

CHAPTER 12. MANUFACTURER IMPACT ANALYSIS

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CHAPTER 12. MANUFACTURER IMPACT ANALYSIS

12.1 INTRODUCTION

The manufacturer impact analysis (MIA) provides the Department with an assessment of the effects that energy-efficiency standards might have on manufacturers of commercial unitary air conditioners and heat pumps. In addition to any financial impacts from adoption of an energy-efficiency standard, there could be a wide range of quantitative and qualitative effects that may require changes to manufacturing practices for commercial unitary air-conditioning equipment. The Department will identify these effects through interviews with manufacturers and other stakeholders as part of the manufacturer impact analysis.

12.2 METHODOLOGY

The Department will conduct the manufacturer impact analysis in three phases. Phase 1 consists of two activities, namely, characterizing the industry and identifying potential issues. In Phase 2, the Department will assess the industry as a whole and use the Government Regulatory Impact Model (GRIM) to perform an industry cash-flow analysis. Also, Phase 2 involves developing an interview guideline and questionnaire for use in Phase 3. At the beginning of Phase 3, the Department will interview manufacturers and adjust the industry cash-flow analysis as appropriate. Also, Phase 3 involves additional cash flow analyses for different sub-groups that might be affected by the rulemaking. Furthermore, in Phase 3 the Department will examine impacts on competition, manufacturing capacity, employment, and the cumulative burden of other regulations affecting manufacturers.

12.2.1 Phase 1: Industry Profile

In Phase 1 of the manufacturer impact analysis, the Department collects pertinent qualitative and quantitative financial and market information. This includes commercial unitary air conditioner manufacturer market share, corporate operating ratios, wages, employment, and production cost ratios. Sources of information include reports published by industry groups, trade journals, the U.S. Census Bureau, and copies of Securities Exchange Commission (SEC) 10-K filings. Also, the Department relies on information from its market assessment, engineering analysis, life-cycle cost analysis, and analysis of markups for equipment price determination to fully characterize the commercial unitary air-conditioning equipment manufacturing industry.

12.2.2 Phase 2: Industry Cash-Flow Analysis and Interview Guide

In Phase 2, the Department performs a preliminary industry cash-flow analysis and prepares written guidelines for interviewing manufacturers.

12.2.2.1 Industry Cash-Flow Analysis

The Department's industry cash-flow analysis primarily relies on the GRIM. The Department uses the GRIM to analyze the financial impacts of more stringent energy-efficiency standards on the industry that produces the products covered by the standard, in this case, commercial unitary air conditioners rated at or above 65,000 Btu/h through less than 240,000 Btu/h. Any change in existing energy-efficiency standards to higher levels can affect the industry cash-flow analysis in three ways. Energy-efficiency standards at higher levels will likely require additional investment, raise production costs, and affect revenue through higher prices and, possibly, lower sales. The Department quantifies these changes through the use of the GRIM.

The GRIM analysis uses a number of factors—annual expected revenues; manufacturer costs such as costs of sales, selling and general administration costs; taxes; and capital expenditures related to depreciation, new standards, and maintenance—to arrive at a series of annual cash flows beginning from the announcement of the new standard and continuing for several years after implementation. The results are compared against baseline projections that involve no new standards. The financial impact of new standards is the difference between the two sets of discounted annual cash flows. Other performance metrics, such as return on invested capital, are also available from the GRIM.

This analysis will use manufacturing costs, shipments forecasts, and price forecasts developed for the other analyses. Financial information, also required as an input to the GRIM, will be developed based on publicly available data and confidentially submitted manufacturer information.

The Department will prepare and distribute to the manufacturers estimates of the financial parameters used in the industry cash flow analysis. A “strawman” GRIM will be prepared for the manufacturers to review and, if desired, input their own values and develop their own cash flow analysis in preparation for the interviews to be conducted in Phase 3 of the MIA.

