The Lisbon Declaration II

of the

International Insulation Industry

on CO_2 reductions

Submission to the Conference of Contracting Parties

of the UN International Framework

Convention on Climate Change

The Hague, November 2000

In 1997, the Kyoto Protocol on Climate Change was adopted by the third Conference of the Parties (COP III) to the United Nations Framework Convention on Climate Change (UNFCCC). Under the Kyoto Protocol, certain industrialized nations agreed to limit their greenhouse gas emissions to, on average, 5 percent below 1990 levels, for the period from 2008 through 2012. The Kyoto Protocol seeks to implement these legally binding limits on emissions through the creation of a variety of flexibility mechanisms, including market-based mechanisms, designed to encourage compliance while reducing the costs of implementing the limits.

In 1999, at the Fifth Conference of the Parties (COP V) in Bonn, international leaders continued their efforts by reaffirming the timetable for decisions on many of the critical issues left unresolved by the Kyoto Protocol. The Parties agreed to an accelerated work program in preparation for the Sixth Conference of the Parties (COP VI) to be held in November 2000 at The Hague, The Netherlands.

POTENTIAL SAVINGS

As demonstrated by the first Lisbon Declaration presented in 1997 by the international insulation industry, heating and cooling of buildings in both Western Europe and North America are major contributors to CO_2 emissions. In turn, one of the most efficient and achievable means of cutting CO_2 emissions is to reduce energy use in the residential, commercial and industrial building sectors through the use of existing energy-efficiency technologies. Effective use of existing energy-efficiency technologies, like thermal insulation, can begin immediately, providing long-lasting environmental and public health benefits over a lifetime.

For example, according to a June 2000 study by the Alliance to Save Energy, researchers found that improved levels of insulation in the industrial and manufacturing sectors in the United States could result in a savings of roughly 2 percent of total manufacturing energy use from on- and off-site-produced energy or 487 trillion Btu (almost one-half quadrillion Btu).

Emissions reductions can also be realized through the use of thermal insulation in other countries. In Mexico, effective use of thermal insulation in industrial facilities would mean a 2.6 percent reduction in the usage of fossil fuels, in turn, reducing emissions of contaminant gases by 2 million tons per year. In Australia, an annual savings potential of 3 million tons of heating and cooling-related CO_2 emissions could be realized by introducing thermal insulation. In Japan, it is estimated that if all housing in the country were insulated to the latest standard adopted in April 1999, the annual reduction in CO_2 emissions would total approximately 27.5 million tons.

Since 1984, the European Commission and the European Parliament have made statements stressing that energy savings in buildings of up to 40 percent is both necessary and feasible. Research papers have confirmed that such savings can be achieved. A recent study (commissioned by the European Alliance of Companies for Energy Efficiency in Buildings) provides a detailed assessment of the potential for the saving of carbon dioxide emissions in the European building stock. The study concluded that the European Commission's estimates of the potential savings of 20-25 percent of current building energy consumption were realistic. After examining the residential, industrial and commercial buildings sectors, the study concluded that the potential for carbon dioxide emission reduction could be between 430 and 452 million tonnes per year by 2010, if such a program began in 2000. Realizing such savings would reduce current EU carbon dioxide emissions by 12.5 percent. A second study analyzing the cost implications of energy-efficiency measures in the reduction of CO_2 emissions from the European building stock confirms that investment in energy savings through insulation is among the most cost-effective measures to combat greenhouse gases.

In Argentina, the impact of improved thermal insulation on energy use and CO_2 emission reductions has been estimated. A study by the Argentine Glass Wool Manufacturers

Association found that the introduction of thermo-acoustical insulation in all residential buildings, to the levels established by IRAM 11605 Standard (in its level "A" or "Recommended" with suitable public and private controls and audits), will produce energy savings of 39,000 million Kwh/year, equivalent to 3,048,000 tons of oil. This quantity is 82 percent of the current energy consumption for heating and represents 8.4 million tons of CO_2 emissions savings. These savings could be used to increase Argentina's gas exports, helping to balance its external trade account and in this way, produce a more rapid growth of Argentina's GDP.

