electrification with Fuel Backup	2049 Commercial HPWH
Electrification with Fuel Backup	2049 Commercial Resistance WH
Electrification with Fuel Backup	2050 Commercial Cooling Demand
Electrification with Fuel Backup	2050 Commercial SC Electric ASHP
Electrification with Fuel Backup	2050 Commercial Cooking
Electrification with Fuel Backup	2050 Commercial SH All Electric ASHP
Electrification with Fuel Backup	2050 Commercial SH Resistance
Electrification with Fuel Backup	2050 Commercial SH Hybrid
Electrification with Fuel Backup	2050 Commercial SH Ground Source HP
Electrification with Fuel Backup	2050 Commercial HPWH
Electrification with Fuel Backup	2050 Commercial Resistance WH
High Decarbonized Methane	2021 Residential Cooling Demand
High Decarbonized Methane	2021 Residential SC Electric ASHP
High Decarbonized Methane	2021 Residential Clothes Drying
High Decarbonized Methane	2021 Residential Cooking
High Decarbonized Methane	2021 Residential SH All Electric ASHP
High Decarbonized Methane	2021 Residential SH Resistance
High Decarbonized Methane	2021 Residential SH Hybrid
High Decarbonized Methane	2021 Residential SH Ground Source HP
High Decarbonized Methane	2021 Residential HPWH
High Decarbonized Methane	2021 Residential Resistance WH
High Decarbonized Methane	2022 Residential Cooling Demand
High Decarbonized Methane	2022 Residential SC Electric ASHP

High Decarbonized Methane	2046 Residential SH Hybrid
High Decarbonized Methane	2046 Residential SH Ground Source HP
High Decarbonized Methane	2046 Residential HPWH
High Decarbonized Methane	2046 Residential Resistance WH
High Decarbonized Methane	2047 Residential Cooling Demand
High Decarbonized Methane	2047 Residential SC Electric ASHP
High Decarbonized Methane	2047 Residential Clothes Drying
High Decarbonized Methane	2047 Residential Cooking
High Decarbonized Methane	2047 Residential SH All Electric ASHP
High Decarbonized Methane	2047 Residential SH Resistance
High Decarbonized Methane	2047 Residential SH Hybrid
High Decarbonized Methane	2047 Residential SH Ground Source HP
High Decarbonized Methane	2047 Residential HPWH
High Decarbonized Methane	2047 Residential Resistance WH
High Decarbonized Methane	2048 Residential Cooling Demand
High Decarbonized Methane	2048 Residential SC Electric ASHP
High Decarbonized Methane	2048 Residential Clothes Drying
High Decarbonized Methane	2048 Residential Cooking
High Decarbonized Methane	2048 Residential SH All Electric ASHP
High Decarbonized Methane	2048 Residential SH Resistance
High Decarbonized Methane	2048 Residential SH Hybrid
High Decarbonized Methane	2048 Residential SH Ground Source HP
High Decarbonized Methane	2048 Residential HPWH
High Decarbonized Methane	2048 Residential Resistance WH
High Decarbonized Methane	2049 Residential Cooling Demand
High Decarbonized Methane	2049 Residential SC Electric ASHP
High Decarbonized Methane	2049 Residential Clothes Drying
High Decarbonized Methane	2049 Residential Cooking
High Decarbonized Methane	2049 Residential SH All Electric ASHP
High Decarbonized Methane	2049 Residential SH Resistance
High Decarbonized Methane	2049 Residential SH Hybrid
High Decarbonized Methane	2049 Residential SH Ground Source HP
High Decarbonized Methane	2049 Residential HPWH
High Decarbonized Methane	2049 Residential Resistance WH
High Decarbonized Methane	2050 Residential Cooling Demand
High Decarbonized Methane	2050 Residential SC Electric ASHP
High Decarbonized Methane	2050 Residential Clothes Drying
High Decarbonized Methane	2050 Residential Cooking
High Decarbonized Methane	2050 Residential SH All Electric ASHP
High Decarbonized Methane	2050 Residential SH Resistance
High Decarbonized Methane	2050 Residential SH Hybrid
High Decarbonized Methane	2050 Residential SH Ground Source HP
High Decarbonized Methane	2050 Residential HPWH
High Decarbonized Methane	2050 Residential Resistance WH
High Decarbonized Methane	2021 Commercial Cooling Demand
High Decarbonized Methane	2021 Commercial SC Electric ASHP
High Decarbonized Methane	2021 Commercial Cooking
High Decarbonized Methane	2021 Commercial SH All Electric ASHP
High Decarbonized Methane	2021 Commercial SH Resistance
High Decarbonized Methane	2021 Commercial SH Hybrid
High Decarbonized Methane	2021 Commercial SH Ground Source HP
High Decarbonized Methane	2021 Commercial HPWH
High Decarbonized Methane	2021 Commercial Resistance WH
High Decarbonized Methane	2022 Commercial Cooling Demand
High Decarbonized Methane	2022 Commercial SC Electric ASHP
High Decarbonized Methane	2022 Commercial Cooking
High Decarbonized Methane	2022 Commercial SH All Electric ASHP
High Decarbonized Methane	2022 Commercial SH Resistance
High Decarbonized Methane	2022 Commercial SH Hybrid
High Decarbonized Methane	2022 Commercial SH Ground Source HP
High Decarbonized Methane	2022 Commercial HPWH

High Decarbonized Methane	2050 Commercial Cooling Demand
High Decarbonized Methane	2050 Commercial SC Electric ASHP
High Decarbonized Methane	2050 Commercial Cooking
High Decarbonized Methane	2050 Commercial SH All Electric ASHP
High Decarbonized Methane	2050 Commercial SH Resistance
High Decarbonized Methane	2050 Commercial SH Hybrid
High Decarbonized Methane	2050 Commercial SH Ground Source HP
High Decarbonized Methane	2050 Commercial HPWH
High Decarbonized Methane	2050 Commercial Resistance WH
Modified Fuel Backup	2021 Residential Cooling Demand
Modified Fuel Backup	2021 Residential SC Electric ASHP
Modified Fuel Backup	2021 Residential Clothes Drying
Modified Fuel Backup	2021 Residential Cooking
Modified Fuel Backup	2021 Residential SH All Electric ASHP
Modified Fuel Backup	2021 Residential SH Resistance
Modified Fuel Backup	2021 Residential SH Hybrid
Modified Fuel Backup	2021 Residential SH Ground Source HP
Modified Fuel Backup	2021 Residential HPWH
Modified Fuel Backup	2021 Residential Resistance WH
Modified Fuel Backup	2022 Residential Cooling Demand
Modified Fuel Backup	2022 Residential SC Electric ASHP
Modified Fuel Backup	2022 Residential Clothes Drying
Modified Fuel Backup	2022 Residential Cooking
Modified Fuel Backup	2022 Residential SH All Electric ASHP
Modified Fuel Backup	2022 Residential SH Resistance
Modified Fuel Backup	2022 Residential SH Hybrid
Modified Fuel Backup	2022 Residential SH Ground Source HP
Modified Fuel Backup	2022 Residential HPWH
Modified Fuel Backup	2022 Residential Resistance WH
Modified Fuel Backup	2023 Residential Cooling Demand
Modified Fuel Backup	2023 Residential SC Electric ASHP
Modified Fuel Backup	2023 Residential Clothes Drying
Modified Fuel Backup	2023 Residential Cooking
Modified Fuel Backup	2023 Residential SH All Electric ASHP
Modified Fuel Backup	2023 Residential SH Resistance
Modified Fuel Backup	2023 Residential SH Hybrid
Modified Fuel Backup	2023 Residential SH Ground Source HP
Modified Fuel Backup	2023 Residential HPWH
Modified Fuel Backup	2023 Residential Resistance WH
Modified Fuel Backup	2024 Residential Cooling Demand
Modified Fuel Backup	2024 Residential SC Electric ASHP
Modified Fuel Backup	2024 Residential Clothes Drying
Modified Fuel Backup	2024 Residential Cooking
Modified Fuel Backup	2024 Residential SH All Electric ASHP
Modified Fuel Backup	2024 Residential SH Resistance
Modified Fuel Backup	2024 Residential SH Hybrid
Modified Fuel Backup	2024 Residential SH Ground Source HP
Modified Fuel Backup	2024 Residential HPWH
Modified Fuel Backup	2024 Residential Resistance WH
Modified Fuel Backup	2025 Residential Cooling Demand
Modified Fuel Backup	2025 Residential SC Electric ASHP
Modified Fuel Backup	2025 Residential Clothes Drying
Modified Fuel Backup	2025 Residential Cooking
Modified Fuel Backup	2025 Residential SH All Electric ASHP
Modified Fuel Backup	2025 Residential SH Resistance
Modified Fuel Backup	2025 Residential SH Hybrid
Modified Fuel Backup	2025 Residential SH Ground Source HP
Modified Fuel Backup	2025 Residential HPWH
Modified Fuel Backup	2025 Residential Resistance WH
Modified Fuel Backup	2026 Residential Cooling Demand
Modified Fuel Backup	2026 Residential SC Electric ASHP

Modified Fuel Backup	2038 Residential SH All Electric ASHP
Modified Fuel Backup	2038 Residential SH Resistance
Modified Fuel Backup	2038 Residential SH Hybrid
Modified Fuel Backup	2038 Residential SH Ground Source HP
Modified Fuel Backup	2038 Residential HPWH
Modified Fuel Backup	2038 Residential Resistance WH
Modified Fuel Backup	2039 Residential Cooling Demand
Modified Fuel Backup	2039 Residential SC Electric ASHP
Modified Fuel Backup	2039 Residential Clothes Drying
Modified Fuel Backup	2039 Residential Cooking
Modified Fuel Backup	2039 Residential SH All Electric ASHP
Modified Fuel Backup	2039 Residential SH Resistance
Modified Fuel Backup	2039 Residential SH Hybrid
Modified Fuel Backup	2039 Residential SH Ground Source HP
Modified Fuel Backup	2039 Residential HPWH
Modified Fuel Backup	2039 Residential Resistance WH
Modified Fuel Backup	2040 Residential Cooling Demand
Modified Fuel Backup	2040 Residential SC Electric ASHP
Modified Fuel Backup	2040 Residential Clothes Drying
Modified Fuel Backup	2040 Residential Cooking
Modified Fuel Backup	2040 Residential SH All Electric ASHP
Modified Fuel Backup	2040 Residential SH Resistance
Modified Fuel Backup	2040 Residential SH Hybrid
Modified Fuel Backup	2040 Residential SH Ground Source HP
Modified Fuel Backup	2040 Residential HPWH
Modified Fuel Backup	2040 Residential Resistance WH
Modified Fuel Backup	2041 Residential Cooling Demand
Modified Fuel Backup	2041 Residential SC Electric ASHP
Modified Fuel Backup	2041 Residential Clothes Drying
Modified Fuel Backup	2041 Residential Cooking
Modified Fuel Backup	2041 Residential SH All Electric ASHP
Modified Fuel Backup	2041 Residential SH Resistance
Modified Fuel Backup	2041 Residential SH Hybrid
Modified Fuel Backup	2041 Residential SH Ground Source HP
Modified Fuel Backup	2041 Residential HPWH
Modified Fuel Backup	2041 Residential Resistance WH
Modified Fuel Backup	2042 Residential Cooling Demand
Modified Fuel Backup	2042 Residential SC Electric ASHP
Modified Fuel Backup	2042 Residential Clothes Drying
Modified Fuel Backup	2042 Residential Cooking
Modified Fuel Backup	2042 Residential SH All Electric ASHP
Modified Fuel Backup	2042 Residential SH Resistance
Modified Fuel Backup	2042 Residential SH Hybrid
Modified Fuel Backup	2042 Residential SH Ground Source HP
Modified Fuel Backup	2042 Residential HPWH
Modified Fuel Backup	2042 Residential Resistance WH
Modified Fuel Backup	2043 Residential Cooling Demand
Modified Fuel Backup	2043 Residential SC Electric ASHP
Modified Fuel Backup	2043 Residential Clothes Drying
Modified Fuel Backup	2043 Residential Cooking
Modified Fuel Backup	2043 Residential SH All Electric ASHP
Modified Fuel Backup	2043 Residential SH Resistance
Modified Fuel Backup	2043 Residential SH Hybrid
Modified Fuel Backup	2043 Residential SH Ground Source HP
Modified Fuel Backup	2043 Residential HPWH
Modified Fuel Backup	2043 Residential Resistance WH
Modified Fuel Backup	2044 Residential Cooling Demand
Modified Fuel Backup	2044 Residential SC Electric ASHP
Modified Fuel Backup	2044 Residential Clothes Drying
Modified Fuel Backup	2044 Residential Cooking
Modified Fuel Backup	2044 Residential SH All Electric ASHP

Modified Fuel Backup	2044 Residential SH Resistance
Modified Fuel Backup	2044 Residential SH Hybrid
Modified Fuel Backup	2044 Residential SH Ground Source HP
Modified Fuel Backup	2044 Residential HPWH
Modified Fuel Backup	2044 Residential Resistance WH
Modified Fuel Backup	2045 Residential Cooling Demand
Modified Fuel Backup	2045 Residential SC Electric ASHP
Modified Fuel Backup	2045 Residential Clothes Drying
Modified Fuel Backup	2045 Residential Cooking
Modified Fuel Backup	2045 Residential SH All Electric ASHP
Modified Fuel Backup	2045 Residential SH Resistance
Modified Fuel Backup	2045 Residential SH Hybrid
Modified Fuel Backup	2045 Residential SH Ground Source HP
Modified Fuel Backup	2045 Residential HPWH
Modified Fuel Backup	2045 Residential Resistance WH
Modified Fuel Backup	2046 Residential Cooling Demand
Modified Fuel Backup	2046 Residential SC Electric ASHP
Modified Fuel Backup	2046 Residential Clothes Drying
Modified Fuel Backup	2046 Residential Cooking
Modified Fuel Backup	2046 Residential SH All Electric ASHP
Modified Fuel Backup	2046 Residential SH Resistance
Modified Fuel Backup	2046 Residential SH Hybrid
Modified Fuel Backup	2046 Residential SH Ground Source HP
Modified Fuel Backup	2046 Residential HPWH
Modified Fuel Backup	2046 Residential Resistance WH
Modified Fuel Backup	2047 Residential Cooling Demand
Modified Fuel Backup	2047 Residential SC Electric ASHP
Modified Fuel Backup	2047 Residential Clothes Drying
Modified Fuel Backup	2047 Residential Cooking
Modified Fuel Backup	2047 Residential SH All Electric ASHP
Modified Fuel Backup	2047 Residential SH Resistance
Modified Fuel Backup	2047 Residential SH Hybrid
Modified Fuel Backup	2047 Residential SH Ground Source HP
Modified Fuel Backup	2047 Residential HPWH
Modified Fuel Backup	2047 Residential Resistance WH
Modified Fuel Backup	2048 Residential Cooling Demand
Modified Fuel Backup	2048 Residential SC Electric ASHP
Modified Fuel Backup	2048 Residential Clothes Drying
Modified Fuel Backup	2048 Residential Cooking
Modified Fuel Backup	2048 Residential SH All Electric ASHP
Modified Fuel Backup	2048 Residential SH Resistance
Modified Fuel Backup	2048 Residential SH Hybrid
Modified Fuel Backup	2048 Residential SH Ground Source HP
Modified Fuel Backup	2048 Residential HPWH
Modified Fuel Backup	2048 Residential Resistance WH
Modified Fuel Backup	2049 Residential Cooling Demand
Modified Fuel Backup	2049 Residential SC Electric ASHP
Modified Fuel Backup	2049 Residential Clothes Drying
Modified Fuel Backup	2049 Residential Cooking
Modified Fuel Backup	2049 Residential SH All Electric ASHP
Modified Fuel Backup	2049 Residential SH Resistance
Modified Fuel Backup	2049 Residential SH Hybrid
Modified Fuel Backup	2049 Residential SH Ground Source HP
Modified Fuel Backup	2049 Residential HPWH
Modified Fuel Backup	2049 Residential Resistance WH
Modified Fuel Backup	2050 Residential Cooling Demand
Modified Fuel Backup	2050 Residential SC Electric ASHP
Modified Fuel Backup	2050 Residential Clothes Drying
Modified Fuel Backup	2050 Residential Cooking
Modified Fuel Backup	2050 Residential SH All Electric ASHP
Modified Fuel Backup	2050 Residential SH Resistance

Modified Fuel Backup	2027 Commercial SH All Electric ASHP
Modified Fuel Backup	2027 Commercial SH Resistance
Modified Fuel Backup	2027 Commercial SH Hybrid
Modified Fuel Backup	2027 Commercial SH Ground Source HP
Modified Fuel Backup	2027 Commercial HPWH
Modified Fuel Backup	2027 Commercial Resistance WH
Modified Fuel Backup	2028 Commercial Cooling Demand
Modified Fuel Backup	2028 Commercial SC Electric ASHP
Modified Fuel Backup	2028 Commercial Cooking
Modified Fuel Backup	2028 Commercial SH All Electric ASHP
Modified Fuel Backup	2028 Commercial SH Resistance
Modified Fuel Backup	2028 Commercial SH Hybrid
Modified Fuel Backup	2028 Commercial SH Ground Source HP
Modified Fuel Backup	2028 Commercial HPWH
Modified Fuel Backup	2028 Commercial Resistance WH
Modified Fuel Backup	2029 Commercial Cooling Demand
Modified Fuel Backup	2029 Commercial SC Electric ASHP
Modified Fuel Backup	2029 Commercial Cooking
Modified Fuel Backup	2029 Commercial SH All Electric ASHP
Modified Fuel Backup	2029 Commercial SH Resistance
Modified Fuel Backup	2029 Commercial SH Hybrid
Modified Fuel Backup	2029 Commercial SH Ground Source HP
Modified Fuel Backup	2029 Commercial HPWH
Modified Fuel Backup	2029 Commercial Resistance WH
Modified Fuel Backup	2030 Commercial Cooling Demand
Modified Fuel Backup	2030 Commercial SC Electric ASHP
Modified Fuel Backup	2030 Commercial Cooking
Modified Fuel Backup	2030 Commercial SH All Electric ASHP
Modified Fuel Backup	2030 Commercial SH Resistance
Modified Fuel Backup	2030 Commercial SH Hybrid
Modified Fuel Backup	2030 Commercial SH Ground Source HP
Modified Fuel Backup	2030 Commercial HPWH
Modified Fuel Backup	2030 Commercial Resistance WH
Modified Fuel Backup	2031 Commercial Cooling Demand
Modified Fuel Backup	2031 Commercial SC Electric ASHP
Modified Fuel Backup	2031 Commercial Cooking
Modified Fuel Backup	2031 Commercial SH All Electric ASHP
Modified Fuel Backup	2031 Commercial SH Resistance
Modified Fuel Backup	2031 Commercial SH Hybrid
Modified Fuel Backup	2031 Commercial SH Ground Source HP
Modified Fuel Backup	2031 Commercial HPWH
Modified Fuel Backup	2031 Commercial Resistance WH
Modified Fuel Backup	2032 Commercial Cooling Demand
Modified Fuel Backup	2032 Commercial SC Electric ASHP
Modified Fuel Backup	2032 Commercial Cooking
Modified Fuel Backup	2032 Commercial SH All Electric ASHP
Modified Fuel Backup	2032 Commercial SH Resistance
Modified Fuel Backup	2032 Commercial SH Hybrid
Modified Fuel Backup	2032 Commercial SH Ground Source HP
Modified Fuel Backup	2032 Commercial HPWH
Modified Fuel Backup	2032 Commercial Resistance WH
Modified Fuel Backup	2033 Commercial Cooling Demand
Modified Fuel Backup	2033 Commercial SC Electric ASHP
Modified Fuel Backup	2033 Commercial Cooking
Modified Fuel Backup	2033 Commercial SH All Electric ASHP
Modified Fuel Backup	2033 Commercial SH Resistance
Modified Fuel Backup	2033 Commercial SH Hybrid
Modified Fuel Backup	2033 Commercial SH Ground Source HP
Modified Fuel Backup	2033 Commercial HPWH
Modified Fuel Backup	2033 Commercial Resistance WH
Modified Fuel Backup	2034 Commercial Cooling Demand

Modified Fuel Backup	2040 Commercial Resistance WH
Modified Fuel Backup	2041 Commercial Cooling Demand
Modified Fuel Backup	2041 Commercial SC Electric ASHP
Modified Fuel Backup	2041 Commercial Cooking
Modified Fuel Backup	2041 Commercial SH All Electric ASHP
Modified Fuel Backup	2041 Commercial SH Resistance
Modified Fuel Backup	2041 Commercial SH Hybrid
Modified Fuel Backup	2041 Commercial SH Ground Source HP
Modified Fuel Backup	2041 Commercial HPWH
Modified Fuel Backup	2041 Commercial Resistance WH
Modified Fuel Backup	2042 Commercial Cooling Demand
Modified Fuel Backup	2042 Commercial SC Electric ASHP
Modified Fuel Backup	2042 Commercial Cooking
Modified Fuel Backup	2042 Commercial SH All Electric ASHP
Modified Fuel Backup	2042 Commercial SH Resistance
Modified Fuel Backup	2042 Commercial SH Hybrid
Modified Fuel Backup	2042 Commercial SH Ground Source HP
Modified Fuel Backup	2042 Commercial HPWH
Modified Fuel Backup	2042 Commercial Resistance WH
Modified Fuel Backup	2043 Commercial Cooling Demand
Modified Fuel Backup	2043 Commercial SC Electric ASHP
Modified Fuel Backup	2043 Commercial Cooking
Modified Fuel Backup	2043 Commercial SH All Electric ASHP
Modified Fuel Backup	2043 Commercial SH Resistance
Modified Fuel Backup	2043 Commercial SH Hybrid
Modified Fuel Backup	2043 Commercial SH Ground Source HP
Modified Fuel Backup	2043 Commercial HPWH
Modified Fuel Backup	2043 Commercial Resistance WH
Modified Fuel Backup	2044 Commercial Cooling Demand
Modified Fuel Backup	2044 Commercial SC Electric ASHP
Modified Fuel Backup	2044 Commercial Cooking
Modified Fuel Backup	2044 Commercial SH All Electric ASHP
Modified Fuel Backup	2044 Commercial SH Resistance
Modified Fuel Backup	2044 Commercial SH Hybrid
Modified Fuel Backup	2044 Commercial SH Ground Source HP
Modified Fuel Backup	2044 Commercial HPWH
Modified Fuel Backup	2044 Commercial Resistance WH
Modified Fuel Backup	2045 Commercial Cooling Demand
Modified Fuel Backup	2045 Commercial SC Electric ASHP
Modified Fuel Backup	2045 Commercial Cooking
Modified Fuel Backup	2045 Commercial SH All Electric ASHP
Modified Fuel Backup	2045 Commercial SH Resistance
Modified Fuel Backup	2045 Commercial SH Hybrid
Modified Fuel Backup	2045 Commercial SH Ground Source HP
Modified Fuel Backup	2045 Commercial HPWH
Modified Fuel Backup	2045 Commercial Resistance WH
Modified Fuel Backup	2046 Commercial Cooling Demand
Modified Fuel Backup	2046 Commercial SC Electric ASHP
Modified Fuel Backup	2046 Commercial Cooking
Modified Fuel Backup	2046 Commercial SH All Electric ASHP
Modified Fuel Backup	2046 Commercial SH Resistance
Modified Fuel Backup	2046 Commercial SH Hybrid
Modified Fuel Backup	2046 Commercial SH Ground Source HP
Modified Fuel Backup	2046 Commercial HPWH
Modified Fuel Backup	2046 Commercial Resistance WH
Modified Fuel Backup	2047 Commercial Cooling Demand
Modified Fuel Backup	2047 Commercial SC Electric ASHP
Modified Fuel Backup	2047 Commercial Cooking
Modified Fuel Backup	2047 Commercial SH All Electric ASHP
Modified Fuel Backup	2047 Commercial SH Resistance
Modified Fuel Backup	2047 Commercial SH Hybrid

Final End Use, 2020-2050

Base Case Scenario in the GGRA analysis

Total Load (MWh)

(9,576)
1,818
179,381
155,395
501,562
(1,159,903)
-
9,116
538,637
(934,757)
(14,293)
2,338
217,308
190,040
642,626
(1,384,054)
-
13,489
727,505
(1,208,350)
(20,089)
2,776
258,175
227,871
804,169
(1,622,982)
-
18,795
930,407
(1,485,115)
(27,096)
3,082
302,455
269,384
988,524
(1,879,465)
-
25,126
1,141,584
(1,752,845)
(35,438)
3,214
350,476
314,952
1,197,204
(2,155,047)
-
32,555
1,355,004
(1,999,049)
(39,532)
3,127
401,645
363,962

1,425,098
(2,447,271)
-
40,837
1,561,871
(2,213,358)
(44,801)
2,833
455,352
415,879
1,669,050
(2,752,323)
-
49,857
1,759,518
(2,391,566)
(51,144)
2,379
510,523
469,741
1,924,174
(3,063,457)
-
59,455
1,946,870
(2,533,728)
(58,529)
1,844
566,054
524,604
2,186,523
(3,373,009)
-
69,544
2,123,920
(2,642,809)
(67,103)
1,311
621,377
580,091
2,455,699
(3,675,570)
-
80,201
2,400,285
(3,001,475)
(77,256)
851
675,289
635,398
2,733,362
(3,958,662)
-
91,746
2,681,466
(3,370,015)
(89,176)
498
728,591
691,293
3,022,189

(4,226,083)
-
104,292
2,961,186
(3,735,758)
(102,494)
259
781,320
747,513
3,316,124
(4,480,348)
-
117,479
3,228,503
(4,073,978)
(116,215)
117
831,934
802,030
3,598,457
(4,717,489)
-
130,444
3,480,160
(4,378,943)
(129,411)
45
878,495
841,942
3,853,466
(4,930,057)
-
142,423
3,717,128
(4,654,595)
(140,919)
14
919,461
866,837
4,065,812
(5,114,580)
-
152,580
3,926,640
(4,902,839)
(151,048)
4
955,601
889,257
4,242,898
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Residential representative building types and energy use characteristics (assembled from EIA F

** All energy use values reported as weighted averages*

** Data sourced from the 2009 EIA Residential Energy Consumption survey*

Building Code	Building Type	AC Equipment
SingleF_CentAC_NatGasSH	Single Family	Central AC
SingleF_CentAC_HeatPumpSH	Single Family	Central AC
SingleF_CentAC_ResistanceSH	Single Family	Central AC
SingleF_PackAC_FuelOilSH	Single Family	Packaged AC
SingleF_PackAC_ResistanceSH	Single Family	Packaged AC
SingleF_CentAC_FuelOilSH	Single Family	Central AC
MultiF_CentAC_NatGasSH	Multifamily	Central AC
SingleF_PackAC_NatGasSH	Single Family	Packaged AC
MultiF_CentAC_ResistanceSH	Multifamily	Central AC
SingleF_CentAC_OtherSH	Single Family	Central AC
MultiF_PackAC_NatGasSH	Multifamily	Packaged AC
SingleF_PackAC_OtherSH	Single Family	Packaged AC
MultiF_CentAC_HeatPumpSH	Multifamily	Central AC
MultiF_PackAC_ResistanceSH	Multifamily	Packaged AC
MultiF_PackAC_OtherSH	Multifamily	Packaged AC

SH = Space Heating

WH = Water Heating

AC = Air Conditioning

Residential Energy Consumption Survey 2009)

SH Equipment	Share of Residential Stock	Estimated Maryland Households	Share of Residential Energy Use
Natural Gas	21.38%	471,530	29.63%
Heat Pump	19.96%	440,204	17.74%
Electric Resistance	10.04%	221,307	9.50%
Fuel Oil	7.47%	164,777	9.10%
Electric Resistance	8.68%	191,499	8.05%
Fuel Oil	4.40%	97,028	6.36%
Natural Gas	7.39%	163,012	5.07%
Natural Gas	2.77%	60,978	3.55%
Electric Resistance	3.73%	82,242	1.80%
Other	1.67%	36,889	1.58%
Natural Gas	1.83%	40,261	1.54%
Other	2.06%	45,326	1.21%
Heat Pump	1.57%	34,663	0.78%
Electric Resistance	1.24%	27,341	0.45%
Other	0.48%	10,691	0.12%

* Assuming 2,205,204 Residential Households in Md

Total Energy Use (kBTU/yr)	SH Energy Use (kBTU/yr)	WH Energy Use (kBTU/yr)	AC Energy Use (kBTU/yr)	Other Energy Use (kBTU/yr)
123,249	60,056	20,110	7,031	30,607
79,060	21,122	12,884	5,496	34,286
84,168	15,166	20,689	5,120	38,105
108,375	67,530	9,407	2,225	26,028
82,496	20,723	17,635	4,129	33,770
128,489	69,835	10,216	6,184	37,061
61,030	32,188	10,019	2,556	13,140
114,175	61,064	20,227	3,912	24,749
42,922	11,524	10,606	3,931	13,690
84,197	27,772	12,280	8,201	30,136
74,805	36,710	6,678	2,845	24,000
52,363	3,382	10,105	2,001	32,289
44,319	10,796	13,832	3,052	13,528
32,393	9,787	6,780	2,204	10,827
21,956	1,212	9,526	1,697	7,181

Maryland as of 2019 (Source: US Census Bureau)

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Commercial representative building types and energy use characteristics (assembled from EIA Commercial Building)

** All energy use values reported as weighted averages*

** Data sourced from the 2012 EIA Commercial Building Energy Consumption Survey*

Building Code	SH Equipment	AC Equipment	Share of Commercial Building Area	Estimated Regional Building Area
CentralSH_PackagedAC	Central Heating	Packaged AC	45.0%	5,391
CentralSH_CentralAC	Central Heating	Central AC	16.3%	1,951
HeatPump	Heat Pump	Heat Pump	16.5%	1,972
DistrictSH_CentralAC	District Heating	Central AC	6.6%	794
CentralSH_NoAC	Central Heating	No AC	8.2%	983
OtherSH_PackagedAC	Other Heating	Packaged AC	5.2%	618
CentralSH_OtherAC	Central Heating	Other AC	0.5%	54
OtherSH_NoAC	Other Heating	No AC	1.1%	134
OtherSH_CentralAC	Other Heating	Central AC	0.5%	62
DistrictSH_PackagedAC	District Heating	Packaged AC	0.1%	16
DistrictSH_NoAC	District Heating	No AC	0.1%	8

** Estimated building are*

SH = Space Heating
 WH = Water Heating
 AC = Air Conditioning
 CK = Cooking

gs Energy Consumption Survey 2012)

11,984

Share of Commercial Energy Use	Total Energy Use (kBTU/yr)	SH Energy Use (kBTU/yr)	WH Energy Use (kBTU/yr)	Cooking Energy Use (kBTU/Yr)
43.5%	1,512,215	244,444	89,846	176,410
21.7%	9,641,069	2,207,878	513,832	302,859
12.2%	711,860	44,819	70,175	38,775
9.6%	16,298,275	6,489,211	1,030,830	951,701
7.6%	636,488	166,311	36,311	40,201
3.2%	571,537	153,764	97,320	11,146
0.9%	3,501,097	73,032	160,670	137,282
0.7%	360,428	132,808	49,901	31,780
0.3%	6,346,676	433,286	73,062	116,000
0.2%	2,833,557	1,549,746	269,600	-
0.1%	620,236	515,000	-	-

based on a total commercial building stock of 11,984 million ft² in the South Atlantic census division and A

AC Energy Use (kBTU/Yr)	Total Energy Use (kBTU/ft2/lyr)	SH Energy Use (kBTU/ft2/lyr)	WH Energy Use (kBTU/ft2/lyr)	Cooking Energy Use (kBTU/ft2/lyr)
165,909	77	12	5	9
1,459,231	105	24	6	3
97,396	59	4	6	3
398,030	114	46	7	7
47,990	74	19	4	5
49,625	48	13	8	1
346,243	162	3	7	6
10,276	51	19	7	5
2,167,027	40	3	0	1
382,353	106	58	10	-
-	143	118	-	-

Mixed-Humid climate zone. State-level estimates unavailable.

AC Energy Use (kBTU/ft2/yr)	Median Building Size (ft2)	Median Year Built
8	6800	1985
16	55000	1988
8	5000	1987
3	120000	2000
6	5000	1984
4	4800	1969
16	4500	995
1	4200	1973
14	104000	2011
14	17250	1953
-	4350	1975

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RNG Demand in 2045

RNG Scenario	Building Scenario	Total Gas Demand (Tbtu)	Natural Gas (Tbtu)
	Reference	164	164
Optimistic	High Decarbonized Methane	129	0
Optimistic	Electrification with Fuel Backup	62	0
Optimistic	High Electrification	10	0
Conservative	High Decarbonized Methane	129	0
Conservative	Electrification with Fuel Backup	62	0
Conservative	High Electrification	10	0

Biomethane (Tbtu)	7% Hydrogen Blend (Tbtu)	Synthetic Natural Gas (Tbtu)	
0	0	0	0
8	9	112	112
8	4	50	50
8	1	1	1
2	9	118	118
2	4	56	56
2	1	7	7

RNG Supply Curve in 2045

Scenario: Conservative			
Fuel	TBTU	Cost	
Biomethane		0	0
Biomethane		0.8370102	9.849741
Biomethane		1.029566269	11.30777
Biomethane		0.301872771	11.73794
Biomethane		0.049504546	23.89708
7% H2 in Pipeline	7% of total gas throughput		24.16
Biomethane		0.007906991	24.8841
Synthetic Natural Gas	Unlimited		68.57

Scenario: Optimistic			
Fuel	TBTU	Cost	
Biomethane		0	0
Biomethane		0.333724812	9.023763
Biomethane		0.161354326	9.023763
Biomethane		0.04872395	9.849741
Biomethane		0.035837806	9.849741
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Biomethane	0.004002386	11.30777
Biomethane	0.00130685	11.30777
Biomethane	0.006136559	11.30777
Biomethane	0.082291446	11.30777
Biomethane	0.041789643	11.30777
Biomethane	0.001419011	11.30777
Biomethane	0.018447553	11.30777
Biomethane	0.005187962	11.30777
Biomethane	0.003687605	11.30777
Biomethane	0.004059273	11.30777
Biomethane	0.073835368	11.30777
Biomethane	0.0631853	11.30777
Biomethane	0.01885238	11.30777
Biomethane	0.059933117	11.30777
Biomethane	0.00849256	11.30777
Biomethane	0.037661534	11.30777
Biomethane	0.042545198	11.30777
Biomethane	0.034393907	11.30777
Biomethane	0.005334161	11.30777
Biomethane	0.038514709	11.30777
Biomethane	0.030187824	11.30777
Biomethane	0.002636059	11.30777
Biomethane	0.006728614	11.30777
Biomethane	0.008469908	11.30777
Biomethane	0.004485409	11.30777
Biomethane	0.081628332	11.30777
Biomethane	0.007759242	11.30777
Biomethane	0.004814461	11.30777
Biomethane	0.062312111	11.30777
Biomethane	0.028019857	11.30777
Biomethane	0.007557647	11.30777

Biomethane	0.00215096	11.30777
Biomethane	0.056736988	11.30777
Biomethane	0.008445936	11.30777
Biomethane	0.125332152	11.30777
Biomethane	0.012925238	11.73794
Biomethane	0.071337589	11.73794
Biomethane	0.001315217	11.73794
Biomethane	0.018270261	11.73794
Biomethane	0.00063066	11.73794
Biomethane	0.016635492	11.73794
Biomethane	0.002476406	11.73794
Biomethane	0.002215921	11.73794
Biomethane	0.002275054	11.73794
Biomethane	0.001972859	11.73794
Biomethane	0.010729571	11.73794
Biomethane	0.001173555	11.73794
Biomethane	0.023933834	11.73794
Biomethane	0.001081268	11.73794
Biomethane	0.00347909	11.73794
Biomethane	0.001799246	11.73794
Biomethane	0.004989197	11.73794
Biomethane	0.011292586	11.73794
Biomethane	0.015631516	11.73794
Biomethane	0.005527636	11.73794
Biomethane	0.000772901	11.73794
Biomethane	0.003805571	11.73794
Biomethane	0.036747979	11.73794
Biomethane	0.000416051	11.73794
Biomethane	0.010588066	11.73794
Biomethane	0.001521114	11.73794
Biomethane	0.006736596	11.73794
Biomethane	0.001190199	11.73794
Biomethane	0.036275915	11.73794
Biomethane	0.003539872	11.73794
Biomethane	0.021648708	11.73794
Biomethane	0.000383164	11.73794
Biomethane	0.002483425	11.73794
Biomethane	0.0241281	11.73794
Biomethane	0.017572648	11.73794
Biomethane	0.001718434	11.73794
Biomethane	0.001563938	11.73794
Biomethane	0.012252802	11.73794
Biomethane	0.012474519	11.73794
Biomethane	0.018526246	11.73794
Biomethane	0.002490064	11.73794
Biomethane	0.011042506	11.73794
Biomethane	0.008851228	11.73794
Biomethane	0.001411648	11.73794
Biomethane	0.008215644	11.73794
Biomethane	0.005408768	11.73794
Biomethane	0.010084429	11.73794
Biomethane	0.007229326	12.28351
Biomethane	0.019087893	13.15248
Biomethane	0.009852754	13.15248
Biomethane	0.009224558	13.15248
Biomethane	0.006425121	13.15248
Biomethane	0.024619763	13.15248
Biomethane	0.051330792	13.15248
Biomethane	0.018242879	13.15248
Biomethane	0.106866834	13.15248
Biomethane	0.019211342	13.15248

Biomethane	0.024892344	13.15248
Biomethane	0.011174192	13.15248
Biomethane	0.032792728	13.15248
Biomethane	0.005348855	13.76106
Biomethane	0.007298586	13.76106
Biomethane	0.015050477	13.76106
Biomethane	0.007218687	13.76106
Biomethane	0.005596729	13.76106
Biomethane	0.001883891	13.76106
Biomethane	0.009615038	13.76106
Biomethane	0.031333819	13.76106
Biomethane	0.003276356	13.76106
Biomethane	0.00563278	13.76106
Biomethane	0.012114359	14.99719
Biomethane	0.017363386	14.99719
Biomethane	0.008892476	14.99719
Biomethane	0.020207076	14.99719
Biomethane	0.777611212	15.20412
7% H2 in Pipeline	7% of total gas throughput	15.33
Biomethane	0.005924681	15.78418
Biomethane	0.002704629	15.78418
Biomethane	0.005090932	15.78418
Biomethane	0.00288887	15.78418
Biomethane	0.00355197	15.78418
Biomethane	0.002607262	17.8073
Biomethane	0.036607154	23.89708
Biomethane	0.000235237	23.89708
Biomethane	0.000897719	23.89708
Biomethane	0.001810876	23.89708
Biomethane	0.071696216	23.89708
Biomethane	0.001009442	23.89708
Biomethane	0.325498345	23.89708
Biomethane	0.012370298	23.89708
Biomethane	0.078610027	23.89708
Biomethane	0.003287143	23.89708
Biomethane	0.005280202	23.89708
Biomethane	0.012878247	23.89708
Biomethane	0.015658143	23.89708
Biomethane	0.017221571	23.89708
Biomethane	0.001466582	23.89708
Biomethane	0.009815674	23.89708
Biomethane	0.061213851	23.89708
Biomethane	0.012651431	23.89708
Biomethane	0.022673849	23.89708
Biomethane	0.001197379	23.89708
Biomethane	0.000750625	23.89708
Biomethane	0.000635814	23.89708
Biomethane	0.020801918	23.89708
Biomethane	0.000154813	23.89708
Biomethane	0.051485478	23.89708
Biomethane	0.000159304	23.89708
Biomethane	0.000130531	23.89708
Biomethane	0.004955698	23.89708
Biomethane	0.003834533	23.89708
Biomethane	0.006246976	23.89708
Biomethane	0.003341882	23.89708
Biomethane	0.000549635	23.89708
Biomethane	0.000352856	23.89708
Biomethane	0.060074158	23.89708
Biomethane	0.039197851	23.89708
Biomethane	0.023644132	23.89708

