NAM National Association of Manufacturers

MANUFACTURING MAKES AMERICA STRONG

Testimony

of Frederick L. Moore

The Dow Chemical Company

on behalf of the National Association of Manufacturers

before the Subcommittee on Energy and Environment, Committee on Science and Technology

United States House of Representatives

Hearing on Revisiting the Industrial Technologies Program (ITP): Achieving Industrial Efficiency

September 25, 2007

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The Dow Chemical Company

STATEMENT FOR THE RECORD

SUBCOMMITTEE ON ENERGY AND ENVIRONMENT
COMMITTEE ON SCIENCE
U.S House of Representatives

HEARING ON

Revisiting the Industrial Technologies Program (ITP):
Achieving Industrial Efficiency

September 25, 2007

Submitted By:
Frederick L. Moore
The Dow Chemical Company,
on behalf of
The National Association of Manufacturers

The Dow Chemical Company, on behalf of the National Association of Manufacturers (NAM), appreciates the opportunity to submit these written comments concerning the Department of Energy (DOE) Industrial Technology Program (ITP).

High U.S. energy prices have spurred a significant amount of private sector action on energy efficiency. Many companies, for example, have established energy efficiency programs. In our experience, in order to be successful, a corporate energy efficiency program requires top-level commitment; an integrated approach; and a continuous effort to identify, evaluate, and prioritize among energy efficiency opportunities. To help companies achieve energy efficiency improvements, several third-party initiatives are underway, including the recent creation of the NAM Energy Efficiency Task Force.

The country currently faces significant energy challenges in the form of energy security and climate change. Given these dual and interrelated problems, promotion of energy efficiency represents the consensus first step toward a comprehensive policy solution. However, a sole reliance on private sector action is not going to solve the interlinked problems of energy security and global climate change. A partnership between the private and public sectors will be required to promote energy efficiency, the development of renewable and alternative energy, and the development and deployment of energy-saving technologies. The DOE ITP program represents the kind of government program that is necessary to help US manufacturers identify opportunities for energy savings through efficiency. We believe this very valuable program should be strengthened in order to promote energy efficiency across the manufacturing sector.

The Dow Chemical Company

Dow was founded in Michigan in 1897 and is one of the world's leading manufacturers of chemicals and plastics. We supply more than 3,300 products to customers in 175 countries around the world, including hundreds of specialty chemicals, plastics, crop protection products, and pharmaceutical raw materials essential to life.

Dow is an energy-intensive company. Dow uses energy, primarily natural gas liquids, as a feedstock to make our products. We also use energy to drive the chemical reactions necessary to turn our feedstock materials into useful products, many of which lead to net energy savings.

Dow is committed to sustainability. Our ambitious 2015 sustainability goals underscore this commitment to reduce our energy and climate "footprint," and to assist other manufacturers and the public to do likewise.

Dow has invested in a comprehensive energy efficiency program, and we have achieved impressive results. Between 1995 and 2005, we reduced our energy intensity (i.e., energy use divided by production output) by 22%. We are not stopping there. We have committed to reduce our energy intensity by an additional 25% from 2005 to 2015. Such an improvement, if replicated across the country, would be extremely beneficial.

For example, if the US reduced its energy intensity by 25% between 2005 and 2015, and assuming GDP grows at the expected 3% rate, we would eliminate the oil equivalent of all the Persian Gulf imports today.

Our financial investment in energy efficiency has been rewarded several times over in terms of energy savings. We believe our experience with energy efficiency can serve as an example for other companies and the general public.

Aside from financial rewards, our energy efficiency program has also helped reduce our absolute levels of greenhouse gas emissions, and we are committed to do even better in the future. Our aggressive focus on energy intensity has contributed to, since 1990, a reduction of over 20% in absolute greenhouse gas emissions—below the reduction target set in the Kyoto Protocol.

