Southern Air Principles Report

Executive Summary

May 2002

Introduction

Air quality is a shared resource, and all sectors of society bear a responsibility for improving air quality and protecting our natural resources. Scientific research and evaluation show that air pollution is not confined to state boundaries. The southern states are experiencing unprecedented population and economic growth, as well as associated increases in energy and vehicle use, which have contributed to increased air pollution. To ensure clean air and a reliable, affordable energy supply, we must develop new strategies to address issues such as regional haze, ozone, fine particulate matter, acid deposition, and mercury that threaten public health and the environment.

In 2001, the Governors of Georgia, North Carolina, South Carolina and Tennessee entered into a Southern Air Principles agreement, which recognizes that regional air quality problems must be addressed through regional approaches that consider each state's unique qualities and needs. As directed by this agreement, the signatory states have worked together to develop joint multi-pollutant strategies to address the problems of ozone pollution, acid deposition and reduced visibility. The states have also worked together to develop innovative transportation and energy policies that will protect and improve air quality in the South.

To accomplish this charge, a Southern Air Principles Work Group was created with representatives of the states' air quality, transportation and energy agencies. The work group formed three focused groups: 1) developing a joint multi-pollutant strategy, 2) developing innovative transportation policies, and 3) developing innovative energy policies. Because these issues overlap, many of the work group members participated in multiple focus areas. The Air Principles work groups have met frequently by conference call and communicated through electronic mail. Additionally, the representatives working on a joint multi-pollutant strategy held several meetings to work on their charge.

The work groups considered a number of policy options identified as having potential for achieving significant reductions in emissions of pollutants that adversely impact air quality in the Southern Appalachian Mountains, as well as air quality in our towns and cities. They also considered legislative actions and policy decisions within their own states, as well as those occurring on the national level. Each of the work groups has attempted to offer realistic measures that can be adapted to fit each state's unique qualities and needs.

The complete reports of the work groups are attached to this summary.

I. Multi-pollutant Strategy

Air pollution sources, including power plants, emit multiple pollutants that traditionally are regulated independently. Since localized and regional ozone, fine particulate matter, acid deposition, and haze impacts are caused by multiple pollutants, multi-pollutant control strategies may more effectively reduce environmental impacts; provide more efficient control of environmental pollutants; provide for collateral mercury emissions reductions; and support economic competitiveness and cost effectiveness.

Through the Southern Air Principles agreement, the governors recognized that regional air quality problems must be addressed through regional approaches that address each state's unique qualities and needs. The document directed the chief environmental officers of the signatory states to work together to develop and recommend joint multi-pollutant strategies to address the problems of ozone pollution, acid deposition and reduced visibility. The information and recommendations provided by the Southern Appalachian Mountains Initiative (SAMI) were also to be taken into consideration.

Representing their respective chief environmental officers, the air quality directors of Georgia, North Carolina, South Carolina, and Tennessee have met and consulted several times since June 1, 2001. Much of the initial focus was to gather information from other national and regional multi-pollutant strategy initiatives. Several developments, including legislative and policy actions, have occurred since the signing of the Principles. These actions demonstrate the emerging focus on the issue.

The Southern Appalachian Mountains Initiative (SAMI) has completed its technical work and has formulated observations and conclusions. In summary, SAMI concluded that:

- Each SAMI state would receive the most benefit from reductions of emissions from within their own state boundaries. However, the air quality related problems being encountered by SAMI's Class I areas would not be resolved by only controlling emissions within the SAMI states;
- Significant sulfur dioxide reductions are needed for improvement of visibility in the SAMI region and acid deposition in SAMI Class I areas;
- Within the SAMI region, Class I areas and other parts of the Southern Appalachians are very fragile and would benefit from nitrogen oxides control; and
- Controlling ammonia is more important than originally envisioned, so states need to improve their understanding of the sources of ammonia, develop better inventories and seek effective ammonia control approaches.

On September 10, 2001, the Southern Governors' Association (SGA) and the Southern States Energy Board released a report on energy policy in the South at their 67th annual meeting in

Lexington, Kentucky. The SGA report calls for a national energy policy based on maintaining a stable energy market achieved by addressing supply needs, increasing conservation and improving efficiency (Summary of *Energy Policy in the South; Integrating Energy, Environment, and Economic Development: A Balanced and Comprehensive Approach*, September 2001).