Biomethane	0.009337901	23.89708
Biomethane	0.003161244	23.89708
Biomethane	0.016876856	23.89708
Biomethane	0.100086773	23.89708
Biomethane	0.01989634	23.89708
Biomethane	0.001305453	23.89708
Biomethane	0.001393176	23.89708
Biomethane	0.01523918	23.89708
Biomethane	0.005053433	24.8841
Biomethane	0.00022162	24.8841
Biomethane	0.000243988	24.8841
Biomethane	0.016114012	24.8841
Biomethane	0.016549282	24.8841
Biomethane	0.002735289	24.8841
Biomethane	0.025140799	24.8841
Biomethane	0.042648037	24.8841
Biomethane	0.022553857	24.8841
Biomethane	0.050804283	24.8841
Biomethane	0.002771026	24.8841
Biomethane	0.197031942	24.8841
Biomethane	0.000952428	24.8841
Biomethane	0.004589624	24.8841
Biomethane	0.000347857	24.8841
Biomethane	0.004826285	24.8841
Biomethane	6.06756E-05	24.8841
Biomethane	0.000133049	24.8841
Biomethane	0.062076969	24.8841
Biomethane	0.000289238	24.8841
Biomethane	0.003725253	24.8841
Biomethane	0.162310175	24.8841
Biomethane	0.008758889	24.8841
Biomethane	0.059762682	24.8841
Biomethane	0.022874461	24.8841
Biomethane	0.006103173	24.8841
Biomethane	0.099077157	24.8841
Biomethane	0.001952162	24.8841
Biomethane	0.078413498	24.8841
Biomethane	0.00304021	24.8841
Biomethane	0.000100012	24.8841
Biomethane	0.01590936	24.8841
Biomethane	0.002034562	24.8841
Biomethane	0.000243988	24.8841
Biomethane	0.002923486	24.8841
Biomethane	0.040946419	24.8841
Biomethane	0.439111696	24.8841
Synthetic Natural Gas	Unlimited	30.45

MWG Scenario	2041	1-in-2	Current Installation Practice
MWG Scenario	2041	1-in-10	Current Installation Practice
MWG Scenario	2041	1-in-40	Current Installation Practice
MWG Scenario	2042	1-in-2	Current Installation Practice
MWG Scenario	2042	1-in-10	Current Installation Practice
MWG Scenario	2042	1-in-40	Current Installation Practice
MWG Scenario	2043	1-in-2	Current Installation Practice
MWG Scenario	2043	1-in-10	Current Installation Practice
MWG Scenario	2043	1-in-40	Current Installation Practice
MWG Scenario	2044	1-in-2	Current Installation Practice
MWG Scenario	2044	1-in-10	Current Installation Practice
MWG Scenario	2044	1-in-40	Current Installation Practice
MWG Scenario	2045	1-in-2	Current Installation Practice
MWG Scenario	2045	1-in-10	Current Installation Practice
MWG Scenario	2045	1-in-40	Current Installation Practice
MWG Scenario	2046	1-in-2	Current Installation Practice
MWG Scenario	2046	1-in-10	Current Installation Practice
MWG Scenario	2046	1-in-40	Current Installation Practice
MWG Scenario	2047	1-in-2	Current Installation Practice
MWG Scenario	2047	1-in-10	Current Installation Practice
MWG Scenario	2047	1-in-40	Current Installation Practice
MWG Scenario	2048	1-in-2	Current Installation Practice
MWG Scenario	2048	1-in-10	Current Installation Practice
MWG Scenario	2048	1-in-40	Current Installation Practice
MWG Scenario	2049	1-in-2	Current Installation Practice
MWG Scenario	2049	1-in-10	Current Installation Practice
MWG Scenario	2049	1-in-40	Current Installation Practice
MWG Scenario	2050	1-in-2	Current Installation Practice
MWG Scenario	2050	1-in-10	Current Installation Practice
MWG Scenario	2050	1-in-40	Current Installation Practice

Baseload	Commercial Cooking	Commercial Cooling Demand	Commercial HPWH	Commercial Resistance WH
7916	56	483	32	228
7916	60	559	31	223
7916	58	566	28	201
7916	64	484	40	215
7916	68	559	39	211
7916	66	567	36	190
7916	75	488	48	199
7916	77	559	48	199
7916	75	567	44	179
7916	82	483	59	191
7916	87	559	58	187
7916	84	566	52	169
7916	95	487	68	177
7916	98	558	68	177
7916	95	565	61	160
7916	103	482	79	171
7916	109	557	78	168
7916	105	564	70	152
7916	113	480	89	164
7916	120	555	87	161
7916	118	559	87	161
7916	124	478	99	159
7916	131	553	96	155
7916	129	557	97	156
7916	135	475	108	155
7916	143	549	106	151
7916	141	553	106	152
7916	147	472	121	138
7916	152	552	119	135
7916	154	549	119	135
7916	160	467	135	120
7916	166	547	132	117
7916	167	544	132	118
7916	177	465	148	102
7916	179	541	145	100
7916	180	539	145	100
7916	185	457	161	85
7916	192	535	158	83
7916	193	532	158	84
7916	202	454	174	70
7916	205	528	170	69
7916	206	526	170	69
7916	210	446	186	56
7916	217	522	182	55
7916	219	520	182	55
7916	225	444	197	44
7916	228	517	193	43
7916	230	514	193	43
7916	230	438	206	33
7916	238	512	202	33
7916	240	510	202	33
7916	238	434	214	24
7916	246	509	210	24
7916	248	506	210	24

7916	245	432	221	17
7916	254	505	217	17
7916	256	503	217	17
7916	256	431	227	11
7916	260	502	223	11
7916	262	500	223	11
7916	256	427	232	7
7916	263	500	205	6
7916	267	497	227	7
7916	260	425	235	4
7916	267	498	208	4
7916	271	495	231	4
7916	263	423	238	2
7916	270	496	211	2
7916	275	493	234	2
7916	272	424	241	1
7916	273	495	213	1
7916	277	491	236	1
7916	268	421	243	0
7916	275	494	215	0
7916	280	491	238	0
7916	270	420	244	0
7916	277	492	216	0
7916	281	489	240	0
7916	271	419	245	0
7916	278	492	217	0
7916	283	488	241	0
7916	278	421	247	0
7916	279	491	218	0
7916	284	488	242	0
7916	273	419	247	0
7916	281	491	219	0
7916	285	488	243	0
7916	274	420	248	0
7916	282	492	220	0
7916	286	489	244	0
7916	40	488	31	223
7916	41	559	31	223
7916	41	562	32	228
7916	39	483	40	215
7916	42	559	39	211
7916	41	563	40	216
7916	39	484	49	203
7916	42	559	48	199
7916	41	563	50	203
7916	40	483	59	191
7916	42	559	58	187
7916	41	562	59	191
7916	40	482	69	180
7916	42	558	68	177
7916	42	561	69	181
7916	40	481	79	171
7916	43	557	78	168
7916	42	560	79	172
7916	42	484	87	161
7916	43	555	87	161
7916	42	558	89	165
7916	42	482	97	155
7916	43	553	96	155
7916	42	556	99	159
7916	41	475	108	155

7916	43	549	106	151
7916	43	553	108	155
7916	41	471	117	152
7916	43	545	114	149
7916	43	549	117	152
7916	41	467	126	150
7916	44	540	123	147
7916	42	548	111	133
7916	41	462	134	149
7916	44	535	131	146
7916	42	542	119	132
7916	43	461	140	146
7916	44	528	139	146
7916	43	535	126	132
7916	43	455	148	146
7916	44	521	147	146
7916	43	528	133	132
7916	42	445	159	149
7916	44	515	155	146
7916	43	522	140	132
7916	42	440	166	150
7916	44	509	162	147
7916	43	516	147	132
7916	42	436	172	150
7916	45	504	168	147
7916	43	511	152	133
7916	44	437	174	148
7916	45	500	174	147
7916	43	507	157	133
7916	44	433	178	148
7916	45	496	178	148
7916	43	503	161	134
7916	42	426	186	152
7916	45	493	182	148
7916	44	499	165	134
7916	43	423	189	152
7916	45	489	185	149
7916	44	496	168	135
7916	43	420	192	153
7916	45	486	188	149
7916	44	493	170	135
7916	44	423	191	150
7916	46	484	190	150
7916	44	490	172	135
7916	43	416	196	154
7916	46	482	192	150
7916	44	488	174	136
7916	43	415	198	154
7916	46	480	194	151
7916	44	486	175	136
7916	43	413	199	155
7916	46	478	195	151
7916	44	484	176	137
7916	45	416	196	152
7916	46	476	196	152
7916	45	482	177	137
7916	45	415	197	153
7916	46	475	197	152
7916	45	481	178	138
7916	44	409	202	156
7916	46	474	198	153

7916	45	480	179	138
7916	45	414	199	154
7916	47	474	198	153
7916	45	480	179	138
7916	47	492	22	223
7916	48	563	22	223
7916	47	567	23	228
7916	47	490	27	215
7916	50	566	27	211
7916	49	570	27	216
7916	49	492	31	203
7916	52	569	31	199
7916	51	573	31	203
7916	51	495	35	191
7916	54	572	35	187
7916	53	576	36	191
7916	55	502	38	177
7916	56	575	38	177
7916	55	579	39	181
7916	56	505	41	168
7916	58	579	41	168
7916	57	583	42	172
7916	56	504	45	164
7916	59	583	44	161
7916	58	587	45	165
7916	58	509	47	159
7916	60	587	46	155
7916	58	595	42	140
7916	58	510	49	155
7916	61	590	47	151
7916	59	598	43	137
7916	58	513	50	152
7916	62	593	49	149
7916	60	601	44	134
7916	59	516	51	150
7916	62	596	49	147
7916	60	604	45	133
7916	59	518	51	149
7916	63	599	50	146
7916	61	608	45	132
7916	61	523	52	149
7916	63	603	51	146
7916	61	611	46	132
7916	61	526	52	149
7916	63	606	51	146
7916	61	614	46	132
7916	60	527	52	149
7916	64	609	51	146
7916	62	617	46	132
7916	60	530	52	150
7916	64	612	51	147
7916	62	621	46	132
7916	60	532	53	150
7916	64	616	52	147
7916	62	624	47	133
7916	61	535	53	151
7916	64	619	52	147
7916	62	627	47	133
7916	62	540	53	151
7916	65	622	52	148
7916	62	630	47	134

7916	61	541	53	152
7916	65	625	52	148
7916	63	634	47	134
7916	61	544	53	152
7916	65	629	52	149
7916	63	637	47	135
7916	61	547	54	153
7916	65	632	52	149
7916	63	640	47	135
7916	62	549	54	153
7916	65	635	53	150
7916	63	644	48	135
7916	63	555	54	154
7916	66	639	53	150
7916	64	647	48	136
7916	62	555	54	154
7916	66	642	53	151
7916	64	651	48	136
7916	62	557	54	155
7916	66	644	53	151
7916	64	653	48	137
7916	64	561	54	155
7916	66	646	53	152
7916	64	655	48	137
7916	63	561	55	156
7916	67	648	53	152
7916	64	657	48	138
7916	63	563	55	156
7916	67	651	54	153
7916	65	659	48	138
7916	63	564	55	157
7916	67	653	54	153
7916	65	661	49	138
7916	56	483	32	228
7916	60	558	31	223
7916	59	561	32	228
7916	65	485	40	215
7916	68	558	39	211
7916	67	562	40	216
7916	73	483	49	203
7916	77	558	48	199
7916	75	566	44	179
7916	84	484	59	191
7916	87	557	58	187
7916	84	565	52	169
7916	92	480	69	180
7916	98	555	68	177
7916	95	563	61	160
7916	103	479	79	171
7916	109	554	78	168
7916	105	561	70	152
7916	113	477	89	164
7916	120	551	87	161
7916	116	559	79	145
7916	127	476	99	159
7916	131	548	96	155
7916	129	551	97	156
7916	135	470	108	155
7916	143	543	106	151
7916	141	547	106	152
7916	150	467	121	138

7916	156	538	118	135
7916	154	542	119	135
7916	160	460	135	120
7916	166	538	132	117
7916	167	536	132	118
7916	173	454	148	102
7916	179	531	145	100
7916	180	529	145	100
7916	189	449	161	85
7916	192	523	158	83
7916	193	521	158	84
7916	198	440	174	70
7916	205	515	170	69
7916	206	513	170	69
7916	210	434	186	56
7916	217	507	182	55
7916	219	505	182	55
7916	220	428	196	44
7916	228	501	193	43
7916	230	498	193	43
7916	235	425	206	33
7916	238	495	202	33
7916	240	493	202	33
7916	238	419	214	24
7916	246	490	210	24
7916	248	488	210	24
7916	245	415	221	17
7916	253	485	217	17
7916	256	483	217	17
7916	251	411	227	11
7916	258	482	201	10
7916	262	479	223	11
7916	256	408	232	7
7916	263	478	205	6
7916	267	475	227	7
7916	260	405	235	4
7916	267	475	208	4
7916	271	472	231	4
7916	269	405	239	2
7916	270	472	211	2
7916	275	469	234	2
7916	272	403	241	1
7916	273	470	213	1
7916	277	467	236	1
7916	268	399	243	0
7916	275	468	215	0
7916	280	465	238	0
7916	276	400	244	0
7916	277	466	216	0
7916	281	463	240	0
7916	271	397	245	0
7916	278	465	217	0
7916	283	462	241	0
7916	272	396	246	0
7916	279	464	218	0
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Commercial SH Hybrid	Commercial SH Resistance	Residential Clothes Drying	Residential Cooking	Residential Cooling Demand
0	0	200	221	2145
0	0	199	240	2629
0	0	188	221	2672
0	0	207	233	2140
0	0	206	253	2622
0	0	195	233	2665
0	0	212	247	2146
0	0	214	267	2613
0	0	202	245	2656
0	0	224	259	2123
0	0	222	282	2602
0	0	210	259	2645
0	0	228	276	2124
0	0	231	298	2587
0	0	218	274	2630
0	0	242	290	2106
0	0	240	315	2580
0	0	227	290	2623
0	0	251	307	2097
0	0	250	333	2570
0	0	278	300	2587
0	0	261	324	2087
0	0	259	352	2557
0	0	289	316	2574
0	0	271	341	2074
0	0	269	371	2542
0	0	300	333	2558
0	0	280	359	2059
0	0	276	362	2546
0	0	310	350	2540
0	0	289	376	2042
0	0	285	379	2525
0	0	321	367	2518
0	0	289	387	2033
0	0	294	397	2501
0	0	331	385	2494
0	0	308	411	2001
0	0	303	415	2475
0	0	341	402	2469
0	0	307	421	1994
0	0	312	432	2452
0	0	350	418	2445
0	0	324	441	1967
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0	0	359	431	2427
0	0	321	441	1969
0	0	327	453	2421
0	0	367	439	2414
0	0	338	456	1950
0	0	333	460	2412
0	0	374	446	2405
0	0	344	463	1944
0	0	339	467	2404
0	0	381	453	2398

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0	0	344	474	2398
0	0	386	459	2392
0	0	343	467	1946
0	0	348	480	2393
0	0	392	465	2387
0	0	358	481	1931
0	0	336	481	2407
0	0	396	470	2383
0	0	362	487	1929
0	0	339	486	2404
0	0	401	476	2380
0	0	365	491	1928
0	0	343	491	2403
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0	0	348	500	2405
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0	0	415	496	2373
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0	0	419	502	2371
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0	0	421	504	2373
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0	0	355	513	2118
0	0	419	502	2097
0	0	380	515	1699
0	0	357	515	2117

0	0	421	504	2096
0	0	197	223	2159
0	0	199	240	2629
0	0	188	221	2672
0	0	204	234	2153
0	0	206	253	2622
0	0	195	233	2665
0	0	215	246	2132
0	0	214	267	2613
0	0	202	245	2656
0	0	223	259	2123
0	0	222	282	2602
0	0	210	259	2645
0	0	228	276	2125
0	0	231	298	2587
0	0	218	274	2630
0	0	242	290	2105
0	0	240	315	2580
0	0	227	290	2623
0	0	247	309	2111
0	0	250	333	2570
0	0	236	306	2613
0	0	261	324	2086
0	0	260	352	2557
0	0	289	316	2574
0	0	271	341	2074
0	0	269	371	2542
0	0	300	333	2558
0	0	280	358	2059
0	0	279	390	2523
0	0	310	350	2540
0	0	289	376	2041
0	0	288	408	2502
0	0	321	367	2518
0	0	299	393	2021
0	0	294	397	2500
0	0	331	385	2494
0	0	298	404	2013
0	0	303	415	2475
0	0	341	402	2469
0	0	316	428	1982
0	0	297	428	2470
0	0	350	418	2445
0	0	315	433	1980
0	0	324	440	2424
0	0	359	431	2427
0	0	322	441	1969
0	0	331	448	2411
0	0	367	439	2414
0	0	328	449	1962
0	0	337	456	2402
0	0	374	446	2405
0	0	343	463	1943
0	0	343	463	2395
0	0	381	453	2398
0	0	349	469	1938
0	0	348	469	2389
0	0	386	459	2392
0	0	353	475	1934
0	0	353	475	2384
0	0	392	465	2387

0	0	347	473	1944
0	0	357	480	2380
0	0	396	470	2383
0	0	361	486	1928
0	0	361	486	2377
0	0	401	476	2380
0	0	354	483	1941
0	0	360	496	2385
0	0	404	480	2379
0	0	368	496	1927
0	0	363	500	2385
0	0	408	485	2379
0	0	360	492	1943
0	0	365	505	2387
0	0	411	489	2381
0	0	362	496	1939
0	0	368	508	2382
0	0	413	493	2376
0	0	364	499	1936
0	0	370	512	2379
0	0	415	496	2373
0	0	377	510	1921
0	0	371	515	2377
0	0	417	499	2371
0	0	378	513	1921
0	0	373	518	2377
0	0	419	502	2371
0	0	369	507	1936
0	0	374	520	2379
0	0	421	504	2373

Residential HPWH	Residential Resistance WH	Residential SC All Electric ASHP	Residential SC Ground Source HP	Residential SC Hybrid
47	413	762	0	0
46	404	788	0	0
49	432	790	0	0
64	393	762	0	0
63	385	788	0	0
67	411	791	0	0
80	365	759	0	0
80	365	788	0	0
85	389	791	0	0
100	353	762	0	0
98	345	788	0	0
105	369	790	0	0
117	328	758	0	0
116	328	787	0	0
124	350	789	0	0
137	320	759	0	0
134	313	784	0	0
143	334	787	0	0
155	308	756	0	0
151	301	781	0	0
152	302	782	0	0
171	299	752	0	0
167	292	777	0	0
168	293	778	0	0
187	292	748	0	0
182	286	773	0	0
183	286	773	0	0
211	260	742	0	0
207	255	769	0	0
207	255	768	0	0
236	226	737	0	0
231	222	763	0	0
231	222	762	0	0
260	192	730	0	0
255	189	758	0	0
255	189	757	0	0
284	161	727	0	0
278	158	753	0	0
278	158	752	0	0
306	132	722	0	0
300	129	749	0	0
300	129	748	0	0
327	106	721	0	0
320	104	748	0	0
320	104	746	0	0
345	83	720	0	0
338	81	747	0	0
338	81	746	0	0
361	63	721	0	0
354	62	747	0	0
354	62	746	0	0
375	46	720	0	0
368	45	746	0	0
368	45	745	0	0

386	32	720	0	0
379	31	746	0	0
379	31	745	0	0
396	21	719	0	0
388	21	746	0	0
388	21	745	0	0
403	14	719	0	0
421	14	746	0	0
395	13	744	0	0
409	8	719	0	0
427	9	746	0	0
401	8	745	0	0
413	5	720	0	0
432	5	747	0	0
405	4	745	0	0
416	2	719	0	0
435	2	747	0	0
408	2	745	0	0
418	1	721	0	0
437	1	748	0	0
410	1	746	0	0
419	0	722	0	0
438	0	749	0	0
411	0	747	0	0
420	0	723	0	0
439	0	750	0	0
412	0	748	0	0
421	0	723	0	0
440	0	751	0	0
413	0	749	0	0
422	0	725	0	0
441	0	752	0	0
414	0	750	0	0
422	0	726	0	0
442	0	753	0	0
414	0	751	0	0
46	405	759	0	0
46	404	788	0	0
47	414	788	0	0
64	393	762	0	0
63	385	788	0	0
64	394	789	0	0
82	373	762	0	0
80	365	788	0	0
82	373	789	0	0
100	353	762	0	0
98	345	788	0	0
100	353	788	0	0
119	335	761	0	0
116	328	787	0	0
119	336	787	0	0
137	320	759	0	0
134	313	784	0	0
137	320	785	0	0
151	302	753	0	0
151	301	781	0	0
155	308	782	0	0
168	293	749	0	0
167	292	778	0	0
171	299	778	0	0
187	292	747	0	0

182	286	773	0	0
187	292	773	0	0
201	287	742	0	0
197	281	768	0	0
202	288	768	0	0
215	284	737	0	0
211	278	762	0	0
225	297	764	0	0
229	282	731	0	0
224	276	757	0	0
239	295	759	0	0
236	276	724	0	0
236	275	752	0	0
252	294	754	0	0
248	275	721	0	0
248	275	748	0	0
265	293	750	0	0
265	281	721	0	0
259	275	746	0	0
277	293	748	0	0
275	281	721	0	0
269	275	746	0	0
288	294	748	0	0
284	282	720	0	0
278	276	745	0	0
297	294	748	0	0
286	277	718	0	0
285	277	745	0	0
305	295	747	0	0
292	278	718	0	0
291	277	745	0	0
311	296	747	0	0
303	284	719	0	0
296	278	744	0	0
317	297	747	0	0
307	285	719	0	0
301	279	744	0	0
321	298	746	0	0
311	286	719	0	0
304	280	744	0	0
325	299	746	0	0
307	282	718	0	0
306	281	744	0	0
327	301	747	0	0
315	288	720	0	0
308	282	745	0	0
329	302	747	0	0
316	289	721	0	0
309	283	746	0	0
330	303	748	0	0
317	290	721	0	0
310	284	747	0	0
331	304	749	0	0
311	286	721	0	0
310	285	747	0	0
332	305	750	0	0
312	287	721	0	0
311	286	748	0	0
332	306	751	0	0
318	293	724	0	0
311	287	749	0	0

333	307	752	0	0
312	289	724	0	0
312	288	751	0	0
333	307	753	0	0
32	405	756	0	0
31	404	785	0	0
32	414	785	0	0
42	393	759	0	0
41	385	785	0	0
42	394	785	0	0
51	373	758	0	0
50	365	784	0	0
51	373	785	0	0
60	353	758	0	0
59	345	783	0	0
60	353	784	0	0
67	328	753	0	0
67	328	782	0	0
69	336	782	0	0
75	313	751	0	0
75	313	780	0	0
76	320	780	0	0
82	308	752	0	0
81	301	777	0	0
83	308	778	0	0
87	298	747	0	0
85	292	774	0	0
91	312	776	0	0
91	292	745	0	0
89	286	770	0	0
95	305	772	0	0
94	287	741	0	0
92	281	766	0	0
98	300	768	0	0
96	284	736	0	0
94	278	761	0	0
100	297	763	0	0
97	282	731	0	0
95	276	756	0	0
101	295	758	0	0
98	281	725	0	0
96	275	751	0	0
102	294	753	0	0
98	281	722	0	0
96	275	748	0	0
103	293	750	0	0
99	281	722	0	0
97	275	746	0	0
103	293	748	0	0
99	281	721	0	0
97	275	745	0	0
104	294	748	0	0
99	282	721	0	0
97	276	745	0	0
104	294	748	0	0
100	283	721	0	0
97	276	745	0	0
104	295	747	0	0
100	283	719	0	0
98	277	745	0	0
105	296	747	0	0

100	285	720	0	0
98	278	744	0	0
105	297	747	0	0
101	286	720	0	0
98	279	744	0	0
105	298	746	0	0
101	287	720	0	0
99	280	744	0	0
106	299	746	0	0
101	288	720	0	0
99	281	744	0	0
106	301	747	0	0
102	288	719	0	0
100	282	745	0	0
106	302	747	0	0
102	290	721	0	0
100	283	746	0	0
107	303	748	0	0
103	291	722	0	0
100	284	746	0	0
107	304	749	0	0
103	291	721	0	0
101	285	747	0	0
107	305	750	0	0
103	293	724	0	0
101	286	748	0	0
108	306	751	0	0
104	293	725	0	0
101	287	749	0	0
108	307	752	0	0
104	294	726	0	0
101	288	751	0	0
108	307	753	0	0
47	413	801	0	0
46	404	868	0	0
47	414	869	0	0
64	393	801	0	0
63	385	868	0	0
64	394	870	0	0
82	373	802	0	0
80	365	868	0	0
85	389	874	0	0
100	353	800	0	0
98	345	868	0	0
105	369	873	0	0
119	335	800	0	0
116	328	866	0	0
124	350	872	0	0
137	320	798	0	0
134	313	864	0	0
143	334	870	0	0
155	308	795	0	0
151	301	860	0	0
162	322	866	0	0
171	298	790	0	0
167	292	856	0	0
168	293	858	0	0
187	292	786	0	0
182	286	851	0	0
183	286	853	0	0
211	260	781	0	0

206	254	846	0	0
207	255	847	0	0
236	226	776	0	0
231	222	844	0	0
231	222	841	0	0
260	192	770	0	0
255	189	838	0	0
255	189	835	0	0
284	160	765	0	0
278	158	833	0	0
278	158	830	0	0
306	132	761	0	0
300	129	829	0	0
300	129	826	0	0
327	106	759	0	0
320	104	827	0	0
320	104	824	0	0
345	83	759	0	0
338	81	826	0	0
338	81	823	0	0
361	63	759	0	0
354	62	826	0	0
354	62	823	0	0
375	46	758	0	0
368	45	826	0	0
368	45	823	0	0
386	32	758	0	0
379	31	825	0	0
379	31	823	0	0
396	21	758	0	0
414	22	826	0	0
388	21	822	0	0
403	14	757	0	0
421	14	826	0	0
395	13	822	0	0
409	8	757	0	0
427	9	826	0	0
401	8	822	0	0
413	5	758	0	0
432	5	827	0	0
405	4	822	0	0
416	2	759	0	0
435	2	827	0	0
408	2	823	0	0
418	1	759	0	0
437	1	828	0	0
410	1	824	0	0
419	0	760	0	0
438	0	829	0	0
411	0	824	0	0
420	0	761	0	0
439	0	830	0	0
412	0	825	0	0
421	0	762	0	0
440	0	831	0	0
413	0	827	0	0
422	0	763	0	0
441	0	832	0	0
414	0	828	0	0
422	0	764	0	0
442	0	833	0	0

414	0	829	0	0
46	405	759	0	0
46	404	788	0	0
49	432	790	0	0
63	385	759	0	0
63	385	788	0	0
67	411	791	0	0
82	373	762	0	0
80	365	788	0	0
85	389	791	0	0
100	353	762	0	0
98	345	788	0	0
105	369	790	0	0
117	328	758	0	0
116	328	787	0	0
124	350	789	0	0
137	320	759	0	0
134	313	784	0	0
143	334	787	0	0
151	302	753	0	0
151	301	781	0	0
162	322	784	0	0
171	299	752	0	0
167	292	777	0	0
168	293	778	0	0
187	292	747	0	0
182	286	773	0	0
183	286	773	0	0
211	260	742	0	0
206	254	767	0	0
207	255	768	0	0
236	226	737	0	0
230	221	762	0	0
231	222	762	0	0
260	192	731	0	0
255	189	758	0	0
255	189	757	0	0
284	161	726	0	0
278	158	753	0	0
278	158	752	0	0
306	132	723	0	0
320	138	750	0	0
300	129	748	0	0
327	106	721	0	0
327	106	746	0	0
320	104	746	0	0
345	83	720	0	0
346	83	746	0	0
338	81	746	0	0
361	63	720	0	0
362	63	746	0	0
354	62	746	0	0
375	46	720	0	0
375	46	745	0	0
368	45	745	0	0
386	32	720	0	0
387	32	745	0	0
379	31	745	0	0
395	21	719	0	0
396	21	745	0	0
388	21	745	0	0

403	14	719	0	0
404	14	744	0	0
395	13	744	0	0
408	8	719	0	0
409	8	744	0	0
401	8	745	0	0
413	5	719	0	0
405	4	746	0	0
405	4	745	0	0
415	2	720	0	0
408	2	746	0	0
408	2	745	0	0
418	1	721	0	0
410	1	747	0	0
410	1	746	0	0
419	0	721	0	0
411	0	748	0	0
411	0	747	0	0
421	0	722	0	0
412	0	749	0	0
412	0	748	0	0
421	0	723	0	0
413	0	750	0	0
413	0	749	0	0
422	0	724	0	0
414	0	751	0	0
414	0	750	0	0
423	0	725	0	0
414	0	752	0	0
414	0	751	0	0

MWG Scenario	2041	1-in-2	Current Installation Practice
MWG Scenario	2041	1-in-10	Current Installation Practice
MWG Scenario	2041	1-in-40	Current Installation Practice
MWG Scenario	2042	1-in-2	Current Installation Practice
MWG Scenario	2042	1-in-10	Current Installation Practice
MWG Scenario	2042	1-in-40	Current Installation Practice
MWG Scenario	2043	1-in-2	Current Installation Practice
MWG Scenario	2043	1-in-10	Current Installation Practice
MWG Scenario	2043	1-in-40	Current Installation Practice
MWG Scenario	2044	1-in-2	Current Installation Practice
MWG Scenario	2044	1-in-10	Current Installation Practice
MWG Scenario	2044	1-in-40	Current Installation Practice
MWG Scenario	2045	1-in-2	Current Installation Practice
MWG Scenario	2045	1-in-10	Current Installation Practice
MWG Scenario	2045	1-in-40	Current Installation Practice
MWG Scenario	2046	1-in-2	Current Installation Practice
MWG Scenario	2046	1-in-10	Current Installation Practice
MWG Scenario	2046	1-in-40	Current Installation Practice
MWG Scenario	2047	1-in-2	Current Installation Practice
MWG Scenario	2047	1-in-10	Current Installation Practice
MWG Scenario	2047	1-in-40	Current Installation Practice
MWG Scenario	2048	1-in-2	Current Installation Practice
MWG Scenario	2048	1-in-10	Current Installation Practice
MWG Scenario	2048	1-in-40	Current Installation Practice
MWG Scenario	2049	1-in-2	Current Installation Practice
MWG Scenario	2049	1-in-10	Current Installation Practice
MWG Scenario	2049	1-in-40	Current Installation Practice
MWG Scenario	2050	1-in-2	Current Installation Practice
MWG Scenario	2050	1-in-10	Current Installation Practice
MWG Scenario	2050	1-in-40	Current Installation Practice

Baseload	Commercial Cooking	Commercial Cooling Demand	Commercial HPWH	Commercial Resistance WH
2509.5	32.2	0.0	40.8	239.6
2509.5	31.8	0.0	51.4	301.3
2509.5	28.5	0.0	51.2	300.7
2509.5	32.6	0.0	65.3	286.1
2509.5	36.0	0.0	65.1	285.0
2509.5	32.3	0.0	65.0	284.3
2509.5	41.2	0.0	63.4	212.7
2509.5	40.8	0.0	80.1	268.5
2509.5	36.6	0.0	79.9	267.9
2509.5	46.9	0.0	98.5	259.2
2509.5	46.1	0.0	95.9	252.8
2509.5	41.3	0.0	95.7	252.3
2509.5	52.7	0.0	115.3	244.8
2509.5	51.8	0.0	112.2	238.8
2509.5	46.4	0.0	112.0	238.3
2509.5	58.6	0.0	131.9	232.7
2509.5	57.7	0.0	128.4	226.9
2509.5	51.7	0.0	128.1	226.4
2509.5	65.5	0.0	119.5	179.8
2509.5	63.6	0.0	144.3	217.3
2509.5	57.0	0.0	144.0	216.9
2509.5	71.0	0.0	164.5	215.9
2509.5	69.7	0.0	159.7	210.1
2509.5	62.5	0.0	159.4	209.6
2509.5	77.3	0.0	180.1	210.7
2509.5	75.8	0.0	174.7	204.8
2509.5	67.9	0.0	174.3	204.3
2509.5	85.0	0.0	161.7	149.9
2509.5	82.8	0.0	196.1	182.0
2509.5	74.3	0.0	195.6	181.6
2509.5	92.2	0.0	179.4	130.3
2509.5	90.0	0.0	217.8	158.4
2509.5	80.7	0.0	217.4	158.0
2509.5	99.7	0.0	248.3	139.2
2509.5	97.2	0.0	239.7	134.6
2509.5	87.1	0.0	239.2	134.4
2509.5	107.1	0.0	270.6	116.5
2509.5	104.3	0.0	260.8	112.6
2509.5	93.5	0.0	260.3	112.3
2509.5	114.3	0.0	292.0	96.0
2509.5	111.2	0.0	281.1	92.6
2509.5	99.6	0.0	280.5	92.4
2509.5	121.3	0.0	312.5	77.3
2509.5	117.9	0.0	300.6	74.5
2509.5	105.7	0.0	300.0	74.3
2509.5	126.2	0.0	260.4	47.7
2509.5	123.9	0.0	318.0	58.3
2509.5	111.1	0.0	317.3	58.2
2509.5	131.5	0.0	272.8	36.1
2509.5	129.2	0.0	333.3	44.2
2509.5	115.8	0.0	332.6	44.1
2509.5	138.0	0.0	361.0	33.5
2509.5	133.8	0.0	346.6	32.3
2509.5	120.0	0.0	345.9	32.2

2509.5	140.1	0.0	292.7	18.4
2509.5	137.8	0.0	357.9	22.6
2509.5	123.5	0.0	357.2	22.5
2509.5	143.5	0.0	300.3	12.3
2509.5	141.1	0.0	367.3	15.1
2509.5	126.5	0.0	366.6	15.1
2509.5	148.5	0.0	390.9	10.0
2509.5	143.9	0.0	375.0	9.6
2509.5	129.0	0.0	374.3	9.6
2509.5	148.6	0.0	311.5	4.7
2509.5	146.2	0.0	381.2	5.8
2509.5	131.1	0.0	380.4	5.7
2509.5	150.4	0.0	315.5	2.6
2509.5	148.0	0.0	386.1	3.2
2509.5	132.7	0.0	385.3	3.2
2509.5	154.3	0.0	406.6	1.7
2509.5	149.5	0.0	389.9	1.6
2509.5	134.0	0.0	389.1	1.6
2509.5	153.1	0.0	321.1	0.5
2509.5	150.7	0.0	393.0	0.6
2509.5	135.1	0.0	392.2	0.6
2509.5	156.5	0.0	412.3	0.1
2509.5	151.7	0.0	395.4	0.1
2509.5	135.9	0.0	394.6	0.1
2509.5	154.9	0.0	324.7	0.0
2509.5	152.4	0.0	397.4	0.0
2509.5	136.7	0.0	396.6	0.0
2509.5	158.0	0.0	416.1	0.0
2509.5	153.1	0.0	399.1	0.0
2509.5	137.3	0.0	398.3	0.0
2509.5	156.2	0.0	327.5	0.0
2509.5	153.7	0.0	400.7	0.0
2509.5	137.8	0.0	399.9	0.0
2509.5	156.8	0.0	328.7	0.0
2509.5	154.3	0.0	402.1	0.0
2509.5	138.3	0.0	401.3	0.0
2509.5	19.7	0.0	51.2	300.6
2509.5	21.9	0.0	51.4	301.4
2509.5	19.6	0.0	51.2	300.7
2509.5	19.8	0.0	64.9	284.3
2509.5	22.0	0.0	65.1	285.0
2509.5	19.8	0.0	65.0	284.3
2509.5	20.0	0.0	79.9	268.0
2509.5	22.2	0.0	80.1	268.5
2509.5	19.9	0.0	79.9	267.9
2509.5	20.1	0.0	95.7	252.4
2509.5	22.3	0.0	95.9	252.9
2509.5	20.0	0.0	95.7	252.3
2509.5	22.9	0.0	89.6	190.6
2509.5	22.5	0.0	112.3	238.8
2509.5	20.2	0.0	112.0	238.3
2509.5	23.0	0.0	102.5	181.1
2509.5	22.6	0.0	128.4	226.9
2509.5	20.3	0.0	128.1	226.4
2509.5	23.1	0.0	115.2	173.5
2509.5	22.8	0.0	144.3	217.4
2509.5	20.4	0.0	144.0	216.9
2509.5	20.6	0.0	159.4	209.7
2509.5	22.9	0.0	159.7	210.1
2509.5	20.5	0.0	159.4	209.6
2509.5	23.4	0.0	139.5	163.5

2509.5	23.0	0.0	174.8	204.8
2509.5	20.6	0.0	174.3	204.3
2509.5	23.5	0.0	151.1	160.5
2509.5	23.1	0.0	189.3	201.1
2509.5	20.7	0.0	188.9	200.7
2509.5	20.8	0.0	203.0	198.4
2509.5	23.1	0.0	203.5	198.8
2509.5	20.7	0.0	203.1	198.3
2509.5	23.6	0.0	173.5	157.7
2509.5	23.2	0.0	217.4	197.6
2509.5	20.8	0.0	216.9	197.1
2509.5	23.7	0.0	184.3	157.3
2509.5	23.3	0.0	230.9	197.1
2509.5	20.9	0.0	230.3	196.7
2509.5	23.8	0.0	194.7	157.4
2509.5	23.4	0.0	244.0	197.2
2509.5	21.0	0.0	243.4	196.8
2509.5	21.1	0.0	256.3	197.2
2509.5	23.5	0.0	256.9	197.6
2509.5	21.0	0.0	256.3	197.1
2509.5	24.0	0.0	214.2	158.1
2509.5	23.6	0.0	268.4	198.2
2509.5	21.1	0.0	267.8	197.7
2509.5	24.0	0.0	222.2	158.6
2509.5	23.7	0.0	278.5	198.8
2509.5	21.2	0.0	277.9	198.3
2509.5	24.1	0.0	229.3	159.1
2509.5	23.7	0.0	287.4	199.4
2509.5	21.3	0.0	286.7	198.9
2509.5	24.2	0.0	235.3	159.6
2509.5	23.8	0.0	295.0	200.1
2509.5	21.3	0.0	294.3	199.6
2509.5	24.3	0.0	240.5	160.1
2509.5	23.9	0.0	301.5	200.8
2509.5	21.4	0.0	300.8	200.3
2509.5	24.4	0.0	244.9	160.6
2509.5	24.0	0.0	307.0	201.4
2509.5	21.5	0.0	306.3	200.9
2509.5	24.4	0.0	248.5	161.2
2509.5	24.1	0.0	311.6	202.1
2509.5	21.6	0.0	310.8	201.6
2509.5	24.5	0.0	251.4	161.7
2509.5	24.1	0.0	315.3	202.7
2509.5	21.6	0.0	314.5	202.2
2509.5	21.8	0.0	317.9	203.1
2509.5	24.2	0.0	318.4	203.4
2509.5	21.7	0.0	317.6	202.9
2509.5	24.7	0.0	255.8	162.7
2509.5	24.3	0.0	320.8	204.1
2509.5	21.8	0.0	320.0	203.6
2509.5	24.8	0.0	257.4	163.2
2509.5	24.4	0.0	322.8	204.7
2509.5	21.8	0.0	322.1	204.2
2509.5	24.8	0.0	258.7	163.7
2509.5	24.4	0.0	324.5	205.4
2509.5	21.9	0.0	323.7	204.9
2509.5	24.9	0.0	259.8	164.2
2509.5	24.5	0.0	326.0	206.1
2509.5	22.0	0.0	325.2	205.6
2509.5	22.2	0.0	326.9	206.5
2509.5	24.6	0.0	327.2	206.7