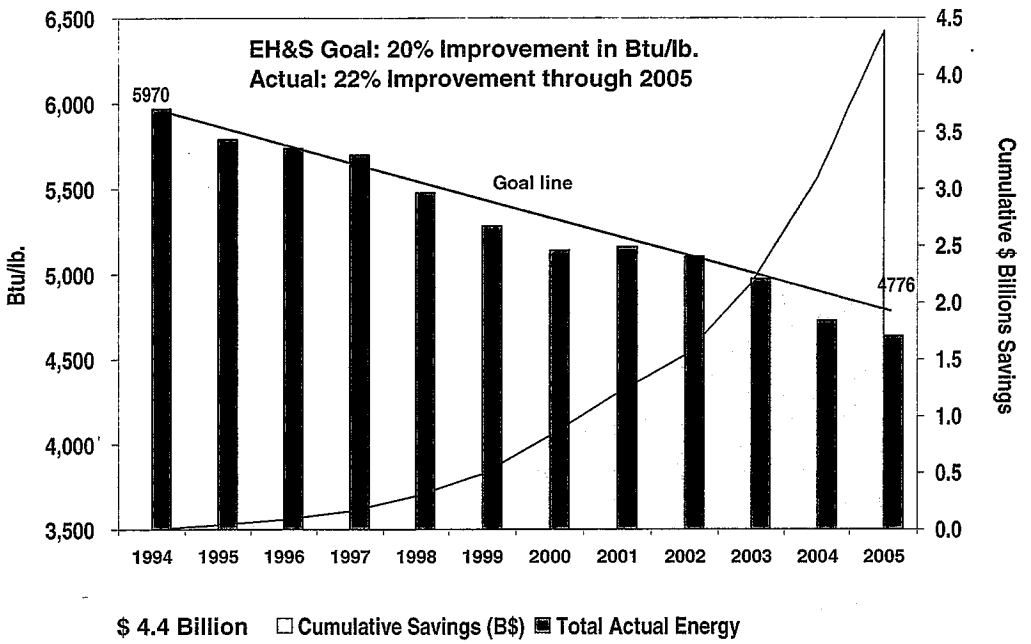
Energy Efficiency at Dow

Dow is using its expertise to minimize its energy and climate "footprint" and to develop products that enable its downstream customers to do likewise.

The Dow Chemical Company is a recognized industry leader in energy management. Energy efficiency has been part of our heritage since the very early years of our company, when Dow helped pioneer the use of industrial combined heat and power, also known as cogeneration. In conventional power plants, a significant portion of the energy is lost (usually through cooling towers or flue gas) in the process of electricity generation. In contrast, cogeneration captures more of the heat, utilizing less fuel, which has a significant impact on greenhouse gas emissions and improved air quality relative to conventional utility power. Cogeneration typically uses 20 to 40% less fuel than separate steam and power generation because energy is captured and used that would otherwise be wasted.

In recent years, through a companywide focus on energy efficiency, we have dramatically reduced our energy intensity -- and exceeded an aggressive, long-term corporate energy efficiency goal mentioned previously. Figure 1 shows how our $1 billion investment in energy efficiency has returned around $4.5 billion in energy savings.

Energy Intensity Performance



Dow's experience in energy efficiency has convinced us that we can help others realize these benefits, too. Indeed, energy efficiency is a universal tool. It should be the tool of choice, irrespective of whether one's motivation is to save money, reduce GHG emissions, or reduce dependence on foreign energy. It is the cheapest and most renewable "fuel" of all.

Dow's energy efficiency and conservation initiative relies strongly on our structured approach to resource conservation and energy intensity reduction. At the core is the sustained commitment and support of Dow's corporate leadership. The overall Energy Efficiency and Conservation effort within Dow is driven by a Global Energy Efficiency Leader, who has full responsibility and accountability for implementing and managing an aggressive global energy conservation plan. The energy conservation leader sponsors technology center and site energy efficiency teams and networks throughout the company to identify energy saving opportunities, develop long-term energy improvement plans, and implement projects.

In addition, each business unit at Dow is responsible for aligning its goals and plans to the corporate goal on energy efficiency. Focal points within each business unit are responsible for driving energy efficiency within their respective technologies. Energy efficiency is further driven by the energy conservation teams at our 13 largest energy-consuming sites, which account for over 90% of Dow's energy usage. These local teams actively engage employees in energy efficiency improvement projects at their sites and drive an energy efficiency mindset and culture at the local level.

The ITP: Promoting Energy Efficiency

Outside of Dow, the company also partners with, and/or supports, government and other organizations in their efforts to promote energy efficiency among all consumers. Dow is an active participant in the U.S. Department of Energy's "Save Energy Now" industrial energy efficiency campaign. Save Energy Now is sponsored by the DOE Industrial Technology Program. Dow was one of the first six companies selected for a DOE Energy Savings Assessment (ESA) because of its interest and past success in setting an example in energy management.

In the past two years, the company has hosted thirteen energy assessments at nine of its largest US manufacturing facilities. These assessments have included steam, process heating, and pumping systems. These joint assessments identified additional energy saving opportunities:

- The total energy savings potential found in the assessments was more than 3.75 trillion Btu per year, valued at more than $30 million per year.
- At the end of August, seven of the plants have reported implementing energy savings valued at more than $6.1 million.
- Additionally, $3.4 million worth of energy savings projects are underway.
- Finally, $4.7 million worth of energy savings projects are scheduled to be done.