12.2.2.2 Interview Guide

The Department will conduct interviews with manufacturer representatives to gather key information on the effects that higher efficiency standard levels might have on their company's revenues and finances, on their direct employment, on their capital assets, and on industry competitiveness. These interviews will take place during Phase 3 of the MIA. Prior to the interviews, the Department will distribute an interview guide that will provide a starting point to identify relevant issues and help identify, both qualitatively and quantitatively, the impacts of possible candidate standard levels on individual manufacturers or sub-groups of manufacturers. It is anticipated that the interview guide will be structured as follows:

- (1) Current Organizational Characteristics,
- (2) Industry Infrastructure,

- (3) Manufacturer Cash Flow Analysis,
- (4) Competitive Impacts Assessment,
- (5) Employment Impacts Assessment, and
- (6) Manufacturing Capacity Impacts Assessment.

12.2.3 Phase 3: Sub-Group Analysis

The Phase 3 activities will take place after the publication of the advanced notice of proposed rulemaking (ANOPR) and will include:

- Manufacturer Interviews,
- Revising the Industry Cash Flow Analysis,
- Manufacturer Sub-Group Cash Flow Analysis,
- Competitive Impact Assessment,
- Manufacturing Capacity Impact,
- Employment Impact, and
- Cumulative Regulatory Burden.

12.2.3.1 Manufacturer Interviews

The information gathered in Phase 1 and the cash-flow analysis performed in Phase 2 will be supplemented with information gathered during interviews with manufacturers during Phase 3. The interview process has a key role in the manufacturer impact analyses, since it provides an opportunity for interested parties to privately express their views on important issues, allowing confidential or sensitive information to be considered in the rulemaking decision.

The Department and/or contractors will conduct detailed interviews with as many manufacturers as is necessary to gain insight into the range of potential impacts of standards. During the interviews, the Department will solicit information on the possible impacts of potential efficiency levels on sales, direct employment, capital assets, and industry competitiveness. Both qualitative and quantitative information are valuable. Interviews will be scheduled well in advance in order to provide every opportunity for key individuals to be available for comment. Although a written response to the questionnaire will be acceptable, an interactive interview process is preferred, because it helps clarify responses and provides the opportunity for additional issues to be identified.

Interview participants will be asked to identify all confidential information provided in writing or orally. All information transmitted will be considered, as appropriate, in DOE's decision-making process. However, confidential information will not be made available in the public record. Participants will also be asked to identify all information they wish included in the public record but that they do not want to have associated with their interview. This information will be incorporated into the public record but reported without attribution.

12.2.3.2 Revised Industry Cash Flow Analysis

In Phase 2 of the MIA, the manufacturers will be provided with a "strawman" GRIM model for their review and evaluation. During the interviews, the Department will seek comment and suggestions regarding the values selected for the parameters. Upon completion of the interviews, the Department will revise its industry cash flow model based on the feedback provided through the interviews.

12.2.3.3 Manufacturer Sub-Group Analysis

Using average cost assumptions to develop an industry cash flow estimate is not adequate for assessing differential impacts among sub-groups of manufacturers. Smaller manufacturers, niche players, or manufacturers exhibiting a cost structure that differs largely from the industry average could be more negatively impacted. Ideally, the Department would consider the impact on every firm individually; however, it typically uses the results of the industry characterization to group manufacturers exhibiting similar characteristics.

During the interview process, the Department will discuss the potential sub-groups and sub-group members that have been identified for the analysis. The Department will look to the manufacturers and other stakeholders to suggest what sub-groups or characteristics are the most appropriate for the analysis.

12.2.3.4 Competitive Impact Assessment

Section 342 (6)(B)(i)(V) of the Energy Policy Act of 1992 (EPCA) directs the Department to consider any lessening of competition that is likely to result from imposition of standards. For commercial unitary air-conditioners and heat pumps, the Department must examine whether there is any decrease in competition if a standard is set above the levels established in the American Society of Heating, Refrigerating and Air-Conditioning Engineers/Illuminating Engineering Society of North America (ASHRAE/IESNA) Standard 90.1-1999. It further directs the Attorney General to determine the impacts, if any, of any decrease in competition. The Department will make a determined effort to gather and report firm-specific financial information and impacts. The competitive analysis will focus on assessing the impacts to smaller, yet significant, manufacturers. The assessment will be based on manufacturing cost data and on information collected from interviews with manufacturers. The manufacturer interviews will focus on gathering information that would help in assessing asymmetrical cost increases to some manufacturers, the potential increase in business risks from

an increased proportion of fixed costs, and potential barriers to market entry (e.g., proprietary technologies).