2509.5	22.0	0.0	326.4	206.2
2509.5	22.2	0.0	328.0	207.2
2509.5	24.7	0.0	328.4	207.4
2509.5	22.1	0.0	327.6	206.9
2509.5	25.8	0.0	29.6	240.2
2509.5	25.4	0.0	37.2	301.3
2509.5	22.7	0.0	37.1	300.7
2509.5	23.9	0.0	44.0	285.0
2509.5	26.5	0.0	44.0	285.0
2509.5	23.8	0.0	43.9	284.3
2509.5	28.0	0.0	40.5	213.7
2509.5	27.6	0.0	50.9	268.5
2509.5	24.8	0.0	50.8	267.9
2509.5	26.0	0.0	57.5	253.3
2509.5	28.7	0.0	57.4	252.8
2509.5	25.8	0.0	57.3	252.3
2509.5	30.1	0.0	50.4	189.8
2509.5	29.7	0.0	63.4	238.8
2509.5	26.7	0.0	63.2	238.3
2509.5	31.0	0.0	54.4	180.2
2509.5	30.6	0.0	68.5	226.9
2509.5	27.4	0.0	68.4	226.4
2509.5	31.7	0.0	57.7	172.6
2509.5	31.3	0.0	72.7	217.3
2509.5	28.1	0.0	72.6	216.9
2509.5	32.3	0.0	60.4	166.7
2509.5	31.9	0.0	76.0	210.1
2509.5	28.6	0.0	75.9	209.6
2509.5	32.8	0.0	62.4	162.5
2509.5	32.4	0.0	78.6	204.8
2509.5	29.0	0.0	78.4	204.3
2509.5	33.1	0.0	63.9	159.5
2509.5	32.8	0.0	80.5	201.1
2509.5	29.4	0.0	80.3	200.7
2509.5	33.4	0.0	65.0	157.7
2509.5	33.0	0.0	81.9	198.8
2509.5	29.6	0.0	81.7	198.3
2509.5	33.6	0.0	65.8	156.7
2509.5	33.3	0.0	82.9	197.5
2509.5	29.8	0.0	82.7	197.1
2509.5	33.8	0.0	66.3	156.3
2509.5	33.5	0.0	83.6	197.1
2509.5	30.0	0.0	83.5	196.7
2509.5	34.0	0.0	66.8	156.4
2509.5	33.6	0.0	84.2	197.2
2509.5	30.1	0.0	84.0	196.8
2509.5	34.1	0.0	67.1	156.7
2509.5	33.8	0.0	84.6	197.6
2509.5	30.3	0.0	84.4	197.1
2509.5	34.2	0.0	67.4	157.1
2509.5	33.9	0.0	85.0	198.1
2509.5	30.4	0.0	84.8	197.7
2509.5	30.8	0.0	85.6	199.6
2509.5	34.0	0.0	85.3	198.7
2509.5	30.5	0.0	85.1	198.3
2509.5	30.9	0.0	85.9	200.2
2509.5	34.1	0.0	85.6	199.4
2509.5	30.6	0.0	85.4	199.0
2509.5	34.6	0.0	68.1	158.7
2509.5	34.2	0.0	85.9	200.0
2509.5	30.7	0.0	85.7	199.6

2509.5	34.7	0.0	68.4	159.3
2509.5	34.4	0.0	86.2	200.7
2509.5	30.8	0.0	86.0	200.3
2509.5	34.9	0.0	68.6	159.8
2509.5	34.5	0.0	86.4	201.4
2509.5	30.9	0.0	86.3	200.9
2509.5	35.0	0.0	68.9	160.4
2509.5	34.6	0.0	86.7	202.0
2509.5	31.0	0.0	86.5	201.6
2509.5	31.4	0.0	87.3	203.4
2509.5	34.7	0.0	87.0	202.7
2509.5	31.1	0.0	86.8	202.3
2509.5	35.2	0.0	69.3	161.5
2509.5	34.8	0.0	87.3	203.4
2509.5	31.2	0.0	87.1	202.9
2509.5	35.3	0.0	69.6	162.1
2509.5	34.9	0.0	87.6	204.0
2509.5	31.3	0.0	87.4	203.6
2509.5	31.7	0.0	88.1	205.2
2509.5	35.0	0.0	87.9	204.7
2509.5	31.4	0.0	87.7	204.2
2509.5	31.8	0.0	88.3	205.9
2509.5	35.1	0.0	88.2	205.3
2509.5	31.5	0.0	88.0	204.9
2509.5	31.9	0.0	88.6	206.5
2509.5	35.3	0.0	88.4	206.0
2509.5	31.6	0.0	88.2	205.6
2509.5	35.8	0.0	70.5	164.3
2509.5	35.4	0.0	88.7	206.7
2509.5	31.7	0.0	88.5	206.2
2509.5	36.0	0.0	70.8	164.9
2509.5	35.5	0.0	89.0	207.3
2509.5	31.8	0.0	88.8	206.9
2509.5	32.1	0.0	40.7	238.7
2509.5	31.8	0.0	51.4	301.4
2509.5	28.5	0.0	51.2	300.7
2509.5	32.7	0.0	65.5	286.9
2509.5	36.0	0.0	65.1	285.0
2509.5	32.3	0.0	65.0	284.3
2509.5	41.5	0.0	82.2	275.0
2509.5	40.8	0.0	80.1	268.6
2509.5	36.6	0.0	79.9	267.9
2509.5	46.8	0.0	98.4	259.0
2509.5	46.1	0.0	95.9	252.9
2509.5	41.3	0.0	95.7	252.3
2509.5	53.5	0.0	93.2	198.0
2509.5	51.8	0.0	112.3	238.8
2509.5	46.4	0.0	112.0	238.3
2509.5	59.4	0.0	106.5	187.9
2509.5	57.7	0.0	128.4	226.9
2509.5	51.7	0.0	128.1	226.4
2509.5	65.5	0.0	119.5	179.7
2509.5	63.7	0.0	144.3	217.4
2509.5	57.0	0.0	144.0	216.9
2509.5	71.7	0.0	132.1	173.5
2509.5	69.7	0.0	159.8	210.1
2509.5	62.5	0.0	159.4	209.6
2509.5	77.8	0.0	144.3	168.9
2509.5	75.8	0.0	174.8	204.8
2509.5	67.9	0.0	174.3	204.3
2509.5	84.9	0.0	161.6	149.9

2509.5	82.9	0.0	196.1	182.1
2509.5	74.3	0.0	195.6	181.6
2509.5	92.1	0.0	179.3	130.1
2509.5	90.0	0.0	217.9	158.4
2509.5	80.7	0.0	217.4	158.0
2509.5	99.3	0.0	196.9	110.5
2509.5	97.2	0.0	239.7	134.7
2509.5	87.1	0.0	239.2	134.4
2509.5	107.2	0.0	270.9	116.7
2509.5	104.3	0.0	260.9	112.6
2509.5	93.5	0.0	260.3	112.3
2509.5	114.4	0.0	292.4	96.1
2509.5	111.2	0.0	281.2	92.6
2509.5	99.6	0.0	280.5	92.4
2509.5	121.5	0.0	313.0	77.4
2509.5	117.9	0.0	300.7	74.5
2509.5	105.7	0.0	300.0	74.3
2509.5	127.8	0.0	331.4	60.7
2509.5	123.9	0.0	318.1	58.3
2509.5	111.1	0.0	317.3	58.2
2509.5	133.4	0.0	347.7	46.0
2509.5	129.2	0.0	333.4	44.2
2509.5	115.8	0.0	332.7	44.1
2509.5	135.8	0.0	283.0	26.3
2509.5	133.9	0.0	346.8	32.3
2509.5	120.0	0.0	345.9	32.2
2509.5	142.4	0.0	373.8	23.5
2509.5	137.8	0.0	358.1	22.6
2509.5	123.5	0.0	357.2	22.5
2509.5	145.9	0.0	383.7	15.8
2509.5	141.2	0.0	367.5	15.1
2509.5	126.5	0.0	366.6	15.1
2509.5	145.9	0.0	305.8	7.8
2509.5	144.0	0.0	375.1	9.6
2509.5	129.0	0.0	374.3	9.6
2509.5	151.2	0.0	398.4	6.0
2509.5	146.2	0.0	381.3	5.8
2509.5	131.1	0.0	380.4	5.7
2509.5	153.1	0.0	403.5	3.3
2509.5	148.1	0.0	386.2	3.2
2509.5	132.7	0.0	385.3	3.2
2509.5	154.7	0.0	407.6	1.7
2509.5	149.6	0.0	390.0	1.6
2509.5	134.0	0.0	389.1	1.6
2509.5	152.7	0.0	320.3	0.5
2509.5	150.7	0.0	393.1	0.6
2509.5	135.1	0.0	392.2	0.6
2509.5	153.7	0.0	322.3	0.1
2509.5	151.7	0.0	395.5	0.1
2509.5	135.9	0.0	394.6	0.1
2509.5	154.5	0.0	323.9	0.0
2509.5	152.5	0.0	397.6	0.0
2509.5	136.7	0.0	396.6	0.0
2509.5	158.4	0.0	417.2	0.0
2509.5	153.2	0.0	399.3	0.0
2509.5	137.3	0.0	398.3	0.0
2509.5	159.0	0.0	418.7	0.0
2509.5	153.8	0.0	400.8	0.0
2509.5	137.8	0.0	399.9	0.0
2509.5	156.4	0.0	327.9	0.0
2509.5	154.3	0.0	402.2	0.0

2509.5	138.3	0.0	401.3	0.0
2509.5	22.2	0.0	41.0	240.4
2509.5	21.9	0.0	51.4	301.4
2509.5	19.6	0.0	51.2	300.7
2509.5	19.9	0.0	65.0	284.8
2509.5	22.0	0.0	65.1	285.0
2509.5	19.8	0.0	65.0	284.3
2509.5	22.5	0.0	63.8	213.9
2509.5	22.2	0.0	80.1	268.5
2509.5	19.9	0.0	79.9	267.9
2509.5	20.2	0.0	96.0	253.0
2509.5	22.3	0.0	95.9	252.9
2509.5	20.0	0.0	95.7	252.3
2509.5	22.8	0.0	89.3	190.0
2509.5	22.5	0.0	112.3	238.8
2509.5	20.2	0.0	112.0	238.3
2509.5	22.9	0.0	102.1	180.4
2509.5	22.6	0.0	128.4	226.9
2509.5	20.3	0.0	128.1	226.4
2509.5	23.0	0.0	114.6	172.7
2509.5	22.8	0.0	144.3	217.4
2509.5	20.4	0.0	144.0	216.9
2509.5	20.7	0.0	160.2	210.8
2509.5	22.9	0.0	159.7	210.1
2509.5	20.5	0.0	159.4	209.6
2509.5	20.8	0.0	175.4	205.6
2509.5	23.0	0.0	174.8	204.8
2509.5	20.6	0.0	174.4	204.3
2509.5	23.3	0.0	150.1	159.4
2509.5	23.1	0.0	189.3	201.1
2509.5	20.7	0.0	188.9	200.7
2509.5	23.3	0.0	161.1	157.4
2509.5	23.1	0.0	203.5	198.8
2509.5	20.7	0.0	203.1	198.3
2509.5	21.1	0.0	218.8	198.9
2509.5	23.2	0.0	217.4	197.6
2509.5	20.8	0.0	216.9	197.1
2509.5	21.2	0.0	232.3	198.5
2509.5	23.3	0.0	230.9	197.1
2509.5	20.9	0.0	230.3	196.7
2509.5	23.8	0.0	250.4	202.0
2509.5	23.4	0.0	244.0	197.2
2509.5	21.0	0.0	243.5	196.8
2509.5	21.3	0.0	258.5	198.9
2509.5	23.5	0.0	256.9	197.6
2509.5	21.1	0.0	256.3	197.2
2509.5	21.4	0.0	270.0	199.4
2509.5	23.6	0.0	268.4	198.1
2509.5	21.1	0.0	267.8	197.7
2509.5	24.0	0.0	285.8	203.6
2509.5	23.7	0.0	278.5	198.8
2509.5	21.2	0.0	277.9	198.3
2509.5	24.1	0.0	294.9	204.3
2509.5	23.7	0.0	287.3	199.4
2509.5	21.3	0.0	286.7	199.0
2509.5	24.2	0.0	302.8	205.0
2509.5	23.8	0.0	295.0	200.1
2509.5	21.3	0.0	294.3	199.6
2509.5	24.6	0.0	250.1	166.3
2509.5	23.9	0.0	301.5	200.7
2509.5	21.4	0.0	300.8	200.3

2509.5	24.7	0.0	254.6	166.8
2509.5	24.0	0.0	307.0	201.4
2509.5	21.5	0.0	306.3	200.9
2509.5	24.8	0.0	258.3	167.3
2509.5	24.1	0.0	311.5	202.0
2509.5	21.6	0.0	310.8	201.6
2509.5	24.5	0.0	323.8	207.8
2509.5	24.1	0.0	315.3	202.7
2509.5	21.6	0.0	314.6	202.3
2509.5	25.0	0.0	263.9	168.4
2509.5	24.2	0.0	318.3	203.4
2509.5	21.7	0.0	317.6	202.9
2509.5	24.7	0.0	329.5	209.2
2509.5	24.3	0.0	320.8	204.0
2509.5	21.8	0.0	320.1	203.6
2509.5	25.1	0.0	267.6	169.5
2509.5	24.4	0.0	322.8	204.7
2509.5	21.8	0.0	322.1	204.3
2509.5	25.2	0.0	269.0	170.0
2509.5	24.4	0.0	324.5	205.4
2509.5	21.9	0.0	323.8	204.9
2509.5	25.3	0.0	270.2	170.6
2509.5	24.5	0.0	325.9	206.0
2509.5	22.0	0.0	325.2	205.6
2509.5	25.0	0.0	336.1	211.9
2509.5	24.6	0.0	327.2	206.7
2509.5	22.1	0.0	326.5	206.2
2509.5	25.4	0.0	272.3	171.7
2509.5	24.7	0.0	328.4	207.3
2509.5	22.1	0.0	327.7	206.9

Commercial SC All Electric ASHP	Commercial SC Ground Source HP	Commercial SC Hybrid	Commercial SH All Electric ASHP	Commercial SH Ground Source HP
0.0	0.0	0.0	1550.2	24.9
0.0	0.0	0.0	2137.0	31.6
0.0	0.0	0.0	2420.9	34.8
0.0	0.0	0.0	1785.6	32.3
0.0	0.0	0.0	2679.6	43.3
0.0	0.0	0.0	3035.7	47.7
0.0	0.0	0.0	2399.5	45.2
0.0	0.0	0.0	3320.2	57.6
0.0	0.0	0.0	3761.5	63.4
0.0	0.0	0.0	2685.3	55.0
0.0	0.0	0.0	4070.1	74.8
0.0	0.0	0.0	4611.1	82.3
0.0	0.0	0.0	3259.1	69.9
0.0	0.0	0.0	4939.2	95.0
0.0	0.0	0.0	5595.8	104.6
0.0	0.0	0.0	3896.9	86.7
0.0	0.0	0.0	5905.2	117.8
0.0	0.0	0.0	6690.2	129.6
0.0	0.0	0.0	4869.1	110.2
0.0	0.0	0.0	6957.7	143.0
0.0	0.0	0.0	7882.7	157.3
0.0	0.0	0.0	5344.5	125.4
0.0	0.0	0.0	8079.6	170.0
0.0	0.0	0.0	9153.7	187.1
0.0	0.0	0.0	6131.4	146.9
0.0	0.0	0.0	9258.9	198.9
0.0	0.0	0.0	10489.9	218.8
0.0	0.0	0.0	7319.0	176.4
0.0	0.0	0.0	10500.0	229.7
0.0	0.0	0.0	11896.2	252.7
0.0	0.0	0.0	8230.2	201.9
0.0	0.0	0.0	11826.3	263.2
0.0	0.0	0.0	13399.0	289.6
0.0	0.0	0.0	8816.2	222.5
0.0	0.0	0.0	13248.9	299.8
0.0	0.0	0.0	15011.0	329.8
0.0	0.0	0.0	9816.2	251.4
0.0	0.0	0.0	14730.4	338.2
0.0	0.0	0.0	16689.9	372.1
0.0	0.0	0.0	10794.2	279.8
0.0	0.0	0.0	16178.6	376.0
0.0	0.0	0.0	18330.9	413.7
0.0	0.0	0.0	11693.2	306.0
0.0	0.0	0.0	17509.1	410.8
0.0	0.0	0.0	19838.6	452.0
0.0	0.0	0.0	12892.7	335.7
0.0	0.0	0.0	18634.0	440.3
0.0	0.0	0.0	21113.4	484.4
0.0	0.0	0.0	13546.6	354.6
0.0	0.0	0.0	19590.2	465.4
0.0	0.0	0.0	22196.9	512.1
0.0	0.0	0.0	13656.8	363.5
0.0	0.0	0.0	20412.6	487.1
0.0	0.0	0.0	23128.9	536.0

0.0	0.0	0.0	14594.7	385.3
0.0	0.0	0.0	21122.9	506.0
0.0	0.0	0.0	23933.7	556.8
0.0	0.0	0.0	15011.8	397.6
0.0	0.0	0.0	21732.6	522.4
0.0	0.0	0.0	24624.6	574.8
0.0	0.0	0.0	14898.0	400.7
0.0	0.0	0.0	22248.6	536.5
0.0	0.0	0.0	25209.4	590.3
0.0	0.0	0.0	15656.0	417.2
0.0	0.0	0.0	22673.5	548.3
0.0	0.0	0.0	25690.9	603.3
0.0	0.0	0.0	15885.0	424.4
0.0	0.0	0.0	23007.8	557.8
0.0	0.0	0.0	26069.7	613.8
0.0	0.0	0.0	15575.0	422.1
0.0	0.0	0.0	23251.4	565.0
0.0	0.0	0.0	26345.7	621.7
0.0	0.0	0.0	16157.4	433.6
0.0	0.0	0.0	23404.7	569.9
0.0	0.0	0.0	26519.4	627.1
0.0	0.0	0.0	15721.4	427.8
0.0	0.0	0.0	23469.5	572.6
0.0	0.0	0.0	26592.8	630.0
0.0	0.0	0.0	16189.0	435.8
0.0	0.0	0.0	23449.1	572.9
0.0	0.0	0.0	26569.7	630.4
0.0	0.0	0.0	15638.0	426.6
0.0	0.0	0.0	23348.3	571.1
0.0	0.0	0.0	26455.5	628.4
0.0	0.0	0.0	16001.6	431.6
0.0	0.0	0.0	23172.7	567.2
0.0	0.0	0.0	26256.6	624.1
0.0	0.0	0.0	15836.3	427.3
0.0	0.0	0.0	22929.7	561.5
0.0	0.0	0.0	25981.2	617.8
0.0	0.0	0.0	609.4	7.7
0.0	0.0	0.0	920.6	10.4
0.0	0.0	0.0	1042.9	11.4
0.0	0.0	0.0	675.5	8.7
0.0	0.0	0.0	1020.1	11.8
0.0	0.0	0.0	1155.6	13.0
0.0	0.0	0.0	749.7	10.0
0.0	0.0	0.0	1132.1	13.4
0.0	0.0	0.0	1282.4	14.8
0.0	0.0	0.0	833.6	11.4
0.0	0.0	0.0	1258.5	15.4
0.0	0.0	0.0	1425.6	16.9
0.0	0.0	0.0	1020.3	13.9
0.0	0.0	0.0	1401.1	17.6
0.0	0.0	0.0	1587.2	19.3
0.0	0.0	0.0	1133.7	15.8
0.0	0.0	0.0	1557.0	20.0
0.0	0.0	0.0	1763.7	22.0
0.0	0.0	0.0	1255.7	17.9
0.0	0.0	0.0	1724.6	22.7
0.0	0.0	0.0	1953.6	24.9
0.0	0.0	0.0	1259.7	18.9
0.0	0.0	0.0	1901.8	25.5
0.0	0.0	0.0	2154.2	28.1
0.0	0.0	0.0	1519.6	22.5

0.0	0.0	0.0	2086.7	28.5
0.0	0.0	0.0	2363.7	31.4
0.0	0.0	0.0	1660.8	25.1
0.0	0.0	0.0	2280.4	31.8
0.0	0.0	0.0	2583.0	34.9
0.0	0.0	0.0	1647.4	26.1
0.0	0.0	0.0	2487.7	35.3
0.0	0.0	0.0	2817.7	38.8
0.0	0.0	0.0	1973.7	30.9
0.0	0.0	0.0	2710.1	39.2
0.0	0.0	0.0	3069.6	43.1
0.0	0.0	0.0	2141.9	34.2
0.0	0.0	0.0	2941.4	43.3
0.0	0.0	0.0	3331.6	47.6
0.0	0.0	0.0	2305.6	37.4
0.0	0.0	0.0	3166.6	47.4
0.0	0.0	0.0	3586.6	52.1
0.0	0.0	0.0	2233.5	38.0
0.0	0.0	0.0	3372.0	51.3
0.0	0.0	0.0	3819.2	56.4
0.0	0.0	0.0	2581.4	43.1
0.0	0.0	0.0	3545.8	54.6
0.0	0.0	0.0	4016.1	60.1
0.0	0.0	0.0	2690.6	45.5
0.0	0.0	0.0	3696.0	57.6
0.0	0.0	0.0	4186.1	63.4
0.0	0.0	0.0	2787.9	47.6
0.0	0.0	0.0	3829.9	60.3
0.0	0.0	0.0	4337.9	66.3
0.0	0.0	0.0	2876.5	49.5
0.0	0.0	0.0	3951.9	62.7
0.0	0.0	0.0	4475.9	69.0
0.0	0.0	0.0	2957.5	51.3
0.0	0.0	0.0	4063.5	65.0
0.0	0.0	0.0	4602.3	71.5
0.0	0.0	0.0	3031.5	52.9
0.0	0.0	0.0	4165.7	67.1
0.0	0.0	0.0	4718.1	73.8
0.0	0.0	0.0	3098.8	54.4
0.0	0.0	0.0	4258.6	69.0
0.0	0.0	0.0	4823.3	75.8
0.0	0.0	0.0	3159.1	55.8
0.0	0.0	0.0	4342.0	70.7
0.0	0.0	0.0	4917.8	77.7
0.0	0.0	0.0	2927.1	53.5
0.0	0.0	0.0	4415.8	72.2
0.0	0.0	0.0	5001.4	79.4
0.0	0.0	0.0	3258.4	58.0
0.0	0.0	0.0	4479.5	73.5
0.0	0.0	0.0	5073.5	80.8
0.0	0.0	0.0	3297.0	58.9
0.0	0.0	0.0	4533.0	74.6
0.0	0.0	0.0	5134.2	82.1
0.0	0.0	0.0	3328.4	59.6
0.0	0.0	0.0	4576.5	75.5
0.0	0.0	0.0	5183.4	83.1
0.0	0.0	0.0	3352.7	60.1
0.0	0.0	0.0	4610.1	76.2
0.0	0.0	0.0	5221.5	83.8
0.0	0.0	0.0	3073.1	56.9
0.0	0.0	0.0	4634.4	76.8

0.0	0.0	0.0	5249.0	84.4
0.0	0.0	0.0	3083.5	57.2
0.0	0.0	0.0	4650.1	77.1
0.0	0.0	0.0	5266.8	84.8
0.0	0.0	0.0	792.4	6.3
0.0	0.0	0.0	1089.5	8.0
0.0	0.0	0.0	1234.3	8.8
0.0	0.0	0.0	794.7	6.2
0.0	0.0	0.0	1197.0	8.3
0.0	0.0	0.0	1356.0	9.1
0.0	0.0	0.0	945.8	6.7
0.0	0.0	0.0	1302.4	8.5
0.0	0.0	0.0	1475.5	9.4
0.0	0.0	0.0	935.3	6.5
0.0	0.0	0.0	1406.5	8.7
0.0	0.0	0.0	1593.5	9.6
0.0	0.0	0.0	1094.9	7.0
0.0	0.0	0.0	1509.9	8.9
0.0	0.0	0.0	1710.6	9.8
0.0	0.0	0.0	1167.7	7.1
0.0	0.0	0.0	1611.2	9.1
0.0	0.0	0.0	1825.5	10.0
0.0	0.0	0.0	1238.3	7.2
0.0	0.0	0.0	1709.4	9.2
0.0	0.0	0.0	1936.7	10.1
0.0	0.0	0.0	1305.2	7.3
0.0	0.0	0.0	1802.4	9.3
0.0	0.0	0.0	2042.0	10.2
0.0	0.0	0.0	1366.8	7.4
0.0	0.0	0.0	1888.0	9.4
0.0	0.0	0.0	2139.0	10.3
0.0	0.0	0.0	1422.3	7.4
0.0	0.0	0.0	1965.0	9.4
0.0	0.0	0.0	2226.3	10.4
0.0	0.0	0.0	1472.7	7.4
0.0	0.0	0.0	2035.0	9.5
0.0	0.0	0.0	2305.5	10.4
0.0	0.0	0.0	1518.1	7.4
0.0	0.0	0.0	2097.9	9.5
0.0	0.0	0.0	2376.8	10.4
0.0	0.0	0.0	1556.8	7.4
0.0	0.0	0.0	2151.5	9.5
0.0	0.0	0.0	2437.5	10.4
0.0	0.0	0.0	1584.9	7.4
0.0	0.0	0.0	2190.3	9.5
0.0	0.0	0.0	2481.5	10.4
0.0	0.0	0.0	1599.3	7.5
0.0	0.0	0.0	2210.0	9.5
0.0	0.0	0.0	2503.8	10.4
0.0	0.0	0.0	1601.1	7.5
0.0	0.0	0.0	2212.3	9.5
0.0	0.0	0.0	2506.4	10.5
0.0	0.0	0.0	1469.4	7.1
0.0	0.0	0.0	2204.1	9.5
0.0	0.0	0.0	2497.1	10.5
0.0	0.0	0.0	1460.8	7.1
0.0	0.0	0.0	2191.7	9.5
0.0	0.0	0.0	2483.0	10.5
0.0	0.0	0.0	1576.8	7.5
0.0	0.0	0.0	2177.9	9.5
0.0	0.0	0.0	2467.4	10.5

0.0	0.0	0.0	1566.6	7.5
0.0	0.0	0.0	2163.4	9.6
0.0	0.0	0.0	2450.9	10.5
0.0	0.0	0.0	1556.0	7.5
0.0	0.0	0.0	2148.3	9.6
0.0	0.0	0.0	2433.9	10.6
0.0	0.0	0.0	1545.0	7.6
0.0	0.0	0.0	2132.8	9.6
0.0	0.0	0.0	2416.2	10.6
0.0	0.0	0.0	1409.5	7.2
0.0	0.0	0.0	2116.7	9.7
0.0	0.0	0.0	2398.0	10.6
0.0	0.0	0.0	1521.9	7.6
0.0	0.0	0.0	2100.1	9.7
0.0	0.0	0.0	2379.3	10.7
0.0	0.0	0.0	1509.8	7.6
0.0	0.0	0.0	2083.0	9.7
0.0	0.0	0.0	2359.9	10.7
0.0	0.0	0.0	1374.6	7.3
0.0	0.0	0.0	2065.4	9.8
0.0	0.0	0.0	2339.9	10.7
0.0	0.0	0.0	1362.2	7.3
0.0	0.0	0.0	2047.1	9.8
0.0	0.0	0.0	2319.2	10.8
0.0	0.0	0.0	1349.3	7.3
0.0	0.0	0.0	2028.2	9.8
0.0	0.0	0.0	2297.8	10.8
0.0	0.0	0.0	1456.9	7.7
0.0	0.0	0.0	2008.5	9.8
0.0	0.0	0.0	2275.4	10.8
0.0	0.0	0.0	1442.4	7.8
0.0	0.0	0.0	1988.0	9.9
0.0	0.0	0.0	2252.2	10.8
0.0	0.0	0.0	1370.2	24.8
0.0	0.0	0.0	2080.4	31.6
0.0	0.0	0.0	2423.9	34.8
0.0	0.0	0.0	1489.2	32.4
0.0	0.0	0.0	2547.7	43.3
0.0	0.0	0.0	2968.3	47.7
0.0	0.0	0.0	1793.6	42.4
0.0	0.0	0.0	3099.1	57.6
0.0	0.0	0.0	3610.8	63.4
0.0	0.0	0.0	2166.9	55.0
0.0	0.0	0.0	3744.3	74.8
0.0	0.0	0.0	4362.5	82.3
0.0	0.0	0.0	2811.1	73.5
0.0	0.0	0.0	4491.8	95.1
0.0	0.0	0.0	5233.3	104.6
0.0	0.0	0.0	3326.1	91.0
0.0	0.0	0.0	5322.3	117.9
0.0	0.0	0.0	6201.0	129.6
0.0	0.0	0.0	3886.3	110.2
0.0	0.0	0.0	6227.1	143.0
0.0	0.0	0.0	7255.0	157.3
0.0	0.0	0.0	4482.2	130.9
0.0	0.0	0.0	7191.2	170.1
0.0	0.0	0.0	8378.2	187.1
0.0	0.0	0.0	5107.5	152.9
0.0	0.0	0.0	8204.3	198.9
0.0	0.0	0.0	9558.4	218.8
0.0	0.0	0.0	5760.4	176.3

0.0	0.0	0.0	9269.8	229.7
0.0	0.0	0.0	10799.8	252.7
0.0	0.0	0.0	6455.4	201.7
0.0	0.0	0.0	10407.4	263.3
0.0	0.0	0.0	12125.2	289.6
0.0	0.0	0.0	7198.7	229.3
0.0	0.0	0.0	11626.6	299.9
0.0	0.0	0.0	13545.8	329.9
0.0	0.0	0.0	7554.6	251.7
0.0	0.0	0.0	12895.8	338.3
0.0	0.0	0.0	15024.5	372.2
0.0	0.0	0.0	8293.0	280.2
0.0	0.0	0.0	14136.0	376.1
0.0	0.0	0.0	16469.5	413.7
0.0	0.0	0.0	8971.7	306.5
0.0	0.0	0.0	15275.1	411.0
0.0	0.0	0.0	17796.8	452.0
0.0	0.0	0.0	9546.0	328.8
0.0	0.0	0.0	16238.1	440.4
0.0	0.0	0.0	18918.9	484.5
0.0	0.0	0.0	10034.4	347.8
0.0	0.0	0.0	17056.5	465.6
0.0	0.0	0.0	19872.5	512.1
0.0	0.0	0.0	10926.3	370.2
0.0	0.0	0.0	17760.4	487.3
0.0	0.0	0.0	20692.5	536.0
0.0	0.0	0.0	10817.1	378.6
0.0	0.0	0.0	18368.1	506.2
0.0	0.0	0.0	21400.6	556.8
0.0	0.0	0.0	11128.2	391.0
0.0	0.0	0.0	18889.6	522.6
0.0	0.0	0.0	22008.3	574.8
0.0	0.0	0.0	11879.9	407.3
0.0	0.0	0.0	19331.0	536.7
0.0	0.0	0.0	22522.6	590.3
0.0	0.0	0.0	11607.9	410.6
0.0	0.0	0.0	19694.3	548.5
0.0	0.0	0.0	22945.9	603.3
0.0	0.0	0.0	11778.0	417.7
0.0	0.0	0.0	19980.1	558.0
0.0	0.0	0.0	23278.8	613.8
0.0	0.0	0.0	11901.8	423.2
0.0	0.0	0.0	20188.2	565.2
0.0	0.0	0.0	23521.3	621.7
0.0	0.0	0.0	12481.2	432.5
0.0	0.0	0.0	20319.0	570.1
0.0	0.0	0.0	23673.7	627.1
0.0	0.0	0.0	12515.1	434.5
0.0	0.0	0.0	20374.0	572.7
0.0	0.0	0.0	23737.8	630.0
0.0	0.0	0.0	12504.9	434.8
0.0	0.0	0.0	20356.2	573.1
0.0	0.0	0.0	23717.1	630.4
0.0	0.0	0.0	11948.1	427.7
0.0	0.0	0.0	20269.6	571.3
0.0	0.0	0.0	23616.2	628.4
0.0	0.0	0.0	11857.6	424.7
0.0	0.0	0.0	20119.2	567.4
0.0	0.0	0.0	23441.0	624.1
0.0	0.0	0.0	12237.0	426.3
0.0	0.0	0.0	19911.0	561.7

0.0	0.0	0.0	23198.4	617.9
0.0	0.0	0.0	670.1	8.2
0.0	0.0	0.0	920.6	10.4
0.0	0.0	0.0	1042.9	11.4
0.0	0.0	0.0	676.6	8.8
0.0	0.0	0.0	1020.1	11.8
0.0	0.0	0.0	1155.6	13.0
0.0	0.0	0.0	822.8	10.6
0.0	0.0	0.0	1131.9	13.4
0.0	0.0	0.0	1282.3	14.8
0.0	0.0	0.0	835.6	11.4
0.0	0.0	0.0	1258.1	15.4
0.0	0.0	0.0	1425.2	16.9
0.0	0.0	0.0	1016.4	13.8
0.0	0.0	0.0	1400.3	17.6
0.0	0.0	0.0	1586.4	19.3
0.0	0.0	0.0	1128.3	15.7
0.0	0.0	0.0	1555.5	20.0
0.0	0.0	0.0	1762.1	22.0
0.0	0.0	0.0	1248.4	17.8
0.0	0.0	0.0	1722.2	22.7
0.0	0.0	0.0	1950.9	24.9
0.0	0.0	0.0	1263.7	19.0
0.0	0.0	0.0	1897.9	25.5
0.0	0.0	0.0	2150.0	28.1
0.0	0.0	0.0	1386.3	21.3
0.0	0.0	0.0	2081.0	28.5
0.0	0.0	0.0	2357.4	31.4
0.0	0.0	0.0	1643.2	24.9
0.0	0.0	0.0	2272.2	31.8
0.0	0.0	0.0	2574.0	34.9
0.0	0.0	0.0	1788.7	27.7
0.0	0.0	0.0	2476.6	35.3
0.0	0.0	0.0	2805.5	38.8
0.0	0.0	0.0	1801.4	29.3
0.0	0.0	0.0	2695.6	39.2
0.0	0.0	0.0	3053.6	43.1
0.0	0.0	0.0	1953.2	32.4
0.0	0.0	0.0	2923.0	43.3
0.0	0.0	0.0	3311.3	47.6
0.0	0.0	0.0	2072.2	34.8
0.0	0.0	0.0	3143.9	47.4
0.0	0.0	0.0	3561.6	52.1
0.0	0.0	0.0	2234.6	38.3
0.0	0.0	0.0	3344.9	51.3
0.0	0.0	0.0	3789.3	56.4
0.0	0.0	0.0	2347.5	40.8
0.0	0.0	0.0	3514.1	54.6
0.0	0.0	0.0	3981.0	60.1
0.0	0.0	0.0	2412.7	42.4
0.0	0.0	0.0	3659.5	57.6
0.0	0.0	0.0	4145.8	63.4
0.0	0.0	0.0	2497.9	44.3
0.0	0.0	0.0	3788.5	60.3
0.0	0.0	0.0	4292.0	66.3
0.0	0.0	0.0	2575.0	46.1
0.0	0.0	0.0	3905.3	62.7
0.0	0.0	0.0	4424.2	69.0
0.0	0.0	0.0	2811.4	50.2
0.0	0.0	0.0	4011.4	65.0
0.0	0.0	0.0	4544.5	71.5

0.0	0.0	0.0	2878.4	51.8
0.0	0.0	0.0	4107.9	67.1
0.0	0.0	0.0	4653.8	73.8
0.0	0.0	0.0	2938.8	53.2
0.0	0.0	0.0	4194.8	68.9
0.0	0.0	0.0	4752.3	75.9
0.0	0.0	0.0	2818.9	52.0
0.0	0.0	0.0	4272.0	70.7
0.0	0.0	0.0	4839.8	77.7
0.0	0.0	0.0	3039.4	55.7
0.0	0.0	0.0	4339.2	72.2
0.0	0.0	0.0	4915.9	79.4
0.0	0.0	0.0	2901.3	54.1
0.0	0.0	0.0	4396.2	73.5
0.0	0.0	0.0	4980.5	80.8
0.0	0.0	0.0	3111.6	57.6
0.0	0.0	0.0	4442.8	74.6
0.0	0.0	0.0	5033.2	82.1
0.0	0.0	0.0	3137.1	58.3
0.0	0.0	0.0	4479.0	75.5
0.0	0.0	0.0	5074.3	83.1
0.0	0.0	0.0	3155.6	58.8
0.0	0.0	0.0	4505.1	76.2
0.0	0.0	0.0	5103.9	83.9
0.0	0.0	0.0	2983.7	56.5
0.0	0.0	0.0	4521.7	76.7
0.0	0.0	0.0	5122.6	84.4
0.0	0.0	0.0	3173.2	59.5
0.0	0.0	0.0	4529.3	77.1
0.0	0.0	0.0	5131.3	84.8

Commercial SH Hybrid	Commercial SH Resistance	Residential Clothes Drying	Residential Cooking	Residential Cooling Demand
0.0	2523.5	97.3	86.2	0.0
0.0	3207.8	92.5	86.4	0.0
0.0	3528.9	67.8	88.7	0.0
0.0	2286.2	70.9	94.2	0.0
0.0	3068.3	95.9	91.0	0.0
0.0	3375.5	70.2	93.4	0.0
0.0	2281.6	104.2	95.3	0.0
0.0	2911.3	99.5	95.9	0.0
0.0	3202.8	72.9	98.5	0.0
0.0	2014.0	120.0	106.1	0.0
0.0	2736.9	103.4	101.3	0.0
0.0	3011.0	75.7	104.0	0.0
0.0	1873.6	124.8	112.2	0.0
0.0	2545.9	107.5	107.1	0.0
0.0	2800.8	78.7	109.9	0.0
0.0	1722.3	129.8	118.7	0.0
0.0	2340.1	111.8	113.3	0.0
0.0	2574.4	81.9	116.3	0.0
0.0	1637.8	119.9	121.8	0.0
0.0	2123.9	116.2	119.8	0.0
0.0	2336.6	85.1	123.0	0.0
0.0	1404.4	140.6	132.9	0.0
0.0	1903.5	120.7	126.5	0.0
0.0	2094.2	88.4	129.9	0.0
0.0	1244.9	145.9	140.1	0.0
0.0	1685.5	125.2	133.2	0.0
0.0	1854.4	91.7	136.8	0.0
0.0	1132.2	133.2	141.8	0.0
0.0	1474.1	129.6	140.0	0.0
0.0	1621.8	94.9	143.8	0.0
0.0	981.7	137.3	148.5	0.0
0.0	1280.2	133.9	146.8	0.0
0.0	1408.5	98.1	150.8	0.0
0.0	816.6	161.8	162.4	0.0
0.0	1100.3	138.1	153.7	0.0
0.0	1210.6	101.2	157.8	0.0
0.0	692.4	166.9	169.9	0.0
0.0	931.6	142.3	160.6	0.0
0.0	1024.9	104.2	164.9	0.0
0.0	577.3	171.8	177.2	0.0
0.0	775.8	146.3	167.2	0.0
0.0	853.5	107.2	171.7	0.0
0.0	474.7	176.4	182.7	0.0
0.0	637.3	150.0	172.2	0.0
0.0	701.2	109.9	176.8	0.0
0.0	394.7	156.4	176.3	0.0
0.0	517.7	153.3	175.4	0.0
0.0	569.6	112.3	180.1	0.0
0.0	316.1	159.3	179.1	0.0
0.0	414.8	156.3	178.3	0.0
0.0	456.4	114.5	183.1	0.0
0.0	243.3	187.2	192.3	0.0
0.0	326.1	158.9	181.0	0.0
0.0	358.8	116.4	185.8	0.0

0.0	190.1	164.3	184.2	0.0
0.0	249.7	161.3	183.5	0.0
0.0	274.7	118.2	188.4	0.0
0.0	140.5	166.5	186.5	0.0
0.0	184.6	163.5	185.8	0.0
0.0	203.1	119.8	190.8	0.0
0.0	97.4	195.1	199.9	0.0
0.0	130.4	165.5	188.0	0.0
0.0	143.5	121.2	193.1	0.0
0.0	65.9	170.3	190.7	0.0
0.0	86.6	167.3	190.1	0.0
0.0	95.3	122.5	195.2	0.0
0.0	40.2	171.8	192.6	0.0
0.0	52.8	168.8	192.0	0.0
0.0	58.1	123.7	197.2	0.0
0.0	21.2	200.7	206.2	0.0
0.0	28.3	170.2	193.8	0.0
0.0	31.2	124.7	199.0	0.0
0.0	9.2	174.5	196.0	0.0
0.0	12.1	171.5	195.4	0.0
0.0	13.3	125.6	200.7	0.0
0.0	2.0	203.4	209.5	0.0
0.0	2.6	172.5	196.9	0.0
0.0	2.9	126.4	202.2	0.0
0.0	0.0	176.5	198.8	0.0
0.0	0.0	173.5	198.2	0.0
0.0	0.0	127.1	203.6	0.0
0.0	0.0	205.5	212.1	0.0
0.0	0.0	174.3	199.4	0.0
0.0	0.0	127.7	204.8	0.0
0.0	0.0	178.2	201.1	0.0
0.0	0.0	175.0	200.5	0.0
0.0	0.0	128.2	205.9	0.0
0.0	0.0	178.9	202.1	0.0
0.0	0.0	175.7	201.4	0.0
0.0	0.0	128.7	206.8	0.0
8.0	2611.1	57.9	70.1	0.0
7.6	3527.5	78.9	68.1	0.0
7.2	3880.4	57.8	69.9	0.0
11.9	2541.1	58.3	70.6	0.0
11.2	3432.2	79.5	68.6	0.0
10.7	3775.6	58.2	70.4	0.0
16.7	2465.9	58.7	71.1	0.0
15.8	3329.9	80.0	69.1	0.0
15.0	3663.0	58.6	70.9	0.0
22.5	2385.4	59.1	71.6	0.0
21.2	3220.7	80.5	69.5	0.0
20.1	3542.9	59.0	71.4	0.0
29.8	2452.1	85.5	70.1	0.0
27.7	3105.2	81.0	70.0	0.0
26.3	3415.8	59.3	71.9	0.0
37.7	2356.3	85.9	70.5	0.0
35.0	2984.2	81.4	70.4	0.0
33.2	3282.6	59.6	72.3	0.0
46.5	2258.5	86.3	70.9	0.0
43.1	2860.3	81.8	70.8	0.0
40.9	3146.2	59.9	72.7	0.0
55.1	2027.2	60.3	73.3	0.0
51.9	2737.0	82.1	71.2	0.0
49.3	3010.5	60.1	73.1	0.0
66.2	2067.4	87.0	71.6	0.0

