

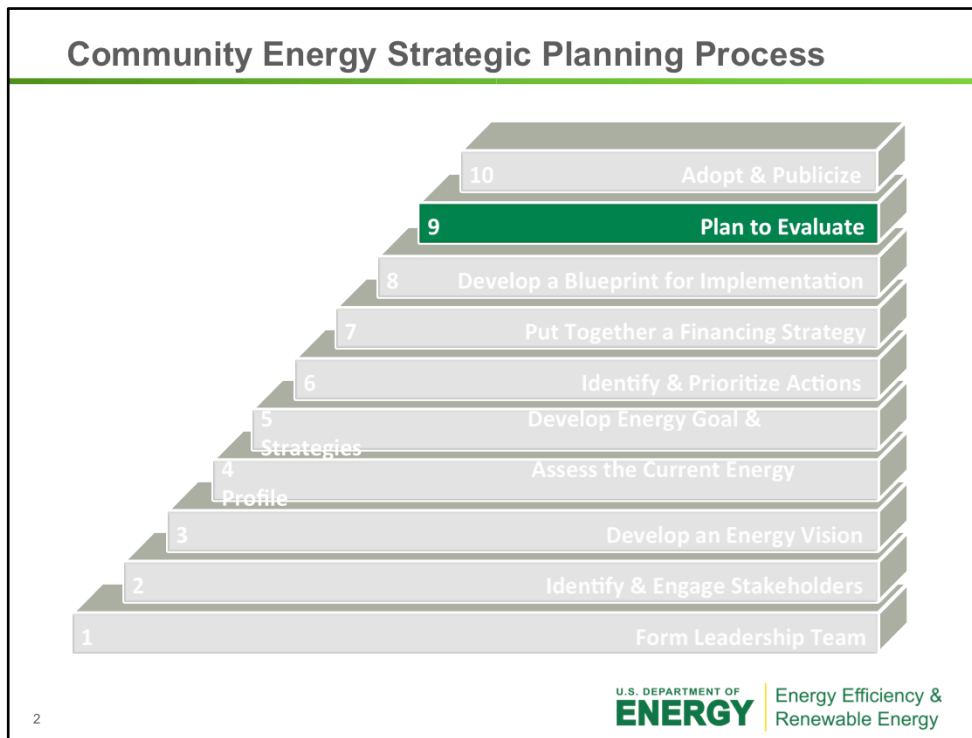
# Community Energy Strategic Planning

## Better Buildings Alliance



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**Step 9**  
**Plan to Evaluate**



**WHAT:** While it may seem early to think about evaluating the outcomes of CESP actions, setting out a clear process for periodic assessment and evaluation up front means that responsibility for these important steps is clear and intentional. In concert with developing an implementation blueprint, identify the process and resources now for monitoring and evaluating progress, as well as providing that information to the public and making necessary adjustments.

**WHY:** Monitoring and evaluation is vital to the ultimate success of the CESP, as it allows:

- Informed management of activities,
- Adjustment of strategies to correct for or make up for deviations or shortfalls,
- Validation of progress toward goals,
- Progress reports to public and authorities to sustain interest; and
- Celebration of successes

**WHEN:** The procedures for monitoring, evaluation, reporting, and update should be an integral part of the implementation blueprint and should be developed in parallel with Step 8. As with the blueprint, this effort may take between 4-8 weeks, depending upon the complexity and breadth of the CESP. Once implemented, the information gathered through these periodic assessments should become a regular component of CESP reporting and public outreach activities (Step 10).

## Step 9: Plan to Evaluate

1. Establish a plan for performance measurement and reporting
2. Evaluate and report on the effectiveness of the full CESP and its components on a regular basis
3. Update the CESP when necessary to ensure the best results



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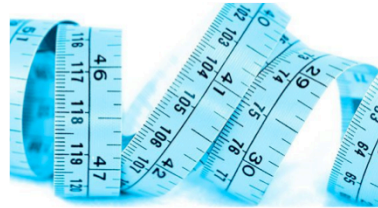
These are the action steps for developing a successful plan for ongoing evaluation:

**WHO:** Identify someone to develop and oversee the activities involved in monitoring, evaluating, and reporting on the CESP progress. While the responsibility for carrying out tracking of individual actions will be held by the lead for each item, the Plan Manager is a good candidate for the ongoing responsibility of aggregating and synthesizing this information for the whole plan. Be sure to allocate the necessary funding and time resources to the ongoing tracking, evaluation, and reporting functions. This activity should be authorized by the Champion, as a part of the approval of the implementation blueprint (Step 8).

