ECONOMIC IMPACT ANALYSIS: METAL COIL MACT

1 INTRODUCTION

Under Section 112(d) of the Clean Air Act, the U.S. Environmental Protection Agency (referred to as EPA or the Agency) is developing National Emissions Standard for Hazardous Air Pollutants (NESHAP) for the metal coil surface coating source category. Coated coil is a precoated sheet of steel or aluminum which has received a coating of paint or plastic laminate prior to being fabricated into the finished article by the end-user. The Innovative Strategies and Economics Group (ISEG) has developed this economic impact analysis (EIA) to support the evaluation of impacts associated with regulatory options considered for this NESHAP.

The remainder of this report provides a summary profile of the metal coil coating industry (Section 2), an overview of the economic impacts associated with this regulatory action (Section 3), and a discussion of small business impacts (Section 4).

2 INDUSTRY PROFILE

Coil coating has become one of the primary processes for applying protective and decorative finishes on steel and aluminum sheets. Coil coated products are used in a variety of industries including building and construction, appliances, automotive parts, and other consumer products. The traditional coatings used during coating operations have a high concentration of solvents, which results in the emission of volatile organic compounds or VOCs. Currently, the U.S. Environmental Protection Agency (EPA) is developing national emissions standards for these hazardous air pollutants.

This section provides an overview of the metal coil coating industry. Section 2.1 provides an overview of the production processes and costs with emphasis on surface coatings. Section 2.2 summarizes the organization of the U.S. metal coil coating industry, including a description of the producer types, manufacturing companies, and industry trends. In addition, the Agency identifies small business potentially affected by the proposed rule. Finally, section 2.3 presents available market data and trends for the industry.

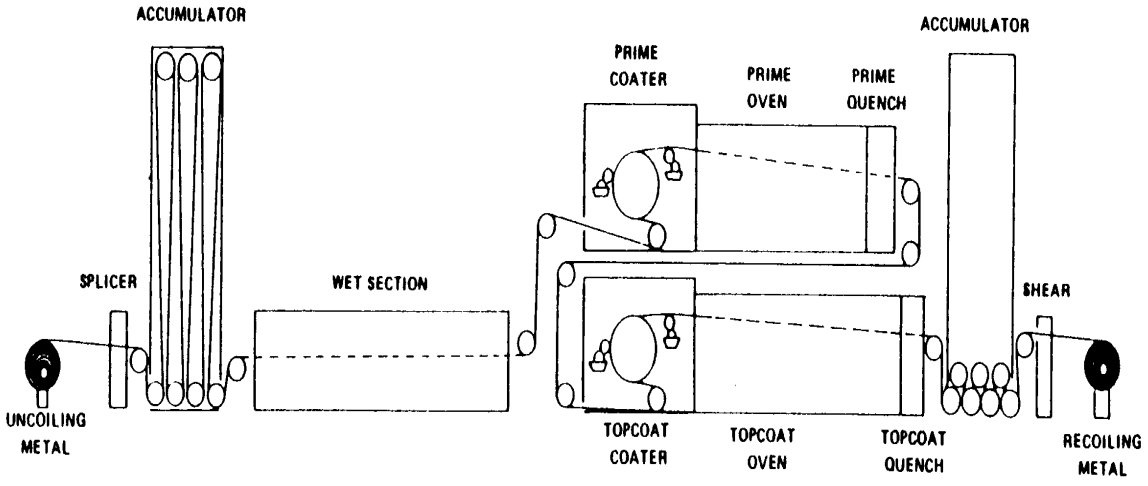

Figure 2-1. Typical Tandem Coil Coating Line

2.1 Production Overview

As shown in Figure 2-1, coil coating is a continuous and highly automated process that applies coatings to coils of metal. During a typical tandem line process, sheet metal (primarily steel and aluminum) is unwound from a coil and passes through a "wet section" where it is cleaned, and chemically treated. Once dry, the metal strip passes through a coating station for the application of protective or decorative coatings, adhesives, or printed ink patterns. After the first coating application, the metal passes through an oven for curing and is cooled by water or air spray. The top or finish coating is then applied by rollers and the metal enters a second oven for curing and drying. Existing coating lines process sheets of varying widths (few inches to 6 feet) and thicknesses (0.006 to 0.15 inches) (EPA, 1998).

After curing or drying, the finished metal strip is typically rewound into coil and shipped to end users, who fabricate it into final products for the building, transportation, container, appliance, furniture, and other industries. Advantages of using precoated metal coil, as opposed to metal that is fabricated and then coated, include higher quality application and lower costs since it eliminates an in-house process (Jancsurak, 1995). Alternatively, issues related to fabrication of precoated metal coil are main disadvantages.

