110TH CONGRESS
1st Session
HOUSE OF REPRESENTATIVES
REPORT
110–401

INDUSTRIAL ENERGY EFFICIENCY RESEARCH AND DEVELOPMENT ACT OF 2007

OCTOBER 22, 2007.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. GORDON of Tennessee, from the Committee on Science and Technology, submitted the following

R E P O R T

[To accompany H.R. 3775]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science and Technology, to whom was referred the bill (H.R. 3775) to support research and development of new industrial processes and technologies that optimize energy efficiency and environmental performance, utilize diverse sources of energy, and increase economic competitiveness, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

CONTENTS

69–006

I. AMENDMENT

The amendment is as follows:
Strike all after the enacting clause and insert the following:

SECTION 1. SHORT TITLE.

This Act may be cited as the "Industrial Energy Efficiency Research and Development Act of 2007".

SEC. 2. FINDINGS.

The Congress finds the following:

(1) According to the Energy Information Administration's 2006 Annual Energy Review, the industrial sector in 2006 accounted for more energy use (32 percent) than the residential (21 percent), commercial (18 percent), or transportation sector (29 percent).

(2) The primary energy intensive industries vital to maintaining our country's infrastructure and economic and national security include steel, chemicals, metal casting, forest products, glass, aluminum, petroleum refining, and mining, as well as other energy intensive manufacturers.

(3) The Department of Energy has demonstrated the success of public-private partnerships with these industries resulting in research, development, and deployment of new energy efficient technologies which reduce emissions and improve manufacturing competitiveness.

(4) Innovations in manufacturing processes within these industries may be translated into efficiency improvements in buildings, transportation, and other economic sectors that depend upon these industries.

(5) While past public-private partnerships have resulted in significant energy efficiency improvements in manufacturing processes, there is a need for new technologies to achieve continual energy efficiency improvements.

(6) Innovations made in the last few decades assisted the United States in remaining competitive in the global market. Continued innovation in the areas of energy efficiency and feedstock diversification are necessary to enable the United States to maintain a competitive edge.

(7) The Department of Energy should continue collaborative efforts with industry, particularly the manufacturing sector, to broaden and accelerate the high-risk research and development of new manufacturing processes that optimize energy efficiency and utilize diverse sources of energy.

(8) These partnerships support critical research and development capabilities at universities and other research institutions while training future generations of engineers in critical areas of energy systems and efficient industrial process technologies for our domestic industries.

SEC. 3. INDUSTRIAL TECHNOLOGIES PROGRAM.

(a) IN GENERAL.—The Secretary of Energy (in this Act referred to as the "Secretary") shall establish a program, in cooperation with energy-intensive industries, trade and industry research collaborations representing such industries, and institutions of higher education, to conduct research, development, demonstration, and commercial application activities with respect to new industrial and commercial processes, technologies, and methods to—

(1) achieve—

(A) substantial improvements in energy efficiency; and

(B) environmental performance improvements such as waste reduction, emissions reductions, and more efficient water use; and

(2) enhance the economic competitiveness of the United States industrial sector.

(b) PROGRAM ACTIVITIES.—Research, development, demonstration, and commercial application activities under this section may include—

(1) activities to support the development and use of technologies and processes that improve the quality and quantity of feedstocks recovered or recycled from process and waste streams;

(2) research to meet manufacturing feedstock requirements with alternative resources;

(3) research to develop and demonstrate technologies and processes that utilize alternative energy sources to supply heat, power, and new feedstocks for energy-intensive industries;

(4) research to achieve energy efficiency in steam, power, control system, and process heat technologies, and in other manufacturing processes; and

(5) a program to fund research, development, and demonstration relating to inventors' and small companies' technology proposals, based on energy savings potential, commercial viability, and technical merit.

(c) COMPETITIVE AWARDS.—All awards under this section shall be made on a competitive, merit-reviewed basis.

(d) COORDINATION AND NONDUPLICATION.—The Secretary shall, coordinate efforts under this section with other programs of the Department and other Federal agencies, to avoid duplication of effort.

(e) ANNUAL REPORT.—Not later than 1 year after the date of enactment of this Act, and once every 2 years thereafter, the Secretary shall submit to the Congress a report on the activities conducted pursuant to this Act, including—

(1) a description of the activities used to facilitate cooperation with energy-intensive industries, universities, and other participants in the program; and

(2) a description of ongoing projects and new projects initiated, and the anticipated energy savings associated with achievement of each project's goals.

SEC. 4. UNIVERSITY-BASED INDUSTRIAL RESEARCH AND ASSESSMENT CENTERS.

To strengthen the program under section 3, the Secretary shall provide funding to university-based industrial research and assessment centers, whose purpose shall be—

(1) to identify opportunities for optimizing energy efficiency and environmental performance;

(2) to promote application of emerging concepts and technologies in small and medium-sized manufacturers;

(3) to promote the research and development for usage of alternative energy sources to supply heat, power, and new feedstocks for energy intensive industries;

(4) to coordinate with appropriate State research offices, and provide a clearinghouse for industrial process and energy efficiency technical assistance resources; and

(5) to coordinate with State-accredited technical training centers and community colleges, while ensuring appropriate services to all regions of the United States.

SEC. 5. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary to carry out this Act $150,000,000 for each of the fiscal years 2009 through 2013.

II. PURPOSE OF THE BILL

The purpose of H.R. 3775 is to authorize and support research, development, demonstration, and commercial application of new industrial processes and technologies that will optimize energy efficiency, environmental performance, and economic competitiveness of energy intensive industries; to enhance research and development through better coordination of interdepartmental research; and to expand Industrial Assessment Centers programs at universities to promote student training and adoption of energy efficient technologies and practices by small and medium-sized industries.

III. BACKGROUND AND NEED FOR LEGISLATION

An expanding economy, growing population, and rising standard of living create rapidly growing demands for energy, making energy conservation a key national goal. In the U.S. industry is responsible for more than one-third of all energy consumed, the large majority of which is consumed by manufacturing industries such as chemical, glass and metals production, mining, petroleum refining, and forest and paper products. These industries require very large amounts of energy per unit of production, making them particularly susceptible to high energy prices. These and other energy-in-

tensive industries are ideal candidates on which to focus federal R&D efforts and apply new technologies, increase efficiency, raise productivity, reduce wastes, and trim costs.

The Energy Efficiency and Renewable Energy's (EERE) Industrial Technologies Program (ITP) at the Department of Energy (DOE), works to improve the energy intensity of U.S. industry through coordinated research and development and dissemination of innovative energy efficiency technologies and practices. The ITP invests in high-risk, high-value cost-shared R&D projects to reduce industrial energy use and process waste streams, while stimulating productivity and growth. Competitive solicitations are the principal mechanism used by ITP to conduct cost-shared R&D. Solicitations reflect the priorities of the Program and selection of projects follows merit-based criteria that emphasize projected energy, environmental, and economic benefits. In addition, ITP makes available information and resources on other financial assistance and research opportunities and case studies from past ITP projects. The ITP portfolio details over 1,000 technology development projects in which ITP has been involved.

The Industrial Technologies Program claims numerous successes. The ITP is considered one of the most effective DOE programs at transferring technologies, with over 170 technologies reaching the commercial market. An estimated 13,000 U.S. manufacturing plants have been improved through the ITP technology delivery effort. Nearly 5 quadrillion Btu of energy (equal to approximately $23 billion) of energy savings are attributed to the program since its inception, with 366 trillion Btu saved in 2004 alone.

The ITP also sponsors 26 University-Based Industrial Assessment Centers (IACs) that provide no-cost energy assessments primarily to small- and medium-sized manufacturers. Assessments are conducted by teams of faculty and students, and involve examinations of potential savings from energy efficiency improvements, waste minimization and pollution prevention, and productivity improvement. The average expected savings per assessment is fifty to seventy thousand dollars, with much larger savings possible with large operations. Companies are in turn encouraged to replicate accomplishments and share results.

By operating through university engineering programs, the IACs serve as a training ground for the next generation of energy and industrial engineers. Roughly 240 students receive training through the program each year. When budgets for the program were higher, 38 IACs operated around the country, compared to the 26 in operation today.

While the U.S. industrial sector has become much more energy efficient over the past 30 years, there are still ample opportunities to achieve efficiency gains. However, energy-intensive industries face enormous competitive pressures that make it difficult to make the necessary R&D investments in technology development on their own. Energy-intensive industries tend to exhibit relatively low levels of R&D spending, and are often unwilling to accept the risks associated with undertaking complex capital-intensive technology development and implementation. Constantly changing market conditions, energy prices, and other business concerns affect the ability and willingness of industry to pursue energy efficiency opportunities. As the role of energy in industry changes, the ITP

should have the resources to sustain and expand operations, adapt, and reshape its strategy where needed. Without a sustained commitment by the private and public sectors to invest in technology R&D and adopt new technologies, the ability to close the gap between U.S. energy supply and demand will be greatly limited.

