

## HUD Utility Schedule Model (HUSM) Instructions

### I. Introduction

The HUD Utility Schedule Model (HUSM) has been developed to provide a consistent basis for determining utility schedules, using form HUD-52667, throughout the United States.

This model is a web application that is primarily based on the Residential Energy Consumption Survey (RECS), a nationally representative survey that collects data on energy characteristics of housing units, usage patterns, and household demographics.<sup>1</sup> Using correlation and regression techniques, the HUSM calculates an allowance for each end-use, with consideration for unit type, size of the unit, and the type of utility used. In addition, the HUSM also considers local 30-year normalized weather data, to estimate average consumption in a geographical area.

In order for a schedule to be produced, users must specify the unit type, size of the unit, the type of utility used, the location, and the utility rate schedule for each type of utility.

Using the Internet, users can access the model from the following URL:

<http://www.huduser.gov/portal/resources/utilallowance.html>

At this URL, users may also access a Microsoft Excel-based version of the model.

### II. Using the HUSM

The HUSM is divided into multiple sections for data input. Each section is separated by a blue border and titles are located in the upper-left portion of each respective section, in a blue font. The instructions provided in this document relate specifically to the web-based version of the HUSM. Users of the Excel-based model may also follow these instructions but must be cognizant that there are slight variations amongst the different versions of the model.

The sections of the model are listed below:

- Location
- Unit Information
- Actual Allowance
- Standard Electric Utility Tariff
- Standard Natural Gas Utility Tariff
- Fuel Oil Delivery Contract
- Liquefied Petroleum Gas (LPG) Delivery Contract
- Water Supply Tariff
- Sewer Tariff

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<sup>1</sup> <http://www.eia.gov/consumption/residential/about.cfm>

- Trash Collection Fees
- Range/Microwave Fees
- Refrigerator Fees
- Other Fees

The “Preview Allowance Schedule” and “Projected Family Allowances” buttons at the top of the model allow users to produce a sample utility schedule and sample HUD-52667 form, respectively, when all user input entries are made.

Bracketed in the picture below is the *Location* section, the first section of the model.

In this section, users click on the white cell beside “Search for PHA or ZIP.” Users simply input the first three characters of their PHA code or zip code and a drop-down menu appears, allowing users to scroll through options until they find their PHA or zip code. Once selected, the user’s choice emerges in the ensuing cell, “Selected PHA or ZIP.” The “Form Date” also requires manual entry. Here, users click on the appropriate cell and a drop-down calendar will appear. Users toggle between months using the arrows in the upper corners of the calendar and then select the appropriate date from the calendar itself. Similarly, each section must be completed to implement the model.

The *Location section*, shown above, enables the model to reference local weather information, critical for any estimate of heating and cooling.

The *Unit Information* and the subsequent *Actual Allowance sections* enable the model to calculate utility allowances for specific residents. These sections include detailed information, such as unit type and relevant end-use, which are necessary to produce allowance estimates.

The remaining HUSM sections pertain to tariffs and fees levied by utility companies. These sections allow the model to consider non-consumption-related expenditures that are considered within the utility allowance such as energy taxes, utility consumption rates, and trash collection, among others.

Each user must complete the entries in each section of the HUSM. When all the consumption entries are made, the HUD-52667 form page is populated with utility allowance results. Those results can then be previewed or printed right from the website when the “Preview Form 52667” button is selected.

### **III. Inputting data into the HUSM**

#### **The Location Section**

The first section of the HUSM is the *Location* section. As the HUSM predicts allowances for utility consumption nationally, the model must account for the vast regional differences therein. For example, heating/cooling estimates are dramatically different between the arid desert of Arizona and the coast of Maine. Entering the location allows the model to account for these regional differences.

***Search for PHA or ZIP*** – Here, users are able to search for their PHA or zip code by typing in the name of the city, PHA, or zip code. A window will appear to help narrow down the search results. Selecting the appropriate PHA or zip code populates the “Climate Data” section of the page with the applicable weather data.

***Form Date*** – Enter the date you wish to appear on the completed form. This date is often the date on which the form goes into effect, or the date on which the form was last changed. This entry is likely to change every time the form is updated.

***Include Allowance for Air Conditioning*** – Check the box if the housing authority normally includes an allowance for the electricity consumption associated with providing air conditioning. Depending on the location and the climate, this is normally checked.

***Climate Data*** – This button is not an input into the model. However, when selected, it will provide the 30-year average weather data used by the model to calculate the allowance.

#### **The Unit Information Section**

The *Unit Information* section is the first of two sections that allow the user to add resident-specific information.

