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*Testimony Before
The House of Representatives Resources Committee,
Subcommittee on Energy and Mineral Resources*

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INTRODUCTION

Madam Chairwoman, Representative Kind, and Members of the Committee, thank you very much for the opportunity to testify before you today about energy supply and the American consumer.

My name is Kara Saul Rinaldi. I am the Director of Policy for the Alliance to Save Energy, a bipartisan, nonprofit coalition of business, government, environmental, and consumer leaders. The Alliance's mission is to promote energy efficiency worldwide to achieve a healthier economy, a cleaner environment, and greater energy security. Senators Charles Percy and Hubert Humphrey founded the Alliance in 1977; it is currently chaired by Senator Byron Dorgan and former CEO of Osram Sylvania, Dean Langford, with Representative Ed Markey and Senators Susan Collins, Jeff Bingaman, and Jim Jeffords serving as Vice Chairs.

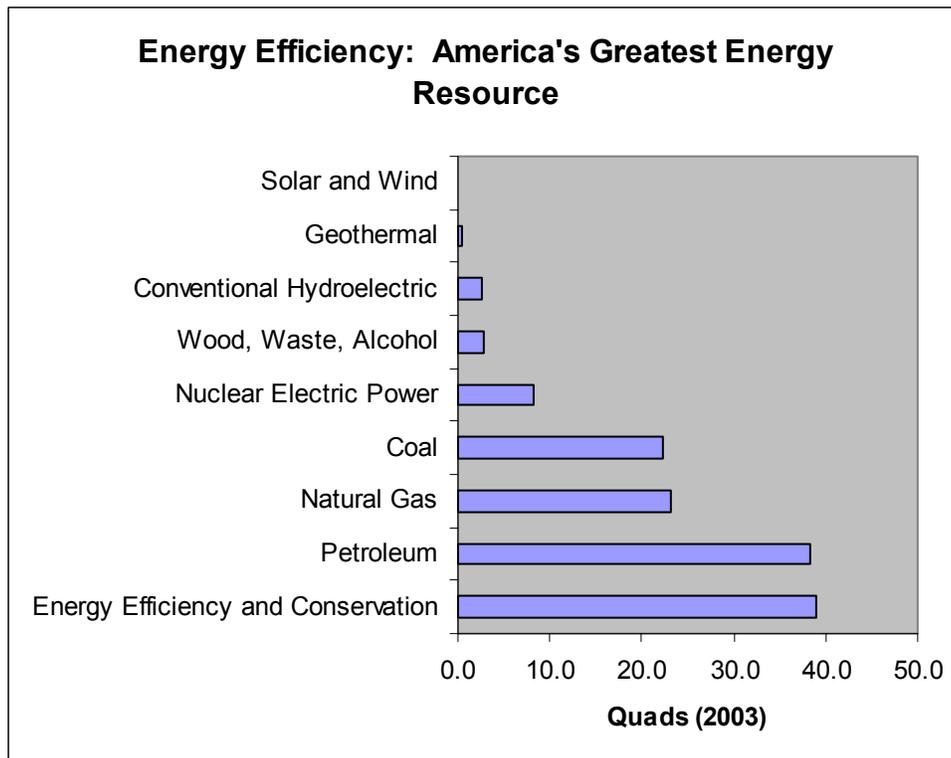
Over 70 companies and organizations currently belong to the Alliance to Save Energy. If it pleases the Chairwoman, I would like to include for the record a complete list of the Alliance's Board of Directors and Associate members, which include many of the nation's leading energy efficiency firms, electric and gas utilities, and other companies providing economic savings and pollution reduction to the marketplace.

Madam Chairwoman, you have heard today about the state of America's traditional energy resources. I am here to tell you the benefits of America's greatest energy resource, energy efficiency. Investing in energy efficiency is the quickest, cleanest, and cheapest way of meeting our nation's energy needs. Energy efficiency could be defined as getting more bang for your buck -- more work out of a given amount of energy -- and that is precisely what consumers around the country are trying to do every day, get more for their money. At the same time, energy efficiency investments also lower energy prices, reduce strain on our electricity system, reduce imports of foreign oil, lower air pollution and greenhouse gas emissions, and have other benefits.