The budget for the Industrial Technologies Program has decreased dramatically in recent years. The Fiscal Year 2007 budget request for Industrial Technologies was $45.6 million, an $11.3 million reduction from the Fiscal Year 2006 Appropriation. By comparison, appropriated levels as recently as Fiscal Year 2000 were as high as $175 million. These funding levels reflect a dramatic shift in priorities away from industrial efficiency R&D. This legislation is needed to ensure continued gains in industrial energy efficiency and environmental performance through research and development.

IV. HEARING SUMMARY

The Energy and Environment Subcommittee held a hearing on Tuesday, September 25, 2007 to hear testimony relevant to the Industrial Technologies Program and to receive comments on a discussion draft of a bill to authorize funding and provide guidelines for the program. The Subcommittee heard from four witnesses representing diverse viewpoints on the program:

- Mr. Malcolm Verdict, C.E.M., Associate Director of the Energy Systems Laboratory within the Texas Engineering Experiment Station (TEES) at Texas A&M University.
- Mr. Fred Moore. Global Director of Manufacturing and Technology for Dow Chemical's Energy Business, and Chairman of the Energy Efficiency Task Force of the National Association of Manufacturers.
- Mr. Lawrence Kavanagh, Vice President of Manufacturing and Technology for the American Iron and Steel Institute (AISI).
- Mr. Paul Cicio, President at Industrial Energy Consumers of America.

The hearing examined the successes and limitations of the Industrial Technologies Program, and how the program can be improved to increase industrial energy efficiency and environmental performance in the U.S. industrial sector. It also looked at which areas of research and development should be enhanced and explored by the ITP and the Industrial Assessment Centers, and what cost-effective opportunities does a further enhancement of industrial efficiency program offer. The hearing provided background for the legislation.

The subcommittee heard testimony from four witnesses offering perspectives from the U.S. industrial sector, industry trade associations, and university-based energy auditing centers. The witnesses all commented on the need and timeliness of this legislation. There was unanimous agreement among all the witnesses that the program should be funded at higher levels than it has received in recent years, and that increased funding was needed to achieve further gains in energy efficiency and environmental performance of the industrial sector. The witnesses also indicated their support for the program to engage in projects that would help industry to reduce its greenhouse gas emissions.

On October 9, 2007, Representative Nick Lampson, Chairman of the Energy and Environment Subcommittee introduced H.R. 3775,

The Industrial Energy Efficiency Research and Development Act of 2007.

V. SUMMARY OF COMMITTEE ACTIONS

The Subcommittee on Energy and Environment met to consider H.R. 3775 on October 10, 2007, with no amendments to the bill. Mr. McNerney moved that the Subcommittee favorably report the bill, H.R. 3775, to the Full Committee on Science and Technology. The motion was agreed to by a voice vote.

The Committee on Science and Technology met on October 16, 2007, to consider H.R. 3775 as reported by the Subcommittee and to consider the following amendment:

The Manager's amendment offered by Representative Lampson and Representative Inglis:

The manager's amendment to the bill made minor corrections and additions to the bill. The amendment adds a finding to further elaborate on the past successes of the program in working with energy intensive industries. The amendment adds to the list of groups the program should coordinate with. The amendment strikes the term, industry trade associations, and changes this to trade and industry research collaborations. The amendment also strikes subsection (c) of section 3 on financial assistance. Finally, the amendment adds a biannual reporting requirement. The amendment was adopted by voice vote.

The Committee favorably reported the bill, H.R. 3775, as amended, by a voice vote.

VI. SUMMARY OF MAJOR PROVISIONS AS REPORTED

H.R. 3775 authorizes $150 million for each fiscal year 2009–2013 to the Department of Energy to support research, development, demonstration, and commercial application of new industrial processes and technologies to optimize energy efficiency and environmental performance of the U.S. industrial sector, and expand the Industrial Assessment Centers program at universities. The bill encourages research, development and demonstration to improve the quality, quantity, and alternative resources of industrial feedstocks; using new alternative energy technologies; and achieving greater energy efficiency in steam, power, control system, and process heat technologies in energy-intensive industries. H.R. 3775 also allows for competitive awards to individuals and small businesses for novel energy savings concepts and inventions. H.R. 3775 enhances research and development efforts through cooperation with energy intensive industries, industry trade associations, and institutions of higher education and through better coordination of interdepartmental research as well as with other Federal agencies.

VII. SECTION-BY-SECTION ANALYSIS OF THE BILL, AS REPORTED

Section 1. Short title

"The Industrial Energy Efficiency Research and Development Act of 2007"

Sec. 2. Findings

The U.S. Industrial sector accounts for more energy use (32%) than the residential, commercial, or transportation sectors. Indus-

tries have almost reached optimal energy efficiencies and new innovations and technologies' research, development, and demonstration are necessary to increase energy efficiency and diversify energy and feedstock sources.

SEC. 3. Industrial technologies program

Establishes a program within the Department of Energy to work with energy-intensive industries, industry trade associations, and institutions of higher education to conduct cost-shared research, development, demonstration, and commercial application activities for new innovations and technologies to enhance industrial efficiency and economic competitiveness of U.S. industrial sector.

Defines the activities of the program to include: research to improve the quality and quantity of feedstocks recovered from waste streams; to develop alternative resources for use as industrial feedstocks; developing alternative energy sources to supply heat and power for energy-intensive industries; and achieve overall energy efficiency in manufacturing processes.

Requires the Secretary to submit a report to Congress one year after enactment and every two years thereafter on the activities of the program including a description of the cooperative activities with non-federal partners and a description of projects undertaken by the program.

SEC. 4. University-based industrial research and assessment centers

Requires the Secretary to fund University-based Industrial Research and Assessment Centers to aid small and medium sized manufacturers by identifying opportunities to optimize their energy efficiency and improve environmental performance through advanced technologies, to serve as a resource for technical data, and to train engineering and research students to conduct energy assessments.

Sec. 5. Authorization of appropriations

$150 million is authorized for each fiscal year 2009–2013.

VIII. COMMITTEE VIEWS

It is the view of the Committee that improving the efficiency of the energy-intensive industrial sector is vital to maintaining our country's economic infrastructure and our security. H.R. 3775 seeks to support and encourage research and development of new industrial processes and technologies that industry can adopt to improve their energy efficiency, environmental performance, including lowering greenhouse gas emissions, and increase U.S. competitiveness.

The Committee believes the Industrial Technology Program (ITP) should continue to work with the traditional material manufacturing industries that have been the focus of this program since its inception. Industries such as primary metals (including steel and aluminum), chemicals, metal casting, ceramics (including glass and cement), forest products, petroleum refining, and mining all require significant energy input for their operations. Through their partnership with the ITP, many of these industries have become more energy efficient. However, they continue to utilize significant energy resources and as energy prices increase or competition for tra-

ditional energy sources increases, further improvements will be required for these industries to remain competitive in the U.S. While incremental efficiency gains are still likely in many areas, dramatic improvements may only be possible through wholesale changes in process technologies and feedstocks.

The Committee believes the ITP's scope should include working with these industries to develop new and cost effective feedstocks and processes that will not only save energy, but will enable these industries to transition to the use of nontraditional inputs and to improve their overall environmental performance. The Committee believes that the program should work with industry to develop processes and technologies that will enable greater re-use of processing resources and waste reduction. This not only delivers benefits to the communities where these industries operate by reducing waste and emissions, it also delivers financial benefits by reducing costs for waste disposal and input purchases.

The Committee believes there are significant opportunities through the increased use of renewable energy alternatives to enhance sustainability and lower emissions when supplying heat, power and feedstock. For example, energy consumption for industrial steam users can be reduced by developing an expanded portfolio of ultra-efficient steam generation systems as well as, improving the efficiency of industrial heating systems by developing process heating and combustion technologies and improved energy recovery technologies. Furthermore, research, development, and demonstration of advanced combined heat and power technologies (CHP) can lead to significant reductions in carbon emissions, cost of electricity, and investments in future power generation, transmission, and delivery upgrades.

The Committee recognizes the Department has numerous efforts underway through multiple programs, outside of the Industrial Technologies Program, to develop new materials for use as feedstocks and fuels as well as to develop new energy sources. The Committee encourages the Department to facilitate the exchange of information and experience of these programs with the ITP. ITP's long history of working in partnership with industry and its success in getting broader adoption of new technologies make this program a good choice for facilitating technology transfer from the lab into general use.

Rising costs for traditional fossil energy sources represents a significant challenge and is providing a strong incentive for energy intensive industries to examine the potential of alternative energy supplies. The Committee believes the ITP is well-suited to work with these industries to assist them in making the transition to the use of alternative energy resources to lead to increased efficiency and cost-effectiveness. Better information exchange among DOE programs would facilitate this outcome.

