Competitiveness Analyses of Alternative SAMI Strategies

Draft Report

Prepared for

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U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Innovative Strategies and Economics Group (C339-01)
Research Triangle Park, NC 27711

EPA Contract Number 68-D-99-024
RTI Project Number 07647.003.272

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EXECUTIVE SUMMARY

The Southern Appalachian Mountains Initiative (SAMI) has developed several emission control strategies that potentially apply to sources in all emitting sectors in the SAMI geographic domain, which includes eight states in the southeastern U.S. As part of the SAMI process, a broad integrated assessment is being conducted to permit a full comparison of the effects of each strategy under consideration. One portion of this integrated assessment is an examination of the socioeconomic impacts associated with the strategies. This is an important consideration because placing restrictions on the manner in which goods may be produced (e.g., by limiting emissions below the level at which they would be under unconstrained economic activity) is generally expected to increase the cost of production, which may result in reductions in output and profits for affected firms and potentially increased product prices for consumers. Because the SAMI strategies are focused on a particular region of the U.S., producers located within the SAMI region may be at a competitive disadvantage relative to producers outside the region. In addition to direct effects on producers, households will experience effects through changes in prices, income, and employment.

Although large costs are associated with the SAMI strategies, the SAMI region will experience significant benefits as well (e.g., better air quality is likely to result in improvements in health, visibility, and recreational opportunities). These benefits may very well outweigh the associated costs for some or all of the strategies under consideration, but conducting a full assessment of the socioeconomic impacts is necessary to determine whether that is the case. This study focuses primarily on the effects of the costs to producers and consumers under the SAMI control strategies. The benefits associated with the SAMI strategies are not assessed in this report. They are covered in other SAMI assessments.

The affected sectors were divided into five categories: utilities, industrial point sources, on-road motor vehicles, nonroad engines/vehicles, and other area sources. Annualized control cost estimates were generated for each of these sectors for two future benchmark years, 2010 and 2040, by E.H. Pechan & Associates (Pechan, 2001) for several different strategies. Although these engineering costs provide an estimate of the resources necessary to comply with the emission

control strategies, they do not incorporate behavioral changes that may occur as a result of the controls. For example, producers may reduce output or even shut down in response to cost increases. These reductions in output are likely to lead to price increases in affected markets, whereby a portion of the emission control costs will be passed on to consumers.

This report provides estimates of the economic impacts to the SAMI region associated with two different control strategies developed by SAMI (denoted B1 and B3) as well as the economic impacts of baseline emission controls (denoted A2), after allowing for behavioral adjustments. The A2 scenario reflects air pollution regulations that are expected to be adopted during the study period regardless of any actions to be taken by the SAMI states, while the B1 and B3 scenarios include a variety of actions that could be taken to further control emissions beyond what would be achieved under A2. Both B1 and B3 call for reductions in emissions from a wide variety of sources, with larger emission reductions over time. However, strategy B3 is generally more stringent than strategy B1.

Ideally, assessment of Scenarios B1 and B3 should focus on their incremental impacts relative to A2. The relevant comparison for policy decisions is the incremental cost and incremental benefit of reducing emissions beyond that achieved under A2, not the total costs and benefits of all emission reductions relative to current conditions. The costs incurred under A2 should be included in generating the baseline for 2010 and 2040, but in assessing whether the benefits of B1 and B3 are greater than their costs, it is important to examine whether the additional gains in such areas as health, visibility, and recreational opportunities above those acquired under A2 are greater than the additional costs required to obtain these gains. Thus, the results provided in the main text of this report focus primarily on the incremental costs of B1 and B3 relative to A2. Appendix B provides additional results, including the total estimated impacts for A2, B1, and B3.

For 2010, we estimated the total losses to consumers and producers to equal $3.1 billion, $5.5 billion, and $10.3 billion for Scenarios A2, B1, and B3, respectively. Thus, the incremental social costs relative to A2 are approximately $2.4 billion for B1 and $7.1 billion for B3. The allocation of these losses between producers and consumers depends on the relative responsiveness of each group to changes in market prices (i.e., the amount by which producers change the quantity they supply and consumers change the quantity they are willing to purchase as the market price changes). Generally, the group that is less responsive to changes in price will bear a larger share of the cost. For example, if consumers of a particular good are very unresponsive to

price, meaning that they would only slightly alter the quantity they purchase as price increases, then producers will be able to pass on much of the control costs with only a small decline in the quantity sold. On the other hand, if consumers are extremely responsive to price, then producers would have very little ability to pass costs on to consumers in the form of higher prices because they would experience large decreases in the quantity sold as they attempted to increase prices. Levels of responsiveness are typically referred to as elasticities, which are defined as the percentage change in quantity supplied or demanded divided by the percentage change in the variable of interest (e.g., price). Based on the elasticities being used in the analysis for producers and consumers in each industry, the social costs are estimated to fall a bit more heavily on consumers (53 to 55 percent of total costs) than producers.

For the energy markets in 2010, the incremental cost of the B1 strategy to energy producers in the SAMI region is estimated to be $1,516.4 million, while energy producers outside the region are estimated to gain $1,178.8 million. Similarly, the incremental cost of the B3 strategy in 2010 is estimated to be $4,750.0 million for SAMI energy producers, while energy producers outside the region gain $3,798.6 million. Because of time constraints and data limitations, all SAMI industries were assumed to compete in perfectly competitive national markets, which limits their ability to pass on increased costs relative to the case where they compete in regional markets (because they are being assumed to face competition from firms outside the region that are not directly affected by the SAMI control strategies). This is especially true in the electricity market, which faces a large share of total costs. Because this market was modeled at the national level, which ignores spatial transmission limits and regulatory limits on selling power across regions, it will tend to overstate the losses to SAMI power producers and the gains to power producers outside the region.

The largest price increase in any industry modeled is in the electricity market for all scenarios, which is not surprising given the large direct costs falling on this sector. The electricity price is estimated to increase by 0.9 percent, 1.5 percent, and 2.8 percent in 2010 for A2, B1, and B3, respectively. Thus, the incremental impacts of B1 and B3 are to increase the price of electricity by about 0.6 percent and 1.9 percent. Some fuel-switching towards petroleum products and natural gas is being projected because of the large increase in the relative price of electricity, while the demand for coal decreases as a result of the estimated decline in electricity production (power producers are a major consumer of coal). In addition, the SAMI strategies are expected to lead to a large shift from coal to natural gas to meet emission limits. However, this shift has already been

factored into the costs generated by Pechan (2001) and does not show up in the Economic Model for Policy Analysis of Control Techniques (EMPACT) results. The incremental losses for residential consumers associated with all energy market price changes are estimated to be approximately $4.90 per U.S. household under B1 and $15.80 per U.S. household under B3. Incremental changes in price and quantity in markets other than the energy sector are generally fairly small, with the largest change occurring in the paper (NAICS 322) sector under B3. Even in that case, the price is estimated to increase by only 0.11 percent, while the quantity decreases by 0.12 percent. This implies a loss to paper consumers of approximately $1.50 per U.S. household under B1 and $2.90 per U.S. household under B3.

For 2040, the total estimated costs are $6.8 billion, $8.2 billion, and $15.3 billion, respectively. The incremental social costs of the rule are approximately $1.4 billion for B1 and $8.5 billion for B3. Based on the elasticities used in the analysis, the distribution of costs between consumers and producers is similar to that described for 2010, with consumers bearing slightly more than half the total social costs of the rule.

Similar to the case for 2010, the model estimates that SAMI energy producers will experience losses, while energy producers outside the region will gain. Incremental losses to SAMI producers are estimated to be $721.1 million under B1 and $5,410.6 million for B3, while energy producers outside the region are estimated to gain $487.5 million and $3,811.9 million under B1 and B3, respectively. The assumption of national competitive energy markets is once again critical to this result and may lead to an overstatement of the losses to SAMI producers. However, this may be a better assumption for 2040 than 2010 if deregulation of energy markets continues to progress over time.

The average price of electricity is expected to increase by 1.2 percent, 1.3 percent, and 2.4 percent for A2, B1, and B3, respectively, as a result of direct and indirect costs on the electricity sector. Therefore, the incremental impacts of B1 and B3 on electricity prices are about 0.1 percent and 1.2 percent, respectively. Just as in 2010, the quantity of electricity falls in all three scenarios because of the increase in production costs. There is some fuel switching away from electricity and towards natural gas and petroleum products as a result of electricity price increases. In addition, there is likely to be large shifts in fuel usage from coal to natural gas as a result of the SAMI strategies. However, as in 2010, much of the fuel switching that would take place does not show up in the EMPACT model results because it has already been factored into the costs that drive the

economic model. Despite some fuel switching towards natural gas, the EMPACT model is projecting an overall reduction in demand for natural gas as a result of reduced demand from the electricity generation sector. However, recall that this model does not fully capture the fuel switching expected to take place between coal and natural gas, as mentioned above. The incremental loss to consumers associated with all energy market price changes is $1.60 per U.S. household under B1 and $12.00 per household under B3.

Because of the national increases in energy prices and direct compliance costs in some final product sectors, agriculture, mining, manufacturing, and commercial markets generally experience consumer and producer welfare losses both inside and outside of the SAMI region. Electricity-intensive industries experience the largest welfare changes due to fairly large increases in electricity prices. However, the distribution of these costs between consumers and producers varies across industries depending on the relevant elasticities in each market. Changes in price and quantity are well below 0.5 percent in each market under all scenarios examined, with the largest changes occurring in the paper market once again. The estimated loss to consumers associated with higher paper prices is $0.77 per U.S. household under B1 and $2.38 per household under B3.

In addition to the results from the models using the base set of elasticities, sensitivity analyses were also performed varying the elasticities used in the model. As expected, there is little change in the total social cost estimated under any of the scenarios and the qualitative impacts on market prices and quantities are similar to the base case. However, the costs are reallocated towards either consumers or producers depending on the elasticities assumed. As described above, as either consumers or producers become relatively more responsive to price relative to the other group, they will bear a smaller fraction of the costs.

We also considered the impacts of demand shifts in the environmental goods and services sector (NAICS 333411 and 333412) that may be caused by the SAMI strategies in 2040 based on capital investment cost data reported by Pechan (2001). For 2040, the demand shifts in these industries were estimated to be 0.15, 4.80, and 6.74 percent of national baseline output in the environmental goods and services sector for A2, B1, and B3, respectively. The model simulations project price increases of 0.12 to 5.1 percent under these scenarios, suggesting upward pressure on the price of compliance capital as a result of the rule. Insufficient data on utility capital costs for 2010 prevented us from running similar simulations for that year.

To provide a sense of the importance of linkages between markets and regional detail, we purchased input-output data from IMPLAN for the state of Georgia (GA). These data show the inputs used per unit of output for 528 sectors of the economy as well as the proportion of inputs purchased within the region and the proportion of output sold within the region, among other information. GA was chosen because it is the state with the highest estimated total control costs under both B1 and B3. These data reveal that 78 percent of electricity purchased within GA is currently being generated within the state. The percentage purchased from all states within the SAMI region (including GA) would surely be higher still given the geographical proximity of other SAMI states. Although consumers may switch to electricity from outside the SAMI region in response to price increases in the SAMI region to some extent, the large percentage of power that is currently purchased within the state suggests that there may be barriers to doing so. It also suggests that the market for power may more accurately be represented as a regional market than a national market. This is true not only for electricity, but for many other industries as well. There is tremendous variation across the various goods and services produced by each IMPLAN sector and across specific inputs used in producing those outputs as to the proportion of each input purchased from suppliers within the state of GA. However, it is generally true that a disproportionate amount of inputs is purchased from within the state. This may suggest that, for reasons such as transportation costs, many of the affected markets may be at least somewhat regional as opposed to truly national markets. To the extent this is true, producers within the SAMI region will tend to be better off than the current model suggests and consumers worse off. This is because producers within the region would face less competition from outside the region and would have more ability to raise prices. On the other hand, the producers outside the region would tend to be worse off and the consumers outside the SAMI region better off. This is because producers and consumers outside the region experience a smaller price increase due to a lesser increase in demand for goods and services from producers outside the SAMI region by consumers inside the region.

In addition to identifying the proportion of goods and services purchased locally, these data reveal how much of each good or service is purchased by each industry in the state. This information could be used to identify the indirect impacts on these industries specific to GA that may result from electricity price increases, for example. The data also provide information on the inputs purchased by each industry in the state, allowing identification of linkages between the affected industries and their suppliers. In the GA electricity production sector, the largest

expenditures on inputs purchased in GA are for maintenance and repair ($184 million within GA), railroads and related services ($44.7 million), computer and data processing services ($43.0 million), banking ($33.0 million), and gas production and distribution ($31.1 million). To the extent that electricity production in GA decreases under B1 and B3, these industries are likely to be affected by a decrease in the demand for their products. Similarly for each of the affected industries, the current economic model may not capture impacts on many suppliers of inputs to that industry.

Finally, the potential impacts on regional tourism are discussed qualitatively. Because the SAMI strategies will result in cleaner air and better visibility in the SAMI region, particularly in the national parks and other Class I areas that are the main focus of the strategies, it is likely that tourism to the region will increase. Visibility is an important aspect of a visit to these areas, and extending the visual range by a few miles is likely to substantially enhance the value of a recreational trip to these areas. To the extent that people place a higher value on recreational trips to the SAMI region, it is expected that visitation will increase. Thus, some positive impacts on tourism-related sectors are possible that may partially offset losses in other sectors.

SECTION 1

INTRODUCTION

Research and monitoring of conditions in the national parks and wilderness areas of the Southern Appalachian mountains have documented adverse air pollution effects. The primary impacts of concern include regional haze, acid deposition effects on streams and aquatic life, acid deposition effects on forests, and the effects of ozone on forests. The air pollution levels in the region are threatening the natural ecosystems, resources, diversity, and beauty of the region. For example, it is estimated that the average annual visual range in the Southern Appalachians has decreased from a distance of 93 miles to the current average of 22 miles as a result of human activity (SAMI, 2002). In addition to the aesthetic values of this region, these areas are very important to the culture and economy of the surrounding states.

The Southern Appalachian Mountains Initiative (SAMI) was created to identify and recommend approaches to improve air quality in Southern Appalachia, with a special focus on the ten Class I[1] national parks and wilderness areas located within the region. Numerous parties are involved in the SAMI process, including the eight southern states surrounding the Southern Appalachian mountains, the Environmental Protection Agency (EPA), the National Park Service (NPS), the Forest Service (FS), industry, academics, environmental organizations, and interested members of the general public. SAMI's goal is to identify and recommend policy measures to improve air quality through the cooperative effort of all stakeholders. As part of this goal, SAMI has developed several emission control strategies that potentially apply to sources in all emitting sectors in the SAMI geographic domain.

The SAMI strategies include restrictions on emissions from electric utilities, other industrial point sources, on-road mobile sources, nonroad mobile sources, and area sources. As part of the SAMI process, a broad integrated assessment is being conducted to permit a full comparison of the

[1]The Clean Air Act defines mandatory Class I federal areas as certain national parks (over 6,000 acres), wilderness areas (over 5,000 acres), national memorial parks (over 5,000 acres), and international parks that were in existence as of August 1977.

effects of each strategy under consideration. The sweeping set of restrictions under consideration may cause substantial impacts on the economy of the SAMI region. Thus, one important aspect of the integrated assessment is to evaluate the socioeconomic impacts associated with the alternative approaches and examine the effects on competitiveness for those industries within the SAMI region that would bear the brunt of the control costs. Because the SAMI strategies are focused on a particular region of the U.S., producers located within the SAMI region may be at a competitive disadvantage relative to producers outside the region following implementation of the strategies. In addition to the direct effects of the strategy compliance costs on producers, households will experience effects through changes in prices, income, and employment.

Although large incremental costs are associated with compliance with the SAMI strategies, there are clearly significant benefits as well. Improving air quality in the region will result in improvements in health, visibility, and recreational opportunities for residents and visitors to the region. To compare the benefits and costs associated with implementation of the strategies, conducting a full assessment of the socioeconomic impacts of each strategy is necessary. This independent study focuses primarily on the effects of the costs to producers and consumers under the SAMI control strategies. The benefits associated with the SAMI strategies are not assessed in this report. They are covered in other SAMI assessments.

The affected sectors were divided into five categories: utilities, industrial point sources, on-road motor vehicles, nonroad engines/vehicles, and other area sources. Annualized control cost estimates were generated for two future benchmark years, 2010 and 2040, for comparison across several different strategies (Pechan, 2001). Although the costs generated in this portion of the integrated assessment provide an estimate of the resources necessary to comply with the emission control strategies, they do not incorporate some of the behavioral changes that may occur as a result of the controls. For example, producers may reduce output or even shut down their operations as a result of the increased cost of production. These reductions in output are likely to lead to price increases in affected markets, whereby a portion of the emission control costs will be passed on to consumers. To incorporate these behavioral adjustments, we use a model grounded in economic theory that explicitly models the changes in market prices and production expected to result from the SAMI strategies being analyzed. To the extent that producers are able to increase prices in response to increased costs of production, consumers may bear a large share of the regulatory burden, mitigating the impact on producers' profits. On the other hand, in markets

where producers have little ability to increase prices, the losses to producers from a given increase in their costs will be much larger.

This report briefly presents the major results of economic impact analyses for two different SAMI control strategies, known as the B1 and B3 strategies, as well as the baseline emission controls (denoted A2). Because of time constraints and data limitations, only the costs estimated by Pechan (2001) for utilities and point sources in selected industries of most interest to SAMI were used as inputs into the economic model. Thus, the results presented in this report allow a comparison of the impacts on some of the key affected industries under different strategies, but they represent the impacts associated with only a subset of the total costs of each strategy. In addition to these quantitative impact estimates, the report provides qualitative discussions of fuel switching that may take place as a result of the strategies and potential benefits to the regional economy from increased tourism.

SECTION 2

MODELING APPROACH

The impacts of the SAMI strategies were estimated using the Economic Model for Policy Analysis of Control Techniques (EMPACT), a multimarket model that focuses on the energy market. This model was developed to support EPA analyses of the economic impacts of regulations on turbines, boilers, reciprocating internal combustion engines, and process heaters. However, the model was substantially modified to allow its application to the current analyses of SAMI strategies. The EMPACT model includes linkages between the industrial, commercial, transportation, and residential sectors and the petroleum, natural gas, electricity, and coal markets.[1] Because the SAMI strategies being analyzed affect the cost of energy, an input into many production processes, complex market interactions need to be captured to provide an accurate picture of the distribution of regulatory costs. The EMPACT model provides a manageable approach to incorporate interactions between energy markets and final product markets. However, it is not a full computable general equilibrium (CGE) model. Although the EMPACT model allows consideration of the linkages between energy markets and consumers of energy, it does not include linkages between the sectors themselves. For example, a price increase in a particular energy market causes a negative supply shift for industries that use that energy source,[2] but the model does not currently contain a way to estimate the effects of a change in output for one industry on other industries that either supply inputs to that industry or purchase goods from that industry. Nonetheless, including linkages between energy markets and final product sectors and estimating market adjustments in different markets simultaneously using an integrated modeling

[1]These markets are defined at the two- and three-digit North American Industry Classification System (NAICS) code level. This allows for a fairly disaggregated examination of the regulation's impact on producers. However, if the costs of the regulation are concentrated on a particular subset of one of these markets, then treating the cost as if it fell on the entire NAICS code may still underestimate the impacts on the subset of producers affected by the regulation.

[2]This negative supply shift also causes feedback effects in the energy markets.

approach such as EMPACT provide significant advantages over models that look at individual industries.

2.1 Summary of EMPACT Model

Figure 2-1 presents an overview of the key market linkages included in the economic impact model. The analysis' emphasis is on the energy supply chain and the consumption of energy by producers of goods and services. The industries that have direct compliance costs in the model under the SAMI strategies are the electricity, textiles, paper/paperboard, chemicals, primary metals, natural gas transmission, and liquid fuel providers industries.[3] However, changes in the equilibrium prices and quantities of energy and goods and services affect all sectors of the economy (see Figure 2-1). This analysis explicitly models the linkages between these market segments to capture both the direct costs of compliance and the indirect costs due to changes in prices. For example, production costs will increase for the paper industry as a result of the capital investments and monitoring costs required to implement the SAMI strategies, as well as the resulting increase in the price of electricity used as an energy input in the production process.

The economic model also captures behavioral changes of producers of goods and services that feed back into the energy markets. Changes in production levels and fuel switching in the manufacturing process affect the demand for British thermal units (Btus) in fuel markets. The change in output is determined by the size of the cost increase per Btu (typically variable cost per output), the facility's production function (slope of supply curve), and the demand characteristics of the facility's downstream market (other market suppliers and market demanders). For example, if consumers' demand for a product is not very sensitive to price, then producers can pass the majority of the cost of the regulation through to consumers and output may not change appreciably. However, if only a small proportion of market output is produced by producers affected by the regulation, then competition will prevent the affected producers from raising their prices significantly. In addition to output changes that influence the demand for Btus, firms may alter the fuels used in their production process in response to changes in relative prices. Fuel-switching impacts are modeled using cross-price elasticities of demand taken from U.S. Department of Energy (DOE) data between energy sources and own-price elasticities. For example, a cross-price elasticity of demand between natural gas and electricity of 0.5 implies that a 1 percent increase in the price of

[3]Although additional industries are expected to face direct compliance costs under the SAMI strategies, time constraints and data limitations precluded their use in the current version of the economic model.

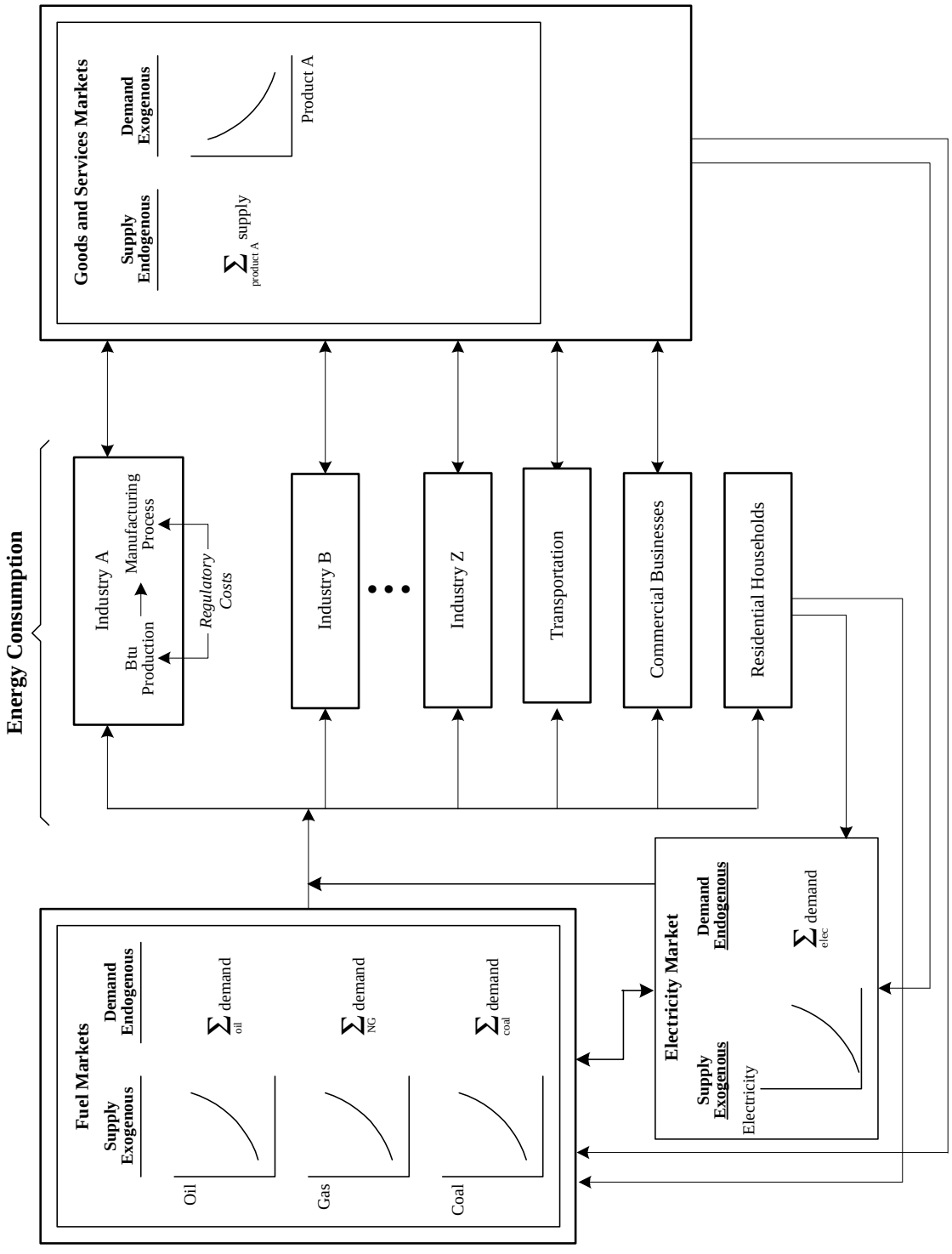


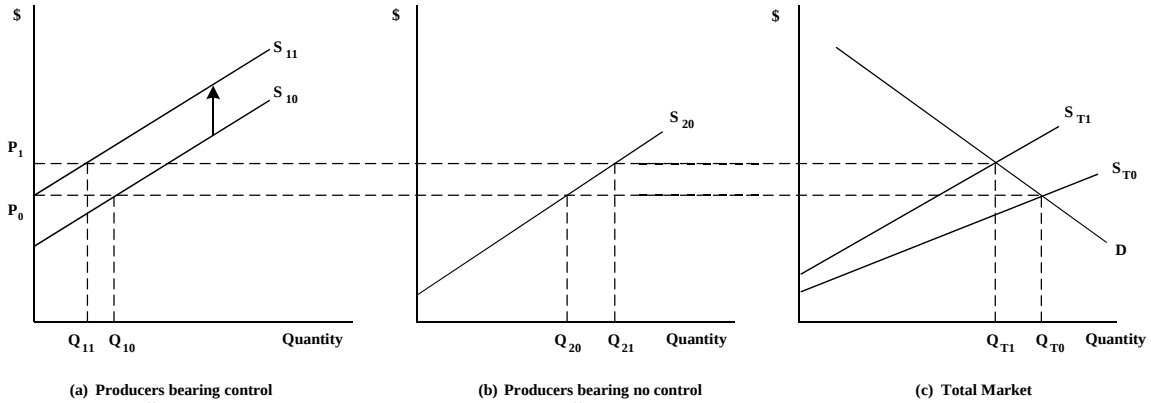
Figure 2-1. Links Between Energy and Goods and Services Markets

electricity will lead to a 0.5 percent increase in the demand for natural gas, and an own-price elasticity of demand of 0.25 implies that a 1 percent increase in the price of electricity will lead to a 0.25 percent decrease in the demand for electricity.

One possible feedback pathway that this analysis does *not* model is technical changes in the manufacturing process. For example, if the cost of Btus increases, a facility may use measures to increase manufacturing efficiency or capture waste heat. Facilities could also possibly change the input mix that they use, substituting other inputs for fuel. These facility-level responses will also act to reduce pollution, but including these responses is beyond the scope of this analysis.

For this study, the energy and goods and services markets were modeled as nationally competitive markets. They were modeled in this way due to data limitations and time constraints. In addition, many of these industries contain numerous firms producing relatively homogenous goods, which implies that an assumption of nationally competitive markets is reasonable as long as transportation costs are not too large. The direct costs of compliance lead to an upward shift in the total market supply for affected industries. Figure 2-2 illustrates these shifts in the supply curve for a representative market. In addition to the direct costs, markets will be indirectly affected through changes in fuel prices. For example, electricity generators are extremely large consumers of coal, natural gas, and petroleum products. Thus, some of the impact of control costs on the petroleum industry will be passed on to the electricity industry in the form of higher input costs. Just as for the direct costs, these indirect costs will lead to upward shifts in the supply curves of the industries facing higher energy costs because production costs have increased.

The demand curves in the affected markets are assumed to remain unchanged as a result of the strategies with the exception of the demand for energy. For example, the demand for electricity in this model is derived by aggregating across the goods and services markets and the residential sector. Because of direct compliance costs on the goods and services markets, which reduce the output of those sectors and hence their derived demand for energy as an input in the production process, the demand for electricity will decline. Therefore, it is ambiguous whether the equilibrium quantity of electricity will rise or fall. The changes in price and quantity are determined by the relative magnitude of the shifts in the supply and demand curves. Similarly, the demand curves for petroleum products, natural gas, and coal are affected by changes in output in the goods and services markets.



P_0 = market price without regulation
P_1 = market price with regulation
S_{10} = supply function for affected firms without regulation
S_{11} = supply function for affected firms with regulation
Q_{10} = quantity sold for affected firms without regulation
Q_{11} = quantity sold for affected firms with regulation
S_{20} = supply function for unaffected firms both with and without regulation
Q_{20} = quantity sold for unaffected firms without regulation
Q_{21} = quantity sold for unaffected firms with regulation
S_{T0} = total market supply function without regulation
S_{T1} = total market supply function with regulation
Q_{T0} = total market quantity sold without regulation
Q_{T1} = total market quantity sold with regulation

Figure 2-2. Market Effects of Regulation-Induced Costs

2.2 Operationalizing the EMPACT Model

The model was applied for both 2010 and 2040 using baseline projections of revenues in each final product market and each energy sector, fuel intensities, energy usage by sector, and energy prices. The data were separated into the SAMI region and the rest of the U.S. to capture regional supply effects. After developing the baseline data, EPA used the compliance costs falling on each sector to shift the supply curves in directly affected industries. In addition, firms experience supply shifts due to changes in the prices of energy inputs. As mentioned above, the SAMI strategies would cause producers in a variety of industries within the SAMI region to add costly controls to their production processes and to incur monitoring costs to ensure that the controls are working properly. Therefore, the strategies would increase production costs in those industries and

cause these directly affected firms to reduce the quantity they are willing to supply at any given price. This is reflected in the model by shifting the relevant supply curves by the per-unit increase in costs for the share of affected production (i.e., located in the SAMI region). In addition to the many markets that are directly affected, almost all other markets will feel impacts despite having no direct control costs. Firms in these markets generally will face changes in the price of energy that will affect their production decisions. Even industries located outside of the SAMI region will typically face increases in energy costs as industries within the SAMI region begin to demand more power from outside the SAMI region as a substitute for the now relatively more expensive energy sources facing the costs of the SAMI control strategies. Changes in manufacturers' Btu demands due to fuel switching and changes in production levels feed back into the energy markets.

This model was operationalized using the EMPACT computer spreadsheet model, which integrates the direct compliance cost inputs and the market-level adjustment parameters to estimate the regulation's impact on the price and quantity in each market being analyzed. The baseline scenario is "shocked" by introducing the compliance costs, and the supply and demand for each market are allowed to adjust to account for increased production costs. At the heart of the model is a market-clearing algorithm that compares the total quantity supplied to the total quantity demanded for each market commodity and iterates over commodity prices until equilibrium is reached in all markets being modeled. The EMPACT model was also used to estimate the economic impact of the regulation in the sectors of the economy being modeled. The share of costs borne by producers and consumers is determined by the new equilibrium price and quantity in each market.

2.3 Calculating Changes in Social Welfare

The SAMI emission control strategies will affect almost every sector of the economy, either directly through control costs or indirectly through changes in the price of energy and final products. For example, a share of control costs that originate in the energy markets is passed through the goods and services markets and borne by both the producers and consumers of their products. Economists commonly use consumer and producer surplus measures to estimate changes in the welfare of market participants. Consumer surplus is the maximum amount that consumers would have been willing to pay for the quantity of a good purchased less their expenditures on that good. Thus, consumer surplus is a measure of the gain that consumers get from being able to purchase a good for less than their valuation of that good. The demand curve represents the maximum amount

that consumers would be willing to pay for each unit of output. Therefore, consumer surplus is measured as the distance between the demand curve and the equilibrium price summed across all units of the good purchased. Producer surplus, on the other hand, is the total revenue that producers receive for their product less the minimum amount necessary for them to make the product available. The supply curve represents the minimum amount that sellers would be willing to accept for each unit of output, which is equal to their marginal costs. Consumer and producer surplus can be thought of as the net benefits associated with consumption and production, respectively.

Changes in supply and demand will lead to changes in consumer and producer surplus. To estimate the total change in social welfare without double-counting impacts across the linked markets being modeled, EPA quantified social welfare changes for the following categories:

- change in producer surplus in the energy markets;
- change in producer surplus in the goods and services markets;
- change in consumer surplus in the goods and services markets; and
- change in consumer surplus in the residential sector.

Figure 2-3 illustrates the change in producer and consumer surplus in the intermediate energy market and the goods and services markets. For example, assume a simple world with only one energy market, wholesale electricity, and one product market, pulp and paper. If the regulation increases the cost of generating wholesale electricity, then part of the cost of the regulation will be borne by the electricity producers as decreased producer surplus, and part of the costs will be passed on to the pulp and paper manufacturers. In Figure 2-3(a), the pulp and paper manufacturers are the consumers of electricity, so the change in consumer surplus is displayed. This change in consumer surplus in the energy market is captured by the product market (because the consumer is the pulp and paper industry in this case), where it is split between consumer surplus and producer surplus in those markets. Figure 2-3(b) shows the change in producer surplus in the energy market, where B represents an increase in producer surplus and C represents a decrease.

As shown in Figures 2-3(c) and 2-3(d), the cost affects the pulp and paper industry by shifting up the supply curve in the pulp and paper market. These higher electricity prices therefore lead to costs in the pulp and paper industry that are distributed between producers and consumers

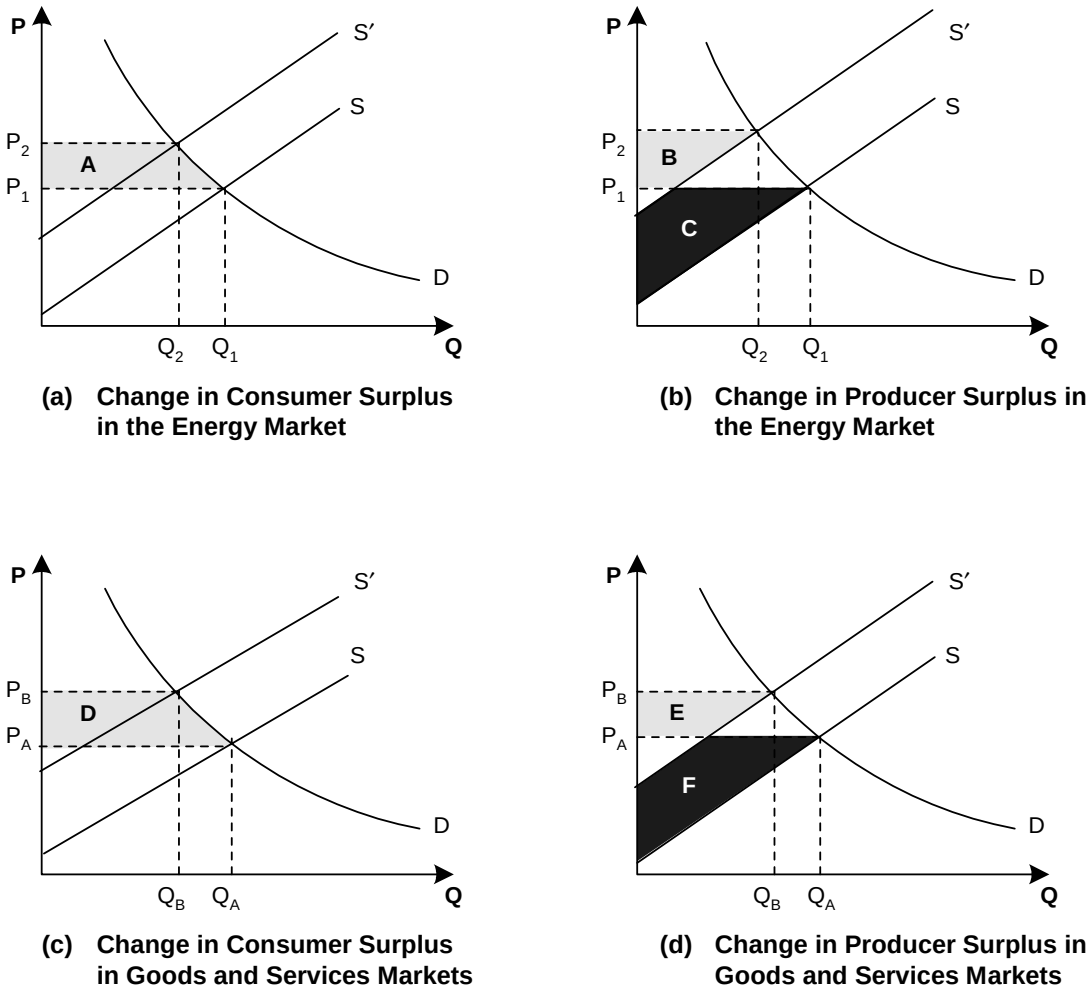


Figure 2-3. Changes in Economic Welfare with Regulation

of paper products in the form of lower producer surplus and lower consumer surplus. Note that the change in consumer surplus in the intermediate energy market must equal the total change in consumer and producer surplus in the product market. Thus, to avoid double-counting, the change in consumer surplus in the intermediate energy market was not quantified; instead the total change in social welfare was calculated as

$$\text{Change in Social Welfare} = \sum\Delta\text{PSE} + \sum\Delta\text{PSF} + \sum\Delta\text{CSF} + \sum\Delta\text{CSR} \qquad (2.1)$$

where

ΔPSE = change in producer surplus in the energy markets;

ΔPSF = change in producer surplus in the goods and services markets;

ΔCSF = change in consumer surplus in the goods and services markets; and

ΔCSR = change in consumer surplus in the commercial, residential, and transportation energy markets.

Appendix A contains the mathematical algorithms used to calculate the change in producer and consumer surplus in the appropriate markets. The market analysis was conducted for the years 2010 and 2040 and incorporates projected growth in both supply and demand.

We can summarize the operations of EMPACT in this independent study as follows. The engineering control costs estimated by Pechan (2001) are inputs (regulatory "shocks") into the market model. The magnitude and distribution of the regulatory costs' impact on the economy depend on the relative size of the impact on individual markets (relative shift of the market supply curves) and the behavioral responses of producers and consumers in each market. The allocation of social welfare losses between producers and consumers depends on the relative responsiveness of each group to changes in market prices (i.e., the amount by which producers change the quantity they supply and consumers change the quantity they are willing to purchase as the market price changes). Generally, the group that is less responsive to changes in price will bear a larger share of the cost. For example, if consumers of a particular good are very unresponsive to price, meaning that they would only slightly alter the quantity they purchase as price increases, then producers will be able to pass on much of the control costs with only a small decline in the quantity sold. On the other hand, if consumers are extremely responsive to price, then producers would have very little ability to pass costs on to consumers in the form of higher prices because they would experience large decreases in the quantity sold as they attempted to increase prices. Levels of responsiveness are typically referred to as elasticities, which are defined as the percentage change in quantity supplied or demanded divided by the percentage change in the variable of interest (e.g., price).

SECTION 3

DATA

To estimate the model for the SAMI region, data were collected from several governmental and trade associations sources. Where data limitations existed, EPA organized the data in a manner that could best be incorporated into the model structure of EMPACT. The data used in each part of the model are briefly described below.

3.1 Energy Markets

EPA obtained baseline equilibrium quantities[1] and prices for each energy market (petroleum, natural gas, electricity, and coal) using the latest DOE forecasts reported in the Annual Energy Outlook (AEO) 2002 (DOE, 2002). Although national and regional data are reported in the supplemental tables, no state-level forecasts are available from this report. Therefore, we used energy data in two Census regions, the South Atlantic and East South Central regions, to approximate energy supply in the SAMI region. These regions do not exactly overlap with the SAMI region (they include a couple of non-SAMI states), but using those regions provides the best match to the SAMI region given available data. The total projected revenue for each energy market in 2010 was calculated by multiplying the projected quantity and price data for that year. Because the AEO 2002 only provides projections through 2020, EPA estimated energy quantities and prices in 2040 by applying the projected annual rates of change for 2010 to 2020 to the period from 2020 to 2040.

The AEO 2002 characterizes demand and provides consumption projections for four sectors: residential, industrial, commercial, and transportation. EPA modeled the residential and transportation (other than trucking and railroads, which were broken out separately) sectors using these data and demand elasticities. In contrast, the Agency developed a series of partial equilibrium

[1]EPA used energy consumption data as the observable equilibrium quantity supplied and demanded in the energy markets. Quantities are reported in quadrillion Btus.

models for the other sectors where energy demand is derived from supply decisions of producers in these markets.[2] The following sections describe the data inputs for these markets.

3.2 Agriculture, Mining, and Manufacturing Markets

Baseline output and energy consumption for the agriculture, mining, and manufacturing sectors were characterized using projected industry-level national and gross state product (GSP) data for 1998 to 2045 from the Bureau of Economic Analysis (BEA), 1997 industry value of shipments data from the U.S. Bureau of the Census (2002), and AEO 2002 industrial-sector energy consumption and fuel intensity forecasts. We used the national annual industry-level growth rates reported for the 1998 to 2045 period and value of shipments data to estimate the 2010 and 2040 baseline revenues for the original 23 industries included in the EMPACT model (in 2000$). In addition, we disaggregated four industries of greatest interest to SAMI participants (textiles, paper/paperboard products, chemicals, and primary metals) using state-level shipment data and GSP growth rates to characterize impacts on suppliers located in the eight states of the SAMI region.

To specify the links between the energy markets and these sectors, the Agency computed energy demand and fuel cost shares using fuel intensity ratios (Btu/$) for 2010 reported in the AEO 2002 Supplemental Tables.[3] Using this approach, the projected demand for agriculture, mining, and manufacturing were reasonably consistent with the data reported for the industrial sector.[4] The Agency applied scaling factors to these initial energy demand estimates to make them consistent with baseline equilibrium quantities in the energy markets.

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[2]We assumed that producers consume fuels in fixed proportions (Btus/unit of output) for the entire range of their output for a given set of energy prices. However, these proportions are allowed to vary when energy prices change using a simple fuel-switching algorithm developed for the EMPACT model.

