



The objective of this concise guidance document is to help companies and other organizations understand the benefits of developing an in-house greenhouse gas inventory and what can be involved in such an effort. This guide was developed by the NC Sustainable Business Council's Energy and Climate Change working group.

	QUESTION	ANSWER
1	<i>What is the difference between a GHG inventory, carbon foot print, and an energy audit?</i>	<p>A greenhouse gas (GHG) inventory is a bookkeeping system for the greenhouse gases produced and emitted from specific sources as part of your operations. It is often expressed in tons of CO₂ equivalent. It is the most comprehensive way to document GHG emissions.</p> <p>Carbon footprint is a popular term which means basically the same thing, but typically at a summary level.</p> <p>An energy audit is a systematic analysis of how energy is being used in a building or plant, and identifies energy savings opportunities. It is an important part (but a subset) of a GHG inventory.</p>
2	<i>What are the benefits of doing a GHG inventory?</i>	<p>Typical benefits include:</p> <ul style="list-style-type: none"> • Manage risk (regulatory, reputation, product, disaster, etc.) • Identify opportunities for emission reduction and energy savings • Respond to voluntary reporting requirements • Position company to participate in emerging carbon markets • Receive recognition for early action • Plan for upcoming mandatory GHG regulations
3	<i>Which gases should be tracked?</i>	<p>Greenhouse gases that are typically tracked include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), certain hydrofluorocarbons (HFC), certain perfluorocarbons (PFC), and sulfur hexafluoride (SF₆). Generally, only CO₂ is important unless your operation has soil, agriculture, petrochemical, or biodegradable waste issues (CH₄ &/or N₂O), or specific chemical processes (HFC, PFC, SF₆, N₂O). Note that nitrous oxide is not the same as nitrogen oxide, which is a pollutant but not a GHG.</p>
4	<i>What are the main emission sources?</i>	<p>Emission sources can include:</p> <ul style="list-style-type: none"> • Stationary combustion (heating, cooling and power generation) • Mobile combustion (any transportation) • Process emissions (for manufacturing facilities), • Other (e.g., fugitive emissions, leaks, wastewater treatment)
5	<i>What is broadly required before we can start?</i>	<ul style="list-style-type: none"> • Get management buy in • Identify corporate goals & metrics (environmental, PR, financial) • Allot adequate time, budget and staff • Set boundaries • Identify protocols and standards to be used
6	<i>What protocols should I use?</i>	<p>Currently, there are no mandatory GHG regulations in the USA, and therefore, no official standards. The most widely recognized protocols include the ISO 14064 standard and the WRI/WBCSD GHG protocol.</p>

7	<i>What are boundaries?</i>	Boundaries determine what emissions you will include in your inventory. Organizational boundaries define which facilities are included (e.g., headquarters &/or satellite offices). Operational boundaries deal with what types of emissions are included (e.g., emissions from suppliers, business travel, manufacturing, electricity use). Usually, there is a distinction made between direct emissions (e.g., from owned, on-site boilers) and indirect emissions (e.g., from electricity from the grid).
8	<i>Can I start small and expand later?</i>	Yes, it all depends on your boundaries. You could do that geographically (Bldg. A, Bldg. B) or operationally (heating & cooling, transportation, processes). However, make sure your inventory follows current protocols from the beginning to avoid wasting your time and resources.
9	<i>How can I ensure a quality inventory from the beginning?</i>	It is critical to follow widely recognized protocols, use qualified personnel and adhere to the following GHG management principles: Relevance, Completeness, Consistency, Transparency and Accuracy
10	<i>What does an inventory cost?</i>	This depends on how you set your boundaries. It also depends on how easily usage data can be retrieved, if your accounting can be done in house, and whether you choose third party verification. A simple effort at a small facility may take 60 – 100 hours. Alternately, developing a comprehensive climate change strategy with assistance from a consultant can take up to 6 months.
11	<i>What steps are involved in doing the actual inventory?</i>	<ol style="list-style-type: none"> 1. Identify the emission sources 2. Select calculation tools 3. Collect activity data and emission factors 4. Do the calculations 5. Roll up emissions and create the report
12	<i>How do I get my inventory verified and why?</i>	Independent verification is important to ensure that you are properly positioned for the emerging carbon trading market and potential early action credits. Currently there are no officially accredited organizations in the USA or accrediting bodies. However, efforts are underway to fill this gap. North Carolina has joined the Climate Registry and it is anticipated that a list of approved third party verifiers for our region will be developed as part of this effort. In the meantime, select a reputable and experienced consulting firm using the same due diligence you would use for selecting any other professional service.
13	<i>How do I anticipate future changes, regulations or other demands?</i>	Your best protection is to use one of the widely accepted protocols and be diligent about following it. Developing a strategy to manage risk and create internal processes for GHG management is a good goal. In addition, stay abreast of emerging developments by subscribing to news from organizations tracking these issues such as NCSBC.
14	<i>Can my company benefit from carbon trading?</i>	Maybe. At this point it is unclear how potential carbon trading or “cap and trade” systems will look in the USA. Nevertheless, it is important to develop a verifiable inventory now and validate any reductions similarly. Voluntary offsets are being sold on carbon markets today (Chicago Climate Exchange (CCX)). In other areas, inventory registries are being used to document corporate GHG emissions as part of future regulatory planning activities. In addition, companies might be eligible for credits for project-based early action measures.

RESOURCE APPENDIX

<p><i>What help and guidance is available?</i></p>	<ul style="list-style-type: none"> • SafeClimate for Business (www.safeclimate.net/business): A clear and simple online guide to help business of all sizes understand and take action on climate change. • EPA’s Climate Leaders (www.epa.gov/climateleaders): A partnership that works with companies to develop long-term climate change strategies; requires partners to set GHG reduction goals and inventory emissions; usually for larger companies; includes up to 80 hours of free consulting. • Climate Risk Toolkit for Corporate Leaders (www.ceres.org/pub/publication.php?pid=83): A 24-page toolkit to help companies address the strategic and financial challenges associated with global climate change. • Getting Ahead of the Curve: Corporate Strategies That Address Climate Change (www.pewclimate.org/global-warming-in-depth/all_reports/corporate_strategies/): A "how to" guide for corporate decision makers that includes case studies; oriented toward large companies • GHG Protocol, a Corporate Accounting and Reporting Standard (www.ghgprotocol.org): Chapter 1 provides a comprehensive overview of GHG accounting and reporting principles. • Environmental Defense: Fight Global Warming (www.fightglobalwarming.com): basic and indispensable information about the dangers, science, and myths associated with global warming • The Climate Registry (www.theclimateregistry.org): A new multi-state collaboration aimed at developing a common GHG reporting system that will provide an accurate, complete, consistent, transparent and verified set of data for reporting entities. • Carbonfund.org (carbonfund.org): Company helping firms reduce and offset carbon emissions. Includes a program for companies with 10 or fewer employees. • The CarbonNeutral Company (www.carbonneutral.com): Core services include carbon offset, climate-consulting, and marketing services. • eMission Solutions (www.emissionsolutions.biz) : Recently formed by Green Mountain Energy. Offers offsets and assistance in developing carbon reduction goals, as well as metrics and public relations resources. • NC Sustainable Business Council (www.sustainnc.org): News, information and education for businesses operating in North Carolina
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Member organizations of the NCSBC Energy & Climate Change Working Group who contributed to this document include:

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