The Committee recognizes that ideas on technological advances can be generated from various sources. For individuals and small businesses with ideas and inventions, developing an energy saving invention and commercializing it in a market with entrenched technologies and processes can be difficult. The Committee believes DOE should resume its support for these small-scale activities as well and has authorized an Inventions and Innovation Program to offer technical and financial support to inventors and small busi-

nesses with promising energy-saving concepts and technologies. At present, the Department is not supporting this type of program.

The ITP program historically partners with industries using a dollar for dollar match cost-sharing arrangement in accordance with section 988 of the Energy Policy Act of 2005 (42 U.S.C. 16352). The Committee believes this is a great strength of this program and demonstrates the commitment and confidence that industry partners have to this program. The Committee also believes that awards to any entity should be made on a competitive, merit-reviewed basis.

The Committee believes the Industrial Assessment Centers (IACs) based at colleges and universities make an important contribution to the ITP. The Centers provide eligible small- and medium-sized manufacturers with comprehensive industrial assessments, performed at no cost to the manufacturer by students and faculty. The Department has developed criteria for eligibility used by the Centers. Small- and medium-sized manufacturers usually cannot afford the services provided through the Centers and often do not have the ability to participate in a collaborative R&D effort to develop new technologies. And, while it is often the case that new technologies and practices developed in larger industry may ultimately find its way to smaller manufacturers, the IACs actually provide a conduit for novel technologies and practices to flow the other way, from smaller firms towards deployment in larger-scale industries. The Committee believes these activities not only provide benefit to small- and medium-size manufacturers, but provide important hands-on training for students who will eventually work in the industrial sector and carry their knowledge and experience with them. Efforts such as these that improve the overall energy and environmental performance of our economy benefit us all and can help to maintain the economic viability of our manufacturing base.

The Committee recognizes the primary activity of the Centers has been providing assessments, information, and recommendations of market-ready technologies to small- and medium-sized manufacturers. However, the Committee believes with some additional resources the Centers could engage in more research utilizing the research and engineering capabilities of the participating universities.

The number and location of the IACs has varied widely depending on program funding levels and university involvement. Currently there are 26 centers, but in the past there were as many as 38. The Committee has not specified the number of Centers the program should support. However, the Committee believes the work of these Centers is vital to increase the distribution of energy-saving processes and technologies throughout the country. Therefore, the bill directs the Department to ensure the services provided by the Centers are available in all regions of the country. The Committee also supports the participation of community colleges and state-accredited training centers in the IACs. These organizations play a vital role in education and training and have a student population that would benefit from the hands-on experience conducted through the IAC program.

The Committee also believes an important function of the Centers is to work with State and regional offices to gather and serve

as a clearinghouse for information on the programs and technical assistance available to help businesses improve their energy efficiency and environmental performance. The Committee also believes the outreach efforts of the Centers would be enhanced by collecting and disseminating information about their successes in working with small- and medium-sized companies and the energy savings the companies achieved by implementing new processes and technologies.

The Committee is concerned about the decline of financial support for the ITP over the past few years. The need for better environmental performance, economic competitiveness, and greater energy efficiency gains is growing and the ITP should be funded at a higher level to promote a more aggressive pace of achievement for these goals.

IX. COST ESTIMATE

A cost estimate and comparison prepared by the Director of the Congressional Budget Office under section 402 of the Congressional Budget Act of 1974 has been timely submitted to the Committee on Science and Technology prior to the filing of this report and is included in Section X of this report pursuant to House Rule XIII, clause 3(c)(3).

H.R. 3775 does not contain new budget authority, credit authority, or changes in revenues or tax expenditures. Assuming that the sums authorized under the bill are appropriated, H.R. 3775 does authorize additional discretionary spending, as described in the Congressional Budget Office report on the bill, which is contained in Section X of this report.

X. CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

OCTOBER 19, 2007.

Hon. BART GORDON,
Chairman, Committee on Science and Technology,
House of Representatives, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 3775, the Industrial Energy Efficiency Research and Development Act of 2007.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Leigh Angres.

Sincerely,

PETER R. ORSZAG.

Enclosure.

H.R. 3775—Industrial Energy Efficiency Research and Development Act of 2007

Summary: H.R. 3775 would authorize the appropriation of $150 million a year over the 2009–2013 period to expand the Department of Energy's (DOE's) industrial technologies program to promote energy efficiency in the industrial sector. Assuming appropriation of the authorized amounts, CBO estimates that implementing H.R. 3775 would cost $68 million in 2009 and $489 million over the 2009–2012 period. Spending of about $260 million would occur after 2012. Enacting H.R. 3775 would not affect direct spending or revenues.

H.R. 3775 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments.

Estimated cost to the Federal Government: The estimated budgetary impact of H.R. 3775 is shown in the following table. The costs of this legislation fall within budget function 250 (general science, space, and technology).

	By fiscal year, in millions of dollars—				
	2008	2009	2010	2011	2012
CHANGES IN SPENDING SUBJECT TO APPROPRIATION					
Authorization Level	0	150	150	150	150
Estimated Outlays	0	68	128	143	150

Note: A full year appropriation for the Department of Energy has not yet been enacted. The 2007 appropriation for the Department of Energy's industrial technologies program was approximately $57 million. Under the bill, an additional $150 million would be authorized in 2013.

Basis of estimate: For this estimate, CBO assumes that H.R. 3775 will be enacted during fiscal year 2008 and that the entire amounts authorized will be appropriated for each fiscal year.

H.R. 3775 would authorize the appropriation of $150 million a year over the 2009–2013 period to expand DOE's industrial technologies program, which promotes energy efficiency in manufacturing processes. The 2007 appropriation for these activities was approximately $57 million. Under the bill, the Secretary of Energy would award grants to promote partnerships among energy-intensive industries, trade and industry research collaborations, and institutes of higher education to develop technologies that utilize alternative energy sources to supply heat, power, and new feedstocks (raw materials) for energy-intensive industries.

The bill also would increase funding for university-based industrial research and assessment centers. Currently, these centers provide no-cost energy assessments to small-and medium-sized manufacturers. H.R. 3775 would require the Secretary to submit a report to the Congress not later than one year after the date of enactment, and once every two years thereafter, detailing ongoing projects and the anticipated energy savings that result from use of new technologies. Based on the historical spending patterns of DOE research and development programs, CBO estimates that implementing H.R. 3775 would cost $68 million in 2009 and $489 million over the 2009–2012 period.

Intergovernmental and private-sector impact: H.R. 3775 contains no intergovernmental or private-sector mandates as defined in UMRA. The bill would authorize increased funding for a Department of Energy program to research and develop new technology for energy efficiency and waste reduction. This program would benefit institutions of higher education, and any costs they might incur, including matching funds, would be incurred voluntarily.

Estimate prepared by: Federal Costs: Leigh Angres; Impact on State, Local, and Tribal Governments: Neil Hood; Impact on the Private Sector: Amy Petz.

Estimate approved by: Theresa Gullo, Deputy Assistant Director for Budget Analysis.

XI. COMPLIANCE WITH PUBLIC LAW 104–4

H.R. 3775 contains no unfunded mandates.

XII. COMMITTEE OVERSIGHT FINDINGS AND RECOMMENDATIONS

The oversight findings and recommendations of the Committee on Science and Technology are reflected in the body of this report.

XIII. STATEMENT ON GENERAL PERFORMANCE GOALS AND OBJECTIVES

Pursuant to clause (3)(c) of House Rule XIII, the goal of H.R. 3775 is to support research and development of new industrial processes and technologies that optimize energy efficiency and environmental performance, utilize diverse sources of energy, and increase economic competitiveness.

XIV. CONSTITUTIONAL AUTHORITY STATEMENT

Article I, section 8 of the Constitution of the United States grants Congress the authority to enact H.R. 3775.

XV. FEDERAL ADVISORY COMMITTEE STATEMENT

H.R. 3775 does not establish nor authorize the establishment of any advisory committee.

XVI. CONGRESSIONAL ACCOUNTABILITY ACT

The Committee finds that H.R. 3775 does not relate to the terms and conditions of employment or access to public services or accommodations within the meaning of section 102(b)(3) of the Congressional Accountability Act (Public Law 104–1).

XVII. EARMARK IDENTIFICATION

H.R. 3775 does not contain any congressional earmarks, limited tax benefits, or limited tariff benefits as defined in clause 9(d), 9(e), or 9(f) of Rule XXI.

XVIII. STATEMENT ON PREEMPTION OF STATE, LOCAL, OR TRIBAL LAW

This bill is not intended to preempt any state, local, or tribal law.

