

DRAFT -- DRAFT -- DRAFT

The Mining Industry Climate Action Plan (MICAP)

The National Mining Association (NMA) supports a voluntary, research and technology driven response to the climate issue. Our climate policy, interlinked with and incorporated into NMA's Sustainable Development Principles, states that this involves:

- Recognizing that the potential for climate change is a special concern of global scope that requires significant attention and a responsible approach cutting across all three of the sustainable development pillars: environmental, social and economic;
- Encouraging climate policies that promote fuel diversity, development of technology and long-term actions to address climate concerns in order to ensure that technological and financial resources are available to support the needs of the future; and,
- Supporting additional research to improve scientific understanding of the existence, causes and effects of climate change and to enhance our understanding of carbon absorbing sinks; advancements in technology to increase efficiencies in electrical generation and capture and sequester carbon dioxide; voluntary programs to improve efficiency and reduce greenhouse gas emission intensity; and, constructive participation in climate policy formulation on both international and national levels.

An equally important part of our policy is support for the President's U.S. Climate Change Strategy announced February 14, 2002. This voluntary program charts a positive path that addresses and advances the climate issue without the economic penalties – including industry dislocation and job losses - that would result from mandatory "command and control" reduction programs.

The President is establishing the President's Energy Partners for Climate Change, a challenge to American business to develop and participate in voluntary initiatives that will contribute to the overall goal of reducing greenhouse gas intensity by 18 percent by 2012. The Mining Industry Climate Action Plan (MICAP) as described in this document, has been drafted to give the members of the mining community the opportunity to contribute toward that goal on a voluntary basis by choosing the path that is most economically and technically possible for each individual company. MICAP will also provide members of the mining industry with a means to report on the progress made toward achieving the individual goals that companies may wish to set.

As is the case with all industries, each company in the mining industry has a different operating and business profile. Some companies are in a better position than others to participate in these programs. Some may have more opportunities to reduce, sequester, offset or avoid greenhouse gas emissions than others. Each company will consider their own unique situation when making a decision on which actions can be undertaken taking into account the company profile and both technical and financial considerations. The initiatives that have been proposed are designed for flexibility so that members participating can tailor a voluntary program that best meets their own requirements.

The program that follows focuses steps that will be taken, activities that will occur and goals that will be achieved in 2003. This is an ongoing program however, and during 2003 members of the industry will work to develop additional initiatives that will be launched in 2004 and after.

Our specific goal is to obtain participation in, or the agreement to participate in, in one or more of the following initiatives by as close to 100 percent of our Board membership as is feasible by the end of 2003. NMA will conduct an active and ongoing outreach program with our members to convey the importance of participating in this program and to offer suggestions on emission management.

NMA commits to issuing a review and progress report on MICAP activities early in 2004. This report will include a review of the goals set and activities undertaken with an assessment of accomplishments. It will also include a catalogue of activities that our members are engaged in to avoid, reduce or sequester emissions and to improve emissions intensity as well as our estimates of emission intensity levels and the potential for cost effective reductions in emissions in the future.

The Allied Partnership Program.

Although energy used for mining and processing per unit of product may not be as great as in other industries, there is the potential to increase efficiency and to lower the amount of energy used in the production process thus lowering both costs and emissions. To illustrate, one coal company found that optimization of a pumping system in their preparation plant increased the efficiencies of that system by 14.9 percent, saving several thousand dollars in energy costs and lowering CO2 emissions by approximately 17 percent. A similar optimization at a gold company in the western part of the United States showed approximately the same result.

The Allied Partnership Program, a formal agreement with the Department of Energy Office of Energy Efficiency and Renewable Energy (EERE), is being designed to make certain that these optimization techniques are made known and available to as broad a spectrum of the mining industry as is possible.

Specifically:

1. The Allied Partnership agreement between NMA and DOE – EERE will be completed in mid to late January.
2. In 2003, NMA and DOE, resources permitting, will host a minimum of six workshops in major mining centers focusing on training in pumping systems, sensors, motor efficiencies and other best practices. These will begin in the late spring and continue throughout 2003.

NMA's commits to achieving participation in this program from as close to 100 percent of our base membership (coal, metals and non-metals producers and mining equipment manufacturers) as possible. NMA will work with EERE to compile a record of the results achieved as a result of employing these

optimization techniques and the emissions avoided as a result and will report on these results as early as possible in 2004, but no later than September.

There is a large potential for energy and cost savings in the over 1000 mines several hundred preparation and processing plants that our membership operates.

3. In 2003, NMA and our members will work with EERE to identify additional areas in the mining process where energy savings and emissions reductions can be achieved. The results of this work will be included in NMA's MICAP report. Resources permitting, we will work with EERE to develop training materials and to host workshops to disseminate these materials. Our goal is to hold a minimum of an additional four workshops in these new areas in 2004.
4. Finally, NMA will outreach and work with state and regional mining associations to expand the audience for these training sessions to some of the possibly smaller operations that are not currently counted in our membership. NMA will work with the state and regional associations include results from these activities in the report referenced above.