2.1.1 Coatings

There are a wide variety of coatings applied to metal coils. These include polyesters, acrylics, fluorocarbons, alkyds, vinyls, epoxies, pastisols, and organosols. The majority of the coatings (85 percent) are organic solvent based and the remaining 15 percent are waterborne type (EPA, 1998). High-solid coatings currently have limited use because of applicability and availability of suitable formulations. The six largest coatings suppliers are Akzo, Dexter, Lilly, Morton, PPG, and Valspar; which combined provide 85 percent of coatings (Bourguignon, 1998).

2.1.2 Costs of Production

The types of metal processed by the coil coating industry include cold-rolled steel, galvanized steel, and aluminum (EPA, 1998). For 1998, as shown in Table 2-1, Purchasing online reported spot prices for cold-rolled steel sheet at $420 per ton, HD galvanized steel sheet $590 per ton, and aluminum common alloy sheet at $1.05 per pound (Purchasing Online, 1999). However, the price of steel has dropped significantly during the past year. For April 1999, Purchasing Online reported spot prices for cold-rolled steel sheet at $360 per ton, HD galvanized steel sheet $410 per ton.

Table 2-1. Spot Prices for Steel and Aluminum Sheet: 1999-1998

Year	1999	1998
Cold-rolled steel sheet (Midwest, $/ton)	$360	$420
HD galvanized steel sheet (Midwest, $/ton)	$410	$590
Aluminum (common alloy sheet 3003, $/lb)	$0.94	$1.05

Source: Purchasing Online. 1999. "Hotlines."

During 1997, as shown in Table 2-2, the coatings industry provided coil coating companies with 39.2 million gallons of coating at a value of $611.7 million, or an average $15.60 per gallon. However, some specialty coatings sell for more than $50 per gallon (Bourguignon, 1998).

Table 2-2. Volume and Value of Coatings Applied to Coat Metal Coils: 1996-1997

Year	Volume (10^6 gallons)	Value ($\$10^6$)	Price $/gallon
1997	39.2	$611.7	$15.60
1996	30.0	$550.0	$18.33
Total/Average	69.2	$1,161.7	$16.79

Source: Bourguigon, E. 1999. "Growth Accelerating for Coil Coating."
Bourguigon, E. 1998. "Coil Coating Industry Promises Continuing Growth."

2.2 Uses, Consumers, Substitutes

One of the earliest applications for metal coil coatings was the in the production of Venetian blinds (NCCA, 1999). During the 1970's, environmental and work safety regulations led many companies to explore prepainting applications and this generated interest in coil coating applications in a variety of industries. Currently, coil coated products are used in building and construction, business and consumer, transportation, package, and other goods. As shown in Figure 2-2, building and construction products accounted for more than 60 percent of coil consumption in 1997. Uses in this segment include residential siding, roofing, trim, gutters, metal doors, mobile homes, and modular housing. Business and consumer products (i.e., appliances and furniture) accounted for 17.4 percent, followed by

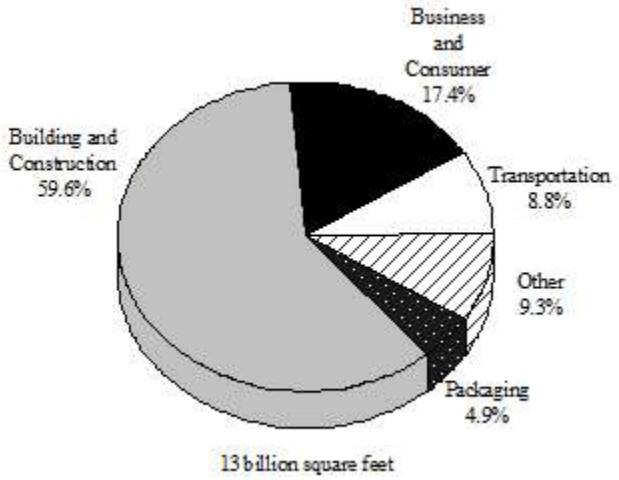

Figure 2-2. Distribution of Coated Metal Coil Shipments by Market: 1997

transportation (8.8 percent), packaging (4.9 percent), and other (9.3 percent).

Coil coating competes with other methods of producing finished coated sheet metal, mostly post-fabrication methods such as spraying, dipping, and brushing. Currently, one coil coating company estimates that roughly 10 percent of coated sheet metal is currently being coil coated (MSC, 1999). All coated steel competes directly with wood products in building and construction applications such as roofing. The relative price of lumber has risen over the past several years making steel coated products more attractive (Stundza, 1997).

2.3 Affected Producers

Based on facility responses to the Section 114 letters, the Agency identified 49 companies that owned 82 potentially affected metal coil coating facilities. The following section describes types of manufacturing facilities, identifies the companies that own them, and presents recent trends in products and processes.