XIX. CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

H.R. 3775, as reported, makes no changes in existing law.

XX. COMMITTEE RECOMMENDATIONS

On October 16, 2007, the Committee on Science and Technology favorably reported H.R. 3775, as amended, by a voice vote and recommended its passage by the House of Representatives.

XXI. PROCEEDINGS OF THE MARKUP BY THE SUBCOMMITTEE ON ENERGY AND ENVIRONMENT ON H.R. 3775, THE INDUSTRIAL ENERGY EFFICIENCY RESEARCH AND DEVELOPMENT ACT OF 2007

WEDNESDAY, OCTOBER 10, 2007

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENERGY AND ENVIRONMENT,
COMMITTEE ON SCIENCE AND TECHNOLOGY,
Washington, DC.

The Subcommittee met, pursuant to call, at 2:06 p.m., in Room 2318 of the Rayburn House Office Building, Hon. Nick Lampson [Chairman of the Subcommittee] presiding.

Chairman LAMPSON. Good afternoon. This Committee on Energy and Environment will come to order. Pursuant to notice, the Subcommittee on Energy and Environment meets to consider the following measures: H.R. 3776, the *Energy Storage Technology Advancement Act of 2007;* H.R. 3775, the *Industrial Energy Efficiency Research and Development Act of 2007;* and H.R. 1834, the *National Ocean Exploration Program Act.* We will now proceed with the markup, beginning with opening statements, and I will begin.

Today the Subcommittee will consider three bills.

The first is the *Energy Storage Technology Advancement Act,* introduced yesterday by Chairman Gordon. As we learned in the hearing last week, an aggressive research program to accelerate the development of batteries and other energy-storing technologies is essential to achieving greater energy efficiency and emission reduction in the utility and transportation sectors. Chairman Gordon's bill, which incorporates many features of an energy bill introduced earlier in the Congress by Ranking Member Hall, will ensure that we move these import technologies forwards and support a vigorous domestic industrial capability in this areas.

The second bill is the *Industrial Energy Efficiency Research and Development Act.* I introduced this legislation yesterday after circulating a discussion draft of the bill at the end of September. If we want to maintain a competitive, domestic industrial economy, we must find ways to enable energy-intensive industries to become more energy efficient and to diversify the fuel and raw materials they use to manufacture their products. Competition for energy and material is increasing and driving up prices for these inputs. The Industrial Technology Program at the Department of Energy has

been working in partnership with industries across the county to achieve these important goals, but we still must do more.

And finally, we will consider H.R. 1834, introduced by our colleague on the Natural Resources Committee, Representative Saxton. The *National Ocean Exploration and National Undersea Research Program Act* will expand our knowledge of the oceans and provide basic information about the vast resources of the seas. The ocean and coastal areas of our nation support significant economic activity in a wide variety of area, but in many respects, the oceans remain a mystery with many areas unexplored. Representative Saxton's legislation provides the National Oceanic and Atmospheric Administration with the authorities and direction to support a vigorous ocean-exploration program. We will continue to work with our colleagues on the Natural Resources Committee to move this legislation forward.

I urge the Members of the Subcommittee to support all three of these bills, and I look forward to continue working with all of you as these will go forward.

[The prepared statement of Chairman Lampson follows:]

PREPARED STATEMENT OF CHAIRMAN NICK LAMPSON

Good afternoon.

Today the Subcommittee will consider three bills. The first is the *Energy Storage Technology Advancement Act* introduced yesterday by Chairman Gordon. As we learned in the hearing last week, an aggressive research program to accelerate the development of batteries and other energy storing technologies is essential to achieving greater energy efficiency and emission reductions in the utility and transportation sectors.

Chairman Gordon's bill, which incorporates many features of an energy bill introduced earlier in this Congress by Ranking Member Hall, will ensure that we move these important technologies forward and support a vigorous domestic industrial capability in this area.

The second bill is the *Industrial Energy Efficiency Research and Development Act.* I introduced this legislation yesterday after circulating a discussion draft of the bill at the end of September.

If we want to maintain a competitive, domestic industrial economy we must find ways to enable energy-intensive industries to become more energy efficient and to diversify the fuel and raw materials they use to manufacture their products. Competition for energy and materials is increasing and driving up prices for these inputs. The Industrial Technology Program at the Department of Energy has been working in partnership with industries across the country to achieve these important goals, but we must do more.

Finally, we will consider H.R. 1834 introduced by our Colleague on the Natural Resources Committee, Rep. Saxton. The *National Ocean Exploration and National Undersea Research Program Act* will expand our knowledge of the oceans and provide basic information about the vast resources of the seas.

The ocean and coastal areas of our nation support significant economic activity in a wide variety of areas. But in many respects, the oceans remain a mystery with many areas unexplored. Rep. Saxton's legislation provides the National Oceanic and Atmospheric Administration with the authorities and direction to support a vigorous ocean exploration program. We will continue to work with our colleagues on the Natural Resources Committee to move this legislation forward.

I urge the Members of the Subcommittee to support all three of these bills, and I look forward to continue working with all of you as these bills go forward.

Chairman LAMPSON. And I recognize Mr. Inglis to present his opening remarks.

Mr. INGLIS. Thank you, Mr. Chairman. I look forward to this markup, and today we will mark up two bills that address two vital needs in pursuit of our energy security: energy efficiency and energy storage.

The Department of Energy's Industrial Technologies Program has a successful track record of helping U.S. manufactures translate research and development into efficient, cost-saving technologies. By reauthorizing this program, the *Industrial Energy Efficiency Research and Development Act,* H.R. 3775, will support our nation's industries in achieving energy efficiency while remaining economically competitive. It is very important that we direct this program to prioritize its efficiency efforts, targeting industry sectors, not individual businesses, where we can attain the best emissions reductions for our buck.

While energy efficiency reduces our total consumption of foreign oil and gas, energy-storage progress will encourage development of clean, renewable energy sources. H.R. 3776, the *Energy Storage Technology Advancement Act,* can help promote consistent and stable energy supply from renewable sources. That is a big hurdle, but it is one we can't clear soon enough.

Finally, we shall be marking up the bill H.R. 1834, the *National Ocean Exploration Program Act.* Marine scientists tell us that we haven't come close to tapping the resources available to us in and under our oceans. I hope that the bill we markup today steers research dollars to those fact-finding projects so that we might, one day, reap the benefits of our hidden oceanic resources.

Thank you again, Mr. Chairman, and I look forward to working with you to advance this legislation.

[The prepared statement of Mr. Inglis follows:]

PREPARED STATEMENT OF REPRESENTATIVE BOB INGLIS

Thank you for holding this markup, Mr. Chairman.

Today we'll mark up two bills that address two vital needs in our pursuit of energy security: energy efficiency and energy storage.

The Department of Energy's Industrial Technologies Program (ITP) has a successful track record of helping U.S. manufacturers translate research and development into efficient, cost-saving technologies. By reauthorizing this program, the *Industrial Energy Efficiency Research and Development Act* (H.R. 3775) will support our nation's industries in achieving energy efficiency while remaining economically competitive. It is very important that we direct this program to prioritize its efficiency efforts, targeting industry sectors (not individual businesses) where we can attain the best emissions reductions for our buck

While energy efficiency reduces our total consumption of foreign oil and gas, energy storage progress will encourage development of clean, renewable energy sources. H.R. 3776, the *Energy Storage Technology Advancement Act* can help promote consistent and stable energy supply from renewable sources. That's a big hurdle, but it's one we can't clear soon enough.

Finally, we'll be marking up the H.R. 1834, the *National Ocean Exploration Program Act.* Marine scientists tell us that we haven't come close to tapping the resources available to us in and under our oceans. I hope that the bill we markup today steers research dollars to those "fact-finding" projects, so that humanity might one day reap the benefits of our hidden oceanic resources.

Thank you again, Mr. Chairman, and I look forward to working with you to advance this legislation.

Chairman LAMPSON. Thank you, Mr. Inglis. Without objection, Members may place statements in the record at this point.

We will now consider H.R. 3775, the *Industrial Energy Efficiency Research and Development Act of 2007.*

I yield myself five minutes to describe this bill.

This bill authorizes and expands the Department of Energy's Industrial Technologies Program through better coordination of the interdepartmental research, enhancing the Industrial Assessment

Center's Program at universities and supporting more research and development of new innovations and technologies as they relate to efficiency improvement of the most energy-intensive manufacturing process.

On September 25, we heard expert energy-industry witnesses testify as to the need for and the timeliness of this legislation. They specifically encouraged research, devolvement and demonstration to improve the quality, quantity, and alternative resources of industrial feed stocks.