The Mining Industry of the Future Program

NMA and EERE have been partners in the Mining Industry of the Future program since 1999. During that time, the industry has developed a Vision Statement and three technology roadmaps: Crosscutting Technologies for Mining, Processing Technologies and Exploration and Mining Technologies. These roadmaps set performance targets and the research projects selected are geared toward meeting these targets. Four solicitations have been completed and three rounds of project awards given. The projects begun under the first solicitation are nearing completion.

EERE estimates show that the technologies developed by the projects now underway, will reduce greenhouse gas emissions by 600,000 metric tons per year by 2010 as they are deployed.

1. NMA commits to expanding this important research program and will revise the mining industry's vision statement to reflect new research needs with an emphasis on areas that will increase efficiency, lower costs and reduce greenhouse gas intensity. This will be done in 2003 so that budget requests and research solicitations can reflect these new priorities.
2. NMA commits to work with the first, second and third round sponsors as the projects are completed to encourage use of these new technologies throughout the mining industry wherever economically and technically possible in order to assure that the potential 600,000 metric ton per year reduction occurs by 2010. Progress will be reported in NMA's MICAP report.
3. Nearly one-half of NMA's mining company membership is actively involved as partners in the I of F research projects. NMA will work to expand participation of our membership in these and other research activities (see other initiatives under Coal Methane and Reclamation). Achievement and maintenance of emissions

intensity reduction goals will only be met in the long run through research and the development and use of new technologies.

Coal Methane

The coal industry is a leader in reducing methane emissions. Methane is removed from underground coal mines either in advance of mining, during mining activities, or after mining has occurred, exiting the mine through degasification systems or mine ventilation systems. Although not economically or technically feasible in many locations, coal companies do recover and sell coal mine methane wherever it is possible. Over the 1990 – 2000 time period recovery of coal mine methane resulted in a reduction of methane emissions by 30 percent or by the equivalent of some 25 million metric tons of CO₂ equivalent per year.

Since 1994 NMA members have worked with the Environmental Protection Agency (EPA) on a voluntary basis through the EPA's coal mine methane outreach program. This program has provided technical assistance to the industry to identify and implement methods to use CMM productively. Additionally, EPA has worked with DOE and the National Energy Technology Center in research project to develop technologies that will allow recovery from ventilation air methane where low concentrations of methane gas have, heretofore, made recovery difficult if not impossible from both an economic and a technical standpoint. NMA members are involved both in this research and in testing promising technologies. As we go forward:

- NMA members will work to continue to maintain the level of coal mine methane reductions achieved and to recover additional methane wherever economic, technological and mining conditions permit.
- NMA members will continue to be involved in CMM-research activities. NMA and members will continue to encourage and work with DOE and EPA to develop, test and demonstrate new technologies to capture ventilation air methane with the goal of confirming and improving the technical and economic feasibility of the technologies needed to recover these emissions. Over the long term, this has a large potential for the reduction of GHG emissions.
- By mid 2003, NMA will establish a formal mechanism to work with DOE and EPA to disseminate information on methane recovery technologies, information on the Coal Methane Outreach Program and on other efforts to expand recovery of coal mine methane. NMA will focus a portion of our outreach program on an expansion of the number of companies involved in CMM research activities.

Reclamation and Sequestration

Since 1977, the mining industry has reclaimed nearly 2 million acres of land and that number will increase significantly in the next decade and beyond. Reclamation of mined lands offers significant opportunities to reduce greenhouse gas emissions beyond those now being sequestered through an increase in the amount of land reclaimed through forestation.

According to the Office of Surface Mining (OSM), since the advent of SMCRA (The Surface Mining Control and Reclamation Act of 1977) many reclamation projects have involved planting fast – growing dominant grasses to create pastures and other grasslands. This is being done to comply with SMCRA regulations even if it is possible to reforest after mining. This does not maximize the potential for carbon sequestration.

It may be possible in many circumstances to reverse the current practice and to increase the number of acres reforested. Again, according to OSM, reforestation would be attractive for economic, social and environmental reasons. The economic value of the land could be greater due to the development of ecological assets and renewable timber resources. Environmental benefits include improved water quality, creation of habitat reserves and sequestration of carbon dioxide. Social benefits include job creation, increased tax revenue and greater opportunities for recreation.

Current reclamation regulations and policy need to be revised for forest carbon sequestration to be included as an objective of post-mine land use. Additionally, some modification of bonding requirements may be necessary to enable the mine operator to reforest land rather than plant grasses.

The amount of carbon that could be sequestered through the afforestation or reforestation of mined lands is unknown at this time although the potential is believed to be large.