2.3.1 Manufacturing Facilities

Metal coil manufacturers can be classified as one of two types of producers: toll coaters and captive coaters. Toll coaters process coils provided by steel or aluminum mills or their customers, who in turn, fabricate the coated coil into end products. For example, Materials Sciences Corporation has a tolling agreement with AK Steel Corporation whereby it agrees to provide coil coating services to its steel plants in Ohio (MSC 10-K, 1997). These coaters are providing a service rather than fabricating an end product and charge a fee based on weight or surface area. Captive producers' coating operations are part of a vertical operation that both coat and fabricate end products. Some coil coaters perform both types of these functions.

Based on responses to the Section 114 letters, Table 2-3 provides a summary of the descriptive statistics for coil coating facilities by producer type. As shown, toll and captive only facilities account for roughly 78 percent of the reporting facilities with facilities performing both functions accounting for the remaining 22 percent. Coil coating lines are distributed similarly across producer types with the average by group and overall being roughly 1.5 coating lines per facility. Furthermore, captive only facilities are larger in terms of average number of employees because of the additional production process related to final products co-located at the site. Alternatively, toll only facilities have a larger average number of employees devoted to their coating line both in absolute magnitude and relative to facility employment. This is consistent with the fact that their primary function is providing coil coating services.

In general, coil coating plants are typically located near steel and aluminum plants to reduce raw material shipping costs. High transportation costs influence the geographic market where coated coil products are exchanged. As shown in Table 2-4, over half of the potentially affected facilities are located in six states, mostly in the "rust-belt." Pennsylvania has the highest number of facilities (13, or 16 percent of total), followed by Alabama (8), Ohio (7), Indiana and Texas (both with six facilities), and Illinois (5).

Table 2-3. Summary of Coil Coating Facilities by Producer Type: 1997

Item	Producer Type			All Facilities
	Toll Only	Captive Only	Both	
Facilities (share)	30 (39.5%)	29 (38.2%)	17 (22.4%)	76
Coating Lines (share)	45 (38.8%)	45 (38.8%)	26 (22.4%)	116
Facility Employment Average	241.9	364.2	183.5	277.6
Coating Line Employment Average	66.8	30.7	33.4	44.6

Table 2-4. Location of Potentially Affected Facilities by State: 1997

State	Number of Facilities	Percentage
PA	13	15.9%
AL	8	9.8%
OH	7	8.5%
IN	6	7.3%
TX	6	7.3%
IL	5	6.1%
Other	37	45.1%
Total	82	100.0%

2.3.2 Companies

The Agency identified 49 ultimate parent companies for the metal coil facilities and obtained their sales and employment data from either their survey response or one of the following secondary sources:

- Dun and Bradstreet Market Identifiers (Dun & Bradstreet, 1999)
- Hoover's Company Profiles (Hoover's Inc., 1999)
- Business and Company ProFile (Information Access Corporation, 1999)
- Company Websites.

Appendix A provides a listing of the 49 companies that own and operate the 82 potentially affected facilities within this source category. The average (median) annual sales across all companies reporting data were $1.8 billion ($650 million). This includes revenue from operations other than metal coil coating. The average (median) employment was 9,918 (2,512) employees. The top four companies in annual sales are:

- Alcoa—$15.34 billion with 103,500 employees.
- Alusuisse-Lonza Group Ltd—$6.98 billion with 28, 495 employees.
- Crown Cork and Seal Company, Inc.—$8.3 billion with 38, 459 employees.
- Reynolds Metals Company—$5.86 billion with 20,000 employees.

Metal coil coating companies can also be grouped into small and large categories using Small Business Administration (SBA) general size standard definitions by SIC Codes. Responses by metal coil coating facilities to the industry survey indicated more than 30 different SIC codes with a small business definition range from 100 to 1,000 employees. Using these guidelines and available data, the Agency has identified 19 small businesses, or 38.8 percent of total. The annual average (median) sales for these companies are $51.7 ($41.0) million. The average (median) employment for these companies is 245 (175) employees. Many of these small coil coating companies compete in smaller niche markets (Stundza, 1997).

Based on responses to the Section 114 letters, Table 2-5 provides a summary of the descriptive statistics for coil coating facilities by ownership size. As shown, the 19 small companies own and operate 21 coil coating facilities, or 25.6 percent of total, with an average of 1.1 facility per company. The 30 large companies own and operate 61 coil coating facilities, or 74.4 percent, with an average of 2 facilities per company. Coil coating lines are distributed similarly across these facilities with the average by group and overall being roughly 1.5 coating lines per facility. Furthermore, facilities owned by large companies are larger in terms of average number of employees, i.e., 310 employees per facility versus 157 employees per facilities. Facilities owned by large companies also have a larger average absolute number of employees devoted to their coating line but less relative to facility employment.

