

entire category and to allow facilities to become part of the low-risk subcategory in the future, after the MACT based standards are established. This would allow low risk facilities to use the CAA section 112(c)(9) exemption without affecting the MACT floor calculation. The EPA requests comment on this suggested approach.

Another approach under CAA section 112(c)(9) would be to define a subcategory of facilities within the industrial boiler and process heater source category based upon technological differences, such as differences in production rate, emission vent flow-rates, overall facility size, emissions characteristics, processes, or air pollution control device viability. The EPA requests comment on how we might establish industrial boiler and process heater subcategories based on these, or other, source characteristics. If it could then be determined that each source in this technologically-defined subcategory presents a low risk to the surrounding community, the subcategory could then be delisted in accordance with CAA section 112(c)(9). The EPA requests comment on the concept of identifying technologically-based subcategories that may include only low-risk facilities within this source category.

If this CAA section 112(c)(9) approach were adopted, the rulemaking would likely indicate that the rule does not apply to any source that demonstrates that it belongs in a subcategory which has been delisted under CAA section 112(c)(9).

F. What Are the Economic Impacts?

The economic impact analysis shows that the expected price increase for output in the 40 affected industries would be no more than 0.04 percent as a result of the proposed rule for industrial boilers and process heaters. The expected change in production of affected output is a reduction of only 0.03 percent or less in the same industries. In addition, impacts to affected energy markets show that prices of petroleum, natural gas, electricity and coal should increase by no more than 0.05 percent as a result of implementation of the proposed rule, and output of these types of energy should decrease by no more than 0.01 percent. Therefore, it is likely that there is no adverse impact expected to occur for those industries that produce output affected by the proposed rule, such as lumber and wood products, chemical manufacturers, petroleum refining, and furniture manufacturing.

G. What Are the Social Costs and Benefits of the Proposed Rule?

Our assessment of costs and benefits of the proposed rule is detailed in the "Regulatory Impact Analysis for the Proposed Industrial, Commercial, and Institutional Boilers and Process Heaters MACT." The Regulatory Impact Analysis (RIA) is located in the Docket.

It is estimated that 3 years after implementation of the proposed requirements, HAP would be reduced by 58,500 tons/yr (53,200 megagrams per year (Mg/yr)) due to reductions in hydrochloric acid, arsenic, mercury, hydrofluoric acid, and several other HAP from existing affected emission sources. Of these reductions, 42,000 tons/yr (38,200 Mg/yr) are of hydrochloric acid. In addition to these reductions, there are 73 tons/yr (66 Mg/yr) of HAP reductions expected from new sources. Of these reductions, virtually all of them are of hydrochloric acid. The health effects associated with these HAP are discussed earlier in this preamble. While it is beneficial to society to reduce these HAP, we are unable to quantify and provide a monetized estimate of the benefits at this time.

Despite our inability to quantify and provide monetized benefit estimates from HAP reductions, it is possible to derive rough estimates for one of the more important benefit categories, *i.e.*, the potential number of cancer cases avoided and cancer risk reduced as a result of the imposition of the MACT level of control on this source category. Our analysis suggests that imposition of the MACT level of control would reduce cancer cases by possibly tens of cases per year, on average, starting some years after implementation of the standard. This risk reduction estimate is uncertain and should be regarded as an extremely rough estimate, and should be viewed in the context of the full spectrum of unquantified noncancer effects associated with the HAP reductions. Noncancer effects associated with the HAP are presented earlier in this preamble.

The control technologies used to reduce the level of HAP emitted from affected sources are also expected to reduce emissions of PM (PM₁₀, PM_{2.5}), and sulfur dioxide (SO₂). It is estimated that PM₁₀ emissions reductions total approximately 562,000 tons/yr (510,000 Mg/yr), PM_{2.5} emissions reductions total approximately 159,000 tons/yr (145,000 Mg/yr), and SO₂ emissions reductions total approximately 102,670 Mg/yr (113,000 tons/yr). These estimated reductions occur from existing sources in operation 3 years after the

implementation of the requirements of the proposed rule and are expected to continue throughout the life of the sources.

Human health effects associated with exposure to PM₁₀ and PM_{2.5} include premature mortality (short-term exposure to PM₁₀ and long-term exposure to PM_{2.5}), chronic bronchitis, additional hospital admissions from respiratory and cardiovascular causes, acute respiratory symptoms, and other effects. Welfare effects associated with PM₁₀ and PM_{2.5} emissions include impaired recreational and residential visibility, household soiling, and materials damage. As SO₂ emissions transform into PM, they can lead to the same health and welfare effects listed above.

For PM₁₀ and PM_{2.5}, we did provide a monetary estimate for the benefits associated with the reduction of the emissions, and we have conducted several analyses recently that estimate the monetized benefits of PM reductions, including: the RIA of the PM/Ozone national ambient air quality standards (NAAQS) (1997), the Nitrogen Oxide (NO_x) State Implementation Plan (SIP) Call (1998), the CAA section 126 RIA (1999), a study conducted for section 812(b) of the CAA (1999), the Tier 2/Gasoline Sulfur Standards (1999), and the Heavy Duty Engine/Diesel Fuel Standards (2000).

On September 26, 2002, the National Academy of Sciences (NAS) released a report on its review of the Agency's methodology for analyzing the health benefits of measures taken to reduce air pollution. The report focused on EPA's approach for estimating the health benefits of regulations designed to reduce concentrations of airborne particulate matter (PM).

In its report, the NAS said that EPA has generally used a reasonable framework for analyzing the health benefits of PM-control measures. It recommended, however, that the Agency take a number of steps to improve its benefits analysis. In particular, the NAS stated that the Agency should:

- Include benefits estimates for a range of regulatory options;
- Estimate benefits for intervals, such as every 5 years, rather than a single year;
- Clearly state the projected baseline statistics used in estimating health benefits, including those for air emissions, air quality, and health outcomes;
- Examine whether implementation of proposed regulations might cause unintended impacts on human health or the environment;