[3]In AEO 2002, fuel intensities are only projected through 2020. Therefore, EPA estimated 2040 fuel intensities by applying the reported national annual rates of change in fuel intensity (1.5 percent annual reduction in fuel intensity) for 2020 to 2040.

[4]Energy demand by the petroleum, natural gas, and coal sectors is also assumed to be included in the industrial sector. Therefore, demand data for these three energy sectors were calculated in a fashion similar to that of the other industrial sectors. In contrast, the AEO 2002 reports energy demand for electricity generators separately.

3.3 Commercial Markets

The commercial sector (NAICS 42-45;51-55;61-72) is modeled as a single national market in the EMPACT model because this model emphasizes the energy markets and the impacts of changes in energy prices on energy users. Because the most energy-intensive sectors are in the manufacturing industries and more disaggregated data on energy use are available for these industries, those industries were disaggregated in the EMPACT model, while industries in the commercial sector are not currently broken out. The value of shipments for the commercial sector was projected to 2010 and 2040 using BEA national growth projections. The AEO 2002 provides energy demand projections for this sector for 2010. EPA estimated energy demand in 2040 assuming the annual rates of change projected for 2010 to 2020 will continue to apply for the years from 2020 to 2040.

3.4 Transportation Market

For this analysis, EPA divided the transportation market into three segments—trucking, railroads, and other transportation—to reflect the particular interest SAMI participants have in the effects of the proposed strategies on trucking and railroads.[5] Baseline revenue data for the trucking industry in 2010 and 2040 were computed using census data and BEA growth rates. Similar to other manufacturing industries of interest, state-level census data were available to characterize supply for each SAMI state. In contrast, census data were unavailable for the railroad sector. Therefore, EPA estimated baseline revenue data for this industry using Association of American Railroads (AAR) (2002) data and BEA growth rates. Railroad revenue data were then apportioned among the SAMI region and the rest of the United States based on employment data reported by AAR. The AEO 2002 provides energy demand projections for the transportation industries for 2010. EPA estimated energy demand in 2040 assuming the annual growth rates are the same for 2020 to 2040 as those reported by AEO 2002 for 2010 to 2020.

3.5 Compliance Costs

The direct compliance costs going into the EMPACT model are less than the total costs estimated in the Pechan cost report because we only have cost data by industry for seven selected industries of most interest to the SAMI workgroup. We are using the total estimated compliance

[5]However, given data limitations and time constraints, there are currently no direct costs going into the model for either of these transportation industries.

cost for electric utilities and the costs provided for point sources in six other key industries (textiles, paper/paperboard, chemicals, primary metals, natural gas transmission, and liquid fuel providers) to drive the model results. Pechan (2001) estimated all of the compliance costs going into the model. The total annual compliance costs currently being used in the model for 2010 are approximately $3.1 billion for A2, $5.6 billion for B1, and $10.5 billion for B3. The equivalent compliance costs for 2040 are $6.9 billion, $8.4 billion, and $15.7 billion, respectively. All of these costs are in terms of year 2000 dollars (i.e., they have been adjusted to remove the effects of inflation so that they can more readily be compared across years).

SECTION 4

MULTIMARKET MODEL RESULTS

Results were estimated for several different scenarios, including under the A2, B1, and B3 strategies for both 2010 and 2040 and sensitivity analyses for changes in the supply and demand elasticities. In addition, two more scenarios are estimated that examine the impacts of reduced compliance costs due to learning effects and demand shifts for environmental goods and services. Ideally, assessment of Scenarios B1 and B3 should focus on their incremental impacts relative to A2. The relevant comparison for policy decisions is the incremental impact of reducing emissions beyond that achieved under A2, not the total impact of all emission reductions relative to current conditions. Thus, the results provided in the main text of this report focus primarily on the incremental costs of B1 and B3 relative to A2. Appendix B provides additional results, including the total estimated impacts for A2, B1, and B3 and the results of the supply and demand elasticity sensitivity analyses.

4.1 Results in Brief

Estimates of changes in prices, quantities, and consumer and producer welfare in energy markets as well as a number of goods and services markets were estimated for SAMI A2, B1, and B3 strategies both 2010 and 2040. For 2010, we estimated the total losses to consumers and producers to equal $3.1 billion, $5.5 billion, and $10.3 billion for A2, B1, and B3, respectively. This implies that the incremental social costs of implementing SAMI strategies relative to the A2 baseline are approximately $2.4 billion for B1 and $7.1 billion for B3. For 2040, the total social welfare losses were estimated to be $6.8 billion, $8.2 billion, and $15.3 billion for A2, B1, and B3, respectively, implying incremental costs of $1.4 billion for B1 and $8.5 billion for B3. The allocation of these losses between producers and consumers depends on supply and demand price elasticities in each market. Based on the primary elasticities used in the analysis (see Appendix A), slightly more than half the social costs are estimated to fall on consumers in both 2010 and 2040.

For the energy markets, large losses are estimated for producers within the SAMI region, while energy producers in the rest of the United States experience large gains. In 2010, the

incremental social cost of the B1 strategy to energy producers in the SAMI region relative to the A2 baseline is estimated to be $1,516.4 million, while energy producers outside the region are estimated to gain $1,178.8 million in producer surplus. Similarly, the incremental social cost of the B3 strategy in 2010 is estimated to be $4,750.0 million for SAMI energy producers with gains of $3,798.6 million in producer surplus for energy producers outside the region. The equivalent estimates for 2040 are losses for SAMI producers of $721.1 million under B1 and $5,410.6 million under B3, with producer surplus gains of $487.5 million for B1 and $3,811.9 million for B3 for those energy producers outside the region. However, the assumption of perfectly competitive national energy markets is critical to these results, especially in the market for electricity. To the extent that spatial transmission limits and government regulation continues to limit the ability of producers to sell power across regions in 2010 and 2040, these results will tend to overstate the losses to SAMI power producers and the gains to power producers outside the SAMI region.

The largest price effects in any market modeled are in the electricity market, which is to be expected given the large share of direct costs falling on this sector. The price of electricity is estimated to increase by 0.9 percent, 1.5 percent, and 2.8 percent in 2010 for A2, B1, and B3, respectively. This implies the incremental impacts of B1 and B3 are to increase the price of electricity by about 0.6 and 1.9 percent, respectively, compared with the prices that would be expected under baseline conditions. In 2040, the incremental impacts of B1 and B3 are projected to be price increases of about 0.1 percent and 1.2 percent, respectively. The incremental consumer surplus losses for residential customers associated with all price changes in the energy markets are estimated to be approximately $4.90 per U.S. household under B1 and $15.80 per household under B3 for 2010. For 2040, the incremental losses are estimated to be $1.60 per U.S. household under B1 and $12.50 per household under B3.

Because of national increases in energy prices and direct compliance costs in some final product sectors, agriculture, mining, manufacturing, and commercial markets generally experience consumer and producer welfare losses both inside and outside the SAMI region. There are some exceptions, though. In particular, where the compliance costs are very low in some regions relative to others, the regions with low compliance costs sometimes experience gains because the estimated increase in market price due to large reductions in supply overall is greater than the cost per unit in low cost regions. In addition, the distribution of costs between consumers and producers varies across industries depending on the relevant elasticities in each market. Incremental changes in price and quantity are well below 0.5 percent in each nonenergy market, with the largest changes

occurring in the paper industry in both 2010 and 2040. In 2010, the estimated incremental welfare loss to consumers associated with higher paper prices is $1.50 per U.S. household under B1 and $2.90 per household under B3, while the equivalent losses in 2040 are $0.79 and $2.47 for strategies B1 and B3.

In addition to the results from the models using the base set of elasticities presented in Appendix A, sensitivity analyses were performed varying the elasticities used in the model and including demand shifts for environmental goods and services (see Appendix B for results). As expected, there is little change in the total social cost estimated under any of the scenarios using different elasticities, and the qualitative impacts on market prices and quantities are similar to the base case, but the costs are reallocated towards either consumers or producers depending on the elasticities assumed. In the case where positive demand shifts for environmental goods and services were included, the incremental demand shifts due to B1 and B3 were 4.6 percent and 6.6 percent, respectively, for 2040. The model simulations project incremental price increases in this market of 3.6 percent and 5.1 percent for B1 and B3 as a result of the increase in demand, implying there may be some upward pressure on the price of compliance capital as a result of the SAMI strategies. Insufficient data on utility capital costs for 2010 prevented estimation of similar simulations for that year. Section 8 discusses some of the limitations of this analysis.

4.2 Economic Impact Results for 2010

For all of the different scenarios estimated, the A2 scenario was estimated in addition to the B1 and B3 scenarios so that both total and incremental effects of the two SAMI strategies could be examined. As mentioned earlier, the focus in Section 4 is on the incremental costs associated with B1 and B3, while the total impacts of A2, B1, and B3 are presented in Appendix B.

4.2.1 Social Cost Impacts

For this scenario, EPA estimates the total social costs as $3.1 billion, $5.5 billion, and $10.2 billion for A2, B1, and B3, respectively. Thus, the incremental social costs of the rule are $2.4 billion for B1 and $7.1 billion for B3 (see Table 4-1). Based on the elasticities being used in the analysis, the social costs fall a bit more heavily on consumers (residential energy consumers and consumers of other goods and services are both included in that category) than producers. Consumers are estimated to bear about 53 percent of the total social costs under B1 and 55 percent in B3. The subcategory of consumers bearing the largest share of costs is the residential

Table 4-1. Distribution of Incremental Social Costs: 2010

Stakeholder	B1-A2 Loss/Gain (10^6)	B3-A2 Loss/Gain (10^6)
Consumers	–$1,300.6	–$3,877.3
Agriculture, Mining, Manufacturing	–$433.5	–$1,101.4
Commercial	–$246.7	–$784.1
Residential	–$564.5	–$1,814.4
Transportation	–$55.9	–$177.4
Producers	–$1,145.5	–$3,205.7
Energy	–$337.6	–$951.4
Rest of U.S.	$1,178.8	$3,798.6
South Atlantic/East South Central	–$1,516.4	–$4,750.0
Agriculture, Mining, Manufacturing	–$470.1	–$1,180.1
Rest of U.S.	–$35.9	–$345.3
SAMI Region	–$434.2	–$834.8
Commercial	–$328.9	–$1,045.5
Transportation	–$8.9	–$28.7
Rest of U.S.	–$7.4	–$23.8
SAMI Region	–$1.5	–$4.9
Total Social Cost	**–$2,446.1**	**–$7,083.0**

energy market, followed by consumers of the agriculture, mining, and manufacturing sectors; consumers of commercial output; and finally consumers of transportation goods and services.[1]

For the energy market, large producer surplus losses are estimated for SAMI producers (proxied by the South Atlantic and East South Central Census regions), while energy producers in the rest of the United States experience gains that are almost as large as the SAMI losses. All SAMI industries were assumed to compete in national markets, which limits their ability to pass on increased costs to some extent. This is especially important in the energy markets, which face a

[1]This finding depends heavily on the subset of compliance costs that were included in the market model (e.g., the compliance costs estimated by Pechan [2001]) for the transportation sector that were not used as an input into the model because of time constraints and data limitations.

large share of total costs. Because the energy markets were modeled at the national level because of time and data constraints, which ignores spatial transmission limits and regulations on selling power across regions, it may tend to overstate the losses to SAMI power producers. Essentially, energy producers outside of the SAMI region (other than coal producers) are gaining from the increase in the national price of energy products without having to bear any compliance costs, which increases their producer surplus as they begin supplying more energy to the SAMI region and receive a higher price on all of their output.

The incremental residential consumer surplus loss associated with all energy market price changes are $564.5 million under B1 and $1,814.4 million under B3 (see Table 4-1), or $4.90 and $15.80 per U.S. household, respectively.[2] For energy producers within the SAMI region, the estimated producer surplus loss of $1,516.4 million under B1 is about 0.7 percent of projected 2010 revenues for the SAMI energy sector and the loss of $4,750.0 million under B3 is approximately 2.3 percent of projected 2010 revenues. Those producers outside the region are projected to see increases in revenue of $1,178.8 million and $3,798.6 million under B1 and B3, respectively, or 0.2 percent and 0.6 percent of projected 2010 energy-sector revenue for the rest of the United States. Because some utilities will own capacity both inside and outside of the SAMI region, some of the shifts in generation will be within corporations, rather than between different corporations. In addition, individual facilities with relatively low costs of control will tend to gain from price increases resulting from the strategies, while facilities with large control costs will not necessarily see increases in price large enough to cover all of their additional costs. Thus, it is possible that there may be a reallocation of electricity production towards the low control cost facilities inside the SAMI region to some extent even though the region is expected to experience reductions in output overall.

4.2.2 National Market-Level Impacts

The largest price increase is expected to be in the electricity market for all cost scenarios, which is not surprising given that market is where the majority of the direct costs fall. The electricity price is estimated to increase by 0.9 percent, 1.5 percent, and 2.8 percent for A2, B1, and B3,

[2]Because all markets are modeled as perfectly competitive national markets, the estimated changes in price under the SAMI strategies apply equally to all households in the United States. No differential impact could be estimated at this time for SAMI households specifically. To the extent that other factors limit the ability of producers outside the region to sell goods and services within the SAMI region, households in the SAMI region would likely experience a larger increase in price than those outside the region.

respectively, as a result of the negative supply shifts caused primarily by the direct costs on the electricity sector but also by price increases for some energy products used as inputs in the production of energy (e.g., natural gas). Therefore, the incremental impacts of B1 and B3 on electricity prices are about 0.6 percent and 1.9 percent, respectively (see Table 4-2). The quantity of electricity is projected to fall in all three scenarios, as expected given the negative supply shifts for electricity resulting from the increased cost of production under the SAMI strategies. For petroleum products, both price and quantity increase, indicating that an increase in demand for petroleum products more than outweighs the negative supply shift in this market because of increased fuel input prices for petroleum production. The increase in demand is resulting from fuel switching away from electricity and towards the use of petroleum products in response to the large increase in the price of electricity relative to petroleum products. A similar effect occurs in the market for natural gas, except that the estimated price and quantity increases in the natural gas market are larger than those in the petroleum market. For the coal market, both price and quantity are estimated to decrease. This implies that the reduction in demand for coal from the electricity sector due to the decline in electricity production more than outweighs any fuel switching from electricity to coal. Estimated changes in price and quantity for selected key industries are also presented in Table 4-2. Incremental changes in price and quantity in goods and service markets generally are fairly small, with the largest incremental price and quantity changes occurring in the paper sector (NAICS 322) for both 2010 and 2040. Those changes are equal to a 0.060 percent increase in price and –0.066 percent decrease in quantity under the B1 strategy and a 0.111 percent increase in price and –0.121 percent decrease in quantity under the B3 strategy.

4.2.3 Regional Impacts

EPA also examined the potential regional supply impacts of the strategies for the energy, textile, paper, chemical, and primary metal sectors.[3] The regional analysis provides regional detail on the supply-side for SAMI state-level/census region producers competing in a single national market. We report the direct costs per unit of sales (i.e. direct supply shift) and producer surplus losses in Table 4-3. However, the model currently does not provide regional detail on the demand side (i.e., consumer losses are reported at the national level).

[3]These were the only sectors where direct compliance costs were available. Direct compliance cost estimates for other directly affected industries were not available for this analysis.

Table 4-2. National Market-Level Incremental Impacts: 2010

		Descripton	B1-A2		B3-A2	
NAICS	SIC	Energy Markets	Price	Quantity	Price	Quantity
		Petroleum	0.017%	0.001%	0.054%	0.003%
		Natural Gas	0.149%	0.022%	0.417%	0.087%
		Electricity	0.575%	–0.120%	1.870%	–0.391%
		Coal	–0.141%	–0.150%	–0.457%	–0.488%
313	22 (pt)	Textile Mills	0.012%	–0.010%	0.040%	–0.034%
322	26	Paper	0.060%	–0.066%	0.111%	–0.121%
325	28	Chemicals	0.014%	–0.020%	0.033%	–0.049%
331	33	Primary Metals	0.017%	–0.014%	0.059%	–0.047%
484	42 (pt)	Trucking Transportation	0.002%	–0.002%	0.007%	–0.007%
482	401	Railroads	0.012%	–0.005%	0.040%	–0.016%

4.2.3.1 Energy Markets

As shown in Table 4-3, the SAMI producers in the electricity market have the highest incremental direct compliance costs per unit of sales (i.e., supply shift) of any group of energy producers. For the SAMI region, the incremental electricity supply shift is 2.42 percent under B1 and 7.88 percent under B3. These are significant shifts and help explain the large changes in electricity prices presented earlier in this section. Energy producers in the SAMI region are expected to experience producer surplus losses under both the B1 and B3 scenarios, while producers outside the region have increases in producer surplus.

4.2.3.2 Textile Mills (NAICS 313)

Tennessee is the only state with an incremental supply shift greater than 0.5 percent of baseline shipments (0.52 for B1 and 1.20 percent for B3). Although the state with the largest proportionate reduction in supply will not necessarily have the largest reduction in producer surplus because that depends on the size of the baseline market as well as the shift, Tennessee does have the largest estimated producer surplus losses in the textile industry, followed closely by North Carolina. Textile mills in three states within the SAMI region (Alabama, Kentucky, and West

Table 4-3. Incremental Impacts by Region: 2010

NAICS	Description	B1-A2 Supply Shift	B1-A2 Change in Consumer Surplus ($10^6)	B1-A2 Change in Producer Surplus ($10^6)	B3-A2 Supply Shift	B3-A2 Change in Consumer Surplus ($10^6)	B3-A2 Change in Producer Surplus ($10^6)
	Energy Producers						
	Natural Gas (Rest of U.S.)	0.00%		$143.0	0.00%		$395.54
	Natural Gas (South) Atlantic/East South Central	0.46%		–$73.9	0.91%		–$120.39
	Electricity (Rest of U.S.)	0.00%		$1,058.5	0.00%		$3,472.73
	Electricity (South) Atlantic/East South Central	2.42%		–$1,430.4	7.88%		–$4,591.63
313	**Textile Consumers**		–$11.62			–$39.92	
313	**Textile Mill Producers**						
	Rest of U.S.	0.00%		$1.97	0.00%		$7.58
	Alabama	0.00%		$0.19	0.00%		$0.63
	Georgia	0.01%		–$0.66	0.03%		–$1.79
	Kentucky	0.00%		$0.01	0.00%		$0.05
	North Carolina	0.06%		–$10.81	0.12%		–$20.95
	South Carolina	0.05%		–$5.30	0.42%		–$47.21
	Tennessee	0.52%		–$11.03	1.22%		– $25.44
	Virginia	0.03%		–$0.96	0.13%		–$4.23
	West Virginia	0.00%		$0.00	0.00%		$0.01
322	**Paper Consumers**		–$177.23			–$327.04	
322	**Paper Producers**						
	Rest of U.S.	0.00%		$110.66	0.00%		$157.32
	Alabama	0.14%		–$8.12	0.40%		–$28.72
	Georgia	1.09%		–$132.31	1.70%		–$206.25
	Kentucky	0.01%		$1.90	0.09%		–$1.12
	North Carolina	0.63%		–$44.04	0.95%		–$66.24
	South Carolina	0.35%		–$22.76	0.63%		–$42.27
	Tennessee	0.36%		–$17.39	0.74%		–$37.79
	Virginia	0.90%		–$47.45	1.30%		–$68.21
	West Virginia	0.02%		$0.05	0.21%		–$0.24
325	**Chemicals Consumers**		–$73.82			–$178.10	

(continued)

Table 4-3. Incremental Impacts by Region: 2010 (Continued)

NAICS	Description	B1-A2 Supply Shift	B1-A2 Change in Consumer Surplus (10^6)	B1-A2 Change in Producer Surplus (10^6)	B3-A2 Supply Shift	B3-A2 Change in Consumer Surplus (10^6)	B3-A2 Change in Producer Surplus (10^6)
325	**Chemicals Producers**						
	Rest of U.S.	0.00%		–$15.43	0.00%		–$92.11
	Alabama	0.13%		–$12.31	0.23%		–$22.16
	Georgia	0.06%		–$9.00	0.11%		–$19.79
	Kentucky	0.01%		–$1.55	0.06%		–$7.48
	North Carolina	0.09%		–$30.28	0.13%		–$47.87
	South Carolina	0.02%		–$4.63	0.04%		–$11.07
	Tennessee	0.29%		–$37.69	0.73%		–$95.98
	Virginia	0.09%		–$9.95	0.14%		–$17.42
	West Virginia	0.31%		–$26.67	0.48%		–$41.90
331	**Primary Metals Consumers**		–$43.05			–$146.91	
331	**Primary Metals Producers**						
	Rest of U.S.	0.00%		–$6.44	0.00%		–$12.17
	Alabama	0.00%		$0.14	0.00%		–$0.33
	Georgia	0.00%		–$0.07	0.01%		–$0.30
	Kentucky	0.03%		–$1.78	0.09%		–$5.96
	North Carolina	0.00%		–$0.08	0.00%		–$0.14
	South Carolina	0.01%		–$0.52	0.09%		–$2.88
	Tennessee	0.03%		–$2.17	0.07%		–$4.94
	Virginia	0.03%		–$0.79	0.08%		–$1.81
	West Virginia	–0.05%		$1.85	0.13%		–$5.00

Virginia), as well as textile mills in the rest of the U.S., experience small incremental gains in producer surplus because they face relatively low costs and benefit from higher prices in the national textile market following implementation of the SAMI strategies. Textile consumers' incremental losses are about $11.6 million to $40.0 million, or $0.10 to $0.35 per U.S. household.

4.2.3.3 Paper (NAICS 322)

The paper industry faces relatively large impacts from the SAMI strategies. Four SAMI states (Georgia, North Carolina, South Carolina, and Virginia) experience incremental supply shifts greater than 0.5 percent of baseline shipments under at least one of the two scenarios (B1 and B3).

Georgia experiences the largest proportionate reduction in supply (1.1 percent under B1 and 1.7 percent under B3). In contrast to the textile mill sector, none of the states within the SAMI region experiences incremental gains in producer surplus under B3, although Kentucky and West Virginia are projected to have small gains under B1. Paper producers in the rest of the U.S. outside the SAMI region are expected to experience gains in producer surplus resulting from an increase in the national price of paper. Paper consumers' incremental losses are $177.2 million to $327.0 million, or $1.50 to $2.90 per U.S. household.

4.2.3.4 Chemicals (NAICS 325)

For the chemicals industry, Tennessee is the only SAMI state with an incremental supply shift greater than 0.5 percent of baseline shipments under either strategy (0.73 percent for B3). In this industry, producers are not expected to gain in any region of the U.S. under either strategy, not even those producers located outside the SAMI region. This implies that energy prices increase sufficiently that chemical producers outside the SAMI region experience an increase in energy costs per unit large enough to more than outweigh the estimated increase in price for this sector. Chemical consumers' incremental losses are $73.8 million to $178.1 million, or $0.60 to $1.50 per U.S. household.

4.2.3.5 Primary Metals (NAICS 326)

All SAMI states experience relatively small incremental supply shifts in this market, with none exceeding 0.1 percent of baseline shipments under both B1 and B3. Two states within the SAMI region, Alabama and West Virginia, are projected to gain producer surplus under B1. In fact, West Virginia is estimated to have an increase in supply, implying their costs per unit decrease after the control costs are applied. This is apparently due to the projected reduction in coal prices under the SAMI strategies reducing their input costs per unit sufficiently to more than offset increases in other energy prices and the direct compliance costs on the sector. For B3, this is no longer the case. All SAMI states are projected to experience welfare losses under B3, as larger direct compliance costs on the sector result in larger supply reductions. Just as for the chemical industry, primary metals producers outside the SAMI region are projected to experience losses under both scenarios due to increases in their energy costs that are large enough to offset the estimated increase in price in the primary metals sector. Primary metal consumers' incremental losses are $43.0 million to $146.9 million, or $0.40 to $1.30 per U.S. household.

4.3 Economic Impact Results for 2040

Similar to the case for 2010, the A2 scenario was estimated for each variation of the model so that both total and incremental effects of the two SAMI strategies could be examined. As for 2010, the economic impacts increase substantially as we move from A2 to B1 to B3 in each scenario (see Appendix B for scenarios with alternative elasticities).

4.3.1 Social Cost Impacts

For this scenario, the total estimated social costs are $6.8 billion, $8.2 billion, and $15.3 billion for A2, B1, and B3, respectively. Thus, the incremental social costs of the rule are estimated to be $1.4 billion for B1 and $8.5 billion for B3 (see Table 4-4). The distribution of social costs between producers and consumers is similar to that estimated for 2010 with consumers bearing slightly more than half the total social costs of the rule. The subcategory of consumers bearing the largest share of costs is once again the residential energy market, followed by agriculture, mining, and manufacturing consumers; commercial product and service consumers; and finally consumers of transportation goods and services.

For the energy market, the model estimates that SAMI producers (proxied by the South Atlantic and East South Central Census regions) experience producer surplus losses of $5.0 billion under A2, $5.8 billion under B1, and $10.4 billion under B3. The incremental producer surplus loss is $0.8 billion for B1 and $5.4 billion for B3 (see Table 4-4). These losses are offset to some extent by the gains of unaffected producers outside the SAMI region, such that national producer surplus losses are smaller than those estimated for the SAMI region. Gains for energy producers in the rest of the United States occur when they see higher prices for their output without corresponding increases in compliance costs, leading to increases in their producer surplus. The assumption of nationally competitive energy markets is once again critical to this result and may lead to an overstatement of the losses to SAMI producers, although it may be a better assumption in 2040 than 2010 if deregulation of energy markets continues to take place over time.

The incremental residential consumer surplus loss associated with all energy market price changes are $238.5 million under B1 and $1,859.6 million under B3 (see Table 4-4), or $1.60 and

Table 4-4. Distribution of Incremental Social Costs: 2040

Stakeholder	B1-A2 Loss/Gain (10^6)	B3-A2 Loss/Gain (10^6)
Consumers	–$664.7	–$4,229.7
Agriculture, Mining, Manufacturing	–$276.4	–$1,210.3
Commercial	–$123.4	–$951.8
Residential	–$238.5	–$1,859.6
Transportation	–$26.5	–$208.0
Producers	–$732.4	–$4,275.0
Energy	–$233.6	–$1,598.7
Rest of U.S.	$487.5	$3,811.9
South Atlantic/East South Central	–$721.1	–$5,410.6
Agriculture, Mining, Manufacturing	–$329.6	–$1,370.0
Rest of U.S.	$75.1	–$164.2
SAMI Region	–$404.7	–$1,205.8
Commercial	–$164.5	–$1,269.0
Transportation	–$4.7	–$37.3
Rest of U.S.	–$4.6	–$36.8
SAMI Region	–$0.1	–$0.6
Total Social Cost	**–$1,397.1**	**–$8,504.7**

$12.50 per U.S. household, respectively.[4] For energy producers within the SAMI region, the estimated producer surplus loss of $721.1 million under B1 is about 0.2 percent of projected 2040 revenues for the SAMI energy sector and the loss of $5,410.6 million under B3 is approximately 1.4 percent of projected 2040 revenues. Those producers outside the region are projected to see increases in revenue of $487.5 million and $3,811.9 million under B1 and B3, respectively, or 0.05 percent and 0.4 percent of projected 2040 energy sector revenue for the rest of the U.S. Note that

[4]Because all markets are modeled as perfectly competitive national markets, the estimated changes in price under the SAMI strategies apply equally to all households in the U.S. No differential impact could be estimated at this time for SAMI households specifically. To the extent that there are other factors limiting the ability of producers outside the region to sell goods and services within the SAMI region, households in the SAMI region would likely experience a larger increase in price than those outside the region.

the relative impacts are actually somewhat smaller in 2040 than 2010 despite more stringent emission limits. This is due to projected reductions in energy intensity (energy use per unit of output) and the higher percentage of new sources (which are typically cheaper to control than existing sources) in 2040 relative to 2010.

As mentioned above, because some utilities will own capacity both inside and outside of the SAMI region, some of the shifts in generation will be within corporations, rather than between different corporations. In addition, individual facilities with relatively low costs of control will tend to gain from price increases resulting from the strategies, while facilities with large control costs will not necessarily see increases in price large enough to cover all of their additional costs. Thus, it is possible that there may be a reallocation of electricity production towards the low control cost facilities inside the SAMI region to some extent even though the region is expected to experience reductions in output overall.

4.3.2 National Market-Level Impacts

The average price of electricity is estimated to increase by 1.2 percent, 1.3 percent, and 2.4 percent for A2, B1, and B3, respectively, as a result of direct and indirect costs on the electricity sector. Therefore, the incremental impacts of B1 and B3 on electricity prices are 0.2 and 1.2 percent, respectively (see Table 4-5). The quantity of electricity falls in all three scenarios as expected given the negative supply shifts for electricity production. For petroleum products, both price and quantity increase, indicating that there has been an increase in demand for petroleum products that more than outweighs the negative supply shift (due to increased fuel input prices for petroleum production) in this market. The increase in petroleum demand occurs as a result of fuel switching from electricity, which has experienced an increase in relative price. In contrast, the model projects natural gas price and quantity declines as less electricity is produced (electricity production uses a large amount of natural gas as an input) and electricity production shifts to the non-SAMI region, which has lower natural gas fuel intensities for electricity production in the year 2040 than the SAMI region.[5] Therefore, net reductions in natural gas demand outweigh the supply shift associated with increasing prices for fuels used as inputs in natural gas production. Finally,

[5]In other words, the 2040 projections imply that the non-SAMI region uses less natural gas per Btu of electricity produced than the SAMI region. Thus, as electricity shifts from the SAMI to non-SAMI region, production of the same quantity of electricity is estimated to require less natural gas. Interestingly, in 2010 just the opposite is true, but based on the AEO 2002 projections, natural gas usage for electricity production appears to be growing much more rapidly in the SAMI region than elsewhere.

Table 4-5. National Market-Level Incremental Impacts: 2040

		Descripton	B1-A2		B3-A2	
NAICS	SIC	Energy Markets	Price	Quantity	Price	Quantity
		Petroleum	0.005%	0.001%	0.040%	0.008%
		Natural Gas	0.001%	–0.009%	–0.071%	–0.056%
		Electricity	0.158%	–0.032%	1.250%	–0.246%
		Coal	–0.027%	–0.031%	–0.211%	–0.241%
313	22 (pt)	Textile Mills	0.006%	–0.005%	0.027%	–0.023%
322	26	Paper	0.026%	–0.028%	0.081%	–0.089%
325	28	Chemicals	0.009%	–0.014%	0.034%	–0.051%
331	33	Primary Metals	0.008%	–0.006%	0.046%	–0.037%
484	42 (pt)	Trucking Transportation	0.001%	–0.001%	0.007%	–0.007%
482	401	Railroads	0.006%	–0.002%	0.047%	–0.019%

both price and quantity are projected to decrease in the coal market. Lower electricity output is the primary cause of this reduction in coal demand because electricity production accounts for a large share of coal demand.[6]

Because of the national increases in energy prices and direct compliance costs in some final product sectors, agriculture, mining, manufacturing, and commercial markets generally experience producer and consumer surplus losses both inside and outside the SAMI region. Electricity-intensive industries experience the largest welfare changes due to fairly large increases in electricity prices. However, the distribution of these costs between producers and consumers varies based on the relative supply and demand elasticities in each market. Changes in prices and quantities in these markets are well below one-half of 1 percent under all scenarios for each strategy.

[6]As noted earlier, the estimated reduction in coal demand from the market model is purely due to changes in relative prices of energy sources. It does not include the effects of the SAMI emission control strategies on the choice of fuel due to higher emissions from some fuels than others, although this may lead to a major shift away from coal. In addition, there may be reallocation by coal users towards low sulfur coal, but the economic model does not currently model high and low sulfur coal separately.

4.3.3 Regional Impacts

The Agency also examined the potential regional impacts of the rule for the energy, textile, paper, chemical, and primary metal sectors.[7] The regional analysis provides regional detail on the supply side for SAMI state-level/census region producers competing in a single national market. We report the direct costs per unit of sales (i.e., direct supply shift) and producer surplus losses in Table 4-6. However, the model currently does not provide regional detail on the demand side (i.e., consumer losses are reported at the national level). In the discussion below, we report the aggregate and per-household consumer loss where applicable.

4.3.3.1 Energy Markets

As shown in Table 4-6, the SAMI producers in the electricity market have the highest incremental direct compliance costs per unit of sales (i.e., supply shift) of the groups of energy producers presented, although the shifts are actually smaller than for 2010. For the SAMI region, the incremental supply shift is 0.6 percent under B1 and 4.8 percent under B3. Energy producers in the SAMI region and natural gas producers in the rest of the U.S. are expected to experience producer surplus losses under both the B1 and B3 scenarios, while electricity producers outside the region have large increases in producer surplus.

4.3.3.2 Textile Mills (NAICS 313)

Tennessee has the largest supply shift in the textiles industry as in 2010, although the proportionate shift (0.44 percent) is slightly smaller than in 2010. Although Tennessee is estimated to have the largest proportionate shift in supply, there are two states with much larger producer surplus losses, South Carolina and North Carolina. This result is driven by the textile industry being projected to be much larger in those states than in Tennessee. Three SAMI states (Alabama, Kentucky, and West Virginia), as well as the rest of the U.S., experience small incremental gains in producer surplus because they face relatively low costs and benefit from higher prices in the national textile market. Textile consumers' incremental losses are $8.5 million to $37.7 million, or $0.06 to $0.25 per U.S. household.

[7]These were the only sectors where direct compliance costs were available. Direct compliance costs estimates for the trucking and railroad sectors were not available for this analysis.

Table 4-6. Incremental Impacts by Region: 2040

NAICS	Description	B1-A2 Supply Shift	B1-A2 Change in Consumer Surplus (10^6)	B1-A2 Change in Producer Surplus (10^6)	B3-A2 Supply Shift	B3-A2 Change in Consumer Surplus (10^6)	B3-A2 Change in Producer Surplus (10^6)
	Energy Producers						
	Natural Gas (Rest of U.S.)	0.00%		–$4.8	0.00%		–$194.1
	Natural Gas (South Atlantic/ East South Central)	0.09%		–$58.5	0.18%		–$183.2
	Electricity (Rest of U.S.)	0.00%		$490.7	0.00%		$3,977.8
	Electricity (South Atlantic/ East South Central)	0.60%		–$662.1	4.81%		–$5,227.8
313	**Textile Consumers**		–$8.48			–$37.66	
313	**Textile Mill Producers**						
	Rest of U.S.	0.00%		$2.66	0.00%		$7.55
	Alabama	0.00%		$0.08	0.01%		$0.36
	Georgia	0.01%		–$0.44	0.03%		–$2.13
	Kentucky	0.00%		$0.02	0.00%		$0.05
	North Carolina	0.03%		–$6.60	0.07%		–$18.00
	South Carolina	0.07%		–$10.32	0.38%		–$57.96
	Tennessee	0.13%		–$3.65	0.44%		–$12.28
	Virginia	0.03%		–$1.19	0.08%		–$3.82
	West Virginia	0.00%		$0.00	0.00%		$0.01
322	**Paper Consumers**		–$117.98			–$367.43	
322	**Paper Producers**						
	Rest of U.S.	0.00%		$82.29	0.00%		$192.11
	Alabama	0.14%		–$15.60	0.41%		–$47.69
	Georgia	0.40%		–$74.94	1.04%		–$196.08
	Kentucky	0.03%		–$0.39	0.13%		–$6.17
	North Carolina	0.24%		–$26.07	0.65%		–$71.38
	South Carolina	0.17%		–$17.98	0.49%		–$53.00
	Tennessee	0.32%		–$27.20	1.03%		–$87.95
	Virginia	0.33%		–$26.24	0.75%		–$59.10
	West Virginia	0.29%		–$0.63	0.86%		–$1.91

(continued)

Table 4-6. Incremental Impacts by Region: 2040 (Continued)

NAICS	Description	B1-A2 Supply Shift	B1-A2 Change in Consumer Surplus (10^6)	B1-A2 Change in Producer Surplus (10^6)	B3-A2 Supply Shift	B3-A2 Change in Consumer Surplus (10^6)	B3-A2 Change in Producer Surplus (10^6)
325	**Chemicals Consumers**		–$74.51			–$269.67	
325	**Chemicals Producers**						
	Rest of U.S.	0.00%		$32.24	0.00%		$10.83
	Alabama	0.13%		–$16.58	0.33%		–$41.69
	Georgia	0.04%		–$8.61	0.13%		–$28.34
	Kentucky	0.03%		–$3.25	0.08%		–$11.06
	North Carolina	0.03%		–$11.96	0.06%		–$26.42
	South Carolina	0.01%		–$2.67	0.04%		–$9.54
	Tennessee	0.20%		–$36.21	0.70%		–$127.09
	Virginia	0.05%		–$6.97	0.14%		–$20.34
	West Virginia	0.88%		–$94.56	2.63%		–$282.26
331	**Primary Metals Consumers**		–$25.35			–$144.43	
331	**Primary Metals Producers**						
	Rest of U.S.	0.00%		$6.97	0.00%		$9.22
	Alabama	0.00%		$0.08	0.01%		–$0.59
	Georgia	0.00%		$0.05	0.01%		–$0.15
	Kentucky	0.03%		–$1.85	0.08%		–$5.86
	North Carolina	0.00%		$0.09	0.00%		$0.12
	South Carolina	0.06%		–$2.43	0.19%		–$8.16
	Tennessee	0.03%		–$2.19	0.08%		–$6.46
	Virginia	0.05%		–$1.38	0.09%		–$2.52
	West Virginia	0.11%		–$5.10	0.40%		–$18.39

4.3.3.3 Paper (NAICS 322)

As in 2010, the paper industry faces relatively large proportionate cost impacts. Five SAMI states (Georgia, North Carolina, Tennessee, Virginia, and West Virginia) experience incremental supply shifts greater than 0.5 percent of baseline shipments under at least one of the two scenarios (B1 and B3). In contrast to the textile sector, no SAMI state experiences gains with regulation. However, paper producers located outside the SAMI region are projected to gain producer surplus after implementation of the SAMI strategies due to increased paper prices. Paper

consumers' incremental losses are $118.0 million to $367.4 million, or $0.79 to $2.47 per U.S. household.

4.3.3.4 Chemical (NAICS 325)

For the chemicals industry, West Virginia and Tennessee are the only SAMI states with incremental producer surplus losses greater than 0.5 percent of baseline shipments under either strategy (0.9 percent for B1 and 2.6 percent for B3 for West Virginia and 0.7 percent under B3 for Tennessee). Similar to the paper sector, no SAMI state experiences incremental gains with regulation, while producers in the rest of the U.S. do experience small gains. Chemical consumers lose $74.5 million to $269.7 million, or $0.50 to $1.82 per U.S. household.

4.3.3.5 Primary Metals (NAICS 326)

All SAMI states experience producer surplus losses of less than 0.5 percent of baseline shipments under both B1 and B3. Alabama, Georgia, and North Carolina experience small incremental gains under B1 and North Carolina gains under B3 because it faces relatively low costs and benefits from higher prices in the national market for primary metals. West Virginia is projected to experience the largest losses in this industrial sector. Primary metal consumers' incremental losses are $25.4 million to $144.4 million, or $0.17 to $0.97 per U.S. household.

4.4 Sensitivity Analyses

4.4.1 Sensitivity Analysis for Supply Elasticities

As expected, there is not much change in the total social cost estimated under any of the cost scenarios relative to the base elasticities case. The qualitative impacts on market prices and quantities are also similar to the base case. However, there is a reallocation of costs towards producers when supply is made less elastic (all supply elasticities are reduced by 25 percent) than the base elasticities case and towards consumers when supply is assumed to be more elastic (all supply elasticities are increased by 25 percent). Appendix B provides detailed results of all sensitivity analysis performed on the supply elasticities.

4.4.2 Sensitivity Analysis for Demand Elasticities

As for the cases varying the supply elasticities, the primary impact associated with this sensitivity analysis is to reallocate the social welfare losses between producers and consumers. For

the case where the market demand elasticities are assumed to be 25 percent less elastic than in the base elasticity case, consumers bear a higher share of the costs, and when the demand elasticities are assumed to be 25 percent more elastic, a larger share of the costs falls on producers. Appendix B provides detailed results of all sensitivity analysis performed on the demand elasticities.

4.4.3 Impacts Including Learning Curve Effects

The Agency also examined impacts assuming the annualized control costs were 10 percent lower than the engineering inputs based on an assumption that the costs of supplying environmental protection capital equipment would fall as the production of this equipment rises. Such a scenario may occur where learning effects lead to improvements in efficiency as more output is produced. As expected, this lowers the social cost estimates of the rule by a similar proportion and slightly mitigates price impacts associated with the rule.

4.4.4 Demand Shifts for Environmental Goods and Services

The Agency considered the impacts of demand shifts in the environmental goods and services sector (NAICS 333411 and 333412) that may be caused by the SAMI strategies based on capital investment cost data reported by E.H. Pechan.[8] For 2040, the demand shifts were estimated to be 0.15, 4.80, and 6.74 percent of national baseline output in the environmental goods and services sector for A2, B1, and B3, respectively. The model simulations project price increases of 0.12 to 5.1 percent under these scenarios, suggesting upward pressure on the price of compliance capital as a result of the rule. Insufficient data on utility capital costs precluded us from running similar simulations for 2010.

[8]Annual capital purchases were computed using total capital expenditures provided by E.H. Pechan divided by 15 years. Pechan assumed that the life of the capital equipment was 15 years, so dividing the total by 15 assumes that an equal proportion of capital equipment is replaced each year.

SECTION 5

FUEL SWITCHING

One impact of the SAMI strategies is to change the relative prices of fuels because different fuels experience different supply shifts depending on the compliance costs falling on that sector. In general, as a fuel becomes relatively less expensive compared with its alternatives, it becomes more attractive to energy consumers. Some of these consumers are expected to make changes to their fuel consumption such that they consume a smaller proportion of fuels that have become relatively more expensive and a higher proportion of fuels that have become relatively less expensive. This is particularly true when looking into the distant future, because the longer the time horizon under consideration, the easier it will be for energy consumers to make adjustments to their equipment and their production process to permit substitution of lower-priced fuels. At any given point in time, consumers change their energy consumption patterns in response to relative price changes until the energy markets once again reach equilibrium. Thus, it is important to consider the potential for substitution between fuels in modeling the impacts of SAMI strategies.