61.4	2617.9	82.4	71.5	0.0
58.3	2879.5	60.3	73.4	0.0
77.2	1978.8	87.2	71.9	0.0
71.6	2505.6	82.6	71.8	0.0
68.0	2755.9	60.5	73.7	0.0
87.9	1778.4	60.8	74.1	0.0
82.9	2401.8	82.8	72.0	0.0
78.7	2641.7	60.7	74.0	0.0
102.7	1822.2	87.6	72.4	0.0
95.3	2307.3	83.0	72.3	0.0
90.4	2537.8	60.8	74.2	0.0
116.8	1757.5	87.8	72.7	0.0
108.4	2225.7	83.2	72.6	0.0
102.9	2448.0	61.0	74.5	0.0
131.0	1708.4	88.0	72.9	0.0
121.5	2163.7	83.4	72.8	0.0
115.3	2379.7	61.1	74.8	0.0
142.1	1575.2	61.4	75.3	0.0
133.9	2126.8	83.6	73.1	0.0
127.0	2339.2	61.2	75.1	0.0
155.9	1668.0	88.5	73.5	0.0
144.7	2112.8	83.8	73.4	0.0
137.3	2323.7	61.4	75.3	0.0
166.1	1667.6	88.7	73.7	0.0
154.2	2112.4	84.1	73.6	0.0
146.3	2323.4	61.6	75.6	0.0
175.3	1671.4	88.9	74.0	0.0
162.8	2117.3	84.3	73.9	0.0
154.4	2328.7	61.7	75.8	0.0
183.7	1676.0	89.1	74.2	0.0
170.6	2123.3	84.5	74.1	0.0
161.8	2335.3	61.9	76.1	0.0
191.4	1680.4	89.4	74.4	0.0
177.7	2129.1	84.7	74.4	0.0
168.6	2341.7	62.0	76.3	0.0
198.4	1684.8	89.6	74.7	0.0
184.3	2134.8	84.9	74.6	0.0
174.8	2348.0	62.2	76.6	0.0
204.8	1688.9	89.8	74.9	0.0
190.2	2140.4	85.2	74.9	0.0
180.5	2354.1	62.4	76.9	0.0
210.6	1693.0	90.1	75.2	0.0
195.6	2145.8	85.4	75.1	0.0
185.6	2360.0	62.6	77.1	0.0
212.8	1594.5	63.0	77.6	0.0
200.3	2151.2	85.7	75.4	0.0
190.1	2366.0	62.8	77.4	0.0
220.1	1701.3	90.6	75.6	0.0
204.5	2156.8	86.0	75.6	0.0
194.0	2372.1	63.0	77.6	0.0
223.8	1705.6	90.9	75.9	0.0
207.9	2162.5	86.2	75.8	0.0
197.3	2378.4	63.1	77.9	0.0
226.9	1710.2	91.2	76.1	0.0
210.8	2168.4	86.5	76.1	0.0
200.0	2384.9	63.4	78.1	0.0
229.2	1715.0	91.5	76.3	0.0
213.0	2174.6	86.8	76.3	0.0
202.1	2391.8	63.6	78.4	0.0
228.0	1617.3	64.0	78.9	0.0
214.6	2181.2	87.1	76.6	0.0

203.6	2399.0	63.8	78.6	0.0
229.1	1622.3	64.2	79.2	0.0
215.6	2188.1	87.3	76.8	0.0
204.6	2406.5	64.0	78.9	0.0
0.0	2782.1	91.9	78.9	0.0
0.0	3527.3	87.2	78.8	0.0
0.0	3880.4	63.9	80.9	0.0
0.0	2547.7	66.0	84.3	0.0
0.0	3432.0	89.6	81.7	0.0
0.0	3775.6	65.6	83.9	0.0
0.0	2622.1	96.8	84.5	0.0
0.0	3329.6	92.0	84.6	0.0
0.0	3663.0	67.4	86.9	0.0
0.0	2394.4	69.5	90.4	0.0
0.0	3220.4	94.3	87.4	0.0
0.0	3542.9	69.1	89.8	0.0
0.0	2441.6	101.6	90.1	0.0
0.0	3104.9	96.6	90.3	0.0
0.0	3415.8	70.8	92.7	0.0
0.0	2345.1	103.9	92.8	0.0
0.0	2983.8	98.9	93.1	0.0
0.0	3282.7	72.5	95.6	0.0
0.0	2246.5	106.2	95.6	0.0
0.0	2859.8	101.1	95.9	0.0
0.0	3146.3	74.1	98.5	0.0
0.0	2148.9	108.4	98.2	0.0
0.0	2736.5	103.2	98.6	0.0
0.0	3010.6	75.6	101.3	0.0
0.0	2054.8	110.4	100.7	0.0
0.0	2617.4	105.2	101.2	0.0
0.0	2879.6	77.1	103.9	0.0
0.0	1966.2	112.3	103.1	0.0
0.0	2505.0	107.0	103.6	0.0
0.0	2756.0	78.4	106.3	0.0
0.0	1884.5	114.0	105.3	0.0
0.0	2401.2	108.7	105.8	0.0
0.0	2641.8	79.6	108.7	0.0
0.0	1810.2	115.7	107.4	0.0
0.0	2306.8	110.3	107.9	0.0
0.0	2537.9	80.8	110.8	0.0
0.0	1746.0	117.2	109.3	0.0
0.0	2225.1	111.7	109.9	0.0
0.0	2448.0	81.8	112.8	0.0
0.0	1697.4	118.4	110.9	0.0
0.0	2163.1	112.9	111.5	0.0
0.0	2379.8	82.7	114.5	0.0
0.0	1668.6	119.3	112.1	0.0
0.0	2126.3	113.8	112.6	0.0
0.0	2339.3	83.3	115.6	0.0
0.0	1657.7	119.9	112.8	0.0
0.0	2112.2	114.3	113.4	0.0
0.0	2323.8	83.7	116.4	0.0
0.0	1574.2	84.8	118.0	0.0
0.0	2111.9	114.7	113.9	0.0
0.0	2323.4	84.0	116.9	0.0
0.0	1577.6	85.0	118.4	0.0
0.0	2116.8	115.0	114.3	0.0
0.0	2328.8	84.2	117.4	0.0
0.0	1666.7	121.0	114.2	0.0
0.0	2122.7	115.3	114.7	0.0
0.0	2335.3	84.5	117.8	0.0

0.0	1671.6	121.3	114.6	0.0
0.0	2128.6	115.6	115.1	0.0
0.0	2341.8	84.7	118.1	0.0
0.0	1676.4	121.7	115.0	0.0
0.0	2134.3	115.9	115.4	0.0
0.0	2348.0	84.9	118.5	0.0
0.0	1681.0	122.1	115.4	0.0
0.0	2139.8	116.3	115.8	0.0
0.0	2354.1	85.2	118.9	0.0
0.0	1597.3	86.1	120.3	0.0
0.0	2145.3	116.6	116.2	0.0
0.0	2360.1	85.4	119.3	0.0
0.0	1690.2	122.8	116.2	0.0
0.0	2150.7	116.9	116.6	0.0
0.0	2366.1	85.7	119.7	0.0
0.0	1694.8	123.2	116.6	0.0
0.0	2156.3	117.3	117.0	0.0
0.0	2372.2	85.9	120.1	0.0
0.0	1608.8	86.8	121.4	0.0
0.0	2162.0	117.7	117.3	0.0
0.0	2378.4	86.2	120.5	0.0
0.0	1613.0	87.1	121.8	0.0
0.0	2167.9	118.0	117.7	0.0
0.0	2385.0	86.5	120.9	0.0
0.0	1617.3	87.4	122.1	0.0
0.0	2174.2	118.4	118.1	0.0
0.0	2391.8	86.8	121.3	0.0
0.0	1715.4	124.9	118.2	0.0
0.0	2180.7	118.8	118.5	0.0
0.0	2399.0	87.0	121.7	0.0
0.0	1721.2	125.3	118.6	0.0
0.0	2187.6	119.2	118.9	0.0
0.0	2406.6	87.3	122.0	0.0
0.0	2514.3	96.9	85.9	0.0
0.0	3208.2	92.5	86.4	0.0
0.0	3529.0	67.8	88.7	0.0
0.0	2292.8	71.1	94.5	0.0
0.0	3068.7	95.9	91.0	0.0
0.0	3375.5	70.3	93.4	0.0
0.0	2140.2	115.5	100.4	0.0
0.0	2911.8	99.5	95.9	0.0
0.0	3202.9	72.9	98.5	0.0
0.0	2011.9	119.9	106.0	0.0
0.0	2737.4	103.4	101.3	0.0
0.0	3011.0	75.7	104.0	0.0
0.0	1968.0	111.1	109.1	0.0
0.0	2546.3	107.5	107.1	0.0
0.0	2800.9	78.7	110.0	0.0
0.0	1806.3	115.4	115.3	0.0
0.0	2340.5	111.8	113.3	0.0
0.0	2574.5	81.9	116.3	0.0
0.0	1637.3	119.9	121.7	0.0
0.0	2124.3	116.2	119.8	0.0
0.0	2336.6	85.1	123.0	0.0
0.0	1465.5	124.3	128.4	0.0
0.0	1904.0	120.7	126.5	0.0
0.0	2094.2	88.4	129.9	0.0
0.0	1296.2	128.8	135.1	0.0
0.0	1685.9	125.2	133.3	0.0
0.0	1854.4	91.7	136.8	0.0
0.0	1131.6	133.1	141.7	0.0

0.0	1474.5	129.6	140.1	0.0
0.0	1621.9	94.9	143.8	0.0
0.0	980.9	137.2	148.3	0.0
0.0	1280.6	133.9	146.9	0.0
0.0	1408.6	98.1	150.8	0.0
0.0	841.6	141.3	155.0	0.0
0.0	1100.6	138.2	153.7	0.0
0.0	1210.6	101.2	157.8	0.0
0.0	693.3	167.1	170.2	0.0
0.0	931.8	142.3	160.6	0.0
0.0	1025.0	104.3	164.9	0.0
0.0	578.2	172.1	177.5	0.0
0.0	776.0	146.4	167.3	0.0
0.0	853.6	107.2	171.7	0.0
0.0	475.5	176.7	183.0	0.0
0.0	637.5	150.1	172.3	0.0
0.0	701.2	109.9	176.8	0.0
0.0	386.6	180.7	186.5	0.0
0.0	517.8	153.4	175.4	0.0
0.0	569.6	112.4	180.1	0.0
0.0	310.0	184.4	189.7	0.0
0.0	415.0	156.3	178.3	0.0
0.0	456.5	114.5	183.1	0.0
0.0	247.8	161.6	181.3	0.0
0.0	326.2	159.0	181.0	0.0
0.0	358.8	116.5	185.8	0.0
0.0	186.8	190.5	195.4	0.0
0.0	249.7	161.4	183.5	0.0
0.0	274.7	118.2	188.4	0.0
0.0	138.2	193.2	198.0	0.0
0.0	184.7	163.6	185.8	0.0
0.0	203.1	119.8	190.8	0.0
0.0	99.0	168.1	188.2	0.0
0.0	130.4	165.5	188.0	0.0
0.0	143.5	121.3	193.1	0.0
0.0	64.8	197.7	202.7	0.0
0.0	86.6	167.3	190.1	0.0
0.0	95.3	122.6	195.2	0.0
0.0	39.5	199.6	204.7	0.0
0.0	52.8	168.9	192.0	0.0
0.0	58.1	123.7	197.2	0.0
0.0	21.2	201.2	206.7	0.0
0.0	28.3	170.3	193.8	0.0
0.0	31.2	124.7	199.0	0.0
0.0	9.2	174.1	195.5	0.0
0.0	12.1	171.5	195.5	0.0
0.0	13.3	125.6	200.7	0.0
0.0	2.0	175.1	197.0	0.0
0.0	2.6	172.6	197.0	0.0
0.0	2.9	126.4	202.2	0.0
0.0	0.0	176.1	198.4	0.0
0.0	0.0	173.5	198.3	0.0
0.0	0.0	127.1	203.6	0.0
0.0	0.0	206.0	212.7	0.0
0.0	0.0	174.3	199.5	0.0
0.0	0.0	127.7	204.8	0.0
0.0	0.0	206.8	213.7	0.0
0.0	0.0	175.1	200.5	0.0
0.0	0.0	128.2	205.9	0.0
0.0	0.0	178.5	201.6	0.0
0.0	0.0	175.8	201.4	0.0

0.0	0.0	128.8	206.8	0.0
8.1	2784.2	97.6	86.5	0.0
7.6	3527.5	92.5	86.4	0.0
7.2	3880.5	67.8	88.7	0.0
11.9	2545.4	70.5	93.8	0.0
11.2	3432.2	95.9	91.0	0.0
10.7	3775.6	70.2	93.4	0.0
16.9	2624.8	104.9	95.9	0.0
15.8	3329.9	99.5	95.9	0.0
15.0	3663.1	72.9	98.5	0.0
22.6	2391.8	76.1	104.5	0.0
21.2	3220.7	103.4	101.3	0.0
20.1	3543.0	75.7	104.0	0.0
29.7	2444.2	113.1	106.9	0.0
27.7	3105.2	107.5	107.1	0.0
26.3	3415.9	78.7	110.0	0.0
37.6	2347.3	117.5	113.0	0.0
35.0	2984.2	111.8	113.3	0.0
33.2	3282.8	81.9	116.3	0.0
46.3	2248.4	122.1	119.4	0.0
43.1	2860.2	116.2	119.8	0.0
40.9	3146.4	85.1	123.0	0.0
55.4	2037.7	89.1	130.9	0.0
51.9	2736.9	120.7	126.5	0.0
49.3	3010.7	88.4	129.9	0.0
65.6	1950.0	92.5	138.0	0.0
61.4	2617.9	125.2	133.3	0.0
58.3	2879.7	91.7	136.8	0.0
76.7	1964.9	135.9	139.3	0.0
71.6	2505.5	129.6	140.1	0.0
68.0	2756.1	94.9	143.8	0.0
88.6	1881.0	140.2	145.9	0.0
82.9	2401.6	133.9	146.9	0.0
78.7	2641.9	98.1	150.8	0.0
102.0	1724.0	102.4	159.7	0.0
95.3	2307.2	138.1	153.7	0.0
90.4	2538.0	101.2	157.8	0.0
116.1	1662.8	105.5	166.8	0.0
108.4	2225.4	142.3	160.6	0.0
102.9	2448.1	104.3	164.9	0.0
127.3	1590.4	169.8	175.1	0.0
121.5	2163.4	146.4	167.3	0.0
115.3	2379.9	107.2	171.8	0.0
143.3	1588.6	111.2	178.9	0.0
133.9	2126.6	150.1	172.2	0.0
127.1	2339.4	109.9	176.9	0.0
154.8	1577.9	113.6	182.2	0.0
144.7	2112.5	153.4	175.4	0.0
137.3	2323.9	112.4	180.1	0.0
161.5	1553.1	181.4	186.7	0.0
154.2	2112.2	156.3	178.3	0.0
146.3	2323.6	114.5	183.1	0.0
170.5	1556.8	184.5	189.6	0.0
162.7	2117.0	159.0	181.0	0.0
154.4	2328.9	116.5	185.9	0.0
178.6	1561.3	187.3	192.2	0.0
170.5	2123.0	161.4	183.5	0.0
161.8	2335.5	118.2	188.4	0.0
191.6	1644.0	169.0	189.2	0.0
177.7	2128.8	163.6	185.8	0.0
168.6	2341.9	119.8	190.8	0.0

198.6	1648.1	171.0	191.4	0.0
184.2	2134.5	165.5	188.0	0.0
174.8	2348.2	121.3	193.1	0.0
205.0	1652.1	172.8	193.5	0.0
190.2	2140.0	167.3	190.1	0.0
180.5	2354.3	122.6	195.2	0.0
205.0	1579.0	196.2	201.3	0.0
195.6	2145.5	168.9	192.0	0.0
185.6	2360.3	123.7	197.2	0.0
215.9	1660.1	175.8	197.2	0.0
200.3	2150.9	170.3	193.8	0.0
190.1	2366.2	124.7	199.0	0.0
214.3	1587.3	199.2	204.9	0.0
204.4	2156.4	171.5	195.5	0.0
194.0	2372.3	125.6	200.7	0.0
224.0	1668.6	178.2	200.4	0.0
207.9	2162.1	172.6	196.9	0.0
197.3	2378.6	126.4	202.2	0.0
227.1	1673.2	179.1	201.8	0.0
210.7	2168.1	173.5	198.3	0.0
200.0	2385.1	127.1	203.6	0.0
229.5	1678.1	180.0	203.0	0.0
212.9	2174.3	174.3	199.5	0.0
202.1	2392.0	127.7	204.8	0.0
224.9	1605.0	203.4	210.2	0.0
214.5	2180.9	175.1	200.5	0.0
203.6	2399.2	128.3	205.9	0.0
232.4	1688.9	181.5	205.0	0.0
215.6	2187.7	175.8	201.4	0.0
204.6	2406.8	128.8	206.8	0.0

Residential HPWH	Residential Resistance WH	Residential SC All Electric ASHP	Residential SC Ground Source HP	Residential SC Hybrid
81.4	580.6	0.0	0.0	0.0
137.5	980.2	0.0	0.0	0.0
137.3	979.0	0.0	0.0	0.0
186.3	936.7	0.0	0.0	0.0
185.7	932.8	0.0	0.0	0.0
185.4	931.7	0.0	0.0	0.0
140.1	521.9	0.0	0.0	0.0
237.4	884.4	0.0	0.0	0.0
237.1	883.2	0.0	0.0	0.0
313.6	900.1	0.0	0.0	0.0
291.3	837.5	0.0	0.0	0.0
291.0	836.5	0.0	0.0	0.0
372.3	854.7	0.0	0.0	0.0
345.8	795.2	0.0	0.0	0.0
345.4	794.3	0.0	0.0	0.0
429.1	816.2	0.0	0.0	0.0
398.6	759.3	0.0	0.0	0.0
398.1	758.4	0.0	0.0	0.0
300.1	487.6	0.0	0.0	0.0
449.0	730.6	0.0	0.0	0.0
448.5	729.7	0.0	0.0	0.0
536.2	763.7	0.0	0.0	0.0
496.8	708.8	0.0	0.0	0.0
496.2	707.9	0.0	0.0	0.0
585.6	747.3	0.0	0.0	0.0
542.0	692.8	0.0	0.0	0.0
541.3	692.0	0.0	0.0	0.0
407.7	410.1	0.0	0.0	0.0
612.5	616.9	0.0	0.0	0.0
611.8	616.1	0.0	0.0	0.0
454.7	356.4	0.0	0.0	0.0
684.2	537.0	0.0	0.0	0.0
683.4	536.4	0.0	0.0	0.0
820.4	494.6	0.0	0.0	0.0
755.6	456.3	0.0	0.0	0.0
754.7	455.8	0.0	0.0	0.0
895.7	413.5	0.0	0.0	0.0
823.8	381.0	0.0	0.0	0.0
822.8	380.5	0.0	0.0	0.0
966.7	339.9	0.0	0.0	0.0
888.0	312.8	0.0	0.0	0.0
887.0	312.4	0.0	0.0	0.0
1033.5	273.4	0.0	0.0	0.0
948.5	251.3	0.0	0.0	0.0
947.4	251.0	0.0	0.0	0.0
662.0	129.7	0.0	0.0	0.0
1001.9	196.5	0.0	0.0	0.0
1000.8	196.3	0.0	0.0	0.0
692.4	98.1	0.0	0.0	0.0
1048.5	148.8	0.0	0.0	0.0
1047.3	148.6	0.0	0.0	0.0
1188.0	118.3	0.0	0.0	0.0
1088.3	108.5	0.0	0.0	0.0
1087.1	108.4	0.0	0.0	0.0

740.1	50.1	0.0	0.0	0.0
1121.7	76.0	0.0	0.0	0.0
1120.4	75.9	0.0	0.0	0.0
757.8	33.5	0.0	0.0	0.0
1148.9	50.8	0.0	0.0	0.0
1147.6	50.8	0.0	0.0	0.0
1278.6	35.3	0.0	0.0	0.0
1170.4	32.3	0.0	0.0	0.0
1169.1	32.3	0.0	0.0	0.0
782.5	12.8	0.0	0.0	0.0
1186.7	19.4	0.0	0.0	0.0
1185.4	19.4	0.0	0.0	0.0
790.3	7.1	0.0	0.0	0.0
1198.6	10.8	0.0	0.0	0.0
1197.3	10.8	0.0	0.0	0.0
1319.2	5.8	0.0	0.0	0.0
1207.0	5.3	0.0	0.0	0.0
1205.7	5.3	0.0	0.0	0.0
799.6	1.4	0.0	0.0	0.0
1212.9	2.1	0.0	0.0	0.0
1211.6	2.1	0.0	0.0	0.0
1330.2	0.3	0.0	0.0	0.0
1217.1	0.3	0.0	0.0	0.0
1215.7	0.3	0.0	0.0	0.0
804.4	0.0	0.0	0.0	0.0
1220.2	0.0	0.0	0.0	0.0
1218.8	0.0	0.0	0.0	0.0
1336.0	0.0	0.0	0.0	0.0
1222.6	0.0	0.0	0.0	0.0
1221.2	0.0	0.0	0.0	0.0
807.6	0.0	0.0	0.0	0.0
1224.7	0.0	0.0	0.0	0.0
1223.4	0.0	0.0	0.0	0.0
809.1	0.0	0.0	0.0	0.0
1226.8	0.0	0.0	0.0	0.0
1225.4	0.0	0.0	0.0	0.0
137.1	977.9	0.0	0.0	0.0
137.5	980.3	0.0	0.0	0.0
137.3	979.0	0.0	0.0	0.0
185.2	930.8	0.0	0.0	0.0
185.7	932.9	0.0	0.0	0.0
185.4	931.7	0.0	0.0	0.0
236.9	882.6	0.0	0.0	0.0
237.5	884.4	0.0	0.0	0.0
237.1	883.2	0.0	0.0	0.0
290.7	836.1	0.0	0.0	0.0
291.3	837.6	0.0	0.0	0.0
291.0	836.5	0.0	0.0	0.0
205.6	472.9	0.0	0.0	0.0
345.8	795.3	0.0	0.0	0.0
345.3	794.3	0.0	0.0	0.0
237.0	451.5	0.0	0.0	0.0
398.6	759.4	0.0	0.0	0.0
398.1	758.4	0.0	0.0	0.0
267.0	434.5	0.0	0.0	0.0
449.1	730.7	0.0	0.0	0.0
448.5	729.7	0.0	0.0	0.0
495.8	707.6	0.0	0.0	0.0
496.9	708.9	0.0	0.0	0.0
496.2	707.9	0.0	0.0	0.0
322.4	412.1	0.0	0.0	0.0

542.1	693.0	0.0	0.0	0.0
541.3	692.0	0.0	0.0	0.0
347.8	405.4	0.0	0.0	0.0
584.8	681.7	0.0	0.0	0.0
584.0	680.7	0.0	0.0	0.0
623.8	672.7	0.0	0.0	0.0
625.4	674.2	0.0	0.0	0.0
624.5	673.2	0.0	0.0	0.0
394.9	398.2	0.0	0.0	0.0
664.0	669.6	0.0	0.0	0.0
663.1	668.7	0.0	0.0	0.0
416.7	396.8	0.0	0.0	0.0
700.8	667.3	0.0	0.0	0.0
699.8	666.4	0.0	0.0	0.0
437.6	396.3	0.0	0.0	0.0
736.1	666.5	0.0	0.0	0.0
734.9	665.5	0.0	0.0	0.0
768.2	665.4	0.0	0.0	0.0
770.0	666.7	0.0	0.0	0.0
768.8	665.7	0.0	0.0	0.0
475.3	396.9	0.0	0.0	0.0
799.5	667.6	0.0	0.0	0.0
798.3	666.6	0.0	0.0	0.0
490.3	397.7	0.0	0.0	0.0
824.9	669.0	0.0	0.0	0.0
823.6	668.0	0.0	0.0	0.0
503.2	398.7	0.0	0.0	0.0
846.6	670.8	0.0	0.0	0.0
845.3	669.8	0.0	0.0	0.0
514.1	400.0	0.0	0.0	0.0
865.1	673.0	0.0	0.0	0.0
863.7	672.0	0.0	0.0	0.0
523.2	401.3	0.0	0.0	0.0
880.4	675.3	0.0	0.0	0.0
879.1	674.3	0.0	0.0	0.0
530.6	402.8	0.0	0.0	0.0
892.9	677.8	0.0	0.0	0.0
891.5	676.7	0.0	0.0	0.0
536.3	404.2	0.0	0.0	0.0
902.6	680.3	0.0	0.0	0.0
901.2	679.3	0.0	0.0	0.0
540.5	405.7	0.0	0.0	0.0
909.7	682.8	0.0	0.0	0.0
908.3	681.8	0.0	0.0	0.0
913.3	684.5	0.0	0.0	0.0
914.7	685.3	0.0	0.0	0.0
913.4	684.2	0.0	0.0	0.0
545.4	408.5	0.0	0.0	0.0
918.2	687.7	0.0	0.0	0.0
916.8	686.6	0.0	0.0	0.0
546.8	409.8	0.0	0.0	0.0
920.6	690.0	0.0	0.0	0.0
919.2	688.9	0.0	0.0	0.0
547.7	411.1	0.0	0.0	0.0
922.3	692.2	0.0	0.0	0.0
920.9	691.1	0.0	0.0	0.0
548.5	412.3	0.0	0.0	0.0
923.6	694.3	0.0	0.0	0.0
922.2	693.3	0.0	0.0	0.0
923.7	695.9	0.0	0.0	0.0
924.8	696.5	0.0	0.0	0.0

923.4	695.4	0.0	0.0	0.0
924.8	698.0	0.0	0.0	0.0
925.9	698.6	0.0	0.0	0.0
924.5	697.5	0.0	0.0	0.0
55.5	582.2	0.0	0.0	0.0
93.5	980.2	0.0	0.0	0.0
93.4	979.0	0.0	0.0	0.0
120.9	933.2	0.0	0.0	0.0
120.9	932.8	0.0	0.0	0.0
120.7	931.7	0.0	0.0	0.0
88.1	524.4	0.0	0.0	0.0
148.6	884.3	0.0	0.0	0.0
148.4	883.2	0.0	0.0	0.0
175.6	839.2	0.0	0.0	0.0
175.3	837.5	0.0	0.0	0.0
175.1	836.5	0.0	0.0	0.0
118.4	470.9	0.0	0.0	0.0
200.0	795.2	0.0	0.0	0.0
199.7	794.3	0.0	0.0	0.0
131.0	449.4	0.0	0.0	0.0
221.4	759.3	0.0	0.0	0.0
221.1	758.4	0.0	0.0	0.0
141.5	432.2	0.0	0.0	0.0
239.2	730.6	0.0	0.0	0.0
238.9	729.7	0.0	0.0	0.0
149.9	419.1	0.0	0.0	0.0
253.5	708.8	0.0	0.0	0.0
253.1	707.9	0.0	0.0	0.0
156.3	409.6	0.0	0.0	0.0
264.4	692.8	0.0	0.0	0.0
264.0	692.0	0.0	0.0	0.0
161.0	402.8	0.0	0.0	0.0
272.4	681.5	0.0	0.0	0.0
272.1	680.7	0.0	0.0	0.0
164.4	398.3	0.0	0.0	0.0
278.1	674.0	0.0	0.0	0.0
277.8	673.2	0.0	0.0	0.0
166.6	395.6	0.0	0.0	0.0
281.9	669.5	0.0	0.0	0.0
281.6	668.7	0.0	0.0	0.0
168.0	394.2	0.0	0.0	0.0
284.3	667.2	0.0	0.0	0.0
284.0	666.4	0.0	0.0	0.0
168.9	393.7	0.0	0.0	0.0
285.8	666.4	0.0	0.0	0.0
285.5	665.5	0.0	0.0	0.0
169.5	393.8	0.0	0.0	0.0
286.8	666.5	0.0	0.0	0.0
286.5	665.7	0.0	0.0	0.0
170.0	394.4	0.0	0.0	0.0
287.7	667.4	0.0	0.0	0.0
287.3	666.6	0.0	0.0	0.0
289.7	671.9	0.0	0.0	0.0
288.5	668.8	0.0	0.0	0.0
288.1	668.0	0.0	0.0	0.0
290.5	673.6	0.0	0.0	0.0
289.4	670.7	0.0	0.0	0.0
289.0	669.8	0.0	0.0	0.0
171.6	397.8	0.0	0.0	0.0
290.3	672.8	0.0	0.0	0.0
290.0	672.0	0.0	0.0	0.0

172.3	399.2	0.0	0.0	0.0
291.3	675.1	0.0	0.0	0.0
291.0	674.3	0.0	0.0	0.0
172.9	400.8	0.0	0.0	0.0
292.4	677.6	0.0	0.0	0.0
292.0	676.8	0.0	0.0	0.0
173.6	402.3	0.0	0.0	0.0
293.5	680.1	0.0	0.0	0.0
293.1	679.3	0.0	0.0	0.0
295.5	685.0	0.0	0.0	0.0
294.6	682.7	0.0	0.0	0.0
294.2	681.8	0.0	0.0	0.0
175.0	405.4	0.0	0.0	0.0
295.7	685.1	0.0	0.0	0.0
295.3	684.3	0.0	0.0	0.0
175.6	406.9	0.0	0.0	0.0
296.7	687.5	0.0	0.0	0.0
296.3	686.6	0.0	0.0	0.0
298.4	691.8	0.0	0.0	0.0
297.7	689.8	0.0	0.0	0.0
297.3	688.9	0.0	0.0	0.0
299.3	693.9	0.0	0.0	0.0
298.6	692.0	0.0	0.0	0.0
298.3	691.2	0.0	0.0	0.0
300.2	695.9	0.0	0.0	0.0
299.6	694.2	0.0	0.0	0.0
299.2	693.3	0.0	0.0	0.0
178.0	412.4	0.0	0.0	0.0
300.5	696.3	0.0	0.0	0.0
300.1	695.4	0.0	0.0	0.0
178.6	413.8	0.0	0.0	0.0
301.4	698.5	0.0	0.0	0.0
301.0	697.6	0.0	0.0	0.0
81.1	578.5	0.0	0.0	0.0
137.5	980.3	0.0	0.0	0.0
137.3	979.0	0.0	0.0	0.0
186.9	939.4	0.0	0.0	0.0
185.7	933.0	0.0	0.0	0.0
185.4	931.7	0.0	0.0	0.0
255.3	949.5	0.0	0.0	0.0
237.5	884.5	0.0	0.0	0.0
237.1	883.3	0.0	0.0	0.0
313.3	899.2	0.0	0.0	0.0
291.4	837.7	0.0	0.0	0.0
291.0	836.5	0.0	0.0	0.0
231.6	532.0	0.0	0.0	0.0
345.8	795.4	0.0	0.0	0.0
345.4	794.3	0.0	0.0	0.0
266.6	507.3	0.0	0.0	0.0
398.7	759.5	0.0	0.0	0.0
398.1	758.4	0.0	0.0	0.0
300.0	487.5	0.0	0.0	0.0
449.1	730.8	0.0	0.0	0.0
448.5	729.7	0.0	0.0	0.0
331.5	472.3	0.0	0.0	0.0
496.9	708.9	0.0	0.0	0.0
496.2	707.9	0.0	0.0	0.0
361.2	461.1	0.0	0.0	0.0
542.1	693.0	0.0	0.0	0.0
541.3	692.0	0.0	0.0	0.0
407.5	409.8	0.0	0.0	0.0

612.7	617.0	0.0	0.0	0.0
611.8	616.1	0.0	0.0	0.0
454.3	356.1	0.0	0.0	0.0
684.4	537.1	0.0	0.0	0.0
683.4	536.4	0.0	0.0	0.0
500.8	302.1	0.0	0.0	0.0
755.8	456.5	0.0	0.0	0.0
754.7	455.8	0.0	0.0	0.0
896.9	414.1	0.0	0.0	0.0
824.0	381.1	0.0	0.0	0.0
822.9	380.5	0.0	0.0	0.0
968.2	340.5	0.0	0.0	0.0
888.3	312.9	0.0	0.0	0.0
887.0	312.4	0.0	0.0	0.0
1035.3	273.9	0.0	0.0	0.0
948.8	251.4	0.0	0.0	0.0
947.4	251.0	0.0	0.0	0.0
1094.6	214.3	0.0	0.0	0.0
1002.2	196.6	0.0	0.0	0.0
1000.8	196.3	0.0	0.0	0.0
1146.3	162.4	0.0	0.0	0.0
1048.8	148.8	0.0	0.0	0.0
1047.3	148.6	0.0	0.0	0.0
716.8	71.4	0.0	0.0	0.0
1088.7	108.6	0.0	0.0	0.0
1087.1	108.4	0.0	0.0	0.0
1227.6	83.0	0.0	0.0	0.0
1122.0	76.0	0.0	0.0	0.0
1120.4	75.9	0.0	0.0	0.0
1257.8	55.6	0.0	0.0	0.0
1149.2	50.9	0.0	0.0	0.0
1147.6	50.8	0.0	0.0	0.0
770.0	21.2	0.0	0.0	0.0
1170.7	32.3	0.0	0.0	0.0
1169.1	32.3	0.0	0.0	0.0
1299.9	21.2	0.0	0.0	0.0
1187.1	19.4	0.0	0.0	0.0
1185.4	19.4	0.0	0.0	0.0
1313.1	11.8	0.0	0.0	0.0
1199.0	10.8	0.0	0.0	0.0
1197.3	10.8	0.0	0.0	0.0
1322.5	5.8	0.0	0.0	0.0
1207.4	5.3	0.0	0.0	0.0
1205.7	5.3	0.0	0.0	0.0
797.6	1.4	0.0	0.0	0.0
1213.3	2.1	0.0	0.0	0.0
1211.6	2.1	0.0	0.0	0.0
800.4	0.2	0.0	0.0	0.0
1217.5	0.3	0.0	0.0	0.0
1215.8	0.3	0.0	0.0	0.0
802.5	0.0	0.0	0.0	0.0
1220.6	0.0	0.0	0.0	0.0
1218.8	0.0	0.0	0.0	0.0
1339.3	0.0	0.0	0.0	0.0
1223.0	0.0	0.0	0.0	0.0
1221.3	0.0	0.0	0.0	0.0
1341.5	0.0	0.0	0.0	0.0
1225.1	0.0	0.0	0.0	0.0
1223.4	0.0	0.0	0.0	0.0
807.2	0.0	0.0	0.0	0.0
1227.2	0.0	0.0	0.0	0.0

1225.5	0.0	0.0	0.0	0.0
81.7	582.6	0.0	0.0	0.0
137.5	980.3	0.0	0.0	0.0
137.3	979.0	0.0	0.0	0.0
185.5	932.4	0.0	0.0	0.0
185.7	932.9	0.0	0.0	0.0
185.4	931.7	0.0	0.0	0.0
140.9	524.9	0.0	0.0	0.0
237.4	884.4	0.0	0.0	0.0
237.1	883.3	0.0	0.0	0.0
291.5	838.3	0.0	0.0	0.0
291.3	837.6	0.0	0.0	0.0
291.0	836.5	0.0	0.0	0.0
205.0	471.4	0.0	0.0	0.0
345.8	795.3	0.0	0.0	0.0
345.4	794.3	0.0	0.0	0.0
236.1	449.8	0.0	0.0	0.0
398.6	759.4	0.0	0.0	0.0
398.1	758.4	0.0	0.0	0.0
265.8	432.5	0.0	0.0	0.0
449.1	730.7	0.0	0.0	0.0
448.5	729.8	0.0	0.0	0.0
498.4	711.3	0.0	0.0	0.0
496.9	708.9	0.0	0.0	0.0
496.2	708.0	0.0	0.0	0.0
544.0	695.6	0.0	0.0	0.0
542.1	693.0	0.0	0.0	0.0
541.4	692.0	0.0	0.0	0.0
361.8	364.3	0.0	0.0	0.0
612.6	617.0	0.0	0.0	0.0
611.8	616.2	0.0	0.0	0.0
403.6	316.8	0.0	0.0	0.0
684.4	537.1	0.0	0.0	0.0
683.5	536.4	0.0	0.0	0.0
760.8	459.6	0.0	0.0	0.0
755.8	456.4	0.0	0.0	0.0
754.8	455.8	0.0	0.0	0.0
829.4	383.7	0.0	0.0	0.0
824.0	381.1	0.0	0.0	0.0
822.9	380.6	0.0	0.0	0.0
955.2	335.9	0.0	0.0	0.0
888.2	312.9	0.0	0.0	0.0
887.1	312.5	0.0	0.0	0.0
954.7	253.1	0.0	0.0	0.0
948.7	251.4	0.0	0.0	0.0
947.5	251.1	0.0	0.0	0.0
1008.4	197.9	0.0	0.0	0.0
1002.2	196.6	0.0	0.0	0.0
1000.9	196.3	0.0	0.0	0.0
1128.2	159.8	0.0	0.0	0.0
1048.8	148.8	0.0	0.0	0.0
1047.4	148.6	0.0	0.0	0.0
1171.1	116.6	0.0	0.0	0.0
1088.6	108.5	0.0	0.0	0.0
1087.2	108.4	0.0	0.0	0.0
1207.0	81.6	0.0	0.0	0.0
1122.0	76.0	0.0	0.0	0.0
1120.5	75.9	0.0	0.0	0.0
769.1	34.0	0.0	0.0	0.0
1149.2	50.9	0.0	0.0	0.0
1147.7	50.8	0.0	0.0	0.0

783.3	21.6	0.0	0.0	0.0
1170.7	32.3	0.0	0.0	0.0
1169.2	32.3	0.0	0.0	0.0
794.2	13.0	0.0	0.0	0.0
1187.0	19.4	0.0	0.0	0.0
1185.5	19.4	0.0	0.0	0.0
1290.8	11.6	0.0	0.0	0.0
1199.0	10.8	0.0	0.0	0.0
1197.4	10.8	0.0	0.0	0.0
807.6	3.6	0.0	0.0	0.0
1207.4	5.3	0.0	0.0	0.0
1205.8	5.3	0.0	0.0	0.0
1306.4	2.3	0.0	0.0	0.0
1213.3	2.1	0.0	0.0	0.0
1211.7	2.1	0.0	0.0	0.0
814.2	0.2	0.0	0.0	0.0
1217.4	0.3	0.0	0.0	0.0
1215.9	0.3	0.0	0.0	0.0
816.3	0.0	0.0	0.0	0.0
1220.5	0.0	0.0	0.0	0.0
1218.9	0.0	0.0	0.0	0.0
818.0	0.0	0.0	0.0	0.0
1222.9	0.0	0.0	0.0	0.0
1221.4	0.0	0.0	0.0	0.0
1318.9	0.0	0.0	0.0	0.0
1225.1	0.0	0.0	0.0	0.0
1223.5	0.0	0.0	0.0	0.0
821.0	0.0	0.0	0.0	0.0
1227.1	0.0	0.0	0.0	0.0
1225.6	0.0	0.0	0.0	0.0

