

to be about 5.2 percent. This percentage is expected to decrease to about 4.5 percent for 2020 and beyond. The range of estimated price increases across equipment types parallels the share of engine costs relative to total equipment price, so the estimated percentage price increase among equipment types also varies. The market price in 2013 for agricultural equipment between 175 and 600 hp is estimated to increase about 1.4 percent, or \$1,835 for equipment with an average cost of \$130,000. This compares with an estimated engine price increase of about \$1,754 for engines of that size. The largest

expected price increase in 2013 for equipment is \$4,335, or 4.9 percent, for pumps and compressors over 600 hp. This compares with an estimated engine price increase of about \$4,211 for engines of that size. The smallest expected price increase in 2013 for equipment is \$125, or 3.6 percent, for construction equipment less than 25 hp. This compares with an estimated engine price increase of about \$124 for engines of that size. The price changes for the equipment are less than that for engines because the engine is only one input in the production of equipment.

The output reduction for nonroad diesel equipment is estimated to be very small and to average about 0.014 percent for all years. This decrease ranges from 0.005 percent for general manufacturing equipment to 0.019 percent for construction equipment. The largest expected decrease in quantity in 2013 is 13 units of construction equipment per year for construction equipment between 100 and 175 hp, out of about 62,800 units. The smallest expected decrease in quantity in 2013 is less than one unit per year in all hp categories of pumps and compressors.

TABLE V.F-1.—SUMMARY OF MARKET IMPACTS (\$2001)

Market	Engineering cost	Change in price		Change in quantity	
	Per unit	Absolute (\$million)	Percent	Absolute	Percent
2013					
Engines .....	\$1,087	\$840	22.9	− 69 <sup>a</sup>	− 0.013
Equipment .....	1,021	1,017	5.2	− 118	− 0.014
Application Markets <sup>b</sup> .....			0.02		− 0.010
No. 2 Distillate Nonroad .....	0.039	0.038	4.1	− 1.38 <sup>c</sup>	− 0.013
2020					
Engines .....	\$1,028	\$779	19.5	− 79 <sup>a</sup>	− 0.013
Equipment .....	1,018	1,013	4.4	− 135	− 0.014
Application Markets <sup>b</sup> .....			0.02		− 0.010
No. 2 Distillate Nonroad .....	0.039	0.039	4.1	− 1.58 <sup>c</sup>	− 0.014
2030					
Engines .....	\$1,027	\$768	19.4	− 92 <sup>a</sup>	− 0.013
Equipment .....	1,004	999	4.5	− 156	− 0.014
Application Markets <sup>b</sup> .....			0.02		− 0.010
No. 2 Distillate Nonroad .....	0.039	0.039	4.1	− 1.84 <sup>c</sup>	− 0.014

**Notes:**

<sup>a</sup> The absolute change in the quantity of engines represents only engines sold on the market. Reductions in engines consumed internally by integrated engine/equipment manufacturers are not reflected in this number but are captured in the cost analysis. For this reason, the absolute change in the number of engines and equipment does not match.

<sup>b</sup> The model uses normalized commodities in the application markets because of the great heterogeneity of products. Thus, only percentage changes are presented.

<sup>c</sup> Units are in million of gallons.

*Application Market Results:* The estimated price increase associated with the proposed standards in all three of the application markets is very small and averages about 0.02 percent for all years. In other words, on average, the prices of goods and services produced using the engines, equipment, and fuel affected by this proposal are expected to increase only negligibly. This is because in all of the application markets the compliance costs passed on through price increases represent a very small share of total production costs. For example, the construction industry realizes an increase in production costs of approximately \$468 million in 2013 because of the price increases for diesel equipment and fuel. However, this

represents only 0.03 percent of the \$1,392 billion value of shipments in the construction industry in 2001. The estimated average commodity price increase in 2013 ranges from 0.06 percent in the agricultural application market to about 0.01 percent in the manufacturing application market. The percentage change in output is also estimated to be very small and averages about 0.01 percent. This reduction ranges from less than a 0.01 percent decrease in manufacturing to about a 0.02 percent decrease in construction. Note that these estimated price increases and quantity decreases are average for these sectors and may vary for specific subsectors. Also, note that absolute changes in price and quantity

are not provided for the application markets in Table V.F-1 because normalized commodity values are used in the market model. Because of the great heterogeneity of manufactured or agriculture products, a normalized commodity (\$1 unit) is used in the application markets. This has no impact on the estimated percentage change impacts but makes interpretation of the absolute changes less informative.

*Fuel Markets Results:* The estimated average price increase across all nonroad diesel fuel is about 4 percent for all years. For 15 ppm fuel, the estimated price increase for 2013 ranges from 3.2 percent in the East Coast region (PADD 1&3) to 9.3 percent in the mountain region (PADD 4). The average