***Unit Type*** – Users choose the appropriate structure from the drop-down menu. The model allows for the following selections; single-family house, single-family attached house, low-rise apartment buildings with 2-4 units, larger apartment buildings with 5+ units, and manufactured homes. The following table shows the Residential Energy Consumption Survey (RECS) unit type and type number.

### CURRENT MODEL UNIT TYPES

<b>Unit Types</b>	<b>Based on RECS Unit Type</b>	<b>RECS Type Number</b>
Single Family House	SF Det	2
Single Family Attached	SF Att	3
Lowrise Apartment (2 - 4 units)	Apt 2-4	4
Larger Apartment Bldgs. (5+ units)	Apt 5+	5
Manufactured Homes	Mobile	1

The listing of previous HUSM unit types is shown on the table below to provide a way to update utility schedules based on RECS unit type and number. For example, a townhouse under the previous HUSM is currently identified as a Single Family Attached unit with a RECS type number of 3.

### PREVIOUS MODEL UNIT TYPES

<b>Unit Types</b>	<b>Based on RECS Unit Type</b>	<b>RECS Type Number</b>
Detached houses	SF Det	2
Duplexes, row or townhouses	SF Att	3
Garden and high rise apartments	Apt 5+	5
Manufactured homes	Mobile	1
Duplex	SF Att	3
Triplex	SF Att	3
Fourplex	SF Att	3
Townhouse - within row	SF Att	3
Townhouse - end of row	SF Att	3
Multifamily	Apt 2-4	4
Highrise	Apt 5+	5
Apartment	Apt 2-4	4
Alternative 1	Apt 2-4	4
Alternative 2	Apt 2-4	4
Alternative 3	Apt 2-4	4
Alternative 4	Apt 2-4	4

**# Bedrooms** – Users select the appropriate number of bedrooms from the drop-down menu. The model allows for studio and 1 to 5 bedroom unit selections.

**Energy Savings Design** –The model provides for buildings that have undergone energy savings improvements with a series of radio buttons: Energy Star Certification, LEED Certification, and Significant Green Retrofit. The model is normally set to None, indicating that the building does not meet an energy saving standard. Users choose Energy Star Certification, which represents 18% in energy savings, if the residence being estimated meets the Environmental Protection Agency (EPA) standard as an Energy Star property. Users can also select LEED Certification, a 25% energy reduction, if the property meets the LEED standards according to the U.S. Green Building Council (USGBC). Finally, the user may choose Significant Green Retrofit, signifying an 18% impact on energy efficiency, if the building has had an energy saving rehabilitation to any of the following systems in the last five years: Heating; Cooling; Lighting; DHW system; Appliances; Building envelope; Water measures; or On-site generation.

**Electric Tariff** – Some utilities have special discounted tariffs for customers that use electric heat or use only electricity and no other source of energy in their homes. If that is the case, users should check this box.

### **The Actual Allowance Section**

The *Actual Allowance* section specifies the resident's utility responsibility. If the tenant does not pay a particular utility or is not responsible for the utility's remittance, the PHA does not cover the utility in an allowance. For example, trash collection is often covered by the municipality. In this instance, the resident does not pay a utility bill on trash collection and so the PHA does not provide an allowance for trash.

This section contains 11 different drop-down menus. Each menu represents the different available allowances. Users select the option specific to the resident. For example, the Space Heating menu allows users to select from the following options; *Not applicable*, *Natural Gas*, *Bottled Gas*, *Electric Resistance*, *Electric Heat Pump*, and *Fuel Oil*. The user first should determine if the tenant is financially responsible for remittance, and if so, select the fuel source used for heat.

For allowances like *Trash Collection* and *Other*, which are often excluded by PHAs, the only options are *Not applicable* and *Tenant pays*. Selecting *Tenant Pays* includes the allowance in the utility estimate. Conversely, *Not applicable* means that any tariff/fee entered on the Tariff page will not be included in the final utility allowance.

### **The Tariffs Section**

A significant part of the model is used to update the rates paid for utilities. The entries in this section allow users to update the tariffs for electricity, natural gas, fuel oil, liquefied petroleum gas (LPG), water, sewer, trash, and certain appliance fees. All energy and non-energy related costs can be included in the model.

To input tariff and fee information, a user must have access to the appropriate utility rates. Most utilities allow you to download a tariff schedule or rate book from their website. After you do this, make sure to understand the utility bill. At times, the tariff is broken into a main tariff and many riders. Some utilities describe taxes in the rate book and some do not. There are two different types of tariffs, *stepped rates* and *fee-for-service*.