## Key Components for Each Action Item

### Measurable indicators (metric)

- High level:
  - Energy saved
  - Renewable energy projects installed
  - Funds leveraged
  - Jobs created
- Program level:
  - # bike stations installed
  - Retrofit savings by building
- Milestones:
  - Achieved/ Progress/ No progress



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A specific plan for monitoring and progress reporting should be developed for each action in the plan. The Plan Manager and the leads for each action item should be involved in this process, and they will likely want to build partnerships with key data holders at this time (for example, staff in different divisions).

Necessary **components** for each action item:

- **Measurable indicator (metric)** – for example: energy saved, renewable energy projects installed, greenhouse gas emissions reduced, funds leveraged, or jobs created.
  - Types of metrics include:
    - System-level metrics: measure the overall impact of a combination of activities (e.g., total government vehicle fleet fuel usage; total residential energy use).
    - Program-level metrics: measure the impact of a specific activity/program (e.g., number of bike parking stations; city hall energy retrofit savings by building).
    - Milestones/status update: illustrates whether or not a specific action has been taken or achieved (yes/no).

#### The most-useful indicators:

- Are accessible, reliable, and well-documented.
- Rely on existing data that are already available when possible – for example: energy use in buildings; number of customers enrolled in EE programs.
- (For new data) Are relatively low cost and easy to measure, if possible – for example, simple surveys.
- Provide results that are easy to communicate to others – they are easily understood by and relevant to the key audience.
- Drive changes in behavior and energy use patterns.
- Capture a range of factors, such as awareness, actions, and actual energy output.
- Are scale independent – use % or normalized information when possible, to allow for relevance across time or relationships between two variables.

## Metrics: Waterbury Vermont Example

How Are We Measuring?				
	Transportation	Heating Fuel	Electricity	Renewable Energy
Homes	Residential Fuel Efficiency and Practices <ul style="list-style-type: none"> <li>Average residential fuel efficiency population (DMV data)</li> </ul>	Heating Efficiency of Residences <ul style="list-style-type: none"> <li>% of households aware of fossil fuel heating index (school survey)</li> <li>Average BTU/sq. ft. (fuel supplier survey)</li> </ul>	Electrical Efficiency of Residences <ul style="list-style-type: none"> <li>% of households aware of electric use index (school survey)</li> <li>% of low-energy lighting in households (school survey)</li> <li>Total kW/population (utility data)</li> </ul>	Residential Renewable Energy Production <ul style="list-style-type: none"> <li>% of homes w/ renewable energy (VT Energy Atlas)</li> <li>Total kW produced per population (VT Energy Atlas)</li> <li>% students exposed to education about renewables</li> </ul>
Businesses	Business Fuel Efficiency and Policies <ul style="list-style-type: none"> <li>Average fuel efficiency of business vehicles (business survey)</li> <li>% of employees with low-impact transportation (business survey)</li> </ul>	Heating Efficiency of Businesses <ul style="list-style-type: none"> <li>% businesses who have conducted heating audits (business survey)</li> <li>Avg. heating BTU/ft2 of businesses (business survey)</li> </ul>	Electrical Efficiency of Businesses <ul style="list-style-type: none"> <li>% of businesses aware of energy use (business survey)</li> <li>% of businesses having energy audit (business survey)</li> <li>% low-energy lighting used (business survey)</li> </ul>	Business Energy Production <ul style="list-style-type: none"> <li>Total kW produced by renewables on business infrastructure (VT Energy Atlas)</li> </ul>
Public Buildings	Public Fuel Efficiency and Policies <ul style="list-style-type: none"> <li>% school bus ridership (direct survey)</li> <li>% pop. served by public transport option (DoT)</li> <li>Average fuel efficiency of public vehicles (direct survey)</li> </ul>	Heating Efficiency of Public Buildings <ul style="list-style-type: none"> <li>% of public buildings with heating audits (direct survey)</li> <li>Avg. heating BTU/ft2 of public buildings (direct survey)</li> </ul>	Electrical Efficiency of Public Buildings <ul style="list-style-type: none"> <li>Total kW use/ft2 of public buildings (direct survey)</li> <li>% public buildings with electric energy audit (direct survey)</li> </ul>	Public Energy Production <ul style="list-style-type: none"> <li>Total kW produced on public infrastructure (schools, tow offices, dams, etc.) (VT Energy Atlas)</li> </ul>