Table 2-5. Summary of Coil Coating Facilities by Ownership Size: 1997

Item	Facilities Owned by		All Facilities
	Small Companies	Large Companies	
Facilities	21	61	82
Toll	6	24	30
Captive	7	22	29
Both	5	12	17
Not reporting	3	3	6
Coating Lines	31	91	122
Share of total reported	25.4%	74.6%	
Facility Employment			
Average	157.1	310.3	277.6
Median	97.5	165.0	126.0
Minimum	26	24	24
Maximum	1,000	2,500	2,500
Coating Line Employment			
Average	30.4	48.7	44.6
Median	30.0	34.0	30.0
Minimum	6	4	4
Maximum	115	194	194

2.3.3 Industry Trends

Industry has focused on the development of new or improved applications and processes. For example, NKK Corporation announced the development of a new precoated steel sheet in fall of 1998. The company plans to market is for use in audiovisual equipment and home appliances, and is targeting production levels to 1,000 tons per month by fiscal 1999 (Drukenbrod, 1998). On the process side, Material Sciences Corporation (MSC) has developed a high-speed powder coating technology and by the end of 1999, plans on operating a 54 inch line running at 400 fpm. Current powder coating lines typically run at 200 fpm (Graves, 1999).

2.4 Market Data

Competition within the coil coating industry is regional due to the high cost of transporting sheet metal coils (MSC, 1997). The coil coatings industry has experience rapid growth since the early 1990s with an annual growth rate of 6 percent per year. As shown in Table 2-6, for 1997, 4.9 million tons of coated coil were shipped. Of this total, steel coil shipments were 4.2 million tons, or 85 percent, and aluminum coil shipments were 0.7 million, or 15 percent. Industry also reported data on square footage of coated coil for 1997 (13 billion square feet) because it is a better measure of coil coating requirements. Table 2-6 also provides estimates of 1996 shipments based on reported annual growth rates.

Table 2-6. Shipments of Coated Metal Coils by Metal Type (10^6 tons)

Type	1997	1996
Steel	4.2	3.7
Aluminum	0.7	0.6
Total	4.9	4.3

Source: Bourguigon, E. 1999. "Growth Accelerating for Coil Coating."

To our knowledge, no publicly available price data exists for coated metal coil products. However, one coil company does report coil coating service revenues and estimates its share of market production for 1996 (MSC, 1997). Based on this data, the Agency estimated a price of toll coating services to be roughly $150 per ton of coil processed.

Combining this estimate with data on the substrate value provides a rough estimate of the price for coated metal coils. Therefore, using the substrate costs from Table 2-1 and the relative share of steel and aluminum coated from Table 2-6, we compute a value of coated metal coils of $3,900 million and a price of roughly $800 per ton for 1997. The value added of coating the metal coil is approximately 20 percent of the total value or price of the final product (i.e., $150 divided into $800).

2.4.1 Market Trends

Industry representatives anticipate a growth rate of 8 to 10 percent for 1998 and 1999 (Pinkham, 1999). Growth in the building and construction market is expected to contribute to strong demand. Representatives see future growth in the appliance market, particularly the refrigeration segment. They also see new opportunities in full-body applications in the automotive industry as well as office furniture segment. Recently, coil coaters have expressed a desire in forming partnerships with steel service centers in identifying new end-user demands (Pinkham, 1999).

3 ECONOMIC IMPACTS

The MACT standards on metal coil coating facilities require these producers to install new, replace old, or upgrade existing equipment designed to destroy (e.g., incineration) or capture (e.g., PTEs) hazardous air pollutants currently being released to the environment. As described in the Agency's Background Information Document (BID), these costs will vary across facilities depending upon their physical characteristics and baseline controls. These regulatory costs will have financial implications for the affected producers, and broader implications as these effects are transmitted through market relationships to other producers and consumers. These potential economic impacts are the subject of this section.

Inputs to the economic analysis include:

- Baseline characterization of metal coil coating facilities based on responses to the Section 114 letters.
- Baseline market data as projected from industry and secondary sources.
- Compliance cost estimates for individual facilities (through model plants) to meet the MACT floor standards.

The Agency has estimated the national total annual compliance costs for this regulation to be $7.7 million in 1997. Because these costs are such a small share of the coating operations and overall economic activity at affected facilities, the analysis focuses on the magnitude and distribution of these costs across affected entities (facilities and coating lines) and affected inputs and products (coating services and coated metal coils). The following subsections address the economic impacts of the regulation on metal coil coating facilities, coating lines at these facilities, and the product markets served by these facilities.

