



9. Targets

Goal

Develop and implement methodology to measure energy savings from employee engagement effort that collectively reduce energy use by at least 2%.

We're working together to help B.C. save energy.

 **BC Hydro**
Power smart

 **FORTIS BC**
Energy at work

The Energy Wise Network Tier Assessment Tool is designed as an assessment tool that indicates areas of strength and areas where there are opportunities to improve your engagement program and energy conservation campaigns. Use the following table to help guide your “Targets” self-assessment using the Tier Assessment Tool.

| | | |
|---|-------------|--|
| TIER 1 – Establish baselines for campaign targets and method(s) for determining energy savings | No | You have not identified your method(s) for determining energy savings from campaigns or established baselines. |
| | In Progress | You are exploring different methods for determining energy savings from campaigns and working towards establishing baselines for campaign targets. |
| | Yes | You have identified your method(s) for determining energy savings from campaigns and established baselines for campaign targets. |
| TIER 2 – Track campaign results | No | You do not track campaign results. |
| | In Progress | You are currently planning or implementing your first campaign where results will be tracked. |
| | Yes | You use your selected methodologies to track campaign results. |
| TIER 3 – Demonstrate measurable energy savings from campaigns | No | You have not demonstrated any energy savings from campaigns. |
| | In Progress | Some of your campaigns demonstrate measurable energy savings. |
| | Yes | Your campaigns regularly demonstrate measurable energy savings. |
| TIER 4 – Decrease energy use by at least 2% from campaigns | No | Your campaigns do not result in a sustained overall building level energy reduction of 2%. |
| | In Progress | Some of your campaigns decreased energy use by up to 2% but it is not a sustained change across your participating building portfolio. |
| | Yes | Your cumulative energy engagement effort has been shown to sustain a 2% decrease in energy use at the building level. |

Overview

Targets are feasible goals associated with your energy engagement effort. Each campaign you implement might have unique objectives and targets, but it's also important to consider the broader targets of your energy engagement effort – or the cumulative impact of all your campaigns and activities. Methodologies for tracking campaign results can be quantitative or qualitative. See below for examples of quantitative and qualitative measurement tools.

| Quantitative | Qualitative |
|---|---|
| <ul style="list-style-type: none">○ Program surveys | <ul style="list-style-type: none">○ Program surveys |
| <ul style="list-style-type: none">○ Participation rates | <ul style="list-style-type: none">○ Photos |
| <ul style="list-style-type: none">○ Diversion rate | <ul style="list-style-type: none">○ Quotes |
| <ul style="list-style-type: none">○ Utility data | <ul style="list-style-type: none">○ Observations |

Purpose of targets

Setting targets can help provide direction and context for your energy engagement efforts. Targets can be a motivator for champions and staff participants, corralling folks around a well-defined objective. They will also help show the “current state,” or baseline, and contrast it with the “desired state,” or anticipated outcome.

Having targets outlined in your overall engagement plan also ensures that you'll know how successful your efforts are. If you aren't on track to meet targets, it's an indicator that you might need to look at how you can course correct what you're doing. Without targets, you might find yourself unsure of where you're headed and unable to determine when you've arrived or been successful.

In the engagement program framework, setting targets is included in the initial “set the goal” step.

ENGAGEMENT PROGRAM FRAMEWORK



We're working together to help B.C. save energy.

Tier 1: Targets

ESTABLISH BASELINES FOR CAMPAIGN TARGETS AND METHOD(S) FOR DETERMINING ENERGY SAVINGS

Establishing baselines and methodologies for measurement are the foundational pieces of the “Targets” tier.

Baselines give you a sense of a starting point, and are what might be considered business as usual for your organization and will provide you with something to measure against. When selecting baseline periods, be mindful of external factors, which may impact energy usage (i.e. new projects, events, staff changes etc.)

Once you’ve determined your baseline period and you have an accurate picture of what is happening within your organization during that time, you’ll need to select a way to measure savings – or rather measure the difference between energy that was used and energy that would have otherwise been used, had you not implemented the campaign.

When reliable energy consumption data is not available, you may rely on qualitative measurement tools such as surveys and observations to understand what’s happening during both the baseline period and the after implementation period.



CHECK THE TOOLKIT

In her Office Technology campaign (see the Office Technology campaign toolkit, found on the Energy Wise Network SharePoint site), Olivia creates a baseline for her campaign by using tallies of computers left on overnight prior to the campaign. She decides that she will redo the tallies once during the campaign and one final time after the campaign is complete in order to measure change.

We're working together to help B.C. save energy.



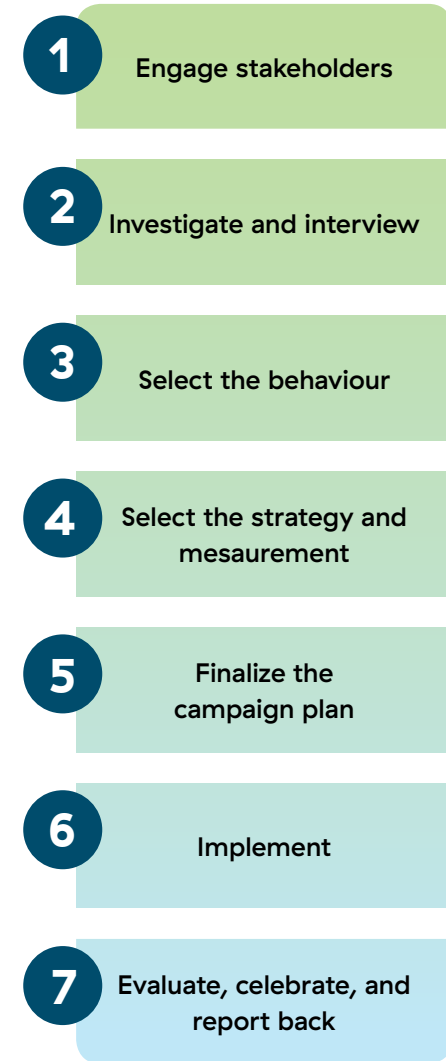
Tier 2: Targets

TRACK CAMPAIGN RESULTS

Measurement is part of the planning process; it defines what success looks like at the end of the initiative and shows if you've been successful with your campaigns.