Residential SH All Electric ASHP	Residential SH Ground Source	Residential SH HP Hybrid	Residential SH Resistance
1908.2	24.0	0.0	2497.9
2586.2	28.4	0.0	2959.0
2947.8	30.5	0.0	3179.6
1905.5	25.8	0.0	2305.1
2795.7	31.6	0.0	2820.3
3186.6	33.9	0.0	3030.6
2232.4	29.8	0.0	2250.2
3037.1	35.4	0.0	2675.6
3461.8	38.1	0.0	2875.2
2228.5	32.2	0.0	2028.5
3314.0	40.0	0.0	2521.6
3777.4	43.0	0.0	2709.7
2440.6	36.5	0.0	1895.2
3629.1	45.4	0.0	2355.6
4136.6	48.8	0.0	2531.4
2673.2	41.3	0.0	1751.7
3974.4	51.4	0.0	2176.9
4530.3	55.2	0.0	2339.4
3087.9	48.4	0.0	1661.4
4345.9	57.9	0.0	1987.6
4953.8	62.2	0.0	2136.0
3193.2	52.3	0.0	1445.6
4736.2	64.8	0.0	1792.2
5398.8	69.7	0.0	1926.0
3468.7	58.2	0.0	1288.7
5139.2	72.1	0.0	1596.0
5858.1	77.5	0.0	1715.1
3930.1	66.4	0.0	1167.7
5553.3	79.8	0.0	1402.6
6330.2	85.7	0.0	1507.3
4226.1	73.2	0.0	1016.3
5981.2	88.1	0.0	1222.7
6818.1	94.7	0.0	1314.0
4358.4	78.8	0.0	854.8
6426.2	97.2	0.0	1053.5
7325.5	104.4	0.0	1132.1
4671.9	86.7	0.0	725.2
6878.5	106.7	0.0	892.6
7841.2	114.6	0.0	959.2
4972.7	94.4	0.0	604.0
7312.5	116.0	0.0	742.5
8336.0	124.7	0.0	797.9
5244.2	101.5	0.0	495.2
7704.3	124.7	0.0	608.1
8782.8	134.0	0.0	653.6
5641.6	109.1	0.0	406.2
8030.9	132.0	0.0	491.5
9155.2	141.9	0.0	528.3
5830.3	114.2	0.0	323.2
8304.3	138.3	0.0	391.3
9466.8	148.6	0.0	420.5
5820.5	117.3	0.0	248.8
8535.7	143.7	0.0	305.0
9730.7	154.5	0.0	327.8

6125.9	122.6	0.0	190.9
8732.4	148.5	0.0	231.3
9955.0	159.6	0.0	248.6
6240.5	125.9	0.0	139.6
8898.2	152.7	0.0	169.2
10144.1	164.1	0.0	181.9
6167.1	127.6	0.0	96.5
9036.1	156.2	0.0	118.2
10301.2	167.9	0.0	127.0
6412.6	131.4	0.0	63.9
9146.9	159.3	0.0	77.5
10427.6	171.2	0.0	83.3
6471.0	133.4	0.0	38.4
9231.2	161.8	0.0	46.6
10523.8	173.9	0.0	50.0
6342.2	133.8	0.0	20.0
9289.4	163.8	0.0	24.5
10590.0	176.0	0.0	26.3
6533.9	136.2	0.0	8.3
9321.9	165.2	0.0	10.0
10627.2	177.6	0.0	10.8
6370.1	135.7	0.0	1.4
9330.1	166.1	0.0	1.7
10636.5	178.6	0.0	1.8
6529.8	137.3	0.0	0.0
9315.5	166.5	0.0	0.0
10619.9	179.0	0.0	0.0
6335.2	135.9	0.0	0.0
9280.3	166.4	0.0	0.0
10579.7	178.8	0.0	0.0
6468.7	136.7	0.0	0.0
9226.4	165.8	0.0	0.0
10518.2	178.2	0.0	0.0
6420.3	135.9	0.0	0.0
9156.0	164.8	0.0	0.0
10438.0	177.1	0.0	0.0
1453.3	18.2	14.7	2642.1
2146.3	22.4	10.3	3253.9
2446.2	24.1	7.6	3496.4
1511.8	18.5	21.8	2562.5
2232.2	22.8	15.3	3155.2
2544.2	24.5	11.3	3390.3
1576.2	18.8	30.4	2487.0
2326.9	23.2	21.3	3061.7
2652.0	24.9	15.7	3289.8
1647.6	19.2	40.7	2413.1
2431.7	23.6	28.5	2970.2
2771.6	25.4	21.0	3191.4
1887.4	20.5	49.8	2439.0
2548.3	24.1	37.0	2878.3
2904.4	25.9	27.2	3092.7
1980.3	21.0	62.6	2359.3
2674.0	24.7	46.4	2784.4
3047.6	26.6	34.2	2991.7
2079.7	21.5	76.5	2278.4
2808.2	25.4	56.8	2688.9
3200.4	27.3	41.8	2889.1
1997.8	21.2	96.8	2107.4
2948.7	26.0	67.9	2593.8
3360.6	28.0	49.9	2786.9
2291.4	22.7	107.2	2119.8

3093.6	26.8	79.6	2501.4
3525.6	28.7	58.5	2687.5
2401.5	23.3	124.1	2045.0
3242.1	27.5	92.0	2413.0
3694.8	29.6	67.7	2592.5
2300.8	23.0	150.7	1892.4
3396.9	28.3	105.7	2329.9
3871.2	30.4	77.7	2503.2
2635.1	24.8	162.5	1909.0
3557.5	29.2	120.6	2252.5
4054.1	31.4	88.7	2420.0
2753.5	25.6	183.8	1850.6
3717.7	30.2	136.4	2183.8
4236.7	32.4	100.4	2346.2
2862.8	26.4	205.1	1805.4
3865.7	31.1	152.2	2130.7
4405.2	33.5	112.0	2289.1
2704.2	26.0	238.2	1705.2
3991.5	32.1	167.0	2098.9
4548.6	34.4	122.9	2254.9
3027.8	27.8	242.4	1767.7
4089.1	32.8	179.9	2086.5
4659.8	35.3	132.4	2241.6
3085.4	28.4	257.7	1766.3
4167.0	33.5	191.3	2085.0
4748.6	36.0	140.7	2239.9
3134.3	28.9	271.5	1767.4
4233.4	34.2	201.5	2086.5
4824.1	36.7	148.3	2241.5
3177.7	29.4	284.0	1768.2
4292.3	34.7	210.8	2087.5
4891.3	37.3	155.1	2242.6
3216.9	29.8	295.5	1768.1
4345.6	35.2	219.4	2087.6
4952.0	37.9	161.4	2242.8
3252.1	30.2	306.0	1768.0
4393.6	35.7	227.2	2087.7
5006.7	38.3	167.1	2242.8
3283.1	30.6	315.5	1768.4
4436.0	36.1	234.3	2088.4
5055.0	38.8	172.4	2243.5
3309.5	30.9	324.1	1769.6
4472.2	36.5	240.7	2090.0
5096.3	39.2	177.1	2245.4
3052.6	29.9	351.8	1701.3
4502.3	36.8	246.4	2092.6
5130.6	39.5	181.3	2248.1
3348.8	31.4	338.4	1773.7
4526.3	37.1	251.4	2095.4
5158.0	39.8	184.9	2251.1
3362.1	31.6	344.0	1776.0
4544.8	37.3	255.6	2098.3
5179.0	40.1	188.0	2254.2
3371.6	31.8	348.6	1778.2
4557.9	37.5	259.0	2101.1
5193.9	40.3	190.6	2257.2
3377.4	31.9	352.3	1780.4
4565.9	37.7	261.7	2103.7
5203.1	40.5	192.6	2260.1
3099.2	30.7	376.7	1713.0
4569.4	37.8	263.8	2106.2

5207.1	40.6	194.0	2262.7
3098.7	30.8	378.6	1714.8
4568.7	37.9	265.1	2108.4
5206.3	40.7	195.1	2265.1
1601.3	18.4	0.0	2753.9
2164.6	21.8	0.0	3253.7
2467.3	23.4	0.0	3496.3
1515.8	17.7	0.0	2568.7
2232.2	21.8	0.0	3154.6
2544.4	23.4	0.0	3389.8
1698.6	18.4	0.0	2586.0
2299.6	21.8	0.0	3060.1
2621.2	23.4	0.0	3288.4
1610.3	17.8	0.0	2419.8
2367.6	21.8	0.0	2967.0
2698.8	23.4	0.0	3188.3
1797.6	18.4	0.0	2424.3
2437.1	21.8	0.0	2872.8
2778.0	23.4	0.0	3087.2
1848.4	18.4	0.0	2341.1
2507.5	21.8	0.0	2775.8
2858.3	23.4	0.0	2983.0
1899.8	18.3	0.0	2256.1
2578.5	21.7	0.0	2676.4
2939.2	23.4	0.0	2876.1
1950.9	18.3	0.0	2171.2
2648.8	21.7	0.0	2576.5
3019.3	23.3	0.0	2768.8
2000.1	18.2	0.0	2087.9
2716.4	21.7	0.0	2478.4
3096.4	23.3	0.0	2663.4
2046.0	18.2	0.0	2007.6
2779.2	21.6	0.0	2383.4
3168.0	23.2	0.0	2561.3
2088.8	18.2	0.0	1931.5
2837.8	21.6	0.0	2293.4
3234.7	23.2	0.0	2464.6
2127.6	18.1	0.0	1859.9
2890.7	21.5	0.0	2208.7
3295.1	23.1	0.0	2373.5
2160.5	18.1	0.0	1795.4
2935.5	21.4	0.0	2132.2
3346.1	23.0	0.0	2291.3
2184.0	18.0	0.0	1743.5
2967.5	21.4	0.0	2070.6
3382.6	23.0	0.0	2225.1
2196.0	18.0	0.0	1708.8
2983.6	21.4	0.0	2029.3
3400.9	23.0	0.0	2180.7
2197.7	18.0	0.0	1689.5
2985.6	21.3	0.0	2006.2
3403.2	22.9	0.0	2155.9
2031.6	17.4	0.0	1629.4
2979.5	21.3	0.0	1992.8
3396.2	22.9	0.0	2141.5
2025.0	17.4	0.0	1620.0
2970.3	21.3	0.0	1981.6
3385.8	22.9	0.0	2129.5
2180.2	17.9	0.0	1659.1
2960.5	21.2	0.0	1969.1
3374.6	22.8	0.0	2116.0

2173.3	17.9	0.0	1647.5
2950.7	21.2	0.0	1955.0
3363.4	22.8	0.0	2100.9
2167.0	17.8	0.0	1635.2
2941.6	21.1	0.0	1940.0
3353.0	22.7	0.0	2084.8
2161.7	17.8	0.0	1622.7
2933.9	21.1	0.0	1924.9
3344.2	22.7	0.0	2068.5
1994.1	17.2	0.0	1559.8
2927.8	21.1	0.0	1909.8
3337.2	22.6	0.0	2052.3
2154.3	17.7	0.0	1597.8
2922.7	21.0	0.0	1894.7
3331.5	22.6	0.0	2036.0
2151.0	17.7	0.0	1584.9
2917.8	21.0	0.0	1879.0
3325.8	22.6	0.0	2019.2
1982.4	17.1	0.0	1520.4
2912.3	21.0	0.0	1862.6
3319.5	22.5	0.0	2001.5
1977.7	17.1	0.0	1505.9
2905.8	20.9	0.0	1845.2
3312.2	22.5	0.0	1982.8
1972.1	17.1	0.0	1490.6
2898.2	20.9	0.0	1826.8
3303.5	22.5	0.0	1963.1
2131.8	17.7	0.0	1525.7
2889.5	20.9	0.0	1807.5
3293.5	22.5	0.0	1942.3
2124.9	17.7	0.0	1508.8
2879.5	20.9	0.0	1787.1
3282.1	22.5	0.0	1920.4
1850.9	23.9	0.0	2488.8
2656.0	28.4	0.0	2959.3
3082.6	30.5	0.0	3179.7
1797.3	25.9	0.0	2311.8
2835.9	31.6	0.0	2820.7
3291.4	33.9	0.0	3030.7
1898.5	28.5	0.0	2150.4
3043.6	35.4	0.0	2676.0
3532.4	38.1	0.0	2875.3
2047.2	32.2	0.0	2026.4
3282.0	40.0	0.0	2522.0
3809.2	43.0	0.0	2709.7
2368.8	38.0	0.0	1973.7
3553.8	45.4	0.0	2356.1
4124.6	48.8	0.0	2531.4
2563.9	43.0	0.0	1821.5
3851.9	51.4	0.0	2177.4
4470.5	55.2	0.0	2339.4
2773.9	48.4	0.0	1660.8
4173.1	57.9	0.0	1988.1
4843.2	62.2	0.0	2136.0
2994.6	54.1	0.0	1495.7
4511.0	64.9	0.0	1792.7
5235.3	69.7	0.0	1926.0
3222.5	60.1	0.0	1330.3
4860.1	72.1	0.0	1596.4
5640.4	77.5	0.0	1715.1
3454.1	66.4	0.0	1167.0

5218.8	79.8	0.0	1402.9
6056.8	85.8	0.0	1507.3
3692.6	73.2	0.0	1015.5
5589.4	88.1	0.0	1223.1
6487.0	94.7	0.0	1314.1
3939.9	80.5	0.0	873.3
5974.5	97.2	0.0	1053.8
6933.9	104.4	0.0	1132.2
4019.3	86.8	0.0	726.2
6365.6	106.7	0.0	892.8
7387.9	114.6	0.0	959.3
4262.2	94.5	0.0	605.0
6740.6	116.1	0.0	742.7
7823.2	124.7	0.0	798.0
4481.4	101.7	0.0	496.1
7079.2	124.7	0.0	608.3
8216.1	134.0	0.0	653.6
4664.4	107.8	0.0	401.3
7361.5	132.0	0.0	491.7
8543.7	141.9	0.0	528.3
4817.6	113.0	0.0	319.7
7597.9	138.3	0.0	391.4
8818.2	148.6	0.0	420.5
5109.8	118.4	0.0	251.3
7798.3	143.8	0.0	305.1
9050.8	154.5	0.0	327.8
5058.1	121.5	0.0	189.2
7968.8	148.5	0.0	231.4
9248.7	159.6	0.0	248.6
5151.3	124.9	0.0	138.5
8112.8	152.7	0.0	169.3
9415.8	164.1	0.0	181.9
5388.7	128.6	0.0	97.2
8232.7	156.3	0.0	118.2
9555.0	167.9	0.0	127.0
5291.4	130.4	0.0	63.4
8329.5	159.3	0.0	77.5
9667.3	171.2	0.0	83.3
5339.3	132.5	0.0	38.1
8403.6	161.9	0.0	46.6
9753.3	173.9	0.0	50.0
5372.6	134.1	0.0	20.0
8455.2	163.8	0.0	24.5
9813.3	176.0	0.0	26.3
5551.1	135.9	0.0	8.2
8484.8	165.3	0.0	10.0
9847.6	177.6	0.0	10.8
5556.6	136.7	0.0	1.4
8493.1	166.2	0.0	1.7
9857.3	178.6	0.0	1.8
5549.4	137.0	0.0	0.0
8481.7	166.6	0.0	0.0
9844.0	179.0	0.0	0.0
5369.9	136.2	0.0	0.0
8452.3	166.4	0.0	0.0
9809.9	178.8	0.0	0.0
5340.1	135.7	0.0	0.0
8406.6	165.8	0.0	0.0
9756.8	178.2	0.0	0.0
5463.5	135.6	0.0	0.0
8346.5	164.8	0.0	0.0

9687.1	177.1	0.0	0.0
1914.7	24.0	0.0	2506.4
2586.3	28.4	0.0	2959.1
2947.8	30.5	0.0	3179.6
1896.7	25.7	0.0	2294.4
2795.8	31.6	0.0	2820.4
3186.7	33.9	0.0	3030.7
2245.5	30.0	0.0	2263.4
3037.3	35.4	0.0	2675.8
3461.9	38.1	0.0	2875.3
2251.5	32.6	0.0	2054.3
3314.3	40.0	0.0	2521.8
3777.5	43.0	0.0	2709.7
2679.5	38.3	0.0	1989.9
3629.5	45.4	0.0	2355.9
4136.8	48.8	0.0	2531.5
2932.5	43.4	0.0	1837.7
3974.9	51.4	0.0	2177.2
4530.5	55.2	0.0	2339.5
3204.6	48.9	0.0	1676.9
4346.5	57.9	0.0	1987.9
4954.0	62.2	0.0	2136.1
3226.2	53.0	0.0	1463.9
4737.0	64.8	0.0	1792.5
5399.0	69.7	0.0	1926.1
3502.5	58.9	0.0	1304.3
5140.2	72.1	0.0	1596.3
5858.5	77.5	0.0	1715.2
4085.6	67.2	0.0	1180.6
5554.4	79.8	0.0	1402.9
6330.6	85.8	0.0	1507.4
4394.7	74.1	0.0	1027.9
5982.5	88.1	0.0	1223.0
6818.6	94.7	0.0	1314.1
4393.6	79.7	0.0	863.7
6427.7	97.2	0.0	1053.7
7326.1	104.4	0.0	1132.2
4702.4	87.4	0.0	731.7
6880.2	106.7	0.0	892.8
7842.0	114.6	0.0	959.3
4913.9	93.3	0.0	596.9
7314.3	116.1	0.0	742.7
8336.8	124.7	0.0	798.0
5265.9	102.2	0.0	498.4
7706.3	124.7	0.0	608.3
8783.7	134.0	0.0	653.6
5488.8	108.2	0.0	402.9
8033.1	132.0	0.0	491.7
9156.1	141.9	0.0	528.3
5581.8	111.2	0.0	314.6
8306.5	138.3	0.0	391.4
9467.9	148.6	0.0	420.6
5737.8	115.6	0.0	245.3
8538.0	143.8	0.0	305.1
9731.8	154.5	0.0	327.9
5870.2	119.4	0.0	186.0
8734.8	148.5	0.0	231.4
9956.1	159.6	0.0	248.6
6333.6	127.8	0.0	141.7
8900.7	152.7	0.0	169.3
10145.3	164.1	0.0	181.9

6430.4	130.8	0.0	98.9
9038.6	156.3	0.0	118.2
10302.4	167.9	0.0	127.0
6508.2	133.3	0.0	64.9
9149.4	159.3	0.0	77.5
10428.8	171.2	0.0	83.3
6210.2	130.2	0.0	37.5
9233.8	161.9	0.0	46.6
10525.0	173.9	0.0	50.0
6608.0	137.1	0.0	20.5
9291.9	163.8	0.0	24.5
10591.3	176.1	0.0	26.3
6272.2	133.0	0.0	8.1
9324.5	165.3	0.0	10.0
10628.4	177.6	0.0	10.8
6636.4	139.0	0.0	1.4
9332.6	166.2	0.0	1.7
10637.7	178.6	0.0	1.8
6626.2	139.3	0.0	0.0
9318.1	166.6	0.0	0.0
10621.1	179.0	0.0	0.0
6601.5	139.2	0.0	0.0
9282.8	166.4	0.0	0.0
10580.9	178.9	0.0	0.0
6206.9	133.4	0.0	0.0
9228.9	165.8	0.0	0.0
10519.4	178.2	0.0	0.0
6514.6	137.9	0.0	0.0
9158.4	164.8	0.0	0.0
10439.2	177.1	0.0	0.0

High Decarbonized Methane

Incremental to 2030 GGRA Plan

2021\$	2021	2022	2023
Total Energy + Storage	-\$66,165,336	-\$85,523,816	-\$106,808,152
Residential	-\$32,066,798	-\$41,486,972	-\$51,843,522
Commercial	-\$34,098,538	-\$44,036,845	-\$54,964,630
Total Generating Capacity	\$20,411,410	\$20,494,693	\$45,153,477
Residential	\$9,892,318	\$9,941,824	\$21,917,010
Commercial	\$10,519,092	\$10,552,869	\$23,236,468
Total Transmission Capacity	\$46,192,341	\$46,014,175	\$45,627,496
Residential	\$22,386,956	\$22,321,137	\$22,147,093
Commercial	\$23,805,385	\$23,693,039	\$23,480,403
Total Distribution Capacity	\$0	\$65,961,301	\$65,406,996
Residential	\$0	\$31,997,340	\$31,747,848
Commercial	\$0	\$33,963,961	\$33,659,147
Total	\$438,415	\$46,946,353	\$49,379,816
Residential	\$212,476	\$22,773,329	\$23,968,429
Commercial	\$225,939	\$24,173,024	\$25,411,387

Electrification with Fuel Backup

Incremental to 2030 GGRA Plan

2021\$	2021	2022	2023
Total Energy + Storage	-\$63,697,813	-\$76,994,837	-\$89,774,652
Residential	-\$30,858,767	-\$37,362,363	-\$43,634,575
Commercial	-\$32,839,046	-\$39,632,474	-\$46,140,077
Total Generating Capacity	\$18,233,670	\$17,809,218	\$38,057,291
Residential	\$8,833,405	\$8,642,066	\$18,497,579
Commercial	\$9,400,265	\$9,167,152	\$19,559,712
Total Transmission Capacity	\$42,377,083	\$43,413,441	\$45,242,596
Residential	\$20,529,818	\$21,066,721	\$21,989,965
Commercial	\$21,847,265	\$22,346,720	\$23,252,631
Total Distribution Capacity	\$0	\$62,233,150	\$64,855,242
Residential	\$0	\$30,199,136	\$31,522,605
Commercial	\$0	\$32,034,014	\$33,332,637
Total	-\$3,087,060	\$46,460,972	\$58,380,477
Residential	-\$1,495,544	\$22,545,560	\$28,375,574
Commercial	-\$1,591,516	\$23,915,412	\$30,004,903

High Electrification - Current Installation Practice

Incremental to 2030 GGRA Plan

2021\$	2021	2022	2023
Total Energy + Storage	-\$45,320,724	-\$48,869,075	-\$50,203,743
Residential	-\$21,944,447	-\$23,687,498	-\$24,351,052
Commercial	-\$23,376,276	-\$25,181,576	-\$25,852,692
Total Generating Capacity	\$22,464,215	\$23,122,938	\$52,368,550
Residential	\$10,877,249	\$11,207,999	\$25,401,080
Commercial	\$11,586,966	\$11,914,939	\$26,967,471
Total Transmission Capacity	\$74,405,534	\$91,132,482	\$112,121,403
Residential	\$36,027,411	\$44,173,141	\$54,383,875
Commercial	\$38,378,123	\$46,959,341	\$57,737,529
Total Distribution Capacity	\$0	\$130,638,374	\$160,725,984
Residential	\$0	\$63,322,179	\$77,959,261
Commercial	\$0	\$67,316,195	\$82,766,723
Total	\$51,549,026	\$196,024,719	\$275,012,195
Residential	\$24,960,212	\$95,015,821	\$133,393,164
Commercial	\$26,588,814	\$101,008,899	\$141,619,031

High Electrification - Improved System Configuration

Incremental to 2030 GGRA Plan

2021\$	2021	2022	2023
Total Energy + Storage	-\$55,681,344	-\$62,923,287	-\$68,876,187
Residential	-\$26,955,634	-\$30,495,773	-\$33,407,260
Commercial	-\$28,725,710	-\$32,427,514	-\$35,468,927
Total Generating Capacity	\$25,794,986	\$26,305,261	\$58,967,611
Residential	\$12,487,489	\$12,748,845	\$28,601,269
Commercial	\$13,307,496	\$13,556,415	\$30,366,342
Total Transmission Capacity	\$74,820,398	\$88,414,564	\$105,566,538
Residential	\$36,220,951	\$42,850,121	\$51,203,310
Commercial	\$38,599,446	\$45,564,443	\$54,363,227
Total Distribution Capacity	\$0	\$126,742,240	\$151,329,587
Residential	\$0	\$61,425,631	\$73,399,924
Commercial	\$0	\$65,316,610	\$77,929,663
Total	\$44,934,039	\$178,538,778	\$246,987,549
Residential	\$21,752,807	\$86,528,824	\$119,797,243
Commercial	\$23,181,232	\$92,009,954	\$127,190,306

MWG Scenario

Incremental to 2030 GGRA Plan

2021\$	2021	2022	2023
Total Energy + Storage	-\$55,476,405	-\$64,830,572	-\$73,325,870
Residential	-\$26,963,249	-\$31,609,456	-\$35,864,626
Commercial	-\$28,513,156	-\$33,221,116	-\$37,461,244
Total Generating Capacity	\$21,664,362	\$21,990,381	\$49,047,794
Residential	\$10,529,550	\$10,721,855	\$23,989,907
Commercial	\$11,134,812	\$11,268,526	\$25,057,887
Total Transmission Capacity	\$47,439,024	\$51,245,620	\$56,349,314
Residential	\$23,056,833	\$24,985,838	\$27,561,174
Commercial	\$24,382,191	\$26,259,782	\$28,788,140
Total Distribution Capacity	\$0	\$73,460,575	\$80,776,718
Residential	\$0	\$35,817,189	\$39,508,932
Commercial	\$0	\$37,643,386	\$41,267,787
Total	\$13,626,982	\$81,866,004	\$112,847,957
Residential	\$6,623,135	\$39,915,426	\$55,195,387
Commercial	\$7,003,847	\$41,950,578	\$57,652,570

2030 GGRA Cost Incremental to Reference

2021\$	2021	2022	2023
Generation	-\$70,381,001	-\$39,810,494	-\$15,302,564
Residential	-\$37,770,027	-\$26,311,223	-\$18,312,248
Commercial	-\$27,602,375	-\$12,175,941	\$224,923
Industrial	-\$4,264,940	-\$2,553,636	-\$1,311,859
Transportation	-\$743,658	\$1,230,307	\$4,096,621
Transmission	\$32,921	\$91,967	\$179,941
Residential	-\$69,424	-\$193,941	-\$379,460
Commercial	-\$23,035	-\$64,349	-\$125,904
Industrial	-\$12,496	-\$34,909	-\$68,303
Transportation	\$137,876	\$385,167	\$753,608
Distribution	-\$206,544	-\$574,697	-\$1,119,957
Residential	-\$208,458	-\$580,022	-\$1,130,335
Commercial	-\$351,063	-\$976,813	-\$1,903,591
Industrial	-\$5,391	-\$15,001	-\$29,233
Transportation	\$358,368	\$997,138	\$1,943,202
Total	-\$70,554,624	-\$40,293,224	-\$16,242,581
Residential	-\$38,047,910	-\$27,085,187	-\$19,822,044
Commercial	-\$27,976,473	-\$13,217,103	-\$1,804,573

Industrial	-\$4,282,828	-\$2,603,546	-\$1,409,395
Transportation	-\$247,413	\$2,612,613	\$6,793,431

2024	2025	2026	2027	2028	2029
-\$126,347,248	-\$144,939,288	-\$168,045,588	-\$183,152,918	-\$201,989,106	-\$211,997,790
-\$61,307,410	-\$70,282,022	-\$81,401,602	-\$88,594,348	-\$97,542,966	-\$102,182,657
-\$65,039,839	-\$74,657,267	-\$86,643,985	-\$94,558,570	-\$104,446,140	-\$109,815,133
\$45,272,511	\$45,515,144	\$46,916,615	\$48,404,817	\$49,958,827	\$51,500,605
\$21,967,557	\$22,070,595	\$22,726,498	\$23,414,277	\$24,125,718	\$24,823,224
\$23,304,954	\$23,444,549	\$24,190,117	\$24,990,540	\$25,833,110	\$26,677,381
\$45,039,725	\$44,294,112	\$43,311,082	\$42,151,333	\$40,864,203	\$39,468,442
\$21,854,602	\$21,478,509	\$20,979,970	\$20,389,355	\$19,733,814	\$19,023,737
\$23,185,123	\$22,815,604	\$22,331,111	\$21,761,978	\$21,130,388	\$20,444,705
\$64,564,427	\$63,495,591	\$62,086,418	\$60,423,917	\$58,578,817	\$56,577,995
\$31,328,563	\$30,789,433	\$30,074,779	\$29,228,131	\$28,288,415	\$27,270,519
\$33,235,864	\$32,706,158	\$32,011,639	\$31,195,786	\$30,290,403	\$29,307,475
\$28,529,414	\$8,365,559	-\$15,731,473	-\$32,172,851	-\$52,587,258	-\$64,450,749
\$13,843,313	\$4,056,515	-\$7,620,356	-\$15,562,584	-\$25,395,019	-\$31,065,177
\$14,686,101	\$4,309,044	-\$8,111,118	-\$16,610,266	-\$27,192,240	-\$33,385,572

2024	2025	2026	2027	2028	2029
-\$98,731,440	-\$104,536,972	-\$111,076,666	-\$109,859,177	-\$108,462,057	-\$100,005,871
-\$48,032,793	-\$50,899,043	-\$54,114,764	-\$53,539,611	-\$52,869,139	-\$48,751,810
-\$50,698,647	-\$53,637,928	-\$56,961,903	-\$56,319,566	-\$55,592,918	-\$51,254,060
\$36,851,939	\$35,592,054	\$35,253,254	\$34,800,652	\$34,243,216	\$33,519,879
\$17,928,448	\$17,329,768	\$17,174,818	\$16,960,016	\$16,691,638	\$16,340,589
\$18,923,490	\$18,262,285	\$18,078,436	\$17,840,636	\$17,551,579	\$17,179,291
\$48,003,596	\$51,875,374	\$56,669,182	\$62,486,484	\$69,395,531	\$77,487,337
\$23,353,724	\$25,258,115	\$27,608,313	\$30,452,641	\$33,826,410	\$37,774,262
\$24,649,872	\$26,617,258	\$29,060,869	\$32,033,843	\$35,569,121	\$39,713,075
\$68,813,134	\$74,363,326	\$81,235,249	\$89,574,349	\$99,478,465	\$111,078,064
\$33,477,553	\$36,207,498	\$39,576,505	\$43,653,848	\$48,490,144	\$54,149,388
\$35,335,581	\$38,155,828	\$41,658,743	\$45,920,501	\$50,988,321	\$56,928,676
\$54,937,228	\$57,293,782	\$62,081,019	\$77,002,309	\$94,655,155	\$122,079,410
\$26,726,932	\$27,896,338	\$30,244,873	\$37,526,894	\$46,139,052	\$59,512,428
\$28,210,296	\$29,397,444	\$31,836,146	\$39,475,415	\$48,516,102	\$62,566,981

2024	2025	2026	2027	2028	2029
-\$50,781,546	-\$51,478,458	-\$51,872,974	-\$48,014,573	-\$37,083,312	-\$8,149,702
-\$24,623,674	-\$24,943,475	-\$25,104,539	-\$23,198,913	-\$17,882,152	-\$3,921,212
-\$26,157,872	-\$26,534,984	-\$26,768,434	-\$24,815,660	-\$19,201,160	-\$4,228,490
\$75,408,083	\$129,011,928	\$189,706,715	\$258,315,397	\$331,478,322	\$406,751,732
\$36,564,938	\$62,511,696	\$91,810,809	\$124,808,699	\$159,844,018	\$195,707,751
\$38,843,146	\$66,500,232	\$97,895,906	\$133,506,699	\$171,634,304	\$211,043,981
\$138,072,628	\$169,722,790	\$206,414,332	\$248,173,161	\$294,779,147	\$346,216,003
\$66,950,608	\$82,237,818	\$99,896,658	\$119,908,335	\$142,147,103	\$166,581,111
\$71,122,020	\$87,484,972	\$106,517,674	\$128,264,826	\$152,632,044	\$179,634,892
\$197,927,054	\$243,297,548	\$295,894,858	\$355,756,121	\$422,565,783	\$496,300,494
\$95,973,669	\$117,887,878	\$143,201,817	\$171,888,548	\$203,767,812	\$238,793,952
\$101,953,386	\$125,409,670	\$152,693,041	\$183,867,573	\$218,797,971	\$257,506,542
\$360,626,220	\$490,553,807	\$640,142,932	\$814,230,106	\$1,011,739,941	\$1,241,118,528
\$174,865,540	\$237,693,917	\$309,804,744	\$393,406,669	\$487,876,782	\$597,161,602
\$185,760,679	\$252,859,889	\$330,338,187	\$420,823,437	\$523,863,159	\$643,956,926

2024	2025	2026	2027	2028	2029
-\$70,798,109	-\$69,132,787	-\$69,348,394	-\$68,637,451	-\$67,992,671	-\$63,048,005
-\$34,333,702	-\$33,507,868	-\$33,578,462	-\$33,186,573	-\$32,818,107	-\$30,371,985
-\$36,464,407	-\$35,624,919	-\$35,769,932	-\$35,450,878	-\$35,174,564	-\$32,676,020
\$60,179,243	\$61,509,167	\$87,186,001	\$134,846,037	\$186,978,131	\$243,380,146
\$29,184,059	\$29,812,787	\$42,215,424	\$65,198,777	\$90,248,966	\$117,243,013
\$30,995,184	\$31,696,380	\$44,970,577	\$69,647,261	\$96,729,165	\$126,137,133
\$126,867,272	\$152,949,059	\$183,235,910	\$217,775,759	\$256,416,302	\$299,178,927
\$61,524,568	\$74,132,652	\$88,722,748	\$105,295,739	\$123,764,774	\$144,122,844
\$65,342,704	\$78,816,406	\$94,513,162	\$112,480,020	\$132,651,529	\$155,056,083
\$181,864,181	\$219,252,411	\$262,668,599	\$312,181,458	\$367,572,661	\$428,872,866
\$88,195,443	\$106,269,126	\$127,184,022	\$150,941,397	\$177,416,751	\$206,600,037
\$93,668,739	\$112,983,285	\$135,484,577	\$161,240,061	\$190,155,910	\$222,272,829
\$298,112,588	\$364,577,850	\$463,742,116	\$596,165,804	\$742,974,424	\$908,383,934
\$144,570,368	\$176,706,697	\$224,543,731	\$288,249,339	\$358,612,384	\$437,593,910
\$153,542,219	\$187,871,152	\$239,198,384	\$307,916,464	\$384,362,040	\$470,790,024

2024	2025	2026	2027	2028	2029
-\$78,084,762	-\$79,552,379	-\$80,573,959	-\$74,940,098	-\$68,100,163	-\$55,670,575
-\$38,287,121	-\$39,100,983	-\$39,689,242	-\$36,984,636	-\$33,667,100	-\$27,565,661
-\$39,797,641	-\$40,451,396	-\$40,884,717	-\$37,955,462	-\$34,433,063	-\$28,104,914
\$49,816,210	\$50,718,365	\$52,703,396	\$54,712,356	\$56,710,053	\$58,591,563
\$24,426,267	\$24,928,707	\$25,960,718	\$27,001,787	\$28,036,101	\$29,012,008
\$25,389,943	\$25,789,658	\$26,742,678	\$27,710,569	\$28,673,952	\$29,579,555
\$62,969,706	\$71,358,650	\$81,219,418	\$92,614,881	\$105,543,881	\$120,068,221
\$30,875,791	\$35,073,663	\$40,007,184	\$45,707,542	\$52,178,383	\$59,452,590
\$32,093,916	\$36,284,987	\$41,212,235	\$46,907,339	\$53,365,498	\$60,615,631
\$90,267,047	\$102,292,595	\$116,428,002	\$132,763,393	\$151,297,109	\$172,117,744
\$44,260,433	\$50,278,082	\$57,350,281	\$65,521,742	\$74,797,690	\$85,225,262
\$46,006,614	\$52,014,514	\$59,077,721	\$67,241,651	\$76,499,419	\$86,892,482
\$124,968,201	\$144,817,231	\$169,776,857	\$205,150,533	\$245,450,880	\$295,106,954
\$61,275,370	\$71,179,469	\$83,628,940	\$101,246,436	\$121,345,074	\$146,124,199
\$63,692,832	\$73,637,763	\$86,147,916	\$103,904,097	\$124,105,806	\$148,982,754

2024	2025	2026	2027	2028	2029
-\$12,719,166	-\$16,100,574	-\$16,596,805	-\$32,315,338	-\$34,178,174	-\$56,819,434
-\$21,405,027	-\$27,974,681	-\$34,844,040	-\$49,133,133	-\$59,550,192	-\$79,172,481
\$2,324,765	\$1,064,006	\$1,052,822	-\$7,274,912	-\$10,237,401	-\$23,466,294
-\$1,457,840	-\$2,088,224	-\$2,682,549	-\$4,347,324	-\$5,403,631	-\$7,763,032
\$7,818,937	\$12,898,325	\$19,876,962	\$28,440,031	\$41,013,049	\$53,582,374
\$306,435	\$481,336	\$692,753	\$985,076	\$1,359,249	\$1,792,375
-\$646,212	-\$1,015,045	-\$1,460,883	-\$2,077,336	-\$2,866,397	-\$3,779,775
-\$214,412	-\$336,790	-\$484,719	-\$689,257	-\$951,066	-\$1,254,124
-\$116,318	-\$182,708	-\$262,959	-\$373,920	-\$515,951	-\$680,359
\$1,283,377	\$2,015,879	\$2,901,314	\$4,125,589	\$5,692,664	\$7,506,633
-\$1,899,664	-\$2,972,029	-\$4,260,393	-\$6,034,026	-\$8,292,835	-\$10,891,783
-\$1,917,266	-\$2,999,568	-\$4,299,870	-\$6,089,938	-\$8,369,677	-\$10,992,706
-\$3,228,858	-\$5,051,557	-\$7,241,389	-\$10,256,033	-\$14,095,330	-\$18,512,760
-\$49,584	-\$77,575	-\$111,204	-\$157,498	-\$216,457	-\$284,294
\$3,296,045	\$5,156,671	\$7,392,070	\$10,469,443	\$14,388,628	\$18,897,978
-\$14,312,395	-\$18,591,268	-\$20,164,445	-\$37,364,289	-\$41,111,760	-\$65,918,842
-\$23,968,506	-\$31,989,294	-\$40,604,793	-\$57,300,407	-\$70,786,265	-\$93,944,963
-\$1,118,505	-\$4,324,342	-\$6,673,287	-\$18,220,202	-\$25,283,797	-\$43,233,178

-\$1,623,742	-\$2,348,507	-\$3,056,711	-\$4,878,743	-\$6,136,039	-\$8,727,686
\$12,398,359	\$20,070,875	\$30,170,346	\$43,035,063	\$61,094,342	\$79,986,985

2030	2031	2032	2033	2034	2035
-\$225,449,567	-\$232,469,610	-\$234,327,283	-\$235,158,751	-\$235,032,435	-\$233,981,928
-\$108,458,587	-\$111,594,508	-\$112,208,507	-\$112,296,788	-\$111,908,441	-\$111,087,645
-\$116,990,981	-\$120,875,103	-\$122,118,776	-\$122,861,964	-\$123,123,994	-\$122,894,282
\$52,932,851	\$54,441,270	\$56,038,919	\$57,815,102	\$59,909,231	\$62,390,455
\$25,464,774	\$26,133,939	\$26,834,449	\$27,608,797	\$28,525,206	\$29,621,128
\$27,468,077	\$28,307,330	\$29,204,470	\$30,206,305	\$31,384,025	\$32,769,326
\$37,943,333	\$36,476,624	\$35,050,489	\$33,706,634	\$32,575,921	\$31,791,429
\$18,253,662	\$17,510,206	\$16,784,059	\$16,096,134	\$15,510,712	\$15,093,623
\$19,689,671	\$18,966,417	\$18,266,429	\$17,610,500	\$17,065,208	\$16,697,806
\$54,391,752	\$52,289,225	\$50,244,861	\$48,318,446	\$46,697,569	\$45,573,001
\$26,166,617	\$25,100,873	\$24,059,942	\$23,073,801	\$22,234,600	\$21,636,702
\$28,225,135	\$27,188,351	\$26,184,919	\$25,244,645	\$24,462,969	\$23,936,298
-\$80,181,631	-\$89,262,492	-\$92,993,015	-\$95,318,568	-\$95,849,715	-\$94,227,043
-\$38,573,533	-\$42,849,488	-\$44,530,057	-\$45,518,055	-\$45,637,923	-\$44,736,192
-\$41,608,098	-\$46,413,004	-\$48,462,957	-\$49,800,513	-\$50,211,792	-\$49,490,851

2030	2031	2032	2033	2034	2035
-\$90,902,316	-\$76,790,960	-\$59,279,622	-\$45,527,009	-\$33,731,665	-\$21,812,826
-\$44,323,425	-\$37,447,565	-\$28,907,490	-\$22,197,440	-\$16,442,294	-\$10,630,684
-\$46,578,892	-\$39,343,395	-\$30,372,132	-\$23,329,569	-\$17,289,371	-\$11,182,142
\$32,501,733	\$31,273,212	\$29,787,413	\$28,220,510	\$34,501,168	\$58,929,042
\$15,847,650	\$15,250,566	\$14,525,723	\$13,759,372	\$16,817,383	\$28,719,617
\$16,654,083	\$16,022,645	\$15,261,690	\$14,461,138	\$17,683,784	\$30,209,425
\$86,933,822	\$98,228,171	\$111,536,476	\$126,689,660	\$143,159,517	\$160,433,938
\$42,388,410	\$47,901,548	\$54,390,353	\$61,769,621	\$69,782,232	\$78,188,973
\$44,545,411	\$50,326,624	\$57,146,123	\$64,920,039	\$73,377,285	\$82,244,965
\$124,619,597	\$140,810,042	\$159,887,491	\$181,609,574	\$205,219,108	\$229,981,983
\$60,763,768	\$68,666,849	\$77,968,549	\$88,546,726	\$100,032,800	\$112,083,860
\$63,855,828	\$72,143,194	\$81,918,943	\$93,062,849	\$105,186,307	\$117,898,123
\$153,152,835	\$193,520,466	\$241,931,759	\$290,992,735	\$349,148,127	\$427,532,137
\$74,676,405	\$94,371,398	\$117,977,135	\$141,878,280	\$170,190,121	\$208,361,767
\$78,476,431	\$99,149,068	\$123,954,624	\$149,114,456	\$178,958,006	\$219,170,371