3.1 Facility Impacts

Absent facility-level sales data, the Agency measured the economic impact on metal coil coating facilities based on the compliance costs incurred per facility and per facility employee. As described in Section 2, these facilities may be categorized by producer type (i.e., toll, captive, or both) and by ownership size (owned by small or large company). The economic impacts on these facilities are presented below for both categories. The projected economic impacts on the owners of these facilities are provided in Section 4 "Small Business Impacts."

Table 3-1 summarizes the magnitude and distribution of compliance costs across facilities by producer type. Captive only facilities are expected to incur 64 percent of the total annual compliance costs of the regulation ($4.6 million of $7.2 million for facilities reporting producer type), while toll only facilities incur 25 percent ($1.8 million) and facilities that perform both functions incur 11 percent ($0.8 million). It follows that the relative impact of these costs per facility is higher for captive only facilities at $162,850 per year compared to the average across all facilities at $95,000 per year. Alternatively, the annual cost per facility for toll only facilities and facilities that perform both functions is lower than the industry average at $58,900 and $48,400, respectively. The estimates shown in Table 3-1 also indicate that the distribution of costs across facilities is skewed toward the lower impact levels, i.e., the median value is significantly less than the average value. This outcome results from the large number of facilities that either incur zero costs or only those costs related to initial performance testing and annually recurring monitoring, reporting, and recordkeeping. Furthermore, as shown in Table 3-1, similar relative impacts for costs per facility employment are observed across these producer types.

Table 3-1. Summary of Compliance Cost Burden on Coil Coating Facilities by Producer Type: 1997

Compliance Costs	Producer Type			All Facilities
	Toll Only	Captive Only	Both	
Per Facility (10^3/yr)				
Average	$58.9	$162.9	$48.4	$95.0
Median	$21.0	$39.5	$19.7	$21.0
Minimum	$0.0	$0.0	$0.0	$0.0
Maximum	$377.3	$1,076.3	$257.3	$1,076.3
Per Facility Employee ($/yr)				
Average	$446	$974	$490	$657
Median	$166	$222	$228	$179
Minimum	$0	$0	$0	$0
Maximum	$1,988	$7,275	$1,969	$7,275

Table 3-2 summarizes the magnitude and distribution of compliance costs across facilities by ownership size. Facilities owned by small companies (as defined in Section 4) are expected to incur only 9.8 percent of the total annual compliance costs of the regulation ($0.8 million of $7.7 million for all facilities), while facilities owned by large companies incur 90.2 percent ($6.9 million). It follows that the relative impact of these costs per facility is much lower for facilities owned by small companies at $36,100 per year compared to the average across all facilities at $95,000 per year. Alternatively, the annual cost per facility for facilities owned by large companies is higher than the industry average at $115,600. As shown in the previous table, the estimates shown here indicate that the distribution of costs across facilities is skewed toward the lower impact levels, i.e., the median value is significantly less than the average value. Furthermore, the relative cost burden measured per employee is distributed in a similar fashion across facilities owned by small and large companies, i.e., $312 per employee vs. $752 per employee.

Table 3-2. Summary of Compliance Cost Burden on Coil Coating Facilities by Ownership Size: 1997

Compliance Cost	Facilities Owned by		All Facilities
	Small Companies	Large Companies	
Per Facility (10^3/yr)			
Average	$36.1	$115.6	$95.0
Median	$11.5	$32.5	$21.0
Minimum	$0.0	$0.0	$0.0
Maximum	$334.0	$1,076.3	$1,076.3
Per Facility Employee ($/yr)			
Average	$312	$752	$657
Median	$72	$211	$179
Minimum	$0	$0	$0
Maximum	$1,988	$7,275	$7,275

3.2 Coating Line Impacts

Absent coating line-level sales data, the Agency measured the economic impact on metal coil coating lines based on the compliance costs incurred per coating-line and per coating-line employee. As described in Section 2, these facilities may be categorized by producer type (i.e., toll, captive, or both) and by ownership size (owned by small or large company). The economic impacts on these coating lines are presented below for both categories. The projected economic impacts on the owners of these coating lines and facilities are provided in Section 4 "Small Business Impacts."

Table 3-3 summarizes the magnitude and distribution of compliance costs across coating lines by producer type. Based on the relative incidence of compliance costs across facilities by producer type, it follows that the relative impact of these costs per coating line is higher for captive only facilities at $129,700 per year compared to the average across all coating lines at $74,800 per year. Alternatively, the annual cost per coating line for toll only facilities and facilities that perform both functions is lower than the industry average at $44,700 and $26,700, respectively. The estimates shown in this table also indicate that the distribution of costs across coating lines is skewed toward the lower impact levels, i.e., the median value is significantly less than the average value. As mentioned in the previous section, this outcome results from the large number of facilities that either incur zero costs or

only those costs related initial performance testing and annually recurring monitoring, reporting, and recordkeeping. Furthermore, coating lines at toll only facilities have twice the employment level as other producer types so that their impact measure per employee is even less than the relative cost differential per coating line.

