Section: Planning

Task 13: We develop action plans and implement improvement projects to achieve our objectives and energy targets.

Getting It Done

1. Use your prioritized opportunities from Task 10 Improvement Opportunities to select projects for implementation.
2. Apply any applicable criteria set by your organization to justify and gain approval of the project.
3. Develop action plans for meeting your organization's objectives and energy targets identified in Task 12 Objectives and Targets.
4. Communicate expectations to relevant positions and review action plan progress.

Task Overview

After setting objectives and energy targets, you must determine how your organization will achieve them. This involves reviewing the list of prioritized opportunities (see Task 10 Improvement Opportunities) and selecting projects for implementation. This process helps to ensure that the projects best suited to meet the objectives and energy targets are planned and implemented.

Once you have selected the projects that will enable your organization to achieve its objectives and energy targets, designate a leader for each project. If the scope and complexity of the project requires additional resources, assemble a project team with the support of the energy team and top management. Then, develop an action plan for each project.

An action plan developed to meet the requirements of ISO 50001 defines, at a minimum, the following:

- The activities to be completed to implement the project and achieve energy performance improvement
- The resources needed to complete the activities
- The time frame for completing the activities
- The person or persons responsible for completing the activities
- A description of the method for verifying project results
- A description of the method for verifying the energy performance improvement

The designation of a project leader with overall responsibility for project implementation provides for one point of contact between management and the project team. It is recommended that the leader be a member of the energy team since it is the energy team that is responsible for implementing the action plans. This person directs the project team to ensure implementation is in accordance with the action plan.

(cc) BY-SA Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

This guidance is relevant to Section 6.2.3 of the ISO 50001:2018 standard.

Associated Resources Short Description

no resources for this questions

Full Description

Select improvement opportunities (projects) for implementation

Using the compilation of prioritized energy opportunities you developed as part of the energy review (Task 10 Improvement Opportunities), your organization will need to select projects to achieve the specific objectives and targets established in Task 12 Objectives and Targets. However, it is unlikely that management can provide resources for all of the potential projects on your list of energy opportunities.

Review the list of prioritized energy opportunities. When selecting a project for implementation, consider the specific objectives and energy targets you have established. Determine which projects are feasible and that will enable you to achieve the improvement(s) in the stated objectives and energy targets. The following considerations can be useful in this process:

- The estimated energy savings associated with implementation of the project
- Organizational constraints, such as
  - funding requirements or constraints,
  - availability of personnel expertise and time (both internal and external, as applicable), and
  - effect on other organizational priorities.
- Any applicable capital justification or other criteria required for project approval by your organization (e.g., return on investment, payback, etc.)

Action plans - determine actions, time frames and responsible positions

Action plans must be established and maintained when planning how to achieve your objectives and energy targets. Start by designating a leader for each energy project. The project leader should be a member of the energy team. Recall that the energy team is responsible for implementing action plans and this responsibility cannot be delegated away from the team (See Task 6 Energy Team and Resources).

The project leader assembles a project team with representatives from the appropriate functions or areas. Not all representatives on the project team have to be members of the energy team. The project team then develops an action plan that defines the specific actions needed to implement the project (i.e., what will be done), the resources that will be required, and who will be responsible.

The optional Playbook worksheet can be a useful starting point. There is no requirement that action plan information be retained in a single document. In some organizations, the information may be retained across different databases or spreadsheets, linked by a common identifier.

(cc) BY-SA Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

When defining actions necessary for project implementation, be sure also to address the following:

- The method(s) to be used to verify the results of the action plan and the energy performance improvement(s) achieved.
- Consideration of how the actions to implement the project and achieve the objectives and energy targets can be integrated into your business processes; for example, consider:
  - any changes in processes or procedures (e.g., operational controls) that are required due to the project,
  - any needed training of employees or contractors on the changes implemented due to the project,
  - continued monitoring and measurement of project parameters to ensure that energy performance improvements are sustained over time.

