Section: Context of the Organization

Task 3: We have documented and approved the scope and boundaries of our 50001 Ready energy management system.

Getting It Done

1. Consider the strategic issues and requirements identified as part of Task 1 An EnMS and Your Organization to determine the scope and boundaries of the energy management system (EnMS).
2. Develop and document an EnMS Scope and Boundaries Statement.

Task Overview

The scope and boundaries enable your organization to focus efforts and resources by defining what the EnMS includes. The scope identifies the set of activities that are included in the energy management system (EnMS), while the boundaries are the physical or organizational limits of the EnMS, commonly referred to as the "fence line" of your site. The boundaries do not have to be fixed in a physical space and could be established around a fleet of vehicles or other transportation equipment.

In the 50001 Ready Navigator the term site is used and carries the same meaning as other terms that describe the physical definitions of a space such as facility, complex, location, and campus so long as there is a relative physical proximity to the assets that will be included within the EnMS.

When determining the scope and boundaries strategic issues and requirements determined as part of Task 1 An EnMS and Your Organization should be considered. In addition, you should ensure that your organization has the authority to control all energy uses within the scope and boundaries, and that no energy-using equipment or systems are excluded unless they are separately metered or a dependable calculation can be made. Once the scope and boundaries are defined, an organization cannot exclude any energy sources that cross or are within the defined boundaries of the EnMS.

EnMS scope and boundaries could include any combination of physical structures: the building management operations of one or more commercial buildings at one or more specific locations; the manufacturing, warehousing, and distribution activities at a particular plant; or multiple sites of a corporation at multiple sites, to name just a few. In many cases, the scope and boundaries may only include one building or site. Top management must ensure the organization's scope and boundaries are established.

This guidance is relevant to Section 4.3 of the ISO 50001:2018 standard.

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Associated Resources Short Description

no resources for this questions

Full Description

Scope and boundaries - Where to start

While the scope and boundaries of an energy management system (EnMS) are different concepts, they are highly related and iteration between the two concepts will yield the best results. You can choose to start by establishing either the scope or the boundaries first, and then establish the other. The guidance below will pose a set of questions that will help establish the scope and boundaries together, focusing on the scope first.

Before starting on this task, consider gathering some of the following resources within your organization. These can be useful in determining the scope and boundaries of the EnMS.

- Organization chart
- Site map or site plan
- Site photographs
- List of on-site contractors and related operations
- Site/building layout
- Process layouts/maps
- Process flow diagrams
- Utilities drawings
- Site/building energy consumption data
- Equipment energy consumption data

Scope: Identify the set of activities to be included in your EnMS

Consider these questions when defining the set of activities to be included or excluded in the scope of EnMS. These questions will also help inform your subsequent process to establish boundaries. The Playbook worksheet can be used to help you formulate the scope.

- Is there an area for which you do not have energy information?
- Is there an area where you cannot obtain employee involvement or participation?
- Are there areas that have a different management team or decision structure?
- Do you have a building or location that you are not including?
    - Can you isolate the energy consumption of those locations?
- Do you have the authority to control your organization’s energy optimization, energy use and energy consumption?

Additionally, the EnMS scope should reflect the strategic internal and external issues and requirements that were identified as part of Task 1 An EnMS and Your Organization.

- Do any of the identified internal or external issues have implications or consequences that need to

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be considered as related to the scope of the EnMS?
- Do any of the interested parties' requirements affect what is included or not included within the EnMS?

Boundaries: Define the physical or organizational limits of your EnMS

Now that you have considered the set of activities to be included in the scope of your EnMS, what are the physical implications of your decision? In many cases this could be as simple as the fence line of your site. How would they be translated into a statement of the boundaries of your EnMS?

Consider your answers to these questions when defining the boundaries of your EnMS. The Playbook worksheet can be used to help formulate the boundaries to be defined in the statement.

- What are the physical or organizational limitations of the areas that are included?
- What are the physical or organizational limitations of the areas that are not included?
- How do the areas that are included and not included compare to the site map or site plan?
- Do you have the authority to control your organization's energy use and energy consumption within the proposed boundaries?

Scope and boundaries statement

The optional Playbook worksheet can be used to formalize a statement of scope and boundaries. The statement of the EnMS scope and boundaries can be a stand-alone document or included within an energy manual, which is not required, but which many organizations find useful as a "road map" to their EnMS. Top management is responsible for ensuring that a scope and boundaries statement has been established, so make sure to review the finalized document with them.

Decarbonization

Determining the scope and boundaries for an energy management system that includes energy-related GHG emissions allows your organization to focus its efforts and resources. As described in the Task Overview, the scope identifies the set of activities that are included in the EnMS, while the boundaries are the physical or organizational limits of the EnMS.

When determining the scope, or set of activities to be included in the EnMS, organizations will need to distinguish between the various sources of direct and indirect emissions that are to be managed by the EnMS. The GHG Protocol's Corporate Accounting and Reporting Standard defines three categories, or "scopes" of direct and indirect emissions that are widely used and should be considered:

- **Scope 1 Emissions: Direct GHG emissions.**

  Direct GHG emissions occur from sources that are owned or controlled by the organization, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.; emissions from chemical production in owned or controlled process equipment.

