Track Municipal Energy Use with MassEnergyInsight

Continual measurement of municipal energy consumption is an integral part of evaluating the effectiveness of energy action plans. To support municipalities in Massachusetts in monitoring energy usage, developing baselines, and benchmarking savings, DOER provides municipalities with the free online database MassEnergyInsight (MEI). Once utility accounts are entered into the database, their usage information is imported automatically, but some effort is needed to organize information and identify what must be entered manually. Additionally, some discussion is needed among municipal departments about managing the municipal MEI account on an ongoing basis. This strategy outlines how to establish a standardized process for maintaining and updating a municipality's MEI account and using the data to benchmark energy reductions.

Program Implementation Steps

1. **Obtain Authorization to Access MEI Account.**

   Submit an authorization letter from the municipality or school department to the relevant DOER Green Communities regional coordinator to receive authorization to access municipal data. *Note: a municipality does not have to be a Green Community to use MEI.

2. **Manage Utility Accounts.**

   To get the most out of the MEI account, set up a system to regularly collect, enter, and manage MEI data.

   - **Designate primary MEI contact** – This municipal staff member or volunteer is charged with the responsibility of collecting and entering MEI data, as well as monitoring the account on a regular basis.

   - **Compile list of all accounts for which the municipality pays bills** – The Administrative Office or the Department of Public Works may already have such a list. Otherwise, MEI staff may need to consult various departments to compile it.

   - **Check list of accounts against existing accounts in MEI** – Data from major utilities are preloaded into MEI. Under Organize Data, add any accounts that are missing. Delete accounts that are not on the list – they do not belong to the municipality. *Warning: once an account is deleted, it cannot be recalled.*

Make sure the right accounts are assigned to the right buildings. Sometimes buildings will have outdoor lighting accounts, such as a school with a lit football stadium. Decide whether to associate those accounts with the building, create a separate account for the football field, or classify them under a broader "street/traffic lighting" category, but be consistent.

- **Create a municipality-specific MEI guide** – Institutionalize practices for collecting, entering, and managing MEI data by documenting standardized procedures in an electronic document that is available to all municipal departments.

3. Label MEI Accounts.

When entering utility accounts, choose labels to help organize the data. Proper labeling is important for comparing the energy use of similar buildings or infrastructure. The diagram on the right shows the hierarchy of labeling for MEI entries. The table below shows the labels that can be used.
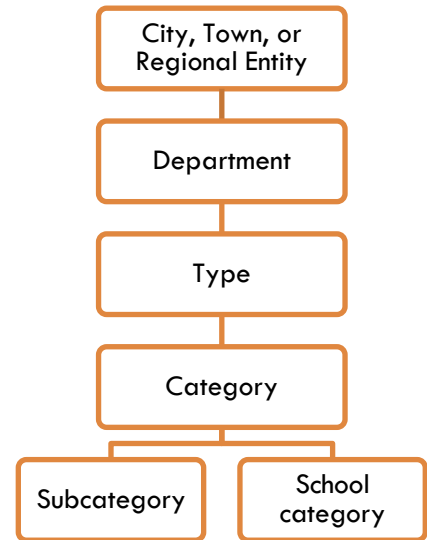
There are no standard rules for how to use labels in MEI. Selecting department, subcategory, or school category is often straightforward, but it can be unclear how to use the type and category labels. The following standards are recommended help communities more effectively utilize MEI's reporting functions. Once the municipality has decided on a system for labeling a building or energy infrastructure's type and category, document how these labels are assigned. New utility accounts should follow the same rules.

Department	Type	Category	Subcategory	School Category
	Complex Facility Units	Building Open Space Street/Traffic Lights Vehicle Water/Sewer	Administration Cemetery Drinking Water Pumping Drinking Water Treatment Plant Indoor Recreation Library Other Outdoor Recreation Park Parking Lots & Parking Garages Public Safety Public Works School Street Light Traffic Light Vehicle Maintenance Building Wastewater Treatment Plant Wastewater Pumping	Elementary School High School K-12 Middle School Middle/High School Pre-K/K Center N/A

- **Department** – Manually enter department names for the municipality. All other labels are chosen from dropdown menus.

- **Type** – Choose how the type categories will be applied in the municipality and use them consistently.

- **Categories** – Specify the category of a facility: building, vehicle, water/sewer, street/traffic lights, or open space.

- **Subcategory** – Subcategories generally do not affect the reporting functions and are therefore not used very often. If they are used, be consistent and remember to document how the labels are assigned.

- **School category** – School categories generally do not affect the reporting functions, but they may allow municipalities to compare school energy use with average school energy use in the region. If they are used, be consistent and remember to document how the labels are assigned.

4. **Collect Data.**

- **Electricity and natural gas accounts** – Electricity and natural gas usage data is preloaded by public utilities into the MEI program. Check the accounts on a regular basis to make sure they are being updated by the utilities and that there are no outstanding data entry errors. Report any missing data or errors by clicking Support.

