



THE GREENHOUSE RULES:

The federal EPA now may require you to measure your emissions

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HIGHLIGHTS

In 2010, the EPA will require companies that produce significant amounts of greenhouse gases to begin recording and reporting their GHG emissions. Larger industries will be impacted first, but regulations for small businesses are not far off.

This new EPA rule will immediately impact about 10,000 facilities nationwide.

The Greenhouse Rules

The environmental footprints carved by America's major industrial and service companies will soon become much more visible. This year the U.S. Environmental Protection Agency will require companies that produce significant amounts of greenhouse gases (GHG), to begin recording and reporting on their GHG emissions. As a result, businesses are implementing methods to conduct energy audits that will provide the data needed to report annually to the EPA and will reduce future emissions through more efficient use of electricity.

The EPA rule 40 CFR 98, mandating annual reports on greenhouse gases beginning in 2010, applies to the emission of carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, perfluorochemicals (PFCs) and other fluorinated gases, such as nitrogen trifluoride and hydrofluorinated ethers, that result from a wide range of industrial processes in excess of 25,000 metric tons per year. (Fluorinated gases often are used as substitutes for ozone-depleting substances like CFCs and HCFCs but are strong potential contributors to global warming.)

In all, 42 greenhouse gases are covered under the rule. The purpose of the rule is to gather baseline information to gain a better understanding of where GHGs originate and to guide development of possible policies and programs to reduce emissions. The government estimates that the program will apply to about 10,000 facilities nationwide.

More specifically, the rule applies to many facilities that emit GHG at levels that surpass designated thresholds, as well as to suppliers of fossil fuels and industrial GHGs. Other rules already in force address GHG reporting by manufacturers of vehicles and engines, so they are not included under the new provisions.

In most cases the reporting must be carried out all facilities, with a few exceptions for companies that report at the corporate level.

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Facilities that must report emissions are those that engage in activities such as:

- Electric power systems
- Electricity-generating facilities that emit > 25,000 metric tons more of carbon dioxide equivalent gases
- Semiconductor manufacturers
- Landfills generating > 25,000 metric tons of carbon dioxide equivalent gases
- Petroleum refineries
- Underground coal mines

Acid to zinc: Emissions reporting for producers, miners, processors, importers and exporters

The EPA specifies three facility categories that must submit reports:

1. Facilities engaged in any of the following activities in any calendar year beginning in 2010 must, in effect, report emissions from all source categories at the facility;
 - Adipic acid production
 - Aluminum production
 - Ammonia manufacturing
 - Cement production
 - Electric power systems with a total capacity exceeding 17,820 pounds of sulfur hexafluoride or PFCs
 - Electricity-generating facilities that emit 25,000 metric tons or more of carbon dioxide equivalent gases annually or that are subject to the Acid Rain Program
 - Manufacturers of semiconductors, microelectronic-mechanical systems and liquid crystal displays that meet certain production thresholds
 - HCFC-22 production
 - Certain HCFC-23 production operations
 - Lime manufacturing
 - Manure management systems that emit methane and nitrous oxide in amounts equivalent to 25,000 metric tons or more per year of carbon dioxide
 - Landfills generating 25,000 metric tons or more annually of carbon dioxide-equivalent methane.
 - Nitric acid production
 - Petrochemical production
 - Petroleum refineries
 - Phosphoric acid production
 - Silicon carbide production
 - Soda ash production
 - Titanium dioxide production
 - Underground coal mines subject to at least quarterly sampling of ventilation systems

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A facility must report its emissions if it emits 25,000 metric tons of carbon dioxide equivalent gases from sources such as:

- Electricity generation
- Oil and gas natural systems
- Industrial wastewater
- Iron and steel production
- Industrial landfills

2. If a facility does not contain any of the source categories listed on the previous page, it still must report if it emits 25,000 metric tons of carbon dioxide-equivalent gases in combined emissions from stationary fuel combustion, miscellaneous carbonate use and the following source categories:

- Electricity generation
- Electronics/photovoltaic manufacturing
- Ethanol production
- Ferroalloy production
- Fluorinated greenhouse gas production
- Food processing
- Glass production
- Hydrogen production
- Industrial landfills
- Iron and steel production
- Lead production
- Magnesium production
- Oil and natural gas systems
- Pulp and paper manufacturing
- Industrial wastewater
- Zinc production

3. If the facility does not contain source categories on the list above or on page two, it then must determine if it emits 25,000 metric tons or more of carbon dioxide-equivalent gases annually from stationary combustion, involving any of the following sources:

- Boilers
- Stationary engines
- Process heaters
- Combustion turbines
- Other fuel combustion equipment

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If an organization meets the GHG thresholds, it will need to determine its level of GHG emission and find ways to reduce their emissions and energy use in order to shrink its GHG footprint.

Facilities that fall below the GHG thresholds outlined in the previous three categories would not be subject to the new reporting rules. If a producer, importer or exporter facility supplies any of the following fossil fuels, it must report the amount of fuel it is introducing into the economy each year and the emissions that fuel generates when it is burned:

- Coal
- Coal-based liquid fuels
- Natural gas
- Natural gas liquids
- Petroleum products

Finally, any producer, importer or exporter facility supplying fluorinated gases, carbon dioxide or nitrous oxide equivalent to 25,000 metric tons or more of carbon dioxide, when released, must report the annual volume of products introduced and the emissions associated with their release.

Measuring emissions: Information in tons

This long and sometimes complex list of impacted manufacturers, miners, suppliers, processors, importers and exporters suggests that thousands of companies—and many more in the years ahead—will need to determine the level of their GHG emissions and find ways to reduce their emissions and energy use so that they can shrink their GHG footprint.