The EMPACT model estimates the extent to which fuel switching is expected to take place as a result of changes in the relative prices of fuels. Only fuel switching between petroleum products, natural gas, electricity, and coal based on changes in their relative prices is included in this study. The EMPACT model does not currently include switching between different types of each fuel (e.g., low sulfur and high sulfur coal). Fuel-switching impacts are modeled using cross-price elasticities of demand between energy sources. For example, a cross-price elasticity of demand between natural gas and electricity of 0.5 implies that a 1 percent increase in the price of electricity will lead to a 0.5 percent increase in the demand for natural gas. Own-price elasticities of demand are used to estimate the change in the use of a fuel by demanders in response to a change in price for that fuel. For instance, a demand elasticity of -0.175 for electricity implies that a 1 percent increase in the price of electricity will lead to a 0.175 percent decrease in the quantity of electricity

demanded. Estimates of own- and cross-price elasticities for petroleum products,[1] natural gas, electricity, and coal were obtained from the DOE National Energy Modeling System (NEMS) data.[2]

Based on the model results, it appears that both the B1 and B3 strategies would lead to fuel switching away from electricity and towards natural gas. For example, in the 2010 model it was estimated that the consumption of natural gas would increase by 0.1 percent[3] and the consumption of electricity would fall by 0.14 percent under the B1 strategy if no fuel switching were allowed. When the fuel switching module is employed, the estimated increase in natural gas consumption rises to 0.7 percent and consumption of electricity is now projected to fall by 0.31 percent. Similarly, under the B3 strategy the estimated change in natural gas consumption is only 0.02 percent without fuel switching, but 0.14 percent when fuel switching is turned on in the model. Electricity consumption falls by 0.27 percent without fuel switching and 0.58 percent with fuel switching.

One important aspect related to fuel switching that was not captured in the model is the extent to which utilities may change their fuel mix because certain fuels have higher emissions per Btu than others. Changing their fuel mix is one way utilities may be able to comply with emissions limits. This is reflected in the compliance costs for new units under B3 estimated by Pechan, where they project a shift from coal to natural gas electricity generation plants. Hence, much of the fuel switching likely to take place due to the B1 and B3 scenarios does not show up in the EMPACT model results because it has already been factored into the costs that drive the model. This costing assumption implies there should be a sharp reduction in coal demand and increase in natural gas

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[1]Petroleum products, as defined in EMPACT, is a category that includes each of the petroleum products defined by DOE, including distillate fuel, jet fuel, liquified petroleum gas, motor gasoline, and residual fuel. Prices and quantities for this category are weighted averages of all petroleum products, as provided by DOE.

[2]As the time frame becomes longer, it is likely that energy consumers could more easily switch between different fuels because they can more easily adjust their production process and equipment over time. However, the same elasticities were assumed for both 2010 and 2040 in this analysis due to data limitations.

[3]The reason for this increase is that electricity production is being reallocated from the SAMI region to the rest of the United States. AEO 2002 data show that for 2010 areas outside the SAMI region use relatively more natural gas and less coal. Thus, even though total electricity production in the United States is declining, the derived demand for natural gas as an input into electricity production is increasing due to this regional production shift. However, EPA estimates for 2040 show that areas outside the SAMI region will use relatively less natural gas compared to the SAMI region.

demand under B3. However, this aspect of the SAMI strategies was not included in the model due to time constraints. In addition, this projected increase in the use of natural gas would presumably drive up natural gas prices relative to coal, which would tend to reduce the extent to which this switching would take place relative to that projected without allowing for this adjustment. Although it was not possible to accurately predict the total quantitative impacts on natural gas production at this time, it appears that natural gas production would be stimulated both inside and outside the SAMI region by both B1 and B3 as they lead to increased demand for natural gas relative to other fuels.

SECTION 6

EXPECTED EFFECTS OF ADDITIONAL REGIONAL DETAIL

To provide a sense of the importance of excluding linkages between markets (other than the energy market) and regional detail from the market model, we purchased 1999 input-output data for GA from IMPLAN. These data provide information on the quantity of each type of input used per unit of output for 528 sectors of the economy as well as the proportion of inputs purchased within the state and the proportion of output sold within the state, among other data. GA was chosen because it is the state with the highest estimated total control costs under both B1 and B3. These data reveal that 78 percent of electricity purchased within GA is currently being generated within the state. The percentage purchased from all states within the SAMI region (including GA) would surely be higher still given the geographical proximity of other SAMI states. Although consumers may switch to electricity from outside the SAMI region in response to price increases in the SAMI region to some extent, the large percentage of power that is currently purchased within the state suggests that there may be barriers to doing so (e.g., regulatory or spatial transmission constraints). It also suggests the possibility that the market for power may more accurately be represented as a regional market than a national market.

IMPLAN data similarly suggest the potential for regional markets in many additional industries other than electricity. There is tremendous variation across the various goods and services produced by each IMPLAN sector and across specific inputs used in producing those goods and services as to the proportion of each input that is purchased from the state of GA. However, it is generally true that a disproportionate amount of inputs is purchased from within the state, both for electric power and for other inputs. This may suggest that, for reasons such as transportation costs, many of the affected markets may be at least somewhat regional as opposed to truly national markets. To the extent this is true, producers within the SAMI region will tend to be better off than the current model suggests and consumers worse off. This is because producers within the region would face less competition from outside the region and would have more ability to raise prices. On the other hand, the producers outside the region would tend to be worse off and the consumers outside the SAMI region better off. This is because producers and consumers

outside the region experience a smaller price increase due to a lesser increase in demand for goods and services from producers outside the SAMI region by consumers inside the region.

In addition to identifying the proportion of goods and services purchased locally, these data reveal how much of each good or service is purchased by each industry in the state. This information could be used to identify the indirect impacts on these industries specific to GA that may result from electricity price increases, for example. The data also provide information on the inputs purchased by each industry in the state, allowing identification of linkages between the affected industries and their suppliers. In the GA electricity production sector, the largest expenditures on inputs purchased in GA are for maintenance and repair ($184 million within GA), railroads and related services ($44.7 million), computer and data processing services ($43.0 million), banking ($33.0 million), and gas production and distribution ($31.1 million). To the extent that electricity production in GA decreases under B1 and B3, these industries are likely to be affected by a decrease in the demand for their products. Similarly for each of the affected industries, the current economic model may not capture impacts on many suppliers of inputs to that industry.

SECTION 7

BENEFITS TO THE REGIONAL ECONOMY

In addition to the large costs imposed on the region due to the SAMI strategies, it is expected that there will also be some benefits to the regional economy due to the local improvements in air quality. In particular, industries that rely on clean, clear air either as part of their production process or as a complement to the consumption of their output will receive benefits. Those industries that need to use clean air in producing output will face lower costs associated with filtering and otherwise cleaning the air to ready it for use in the production process, which will lead to an outward shift in their supply functions, whereas those industries that rely on clean, clear air as complements to their outputs will see an increase in demand for their goods and services as air quality improves. In addition, to the extent that people value air quality, the improvements in air quality for the SAMI region relative to the rest of the nation[1] may increase the desirability of living in the region. This could potentially stimulate the regional economy as people and businesses relocate to take advantage of the improved environmental amenities and to use them as a selling point to employees.

One set of industries most likely to experience increases in revenue directly related to improvements in air quality in the SAMI region is the group of industries that provide tourism-related goods and services, especially in the vicinity of Class I wilderness areas where air quality improvements are focused. These industries include hotels and motels (NAICS 721110), recreational goods rental (NAICS 532292), restaurants (NAICS 7222110, 722211), supermarkets (NAICS 445110), gasoline stations (NAICS 4471), and souvenir shops (NAICS 453220), among others. Some areas of the southern Appalachian mountains have serious air quality issues, including problems with low visibility, high levels of acid deposition, and high concentrations of ground level ozone. The negative aesthetic, human health, and ecosystem effects

[1]The reductions in emissions within the SAMI region will also improve air quality outside the region because emissions are transported between regions. However, air quality would presumably improve more in the SAMI region where the emissions are taking place than in other regions.

associated with poor air quality in the southern Appalachian mountains would be expected to discourage tourism to the region relative to cases where those problems were reduced.[2] Poor air quality would be expected to have particularly large impacts on tourism to Class I areas because an important motivation for visiting these regions is to experience a pristine wilderness setting and enjoy scenic vistas. Thus, air pollution that disturbs the pristine nature of the region is likely to reduce the enjoyment visitors derive from these areas to a much larger extent than for other areas, such as urban centers. This large reduction in enjoyment, or consumer surplus, associated with air pollution would be expected to reduce visitation to Class I sites. Improvements in air quality will therefore directly benefit those industries relying heavily on tourism.[3] Through linkages with other industries, this increase in tourism activity may lead to positive effects on other industries within the region. Although data are insufficient to adequately quantify the impacts on tourism-related industries, some of the potential impacts are presented qualitatively in this section.

One of the key variables affecting visitor enjoyment of wilderness areas is visibility (i.e., how far people can see on a clear day). Visitors experience additional benefits from other improvements in air quality, such as reduced levels of acid deposition and ground-level ozone, but visibility is probably the most noticeable air quality issue for park visitors. The National Park Service (NPS) (1988) has conducted a number of studies that have examined the importance of clean air as a park feature. It has consistently been shown that visitors rank clean, clear air and unobstructed views of the scenery among their top priorities when visiting national parks. When visitors find a particular site to have poor visibility, some may shorten their stay or travel to an alternative destination. Potential visitors that learn of the poor visibility at a particular site may choose not to visit that site at all. Although degradation of visibility may affect most outdoor recreation to some extent, the impacts are perhaps most pronounced at national parks (Abt Associates, 2000).

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[2]Not only is visibility in national parks important to visitors, but visibility also has "nonuse" value for people who do not visit. In numerous studies, it has been shown that people place a value on environmental amenities even if they do not directly experience that amenity themselves. This topic is covered in more detail for the SAMI region in a report by Abt Associates (2002). The current report focuses only on the potential for increases in regional economic activity related to visibility and air quality improvements.

[3]Although the increased costs to households of the SAMI control strategies may slightly reduce household income available for recreational trips to sites such as the SAMI Class I areas, the costs per household are a very small fraction of total income and any resulting reductions in demand for goods and services would be spread across all goods and services consumed. Thus, it is unlikely that this effect would be significant.

Despite the importance of visibility to park visitors, poor visibility has become a major issue in wilderness areas in the SAMI region. Without the effects of pollution, the natural visual range in the eastern states would be about 90 miles, while in the west it would be about 140 miles. However, anthropogenic contaminants such as soil dust, carbon monoxide, sulfates from sulfur dioxide, nitrates from nitrogen oxide, soot, ozone haze, and other contaminants have combined with contaminants from natural events such as volcanoes to reduce visual range to about 14 to 24 miles in the east and about 33 to 90 miles in the west (Texas Environmental Profiles, 2002). Although visibility varies widely across the United States, it has generally worsened throughout the United States over the last few decades, especially in the southeast, which has experienced rapid economic growth. Table 7-1 shows data obtained from Abt Associates Inc. (2002), which show the current state of visual air quality specific to Class I areas in the SAMI region as well as the projected changes in visibility under scenarios B1 and B3. For example, these values show that visual range is projected to increase by between 7.4 percent and 21.3 percent relative to baseline (A2) across the Class I areas under B1 and by between 23.5 percent and 71.7 percent under B3 for 2010. Similarly, visual range is expected to improve by 11.2 to 27.1 percent for B1 and from 27.0 to 55.1 percent for B3 in 2040.[4]

No data are available to permit quantitative estimates of the increase in visitation to the region and the accompanying economic impacts for the region due to enhanced air quality. However, the magnitude of visibility improvements expected under the SAMI control strategies, especially B3, suggests that the experience of visitors to the Class I areas will be substantially enhanced. They will generally be able to see and enjoy scenery several miles farther away than in the baseline and will enjoy a much clearer view, as evidenced by the increase in visual range, decrease in light extinction, and decrease in deciviews (all of which are closely related concepts) for these areas as shown in Table 7-1.

Thus, improving visibility in the SAMI region to this extent may substantially increase the consumer surplus of visitors to the Class I areas. It is expected that this increase in consumer surplus will encourage visitors to visit the region more often and to stay longer, other things being equal, because visiting the SAMI region will have become more attractive relative to other activities

[4]Note that the percentage increase relative to baseline is larger for 2010 than 2040 in some cases because the baseline (A2) visual range is generally increasing over time, making it possible for there to be smaller percentage improvements relative to baseline in 2040 even if the absolute visual range has increased relative to 2010.

Table 7-1. Visual Air Quality of Class I Areas by Year and Scenario

Year	Extinction[a] (1/Mm)			Visual Range (miles)			Deciviews[b] (dv)		
	A2	B1	B3	A2	B1	B3	A2	B1	B3
Great Smoky Mountains									
2010	100.3	86.9	63.6	24.2	28.0	38.2	23.1	21.6	18.5
2040	83.0	68.4	58.7	29.3	35.5	41.4	21.2	19.2	17.7
Shenandoah									
2010	105.7	98.2	85.4	23.0	24.7	28.4	23.6	22.8	21.4
2040	90.2	79.2	70.9	27.0	30.7	34.3	22.0	20.7	19.6
Cohutta									
2010	127.6	107.8	76.0	19.0	22.5	32.0	25.5	23.8	20.3
2040	103.1	81.0	66.4	23.6	30.0	36.6	23.3	20.9	18.9
Dolly Sods									
2010	239.0	217.7	183.3	10.2	11.2	13.3	31.7	30.8	29.1
2040	181.1	162.9	138.2	13.4	14.9	17.6	29.0	27.9	26.3
James River Face									
2010	174.7	158.1	121.2	13.9	15.4	20.0	28.6	27.6	25.0
2040	149.0	118.5	98.8	16.3	20.5	24.6	27.0	24.7	22.9
Joyce Kilmer Slickrock									
2010	104.6	87.7	64.6	23.2	27.7	37.6	23.5	21.7	18.7
2040	87.0	70.7	59.6	27.9	34.4	40.8	21.6	19.6	17.8
Linville Gorge									
2010	190.8	158.2	111.6	12.7	15.4	21.8	29.5	27.6	24.1
2040	147.7	117.5	98.8	16.5	20.7	24.6	26.9	24.6	22.9
Otter Creek									
2010	241.4	220.2	184.0	10.1	11.0	13.2	31.8	30.9	29.1
2040	186.1	163.8	138.1	13.1	14.8	17.6	29.2	28.0	26.3
Shining Rock									
2010	126.2	108.0	77.3	19.3	22.5	31.4	25.3	23.8	20.4
2040	99.7	82.1	70.0	24.4	29.6	34.7	23.0	21.1	19.5
Sipsey									
2010	139.9	128.6	103.1	17.4	18.9	23.6	26.4	25.5	23.3
2040	118.9	100.8	91.3	20.4	24.1	26.6	24.8	23.1	22.1

[a] Light extinction is defined as the sum of the light scattering and light absorption by particles and gases in the atmosphere (Abt Associates, 2000).

[b] The deciview index provides a scale for perceived visual changes. On a particle-free day, the index has a value of zero. For each 10 percent increase in light extinction, the deciview index increases by one. A change of one deciview is generally considered to be just perceptible by the average person (Abt Associates, 2000).

Source: Abt Associates Inc. 2000. *Out of Sight: The Science and Economics of Visibility Impairment*. Report prepared for the Clean Air Task Force, Boston, MA.

following the improvements in air quality. In addition, it is likely that some people who currently do not visit the Class I areas in the SAMI region will begin visiting because of the more attractive environmental conditions. Given the importance of visibility reported in park surveys of visitors, it appears likely that visitation to these areas will increase substantially following the anticipated improvements in air quality. As expected, the benefits are larger under B3 than B1, but both scenarios will likely result in more tourism to the SAMI area. In addition to the direct spending on tourism industries, the expenditures of visitors from outside the region end up affecting almost all aspects of the economy through linkages with other sectors. This increase in economic activity related to higher visitation levels should help to at least partially offset the decrease in regional economic activity expected as a result of imposing large costs on firms located within the region.

SECTION 8

LIMITATIONS

As with any model of an extremely complicated process, there are uncertainties and limitations associated with the results presented in this report. These limitations should be kept in mind when reviewing and interpreting the economic impact estimates. The results presented in this report are dependent on a number of assumptions and projections of baseline conditions into the distant future, which introduces a great deal of uncertainty concerning the exact magnitude of the impacts. Some of the most important limitations of the analysis include the following:

- The results are dependent on the annualized costs estimated by Pechan (2001). However, there is uncertainty concerning these costs because, for example, pollution control technology has advanced considerably in recent years, but it is difficult to predict future changes in technology that may change the costs of compliance, especially looking forward to 2040. In addition, to the extent that increases in demand for environmental capital drive up the price of this capital and/or learning effects drive costs down as output of environmental capital increases, these costs may increase or decrease relative to the Pechan estimates.

- Only a portion of the total incremental costs associated with SAMI strategies B1 and B3 are used to drive the model results. The costs to utilities and point sources in selected industries are included as model inputs, but all of the other annualized costs estimated by Pechan (2001) have been excluded from the model due to time constraints and data limitations. Inclusion of those costs would clearly increase the overall social costs of compliance with the SAMI strategies.

- There are no linkages between sectors other than linkages with the energy sectors. Thus, the only factors shifting an industry's supply curve in the model are direct compliance costs and increases in the price of energy, although they may also be facing increases in the prices of other inputs caused by rising energy prices in those sectors. In addition, an increase in the relative price of a good or service is expected to cause shifts in the demand for its substitutes and complements, but this effect is not currently being modeled.

- The results are dependent on the assumed growth rates in each industry as projected by the EIA for the energy markets and the BEA for other goods and services. The EIA was used for the energy markets because the projections are more recent than BEA projections and are presumably more accurate, but BEA projections were used for the other markets in the model because BEA projects farther into the future (until 2045) and at a more disaggregated level. However, for industries that are included in both the EIA and BEA projections, the annual rates of growth for a given industry may be quite different between the two sources. For example, the annual national growth rate in output in the primary metals sector through 2010 is projected by BEA to be 0.1 percent, but the EIA projects an average annual growth rate of 1.1 percent over this time. In addition, positive output growth in the textiles sector is projected in all states in the SAMI region based on the BEA data, but recent changes in market conditions have actually led to reductions in output in this industry. The uncertainty concerning the actual growth rates over time suggests considerable uncertainty surrounding the projected baseline output in 2010 and 2040.

- Fuel intensities (fuel used per unit of output) are assumed to continue declining from 2020 to 2040 at the same annual rate as between 2010 and 2020. To the extent that the actual rate differs, the demand for energy in 2040 may differ substantially from the projected levels. For 2010, the fuel intensities were projected by the EIA and are presumably more accurate, but, as with all projections that far into the future, there is still considerable uncertainty.

- The EIA projections for generation capacity include information obtained from a survey of utilities to project new capacity by region. To the extent that utilities expand capacity in a given region faster or slower than they planned at the time of the survey, EIA projections will understate or overstate capacity growth in a particular region.

- The assumption of perfectly competitive national markets has a large impact on the distribution of welfare impacts between consumers and producers and between the SAMI region and the rest of the U.S. If some of the markets in the model are more accurately characterized as regional markets, with barriers to imports from outside the region, SAMI producers will be relatively better off than estimated and producers outside the SAMI region will be worse off. Similarly, consumers in the SAMI region would be worse off than currently projected and those outside the region would be better off.

- The allocation of social welfare costs between consumers and producers is highly dependent on the assumed elasticities. Where available, these elasticities were drawn from the economics literature. However, they were not available for many industries in

the model and even where they are available, they may not accurately represent the true responsiveness of consumers and producers to price changes over a period as long as is being considered here. Especially for 2040, market participants have so long to adjust to price changes (e.g., by finding substitute products) that they may be more responsive to price changes than assumed. Some sensitivity analysis on the choice of elasticities was performed (see Appendix B), but they may easily differ from the range of values assumed in the sensitivity analyses as well. This could potentially result in a distribution of costs between producers and consumers that differs from that presented in this report.

- This analysis assumes that costs are only being applied to the SAMI region and not to the rest of the U.S. While the states outside the SAMI region may not face B1 and B3 strategies, they will face some costs under the baseline due to the Clean Air Act (similar to A2 impacts for SAMI region). Because these costs are not available for the rest of the U.S., the results will tend to overstate the shift in production away from the SAMI region towards the rest of the U.S. In addition, to the extent that areas outside the SAMI region engage in similar air quality improvement initiatives, the shift of production away from the SAMI region will be further mitigated (although price changes would be greater).

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APPENDIX A:

ECONOMIC MODEL DESCRIPTION

To estimate the economic impacts associated with SAMI strategies A2, B1, and B3, EPA used a basic framework that is consistent with economic theory and the methodology used to estimate impacts associated with EPA air quality regulations. This approach employs standard microeconomic concepts to model behavioral responses expected to occur with regulation. This appendix describes the spreadsheet model in more detail and discusses how the Agency

- collected the baseline data set from the Annual Energy Outlook 2002 (DOE, EIA, 2002), U.S. Census Bureau (U.S. Department of Commerce, 2001), and U.S. Department of Agriculture (USDA, 2002).
- characterized market supply and demand for each market and specified links between the energy and agricultural, manufacturing, mining, and commercial markets.
- introduced a policy "shock" into the model by using control cost-induced shifts in the supply functions, and
- used a solution algorithm to determine a new with-regulation equilibrium for each market.

A.1 Baseline Data Set

EPA collected the following data to characterize the baseline years of the analysis (2010 and 2040):

- *Energy Market Data*—The Department of Energy's Supplemental Tables to the Annual Energy Outlook 2002 report forecasts of price, quantity, and fuel intensities used to calibrate the model.
- *Agriculture, Mining, Manufacturing, Commercial Sectors*—EPA obtained shipment data from the 1997 Economic Census and 1997 Agriculture Census. We then used annual growth rates reported by the Bureau of Economic Analysis (BEA, 1997) to estimate baseline shipment data. The Agency selected units for output such that the price in each market equals one. We computed energy demand using fuel intensity data reported in the AEO 2002.

Table A-1. Supply and Demand Elasticities Used in the Market Model

		Demand Elasticities			
	Supply Elasticities	**Industrial**	**Residential[a]**	**Transportation**	**Commercial**
Petroleum	0.58[b]	Derived	–0.28	Derived	Derived
Natural Gas	0.41[b]	Derived	–0.26	Derived	Derived
Electricity	0.75[c]	Derived	–0.23	Derived	Derived
Coal	1.00[b]	Derived	–0.26	Derived	Derived

NAICS	**Description**	**Supply[d]**	**Demand[d]**
311	Food	0.75[c]	–0.30
312	Beverage and Tobacco Products	0.75[c]	–1.30
313	Textile Mills	0.37[e]	–0.85[e]
314	Textile Product Mills	0.37[e]	–0.85[e]
315	Apparel	0.75[c]	–1.80
316	Leather and Allied Products	0.75[c]	–1.20
321	Wood Products	0.75[d]	–0.20
322	Paper	1.20[c]	–1.09
323	Printing and Related Support	0.75[c]	–1.80
325	Chemicals	0.75[c]	–1.50
326	Plastics and Rubber Products	0.75[c]	–1.80
327	Nonmetallic Mineral Products	0.75[c]	–0.90
331	Primary Metals	3.50[f]	–0.80
332	Fabricated Metal Products	0.75[c]	–0.20
333	Machinery	0.75[c]	–0.50
334	Computer and Electronic Products	0.75[c]	–0.30
335	Electrical Equipment, Appliances, and Components	0.75[c]	–0.50
336	Transportation Equipment	0.75[c]	–1.00[c]
337	Furniture and Related Products	0.75[c]	–3.40
339	Miscellaneous	0.75[c]	–0.60
11	Agricultural Sector	0.75[c]	–1.80

(continued)

Table A-1. Supply and Demand Elasticities (continued)

NAICS	Description	Supply[d]	Demand[d]
23	Construction Sector	0.75[c]	–1.00[c]
21	Other Mining Sector	0.43	–0.30
48	Transportation	0.75[c]	–0.70
Commercial	Commercial	0.75[c]	–1.00[c]

[a] U.S. Department of Energy, Energy Information Administration (EIA). "Issues in Midterm Analysis and Forecasting 1999—Table 1." <http://www.eia.doe.gov/oaif/issues/pricetbl1.html>. As obtained on May 8, 2000a.

[b] Dahl, Carol A., and Thomas E. Duggan. 1996. "U.S. Energy Product Supply Elasticities: A Survey and Application to the U.S. Oil Market." *Resource and Energy Economics*18:243-263.

[c] Assumed value.

[d] E.H. Pechan & Associates, Inc. 1997. Qualitative Market Impact Analysis for Implementation of the Selected Ozone and PM NAAQS. Appendix B. Prepared for the U.S. Environmental Protection Agency.

[e] Warfield, et al. 2001. "Multifiber Arrangement Phaseout: Implications for the U.S. Fibers/Textiles/Fabricated Products Complex." www.fibronet.com.tw/mirron/ncs/9312/mar.html> As obtained September 19, 2001.

[f] U.S. International Trade Commission (USITC). November 21, 2001. Memorandum to the Commission from Craig Thomsen, John Giamalua, John Benedetto, Joshua Levy, International Economists. Investigation No. TA-201-73: STEEL-Remedy Memorandum.

- *Supply and Demand Elasticities*—The supply and demand elasticity values used in the market model are reported in Table A-1 of this report. Given the uncertainties regarding these parameters, EPA also conducted several sensitivity analyses and report these results in Appendix B.

A.2 Multi-Market Model

The model includes four energy markets (coal, electricity, natural gas, and petroleum) and 24 goods and service markets. The following sections describe model equations the Agency developed to characterize these markets and estimate welfare changes resulting from the rule.

A.2.1 Supply Side Modeling

EPA estimated the change in quantity supplied as follows:

$$\Delta q^S = q_0^S \cdot \varepsilon^S \cdot \frac{\Delta p - c - \sum_{j=1}^{n} \alpha_j \Delta p_j}{p_0} \qquad \text{(A.1)}$$

where q_0^S is the baseline quantity, ε^S is the domestic supply elasticity, the term $\Delta p - c - \sum_{j=1}^{n} \alpha_j \Delta p_j$ is the change in the producer's net price, and p_0 is the baseline price. The change in net price is composed of the change in baseline price resulting from the regulation, the direct shift in the supply function resulting from compliance costs, and the indirect shift in the supply function resulting from changes in input prices in energy market (j). The fuel share is allowed to vary using a fuel switching rule relying on cross-price elasticities of demand between energy sources.

A.2.2 Producer Welfare Measurement

EPA approximated the change in producer surplus with the following equation:

$$\Delta PS = q_1 \cdot (\Delta p - c - \sum_{j=1}^{n} \alpha_j \Delta p_j) - 0.5 \cdot \Delta q \cdot (\Delta p - c - \sum_{j=1}^{n} \alpha_j \Delta p_j) \qquad \text{(A.2)}$$

Increased control costs, higher energy input costs, and output declines have a negative effect on domestic producer surplus. However, these losses are mitigated to some degree as a result of higher market prices.

A.2.3 Energy Demand Side Modeling

Market demand in the energy markets is expressed as the sum of the energy, residential, agriculture, manufacturing, mining, commercial, and transportation sectors:

$$Q_{Dj} = \sum_{i=1}^{n} q_{Dji} \,, \qquad \text{(A.3)}$$

where j indexes the energy market and i indexes the consuming sector. The change in residential quantity demanded of energy market j can be approximated as follows:

$$\Delta q^{D_j} = q_0^{D_j} \cdot \eta^{D_j} \cdot \frac{\Delta p_j}{p_{j0}} \qquad \text{(A.4)}$$

where $q_0^{D_j}$ is baseline consumption, η^{Dj} is the residential demand elasticity and (Δp) is the change in the market price.

In contrast, energy demand from energy, agricultural, manufacturing, mining, commercial, and transportation sectors is modeled as a derived demand resulting from the production and consumption choices in these industries. Energy demand responds to changes in sector output and fuel switching that occurs in response to changes in relative energy prices. For each of these sectors, energy demand is expressed as follows:

$$BTU_{ji1} = \frac{BTU_{ji}}{q_{i0}} \cdot FSW \cdot q_{i1} \qquad (A.5)$$

where BTU is demand for energy market j from sector i, q is sector i's output, and FSW is a factor generated by the fuel switching algorithm. The subscripts 0 and 1 represent baseline and with regulation conditions, respectively.

A.2.4 Agriculture, Manufacturing, Mining, Commercial, and Transportation Demand Side Modeling

The change in quantity demanded in these markets can be approximated as follows:

$$\Delta q^{D_i} = q_0^{D_i} \cdot \eta^{D_i} \cdot \frac{\Delta p_i}{p_{i0}} \qquad (A.6)$$

where $q_0^{D_i}$ is baseline output, η^D is the demand elasticity of the respective market (i) and (Δp_i) is the change in the market price.

The change in consumer surplus in markets is approximated as follows:

$$\Delta CS = - q_1 \cdot \Delta p + 0.5 \cdot \Delta q \cdot \Delta p \qquad (A.7)$$

As shown, higher market prices and reduced consumption lead to welfare losses for consumers.

A.3 With-Regulation Market Equilibrium Determination

Market adjustments can be conceptualized as an interactive feedback process. Supply segments face increased production costs as a result of the rule and are willing to supply smaller quantities at the baseline price. This reduction in market supply leads to an increase in the market

price that all producers and consumers face, which leads to further responses by producers and consumers and thus new market prices. The new with-regulation equilibrium is the result of a series of iterations in which price is adjusted and producers and consumers respond, until a set of stable market prices arises where total market supply equals market demand (i.e., $Qs = Q_D$) in each market. Market price adjustment takes place based on a price revision rule that adjusts price upward (downward) by a given percentage in response to excess demand (excess supply).

The algorithm for determining with-regulation equilibria can be summarized by seven recursive steps:

1. Impose the control costs on affected supply segments, thereby affecting their supply decisions.

2. Recalculate the market supply in each market. Excess demand currently exists.

3. Determine the new prices via a price revision rule.

4. Recalculate market supply with new prices, accounting for fuel switching choices associated with new energy prices.

5. Compute market demand in each market.

6. Compare supply and demand in each markets. If equilibrium conditions are not satisfied, go to Step 3, resulting in a new set of market prices. Repeat until equilibrium conditions are satisfied (i.e., the ratio of supply to demand is arbitrarily close to one).

APPENDIX B:

SENSITIVITY ANALYSES

Estimates of the economic impacts of the SAMI strategies are sensitive to the parameters used in the model. Therefore, a sensitivity analysis was conducted to determine the effects on the model results of changing several of the key parameters. This appendix presents the results of sensitivity analyses that were developed for the elasticities of supply and demand in the energy markets and the final product markets. In general, estimates of the total change in social welfare are robust. However, the distribution of welfare losses across producers and consumers and between different markets responds moderately to changes in the selected parameters.

Results of the sensitivity analyses are presented for both 2010 and 2040. Tables B-1 through B-20 contain results for 2010, while Tables B-21 through B-40 contain the equivalent tables for 2040. Tables B-1 through B-5 (B-21 through B-25) present estimates of the distribution of social costs associated with the SAMI strategies between consumers and producers for 2010 (2040). Tables B-6 through B-10 (B-26 through B-30) provide estimates of the national market-level changes in 2010 (2040) price and quantity for each energy and product market analyzed under each of the SAMI strategies. Tables B-11 through B-15 (B-31 through B-35) contain estimates of the impacts on 2010 (2040) consumer surplus by market sector for each SAMI strategy. Finally, Tables B-16 through B-20 (B-36 through B-40) provide estimates of the impacts on 2010 (2040) producer surplus by market sector under each SAMI strategy.

Table B-1. Distribution of 2010 Social Costs Associated with the A2 Strategy: Sensitivity to Elasticity Assumptions (2000$)

	Loss/Gain (10^6)				
Stakeholder	**Primary**	**Sensitivity Analysis A[a]**	**Sensitivity Analysis B[b]**	**Sensitivity Analysis C[c]**	**Sensitivity Analysis D[d]**
Consumers	–$1,678.6	–$1,929.1	–$1,221.1	–$1,486.8	–$1,928.9
Agriculture, Mining, Manufacturing	–$369.7	–$441.0	–$256.7	–$313.4	–$446.2
Commercial	–$369.1	–$451.4	–$253.6	–$305.8	–$456.8
Residential	–$857.1	–$931.0	–$691.9	–$808.1	–$913.3
Transportation	–$82.6	–$105.8	–$19.0	–$59.5	–$112.6
Producers	–$1,395.1	–$1,137.5	–$1,859.3	–$1,586.3	–$1,145.3
Energy	–$520.0	–$277.0	–$1,075.1	–$686.2	–$326.1
Rest of U.S.	$1,765.7	$1,940.3	$1,356.7	$1,640.9	$1,911.6
South Atlantic/East South Central	–$2,285.7	–$2,217.3	–$2,431.8	–$2,327.1	–$2,237.7
Agriculture, Mining, Manufacturing	–$369.4	–$364.3	–$327.5	–$378.6	–$347.6
Rest of U.S.	–$277.9	–$273.1	–$240.3	–$286.4	–$257.9
SAMI Region	–$91.6	–$91.2	–$87.2	–$92.3	–$89.7
Commercial	–$492.1	–$481.5	–$450.8	–$509.7	–$456.8
Transportation	–$13.6	–$14.7	–$5.8	–$11.8	–$14.9
Rest of U.S.	–$11.2	–$12.2	–$4.8	–$9.8	–$12.3
SAMI Region	–$2.3	–$2.5	–$1.0	–$2.0	–$2.5
Total Social Cost:	–$3,073.7	–$3,066.6	–$3,080.4	–$3,073.2	–$3,074.3

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-2. Distribution of 2010 Social Costs Associated with the B1 Strategy: Sensitivity to Elasticity Assumptions (2000$)

	Loss/Gain (10^6)				
Stakeholder	**Primary**	**Sensitivity Analysis A[a]**	**Sensitivity Analysis B[b]**	**Sensitivity Analysis C[c]**	**Sensitivity Analysis D[d]**
Consumers	–$2,979.1	–$3,418.2	–$2,193.2	–$2,193.2	–$3,428.0
Agriculture, Mining, Manufacturing	–$803.3	–$944.2	–$587.5	–$587.5	–$960.1
Commercial	–$615.8	–$752.8	–$423.9	–$423.9	–$762.5
Residential	–$1,421.6	–$1,544.0	–$1,148.5	–$1,148.5	–$1,516.4
Transportation	–$138.5	–$177.1	–$33.1	–$33.1	–$189.0
Producers	–$2,540.6	–$2,082.1	–$3,345.3	–$3,345.3	–$2,093.4
Energy	–$857.6	–$446.3	–$1,783.1	–$1,783.1	–$531.0
Rest of U.S.	$2,944.5	$3,237.4	$2,265.0	$2,265.0	$3,191.1
South Atlantic/East South Central	–$3,802.1	–$3,683.7	–$4,048.2	–$4,048.2	–$3,722.1
Agriculture, Mining, Manufacturing	–$839.5	–$808.4	–$798.7	–$798.7	–$775.1
Rest of U.S.	–$313.7	–$288.3	–$273.9	–$273.9	–$258.5
SAMI Region	–$525.7	–$520.1	–$524.8	–$524.8	–$516.6
Commercial	–$821.1	–$803.0	–$753.7	–$753.7	–$762.5
Transportation	–$22.5	–$24.4	–$9.7	–$9.7	–$24.8
Rest of U.S.	–$18.6	–$20.3	–$8.0	–$8.0	–$20.5
SAMI Region	–$3.9	–$4.2	–$1.7	–$1.7	–$4.2
Total Social Cost:	–$5,519.8	–$5,500.3	–$5,538.4	–$5,538.4	–$5,521.4

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-3. Distribution of 2010 Social Costs Associated with the B3 Strategy: Sensitivity to Elasticity Assumptions (2000$)

	Loss/Gain (10^6)				
Stakeholder	**Primary**	**Sensitivity Analysis A[a]**	**Sensitivity Analysis B[b]**	**Sensitivity Analysis C[c]**	**Sensitivity Analysis D[d]**
Consumers	–$5,555.9	–$6,377.1	–$4,082.8	–$4,913.0	–$6,394.8
Agriculture, Mining, Manufacturing	–$1,471.1	–$1,732.3	–$1,070.3	–$1,255.0	–$1,761.1
Commercial	–$1,153.2	–$1,410.5	–$792.6	–$954.7	–$1,428.4
Residential	–$2,671.6	–$2,901.4	–$2,158.3	–$2,516.2	–$2,850.3
Transportation	–$260.0	–$332.8	–$61.5	–$187.1	–$354.9
Producers	–$4,600.8	–$3,710.8	–$6,139.5	–$5,238.7	–$3,767.5
Energy	–$1,471.4	–$664.8	–$3,245.5	–$1,994.7	–$858.7
Rest of U.S.	$5,564.3	$6,126.0	$4,274.4	$5,167.6	$6,029.7
South Atlantic/East South Central	–$7,035.7	–$6,790.8	–$7,519.9	–$7,162.3	–$6,888.4
Agriculture, Mining, Manufacturing	–$1,549.5	–$1,495.4	–$1,466.8	–$1,616.0	–$1,433.9
Rest of U.S.	–$623.1	–$580.0	–$542.0	–$679.0	–$524.8
SAMI Region	–$926.4	–$915.4	–$924.8	–$937.0	–$909.1
Commercial	–$1,537.6	–$1,504.6	–$1,409.1	–$1,591.2	–$1,428.4
Transportation	–$42.3	–$46.0	–$18.2	–$36.7	–$46.5
Rest of U.S.	–$35.0	–$38.1	–$15.0	–$30.4	–$38.6
SAMI Region	–$7.3	–$7.9	–$3.2	–$6.3	–$8.0
Total Social Cost:	–$10,156.7	–$10,087.9	–$10,222.4	–$10,151.7	–$10,162.3

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-4. Distribution of 2010 Incremental Social Costs Associated with the B1 Strategy (B1–A2): Sensitivity to Elasticity Assumptions (2000$)

	Loss/Gain (10^6)				
Stakeholder	**Primary**	**Sensitivity Analysis A[a]**	**Sensitivity Analysis B[b]**	**Sensitivity Analysis C[c]**	**Sensitivity Analysis D[d]**
Consumers	–$1,300.6	–$1,489.1	–$972.0	–$706.3	–$1,499.1
Agriculture, Mining, Manufacturing	–$433.5	–$503.2	–$330.8	–$274.2	–$513.9
Commercial	–$246.7	–$301.4	–$170.3	–$118.1	–$305.7
Residential	–$564.5	–$613.0	–$456.7	–$340.4	–$603.1
Transportation	–$55.9	–$71.4	–$14.2	$26.4	–$76.4
Producers	–$1,145.5	–$944.6	–$1,485.9	–$1,758.9	–$948.0
Energy	–$337.6	–$169.4	–$708.0	–$1,096.9	–$204.9
Rest of U.S.	$1,178.8	$1,297.1	$908.3	$624.1	$1,279.5
South Atlantic/East South Central	–$1,516.4	–$1,466.4	–$1,616.3	–$1,721.1	–$1,484.4
Agriculture, Mining, Manufacturing	–$470.1	–$444.1	–$471.2	–$420.1	–$427.5
Rest of U.S.	–$35.9	–$15.2	–$33.6	$12.4	–$0.6
SAMI Region	–$434.2	–$428.9	–$437.6	–$432.5	–$426.9
Commercial	–$328.9	–$321.5	–$302.8	–$244.0	–$305.7
Transportation	–$8.9	–$9.7	–$3.9	$2.1	–$9.9
Rest of U.S.	–$7.4	–$8.0	–$3.2	$1.8	–$8.2
SAMI Region	–$1.5	–$1.7	–$0.7	$0.4	–$1.7
Total Social Cost:	–$2,446.1	–$2,433.7	–$2,458.0	–$2,465.2	–$2,447.1

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-5. Distribution of 2010 Incremental Social Costs Associated with the B3 Strategy (B3–A2): Sensitivity to Elasticity Assumptions (2000$)

	Loss/Gain (10^6)				
Stakeholder	**Primary**	**Sensitivity Analysis A[a]**	**Sensitivity Analysis B[b]**	**Sensitivity Analysis C[c]**	**Sensitivity Analysis D[d]**
Consumers	–$3,877.3	–$4,448.0	–$2,861.7	–$3,426.2	–$4,465.9
Agriculture, Mining, Manufacturing	–$1,101.4	–$1,291.4	–$813.7	–$941.6	–$1,314.9
Commercial	–$784.1	–$959.2	–$539.0	–$648.9	–$971.7
Residential	–$1,814.4	–$1,970.5	–$1,466.5	–$1,708.1	–$1,937.0
Transportation	–$177.4	–$227.0	–$42.6	–$127.6	–$242.4
Producers	–$3,205.7	–$2,573.3	–$4,280.2	–$3,652.3	–$2,622.2
Energy	–$951.4	–$387.9	–$2,170.4	–$1,308.5	–$532.6
Rest of U.S.	$3,798.6	$4,185.7	$2,917.7	$3,526.7	$4,118.0
South Atlantic/East South Central	–$4,750.0	–$4,573.5	–$5,088.1	–$4,835.3	–$4,650.6
Agriculture, Mining, Manufacturing	–$1,180.1	–$1,131.1	–$1,139.3	–$1,237.4	–$1,086.3
Rest of U.S.	–$345.3	–$306.9	–$301.7	–$392.7	–$266.8
SAMI Region	–$834.8	–$824.2	–$837.6	–$844.7	–$819.4
Commercial	–$1,045.5	–$1,023.1	–$958.2	–$1,081.6	–$971.7
Transportation	–$28.7	–$31.2	–$12.3	–$24.9	–$31.7
Rest of U.S.	–$23.8	–$25.9	–$10.2	–$20.6	–$26.2
SAMI Region	–$4.9	–$5.4	–$2.1	–$4.3	–$5.4
Total Social Cost:	–$7,083.0	–$7,021.3	–$7,141.9	–$7,078.5	–$7,088.1