Stepped rates are common practice among utilities, and they are designed to reflect the effect of demand on utility prices. For example, additional electrical consumption during the summer months requires a higher rate per kWh. To accomplish this, a utility company often creates two different rates, one for summer and one for winter. However, within each season, consumers have different energy demands. To account for this, a utility would first set up a summer block “size.” Let us say that 600 kWh is an example block “size.” This means that a user could expect one rate for their first 600 kWh, and then another if they surpass that amount of consumption. Then the utility company selects a “cost.” This cost can be explained as a dollar per kWh rate for each of the blocks. Continuing with the example, an energy company could charge \$0.11 (“cost”) for a consumer’s first 600 kWh (“size”) of energy consumption and then charge \$0.18 for each kWh above 600 kWh.

The HUSM allows for four block “sizes” and “costs” of electric, natural gas, LPG, fuel oil, water, and sewer rates. In addition, HUSM provides for two possible seasons, summer and winter. Block sizes and rates can sometimes be found on a utility bill, but other times they are hard to determine. Utility companies are required to publish their stepped rates, and these are regularly found online.

Using the standard electric tariff as an example, the following directions can be used to implement any of the stepped rate tariffs:

***Utility Name*** and ***Rate Name*** – Users enter the name (or an abbreviation of the name) for the utility that provides electricity for the specific rate to be used in the calculations. Many utilities have multiple rates that could be used by residential customers; users choose one that is the most typical.

***Rate Effective Date*** – Often utilities will use the same name for a tariff even though they may change the values. Entering an effective date here allows the user to understand which version of the tariff you are using.

***First Month of Summer*** and ***Last Month of Summer*** – From the drop-down menu, select the months that are the first and last months of the summer period as described on the electric bill or in the rate book. If the tariff does not vary by season, users set the summer period to begin January and end December. If the tariff is seasonal but starts mid-month, users should make sure the number of summer months entered in the cell is equal to the total number of summer months used by the utility, as the number of total months is more important than exactly recording the beginning of a tariff change.

**Monthly Charge** – Enter the value charged for electric service. This is sometimes called a monthly charge or a service charge. This should be readily available on any utility bill.

**Floor and Ceiling** – Often utilities charge a maximum monthly fee, are required to charge a minimum, or both. For this reason, many of the HUSM sections provide for “floor” (i.e., minimum) and “ceiling” (i.e., maximum) monthly values. In these cases, the floor checkbox should be selected when a minimum exists and ceiling should be selected for maximum. Adjacent to these checkboxes are fields where users should input the floor or ceiling value.

**Block Tariffs** – Block tariffs are often expressed as a “stepped” or a “blocked” tariff or rate. For example, electricity costs might be 5 cents per kWh for the first 500 kWh and 4 cents per kWh for the remaining kWh. Since some utilities have multiple blocks in their tariffs, up to four blocks are provided. If the rate is not a stepped/blocked rate, enter values for the first block only.

**Summer/Winter Size of 1<sup>st</sup>-4<sup>th</sup> Blocks** – The size of the block refers to the number of units of utility usage that a rate applies to. For example, if a tariff is 5 cents per kWh for the first 500 kWh and 4 cents per kWh for the remaining kWh, there are two blocks. The size of the first block is “500,” and the size of the second block is effectively infinite. HUSM recognizes the second size by automatically filling in the next block with the word “remainder.”

Size of First Block	remainder	500	kWh
Size of Second Block		remainder	kWh
Size of Third Block			kWh
Size of Fourth Block			kWh
Cost of First Block	n/a	.05	\$/kWh
Cost of Second Block		.04	\$/kWh
Cost of Third Block		n/a	\$/kWh
Cost of Fourth Block			\$/kWh

Since some utilities have multiple blocks in their tariffs, up to four blocks are provided. If more blocks are part of the tariff, average the cost of some of the blocks together and combine their sizes. If the tariff does not have blocks that vary by season, users only enter values for the summer entries.

**Summer/Winter Cost of 1<sup>st</sup>-4<sup>th</sup> Blocks** – Continuing the example above, the user would enter 0.05 in the “Cost of First Block” a 0.04 in the “Cost of the Second Block.” If more blocks are part of the tariff, average the cost of some of the blocks together and combine their sizes. If multiple companies are involved in providing the utility service, such as when the utilities are deregulated, then add up the costs for each company for that block and enter the combined total. Note: HUSM will alert users when there is a missing cost.

**Extra Charges** – This is an extra fee charged by the utility for every kWh sold. That fee and possible credits are often expressed as a fuel cost adjustment, an energy cost adjustment, or a surcharge. Credits are often provided on the basis of every kWh and can be entered as negative numbers. If multiple extra charges exist in the tariff, add them together.

**Taxes** – This is expressed as a whole number percentage. For a 3.0 percent tax (3.0%), simply enter “3.0.” The tax is calculated from a subtotal that includes the block charges, the monthly charge, and the extra charges.

