

existing sources), EPA considers that the regulations for new sources do not impose requirements that might grant existing operators a cost advantage over new CAFO operators and further determines that the NSPS requirements are affordable and do not present a barrier to entry for new facilities. In general, costs to new sources from NSPS requirements are lower than the costs for retrofitting the same technologies at existing sources since new sources are able to apply control technologies more efficiently than existing sources that might incur high retrofit cost. New sources will be able to avoid the retrofit costs that will be incurred by existing sources. Furthermore, new sources might be able to avoid the other various control costs facing some existing producers through careful site selection. The requirements promulgated in today's rule do not give existing operators a cost advantage over new CAFO operators; therefore, the NSPS do not present a barrier to entry for new facilities. Examples of avoided retrofit costs and costs of total containment systems and waste management, including land application, for both existing and new sources are provided in Section IV.C of this preamble. More detailed information is provided in the *Cost Report* and the *Economic Analysis* supporting the final regulations.

2. Market Analysis

EPA's market analysis evaluates the effects of the final regulations on national markets. This analysis uses a linear partial equilibrium model adapted from the COSTBEN model developed by USDA's Economic Research Service. The modified EPA model provides a means to conduct a long-run static analysis to measure the market effects of the final regulations in terms of predicted changes in farm and retail prices and product quantities. Market data used as inputs to this model are from a wide range of USDA data and land grant university research. Once price and quantity changes are predicted by the model, EPA uses national multipliers that relate changes in sales to changes in total direct and indirect employment and also to national economic output. These estimated relationships are based on the Regional Input-Output Modeling System (RIMS II) from the U.S. Department of Commerce. The details of the market analysis are described in the *Economic Analysis*.

a. Commodity prices and quantities. EPA's market model predicts that the final rule will not result in significant industry-level changes in production and prices for most sectors. Predicted

changes in animal production might raise producer prices as the market adjusts to the final regulatory requirements. For most sectors, EPA estimates that producer price changes will rise by less than one percent of the pre-regulation baseline price. The exception is in the hog sector, where estimated compliance costs slightly exceed one percent of the baseline price. At the retail level, EPA expects that the final rule will not have a substantial impact on overall production or consumer prices for value-added meat, eggs, and fluid milk and dairy products. EPA estimates that retail price increases resulting from this rule will be less than one percent of baseline prices in all sectors, averaging below the rate of general price inflation for all foods. In terms of retail level price changes, EPA estimates that poultry and red meat prices will rise about one cent per pound. EPA also estimates that egg prices will rise by about one cent per dozen and that milk prices will rise by about one cent per gallon.

b. Aggregate employment and national economic output. EPA does not expect the final rule to cause significant changes in aggregate employment or national economic output, measured in terms of Gross Domestic Product (GDP). EPA expects, however, that there will be losses in employment and economic output associated with decreases in animal production due to rising compliance costs. These losses are estimated throughout the entire economy, using available modeling approaches, and are not attributable to the regulated community only. This analysis also does not adjust for offsetting increases in other parts of the economy and other sector employment that might be stimulated as a result of the final rule, such as the construction and farm services sectors.

Employment losses are measured in full-time equivalents (FTEs) per year, including both direct and indirect employment. EPA estimates that the reduction in total direct employment is about 1,600 FTEs. This projected change is compared to total national employment of about 129.6 million jobs in 1997. More detailed information on these results is presented in the *Economic Analysis*.

c. Regional and community impacts. EPA considered whether the final rule could have community level and/or regional impacts if it substantially altered the competitive position of livestock and poultry production across the nation, or led to growth or reduction in farm production (in- or out-migration) in different regions and communities. Ongoing structural and

technological changes in these industries have influenced where farmers operate and have contributed to locational shifts between the traditional production regions and the emergent, nontraditional regions. Production is growing rapidly in the emergent regions because of competitive pressures and because specialized producers tend to have the advantage of lower per-unit costs of production. This is especially true in hog and dairy production.

To evaluate the potential for differential impacts among farm production regions, EPA examined employment impacts by region. EPA also evaluated whether the final requirements could result in substantial changes in volume of production, given predicted facility closures, within a particular production region. EPA concludes from these analyses that regional and community level effects are estimated to be modest, but do tend to be concentrated within the more traditional agricultural regions. This analysis is discussed in the *Economic Analysis*.

EPA does not expect that this rule will have a significant impact on where animals are raised. On one hand, on-site improvements in waste management and disposal, as required by the final rule, could accelerate recent shifts in production to more nontraditional regions as higher-cost producers in some regions exit the market to avoid the relatively high retrofitting costs associated with bringing existing facilities into compliance. On the other hand, the final regulations might favor more traditional production systems where operators grow both livestock and crops, since these operations tend to have available cropland for land application of manure nutrients. These types of operations tend to be more diverse and less specialized and, generally, smaller in size. Long-standing farm services and input supply industries in these areas could likewise benefit from the final rule, given the need to support on-site improvements in manure management and disposal. Local and regional governments, as well as other nonagricultural enterprises, would also benefit.

d. Foreign trade impacts. Foreign trade impacts are difficult to predict because agricultural exports are determined by economic conditions in foreign markets and changes in the international exchange rate for the U.S. dollar. However, EPA predicts that foreign trade impacts as a result of the final rule will be minor given the relatively small projected changes in overall supply and demand for these products and the slight increase in