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-6. National Market-Level Impacts on Prices and Quantities in 2010 Associated with the A2 Strategy: Sensitivity to Elasticity Assumptions

			Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
		Energy Markets	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**
		Petroleum	0.025%	0.002%	0.033%	0.005%	0.004%	–0.004%	0.018%	–0.001%	0.035%	0.005%
		Natural Gas	0.166%	0.049%	0.213%	0.084%	0.022%	–0.004%	0.117%	0.030%	0.224%	0.072%
		Electricity	0.889%	–0.186%	0.956%	–0.178%	0.751%	–0.204%	0.850%	–0.209%	0.933%	–0.160%
		Coal	–0.217%	–0.232%	–0.181%	–0.246%	–0.290%	–0.226%	–0.239%	–0.253%	–0.193%	–0.209%
NAICS	**SIC**											
311	20 (pt)	Food	0.005%	–0.001%	0.005%	–0.002%	0.003%	–0.001%	0.004%	–0.001%	0.005%	–0.001%
312	20 (pt); 21	Beverage and Tobacco Products	0.004%	–0.005%	0.005%	–0.007%	0.003%	–0.003%	0.003%	–0.005%	0.005%	–0.005%
313	22 (pt)	Textile Mills	0.004%	–0.003%	0.005%	–0.004%	0.002%	–0.002%	0.003%	–0.003%	0.005%	–0.003%
314	22 (pt)	Textile Product Mills	0.003%	–0.003%	0.004%	–0.004%	0.002%	–0.002%	0.003%	–0.003%	0.004%	–0.003%
315	23	Apparel	0.003%	–0.006%	0.004%	–0.008%	0.002%	–0.004%	0.003%	–0.006%	0.004%	–0.006%
316	31	Leather and Allied Products	0.004%	–0.005%	0.005%	–0.006%	0.003%	–0.003%	0.004%	–0.005%	0.005%	–0.005%
321	24	Wood Products	0.009%	–0.002%	0.010%	–0.002%	0.006%	–0.001%	0.008%	–0.002%	0.010%	–0.001%
322	26	Paper	0.018%	–0.019%	0.021%	–0.023%	0.013%	–0.014%	0.015%	–0.021%	0.021%	–0.017%
323	27	Printing and Related Support	0.003%	–0.006%	0.004%	–0.008%	0.002%	–0.004%	0.003%	–0.006%	0.004%	–0.006%
325	28	Chemicals	0.010%	–0.015%	0.012%	–0.019%	0.006%	–0.009%	0.008%	–0.015%	0.013%	–0.014%
326	30	Plastics and Rubber Products	0.003%	–0.006%	0.004%	–0.008%	0.002%	–0.004%	0.003%	–0.006%	0.004%	–0.006%
327	32	Nonmetallic Mineral Products	0.010%	–0.009%	0.012%	–0.011%	0.006%	–0.006%	0.008%	–0.009%	0.012%	–0.008%
331	33	Primary Metals	0.027%	–0.022%	0.030%	–0.024%	0.020%	–0.016%	0.024%	–0.024%	0.030%	–0.018%
332	34	Fabricated Metal Products	0.004%	–0.001%	0.005%	–0.001%	0.003%	–0.001%	0.004%	–0.001%	0.005%	–0.001%
333	35	Machinery	0.003%	–0.002%	0.004%	–0.002%	0.002%	–0.001%	0.003%	–0.002%	0.004%	–0.001%

(continued)

Table B-6. National Market-Level Impacts on Prices and Quantities in 2010 Associated with the A2 Strategy: Sensitivity to Elasticity Assumptions (Continued)

NAICS	SIC		Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
			Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity
334	36 (pt)	Computer and Electronic Products	0.004%	–0.001%	0.004%	–0.001%	0.003%	–0.001%	0.003%	–0.001%	0.004%	–0.001%
335	36 (pt)	Electrical Equip., Appliances, and Components	0.003%	–0.002%	0.004%	–0.002%	0.002%	–0.001%	0.003%	–0.002%	0.004%	–0.001%
336	37	Transportation Equipment	0.002%	–0.002%	0.003%	–0.003%	0.001%	–0.001%	0.002%	–0.002%	0.003%	–0.002%
337	25	Furniture and Related Products	0.002%	–0.007%	0.003%	–0.009%	0.001%	–0.004%	0.002%	–0.008%	0.003%	–0.007%
339	39	Miscellaneous	0.006%	–0.004%	0.007%	–0.004%	0.004%	–0.003%	0.005%	–0.004%	0.008%	–0.003%
11	01–08	Agricultural Sector	0.003%	–0.005%	0.004%	–0.006%	0.002%	–0.003%	0.002%	–0.005%	0.004%	–0.005%
23	15–17	Construction Sector	0.001%	–0.001%	0.002%	–0.002%	0.001%	–0.001%	0.001%	–0.001%	0.002%	–0.001%
21	10;14	Other Mining Sector	0.030%	–0.009%	0.035%	–0.011%	0.021%	–0.006%	0.025%	–0.010%	0.035%	–0.008%
484	42(pt)	Trucking Transportation	0.003%	–0.003%	0.005%	–0.005%	0.000%	0.000%	0.002%	–0.003%	0.005%	–0.004%
482	401	Railroads	0.019%	–0.008%	0.023%	–0.009%	0.013%	–0.005%	0.017%	–0.008%	0.023%	–0.007%
NAICS 42–45; 51–55; 61–72	41–48 (pt); 50–99	Commercial	0.002%	–0.002%	0.003%	–0.003%	0.002%	–0.002%	0.002%	–0.002%	0.003%	–0.002%

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-7. National Market-Level Impacts on Prices and Quantities in 2010 Associated with the B1 Strategy: Sensitivity to Elasticity Assumptions

			Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
		Energy Markets	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**
		Petroleum	0.042%	0.003%	0.054%	0.008%	0.007%	–0.007%	0.030%	–0.002%	0.058%	0.009%
		Natural Gas	0.315%	0.071%	0.396%	0.127%	0.075%	–0.016%	0.232%	0.039%	0.414%	0.109%
		Electricity	1.465%	–0.306%	1.575%	–0.293%	1.237%	–0.335%	1.400%	–0.345%	1.539%	–0.262%
		Coal	–0.358%	–0.382%	–0.298%	–0.405%	–0.477%	–0.373%	–0.393%	–0.416%	–0.318%	–0.343%
NAICS	**SIC**											
311	20 (pt)	Food	0.008%	–0.002%	0.009%	–0.003%	0.005%	–0.002%	0.007%	–0.002%	0.009%	–0.002%
312	20 (pt); 21	Beverage and Tobacco Products	0.007%	–0.009%	0.009%	–0.011%	0.004%	–0.006%	0.005%	–0.009%	0.009%	–0.008%
313	22 (pt)	Textile Mills	0.015%	–0.013%	0.018%	–0.016%	0.011%	–0.010%	0.013%	–0.013%	0.019%	–0.012%
314	22 (pt)	Textile Product Mills	0.006%	–0.005%	0.007%	–0.006%	0.004%	–0.003%	0.005%	–0.005%	0.007%	–0.005%
315	23	Apparel	0.005%	–0.010%	0.007%	–0.013%	0.003%	–0.006%	0.004%	–0.010%	0.007%	–0.010%
316	31	Leather and Allied Products	0.007%	–0.009%	0.009%	–0.011%	0.005%	–0.006%	0.006%	–0.009%	0.009%	–0.008%
321	24	Wood Products	0.015%	–0.003%	0.017%	–0.003%	0.011%	–0.002%	0.013%	–0.003%	0.017%	–0.002%
322	26	Paper	0.078%	–0.085%	0.088%	–0.096%	0.063%	–0.069%	0.068%	–0.093%	0.090%	–0.074%
323	27	Printing and Related Support	0.005%	–0.010%	0.007%	–0.013%	0.004%	–0.006%	0.004%	–0.010%	0.007%	–0.010%
325	28	Chemicals	0.024%	–0.035%	0.029%	–0.043%	0.016%	–0.024%	0.019%	–0.036%	0.030%	–0.034%
326	30	Plastics and Rubber Products	0.005%	–0.010%	0.007%	–0.013%	0.003%	–0.006%	0.004%	–0.010%	0.007%	–0.010%
327	32	Nonmetallic Mineral Products	0.017%	–0.015%	0.020%	–0.018%	0.011%	–0.010%	0.013%	–0.015%	0.021%	–0.014%
331	33	Primary Metals	0.044%	–0.035%	0.050%	–0.040%	0.033%	–0.026%	0.039%	–0.039%	0.050%	–0.030%
332	34	Fabricated Metal Products	0.007%	–0.001%	0.008%	–0.002%	0.005%	–0.001%	0.006%	–0.002%	0.008%	–0.001%
333	35	Machinery	0.005%	–0.003%	0.006%	–0.003%	0.004%	–0.002%	0.004%	–0.003%	0.006%	–0.002%

(continued)

Table B-7. National Market-Level Impacts on Prices and Quantities in 2010 Associated with the B1 Strategy: Sensitivity to Elasticity Assumptions (Continued)

NAICS	SIC		Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
			Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity
334	36 (pt)	Computer and Electronic Products	0.006%	–0.002%	0.007%	–0.002%	0.005%	–0.001%	0.005%	–0.002%	0.007%	–0.002%
335	36 (pt)	Electrical Equip., Appliances, and Components	0.005%	–0.003%	0.006%	–0.003%	0.004%	–0.002%	0.004%	–0.003%	0.006%	–0.002%
336	37	Transportation Equipment	0.004%	–0.004%	0.004%	–0.004%	0.002%	–0.002%	0.003%	–0.004%	0.005%	–0.003%
337	25	Furniture and Related Products	0.003%	–0.011%	0.004%	–0.015%	0.002%	–0.007%	0.003%	–0.014%	0.005%	–0.012%
339	39	Miscellaneous	0.010%	–0.006%	0.012%	–0.007%	0.007%	–0.004%	0.009%	–0.007%	0.013%	–0.006%
11	01–08	Agricultural Sector	0.005%	–0.008%	0.006%	–0.010%	0.003%	–0.005%	0.004%	–0.008%	0.006%	–0.008%
23	15–17	Construction Sector	0.002%	–0.002%	0.003%	–0.003%	0.001%	–0.001%	0.002%	–0.002%	0.003%	–0.002%
21	10;14	Other Mining Sector	0.049%	–0.015%	0.058%	–0.017%	0.035%	–0.010%	0.042%	–0.016%	0.058%	–0.013%
484	42(pt)	Trucking Transportation	0.006%	–0.006%	0.008%	–0.008%	0.001%	–0.001%	0.003%	–0.004%	0.009%	–0.007%
482	401	Railroads	0.032%	–0.013%	0.038%	–0.015%	0.022%	–0.009%	0.027%	–0.014%	0.038%	–0.011%
NAICS 42–45; 51–55; 61–72	41–48 (pt); 50–99	Commercial	0.004%	–0.004%	0.005%	–0.005%	0.003%	–0.003%	0.003%	–0.004%	0.005%	–0.003%

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-8. National Market-Level Impacts on Prices and Quantities in 2010 Associated with the B3 Strategy: Sensitivity to Elasticity Assumptions

			Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
		Energy Markets	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**
		Petroleum	0.079%	0.005%	0.102%	0.016%	0.013%	–0.013%	0.056%	–0.003%	0.109%	0.017%
		Natural Gas	0.582%	0.136%	0.734%	0.243%	0.131%	–0.028%	0.427%	0.077%	0.768%	0.208%
		Electricity	2.760%	–0.577%	2.967%	–0.553%	2.330%	–0.632%	2.637%	–0.650%	2.898%	–0.495%
		Coal	–0.674%	–0.720%	–0.561%	–0.763%	–0.899%	–0.702%	–0.741%	–0.784%	–0.599%	–0.647%
NAICS	**SIC**											
311	20 (pt)	Food	0.014%	–0.004%	0.017%	–0.005%	0.010%	–0.003%	0.012%	–0.005%	0.017%	–0.004%
312	20 (pt); 21	Beverage and Tobacco Products	0.013%	–0.017%	0.016%	–0.021%	0.008%	–0.011%	0.010%	–0.017%	0.016%	–0.016%
313	22 (pt)	Textile Mills	0.044%	–0.037%	0.052%	–0.044%	0.034%	–0.029%	0.036%	–0.039%	0.054%	–0.034%
314	22 (pt)	Textile Product Mills	0.011%	–0.009%	0.013%	–0.011%	0.007%	–0.006%	0.008%	–0.009%	0.014%	–0.009%
315	23	Apparel	0.010%	–0.018%	0.013%	–0.024%	0.007%	–0.012%	0.008%	–0.018%	0.013%	–0.018%
316	31	Leather and Allied Products	0.013%	–0.016%	0.017%	–0.020%	0.009%	–0.011%	0.011%	–0.016%	0.017%	–0.015%
321	24	Wood Products	0.028%	–0.006%	0.031%	–0.006%	0.020%	–0.004%	0.024%	–0.006%	0.031%	–0.005%
322	26	Paper	0.129%	–0.140%	0.146%	–0.160%	0.104%	–0.113%	0.113%	–0.154%	0.150%	–0.122%
323	27	Printing and Related Support	0.010%	–0.019%	0.013%	–0.024%	0.007%	–0.012%	0.008%	–0.018%	0.013%	–0.018%
325	28	Chemicals	0.043%	–0.064%	0.053%	–0.079%	0.029%	–0.044%	0.035%	–0.065%	0.054%	–0.061%
326	30	Plastics and Rubber Products	0.010%	–0.018%	0.013%	–0.024%	0.007%	–0.012%	0.008%	–0.018%	0.013%	–0.018%
327	32	Nonmetallic Mineral Products	0.031%	–0.028%	0.038%	–0.035%	0.020%	–0.018%	0.025%	–0.028%	0.039%	–0.026%
331	33	Primary Metals	0.086%	–0.069%	0.096%	–0.077%	0.064%	–0.051%	0.077%	–0.077%	0.097%	–0.058%
332	34	Fabricated Metal Products	0.013%	–0.003%	0.014%	–0.003%	0.010%	–0.002%	0.011%	–0.003%	0.014%	–0.002%
333	35	Machinery	0.010%	–0.005%	0.011%	–0.006%	0.007%	–0.003%	0.008%	–0.005%	0.011%	–0.004%

(continued)

Table B-8. National Market-Level Impacts on Prices and Quantities in 2010 Associated with the B3 Strategy: Sensitivity to Elasticity Assumptions (Continued)

NAICS	SIC		Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
			Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity
334	36 (pt)	Computer and Electronic Products	0.011%	–0.003%	0.013%	–0.004%	0.008%	–0.003%	0.010%	–0.004%	0.013%	–0.003%
335	36 (pt)	Electrical Equip., Appliances, and Components	0.010%	–0.005%	0.011%	–0.006%	0.007%	–0.003%	0.008%	–0.005%	0.011%	–0.004%
336	37	Transportation Equipment	0.007%	–0.007%	0.008%	–0.008%	0.005%	–0.005%	0.006%	–0.007%	0.009%	–0.006%
337	25	Furniture and Related Products	0.006%	–0.021%	0.008%	–0.028%	0.004%	–0.013%	0.004%	–0.015%	0.009%	–0.022%
339	39	Miscellaneous	0.019%	–0.012%	0.023%	–0.014%	0.013%	–0.008%	0.016%	–0.012%	0.024%	–0.011%
11	01–08	Agricultural Sector	0.009%	–0.015%	0.011%	–0.020%	0.005%	–0.010%	0.007%	–0.015%	0.011%	–0.015%
23	15–17	Construction Sector	0.005%	–0.005%	0.006%	–0.006%	0.003%	–0.003%	0.004%	–0.005%	0.006%	–0.005%
21	10;14	Other Mining Sector	0.092%	–0.028%	0.109%	–0.033%	0.066%	–0.020%	0.079%	–0.030%	0.109%	–0.025%
484	42(pt)	Trucking Transportation	0.010%	–0.010%	0.015%	–0.015%	0.001%	–0.001%	0.006%	–0.008%	0.017%	–0.013%
482	401	Railroads	0.060%	–0.024%	0.071%	–0.028%	0.041%	–0.016%	0.051%	–0.025%	0.071%	–0.021%
NAICS 42–45; 51–55; 61–72	41–48 (pt); 50–99	Commercial	0.007%	–0.007%	0.008%	–0.008%	0.005%	–0.005%	0.006%	–0.007%	0.009%	–0.006%

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-9. Incremental National Market-Level Impacts on Prices and Quantities in 2010 Associated with the B1 Strategy (B1–A2): Sensitivity to Elasticity Assumptions

			Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
		Energy Markets	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**
		Petroleum	0.017%	0.001%	0.022%	0.003%	0.003%	–0.003%	0.012%	–0.001%	0.023%	0.003%
		Natural Gas	0.149%	0.022%	0.183%	0.043%	0.052%	–0.011%	0.115%	0.009%	0.190%	0.038%
		Electricity	0.575%	–0.120%	0.619%	–0.115%	0.486%	–0.131%	0.549%	–0.136%	0.605%	–0.102%
		Coal	–0.141%	–0.150%	–0.117%	–0.159%	–0.187%	–0.146%	–0.155%	–0.164%	–0.124%	–0.135%
NAICS	**SIC**											
311	20 (pt)	Food	0.003%	–0.001%	0.004%	–0.001%	0.002%	–0.001%	0.003%	–0.001%	0.004%	–0.001%
312	20 (pt); 21	Beverage and Tobacco Products	0.003%	–0.004%	0.003%	–0.004%	0.002%	–0.002%	0.002%	–0.004%	0.003%	–0.003%
313	22 (pt)	Textile Mills	0.012%	–0.010%	0.014%	–0.012%	0.009%	–0.008%	0.010%	–0.010%	0.014%	–0.009%
314	22 (pt)	Textile Product Mills	0.002%	–0.002%	0.003%	–0.002%	0.001%	–0.001%	0.002%	–0.002%	0.003%	–0.002%
315	23	Apparel	0.002%	–0.004%	0.003%	–0.005%	0.001%	–0.003%	0.002%	–0.004%	0.003%	–0.004%
316	31	Leather and Allied Products	0.003%	–0.003%	0.004%	–0.004%	0.002%	–0.002%	0.002%	–0.003%	0.004%	–0.003%
321	24	Wood Products	0.006%	–0.001%	0.007%	–0.001%	0.004%	–0.001%	0.005%	–0.001%	0.007%	–0.001%
322	26	Paper	0.060%	–0.066%	0.067%	–0.073%	0.050%	–0.055%	0.053%	–0.073%	0.069%	–0.056%
323	27	Printing and Related Support	0.002%	–0.004%	0.003%	–0.005%	0.001%	–0.003%	0.002%	–0.004%	0.003%	–0.004%
325	28	Chemicals	0.014%	–0.020%	0.016%	–0.025%	0.010%	–0.015%	0.011%	–0.021%	0.017%	–0.019%
326	30	Plastics and Rubber Products	0.002%	–0.004%	0.003%	–0.005%	0.001%	–0.003%	0.002%	–0.004%	0.003%	–0.004%
327	32	Nonmetallic Mineral Products	0.007%	–0.006%	0.008%	–0.007%	0.004%	–0.004%	0.005%	–0.006%	0.008%	–0.006%
331	33	Primary Metals	0.017%	–0.014%	0.020%	–0.016%	0.013%	–0.010%	0.015%	–0.015%	0.020%	–0.012%
332	34	Fabricated Metal Products	0.003%	–0.001%	0.003%	–0.001%	0.002%	0.000%	0.002%	–0.001%	0.003%	0.000%
333	35	Machinery	0.002%	–0.001%	0.002%	–0.001%	0.001%	–0.001%	0.002%	–0.001%	0.002%	–0.001%

(continued)

Table B-9. Incremental National Market-Level Impacts on Prices and Quantities in 2010 Associated with the B1 Strategy (B1–A2): Sensitivity to Elasticity Assumptions (Continued)

			Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
NAICS	SIC		Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity
334	36 (pt)	Computer and Electronic Products	0.002%	–0.001%	0.003%	–0.001%	0.002%	–0.001%	0.002%	–0.001%	0.003%	–0.001%
335	36 (pt)	Electrical Equip., Appliances, and Components	0.002%	–0.001%	0.002%	–0.001%	0.001%	–0.001%	0.002%	–0.001%	0.002%	–0.001%
336	37	Transportation Equipment	0.001%	–0.001%	0.002%	–0.002%	0.001%	–0.001%	0.001%	–0.001%	0.002%	–0.001%
337	25	Furniture and Related Products	0.001%	–0.005%	0.002%	–0.006%	0.001%	–0.003%	0.001%	–0.006%	0.002%	–0.005%
339	39	Miscellaneous	0.004%	–0.002%	0.005%	–0.003%	0.003%	–0.002%	0.003%	–0.003%	0.005%	–0.002%
11	01–08	Agricultural Sector	0.002%	–0.003%	0.002%	–0.004%	0.001%	–0.002%	0.001%	–0.003%	0.002%	–0.003%
23	15–17	Construction Sector	0.001%	–0.001%	0.001%	–0.001%	0.001%	–0.001%	0.001%	–0.001%	0.001%	–0.001%
21	10;14	Other Mining Sector	0.019%	–0.006%	0.023%	–0.007%	0.014%	–0.004%	0.017%	–0.006%	0.023%	–0.005%
484	42(pt)	Trucking Transportation	0.002%	–0.002%	0.003%	–0.003%	0.000%	0.000%	0.001%	–0.002%	0.004%	–0.003%
482	401	Railroads	0.012%	–0.005%	0.015%	–0.006%	0.009%	–0.003%	0.011%	–0.005%	0.015%	–0.004%
NAICS 42–45; 51–55; 61–72	41–48 (pt); 50–99	Commercial	0.001%	–0.001%	0.002%	–0.002%	0.001%	–0.001%	0.001%	–0.002%	0.002%	–0.001%

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-10. Incremental National Market-Level Impacts on Prices and Quantities in 2010 Associated with the B3 Strategy (B3–A2): Sensitivity to Elasticity Assumptions

			Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
		Energy Markets	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**
		Petroleum	0.054%	0.003%	0.069%	0.010%	0.009%	–0.009%	0.038%	–0.002%	0.074%	0.011%
		Natural Gas	0.417%	0.087%	0.521%	0.159%	0.108%	–0.023%	0.310%	0.046%	0.544%	0.136%
		Electricity	1.870%	–0.391%	2.011%	–0.374%	1.579%	–0.428%	1.787%	–0.441%	1.965%	–0.335%
		Coal	–0.457%	–0.488%	–0.380%	–0.517%	–0.609%	–0.476%	–0.503%	–0.532%	–0.406%	–0.438%
NAICS	**SIC**											
311	20 (pt)	Food	0.010%	–0.003%	0.011%	–0.003%	0.007%	–0.002%	0.008%	–0.003%	0.011%	–0.003%
312	20 (pt); 21	Beverage and Tobacco Products	0.009%	–0.011%	0.011%	–0.014%	0.006%	–0.007%	0.007%	–0.011%	0.011%	–0.011%
313	22 (pt)	Textile Mills	0.040%	–0.034%	0.047%	–0.040%	0.031%	–0.027%	0.034%	–0.036%	0.049%	–0.031%
314	22 (pt)	Textile Product Mills	0.007%	–0.006%	0.009%	–0.008%	0.005%	–0.004%	0.006%	–0.006%	0.009%	–0.006%
315	23	Apparel	0.007%	–0.013%	0.009%	–0.016%	0.004%	–0.008%	0.006%	–0.012%	0.009%	–0.012%
316	31	Leather and Allied Products	0.009%	–0.011%	0.011%	–0.014%	0.006%	–0.007%	0.007%	–0.011%	0.012%	–0.010%
321	24	Wood Products	0.019%	–0.004%	0.021%	–0.004%	0.014%	–0.003%	0.017%	–0.004%	0.021%	–0.003%
322	26	Paper	0.111%	–0.121%	0.125%	–0.137%	0.091%	–0.099%	0.098%	–0.133%	0.128%	–0.105%
323	27	Printing and Related Support	0.007%	–0.013%	0.009%	–0.016%	0.004%	–0.008%	0.006%	–0.013%	0.009%	–0.012%
325	28	Chemicals	0.033%	–0.049%	0.040%	–0.060%	0.023%	–0.035%	0.027%	–0.051%	0.042%	–0.047%
326	30	Plastics and Rubber Products	0.007%	–0.013%	0.009%	–0.016%	0.004%	–0.008%	0.006%	–0.012%	0.009%	–0.012%
327	32	Nonmetallic Mineral Products	0.021%	–0.019%	0.026%	–0.024%	0.014%	–0.012%	0.017%	–0.019%	0.027%	–0.018%
331	33	Primary Metals	0.059%	–0.047%	0.066%	–0.053%	0.044%	–0.035%	0.053%	–0.053%	0.066%	–0.040%
332	34	Fabricated Metal Products	0.009%	–0.002%	0.010%	–0.002%	0.006%	–0.001%	0.008%	–0.002%	0.010%	–0.001%
333	35	Machinery	0.007%	–0.003%	0.008%	–0.004%	0.005%	–0.002%	0.006%	–0.003%	0.008%	–0.003%

(continued)

Table B-10. Incremental National Market-Level Impacts on Prices and Quantities in 2010 Associated with the B3 Strategy (B3–A2): Sensitivity to Elasticity Assumptions (Continued)

			Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
NAICS	SIC		Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity
334	36 (pt)	Computer and Electronic Products	0.008%	–0.002%	0.009%	–0.003%	0.006%	–0.002%	0.007%	–0.003%	0.009%	–0.002%
335	36 (pt)	Electrical Equip., Appliances, and Components	0.007%	–0.003%	0.008%	–0.004%	0.005%	–0.002%	0.006%	–0.003%	0.008%	–0.003%
336	37	Transportation Equipment	0.005%	–0.005%	0.006%	–0.006%	0.003%	–0.003%	0.004%	–0.005%	0.006%	–0.004%
337	25	Furniture and Related Products	0.004%	–0.015%	0.006%	–0.019%	0.003%	–0.009%	0.002%	–0.007%	0.006%	–0.015%
339	39	Miscellaneous	0.013%	–0.008%	0.016%	–0.010%	0.009%	–0.005%	0.011%	–0.008%	0.016%	–0.007%
11	01–08	Agricultural Sector	0.006%	–0.010%	0.007%	–0.013%	0.004%	–0.007%	0.005%	–0.010%	0.008%	–0.010%
23	15–17	Construction Sector	0.003%	–0.003%	0.004%	–0.004%	0.002%	–0.002%	0.002%	–0.003%	0.004%	–0.003%
21	10;14	Other Mining Sector	0.063%	–0.019%	0.074%	–0.022%	0.044%	–0.013%	0.053%	–0.020%	0.074%	–0.017%
484	42(pt)	Trucking Transportation	0.007%	–0.007%	0.010%	–0.010%	0.001%	–0.001%	0.004%	–0.005%	0.011%	–0.009%
482	401	Railroads	0.040%	–0.016%	0.048%	–0.019%	0.028%	–0.011%	0.034%	–0.017%	0.048%	–0.014%
NAICS 42–45; 51–55; 61–72	41–48 (pt); 50–99	Commercial	0.005%	–0.005%	0.006%	–0.006%	0.003%	–0.003%	0.004%	–0.005%	0.006%	–0.004%

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-11. Impacts on 2010 Consumer Surplus Associated with the A2 Strategy (by Market Sector): Sensitivity to Elasticity Assumptions (2000$)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
311	20 (pt)	Food	–$24,950,385	–$29,205,448	–$17,120,752	–$21,510,468	–$29,245,002
312	20 (pt); 21	Beverage and Tobacco Products	–$3,057,441	–$3,825,061	–$1,988,848	–$2,471,223	–$3,899,514
313	22 (pt)	Textile Mills	–$3,587,471	–$4,531,918	–$2,327,927	–$2,871,904	–$4,644,056
314	22 (pt)	Textile Product Mills	–$1,277,372	–$1,621,077	–$816,996	–$1,018,839	–$1,659,712
315	23	Apparel	–$5,191,781	–$6,603,760	–$3,311,854	–$4,132,370	–$6,765,895
316	31	Leather and Allied Products	–$478,020	–$594,891	–$313,453	–$388,213	–$605,870
321	24	Wood Products	–$9,300,227	–$10,606,144	–$6,847,942	–$8,273,326	–$10,535,599
322	26	Paper	–$52,525,301	–$61,834,485	–$38,347,299	–$44,729,949	–$62,872,503
323	27	Printing and Related Support	–$3,762,005	–$4,780,550	–$2,406,461	–$2,996,423	–$4,899,259
325	28	Chemicals	–$53,272,540	–$67,152,219	–$33,724,920	–$42,454,859	–$69,155,932
326	30	Plastics and Rubber Products	–$7,936,682	–$10,095,175	–$5,062,835	–$6,317,159	–$10,343,031
327	32	Nonmetallic Mineral Products	–$10,767,898	–$13,337,278	–$6,913,809	–$8,782,281	–$13,522,732
331	33	Primary Metals	–$67,074,813	–$75,408,014	–$49,682,791	–$59,971,007	–$75,560,216
332	34	Fabricated Metal Products	–$11,306,609	–$12,818,875	–$8,542,802	–$10,135,262	–$12,705,641
333	35	Machinery	–$12,462,000	–$14,710,753	–$8,891,061	–$10,689,912	–$14,741,092
334	36 (pt)	Computer and Electronic Products	–$21,542,285	–$24,813,103	–$15,904,000	–$18,971,756	–$24,697,905
335	36 (pt)	Electrical Equip., Appliances, and Components	–$4,655,553	–$5,495,642	–$3,321,522	–$3,993,536	–$5,506,976
336	37	Transportation Equipment	–$16,621,258	–$20,380,025	–$11,289,305	–$13,723,067	–$20,644,106
337	25	Furniture and Related Products	–$1,634,598	–$2,135,539	–$1,011,760	–$1,589,697	–$2,206,142
339	39	Miscellaneous	–$8,064,935	–$9,660,344	–$5,550,525	–$6,801,557	–$9,730,636
11	01-08	Agricultural Sector	–$7,490,961	–$9,540,921	–$4,748,607	–$5,946,686	–$9,802,798

(continued)

Table B-11. Impacts on 2010 Consumer Surplus Associated with the A2 Strategy (by Market Sector): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($) Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
23	15-17	Construction Sector	–$15,768,480	–$19,891,912	–$9,347,522	–$12,496,269	–$20,493,274
21	10; 14	Other Mining Sector	–$26,991,946	–$31,942,874	–$19,209,762	–$23,109,030	–$32,009,472
484	42 (pt)	Trucking	–$6,801,088	–$9,837,218	–$953,562	–$4,213,474	–$10,872,563
482	401	Railroads	–$8,445,090	–$9,962,401	–$5,836,616	–$7,220,687	–$10,027,742
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$369,106,113	–$451,389,813	–$253,600,950	–$305,799,327	–$456,767,403
		Residential	–$857,141,032	–$930,981,668	–$691,890,051	–$808,135,455	–$913,336,749
		Other Transportation	–$67,360,451	–$85,973,234	–$12,168,371	–$48,090,305	–$91,657,529
Total			–$1,678,574,336	–$1,929,130,339	–$1,221,132,303	–$1,486,834,039	–$1,928,909,349

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-12. Impacts on 2010 Consumer Surplus Associated with the B1 Strategy (by Market Sector): Sensitivity to Elasticity Assumptions (2000$)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
311	20 (pt)	Food	–$41,832,112	–$48,958,686	–$28,792,115	–$36,044,414	–$49,074,278
312	20 (pt); 21	Beverage and Tobacco Products	–$5,088,365	–$6,366,598	–$3,313,555	–$4,109,474	–$6,496,613
313	22 (pt)	Textile Mills	–$15,206,833	–$18,273,054	–$11,375,261	–$12,643,275	–$18,918,988
314	22 (pt)	Textile Product Mills	–$2,125,891	–$2,698,218	–$1,361,179	–$1,694,273	–$2,765,116
315	23	Apparel	–$8,640,436	–$10,991,555	–$5,517,768	–$6,871,836	–$11,271,988
316	31	Leather and Allied Products	–$795,518	–$990,135	–$522,195	–$645,550	–$1,009,340
321	24	Wood Products	–$15,478,141	–$17,653,602	–$11,409,218	–$13,758,128	–$17,552,631
322	26	Paper	–$229,757,949	–$260,236,723	–$186,720,015	–$201,592,441	–$266,307,588
323	27	Printing and Related Support	–$6,260,695	–$7,956,709	–$4,009,035	–$4,982,670	–$8,161,831
325	28	Chemicals	–$127,090,675	–$156,167,114	–$87,595,143	–$103,517,006	–$161,373,819
326	30	Plastics and Rubber Products	–$13,208,645	–$16,802,802	–$8,435,018	–$10,504,983	–$17,231,500
327	32	Nonmetallic Mineral Products	–$17,972,875	–$22,260,656	–$11,563,336	–$14,647,628	–$22,594,301
331	33	Primary Metals	–$110,124,852	–$123,969,091	–$81,353,584	–$98,285,565	–$124,311,155
332	34	Fabricated Metal Products	–$18,742,509	–$21,253,592	–$14,166,271	–$16,786,832	–$21,084,180
333	35	Machinery	–$20,657,704	–$24,300,236	–$14,743,754	–$17,705,445	–$24,461,795
334	36 (pt)	Computer and Electronic Products	–$35,709,740	–$41,139,876	–$26,373,106	–$31,422,510	–$40,984,501
335	36 (pt)	Electrical Equip., Appliances, and Components	–$7,717,303	–$9,111,702	–$5,507,970	–$6,614,398	–$9,138,435
336	37	Transportation Equipment	–$27,552,260	–$33,789,718	–$18,720,660	–$22,729,140	–$34,257,315
337	25	Furniture and Related Products	–$2,720,376	–$3,554,457	–$1,685,656	–$2,645,943	–$3,675,418
339	39	Miscellaneous	-$13,421,688	-$16,078,760	–$9,246,916	–$11,310,194	–$16,210,732
11	01-08	Agricultural Sector	–$12,376,282	–$15,768,971	–$7,844,684	–$9,813,787	–$16,219,072

(continued)

Table B-12. Impacts on 2010 Consumer Surplus Associated with the B1 Strategy (by Market Sector): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($) Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
23	15-17	Construction Sector	–$26,122,083	–$32,968,712	–$15,493,825	–$20,669,626	–$34,014,479
21	10; 14	Other Mining Sector	–$44,650,012	–$52,852,330	–$31,780,436	–$38,192,891	–$53,010,245
484	42 (pt)	Trucking	–$11,297,892	–$16,354,642	–$1,620,172	–$6,965,231	–$18,139,017
482	401	Railroads	–$13,905,785	–$16,412,920	–$9,603,499	–$11,873,227	–$16,540,480
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$615,817,092	–$752,777,500	–$423,947,259	–$510,017,086	–$762,503,537
		Residential	–$1,421,600,872	–$1,544,028,493	–$1,148,549,979	–$1,339,209,700	–$1,516,403,444
		Other Transportation	–$113,270,716	–$144,375,413	–$21,900,436	–$80,845,429	–$154,310,930
Total			-$2,979,145,303	-$3,418,182,265	–$2,193,152,045	–$2,636,098,681	–$3,428,022,727

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-13. Impacts on 2010 Consumer Surplus Associated with the B3 Strategy (by Market Sector): Sensitivity to Elasticity Assumptions (2000$)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
311	20 (pt)	Food	–$78,449,640	–$91,871,196	–$53,891,090	–$67,570,423	–$92,069,176
312	20 (pt); 21	Beverage and Tobacco Products	–$9,549,502	–$11,954,158	–$6,210,057	–$7,710,332	–$12,195,992
313	22 (pt)	Textile Mills	–$43,510,689	–$51,691,710	–$33,492,034	–$36,477,956	–$53,636,238
314	22 (pt)	Textile Product Mills	–$3,989,795	–$5,066,384	–$2,551,061	–$3,178,906	–$5,191,003
315	23	Apparel	–$16,215,725	–$20,638,008	–$10,341,036	–$12,893,118	–$21,160,614
316	31	Leather and Allied Products	–$1,493,014	–$1,859,148	–$978,719	–$1,211,239	–$1,894,859
321	24	Wood Products	–$29,049,018	–$33,148,182	–$21,382,687	–$25,814,034	–$32,952,215
322	26	Paper	–$379,564,394	–$431,385,519	–$305,769,668	–$332,164,577	–$441,237,554
323	27	Printing and Related Support	–$11,749,887	–$14,939,949	–$7,513,863	–$9,348,886	–$15,322,295
325	28	Chemicals	–$231,376,103	–$284,939,490	–$158,405,072	–$188,118,047	–$294,357,917
326	30	Plastics and Rubber Products	–$24,788,997	–$31,549,345	–$15,808,353	–$19,709,724	–$32,348,254
327	32	Nonmetallic Mineral Products	–$33,715,738	–$41,783,284	–$21,653,695	–$27,468,516	–$42,400,847
331	33	Primary Metals	–$213,987,871	–$240,155,304	–$159,356,176	–$191,389,836	–$241,042,386
332	34	Fabricated Metal Products	–$35,190,322	–$39,922,126	–$26,567,604	–$31,511,574	–$39,596,521
333	35	Machinery	–$38,786,063	–$45,813,604	–$27,650,573	–$32,235,818	–$45,939,484
334	36 (pt)	Computer and Electronic Products	–$67,047,328	–$77,275,744	–$49,460,421	–$58,984,990	–$76,969,558
335	36 (pt)	Electrical Equip., Appliances, and Components	–$14,489,694	–$17,115,042	–$10,329,698	–$12,416,234	–$17,162,068
336	37	Transportation Equipment	–$51,730,792	–$63,468,782	–$35,108,843	–$42,665,897	–$64,335,198
337	25	Furniture and Related Products	–$5,105,366	–$6,673,836	–$3,159,136	–$2,935,152	–$6,899,706
339	39	Miscellaneous	–$25,189,800	–$30,191,047	–$17,330,988	–$21,221,389	–$30,433,163
11	01-08	Agricultural Sector	–$23,248,888	–$29,634,955	–$14,718,473	–$18,431,317	–$30,474,840

(continued)

Table B-13. Impacts on 2010 Consumer Surplus Associated with the B3 Strategy (by Market Sector): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($) Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
23	15-17	Construction Sector	–$49,072,797	–$61,970,638	–$29,053,930	–$38,818,708	–$63,920,382
21	10; 14	Other Mining Sector	–$83,845,835	–$99,289,233	–$59,613,304	–$71,705,288	–$99,568,779
484	42 (pt)	Trucking	–$21,242,845	–$30,764,081	–$3,014,598	–$13,098,437	–$34,103,265
482	401	Railroads	–$26,133,619	–$30,858,643	–$18,026,980	–$22,309,409	–$31,092,167
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$1,153,205,659	–$1,410,541,383	–$792,589,965	–$954,741,876	–$1,428,433,990
		Residential	–$2,671,584,192	–$2,901,431,999	–$2,158,345,822	–$2,516,215,566	–$2,850,329,841
		Other Transportation	–$212,609,926	–$271,169,199	–$40,499,093	–$151,682,185	–$289,731,305
Total			–$5,555,923,498	–$6,377,101,988	–$4,082,822,941	–$4,913,029,433	–$6,394,799,618

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-14. Incremental Impacts on 2010 Consumer Surplus Associated with the B1 Strategy (B1–A2 by Market Sector): Sensitivity to Elasticity Assumptions (2000$)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
311	20 (pt)	Food	–$16,881,726	–$19,753,238	–$11,671,363	–$14,533,946	–$19,829,275
312	20 (pt); 21	Beverage and Tobacco Products	–$2,030,924	–$2,541,538	–$1,324,707	–$1,638,251	–$2,597,099
313	22 (pt)	Textile Mills	–$11,619,362	–$13,741,137	–$9,047,334	–$9,771,371	–$14,274,932
314	22 (pt)	Textile Product Mills	–$848,519	–$1,077,141	–$544,182	–$675,434	–$1,105,404
315	23	Apparel	–$3,448,655	–$4,387,795	–$2,205,914	–$2,739,465	–$4,506,093
316	31	Leather and Allied Products	–$317,498	–$395,244	–$208,743	–$257,337	–$403,470
321	24	Wood Products	–$6,177,914	–$7,047,457	–$4,561,276	–$5,484,802	–$7,017,031
322	26	Paper	–$177,232,649	–$198,402,238	–$148,372,716	–$156,862,492	–$203,435,086
323	27	Printing and Related Support	–$2,498,690	–$3,176,159	–$1,602,575	–$1,986,246	–$3,262,572
325	28	Chemicals	–$73,818,135	–$89,014,894	–$53,870,223	–$61,062,147	–$92,217,886
326	30	Plastics and Rubber Products	–$5,271,962	–$6,707,627	–$3,372,183	–$4,187,824	–$6,888,470
327	32	Nonmetallic Mineral Products	–$7,204,977	–$8,923,377	–$4,649,528	–$5,865,347	–$9,071,569
331	33	Primary Metals	–$43,050,039	–$48,561,078	–$31,670,793	–$38,314,558	–$48,750,939
332	34	Fabricated Metal Products	–$7,435,900	–$8,434,716	–$5,623,469	–$6,651,571	–$8,378,539
333	35	Machinery	–$8,195,704	–$9,679,484	–$5,852,693	–$7,015,533	–$9,720,702
334	36 (pt)	Computer and Electronic Products	–$14,167,456	–$16,326,774	–$10,469,106	–$12,450,755	–$16,286,597
335	36 (pt)	Electrical Equip., Appliances, and Components	–$3,061,750	–$3,616,061	–$2,186,449	–$2,620,862	–$3,631,459
336	37	Transportation Equipment	–$10,931,003	–$13,409,693	–$7,431,354	–$9,006,073	–$13,613,209
337	25	Furniture and Related Products	–$1,085,778	–$1,418,918	–$673,896	–$1,056,246	–$1,469,276
339	39	Miscellaneous	–$5,356,754	–$6,418,417	–$3,696,391	–$4,508,637	–$6,480,096
11	01-08	Agricultural Sector	–$4,885,321	–$6,228,051	–$3,096,077	–$3,867,101	–$6,416,274