2030	2031	2032	2033	2034	2035
\$2,746,716	\$20,076,936	\$42,893,674	\$70,670,606	\$100,826,713	\$129,637,748
\$1,315,648	\$9,569,212	\$20,336,064	\$33,324,569	\$47,292,065	\$60,485,511
\$1,431,068	\$10,507,724	\$22,557,610	\$37,346,038	\$53,534,649	\$69,152,237
\$485,402,998	\$572,187,804	\$667,632,983	\$768,535,286	\$867,760,228	\$959,108,175
\$232,502,895	\$272,720,224	\$316,527,488	\$362,401,121	\$407,016,867	\$447,494,261
\$252,900,103	\$299,467,581	\$351,105,495	\$406,134,165	\$460,743,361	\$511,613,914
\$401,345,352	\$463,698,232	\$534,083,949	\$611,055,678	\$690,364,576	\$767,852,985
\$192,240,173	\$221,011,152	\$253,211,353	\$288,141,958	\$323,810,677	\$358,259,697
\$209,105,179	\$242,687,081	\$280,872,596	\$322,913,719	\$366,553,900	\$409,593,288
\$575,328,393	\$664,711,220	\$765,609,115	\$875,948,056	\$989,637,328	\$1,100,716,929
\$275,576,206	\$316,819,392	\$362,978,367	\$413,051,376	\$464,182,468	\$513,565,124
\$299,752,186	\$347,891,828	\$402,630,748	\$462,896,680	\$525,454,860	\$587,151,805
\$1,464,823,459	\$1,720,674,193	\$2,010,219,722	\$2,326,209,625	\$2,648,588,846	\$2,957,315,836
\$701,634,922	\$820,119,980	\$953,053,272	\$1,096,919,024	\$1,242,302,077	\$1,379,804,593
\$763,188,537	\$900,554,213	\$1,057,166,451	\$1,229,290,602	\$1,406,286,769	\$1,577,511,244

2030	2031	2032	2033	2034	2035
-\$67,783,630	-\$69,916,945	-\$69,431,327	-\$55,028,160	-\$36,723,236	-\$18,810,723
-\$32,514,846	-\$33,381,966	-\$32,984,533	-\$26,009,112	-\$17,269,925	-\$8,801,573
-\$35,268,784	-\$36,534,978	-\$36,446,794	-\$29,019,048	-\$19,453,310	-\$10,009,150
\$300,596,173	\$365,107,030	\$437,349,766	\$511,429,915	\$584,470,208	\$651,859,086
\$144,191,720	\$174,320,984	\$207,770,446	\$241,727,838	\$274,860,224	\$305,006,111
\$156,404,453	\$190,786,046	\$229,579,321	\$269,702,078	\$309,609,984	\$346,852,975
\$344,855,931	\$396,780,467	\$455,624,958	\$520,147,008	\$586,728,383	\$651,843,665
\$165,422,498	\$189,443,521	\$216,452,386	\$245,847,980	\$275,922,181	\$304,998,895
\$179,433,433	\$207,336,946	\$239,172,572	\$274,299,028	\$310,806,202	\$346,844,770
\$494,350,832	\$568,784,632	\$653,138,185	\$745,630,516	\$841,074,889	\$934,417,618
\$237,133,081	\$271,567,208	\$310,284,404	\$352,422,975	\$395,534,330	\$437,215,787
\$257,217,750	\$297,217,424	\$342,853,781	\$393,207,541	\$445,540,559	\$497,201,831
\$1,072,019,305	\$1,260,755,184	\$1,476,681,583	\$1,722,179,279	\$1,975,550,245	\$2,219,309,646
\$514,232,453	\$601,949,746	\$701,522,703	\$813,989,680	\$929,046,810	\$1,038,419,220
\$557,786,852	\$658,805,438	\$775,158,880	\$908,189,599	\$1,046,503,435	\$1,180,890,426

2030	2031	2032	2033	2034	2035
-\$51,591,551	-\$44,111,404	-\$33,693,844	-\$26,086,476	-\$20,234,964	-\$6,690,736
-\$25,502,022	-\$21,759,860	-\$16,583,497	-\$12,810,493	-\$9,913,984	-\$3,269,482
-\$26,089,529	-\$22,351,544	-\$17,110,347	-\$13,275,983	-\$10,320,979	-\$3,421,254
\$58,562,281	\$58,113,353	\$78,598,386	\$108,161,206	\$138,691,256	\$165,928,712
\$28,947,697	\$28,666,928	\$38,684,696	\$53,115,582	\$67,950,847	\$81,082,400
\$29,614,584	\$29,446,425	\$39,913,690	\$55,045,623	\$70,740,408	\$84,846,311
\$135,090,525	\$152,575,098	\$172,829,402	\$195,538,749	\$219,552,028	\$243,700,025
\$66,776,080	\$75,264,274	\$85,063,488	\$96,024,767	\$107,568,038	\$119,085,978
\$68,314,445	\$77,310,825	\$87,765,914	\$99,513,982	\$111,983,990	\$124,614,047
\$193,652,210	\$218,716,339	\$247,750,875	\$280,304,714	\$314,727,739	\$349,343,883
\$95,723,482	\$107,891,304	\$121,938,474	\$137,651,462	\$154,198,737	\$170,709,699
\$97,928,728	\$110,825,035	\$125,812,400	\$142,653,251	\$160,529,002	\$178,634,183
\$335,713,465	\$385,293,386	\$465,484,819	\$557,918,192	\$652,736,059	\$752,281,883
\$165,945,237	\$190,062,646	\$229,103,162	\$273,981,318	\$319,803,638	\$367,608,596
\$169,768,228	\$195,230,741	\$236,381,657	\$283,936,874	\$332,932,421	\$384,673,287

2030	2031	2032	2033	2034	2035
-\$59,868,439	-\$95,990,830	-\$171,777,290	-\$238,160,019	-\$294,204,179	-\$339,793,748
-\$91,722,790	-\$119,789,920	-\$165,740,148	-\$209,531,424	-\$250,697,991	-\$288,896,652
-\$28,382,925	-\$49,067,693	-\$87,547,718	-\$123,592,888	-\$156,974,483	-\$187,526,974
-\$9,095,424	-\$12,390,077	-\$18,145,485	-\$23,605,769	-\$28,715,827	-\$33,453,152
\$69,332,700	\$85,256,860	\$99,656,061	\$118,570,063	\$142,184,122	\$170,083,030
\$2,264,006	\$2,822,346	\$3,451,472	\$4,243,142	\$5,196,390	\$6,289,662
-\$4,774,355	-\$5,951,787	-\$7,278,493	-\$8,947,974	-\$10,958,191	-\$13,263,694
-\$1,584,124	-\$1,974,795	-\$2,414,994	-\$2,968,925	-\$3,635,913	-\$4,400,875
-\$859,384	-\$1,071,322	-\$1,310,129	-\$1,610,635	-\$1,972,474	-\$2,387,465
\$9,481,870	\$11,820,248	\$14,455,088	\$17,770,677	\$21,762,968	\$26,341,695
-\$13,702,949	-\$17,014,256	-\$20,723,989	-\$25,375,984	-\$4,820,645	\$14,713,307
-\$13,829,921	-\$17,171,910	-\$20,916,018	-\$25,611,119	-\$16,351,402	-\$8,172,096
-\$23,290,899	-\$28,919,126	-\$35,224,560	-\$43,131,555	-\$42,857,684	-\$44,469,432
-\$357,670	-\$444,101	-\$540,932	-\$662,357	-\$422,881	-\$211,347
\$23,775,541	\$29,520,882	\$35,957,521	\$44,029,046	\$54,811,322	\$67,566,182
-\$71,307,382	-\$110,182,740	-\$189,049,808	-\$259,292,862	-\$293,828,434	-\$318,790,779
-\$110,327,066	-\$142,913,616	-\$193,934,660	-\$244,090,517	-\$278,007,584	-\$310,332,441
-\$53,257,949	-\$79,961,614	-\$125,187,272	-\$169,693,368	-\$203,468,079	-\$236,397,281

-\$10,312,478	-\$13,905,500	-\$19,996,545	-\$25,878,761	-\$31,111,183	-\$36,051,964
\$102,590,111	\$126,597,990	\$150,068,669	\$180,369,785	\$218,758,411	\$263,990,908

2036	2037	2038	2039	2040	2041
-\$232,283,663	-\$230,407,436	-\$228,723,625	-\$227,382,981	-\$228,622,083	-\$230,623,745
-\$109,955,167	-\$108,732,094	-\$107,592,675	-\$106,608,938	-\$106,826,808	-\$107,398,760
-\$122,328,496	-\$121,675,342	-\$121,130,950	-\$120,774,043	-\$121,795,276	-\$123,224,985
\$65,129,705	\$67,918,989	\$70,673,530	\$73,395,732	\$76,093,957	\$78,819,865
\$30,830,182	\$32,051,804	\$33,245,163	\$34,411,727	\$35,555,946	\$36,705,482
\$34,299,523	\$35,867,185	\$37,428,367	\$38,984,005	\$40,538,011	\$42,114,383
\$31,341,532	\$31,064,130	\$32,962,992	\$34,978,493	\$37,056,883	\$39,224,726
\$14,836,013	\$14,659,544	\$15,505,948	\$16,399,732	\$17,315,338	\$18,266,493
\$16,505,519	\$16,404,586	\$17,457,045	\$18,578,761	\$19,741,546	\$20,958,234
\$44,928,073	\$44,530,417	\$47,252,436	\$50,141,655	\$53,121,027	\$56,228,629
\$21,267,418	\$21,014,450	\$22,227,769	\$23,509,009	\$24,821,529	\$26,185,010
\$23,660,655	\$23,515,967	\$25,024,666	\$26,632,646	\$28,299,498	\$30,043,619
-\$90,884,354	-\$86,893,901	-\$77,834,667	-\$68,867,102	-\$62,350,216	-\$56,350,525
-\$43,021,555	-\$41,006,297	-\$36,613,795	-\$32,288,470	-\$29,133,994	-\$26,241,775
-\$47,862,799	-\$45,887,604	-\$41,220,871	-\$36,578,632	-\$33,216,221	-\$30,108,750

2036	2037	2038	2039	2040	2041
\$4,623,808	\$28,762,716	\$43,847,161	\$55,656,253	\$66,041,414	\$74,649,647
\$2,252,441	\$14,000,966	\$21,321,310	\$27,028,163	\$32,022,254	\$36,135,713
\$2,371,366	\$14,761,750	\$22,525,851	\$28,628,090	\$34,019,160	\$38,513,935
\$77,635,340	\$94,900,293	\$110,671,721	\$125,011,800	\$138,059,350	\$149,987,261
\$37,819,274	\$46,195,073	\$53,815,710	\$60,709,070	\$66,942,412	\$72,604,449
\$39,816,067	\$48,705,220	\$56,856,011	\$64,302,730	\$71,116,937	\$77,382,811
\$177,323,346	\$193,783,769	\$209,764,051	\$225,275,032	\$240,365,791	\$255,098,164
\$86,381,281	\$94,329,059	\$102,000,775	\$109,399,574	\$116,548,904	\$123,485,566
\$90,942,065	\$99,454,710	\$107,763,276	\$115,875,458	\$123,816,887	\$131,612,598
\$254,192,941	\$277,788,951	\$300,696,679	\$322,931,663	\$344,564,260	\$365,683,110
\$123,827,530	\$135,220,666	\$146,218,068	\$156,824,243	\$167,072,805	\$177,016,507
\$130,365,412	\$142,568,285	\$154,478,611	\$166,107,420	\$177,491,455	\$188,666,604
\$513,775,435	\$595,235,729	\$664,979,612	\$728,874,748	\$789,030,816	\$845,418,183
\$250,280,525	\$289,745,763	\$323,355,864	\$353,961,051	\$382,586,377	\$409,242,235
\$263,494,910	\$305,489,966	\$341,623,749	\$374,913,697	\$406,444,439	\$436,175,948

2036	2037	2038	2039	2040	2041
\$153,225,005	\$173,602,247	\$191,887,734	\$208,770,044	\$224,411,273	\$237,668,196
\$71,110,038	\$80,156,932	\$88,175,148	\$95,505,733	\$102,239,471	\$107,875,194
\$82,114,967	\$93,445,314	\$103,712,586	\$113,264,312	\$122,171,803	\$129,793,003
\$1,035,667,889	\$1,100,325,040	\$1,155,707,828	\$1,203,427,392	\$1,244,366,605	\$1,279,079,693
\$480,642,065	\$508,050,337	\$531,064,217	\$550,530,203	\$566,920,642	\$580,561,353
\$555,025,824	\$592,274,703	\$624,643,611	\$652,897,190	\$677,445,963	\$698,518,340
\$838,455,189	\$903,641,299	\$964,815,359	\$1,022,786,055	\$1,077,893,441	\$1,130,247,346
\$389,117,822	\$417,236,044	\$443,346,407	\$467,892,469	\$491,077,179	\$513,007,854
\$449,337,366	\$486,405,256	\$521,468,952	\$554,893,586	\$586,816,263	\$617,239,492
\$1,201,925,159	\$1,295,369,421	\$1,383,062,410	\$1,466,163,378	\$1,545,159,793	\$1,620,209,093
\$557,800,234	\$598,107,692	\$635,536,887	\$670,723,657	\$703,958,928	\$735,396,542
\$644,124,925	\$697,261,728	\$747,525,523	\$795,439,721	\$841,200,864	\$884,812,551
\$3,229,273,241	\$3,472,938,006	\$3,695,473,331	\$3,901,146,869	\$4,091,831,112	\$4,267,204,328
\$1,498,670,160	\$1,603,551,005	\$1,698,122,659	\$1,784,652,061	\$1,864,196,219	\$1,936,840,943
\$1,730,603,082	\$1,869,387,001	\$1,997,350,671	\$2,116,494,808	\$2,227,634,892	\$2,330,363,386

2036	2037	2038	2039	2040	2041
-\$4,990,212	\$6,879,996	\$17,656,333	\$27,857,975	\$37,052,373	\$45,146,052
-\$2,322,819	\$3,186,426	\$8,138,532	\$12,783,822	\$16,932,939	\$20,554,025
-\$2,667,392	\$3,693,570	\$9,517,801	\$15,074,153	\$20,119,434	\$24,592,027
\$708,268,323	\$755,899,720	\$796,731,108	\$831,970,066	\$862,277,749	\$888,078,675
\$329,681,267	\$350,090,084	\$367,246,209	\$381,785,005	\$394,061,043	\$404,323,096
\$378,587,056	\$405,809,636	\$429,484,898	\$450,185,061	\$468,216,706	\$483,755,579
\$711,146,336	\$765,908,838	\$817,328,124	\$866,093,390	\$912,495,402	\$956,633,982
\$331,020,911	\$354,725,742	\$376,740,223	\$397,443,950	\$417,010,517	\$435,534,851
\$380,125,426	\$411,183,096	\$440,587,901	\$468,649,440	\$495,484,885	\$521,099,131
\$1,019,427,973	\$1,097,929,996	\$1,171,639,521	\$1,241,544,508	\$1,308,061,773	\$1,371,334,409
\$474,518,335	\$508,499,202	\$540,056,951	\$569,735,734	\$597,784,400	\$624,339,025
\$544,909,637	\$589,430,794	\$631,582,570	\$671,808,774	\$710,277,374	\$746,995,384
\$2,433,852,421	\$2,626,618,550	\$2,803,355,086	\$2,967,465,939	\$3,119,887,297	\$3,261,193,118
\$1,132,897,694	\$1,216,501,454	\$1,292,181,915	\$1,361,748,511	\$1,425,788,898	\$1,484,750,998
\$1,300,954,727	\$1,410,117,096	\$1,511,173,171	\$1,605,717,428	\$1,694,098,398	\$1,776,442,120

2036	2037	2038	2039	2040	2041
\$6,379,877	\$17,386,232	\$27,121,250	\$36,084,540	\$44,399,994	\$51,710,425
\$3,107,215	\$8,437,555	\$13,114,969	\$17,389,177	\$21,326,196	\$24,761,185
\$3,272,662	\$8,948,677	\$14,006,280	\$18,695,363	\$23,073,797	\$26,949,240
\$188,999,726	\$209,252,290	\$227,154,980	\$243,040,760	\$257,379,858	\$270,122,037
\$92,049,236	\$101,550,333	\$109,844,887	\$117,121,592	\$123,624,644	\$129,346,097
\$96,950,490	\$107,701,957	\$117,310,093	\$125,919,167	\$133,755,214	\$140,775,940
\$266,217,655	\$287,470,319	\$307,743,224	\$327,222,637	\$346,010,819	\$364,164,458
\$129,656,969	\$139,509,616	\$148,814,786	\$157,688,926	\$166,195,850	\$174,377,670
\$136,560,686	\$147,960,703	\$158,928,439	\$169,533,711	\$179,814,969	\$189,786,788
\$381,622,896	\$412,088,580	\$441,149,782	\$469,073,512	\$496,006,362	\$522,029,596
\$185,863,211	\$199,986,976	\$213,325,932	\$226,047,008	\$238,241,680	\$249,970,316
\$195,759,685	\$212,101,605	\$227,823,849	\$243,026,503	\$257,764,682	\$272,059,280
\$843,220,155	\$926,197,420	\$1,003,169,235	\$1,075,421,449	\$1,143,797,033	\$1,208,026,516
\$410,676,631	\$449,484,479	\$485,100,574	\$518,246,704	\$549,388,371	\$578,455,268
\$432,543,524	\$476,712,941	\$518,068,661	\$557,174,745	\$594,408,662	\$629,571,248

2036	2037	2038	2039	2040	2041
-\$375,913,949	-\$403,302,633	-\$422,618,307	-\$434,358,542	-\$407,713,559	-\$370,649,117
-\$324,328,019	-\$357,073,708	-\$387,260,441	-\$414,969,201	-\$428,832,408	-\$438,806,276
-\$215,444,650	-\$240,983,169	-\$264,423,763	-\$285,957,296	-\$293,719,390	-\$298,033,309
-\$37,824,883	-\$41,850,243	-\$45,555,067	-\$48,968,186	-\$50,501,961	-\$51,555,664
\$201,683,603	\$236,604,487	\$274,620,963	\$315,536,140	\$365,340,200	\$417,746,132
\$7,493,494	\$8,785,250	\$10,147,630	\$11,564,641	\$13,019,717	\$14,443,367
-\$15,802,346	-\$18,526,412	-\$21,399,410	-\$24,387,615	-\$27,456,092	-\$30,458,298
-\$5,243,196	-\$6,147,038	-\$7,100,294	-\$8,091,777	-\$9,109,893	-\$10,106,021
-\$2,844,422	-\$3,334,754	-\$3,851,894	-\$4,389,771	-\$4,942,097	-\$5,482,494
\$31,383,458	\$36,793,454	\$42,499,228	\$48,433,803	\$54,527,799	\$60,490,180
\$38,869,468	\$67,218,806	\$99,438,207	\$135,387,904	\$174,744,696	\$215,224,608
\$2,247,469	\$14,695,633	\$29,012,074	\$45,142,574	\$62,936,333	\$81,303,239
-\$45,542,590	-\$46,138,375	-\$46,305,656	-\$46,019,908	-\$45,301,146	-\$44,364,595
\$58,124	\$380,059	\$750,312	\$1,167,480	\$1,627,664	\$2,102,670
\$82,106,466	\$98,281,489	\$115,981,477	\$135,097,758	\$155,481,845	\$176,183,294
-\$329,550,987	-\$327,298,576	-\$313,032,469	-\$287,405,998	-\$219,949,146	-\$140,981,142
-\$337,882,896	-\$360,904,487	-\$379,647,777	-\$394,214,242	-\$393,352,167	-\$387,961,335
-\$266,230,437	-\$293,268,581	-\$317,829,713	-\$340,068,980	-\$348,130,429	-\$352,503,925

-\$40,611,181	-\$44,804,938	-\$48,656,648	-\$52,190,476	-\$53,816,394	-\$54,935,487
\$315,173,527	\$371,679,430	\$433,101,668	\$499,067,701	\$575,349,844	\$654,419,606

2042	2043	2044	2045	2046	2047
-\$232,772,800	-\$235,088,886	-\$237,560,190	-\$240,158,335	-\$243,225,633	-\$246,393,345
-\$108,044,116	-\$108,774,640	-\$109,583,927	-\$110,457,475	-\$111,532,309	-\$112,651,998
-\$124,728,684	-\$126,314,247	-\$127,976,263	-\$129,700,860	-\$131,693,324	-\$133,741,347
\$81,579,879	\$84,374,710	\$87,197,971	\$90,038,131	\$91,686,711	\$93,320,150
\$37,866,219	\$39,039,823	\$40,223,474	\$41,411,782	\$42,043,392	\$42,666,337
\$43,713,659	\$45,334,886	\$46,974,497	\$48,626,349	\$49,643,319	\$50,653,814
\$41,488,406	\$43,851,796	\$46,315,230	\$48,876,144	\$50,874,041	\$52,928,393
\$19,257,311	\$20,290,042	\$21,364,711	\$22,479,900	\$23,328,542	\$24,199,068
\$22,231,095	\$23,561,754	\$24,950,519	\$26,396,244	\$27,545,500	\$28,729,325
\$59,473,613	\$62,861,531	\$66,392,863	\$70,063,932	\$72,927,917	\$75,872,829
\$27,605,347	\$29,085,766	\$30,626,304	\$32,224,928	\$33,441,455	\$34,689,353
\$31,868,266	\$33,775,765	\$35,766,559	\$37,839,004	\$39,486,462	\$41,183,475
-\$50,230,902	-\$44,000,849	-\$37,654,126	-\$31,180,127	-\$27,736,963	-\$24,271,973
-\$23,315,239	-\$20,359,008	-\$17,369,438	-\$14,340,864	-\$12,718,921	-\$11,097,241
-\$26,915,663	-\$23,641,841	-\$20,284,688	-\$16,839,263	-\$15,018,042	-\$13,174,733

2042	2043	2044	2045	2046	2047
\$81,767,929	\$87,441,914	\$91,810,656	\$95,065,925	\$97,144,253	\$98,458,924
\$39,511,971	\$42,177,019	\$44,202,330	\$45,685,165	\$46,594,186	\$47,135,323
\$42,255,959	\$45,264,895	\$47,608,326	\$49,380,760	\$50,550,067	\$51,323,600
\$160,852,688	\$170,660,398	\$179,380,878	\$186,985,017	\$193,526,037	\$198,974,032
\$77,727,377	\$82,316,895	\$86,363,099	\$89,858,078	\$92,822,662	\$95,255,006
\$83,125,311	\$88,343,503	\$93,017,779	\$97,126,939	\$100,703,375	\$103,719,026
\$269,454,003	\$283,387,770	\$296,849,179	\$309,798,267	\$322,203,007	\$334,053,393
\$130,205,800	\$136,690,184	\$142,918,327	\$148,877,580	\$154,541,173	\$159,921,662
\$139,248,203	\$146,697,586	\$153,930,852	\$160,920,687	\$167,661,834	\$174,131,731
\$386,262,199	\$406,236,249	\$425,533,172	\$444,095,684	\$461,877,874	\$478,865,398
\$186,649,959	\$195,945,322	\$204,873,362	\$213,415,948	\$221,534,706	\$229,247,635
\$199,612,240	\$210,290,927	\$220,659,811	\$230,679,737	\$240,343,168	\$249,617,763
\$898,336,819	\$947,726,331	\$993,573,885	\$1,035,944,893	\$1,074,751,171	\$1,110,351,746
\$434,095,107	\$457,129,420	\$478,357,118	\$497,836,770	\$515,492,727	\$531,559,625
\$464,241,711	\$490,596,912	\$515,216,767	\$538,108,123	\$559,258,445	\$578,792,121

2042	2043	2044	2045	2046	2047
\$249,006,642	\$258,052,142	\$264,636,696	\$268,753,892	\$269,941,178	\$268,973,827
\$112,640,353	\$116,374,783	\$119,012,174	\$120,559,767	\$120,802,682	\$120,104,301
\$136,366,289	\$141,677,359	\$145,624,522	\$148,194,125	\$149,138,496	\$148,869,526
\$1,307,733,532	\$1,330,318,870	\$1,346,736,705	\$1,356,889,449	\$1,360,811,933	\$1,358,927,262
\$591,564,810	\$599,939,100	\$605,653,204	\$608,684,303	\$608,983,528	\$606,798,851
\$716,168,722	\$730,379,771	\$741,083,501	\$748,205,146	\$751,828,405	\$752,128,411
\$1,179,672,310	\$1,225,857,219	\$1,268,425,460	\$1,306,996,188	\$1,341,226,429	\$1,371,133,185
\$533,635,186	\$552,829,620	\$570,435,142	\$586,302,785	\$600,218,725	\$612,249,136
\$646,037,124	\$673,027,598	\$697,990,318	\$720,693,402	\$741,007,704	\$758,884,050
\$1,691,059,758	\$1,757,265,805	\$1,818,287,360	\$1,873,578,483	\$1,922,647,520	\$1,965,518,841
\$764,965,813	\$792,481,027	\$817,718,535	\$840,464,795	\$860,413,288	\$877,658,877
\$926,093,945	\$964,784,778	\$1,000,568,826	\$1,033,113,688	\$1,062,234,231	\$1,087,859,964
\$4,427,472,241	\$4,571,494,036	\$4,698,086,221	\$4,806,218,012	\$4,894,627,060	\$4,964,553,116
\$2,002,806,162	\$2,061,624,530	\$2,112,819,055	\$2,156,011,650	\$2,190,418,224	\$2,216,811,165
\$2,424,666,079	\$2,509,869,506	\$2,585,267,167	\$2,650,206,362	\$2,704,208,837	\$2,747,741,951

2042	2043	2044	2045	2046	2047
\$52,107,773	\$57,558,465	\$61,332,715	\$63,416,851	\$63,526,513	\$62,098,346
\$23,642,294	\$26,033,682	\$27,661,289	\$28,526,423	\$28,504,868	\$27,799,507
\$28,465,480	\$31,524,783	\$33,671,426	\$34,890,428	\$35,021,645	\$34,298,839
\$909,493,008	\$926,496,762	\$938,981,046	\$946,825,229	\$949,990,335	\$948,854,660
\$412,654,379	\$419,054,295	\$423,484,043	\$425,904,730	\$426,268,466	\$424,772,854
\$496,838,629	\$507,442,468	\$515,497,003	\$520,920,500	\$523,721,869	\$524,081,806
\$998,360,627	\$1,037,406,419	\$1,073,438,639	\$1,106,114,168	\$1,135,118,277	\$1,160,483,047
\$452,975,318	\$469,218,710	\$484,124,931	\$497,556,720	\$509,336,894	\$519,512,331
\$545,385,309	\$568,187,710	\$589,313,708	\$608,557,448	\$625,781,383	\$640,970,716
\$1,431,149,537	\$1,487,121,663	\$1,538,773,836	\$1,585,614,192	\$1,627,191,570	\$1,663,551,957
\$649,339,927	\$672,624,822	\$693,992,884	\$713,247,348	\$730,134,223	\$744,720,706
\$781,809,610	\$814,496,842	\$844,780,951	\$872,366,844	\$897,057,348	\$918,831,251
\$3,391,110,945	\$3,508,583,309	\$3,612,526,235	\$3,701,970,440	\$3,775,826,695	\$3,834,988,009
\$1,538,611,918	\$1,586,931,508	\$1,629,263,147	\$1,665,235,220	\$1,694,244,451	\$1,716,805,398
\$1,852,499,027	\$1,921,651,802	\$1,983,263,088	\$2,036,735,220	\$2,081,582,244	\$2,118,182,611

2042	2043	2044	2045	2046	2047
\$57,819,551	\$62,406,679	\$65,386,164	\$66,824,248	\$66,301,303	\$64,347,835
\$27,606,618	\$29,714,840	\$31,050,701	\$31,651,350	\$31,319,735	\$30,315,018
\$30,212,933	\$32,691,840	\$34,335,463	\$35,172,898	\$34,981,568	\$34,032,817
\$281,261,714	\$290,777,781	\$298,609,529	\$304,693,681	\$309,051,059	\$311,860,284
\$134,291,682	\$138,453,372	\$141,804,238	\$144,318,367	\$145,991,057	\$146,921,028
\$146,970,032	\$152,324,410	\$156,805,292	\$160,375,314	\$163,060,002	\$164,939,255
\$381,622,250	\$398,275,136	\$413,997,463	\$428,667,652	\$442,172,602	\$454,588,939
\$182,209,989	\$189,638,064	\$196,599,870	\$203,038,722	\$208,875,665	\$214,162,168
\$199,412,261	\$208,637,072	\$217,397,593	\$225,628,930	\$233,296,936	\$240,426,772
\$547,055,333	\$570,927,239	\$593,465,188	\$614,494,898	\$633,854,237	\$651,653,052
\$261,197,942	\$271,846,084	\$281,825,831	\$291,055,922	\$299,423,178	\$307,001,377
\$285,857,391	\$299,081,155	\$311,639,357	\$323,438,976	\$334,431,059	\$344,651,675
\$1,267,758,847	\$1,322,386,835	\$1,371,458,345	\$1,414,680,478	\$1,451,379,201	\$1,482,450,110
\$605,306,231	\$629,652,359	\$651,280,640	\$670,064,361	\$685,609,636	\$698,399,591
\$662,452,616	\$692,734,476	\$720,177,705	\$744,616,118	\$765,769,565	\$784,050,519

2042	2043	2044	2045	2046	2047
-\$332,816,031	-\$294,677,984	-\$256,609,433	-\$218,709,462	-\$180,855,789	-\$142,877,468
-\$448,344,663	-\$457,470,123	-\$466,201,875	-\$474,510,593	-\$482,451,251	-\$490,088,270
-\$302,490,110	-\$307,057,604	-\$311,712,023	-\$316,445,060	-\$321,207,999	-\$326,092,063
-\$52,609,022	-\$53,660,592	-\$54,709,371	-\$55,755,962	-\$56,801,885	-\$57,848,403
\$470,627,764	\$523,510,334	\$576,013,835	\$628,002,153	\$679,605,346	\$731,151,267
\$15,827,389	\$17,164,561	\$18,451,220	\$19,689,331	\$20,885,615	\$22,050,251
-\$33,376,935	-\$36,196,775	-\$38,910,092	-\$41,521,032	-\$44,043,766	-\$46,499,759
-\$11,074,421	-\$12,010,040	-\$12,910,314	-\$13,776,621	-\$14,613,660	-\$15,428,555
-\$6,007,848	-\$6,515,420	-\$7,003,816	-\$7,473,786	-\$7,927,878	-\$8,369,957
\$66,286,594	\$71,886,796	\$77,275,442	\$82,460,770	\$87,470,920	\$92,348,522
\$256,293,839	\$297,449,640	\$338,287,606	\$378,717,050	\$418,911,242	\$459,084,770
\$99,979,321	\$118,719,559	\$137,325,586	\$155,755,848	\$174,094,561	\$192,430,273
-\$43,288,308	-\$42,134,942	-\$40,958,748	-\$39,763,059	-\$38,526,962	-\$37,272,104
\$2,585,672	\$3,070,333	\$3,551,524	\$4,028,168	\$4,502,446	\$4,976,645
\$197,017,154	\$217,794,689	\$238,369,244	\$258,696,093	\$278,841,197	\$298,949,957
-\$60,694,803	\$19,936,217	\$100,129,392	\$179,696,920	\$258,941,068	\$338,257,553
-\$381,742,278	-\$374,947,339	-\$367,786,380	-\$360,275,777	-\$352,400,456	-\$344,157,756
-\$356,852,839	-\$361,202,586	-\$365,581,085	-\$369,984,740	-\$374,348,621	-\$378,792,723

-\$56,031,198	-\$57,105,678	-\$58,161,663	-\$59,201,579	-\$60,227,318	-\$61,241,715
\$733,931,511	\$813,191,819	\$891,658,521	\$969,159,016	\$1,045,917,463	\$1,122,449,746

2048	2049	2050
-\$249,659,129	-\$253,022,719	-\$256,484,208
-\$113,814,401	-\$115,017,115	-\$116,257,301
-\$135,844,728	-\$138,005,604	-\$140,226,907
\$94,938,305	\$96,550,671	\$98,176,526
\$43,280,397	\$43,889,259	\$44,500,744
\$51,657,908	\$52,661,412	\$53,675,783
\$55,040,511	\$57,217,383	\$59,472,379
\$25,091,824	\$26,009,437	\$26,957,209
\$29,948,688	\$31,207,947	\$32,515,171
\$78,900,549	\$82,021,095	\$85,253,630
\$35,969,118	\$37,284,516	\$38,643,147
\$42,931,431	\$44,736,579	\$46,610,483
-\$20,779,764	-\$17,233,570	-\$13,581,672
-\$9,473,062	-\$7,833,903	-\$6,156,202
-\$11,306,702	-\$9,399,667	-\$7,425,470

2048	2049	2050
\$99,062,879	\$99,044,546	\$98,494,712
\$47,336,522	\$47,241,748	\$46,895,444
\$51,726,357	\$51,802,798	\$51,599,267
\$203,377,738	\$206,805,693	\$209,357,803
\$97,182,667	\$98,641,094	\$99,679,739
\$106,195,071	\$108,164,599	\$109,678,064
\$345,348,690	\$356,104,022	\$366,364,561
\$165,022,520	\$169,852,627	\$174,434,024
\$180,326,170	\$186,251,394	\$191,930,537
\$495,057,202	\$510,474,965	\$525,183,443
\$236,559,713	\$243,483,669	\$250,051,099
\$258,497,489	\$266,991,295	\$275,132,344
\$1,142,846,509	\$1,172,429,225	\$1,199,400,519
\$546,101,422	\$559,219,138	\$571,060,307
\$596,745,087	\$613,210,087	\$628,340,212

2048	2049	2050
\$265,461,617	\$259,435,795	\$251,068,505
\$118,292,548	\$115,382,972	\$111,453,732
\$147,169,069	\$144,052,822	\$139,614,773
\$1,350,922,439	\$1,336,999,650	\$1,317,787,718
\$601,985,548	\$594,624,940	\$584,989,183
\$748,936,891	\$742,374,711	\$732,798,535
\$1,396,191,498	\$1,416,236,717	\$1,431,461,576
\$622,157,927	\$629,865,290	\$635,451,011
\$774,033,571	\$786,371,427	\$796,010,565
\$2,001,439,922	\$2,030,174,735	\$2,051,999,565
\$891,863,125	\$902,911,627	\$910,918,756
\$1,109,576,797	\$1,127,263,108	\$1,141,080,809
\$5,014,015,476	\$5,042,846,896	\$5,052,317,364
\$2,234,299,148	\$2,242,784,829	\$2,242,812,682
\$2,779,716,329	\$2,800,062,067	\$2,809,504,682

2048	2049	2050
\$58,804,071	\$53,628,877	\$46,688,390
\$26,267,166	\$23,905,163	\$20,768,875
\$32,536,905	\$29,723,715	\$25,919,515
\$943,012,206	\$932,556,757	\$917,985,381
\$421,233,733	\$415,688,751	\$408,356,843
\$521,778,473	\$516,868,006	\$509,628,537
\$1,181,686,789	\$1,198,557,371	\$1,211,262,876
\$527,847,184	\$534,258,974	\$538,818,477
\$653,839,605	\$664,298,397	\$672,444,399
\$1,693,947,513	\$1,718,131,485	\$1,736,344,821
\$756,668,716	\$765,860,014	\$772,396,059
\$937,278,797	\$952,271,471	\$963,948,762
\$3,877,450,580	\$3,902,874,490	\$3,912,281,468
\$1,732,016,800	\$1,739,712,902	\$1,740,340,253
\$2,145,433,780	\$2,163,161,588	\$2,171,941,214

2048	2049	2050
\$60,848,906	\$55,829,649	\$49,409,767
\$28,587,758	\$26,155,160	\$23,079,360
\$32,261,148	\$29,674,489	\$26,330,407
\$312,839,943	\$312,039,636	\$309,671,940
\$146,977,049	\$146,184,808	\$144,648,125
\$165,862,894	\$165,854,828	\$165,023,815
\$465,643,628	\$475,285,642	\$483,596,067
\$218,766,586	\$222,662,548	\$225,888,288
\$246,877,042	\$252,623,095	\$257,707,779
\$667,499,944	\$681,321,767	\$693,234,758
\$313,601,809	\$319,186,668	\$323,810,765
\$353,898,135	\$362,135,099	\$369,423,993
\$1,506,832,421	\$1,524,476,695	\$1,535,912,532
\$707,933,202	\$714,189,183	\$717,426,537
\$798,899,219	\$810,287,511	\$818,485,995

2048	2049	2050
-\$104,501,195	-\$65,515,934	-\$25,728,413
-\$497,469,732	-\$504,670,549	-\$511,710,167
-\$331,147,696	-\$336,409,571	-\$341,888,087
-\$58,897,656	-\$59,950,620	-\$61,008,862
\$783,013,888	\$835,514,806	\$888,878,703
\$23,192,438	\$24,319,183	\$25,434,852
-\$48,908,414	-\$51,284,504	-\$53,637,235
-\$16,227,744	-\$17,016,127	-\$17,796,760
-\$8,803,515	-\$9,231,211	-\$9,654,702
\$97,132,111	\$101,851,025	\$106,523,549
\$499,576,244	\$540,636,857	\$582,493,453
\$210,919,079	\$229,672,699	\$248,799,577
-\$35,983,235	-\$34,661,343	-\$33,284,526
\$5,454,804	\$5,939,811	\$6,434,472
\$319,185,596	\$339,685,690	\$360,543,931
\$418,267,487	\$499,440,106	\$582,199,892
-\$335,459,067	-\$326,282,354	-\$316,547,825
-\$383,358,674	-\$388,087,041	-\$392,969,373

-\$62,246,366	-\$63,242,020	-\$64,229,092
\$1,199,331,595	\$1,277,051,521	\$1,355,946,183

Incremental gas system costs are calculated relative to Reference

Incremental Delivery Cost

Scenario		Incremental Delivery Cost	
		2021	2022
High Decarbonized Methane		\$0.00	\$0.00
Electrification with Fuel Backup		\$0.00	\$0.00
High Electrification	Unstructured	\$0.00	\$0.00
High Electrification	Structured	\$0.00	-\$5.17
MWG Scenario		\$0.00	\$0.00

Incremental Commodity Cost

High Decarbonized Methane - Low RNG Price

Commodity Cost (MM\$2021)	2021	2022
Residential	-\$93.34	-\$95.82
Commercial	-\$19.24	-\$21.32
Other	\$0.00	\$0.00
Total	-\$112.58	-\$117.14

High Decarbonized Methane - High RNG Price

Commodity Cost (MM\$2021)	2021	2022
Residential	-\$93.34	-\$95.82
Commercial	-\$19.24	-\$21.32
Other	\$0.00	\$0.00
Total	-\$112.58	-\$117.14

Electrification with Fuel Backup - Low RNG Price

Commodity Cost (MM\$2021)	2021	2022
Residential	-\$104.06	-\$111.34
Commercial	-\$26.64	-\$32.16
Other	\$0.00	\$0.00
Total	-\$130.70	-\$143.50

Electrification with Fuel Backup - High RNG Price

Commodity Cost (MM\$2021)	2021	2022
Residential	-\$104.06	-\$111.34
Commercial	-\$26.64	-\$32.16
Other	\$0.00	\$0.00
Total	-\$130.70	-\$143.50

High Electrification - Low RNG Price

Commodity Cost (MM\$2021)	2021	2022
Residential	-\$107.40	-\$116.34
Commercial	-\$33.49	-\$42.37
Other	\$0.00	\$0.00
Total	-\$140.89	-\$158.70

High Electrification - High RNG Price

Commodity Cost (MM\$2021)	2021	2022
Residential	-\$107.40	-\$116.34
Commercial	-\$33.49	-\$42.37
Other	\$0.00	\$0.00
Total	-\$140.89	-\$158.70

MWG Scenario - Low RNG Price

Commodity Cost (MM\$2021)	2021	2022
Residential	-\$107.40	-\$116.34
Commercial	-\$26.64	-\$32.16
Other	\$0.00	\$0.00
Total	-\$134.05	-\$148.49