### Standard Electric Utility Tariff

	Previous	Current	
Utility Name			
Rate Name			
Effective Date	MM/DD/YYYY	MM/DD/YYYY	
First Month of Summer	January ▼	January ▼	Select January if rate is not seasonal
Last Month of Summer	December ▼	December ▼	Select December if rate is not seasonal
Monthly Charge			\$/month
Floor	<input type="checkbox"/>		
Ceiling	<input type="checkbox"/>		
<b>Summer</b>			
Size of First Block	remainder	500	kWh
Size of Second Block		remainder	kWh
Size of Third Block			kWh
Size of Fourth Block			kWh
Cost of First Block	n/a	.05	\$/kWh
Cost of Second Block		.04	\$/kWh
Cost of Third Block		n/a	\$/kWh
Cost of Fourth Block			\$/kWh
<b>Winter</b>			
Size of First Block	remainder	remainder	kWh
Size of Second Block			kWh
Size of Third Block			kWh
Size of Fourth Block			kWh
Cost of First Block	n/a	n/a	\$/kWh
Cost of Second Block			\$/kWh
Cost of Third Block			\$/kWh
Cost of Fourth Block			\$/kWh
Extra Charges			\$/kWh
Taxes		3	%

In some locations, utilities are deregulated and multiple companies may be involved in providing service. This is especially likely for natural gas and electric utilities. To determine usage for deregulated utilities, add up the charges for each kWh or other unit of measure and enter the combined total. For example, if an electric generating company charges 4 cents per kWh and the electric distribution company charges 3 cents per kWh, add the two charges together to get 7 cents per kWh. (If the companies have multiple block rates, these charges need to be combined for each rate block.)

The remaining sections of the model relate to fee-for-service utilities, including trash collection, microwave, refrigerator, and other. If rental units in the PHA’s jurisdiction are typically leased without owner-provided ranges and/or refrigerators, an allowance must be made for the cost to the family in providing its own. Allowances for tenant-provided ranges and refrigerators should be based on the lower of the cost of leasing the equipment or the cost of purchasing it on an installment plan. The utility allowance schedule should also provide allowances for all other utilities and services for which, in the PHA’s locality, the tenant is typically responsible, and which are required for compliance with HQS. Examples would be firewood used as a primary heating fuel, or the required annual flushing of a septic tank in an area without public sewers. The model provides for these inputs:

**Trash Collection Fees** – Enter the average monthly fees for trash collection according to a unit’s number of bedrooms. In general, fee-for-service rates can change based on the amount of bedrooms on the property. For example, it is expected that an apartment with more bedrooms has more occupants and therefore, more trash and collection costs.

**Range/Microwave Fees** – Enter the average monthly cost for renting or financing the purchase of a range and microwave oven for units of different sizes.

**Refrigerator Fees** – Enter the average monthly cost for renting or financing the purchase of a refrigerator for units of different sizes.

**Other Fees** – Enter the average monthly fees for units of different sizes.

Trash Collection Fees		
	Previous	Current
Studio		10
1 Bedroom		12
2 Bedroom		14
3 Bedroom		16
4 Bedroom		20
5 Bedroom		25

Once all of the inputs are entered, a user can produce a sample HUD-52667 by pressing the “Projected Family Allowances” button at the top of the webpage. Notice that there is a second button at the top of the page labeled “Preview Allowance Schedule.” This option allows users to view and print a schedule of allowances, without the additional family-specific allowance required on the HUD 52667.

PHAs can also evaluate the reasonableness of the utility allowance by comparing their respective HUSM estimate with a schedule estimated using state average utility rates and climate data. This is done by clicking the “Show/Hide State Average”<sup>2</sup> button.

Lastly, PHAs can also make a factor adjustment to the estimate using the “Apply Adjustment” button. Factor adjustments are helpful when a schedule of allowances is consistently low or high relative to actual allowances. As with taxes in the tariff section, users input the percent increase/decrease to be applied across all of the allowances. The following image depicts a 2 percent (2.0%) increase:

Adjustment % (negative to decrease):

**Allowances for Tenant-Furnished Utilities and Other Services**

U.S. Department of Housing and Urban Development  
Office of Public and Indian Housing

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<sup>2</sup> State Averages are compiled using 2014 [eia.gov](http://eia.gov) state average natural gas and electric utility rates. Water and Sewer rates are derived from the American Water Works Association 2014 Water and Wastewater Rate Survey. Finally, HUSM uses the average of each state’s 30-year National Oceanic and Atmospheric Administration normalized weather data. Note, some locations are not well represented by the state average.