(continued)

Table B-14. Incremental Impacts on 2010 Consumer Surplus Associated with the B1 Strategy (B1–A2 by Market Sector): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
23	15-17	Construction Sector	–$10,353,603	–$13,076,800	–$6,146,303	–$8,173,358	–$13,521,205
21	10; 14	Other Mining Sector	–$17,658,067	–$20,909,457	–$12,570,674	–$15,083,861	–$21,000,773
484	42 (pt)	Trucking	–$4,496,804	–$6,517,424	–$666,609	–$2,751,758	–$7,266,454
482	401	Railroads	–$5,460,695	–$6,450,519	–$3,766,883	–$4,652,539	–$6,512,737
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$246,710,979	–$301,387,687	–$170,346,309	–$204,217,759	–$305,736,135
		Residential	–$564,459,840	–$613,046,825	–$456,659,928	–$531,074,246	–$603,066,695
		Other Transportation	–$45,910,265	–$58,402,179	–$9,732,066	–$32,755,124	–$62,653,401
Total			–$1,300,570,967	–$1,489,051,926	–$972,019,742	–$1,149,264,643	–$1,499,113,379

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-15. Incremental Impacts on 2010 Consumer Surplus Associated with the B3 Strategy (B3–A2 by Market Sector): Sensitivity to Elasticity Assumptions (2000$)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
311	20 (pt)	Food	–$53,499,255	–$62,665,748	–$36,770,338	–$46,059,955	–$62,824,173
312	20 (pt); 21	Beverage and Tobacco Products	–$6,492,060	–$8,129,097	–$4,221,209	–$5,239,109	–$8,296,478
313	22 (pt)	Textile Mills	–$39,923,218	–$47,159,792	–$31,164,107	–$33,606,052	–$48,992,181
314	22 (pt)	Textile Product Mills	–$2,712,423	–$3,445,307	–$1,734,065	–$2,160,067	–$3,531,292
315	23	Apparel	–$11,023,944	–$14,034,248	–$7,029,182	–$8,760,748	–$14,394,719
316	31	Leather and Allied Products	–$1,014,993	–$1,264,256	–$665,266	–$823,026	–$1,288,989
321	24	Wood Products	–$19,748,791	–$22,542,038	–$14,534,745	–$17,540,707	–$22,416,615
322	26	Paper	–$327,039,093	–$369,551,035	–$267,422,369	–$287,434,628	–$378,365,052
323	27	Printing and Related Support	–$7,987,882	–$10,159,399	–$5,107,402	–$6,352,462	–$10,423,036
325	28	Chemicals	–$178,103,563	–$217,787,271	–$124,680,152	–$145,663,188	–$225,201,985
326	30	Plastics and Rubber Products	–$16,852,315	–$21,454,170	–$10,745,518	–$13,392,565	–$22,005,224
327	32	Nonmetallic Mineral Products	–$22,947,840	–$28,446,006	–$14,739,886	–$18,686,236	–$28,878,115
331	33	Primary Metals	–$146,913,057	–$164,747,290	–$109,673,385	–$131,418,829	–$165,482,170
332	34	Fabricated Metal Products	–$23,883,713	–$27,103,250	–$18,024,801	–$21,376,313	–$26,890,880
333	35	Machinery	–$25,324,063	–$31,102,851	–$18,759,513	–$22,545,906	–$31,198,391
334	36 (pt)	Computer and Electronic Products	–$45,505,044	–$52,462,641	–$33,556,421	–$40,013,234	–$52,271,654
335	36 (pt)	Electrical Equip., Appliances, and Components	–$9,834,141	–$11,619,400	–$7,008,177	–$8,422,697	–$11,655,092
336	37	Transportation Equipment	–$35,109,534	–$43,088,756	–$23,819,538	–$28,942,831	–$43,691,092
337	25	Furniture and Related Products	–$3,470,768	–$4,538,298	–$2,147,376	–$1,345,455	–$4,693,564
339	39	Miscellaneous	–$17,124,866	–$20,530,703	–$11,780,462	–$14,419,831	–$20,702,528
11	01-08	Agricultural Sector	–$15,757,927	–$20,094,035	–$9,969,866	–$12,484,631	–$20,672,042

(continued)

Table B-15. Incremental Impacts on 2010 Consumer Surplus Associated with the B3 Strategy (B3–A2 by Market Sector): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
23	15-17	Construction Sector	–$33,304,316	–$42,078,726	–$19,706,408	–$26,322,439	–$43,427,108
21	10; 14	Other Mining Sector	–$56,853,889	–$67,346,360	–$40,403,543	–$48,596,259	–$67,559,306
484	42 (pt)	Trucking	–$14,441,757	–$20,926,863	–$2,061,036	–$8,884,963	–$23,230,702
482	401	Railroads	–$17,688,529	–$20,896,242	–$12,190,364	–$15,088,721	–$21,064,425
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$784,099,545	–$959,151,571	–$538,989,014	–$648,942,549	–$971,666,588
		Residential	–$1,814,443,160	–$1,970,450,330	–$1,466,455,771	–$1,708,080,111	–$1,936,993,092
		Other Transportation	–$145,249,475	–$185,195,966	–$28,330,723	–$103,591,881	–$198,073,776
Total			–$3,877,349,162	–$4,447,971,649	–$2,861,690,638	–$3,426,195,394	–$4,465,890,269

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-16. Impacts on 2010 Producer Surplus Associated with the A2 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
		Energy					
		Petroleum (Rest of U.S.)	$10,857,261	$23,679,311	–$30,072,799	–$4,129,110	$30,479,021
		Petroleum (South Atlantic/ East South Central)	$3,133,337	$6,833,699	–$8,678,819	–$1,191,635	$8,796,052
		Natural Gas (Rest of U.S.)	$155,056,831	$201,801,220	$11,687,412	$106,245,419	$213,199,125
		Natural Gas (South Atlantic/ East South Central)	–$316,840	$9,468,300	–$30,342,803	–$10,538,736	$11,859,095
		Electricity (Rest of U.S.)	$1,642,031,096	$1,750,661,358	$1,430,050,809	$1,584,737,175	$1,706,010,072
		Electricity (South Atlantic/ East South Central)	–$2,267,736,513	–$2,216,016,015	–$2,365,811,449	–$2,292,763,948	–$2,239,705,700
		Coal (Rest of U.S.)	–$42,252,150	–$35,806,519	–$54,966,207	–$45,994,252	–$38,055,417
		Coal (South Atlantic/East South Central)	–$20,735,655	–$17,572,398	–$26,975,202	–$22,572,128	–$18,676,067
311	20 (pt)	Food	–$9,980,155	–$9,345,743	–$9,131,068	–$10,755,240	–$8,774,065
312	20 (pt); 21	Beverage and Tobacco Products	–$5,299,565	–$5,304,084	–$4,596,448	–$5,354,313	–$5,069,420
313	22 (pt)	Textile Mills	–$3,543,281	–$3,584,047	–$3,025,403	–$3,545,860	–$3,431,505
313	22 (pt)	Alabama	–$347,177	–$351,139	–$296,833	–$347,427	–$336,311
313	22 (pt)	Georgia	–$747,020	–$755,462	–$639,771	–$747,554	–$723,872
313	22 (pt)	Kentucky	–$21,636	–$21,885	–$18,474	–$21,652	–$20,954
313	22 (pt)	North Carolina	–$1,650,257	–$1,668,521	–$1,418,227	–$1,651,412	–$1,600,177
313	22 (pt)	South Carolina	–$1,385,121	–$1,395,408	–$1,254,391	–$1,385,773	–$1,356,904
313	22 (pt)	Tennessee	–$203,058	–$204,912	–$179,504	–$203,175	–$197,974
313	22 (pt)	Virginia	–$314,270	–$317,568	–$272,369	–$314,479	–$305,226
313	22 (pt)	West Virginia	–$4,643	–$4,697	–$3,965	–$4,647	–$4,497
314	22 (pt)	Textile Product Mills	–$2,925,594	–$2,970,231	–$2,494,914	–$2,916,837	–$2,851,006
315	23	Apparel	–$12,460,276	–$12,679,219	–$10,597,933	–$12,397,099	–$12,178,697
316	31	Leather and Allied Products	–$764,832	–$761,461	–$668,699	–$776,426	–$727,052

(continued)

Table B-16. Impacts on 2010 Producer Surplus Associated with the A2 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
321	24	Wood Products	–$2,480,061	–$2,262,644	–$2,434,824	–$2,757,777	–$2,107,283
322	26	Paper	–$9,179,265	–$6,895,877	–$8,135,872	–$11,709,528	–$5,167,356
322	26	Alabama	–$7,529,855	–$7,448,353	–$7,494,041	–$7,619,092	–$7,388,364
322	26	Georgia	–$9,286,026	–$9,165,281	–$9,232,307	–$9,418,728	–$9,075,617
322	26	Kentucky	–$236,654	–$192,466	–$216,464	–$285,619	–$159,017
322	26	North Carolina	–$4,320,821	–$4,249,557	–$4,288,786	–$4,399,392	–$4,196,241
322	26	South Carolina	–$4,722,619	–$4,651,645	–$4,690,825	–$4,800,787	–$4,598,678
322	26	Tennessee	–$3,773,017	–$3,719,711	–$3,749,201	–$3,831,677	–$3,680,006
322	26	Virginia	–$8,627,628	–$8,573,040	–$8,605,573	–$8,685,929	–$8,535,186
322	26	West Virginia	–$18,171	–$16,597	–$17,452	–$19,916	–$15,405
323	27	Printing and Related Support	–$9,028,813	–$9,178,656	–$7,700,674	–$8,989,261	–$8,818,728
325	28	Chemicals	–$66,041,225	–$66,749,167	–$52,962,470	–$65,720,003	–$63,828,904
325	28	Alabama	–$4,499,200	–$4,513,952	–$4,223,298	–$4,492,419	–$4,452,501
325	28	Georgia	–$2,946,287	–$2,970,969	–$2,489,923	–$2,935,078	–$2,869,088
325	28	Kentucky	–$1,500,508	–$1,516,180	–$1,210,951	–$1,493,396	–$1,451,528
325	28	North Carolina	–$5,550,031	–$5,602,401	–$4,582,164	–$5,526,259	–$5,386,310
325	28	South Carolina	–$2,855,411	–$2,885,558	–$2,298,445	–$2,841,731	–$2,761,198
325	28	Tennessee	–$12,817,656	–$12,837,700	–$12,426,653	–$12,808,026	–$12,751,328
325	28	Virginia	–$2,674,827	–$2,693,006	–$2,338,323	–$2,666,561	–$2,617,901
325	28	West Virginia	–$7,654,592	–$7,667,937	–$7,396,886	–$7,648,248	–$7,610,899
326	30	Plastics and Rubber Products	–$19,048,037	–$19,382,736	–$16,201,072	–$18,951,458	–$18,617,588
327	32	Nonmetallic Mineral Products	–$12,921,478	–$12,803,787	–$11,062,094	–$13,173,414	–$12,170,677
331	33	Primary Metals	–$7,428,555	–$6,816,243	–$7,263,700	–$8,990,869	–$5,367,898
331	33	Alabama	–$720,810	–$699,695	–$715,156	–$774,638	–$649,811
331	33	Georgia	–$78,082	–$71,671	–$76,356	–$94,440	–$56,506
331	33	Kentucky	–$214,767	–$197,764	–$210,189	–$258,150	–$157,545
331	33	North Carolina	–$86,880	–$79,719	–$84,952	–$105,152	–$62,780

(continued)

Table B-16. Impacts on 2010 Producer Surplus Associated with the A2 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
331	33	South Carolina	–$159,708	–$150,876	–$157,332	–$182,239	–$129,990
331	33	Tennessee	–$247,185	–$229,778	–$242,499	–$291,596	–$188,606
331	33	Virginia	–$76,694	–$70,770	–$75,099	–$91,808	–$56,759
331	33	West Virginia	–$6,300,886	–$6,287,068	–$6,302,773	–$6,327,589	–$6,265,665
332	34	Fabricated Metal Products	–$3,015,096	–$2,734,693	–$3,037,441	–$3,378,422	–$2,541,294
333	35	Machinery	–$8,308,000	–$7,845,735	–$7,903,165	–$8,908,257	–$7,370,725
334	36 (pt)	Computer and Electronic Products	–$8,616,914	–$7,940,193	–$8,482,134	–$9,485,878	–$7,409,685
335	36 (pt)	Electrical Equipment, Appliances, and Components	–$3,103,702	–$2,931,009	–$2,952,464	–$3,327,946	–$2,753,555
336	37	Transportation Equipment	–$22,161,677	–$21,738,693	–$20,069,877	–$22,871,765	–$20,644,341
337	25	Furniture and Related Products	–$7,410,180	–$7,744,887	–$6,115,525	–$6,879,880	–$7,500,911
339	39	Miscellaneous	–$6,451,948	–$6,182,620	–$5,920,561	–$6,801,555	–$5,838,519
11	01-08	Agricultural Sector	–$17,978,307	–$18,318,568	–$15,195,544	–$17,840,042	–$17,645,168
23	15-17	Construction Sector	–$21,024,641	–$21,218,039	–$16,617,818	–$20,827,109	–$20,493,729
21	10; 14	Other Mining Sector	–$18,686,732	–$17,691,438	–$17,732,089	–$19,998,212	–$16,621,121
484	42 (pt)	Trucking Transportation	–$7,526,184	–$8,708,807	–$1,406,968	–$5,828,375	–$9,024,399
484	42 (pt)	Alabama	–$191,308	–$221,369	–$35,764	–$148,151	–$229,391
484	42 (pt)	Georgia	–$306,544	–$354,713	–$57,306	–$237,392	–$367,567

(continued)

Table B-16. Impacts on 2010 Producer Surplus Associated with the A2 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
484	42 (pt)	Kentucky	–$146,868	–$169,946	–$27,456	–$113,737	–$176,105
484	42 (pt)	North Carolina	–$269,276	–$311,588	–$50,339	–$208,531	–$322,880
484	42 (pt)	South Carolina	–$105,689	–$122,296	–$19,758	–$81,847	–$126,728
484	42 (pt)	Tennessee	–$303,510	–$351,202	–$56,739	–$235,042	–$363,929
484	42 (pt)	Virginia	–$165,405	–$191,396	–$30,921	–$128,092	–$198,332
484	42 (pt)	West Virginia	–$53,335	–$61,716	–$9,971	–$41,303	–$63,952
482	401	Railroads	–$3,717,247	–$3,508,093	–$3,425,445	–$3,972,883	–$3,310,547
482	401	Alabama	–$85,312	–$80,512	–$78,615	–$91,179	–$75,978
482	401	Georgia	–$163,081	–$153,905	–$150,279	–$174,296	–$145,239
482	401	Kentucky	–$108,020	–$101,942	–$99,540	–$115,448	–$96,202
482	401	North Carolina	–$57,195	–$53,977	–$52,706	–$61,129	–$50,938
482	401	South Carolina	–$42,004	–$39,641	–$38,707	–$44,893	–$37,409
482	401	Tennessee	–$101,588	–$95,872	–$93,614	–$108,574	–$90,474
482	401	Virginia	–$158,153	–$149,254	–$145,738	–$169,029	–$140,850
482	401	West Virginia	–$71,447	–$67,427	–$65,838	–$76,360	–$63,630
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$492,141,488	–$481,482,467	–$450,846,138	–$509,665,257	–$456,772,141
		Total	–$1,395,106,116	–$1,137,468,226	–$1,859,311,872	–$1,586,340,476	–$1,145,342,579

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.

[b] Primary demand elasticity, 25 percent less elastic supply in all markets.

[c] Primary supply elasticity, 25 percent more elastic demand in all markets.

[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-17. Impacts on 2010 Producer Surplus Associated with the B1 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$)

NAICS	SIC	Description	Value ($) Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
		Energy					
		Petroleum (Rest of U.S.)	$15,394,335	$36,618,268	–$52,019,147	–$9,708,217	$48,409,873
		Petroleum (South Atlantic/ East South Central)	$4,442,708	$10,567,800	–$15,012,396	–$2,801,730	$13,970,783
		Natural Gas (Rest of U.S.)	$298,071,700	$378,329,483	$57,685,841	$214,914,933	$397,409,069
		Natural Gas (South Atlantic/ East South Central)	–$74,179,509	–$57,411,023	–$124,459,510	–$91,560,703	–$53,416,272
		Electricity (Rest of U.S.)	$2,700,537,739	$2,881,399,159	$2,349,786,130	$2,604,792,137	$2,807,808,312
		Electricity (South Atlantic/ East South Central)	–$3,698,180,555	–$3,607,947,120	–$3,864,292,393	–$3,739,268,795	–$3,651,989,140
		Coal (Rest of U.S.)	–$69,550,831	–$58,950,225	–$90,445,695	–$75,791,290	–$62,524,779
		Coal (South Atlantic/East South Central)	–$34,132,749	–$28,930,398	–$44,387,107	–$37,195,315	–$30,684,645
311	20 (pt)	Food	–$16,732,845	–$15,666,779	–$15,355,795	–$18,022,215	–$14,722,834
312	20 (pt); 21	Beverage and Tobacco Products	–$8,819,832	–$8,828,350	–$7,657,994	–$8,903,854	–$8,445,647
313	22 (pt)	Textile Mills	–$1,577,854	–$947,890	–$1,534,946	–$2,217,560	–$488,002
313	22 (pt)	Alabama	–$161,937	–$100,697	–$157,766	–$224,124	–$55,991
313	22 (pt)	Georgia	–$1,406,938	–$1,276,474	–$1,398,061	–$1,539,411	–$1,181,246
313	22 (pt)	Kentucky	–$9,635	–$5,788	–$9,373	–$13,541	–$2,980
313	22 (pt)	North Carolina	–$12,461,546	–$12,179,026	–$12,442,668	–$12,748,100	–$11,973,350
313	22 (pt)	South Carolina	–$6,683,711	–$6,524,543	–$6,673,056	–$6,845,170	–$6,408,637
313	22 (pt)	Tennessee	–$11,235,807	–$11,204,459	–$11,236,625	–$11,264,846	–$11,186,335
313	22 (pt)	Virginia	–$1,278,037	–$1,227,054	–$1,274,586	–$1,329,790	–$1,189,867
313	22 (pt)	West Virginia	–$2,068	–$1,242	–$2,011	–$2,906	–$640
314	22 (pt)	Textile Product Mills	–$4,868,976	–$4,943,832	–$4,156,719	–$4,850,539	–$4,749,804
315	23	Apparel	–$20,737,047	–$21,103,785	–$17,656,857	–$20,615,486	–$20,289,663
316	31	Leather and Allied Products	–$1,272,829	–$1,267,373	–$1,114,017	–$1,291,099	–$1,211,216

(continued)

Table B-17. Impacts on 2010 Producer Surplus Associated with the B1 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
321	24	Wood Products	–$4,127,504	–$3,766,102	–$4,056,611	–$4,586,045	–$3,510,686
322	26	Paper	$101,477,817	$117,603,146	$87,132,762	$84,849,441	$123,935,771
322	26	Alabama	–$15,647,257	–$15,075,820	–$16,156,739	–$16,232,713	–$14,856,553
322	26	Georgia	–$141,597,325	–$140,526,387	–$142,581,687	–$142,457,975	–$140,434,946
322	26	Kentucky	$1,665,291	$1,977,283	$1,387,737	$1,343,525	$2,099,863
322	26	North Carolina	–$48,359,625	–$47,816,984	–$48,849,352	–$48,872,055	–$47,667,548
322	26	South Carolina	–$27,481,773	–$26,971,323	–$27,938,610	–$27,993,320	–$26,790,887
322	26	Tennessee	–$21,162,517	–$20,778,885	–$21,505,939	–$21,546,378	–$20,644,081
322	26	Virginia	–$56,073,772	–$55,622,222	–$56,486,957	–$56,452,778	–$55,561,895
322	26	West Virginia	$32,875	$43,987	$22,989	$21,412	$48,357
323	27	Printing and Related Support	–$15,025,669	–$15,276,881	–$12,828,914	–$14,947,993	–$14,691,356
325	28	Chemicals	–$81,468,488	–$78,078,767	–$65,245,605	–$85,099,304	–$71,925,311
325	28	Alabama	–$16,809,802	–$16,735,423	–$16,470,515	–$16,886,367	–$16,608,560
325	28	Georgia	–$11,945,177	–$11,826,107	–$11,380,108	–$12,071,820	–$11,612,311
325	28	Kentucky	–$3,055,405	–$2,980,306	–$2,696,323	–$3,135,782	–$2,844,143
325	28	North Carolina	–$35,826,854	–$35,572,504	–$34,630,626	–$36,095,363	–$35,121,108
325	28	South Carolina	–$7,486,534	–$7,341,983	–$6,795,985	–$7,641,129	–$7,080,198
325	28	Tennessee	–$50,507,554	–$50,387,482	–$50,040,631	–$50,616,172	–$50,222,064
325	28	Virginia	–$12,626,497	–$12,538,019	–$12,210,585	–$12,719,862	–$12,381,098
325	28	West Virginia	–$34,328,494	–$34,248,609	–$34,021,761	–$34,400,033	–$34,140,462
326	30	Plastics and Rubber Products	–$31,700,747	–$32,261,380	–$26,992,057	–$31,514,917	–$31,016,830
327	32	Nonmetallic Mineral Products	–$21,567,450	–$21,370,229	–$18,501,339	–$21,971,430	–$20,335,083
331	33	Primary Metals	–$13,866,821	–$12,888,926	–$13,538,758	–$16,388,334	–$10,521,210
331	33	Alabama	–$578,342	–$544,639	–$567,043	–$665,234	–$463,051
331	33	Georgia	–$146,136	–$135,897	–$142,701	–$172,538	–$111,106
331	33	Kentucky	–$1,996,483	–$1,969,158	–$1,987,660	–$2,066,436	–$1,903,668

(continued)

Table B-17. Impacts on 2010 Producer Surplus Associated with the B1 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
331	33	North Carolina	–$162,178	–$150,741	–$158,341	–$191,668	–$123,050
331	33	South Carolina	–$684,194	–$670,057	–$679,525	–$720,541	–$635,969
331	33	Tennessee	–$2,414,935	–$2,386,884	–$2,406,023	–$2,486,533	–$2,319,938
331	33	Virginia	–$861,741	–$852,185	–$858,722	–$886,104	–$829,414
331	33	West Virginia	–$4,450,244	–$4,431,840	–$4,446,960	–$4,493,422	–$4,392,954
332	34	Fabricated Metal Products	–$4,998,002	–$4,534,100	–$5,036,896	–$5,595,612	–$4,216,998
333	35	Machinery	–$13,771,803	–$13,008,126	–$13,105,559	–$14,754,533	–$12,231,072
334	36 (pt)	Computer and Electronic Products	–$14,283,896	–$13,164,760	–$14,065,657	–$15,711,255	–$12,295,656
335	36 (pt)	Electrical Equipment, Appliances, and Components	–$5,144,869	–$4,859,574	–$4,895,973	–$5,511,997	–$4,569,283
336	37	Transportation Equipment	–$36,736,347	–$36,042,366	–$33,281,173	–$37,881,877	–$34,257,544
337	25	Furniture and Related Products	–$12,332,373	–$12,890,829	–$10,188,853	–$11,438,316	–$12,496,448
339	39	Miscellaneous	–$10,737,351	–$10,290,407	–$9,863,378	–$11,310,190	–$9,726,573
11	01-08	Agricultural Sector	–$29,703,078	–$30,276,425	–$25,102,990	–$29,441,335	–$29,194,458
23	15-17	Construction Sector	–$34,829,444	–$35,166,626	–$27,544,578	–$34,449,367	–$34,014,923
21	10; 14	Other Mining Sector	–$30,911,548	–$29,272,060	–$29,335,788	–$33,051,560	–$27,525,349
484	42 (pt)	Trucking Transportation	–$12,502,412	–$14,478,629	–$2,390,541	–$9,634,799	–$15,055,257
484	42 (pt)	Alabama	–$317,798	–$368,032	–$60,765	–$244,906	–$382,689
484	42 (pt)	Georgia	–$509,228	–$589,720	–$97,368	–$392,429	–$613,206

(continued)

Table B-17. Impacts on 2010 Producer Surplus Associated with the B1 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($) Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
484	42 (pt)	Kentucky	–$243,976	–$282,540	–$46,650	–$188,016	–$293,793
484	42 (pt)	North Carolina	–$447,318	–$518,024	–$85,530	–$344,719	–$538,655
484	42 (pt)	South Carolina	–$175,569	–$203,321	–$33,570	–$135,300	–$211,418
484	42 (pt)	Tennessee	–$504,187	–$583,883	–$96,404	–$388,545	–$607,136
484	42 (pt)	Virginia	–$274,769	–$318,201	–$52,538	–$211,746	–$330,873
484	42 (pt)	West Virginia	–$88,599	–$102,604	–$16,941	–$68,278	–$106,690
482	401	Railroads	–$6,120,863	–$5,779,536	–$5,636,187	–$6,532,749	–$5,460,561
482	401	Alabama	–$140,476	–$132,643	–$129,353	–$149,929	–$125,322
482	401	Georgia	–$268,532	–$253,557	–$247,268	–$286,602	–$239,563
482	401	Kentucky	–$177,867	–$167,948	–$163,783	–$189,836	–$158,679
482	401	North Carolina	–$94,179	–$88,927	–$86,721	–$100,516	–$84,019
482	401	South Carolina	–$69,165	–$65,308	–$63,688	–$73,819	–$61,703
482	401	Tennessee	–$167,276	–$157,948	–$154,031	–$178,533	–$149,231
482	401	Virginia	–$260,417	–$245,895	–$239,796	–$277,941	–$232,324
482	401	West Virginia	–$117,645	–$111,084	–$108,329	–$125,561	–$104,953
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$821,089,460	–$802,962,666	–$753,684,021	–$850,027,979	–$762,508,156
		Total	–$2,540,648,207	–$2,082,098,412	–$3,345,261,665	–$2,882,283,733	–$2,093,377,035

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.

[b] Primary demand elasticity, 25 percent less elastic supply in all markets.

[c] Primary supply elasticity, 25 percent more elastic demand in all markets.

[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-18. Impacts on 2010 Producer Surplus Associated with the B3 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$)

NAICS	SIC	Description	Value ($) Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
		Energy					
		Petroleum (Rest of U.S.)	$29,748,182	$69,664,172	–$97,193,311	–$17,382,015	$91,727,606
		Petroleum (South Atlantic/ East South Central)	$8,585,137	$20,104,639	–$28,049,374	–$5,016,339	$26,472,006
		Natural Gas (Rest of U.S.)	$550,600,343	$701,292,288	$98,471,543	$394,539,073	$737,092,716
		Natural Gas (South Atlantic/ East South Central)	–$120,704,670	–$89,295,663	–$215,140,275	–$153,264,660	–$81,795,548
		Electricity (Rest of U.S.)	$5,114,766,048	$5,465,898,293	$4,443,201,974	$4,932,955,356	$5,318,481,939
		Electricity (South Atlantic/ East South Central)	–$6,859,370,262	–$6,667,201,040	–$7,193,185,409	–$6,934,106,907	–$6,775,306,244
		Coal (Rest of U.S.)	–$130,814,880	–$110,859,201	–$170,129,924	–$142,506,534	–$117,649,195
		Coal (South Atlantic/East South Central)	–$64,198,679	–$54,405,234	–$83,492,920	–$69,936,472	–$57,737,490
311	20 (pt)	Food	–$31,380,349	–$29,398,905	–$28,742,528	–$33,785,866	–$27,621,276
312	20 (pt); 21	Beverage and Tobacco Products	–$16,552,509	–$16,576,467	–$14,352,178	–$16,705,782	–$15,854,837
313	22 (pt)	Textile Mills	$4,041,705	$6,351,125	$2,816,860	$1,805,992	$7,559,569
313	22 (pt)	Alabama	$280,408	$504,906	$161,341	$63,074	$622,381
313	22 (pt)	Georgia	–$2,535,770	–$2,057,555	–$2,789,429	–$2,998,710	–$1,807,338
313	22 (pt)	Kentucky	$24,680	$38,782	$17,201	$11,028	$46,161
313	22 (pt)	North Carolina	–$22,602,041	–$21,566,761	–$23,151,770	–$23,603,297	–$21,026,578
313	22 (pt)	South Carolina	–$48,594,590	–$48,003,412	–$48,912,749	–$49,158,104	–$47,707,909
313	22 (pt)	Tennessee	–$25,644,657	–$25,525,766	–$25,714,624	–$25,745,883	–$25,485,379
313	22 (pt)	Virginia	–$4,546,315	–$4,359,318	–$4,645,635	–$4,727,120	–$4,261,820
313	22 (pt)	West Virginia	$5,296	$8,323	$3,691	$2,367	$9,906
314	22 (pt)	Textile Product Mills	–$9,137,954	–$9,282,937	–$7,790,380	–$9,100,949	–$8,916,851
315	23	Apparel	–$38,917,807	–$39,625,064	–$33,091,391	–$38,679,477	–$38,089,186
316	31	Leather and Allied Products	–$2,388,828	–$2,379,714	–$2,087,940	–$2,422,489	–$2,273,838

(continued)

Table B-18. Impacts on 2010 Producer Surplus Associated with the B3 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
321	24	Wood Products	–$7,746,551	–$7,071,647	–$7,602,921	–$8,604,876	–$6,590,594
322	26	Paper	$148,139,989	$173,908,312	$127,132,819	$121,461,641	$184,545,031
322	26	Alabama	–$36,253,981	–$35,328,211	–$37,015,046	–$37,190,331	–$34,976,245
322	26	Georgia	–$215,536,739	–$213,661,644	–$217,180,262	–$216,907,307	–$213,666,467
322	26	Kentucky	–$1,354,893	–$857,102	–$1,760,889	–$1,870,613	–$651,146
322	26	North Carolina	–$70,561,003	–$69,672,480	–$71,307,730	–$71,379,989	–$69,443,419
322	26	South Carolina	–$46,990,467	–$46,157,953	–$47,679,997	–$47,808,407	–$45,874,313
322	26	Tennessee	–$41,567,063	–$40,930,214	–$42,097,121	–$42,180,070	–$40,730,556
322	26	Virginia	–$76,834,052	–$76,091,491	–$77,473,287	–$77,439,203	–$76,008,267
322	26	West Virginia	–$262,365	–$244,602	–$276,874	–$280,712	–$237,327
323	27	Printing and Related Support	–$28,199,777	–$28,684,765	–$24,044,415	–$28,046,746	–$27,580,189
325	28	Chemicals	–$158,153,888	–$152,783,158	–$126,364,734	–$164,094,616	–$141,446,062
325	28	Alabama	–$26,658,070	–$26,537,635	–$25,995,164	–$26,783,259	–$26,305,987
325	28	Georgia	–$22,731,742	–$22,541,456	–$21,626,223	–$22,938,869	–$22,149,212
325	28	Kentucky	–$8,979,451	–$8,859,929	–$8,276,561	–$9,110,920	–$8,609,707
325	28	North Carolina	–$53,415,178	–$53,010,114	–$51,072,455	–$53,854,387	–$52,179,937
325	28	South Carolina	–$13,930,243	–$13,700,843	–$12,577,551	–$14,183,158	–$13,218,941
325	28	Tennessee	–$108,795,505	–$108,548,331	–$107,933,486	–$108,972,637	–$108,297,337
325	28	Virginia	–$20,098,695	–$19,957,359	–$19,284,655	–$20,251,401	–$19,669,223
325	28	West Virginia	–$49,559,216	–$49,426,250	–$48,960,371	–$49,676,124	–$49,230,423
326	30	Plastics and Rubber Products	–$59,493,695	–$60,574,880	–$50,586,846	–$59,129,360	–$58,226,981
327	32	Nonmetallic Mineral Products	–$40,459,060	–$40,112,052	–$34,646,118	–$41,203,018	–$38,160,964
331	33	Primary Metals	–$19,599,751	–$17,717,733	–$19,297,218	–$24,603,077	–$13,020,878
331	33	Alabama	–$1,048,902	–$984,031	–$1,038,516	–$1,221,297	–$822,221
331	33	Georgia	–$374,250	–$354,536	–$371,101	–$426,623	–$305,383
331	33	Kentucky	–$6,176,520	–$6,122,481	–$6,170,914	–$6,314,998	–$5,994,436

(continued)

Table B-18. Impacts on 2010 Producer Surplus Associated with the B3 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
331	33	North Carolina	–$229,227	–$207,216	–$225,689	–$287,743	–$152,284
331	33	South Carolina	–$3,035,821	–$3,007,857	–$3,032,757	–$3,107,758	–$2,941,232
331	33	Tennessee	–$5,184,373	–$5,129,681	–$5,177,691	–$5,326,229	–$4,997,847
331	33	Virginia	–$1,887,116	–$1,868,441	–$1,884,937	–$1,935,380	–$1,823,653
331	33	West Virginia	–$11,301,062	–$11,258,236	–$11,311,114	–$11,386,187	–$11,189,132
332	34	Fabricated Metal Products	–$9,384,234	–$8,516,759	–$9,446,451	–$10,504,061	–$7,919,458
333	35	Machinery	–$25,857,525	–$24,433,983	–$24,578,473	–$27,696,722	–$22,969,908
334	36 (pt)	Computer and Electronic Products	–$26,819,204	–$24,728,321	–$26,379,237	–$29,492,867	–$23,091,157
335	36 (pt)	Electrical Equipment, Appliances, and Components	–$9,659,852	–$9,128,045	–$9,182,023	–$10,346,939	–$8,581,096
336	37	Transportation Equipment	–$68,974,575	–$67,700,166	–$62,415,944	–$71,110,108	–$64,335,416
337	25	Furniture and Related Products	–$23,144,347	–$24,203,948	–$19,095,246	–$23,490,019	–$23,459,026
339	39	Miscellaneous	–$20,151,953	–$19,322,317	–$18,486,524	–$21,221,544	–$18,260,025
11	01-08	Agricultural Sector	–$55,797,430	–$56,899,218	–$47,099,228	–$55,294,122	–$54,854,834
23	15-17	Construction Sector	–$65,430,743	–$66,102,119	–$51,651,835	–$64,698,290	–$63,920,803
21	10; 14	Other Mining Sector	–$58,047,789	–$54,991,072	–$55,028,442	–$62,053,486	–$51,699,932
484	42 (pt)	Trucking Transportation	–$23,508,086	–$27,235,192	–$4,448,505	–$18,119,150	–$28,304,930
484	42 (pt)	Alabama	–$597,551	–$692,290	–$113,076	–$460,570	–$719,482
484	42 (pt)	Georgia	–$957,492	–$1,109,299	–$181,189	–$737,999	–$1,152,870

(continued)

Table B-18. Impacts on 2010 Producer Surplus Associated with the B3 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
484	42 (pt)	Kentucky	–$458,744	–$531,476	–$86,810	–$353,583	–$552,351
484	42 (pt)	North Carolina	–$841,084	–$974,435	–$159,161	–$648,276	–$1,012,708
484	42 (pt)	South Carolina	–$330,119	–$382,458	–$62,469	–$254,444	–$397,480
484	42 (pt)	Tennessee	–$948,015	–$1,098,319	–$179,396	–$730,695	–$1,141,459
484	42 (pt)	Virginia	–$516,643	–$598,555	–$97,766	–$398,209	–$622,065
484	42 (pt)	West Virginia	–$166,592	–$193,004	–$31,525	–$128,403	–$200,585
482	401	Railroads	–$11,503,262	–$10,866,380	–$10,579,975	–$12,274,967	–$10,264,430
482	401	Alabama	–$264,005	–$249,388	–$242,815	–$281,716	–$235,573
482	401	Georgia	–$504,666	–$476,725	–$464,160	–$538,521	–$450,316
482	401	Kentucky	–$334,275	–$315,767	–$307,445	–$356,700	–$298,275
482	401	North Carolina	–$176,995	–$167,196	–$162,789	–$188,869	–$157,934
482	401	South Carolina	–$129,985	–$122,788	–$119,552	–$138,705	–$115,986
482	401	Tennessee	–$314,371	–$296,966	–$289,139	–$335,461	–$280,515
482	401	Virginia	–$489,415	–$462,318	–$450,133	–$522,248	–$436,708
482	401	West Virginia	–$221,096	–$208,855	–$203,350	–$235,928	–$197,285
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$1,537,611,293	–$1,504,580,276	–$1,409,053,330	–$1,591,242,163	–$1,428,438,368
		Total	–$4,600,757,521	–$3,710,756,156	–$6,139,533,039	–$5,238,672,128	–$3,767,547,512

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.

[b] Primary demand elasticity, 25 percent less elastic supply in all markets.

[c] Primary supply elasticity, 25 percent more elastic demand in all markets.

[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-19. Incremental Impacts on 2010 Producer Surplus Associated with the B1 Strategy (B1–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
		Energy					
		Petroleum (Rest of U.S.)	$4,537,074	$12,938,957	–$21,946,348	–$5,579,107	$17,930,852
		Petroleum (South Atlantic/East South Central)	$1,309,371	$3,734,101	–$6,333,577	–$1,610,095	$5,174,730
		Natural Gas (Rest of U.S.)	$143,014,869	$176,528,263	$45,998,429	$108,669,514	$184,209,944
		Natural Gas (South Atlantic/ East South Central)	–$73,862,669	–$66,879,322	–$94,116,707	–$81,021,967	–$65,275,367
		Electricity (Rest of U.S.)	$1,058,506,642	$1,130,737,801	$919,735,321	$1,020,054,962	$1,101,798,240
		Electricity (South Atlantic/ East South Central)	–$1,430,444,042	–$1,391,931,105	–$1,498,480,944	–$1,446,504,847	–$1,412,283,439
		Coal (Rest of U.S.)	–$27,298,681	–$23,143,707	–$35,479,488	–$29,797,038	–$24,469,362
		Coal (South Atlantic/ East South Central)	–$13,397,094	–$11,358,000	–$17,411,905	–$14,623,187	–$12,008,578
311	20 (pt)	Food	–$6,752,691	–$6,321,036	–$6,224,727	–$7,266,975	–$5,948,769
312	20 (pt); 21	Beverage and Tobacco Products	–$3,520,268	–$3,524,265	–$3,061,546	–$3,549,541	–$3,376,227
313	22 (pt)	Textile Mills	$1,965,427	$2,636,156	$1,490,457	$1,328,300	$2,943,502
313	22 (pt)	Alabama	$185,240	$250,442	$139,067	$123,304	$280,319
313	22 (pt)	Georgia	–$659,918	–$521,012	–$758,290	–$791,857	–$457,375
313	22 (pt)	Kentucky	$12,002	$16,097	$9,101	$8,111	$17,974
313	22 (pt)	North Carolina	–$10,811,289	–$10,510,505	–$11,024,441	–$11,096,688	–$10,373,173
313	22 (pt)	South Carolina	–$5,298,590	–$5,129,135	–$5,418,665	–$5,459,398	–$5,051,733
313	22 (pt)	Tennessee	–$11,032,750	–$10,999,547	–$11,057,121	–$11,061,671	–$10,988,361
313	22 (pt)	Virginia	–$963,767	–$909,486	–$1,002,217	–$1,015,311	–$884,640
313	22 (pt)	West Virginia	$2,576	$3,455	$1,953	$1,741	$3,857
314	22 (pt)	Textile Product Mills	–$1,943,382	–$1,973,600	–$1,661,804	–$1,933,702	–$1,898,798
315	23	Apparel	–$8,276,772	–$8,424,566	–$7,058,924	–$8,218,388	–$8,110,965
316	31	Leather and Allied Products	–$507,997	–$505,912	–$445,318	–$514,673	–$484,164

(continued)

Table B-19. Incremental Impacts on 2010 Producer Surplus Associated with the B1 Strategy (B1–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
321	24	Wood Products	–$1,647,444	–$1,503,458	–$1,621,787	–$1,828,268	–$1,403,402
322	26	Paper	$110,657,082	$124,499,023	$95,268,634	$96,558,969	$129,103,127
322	26	Alabama	–$8,117,402	–$7,627,467	–$8,662,699	–$8,613,621	–$7,468,189
322	26	Georgia	–$132,311,299	–$131,361,106	–$133,349,380	–$133,039,246	–$131,359,329
322	26	Kentucky	$1,901,946	$2,169,749	$1,604,201	$1,629,144	$2,258,880
322	26	North Carolina	–$44,038,804	–$43,567,427	–$44,560,565	–$44,472,663	–$43,471,306
322	26	South Carolina	–$22,759,154	–$22,319,678	–$23,247,786	–$23,192,532	–$22,192,209
322	26	Tennessee	–$17,389,500	–$17,059,174	–$17,756,737	–$17,714,700	–$16,964,075
322	26	Virginia	–$47,446,145	–$47,049,182	–$47,881,384	–$47,766,848	–$47,026,708
322	26	West Virginia	$51,046	$60,584	$40,441	$41,328	$63,762
323	27	Printing and Related Support	–$5,996,856	–$6,098,225	–$5,128,240	–$5,958,732	–$5,872,628
325	28	Chemicals	–$15,427,263	–$11,329,600	–$12,283,136	–$19,379,301	–$8,096,407
325	28	Alabama	–$12,310,602	–$12,221,472	–$12,247,217	–$12,393,948	–$12,156,060
325	28	Georgia	–$8,998,890	–$8,855,138	–$8,890,185	–$9,136,742	–$8,743,223
325	28	Kentucky	–$1,554,897	–$1,464,126	–$1,485,373	–$1,642,386	–$1,392,615
325	28	North Carolina	–$30,276,823	–$29,970,103	–$30,048,462	–$30,569,104	–$29,734,798
325	28	South Carolina	–$4,631,123	–$4,456,425	–$4,497,540	–$4,799,398	–$4,319,001
325	28	Tennessee	–$37,689,898	–$37,549,782	–$37,613,978	–$37,808,147	–$37,470,736
325	28	Virginia	–$9,951,670	–$9,845,013	–$9,872,262	–$10,053,300	–$9,763,197
325	28	West Virginia	–$26,673,902	–$26,580,672	–$26,624,874	–$26,751,785	–$26,529,563
326	30	Plastics and Rubber Products	–$12,652,710	–$12,878,643	–$10,790,985	–$12,563,458	–$12,399,242
327	32	Nonmetallic Mineral Products	–$8,645,972	–$8,566,442	–$7,439,244	–$8,798,016	–$8,164,406
331	33	Primary Metals	–$6,438,265	–$6,072,682	–$6,275,057	–$7,397,465	–$5,153,312
331	33	Alabama	$142,468	$155,055	$148,113	$109,404	$186,760
331	33	Georgia	–$68,054	–$64,226	–$66,345	–$78,097	–$54,600
331	33	Kentucky	–$1,781,717	–$1,771,395	–$1,777,471	–$1,808,286	–$1,746,122

(continued)

Table B-19. Incremental Impacts on 2010 Producer Surplus Associated with the B1 Strategy (B1–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
331	33	North Carolina	–$75,298	–$71,022	–$73,389	–$86,516	–$60,270
331	33	South Carolina	–$524,486	–$519,181	–$522,193	–$538,302	–$505,979
331	33	Tennessee	–$2,167,751	–$2,157,107	–$2,163,523	–$2,194,936	–$2,131,331
331	33	Virginia	–$785,047	–$781,415	–$783,623	–$794,296	–$772,655
331	33	West Virginia	$1,850,642	$1,855,228	$1,855,813	$1,834,167	$1,872,711
332	34	Fabricated Metal Products	–$1,982,907	–$1,799,406	–$1,999,456	–$2,217,191	–$1,675,704
333	35	Machinery	–$5,463,803	–$5,162,391	–$5,202,394	–$5,846,275	–$4,860,347
334	36 (pt)	Computer and Electronic Products	–$5,666,982	–$5,224,568	–$5,583,523	–$6,225,376	–$4,885,971
335	36 (pt)	Electrical Equipment, Appliances, and Components	–$2,041,167	–$1,928,566	–$1,943,510	–$2,184,051	–$1,815,728
336	37	Transportation Equipment	–$14,574,670	–$14,303,673	–$13,211,297	–$15,010,113	–$13,613,203
337	25	Furniture and Related Products	–$4,922,193	–$5,145,942	–$4,073,328	–$4,558,436	–$4,995,538
339	39	Miscellaneous	–$4,285,403	–$4,107,787	–$3,942,817	–$4,508,635	–$3,888,054
11	01-08	Agricultural Sector	–$11,724,771	–$11,957,858	–$9,907,446	–$11,601,293	–$11,549,289
23	15-17	Construction Sector	–$13,804,804	–$13,948,587	–$10,926,760	–$13,622,258	–$13,521,194
21	10; 14	Other Mining Sector	–$12,224,815	–$11,580,622	–$11,603,699	–$13,053,348	–$10,904,227
484	42 (pt)	Trucking Transportation	–$4,976,229	–$5,769,821	–$983,573	–$3,806,425	–$6,030,858
484	42 (pt)	Alabama	–$126,490	–$146,663	–$25,001	–$96,755	–$153,298
484	42 (pt)	Georgia	–$202,684	–$235,007	–$40,061	–$155,037	–$245,639

(continued)

Table B-19. Incremental Impacts on 2010 Producer Surplus Associated with the B1 Strategy (B1–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
484	42 (pt)	Kentucky	–$97,108	–$112,594	–$19,194	–$74,280	–$117,688
484	42 (pt)	North Carolina	–$178,042	–$206,436	–$35,191	–$136,188	–$215,775
484	42 (pt)	South Carolina	–$69,880	–$81,024	–$13,812	–$53,453	–$84,690
484	42 (pt)	Tennessee	–$200,677	–$232,681	–$39,665	–$153,502	–$243,208
484	42 (pt)	Virginia	–$109,364	–$126,805	–$21,616	–$83,655	–$132,542
484	42 (pt)	West Virginia	–$35,264	–$40,888	–$6,970	–$26,975	–$42,738
482	401	Railroads	–$2,403,616	–$2,271,443	–$2,210,742	–$2,559,866	–$2,150,014
482	401	Alabama	–$55,164	–$52,131	–$50,737	–$58,750	–$49,344
482	401	Georgia	–$105,450	–$99,652	–$96,989	–$112,305	–$94,324
482	401	Kentucky	–$69,847	–$66,006	–$64,242	–$74,387	–$62,477
482	401	North Carolina	–$36,983	–$34,950	–$34,016	–$39,387	–$33,081
482	401	South Carolina	–$27,160	–$25,667	–$24,981	–$28,926	–$24,295
482	401	Tennessee	–$65,688	–$62,076	–$60,417	–$69,958	–$58,757
482	401	Virginia	–$102,264	–$96,640	–$94,058	–$108,911	–$91,474
482	401	West Virginia	–$46,198	–$43,658	–$42,491	–$49,201	–$41,324
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$328,947,972	–$321,480,199	–$302,837,882	–$340,362,722	–$305,736,015
		Total	–$1,145,542,091	–$944,630,186	–$1,485,949,793	–$1,295,943,257	–$948,034,456

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.