The National Governors Association adopted NR-18, Comprehensive National Energy Policy, at its annual meeting in August 2001. An excerpt from the Regulatory and Environmental Issues section states:

> Congress should pass legislation to establish a flexible, market-based program to significantly reduce and cap emissions of sulfur dioxide, nitrogen oxides, mercury, and voluntary reductions of carbon dioxide from electric power generators. The legislation should provide regulatory certainty by establishing reduction targets for emissions, phasing in reductions over a reasonable period of time, and providing market-based incentives, such as emissions-trading credits, to help achieve the required reductions.

Finally, several multi-pollutant Congressional bills have been introduced. In addition, on February 14, 2002, the Bush Administration announced a multi-pollutant strategy, referred to as the Clear Skies Initiative (CSI). While implementation details are still being developed, the Clear Skies Initiative proposes to establish a cap and trade program for nitrogen oxides, sulfur dioxide, and mercury. Further, several states, including North Carolina, have adopted or are considering multi-pollutant strategies.

Multi-pollutant Strategy Recommendations

A. Support and promote strong multi-pollutant legislation for electric utility plants to assure significant reductions of SO2, NOx, and mercury both in and outside the Southern Air Principles states.

Southern Air Principles states will determine the most appropriate strategy to achieve these emissions reductions for their states. Results from SAMI revealed that each SAMI state would receive the most benefit from reductions of emissions from within their own state boundaries. Leadership by states ahead of possible national legislation is encouraged. Because an individual state may not be able to resolve its air quality issues without assistance from neighboring states and other regions, a strong national multi-pollutant strategy helps all states, including those that have reduced emissions from sources within their own borders, towards the goal of clean air. Early reductions obtained from an individual state's efforts should be recognized, encouraged and rewarded by any subsequent national measures.

The Southern Air Principles states recommend a multi-pollutant strategy that:

- Requires significant reductions in air contaminant emissions from electric generating units achieved within a reasonable and certain timeframe.
- Uses a stringent cap and trade program as appropriate and requires significant reductions in air contaminant emissions from electric generating units. The sum of emissions from all electric generating units (both existing and new) cannot exceed the total represented by the cap.
- Assures that local air quality impacts are assessed and then addressed within an expeditious and certain timeframe.
- Includes provisions that will reward and encourage early reductions; provides incentives to achieve these goals; and considers additional pollutants.
- Resolves what is the appropriate level and timing of implementation of the cap; how to allow for new growth; and what should be the appropriate scale of the trading program (individual states, four states, regional, national, etc.).

The reductions of sulfur dioxide, nitrogen oxides and mercury would provide improvements in public health and in regional air quality areas of concern, such as areas affected in a significant adverse way by deposition, visibility, ozone and fine particulate matter.

B. Reductions from other source categories should also be considered in state and national legislation and regulations.

The Southern Air Principles States recognize that sources other than electric power utilities contribute to the sulfur dioxide, nitrogen oxide and mercury emission inventories. As such, they agree to work cooperatively to improve their understanding of the emission sources and to develop strategies for effective emission reductions from appropriate source categories.

C. Recognize the value and importance of all Class I areas and work cooperatively to assure SAMI recommendations are implemented.

The Southern Air Principles states recognize the value and importance of our Class I areas and agree to cooperatively work together with groups such as VISTAS and other appropriate stakeholders in the implementation of SAMI recommendations. The Southern Air Principles states recommend that we assist in the improvement of the understanding of the sources of ammonia, and the development of better inventories and strategies for effective ammonia control approaches. Southern Air Principles states also recommend that SAMI make available to the various Regional Haze Planning Organizations (RPOs) the geographic sensitivity modeling results that show that states within those RPOs collectively impact visibility in the SAMI Class I areas. Furthermore, the level of communication and cooperation between Southern Air Principles states and the federal land managers for our Class I areas has been greatly improved and enhanced as a result of SAMI efforts.

This improved relationship has helped provide greater consideration of federal land manager concerns and provided more certainty in air quality permitting. We recommend that we continue to build on and improve this relationship.

D. Continue to consult, consider and develop strategies as necessary to successfully implement these recommendations.

In order to accomplish the above recommendations, we recommend that the chief environmental officers of the Southern Air Principles states should continue their collaborative efforts and encourage other states' participation in these efforts toward the development of emissions reduction strategies.