Table 3-3. Summary of Compliance Cost Burden on Coil Coating Lines by Producer Type: 1997

	Producer Type			
Compliance Costs	**Toll Only**	**Captive Only**	**Both**	**All Facilities**
Per Coating Line (10^3/yr)				
Average	$44.7	$129.7	$26.7	$74.8
Median	$20.3	$23.5	$16.0	$19.7
Minimum	$0.0	$0.0	$0.0	$0.0
Maximum	$377.3	$1,076.3	$118.2	$1,076.3
Per Coating Line Emp($/yr)				
Average	$856	$11,637	$2,225	$6,017
Median	$277	$2,116	$405	$708
Minimum	$0	$0	$0	$0
Maximum	$10,112	$86,903	$16,281	$86,903

Table 3-4 summarizes the magnitude and distribution of compliance costs across coating lines by ownership size. Based on the relative incidence of compliance costs across facilities by ownership size, it follows that the relative impact of these costs per coating line is much lower for those owned by small companies at $21,000 per year compared to the average across all coating lines at $74,800 per year. Alternatively, the annual cost per coating line owned by large companies is higher than the industry average at $93,700. Similar to results from the previous table, the estimates shown here indicate that the distribution of costs across coating lines is skewed toward the lower impact levels, i.e., the median value is significantly less than the average value. Furthermore, the relative cost burden measured per coating line employee is distributed in a similar fashion across ownership size, i.e., $1,453 per employee for facilities owned by small companies vs. $7,101 per employee for those owned by large companies.

Table 3-4. Summary of Compliance Cost Burden on Coil Coating Lines by Ownership Size: 1997

Compliance Cost	Facilities Owned by		All Facilities
	Small Companies	Large Companies	
Per Coating Line (10^3/yr)			
Average	$21.0	$93.7	$74.8
Median	$11.5	$27.6	$19.7
Minimum	$0.0	$0.0	$0.0
Maximum	$114.2	$1,076.3	$1,076.3
Per Coating Line Emp. ($/yr)			
Average	$1,453	$7,101	$6,017
Median	$59	$1,030	$708
Minimum	$0	$0	$0
Maximum	$10,122	$86,903	$86,903

3.3 Market Impacts

In conducting an economic impact analysis, the Agency typically models the responses by producers and markets to the imposition of the proposed regulation. The alternatives available to producers in response to the regulation and the context of these choices are important in determining the economic and financial impacts. Economic theory predicts that producers will take actions to minimize their share of the regulatory costs. Producers decide whether to continue production and, if so, to determine the optimal level consistent with market signals. These choices and market feedbacks allow them to pass costs forward to the consumers of their end-products or services and/or to pass costs backward to the suppliers of production inputs. However, based on the small absolute and relative magnitude of the estimated regulatory costs, the Agency focuses the economic impact analysis on the initial distribution of costs across facilities and coating lines presented above. The financial impact of the regulation on affected businesses is analyzed in Section 4.

Table 3-5 shows that the total annual compliance cost estimate of $7.7 million for the metal coil coating industry is small relative to the sales value of its end-product, i.e., coated metal coil, and the value of inputs to the production process. Absent observed price and cost data for this industry, we gauge these potential market impacts using approximations for end-

product and input values based on available market data presented in Section 2. As shown in Table 3-5, total annual compliance costs for this regulation represent less than 0.2 percent of the computed value of coated metal coils for 1997. Therefore, the potential increase in the projected baseline market price of $793 per ton would be a similarly small proportion, or only $1.58 per short ton. Furthermore, the regulatory costs are also expected to represent only 1 percent of the computed value of coating services ($150 per ton of coated metal coil), which does not indicate the cost of coating operations will increase sufficiently to cause producers to cease or alter their current coating operations.

Table 3-5. Compliance Cost Share of the Value of Coated Metal Coil and Inputs: 1997

Item	Baseline Value		
	Total (10^6)	Per Unit [a] ($/ton)	Compliance Cost Share (%)
Coating Operations	$735	$150	1.0%
Coatings	$612	$125	1.3%
Value Added	$123	$25	6.2%
Substrates	$3,150	$643	0.2%
Steel	$1,750	$416	0.3%
Aluminum	$1,400	$2,000	0.4%
Coated Metal Coils	$3,885	$793	0.2%

[a] Per unit value as measured based on the reported volume of coated metal coil volume in 1997 of 4.9 million short tons with the per unit values for substrate measure based on their share of that total, i.e., 4.2 million for steel and 0.7 million for aluminum.