[b] Primary demand elasticity, 25 percent less elastic supply in all markets.

[c] Primary supply elasticity, 25 percent more elastic demand in all markets.

[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-20. Incremental Impacts on 2010 Producer Surplus Associated with the B3 Strategy (B3–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
		Energy					
		Petroleum (Rest of U.S.)	$18,890,921	$45,984,861	–$67,120,512	–$13,252,905	$61,248,586
		Petroleum (South Atlantic/East South Central)	$5,451,800	$13,270,940	–$19,370,554	–$3,824,704	$17,675,954
		Natural Gas (Rest of U.S.)	$395,543,512	$499,491,069	$86,784,130	$288,293,654	$523,893,590
		Natural Gas (South Atlantic/ East South Central)	–$120,387,830	–$98,763,963	–$184,797,472	–$142,725,923	–$93,654,643
		Electricity (Rest of U.S.)	$3,472,734,952	$3,715,236,935	$3,013,151,165	$3,348,218,181	$3,612,471,867
		Electricity (South Atlantic/ East South Central)	–$4,591,633,749	–$4,451,185,025	–$4,827,373,961	–$4,641,342,959	–$4,535,600,543
		Coal (Rest of U.S.)	–$88,562,730	–$75,052,682	–$115,163,717	–$96,512,283	–$79,593,777
		Coal (South Atlantic/ East South Central)	–$43,463,024	–$36,832,836	–$56,517,717	–$47,364,344	–$39,061,422
311	20 (pt)	Food	–$21,400,194	–$20,053,161	–$19,611,459	–$23,030,626	–$18,847,211
312	20 (pt); 21	Beverage and Tobacco Products	–$11,252,945	–$11,272,382	–$9,755,730	–$11,351,470	–$10,785,417
313	22 (pt)	Textile Mills	$7,584,986	$9,935,171	$5,842,263	$5,351,852	$10,991,074
313	22 (pt)	Alabama	$627,584	$856,045	$458,174	$410,501	$958,691
313	22 (pt)	Georgia	–$1,788,750	–$1,302,093	–$2,149,658	–$2,251,156	–$1,083,467
313	22 (pt)	Kentucky	$46,316	$60,667	$35,675	$32,680	$67,115
313	22 (pt)	North Carolina	–$20,951,784	–$19,898,240	–$21,733,543	–$21,951,884	–$19,426,402
313	22 (pt)	South Carolina	–$47,209,469	–$46,608,004	–$47,658,358	–$47,772,331	–$46,351,005
313	22 (pt)	Tennessee	–$25,441,599	–$25,320,855	–$25,535,120	–$25,542,708	–$25,287,406
313	22 (pt)	Virginia	–$4,232,044	–$4,041,749	–$4,373,266	–$4,412,641	–$3,956,593
313	22 (pt)	West Virginia	$9,940	$13,020	$7,656	$7,013	$14,403
314	22 (pt)	Textile Product Mills	–$6,212,361	–$6,312,706	–$5,295,466	–$6,184,112	–$6,065,845
315	23	Apparel	–$26,457,531	–$26,945,845	–$22,493,458	–$26,282,378	–$25,910,488
316	31	Leather and Allied Products	–$1,623,996	–$1,618,253	–$1,419,241	–$1,646,063	–$1,546,787

(continued)

Table B-20. Incremental Impacts on 2010 Producer Surplus Associated with the B3 Strategy (B3–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
321	24	Wood Products	–$5,266,490	–$4,809,003	–$5,168,097	–$5,847,099	–$4,483,311
322	26	Paper	$157,319,254	$180,804,190	$135,268,691	$133,171,169	$189,712,387
322	26	Alabama	–$28,724,126	–$27,879,859	–$29,521,005	–$29,571,239	–$27,587,881
322	26	Georgia	–$206,250,713	–$204,496,363	–$207,947,955	–$207,488,579	–$204,590,850
322	26	Kentucky	–$1,118,239	–$664,636	–$1,544,426	–$1,584,994	–$492,128
322	26	North Carolina	–$66,240,182	–$65,422,923	–$67,018,944	–$66,980,598	–$65,247,178
322	26	South Carolina	–$42,267,848	–$41,506,308	–$42,989,172	–$43,007,619	–$41,275,635
322	26	Tennessee	–$37,794,046	–$37,210,503	–$38,347,920	–$38,348,393	–$37,050,550
322	26	Virginia	–$68,206,424	–$67,518,451	–$68,867,714	–$68,753,273	–$67,473,080
322	26	West Virginia	–$244,193	–$228,005	–$259,422	–$260,796	–$221,922
323	27	Printing and Related Support	–$19,170,965	–$19,506,109	–$16,343,742	–$19,057,484	–$18,761,461
325	28	Chemicals	–$92,112,663	–$86,033,991	–$73,402,264	–$98,374,613	–$77,617,159
325	28	Alabama	–$22,158,870	–$22,023,684	–$21,771,866	–$22,290,840	–$21,853,486
325	28	Georgia	–$19,785,455	–$19,570,486	–$19,136,300	–$20,003,791	–$19,280,124
325	28	Kentucky	–$7,478,943	–$7,343,749	–$7,065,611	–$7,617,523	–$7,158,179
325	28	North Carolina	–$47,865,146	–$47,407,713	–$46,490,291	–$48,328,127	–$46,793,627
325	28	South Carolina	–$11,074,833	–$10,815,285	–$10,279,107	–$11,341,427	–$10,457,743
325	28	Tennessee	–$95,977,849	–$95,710,632	–$95,506,833	–$96,164,611	–$95,546,009
325	28	Virginia	–$17,423,868	–$17,264,352	–$16,946,332	–$17,584,839	–$17,051,322
325	28	West Virginia	–$41,904,625	–$41,758,314	–$41,563,485	–$42,027,876	–$41,619,525
326	30	Plastics and Rubber Products	–$40,445,658	–$41,192,143	–$34,385,774	–$40,177,901	–$39,609,392
327	32	Nonmetallic Mineral Products	–$27,537,582	–$27,308,265	–$23,584,024	–$28,029,603	–$25,990,287
331	33	Primary Metals	–$12,171,196	–$10,901,490	–$12,033,517	–$15,612,208	–$7,652,980
331	33	Alabama	–$328,093	–$284,336	–$323,360	–$446,658	–$172,410
331	33	Georgia	–$296,167	–$282,865	–$294,745	–$332,183	–$248,877
331	33	Kentucky	–$5,961,754	–$5,924,717	–$5,960,725	–$6,056,848	–$5,836,891

(continued)

Table B-20. Incremental Impacts on 2010 Producer Surplus Associated with the B3 Strategy (B3–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
331	33	North Carolina	–$142,347	–$127,497	–$140,737	–$182,591	–$89,505
331	33	South Carolina	–$2,876,113	–$2,856,980	–$2,875,425	–$2,925,519	–$2,811,242
331	33	Tennessee	–$4,937,189	–$4,899,904	–$4,935,191	–$5,034,633	–$4,809,241
331	33	Virginia	–$1,810,422	–$1,797,670	–$1,809,837	–$1,843,573	–$1,766,894
331	33	West Virginia	–$5,000,176	–$4,971,168	–$5,008,341	–$5,058,598	–$4,923,467
332	34	Fabricated Metal Products	–$6,369,138	–$5,782,065	–$6,409,010	–$7,125,639	–$5,378,164
333	35	Machinery	–$17,549,525	–$16,588,248	–$16,675,308	–$18,788,464	–$15,599,182
334	36 (pt)	Computer and Electronic Products	–$18,202,290	–$16,788,128	–$17,897,104	–$20,006,989	–$15,681,473
335	36 (pt)	Electrical Equipment, Appliances, and Components	–$6,556,150	–$6,197,036	–$6,229,560	–$7,018,993	–$5,827,541
336	37	Transportation Equipment	–$46,812,898	–$45,961,472	–$42,346,067	–$48,238,343	–$43,691,074
337	25	Furniture and Related Products	–$15,734,167	–$16,459,061	–$12,979,720	–$16,610,139	–$15,958,115
339	39	Miscellaneous	–$13,700,006	–$13,139,697	–$12,565,964	–$14,419,988	–$12,421,506
11	01-08	Agricultural Sector	–$37,819,123	–$38,580,650	–$31,903,684	–$37,454,080	–$37,209,666
23	15-17	Construction Sector	–$44,406,102	–$44,884,080	–$35,034,017	–$43,871,181	–$43,427,075
21	10; 14	Other Mining Sector	–$39,361,057	–$37,299,634	–$37,296,354	–$42,055,274	–$35,078,811
484	42 (pt)	Trucking Transportation	–$15,981,902	–$18,526,385	–$3,041,536	–$12,290,775	–$19,280,531
484	42 (pt)	Alabama	–$406,243	–$470,921	–$77,313	–$312,419	–$490,091
484	42 (pt)	Georgia	–$650,948	–$754,586	–$123,883	–$500,608	–$785,303

(continued)

Table B-20. Incremental Impacts on 2010 Producer Surplus Associated with the B3 Strategy (B3–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
484	42 (pt)	Kentucky	–$311,876	–$361,530	–$59,353	–$239,846	–$376,246
484	42 (pt)	North Carolina	–$571,809	–$662,847	–$108,822	–$439,746	–$689,829
484	42 (pt)	South Carolina	–$224,431	–$260,162	–$42,712	–$172,597	–$270,753
484	42 (pt)	Tennessee	–$644,505	–$747,117	–$122,657	–$495,653	–$777,530
484	42 (pt)	Virginia	–$351,238	–$407,159	–$66,845	–$270,118	–$423,733
484	42 (pt)	West Virginia	–$113,257	–$131,289	–$21,554	–$87,100	–$136,633
482	401	Railroads	–$7,786,014	–$7,358,287	–$7,154,530	–$8,302,084	–$6,953,883
482	401	Alabama	–$178,692	–$168,876	–$164,199	–$190,536	–$159,594
482	401	Georgia	–$341,584	–$322,819	–$313,880	–$364,225	–$305,077
482	401	Kentucky	–$226,255	–$213,825	–$207,904	–$241,251	–$202,074
482	401	North Carolina	–$119,800	–$113,218	–$110,083	–$127,740	–$106,996
482	401	South Carolina	–$87,981	–$83,147	–$80,845	–$93,812	–$78,578
482	401	Tennessee	–$212,783	–$201,094	–$195,525	–$226,887	–$190,042
482	401	Virginia	–$331,262	–$313,064	–$304,395	–$353,218	–$295,858
482	401	West Virginia	–$149,649	–$141,428	–$137,512	–$159,568	–$133,656
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$1,045,469,805	–$1,023,097,809	–$958,207,192	–$1,081,576,906	–$971,666,227
		Total	–$3,205,651,405	–$2,573,287,930	–$4,280,221,167	–$3,652,331,652	–$2,622,204,933

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.

[b] Primary demand elasticity, 25 percent less elastic supply in all markets.

[c] Primary supply elasticity, 25 percent more elastic demand in all markets.

[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-21. Distribution of 2040 Social Costs Associated with the A2 Strategy: Sensitivity to Elasticity Assumptions (2000$)

	Loss/Gain (10^6)				
Stakeholder	**Primary**	**Sensitivity Analysis A[a]**	**Sensitivity Analysis B[b]**	**Sensitivity Analysis C[c]**	**Sensitivity Analysis D[d]**
Consumers	–$3,440.7	–$3,960.3	–$2,507.6	–$3,030.3	–$3,979.5
Agriculture, Mining, Manufacturing	–$642.4	–$767.5	–$447.4	–$542.1	–$777.6
Commercial	–$880.6	–$1,079.3	–$600.4	–$725.9	–$1,096.5
Residential	–$1,720.5	–$1,873.8	–$1,377.9	–$1,613.7	–$1,844.9
Transportation	–$197.2	–$239.6	–$81.9	–$148.6	–$260.5
Producers	–$3,402.2	–$2,864.7	–$4,352.8	–$3,811.3	–$2,865.2
Energy	–$1,547.1	–$1,040.0	–$2,688.0	–$1,907.3	–$1,122.6
Rest of U.S.	$3,484.3	$3,832.0	$2,681.4	$3,224.8	$3,790.9
South Atlantic/East South Central	–$5,031.3	–$4,872.0	–$5,369.4	–$5,132.2	–$4,913.5
Agriculture, Mining, Manufacturing	–$645.5	–$636.9	–$575.6	–$662.0	–$608.5
Rest of U.S.	–$529.9	–$521.5	–$467.6	–$545.5	–$495.7
SAMI Region	–$115.6	–$115.4	–$108.0	–$116.5	–$112.7
Commercial	–$1,174.2	–$1,151.3	–$1,067.4	–$1,209.9	–$1,096.5
Transportation	$0.0	$0.0	$0.0	$0.0	$0.0
Rest of U.S.	–$35.4	–$36.6	–$21.9	–$32.1	–$37.7
SAMI Region	–$34.8	–$36.7	–$21.2	–$31.1	–$37.9
Total Social Cost	–$0.6	$0.1	–$0.7	–$1.0	$0.3

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-22. Distribution of 2040 Social Costs Associated with the B1 Strategy: Sensitivity to Elasticity Assumptions (2000$)

	Loss/Gain (10^6)				
Stakeholder	**Primary**	**Sensitivity Analysis A[a]**	**Sensitivity Analysis B[b]**	**Sensitivity Analysis C[c]**	**Sensitivity Analysis D[d]**
Consumers	–$4,105.4	–$4,722.5	–$3,010.9	–$3,613.9	–$4,751.9
Agriculture, Mining, Manufacturing	–$918.8	–$1,084.2	–$668.2	–$782.4	–$1,102.5
Commercial	–$1,004.0	–$1,231.1	–$684.0	–$827.2	–$1,250.9
Residential	–$1,959.0	–$2,134.7	–$1,567.1	–$1,836.2	–$2,102.2
Transportation	–$223.6	–$272.5	–$91.6	–$168.0	–$296.3
Producers	–$4,134.6	–$3,494.2	–$5,251.9	–$4,624.3	–$3,490.6
Energy	–$1,780.7	–$1,196.3	–$3,088.5	–$2,194.1	–$1,292.3
Rest of U.S.	$3,971.8	$4,371.9	$3,052.0	$3,673.7	$4,324.9
South Atlantic/East South Central	–$5,752.5	–$5,568.2	–$6,140.6	–$5,867.9	–$5,617.2
Agriculture, Mining, Manufacturing	–$975.2	–$943.2	–$922.8	–$1,015.3	–$904.6
Rest of U.S.	–$454.9	–$428.2	–$405.1	–$489.3	–$393.7
SAMI Region	–$520.3	–$515.0	–$517.7	–$525.9	–$510.9
Commercial	–$1,338.7	–$1,313.2	–$1,216.0	–$1,378.8	–$1,250.9
Transportation	$0.0	$0.0	$0.0	$0.0	$0.0
Rest of U.S.	–$40.1	–$41.5	–$24.5	–$36.2	–$42.7
SAMI Region	–$39.4	–$41.6	–$23.7	–$35.1	–$43.0
Total Social Cost	–$0.6	$0.1	–$0.7	–$1.1	$0.3

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-23. Distribution of 2040 Social Costs Associated with the B3 Strategy: Sensitivity to Elasticity Assumptions (2000$)

	Loss/Gain (10^6)				
Stakeholder	**Primary**	**Sensitivity Analysis A[a]**	**Sensitivity Analysis B[b]**	**Sensitivity Analysis C[c]**	**Sensitivity Analysis D[d]**
Consumers	–$7,670.4	–$8,826.0	–$5,631.9	–$6,748.3	–$8,884.4
Agriculture, Mining, Manufacturing	–$1,852.7	–$2,177.7	–$1,366.0	–$1,582.2	–$2,217.0
Commercial	–$1,832.4	–$2,249.0	–$1,245.2	–$1,509.0	–$2,284.5
Residential	–$3,580.2	–$3,903.7	–$2,859.1	–$3,354.0	–$3,844.3
Transportation	–$405.1	–$495.6	–$161.6	–$303.2	–$538.6
Producers	–$7,677.2	–$6,442.1	–$9,793.1	–$8,593.0	–$6,471.2
Energy	–$3,145.7	–$2,031.5	–$5,591.1	–$3,903.8	–$2,249.3
Rest of U.S.	$7,296.2	$8,047.0	$5,588.1	$6,747.1	$7,947.2
South Atlantic/East South Central	–$10,441.9	–$10,078.5	–$11,179.2	–$10,650.9	–$10,196.5
Agriculture, Mining, Manufacturing	–$2,015.5	–$1,936.1	–$1,944.5	–$2,108.8	–$1,859.7
Rest of U.S.	–$694.1	–$630.5	–$620.6	–$772.3	–$562.1
SAMI Region	–$1,321.4	–$1,305.6	–$1,323.9	–$1,336.5	–$1,297.6
Commercial	–$2,443.2	–$2,399.0	–$2,213.7	–$2,515.0	–$2,284.5
Transportation	$0.0	$0.0	$0.0	$0.0	$0.0
Rest of U.S.	–$72.7	–$75.5	–$43.8	–$65.5	–$77.8
SAMI Region	–$71.6	–$75.8	–$42.4	–$63.6	–$78.3
Total Social Cost	–$1.1	$0.2	–$1.3	–$1.9	$0.6

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-24. Distribution of 2040 Incremental Social Costs Associated with the B1 Strategy (B1–A2): Sensitivity to Elasticity Assumptions (2000$)

	Loss/Gain (10^6)				
Stakeholder	**Primary**	**Sensitivity Analysis A[a]**	**Sensitivity Analysis B[b]**	**Sensitivity Analysis C[c]**	**Sensitivity Analysis D[d]**
Consumers	–$664.7	–$762.2	–$503.2	–$583.6	–$772.3
Agriculture, Mining, Manufacturing	–$276.4	–$316.6	–$220.7	–$240.3	–$324.8
Commercial	–$123.4	–$151.8	–$83.6	–$101.3	–$154.4
Residential	–$238.5	–$260.9	–$189.2	–$222.6	–$257.3
Transportation	–$26.5	–$32.9	–$9.7	–$19.4	–$35.8
Producers	–$732.4	–$629.5	–$899.1	–$813.1	–$625.3
Energy	–$233.6	–$156.3	–$400.6	–$286.8	–$169.8
Rest of U.S.	$487.5	$539.9	$370.6	$448.9	$534.0
South Atlantic/East South Central	–$721.1	–$696.2	–$771.2	–$735.7	–$703.7
Agriculture, Mining, Manufacturing	–$329.6	–$306.3	–$347.2	–$353.3	–$296.1
Rest of U.S.	$75.1	$93.3	$62.5	$56.2	$102.0
SAMI Region	–$404.7	–$399.7	–$409.7	–$409.4	–$398.1
Commercial	–$164.5	–$161.9	–$148.6	–$168.9	–$154.4
Transportation	$0.0	$0.0	$0.0	$0.0	$0.0
Rest of U.S.	–$4.7	–$4.9	–$2.6	–$4.1	–$5.1
SAMI Region	–$4.6	–$4.9	–$2.5	–$4.0	–$5.1
Total Social Cost	–$0.1	$0.0	–$0.1	–$0.1	$0.0

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-25. Distribution of 2040 Incremental Social Costs Associated with the B3 Strategy (B3–A2): Sensitivity to Elasticity Assumptions (2000$)

	Loss/Gain (10^6)				
Stakeholder	**Primary**	**Sensitivity Analysis A[a]**	**Sensitivity Analysis B[b]**	**Sensitivity Analysis C[c]**	**Sensitivity Analysis D[d]**
Consumers	–$4,229.7	–$4,865.7	–$3,124.3	–$3,718.0	–$4,904.9
Agriculture, Mining, Manufacturing	–$1,210.3	–$1,410.1	–$918.6	–$1,040.1	–$1,439.3
Commercial	–$951.8	–$1,169.7	–$644.8	–$783.1	–$1,187.9
Residential	–$1,859.6	–$2,029.9	–$1,481.2	–$1,740.3	–$1,999.4
Transportation	–$208.0	–$256.0	–$79.6	–$154.6	–$278.1
Producers	–$4,275.0	–$3,577.4	–$5,440.3	–$4,781.8	–$3,606.0
Energy	–$1,598.7	–$991.6	–$2,903.1	–$1,996.4	–$1,126.7
Rest of U.S.	$3,811.9	$4,215.0	$2,906.7	$3,522.3	$4,156.3
South Atlantic/East South Central	–$5,410.6	–$5,206.6	–$5,809.8	–$5,518.7	–$5,283.0
Agriculture, Mining, Manufacturing	–$1,370.0	–$1,299.2	–$1,368.9	–$1,446.8	–$1,251.3
Rest of U.S.	–$164.2	–$108.9	–$153.0	–$226.8	–$66.4
SAMI Region	–$1,205.8	–$1,190.2	–$1,215.9	–$1,220.0	–$1,184.9
Commercial	–$1,269.0	–$1,247.7	–$1,146.4	–$1,305.1	–$1,187.9
Transportation	$0.0	$0.0	$0.0	$0.0	$0.0
Rest of U.S.	–$37.3	–$39.0	–$21.9	–$33.5	–$40.1
SAMI Region	–$36.8	–$39.1	–$21.3	–$32.5	–$40.4
Total Social Cost	–$0.6	$0.1	–$0.6	–$1.0	$0.3

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-26. National Market-Level Impacts on Prices and Quantities in 2040 Associated with the A2 Strategy: Sensitivity to Elasticity Assumptions

			Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
		Energy Markets	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**
		Petroleum	0.038%	0.008%	0.045%	0.013%	0.018%	0.001%	0.030%	0.005%	0.049%	0.012%
		Natural Gas	–0.079%	–0.044%	–0.027%	–0.030%	–0.234%	–0.077%	–0.135%	–0.065%	–0.012%	–0.018%
		Electricity	1.157%	–0.223%	1.244%	–0.213%	0.972%	–0.244%	1.102%	–0.251%	1.221%	–0.191%
		Coal	–0.190%	–0.218%	–0.143%	–0.216%	–0.281%	–0.228%	–0.217%	–0.243%	–0.160%	–0.189%
NAICS	**SIC**											
311	20 (pt)	Food	0.006%	–0.002%	0.006%	–0.002%	0.004%	–0.001%	0.005%	–0.002%	0.006%	–0.001%
312	20 (pt); 21	Beverage and Tobacco Products	0.005%	–0.007%	0.007%	–0.009%	0.003%	–0.005%	0.004%	–0.007%	0.007%	–0.007%
313	22 (pt)	Textile Mills	0.005%	–0.004%	0.006%	–0.005%	0.003%	–0.003%	0.004%	–0.004%	0.006%	–0.004%
314	22 (pt)	Textile Product Mills	0.004%	–0.004%	0.006%	–0.005%	0.003%	–0.002%	0.003%	–0.004%	0.006%	–0.004%
315	23	Apparel	0.004%	–0.008%	0.005%	–0.010%	0.003%	–0.005%	0.003%	–0.008%	0.006%	–0.007%
316	31	Leather and Allied Products	0.006%	–0.007%	0.007%	–0.008%	0.004%	–0.004%	0.005%	–0.007%	0.007%	–0.006%
321	24	Wood Products	0.011%	–0.002%	0.013%	–0.003%	0.008%	–0.002%	0.010%	–0.003%	0.013%	–0.002%
322	26	Paper	0.018%	–0.019%	0.021%	–0.023%	0.012%	–0.014%	0.015%	–0.020%	0.021%	–0.018%
323	27	Printing and Related Support	0.004%	–0.008%	0.005%	–0.010%	0.003%	–0.005%	0.003%	–0.008%	0.006%	–0.007%
325	28	Chemicals	0.011%	–0.017%	0.014%	–0.021%	0.007%	–0.011%	0.009%	–0.017%	0.015%	–0.016%
326	30	Plastics and Rubber Products	0.004%	–0.008%	0.005%	–0.010%	0.003%	–0.005%	0.003%	–0.008%	0.006%	–0.007%
327	32	Nonmetallic Mineral Products	0.013%	–0.011%	0.016%	–0.014%	0.008%	–0.007%	0.010%	–0.012%	0.016%	–0.011%
331	33	Primary Metals	0.033%	–0.026%	0.037%	–0.030%	0.025%	–0.020%	0.029%	–0.029%	0.037%	–0.022%
332	34	Fabricated Metal Products	0.005%	–0.001%	0.006%	–0.001%	0.004%	–0.001%	0.005%	–0.001%	0.006%	–0.001%
333	35	Machinery	0.004%	–0.002%	0.005%	–0.002%	0.003%	–0.001%	0.004%	–0.002%	0.005%	–0.002%

(continued)

Table B-26. National Market-Level Impacts on Prices and Quantities in 2040 Associated with the A2 Strategy: Sensitivity to Elasticity Assumptions (Continued)

NAICS	SIC		Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
			Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity
334	36 (pt)	Computer and Electronic Products	0.005%	–0.001%	0.006%	–0.002%	0.004%	–0.001%	0.004%	–0.002%	0.006%	–0.001%
335	36 (pt)	Electrical Equip., Appliances, and Components	0.004%	–0.002%	0.005%	–0.002%	0.003%	–0.001%	0.004%	–0.002%	0.005%	–0.002%
336	37	Transportation Equipment	0.003%	–0.003%	0.004%	–0.004%	0.002%	–0.002%	0.002%	–0.003%	0.004%	–0.003%
337	25	Furniture and Related Products	0.003%	–0.009%	0.003%	–0.012%	0.002%	–0.006%	0.001%	–0.006%	0.004%	–0.009%
339	39	Miscellaneous	0.008%	–0.005%	0.010%	–0.006%	0.006%	–0.003%	0.007%	–0.005%	0.010%	–0.004%
11	01–08	Agricultural Sector	0.004%	–0.007%	0.005%	–0.009%	0.002%	–0.004%	0.003%	–0.007%	0.005%	–0.007%
23	15–17	Construction Sector	0.002%	–0.002%	0.002%	–0.002%	0.001%	–0.001%	0.002%	–0.002%	0.003%	–0.002%
21	10;14	Other Mining Sector	0.054%	–0.016%	0.064%	–0.019%	0.039%	–0.012%	0.046%	–0.017%	0.064%	–0.014%
484	42(pt)	Trucking Transportation	0.006%	–0.006%	0.009%	–0.009%	0.002%	–0.002%	0.004%	–0.005%	0.010%	–0.007%
482	401	Railroads	0.044%	–0.018%	0.051%	–0.021%	0.032%	–0.013%	0.038%	–0.019%	0.052%	–0.016%
NAICS 42–45; 51–55; 61–72	41–48 (pt); 50–99	Commercial	0.004%	–0.004%	0.004%	–0.004%	0.002%	–0.002%	0.003%	–0.004%	0.004%	–0.003%

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-27. National Market-Level Impacts on Prices and Quantities in 2040 Associated with the B1 Strategy: Sensitivity to Elasticity Assumptions

			Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
		Energy Markets	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**
		Petroleum	0.043%	0.009%	0.051%	0.014%	0.020%	0.001%	0.033%	0.005%	0.056%	0.014%
		Natural Gas	–0.078%	–0.053%	–0.017%	–0.038%	–0.257%	–0.091%	–0.143%	–0.078%	0.000%	–0.024%
		Electricity	1.315%	–0.254%	1.415%	–0.243%	1.103%	–0.278%	1.251%	–0.287%	1.388%	–0.217%
		Coal	–0.218%	–0.249%	–0.164%	–0.247%	–0.322%	–0.261%	–0.248%	–0.278%	–0.183%	–0.216%
NAICS	**SIC**											
311	20 (pt)	Food	0.006%	–0.002%	0.007%	–0.002%	0.004%	–0.001%	0.005%	–0.002%	0.007%	–0.002%
312	20 (pt); 21	Beverage and Tobacco Products	0.006%	–0.008%	0.008%	–0.010%	0.004%	–0.005%	0.005%	–0.008%	0.008%	–0.007%
313	22 (pt)	Textile Mills	0.011%	–0.009%	0.013%	–0.011%	0.008%	–0.007%	0.009%	–0.010%	0.014%	–0.009%
314	22 (pt)	Textile Product Mills	0.005%	–0.004%	0.006%	–0.005%	0.003%	–0.003%	0.004%	–0.004%	0.007%	–0.004%
315	23	Apparel	0.005%	–0.009%	0.006%	–0.011%	0.003%	–0.006%	0.004%	–0.009%	0.006%	–0.009%
316	31	Leather and Allied Products	0.006%	–0.008%	0.008%	–0.009%	0.004%	–0.005%	0.005%	–0.008%	0.008%	–0.007%
321	24	Wood Products	0.013%	–0.003%	0.015%	–0.003%	0.010%	–0.002%	0.012%	–0.003%	0.015%	–0.002%
322	26	Paper	0.044%	–0.048%	0.050%	–0.055%	0.035%	–0.038%	0.038%	–0.052%	0.051%	–0.042%
323	27	Printing and Related Support	0.005%	–0.009%	0.006%	–0.011%	0.003%	–0.006%	0.004%	–0.009%	0.006%	–0.009%
325	28	Chemicals	0.021%	–0.031%	0.025%	–0.038%	0.015%	–0.022%	0.017%	–0.032%	0.026%	–0.029%
326	30	Plastics and Rubber Products	0.005%	–0.009%	0.006%	–0.011%	0.003%	–0.006%	0.004%	–0.009%	0.006%	–0.009%
327	32	Nonmetallic Mineral Products	0.014%	–0.013%	0.018%	–0.016%	0.009%	–0.009%	0.012%	–0.013%	0.018%	–0.012%
331	33	Primary Metals	0.041%	–0.033%	0.046%	–0.037%	0.031%	–0.025%	0.037%	–0.037%	0.046%	–0.028%
332	34	Fabricated Metal Products	0.006%	–0.001%	0.007%	–0.001%	0.005%	–0.001%	0.006%	–0.001%	0.007%	–0.001%
333	35	Machinery	0.005%	–0.002%	0.006%	–0.003%	0.003%	–0.002%	0.004%	–0.003%	0.006%	–0.002%

(continued)

Table B-27. National Market-Level Impacts on Prices and Quantities in 2040 Associated with the B1 Strategy: Sensitivity to Elasticity Assumptions (Continued)

NAICS	SIC		Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
			Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity
334	36 (pt)	Computer and Electronic Products	0.006%	–0.002%	0.006%	–0.002%	0.004%	–0.001%	0.005%	–0.002%	0.006%	–0.001%
335	36 (pt)	Electrical Equip., Appliances, and Components	0.005%	–0.002%	0.006%	–0.003%	0.003%	–0.002%	0.004%	–0.003%	0.006%	–0.002%
336	37	Transportation Equipment	0.003%	–0.003%	0.004%	–0.004%	0.002%	–0.002%	0.003%	–0.003%	0.004%	–0.003%
337	25	Furniture and Related Products	0.003%	–0.010%	0.004%	–0.013%	0.002%	–0.006%	0.002%	–0.007%	0.004%	–0.010%
339	39	Miscellaneous	0.009%	–0.005%	0.011%	–0.007%	0.006%	–0.004%	0.008%	–0.006%	0.011%	–0.005%
11	01–08	Agricultural Sector	0.004%	–0.008%	0.005%	–0.010%	0.003%	–0.005%	0.003%	–0.008%	0.006%	–0.008%
23	15–17	Construction Sector	0.002%	–0.002%	0.003%	–0.003%	0.001%	–0.001%	0.002%	–0.002%	0.003%	–0.002%
21	10;14	Other Mining Sector	0.061%	–0.018%	0.072%	–0.022%	0.044%	–0.013%	0.052%	–0.020%	0.073%	–0.016%
484	42(pt)	Trucking Transportation	0.007%	–0.007%	0.010%	–0.010%	0.002%	–0.002%	0.005%	–0.006%	0.011%	–0.008%
482	401	Railroads	0.050%	–0.020%	0.058%	–0.023%	0.036%	–0.014%	0.043%	–0.021%	0.059%	–0.018%
NAICS 42–45; 51–55; 61–72	41–48 (pt); 50–99	Commercial	0.004%	–0.004%	0.005%	–0.005%	0.003%	–0.003%	0.003%	–0.004%	0.005%	–0.004%

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-28. National Market-Level Impacts on Prices and Quantities in 2040 Associated with the B3 Strategy: Sensitivity to Elasticity Assumptions

			Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
		Energy Markets	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**
		Petroleum	0.078%	0.016%	0.092%	0.025%	0.035%	0.001%	0.060%	0.009%	0.101%	0.025%
		Natural Gas	–0.150%	–0.100%	–0.037%	–0.072%	–0.480%	–0.169%	–0.268%	–0.145%	–0.007%	–0.046%
		Electricity	2.408%	–0.468%	2.592%	–0.448%	2.018%	–0.512%	2.291%	–0.528%	2.542%	–0.401%
		Coal	–0.402%	–0.459%	–0.303%	–0.456%	–0.593%	–0.481%	–0.458%	–0.513%	–0.337%	–0.398%
NAICS	**SIC**											
311	20 (pt)	Food	0.012%	–0.003%	0.014%	–0.004%	0.008%	–0.002%	0.010%	–0.004%	0.014%	–0.003%
312	20 (pt); 21	Beverage and Tobacco Products	0.011%	–0.014%	0.014%	–0.018%	0.007%	–0.009%	0.009%	–0.014%	0.014%	–0.014%
313	22 (pt)	Textile Mills	0.032%	–0.027%	0.038%	–0.033%	0.025%	–0.021%	0.027%	–0.029%	0.040%	–0.025%
314	22 (pt)	Textile Product Mills	0.009%	–0.008%	0.012%	–0.010%	0.006%	–0.005%	0.007%	–0.008%	0.012%	–0.008%
315	23	Apparel	0.009%	–0.016%	0.011%	–0.020%	0.006%	–0.010%	0.007%	–0.016%	0.012%	–0.016%
316	31	Leather and Allied Products	0.012%	–0.014%	0.014%	–0.017%	0.008%	–0.009%	0.009%	–0.014%	0.015%	–0.013%
321	24	Wood Products	0.024%	–0.005%	0.027%	–0.005%	0.018%	–0.004%	0.021%	–0.005%	0.027%	–0.004%
322	26	Paper	0.099%	–0.108%	0.113%	–0.123%	0.080%	–0.087%	0.087%	–0.118%	0.115%	–0.094%
323	27	Printing and Related Support	0.009%	–0.016%	0.011%	–0.020%	0.006%	–0.010%	0.007%	–0.016%	0.012%	–0.016%
325	28	Chemicals	0.045%	–0.068%	0.055%	–0.082%	0.033%	–0.049%	0.037%	–0.070%	0.057%	–0.064%
326	30	Plastics and Rubber Products	0.009%	–0.016%	0.011%	–0.020%	0.006%	–0.010%	0.007%	–0.016%	0.012%	–0.016%
327	32	Nonmetallic Mineral Products	0.026%	–0.024%	0.033%	–0.029%	0.017%	–0.016%	0.022%	–0.024%	0.033%	–0.022%
331	33	Primary Metals	0.079%	–0.063%	0.088%	–0.070%	0.060%	–0.048%	0.071%	–0.071%	0.088%	–0.053%
332	34	Fabricated Metal Products	0.011%	–0.002%	0.013%	–0.003%	0.009%	–0.002%	0.010%	–0.003%	0.013%	–0.002%
333	35	Machinery	0.009%	–0.004%	0.010%	–0.005%	0.006%	–0.003%	0.007%	–0.005%	0.010%	–0.004%

(continued)

Table B-28. National Market-Level Impacts on Prices and Quantities in 2040 Associated with the B3 Strategy: Sensitivity to Elasticity Assumptions (Continued)

NAICS	SIC		Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
			Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity
334	36 (pt)	Computer and Electronic Products	0.010%	–0.003%	0.012%	–0.004%	0.008%	–0.002%	0.009%	–0.003%	0.012%	–0.003%
335	36 (pt)	Electrical Equip., Appliances, and Components	0.009%	–0.004%	0.010%	–0.005%	0.006%	–0.003%	0.007%	–0.005%	0.010%	–0.004%
336	37	Transportation Equipment	0.006%	–0.006%	0.008%	–0.008%	0.004%	–0.004%	0.005%	–0.006%	0.008%	–0.006%
337	25	Furniture and Related Products	0.005%	–0.018%	0.007%	–0.024%	0.003%	–0.011%	0.003%	–0.013%	0.007%	–0.019%
339	39	Miscellaneous	0.017%	–0.010%	0.020%	–0.012%	0.012%	–0.007%	0.014%	–0.011%	0.020%	–0.009%
11	01–08	Agricultural Sector	0.008%	–0.014%	0.010%	–0.018%	0.005%	–0.009%	0.006%	–0.014%	0.010%	–0.014%
23	15–17	Construction Sector	0.004%	–0.004%	0.005%	–0.005%	0.003%	–0.003%	0.003%	–0.004%	0.005%	–0.004%
21	10;14	Other Mining Sector	0.112%	–0.034%	0.132%	–0.040%	0.080%	–0.024%	0.096%	–0.036%	0.133%	–0.030%
484	42(pt)	Trucking Transportation	0.013%	–0.013%	0.018%	–0.018%	0.004%	–0.004%	0.009%	–0.011%	0.020%	–0.015%
482	401	Railroads	0.091%	–0.036%	0.107%	–0.043%	0.066%	–0.026%	0.078%	–0.039%	0.108%	–0.032%
NAICS 42–45; 51–55; 61–72	41–48 (pt); 50–99	Commercial	0.008%	–0.008%	0.009%	–0.009%	0.005%	–0.005%	0.006%	–0.008%	0.009%	–0.007%