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Examples of some metrics:

Looking at awareness (education and outreach) as well as actual energy saved:

See Heating Fuel –

Also relying on data pulled together by others – end users or government data

## More Key Components for Each Action Item

- **Measurable indicator (metric)**
- Baseline – the starting point for each indicator
- Method to use for measuring progress
- Process to use for collecting data
- How often data collected will be used to measure progress
- Reporting protocol



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Just defining what will be measured is only the beginning --

- **Baseline** – the starting point for each indicator.
- **Method for measuring progress** – for example: survey; data from government budget; data from external organization (number of new ENERGY STAR homes built from homebuilders association).
- **Process to use for collecting data**, including:
  - Who will collect the information? This will often be the lead for that action identified in Step 8, or they may delegate or partner with someone for monitoring.
  - How they will obtain it?
  - Where and how it will be tracked (see tracking system discussion below)?
  - How the data will be analyzed?
- **How often data collected will be used to measure progress**, with a clear deadline to attain the goal – plan for regular assessments, so that adjustments can be made if necessary.

## Tracking Systems

- Build on existing tools when possible
- Involve action leads in their design
- Collect data in a reasonable timeframe
- Assuring good and timely information from community-led initiatives may be more challenging than government activities
  - Consider having Plan Manager set up tracking and reporting system for community leads



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Identify and/or develop **tracking systems** as needed, being sure that the individuals assigned as action leads are involved in their design. IT staff are also a good resource for this step.

- Incorporate the **characteristics of good systems**.
  - A good tracking system will help identify when a specific activity is performing well and when it is not meeting its expected performance and is in need of review.
  - Such a system should be centralized and available for all to use in gauging progress toward established targets, milestones, and deadlines.
- If possible, **build on existing tools** rather than developing new ones.

## How Complicated?

- Design for an appropriate level of detail and rigor
  - Detailed when necessary: benchmarked systems; program-performance reporting
  - Simpler and less-costly if possible: existing data; simple surveys; participant counts
- Consider the audience
  - Broad overview for public feedback (even for government-only plan)
  - Detailed information for key decision-makers
  - May need specific types of information to feed into other government efforts



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- If possible, **build on existing tools** rather than developing new ones.
  - Developing a full-scale, internal tracking system to capture frequent and detailed information on every activity will be expensive and more sophisticated than needed for many types of goals.
  - Data from existing sources or simple assessments is often sufficient.
- If the CESP actions include installing equipment, benchmarking buildings, or developing energy-related programs, **using a detailed energy tracking system** at the project, building, or program level will be in order.
  - Benchmarking tools, such as EPA's Portfolio Manager, that have been used for building energy use assessments in Step 4 will provide effective tools for ongoing performance tracking.
  - Other calculation tools for savings in buildings are available here:  
[http://www1.eere.energy.gov/buildings/betterbuildings/neighborhoods/resource\\_directory.html](http://www1.eere.energy.gov/buildings/betterbuildings/neighborhoods/resource_directory.html)
- Note: **a tracking system for data is only effective if the information it contains is current and comprehensive.** Data need to be collected and incorporated into the system at an interval of time effective for the activity. Many organizations perform monthly updates to their tracking systems for data-intensive reviews – annual assessment is appropriate for items with longer-term horizons.