In Canada, an August 1999 report from the National Climate Change Program estimates that the use of increased levels of insulation through a national energy-efficient retrofit program could significantly reduce CO_2 emissions. The report estimates that CO_2 emissions could be reduced by 3.14 Mt/yr. (Mt = 1 million metric tons) in the residential buildings sector and 3.82 Mt/yr. in the commercial and institutional buildings sectors. The combined savings of 6.96 Mt/yr. would, if realized, represent a 5.5 percent reduction of the estimated combined CO_2 production for the year 2010 in these sectors.

ROLE OF EXISTING TECHNOLOGIES

Existing, off-the-shelf energy-efficiency technologies, like thermal insulation, high-efficiency equipment, solar panels and other energy-efficiency measures, represent the most immediate, cost-effective solutions to stem carbon dioxide emissions that lead to global warming and climate change. These technologies are readily available throughout the world and can be easily implemented for minimal cost. In addition, the increased application of an "environmental technology," like thermal insulation, can help improve air quality, reduce the impact of climate change, and ultimately result in public health benefits.

The use of existing energy-efficiency environmental technologies to achieve emissions reductions should be encouraged in both industrialized and developing countries. However, in order for these energy-saving existing technologies to be readily employed, it is imperative that governments from around the world develop market-based incentives to encourage their widespread use. Such market-based incentives, utilizing readily available, existing energy-efficiency technologies, can help achieve significant emissions reductions in both developed and developing countries alike.

REGULATORY APPROACH

Over the past several years, policymakers in Europe and the United States have considered a wide range of approaches to environmental regulation. In the U.S., for example, early environmental regulation assumed a "command-and-control" approach, generally rejected by business and industry on the basis of the high cost of environmental protection. Since then, regulation has evolved to an approach that combines minimum energy-efficiency codes and standards for buildings with incentives

for greater efficiency, while encouraging ongoing efforts to find better, cheaper and faster ways of saving energy and reducing emissions.

In the European Union, pollution taxes and charges have been used in a number of member states. Policy evaluation in The Netherlands has demonstrated that tax breaks for retrofitting of insulation did help considerably in speeding up the conversion of the existing housing stock to state-of-the-art levels of insulation and energy conservation.

INCENTIVE APPROACH

Among the market-based incentives that should be recognized and encouraged by international leaders at COP VI to increase the utilization of existing energy-efficiency technologies are energy-efficient mortgages and tax incentives for energy-efficiency capital investment directed towards both the residential and industrial sectors. This incentives approach to energy efficiency provides multiple energy, environmental and economic benefits that can be achieved in developed as well as developing countries throughout the world.

For example, energy-efficient mortgages (EEM) provide an opportunity for a market-based incentive geared toward meeting the growing demand for improved energy efficiency. EEMs provide a government-sponsored financing tool that allows homebuyers to include the cost of retrofitting their homes with cost-effective, energy-efficient features into the mortgage. EEM programs allow current mortgage underwriting guidelines to be adjusted for the economic benefit of home energy savings by increasing the debt-to-income ratios used in evaluating the borrower's ability to repay the mortgage loan.

Another market-based incentive that should be considered is a tax credit for the purchase of energy-efficient new homes and for energy-efficiency improvements to existing housing stock. Tax credits for energy-efficient new homes will support home construction, in turn generating jobs and tax revenues. In the United States, it is estimated that the construction of 1,000 single-family homes generates 2,448 jobs in construction and related industries, approximately $79.4 million in wages, and more that $42.5 million in federal, state and local tax revenues and fees. Additional benefits from an energy-efficiency residential tax credit include increasing the affordability of homes for first-time buyers, reducing the homeowner's monthly energy bills by reducing energy use, enhancing the overall value of the home, and providing cumulative energy savings and environmental benefits for the life of the home.