Madam Chairwoman, my testimony will review how energy efficiency has grown into America's greatest energy resource and will discuss the policies and measures that are needed from Congress and the federal government to help realize the great remaining potential of energy efficiency.

ENERGY EFFICIENCY: THE GREATEST ENERGY RESOURCE IN THE U.S.

Let me tell you what I mean when I say that energy efficiency is our nation’s greatest energy resource, making a larger contribution to meeting our energy needs than petroleum, natural gas, or even coal. The Alliance estimates that energy efficiency gains since 1973 are now saving at least 39 quadrillion BTUs of energy each year, or 40% of our actual energy use.¹ The energy savings we are enjoying from energy efficiency far exceeds consumption of natural gas or coal, and far outpace energy produced using oil, nuclear, and other energy sources. Without these enormous savings on the demand side, our difficulties in meeting energy demand would be far, far worse than they are today.



The enormous contribution of energy efficiency to meeting our energy needs is achieved with little or no negative impact on our wilderness areas, our air quality, or the global climate. Energy efficiency enhances our national and energy security by lessening requirements for foreign energy sources. Further, it is invulnerable to supply disruptions; is rarely subject to siting disputes; is available in all areas in large or small quantities; and generally costs much less than it would to buy additional energy (this is especially true when the costs of externalities are taken into account).

¹ Energy efficiency savings estimated by Alliance to Save Energy. Production quantities from Energy Information Administration, Monthly Energy Review, January 2004.

Without the efficiency gains realized by our nation in the past 30 years, Americans would now be paying much more for energy, and prices likely would be significantly higher. Importantly, there are no signs that the resource of energy efficiency will be depleted in the foreseeable future—there still are many cost-effective efficiency measures waiting to be implemented.

ENERGY EFFICIENCY: A CONTRIBUTION ACROSS THE ECONOMY

Madam Chairwoman, cost-effective energy-efficient technologies provide multiple benefits to businesses and consumers in every economic sector. A brief review of these sectors will help explain how energy efficiency has grown to be our greatest energy resource, and it will provide the context for the policy recommendations offered by the Alliance to help this resource continue to grow.

Residential and Commercial Buildings

From more efficient appliances and compact fluorescent light bulbs to better insulation and low-emissivity windows, the progress in bringing energy efficiency to America's homes and consumers has been nothing short of phenomenal. The typical refrigerator sold today uses only one-third of the electricity used by refrigerators in the early 1970's, even though refrigerators are now bigger and have more features. Under new standards, central air conditioners will be almost twice as efficient as they were in the mid 1970's. Many other new technologies also have produced major efficiency gains.

Notwithstanding this important progress, the potential for reducing energy use in buildings is even greater than those realized to date. For example, research into LED lighting (based on the same principles as the first digital watches in the 1970's) promises as great an efficiency improvement over fluorescent lights as fluorescent lights have provided over incandescent bulbs. The Department of Energy has now set a goal of "zero-energy buildings"—buildings that produce as much energy from solar cells as they use. Realizing such a goal would have a profound impact on U.S. energy consumption: the residential sector now accounts for one-third of all electricity use in the U.S; if all homes were zero-energy, then we would need up to a third fewer power plants.

Yet many barriers prevent the buildings sector from reaping the large savings energy efficiency technologies could provide. The sector is fragmented, with many small companies that lack the resources for research. Builders and landlords often do not pay for the energy used by the appliances that they provide. Other challenges include lack of product availability and of consumer awareness. Overcoming such barriers requires innovative policy direction from the Congress.

Industry

Industry accounts for one-third of all energy use in the U.S. Energy-intensive industrial plants typically have enormous energy bills, sometimes running into the millions of dollars annually. Energy efficiency improvements offer the potential for a significant return on investment for the industrial energy consumer in the form of lower utility bills.

Using energy efficiency as a resource does not always translate into high upfront costs to the energy consumer; often it can be accomplished in the industrial sector through the adoption of energy management strategies. The Alliance to Save Energy works with Lawrence Berkeley National Laboratory, the U.S. Department of Energy, and industrial organizations to increase adoption of these strategies.

Select companies are gaining a sustainable competitive advantage, while at the same time improving environmental performance and increasing productivity, by effectively managing energy use comprehensively and within all aspects of the company's operations. 3M, Frito-Lay, Kimberly-Clark, Johnson Controls, and BP are but a few of the industrial consumers that have realized the benefits of strong energy management while saving millions in avoided costs for energy and water.