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- **Scope 2 Emissions: Electricity indirect GHG emissions.**

  Scope 2 accounts for GHG emissions from the generation of purchased electricity, steam, heat, or cooling consumed by the organization. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company. For purchased energy, scope 2 emissions physically occur at the facility where electricity, steam, heat, or cooling is generated.

- **Scope 3 Emissions: Other indirect GHG emissions.**

  Scope 3 is an optional reporting category that allows for the treatment of all other indirect emissions. Scope 3 emissions are a consequence of the activities of the organization, but occur from sources not owned or controlled by the organization. Some examples of scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services.

For most organizations, inclusion of scope 1 and scope 2 emissions is the minimum that should be considered when determining the EnMS scope and boundaries. However, some organizations also include scope 3 emissions within the scope of their GHG objectives and can consider including some categories of scope 3 emissions that are energy-related in the EnMS.

Keep in mind that your organization may choose to ***manage*** some scope 3 emissions, for instance by engaging with stakeholders in the value chain, whether or not it chooses to ***report*** those emissions externally. Consider the issues and requirements identified in Task 1: An EnMS and Your Organization to determine which GHG emissions categories are relevant to your organization. For instance, the decision to include various categories of scope 3 emissions in the EnMS could be due to those emissions being:

- Large relative to the organization's scope 1 and scope 2 emissions.
- Critical to key stakeholders (e.g. customers or investors)
- Ones that your organization can influence (e.g. outsourced production processes).

In setting the boundaries for the EnMS, consider the EnMS scope identified (especially for scope 3 emissions) to ensure that the boundaries include all managed emissions.

For many organizations, starting with management of scope 1 and 2 boundaries will provide ample opportunity to reduce energy-related GHG emissions.

For corporate entities, the organizational boundary addresses the variety of ownership structures a corporation could have, including wholly owned operations, incorporated and unincorporated joint ventures, subsidiaries, and others. Chapter 3 of the GHG Protocol's Corporate Accounting and Reporting Standard provides guidance on the use of two distinct approaches to define organizational boundaries for the purpose of accounting for GHG emissions:

- Equity share approach: A company accounts for GHG emissions from operations according to its share of equity in the operation.

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- Control approach: A company accounts for 100 percent of the GHG emissions from operations over which it has control.

Corporate entities should review this document to better understand corporate GHG emissions accounting practices.

Establishing a new EnMS prioritizing decarbonization

If you do not have an existing 50001 Ready-based EnMS and want to build one that helps your organization manage energy-related GHG emissions, in this task you should follow the guidance in the "Full Description" tab keeping the following in mind:

1. **Develop a scope that considers energy-related GHG emissions**. Consider whether your organization will manage energy-related scope 1 and scope 2 emissions and which, if any scope 3 emissions it will include. Make sure the scope reflects the GHG emissions issues and requirements identified in Task 1: An EnMS and Your Organization.
2. **Define the boundaries of the EnMS**. Make sure you have the authority to control the energy consumption and energy-related GHG emissions within the proposed boundaries, especially if including any scope 3 emissions within the scope of the EnMS.
3. **Develop the scope and boundaries statement**. If relevant, incorporate any discussion on emissions (scope 1, 2, or 3) included in the scope into the scope and boundaries statement.

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 existing scope**. Consider whether your organization will manage energy-related scope 1 and scope 2 emissions and which, if any scope 3 emissions it will include. Make sure the scope reflects the issues and requirements identified when updating Task 1: An EnMS and Your Organization for GHG emissions. Update your scope as needed.
2. **Review your existing boundaries**. Consider any changes made to the scope, especially if including any scope 3 emissions, to see if there are any changes to be made to the physical or organizational limitations of the areas that are to be included or not included in the EnMS. Decide whether you need to update the boundaries of the EnMS. If there are any changes, make sure you have the authority to control the energy consumption and energy-related GHG emissions within the proposed boundaries.
3. **Update your Scope and Boundaries Statement**. Based on the changes you made to both your scope and your boundaries, update your scope and boundaries statement as needed.
4. **Review the updated Scope and Boundaries Statement with Top Management**. Top management is responsible for ensuring that a scope and boundaries statement has been established and should review and approve the finalized scope and boundary statement.

Commercial Emissions Reduction Planning Framework

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

The Scope and Boundaries task involves documenting and approving the scope and boundaries of the organization's 50001 Ready energy management system. This task applies to commercial, multifamily, or institutional organizations developing an emissions reduction plan for their portfolio of buildings and fleets. The Scopes and Boundaries defined in this task inform the development of the GHG Inventory Management Plan (IMP) and include Scope 1 (direct GHG emissions from sources controlled or owned by the organization) and Scope 2 emissions (indirect GHG emissions associated with the purchase of electricity, steam, heating, or cooling). Scope 3 emissions (other indirect GHG emissions) are not covered in this framework. The task also involves reviewing existing plans and studies to reduce duplicative work and identifying certain core and optional elements for the Emissions Reduction Plan scope of work. Prior to emissions reduction audits, the organization must define the scope of the audit using the GHG Emissions Reduction Audit Checklist for Owners.