Determining the results of CESP activities can be difficult because not everything that a local government may want to measure is easily documented, so design for an appropriate level of **detail and rigor**. For example, the level of sophistication of this feedback process should be as rigorous as needed to meet any reporting requirements to funders or decision makers –



## Step 9: Plan to Evaluate

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## Evaluate the Full CESP on a Regular Basis

- Doing an evaluation provides an assessment of how the CESP is faring
- Assign responsibility up front for developing periodic progress reports
- For your CESP Progress Reports, determine:
  - Audience(s)
  - Format of report
  - Information to include
  - Frequency
- Consider developing a template for guidance



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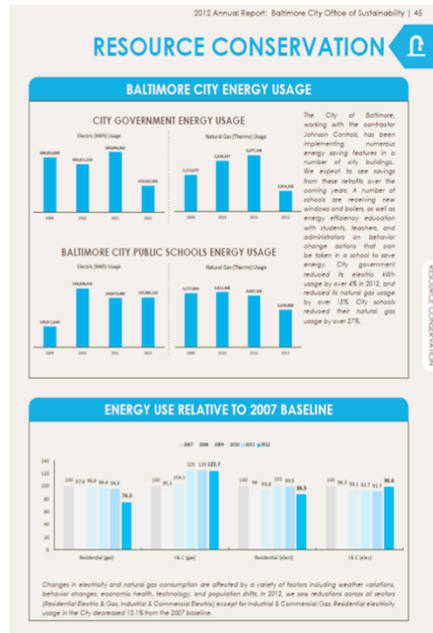
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Bullet #1 Assessing progress toward all the goals together provides insight into how the CESP is faring, so develop a plan for aggregating and evaluating performance information for the full CESP (all component parts) as well. Doing this overall evaluation has **a number of advantages**; it:

- Brings to light the dollars saved and other success stories as a means of building support for initiatives moving forward.
- Creates insight for new actions.
- Avoids repeating failures by identifying activities that are not as effective as expected.
- Assesses the usefulness of the tracking system and other administrative tools and processes, to better manage the plan.
- Provides staff and the public the opportunity to contribute to and understand the process.

As part of the planning for monitoring and evaluation, define and assign responsibility for developing periodic overall CESP reports. This should be a centralized activity, undertaken by the Project Manager or other manager of the implementation phase of the CESP (see Implementation Team discussion in Step 8). Planning for aggregated reports should include:

## Public Reporting on Progress Example



Baltimore publishes an Annual Report for its Sustainability Plan which features metrics for each of its 29 goals

[http://www.baltimoresustainability.org/sites/baltimoresustainability.org/files/BaltimoreOfficeofSustainability\\_2012AnnualReport\\_singlepages.pdf](http://www.baltimoresustainability.org/sites/baltimoresustainability.org/files/BaltimoreOfficeofSustainability_2012AnnualReport_singlepages.pdf)

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## Public Reporting on Progress Example

Boulder publishes an Annual Community Guide for its Climate Action Plan to report on the implementation and effectiveness of its goals and active programs, including estimated GHGs avoided and funding levels

<https://www-static.bouldercolorado.gov/docs/2010-2011-community-guide-to-boulders-climate-action-plan-1-201305081156.pdf>

Active Programs as of September 2011	Estimated GHGs Avoided in 2011 and 2012 (mtCO <sub>2</sub> e)	CAP Funding 2011 and 2012	CAP \$ per mtCO <sub>2</sub> e	Non-CAP City Funding 2011 and 2012	City of Boulder ARRA Funding	Estimated Private Investment 2011 and 2012
<b>1. Reduce Use</b>						
<b>Commercial EnergySmart</b>						
Discover – Outreach	*	\$102,574	**	\$31,989	\$0	*
Discover – Quick Installs	86	\$1,165	\$14	\$6,250	\$36,850	***
Optimize	5,142	\$789,015	\$153	\$104,043	\$48,950	\$735,000
Upgrade	6,960	\$254,502	\$37	\$57,734	\$132,000	\$356,607
<b>Residential EnergySmart</b>						
EnergySmart Assessments & Quick Installs	2,947	\$40,412	\$14	\$31,224	\$104,500	*
EnergySmart Upgrades (Beyond Quick Installs)	3,338	\$161,059	\$48	\$31,224	\$0	\$1,939,648
<b>Residential SmartRegs</b>						
SmartRegs Assessments & Quick Installs (Primarily Administration)	2,136	\$208,254	\$98	\$31,224	\$0	*
SmartRegs Upgrades (Beyond Quick Installs)	4,101	\$311,294	\$76	\$31,224	\$41,822	\$3,448,158
<b>Other</b>						
10 for Change	7,527	\$124,738	\$17	\$74,807	\$0	*
Public Utilities Commission (Demand)	*	\$75,451	*	\$25,000	\$0	***
Xcel Energy DSM Programs	26,000	*	***	***	\$0	*
<b>Total Reduce Use</b>	<b>58,237</b>	<b>\$1,993,013</b>	<b>\$34</b>	<b>\$424,720</b>	<b>\$364,122</b>	<b>\$6,479,413</b>
<i>Percent of Goal Met</i>	11.2%					