E. Provide periodic reports to the Governors.

The chief environmental officers of the Southern Air Principles states will provide periodic reports regarding progress to their Governors and appropriate staff. Such reports are envisioned to be presented on an individual state basis, as well as by way of future Air Quality Summits.

II. Innovative Transportation Options

Air emissions from transportation sources contribute significantly to air quality impairments in the Southern Appalachian Mountains as well as across the Southeast. SAMI projects that mobile source contributions will continue to increase without proactive steps to reduce these emissions. The policy recommendations in this report offer both short- and long-term options to address mobile source emissions across the four states and in the Southern Appalachian Mountains.

A. Alternative Fuels and Vehicle Technologies

Broad availability and use of cleaner vehicles and cleaner fuels are essential components to a southeastern strategy to reduce mobile source air emissions and offset national reliance on imported oil. A southeastern alternative fuels policy will provide both air quality and energy benefits.

Recommendation:

Increase the availability and use of cleaner fuels in the Southeast.

Implementing this goal will require that the states adopt policies that address the availability of alternative fuels, availability of alternative fuel vehicles, and fuel distribution infrastructure. To achieve this goal, the work group recommends that the states adopt the following policy options.

- Develop a southeastern regional network of alternative fuel stations along interstates and major highway corridors. In cooperation with the U.S. Department of Energy (DOE) Clean Cities program, the states should conduct a feasibility study to select initial corridors and identify potential markets and fuel types.

- Develop a broad-based regional consortium to encourage the availability and promote the use of clean and alternative fuel vehicles in the Southeast. Such a regional consortium should include state, federal and local government agencies; fuel producers, suppliers and retailers; vehicle manufacturers and dealers; public and private fleet managers, and others.
- Hold an annual Southeastern Alternative Fuels and Technology Forum beginning in the fall of 2002. The initial forum will seek to identify critical needs and near-term actions necessary to significantly increase the availability and use of clean and alternative fuels and vehicles in the Southeast; develop a consensus between government and the private sector on interstate goals for improving and enhancing alternative fuels infrastructure; and build partnerships with organizations and interests that are committed to building alternative fuels infrastructure.
- Collaborate with local governments, businesses and the U.S. Department of Energy to establish and operate additional Clean Cities programs in the Southeast. The annual Southeastern Alternative Fuels and Technology Forum will support this effort.
- Provide adequate fueling infrastructure for alternative fuel capable vehicles in state fleets in accordance with the spirit of the Energy Policy Act of 1992 and, if appropriate, to make this infrastructure available to local and federal government fleet vehicles.
- Place priority, where feasible, on purchasing alternative fuel vehicles certified to meet low-emission vehicle (LEV), ultra low-emission vehicle (ULEV) or zero-emission vehicle (ZEV) standards and challenge local governments and businesses to match this commitment.
- Identify and facilitate support for the advancement of clean alternative fuels and for vehicle and infrastructure technologies.
- Pursue incentives to promote the availability and use of clean and alternative vehicles, such as tax credits, rebates, and grants and loans for suppliers and users of alternative fuel vehicles and supporting infrastructure.

In deliberating the policy recommendations outlined in this report, the work group considered availability, benefits and disadvantages of the clean and alternative fuels and vehicles marketed and used in the four states. The work group also considered the substantial costs of developing refueling infrastructure and a delivery network. The recommendations focus first on public and private fleets, as existing alternative fuel programs in the four states have concentrated on government and private sector fleets where fuel infrastructure can be centralized and fleet managers have a large degree of control over how the vehicles are used and refueled.

Achieving the goal of increased availability and use of clean and alternative fuels and vehicles will require a concerted, ongoing effort. The states should continue to seek sources of

funding (federal, state and private sector) for necessary studies and planning and development of an infrastructure network that will meet the needs of the four states. Significant challenges in advancing the use of alternative fuels must also be addressed, for example, the relatively small number of alternative fuel vehicles currently in use and the barriers to broader use of alternative fuels by average citizens. Additionally, the states must help public fuel providers understand the advantages and benefits of providing multi-fuel stations and offer incentives that encourage providers and suppliers to invest in infrastructure for multi-fuel stations.