A comprehensive list of actions helps to ensure the team understands what is necessary to implement the project, and they can communicate required resources effectively to management.

After the team has defined what will be done and the required resources necessary for implementation, the team determines the time frame for completing the action plan, considering resource availability and any time frames established for achieving the objectives and energy targets. A recommended practice is that responsible positions and due dates for specific actions are included in the action plan, and that action plans are regularly reviewed and updated. This helps to ensure progress of project activities can be tracked.

Note: Objectives and associated action plans also can be used to plan and implement projects related to improving the energy management system (EnMS). Such objectives and action plans tend to be qualitative. There is no explicit requirement that the organization establish objectives and action plans related to the EnMS; however, ISO 50001:2018 does require continual improvement of the suitability, adequacy, and effectiveness of the EnMS. For some EnMS improvements, use of objectives and action plans can be useful.

Define verification methods

To effectively evaluate project results, the project leader or team will need to identify who is going to be responsible for project verification. The person or team assigned should have a working knowledge of the systems involved and be competent in performing the necessary data gathering and analysis.

To clearly define the method of verification, the following questions will need to be answered:

- What will be measured or evaluated to identify project impacts?
- How will it be measured or evaluated?

The answers to these questions will establish the measurement or evaluation activities necessary for verification. Consider any instrumentation or metering that could be included in the project scope to enhance the ability to measure and evaluate system energy performance and project results.

Once these activities are determined, the verification process will need to establish a baseline or

(cc) BY-SA Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

measurement of pre-project operations. When the project is complete, the verification process will need to evaluate or measure the post-project results. The estimated or expected project results can then be compared with actual data from the project verification to determine the action plan's effectiveness.

The project is not complete until the verification of results is complete and both the project team and energy team have reviewed them. The verification methods and the verification results should be recorded on the action plan.

Communicate expectations and review progress

The first step to communicating expectations for the energy project(s) is to have them fully defined and documented. The optional Playbook worksheet may be of use.

Everyone involved in energy project(s) needs to know their role and responsibilities. As previously indicated, action plans can involve personnel who are not on the energy team; communicating to them the responsibilities and expectations for their involvement is critical. This should be done using the internal communication processes of the EnMS (see Task 15 Awareness and Communication). A "project kick-off" meeting that brings together all the personnel involved can be an effective approach for communicating the expectations for the project. It can help them understand how their assigned tasks or actions fit into the overall effort.

The project team, with participation from members of the energy team, should hold regular meetings to review the action plan(s) and determine progress against schedule. During these meetings, use the action plan to determine if implementation is progressing as expected. Also, use team meetings to determine if any additional resources are required or if any additional activities need to be included in the action plan. Review and update the action plan in accordance with the schedule and use it to communicate regularly with management.

The optional Playbook worksheet illustrates a completed action plan, including the verification of the energy performance improvement achieved.

Good project management can ensure that the action plans are properly implemented. Ongoing communication such as status reporting and project and energy team meetings, when appropriate, will contribute to this success.

Decarbonization

After setting energy-related GHG emissions objectives and targets, you must determine how your organization will achieve them. This involves reviewing the list of prioritized opportunities (see Improvement Opportunities) and selecting projects for implementation that enable the organization to achieve its objectives and targets.

Consider that your organization's long-term GHG emissions objectives and targets may significantly affect the priority or desirability of specific opportunities. For example, a natural gas fired boiler

(cc) BY-SA Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

replacement that significantly reduces GHG emissions may be desirable for an organization that sets a long-term 20% GHG emission reduction objective but not desirable for an organization that sets a long-term zero GHG emission objective.

In refining project selection, keep in mind the relative importance that improving GHG emissions performance has to your organization. This will be important as you consider your organization's constraints (e.g. funding requirements or constraints, availability of personnel expertise and time; and effect on other organizational priorities) and criteria for project approval (e.g., return on investment, payback, etc.). This process helps to ensure that the projects best suited to meet your energy-related GHG emissions objectives and targets are planned and implemented.

