## Hourly Consumption By Fuel to CSV

### Description

This creates a single CSV file with a column for each fuel type. It creates a header row to identify the fuel, and a row for each hour in the simulation.

### Modeler Description

This will create columns for Electricity, Natural Gas, Additional Fuel, District Cooling, District Heating, and Water. Each column will contain a header row followed by hourly consumption of that fuel. If a fuel type is not used, it will just return 0 values for all rows. The name of the CSV file will be the name of the building object followed by “.csv”.

### Additional XML data

Measure Type = ReportingMeasure  
Taxonomy = Reporting.QAQC

### Intended Software Tools

OpenStudio Application, PAT, Analysis Spreadsheet

### Use Case Types

Report Generation

### Arguments

Currently no user arguments. We could add argument for timestep in the future. For now it is hard coded as hourly

### Initial Condition

“The Total Energy Consumption for the building is #{}”

### Final Condition

“The following fuels contained non zero values: #{non\_zero\_fuel\_array}”

### Not Applicable

Even if all values are zero we can report that, so this shouldn’t get triggered

### Warning

“All fuel values are 0. This building doesn’t appear to consume any energy.”

### Information

For each fuel list the total consumption and the hourly man and max value.

### Error

If can’t access the timeseries SQL data

### Code Outline

* Add in time series requests for fuels to the energyPlusOutputRequests section.
* Create a CSV file named after the building name with a “.csv” extension. Pull the building name from the last IDF file, since another measure is renaming the IDF.
* Loop through fuel types (Electricity, Natural Gas, Additional Fuel, District Cooling, District Heating, and Water)
* Create a column for each fuel with the fuel type as the header row
* Add hourly data to each column.
* Save .csv file

### Tests

* Test model with All fuel types
  + Spot check a few values
* Test model where SQL data can’t be accessed
* Test model with no consumption