Further, Dow collaborated with the DOE to pilot conducting a series of Industrial Best Practices training sessions via webcast, also well as hosting, in-depth DOE Steam Systems Assessment training sessions in Texas and Louisiana, drawing not only Dow engineers but also surrounding industrial community members, enabling other companies to benefit from energy saving assessment tools and strategies. We are continuing that collaboration on other projects, such as the Superior Energy Performance Partnership, whose purpose is to develop a more consistent framework for achieving greater energy efficiency in all US manufacturing plants. The goal of the Partnership is to reduce, by 25%, the energy intensity of US industry over the next ten years. Meeting this goal would save 8.4 quadrillion Btu per year, which is equal to the annual energy consumption of the state of California.

It is useful to provide an illustration of the value of the ITP. Last December, one of Dow's combined heat and power (CHP) units, known as Power 6, participated in the Energy Savings Assessment sponsored by the Department of Energy's "Save Energy Now" program. The 3-day activity was facilitated by an expert consultant, and focused on steam system optimization and energy conservation. The assessment yielded a list of opportunities that were evaluated by the Operations and Technology Center teams.

Several of the opportunities were implemented and led to significant energy savings. DOE is launching a recognition program to reward plants who have implemented significant savings through the energy assessment. Power 6 has achieved the highest award level - Energy Champion - by saving over 250,000 million Btu and /or over 15% total energy savings.

If a company like Dow, that has a successful track record in energy efficiency, can benefit so much from the ITP program, then what about the thousands of small- and medium-size companies that have neither the internal expertise nor the resources?

This is where the unique collaboration between the National Association of Manufacturers (NAM), government, and other organizations can help take industrial energy efficiency to the next level. The US industrial sector is responsible for 33% of total US energy consumption. The opportunities for energy efficiency are enormous.

The NAM is the largest industrial trade association in the United States. The NAM represents the more than 14 million men and women employed in the manufacturing economy, producing $1.5 trillion in revenues last year. Through its membership, the NAM has access to a large number of U.S. manufacturers, and has the means to both communicate and market to candidate companies on the availability of energy efficiency resources. In support of the NAM's agenda to establish a national commitment to reduce energy intensity of the U.S. economy through strategic goal-setting, public-private partnership and consumer education, the NAM created its Energy Efficiency Task Force.

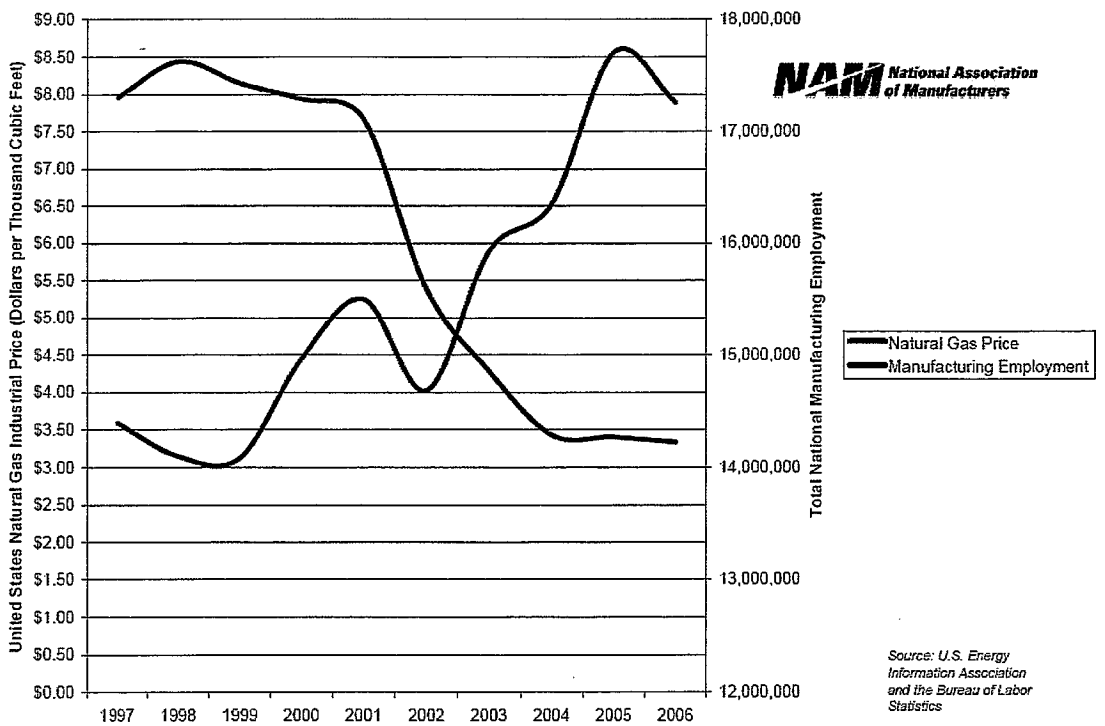
The NAM further affirmed the importance of energy efficiency with the release of its comprehensive model energy legislation earlier this year, The Energy Security for American Competitiveness Act (ESAC), which treats energy efficiency as a virtual domestic energy source that can displace imports. The NAM recently signed a memorandum of understanding (MOU) with the DOE to promote increased industrial energy efficiency among NAM member companies. The purpose of this MOU is to establish a working arrangement between the U.S. Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy's Industrial Technologies Program (ITP) and the NAM. The NAM and the EPA's Energy Star Program are working on a partnership. The NAM continues to work on this project with NGO partners, such as the Alliance to Save Energy (ASE) and the American Council for an Energy Efficient Economy (ACEEE).