B. Regional Transportation Initiatives

Recommendations:

Develop regional alternatives to automobile travel to address the growing trend in vehicle miles traveled and to provide desirable and efficient alternatives to motor vehicle and air transportation.

- The states should work cooperatively to seek support and funding for an integrated regional transportation system initiative, including an integrated intercity rail plan to connect major cities with other than highways.
- To reduce air pollution in Great Smoky Mountains National Park, the states should support alternative transportation projects to relieve congestion and reduce vehicle emissions inside the park, as well as on major routes used to access the park.
- The states should develop a regional transit partnership that will explore options for an integrated regional transportation system (e.g., intelligent transportation systems, smart card technology, information clearinghouse) that unites transportation systems and tour operations near the park.

A long-term plan for reducing vehicle miles traveled and associated mobile source emissions must include convenient, accessible and affordable mass transit alternatives on the local level as well as from a regional approach. Efforts must also continue to relieve congestion and vehicle emissions inside the national park.

C. Heavy-Duty Vehicle and Equipment Initiatives

Recommendation:

Where feasible, the states should implement strategies to reduce pollution from state-owned and/or operated heavy-duty vehicles and equipment.

The states should consider strategies such as emissions control retrofits, cleaner diesel fuels, accelerated vehicle replacement, repowering, changes in operating characteristic and engine

reprogramming. The states should also challenge local governments, transit operators and businesses to match this commitment.

Heavy-duty vehicles and equipment, including highway and non-road applications, emit significant amounts of fine particulate matter ($PM_{2.5}$) and the precursors that lead to ground-level ozone and $PM_{2.5}$ formation in the Southeast. Although new, more stringent federal emissions standards will be phased in beginning in 2004, heavy-duty engines typically have long service lives and, as a result, the current fleet of dirtier heavy-duty vehicles and equipment will likely be polluting for many more years to come. However, there are several potential barriers to implementing strategies to reduce heavy-duty vehicle and equipment emissions that must be overcome.

D. Southeastern Alternative Fuels and Technology Task Force

Recommendation:

Appoint a Southeastern Alternative Fuels and Technology Task Force to coordinate regional alternative fuels initiatives. The task force would consist of state transportation, energy and air quality officials, and others as determined by the governors. Among its duties, the task force would:

- Plan and hold an annual Southeast Alternative Fuels and Technology Forum in partnership with the U.S. DOE Clean Cities program.
- Establish and work with the regional alternative fuels / technology consortium.
- Act as liaison between the regional consortium and state agencies/environmental chiefs/governors to ensure that state goals and needs are being addressed appropriately. The task force would also serve to communicate the limitations and liabilities of various technologies and fuels to state government.
- Work to lower the barriers to implementation and utilization of clean alternative fuels in the Southeast.
- Identify applicable laws, rules and policies that need to be changed or developed in order to promote a regional alternative fuels network.
- Work within their states to identify and support state fleet purchasing and vehicle use policies needed to promote the purchase and use of clean alternative fuels.

Developing an effective cooperative regional effort will require ongoing participation and responsibility from the state agencies involved. This task force would provide the necessary continuity and communication within and between the four states, other government agencies and private sector partners.

III. Innovative Energy Options

Energy production and consumption clearly have significant environmental and economic impacts on the region. According to projections by the Southern Appalachian Mountains Initiative (SAMI), the Southeast could see a 50 percent increase in electricity generation by the year 2010 as compared to 1990 levels. In comparison, SAMI projects southeastern population growth will be approximately 25 percent during that same time period. These projections assume that growth will continue at the same rate as in the past decade and that no concerted conservation efforts are implemented. As the southeastern states continue to grow, it is incumbent upon state and federal government leaders to take steps to curb per capita energy consumption and to seek means to further reduce associated air quality impacts.

The work group has considered numerous policy options that address air quality issues through energy programs. The following energy policy options address both air quality concerns and energy consumption growth trends in the Southeast.

A. Green Power

Recommendation:

Develop a strong green power network in the Southeast. To promote the development and increased use of green power, the states should—

- Pursue financial incentives that encourage growth and investment in green power technologies.
- Encourage investor-owned, public and rural electric cooperative utilities to offer green power pricing programs.
- Consider means to purchase green power for state-owned and operated buildings.
- Promote commercial and residential use of green power, where available, including incentives for consumer use.
- Partner with the Atlanta Regional Office of the U.S. Department of Energy in cooperative green power initiatives. Annual southeastern green power summits should be held to review current issues in developing green power sources and to support further coordination of projects in the Southeastern states.