4 SMALL BUSINESS IMPACTS

This regulatory action will potentially affect the economic welfare of owners of metal coil coating facilities. The ownership of these facilities ultimately falls on private individuals who may be owner/operators that directly conduct the business of the firm (i.e., "mom and pop shops" or partnerships) or, more commonly, investors or stockholders that employ others to conduct the business of the firm on their behalf (i.e., privately-held or publicly-traded corporations). The individuals or agents that manage these facilities have the capacity to conduct business transactions and make business decisions that affect the facility. The legal and financial responsibility for compliance with a regulatory action ultimately rests with these agents; however, the owners must bear the financial consequences of the decisions. Environmental regulations like this rule potentially affect all businesses, large and small, but small businesses may have special problems in complying with such regulations.

The Regulatory Flexibility Act (RFA) of 1980 requires that special consideration be given to small entities affected by federal regulation. The RFA was amended in 1996 by the Small Business Regulatory Enforcement Fairness Act (SBREFA) to strengthen the RFA's analytical and procedural requirements. Prior to enactment of SBREFA, EPA exceeded the requirements of the RFA by requiring the preparation of a regulatory flexibility analysis for every rule that would have any impact, no matter how minor, on any number, no matter how small, of small entities. Under SBREFA, however, the Agency decided to implement the RFA as written and that a regulatory flexibility analysis will be required only for rules that will have a significant impact on a substantial number of small entities.

This section identifies the businesses that will be affected by this proposed rule and provides a preliminary screening-level analysis to assist in determining whether this rule is likely to impose a significant impact on a substantial number of the small businesses within this industry. The screening-level analysis employed here is a "sales test," which computes the annualized compliance costs as a share of sales for each company. Appendix A provides a listing of the 49 companies that own and operate the 82 potentially affected facilities within this source category.

The Small Business Administration (SBA) defines a small business in terms of the sales or employment of the owning entity. These thresholds vary by industry and are evaluated based on the industry classification (SIC Code) of the impacted facility. Responses by metal coil coating facilities to the industry survey indicated over 30 different SIC codes with a small business definition range from 100 to 1,000 employees. The Agency developed

a company's size standard based on the reported SIC codes for these facilities. In determining the companies' SIC size standard, the following assumptions were made:

- In cases where companies own facilities with multiple SIC's, the most conservative SBA definition was used. For example, if a company owned facilities within SICs 3448 (size standard equal to 500 employees) and 3334 (size standard equal to 1,000 employees), we used the size standard of 1,000 employees.
- Four companies owning facilities that did not report an SIC code. We assigned these companies the most conservative size standard of 1,000 employees.

Based on EPA's database, 19 of the companies owning facilities (38.8 percent) that perform metal coil coating were identified as small with the remaining 30 companies being large (61.2 percent) (See Appendix A for detailed listing).

For the purposes of assessing the potential impact of this rule on these small businesses, the Agency calculated the share of annual compliance cost relative to baseline sales for each company. When a company owns more than one facility, the costs for each facility it owns are summed to develop the numerator of the test ratio. For this screening-level analysis, annual compliance costs were defined as the engineering control costs imposed on these companies; thus, they do not reflect the changes in production expected to occur in response to imposition of these costs and the resulting market adjustments.

Table 4-1 reports total annual compliance costs and the number of companies impacted at various threshold levels. It also provides summary statistics for the cost-to-sales ratios (CSRs) for small and large companies reporting the necessary sales data. Although small businesses represent almost 39 percent of the companies within this source category, Table 4-1 shows that their aggregate compliance costs totals $0.8 million, or only 9.9 percent of the total industry costs of $7.7 million. Under the proposed rule, the annual compliance costs for small businesses range from zero to 3.24 percent of sales with 7 of the 19 small businesses not incurring any regulatory costs. The vast majority of small companies with sales data have CSRs below 0.5 percent.[1] The mean (median) cost-to-sales ratio is 0.24

[1] Three of the four small companies without sales data incur compliance costs ranging from $11,520 to $82,850 per year. Therefore, annual company sales for these companies would have to fall below $1.15 or $8.3 million per year for these companies to be impacted at the 1 percent level.

(0.02) percent for the identified small businesses and 0.02 (<0.01) percent for the large businesses.

The U.S. Census Bureau (1998) reports the after-tax return to sales for corporations in the Fabricated Metal Products industry grouping at 5.7 percent for 1997. Corporations with less than $25 million in assets within this grouping experienced similar return to sales of 5.75 percent during this time period. Reviewing the range of costs to be borne by small businesses in light of the profit margins typical of this industry, the Agency has determined the costs are typically small and, overall, do not constitute a significant impact on a substantial number.

