

# EndUseOptions

Enumerator	Description	Notes
INTERIOR_LIGHTING	Interior lighting	
EXTERIOR_LIGHTING	Exterior lighting	
SPACE_HEATING	Space heating	
HEAT_PUMP_SUPPLEMENTAL_HEATING	Heat pump supplemental heating	
SPACE_COOLING	Space cooling	
PUMPS	Pumps	
HEAT_REJECTION	Heat rejection	
FANS_INTERIOR_VENTILATION	Fans - interior ventilation	
FANS_PARKING_GARAGE	Fans - parking garage	
HUMIDIFICATION	Humidification	
HEAT_RECOVERY	Heat recovery	
SERVICE_WATER_HEATING	Service water heating	
MOTORS	Motors	
TRANSFORMERS	Transformers	
OFFICE_EQUIPMENT	Office equipment	
COMPUTERS_SERVERS	Computers and servers	
COMMERCIAL_COOKING	Commercial cooking	
MISC_EQUIPMENT	Misc equipment	
INDUSTRIAL_PROCESS	Industrial process	
REFRIGERATION_EQUIPMENT	Refrigeration equipment	
ELEVATORS_ESCALATORS	Elevators and escalators	
OTHER	Other	

# EnergySourceOptions

Enumerator	Description	Notes
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Enumerator	Description	Notes
ELECTRICITY	Electricity	
NATURAL_GAS	Natural gas	
PROPANE	Propane	
FUEL_OIL	Fuel oil	
STEAM	Steam	
PURCHASED_HOT_WATER	Purchased hot water	
PURCHASED_CHILLED_WATER	Purchased chilled water	
ON_SITE_RENEWABLES	On-site renewables	Used primarily in AnnualResult
OTHER	Other	

## Output2019ASHRAE901

Name	Description	Data Type	Units	Range	Req	Notes
id	Scope-unique reference identifier for instances of this data group.	ID			✓	
reporting_name	Descriptive name used in RCT reports if id is not already a descriptive name	String				
notes	Supplementary information to provide context to the model reviewer	String				
output_instance	References output that correspond to specific simulation model.	{OutputInstance}				A separate file is expected for each simulation model including outputs that correspond with building rotations.
performance_cost_index	Performance cost index for the project	Numeric				This output is appropriate for the overall project not specific instance of a model.
baseline_building_unregulated_energy_cost	baseline building unregulated energy cost.	Numeric				The units are the local monetary units such as dollars. This output is appropriate for the overall project not specific instance of a model.

Name	Description	Data Type	Units	Range	Req	Notes
<code>baseline_building_regulated_energy_cost</code>	baseline building regulated energy cost.	<code>Numeric</code>				The units are the local monetary units such as dollars. This output is appropriate for the overall project not specific instance of a model.
<code>baseline_building_performance_energy_cost</code>	baseline building performance energy cost.	<code>Numeric</code>				The units are the local monetary units such as dollars. This output is appropriate for the overall project not specific instance of a model.
<code>total_area_weighted_building_performance_factor</code>	Total area weighted building performance factor	<code>Numeric</code>				This output is appropriate for the overall project not specific instance of a model.
<code>performance_cost_index_target</code>	Performance cost index target for the project	<code>Numeric</code>				This output is appropriate for the overall project not specific instance of a model.
<code>total_proposed_building_energy_cost_including_renewable_energy</code>	Total proposed building energy cost including renewable energy.	<code>Numeric</code>				The units are the local monetary units such as dollars. This output is appropriate for the overall project not specific instance of a model.
<code>total_proposed_building_energy_cost_excluding_renewable_energy</code>	Total proposed building energy cost excluding renewable energy.	<code>Numeric</code>				The units are the local monetary units such as dollars. This output is appropriate for the overall project not specific instance of a model.
<code>percent_renewable_energy_savings</code>	Percent renewable energy savings	<code>Numeric</code>				This output is appropriate for the overall project not specific instance of a model.

# OutputInstance

Name	Description	Data Type	Units	Range	Req	Notes
<code>id</code>	Scope-unique reference identifier for instances of this data group.	<code>ID</code>			✓	

Name	Description	Data Type	Units	Range	Req	Notes
reporting_name	Descriptive name used in RCT reports if id is not already a descriptive name	String				
notes	Supplementary information to provide context to the model reviewer	String				
ruleset_model_type	Describes the current model instance for rulesets with multiple simulation models	<RulesetModelOptions2019ASHRAE901>				
rotation_angle	Rotation angle of the building model.	Numeric		≥0, <360		Usually 0, 90, 180, or 270.
unmet_load_hours	Unmet load hours for heating and cooling	Numeric	hr		✓	This would be the coincident unmet load hours so if the same hour is during heating and during cooling it would only count as one hour.
unmet_load_hours_heating	Unmet load hours for heating	Numeric	hr		✓	
unmet_occupied_load_hours_heating	Unmet load hours for heating when the zone is occupied	Numeric	hr		✓	
unmet_load_hours_cooling	Unmet load hours for cooling	Numeric	hr		✓	
unmet_occupied_load_hours_cooling	Unmet load hours for cooling when the zone is occupied	Numeric	hr		✓	
annual_source_results	Annual results by source	[{SourceResult}]				Contains a list of results by energy source.
building_peak_cooling_load	Building peak cooling load	Numeric	W		✓	
annual_end_use_results	Annual end use results	[{EndUseResult}]				Contains a list of results by end use and energy source.

## SourceResult

Name	Description	Data Type	Units	Range	Req	Notes
id	Scope-unique reference identifier for instances of this data group.	ID			✓	
reporting_name	Descriptive name used in RCT reports if id is not already a descriptive name	String				
notes	Supplementary information to provide context to the model reviewer	String				
energy_source	End use type	<EnergySourceOptions>			✓	
annual_consumption	Annual energy consumption	Numeric	J		✓	For energy_source ON_SITE_RENEWABLES this value is negative.
annual_demand	Annual site demand	Numeric	J		✓	This corresponds to the coincident demand for end-use results.

Name	Description	Data Type	Units	Range	Req	Notes
annual_cost	Annual cost	Numeric			✓	The units are the local monetary units such as dollars. For energy_source ON_SITE_RENEWABLES this value is negative.

## EndUseResult

Name	Description	Data Type	Units	Range	Req	Notes
id	Scope-unique reference identifier for instances of this data group.	ID			✓	
reporting_name	Descriptive name used in RCT reports if id is not already a descriptive name	String				
notes	Supplementary information to provide context to the model reviewer	String				
type	End use type	<EndUseOptions>			✓	
energy_source	End source	<EnergySourceOptions>			✓	
annual_site_energy_use	Annual site energy use	Numeric	J		✓	
annual_site_coincident_demand	Annual site coincident demand	Numeric	J		✓	
annual_site_non_coincident_demand	Annual site non-coincident demand	Numeric	J		✓	
is_regulated	Indicates whether the end use consumption is from regulated equipment	Boolean				