As described by the EPA, the exact type of information to be submitted electronically includes:

- Total facility emissions in metric tons of CO₂e aggregated for all source categories
- Total emissions in metric tons of CO₂e aggregated for all supply categories
- Emissions from each source category and supply category expressed in metric tons of each GHG
- Onsite electricity generation in kilowatt-hours
- Total pounds of synthetic fertilizer produced and total nitrogen contained in the fertilizer
- Any additional information, including unit- or process-level emissions, activity data (e.g., fuel use, feedstock inputs), or quality assurance/quality control data that are specified in an applicable subpart.

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Many suspect that a company's pollution footprint will become a negotiating point for contracts with governments and large corporations in the future.

Much of a company's carbon footprint is derived from electricity generation.

A large number of businesses across the country are working in a voluntary industry-government partnership with the EPA, called Climate Leaders. This program encourages companies to develop long-term and comprehensive climate change strategies and sets an aggressive corporate wide GHG reduction goal. These targeted reductions vary by sector and by company within each sector. (For more information on Climate Leaders and methods to report GHG emissions, visit www.epa.gov/climateleaders.)

Initially the EPA is using the information collected from such partnership programs and individual facility and corporate reporting to establish baseline levels of emissions. Eventually, these levels will likely serve as ceilings, below which reduced emission targets will be set. The implications for the new reporting procedure and efforts to shrink GHG footprints are expected to be crucial to business operations.

Negotiating with your footprint

Tom Blank, L.R. Kimball's Vice President and Operations Manager for environmental services, anticipates that a company's pollution footprint will become a negotiating point for contracts with governments and large corporations in the future. "Some international firms may say they will buy your products only if you tell them what your footprint is and what you're doing to reduce it. The federal government may require this kind of measurement from those who are supplying services under federal contracts. So at some point, any company doing business with the government and with large companies may be under this sort of scrutiny. While your business may not fall under the rule today, you should start thinking about its eventual impact."

For companies that want to reduce their energy costs and emissions, L.R. Kimball is assisting with energy audits and tips for cutting all energy sources use within their facilities. This could include electrical power, natural gas and other fuels.

"We are looking at a common sense approach to how our clients can reduce energy consumption, save money, and do things smarter and faster," says Blank.

How to reduce your energy usage

Blank notes that much of a company's carbon footprint derives from electricity generation, at a time when deregulation of electricity rates is about to return. As a result, rates could be rising substantially, Blank predicts, so simple steps to reduce electrical demands can make a difference. In providing strategies to regional businesses, Blank recommends considering the following measures:

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A good starting point for office-based businesses is to begin to review an energy checklist developed by the European community's "Action Save II" program.

- When replacing equipment—from computers to monitors to appliances—always specify the most energy-efficient models. They will pay for themselves over time while decreasing electrical usage.
- Switch to zone lighting and heating so that only areas that are occupied at any point in the day are powered on. Too often, office buildings and other facilities light and heat or cool entire floors at night when only a small portion of the floor space is being used. Programmable thermostats and/or a computerized building-system manager can ensure heating and air conditioning systems are operating at the optimal times.
- Change the style of lighting to more energy-efficient sources, using more indirect light, day-lighting and reflected light in place of bulbs, or use LED bulbs and fluorescents in place of incandescent sources.
- Maintain systems regularly. A dirty filter makes heating and air conditioning units work harder and consume more energy.
- Plan work activities so that your company is using the most power at times when the community's electrical demands are lowest—and the cost per kilowatt hour is lowest, as well.
- Consolidate activities such as training and meetings so that large groups carry out these activities together and energy use can be reduced in normal work areas.
- Look for energy-efficient window replacements and insulation.

In addition to these measures, Blank suggests that office-based businesses review a checklist developed by the European Community's "Action Save II" program to improve the organization of electrical office equipment, lighting and heating/AC system use. Among this group's suggestions are the following considerations:

- Replace standard fluorescent bulbs with tri-phosphor lights, which use 25 percent less electricity
- Consider electronic light switches, which protect against current leakage
- Determine the required brightness level in corridors and remove unneeded bulbs
- Equip lighting in public areas with automatic shut-offs or check such areas manually at end of day
- Avoid positioning computer screens where they reflect sunlight, driving employees to close curtains and turn on electric lights

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An energy audit is the first natural step to make your facility more energy efficient. The regulations are likely to impact small businesses sooner than later.

- Situate tables near sunlight
- Provide only cold water for hand washing
- Do not place furniture near radiators
- Determine if a natural air exchange can replace ventilation equipment
- Decentralize computer locations to avoid concentrated heat build-up
- Determine if one or more elevators can be turned off at night, and be sure that only one elevator responds to a call
- Plug each user's computer equipment into a power strip that can be turned off at night
- Consider turning off networked printers and computers for data transmission at night and over weekends
- Switch copiers off at end of day
- Switch on high-performance copiers only when they are needed, rather than having them on stand-by all day

Energy audits: Developing a plan for your company's energy efficiency

The best way to make a facility more energy efficient can be easily determined by an energy audit. In conducting these audits, L.R. Kimball:

- Meets with the client to identify how they are using energy
- Examines electricity and gas bills
- Reviews how fuel supplies are used
- Recommends a systematic plan to reduce energy usage.

L.R. Kimball can even conduct thermal-energy scans to visualize heat that is leaking through windows or the roof or that is entering the building during the summer.

"This is a good time for business and facility owners of all sizes to start thinking about energy usage," Blank advises. "While requirements will first begin for larger industries, eventually they will apply to smaller businesses as well."

To discuss an energy audit for your facility, contact Tom Blank at tom.blank@lrkimball.com or 412.262.5400. L.R. Kimball can tailor an energy audit to each of your physical sites and assist in developing energy-conservation policies company-wide.