In the campaign planning process (see right), tracking campaign results is involved in steps 4–6. You will need to decide what success looks like for your campaign and how you will measure results, capture that in the campaign plan with a detailed task list and timeline, and then implement your campaign and measurement strategy.

CAMPAIGN PLANNING PROCESS



We're working together to help B.C. save energy.



Tier 3: Targets

DEMONSTRATE MEASURABLE ENERGY SAVINGS FROM CAMPAIGNS

One way to show value from your conservation campaigns and program is to demonstrate measured energy savings. Use the following basic calculation to determine savings.

$$\text{SAVINGS} = (\text{BASELINE ENERGY USE ADJUSTED} - \text{POST IMPLEMENTATION ENERGY}) \pm \text{ADJUSTMENTS}$$

While it can be difficult with behaviour change campaigns and programs to show measured energy savings, it's possible if you are able to get reliable energy data that isolates the targeted area. You will likely need to develop and implement a metering strategy to ensure accurate energy data will be available.

Tier 4: Targets

DECREASE ENERGY USE BY AT LEAST 2% FROM CAMPAIGNS

According to multiple studies, effective behavioural change campaigns can result in upwards of a 2% to 7% impact and on average about 2% of an organization's total energy usage. While it may not sound like much, saving 2% on annual energy consumption through behaviour change campaigns is a much lower cost alternative to new technology upgrades.

APPENDIX 1—TARGETS

METHODS FOR ESTABLISHING CONSERVATION CAMPAIGN BASELINES AND TRACKING

| Method | Examples | Benefits | Drawbacks |
|---------------------------------|--|---|---|
| Direct measurement | <ul style="list-style-type: none"> ○ Meter readings ○ Billing statements ○ EMIS system ○ DDC system readings ○ MyHydro.com ○ C-Ops data ○ Lighting loggers ○ IT records | <ul style="list-style-type: none"> ○ Very reliable ○ Access to on-going stream of data | <ul style="list-style-type: none"> ○ Many behaviours may not be directly measurable ○ Potential time lag |
| Audit/Direct Observation | <ul style="list-style-type: none"> ○ Night audit to identify number of personal space heaters, equipment turned off, blinds shut ○ Security identifies number of lights shut off after hours ○ Building operator identifies doors left open | <ul style="list-style-type: none"> ○ Quite reliable ○ Can measure most behaviours | <ul style="list-style-type: none"> ○ Resource intensive ○ Reliability depends on sampling protocol ○ Observer bias |
| Participant Records | <ul style="list-style-type: none"> ○ Logs tracking action ○ Behavior checklists ○ On-line checklist | <ul style="list-style-type: none"> ○ Quite reliable ○ Relatively inexpensive ○ Current time ○ Can measure any behaviour ○ Timely--does not rely on memory | <ul style="list-style-type: none"> ○ Self-reporting bias ○ Reliability depends on sampling protocol ○ Survey fatigue |
| Participant Survey | <ul style="list-style-type: none"> ○ Surveys asking what actions were done | <ul style="list-style-type: none"> ○ Can measure any behavior ○ Can measure knowledge, awareness, attitudes and intentions to act in the future ○ Can provide information on barriers & motivators | <ul style="list-style-type: none"> ○ Less reliable ○ Self-reporting bias ○ Time lag (memory might not be accurate) ○ Reliability depends on sampling protocol |
| Expert Panel | <ul style="list-style-type: none"> ○ Use stakeholders from WCA Planning Group to estimate | <ul style="list-style-type: none"> ○ Quick and easy | <ul style="list-style-type: none"> ○ Observer bias ○ Least accurate ○ Time lag (memory might not be accurate) |

We're working together to help B.C. save energy.



Normalization of data

- Be careful to normalize data to ensure you are measuring the change in behaviour.
- For direct measurement you might need to normalize for temperature and differences in lighting or HVAC schedules.
- For direct observation you may need to ensure that it is the same time of year, occupancy levels are the same, that there were no other factors besides your campaign that would impact what you are measuring.

Corroboration and attribution of results

- Corroboration involves strengthening and supporting your findings with other evidence. Triangulation is a powerful way to do this. To triangulate, you use two or more methods of measurement to add to and cross-check your findings. For instance you could use a logger and follow up with a quick survey.
- Attribution involves assessing what portion of any measured changes resulted from your program and what portion resulted from other influences. More information on attribution can be found on the Tools of Change website.
- If you use direct observation, you can follow up with a survey to determine the barriers, motivations and other information to inform future campaigns.

Estimating energy savings

- Use energy use best practice information to determine energy savings (from Power Smart, industry averages, building averages).
- Use energy audits that estimate energy use by type of usage (e.g. lighting, HVAC, plug load) to make assumptions to determine energy use.
- Use BC Hydro information on estimated energy usage for lighting, HVAC, plug load to guide energy saving calculations.