Using new, alternative energy technologies and achieving greater energy efficiency in our nation's most energy-intensive industries, the Industrial Technologies Program is already widely recognized for producing a number of high-quality, market-ready technological advances that have saved industry billions in energy costs, and consequently preserved American jobs. It also serves as a training ground for the next generation of energy and industrial engineers, training over 240 students a years.

Unfortunately, we have seen the budget for this program drop rapidly in the last few years, down almost 70 percent from 2001. This legislation is needed to continue supporting the successes of this program, while shifting the funding levels to reflect our priorities to ensure energy efficiency and environment performance through industrial efficiency research. These efforts not only improve the bottom line of a wide variety industries, but enhance the quality of life for American workers, families, and the communities they serve.

I ask my colleagues to support this important legislation, and I now recognize Mr. Inglis to present any remarks on the bill.

Mr. INGLIS. Only this, Mr. Chairman, a question for the record: it appears that the version in front of us today has a bill number added to it, which was not in the discussion draft that was circulated. I just want to make sure that the version that we are using is identical to the introduced version in order to prevent any confusion moving forward. Is the October 4, 2007, 8:22 p.m., version identical to the version that was introduced?

Chairman LAMPSON. It is the same.

Mr. INGLIS. Thank you, Mr. Chairman.

Chairman LAMPSON. Thank you, Mr. Inglis. Does anyone else wish to be recognized on this bill? Anyone else wish to be recognized on the bill? Seeing none, I ask unanimous consent that the bill is considered as read and open to amendment at any point, and that the Members proceed with the amendments in the order of the roster. Without objection, it is so ordered.

There are no amendments, and at this point, we do not have a quorum, I don't believe to make our vote. Can we roll this vote and go to the next bill then?

Mr. BARTLETT. Can we, by unanimous consent, waive the quorum rule?

Chairman LAMPSON. If there is no objection, we may go forward, yes.

Mr. BARTLETT. I ask unanimous consent we waive the quorum rule and go forward.

Chairman LAMPSON. Is there objection? Seeing none, we will proceed. Turning to H.R. 3775, I recognize Mr. McNerney to offer a motion.

Mr. MCNERNEY. Mr. Chairman, I move that the Committee favorably report H.R. 3775 to the Full Committee. Furthermore, I move that the staff be instructed to prepare the Subcommittee legislative report and make necessary technical and conforming changes to the bill, in accordance with the recommendations of the Subcommittee.

Chairman LAMPSON. The question is on the motion to report the bill favorably. Those in favor of the motion will signify by saying aye; those opposed, no. The ayes have it, and the bill is favorably reported.

Without objection, the motion to reconsider is laid upon the table. The Subcommittee Members may submit additional or Minority views on the measure.

I want to thank the Members for their attendance. This concludes our Subcommittee markup. We are adjourned. Thank you.

[Whereupon, at 2:25 p.m., the Subcommittee was adjourned.]

Appendix:

H.R. 3775, Section-by-Section: Discussion Draft

I

110TH CONGRESS
1ST SESSION

H. R. 3775

To support research and development of new industrial processes and technologies that optimize energy efficiency and environmental performance, utilize diverse sources of energy, and increase economic competitiveness.

IN THE HOUSE OF REPRESENTATIVES

OCTOBER 9, 2007

Mr. LAMPSON introduced the following bill; which was referred to the Committee on Science and Technology

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A BILL

To support research and development of new industrial processes and technologies that optimize energy efficiency and environmental performance, utilize diverse sources of energy, and increase economic competitiveness.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Industrial Energy Efficiency Research and Development Act of 2007".

SEC. 2. FINDINGS.

The Congress finds the following:

(1) According to the Energy Information Administration's 2006 Annual Energy Review, the industrial sector in 2006 accounted for more energy use (32 percent) than the residential (21 percent), commercial (18 percent), or transportation sector (29 percent).

(2) The Department of Energy has demonstrated the success of public-private partnerships to research, develop, and deploy new energy efficient technologies which reduce emissions and improve manufacturing competitiveness.

(3) Innovations in manufacturing processes may be translated into efficiency improvements in buildings, transportation, and other economic sectors.

(4) While past public-private partnerships have resulted in significant energy efficiency improvements in manufacturing processes, there is a need for new technologies to achieve continual energy efficiency improvements.

(5) Innovations made in the last few decades assisted the United States in remaining competitive in the global market. Continued innovation in the areas of energy efficiency and feedstock diversifica-

tion are necessary to enable the United States to maintain a competitive edge.

(6) The Department of Energy should continue collaborative efforts with industry, particularly the manufacturing sector, to broaden and accelerate the high-risk research and development of new manufacturing processes that optimize energy efficiency and utilize diverse sources of energy.

(7) These partnerships support critical research and development capabilities at universities and other research institutions while training engineers in critical areas of energy systems and efficient industrial process technologies.

SEC. 3. INDUSTRIAL TECHNOLOGIES PROGRAM.

(a) IN GENERAL.—The Secretary of Energy (in this Act referred to as the ''Secretary'') shall establish a program, in cooperation with energy-intensive industries, industry trade associations representing such industries, and institutions of higher education, to conduct research, development, demonstration, and commercial application activities with respect to new industrial and commercial processes, technologies, and methods to—

(1) achieve—

(A) substantial improvements in energy efficiency; and

(B) environmental performance improvements such as waste reduction, emissions reductions, and more efficient water use; and

(2) enhance the economic competitiveness of the United States industrial sector.

(b) PROGRAM ACTIVITIES.—Research, development, demonstration, and commercial application activities under this section may include—

(1) activities to support the development and use of technologies and processes that improve the quality and quantity of feedstocks recovered or recycled from process and waste streams;

(2) research to meet manufacturing feedstock requirements with alternative resources;

(3) research to develop and demonstrate technologies and processes that utilize alternative energy sources to supply heat, power, and new feedstocks for energy-intensive industries;

(4) research to achieve energy efficiency in steam, power, control system, and process heat technologies, and in other manufacturing processes; and

(5) a program to fund research, development, and demonstration relating to inventors' and small companies' technology proposals, based on energy

savings potential, commercial viability, and technical merit.

(c) FINANCIAL ASSISTANCE.—Financial assistance under this section may be in the form of grants, contracts, and cooperative agreements, which shall be subject to cost sharing as required under applicable Federal law.

(d) COMPETITIVE AWARDS.—All awards under this section shall be made on a competitive, merit-reviewed basis.

(e) COORDINATION AND NONDUPLICATION.—The Secretary shall, coordinate efforts under this section with other programs of the Department and other Federal agencies, to avoid duplication of effort.

SEC. 4. UNIVERSITY-BASED INDUSTRIAL RESEARCH AND ASSESSMENT CENTERS.

To strengthen the program under section 3, the Secretary shall provide funding to university-based industrial research and assessment centers, whose purpose shall be—

(1) to identify opportunities for optimizing energy efficiency and environmental performance;

(2) to promote application of emerging concepts and technologies in small and medium-sized manufacturers;

(3) to promote the research and development for usage of alternative energy sources to supply heat, power, and new feedstocks for energy intensive industries;

(4) to coordinate with appropriate State research offices, and provide a clearinghouse for industrial process and energy efficiency technical assistance resources; and

(5) to coordinate with State-accredited technical training centers and community colleges, while ensuring appropriate services to all regions of the United States.

SEC. 5. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary to carry out this Act $150,000,000 for each of the fiscal years 2009 through 2013.

○

Industrial Energy Efficiency Research and Development Act of 2007

Section 1. Short Title

"The Industrial Energy Efficiency Research and Development Act of 2007"

Section 2. Findings

The U.S. Industrial sector accounts for more energy use (32 percent) than the residential, commercial, or transportation sectors. Industries have almost reached optimal energy efficiencies and new innovations and technologies' research, development, and demonstration are necessary to increase energy efficiency and diversify energy and feedstock sources.

Section 3. Industrial Technologies Program

Establishes a program within the Department of Energy to work with energy-intensive industries, industry trade associations, and institutions of higher education to conduct cost-shared research, development, demonstration, and commercial application activities for new innovations and technologies to enhance industrial efficiency and economic competitiveness of U.S. industrial sector.

Defines the activities of the program to include: research to improve the quality and quantity of feedstocks recovered from waste streams; to develop alternative resources for use as industrial feedstocks; developing alternative energy sources to supply heat and power for energy-intensive industries; and achieve overall energy efficiency in manufacturing processes.

Section 4. University-Based Industrial Research and Assessment Centers

Requires the Secretary to fund University-based Industrial Research and Assessment Centers to aid small-and medium sized manufacturers by identifying opportunities to optimize their energy efficiency and improve environmental performance through advanced technologies, to serve as a resource for technical data, and to train engineering and research students to conduct energy assessments.

Section 5. Authorization of Appropriations

$150 million is authorized for each fiscal year 2009–2013.