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-29. Incremental National Market-Level Impacts on Prices and Quantities in 2040 Associated with the B1 Strategy (B1–A2): Sensitivity to Elasticity Assumptions

			Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
		Energy Markets	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**
		Petroleum	0.005%	0.001%	0.006%	0.001%	0.002%	0.000%	0.004%	0.000%	0.006%	0.001%
		Natural Gas	0.001%	–0.009%	0.010%	–0.008%	–0.022%	–0.014%	–0.008%	–0.013%	0.012%	–0.005%
		Electricity	0.158%	–0.032%	0.170%	–0.030%	0.131%	–0.034%	0.149%	–0.036%	0.167%	–0.027%
		Coal	–0.027%	–0.031%	–0.021%	–0.031%	–0.040%	–0.033%	–0.031%	–0.035%	–0.023%	–0.027%
NAICS	**SIC**											
311	20 (pt)	Food	0.001%	0.000%	0.001%	0.000%	0.001%	0.000%	0.001%	0.000%	0.001%	0.000%
312	20 (pt); 21	Beverage and Tobacco Products	0.001%	–0.001%	0.001%	–0.001%	0.000%	–0.001%	0.001%	–0.001%	0.001%	–0.001%
313	22 (pt)	Textile Mills	0.006%	–0.005%	0.007%	–0.006%	0.005%	–0.004%	0.005%	–0.006%	0.008%	–0.005%
314	22 (pt)	Textile Product Mills	0.001%	–0.001%	0.001%	–0.001%	0.000%	0.000%	0.000%	–0.001%	0.001%	–0.001%
315	23	Apparel	0.001%	–0.001%	0.001%	–0.001%	0.000%	–0.001%	0.000%	–0.001%	0.001%	–0.001%
316	31	Leather and Allied Products	0.001%	–0.001%	0.001%	–0.001%	0.001%	–0.001%	0.001%	–0.001%	0.001%	–0.001%
321	24	Wood Products	0.002%	0.000%	0.002%	0.000%	0.001%	0.000%	0.001%	0.000%	0.002%	0.000%
322	26	Paper	0.026%	–0.028%	0.029%	–0.032%	0.022%	–0.024%	0.023%	–0.032%	0.030%	–0.024%
323	27	Printing and Related Support	0.001%	–0.001%	0.001%	–0.001%	0.000%	–0.001%	0.000%	–0.001%	0.001%	–0.001%
325	28	Chemicals	0.009%	–0.014%	0.011%	–0.017%	0.007%	–0.011%	0.008%	–0.015%	0.011%	–0.013%
326	30	Plastics and Rubber Products	0.001%	–0.001%	0.001%	–0.001%	0.000%	–0.001%	0.000%	–0.001%	0.001%	–0.001%
327	32	Nonmetallic Mineral Products	0.002%	–0.002%	0.002%	–0.002%	0.001%	–0.001%	0.001%	–0.002%	0.002%	–0.002%
331	33	Primary Metals	0.008%	–0.006%	0.009%	–0.007%	0.007%	–0.005%	0.007%	–0.007%	0.009%	–0.005%
332	34	Fabricated Metal Products	0.001%	0.000%	0.001%	0.000%	0.001%	0.000%	0.001%	0.000%	0.001%	0.000%
333	35	Machinery	0.001%	0.000%	0.001%	0.000%	0.000%	0.000%	0.000%	0.000%	0.001%	0.000%

(continued)

Table B-29. Incremental National Market-Level Impacts on Prices and Quantities in 2040 Associated with the B1 Strategy (B1–A2): Sensitivity to Elasticity Assumptions (Continued)

			Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
NAICS	SIC		Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity
334	36 (pt)	Computer and Electronic Products	0.001%	0.000%	0.001%	0.000%	0.000%	0.000%	0.001%	0.000%	0.001%	0.000%
335	36 (pt)	Electrical Equip., Appliances, and Components	0.001%	0.000%	0.001%	0.000%	0.000%	0.000%	0.000%	0.000%	0.001%	0.000%
336	37	Transportation Equipment	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.001%	0.000%
337	25	Furniture and Related Products	0.000%	–0.001%	0.000%	–0.002%	0.000%	–0.001%	0.000%	–0.001%	0.000%	–0.001%
339	39	Miscellaneous	0.001%	–0.001%	0.001%	–0.001%	0.001%	0.000%	0.001%	–0.001%	0.001%	–0.001%
11	01–08	Agricultural Sector	0.001%	–0.001%	0.001%	–0.001%	0.000%	–0.001%	0.000%	–0.001%	0.001%	–0.001%
23	15–17	Construction Sector	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
21	10;14	Other Mining Sector	0.007%	–0.002%	0.009%	–0.003%	0.005%	–0.002%	0.006%	–0.002%	0.009%	–0.002%
484	42(pt)	Trucking Transportation	0.001%	–0.001%	0.001%	–0.001%	0.000%	0.000%	0.001%	–0.001%	0.001%	–0.001%
482	401	Railroads	0.006%	–0.002%	0.007%	–0.003%	0.004%	–0.002%	0.005%	–0.003%	0.007%	–0.002%
NAICS 42–45; 51–55; 61–72	41–48 (pt); 50–99	Commercial	0.001%	–0.001%	0.001%	–0.001%	0.000%	0.000%	0.000%	–0.001%	0.001%	0.000%

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-30. Incremental National Market-Level Impacts on Prices and Quantities in 2040 Associated with the B3 Strategy (B3–A2): Sensitivity to Elasticity Assumptions

			Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
		Energy Markets	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**	**Price**	**Quantity**
		Petroleum	0.040%	0.008%	0.047%	0.013%	0.017%	0.000%	0.030%	0.004%	0.052%	0.013%
		Natural Gas	–0.071%	–0.056%	–0.010%	–0.042%	–0.245%	–0.092%	–0.133%	–0.080%	0.005%	–0.027%
		Electricity	1.250%	–0.246%	1.347%	–0.235%	1.046%	–0.268%	1.189%	–0.277%	1.321%	–0.210%
		Coal	–0.211%	–0.241%	–0.160%	–0.240%	–0.312%	–0.252%	–0.241%	–0.269%	–0.178%	–0.209%
NAICS	**SIC**											
311	20 (pt)	Food	0.006%	–0.002%	0.007%	–0.002%	0.004%	–0.001%	0.005%	–0.002%	0.007%	–0.002%
312	20 (pt); 21	Beverage and Tobacco Products	0.006%	–0.007%	0.007%	–0.009%	0.004%	–0.005%	0.005%	–0.007%	0.007%	–0.007%
313	22 (pt)	Textile Mills	0.027%	–0.023%	0.032%	–0.028%	0.021%	–0.018%	0.023%	–0.025%	0.034%	–0.021%
314	22 (pt)	Textile Product Mills	0.005%	–0.004%	0.006%	–0.005%	0.003%	–0.003%	0.004%	–0.004%	0.006%	–0.004%
315	23	Apparel	0.005%	–0.008%	0.006%	–0.011%	0.003%	–0.005%	0.004%	–0.008%	0.006%	–0.008%
316	31	Leather and Allied Products	0.006%	–0.007%	0.007%	–0.009%	0.004%	–0.005%	0.005%	–0.007%	0.008%	–0.007%
321	24	Wood Products	0.012%	–0.002%	0.014%	–0.003%	0.009%	–0.002%	0.011%	–0.003%	0.014%	–0.002%
322	26	Paper	0.081%	–0.089%	0.092%	–0.100%	0.067%	–0.073%	0.072%	–0.098%	0.094%	–0.077%
323	27	Printing and Related Support	0.005%	–0.008%	0.006%	–0.011%	0.003%	–0.005%	0.004%	–0.008%	0.006%	–0.008%
325	28	Chemicals	0.034%	–0.051%	0.041%	–0.061%	0.026%	–0.038%	0.028%	–0.053%	0.042%	–0.047%
326	30	Plastics and Rubber Products	0.005%	–0.008%	0.006%	–0.011%	0.003%	–0.005%	0.004%	–0.008%	0.006%	–0.008%
327	32	Nonmetallic Mineral Products	0.014%	–0.012%	0.017%	–0.015%	0.009%	–0.008%	0.011%	–0.013%	0.017%	–0.012%
331	33	Primary Metals	0.046%	–0.037%	0.051%	–0.041%	0.036%	–0.029%	0.041%	–0.041%	0.051%	–0.031%
332	34	Fabricated Metal Products	0.006%	–0.001%	0.007%	–0.001%	0.004%	–0.001%	0.005%	–0.001%	0.007%	–0.001%
333	35	Machinery	0.004%	–0.002%	0.005%	–0.003%	0.003%	–0.002%	0.004%	–0.002%	0.005%	–0.002%

(continued)

Table B-30. Incremental National Market-Level Impacts on Prices and Quantities in 2040 Associated with the B3 Strategy (B3–A2): Sensitivity to Elasticity Assumptions (Continued)

			Primary		Sensitivity Analysis A[a]		Sensitivity Analysis B[b]		Sensitivity Analysis C[c]		Sensitivity Analysis D[d]	
NAICS	SIC		Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity
334	36 (pt)	Computer and Electronic Products	0.005%	–0.002%	0.006%	–0.002%	0.004%	–0.001%	0.005%	–0.002%	0.006%	–0.001%
335	36 (pt)	Electrical Equip., Appliances, and Components	0.004%	–0.002%	0.005%	–0.003%	0.003%	–0.002%	0.004%	–0.002%	0.005%	–0.002%
336	37	Transportation Equipment	0.003%	–0.003%	0.004%	–0.004%	0.002%	–0.002%	0.003%	–0.003%	0.004%	–0.003%
337	25	Furniture and Related Products	0.003%	–0.010%	0.004%	–0.013%	0.002%	–0.006%	0.002%	–0.007%	0.004%	–0.010%
339	39	Miscellaneous	0.009%	–0.005%	0.010%	–0.006%	0.006%	–0.004%	0.007%	–0.005%	0.011%	–0.005%
11	01–08	Agricultural Sector	0.004%	–0.007%	0.005%	–0.009%	0.003%	–0.005%	0.003%	–0.007%	0.005%	–0.007%
23	15–17	Construction Sector	0.002%	–0.002%	0.003%	–0.003%	0.001%	–0.001%	0.002%	–0.002%	0.003%	–0.002%
21	10;14	Other Mining Sector	0.058%	–0.017%	0.069%	–0.021%	0.041%	–0.012%	0.050%	–0.019%	0.069%	–0.016%
484	42(pt)	Trucking Transportation	0.007%	–0.007%	0.009%	–0.009%	0.002%	–0.002%	0.004%	–0.005%	0.010%	–0.008%
482	401	Railroads	0.047%	–0.019%	0.055%	–0.022%	0.034%	–0.014%	0.041%	–0.020%	0.056%	–0.017%
NAICS 42–45; 51–55; 61–72	41–48 (pt); 50–99	Commercial	0.004%	–0.004%	0.005%	–0.005%	0.003%	–0.003%	0.003%	–0.004%	0.005%	–0.004%

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-31. Impacts on 2040 Consumer Surplus Associated with the A2 Strategy (by Market Share): Sensitivity to Elasticity Assumptions (2000$)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
311	20 (pt)	Food	–$42,592,078	–$49,833,800	–$29,645,982	–$36,757,503	–$49,914,587
312	20 (pt); 21	Beverage and Tobacco Products	–$2,671,835	–$3,339,083	–$1,755,036	–$2,159,562	–$3,410,376
313	22 (pt)	Textile Mills	–$6,613,909	–$8,323,773	–$4,366,819	–$5,306,418	–$8,548,873
314	22 (pt)	Textile Product Mills	–$2,262,561	–$2,868,308	–$1,461,286	–$1,804,643	–$2,942,102
315	23	Apparel	–$8,867,683	–$11,267,352	–$5,712,134	–$7,058,218	–$11,565,349
316	31	Leather and Allied Products	–$671,526	–$835,226	–$443,999	–$545,171	–$852,100
321	24	Wood Products	–$15,264,431	–$17,389,431	–$11,349,525	–$13,579,062	–$17,305,735
322	26	Paper	–$79,889,600	–$95,369,088	–$56,320,876	–$67,254,571	–$96,835,829
323	27	Printing and Related Support	–$6,176,081	–$7,843,605	–$3,983,646	–$4,917,513	–$8,052,202
325	28	Chemicals	–$88,899,814	–$112,400,141	–$56,434,114	–$70,717,175	–$115,704,072
326	30	Plastics and Rubber Products	–$16,882,788	–$21,451,410	–$10,875,078	–$13,437,827	–$22,018,755
327	32	Nonmetallic Mineral Products	–$18,622,040	–$22,969,212	–$12,228,863	–$15,233,158	–$23,336,813
331	33	Primary Metals	–$104,202,928	–$117,253,406	–$77,490,485	–$93,034,827	–$117,646,338
332	34	Fabricated Metal Products	–$20,223,615	–$22,912,914	–$15,354,416	–$18,105,476	–$22,773,996
333	35	Machinery	–$24,601,002	–$29,020,351	–$17,637,057	–$21,075,974	–$29,161,483
334	36 (pt)	Computer and Electronic Products	–$41,869,110	–$48,193,283	–$31,060,989	–$36,826,297	–$48,103,620
335	36 (pt)	Electrical Equip., Appliances, and Components	–$9,048,437	–$10,673,907	–$6,487,045	–$7,751,905	–$10,725,817
336	37	Transportation Equipment	–$32,060,630	–$39,283,895	–$21,881,827	–$26,436,727	–$39,904,147
337	25	Furniture and Related Products	–$3,034,321	–$3,959,986	–$1,896,539	–$1,735,674	–$4,098,479
339	39	Miscellaneous	–$15,319,956	–$18,339,836	–$10,631,582	–$12,915,589	–$18,505,061
11	01-08	Agricultural Sector	–$13,451,656	–$17,021,143	–$8,739,828	–$10,703,357	–$17,569,244

(continued)

Table B-31. Impacts on 2040 Consumer Surplus Associated with the A2 Strategy (by Market Share): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($) Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
23	15-17	Construction Sector	–$27,956,779	–$34,710,632	–$17,763,077	–$22,388,813	–$35,967,451
21	10; 14	Other Mining Sector	–$61,204,333	–$72,275,655	–$43,896,268	–$52,355,212	–$72,702,371
484	42 (pt)	Trucking	–$18,022,556	–$24,333,331	–$6,141,117	–$11,896,943	–$27,598,463
482	401	Railroads	–$21,321,885	–$24,866,986	–$15,373,419	–$18,352,832	–$25,145,053
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$880,649,928	–$1,079,327,151	–$600,397,197	–$725,905,538	–$1,096,536,856
		Residential	–$1,720,538,249	–$1,873,811,734	–$1,377,876,498	–$1,613,663,054	–$1,844,880,699
		Other Transportation	–$157,821,855	–$190,406,399	–$60,433,017	–$118,372,671	–$207,726,169
Total			–$3,440,741,588	–$3,960,281,038	–$2,507,637,720	–$3,030,291,709	–$3,979,532,039

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-32. Impacts on 2040 Consumer Surplus Associated with the B1 Strategy (by Market Share): Sensitivity to Elasticity Assumptions (2000$)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
311	20 (pt)	Food	-$48,594,579	-$56,893,964	–$33,784,952	–$41,911,632	–$56,995,210
312	20 (pt); 21	Beverage and Tobacco Products	–$3,042,427	–$3,804,617	–$1,995,957	–$2,457,622	–$3,886,410
313	22 (pt)	Textile Mills	–$15,096,784	–$18,272,739	–$11,107,759	–$12,483,229	–$18,901,007
314	22 (pt)	Textile Product Mills	–$2,576,392	–$3,268,215	–$1,661,887	–$2,053,722	–$3,352,782
315	23	Apparel	–$10,097,654	–$12,838,235	–$6,496,261	–$8,032,381	–$13,179,679
316	31	Leather and Allied Products	–$764,676	–$951,679	–$504,957	–$620,422	–$971,045
321	24	Wood Products	–$17,381,723	–$19,813,944	–$12,907,563	–$15,453,276	–$19,721,422
322	26	Paper	–$197,872,332	–$226,807,104	–$156,326,906	–$172,070,665	–$231,694,179
323	27	Printing and Related Support	–$7,032,777	–$8,937,206	–$4,530,567	–$5,596,284	–$9,176,196
325	28	Chemicals	–$163,410,758	–$199,839,111	–$115,030,292	–$133,762,050	–$206,494,501
326	30	Plastics and Rubber Products	–$19,224,474	–$24,442,144	–$12,367,942	–$15,292,493	–$25,092,204
327	32	Nonmetallic Mineral Products	–$21,217,139	–$26,187,544	–$13,914,738	–$17,344,855	–$26,610,869
331	33	Primary Metals	–$129,550,828	–$144,828,494	–$98,380,958	–$116,282,076	–$145,499,194
332	34	Fabricated Metal Products	–$23,007,240	–$26,082,329	–$17,446,260	–$20,585,792	–$25,927,657
333	35	Machinery	–$27,987,116	–$33,034,547	–$20,039,863	–$23,963,210	–$33,199,627
334	36 (pt)	Computer and Electronic Products	–$47,632,054	–$54,859,573	–$35,292,640	–$41,871,214	–$54,764,815
335	36 (pt)	Electrical Equip., Appliances, and Components	–$10,293,876	–$12,150,359	–$7,370,815	–$8,813,852	–$12,211,077
336	37	Transportation Equipment	–$36,473,467	–$44,717,744	–$24,862,906	–$30,058,324	–$45,429,842
337	25	Furniture and Related Products	–$3,455,185	–$4,512,079	–$2,156,882	–$1,977,006	–$4,670,553
339	39	Miscellaneous	–$17,445,057	–$20,896,940	–$12,091,232	–$14,698,373	–$21,088,213
11	01-08	Agricultural Sector	–$15,282,290	–$19,351,763	–$9,912,981	–$12,151,786	–$19,977,514

(continued)

Table B-32. Impacts on 2040 Consumer Surplus Associated with the B1 Strategy (by Market Share): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
23	15-17	Construction Sector	–$31,748,565	–$39,459,074	–$20,121,875	–$25,401,553	–$40,893,942
21	10; 14	Other Mining Sector	–$69,589,066	–$82,227,302	–$49,845,389	–$59,493,118	–$82,723,820
484	42 (pt)	Trucking	–$20,363,301	–$27,591,159	–$6,793,942	–$13,379,116	–$31,309,811
482	401	Railroads	–$24,199,050	–$28,244,515	–$17,416,479	–$20,814,528	–$28,564,223
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$1,004,038,865	–$1,231,087,516	–$684,009,721	–$827,247,551	–$1,250,925,534
		Residential	–$1,959,001,138	–$2,134,714,706	–$1,567,096,267	–$1,836,225,785	–$2,102,168,407
		Other Transportation	–$179,059,652	–$216,686,390	–$67,419,350	–$133,818,416	–$236,438,088
Total			–$4,105,438,464	–$4,722,500,992	–$3,010,887,340	–$3,613,860,334	–$4,751,867,820

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-33. Impacts on 2040 Consumer Surplus Associated with the B3 Strategy (by Market Share): Sensitivity to Elasticity Assumptions (2000$)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
311	20 (pt)	Food	–$88,667,596	–$103,944,792	–$61,424,427	–$76,419,070	–$104,086,200
312	20 (pt); 21	Beverage and Tobacco Products	–$5,555,145	–$6,954,058	–$3,634,608	–$4,484,932	–$7,100,998
313	22 (pt)	Textile Mills	–$44,278,040	–$52,795,552	–$33,826,081	–$37,023,130	–$54,756,746
314	22 (pt)	Textile Product Mills	–$4,704,292	–$5,973,734	–$3,026,305	–$3,747,914	–$6,126,080
315	23	Apparel	–$18,437,159	–$23,465,530	–$11,829,562	–$14,658,298	–$24,080,947
316	31	Leather and Allied Products	–$1,396,244	–$1,739,498	–$919,558	–$1,132,240	–$1,774,259
321	24	Wood Products	–$31,737,935	–$36,216,843	–$23,504,880	–$28,201,460	–$36,034,569
322	26	Paper	–$447,324,142	–$509,370,799	–$359,435,364	–$390,985,182	–$520,846,121
323	27	Printing and Related Support	–$12,841,283	–$16,335,488	–$8,250,411	–$10,212,896	–$16,766,316
325	28	Chemicals	–$358,567,667	–$434,596,230	–$258,934,185	–$295,740,642	–$449,465,384
326	30	Plastics and Rubber Products	–$35,101,687	–$44,674,980	–$22,521,777	–$27,907,283	–$45,846,643
327	32	Nonmetallic Mineral Products	–$38,724,339	–$47,852,119	–$25,315,894	–$31,636,778	–$48,606,766
331	33	Primary Metals	–$248,637,322	–$277,134,690	–$190,577,547	–$223,761,406	–$278,523,982
332	34	Fabricated Metal Products	–$42,025,052	–$47,686,197	–$31,794,148	–$37,584,696	–$47,387,356
333	35	Machinery	–$51,121,004	–$60,396,560	–$36,520,565	–$43,750,786	–$60,677,850
334	36 (pt)	Computer and Electronic Products	–$87,004,565	–$100,299,273	–$64,317,347	–$76,446,561	–$100,092,138
335	36 (pt)	Electrical Equip., Appliances, and Components	–$18,802,697	–$22,214,317	–$13,432,544	–$16,091,874	–$22,317,778
336	37	Transportation Equipment	–$66,621,755	–$81,756,318	–$45,309,889	–$54,878,665	–$83,030,187
337	25	Furniture and Related Products	–$6,308,732	–$8,247,036	–$3,927,626	–$3,565,701	–$8,533,627
339	39	Miscellaneous	–$31,853,742	–$38,196,290	–$22,019,010	–$26,824,047	–$38,532,011
11	01-08	Agricultural Sector	–$27,910,202	–$35,378,163	–$18,057,398	–$22,181,734	–$36,508,913

(continued)

Table B-33. Impacts on 2040 Consumer Surplus Associated with the B3 Strategy (by Market Share): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
23	15-17	Construction Sector	–$57,934,238	–$72,104,228	–$36,573,601	–$46,317,625	–$74,692,352
21	10; 14	Other Mining Sector	–$127,111,924	–$150,331,713	–$90,845,380	–$108,621,357	–$151,191,878
484	42 (pt)	Trucking	–$36,867,479	–$50,157,264	–$11,926,340	–$24,117,006	–$56,888,348
482	401	Railroads	–$44,196,449	–$51,636,656	–$31,727,836	–$37,996,054	–$52,202,906
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$1,832,417,136	–$2,249,030,908	–$1,245,225,344	–$1,508,986,703	–$2,284,471,136
		Residential	–$3,580,180,775	–$3,903,667,021	–$2,859,122,918	–$3,353,991,249	–$3,844,325,194
		Other Transportation	–$324,078,923	–$393,843,465	–$117,917,207	–$241,068,576	–$429,522,008
Total			–$7,670,407,523	–$8,825,999,725	–$5,631,917,753	–$6,748,333,866	–$8,884,388,693

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-34. Incremental Impacts on 2040 Consumer Surplus Associated with the B1 Strategy (B1–A2 by Market Share): Sensitivity to Elasticity Assumptions (2000$)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
311	20 (pt)	Food	–$6,002,501	–$7,060,164	–$4,138,969	–$5,154,129	–$7,080,623
312	20 (pt); 21	Beverage and Tobacco Products	–$370,592	–$465,534	–$240,921	–$298,060	–$476,034
313	22 (pt)	Textile Mills	–$8,482,875	–$9,948,966	–$6,740,939	–$7,176,811	–$10,352,134
314	22 (pt)	Textile Product Mills	–$313,831	–$399,908	–$200,600	–$249,079	–$410,680
315	23	Apparel	–$1,229,970	–$1,570,883	–$784,127	–$974,163	–$1,614,329
316	31	Leather and Allied Products	–$93,149	–$116,453	–$60,958	–$75,251	–$118,945
321	24	Wood Products	–$2,117,291	–$2,424,514	–$1,558,038	–$1,874,214	–$2,415,687
322	26	Paper	–$117,982,732	–$131,438,015	–$100,006,030	–$104,816,093	–$134,858,350
323	27	Printing and Related Support	–$856,696	–$1,093,601	–$546,922	–$678,771	–$1,123,995
325	28	Chemicals	–$74,510,944	–$87,438,970	–$58,596,177	–$63,044,874	–$90,790,429
326	30	Plastics and Rubber Products	–$2,341,686	–$2,990,734	–$1,492,864	–$1,854,666	–$3,073,449
327	32	Nonmetallic Mineral Products	–$2,595,098	–$3,218,332	–$1,685,875	–$2,111,697	–$3,274,056
331	33	Primary Metals	–$25,347,900	–$27,575,087	–$20,890,473	–$23,247,249	–$27,852,856
332	34	Fabricated Metal Products	–$2,783,625	–$3,169,415	–$2,091,844	–$2,480,316	–$3,153,661
333	35	Machinery	–$3,386,113	–$4,014,196	–$2,402,806	–$2,887,235	–$4,038,144
334	36 (pt)	Computer and Electronic Products	–$5,762,944	–$6,666,290	–$4,231,650	–$5,044,917	–$6,661,195
335	36 (pt)	Electrical Equip., Appliances, and Components	–$1,245,438	–$1,476,452	–$883,770	–$1,061,947	–$1,485,260
336	37	Transportation Equipment	–$4,412,837	–$5,433,849	–$2,981,079	–$3,621,597	–$5,525,695
337	25	Furniture and Related Products	–$420,865	–$552,093	–$260,344	–$241,332	–$572,073
339	39	Miscellaneous	–$2,125,101	–$2,557,104	–$1,459,650	–$1,782,785	–$2,583,152
11	01-08	Agricultural Sector	–$1,830,634	–$2,330,620	–$1,173,153	–$1,448,429	–$2,408,271

(continued)

Table B-34. Incremental Impacts on 2040 Consumer Surplus Associated with the B1 Strategy (B1–A2 by Market Share): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
23	15-17	Construction Sector	–$3,791,786	–$4,748,441	–$2,358,798	–$3,012,740	–$4,926,491
21	10; 14	Other Mining Sector	–$8,384,733	–$9,951,647	–$5,949,120	–$7,137,906	–$10,021,448
484	42 (pt)	Trucking	–$2,340,745	–$3,257,828	–$652,825	–$1,482,173	–$3,711,348
482	401	Railroads	–$2,877,165	–$3,377,529	–$2,043,059	–$2,461,697	–$3,419,170
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$123,388,937	–$151,760,365	–$83,612,524	–$101,342,013	–$154,388,677
		Residential	–$238,462,889	–$260,902,972	–$189,219,769	–$222,562,732	–$257,287,708
		Other Transportation	–$21,237,797	–$26,279,991	–$6,986,333	–$15,445,745	–$28,711,919
Total			–$664,696,875	–$762,219,954	–$503,249,620	–$583,568,625	–$772,335,781

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-35. Incremental Impacts on 2040 Consumer Surplus Associated with the B3 Strategy (B3–A2 by Market Share): Sensitivity to Elasticity Assumptions (2000$)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
311	20 (pt)	Food	–$46,075,518	–$54,110,992	–$31,778,444	–$39,661,567	–$54,171,613
312	20 (pt); 21	Beverage and Tobacco Products	–$2,883,311	–$3,614,976	–$1,879,572	–$2,325,370	–$3,690,622
313	22 (pt)	Textile Mills	–$37,664,131	–$44,471,780	–$29,459,261	–$31,716,712	–$46,207,874
314	22 (pt)	Textile Product Mills	–$2,441,731	–$3,105,427	–$1,565,019	–$1,943,271	–$3,183,978
315	23	Apparel	–$9,569,476	–$12,198,178	–$6,117,428	–$7,600,081	–$12,515,597
316	31	Leather and Allied Products	–$724,718	–$904,272	–$475,559	–$587,069	–$922,158
321	24	Wood Products	–$16,473,504	–$18,827,412	–$12,155,356	–$14,622,398	–$18,728,834
322	26	Paper	–$367,434,542	–$414,001,711	–$303,114,488	–$323,730,610	–$424,010,292
323	27	Printing and Related Support	–$6,665,202	–$8,491,883	–$4,266,765	–$5,295,383	–$8,714,114
325	28	Chemicals	–$269,667,854	–$322,196,089	–$202,500,071	–$225,023,466	–$333,761,313
326	30	Plastics and Rubber Products	–$18,218,899	–$23,223,569	–$11,646,700	–$14,469,456	–$23,827,889
327	32	Nonmetallic Mineral Products	–$20,102,299	–$24,882,907	–$13,087,031	–$16,403,620	–$25,269,953
331	33	Primary Metals	–$144,434,394	–$159,881,283	–$113,087,062	–$130,726,579	–$160,877,644
332	34	Fabricated Metal Products	–$21,801,437	–$24,773,283	–$16,439,732	–$19,479,220	–$24,613,360
333	35	Machinery	–$26,520,001	–$31,376,209	–$18,883,508	–$22,674,812	–$31,516,367
334	36 (pt)	Computer and Electronic Products	–$45,135,454	–$52,105,990	–$33,256,358	–$39,620,264	–$51,988,518
335	36 (pt)	Electrical Equip., Appliances, and Components	–$9,754,260	–$11,540,410	–$6,945,499	–$8,339,970	–$11,591,961
336	37	Transportation Equipment	–$34,561,125	–$42,472,423	–$23,428,061	–$28,441,938	–$43,126,040
337	25	Furniture and Related Products	–$3,274,412	–$4,287,051	–$2,031,087	–$1,830,027	–$4,435,148
339	39	Miscellaneous	–$16,533,786	–$19,856,454	–$11,387,428	–$13,908,459	–$20,026,950
11	01-08	Agricultural Sector	–$14,458,546	–$18,357,020	–$9,317,570	–$11,478,378	–$18,939,670

(continued)

Table B-35. Incremental Impacts on 2040 Consumer Surplus Associated with the B3 Strategy (B3–A2 by Market Share): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
23	15-17	Construction Sector	–$29,977,459	–$37,393,596	–$18,810,524	–$23,928,812	–$38,724,901
21	10; 14	Other Mining Sector	–$65,907,591	–$78,056,057	–$46,949,112	–$56,266,145	–$78,489,506
484	42 (pt)	Trucking	–$18,844,923	–$25,823,932	–$5,785,223	–$12,220,062	–$29,289,886
482	401	Railroads	–$22,874,563	–$26,769,671	–$16,354,417	–$19,643,222	–$27,057,854
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$951,767,208	–$1,169,703,757	–$644,828,148	–$783,081,164	–$1,187,934,280
		Residential	–$1,859,642,526	–$2,029,855,287	–$1,481,246,420	–$1,740,328,195	–$1,999,444,494
		Other Transportation	–$166,257,068	–$203,437,066	–$57,484,190	–$122,695,905	–$221,795,839
Total			–$4,229,665,935	–$4,865,718,687	–$3,124,280,033	–$3,718,042,157	–$4,904,856,654

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.
[b] Primary demand elasticity, 25 percent less elastic supply in all markets.
[c] Primary supply elasticity, 25 percent more elastic demand in all markets.
[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-36. Impacts on 2040 Producer Surplus Associated with the A2 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$)

NAICS	SIC	Description	Value ($) Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
		Energy					
		Petroleum (Rest of U.S.)	$71,312,557	$88,553,567	$10,843,745	$43,211,451	$108,185,570
		Petroleum (South Atlantic/East South Central)	$22,096,419	$27,438,600	$3,359,968	$13,389,203	$33,521,637
		Natural Gas (Rest of U.S.)	–$207,237,798	–$106,684,100	–$506,081,216	–$314,954,096	–$76,778,069
		Natural Gas (South Atlantic/East South Central)	–$86,400,755	–$54,289,642	–$181,835,548	–$120,797,715	–$44,741,152
		Electricity (Rest of U.S.)	$3,657,766,459	$3,879,960,220	$3,229,195,972	$3,538,517,060	$3,792,100,473
		Electricity (South Atlantic/East South Central)	–$4,947,933,147	–$4,829,940,847	–$5,164,245,565	–$5,003,399,955	–$4,885,653,301
		Coal (Rest of U.S.)	–$37,564,949	–$29,836,129	–$52,508,749	–$41,957,774	–$32,607,083
		Coal (South Atlantic/East South Central)	–$19,111,285	–$15,179,224	–$26,713,990	–$21,346,149	–$16,588,956
311	20 (pt)	Food	–$17,037,515	–$15,946,820	–$15,812,007	–$18,379,359	–$14,975,128
312	20 (pt); 21	Beverage and Tobacco Products	–$4,631,210	–$4,630,195	–$4,056,116	–$4,679,078	–$4,433,526
313	22 (pt)	Textile Mills	–$6,169,831	–$6,217,845	–$5,326,314	–$6,190,189	–$5,954,300
313	22 (pt)	Alabama	–$640,715	–$645,598	–$554,925	–$642,785	–$618,794
313	22 (pt)	Georgia	–$1,431,321	–$1,441,794	–$1,247,326	–$1,435,762	–$1,384,307
313	22 (pt)	Kentucky	–$39,498	–$39,806	–$34,098	–$39,629	–$38,119
313	22 (pt)	North Carolina	–$3,160,819	–$3,182,410	–$2,781,446	–$3,169,975	–$3,063,883
313	22 (pt)	South Carolina	–$2,600,387	–$2,612,141	–$2,393,674	–$2,605,376	–$2,547,566
313	22 (pt)	Tennessee	–$501,391	–$503,533	–$463,712	–$502,301	–$491,763
313	22 (pt)	Virginia	–$595,214	–$599,144	–$526,166	–$596,881	–$577,571
313	22 (pt)	West Virginia	–$8,944	–$9,013	–$7,721	–$8,973	–$8,631
314	22 (pt)	Textile Product Mills	–$5,182,050	–$5,255,480	–$4,462,482	–$5,166,564	–$5,053,843
315	23	Apparel	–$21,282,539	–$21,633,319	–$18,278,935	–$21,174,751	–$20,817,752

(continued)

Table B-36. Impacts on 2040 Producer Surplus Associated with the A2 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
316	31	Leather and Allied Products	–$1,074,450	–$1,069,089	–$947,206	–$1,090,348	–$1,022,530
321	24	Wood Products	–$4,070,716	–$3,709,746	–$4,035,632	–$4,526,536	–$3,461,362
322	26	Paper	–$34,591,084	–$31,928,893	–$31,038,109	–$37,686,559	–$29,210,975
322	26	Alabama	–$6,925,687	–$6,829,423	–$6,798,405	–$7,037,022	–$6,732,180
322	26	Georgia	–$10,509,490	–$10,363,832	–$10,316,910	–$10,677,946	–$10,216,702
322	26	Kentucky	–$1,032,002	–$973,202	–$953,546	–$1,100,363	–$913,187
322	26	North Carolina	–$4,660,882	–$4,573,440	–$4,544,754	–$4,762,268	–$4,484,666
322	26	South Carolina	–$3,642,004	–$3,554,499	–$3,525,551	–$3,743,585	–$3,465,451
322	26	Tennessee	–$4,915,850	–$4,850,190	–$4,829,104	–$4,991,755	–$4,783,923
322	26	Virginia	–$6,185,720	–$6,123,951	–$6,104,808	–$6,256,782	–$6,062,212
322	26	West Virginia	–$97,608	–$95,888	–$95,325	–$99,602	–$94,143
323	27	Printing and Related Support	–$14,822,662	–$15,059,723	–$12,747,741	–$14,752,607	–$14,494,049
325	28	Chemicals	–$115,995,336	–$117,599,731	–$94,523,403	–$115,203,749	–$112,659,128
325	28	Alabama	–$6,023,413	–$6,056,227	–$5,581,446	–$6,007,112	–$5,954,711
325	28	Georgia	–$5,385,659	–$5,443,446	–$4,611,669	–$5,357,123	–$5,265,394
325	28	Kentucky	–$2,829,249	–$2,864,294	–$2,360,104	–$2,811,953	–$2,756,354
325	28	North Carolina	–$9,896,231	–$10,021,965	–$8,213,142	–$9,834,181	–$9,634,717
325	28	South Carolina	–$5,346,138	–$5,416,804	–$4,400,287	–$5,311,268	–$5,199,175
325	28	Tennessee	–$11,885,457	–$11,931,644	–$11,258,917	–$11,862,336	–$11,788,012
325	28	Virginia	–$4,287,313	–$4,326,285	–$3,764,928	–$4,268,053	–$4,206,139
325	28	West Virginia	–$16,143,617	–$16,169,310	–$15,772,083	–$16,129,841	–$16,085,559
326	30	Plastics and Rubber Products	–$40,518,879	–$41,186,714	–$34,800,452	–$40,313,667	–$39,633,993
327	32	Nonmetallic Mineral Products	–$22,346,694	–$22,050,447	–$19,566,457	–$22,849,953	–$21,003,426
331	33	Primary Metals	–$16,934,846	–$16,014,822	–$16,761,337	–$19,310,846	–$13,797,261

(continued)

Table B-36. Impacts on 2040 Producer Surplus Associated with the A2 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
331	33	Alabama	–$1,103,460	–$1,070,216	–$1,097,233	–$1,189,249	–$990,174
331	33	Georgia	–$180,915	–$171,274	–$179,097	–$205,813	–$148,036
331	33	Kentucky	–$587,035	–$559,576	–$581,862	–$657,942	–$493,401
331	33	North Carolina	–$217,243	–$205,440	–$215,017	–$247,722	–$176,993
331	33	South Carolina	–$515,777	–$501,020	–$513,016	–$553,852	–$465,497
331	33	Tennessee	–$668,194	–$639,923	–$662,872	–$741,186	–$571,804
331	33	Virginia	–$215,445	–$206,013	–$213,669	–$239,796	–$183,287
331	33	West Virginia	–$3,391,513	–$3,375,091	–$3,389,641	–$3,431,943	–$3,338,123
332	34	Fabricated Metal Products	–$5,393,195	–$4,888,090	–$5,459,632	–$6,035,369	–$4,555,047
333	35	Machinery	–$16,400,931	–$15,477,523	–$15,677,691	–$17,563,545	–$14,581,042
334	36 (pt)	Computer and Electronic Products	–$16,748,110	–$15,421,854	–$16,566,422	–$18,413,567	–$14,431,599
335	36 (pt)	Electrical Equipment, Appliances, and Components	–$6,032,388	–$5,692,752	–$5,766,375	–$6,460,006	–$5,363,019
336	37	Transportation Equipment	–$42,747,830	–$41,902,826	–$38,901,389	–$44,061,503	–$39,904,537
337	25	Furniture and Related Products	–$13,755,619	–$14,361,555	–$11,463,556	–$13,986,601	–$13,934,872
339	39	Miscellaneous	–$12,256,149	–$11,737,497	–$11,340,567	–$12,915,751	–$11,103,250
11	01-08	Agricultural Sector	–$32,284,116	–$32,680,599	–$27,967,606	–$32,110,210	–$31,624,820
23	15-17	Construction Sector	–$37,276,134	–$37,024,678	–$31,579,285	–$37,315,050	–$35,967,986
21	10; 14	Other Mining Sector	–$42,373,521	–$40,029,599	–$40,521,070	–$45,308,483	–$37,750,805
484	42 (pt)	Trucking Transportation	–$22,920,288	–$25,171,330	–$10,079,791	–$18,627,923	–$26,908,585
484	42 (pt)	Alabama	–$138,630	–$97,873	–$104,695	–$149,911	–$86,235
484	42 (pt)	Georgia	–$226,666	–$160,028	–$171,181	–$245,112	–$140,999

(continued)

Table B-36. Impacts on 2040 Producer Surplus Associated with the A2 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
484	42 (pt)	Kentucky	–$106,226	–$74,996	–$80,224	–$114,871	–$66,079
484	42 (pt)	North Carolina	–$189,613	–$133,868	–$143,198	–$205,043	–$117,950
484	42 (pt)	South Carolina	–$76,222	–$53,814	–$57,564	–$82,425	–$47,415
484	42 (pt)	Tennessee	–$216,734	–$153,015	–$163,680	–$234,371	–$134,820
484	42 (pt)	Virginia	–$119,855	–$84,619	–$90,516	–$129,609	–$74,557
484	42 (pt)	West Virginia	–$36,619	–$25,853	–$27,655	–$39,599	–$22,779
482	401	Railroads	–$11,916,857	–$11,494,213	–$11,092,316	–$12,482,042	–$11,006,597
482	401	Alabama	$59,163	$96,001	$17,358	$26,790	$102,932
482	401	Georgia	$113,380	$183,976	$33,265	$51,340	$197,259
482	401	Kentucky	$73,925	$119,955	$21,689	$33,474	$128,615
482	401	North Carolina	$40,010	$64,923	$11,739	$18,117	$69,610
482	401	South Carolina	$29,239	$47,445	$8,579	$13,240	$50,870
482	401	Tennessee	$70,542	$114,466	$20,697	$31,942	$122,730
482	401	Virginia	$109,660	$177,940	$32,173	$49,655	$190,787
482	401	West Virginia	$49,360	$80,094	$14,482	$22,351	$85,877
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$1,174,208,854	–$1,151,282,439	–$1,067,382,857	–$1,209,850,640	–$1,096,547,664
		Total	–$3,402,233,781	–$2,864,700,989	–$4,352,811,319	–$3,811,267,281	–$2,865,240,605

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.

[b] Primary demand elasticity, 25 percent less elastic supply in all markets.

[c] Primary supply elasticity, 25 percent more elastic demand in all markets.