The action plans developed for GHG emissions-related projects selected should address the actions, time frames and responsible positions. They should also have a method for verifying the project results. For projects that reduce a significant amount of GHG emissions, make sure the verification method provides an approach that is defendable to stakeholders and that is well documented.

Establishing a new EnMS prioritizing decarbonization

If you do not have an existing 50001 Ready-based EnMS and want to build one that also helps your organization manage energy-related GHG emissions, in addition to the guidance for the energy management system you should:

1. **Review your selected improvement opportunities**. Gather and review the prioritized improvements opportunities developed as part of Task 10 Improvement Opportunities. Consider the GHG emissions targets and objectives established when you updated Task 12 Objectives and Targets.
2. **Develop action plans**. Establish action plans for any GHG emissions-related projects selected. Include the items listed in the "Full Description" tab for this task.
3. **Define verification methods**. Develop verification methods for any selected GHG emissions-related projects using the guidance in the "Full Description" tab to verify project results and performance improvement. If the project reduces a significant amount of GHG emissions, make sure the quality of data meets any stakeholder needs.
4. **Communicate expectations and review progress**. Make sure any selected GHG emissions-related projects are well defined and documented and that anyone involved in the projects knows their roles and responsibilities. Where appropriate, hold regular meetings to review progress and communicate this progress regularly with management.

Adapting an existing EnMS to prioritize decarbonization

If you have an existing 50001 Ready-based EnMS and want to adapt it to manage energy-related GHG emissions, you should:

1. **Review your selected improvement opportunities**. Gather and review the prioritized improvements opportunities developed as part of updating Task 10 Improvement Opportunities for energy-related GHG emissions. Keep in mind that if you added GHG emissions as part of the criteria for prioritizing opportunities, the relative priority for each opportunity may have changed.

(cc) BY-SA Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

Consider the GHG emissions targets and objectives established when you updated Task 12 Objectives and Targets.

2. **Develop action plans**. Establish action plans for any GHG emissions-related projects selected. Follow your organization's approach for documenting actions plans and include the items listed in the "Full Description" tab for this task.
3. **Define verification methods**. Develop verification methods for any selected GHG emissions-related projects using the guidance in the "Full Description" tab to verify project results and performance improvement. If the project reduces a significant amount of GHG emissions, make sure the quality of data meets any stakeholder needs.
4. **Communicate expectations and review progress**. Make sure any selected GHG emissions-related projects are well defined and documented and that anyone involved in the projects knows their roles and responsibilities. Where appropriate, hold regular meetings to review progress and communicate this progress regularly with management.

Commercial Emissions Reduction Planning Framework

The guidance for this task is from the following sections from the ERP Framework: ERP Framework Milestones 1, 3, 4, and 5.

There are many benefits to developing and documenting an Emissions Reduction Plan that outlines how an organization is going to achieve its GHG emissions reduction targets. The Emissions Reduction Plan is necessary to define how to meet the targets across the portfolio. Emissions Reduction Plan benefits include the following (Milestone 1):

- Offering stakeholders (e.g., executive leadership, employees, building occupants) confidence that the organization has identified and secured the resources (financial and personnel) needed to turn their ambitious targets into action.
- Preparing an organization to meet regulatory and reporting requirements and avoid potential financial penalties from state, local, or other GHG policies and programs.
- Supporting analysis of multiple scenarios to identify the preferred strategies to pursue.
- Aligning decarbonization ambitions with the operational actions needed to achieve them (i.e., capital planning processes, maintenance/replacement decisions).
- Reducing the chance of decisions resulting in assets that lock in carbon emissions for the foreseeable future by integrating decarbonization principles throughout all organizational practices.
- Supporting organizations in staying on track to achieve long-term emissions reductions even if there is staff turnover, since the emissions reduction plans have been defined and documented.