XXII. PROCEEDINGS OF THE FULL COMMITTEE MARKUP ON H.R. 3775, THE INDUSTRIAL ENERGY EFFICIENCY RESEARCH AND DEVELOPMENT ACT OF 2007

TUESDAY, OCTOBER 16, 2007

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND TECHNOLOGY,
Washington, DC.

The Committee met, pursuant to call, at 10:07 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Bart Gordon [Chairman of the Committee] presiding.

Chairman GORDON. Good morning, everyone. Pursuant to notice the Committee on Science and Technology meets to consider the following measures; H.R. 3776, the *Energy Storage Technology Advancement Act of 2007,* and H.R. 3775, the *Industrial Energy Efficiency Research and Development Act of 2007.*

We will put the Committee on notice. We originally also were going to deal with a bill from Mr. Sexton today, but apparently it is not ready, and we will be doing it next week. So I assume everybody is working, and we will get that ready to go.

We will now proceed with the markup, and I will begin with a brief statement. Today the Science and Technology Committee will consider two bills. The first is the *Energy Storage Technology Advancement Act,* H.R. 3776, and I would like to thank my friend, Ranking Member Hall, for his interest in this important issue and the work he and his staff have put into the bill.

H.R. 3776 includes provisions from a bill Mr. Hall introduced earlier this year, and I am glad we could incorporate that into it.

I will offer a Manager's amendment to H.R. 3776, which makes some technical changes and other improvements to the bill, and I would like to thank Mr. Hall, Ms. Biggert, Mr. Inglis, and their staffs for working with us to develop the amendment.

The second bill we will markup today is the *Industrial Energy Efficiency Research and Development Act,* H.R. 3775.

H.R. 3775 was introduced by Energy and Environment Subcommittee Chairman Nick Lampson. I understand Chairman Lampson and Ranking Member Inglis have worked together on a Manager's amendment that will make several changes to the introduced legislation.

And I am glad to see the Committee tackle such and important and under-served area as this, and I know Mr. Lampson has worked hard with the industry, universities, DOE, and the minority to make this a good bill.

I now recognize Mr. Hall to present his opening remarks.

[The prepared statement of Chairman Gordon follows:]

PREPARED STATEMENT OF CHAIRMAN BART GORDON

Today, the Science and Technology Committee will consider two bills.

The first is the *Energy Storage Technology Advancement Act,* H.R. 3776 which I introduced last week.

I would like to thank my friend from Texas, Ranking Member Hall, for his interest in this important issue and the work he and his staff put into this bill. H.R. 3776 includes provisions from a bill Mr. Hall introduced earlier this year, and I am glad we could incorporate them.

Advancing the field of energy storage technologies brings with it several environmental, economic and security-related benefits, and it is critical that the U.S. build up and maintain a competitive industrial capability in this sector.

Establishing an aggressive research program to is vital to advancing the development and deployment of energy storage technologies for use in electric drive vehicles and stationary applications that improve operation of our electricity delivery system.

I will offer a Manager's amendment to H.R. 3776 which makes some technical changes and other improvements to the bill. I would like to thank Mr. Hall, Mrs. Biggert, Mr. Inglis and their staffs for working with us to develop the amendment.

The second bill we will markup today is the *Industrial Energy Efficiency Research and Development Act,* H.R. 3775.

H.R. 3775 was introduced by Energy and Environment Subcommittee Chairman Nick Lampson. I understand Chairman Lampson and Ranking Member Inglis have worked together on a Manager's amendment that will make several changes to the introduced legislation.

I am glad to see the Committee tackle such an important and under-served area as this, and I know Mr. Lampson has worked hard with industry, universities, DOE, and the Minority to make this a good bill.

Mr. HALL. Thank you, Mr. Chairman, and I would like to add my support to the two bills that we are marking up today. Both of them work towards efficiently using our country's energy resources.

The *Industrial Energy Efficiency Research and Development Act* will reinforce the good work the Department of Energy is currently doing in the Industrial Technologies Program to help American companies lower their use of energy in the production of their products and in the running of their plants and their businesses, which is very important.

The *Energy Storage Technology Advancement Act* will also help our country use energy more efficiently in that it establishes a program at the Department of Energy to develop energy storage devices for stationary and vehicular applications.

This will allow our country to utilize renewable energy sources to the maximum extent possible and allow for traditional generation to become even more efficient as energy storage devices will reduce the need for inefficient and expensive power plants to be ramped up during times of high energy demand.

The bill, Mr. Chairman, will also help pave the way toward the development of plug-in hybrid vehicles by furthering research on the storage system necessary to make the vehicles a viable, widespread transportation option.

I introduced similar energy storage legislation earlier this year. Mr. Chairman, I really want to thank you for including a lot of my language in the version that is before us today.

And I yield back my time.

[The prepared statement of Mr. Hall follows:]

PREPARED STATEMENT OF REPRESENTATIVE RALPH M. HALL

Mr. Chairman, I would like to add my support to the two bills we are marking up today. Both of them work towards efficiently using our country's energy resources. The *Industrial Energy Efficiency Research and Development Act* will reinforce the good work the Department of Energy is currently doing in the Industrial Technologies Program to help American companies lower their use of energy in the production of their products and in the running of their plants and businesses.

The *Energy Storage Technology Advancement Act* will also help our country use energy more efficiently in that it establishes a program at the Department of Energy to develop energy storage devices for stationary and vehicular applications. This will allow our country to utilize renewable energy sources to the maximum extent possible and allow for traditional generation to become even more efficient as energy storage devices will reduce the need for inefficient and expensive power plants to be ramped up during times of high energy demand. The bill will also help pave the way toward the development of plug-in hybrid vehicles by furthering research on the storage systems necessary to make the vehicles a viable, widespread transportation option.

I introduced similar energy storage legislation earlier this year, and I would like to thank Chairman Gordon for including much of my language in this version before us today.

I yield back the balance of my time.

Chairman GORDON. Thank you, Mr. Hall, and now without objection Members may place statements in the record at this point.

We will now consider H.R. 3775, the *Industrial Energy Efficiency Research and Development Act of 2007.*

I yield to the Chairman of Energy and Environmental Subcommittee, Mr. Lampson, five minutes to describe his bill.

Mr. LAMPSON. Thank you, Mr. Chairman, for bringing this bill up today for a Full Committee markup.

This bill authorizes and expands the Department of Energy's Industrial Technologies Program through better coordination of interdepartmental research, enhancing the Industrial Assessment Centers Program at universities, and supporting more research and development of new innovations and technologies as they relate to efficiency and environmental improvements of most energy-intensive manufacturing processes.

On September 25 we heard expert energy industry witnesses testify as to the need for and timeliness of this legislation. I introduced the bill on the 9th of October, and last week we marked up, marked the bill up in Subcommittee.

The Industrial Technologies Program is already widely recognized for producing a number of high-quality, market-ready technological advances that have saved industry literally billions in energy costs. Consequently, making these industries more competitive and preserving American jobs.

Unfortunately, we have seen the budget for this program drop rapidly in the last few years. This legislation is needed to continue supporting the successes of this program while shifting the funding levels to reflect our priorities to ensure energy efficiency, environmental performance, and competitiveness through industrial efficiency research and development.

I ask my colleagues to support this important legislation.

I yield back my time.

[The prepared statement of Mr. Lampson follows:]

PREPARED STATEMENT OF REPRESENTATIVE NICK LAMPSON

Thank you, Chairman, for bringing this bill up today for Full Committee markup.

This bill authorizes and expands the Department of Energy's Industrial Technologies Program through better coordination of interdepartmental research; enhancing the Industrial Assessment Centers program at universities; and supporting more research and development of new innovations and technologies as they relate to efficiency and environmental improvements of the most energy-intensive manufacturing processes.

On September 25 we heard expert energy industry witnesses testify as to the need for and timeliness of this legislation. I introduced this bill on the 9th of October, and last week we marked this bill up in Subcommittee.

The Industrial Technologies Program is already widely recognized for producing a number of high quality market-ready technological advances that have saved industry billions in energy costs, consequently making these industries more competitive and preserving American jobs. Unfortunately, we have seen the budget for this program drop rapidly in the last few years.

This legislation is needed to continue supporting the successes of this program while shifting the funding levels to reflect our priorities to ensure energy efficiency, environmental performance, and competitiveness through industrial efficiency research and development.

I ask my colleagues to support this important legislation.

Chairman GORDON. Mr. Hall is recognized for any remarks on the bill.

Mr. HALL. Mr. Chairman, I am in full agreement with it. I yield back my time.

Chairman GORDON. Does anyone else wish to be recognized?

I ask unanimous consent the resolution is considered as read and open to amendment at any point and that Members proceed with the amendments in the order of the roster.

Without objection, so ordered.

The first amendment on the roster is a Manager's amendment offered by Mr. Lampson. Are you ready to proceed?