Transportation Sector

Vehicle fuel efficiency has historically been a remarkable success story for both consumers and the country. After the 1973 oil embargo, Congress and the Administration established Corporate Average Fuel Economy (CAFE) standards that spurred a 70 percent increase in the fuel efficiency of our nation's cars and light trucks in little more than a decade, from an average of 13 mpg to 22 mpg. And the new vehicles were not only more efficient, but also more powerful, safer, more reliable, and less polluting. Unfortunately, since the mid 1980's average fuel efficiency has slowly declined back to 20 mpg, as CAFE standards have remained static and inefficient SUVs have become a consumer favorite.

The decline has occurred despite an array of new technologies that promise large and cost-effective efficiency gains. A hybrid gas-electric engine, such as that found in Motor Trend's 2004 "Car of the Year," the Toyota Prius, can increase fuel efficiency by about 50 percent over a comparable, gas-powered vehicles. Improved transmissions, better aerodynamics, lighter weight materials, and other technologies can yield further gains. Importantly, these technologies offer not only fuel savings but also significantly decreased emissions.

Two-thirds of America's oil use is in the transportation sector. Despite increases in fuel efficiency, as the number of miles driven has increased, America's consumption of oil has increased. As domestic production of oil has decreased at the same time, our dependence on foreign oil has gone up. We now import more than half of the oil we use, and imports from the Persian Gulf are three times as high as they were at the time of the OPEC oil embargo in 1973. Support for further drilling may slow the decline of domestic production, but it will not reverse the trend. We, as a nation, must move toward electric drive transportation options and other technologies that offer significant fuel economy improvements, as well as the potential for future use of non-petroleum-based fuels like hydrogen.

The kinds of energy efficiency improvements I have been talking about across the sectors can have a real impact not only on oil imports but also on the energy crises in natural gas and electricity that have gripped our nation.

Natural gas

Faced with the recent natural gas price surge, Energy Secretary Abraham, the National Petroleum Council, and other experts have focused on efficiency measures as a key to bringing supply and demand back into balance, and thus moderating prices, in the near and long terms. A recent report by the American Council for an Energy-Efficient Economy³ found that reasonable efforts to reduce electricity use, reduce natural gas use, and install renewable electricity generation could have a quick and dramatic impact on natural gas prices. Electricity and natural gas use are closely related, because increased electricity demand is met almost entirely by plants fueled by natural gas. The study found that in the first year, natural gas demand could be reduced more than 1 percent. The study also projected, using national natural gas pricing models, that wholesale gas prices would then drop almost 20 percent.

Electricity

Reducing electricity use and enabling demand-side response makes the electricity system more robust, decreases strain on aging generation and transmission facilities, and thus helps prevent blackouts and price spikes that harm American businesses and consumers. After the California electric power crisis in the winter of 2000-2001, a public campaign reduced overall electricity use by 7 percent and peak demand by 10 percent, in just a year. This helped avoid further blackouts or price spikes during the season of peak demand the next summer. Efficiency measures also can avoid the need for costly new generation and transmission facilities. Yet, in the face of expected deregulation, support for utility efficiency programs has been slashed around the country. We are crippling our ability to use energy efficiency to provide the most reliable, least-costly electricity to consumers.

ENERGY EFFICIENCY AND ECONOMIC GROWTH

Madam Chairwoman, for all the reasons I have noted and many more, energy efficiency measures are a stimulus to economic growth, not a drag on it. Since 1973, the per capita Gross Domestic Product has grown by about 70 percent, while per capita energy use has actually declined slightly for at least two reasons:

- Lowering energy use saves businesses money and thus makes them more efficient and competitive; and,
- Limiting energy demand lowers energy prices -- in fact consumers pay less (in real terms) for gasoline, heating oil, and electricity today than they did in the 1970's.

In addition, the energy efficiency industry contributes to the economy: more than 5,000 U.S.-based companies that provide energy-saving equipment and services contribute more than \$10

³ *Impacts of Energy Efficiency and Renewable Energy on Natural Gas Markets*, R. Neal Elliot, et.al., September 8, 2003, ACEEE, Washington, D.C.

billion to our economy each year and employ approximately one-quarter of a million people. Companies like Lithonia Lighting and Maytag -- both Associates of the Alliance to Save Energy -- are just two examples of companies that are “doing well by doing good.”