Working with stakeholders, organizations can define specific evaluation criteria that will be used to select a decarbonization pathway from potential scenarios. Evaluation criteria may include financials (e.g., lifecycle cost), emissions reduction potential, and other considerations (e.g., occupant benefits). These evaluation criteria are covered in more detail in Milestone 5: Define Emissions Reduction Plan (Milestone 1).

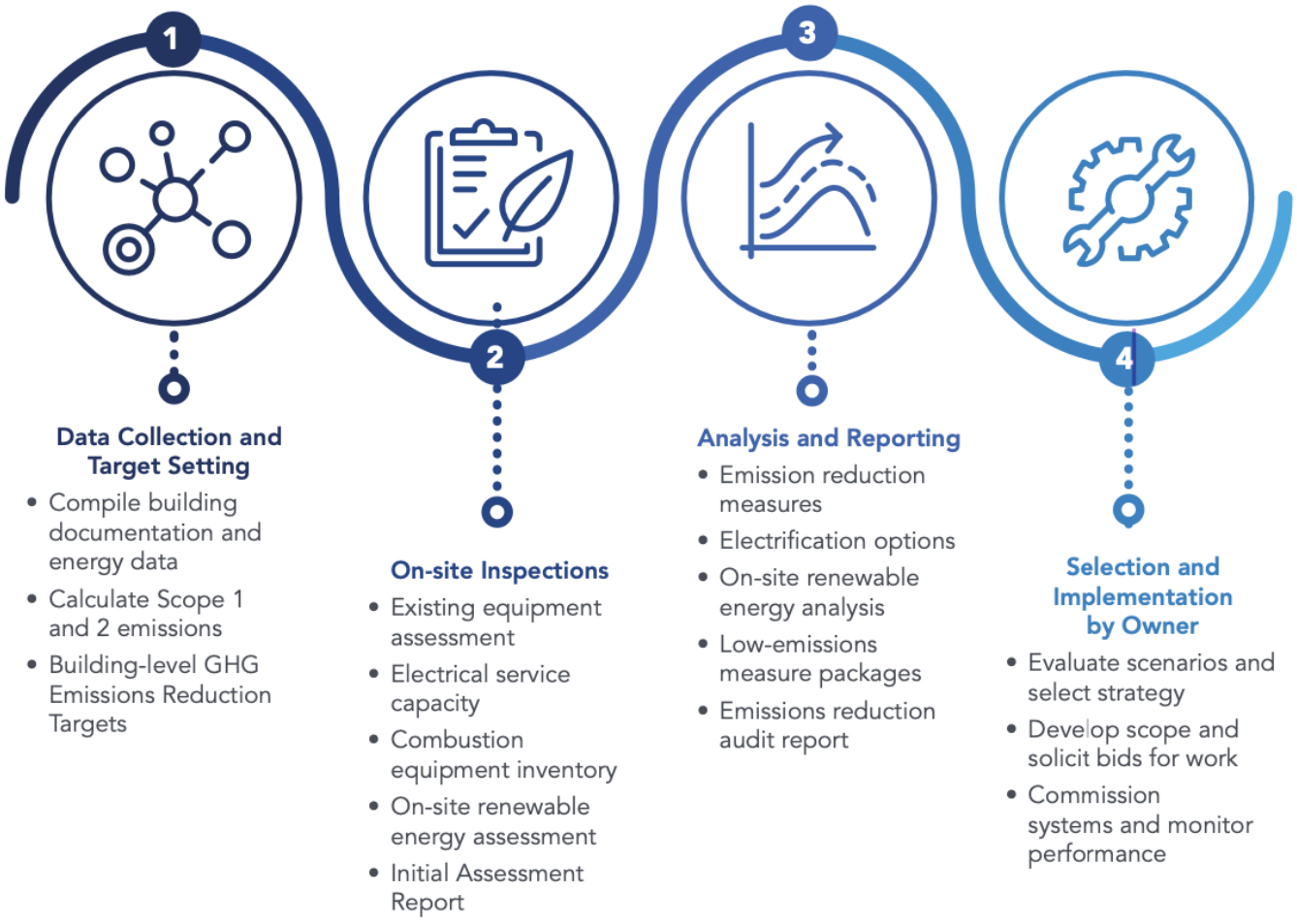
In addition to assessing which measures should be input into scenario development, emissions reduction audits can be used to identify projects for immediate implementation. Organizations do not need to wait