Mr. LAMPSON. Yes, I am, Mr. Chairman. I have an amendment at the desk.

Chairman GORDON. The Clerk will report the amendment.

The CLERK. Amendment to H.R. 3775 offered by Mr. Lampson of Texas and Mr. Inglis of South Carolina.

Chairman GORDON. I ask unanimous consent to dispense with the reading.

Without objection, so ordered.

I recognize the gentleman from Texas for five minutes to explain his amendment.

Mr. LAMPSON. Mr. Chairman, this amendment incorporates suggestions by witnesses at our hearing and outside stakeholders who provided comments on the bill, and I want to thank Mr. Inglis for working with us on this amendment that makes some minor corrections and additions to the bill.

We have added an additional finding to further highlight the past successes of the program and working with certain energy-intensive industries.

In addition, this amendment strikes Sub-Section C of Section 3 to eliminate duplicative statements of authority already given to the Secretary of Energy.

And finally, the amendment adds a biannual report to be submitted to Congress to provide added accountability and provide some specific documentation on how the program coordinates with the industrial sector.

And once again, I thank my colleague, Mr. Inglis, for working with me. I encourage all of our colleagues to support this amendment.

And I yield back the balance of my time.

[The prepared statement of Mr. Lampson follows:]

PREPARED STATEMENT OF REPRESENTATIVE NICK LAMPSON

Mr. Chairman, I have an amendment at the desk.

This amendment incorporates suggestions by witnesses at our hearing and outside stakeholders who provided comments on the bill. I want to thank Mr. Inglis for working with us on this amendment that makes some minor corrections and additions to the bill.

We have added an additional finding to further highlight the past successes of the program in working with certain energy intensive industries.

In addition, this amendment strikes subsection (c) of Section 3, to eliminate duplicative statements of authority already given to the Secretary of Energy. Finally, the amendment adds a biannual report to be submitted to Congress to provide added accountability and provide some specific documentation on how the program coordinates with the industrial sector.

Once again, I thank my colleague, Mr. Inglis for working with me, and I encourage all of my colleagues to support this amendment.

I yield back the balance of my time.

Chairman GORDON. Does anyone else wish to be recognized?

Mr. INGLIS. Just briefly.

Chairman GORDON. Mr. Inglis is recognized.

Mr. INGLIS. I just echo what Mr. Lampson said and add this. The Department of Energy is rightly focused on some exciting industries that are very sexy and may yield some real energy savings, but then there are also these existing industries that use a huge amount of energy that we hope they continue to focus in on, because that is where additional gains can be made.

So while we go after things like high-tech industries and computers, technologies, applications, those sorts of things, we also need to continue to focus on the Nation's steel, chemical, metal casting, forest products, glass, petroleum, mining, and other manufacturings that have a track record of joining public and private dollars to increase sufficiency and decrease energy consumption.

I trust that that is what this amendment will help see that the Department of Energy focuses on these existing industries as well as the new and exciting ones.

Thank you, Mr. Chairman.

Chairman GORDON. Any further discussion?

If no, the vote occurs on the amendment. All in favor, say aye. Those opposed, say no. The ayes have it. The amendment is agreed to.

Are there other amendments? If no, then the vote is on the bill, H.R. 3775 as amended. All those in favor will say aye. All those opposed, no. In the opinion of the Chair the ayes have it.

I recognize Mr. Hall to offer a motion.

Mr. HALL. Mr. Chairman, I move that the Committee favorably report H.R. 3775 as amended to the House with the recommendation that the bill do pass.

Furthermore, I move that the staff be instructed to make necessary technical and conforming changes and that the Chairman take all the necessary steps to bring the bill before the House for consideration.

I yield back.

Chairman GORDON. The question is on the motion to report the bill favorably. Those in favor of the motion will signify by saying aye. Opposed, no. The ayes have it. The bill is favorably reported.

Without objection the motion to reconsider is laid upon the table. Members will have two subsequent days in which to submit supplemental, Minority, or additional views on the measure, ending Friday, October the 19th, at 9:00 a.m.

I move pursuant to Clause 1 of Rule 22 of the Rules of the House of Representatives that the Committee authorize the Committee to, Chairman to offer such motions as may be necessary in the House to adopt and pass H.R. 3775, *Industrial Energy Efficiency Research and Development Act of 2007,* as amended.

Without objection, so ordered.

Let me thank the Members for being here today. This is a good showing. These are two good bills, and they are really going to make us relevant in this, our Energy Bill, and I hope that all of you will go home and take credit for these, because these are well thought-out bipartisan bills. And now the Committee, unless there is, anyone else has any remarks, suggestions for today. If not, the Committee concludes.

[Whereupon, at 10:35 a.m., the Committee was adjourned.]

Appendix:

Subcommittee Markup Report, Amendment Roster

SUBCOMMITTEE ON ENERGY AND ENVIRONMENT
REPORT FROM SUBCOMMITTEE MARKUP

OCTOBER 10, 2007

H.R. 3775, the Industrial Energy Efficiency Research and Development Act of 2007

I. Purpose

The purpose of this bill is to authorize and support research, development, demonstration, and commercial application of new industrial processes and technologies that will optimize energy efficiency and environmental performance of energy intensive industries; to enhance research and development through better coordination of interdepartmental research; and to expand Industrial Assessment Centers programs at universities.

II. Background and Need for Legislation

An expanding economy, growing population, and rising standard of living create rapidly growing demands for energy, making energy conservation a key national goal. In the U.S. industry is responsible for more than one-third of all energy consumed, the large majority of which is consumed by manufacturing industries such as chemical, glass and metals production, mining, petroleum refining, and forest and paper products. These industries require very large amounts of energy per unit of production, making them particularly susceptible to high energy prices. These and other energy-intensive industries are ideal candidates on which to focus federal R&D efforts and apply new technologies increase efficiency, raise productivity, reduce wastes, and trim costs.

The Energy Efficiency and Renewable Energy's (EERE) Industrial Technologies Program (ITP) at the Department of Energy (DOE), works to improve the energy intensity of U.S. industry through coordinated research and development and dissemination of innovative energy efficiency technologies and practices. The ITP invests in high-risk, high-value cost-shared R&D projects to reduce industrial energy use and process waste streams, while stimulating productivity and growth. Competitive solicitations are the principal mechanism used by ITP to conduct cost-shared R&D. Solicitations reflect the priorities of the Program and selection of projects follows merit-based criteria that emphasize projected energy, environmental, and economic benefits. In addition, ITP makes available information and resources on other financial assistance and research opportunities and case studies from past ITP projects. The ITP portfolio details over 1,000 technology development projects in which ITP has been involved.

The Industrial Technologies Program claims numerous successes. The ITP is considered one of the most effective DOE programs at transferring technologies, with over 170 technologies reaching the commercial market. An estimated 13,000 U.S. manufacturing plants have been improved through the ITP technology delivery effort. Nearly five quadrillion Btu of energy (equal to approximately $23 billion) of energy savings are attributed to the program since its inception, with 366 trillion Btu saved in 2004 alone.

The ITP also sponsors 26 University-Based Industrial Assessment Centers (IACs) that provide no-cost energy assessments primarily to small-and medium-sized manufacturers. Assessments are conducted by teams of faculty and students, and involve examinations of potential savings from energy efficiency improvements, waste minimization and pollution prevention, and productivity improvement. The average expected savings per assessment is fifty to seventy thousand dollars, with much larger savings possible with large operations. Companies are in turn encouraged to replicate accomplishments and share results.

By operating through university engineering programs the IACs serve as a training ground for the next-generation of energy and industrial engineers. Roughly 240 students receive training through the program each year. When budgets for the program were higher 38 IACs operated around the country, compared to the 26 in operation today.

While the U.S. industrial sector has become much more energy efficient over the past 30 years, there are still ample opportunities to achieve efficiency gains. However, energy-intensive industries face enormous competitive pressures that make it difficult to make the necessary R&D investments in technology development. Energy-intensive industries tend to exhibit relatively low levels of R&D spending, and are often unwilling to accept the risks associated with undertaking complex capital-intensive technology development and implementation. Constantly changing market

conditions, energy prices, and other business concerns affect the ability and willingness of industry to pursue energy efficiency opportunities. As the role of energy in industry changes, the ITP should have the resources to sustain and expand operations, adapt, and reshape its strategy where needed. Without a sustained commitment by the private and public sectors to invest in technology R&D and adopt new technologies, the ability to close the gap between U.S. energy supply and demand will be greatly limited.

The budget for Industrial Technologies Program has decreased dramatically in recent years. The Fiscal Year 2007 budget request for Industrial Technologies was $45.6 million, an $11.3 million reduction from the Fiscal Year 2006 Appropriation. By comparison, appropriated levels as recently as Fiscal Year 2000 were as high as $175 million. These funding levels reflect a dramatic shift in priorities away from industrial efficiency R&D. This legislation is needed to ensure continued gains in industrial energy efficiency and environmental performance through research and development.