Green power incentives throughout the states, such as North Carolina's 35 percent tax credit for green power generators, will encourage economic development, especially for businesses looking to promote their technologies throughout the region. Incentives must also be offered to end-use customers, for example, state or utility loan programs, rebates, tax credits and zoning ordinances designed to reduce financial barriers to green power. There must also be an extensive green power

education program to provide technical information for industry professionals, as well as more general information to the public.

B. Energy Efficiency for Buildings and Industry

Recommendation:

Adopt the new International Energy Code and consider means to encourage compliance with energy-efficient construction standards, such as providing financial incentives to local governments responsible for codes implementation and enforcement.

A vast amount of our energy use occurs in our buildings and industrial sectors, roughly equating to about two-thirds of our total energy consumption. Building energy codes serve not only to improve energy efficiency, but also to reduce energy demand. Energy-efficient buildings have lower energy costs, create less demand for fossil fuels, and reduce or prevent air emissions from new power generation. According to the Building Energy Codes Program, U.S. Department of Energy, strengthening energy codes increases the likelihood of energy and cost savings in new construction and renovations to existing buildings. New buildings can be designed to be both more comfortable and more efficient, cutting heating and cooling costs by close to 50 percent.

In the industrial arena, hundreds of millions of dollars could be saved annually with energy efficiency measures that would average paybacks of three years or less. Much of these savings could be found in troubled industries, such as textiles and furniture, which desperately need to reduce their operating expenses in order to compete effectively in the global marketplace. The states should aggressively market their existing programs or establish new programs that assist industry in reducing its energy use and resulting air emissions through quality energy auditing, training and financial incentive programs.

Recommendation:

Place special emphasis on reducing energy expenditures in public education through energy audits, design and technical assistance, training for school officials and building designers, and adequate capital financing to secure the needed energy improvements for both new and renovated buildings. In both the construction of new facilities and the renovation of existing buildings, states should seek to reduce energy expenditures by at least 30 percent.

In the buildings sector, which constitutes about 36 percent of our energy usage, each of the participating states faces the prospect of spending many billions of dollars over the coming decade for new construction and renovation of public schools and community college and university buildings. These education buildings, where energy expenditures may exceed more than $2 billion

for the four states, drain taxpayer resources for energy expenses that could be more wisely invested in faculty and teacher support, as well as other pressing educational needs.

Recommendation:

Institute a comprehensive and aggressive energy efficiency program for state facilities and universities that will yield a minimum reduction of 30 percent in energy expenditures. Alternative financing strategies, such as performance contracting and the issuance of bonds, should be seriously considered as a possible means of covering the capital expenses of this much needed endeavor.

Energy efficiency improvements in state facilities and related operations could yield substantial cost savings. Given the present budget difficulties in each of the four states, it is an ideal time to reduce energy expenses. For example, Tennessee expects to save $5.1 million annually through energy efficiency in state buildings. Aggressive energy conservation programs would also place the governors in position to lead by example, demonstrating that states can and will take action to control their energy expenditures. Such leadership will give added credibility to other state energy programs that are reaching out to local schools and governments, business and industry, and the general public.

Today, state agencies and universities in the four states are estimated to spend in excess of $700 million annually on their energy bills. A comprehensive energy efficiency campaign in state facilities could reduce this amount by 30 percent or more. Alternative financing strategies, such as performance contracting and the issuance of state bonds, should be investigated to potentially provide a vehicle for raising the capital for such an effort during the present lean budget period.

C. Industries of the Future (IOF) Program for Improving Regional Air

Recommendation:

Expand, broaden and enhance existing state energy efficiency programs for industry to result in significant reductions in air pollutants and costs savings to industry that is increasingly struggling to compete in a global marketplace. States should partner with the U.S. Department of Energy, as in the recent case of Tennessee and North Carolina, to formally establish Industries of the Future programs that seek increased efficiencies and process improvements in selected energy-intensive industries.