MWG Scenario - High RNG Price

Commodity Cost (MM\$2021)	2021	2022
Residential	-\$107.40	-\$116.34
Commercial	-\$26.64	-\$32.16
Other	\$0.00	\$0.00
Total	-\$134.05	-\$148.49

(MM\$2021)

2023	2024	2025	2026	2027	2028	2029
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$0.00	\$0.00	\$0.00	-\$14.98	-\$30.73	-\$47.28	-\$64.67
-\$11.01	-\$17.54	-\$24.76	-\$46.49	-\$72.39	-\$102.56	-\$137.06
\$0.00	\$0.00	\$0.00	-\$4.99	-\$10.30	-\$15.94	-\$21.90

2023	2024	2025	2026	2027	2028	2029
-\$99.41	-\$104.79	-\$113.48	-\$123.22	-\$131.41	-\$138.47	-\$143.95
-\$24.04	-\$27.64	-\$32.66	-\$38.58	-\$44.55	-\$50.58	-\$56.39
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$123.46	-\$132.44	-\$146.13	-\$161.80	-\$175.97	-\$189.05	-\$200.35

2023	2024	2025	2026	2027	2028	2029
-\$99.41	-\$104.79	-\$113.48	-\$123.22	-\$131.41	-\$138.47	-\$143.95
-\$24.04	-\$27.64	-\$32.66	-\$38.58	-\$44.55	-\$50.58	-\$56.39
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$123.46	-\$132.44	-\$146.13	-\$161.80	-\$175.97	-\$189.05	-\$200.35

2023	2024	2025	2026	2027	2028	2029
-\$120.67	-\$133.01	-\$150.72	-\$170.93	-\$189.95	-\$207.99	-\$224.04
-\$39.01	-\$47.69	-\$59.34	-\$73.03	-\$87.14	-\$101.49	-\$115.35
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$159.68	-\$180.70	-\$210.06	-\$243.96	-\$277.08	-\$309.48	-\$339.39

2023	2024	2025	2026	2027	2028	2029
-\$120.67	-\$133.01	-\$150.72	-\$170.93	-\$189.95	-\$207.99	-\$224.04
-\$39.01	-\$47.69	-\$59.34	-\$73.03	-\$87.14	-\$101.49	-\$115.35
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$159.68	-\$180.70	-\$210.06	-\$243.96	-\$277.08	-\$309.48	-\$339.39

2023	2024	2025	2026	2027	2028	2029
-\$127.74	-\$142.75	-\$164.07	-\$188.66	-\$212.45	-\$235.55	-\$256.69
-\$53.41	-\$67.39	-\$86.08	-\$108.21	-\$131.40	-\$155.29	-\$178.67
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$181.15	-\$210.14	-\$250.14	-\$296.87	-\$343.86	-\$390.85	-\$435.36

2023	2024	2025	2026	2027	2028	2029
-\$127.74	-\$142.75	-\$164.07	-\$188.66	-\$212.45	-\$235.55	-\$256.69
-\$53.41	-\$67.39	-\$86.08	-\$108.21	-\$131.40	-\$155.29	-\$178.67
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$181.15	-\$210.14	-\$250.14	-\$296.87	-\$343.86	-\$390.85	-\$435.36

2023	2024	2025	2026	2027	2028	2029
-\$127.74	-\$142.75	-\$164.07	-\$188.66	-\$212.45	-\$235.55	-\$256.69
-\$39.01	-\$47.69	-\$59.34	-\$73.03	-\$87.14	-\$101.49	-\$115.35
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$166.75	-\$190.44	-\$223.41	-\$261.69	-\$299.59	-\$337.04	-\$372.03

2023	2024	2025	2026	2027	2028	2029
-\$127.74	-\$142.75	-\$164.07	-\$188.66	-\$212.45	-\$235.55	-\$256.69
-\$39.01	-\$47.69	-\$59.34	-\$73.03	-\$87.14	-\$101.49	-\$115.35
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$166.75	-\$190.44	-\$223.41	-\$261.69	-\$299.59	-\$337.04	-\$372.03

2030	2031	2032	2033	2034	2035	2036
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$82.93	-\$102.11	-\$122.25	-\$143.38	-\$165.56	-\$188.84	-\$203.92
-\$175.94	-\$219.31	-\$264.33	-\$311.08	-\$359.44	-\$409.05	-\$450.30
-\$28.21	-\$34.88	-\$41.96	-\$49.48	-\$57.44	-\$65.79	-\$71.23

2030	2031	2032	2033	2034	2035	2036
-\$148.08	-\$46.87	\$54.19	\$154.51	\$256.84	\$365.32	\$478.03
-\$62.14	\$51.44	\$166.69	\$282.09	\$399.35	\$522.17	\$649.34
\$0.00	\$0.19	\$0.39	\$0.59	\$0.80	\$1.02	\$1.26
-\$210.21	\$4.76	\$221.26	\$437.19	\$656.98	\$888.51	\$1,128.63

2030	2031	2032	2033	2034	2035	2036
-\$148.08	\$1.74	\$167.52	\$348.19	\$546.16	\$765.35	\$1,003.67
-\$62.14	\$106.59	\$295.63	\$502.81	\$729.24	\$978.15	\$1,247.99
\$0.00	\$0.28	\$0.59	\$0.95	\$1.34	\$1.78	\$2.26
-\$210.21	\$108.61	\$463.74	\$851.94	\$1,276.74	\$1,745.28	\$2,253.92

2030	2031	2032	2033	2034	2035	2036
-\$238.14	-\$175.84	-\$124.03	-\$83.67	-\$50.74	-\$20.07	\$8.81
-\$128.64	-\$44.06	\$34.37	\$104.84	\$170.12	\$234.95	\$300.30
\$0.00	\$0.19	\$0.39	\$0.59	\$0.80	\$1.02	\$1.26
-\$366.78	-\$219.71	-\$89.27	\$21.76	\$120.18	\$215.90	\$310.37

2030	2031	2032	2033	2034	2035	2036
-\$238.14	-\$140.30	-\$45.35	\$43.14	\$127.04	\$210.00	\$292.83
-\$128.64	\$1.40	\$137.58	\$275.79	\$416.89	\$564.26	\$719.20
\$0.00	\$0.28	\$0.59	\$0.95	\$1.34	\$1.78	\$2.26
-\$366.78	-\$138.62	\$92.82	\$319.88	\$545.27	\$776.04	\$1,014.29

2030	2031	2032	2033	2034	2035	2036
-\$275.84	-\$231.08	-\$201.86	-\$189.29	-\$188.56	-\$193.69	-\$203.58
-\$201.32	-\$149.78	-\$113.37	-\$93.99	-\$87.63	-\$88.47	-\$94.25
\$0.00	\$0.19	\$0.39	\$0.59	\$0.80	\$1.02	\$1.26
-\$477.16	-\$380.67	-\$314.84	-\$282.69	-\$275.38	-\$281.14	-\$296.57

2030	2031	2032	2033	2034	2035	2036
-\$275.84	-\$201.14	-\$138.33	-\$92.14	-\$60.75	-\$40.20	-\$28.93
-\$201.32	-\$115.03	-\$38.89	\$21.13	\$65.67	\$98.21	\$121.49
\$0.00	\$0.28	\$0.59	\$0.95	\$1.34	\$1.78	\$2.26
-\$477.16	-\$315.90	-\$176.62	-\$70.06	\$6.26	\$59.79	\$94.82

2030	2031	2032	2033	2034	2035	2036
-\$275.84	-\$295.94	-\$320.88	-\$349.72	-\$378.02	-\$401.77	-\$422.75
-\$128.64	-\$142.55	-\$158.97	-\$177.46	-\$195.70	-\$211.46	-\$225.40
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$404.48	-\$438.48	-\$479.85	-\$527.18	-\$573.73	-\$613.23	-\$648.15

2030	2031	2032	2033	2034	2035	2036
-\$275.84	-\$295.94	-\$320.88	-\$349.72	-\$378.02	-\$401.77	-\$422.75
-\$128.64	-\$142.55	-\$158.97	-\$177.46	-\$195.70	-\$211.46	-\$225.40
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$404.48	-\$438.48	-\$479.85	-\$527.18	-\$573.73	-\$613.23	-\$648.15

2037	2038	2039	2040	2041	2042	2043
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$219.61	-\$235.94	-\$252.93	-\$270.61	-\$289.01	-\$308.16	-\$328.09
-\$491.40	-\$532.56	-\$573.98	-\$615.79	-\$658.11	-\$701.00	-\$744.53
-\$76.85	-\$82.69	-\$88.78	-\$95.14	-\$101.80	-\$108.77	-\$116.05

2037	2038	2039	2040	2041	2042	2043
\$590.77	\$705.95	\$825.31	\$950.20	\$1,078.30	\$1,206.90	\$1,338.94
\$776.97	\$906.53	\$1,040.03	\$1,179.24	\$1,321.52	\$1,464.30	\$1,610.31
\$1.50	\$1.74	\$2.00	\$2.26	\$2.54	\$2.82	\$3.11
\$1,369.25	\$1,614.22	\$1,867.34	\$2,131.70	\$2,402.36	\$2,674.02	\$2,952.36

2037	2038	2039	2040	2041	2042	2043
\$1,256.74	\$1,526.77	\$1,815.34	\$2,123.65	\$2,449.37	\$2,789.73	\$3,147.66
\$1,534.52	\$1,838.95	\$2,163.03	\$2,508.32	\$2,872.07	\$3,251.56	\$3,649.32
\$2.78	\$3.33	\$3.93	\$4.57	\$5.25	\$5.97	\$6.72
\$2,794.04	\$3,369.05	\$3,982.30	\$4,636.54	\$5,326.69	\$6,047.25	\$6,803.71

2037	2038	2039	2040	2041	2042	2043
\$31.83	\$53.67	\$75.80	\$98.63	\$121.64	\$142.64	\$165.28
\$362.34	\$424.18	\$487.58	\$553.60	\$620.98	\$687.61	\$756.90
\$1.50	\$1.74	\$2.00	\$2.26	\$2.54	\$2.82	\$3.11
\$395.66	\$479.59	\$565.38	\$654.49	\$745.16	\$833.07	\$925.28

2037	2038	2039	2040	2041	2042	2043
\$371.11	\$449.19	\$528.41	\$609.25	\$691.53	\$773.55	\$859.68
\$877.55	\$1,042.11	\$1,214.46	\$1,395.71	\$1,584.84	\$1,780.16	\$1,985.65
\$2.78	\$3.33	\$3.93	\$4.57	\$5.25	\$5.97	\$6.72
\$1,251.43	\$1,494.63	\$1,746.80	\$2,009.53	\$2,281.62	\$2,559.68	\$2,852.06

2037	2038	2039	2040	2041	2042	2043
-\$222.36	-\$244.43	-\$268.61	-\$295.02	-\$323.41	-\$355.81	-\$388.26
-\$108.75	-\$127.00	-\$147.58	-\$170.28	-\$194.89	-\$223.12	-\$251.03
\$1.50	\$1.74	\$2.00	\$2.26	\$2.54	\$2.82	\$3.11
-\$329.61	-\$369.69	-\$414.20	-\$463.04	-\$515.76	-\$576.12	-\$636.18

2037	2038	2039	2040	2041	2042	2043
-\$31.64	-\$43.27	-\$62.94	-\$90.79	-\$126.25	-\$170.74	-\$219.40
\$131.12	\$131.55	\$123.88	\$108.39	\$85.70	\$54.83	\$20.79
\$2.78	\$3.33	\$3.93	\$4.57	\$5.25	\$5.97	\$6.72
\$102.26	\$91.61	\$64.86	\$22.17	-\$35.30	-\$109.94	-\$191.89

2037	2038	2039	2040	2041	2042	2043
-\$445.29	-\$464.74	-\$481.09	-\$495.48	-\$508.01	-\$521.49	-\$533.27
-\$239.90	-\$252.55	-\$263.38	-\$273.01	-\$281.51	-\$290.43	-\$298.31
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$685.19	-\$717.30	-\$744.46	-\$768.49	-\$789.52	-\$811.91	-\$831.58

2037	2038	2039	2040	2041	2042	2043
-\$445.29	-\$464.74	-\$481.09	-\$495.48	-\$508.01	-\$521.49	-\$533.27
-\$239.90	-\$252.55	-\$263.38	-\$273.01	-\$281.51	-\$290.43	-\$298.31
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$685.19	-\$717.30	-\$744.46	-\$768.49	-\$789.52	-\$811.91	-\$831.58

2044	2045	2046	2047	2048	2049	2050
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$348.83	-\$370.42	-\$392.90	-\$416.30	-\$440.66	-\$466.02	-\$492.42
-\$788.77	-\$833.76	-\$879.58	-\$926.29	-\$973.98	-\$1,022.72	-\$1,072.60
-\$123.66	-\$131.61	-\$139.89	-\$148.52	-\$157.50	-\$166.83	-\$176.53

2044	2045	2046	2047	2048	2049	2050
\$1,474.18	\$1,613.18	\$1,598.57	\$1,582.82	\$1,568.70	\$1,556.07	\$1,540.71
\$1,759.21	\$1,911.74	\$1,891.37	\$1,869.58	\$1,849.05	\$1,829.61	\$1,807.20
\$3.40	\$3.71	\$3.71	\$3.70	\$3.70	\$3.70	\$3.70
\$3,236.80	\$3,528.63	\$3,493.64	\$3,456.10	\$3,421.46	\$3,389.38	\$3,351.61

2044	2045	2046	2047	2048	2049	2050
\$3,522.84	\$3,915.68	\$3,890.37	\$3,864.05	\$3,839.23	\$3,815.51	\$3,788.54
\$4,064.75	\$4,498.18	\$4,460.67	\$4,421.51	\$4,383.00	\$4,344.72	\$4,302.48
\$7.52	\$8.36	\$8.36	\$8.35	\$8.35	\$8.36	\$8.36
\$7,595.12	\$8,422.22	\$8,359.39	\$8,293.91	\$8,230.58	\$8,168.59	\$8,099.38

2044	2045	2046	2047	2048	2049	2050
\$189.99	\$216.94	\$190.80	\$168.13	\$151.09	\$139.11	\$127.78
\$829.24	\$905.37	\$882.31	\$862.23	\$847.48	\$837.66	\$828.55
\$3.40	\$3.71	\$3.71	\$3.70	\$3.70	\$3.70	\$3.70
\$1,022.63	\$1,126.03	\$1,076.82	\$1,034.06	\$1,002.26	\$980.47	\$960.03

2044	2045	2046	2047	2048	2049	2050
\$951.19	\$1,049.15	\$1,000.87	\$960.91	\$930.98	\$910.05	\$893.20
\$2,202.44	\$2,432.08	\$2,389.54	\$2,354.27	\$2,328.26	\$2,310.74	\$2,297.03
\$7.52	\$8.36	\$8.36	\$8.35	\$8.35	\$8.36	\$8.36
\$3,161.15	\$3,489.60	\$3,398.77	\$3,323.53	\$3,267.59	\$3,229.14	\$3,198.59

2044	2045	2046	2047	2048	2049	2050
-\$420.01	-\$451.11	-\$487.81	-\$519.12	-\$543.21	-\$560.91	-\$576.79
-\$277.69	-\$302.90	-\$341.23	-\$373.34	-\$397.61	-\$414.96	-\$429.88
\$3.40	\$3.71	\$3.71	\$3.70	\$3.70	\$3.70	\$3.70
-\$694.29	-\$750.30	-\$825.33	-\$888.75	-\$937.12	-\$972.17	-\$1,002.96

2044	2045	2046	2047	2048	2049	2050
-\$270.35	-\$322.39	-\$392.01	-\$449.42	-\$493.38	-\$525.34	-\$550.60
-\$14.23	-\$48.54	-\$121.82	-\$181.30	-\$226.05	-\$257.73	-\$281.72
\$7.52	\$8.36	\$8.36	\$8.35	\$8.35	\$8.36	\$8.36
-\$277.07	-\$362.58	-\$505.48	-\$622.37	-\$711.07	-\$774.72	-\$823.96

2044	2045	2046	2047	2048	2049	2050
-\$543.65	-\$553.76	-\$564.15	-\$574.60	-\$582.87	-\$589.24	-\$597.65
-\$305.30	-\$312.04	-\$318.85	-\$325.60	-\$331.03	-\$335.31	-\$340.66
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$848.95	-\$865.80	-\$883.00	-\$900.20	-\$913.90	-\$924.55	-\$938.31

2044	2045	2046	2047	2048	2049	2050
-\$543.65	-\$553.76	-\$564.15	-\$574.60	-\$582.87	-\$589.24	-\$597.65
-\$305.30	-\$312.04	-\$318.85	-\$325.60	-\$331.03	-\$335.31	-\$340.66
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
-\$848.95	-\$865.80	-\$883.00	-\$900.20	-\$913.90	-\$924.55	-\$938.31

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Total Incremental Equipment Costs by Scenario and Sensitivity

** Costs are shown as incremental to the reference case (consistent with the GGRA)*

Scenario	Unit	Cost Profile
High Electrification	(\$2021 Millions)	Low
High Electrification	(\$2021 Millions)	High
Electrification with Fuel Backup	(\$2021 Millions)	Low
Electrification with Fuel Backup	(\$2021 Millions)	High
MWG Scenario	(\$2021 Millions)	Low
MWG Scenario	(\$2021 Millions)	High
High Decarbonized Methane	(\$2021 Millions)	Low
High Decarbonized Methane	(\$2021 Millions)	High
High Electrification	(\$2021 Millions)	Low
High Electrification	(\$2021 Millions)	High

Electric Sensitivity	2021	2022	2023	2024	2025	2026	2027
Current Installation Practice	\$ 15	\$ 69	\$ 143	\$ 247	\$ 371	\$ 515	\$ 677
Current Installation Practice	\$ 58	\$ 190	\$ 364	\$ 633	\$ 947	\$ 1,301	\$ 1,694
Current Installation Practice	\$ 11	\$ 24	\$ 39	\$ 67	\$ 97	\$ 131	\$ 167
Current Installation Practice	\$ 41	\$ 93	\$ 156	\$ 280	\$ 416	\$ 562	\$ 717
Current Installation Practice	\$ 14	\$ 52	\$ 104	\$ 177	\$ 263	\$ 362	\$ 473
Current Installation Practice	\$ 56	\$ 160	\$ 296	\$ 512	\$ 761	\$ 1,039	\$ 1,344
Current Installation Practice	3.976208	44.25183	102.4294	186.9389	289.68692	409.41269	545.76846
Current Installation Practice	3.976208	67.69278	160.4094	331.7697	532.74823	760.53452	1014.3468
Improved System Configuration	29.86903	102.2152	199.3299	330.5636	488.85505	672.26355	880.51042
Improved System Configuration	22.88925	115.8522	250.1762	478.2492	753.65504	1072.8987	1435.3115

2028	2029	2030	2031	2032	2033	2034	2035	2036
\$ 857	\$ 1,054	\$ 1,264	\$ 1,475	\$ 1,689	\$ 1,903	\$ 2,117	\$ 2,329	\$ 2,537
\$ 2,124	\$ 2,590	\$ 3,113	\$ 3,627	\$ 4,151	\$ 4,680	\$ 5,179	\$ 5,670	\$ 6,147
\$ 205	\$ 245	\$ 286	\$ 328	\$ 371	\$ 416	\$ 459	\$ 501	\$ 538
\$ 879	\$ 1,049	\$ 1,224	\$ 1,385	\$ 1,549	\$ 1,713	\$ 1,844	\$ 1,968	\$ 2,080
\$ 595	\$ 727	\$ 867	\$ 1,009	\$ 1,152	\$ 1,295	\$ 1,438	\$ 1,578	\$ 1,714
\$ 1,674	\$ 2,028	\$ 2,429	\$ 2,818	\$ 3,217	\$ 3,619	\$ 3,990	\$ 4,351	\$ 4,699
698.42955	867.1501	1049.1591	1233.0315	1418.7286	1605.5969	1792.8605	1979.027	2164.7178
1293.7823	1598.5137	1923.5683	2250.7609	2580.3175	2911.5299	3213.1013	3512.6066	3812.1704
1112.9111	1368.9336	1643.6294	1928.0985	2224.3865	2530.8393	2841.1021	3149.4687	3451.361
1839.3995	2283.6877	2751.5334	3258.0178	3780.1418	4315.0017	4823.9839	5325.1585	5810.8654

2037	2038	2039	2040	2041	2042	2043	2044	2045
\$ 2,729	\$ 2,915	\$ 3,096	\$ 3,263	\$ 3,425	\$ 3,580	\$ 3,731	\$ 3,877	\$ 4,019
\$ 6,580	\$ 6,995	\$ 7,392	\$ 7,724	\$ 8,029	\$ 8,309	\$ 8,569	\$ 8,811	\$ 9,038
\$ 563	\$ 583	\$ 600	\$ 604	\$ 603	\$ 598	\$ 589	\$ 576	\$ 560
\$ 2,164	\$ 2,237	\$ 2,299	\$ 2,330	\$ 2,348	\$ 2,354	\$ 2,348	\$ 2,330	\$ 2,302
\$ 1,834	\$ 1,948	\$ 2,057	\$ 2,151	\$ 2,240	\$ 2,322	\$ 2,400	\$ 2,473	\$ 2,542
\$ 5,004	\$ 5,292	\$ 5,561	\$ 5,767	\$ 5,948	\$ 6,104	\$ 6,241	\$ 6,359	\$ 6,463
2346.398	2527.3581	2707.6467	2878.605	3048.2486	3216.5481	3383.49	3549.1472	3713.6166
4109.1417	4407.2625	4706.4483	4986.7135	5265.824	5543.4257	5819.2212	6093.1893	6365.8677
3719.4142	3977.2935	4225.1333	4453.7903	4670.3012	4875.1742	5068.1912	5249.6931	5419.9846
6235.6102	6638.1005	7018.9024	7367.7548	7707.5192	8031.6289	8334.266	8617.5118	8883.6058

	2046	2047	2048	2049	2050
	\$ 4,160	\$ 4,298	\$ 4,434	\$ 4,568	4702.458
	\$ 9,257	\$ 9,468	\$ 9,669	\$ 9,864	10056.97
	\$ 542	\$ 521	\$ 497	\$ 471	443.794
	\$ 2,267	\$ 2,224	\$ 2,174	\$ 2,117	2059.244
	\$ 2,609	\$ 2,673	\$ 2,734	\$ 2,794	2852.516
	\$ 6,559	\$ 6,647	\$ 6,725	\$ 6,797	6866.471
	3877.07066	4039.47848	4201.05281	4362.60041	4525.047
	6637.74219	6908.63832	7178.85429	7449.50366	7722.109
	5581.37379	5730.35275	5865.4717	5988.37198	6105.34
	9135.81385	9371.80773	9590.3456	9793.92491	9989.013

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Electric Rates (2021\$/kWh)

Scenario	Electric Scenario	Class
Electrification with Fuel Backup	Current Installation Practice	Residential
High Electrification	Current Installation Practice	Residential
High Electrification	Improved System Configuration	Residential
High Decarbonized Methane	Current Installation Practice	Residential
MWG Scenario	Current Installation Practice	Residential
GGRA	Current Installation Practice	Residential
Electrification with Fuel Backup	Current Installation Practice	Commercial
High Electrification	Current Installation Practice	Commercial
High Electrification	Improved System Configuration	Commercial
High Decarbonized Methane	Current Installation Practice	Commercial
MWG Scenario	Current Installation Practice	Commercial
GGRA	Current Installation Practice	Commercial

2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
\$0.14	\$0.14	\$0.14	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15
\$0.14	\$0.14	\$0.15	\$0.15	\$0.15	\$0.16	\$0.16	\$0.16	\$0.17	\$0.17	\$0.18
\$0.14	\$0.14	\$0.15	\$0.15	\$0.15	\$0.16	\$0.16	\$0.16	\$0.16	\$0.17	\$0.17
\$0.14	\$0.14	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.16	\$0.16	\$0.16
\$0.14	\$0.14	\$0.14	\$0.14	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15
\$0.13	\$0.13	\$0.14	\$0.14	\$0.14	\$0.14	\$0.14	\$0.14	\$0.14	\$0.14	\$0.14
\$0.11	\$0.11	\$0.11	\$0.11	\$0.11	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12
\$0.11	\$0.11	\$0.12	\$0.12	\$0.12	\$0.12	\$0.13	\$0.13	\$0.13	\$0.14	\$0.14
\$0.11	\$0.11	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.13	\$0.13	\$0.13	\$0.14
\$0.11	\$0.11	\$0.11	\$0.11	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12
\$0.11	\$0.11	\$0.11	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12
\$0.11	\$0.11	\$0.11	\$0.11	\$0.11	\$0.11	\$0.11	\$0.12	\$0.11	\$0.11	\$0.11

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Total Gas Rates (2021\$/MMBtu)

Scenario	Gas System Scenario	Fuel Cost
Electrification with Fuel Backup	Unstructured	High
Electrification with Fuel Backup	Unstructured	High
Electrification with Fuel Backup	Unstructured	Low
Electrification with Fuel Backup	Unstructured	Low
High Decarbonized Methane	Unstructured	High
High Decarbonized Methane	Unstructured	High
High Decarbonized Methane	Unstructured	Low
High Decarbonized Methane	Unstructured	Low
High Electrification	Structured	High
High Electrification	Structured	High
High Electrification	Structured	Low
High Electrification	Structured	Low
High Electrification	Unstructured	High
High Electrification	Unstructured	High
High Electrification	Unstructured	Low
High Electrification	Unstructured	Low
MWG Scenario	Unstructured	Low
MWG Scenario	Unstructured	Low
MWG Scenario	Unstructured	High
MWG Scenario	Unstructured	High
Reference	NA	NA
Reference	NA	NA

Sector	2021	2022	2023	2024	2025	2026	2027	2028	2029
Residential	\$12	\$12	\$13	\$13	\$14	\$14	\$15	\$16	\$17
Commercial	\$12	\$12	\$13	\$13	\$14	\$14	\$15	\$16	\$17
Residential	\$12	\$12	\$12	\$13	\$13	\$14	\$15	\$15	\$16
Commercial	\$12	\$12	\$12	\$13	\$13	\$14	\$15	\$15	\$16
Residential	\$12	\$12	\$12	\$12	\$13	\$13	\$14	\$14	\$14
Commercial	\$12	\$12	\$12	\$12	\$13	\$13	\$14	\$14	\$14
Residential	\$12	\$12	\$12	\$12	\$13	\$13	\$14	\$14	\$14
Commercial	\$12	\$12	\$12	\$12	\$13	\$13	\$14	\$14	\$14
Residential	\$12	\$12	\$13	\$13	\$14	\$14	\$15	\$16	\$17
Commercial	\$12	\$12	\$13	\$13	\$14	\$14	\$15	\$16	\$17
Residential	\$12	\$12	\$12	\$13	\$13	\$14	\$15	\$15	\$16
Commercial	\$12	\$12	\$12	\$13	\$13	\$14	\$15	\$15	\$16
Residential	\$12	\$12	\$13	\$13	\$14	\$15	\$15	\$16	\$17
Commercial	\$12	\$12	\$13	\$13	\$14	\$15	\$15	\$16	\$17
Residential	\$12	\$12	\$13	\$13	\$14	\$15	\$15	\$16	\$17
Commercial	\$12	\$12	\$13	\$13	\$14	\$15	\$15	\$16	\$17
Residential	\$12	\$12	\$12	\$13	\$14	\$14	\$15	\$16	\$16
Commercial	\$12	\$12	\$12	\$13	\$14	\$14	\$15	\$16	\$16
Residential	\$12	\$12	\$12	\$13	\$14	\$14	\$15	\$16	\$16
Commercial	\$12	\$12	\$12	\$13	\$14	\$14	\$15	\$16	\$16
Residential	\$12	\$12	\$12	\$12	\$13	\$13	\$13	\$14	\$14
Commercial	\$9	\$10	\$10	\$10	\$10	\$11	\$11	\$11	\$11

2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
\$76	\$88	\$103	\$120	\$141	\$163	\$188	\$215	\$241	\$262
\$76	\$88	\$103	\$120	\$141	\$163	\$188	\$215	\$241	\$262
\$52	\$55	\$59	\$63	\$67	\$68	\$69	\$71	\$72	\$73
\$52	\$55	\$59	\$63	\$67	\$68	\$69	\$71	\$72	\$73
\$62	\$68	\$75	\$82	\$89	\$90	\$90	\$91	\$91	\$92
\$62	\$68	\$75	\$82	\$89	\$90	\$90	\$91	\$91	\$92
\$40	\$42	\$45	\$48	\$51	\$51	\$52	\$52	\$53	\$53
\$40	\$42	\$45	\$48	\$51	\$51	\$52	\$52	\$53	\$53
\$99	\$114	\$132	\$154	\$179	\$201	\$226	\$253	\$279	\$300
\$99	\$114	\$132	\$154	\$179	\$201	\$226	\$253	\$279	\$300
\$74	\$81	\$89	\$97	\$105	\$106	\$107	\$109	\$110	\$111
\$74	\$81	\$89	\$97	\$105	\$106	\$107	\$109	\$110	\$111
\$116	\$136	\$160	\$190	\$225	\$259	\$299	\$343	\$387	\$424
\$116	\$136	\$160	\$190	\$225	\$259	\$299	\$343	\$387	\$424
\$94	\$110	\$131	\$156	\$187	\$221	\$261	\$305	\$348	\$385
\$94	\$110	\$131	\$156	\$187	\$221	\$261	\$305	\$348	\$385
\$37	\$39	\$42	\$44	\$46	\$49	\$51	\$53	\$54	\$56
\$42	\$45	\$47	\$49	\$52	\$54	\$56	\$58	\$60	\$61
\$37	\$39	\$42	\$44	\$46	\$49	\$51	\$53	\$54	\$56
\$42	\$45	\$47	\$49	\$52	\$54	\$56	\$58	\$60	\$61
\$17	\$17	\$17	\$17	\$18	\$18	\$18	\$18	\$19	\$19
\$13	\$13	\$13	\$13	\$13	\$14	\$14	\$14	\$14	\$14

2035	MWG Policy Scenario	New Construction	All-Electric
2035	MWG Policy Scenario	Retrofit - No Shell Improvement	Existing Fuel
2035	MWG Policy Scenario	Retrofit - No Shell Improvement	All-Electric
2035	MWG Policy Scenario	Retrofit - No Shell Improvement	Electric SH and WH with fuel backup
2035	MWG Policy Scenario	Retrofit - Shell Improvement	Existing Fuel
2035	MWG Policy Scenario	Retrofit - Shell Improvement	All-Electric
2035	MWG Policy Scenario	Retrofit - Shell Improvement	Electric SH and WH with fuel backup

Annual Cost (\$/year)

Total	Annualized Capex	O&M	Electricity	Gas	Alternative Compliance Payment
\$6,525	\$3,957	\$165	\$188	\$2,215	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$4,827	\$1,856	\$125	\$1,667	\$1,179	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,456	\$1,894	\$185	\$574	\$802	\$0
\$6,542	\$4,016	\$125	\$1,223	\$1,179	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,553	\$4,184	\$185	\$491	\$694	\$0
\$6,156	\$3,957	\$165	\$188	\$1,846	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$4,630	\$1,856	\$125	\$1,667	\$982	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,322	\$1,894	\$185	\$574	\$669	\$0
\$6,346	\$4,016	\$125	\$1,223	\$982	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,438	\$4,184	\$185	\$491	\$578	\$0
\$5,865	\$3,957	\$165	\$188	\$1,556	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$4,476	\$1,856	\$125	\$1,667	\$828	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,217	\$1,894	\$185	\$574	\$563	\$0
\$6,191	\$4,016	\$125	\$1,223	\$828	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,347	\$4,184	\$185	\$491	\$487	\$0
\$6,525	\$3,957	\$165	\$188	\$2,215	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$5,437	\$2,425	\$165	\$209	\$2,639	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,456	\$1,894	\$185	\$574	\$802	\$0
\$7,152	\$4,584	\$165	\$188	\$2,215	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,553	\$4,184	\$185	\$491	\$694	\$0
\$6,156	\$3,957	\$165	\$188	\$1,846	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$4,998	\$2,425	\$165	\$209	\$2,199	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,322	\$1,894	\$185	\$574	\$669	\$0
\$6,783	\$4,584	\$165	\$188	\$1,846	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,438	\$4,184	\$185	\$491	\$578	\$0
\$5,865	\$3,957	\$165	\$188	\$1,556	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$4,651	\$2,425	\$165	\$209	\$1,853	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,217	\$1,894	\$185	\$574	\$563	\$0
\$6,492	\$4,584	\$165	\$188	\$1,556	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,347	\$4,184	\$185	\$491	\$487	\$0
\$6,525	\$3,957	\$165	\$188	\$2,215	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$5,512	\$2,241	\$195	\$209	\$2,867	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,456	\$1,894	\$185	\$574	\$802	\$0
\$7,161	\$4,400	\$195	\$188	\$2,378	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0

\$5,553	\$4,184	\$185	\$491	\$694	\$0
\$6,156	\$3,957	\$165	\$188	\$1,846	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$5,034	\$2,241	\$195	\$209	\$2,390	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,322	\$1,894	\$185	\$574	\$669	\$0
\$6,764	\$4,400	\$195	\$188	\$1,981	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,438	\$4,184	\$185	\$491	\$578	\$0
\$5,865	\$3,957	\$165	\$188	\$1,556	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$4,658	\$2,241	\$195	\$209	\$2,013	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,217	\$1,894	\$185	\$574	\$563	\$0
\$6,452	\$4,400	\$195	\$188	\$1,670	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,347	\$4,184	\$185	\$491	\$487	\$0
\$6,525	\$3,957	\$165	\$188	\$2,215	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$4,104	\$2,192	\$125	\$608	\$1,179	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,456	\$1,894	\$185	\$574	\$802	\$0
\$6,117	\$4,352	\$125	\$462	\$1,179	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,553	\$4,184	\$185	\$491	\$694	\$0
\$6,156	\$3,957	\$165	\$188	\$1,846	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$3,908	\$2,192	\$125	\$608	\$982	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,322	\$1,894	\$185	\$574	\$669	\$0
\$5,921	\$4,352	\$125	\$462	\$982	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,438	\$4,184	\$185	\$491	\$578	\$0
\$5,865	\$3,957	\$165	\$188	\$1,556	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$3,753	\$2,192	\$125	\$608	\$828	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,217	\$1,894	\$185	\$574	\$563	\$0
\$5,766	\$4,352	\$125	\$462	\$828	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,347	\$4,184	\$185	\$491	\$487	\$0
\$4,718	\$3,065	\$165	\$94	\$1,395	\$0
\$3,428	\$2,738	\$145	\$546	\$0	\$0
\$3,083	\$1,165	\$125	\$1,120	\$673	\$0
\$2,264	\$1,475	\$145	\$645	\$0	\$0
\$2,022	\$993	\$185	\$347	\$497	\$0
\$4,083	\$2,471	\$125	\$815	\$673	\$0
\$3,471	\$2,780	\$145	\$546	\$0	\$0
\$3,364	\$2,465	\$185	\$293	\$421	\$0
\$4,486	\$3,065	\$165	\$94	\$1,163	\$0
\$3,428	\$2,738	\$145	\$546	\$0	\$0
\$2,971	\$1,165	\$125	\$1,120	\$560	\$0
\$2,264	\$1,475	\$145	\$645	\$0	\$0
\$1,939	\$993	\$185	\$347	\$414	\$0
\$3,971	\$2,471	\$125	\$815	\$560	\$0
\$3,471	\$2,780	\$145	\$546	\$0	\$0
\$3,294	\$2,465	\$185	\$293	\$351	\$0
\$4,303	\$3,065	\$165	\$94	\$980	\$0
\$3,428	\$2,738	\$145	\$546	\$0	\$0
\$2,882	\$1,165	\$125	\$1,120	\$472	\$0
\$2,264	\$1,475	\$145	\$645	\$0	\$0

\$1,874	\$993	\$185	\$347	\$349	\$0
\$3,883	\$2,471	\$125	\$815	\$472	\$0
\$3,471	\$2,780	\$145	\$546	\$0	\$0
\$3,239	\$2,465	\$185	\$293	\$296	\$0
\$4,718	\$3,065	\$165	\$94	\$1,395	\$0
\$3,428	\$2,738	\$145	\$546	\$0	\$0
\$3,578	\$1,619	\$165	\$104	\$1,690	\$0
\$2,264	\$1,475	\$145	\$645	\$0	\$0
\$2,022	\$993	\$185	\$347	\$497	\$0
\$4,578	\$2,924	\$165	\$94	\$1,395	\$0
\$3,471	\$2,780	\$145	\$546	\$0	\$0
\$3,364	\$2,465	\$185	\$293	\$421	\$0
\$4,486	\$3,065	\$165	\$94	\$1,163	\$0
\$3,428	\$2,738	\$145	\$546	\$0	\$0
\$3,296	\$1,619	\$165	\$104	\$1,409	\$0
\$2,264	\$1,475	\$145	\$645	\$0	\$0
\$1,939	\$993	\$185	\$347	\$414	\$0
\$4,346	\$2,924	\$165	\$94	\$1,163	\$0
\$3,471	\$2,780	\$145	\$546	\$0	\$0
\$3,294	\$2,465	\$185	\$293	\$351	\$0
\$4,303	\$3,065	\$165	\$94	\$980	\$0
\$3,428	\$2,738	\$145	\$546	\$0	\$0
\$3,074	\$1,619	\$165	\$104	\$1,187	\$0
\$2,264	\$1,475	\$145	\$645	\$0	\$0
\$1,874	\$993	\$185	\$347	\$349	\$0
\$4,162	\$2,924	\$165	\$94	\$980	\$0
\$3,471	\$2,780	\$145	\$546	\$0	\$0
\$3,239	\$2,465	\$185	\$293	\$296	\$0
\$4,718	\$3,065	\$165	\$94	\$1,395	\$0
\$3,428	\$2,738	\$145	\$546	\$0	\$0
\$2,508	\$1,318	\$125	\$392	\$673	\$0
\$2,264	\$1,475	\$145	\$645	\$0	\$0
\$2,022	\$993	\$185	\$347	\$497	\$0
\$3,714	\$2,623	\$125	\$294	\$673	\$0
\$3,471	\$2,780	\$145	\$546	\$0	\$0
\$3,364	\$2,465	\$185	\$293	\$421	\$0
\$4,486	\$3,065	\$165	\$94	\$1,163	\$0
\$3,428	\$2,738	\$145	\$546	\$0	\$0
\$2,395	\$1,318	\$125	\$392	\$560	\$0
\$2,264	\$1,475	\$145	\$645	\$0	\$0
\$1,939	\$993	\$185	\$347	\$414	\$0
\$3,602	\$2,623	\$125	\$294	\$560	\$0
\$3,471	\$2,780	\$145	\$546	\$0	\$0
\$3,294	\$2,465	\$185	\$293	\$351	\$0
\$4,303	\$3,065	\$165	\$94	\$980	\$0
\$3,428	\$2,738	\$145	\$546	\$0	\$0
\$2,307	\$1,318	\$125	\$392	\$472	\$0
\$2,264	\$1,475	\$145	\$645	\$0	\$0
\$1,874	\$993	\$185	\$347	\$349	\$0
\$3,514	\$2,623	\$125	\$294	\$472	\$0
\$3,471	\$2,780	\$145	\$546	\$0	\$0
\$3,239	\$2,465	\$185	\$293	\$296	\$0
\$21,440	\$10,982	\$1,345	\$1,111	\$8,003	\$0
\$15,452	\$11,256	\$800	\$3,396	\$0	\$0
\$14,480	\$2,688	\$1,345	\$1,277	\$9,170	\$0
\$7,648	\$2,977	\$800	\$3,871	\$0	\$0
\$10,870	\$2,549	\$1,200	\$1,559	\$5,563	\$0
\$21,206	\$10,747	\$1,345	\$1,111	\$8,003	\$0
\$15,232	\$11,036	\$800	\$3,396	\$0	\$0
\$18,218	\$10,656	\$1,200	\$1,359	\$5,002	\$0
\$20,107	\$10,982	\$1,345	\$1,111	\$6,669	\$0