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## Update the CESP When Necessary

- Leadership Team or other decision-makers should periodically assess whether adjustments are needed
  - Targets are not being met effectively
  - Targets have been exceeded or additional resources are available
- Use the CESP Steps to revisit and update the Plan



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As a CESP is implemented and evaluated, it may become necessary to make adjustments. This should be done by the implementation lead and Leadership Team (or other decision-makers) in coordination with the Implementation Team and other stakeholders who can provide information on the particular area that needs adjustment.

If changes to the plan are needed because targets are not being effectively met:

- Start by identifying the contributing factors, both controllable (e.g., mismatched resources) and uncontrollable (e.g., weather abnormalities).
- Assess whether there should be changes to the implementation strategy. For example, milestones may need to be adjusted or leadership for plan components changed.
- Then take into consideration the actions and strategies. Resist the temptation to back off of the goals themselves.

If changes are needed because targets have been exceeded or new resources are available:

- Again, start at the lowest level. Add actions that ranked slightly lower than those that made the final cut in the original CESP, or accelerate timelines.
- Then consider expanding or ramping up existing strategies or goals, or even expanding the scope of the plan.

## Updating Plan Example

**Table 1: Municipal Recommendations' Status from Pittsburgh Climate Action Plan, Version 1.0**

**Short-Term**

Classification	Title	Status	Details
General 2.1	Create a Full-Time Sustainability Coordinator Position	Complete	Aftyn Giles, Sustainability Coordinator, City of Pittsburgh (412)255-2254, Aftyn.Giles@city.pittsburgh.pa.us
General 2.2	Form a City Sustainability Committee	Complete	Meets every other month Contact: Aftyn Giles & Jim Sloss
General 2.3	Foster Student Involvement in City Initiatives	Complete	12 college interns since 2008 from Duquesne, University of Pittsburgh, & Carnegie Mellon
General 2.4	Institute an Environmental Behavior Change Program for City Employees	In Progress	Lunchtime lectures for those interested in sustainability topics
General 2.5	Make Environmental Information Available to Response Center	Complete	
Energy 2.1	Require LEED Construction Standards for Municipal Buildings	Complete	LEED Silver standard for city projects of at least 5,000 ft \$2 million, or receiving TIF financing
Energy 2.2	Complete Energy Audit of City-County Building and Implement Retrofits	Complete	Awaiting Results
Energy 2.3	Install Vending Meters on All Vending Machines in City-County Building	Complete	
Energy 2.4	Replace Exit Signs in City-County Building with Signs Lit by Light Emitting Diodes	In Progress	

Pittsburgh updated its Climate Action Plan six years after its initial adoption to refine recommendations

<http://pittsburghclimate.org/wp-content/uploads/2011/12/Pittsburgh-Climate-Action-Plan-Version-2-FINAL-Web.pdf>

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In 2006, Pittsburgh developed a sustainability plan, the Pittsburgh Climate Action Plan, Version 1.0, which was adopted by Pittsburgh City Council in August 2008 as a guiding document for City of Pittsburgh government. The Pittsburgh Climate Action Plan, Version 1.0 was designed to be updated and revised so that progress on the published recommendations could be tracked, which is part of the goal of this Pittsburgh Climate Action Plan, Version 2.0, which was released in 2012.

In developing a regularly updated climate action plan, Pittsburgh has worked to create a framework for each sector's work by regularly refining the recommendations contained in the Pittsburgh Climate Action Plan. Local government, business leaders, community organizations, and institutions of higher education are all represented by the Pittsburgh Climate Initiative Partners and other PCI-led collaborations that helped author the Plan.

## Step 9: Tips & Tools

### Tips

- Be sure to allocate funding and time for ongoing tracking, evaluation, and reporting
- Have Plan Manager provide evaluation framework for community action leaders to use
- Develop a template for your Progress Report

### Tools

- Monitoring Plan Template
- Goals, Strategies & Actions Planning Tool