Table 4-1. Summary Statistics for SBREFA Screening Analysis of Metal Coil Coating MACT Floor: 1997

	Small		Large		All Companies	
Total Number of Companies	19		30		49	
Annual Compliance Costs (10^3/yr)	$758.1		$6,935.3		$7,693.4	
	Number	Share	Number	Share	Number	Share
Companies with Sales Data[a]	19	100%	30	100%	49	100%
Comp. costs are 0% of sales	7	37%	1	3%	8	16%
Comp. costs are >0 to 1% of sales	11	58%	29	97%	40	82%
Comp. costs are ≥1 to 3% of sales	0	0%	0	0%	0	0%
Comp. costs are ≥3% of sales	1	5%	0	0%	1	2%
Compliance Cost-to-Sales Ratios						
Average	0.24%		0.02%		0.10%	
Median	0.02%		<0.01%		<0.01%	
Maximum	3.24%		0.09%		3.24%	
Minimum	0.00%		0.00%		0.00%	

Note: Assumes no market responses (i.e., price and output adjustments) by regulated entities.

[a] For four small companies without sales data, we approximated their sales by multiplying the reported employment time the average sales per employee for small businesses in the database ($241 per employee).

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APPENDIX A:

SUMMARY DATA FOR COMPANIES OWNING METAL COIL COATING FACILITIES

Table A-1. Summary Data for Companies Operating Metal Coil Coatings Facilities

Company Name	Number of Facilities	Sales(10)	Employment	Small Business
Alcoa Inc.	6	$15,339,800	103,500	No
Allmet Building Products, Inc.	1	$45,000	170	Yes
Alusuisse-Lonza Group Ltd.	1	$6,984,700	29,495	No
American Buildings Co.	1	$440,700	2,850	No
American Nickeloid Co.	2	NA	250	Yes
Amerimax Home Products Inc.	1	$92,000	290	Yes
Arrow Group Industries, Inc.	1	NA	430	Yes
Arvin Industries, Inc.	3	$2,498,700	14,963	No
Berridge Manufacturing Co., Inc.	1	$41,000	122	Yes
Bouras Industries Inc.	1	$190,000	525	No
Centria International	2	$150,000	605	No
Chicago Metallic Corporation	2	$95,300	NA	Yes
Coastal Aluminum Rolling Mills, Inc./ Chromographic Processing Company	1	$10,300	110	Yes
Commonwealth Industries, Inc.	3	$967,900	2,173	No
Consolidated Systems Inc.	1	$650,000	650	No
Crown Cork and Seal Co. Inc.	2	$8,300,000	38,459	No
Decatur Aluminum Corp.	1	NA	270	Yes
Doublecote, L.L.C.	1	$3,600	65	Yes
Eagle-Picher Ind., Inc.	3	$826,100	6,600	No
Edco Products, Inc.	1	$8,000	100	Yes
Englert Inc.	1	$14,700	175	Yes
Federal Mogul Corporation	1	$4,468,700	54,350	No
First American Resources Corp.	1	$45,000	85	Yes
Frederick Cooper Metal Finishing Limited (London)	1	$10,000	85	Yes
Genstar Capital LLC	1	$110,000	NA	No
Hanna Steel Corporation	1	$150,000	500	Yes

Table A-1. Summary Data for Companies Operating Metal Coil Coatings Facilities (continued)

Company Name	Number of Facilities	Sales(1θ)	Employment	Small Business
Hunter Douglas N.V.	1	$1,459,600	13,547	No
Jupiter Aluminum Corp.	1	$80,000	180	Yes
K.B.P. Coil Coaters Inc.	1	$33,000	NA	Yes
Kaiser Aluminum Corporation	1	$2,256,400	9,200	No
Koninklijke Hoogovens NV	1	$5,756,900	21,942	No
Logan Aluminum Inc.	1	NA	750	Yes
Material Sciences Corporation	2	$469,100	1,206	No
NCI Buildings Systems., Inc	4	$675,300	3,700	No
Newell Company	1	$3,234,261	24,647	No
Noranda Inc.	1	$3,909,100	18,000	No
Nucor Corporation	5	$4,151,200	7,200	No
Ormet Corporation	1	$910,000	3,300	No
Polyfibran Technologies, Inc.	1	$60,000	1,000	No
Quanex Corporation	2	$797,500	3,405	No
Reynolds Metals Company	2	$5,859,000	20,000	No
Rollex Corp.	1	$120,000	500	Yes
Sequa Corporation	7	$1,802,400	11,050	No
Springs Industries, Inc.	1	$2,180,500	17,500	No
Stanley Works	1	$2,729,100	18,000	No
USG Corporation	1	$3,130,000	13,700	No
Venturian Corporation	1	$27,579	129	Yes
Wheeling Pittsburgh Steel	3	$642,000	4,000	No
Worthington Industries, Inc.	1	$1,763,100	6,500	No
Totals	82	$83,487,540	456,278	19