12.2.3.5 Manufacturing Capacity Impact

One of the significant outcomes of new standards could be the consequential obsolescence of existing manufacturing assets, including tooling and investment. The manufacturer interview guide will have a series of questions to help identify impacts on manufacturing capacity, specifically:

- Capacity utilization and plant location decisions in the U.S. and North America with and without a standard level higher than required by ASHRAE 90.1;
- The ability of manufacturers to upgrade or remodel existing facilities to accommodate the new requirements;
- The nature and value of stranded assets, if any; and
- Estimates for any one-time restructuring and other charges, where applicable.

12.2.3.6 Employment Impacts

The impact of new energy-efficiency standards on employment is an important consideration in the rulemaking process. In order to assess how domestic employment patterns might be affected, the interview will explore current employment trends in the air-conditioning industry. In addition, the interview will solicit manufacture views on changes in employment patterns that may result from increased standard levels. The employment impacts section of the interview guide will focus on:

- current employment levels associated with air-conditioning manufacturers at each of their commercial air conditioner production facilities;
- expected future employment levels with and without a standard level higher than required by ASHRAE 90.1; and
- differences in workforce skills and issues related to the retraining of employees.

12.2.3.7 Cumulative Regulatory Burden

The Department recognizes and seeks to mitigate the overlapping effects on manufacturers of amended DOE standards and other regulatory actions affecting the same equipment or companies.

The Department is aware that the phaseout of R-22 (in 2010) will occur shortly after the effective date of any new standards. Two refrigerants, R-410a and R-407c, are currently under consideration as substitutes for R-22. In either case, the Department understands that there may be additional capital conversion and production conversion costs associated with the phaseout.

12.3 RESULTS

12.3.1 Phase 1 – Industry Profile

The Department completed some aspects of Phase 1 as part of the engineering analysis, including:

- conducting interviews of manufacturers, component suppliers, and other industry participants;
- collecting pertinent financial information from SEC 10-K reports;
- estimating production costs and markups; and
- gathering market share information from industry publications.

Phase 1 will continue after the publication of the ANOPR. First, the Department will collect or estimate the remaining financial information required for the Phase 2 GRIM analysis, including tax rates, working capital, capital expenditures, and cost of capital. The Department also will develop product mix and markup scenarios to represent possible industry futures.

Industry participants have also identified several issues associated with new standards that DOE will pursue further during Phase 1. They include:

- commoditization of high-efficiency products,
- international competition and export sales,
- timing of conversion to HCFC alternatives, and
- recovery of and extent of conversion costs.

Remaining Phase 1 results will be presented as part of the GRIM analysis report in the Notice of Proposed Rulemaking (NOPR) and the accompanying Technical Support Document (TSD). Preliminary results may be available prior to publication of the NOPR.

12.3.2 Phase 2 – Industry Cash Flow

The preliminary industry cash flow using the GRIM is currently under development, so Phase 2 results are not yet available. Results will be presented in the NOPR and accompanying TSD. Preliminary results may be available prior to publication of the NOPR. The results will include:

- projections of industry cash flows,
- projections of industry net present value,

- a “strawman” GRIM, and
- a manufacturer interview guide.

12.3.3 Phase 3 – Sub-Group Analysis

The Department has not yet begun to gather information that would allow it to convert the industry GRIM into a sub-group GRIM. Phase 3 results will be presented in the NOPR and the accompanying TSD. Preliminary results may be available prior to publication of the NOPR. The results will include, but are not limited to:

- projections of sub-group cash flows,
- projection of sub-group net present values,
- employment impacts,
- cumulative regulatory burdens, and
- manufacturing capacity impacts.