NMA and its members will:

- Participate in the process underway at the Department of Agriculture to develop and agree on methodologies to measure, monitor and verify the amount of carbon sequestered both on agricultural lands (applicable to lands reclaimed through creating grasslands) and forest lands. Once that methodology is established, NMA commits to working with USDA, DOI and other appropriate government agencies to estimate and report on the amount of carbon now being sequestered on reclaimed lands. This estimation will allow the industry to set goals for carbon sequestration on reclaimed lands. The report will be done within a year after methodologies are established.
- Establish a working group to determine the changes that may have to be made in regulations to encourage forestation and forest management. NMA will then work with OSM and other appropriate agencies to effect changes that are needed and are practical.
- Establish a formal mechanism to work with OSM and other relevant agencies to establish a "best practices" for sequestration on mined lands web based data base so that NMA members (and the public) have ready access to the latest research and information.
- Work with appropriate state and federal government agencies, and with other industries such as the utility industry, to explore opportunities for sequestration on AML properties and to distribute information about these potentials throughout the industry.

A Greenhouse Gas Emissions Reporting Protocol for the Mining Industry

The President has established a national goal – to reduce the greenhouse gas intensity of the U.S. Economy by 18 percent by 2012. In order to measure progress toward achieving that goal – on a national or a sector basis – it is necessary to have a reliable and consistent way to measure and report on emission levels. The Department of Energy has developed a reporting methodology that is now used for voluntary reporting under the Department's 1605(b) program. This program is in the process of being improved to enhance measurement accuracy, reliability and verifiability of the reductions reported. NMA supports this effort to improve the voluntary greenhouse gas data base.

With some exceptions, the guidelines used for voluntary reporting under the 1605(b) program are not sector specific. There are specific guidelines for measuring and reporting on coal mine methane emissions, however the guidelines that would be used for other mining activities are insufficient to make reporting an easy task. NMA believes that a simple, and consistent, reporting methodology for the mining industry would encourage greater participation in this voluntary program. Therefore:

- NMA has made a commitment to complete preparation of a "Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Mining Industry" by the end of 2003. This will give NMA members (and other mining companies) a "how to" instruction manual and spreadsheet model to make reporting as simple as possible with as low a cost as possible. This will contribute to the President's goal of expanding participation in the voluntary greenhouse gas emissions data base.
- Upon completion of the compendium NMA will conduct a series of workshops for members to discuss practices and recommendations for measuring and assessing emissions.
- NMA will encourage NMA members to begin reporting emissions under the 1605(b) program and has established an ultimate goal of 100 percent participation in the program. This will enable companies, and the industry, to measure progress that the mining industry is making toward contributing toward the President's emissions intensity reduction goal and will enable companies to consider and set emissions intensity goals.

Other Activities

National Mining Association has established a separate group to explore options to address the climate issue. The group includes representatives from coal, metals and non-metal producers as well as equipment manufacturers. Options that will be explored in 2003 include, but are not limited to:

Research:

Sequestration. NMA members are already involved in research projects designed to reduce, avoid or sequester emissions. The Industry of the Future program is one

example as is the research into new technologies to improve coal mine methane capture (described above) is one area of current focus. At least three NMA members are now involved in the 'zero emissions coalition' a group exploring the opportunities for sequestration in geological formations. Others are involved in research aimed at improving carbon uptake of soils. Several members are planning to participate in the Regional Carbon Sequestration Partnerships solicitation just issued by DOE.

Greater strides in reducing greenhouse gas emissions intensity will be difficult to do on a cost effective basis without new technologies and new methods. NMA will work with DOE, DOI, EPA and other agencies to identify research opportunities in carbon capture, disposal and sequestration and to establish a better outreach program to advise our members (and others in the industry) of these possibilities and to encourage active participation in this research.

Clean Coal Technologies. NMA will continue to work with the Coal Utilization Research Council, Electric Power Research and other groups to refine emissions reduction and efficiency goals for new technology research. The ultimate goal development and commercialization of a zero emissions power plant. This requires both time and research dollars. NMA members participate by advocating research budgets during the Congressional Appropriations process and by investing in that research directly. An indication of the dollars spent by industry in these research endeavors will be included in the 2004 NMA MICAP report.

New methods and procedures: NMA will lead an effort among our members to explore the opportunity to substitute biodiesel for diesel fuel in mining operations. Due to use of renewable energy, it is thought that CO₂ emissions would be reduced however additional work will be required to ascertain the feasibility of this option and to quantify the amount of potential emissions reductions.

Reports: NMA commits to a report that will outline the goals that we have set and measure progress made toward those goals. The first NMA MICAP report will be issued shortly after the close of the first quarter of 2004. During the last part of 2003, NMA will conduct a survey of its membership to get a more complete picture of the activities that companies are undertaking to avoid, reduce or sequester emissions. NMA will combine the information gathered from this survey with information developed through the Allied Partnership for this report. This report will also indicate additional programs that the industry is contemplating for 2004 and beyond.