In its fiscal 2001 budget package, the current U.S. Administration proposed a tax incentive for consumers who buy new, energy-efficient homes. Under the President's budget proposal, consumers would receive a $1,000 tax credit for homes purchased from 2001 to 2003 that use at least 30 percent less energy than the standard under the 1998 International Energy Conservation Code. A $2,000 tax credit would be available for homes purchased from 2001 to 2005 that use at least 50 percent less energy than the IECC standard.

Similarly, legislation introduced in the United States Congress in 1999 also seeks to establish a tax credit to ensure that all homes will be constructed or renovated to be energy efficient. With the implementation of this credit, builders in the United States will have an incentive to construct modestly priced, energy-efficient new homes and low- and middle-income homeowners will be encouraged to upgrade their existing homes with existing energy-efficiency technologies. To achieve this credit, homes must be constructed or renovated to be 30 percent more efficient than the standards included in the 1998 International Energy Conservation Code.

In Europe, research conducted by the Belgian Building Research Institute for the European Commission has calculated that 150,000 man/years can be created by retrofitting when one takes a ratio of retrofitting 1 percent of the existing housing stock per year. It is emphasized that these are market-based jobs, not subsidized ones.

In Japan, policymakers have created a public loan program with a low interest rate called the "premium loan for high energy efficient housing." The loan is intended to encourage the more effective use of energy in housing, and in turn, reduce CO_2 emissions.

Incentives in Mexico have taken the form of credits to industry and to homeowners. For industry, credits are issued to assist manufacturing enterprises and service companies, including shopping centers and commercial buildings, in evaluating the potential savings from investing in insulation. Thereafter, assistance is offered in obtaining proper funding from international and local financial funds. Manufacturing plants have profitably invested in improved steam systems, adding thermal insulation. Commercial buildings and malls have gained in comfort and reduced costs by adding thermal insulation.

For Mexican homeowners, the program has gone one step further by offering funds to families with conditioned-spaced homes to improve the energy efficiency of the dwelling. Amounts are established in relation to the size of the home and monthly energy bill. The materials are paid directly by the Power Company with money coming from several sources, namely the Power Company, the municipal government, the state government, the federal government and one or two international funds. The homeowner will pay back over an extended period of time, and is charged a fixed amount to the energy bill, including a low interest rate.

The initial experience was to furnish 60,000 new homes with improved thermal insulation in the city of Mexicali. Currently, the residential experience is being extended to other large cities in Mexico. In all cases the results have been extremely satisfactory; the homeowner saves 60 percent on his energy bill during the summer months; the Power Company has leveled yearly energy demand significantly; and the cost to government is small.

CONCLUSION

Market-based incentive programs, which encourage and reward businesses and industry that continually search for and implement new and better ways to reduce greenhouse gas emissions, should play a critical role in the policymaking decisions resulting from COP VI. The use of tax credits and other incentive programs that encourage the application of existing, energy-efficiency technologies, like thermal insulation, offer the most effective, immediate and cost-effective solution to stem carbon dioxide emissions that lead to global warming. Furthermore, the use of existing, energy-efficiency technologies can help reduce the inefficient burning of fossil fuels and the subsequent air pollution, lessening the impact of climate change on public health.

Equally important is the need for adoption and implementation of appropriate building energy codes, which recognize the environmental benefits of reduced energy use for both new construction and existing residential, industrial and commercial buildings. In those countries where building energy codes currently exist, it is critical that these codes are enforced to ensure maximum energy reductions.

Market-based incentives, including tax credits, offer a real opportunity for significant potential emissions reductions in both Annex I and developing countries alike. Such incentive-based programs also reflect the intent of the Kyoto Protocol that domestic action must occur first, before international activity, such as emissions trading, can successfully occur. These and other market-based incentives should be embraced by participants at the Sixth Conference of the Parties to ensure that an environmental technology, such as thermal insulation, can be deployed immediately to stem carbon dioxide emissions that lead to global warming.

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