\$15,452	\$11,256	\$800	\$3,396	\$0	\$0
\$12,952	\$2,688	\$1,345	\$1,277	\$7,642	\$0
\$7,648	\$2,977	\$800	\$3,871	\$0	\$0
\$9,943	\$2,549	\$1,200	\$1,559	\$4,636	\$0
\$19,872	\$10,747	\$1,345	\$1,111	\$6,669	\$0
\$15,232	\$11,036	\$800	\$3,396	\$0	\$0
\$17,384	\$10,656	\$1,200	\$1,359	\$4,169	\$0
\$19,057	\$10,982	\$1,345	\$1,111	\$5,619	\$0
\$15,452	\$11,256	\$800	\$3,396	\$0	\$0
\$11,749	\$2,688	\$1,345	\$1,277	\$6,439	\$0
\$7,648	\$2,977	\$800	\$3,871	\$0	\$0
\$9,213	\$2,549	\$1,200	\$1,559	\$3,906	\$0
\$18,822	\$10,747	\$1,345	\$1,111	\$5,619	\$0
\$15,232	\$11,036	\$800	\$3,396	\$0	\$0
\$16,728	\$10,656	\$1,200	\$1,359	\$3,513	\$0
\$21,440	\$10,982	\$1,345	\$1,111	\$8,003	\$0
\$15,452	\$11,256	\$800	\$3,396	\$0	\$0
\$11,329	\$815	\$1,345	\$0	\$9,170	\$0
\$7,648	\$2,977	\$800	\$3,871	\$0	\$0
\$10,870	\$2,549	\$1,200	\$1,559	\$5,563	\$0
\$18,221	\$8,873	\$1,345	\$0	\$8,003	\$0
\$15,232	\$11,036	\$800	\$3,396	\$0	\$0
\$18,218	\$10,656	\$1,200	\$1,359	\$5,002	\$0
\$20,107	\$10,982	\$1,345	\$1,111	\$6,669	\$0
\$15,452	\$11,256	\$800	\$3,396	\$0	\$0
\$9,801	\$815	\$1,345	\$0	\$7,642	\$0
\$7,648	\$2,977	\$800	\$3,871	\$0	\$0
\$9,943	\$2,549	\$1,200	\$1,559	\$4,636	\$0
\$16,887	\$8,873	\$1,345	\$0	\$6,669	\$0
\$15,232	\$11,036	\$800	\$3,396	\$0	\$0
\$17,384	\$10,656	\$1,200	\$1,359	\$4,169	\$0
\$19,057	\$10,982	\$1,345	\$1,111	\$5,619	\$0
\$15,452	\$11,256	\$800	\$3,396	\$0	\$0
\$8,598	\$815	\$1,345	\$0	\$6,439	\$0
\$7,648	\$2,977	\$800	\$3,871	\$0	\$0
\$9,213	\$2,549	\$1,200	\$1,559	\$3,906	\$0
\$15,837	\$8,873	\$1,345	\$0	\$5,619	\$0
\$15,232	\$11,036	\$800	\$3,396	\$0	\$0
\$16,728	\$10,656	\$1,200	\$1,359	\$3,513	\$0
\$163,007	\$103,712	\$12,100	\$11,599	\$35,596	\$0
\$145,546	\$117,854	\$8,800	\$18,892	\$0	\$0
\$101,921	\$31,720	\$12,100	\$13,332	\$44,768	\$0
\$81,532	\$49,783	\$8,800	\$22,949	\$0	\$0
\$88,654	\$42,373	\$13,000	\$14,269	\$19,011	\$0
\$158,797	\$99,502	\$12,100	\$11,599	\$35,596	\$0
\$145,256	\$117,564	\$8,800	\$18,892	\$0	\$0
\$150,673	\$110,695	\$13,000	\$12,370	\$14,608	\$0
\$157,076	\$103,712	\$12,100	\$11,599	\$29,665	\$0
\$145,546	\$117,854	\$8,800	\$18,892	\$0	\$0
\$94,461	\$31,720	\$12,100	\$13,332	\$37,309	\$0
\$81,532	\$49,783	\$8,800	\$22,949	\$0	\$0
\$85,486	\$42,373	\$13,000	\$14,269	\$15,843	\$0
\$152,866	\$99,502	\$12,100	\$11,599	\$29,665	\$0
\$145,256	\$117,564	\$8,800	\$18,892	\$0	\$0
\$148,239	\$110,695	\$13,000	\$12,370	\$12,174	\$0
\$152,405	\$103,712	\$12,100	\$11,599	\$24,995	\$0
\$145,546	\$117,854	\$8,800	\$18,892	\$0	\$0
\$88,587	\$31,720	\$12,100	\$13,332	\$31,435	\$0
\$81,532	\$49,783	\$8,800	\$22,949	\$0	\$0
\$82,992	\$42,373	\$13,000	\$14,269	\$13,349	\$0
\$148,196	\$99,502	\$12,100	\$11,599	\$24,995	\$0

\$145,256	\$117,564	\$8,800	\$18,892	\$0	\$0
\$146,323	\$110,695	\$13,000	\$12,370	\$10,257	\$0
\$163,007	\$103,712	\$12,100	\$11,599	\$35,596	\$0
\$145,546	\$117,854	\$8,800	\$18,892	\$0	\$0
\$95,512	\$49,044	\$10,400	\$18,276	\$17,792	\$0
\$81,532	\$49,783	\$8,800	\$22,949	\$0	\$0
\$88,654	\$42,373	\$13,000	\$14,269	\$19,011	\$0
\$159,236	\$116,826	\$10,400	\$14,218	\$17,792	\$0
\$145,256	\$117,564	\$8,800	\$18,892	\$0	\$0
\$150,673	\$110,695	\$13,000	\$12,370	\$14,608	\$0
\$157,076	\$103,712	\$12,100	\$11,599	\$29,665	\$0
\$145,546	\$117,854	\$8,800	\$18,892	\$0	\$0
\$92,547	\$49,044	\$10,400	\$18,276	\$14,827	\$0
\$81,532	\$49,783	\$8,800	\$22,949	\$0	\$0
\$85,486	\$42,373	\$13,000	\$14,269	\$15,843	\$0
\$156,271	\$116,826	\$10,400	\$14,218	\$14,827	\$0
\$145,256	\$117,564	\$8,800	\$18,892	\$0	\$0
\$148,239	\$110,695	\$13,000	\$12,370	\$12,174	\$0
\$152,405	\$103,712	\$12,100	\$11,599	\$24,995	\$0
\$145,546	\$117,854	\$8,800	\$18,892	\$0	\$0
\$90,213	\$49,044	\$10,400	\$18,276	\$12,493	\$0
\$81,532	\$49,783	\$8,800	\$22,949	\$0	\$0
\$82,992	\$42,373	\$13,000	\$14,269	\$13,349	\$0
\$153,937	\$116,826	\$10,400	\$14,218	\$12,493	\$0
\$145,256	\$117,564	\$8,800	\$18,892	\$0	\$0
\$146,323	\$110,695	\$13,000	\$12,370	\$10,257	\$0
\$163,007	\$103,712	\$12,100	\$11,599	\$35,596	\$0
\$145,546	\$117,854	\$8,800	\$18,892	\$0	\$0
\$101,921	\$31,720	\$12,100	\$13,332	\$44,768	\$0
\$81,532	\$49,783	\$8,800	\$22,949	\$0	\$0
\$88,654	\$42,373	\$13,000	\$14,269	\$19,011	\$0
\$158,797	\$99,502	\$12,100	\$11,599	\$35,596	\$0
\$145,256	\$117,564	\$8,800	\$18,892	\$0	\$0
\$150,673	\$110,695	\$13,000	\$12,370	\$14,608	\$0
\$157,076	\$103,712	\$12,100	\$11,599	\$29,665	\$0
\$145,546	\$117,854	\$8,800	\$18,892	\$0	\$0
\$94,461	\$31,720	\$12,100	\$13,332	\$37,309	\$0
\$81,532	\$49,783	\$8,800	\$22,949	\$0	\$0
\$85,486	\$42,373	\$13,000	\$14,269	\$15,843	\$0
\$152,866	\$99,502	\$12,100	\$11,599	\$29,665	\$0
\$145,256	\$117,564	\$8,800	\$18,892	\$0	\$0
\$148,239	\$110,695	\$13,000	\$12,370	\$12,174	\$0
\$152,405	\$103,712	\$12,100	\$11,599	\$24,995	\$0
\$145,546	\$117,854	\$8,800	\$18,892	\$0	\$0
\$88,587	\$31,720	\$12,100	\$13,332	\$31,435	\$0
\$81,532	\$49,783	\$8,800	\$22,949	\$0	\$0
\$82,992	\$42,373	\$13,000	\$14,269	\$13,349	\$0
\$148,196	\$99,502	\$12,100	\$11,599	\$24,995	\$0
\$145,256	\$117,564	\$8,800	\$18,892	\$0	\$0
\$146,323	\$110,695	\$13,000	\$12,370	\$10,257	\$0
\$6,265	\$3,957	\$165	\$236	\$1,907	\$0
\$4,074	\$2,789	\$145	\$1,140	\$0	\$0
\$4,879	\$1,634	\$125	\$2,106	\$1,015	\$0
\$3,804	\$2,336	\$145	\$1,323	\$0	\$0
\$3,489	\$1,894	\$185	\$720	\$691	\$0
\$6,481	\$3,793	\$125	\$1,548	\$1,015	\$0
\$5,780	\$4,495	\$145	\$1,140	\$0	\$0
\$5,581	\$4,184	\$185	\$615	\$598	\$0
\$5,840	\$3,957	\$165	\$180	\$1,538	\$0
\$3,805	\$2,789	\$145	\$871	\$0	\$0
\$4,186	\$1,634	\$125	\$1,608	\$818	\$0

\$3,491	\$2,336	\$145	\$1,011	\$0	\$0
\$3,186	\$1,894	\$185	\$550	\$557	\$0
\$5,919	\$3,793	\$125	\$1,182	\$818	\$0
\$5,511	\$4,495	\$145	\$871	\$0	\$0
\$5,320	\$4,184	\$185	\$470	\$482	\$0
\$5,557	\$3,957	\$165	\$188	\$1,247	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$4,312	\$1,856	\$125	\$1,667	\$664	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,105	\$1,894	\$185	\$574	\$452	\$0
\$6,027	\$4,016	\$125	\$1,223	\$664	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,250	\$4,184	\$185	\$491	\$391	\$0
\$6,265	\$3,957	\$165	\$236	\$1,907	\$0
\$4,074	\$2,789	\$145	\$1,140	\$0	\$0
\$5,044	\$2,114	\$165	\$278	\$2,486	\$0
\$3,804	\$2,336	\$145	\$1,323	\$0	\$0
\$3,489	\$1,894	\$185	\$720	\$691	\$0
\$6,748	\$4,274	\$165	\$250	\$2,060	\$0
\$5,780	\$4,495	\$145	\$1,140	\$0	\$0
\$5,581	\$4,184	\$185	\$615	\$598	\$0
\$5,840	\$3,957	\$165	\$180	\$1,538	\$0
\$3,805	\$2,789	\$145	\$871	\$0	\$0
\$4,497	\$2,114	\$165	\$212	\$2,005	\$0
\$3,491	\$2,336	\$145	\$1,011	\$0	\$0
\$3,186	\$1,894	\$185	\$550	\$557	\$0
\$6,291	\$4,274	\$165	\$191	\$1,661	\$0
\$5,511	\$4,495	\$145	\$871	\$0	\$0
\$5,320	\$4,184	\$185	\$470	\$482	\$0
\$5,557	\$3,957	\$165	\$188	\$1,247	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$4,284	\$2,425	\$165	\$209	\$1,486	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,105	\$1,894	\$185	\$574	\$452	\$0
\$6,184	\$4,584	\$165	\$188	\$1,247	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,250	\$4,184	\$185	\$491	\$391	\$0
\$6,265	\$3,957	\$165	\$236	\$1,907	\$0
\$4,074	\$2,789	\$145	\$1,140	\$0	\$0
\$4,960	\$2,018	\$195	\$278	\$2,469	\$0
\$3,804	\$2,336	\$145	\$1,323	\$0	\$0
\$3,489	\$1,894	\$185	\$720	\$691	\$0
\$6,670	\$4,178	\$195	\$250	\$2,047	\$0
\$5,780	\$4,495	\$145	\$1,140	\$0	\$0
\$5,581	\$4,184	\$185	\$615	\$598	\$0
\$5,840	\$3,957	\$165	\$180	\$1,538	\$0
\$3,805	\$2,789	\$145	\$871	\$0	\$0
\$4,416	\$2,018	\$195	\$212	\$1,991	\$0
\$3,491	\$2,336	\$145	\$1,011	\$0	\$0
\$3,186	\$1,894	\$185	\$550	\$557	\$0
\$6,215	\$4,178	\$195	\$191	\$1,651	\$0
\$5,511	\$4,495	\$145	\$871	\$0	\$0
\$5,320	\$4,184	\$185	\$470	\$482	\$0
\$5,557	\$3,957	\$165	\$188	\$1,247	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$4,259	\$2,241	\$195	\$209	\$1,615	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,105	\$1,894	\$185	\$574	\$452	\$0
\$6,122	\$4,400	\$195	\$188	\$1,339	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,250	\$4,184	\$185	\$491	\$391	\$0

\$6,265	\$3,957	\$165	\$236	\$1,907	\$0
\$4,074	\$2,789	\$145	\$1,140	\$0	\$0
\$4,031	\$1,956	\$125	\$935	\$1,015	\$0
\$3,804	\$2,336	\$145	\$1,323	\$0	\$0
\$3,489	\$1,894	\$185	\$720	\$691	\$0
\$5,956	\$4,115	\$125	\$702	\$1,015	\$0
\$5,780	\$4,495	\$145	\$1,140	\$0	\$0
\$5,581	\$4,184	\$185	\$615	\$598	\$0
\$5,840	\$3,957	\$165	\$180	\$1,538	\$0
\$3,805	\$2,789	\$145	\$871	\$0	\$0
\$3,613	\$1,956	\$125	\$714	\$818	\$0
\$3,491	\$2,336	\$145	\$1,011	\$0	\$0
\$3,186	\$1,894	\$185	\$550	\$557	\$0
\$5,594	\$4,115	\$125	\$536	\$818	\$0
\$5,511	\$4,495	\$145	\$871	\$0	\$0
\$5,320	\$4,184	\$185	\$470	\$482	\$0
\$5,557	\$3,957	\$165	\$188	\$1,247	\$0
\$3,843	\$2,789	\$145	\$909	\$0	\$0
\$3,589	\$2,192	\$125	\$608	\$664	\$0
\$3,536	\$2,336	\$145	\$1,056	\$0	\$0
\$3,105	\$1,894	\$185	\$574	\$452	\$0
\$5,602	\$4,352	\$125	\$462	\$664	\$0
\$5,549	\$4,495	\$145	\$909	\$0	\$0
\$5,250	\$4,184	\$185	\$491	\$391	\$0
\$4,548	\$3,065	\$165	\$117	\$1,201	\$0
\$3,567	\$2,738	\$145	\$684	\$0	\$0
\$3,127	\$1,010	\$125	\$1,412	\$579	\$0
\$2,428	\$1,475	\$145	\$808	\$0	\$0
\$2,041	\$993	\$185	\$436	\$428	\$0
\$4,049	\$2,316	\$125	\$1,029	\$579	\$0
\$3,610	\$2,780	\$145	\$684	\$0	\$0
\$3,380	\$2,465	\$185	\$367	\$363	\$0
\$4,288	\$3,065	\$165	\$90	\$969	\$0
\$3,405	\$2,738	\$145	\$523	\$0	\$0
\$2,681	\$1,010	\$125	\$1,079	\$467	\$0
\$2,237	\$1,475	\$145	\$617	\$0	\$0
\$1,855	\$993	\$185	\$333	\$345	\$0
\$3,694	\$2,316	\$125	\$786	\$467	\$0
\$3,448	\$2,780	\$145	\$523	\$0	\$0
\$3,223	\$2,465	\$185	\$280	\$293	\$0
\$4,109	\$3,065	\$165	\$94	\$786	\$0
\$3,428	\$2,738	\$145	\$546	\$0	\$0
\$2,789	\$1,165	\$125	\$1,120	\$379	\$0
\$2,264	\$1,475	\$145	\$645	\$0	\$0
\$1,805	\$993	\$185	\$347	\$280	\$0
\$3,789	\$2,471	\$125	\$815	\$379	\$0
\$3,471	\$2,780	\$145	\$546	\$0	\$0
\$3,180	\$2,465	\$185	\$293	\$237	\$0
\$4,548	\$3,065	\$165	\$117	\$1,201	\$0
\$3,567	\$2,738	\$145	\$684	\$0	\$0
\$3,314	\$1,406	\$165	\$138	\$1,605	\$0
\$2,428	\$1,475	\$145	\$808	\$0	\$0
\$2,041	\$993	\$185	\$436	\$428	\$0
\$4,308	\$2,711	\$165	\$125	\$1,307	\$0
\$3,610	\$2,780	\$145	\$684	\$0	\$0
\$3,380	\$2,465	\$185	\$367	\$363	\$0
\$4,288	\$3,065	\$165	\$90	\$969	\$0
\$3,405	\$2,738	\$145	\$523	\$0	\$0
\$2,970	\$1,406	\$165	\$106	\$1,294	\$0
\$2,237	\$1,475	\$145	\$617	\$0	\$0
\$1,855	\$993	\$185	\$333	\$345	\$0

\$4,026	\$2,711	\$165	\$95	\$1,054	\$0
\$3,448	\$2,780	\$145	\$523	\$0	\$0
\$3,223	\$2,465	\$185	\$280	\$293	\$0
\$4,109	\$3,065	\$165	\$94	\$786	\$0
\$3,428	\$2,738	\$145	\$546	\$0	\$0
\$2,839	\$1,619	\$165	\$104	\$952	\$0
\$2,264	\$1,475	\$145	\$645	\$0	\$0
\$1,805	\$993	\$185	\$347	\$280	\$0
\$3,968	\$2,924	\$165	\$94	\$786	\$0
\$3,471	\$2,780	\$145	\$546	\$0	\$0
\$3,180	\$2,465	\$185	\$293	\$237	\$0
\$4,548	\$3,065	\$165	\$117	\$1,201	\$0
\$3,567	\$2,738	\$145	\$684	\$0	\$0
\$2,357	\$1,040	\$125	\$612	\$579	\$0
\$2,428	\$1,475	\$145	\$808	\$0	\$0
\$2,041	\$993	\$185	\$436	\$428	\$0
\$3,504	\$2,346	\$125	\$454	\$579	\$0
\$3,610	\$2,780	\$145	\$684	\$0	\$0
\$3,380	\$2,465	\$185	\$367	\$363	\$0
\$4,288	\$3,065	\$165	\$90	\$969	\$0
\$3,405	\$2,738	\$145	\$523	\$0	\$0
\$2,100	\$1,040	\$125	\$468	\$467	\$0
\$2,237	\$1,475	\$145	\$617	\$0	\$0
\$1,855	\$993	\$185	\$333	\$345	\$0
\$3,284	\$2,346	\$125	\$346	\$467	\$0
\$3,448	\$2,780	\$145	\$523	\$0	\$0
\$3,223	\$2,465	\$185	\$280	\$293	\$0
\$4,109	\$3,065	\$165	\$94	\$786	\$0
\$3,428	\$2,738	\$145	\$546	\$0	\$0
\$2,214	\$1,318	\$125	\$392	\$379	\$0
\$2,264	\$1,475	\$145	\$645	\$0	\$0
\$1,805	\$993	\$185	\$347	\$280	\$0
\$3,421	\$2,623	\$125	\$294	\$379	\$0
\$3,471	\$2,780	\$145	\$546	\$0	\$0
\$3,180	\$2,465	\$185	\$293	\$237	\$0
\$20,723	\$10,982	\$1,345	\$1,506	\$6,890	\$0
\$16,662	\$11,256	\$800	\$4,606	\$0	\$0
\$13,712	\$1,807	\$1,345	\$2,000	\$8,559	\$0
\$9,026	\$2,977	\$800	\$5,249	\$0	\$0
\$10,651	\$2,549	\$1,200	\$2,114	\$4,789	\$0
\$20,279	\$9,865	\$1,345	\$1,740	\$7,329	\$0
\$16,441	\$11,036	\$800	\$4,606	\$0	\$0
\$18,006	\$10,656	\$1,200	\$1,843	\$4,307	\$0
\$19,025	\$10,982	\$1,345	\$1,142	\$5,556	\$0
\$15,547	\$11,256	\$800	\$3,491	\$0	\$0
\$11,571	\$1,807	\$1,345	\$1,516	\$6,903	\$0
\$7,756	\$2,977	\$800	\$3,979	\$0	\$0
\$9,213	\$2,549	\$1,200	\$1,602	\$3,862	\$0
\$18,440	\$9,865	\$1,345	\$1,319	\$5,910	\$0
\$15,327	\$11,036	\$800	\$3,491	\$0	\$0
\$16,726	\$10,656	\$1,200	\$1,397	\$3,473	\$0
\$17,944	\$10,982	\$1,345	\$1,111	\$4,506	\$0
\$15,452	\$11,256	\$800	\$3,396	\$0	\$0
\$10,474	\$2,688	\$1,345	\$1,277	\$5,163	\$0
\$7,648	\$2,977	\$800	\$3,871	\$0	\$0
\$8,440	\$2,549	\$1,200	\$1,559	\$3,132	\$0
\$17,709	\$10,747	\$1,345	\$1,111	\$4,506	\$0
\$15,232	\$11,036	\$800	\$3,396	\$0	\$0
\$16,032	\$10,656	\$1,200	\$1,359	\$2,817	\$0
\$20,723	\$10,982	\$1,345	\$1,506	\$6,890	\$0
\$16,662	\$11,256	\$800	\$4,606	\$0	\$0

\$10,517	\$612	\$1,345	\$0	\$8,559	\$0
\$9,026	\$2,977	\$800	\$5,249	\$0	\$0
\$10,651	\$2,549	\$1,200	\$2,114	\$4,789	\$0
\$17,344	\$8,671	\$1,345	\$0	\$7,329	\$0
\$16,441	\$11,036	\$800	\$4,606	\$0	\$0
\$18,006	\$10,656	\$1,200	\$1,843	\$4,307	\$0
\$19,025	\$10,982	\$1,345	\$1,142	\$5,556	\$0
\$15,547	\$11,256	\$800	\$3,491	\$0	\$0
\$8,860	\$612	\$1,345	\$0	\$6,903	\$0
\$7,756	\$2,977	\$800	\$3,979	\$0	\$0
\$9,213	\$2,549	\$1,200	\$1,602	\$3,862	\$0
\$15,926	\$8,671	\$1,345	\$0	\$5,910	\$0
\$15,327	\$11,036	\$800	\$3,491	\$0	\$0
\$16,726	\$10,656	\$1,200	\$1,397	\$3,473	\$0
\$17,944	\$10,982	\$1,345	\$1,111	\$4,506	\$0
\$15,452	\$11,256	\$800	\$3,396	\$0	\$0
\$7,323	\$815	\$1,345	\$0	\$5,163	\$0
\$7,648	\$2,977	\$800	\$3,871	\$0	\$0
\$8,440	\$2,549	\$1,200	\$1,559	\$3,132	\$0
\$14,724	\$8,873	\$1,345	\$0	\$4,506	\$0
\$15,232	\$11,036	\$800	\$3,396	\$0	\$0
\$16,032	\$10,656	\$1,200	\$1,359	\$2,817	\$0
\$162,186	\$103,712	\$12,100	\$15,728	\$30,646	\$0
\$152,271	\$117,854	\$8,800	\$25,617	\$0	\$0
\$96,975	\$20,222	\$12,100	\$20,886	\$43,768	\$0
\$89,702	\$49,783	\$8,800	\$31,119	\$0	\$0
\$91,089	\$42,373	\$13,000	\$19,349	\$16,367	\$0
\$152,368	\$88,004	\$12,100	\$18,170	\$34,094	\$0
\$151,982	\$117,564	\$8,800	\$25,617	\$0	\$0
\$153,045	\$110,695	\$13,000	\$16,773	\$12,577	\$0
\$152,449	\$103,712	\$12,100	\$11,923	\$24,714	\$0
\$146,073	\$117,854	\$8,800	\$19,420	\$0	\$0
\$83,451	\$20,222	\$12,100	\$15,833	\$35,297	\$0
\$82,173	\$49,783	\$8,800	\$23,590	\$0	\$0
\$83,241	\$42,373	\$13,000	\$14,668	\$13,199	\$0
\$141,374	\$88,004	\$12,100	\$13,774	\$27,496	\$0
\$145,784	\$117,564	\$8,800	\$19,420	\$0	\$0
\$146,553	\$110,695	\$13,000	\$12,715	\$10,142	\$0
\$147,455	\$103,712	\$12,100	\$11,599	\$20,044	\$0
\$145,546	\$117,854	\$8,800	\$18,892	\$0	\$0
\$82,361	\$31,720	\$12,100	\$13,332	\$25,209	\$0
\$81,532	\$49,783	\$8,800	\$22,949	\$0	\$0
\$80,348	\$42,373	\$13,000	\$14,269	\$10,705	\$0
\$143,245	\$99,502	\$12,100	\$11,599	\$20,044	\$0
\$145,256	\$117,564	\$8,800	\$18,892	\$0	\$0
\$144,291	\$110,695	\$13,000	\$12,370	\$8,226	\$0
\$162,186	\$103,712	\$12,100	\$15,728	\$30,646	\$0
\$152,271	\$117,854	\$8,800	\$25,617	\$0	\$0
\$98,055	\$44,243	\$10,400	\$28,094	\$15,317	\$0
\$89,702	\$49,783	\$8,800	\$31,119	\$0	\$0
\$91,089	\$42,373	\$13,000	\$19,349	\$16,367	\$0
\$159,206	\$112,024	\$10,400	\$21,464	\$15,317	\$0
\$151,982	\$117,564	\$8,800	\$25,617	\$0	\$0
\$153,045	\$110,695	\$13,000	\$16,773	\$12,577	\$0
\$152,449	\$103,712	\$12,100	\$11,923	\$24,714	\$0
\$146,073	\$117,854	\$8,800	\$19,420	\$0	\$0
\$88,293	\$44,243	\$10,400	\$21,297	\$12,353	\$0
\$82,173	\$49,783	\$8,800	\$23,590	\$0	\$0
\$83,241	\$42,373	\$13,000	\$14,668	\$13,199	\$0
\$151,048	\$112,024	\$10,400	\$16,271	\$12,353	\$0
\$145,784	\$117,564	\$8,800	\$19,420	\$0	\$0

\$146,553	\$110,695	\$13,000	\$12,715	\$10,142	\$0
\$147,455	\$103,712	\$12,100	\$11,599	\$20,044	\$0
\$145,546	\$117,854	\$8,800	\$18,892	\$0	\$0
\$87,738	\$49,044	\$10,400	\$18,276	\$10,018	\$0
\$81,532	\$49,783	\$8,800	\$22,949	\$0	\$0
\$80,348	\$42,373	\$13,000	\$14,269	\$10,705	\$0
\$151,463	\$116,826	\$10,400	\$14,218	\$10,018	\$0
\$145,256	\$117,564	\$8,800	\$18,892	\$0	\$0
\$144,291	\$110,695	\$13,000	\$12,370	\$8,226	\$0
\$162,186	\$103,712	\$12,100	\$15,728	\$30,646	\$0
\$152,271	\$117,854	\$8,800	\$25,617	\$0	\$0
\$96,975	\$20,222	\$12,100	\$20,886	\$43,768	\$0
\$89,702	\$49,783	\$8,800	\$31,119	\$0	\$0
\$91,089	\$42,373	\$13,000	\$19,349	\$16,367	\$0
\$152,368	\$88,004	\$12,100	\$18,170	\$34,094	\$0
\$151,982	\$117,564	\$8,800	\$25,617	\$0	\$0
\$153,045	\$110,695	\$13,000	\$16,773	\$12,577	\$0
\$152,449	\$103,712	\$12,100	\$11,923	\$24,714	\$0
\$146,073	\$117,854	\$8,800	\$19,420	\$0	\$0
\$83,451	\$20,222	\$12,100	\$15,833	\$35,297	\$0
\$82,173	\$49,783	\$8,800	\$23,590	\$0	\$0
\$83,241	\$42,373	\$13,000	\$14,668	\$13,199	\$0
\$141,374	\$88,004	\$12,100	\$13,774	\$27,496	\$0
\$145,784	\$117,564	\$8,800	\$19,420	\$0	\$0
\$146,553	\$110,695	\$13,000	\$12,715	\$10,142	\$0
\$147,455	\$103,712	\$12,100	\$11,599	\$20,044	\$0
\$145,546	\$117,854	\$8,800	\$18,892	\$0	\$0
\$82,361	\$31,720	\$12,100	\$13,332	\$25,209	\$0
\$81,532	\$49,783	\$8,800	\$22,949	\$0	\$0
\$80,348	\$42,373	\$13,000	\$14,269	\$10,705	\$0
\$143,245	\$99,502	\$12,100	\$11,599	\$20,044	\$0
\$145,256	\$117,564	\$8,800	\$18,892	\$0	\$0
\$144,291	\$110,695	\$13,000	\$12,370	\$8,226	\$0
\$5,520	\$3,957	\$165	\$187	\$1,211	\$0
\$3,837	\$2,789	\$145	\$903	\$0	\$0
\$4,282	\$1,856	\$125	\$1,656	\$645	\$0
\$3,530	\$2,336	\$145	\$1,049	\$0	\$0
\$3,088	\$1,894	\$185	\$570	\$439	\$0
\$6,000	\$4,016	\$125	\$1,215	\$645	\$0
\$5,543	\$4,495	\$145	\$903	\$0	\$0
\$5,236	\$4,184	\$185	\$488	\$380	\$0
\$5,520	\$3,957	\$165	\$187	\$1,211	\$0
\$3,837	\$2,789	\$145	\$903	\$0	\$0
\$4,240	\$2,425	\$165	\$207	\$1,443	\$0
\$3,530	\$2,336	\$145	\$1,049	\$0	\$0
\$3,088	\$1,894	\$185	\$570	\$439	\$0
\$6,147	\$4,584	\$165	\$187	\$1,211	\$0
\$5,543	\$4,495	\$145	\$903	\$0	\$0
\$5,236	\$4,184	\$185	\$488	\$380	\$0
\$5,520	\$3,957	\$165	\$187	\$1,211	\$0
\$3,837	\$2,789	\$145	\$903	\$0	\$0
\$4,211	\$2,241	\$195	\$207	\$1,568	\$0
\$3,530	\$2,336	\$145	\$1,049	\$0	\$0
\$3,088	\$1,894	\$185	\$570	\$439	\$0
\$6,082	\$4,400	\$195	\$187	\$1,300	\$0
\$5,543	\$4,495	\$145	\$903	\$0	\$0
\$5,236	\$4,184	\$185	\$488	\$380	\$0
\$5,520	\$3,957	\$165	\$187	\$1,211	\$0
\$3,837	\$2,789	\$145	\$903	\$0	\$0
\$3,566	\$2,192	\$125	\$604	\$645	\$0
\$3,530	\$2,336	\$145	\$1,049	\$0	\$0

\$3,088	\$1,894	\$185	\$570	\$439	\$0
\$5,580	\$4,352	\$125	\$459	\$645	\$0
\$5,543	\$4,495	\$145	\$903	\$0	\$0
\$5,236	\$4,184	\$185	\$488	\$380	\$0
\$4,086	\$3,065	\$165	\$93	\$763	\$0
\$3,425	\$2,738	\$145	\$542	\$0	\$0
\$2,771	\$1,165	\$125	\$1,113	\$368	\$0
\$2,260	\$1,475	\$145	\$641	\$0	\$0
\$1,795	\$993	\$185	\$345	\$272	\$0
\$3,773	\$2,471	\$125	\$810	\$368	\$0
\$3,468	\$2,780	\$145	\$542	\$0	\$0
\$3,171	\$2,465	\$185	\$291	\$230	\$0
\$4,086	\$3,065	\$165	\$93	\$763	\$0
\$3,425	\$2,738	\$145	\$542	\$0	\$0
\$2,811	\$1,619	\$165	\$103	\$924	\$0
\$2,260	\$1,475	\$145	\$641	\$0	\$0
\$1,795	\$993	\$185	\$345	\$272	\$0
\$3,945	\$2,924	\$165	\$93	\$763	\$0
\$3,468	\$2,780	\$145	\$542	\$0	\$0
\$3,171	\$2,465	\$185	\$291	\$230	\$0
\$4,086	\$3,065	\$165	\$93	\$763	\$0
\$3,425	\$2,738	\$145	\$542	\$0	\$0
\$2,200	\$1,318	\$125	\$390	\$368	\$0
\$2,260	\$1,475	\$145	\$641	\$0	\$0
\$1,795	\$993	\$185	\$345	\$272	\$0
\$3,408	\$2,623	\$125	\$292	\$368	\$0
\$3,468	\$2,780	\$145	\$542	\$0	\$0
\$3,171	\$2,465	\$185	\$291	\$230	\$0
\$18,427	\$10,982	\$1,345	\$1,204	\$4,358	\$539
\$15,735	\$11,256	\$800	\$3,680	\$0	\$0
\$10,834	\$1,807	\$1,345	\$1,598	\$5,415	\$669
\$7,971	\$2,977	\$800	\$4,193	\$0	\$0
\$8,841	\$2,549	\$1,200	\$1,689	\$3,029	\$374
\$17,810	\$9,865	\$1,345	\$1,390	\$4,636	\$573
\$15,515	\$11,036	\$800	\$3,680	\$0	\$0
\$16,389	\$10,656	\$1,200	\$1,472	\$2,724	\$337
\$18,427	\$10,982	\$1,345	\$1,204	\$4,358	\$539
\$15,735	\$11,256	\$800	\$3,680	\$0	\$0
\$8,041	\$612	\$1,345	\$0	\$5,415	\$669
\$7,971	\$2,977	\$800	\$4,193	\$0	\$0
\$8,841	\$2,549	\$1,200	\$1,689	\$3,029	\$374
\$15,225	\$8,671	\$1,345	\$0	\$4,636	\$573
\$15,515	\$11,036	\$800	\$3,680	\$0	\$0
\$16,389	\$10,656	\$1,200	\$1,472	\$2,724	\$337
\$150,160	\$103,712	\$12,100	\$12,566	\$19,386	\$2,396
\$147,120	\$117,854	\$8,800	\$20,467	\$0	\$0
\$80,117	\$20,222	\$12,100	\$16,686	\$27,687	\$3,422
\$83,445	\$49,783	\$8,800	\$24,862	\$0	\$0
\$82,465	\$42,373	\$13,000	\$15,459	\$10,354	\$1,280
\$138,854	\$88,004	\$12,100	\$14,517	\$21,568	\$2,666
\$146,831	\$117,564	\$8,800	\$20,467	\$0	\$0
\$146,035	\$110,695	\$13,000	\$13,401	\$7,956	\$983
\$150,160	\$103,712	\$12,100	\$12,566	\$19,386	\$2,396
\$147,120	\$117,854	\$8,800	\$20,467	\$0	\$0
\$87,976	\$44,243	\$10,400	\$22,446	\$9,690	\$1,198
\$83,445	\$49,783	\$8,800	\$24,862	\$0	\$0
\$82,465	\$42,373	\$13,000	\$15,459	\$10,354	\$1,280
\$150,460	\$112,024	\$10,400	\$17,148	\$9,690	\$1,198
\$146,831	\$117,564	\$8,800	\$20,467	\$0	\$0
\$146,035	\$110,695	\$13,000	\$13,401	\$7,956	\$983
\$150,160	\$103,712	\$12,100	\$12,566	\$19,386	\$2,396

\$147,120	\$117,854	\$8,800	\$20,467	\$0	\$0
\$80,117	\$20,222	\$12,100	\$16,686	\$27,687	\$3,422
\$83,445	\$49,783	\$8,800	\$24,862	\$0	\$0
\$82,465	\$42,373	\$13,000	\$15,459	\$10,354	\$1,280
\$138,854	\$88,004	\$12,100	\$14,517	\$21,568	\$2,666
\$146,831	\$117,564	\$8,800	\$20,467	\$0	\$0
\$146,035	\$110,695	\$13,000	\$13,401	\$7,956	\$983

		Capital Costs (\$/sq ft)		
Equipment Category	Equipment Type	Residential		
		SF		M
		Retrofit	NC	Retrofit
Space Cooling	Air-Conditioning	\$4.08	\$2.54	\$6.69
	High- Eff Air-Conditioning	\$5.14	\$3.20	\$8.43
Space Heating	Natural Gas	\$3.81	\$2.06	\$5.97
	High-Eff Natural Gas	\$4.23	\$2.48	\$6.63
	Fuel Oil	\$3.35	\$1.81	-
	Air Source Heat Pump (2025)	\$7.80	\$3.42	\$9.35
	Air Source Heat Pump (2035)	\$7.13	\$3.12	\$8.55
	Air Source Heat Pump (2045)	\$6.47	\$2.83	\$7.75
	High-Eff Air-Source Heat Pump (2025)	\$9.04	\$4.14	\$12.76
	High-Eff Air-Source Heat Pump (2035)	\$8.26	\$3.78	\$11.67
	High-Eff Air-Source Heat Pump (2045)	\$7.49	\$3.43	\$10.58
	Hybrid Heat-Pump/Furnace (2025)	\$7.41	-	\$8.88
	Hybrid Heat-Pump/Furnace (2035)	\$6.78	-	\$8.12
	Hybrid Heat-Pump/Furnace (2045)	\$6.14	-	\$7.36
	Electric Resistance	\$1.52	\$1.52	\$1.52
	Ground Source Heat-Pump	\$7.88	\$7.88	\$9.29
Water Heating	Natural Gas	\$1.37	\$1.92	\$1.89
	Heat Pump (2025)	\$1.73	\$1.09	\$2.15
	Heat Pump (2035)	\$1.43	\$0.90	\$1.78
	Heat Pump (2045)	\$1.13	\$0.71	\$1.41
	Electric Resistance	\$3.04	\$3.04	\$3.04
Envelope	Roof Insulation	\$3.13	\$3.13	\$4.07
	Wall Insulation	\$6.90	\$6.90	\$9.51
	Air-Tightness	\$1.24	\$1.24	\$2.07
	Glazing	\$3.75	\$3.75	\$7.44
HVAC	Heat Recovery Ventilation	\$2.00	\$2.00	\$1.22
Lighting & Plugs	Electric Cooktop	\$0.80	\$0.82	\$2.10
	Gas Cooktop	\$0.37	\$0.52	\$0.60
	Electric Dryer	\$0.64	\$0.56	\$1.05
	Gas Dryer	\$0.45	\$0.45	\$0.67
Gas Hookup	Avoided Gas Connection	\$0.00	-\$3.05	\$0.00

Commercial					
IF	Small		Large		
	NC	Retrofit	NC	Retrofit	NC
	\$7.34	\$2.48	\$2.72	\$2.73	\$2.99
	\$9.25	\$3.89	\$4.27	\$4.48	\$4.91
	\$6.14	\$0.54	\$0.56	\$0.54	\$0.56
	\$7.39	\$0.96	\$1.07	\$0.96	\$1.07
	-	-	-	-	-
	\$9.97	\$5.40	\$8.15	\$8.88	\$8.88
	\$9.11	\$4.74	\$7.16	\$7.80	\$7.80
	\$8.26	\$4.09	\$6.17	\$6.73	\$6.73
	\$12.58	\$6.03	\$9.10	\$9.91	\$9.91
	\$11.51	\$5.29	\$7.99	\$8.71	\$8.71
	\$10.43	\$4.56	\$6.89	\$7.51	\$7.51
	-	\$5.13	-	\$8.44	-
	-	\$4.51	-	\$7.41	-
	-	\$3.89	-	\$6.39	-
	\$1.52	\$1.33	\$1.33	-	-
	\$9.29	\$9.04	\$9.04	\$9.04	\$11.66
	\$1.89	\$0.64	\$0.64	\$0.45	\$0.45
	\$2.15	\$0.80	\$0.80	\$0.57	\$0.57
	\$1.78	\$0.69	\$0.69	\$0.49	\$0.49
	\$1.41	\$0.58	\$0.58	\$0.42	\$0.42
	\$3.04	\$0.47	\$0.47	\$7.60	\$7.60
	\$4.07	\$5.00	\$5.00	\$5.00	\$5.25
	\$9.51	\$15.55	\$15.55	\$8.17	\$8.17
	\$2.07	\$1.37	\$1.37	\$0.74	\$0.74
	\$7.44	\$5.30	\$5.30	\$6.86	\$6.86
	\$1.22	\$0.44	\$0.44	\$0.55	\$0.55
	\$2.10	\$0.20	\$0.20	\$0.20	\$0.20
	\$0.60	\$0.09	\$0.09	\$0.09	\$0.09
	\$1.05	\$0.14	\$0.14	\$0.14	\$0.14
	\$0.67	\$0.09	\$0.09	\$0.09	\$0.09
	-\$0.32	\$0.00	-\$2.24	\$0.00	-\$0.20

Annualized cost factors	
Discount Rate	5%
HVAC lifetime (yrs)	15
Shell lifetime (yrs)	40