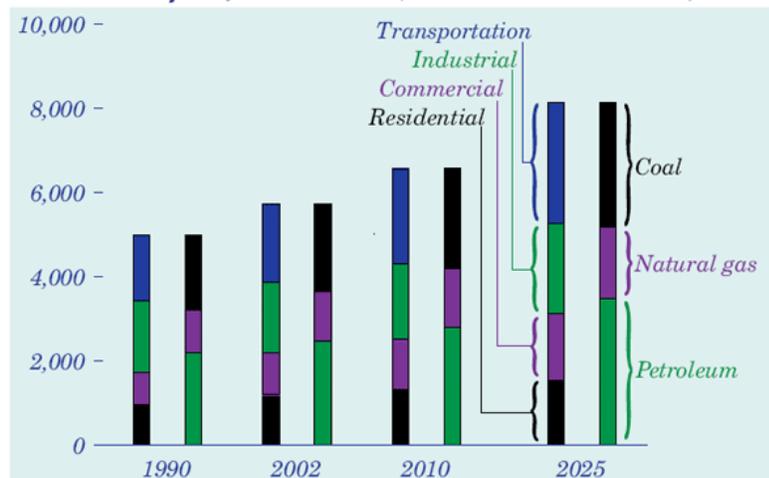
Lithonia Lighting (An Acuity Brands Company): Lithonia manufactures highly efficient lighting and lighting controls, such as motion and light sensors that dim the lights when they are not needed.

Maytag: Maytag offers 132 residential appliances that qualify for Energy Star. These models accounted for over 28 percent of the units Maytag sold in 2002.

ENERGY EFFICIENCY AND ENVIRONMENTAL PROTECTION

According to the Department of Energy, carbon dioxide emissions from energy use are projected to increase from 5,729 million metric tons in 2002 to 8,142 million metric tons in 2025 – an average annual increase of 1.5 percent. None of these emissions come from America’s greatest resource, energy efficiency. In fact, if America’s energy use were 40 percent higher (without the energy efficiency improvements since 1973), carbon dioxide emissions would be similarly increased.

Figure 7. Projected U.S. carbon dioxide emissions by sector and fuel, 1990-2025 (million metric tons)



History: Energy Information Administration, Emissions of Greenhouse Gases in the United States 2002, DOE/EIA-0573(2002) (Washington, DC, October 2003). Projections: Table A19.

ENERGY EFFICIENCY POLICY RECOMMENDATIONS FOR THE FUTURE

Madam Chairwoman, for energy efficiency to increase its role in meeting our energy needs and further increase the other benefits I have described, smart government policies are needed. Here are some of the ways in which the federal government can help. While these proposals are generally not in your subcommittee’s jurisdiction, I hope you will work with us in supporting these policies that will stretch our energy resources.

Tax Incentives

Providing incentives to consumers and businesses is an important policy option that can help transform markets to embrace energy-efficient technologies and practices. The Alliance to Save

Energy believes tax incentives are an important piece of any balanced energy plan, and we support the energy efficiency tax incentives that emerged in the conference report on the comprehensive energy bill, H.R. 6. This package represented a bipartisan compromise that would benefit businesses and consumers across the country, and we recommend passage of these important incentives as quickly as possible.

Tax credits for highly efficient new homes will show home builders across the nation that incorporating energy-efficient technologies into homes is neither as difficult nor as expensive as they now contend. Tax credits for highly efficient refrigerators and clothes washers will encourage the manufacture and purchase of energy- and water-saving appliances. The commercial buildings deduction will give business owners the incentive to outfit their commercial space with energy-efficient equipment.

In addition, two notable tax credits are directed at consumers – tax credits for the purchase of hybrid and other electric drive vehicles, and tax credits to upgrade the efficiency of existing homes. These tax credits will help everyday Americans cope with volatile natural gas, heating oil, and gasoline prices while doing their part to protect the environment. Other important tax incentives would benefit highly efficient fuel cells, combined heat and power, and advanced electricity meters.

Madam Chairwoman, America's businesses and consumers need these tax credits, and we urge Congress to find a way to enact them..