Expanding and enhancing existing state and federal energy efficiency programs for industry can achieve large reductions in both energy use and air emissions for the region. The U.S. Department of Energy (DOE) Industries of the Future (IOF) program seeks a 25 percent improvement in energy efficiency and a 30 percent reduction in air emissions for the selected energy-intensive industries by 2010, and a 35 percent improvement in energy efficiency and a 50

percent reduction in emissions for the selected industries by 2020. This program motivates and assists industry with developing technology solutions to critical energy and environmental challenges that will produce additional business and community benefits.

D. Financing Energy Efficiency, Renewable Energy and Low-Income Needs

Recommendation:

Give strong consideration to developing and advocating state legislation that would create a public benefits fund to finance state energy efficiency, renewable energy and low-income energy programs.

Ensuring that our homes and businesses operate in the most efficient manner and that the region's extensive renewable resources are developed over the next decade to meet a large portion of the region's anticipated energy growth requires a mechanism to finance these activities. The need for this financing mechanism has never been greater.

To meet this need and fill the gap created by the elimination of energy efficiency and other programs at utility service companies, the growing trend across the country has been to create a public benefits fund by placing a small charge on each electric utility customer. More than 20 states now have a public benefits fund in place, using a minimal charge of 1 to 3 mills per kilowatt-hour (i.e., 1 mill = .1 of 1 cent). Although this is a very small charge per customer, costing only a few dollars per year, it can generate substantial funds needed for energy efficiency and renewable energy investments, as well as low-income assistance.

Funds collected for a public benefits fund should be used primarily as direct incentives to energy users to employ energy efficiency and renewable energy measures in their homes, businesses, schools and local governments. Outreach and education is an essential ingredient to raising consumer awareness and helping them make sound, informed decisions about the purchase of these energy-related measures. A minority portion of the funds should also be used to educate consumers about the benefits of these technologies and to augment low-income fuel payments when funds from existing sources are exhausted.

E. Renewable Portfolio Standard

Recommendation:

Give strong consideration to developing and advocating for state legislation that would establish a renewable portfolio standard. The requirement of renewable resources, as part of the utilities' overall generation mix, should be set to correlate with the available renewable resource potential and existing resources that are being utilized.

The South's renewable energy resources are among its greatest assets. The region is blessed with the most abundant biomass energy resources in the nation (e.g., animal waste, wood waste,

potential for energy crops and landfill gas). The southern region also possesses good solar and hydro resources and has extensive potential for wind energy in the Appalachian Mountains and along its coastline. Many of these resources are virtually environmentally benign, such as solar and wind power, and the remainder typically have far lower emissions and less environmental disruption than typical fossil fuel plants. The development of these resources, located within the boundaries of our states, leads to less dependence on outside sources of fuel and generates in-state jobs and economic growth.

To accelerate the development of renewable resources, ten states in the nation have taken the lead and established a renewable portfolio standard (RPS). The RPS establishes a minimum percentage of renewable energy generation that is required, usually increasing gradually over a decade or more, to be provided by utility companies in the state. This percentage usually begins at a level near current renewable energy generation and then grows each year. In most states, trading of credits is allowed to enable smaller utilities or those having difficulty developing renewable resources to meet the requirement by buying credits from those who may have developed excess renewable capacity.

F. Interconnection Standards and Net Metering

Recommendation:

Give strong consideration to developing and advocating state legislation, such as that in the state of Georgia, which would allow for net metering and simplified interconnection standards for small renewable energy generators. Net metering laws encourage small-scale renewable generation and, thereby, increase the contribution of these resources to the state's energy mix. Alternatively, a state could also enact net metering rules through the appropriate regulatory authority.

The development of renewable and distributed resources across the South suffers from a lack of clear and streamlined standards that pave the way for easy interconnection of these resources to the utility grid. In many instances, roadblocks and barriers have been placed in front of small generators who wish to sell power. Since many renewable resources are inherently decentralized, removing the barriers to interconnection is essential to tapping their full potential.

To date, 36 states have passed legislation that allows for "net metering" or the exchange of power bought and sold by small generators at the utility company's retail rate. Such laws, now in place in Georgia and nearby Virginia in our region, require only a single meter on a household that runs forward or backward as energy is supplied to or purchased from the grid. Such laws also spell out simple interconnection standards and clarify the process for tying into the utility grid.