This MOU supports a variety of activities, which aim to assist manufacturing facilities to initiate and implement energy management programs, adopt clean energy efficient technologies, and achieve continual energy efficiency and intensity reduction improvements. NAM and DOE will also coordinate in measuring and documenting the energy savings achieved in NAM member company manufacturing facilities as impacted by the energy efficiency campaign supported by the parties and other partners to the extent the information is available. This MOU represents a non-binding expression of intent between the parties to work together to promote energy efficiency in manufacturing.

As we face the interrelated issues of energy security and climate change, we must increasingly rely on the energy we do not use as the fuel of choice. Energy efficiency is the well we must tap for this resource.

High global oil prices affect the economy as a whole. Natural gas prices differ widely around the world, from 75 cents per million Btu in the Middle East to a forecast of nearly $9.00 for this coming winter in the US. Since we often can't pass on our energy costs in the price of our products, manufacturers become the shock absorber for volatile and high natural gas prices.

Manufacturing is the leading edge of demand destruction in the face of high energy prices. And demand destruction is just a more palatable economic term for job destruction. Figure 2 shows how high energy costs have contributed to over 3 million high paying manufacturing jobs being lost since the run up in natural gas prices began in 2000.



The Energy Efficiency Task Force, chaired by Dow, is partnering with DOE, EPA EnergyStar, the Alliance to Save Energy, the American Council for an Energy Efficient Economy, and other energy efficiency organizations to make use of readily available

tools which will help manufacturers identify and address cost-effective energy efficiency opportunities.

The partners are providing their specific expertise and services to access, communicate, and market to a large number of U.S. manufacturers, and deliver a consolidated catalog of tools, technologies, and a menu of options for future direction in energy management. NAM will utilize a website portal to access the right energy efficient technology, a consolidated library of tools, and roadmaps to implementing effective energy management programs

Through marketing and outreach efforts, the partners plan to reach a greater number of small- and medium-sized manufacturers; help them progress toward greater energy efficiency; and establish systems and technology improvements capable of delivering immediate and sustaining long-term energy savings.

Recommendations for Congress and the Administration

The ITP program offers a wide range of important benefits to the manufacturing sector:

- The program provides training for the next generation of manufacturing energy efficiency engineers through the Industrial Assessment Program. Graduates of this program have a proven track record of being able to perform in jobs much more quickly than students without the experience. These students also become sensitive to identifying and implementing energy efficiency opportunities.

- The program has the ability to convene representatives from a wide range of companies to work on manufacturing issues as a whole, without raising anti-trust concerns.

- The program's cooperative RD&D efforts have been valuable to industry by allowing industry and government to work together to target research that meets the needs of manufacturing industries, resulting in near-term impacts.

Dow and NAM support the ITP, which is currently the only federal program that supports manufacturing research.

To strengthen the program, we recommend the following:

- Expand the program to focus on cogeneration, CHP and recycled energy as important opportunities.

- Develop closer relationships to manufacturing company representatives to ensure that ITP activities meet the needs of the manufacturing sector.

- Program funding should be restored to late-1990s levels to allow re-staffing of the program.

- The program should be coordinated with NIST MEP Centers and DOE CHP Regional Application Centers to maximize synergies between program offerings and minimize redundancies.

Conclusion

US manufacturers are doing a great deal to improve their energy efficiency performance. High US energy prices are a driver, as are the dual problems of energy dependence and rising GHG emissions. But a sole reliance on private sector action is not going to solve these problems. A partnership between the private and public sectors will be required to promote energy efficiency, the development of renewable and alternative energy, and the development and deployment of energy-saving technologies.

Public policy plays an important role, and Congress must enact measures to reduce demand, increase supply, and promote alternatives. The first order of business should be to promote energy efficiency. The DOE ITP program represents the kind of government program that is necessary to help US manufacturers identify opportunities for energy savings through efficiency. We believe this very valuable program should be strengthened in order to promote energy efficiency across the manufacturing sector, increase our energy security, and reduce GHG emissions.