(cc) BY-SA Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

until the full ERP is completed to implement projects but should review the audit results and assess whether the recommended projects generally align with the direction of the ERP. Organizations should be empowered to act on the audit results through initial projects and pilots (Milestone 3).

To develop multiple scenarios and evaluate their alignment with the organization's needs, different technical strategies can be tested such as the level of energy efficiency, electrification, and reliance on renewables (Milestone 4).

A complete Emissions Reduction Plan defines how the emissions reduction targets will be met, providing clarity and detail on next steps, including project phasing and financing, with buy-in from stakeholders (Milestone 5). *The figure below summarizes how tasks 8-12 come together in task 13.*



Industrial Emissions Reduction Planning Framework

Action plans define the process for implementing projects to meet the defined objectives and projects. Determining scenarios and developing an emissions reduction plan within the ERP Industrial Framework can be important elements of these action plans as a part of task 13.

The guidance for Task 13 is found within the following sections of the ERP Industrial Framework:

(cc) BY-SA Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

Milestone 4:

After identifying and assessing ERMs in Milestone 3 (Task 10), an organization can now combine, scale, and phase ERMs across the portfolio to create emissions reduction scenarios. Decarbonization scenario development plays a crucial role in determining the overall impact on an organization's GHG emissions.

By developing and analyzing multiple scenarios, organizations can compare the costs and benefits of each and select a pathway that best meets their needs. It also enables organizations to understand the interplay of different combinations of ERMs. The approach to developing GHG emissions reduction scenarios is as follows:

1. **Establish Scenario Parameters**: Determine the scope (i.e., which emissions sources to include), GHG targets and timelines, and descriptions/goals of each scenario (e.g., high electrification scenario, moderate energy efficiency scenario, etc.).

2. **Estimate Future Portfolio Changes**: Project future business development (acquisitions, sales, or expansions) and changes to production rates and product mix to ensure a viable path to achieving GHG goals despite growth.

3. **Review Emission Reduction Measures**: Review the opportunities identified in facility- and portfolio-level assessments. Collect data on technology/equipment availability, deployment year, cost, implementation effort, etc.

4. **Define Scenarios**: Develop several distinct scenarios with different combinations and phasing of ERMs. Scenarios may also vary based on different projections of external factors such as technology costs or changes to the GHG intensity of grid power.

5. **Evaluate Scenarios**: Evaluate scenarios to estimate emissions reductions, costs, and benefits of each scenario.

Milestone 5:

In this milestone, organizations create the emissions reduction plan and define how the organization's emissions targets will be met and the timing of key emissions-reducing activities, assign responsibility to key stakeholders, outline financing plans, and communicate next steps.

Assess scenarios and select pathway – After developing multiple emissions reduction scenarios (Milestone 4), assess which one best meets organizational needs using the evaluation criteria defined in Milestone 1, selecting it as the emissions reduction pathway.

Ongoing Implementation:

Develop work plan – Develop a work plan for the emissions reduction plan that outlines actions, sets timelines, and assigns personnel and capital. This provides accountability for the projects being implemented. Quantify risks and constraints for emissions reduction measures to predict potential delays in implementation. Build in time and resources for analysis, design, implementation, testing, and

(cc) BY-SA Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

training for new projects.

Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.