[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-37. Impacts on 2040 Producer Surplus Associated with the B1 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
		Energy					
		Petroleum (Rest of U.S.)	$78,369,251	$98,277,851	$9,137,662	$46,235,025	$120,662,062
		Petroleum (South Atlantic/East South Central)	$24,282,958	$30,451,699	$2,831,333	$14,326,067	$37,387,517
		Natural Gas (Rest of U.S.)	–$212,071,641	–$94,988,729	–$556,179,550	–$336,444,080	–$61,133,340
		Natural Gas (South Atlantic/East South Central)	–$144,886,063	–$107,503,010	–$254,756,866	–$184,587,839	–$96,704,011
		Electricity (Rest of U.S.)	$4,148,460,888	$4,402,717,107	$3,659,067,344	$4,011,932,323	$4,302,588,381
		Electricity (South Atlantic/East South Central)	–$5,610,015,339	–$5,473,771,577	–$5,858,145,347	–$5,673,200,869	–$5,538,919,715
		Coal (Rest of U.S.)	–$42,946,128	–$34,128,750	–$59,983,373	–$47,979,268	–$37,252,188
		Coal (South Atlantic/East South Central)	–$21,848,977	–$17,363,108	–$30,516,729	–$24,409,603	–$18,952,167
311	20 (pt)	Food	–$19,438,539	–$18,206,065	–$18,019,467	–$20,956,504	–$17,099,284
312	20 (pt); 21	Beverage and Tobacco Products	–$5,273,571	–$5,275,735	–$4,612,913	–$5,324,879	–$5,052,369
313	22 (pt)	Textile Mills	–$3,505,106	–$2,995,113	–$3,199,645	–$4,045,734	–$2,523,476
313	22 (pt)	Alabama	–$561,589	–$509,719	–$530,523	–$616,573	–$461,753
313	22 (pt)	Georgia	–$1,868,341	–$1,757,091	–$1,801,722	–$1,986,265	–$1,654,225
313	22 (pt)	Kentucky	–$22,439	–$19,174	–$20,484	–$25,900	–$16,155
313	22 (pt)	North Carolina	–$9,757,267	–$9,527,774	–$9,620,044	–$10,000,393	–$9,315,817
313	22 (pt)	South Carolina	–$12,920,819	–$12,795,382	–$12,846,465	–$13,053,279	–$12,680,309
313	22 (pt)	Tennessee	–$4,149,189	–$4,126,141	–$4,135,827	–$4,173,328	–$4,105,359
313	22 (pt)	Virginia	–$1,784,528	–$1,742,758	–$1,759,553	–$1,828,779	–$1,704,181
313	22 (pt)	West Virginia	–$5,081	–$4,342	–$4,638	–$5,865	–$3,658
314	22 (pt)	Textile Product Mills	–$5,900,826	–$5,988,213	–$5,075,069	–$5,879,660	–$5,759,282
315	23	Apparel	–$24,234,470	–$24,649,408	–$20,788,143	–$24,097,254	–$23,723,540

(continued)

Table B-37. Impacts on 2040 Producer Surplus Associated with the B1 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
316	31	Leather and Allied Products	–$1,223,489	–$1,218,149	–$1,077,250	–$1,240,852	–$1,165,263
321	24	Wood Products	–$4,635,333	–$4,226,974	–$4,589,604	–$5,151,298	–$3,944,491
322	26	Paper	$47,703,253	$59,873,288	$39,882,524	$34,942,680	$65,567,463
322	26	Alabama	–$22,524,422	–$22,081,963	–$22,811,106	–$22,982,611	–$21,882,979
322	26	Georgia	–$85,446,551	–$84,733,499	–$85,925,475	–$86,137,679	–$84,479,003
322	26	Kentucky	–$1,421,263	–$1,152,594	–$1,593,954	–$1,702,978	–$1,026,877
322	26	North Carolina	–$30,729,243	–$30,320,366	–$30,996,600	–$31,145,997	–$30,145,808
322	26	South Carolina	–$21,626,178	–$21,222,078	–$21,888,222	–$22,044,069	–$21,041,150
322	26	Tennessee	–$32,115,292	–$31,801,204	–$32,323,686	–$32,426,982	–$31,678,941
322	26	Virginia	–$32,426,620	–$32,130,003	–$32,624,337	–$32,718,387	–$32,018,160
322	26	West Virginia	–$729,831	–$721,690	–$735,193	–$738,022	–$718,365
323	27	Printing and Related Support	–$16,878,735	–$17,159,433	–$14,497,891	–$16,788,930	–$16,517,236
325	28	Chemicals	–$83,759,997	–$78,200,817	–$67,966,041	–$89,723,635	–$70,328,871
325	28	Alabama	–$22,599,924	–$22,481,877	–$22,278,630	–$22,722,608	–$22,323,619
325	28	Georgia	–$13,999,615	–$13,798,518	–$13,431,183	–$14,214,525	–$13,515,602
325	28	Kentucky	–$6,082,804	–$5,961,139	–$5,737,999	–$6,213,079	–$5,789,402
325	28	North Carolina	–$21,858,184	–$21,421,706	–$20,621,188	–$22,325,550	–$20,805,598
325	28	South Carolina	–$8,011,218	–$7,766,193	–$7,315,710	–$8,273,892	–$7,419,631
325	28	Tennessee	–$48,094,173	–$47,920,208	–$47,645,270	–$48,268,093	–$47,702,478
325	28	Virginia	–$11,254,862	–$11,118,908	–$10,871,437	–$11,399,909	–$10,928,191
325	28	West Virginia	–$110,706,444	–$110,503,743	–$110,539,670	–$110,809,539	–$110,474,257
326	30	Plastics and Rubber Products	–$46,138,930	–$46,928,911	–$39,577,621	–$45,877,691	–$45,166,192
327	32	Nonmetallic Mineral Products	–$25,460,820	–$25,140,039	–$22,263,860	–$26,017,528	–$23,950,064
331	33	Primary Metals	–$9,960,707	–$8,644,638	–$10,278,971	–$13,066,459	–$5,946,479
331	33	Alabama	–$1,020,943	–$973,400	–$1,032,475	–$1,133,074	–$876,013
331	33	Georgia	–$135,055	–$121,263	–$138,391	–$167,599	–$92,991
331	33	Kentucky	–$2,437,412	–$2,397,951	–$2,447,220	–$2,530,014	–$2,317,722

(continued)

Table B-37. Impacts on 2040 Producer Surplus Associated with the B1 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
331	33	North Carolina	–$127,777	–$110,895	–$131,860	–$167,618	–$76,282
331	33	South Carolina	–$2,950,510	–$2,928,846	–$2,956,478	–$3,000,177	–$2,886,314
331	33	Tennessee	–$2,860,075	–$2,819,390	–$2,870,271	–$2,955,390	–$2,736,880
331	33	Virginia	–$1,597,659	–$1,583,913	–$1,601,317	–$1,629,432	–$1,556,592
331	33	West Virginia	–$8,490,177	–$8,462,997	–$8,502,440	–$8,542,815	–$8,422,142
332	34	Fabricated Metal Products	–$6,135,503	–$5,564,229	–$6,203,402	–$6,862,169	–$5,185,769
333	35	Machinery	–$18,658,349	–$17,618,422	–$17,813,522	–$19,969,605	–$16,600,101
334	36 (pt)	Computer and Electronic Products	–$19,053,303	–$17,555,060	–$18,823,308	–$20,936,080	–$16,429,936
335	36 (pt)	Electrical Equipment, Appliances, and Components	–$6,862,684	–$6,480,191	–$6,551,950	–$7,344,974	–$6,105,644
336	37	Transportation Equipment	–$48,631,623	–$47,698,922	–$44,201,090	–$50,097,537	–$45,430,215
337	25	Furniture and Related Products	–$15,663,540	–$16,363,801	–$13,037,191	–$15,915,218	–$15,879,919
339	39	Miscellaneous	–$13,956,236	–$13,374,040	–$12,897,529	–$14,698,557	–$12,653,132
11	01-08	Agricultural Sector	–$36,677,642	–$37,155,381	–$31,721,699	–$36,455,515	–$35,959,700
23	15-17	Construction Sector	–$42,331,864	–$42,089,675	–$35,772,710	–$42,336,331	–$40,894,454
21	10; 14	Other Mining Sector	–$48,178,380	–$45,541,270	–$46,012,583	–$51,485,660	–$42,954,186
484	42 (pt)	Trucking Transportation	–$25,907,417	–$28,553,419	–$11,153,468	–$20,957,116	–$30,539,040
484	42 (pt)	Alabama	–$155,340	–$109,467	–$115,544	–$167,533	–$96,322
484	42 (pt)	Georgia	–$253,989	–$178,984	–$188,919	–$273,925	–$157,490
484	42 (pt)	Kentucky	–$119,031	–$83,880	–$88,537	–$128,374	–$73,807
484	42 (pt)	North Carolina	–$212,469	–$149,725	–$158,037	–$229,146	–$131,745

(continued)

Table B-37. Impacts on 2040 Producer Surplus Associated with the B1 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
484	42 (pt)	South Carolina	–$85,410	–$60,188	–$63,529	–$92,114	–$52,960
484	42 (pt)	Tennessee	–$242,859	–$171,141	–$180,641	–$261,921	–$150,589
484	42 (pt)	Virginia	–$134,303	–$94,642	–$99,896	–$144,844	–$83,277
484	42 (pt)	West Virginia	–$41,033	–$28,915	–$30,521	–$44,253	–$25,443
482	401	Railroads	–$13,525,616	–$13,055,890	–$12,567,610	–$14,157,179	–$12,503,676
482	401	Alabama	$67,231	$109,102	$19,799	$30,486	$116,987
482	401	Georgia	$128,842	$209,083	$37,943	$58,423	$224,193
482	401	Kentucky	$84,006	$136,325	$24,739	$38,092	$146,177
482	401	North Carolina	$45,467	$73,783	$13,389	$20,617	$79,115
482	401	South Carolina	$33,226	$53,920	$9,785	$15,066	$57,816
482	401	Tennessee	$80,162	$130,087	$23,607	$36,349	$139,488
482	401	Virginia	$124,614	$202,223	$36,698	$56,506	$216,838
482	401	West Virginia	$56,091	$91,025	$16,518	$25,434	$97,603
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$1,338,727,737	–$1,313,159,875	–$1,216,027,463	–$1,378,755,059	–$1,250,935,887
		Total	–$4,134,612,495	–$3,494,167,023	–$5,251,875,516	–$4,624,328,543	–$3,490,554,072

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.

[b] Primary demand elasticity, 25 percent less elastic supply in all markets.

[c] Primary supply elasticity, 25 percent more elastic demand in all markets.

[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-38. Impacts on 2040 Producer Surplus Associated with the B3 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$)

NAICS	SIC	Description	Value ($) Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
		Energy					
		Petroleum (Rest of U.S.)	$140,966,188	$177,923,369	$13,137,143	$82,121,895	$218,538,127
		Petroleum (South Atlantic/East South Central)	$43,678,814	$55,130,112	$4,070,585	$25,445,726	$67,714,722
		Natural Gas (Rest of U.S.)	–$401,320,725	–$184,406,026	–$1,036,460,593	–$629,598,011	–$123,837,137
		Natural Gas (South Atlantic/East South Central)	–$269,574,125	–$200,330,508	–$472,328,577	–$342,415,067	–$181,031,918
		Electricity (Rest of U.S.)	$7,635,590,236	$8,116,338,541	$6,721,833,655	$7,382,898,769	$7,921,171,523
		Electricity (South Atlantic/ East South Central)	–$10,175,773,879	–$9,901,344,301	–$10,654,803,691	–$10,288,977,449	–$10,048,265,628
		Coal (Rest of U.S.)	–$79,079,342	–$62,860,430	–$110,405,502	–$88,307,917	–$68,627,006
		Coal (South Atlantic/East South Central)	–$40,231,863	–$31,980,441	–$56,169,145	–$44,926,929	–$34,914,204
311	20 (pt)	Food	–$35,467,704	–$33,262,330	–$32,760,518	–$38,210,223	–$31,226,614
312	20 (pt); 21	Beverage and Tobacco Products	–$9,628,948	–$9,642,960	–$8,400,016	–$9,717,388	–$9,231,335
313	22 (pt)	Textile Mills	$1,378,495	$3,553,513	$502,393	–$754,502	$4,800,954
313	22 (pt)	Alabama	–$283,436	–$62,232	–$372,538	–$500,366	$64,636
313	22 (pt)	Georgia	–$3,559,553	–$3,085,135	–$3,750,684	–$4,024,775	–$2,813,089
313	22 (pt)	Kentucky	$8,825	$22,749	$3,216	–$4,830	$30,735
313	22 (pt)	North Carolina	–$21,164,938	–$20,186,328	–$21,559,612	–$22,124,001	–$19,626,093
313	22 (pt)	South Carolina	–$60,556,003	–$60,013,031	–$60,781,365	–$61,078,006	–$59,718,433
313	22 (pt)	Tennessee	–$12,778,653	–$12,679,032	–$12,820,400	–$12,873,781	–$12,626,015
313	22 (pt)	Virginia	–$4,413,869	–$4,235,722	–$4,485,742	–$4,588,419	–$4,133,799
313	22 (pt)	West Virginia	$1,998	$5,151	$728	–$1,094	$6,959
314	22 (pt)	Textile Product Mills	–$10,774,400	–$10,945,423	–$9,241,679	–$10,729,968	–$10,523,096
315	23	Apparel	–$44,249,277	–$45,053,815	–$37,854,707	–$43,975,027	–$43,345,828

(continued)

Table B-38. Impacts on 2040 Producer Surplus Associated with the B3 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
316	31	Leather and Allied Products	–$2,233,997	–$2,226,558	–$1,961,732	–$2,264,488	–$2,129,120
321	24	Wood Products	–$8,463,645	–$7,726,259	–$8,357,538	–$9,400,692	–$7,207,129
322	26	Paper	$157,514,728	$187,040,803	$133,874,607	$126,793,926	$199,573,432
322	26	Alabama	–$54,611,796	–$53,523,012	–$55,492,537	–$55,711,264	–$53,106,555
322	26	Georgia	–$206,588,645	–$204,684,637	–$208,185,665	–$208,239,713	–$204,328,226
322	26	Kentucky	–$7,197,411	–$6,545,878	–$7,719,620	–$7,874,812	–$6,270,007
322	26	North Carolina	–$76,044,998	–$75,015,344	–$76,886,880	–$77,043,411	–$74,678,106
322	26	South Carolina	–$56,639,945	–$55,638,558	–$57,451,992	–$57,642,135	–$55,267,882
322	26	Tennessee	–$92,864,260	–$92,006,990	–$93,583,186	–$93,608,256	–$91,845,681
322	26	Virginia	–$65,288,318	–$64,542,334	–$65,903,392	–$65,987,183	–$64,331,528
322	26	West Virginia	–$2,003,905	–$1,982,579	–$2,021,571	–$2,023,489	–$1,977,094
323	27	Printing and Related Support	–$30,819,144	–$31,364,135	–$26,401,390	–$30,638,779	–$30,179,454
325	28	Chemicals	–$105,161,128	–$88,069,644	–$84,158,074	–$122,637,854	–$71,384,530
325	28	Alabama	–$47,716,032	–$47,348,507	–$47,300,957	–$48,075,042	–$47,022,186
325	28	Georgia	–$33,725,284	–$33,105,211	–$32,973,392	–$34,354,687	–$32,508,860
325	28	Kentucky	–$13,885,641	–$13,511,196	–$13,428,238	–$14,267,264	–$13,148,094
325	28	North Carolina	–$36,320,675	–$34,979,232	–$34,677,235	–$37,690,043	–$33,674,151
325	28	South Carolina	–$14,885,520	–$14,132,199	–$13,961,190	–$15,655,174	–$13,398,039
325	28	Tennessee	–$138,978,688	–$138,382,711	–$138,467,704	–$139,486,458	–$137,997,341
325	28	Virginia	–$24,627,845	–$24,208,806	–$24,120,914	–$25,052,642	–$23,806,855
325	28	West Virginia	–$298,407,532	–$297,331,218	–$298,833,667	–$298,705,654	–$297,831,363
326	30	Plastics and Rubber Products	–$84,244,231	–$85,775,956	–$72,069,893	–$83,722,098	–$82,524,194
327	32	Nonmetallic Mineral Products	–$46,469,446	–$45,938,031	–$40,505,708	–$47,455,424	–$43,746,384
331	33	Primary Metals	–$7,710,543	–$5,053,872	–$8,781,267	–$13,818,107	$102,628
331	33	Alabama	–$1,693,781	–$1,597,810	–$1,732,558	–$1,914,231	–$1,411,769
331	33	Georgia	–$335,068	–$307,227	–$346,302	–$399,050	–$253,219

(continued)

Table B-38. Impacts on 2040 Producer Surplus Associated with the B3 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
331	33	Kentucky	–$6,451,081	–$6,370,438	–$6,485,224	–$6,632,864	–$6,218,533
331	33	North Carolina	–$98,912	–$64,832	–$112,647	–$177,261	$1,317
331	33	South Carolina	–$8,671,701	–$8,624,023	–$8,696,395	–$8,768,917	–$8,547,336
331	33	Tennessee	–$7,128,940	–$7,045,689	–$7,164,437	–$7,316,036	–$6,889,594
331	33	Virginia	–$2,737,177	–$2,709,210	–$2,749,306	–$2,799,567	–$2,657,363
331	33	West Virginia	–$21,783,868	–$21,706,838	–$21,847,543	–$21,886,318	–$21,652,806
332	34	Fabricated Metal Products	–$11,206,906	–$10,173,054	–$11,304,873	–$12,528,471	–$9,477,720
333	35	Machinery	–$34,080,925	–$32,211,496	–$32,463,034	–$36,459,259	–$30,339,226
334	36 (pt)	Computer and Electronic Products	–$34,802,279	–$32,095,764	–$34,303,150	–$38,223,758	–$30,028,155
335	36 (pt)	Electrical Equipment, Appliances, and Components	–$12,535,225	–$11,847,635	–$11,940,153	–$13,409,995	–$11,159,000
336	37	Transportation Equipment	–$88,829,321	–$87,206,733	–$80,551,279	–$91,464,797	–$83,030,578
337	25	Furniture and Related Products	–$28,599,618	–$29,909,246	–$23,740,351	–$29,085,618	–$29,014,375
339	39	Miscellaneous	–$25,483,173	–$24,445,624	–$23,487,158	–$26,824,236	–$23,119,421
11	01-08	Agricultural Sector	–$66,984,622	–$67,926,069	–$57,783,831	–$66,545,390	–$65,716,226
23	15-17	Construction Sector	–$77,246,068	–$76,911,173	–$65,020,221	–$77,196,469	–$74,692,888
21	10; 14	Other Mining Sector	–$88,001,818	–$83,260,635	–$83,858,723	–$94,000,470	–$78,504,974
484	42 (pt)	Trucking Transportation	–$46,896,455	–$51,901,036	–$19,551,939	–$37,766,087	–$55,481,217
484	42 (pt)	Alabama	–$282,194	–$199,646	–$206,140	–$303,268	–$175,706
484	42 (pt)	Georgia	–$461,401	–$326,430	–$337,049	–$495,857	–$287,287

(continued)

Table B-38. Impacts on 2040 Producer Surplus Associated with the B3 Strategy (by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
484	42 (pt)	Kentucky	–$216,234	–$152,980	–$157,957	–$232,382	–$134,636
484	42 (pt)	North Carolina	–$385,976	–$273,068	–$281,951	–$414,800	–$240,324
484	42 (pt)	South Carolina	–$155,158	–$109,771	–$113,342	–$166,745	–$96,608
484	42 (pt)	Tennessee	–$441,182	–$312,126	–$322,279	–$474,129	–$274,698
484	42 (pt)	Virginia	–$243,977	–$172,608	–$178,223	–$262,197	–$151,910
484	42 (pt)	West Virginia	–$74,541	–$52,736	–$54,451	–$80,107	–$46,412
482	401	Railroads	–$24,703,242	–$23,868,807	–$22,896,424	–$25,844,034	–$22,851,389
482	401	Alabama	$122,935	$199,569	$36,330	$55,812	$213,922
482	401	Georgia	$235,592	$382,453	$69,624	$106,957	$409,961
482	401	Kentucky	$153,609	$249,364	$45,395	$69,738	$267,300
482	401	North Carolina	$83,138	$134,963	$24,569	$37,744	$144,670
482	401	South Carolina	$60,756	$98,629	$17,955	$27,583	$105,723
482	401	Tennessee	$146,580	$237,953	$43,318	$66,546	$255,068
482	401	Virginia	$227,863	$369,905	$67,339	$103,448	$396,510
482	401	West Virginia	$102,565	$166,501	$30,311	$46,564	$178,477
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$2,443,231,550	–$2,398,966,157	–$2,213,744,083	–$2,514,987,678	–$2,284,481,961
		Total	–$7,677,235,413	–$6,442,075,865	–$9,793,112,369	–$8,593,047,706	–$6,471,241,641

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.

[b] Primary demand elasticity, 25 percent less elastic supply in all markets.

[c] Primary supply elasticity, 25 percent more elastic demand in all markets.

[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-39. Incremental Impacts on 2040 Producer Surplus Associated with the B1 Strategy (B1–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
		Energy					
		Petroleum (Rest of U.S.)	$7,056,694	$9,724,283	–$1,706,083	$3,023,575	$12,476,493
		Petroleum (South Atlantic/East South Central)	$2,186,539	$3,013,100	–$528,635	$936,864	$3,865,880
		Natural Gas (Rest of U.S.)	–$4,833,843	$11,695,371	–$50,098,334	–$21,489,984	$15,644,729
		Natural Gas (South Atlantic/East South Central)	–$58,485,308	–$53,213,367	–$72,921,319	–$63,790,124	–$51,962,859
		Electricity (Rest of U.S.)	$490,694,429	$522,756,887	$429,871,372	$473,415,262	$510,487,909
		Electricity (South Atlantic/ East South Central)	–$662,082,192	–$643,830,730	–$693,899,782	–$669,800,914	–$653,266,413
		Coal (Rest of U.S.)	–$5,381,179	–$4,292,621	–$7,474,625	–$6,021,494	–$4,645,104
		Coal (South Atlantic/East South Central)	–$2,737,692	–$2,183,884	–$3,802,739	–$3,063,454	–$2,363,211
311	20 (pt)	Food	–$2,401,024	–$2,259,245	–$2,207,460	–$2,577,145	–$2,124,155
312	20 (pt); 21	Beverage and Tobacco Products	–$642,361	–$645,540	–$556,797	–$645,801	–$618,843
313	22 (pt)	Textile Mills	$2,664,726	$3,222,732	$2,126,669	$2,144,455	$3,430,824
313	22 (pt)	Alabama	$79,126	$135,879	$24,402	$26,213	$157,041
313	22 (pt)	Georgia	–$437,020	–$315,298	–$554,397	–$550,503	–$269,918
313	22 (pt)	Kentucky	$17,059	$20,631	$13,615	$13,729	$21,964
313	22 (pt)	North Carolina	–$6,596,447	–$6,345,364	–$6,838,598	–$6,830,418	–$6,251,935
313	22 (pt)	South Carolina	–$10,320,432	–$10,183,241	–$10,452,791	–$10,447,903	–$10,132,743
313	22 (pt)	Tennessee	–$3,647,797	–$3,622,607	–$3,672,115	–$3,671,027	–$3,613,595
313	22 (pt)	Virginia	–$1,189,314	–$1,143,614	–$1,233,387	–$1,231,898	–$1,126,610
313	22 (pt)	West Virginia	$3,863	$4,672	$3,083	$3,109	$4,973
314	22 (pt)	Textile Product Mills	–$718,776	–$732,733	–$612,587	–$713,096	–$705,439
315	23	Apparel	–$2,951,932	–$3,016,089	–$2,509,207	–$2,922,503	–$2,905,787

(continued)

Table B-39. Incremental Impacts on 2040 Producer Surplus Associated with the B1 Strategy (B1–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
316	31	Leather and Allied Products	–$149,039	–$149,060	–$130,044	–$150,503	–$142,733
321	24	Wood Products	–$564,618	–$517,227	–$553,972	–$624,762	–$483,128
322	26	Paper	$82,294,337	$91,802,181	$70,920,632	$72,629,239	$94,778,438
322	26	Alabama	–$15,598,736	–$15,252,541	–$16,012,701	–$15,945,589	–$15,150,799
322	26	Georgia	–$74,937,062	–$74,369,667	–$75,608,565	–$75,459,733	–$74,262,301
322	26	Kentucky	–$389,262	–$179,393	–$640,408	–$602,615	–$113,690
322	26	North Carolina	–$26,068,362	–$25,746,926	–$26,451,846	–$26,383,728	–$25,661,142
322	26	South Carolina	–$17,984,174	–$17,667,579	–$18,362,671	–$18,300,483	–$17,575,700
322	26	Tennessee	–$27,199,442	–$26,951,015	–$27,494,582	–$27,435,227	–$26,895,018
322	26	Virginia	–$26,240,899	–$26,006,053	–$26,519,529	–$26,461,605	–$25,955,948
322	26	West Virginia	–$632,223	–$625,802	–$639,868	–$638,420	–$624,222
323	27	Printing and Related Support	–$2,056,073	–$2,099,710	–$1,750,150	–$2,036,323	–$2,023,187
325	28	Chemicals	$32,235,339	$39,398,914	$26,557,361	$25,480,114	$42,330,257
325	28	Alabama	–$16,576,511	–$16,425,650	–$16,697,184	–$16,715,496	–$16,368,908
325	28	Georgia	–$8,613,957	–$8,355,072	–$8,819,514	–$8,857,402	–$8,250,209
325	28	Kentucky	–$3,253,555	–$3,096,846	–$3,377,895	–$3,401,126	–$3,033,048
325	28	North Carolina	–$11,961,953	–$11,399,741	–$12,408,045	–$12,491,369	–$11,170,881
325	28	South Carolina	–$2,665,080	–$2,349,388	–$2,915,423	–$2,962,624	–$2,220,456
325	28	Tennessee	–$36,208,717	–$35,988,564	–$36,386,353	–$36,405,757	–$35,914,465
325	28	Virginia	–$6,967,549	–$6,792,624	–$7,106,509	–$7,131,857	–$6,722,052
325	28	West Virginia	–$94,562,827	–$94,334,433	–$94,767,587	–$94,679,698	–$94,388,698
326	30	Plastics and Rubber Products	–$5,620,052	–$5,742,197	–$4,777,168	–$5,564,024	–$5,532,199
327	32	Nonmetallic Mineral Products	–$3,114,126	–$3,089,593	–$2,697,403	–$3,167,574	–$2,946,638
331	33	Primary Metals	$6,974,139	$7,370,184	$6,482,365	$6,244,387	$7,850,783
331	33	Alabama	$82,517	$96,816	$64,758	$56,176	$114,161

(continued)

Table B-39. Incremental Impacts on 2040 Producer Surplus Associated with the B1 Strategy (B1–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
331	33	Georgia	$45,860	$50,011	$40,706	$38,214	$55,045
331	33	Kentucky	–$1,850,376	–$1,838,375	–$1,865,358	–$1,872,071	–$1,824,321
331	33	North Carolina	$89,465	$94,546	$83,157	$80,104	$100,711
331	33	South Carolina	–$2,434,733	–$2,427,826	–$2,443,463	–$2,446,325	–$2,420,817
331	33	Tennessee	–$2,191,882	–$2,179,466	–$2,207,398	–$2,214,204	–$2,165,075
331	33	Virginia	–$1,382,214	–$1,377,900	–$1,387,648	–$1,389,635	–$1,373,305
331	33	West Virginia	–$5,098,665	–$5,087,907	–$5,112,798	–$5,110,872	–$5,084,019
332	34	Fabricated Metal Products	–$742,308	–$676,139	–$743,770	–$826,800	–$630,722
333	35	Machinery	–$2,257,418	–$2,140,900	–$2,135,831	–$2,406,060	–$2,019,060
334	36 (pt)	Computer and Electronic Products	–$2,305,193	–$2,133,206	–$2,256,887	–$2,522,514	–$1,998,337
335	36 (pt)	Electrical Equipment, Appliances, and Components	–$830,296	–$787,439	–$785,575	–$884,967	–$742,626
336	37	Transportation Equipment	–$5,883,793	–$5,796,095	–$5,299,701	–$6,036,034	–$5,525,678
337	25	Furniture and Related Products	–$1,907,921	–$2,002,246	–$1,573,634	–$1,928,616	–$1,945,047
339	39	Miscellaneous	–$1,700,087	–$1,636,543	–$1,556,962	–$1,782,806	–$1,549,882
11	01-08	Agricultural Sector	–$4,393,526	–$4,474,782	–$3,754,093	–$4,345,306	–$4,334,880
23	15-17	Construction Sector	–$5,055,730	–$5,064,996	–$4,193,425	–$5,021,281	–$4,926,469
21	10; 14	Other Mining Sector	–$5,804,859	–$5,511,671	–$5,491,513	–$6,177,177	–$5,203,382
484	42 (pt)	Trucking Transportation	–$2,987,129	–$3,382,090	–$1,073,677	–$2,329,193	–$3,630,455
484	42 (pt)	Alabama	–$16,711	–$11,594	–$10,849	–$17,622	–$10,086
484	42 (pt)	Georgia	–$27,323	–$18,956	–$17,738	–$28,813	–$16,492

(continued)

Table B-39. Incremental Impacts on 2040 Producer Surplus Associated with the B1 Strategy (B1–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

NAICS	SIC	Description	Value ($)				
			Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
484	42 (pt)	Kentucky	–$12,805	–$8,884	–$8,313	–$13,503	–$7,729
484	42 (pt)	North Carolina	–$22,856	–$15,857	–$14,839	–$24,103	–$13,796
484	42 (pt)	South Carolina	–$9,188	–$6,375	–$5,965	–$9,689	–$5,546
484	42 (pt)	Tennessee	–$26,125	–$18,126	–$16,961	–$27,551	–$15,769
484	42 (pt)	Virginia	–$14,447	–$10,024	–$9,380	–$15,236	–$8,720
484	42 (pt)	West Virginia	–$4,414	–$3,062	–$2,866	–$4,655	–$2,664
482	401	Railroads	–$1,608,759	–$1,561,676	–$1,475,293	–$1,675,137	–$1,497,078
482	401	Alabama	$8,068	$13,101	$2,441	$3,696	$14,055
482	401	Georgia	$15,462	$25,107	$4,678	$7,083	$26,935
482	401	Kentucky	$10,081	$16,370	$3,050	$4,618	$17,562
482	401	North Carolina	$5,456	$8,860	$1,651	$2,500	$9,505
482	401	South Carolina	$3,987	$6,475	$1,206	$1,827	$6,946
482	401	Tennessee	$9,620	$15,621	$2,910	$4,407	$16,758
482	401	Virginia	$14,955	$24,283	$4,524	$6,851	$26,051
482	401	West Virginia	$6,731	$10,930	$2,036	$3,084	$11,726
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$164,518,883	–$161,877,436	–$148,644,606	–$168,904,419	–$154,388,223
		Total	–$732,378,715	–$629,466,034	–$899,064,197	–$813,061,262	–$625,313,467

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.

[b] Primary demand elasticity, 25 percent less elastic supply in all markets.

[c] Primary supply elasticity, 25 percent more elastic demand in all markets.

[d] Primary supply elasticity, 25 percent less elastic demand in all markets.

Table B-40. Incremental Impacts on 2040 Producer Surplus Associated with the B3 Strategy (B3–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
		Energy					
		Petroleum (Rest of U.S.)	$69,653,631	$89,369,802	$2,293,398	$38,910,444	$110,352,557
		Petroleum (South Atlantic/East South Central)	$21,582,395	$27,691,513	$710,617	$12,056,523	$34,193,085
		Natural Gas (Rest of U.S.)	–$194,082,928	–$77,721,926	–$530,379,377	–$314,643,915	–$47,059,068
		Natural Gas (South Atlantic/East South Central)	–$183,173,371	–$146,040,865	–$290,493,029	–$221,617,353	–$136,290,766
		Electricity (Rest of U.S.)	$3,977,823,777	$4,236,378,320	$3,492,637,683	$3,844,381,709	$4,129,071,050
		Electricity (South Atlantic/ East South Central)	–$5,227,840,732	–$5,071,403,453	–$5,490,558,126	–$5,285,577,494	–$5,162,612,327
		Coal (Rest of U.S.)	–$41,514,393	–$33,024,302	–$57,896,754	–$46,350,143	–$36,019,923
		Coal (South Atlantic/East South Central)	–$21,120,577	–$16,801,217	–$29,455,155	–$23,580,780	–$18,325,248
311	20 (pt)	Food	–$18,430,189	–$17,315,510	–$16,948,511	–$19,830,863	–$16,251,486
312	20 (pt); 21	Beverage and Tobacco Products	–$4,997,737	–$5,012,765	–$4,343,900	–$5,038,309	–$4,797,809
313	22 (pt)	Textile Mills	$7,548,326	$9,771,358	$5,828,707	$5,435,687	$10,755,254
313	22 (pt)	Alabama	$357,279	$583,366	$182,387	$142,419	$683,431
313	22 (pt)	Georgia	–$2,128,232	–$1,643,342	–$2,503,358	–$2,589,013	–$1,428,781
313	22 (pt)	Kentucky	$48,323	$62,555	$37,315	$34,799	$68,854
313	22 (pt)	North Carolina	–$18,004,119	–$17,003,918	–$18,778,166	–$18,954,025	–$16,562,210
313	22 (pt)	South Carolina	–$57,955,616	–$57,400,890	–$58,387,691	–$58,472,630	–$57,170,867
313	22 (pt)	Tennessee	–$12,277,261	–$12,175,499	–$12,356,688	–$12,371,481	–$12,134,252
313	22 (pt)	Virginia	–$3,818,655	–$3,636,579	–$3,959,576	–$3,991,538	–$3,556,228
313	22 (pt)	West Virginia	$10,942	$14,164	$8,449	$7,879	$15,591
314	22 (pt)	Textile Product Mills	–$5,592,349	–$5,689,942	–$4,779,197	–$5,563,404	–$5,469,253
315	23	Apparel	–$22,966,739	–$23,420,496	–$19,575,771	–$22,800,276	–$22,528,075

(continued)

Table B-40. Incremental Impacts on 2040 Producer Surplus Associated with the B3 Strategy (B3–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
316	31	Leather and Allied Products	–$1,159,548	–$1,157,468	–$1,014,526	–$1,174,140	–$1,106,590
321	24	Wood Products	–$4,392,929	–$4,016,512	–$4,321,906	–$4,874,156	–$3,745,767
322	26	Paper	$192,105,813	$218,969,695	$164,912,715	$164,480,485	$228,784,407
322	26	Alabama	–$47,686,110	–$46,693,589	–$48,694,132	–$48,674,243	–$46,374,375
322	26	Georgia	–$196,079,155	–$194,320,805	–$197,868,755	–$197,561,767	–$194,111,524
322	26	Kentucky	–$6,165,409	–$5,572,676	–$6,766,074	–$6,774,450	–$5,356,820
322	26	North Carolina	–$71,384,116	–$70,441,904	–$72,342,126	–$72,281,143	–$70,193,440
322	26	South Carolina	–$52,997,940	–$52,084,060	–$53,926,441	–$53,898,550	–$51,802,431
322	26	Tennessee	–$87,948,410	–$87,156,801	–$88,754,082	–$88,616,501	–$87,061,758
322	26	Virginia	–$59,102,598	–$58,418,384	–$59,798,584	–$59,730,401	–$58,269,316
322	26	West Virginia	–$1,906,297	–$1,886,691	–$1,926,246	–$1,923,887	–$1,882,951
323	27	Printing and Related Support	–$15,996,482	–$16,304,412	–$13,653,649	–$15,886,172	–$15,685,406
325	28	Chemicals	$10,834,208	$29,530,086	$10,365,329	–$7,434,105	$41,274,598
325	28	Alabama	–$41,692,619	–$41,292,280	–$41,719,511	–$42,067,930	–$41,067,475
325	28	Georgia	–$28,339,625	–$27,661,765	–$28,361,723	–$28,997,564	–$27,243,466
325	28	Kentucky	–$11,056,392	–$10,646,903	–$11,068,134	–$11,455,310	–$10,391,739
325	28	North Carolina	–$26,424,444	–$24,957,267	–$26,464,093	–$27,855,862	–$24,039,434
325	28	South Carolina	–$9,539,382	–$8,715,395	–$9,560,903	–$10,343,906	–$8,198,864
325	28	Tennessee	–$127,093,232	–$126,451,066	–$127,208,788	–$127,624,122	–$126,209,329
325	28	Virginia	–$20,340,532	–$19,882,522	–$20,355,986	–$20,784,589	–$19,600,717
325	28	West Virginia	–$282,263,915	–$281,161,909	–$283,061,584	–$282,575,813	–$281,745,804
326	30	Plastics and Rubber Products	–$43,725,353	–$44,589,242	–$37,269,441	–$43,408,431	–$42,890,200
327	32	Nonmetallic Mineral Products	–$24,122,752	–$23,887,584	–$20,939,251	–$24,605,471	–$22,742,958
331	33	Primary Metals	$9,224,304	$10,960,951	$7,980,070	$5,492,740	$13,899,889
331	33	Alabama	–$590,321	–$527,594	–$635,325	–$724,981	–$421,596

(continued)

Table B-40. Incremental Impacts on 2040 Producer Surplus Associated with the B3 Strategy (B3–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
331	33	Georgia	–$154,153	–$135,954	–$167,205	–$193,237	–$105,183
331	33	Kentucky	–$5,864,046	–$5,810,862	–$5,903,362	–$5,974,922	–$5,725,132
331	33	North Carolina	$118,331	$140,609	$102,370	$70,462	$178,310
331	33	South Carolina	–$8,155,924	–$8,123,003	–$8,183,379	–$8,215,065	–$8,081,838
331	33	Tennessee	–$6,460,746	–$6,405,765	–$6,501,565	–$6,574,850	–$6,317,789
331	33	Virginia	–$2,521,732	–$2,503,196	–$2,535,637	–$2,559,771	–$2,474,076
331	33	West Virginia	–$18,392,355	–$18,331,747	–$18,457,901	–$18,454,375	–$18,314,683
332	34	Fabricated Metal Products	–$5,813,710	–$5,284,964	–$5,845,240	–$6,493,101	–$4,922,673
333	35	Machinery	–$17,679,994	–$16,733,973	–$16,705,343	–$18,895,714	–$15,758,184
334	36 (pt)	Computer and Electronic Products	–$18,054,169	–$16,673,910	–$17,736,729	–$19,810,192	–$15,596,557
335	36 (pt)	Electrical Equipment, Appliances, and Components	–$6,502,837	–$6,154,884	–$6,173,778	–$6,949,988	–$5,795,981
336	37	Transportation Equipment	–$46,081,491	–$45,303,907	–$41,649,890	–$47,403,294	–$43,126,041
337	25	Furniture and Related Products	–$14,843,999	–$15,547,691	–$12,276,794	–$15,099,017	–$15,079,503
339	39	Miscellaneous	–$13,227,024	–$12,708,127	–$12,146,592	–$13,908,485	–$12,016,170
11	01-08	Agricultural Sector	–$34,700,506	–$35,245,470	–$29,816,225	–$34,435,180	–$34,091,406
23	15-17	Construction Sector	–$39,969,934	–$39,886,494	–$33,440,936	–$39,881,419	–$38,724,902
21	10; 14	Other Mining Sector	–$45,628,297	–$43,231,037	–$43,337,653	–$48,691,987	–$40,754,170
484	42 (pt)	Trucking Transportation	–$23,976,168	–$26,729,707	–$9,472,148	–$19,138,164	–$28,572,632
484	42 (pt)	Alabama	–$143,564	–$101,772	–$101,445	–$153,357	–$89,470
484	42 (pt)	Georgia	–$234,734	–$166,402	–$165,868	–$250,746	–$146,288

(continued)

Table B-40. Incremental Impacts on 2040 Producer Surplus Associated with the B3 Strategy (B3–A2 by Market Sector and Region): Sensitivity to Elasticity Assumptions (2000$) (Continued)

			Value ($)				
NAICS	SIC	Description	Primary	Sensitivity Analysis A[a]	Sensitivity Analysis B[b]	Sensitivity Analysis C[c]	Sensitivity Analysis D[d]
484	42 (pt)	Kentucky	–$110,008	–$77,984	–$77,733	–$117,511	–$68,558
484	42 (pt)	North Carolina	–$196,362	–$139,200	–$138,753	–$209,756	–$122,375
484	42 (pt)	South Carolina	–$78,936	–$55,957	–$55,777	–$84,320	–$49,193
484	42 (pt)	Tennessee	–$224,448	–$159,110	–$158,599	–$239,758	–$139,878
484	42 (pt)	Virginia	–$124,122	–$87,989	–$87,707	–$132,588	–$77,354
484	42 (pt)	West Virginia	–$37,922	–$26,883	–$26,796	–$40,509	–$23,633
482	401	Railroads	–$12,786,385	–$12,374,593	–$11,804,107	–$13,361,992	–$11,844,792
482	401	Alabama	$63,772	$103,568	$18,972	$29,022	$110,990
482	401	Georgia	$122,213	$198,477	$36,359	$55,618	$212,702
482	401	Kentucky	$79,684	$129,409	$23,706	$36,263	$138,684
482	401	North Carolina	$43,127	$70,040	$12,831	$19,627	$75,060
482	401	South Carolina	$31,517	$51,184	$9,376	$14,343	$54,853
482	401	Tennessee	$76,038	$123,487	$22,622	$34,604	$132,338
482	401	Virginia	$118,203	$191,965	$35,166	$53,793	$205,723
482	401	West Virginia	$53,205	$86,407	$15,829	$24,213	$92,600
42-45; 51-55; 61-72	41-48 (pt); 50-99	Commercial	–$1,269,022,696	–$1,247,683,718	–$1,146,361,226	–$1,305,137,038	–$1,187,934,297
		Total	–$4,275,001,633	–$3,577,374,877	–$5,440,301,050	–$4,781,780,425	–$3,606,001,036

[a] Primary demand elasticity, 25 percent more elastic supply in all markets.

[b] Primary demand elasticity, 25 percent less elastic supply in all markets.

[c] Primary supply elasticity, 25 percent more elastic demand in all markets.

[d] Primary supply elasticity, 25 percent less elastic demand in all markets.