  - Competitive supply account data for either electricity or gas must be manually entered and kept up to date by municipal staff. Instead of creating separate competitive supply accounts for each facility, the municipality can specify that a public utility account has a competitive supplier and attach the information to that account. If separate competitive supply accounts area created, remember to document the rule and be consistent throughout the MEI database.

- **Heating oil, propane, and other building fuels** – Heating oil, propane, and other building fuel usage data must be manually entered and kept up to date by municipal staff. A standard system for collecting and entering fuel usage data on a regular basis ensures accuracy.

  - Identify a contact person for every department that pays bills heating oil, propane, and other building fuels and coordinate meetings with the department contacts.

  - Identify a standard format in which to collect data. This may vary depending on the department and MEI staff capacity, as well as how bills are documented. In some cases, it may be more efficient for each department to enter fuel usage data into a standard spreadsheet and submit it to MEI staff. In other cases, it may make more sense for each department to submit bills directly to MEI staff, who will then enter the data to MEI.

- Establish a regular schedule for collecting fuel usage data from departments, ideally every month. Schedules may vary by departments depending on when bills are paid. Document the schedules for each department in the municipality's MEI guide.

- Provide regular reminders and coordinate with department contacts to make sure fuel usage data is submitted on time.

Renewable energy – Renewable energy usage data must be manually entered and kept up to date by the municipality. Tracking renewable energy usage can sometimes be challenging. Work with the manager of the renewable energy facility, the facility contractor, and the public utilities to establish the most appropriate system for collecting usage data. Renewable energy accounts should be listed under the buildings/facilities the system is connected to. For example, a solar account HS_Solar would fall under High School (building). In some cases where the output of the facility is low, municipalities may assume that all renewable energy generated is completely consumed by the building/facility the renewable energy system is connected to. In this case, the renewable energy output can be treated as energy usage. Be aware that if the renewable energy facility has a net metering setup, MEI may still count generation as usage.

- **Vehicle fuel** – Vehicle fuel usage must be manually entered and kept up to date by the municipality.

  - Compile a list of all vehicle accounts. It is not necessary to record each vehicle, but it is useful to break the accounts out by departments.

  - Identify what departments pay the bills for the vehicles. If it is the Department of Public Works, they can all fall under DPW, or they can be separated out into different types of vehicles (police cruisers, fire trucks etc.) for tracking purposes.

  - Identify a contact person for every department that pays for vehicle fuel usage.

  - Establish a standard format in which to collect data. Be sure to collect both use and cost information. Make separate accounts for gasoline and diesel. For example, a facility called DPW vehicles could have the accounts DPW_Gas and DPW_Diesel.

  - Establish a regular schedule for collecting fuel usage data from the departments. Document the schedules for each department in the municipality's MEI guide.

  - Monitor data collection.

5. Enter Energy Data.

Electricity and natural gas usage for municipal accounts are pre-loaded by public utilities into the MEI program. If the utility data is not up to date, contact Peregrine to request the data from the utility by clicking Support. For heating oil, vehicle fuel, and other data, there are two methods for manually entering energy data to MEI: click Organize Data and update the information manually or select Upload Spreadsheet. Click on Support, then FAQ for more detailed instructions.

6. Report Energy Data.

It is recommended that municipalities monitor their MEI data and document energy usage information on a regular basis. There are various report functions in MEI a municipality can use to identify general energy usage patterns and determine outstanding energy usage trends. (For guidance on how to create a detailed energy report, refer to the [Report Monthly Energy Use](#) strategy.)

- **Baseline** – The Baseline dashboard allows municipalities to compare their overall usage from year to year. This information is useful for monitoring energy usage trends and can be used as a high-level assessment of energy reduction efforts. From the dropdown menu on the right, choose Facility Category to compare energy data by facilities or Department to compare energy data by departments.

- **Baseline – Weather Normalized** – For a more relevant assessment, refer to overall annual energy use data in the Baseline – Weather Normalized section. Weather normalization uses heating and cooling degree days to account for abnormal fuel consumption due to weather differences each year.

- **Use and Cost Table** – The Use and Cost Table compares normalized energy usage and expenditure values by fuel types and by years. Municipalities can use the data from this table to monitor energy reduction progresses and benchmark energy savings.

- **Buildings to Target** – The Buildings to Target dashboard compares energy usage by building. Use this information to identify the highest energy users and potentially less efficient buildings based on the energy usage intensity (kBTU/sq.ft) for each building. Target buildings with high energy usage intensity for projects with significant energy reduction potential.

  Energy usage intensity alone is not sufficient to determine the efficiency of a building since energy use patterns and operating hours all contribute to variations in energy usage intensity. For a more accurate analysis of building energy efficiency, consult a building/facility professional and perform a building energy audit.

References

- "Support: Frequently Asked Questions (FAQ)." MassEnergyInsight. http://www.massenergyinsight.net

- Green Communities Regional Coordinator. http://www.mass.gov/eea/energy-utilities-clean-tech/green-communities/green-communities-coordinators