III. Subcommittee Actions

The Energy and Environment Subcommittee held a hearing on Tuesday, September 25, 2007 to hear testimony relevant to the Industrial Technologies Program and to receive comments on a discussion draft of a bill to authorize funding and provide guidelines for the program. The Subcommittee heard from four witnesses representing diverse viewpoints on the program:

- **Mr. Malcolm Verdict, C.E.M.,** Associate Director of the Energy Systems Laboratory within the Texas Engineering Experiment Station (TEES) at Texas A&M University.
- **Mr. Fred Moore,** Global Director of Manufacturing and Technology for Dow Chemical's Energy Business, and Chairman of the Energy Efficiency Task Force of the National Association of Manufacturers.
- **Mr. Lawrence Kavanagh,** Vice President of Manufacturing and Technology for the American Iron and Steel Institute (AISI).
- **Mr. Paul Cicio,** President at Industrial Energy Consumers of America.

On October 9, 2007, Representative Nick Lampson, Chairman of the Energy and Environment Subcommittee introduced H.R. 3775, the *Industrial Energy Efficiency Research and Development Act of 2007.*

The Subcommittee on Energy and Environment met to consider H.R. 3775 on October 10, 2007, with no amendments to the bill. Mr. McNerney moved that the Subcommittee favorably report the bill, H.R. 3775, to the Full Committee on Science and Technology. The motion was agreed to by a voice vote.

IV. Summary of Major Provisions

H.R. 3775 authorizes $150 million for each fiscal year 2009092013 to the Department of Energy to support research, development, demonstration, and commercial application of new industrial processes and technologies to optimize energy efficiency and environmental performance of the U.S. industrial sector, and expand the Industrial Assessment Centers program at universities. The bill specifically encourages research, development and demonstration to improve the quality, quantity, and alternative resources of industrial feedstocks; using new alternative energy technologies; and achieving greater energy efficiency in steam, power, control system, and process heat technologies in energy-intensive industries. H.R. 3775 also allows for competitive awards to individuals and small businesses for novel energy savings concepts and inventions. H.R. 3775 enhances research and development efforts through cooperation with energy intensive industries, industry trade associations, and institutions of higher education and through better coordination of interdepartmental research as well as with other federal agencies.

V. Section-by-Section Analysis of the bill as reported by the Subcommittee

SECTION 1. SHORT TITLE

"The Industrial Energy Efficiency Research and Development Act of 2007"

SEC. 2. FINDINGS

The U.S. Industrial sector accounts for more energy use (32 percent) than the residential, commercial, or transportation sectors. Industries have almost reached optimal energy efficiencies and new innovations and technologies' research, development, and demonstration are necessary to increase energy efficiency and diversify energy and feedstock sources.

SEC. 3. INDUSTRIAL TECHNOLOGIES PROGRAM

Establishes a program within the Department of Energy to work with energy-intensive industries, industry trade associations, and institutions of higher education to conduct cost-shared research, development, demonstration, and commercial application activities for new innovations and technologies to enhance industrial efficiency and economic competitiveness of U.S. industrial sector.

Defines the activities of the program to include: research to improve the quality and quantity of feedstocks recovered from waste streams; to develop alternative resources for use as industrial feedstocks; developing alternative energy sources to supply heat and power for energy-intensive industries; and achieve overall energy efficiency in manufacturing processes.

SEC. 4. UNIVERSITY-BASED INDUSTRIAL RESEARCH AND ASSESSMENT CENTERS

Requires the Secretary to fund University-based Industrial Research and Assessment Centers to aid small and medium sized manufacturers by identifying opportunities to optimize their energy efficiency and improve environmental performance through advanced technologies, to serve as a resource for technical data, and to train engineering and research students to conduct energy assessments.

SEC. 5. AUTHORIZATION OF APPROPRIATIONS

$150 million is authorized for each fiscal year 2009–2013.

COMMITTEE ON SCIENCE AND TECHNOLOGY
FULL COMMITTEE MARKUP
OCTOBER 16, 2007

AMENDMENT ROSTER

H.R. 3775, Industrial Energy Efficiency Research and Development Act of 2007

No.	Sponsor	Description	Results
1	Mr. Lampson with Mr. Inglis	Manager's amendment makes technical corrections, adds a finding, strikes the financial assistance section, and adds a report to Congress on review of the program.	Agreed to by voice vote.

AMENDMENT TO H.R. 3775

OFFERED BY MR. LAMPSON OF TEXAS AND MR. INGLIS OF SOUTH CAROLINA

Page 2, line 7, through page 3, line 9, redesignate paragraphs (2) through (7) as paragraphs (3) through (8), respectively.

Page 2, after line 6, insert the following new paragraph:

(2) The primary energy intensive industries vital to maintaining our country's infrastructure and economic and national security include steel, chemicals, metal casting, forest products, glass, aluminum, petroleum refining, and mining, as well as other energy intensive manufacturers.

Page 2, lines 7 through 15, amend paragraphs (3) and (4), as so redesignated, to read as follows:

(3) The Department of Energy has demonstrated the success of public-private partnerships with these industries resulting in research, development, and deployment of new energy efficient technologies which reduce emissions and improve manufacturing competitiveness.

(4) Innovations in manufacturing processes within these industries may be translated into efficiency improvements in buildings, transportation, and other economic sectors that depend upon these industries.

Page 3, lines 9 through 13, amend paragraph (8), as so redesignated, to read as follows:

(8) These partnerships support critical research and development capabilities at universities and other research institutions while training future generations of engineers in critical areas of energy systems and efficient industrial process technologies for our domestic industries.

Page 3, lines 17 and 18, strike ''industry trade associations'' and insert ''trade and industry research collaborations''.

Page 5, lines 3 through 6, strike subsection (c) and redesignate the subsequent subsections accordingly.

Page 5, after line 13, insert the following new subsection:

(e) ANNUAL REPORT.—Not later than 1 year after the date of enactment of this Act, and once every 2 years thereafter, the Secretary shall submit to the Congress a

report on the activities conducted pursuant to this Act, including—

(1) a description of the activities used to facilitate cooperation with energy-intensive industries, universities, and other participants in the program; and

(2) a description of ongoing projects and new projects initiated, and the anticipated energy savings associated with achievement of each project's goals.

XXIII. Exchange of Letters

ONE HUNDRED TENTH CONGRESS

U.S. House of Representatives
Committee on Energy and Commerce
Washington, DC 20515–6115

JOHN D. DINGELL, MICHIGAN
CHAIRMAN

October 22, 2007

The Honorable Bart Gordon
Chairman
Committee on Science and Technology
2320 Rayburn House Office Building
Washington, D.C. 20515

Dear Mr. Chairman:

I write with regard to H.R. 3775, the Industrial Energy Efficiency Research and Development Act of 2007. I know it is your wish for the bill to be considered on the House floor as soon as possible.

Some of the provisions in the bill are of jurisdictional interest to the Committee on Energy and Commerce. I am not, however, raising the issue with the Speaker because it is my understanding that you have agreed that the referral and consideration of the bill do not in any way serve as a jurisdictional precedent as to our two committees.

I request that you send to me a letter confirming our agreement and that our exchange of letters be included in your Committee's report on the bill and inserted in the Congressional Record as part of the consideration of the bill.

Please call me if you would like to discuss this matter further.

Sincerely,

JOHN D. DINGELL
CHAIRMAN

cc: The Honorable Joe Barton, Ranking Member
Committee on Energy and Commerce

BART GORDON, TENNESSEE
CHAIRMAN

RALPH M. HALL, TEXAS
RANKING MEMBER

U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE AND TECHNOLOGY
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WASHINGTON, DC 20515–6301
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http://science.house.gov

October 22, 2007

The Honorable John D. Dingell
Chairman, Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, DC 20515

Dear Mr. Chairman:

Thank you for your letter regarding the referral and consideration of H.R. 3775, the Industrial Energy Efficiency Research and Development Act of 2007. I appreciate your support of this important legislation.

I recognize your Committee's jurisdictional interest in this area, and I agree that the inaction of the Committee on Energy and Commerce with respect to the bill does not in any way serve as a jurisdictional precedent as to our two committees. The exchange of letters between our two committees will be placed in the Committee's report on H.R. 3775 and in the *Congressional Record* during consideration of the bill.

Thank you for your attention to this matter.

Sincerely,

Bart Gordon

Bart Gordon
Chairman

cc: The Honorable Ralph Hall, Ranking Member
The Honorable Joe Barton, Ranking Member, Committee on Energy and Commerce
The Honorable John V. Sullivan

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