Appliance Standards

There are times when national standards are the best policy option. They provide an efficiency baseline that American consumers can trust, provide uniform national rules for manufacturers, and slash wasteful energy consumption with one broad and effective stroke.

The federal appliance energy efficiency standards program began in 1987 and has been tremendously successful in saving energy, reducing pollution, and saving consumers money. By the year 2020, appliance efficiency standards already in place are expected to reduce U.S. electricity consumption by 7.8 percent, reduce peak demand enough to avoid building 400 power plants, and reduce carbon emissions by 75 million metric tons.

The comprehensive energy bill, H.R. 6, includes a package of new energy efficiency standards that were negotiated between energy efficiency interest groups, including the Alliance to Save Energy, and the manufacturers of the products proposed for regulation. These provisions would establish standards in law for torchiere lamps, dry-type transformers, exit signs, and traffic lights. They also require DOE to establish standards through rulemakings for ceiling fans, commercial refrigerators, vending machines, unit-heaters, and batteries. These bipartisan provisions would save an estimated 8.9 quadrillion BTU from 2004 to 2020.

Federal Energy Management

Since this hearing focuses on energy and the American consumer, I must not forget to mention America's largest energy consumer – the federal government. According to the Alliance report *Leading by Example*, the federal government wastes \$1 billion in buildings alone through inefficient energy use. Those are one billion wasted taxpayer dollars.

Few federal programs have been as cost-effective as the U.S. Department of Energy's Federal Energy Management Program (FEMP). At an average cost of \$20 million per year, FEMP has helped cut federal building energy waste by nearly 21 percent from 1985 to 1999 – a reduction that now saves federal taxpayers roughly \$1 billion each year in reduced energy costs. Again, bipartisan provisions to improve federal energy use, included in the comprehensive energy bill, remain stalled. These provisions include updating agency energy reduction targets, extending and expanding Energy Savings Performance Contract (ESPC) authority and including water savings, requiring cost-effective metering so that federal energy officials can know what to measure and manage, increasing performance standards for new federal buildings, and strengthening federal procurement requirements.

In particular, the Alliance respectfully urges members of the Committee to support efforts to reauthorize ESPCs **immediately, whether comprehensive energy legislation moves forward or not. The ESPC authorization lapsed in September 2003.** Since 1992, nearly \$1.1 billion in private-sector capital has been invested in energy improvement projects in federal government buildings through ESPCs. Yet every month that the program is not reauthorized, millions of dollars in potential energy savings are slipping away.

The Alliance also applauds the efforts by Representatives Joe Wilson and Ellen Tauscher to expand ESPC authority to mobile sources for the military through their bill, H.R. 3339. This would allow ESPCs to retrofit the B-52 Bomber for example (which relies on a 1960's-era engine) or the Abrams tank (which has 1970's-era engine). In fact, a 2001 Defense Science Board report listed over 16 weapons systems that are candidates for such upgrades, covering every service and virtually every major defense contractor.

Electricity Efficiency Programs

Over the last two decades, states worked with regulated utilities using “Integrated Resource Planning” and demand-side management programs to avoid the need for about 100 300-Megawatt (MW) power plants. However, utility spending on public benefit programs nationwide was cut in half as states and the electricity industry prepared for expected deregulation. Madam Chairwoman, we need new policies that can bring the benefits of energy efficiency back to the electricity system. Two of the most effective national policy strategies for increasing energy efficiency are federal public benefits funds and federal energy efficiency performance standards.

Public Benefits Fund: Twenty-four states and the District of Columbia have created a guaranteed stream of funds for energy efficiency and other public goods via public benefit funds (PBFs), mostly through a small surcharge on electricity bills. The Alliance strongly supports the creation of a *federal* public benefits fund that would match these state funds. A federal PBF

would help stabilize electricity prices, reduce air pollution and greenhouse gas emissions, and ease the need for massive infrastructure replacement. By 2020, ACEEE estimates that a federal PBF would:

- *Save 1.3 trillion kilowatt hours (kWh) a year,*
- *Reduce peak electricity demand by 160,000 MW (equivalent to about 500 power plants),*
- *Save consumers \$68 billion (net after investments), and*
- *Prevent greenhouse gas emissions equivalent to 96 million metric tons of carbon each year.*