The ERP Framework applies to commercial, multifamily, or institutional organizations that are developing an emissions reduction plan for their portfolio of buildings and fleets. Stakeholders include building owners, property managers, sustainability and energy teams, and facilities engineers. While this guidance was developed through the Better Climate Challenge and therefore focuses on Scope 1 and 2 GHG emissions, the principles apply across all building portfolio decarbonization efforts.

The Scopes and Boundaries defined in this task will help inform the development of the GHG Inventory Management Plan (IMP) (explained further in Task 8, Energy Data Collection and Analysis). An IMP will cover the organization’s methods for reporting Scope 1, 2, and 3 emissions, using the following definitions from the GHG protocol (Milestone 1):

- Scope 1 emissions consist of direct GHG emissions from sources controlled or owned by an organization, such as boilers, furnaces, and vehicle fleets.
- Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heating, or cooling.
- Scope 3 emissions are defined as other indirect GHG emissions that are the result of an organization’s activities but are emitted from sources that are not owned or controlled by the company.

As noted earlier, this framework focuses on developing a GHG Emissions Reduction Plan for Scope 1 and Scope 2 emissions. Scope 3 emissions (e.g., other indirect value chain emissions) are not covered in this framework. For organizations with emissions from leased assets (e.g., tenant emissions), emissions can be categorized as direct (Scope 1) emissions or indirect (Scope 2 or 3) emissions, depending on the organizational boundary approach defined in the IMP. Therefore, this framework can support a decarbonization plan for tenant emissions regardless of scope category. (Milestone 1)

Organizations may have already completed or are in the process of completing various plans, studies, and analyses, and these should be compiled and reviewed for usefulness to reduce the potential for duplicative work. Existing information may include asset management plans, energy or decarbonization audits, district energy studies, benchmarking reports, climate action plans, and strategic energy plans. If previous plans and studies have not been completed, then the scoping process will define which areas to

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include. (Milestone 1)

Certain scope of work elements are core to nearly all Emissions Reduction Plans, while other elements may be optional and can be incorporated based on organizational needs, as listed in TABLE 2. Consider whether the elements in TABLE 2 should be included in the plan, at what level of detail, and whether the elements will be delivered internally or externally (e.g., by consultants), and begin planning for how the work will be funded. (Milestone 1)

Elements of Emission Reduction Planning Scope of Work

Core	• Portfolio categorization • Building audits and district energy/central plant studies • Scenario development and assessment • Renewable energy procurement • Retrofit policy or requirements development • Project phasing and prioritization • Fleet emissions reductions
Optional	• Analysis of potential funding sources • Scope 3 emissions analysis • Stakeholder engagement • Pilot development • Resiliency assessment

Prior to completing emissions reduction audits at the representative buildings, the organization first needs to clearly define the scope of the audit. The Better Buildings Initiative has developed the resource, GHG Emissions Reduction Audit: A Checklist for Owners (Kramer et al., 2023), which includes guidance and an accompanying checklist that details recommended services and deliverables for a building-level GHG emissions reduction audit for operational Scope 1 and 2 GHG emissions. It is recommended that organizations use this resource to define the scope of work for their audits. (Milestone 3)

Industrial Emissions Reduction Planning Framework

The scope and boundaries for GHG emissions frequently overlap with the energy management system's scope and boundaries, but any non-energy-related sources of emissions (such as fluorinated gases) will need to be included.

The guidance for Task 3 is found within the following sections of the ERP Industrial Framework:

Milestone 1:

Establish a greenhouse gas inventory management plan – Many organizations may have already completed a GHG inventory and have these processes in place; it may be worth revisiting them for completeness, however. Inventories should follow the Greenhouse Gas Protocol and cover all significant sources of GHG emissions. At a minimum, inventories must include all direct emissions from sources owned or operated by the organization, such as boilers, furnaces, and vehicles (Scope 1) as well as indirect emissions associated with purchased energy such as electricity (Scope 2). In addition to energy-

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related emissions, Scope 1 emissions may also include non-energy emissions, such as direct process emissions from certain industrial processes or leaks of fluorinated gases or other GHGs. Indirect emissions that occur in the value chain, both upstream and downstream, may also be included (Scope 3). Having a clear understanding of which sources of energy account for the largest portion of GHG emissions can help identify opportunities to strategically reduce GHG emissions. For example, organizations with significant Scope 2 emissions may prioritize renewable electricity generation, whereas those with predominantly Scope 1 emissions may need to prioritize electrification or low- carbon fuel switching opportunities.

Define GHG Emissions Reduction Plan scope of work – Define the scope of work for the ERP development process and outline what tasks will be included in an ERP.

Milestone 3:

Determine Scope - Identify the scope of the (facility level) assessment, including which processes and which emissions sources will be considered (negligible sources may be appropriate to ignore in some cases). From the inventory completed in Milestone 1, gather relevant data on facility energy consumption and individual production processes needed to calculate emissions.

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