Energy Efficiency Performance Standard (EEPS): A uniform, national energy efficiency performance standard (EEPS) would require retail electricity suppliers to meet customer needs in part through energy efficiency and load reduction programs rather than through new generation and transmission facilities. The Alliance recommends that utilities be required to take action to reduce total electricity use and peak demand by their customers by 1 percent each year. The savings would be independently verified, and “efficiency credits” trading would allow such savings to be achieved at the lowest cost, anywhere in the country. An EEPS is a flexible, market-based mechanism to promote cost-effective energy efficiency improvements. Electricity retailers would be able to meet the EEPS through a variety of methods, including, but not limited to appliance rebate programs, consumer education campaigns, and purchasing energy savings credits from other retailers. According to estimates by ACEEE, by 2020 a 1 percent federal EEPS would:

- *Save over 340 billion kWh a year,*
- *Save consumers over \$12 billion a year, and*
- *Reduce peak electricity demand by about 68,000 MW (avoiding about 225 power plants).*

Funding Energy Efficiency

Federal efficiency programs are largely voluntary programs that further the national goals of broad-based economic growth, environmental protection, national security, and economic competitiveness. A 2001 National Research Council report found that the 17 DOE energy efficiency R&D programs they studied returned nearly \$20 to the U.S. economy for every dollar invested. The programs do this through the development of new energy-efficient technology in cooperation with the national laboratories, by working with the private sector to deploy that technology, and by fostering energy efficiency activities in the states.

The President’s overall fiscal year 2005 budget request for DOE efficiency programs is \$876 million, down \$2 million from the FY 2004 appropriation, and almost level with the administration’s FY 2004 request. This continues a gradual downward trend from \$896 million appropriated in FY 2002. Importantly, the slow overall decline masks some major changes. Once again the President has requested major increases for fuel cells and for weatherization of low-income homes. The money for those increases was taken from other energy efficiency programs—thus there are major cuts to core research and development (R&D) programs in industrial energy efficiency, distributed energy, and, to a lesser extent, buildings efficiency.

The EPA’s Energy Star program is a shining example of voluntary efficiency programs. The Energy Star program educates consumers about their energy purchases and encourages them to purchase the most efficient products. It works closely with private sector manufacturers,

retailers, building owners, and energy service providers, as well as with state and local governments, nonprofits, and other organizations. And it works extremely well – for every tax dollar spent by the Energy Star program, \$75 or more of energy savings are returned. Last year alone, Americans, with the help of Energy Star, saved enough energy to power 15 million homes and avoid the greenhouse gas emissions from 14 million cars – while also saving over \$6 billion. The proposed EPA Energy Star budget for 2005 is flat at \$50.3 million.

These programs are critical to tapping the power of energy efficiency to address the critical energy problems facing the nation. The Alliance has a long history of advocating for, as well as researching and evaluating, federal efforts to promote energy efficiency. Federal energy efficiency programs provide enormous economic and environmental returns while encouraging consumers and businesses to work together to advance national energy goals. We urge you and your colleagues in Congress to increase funding for this important work as you consider Fiscal Year 2005 appropriations for the Department of Energy and EPA.

CONCLUSION

Madam Chairwoman, American consumers need a balanced energy policy that takes aggressive steps to save energy wherever it is cost-effective and feasible. Energy efficiency is our largest energy resource, and it should be our first energy priority.

The policy options I have identified, such as tax credits, standards, and federal energy management, have been proven effective on the national level. Others, such as energy efficiency performance standards and public benefits funds, have been tested in the states and are ready for replication at a national level. And finally, all these policies rely on technologies developed by federal programs, and they need the continued research, development, and deployment efforts that well-funded federal energy efficiency programs provide. Congress is facing tight budgets and difficulties passing energy legislation. But we must ask ourselves, if not now – with high energy prices and troops in the Middle East – then when? If the U.S. Congress cannot take the lead in providing the incentives, standards, and programs, then who will? When American consumers look at their utility bill this month, or the gasoline prices this summer, they will be looking to Washington for answers.

Again, Madam Chairwoman, I understand that many of these measures are not in your subcommittee's jurisdiction. However, these issues affect all of us. Energy efficiency measures can help protect the environment, boost the economy, and increase our national security. The Alliance to Save Energy would like to work with you and your subcommittee in any way we can.

Thank you again for the opportunity to testify before your Committee today. I am happy to address any questions you might have.

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