

ENERGY EFFICIENCY



CONFIDENTIAL

To: Energy Efficiency Negotiators
Subject: Your Negotiating Goals in "World Energy"

Welcome to the global climate and energy policy negotiations. As leaders of energy-intensive sectors of the economy, you will make decisions regarding improvements in energy efficiency over the coming decades.

Your group includes the car and truck industries, airline industries, public transit authorities, industrial machinery and appliance manufacturers, energy efficiency incentive programs of electric utilities, residential/commercial builders, and the real estate industry.

You will make decisions regarding the energy efficiency of new capital over the coming decades for both mobile (transportation) and stationary sources (buildings, appliances, and industrial equipment). Improvements in energy efficiency deliver the same energy services (e.g., vehicles traveled or homes heated), while using less energy.

Your goal is to achieve the best outcome for the groups you represent. Do your best in the time allotted.

The best available science shows that greenhouse gases (GHGs) emitted by human activity are already changing the climate, that the risks of further climate change to our economy and to human welfare are serious and that avoiding the worst impacts is possible. The internationally agreed upon goal is to limit the increase in global average temperature to no more than 2 °C above preindustrial levels. Warming above 2 °C threatens the economy and human welfare of all nations. Your own climate science experts agree with this assessment.

However, you must balance the imperative to prevent dangerous climate change with the needs of your key stakeholders, including the public (your customers), shareholders, employees, and the policymakers who provide your license to operate, regulate your industries and affect your operating costs.

The industries you represent developed in an era of inexpensive energy. Dramatically increasing energy efficiency would require substantial cultural change and new capabilities. Some firms will reinvent themselves while others will go out of business. Some of your key stakeholders, including the air travel industry and large auto makers, will be hurt by policies that require aggressive improvements in energy efficiency. These firms believe enough is already being done (e.g., via the US CAFE fuel efficiency standards). Traditional electric utilities will also be hurt if there are large drops in demand, given their high fixed costs. At the same time, climate change impacts, including rising sea levels, more extreme weather, and geopolitical dislocations, may pose serious risks to the infrastructure your sector relies on. Growing climate damages may also increase the likelihood of regulations and other policy changes that favor firms and organizations capable of delivering superior energy efficiency.

Energy efficiency not only reduces energy demand, but can also improve society's resilience to climate-related disasters. Even without a concerted effort, the energy intensity of the economy (i.e., energy used per unit of real GDP) is currently decreasing a rate of ~1.3%/year, a trend that is expected to continue over the coming decades. Your own analysts report that many energy efficiency projects have short payback periods and offer positive net present value over their useful lifetimes. Innovative financing mechanisms, such as revolving funds, can use savings from lower energy costs to finance new energy efficiency projects, reducing the up-front cost barriers of these projects and making them financially attractive to stakeholders.

Investing in new capabilities and shaping policy and regulations would be advantageous to many, but not all, firms in your industry. To that end, you are actively exploring how you might use your financial capital,

your expertise, and society's existing infrastructure to compete in a changing world. Many trends point in the direction of opportunities within your sector to increase energy efficiency:

- Energy intensity of new energy-using capital has been falling 1% per year but some think it could fall 5-7% per year (at some cost, and not in all industries).
- The International Energy Agency (IEA) has shown that energy efficiency across all sectors could save \$1 trillion/year in energy costs and deliver 'incalculable security benefits' in the forms of energy security and environmental and public health benefits.¹
- Between 2005 and 2010, advances in energy efficiency saved eleven developed nations from burning \$420 billion worth of oil. Without those advances, the total energy consumption of those countries would have been 65 percent higher in 2010.²
- After the Fukushima nuclear accident, Japan replaced half of its nuclear power with energy efficiency.³
- In the US, under current CAFE (Corporate Average Fuel Economy) standards, passenger cars and light trucks would be required to achieve improvements in fuel economy of 5%/year and 3.5%/year, respectively, reaching an average of about 54 miles per gallon by 2025.
- Energy savings from residential customer information and behavioral feedback programs have reported 2-7% increases in energy efficiency.⁴

As a group, you will:

1. **Decide** on the annual rate of energy efficiency improvements for new capital for both the mobile and stationary emissions sources.
2. **Advocate** that the Carbon Pricing group set a price on GHG emissions (if you desire any).
3. **Lobby and negotiate** with the other parties to encourage them to take actions that contribute to solving the climate change problem while improving the welfare of the people and groups you represent. Industry and individuals cannot be asked to bear all the costs of GHG reductions.
 1. You can propose policies that boost the efficiency of new energy-using capital, which slowly replaces the existing capital stock. A 7% per year improvement in the efficiency of new capital gives a 3.5% per year decrease in average energy intensity, a rate that some energy experts believe is possible. You will decide separately on energy efficiency improvement rates for mobile (transportation) and stationary (buildings and utilities) infrastructure.
 2. Take a position on carbon pricing. Your economists acknowledge that internalizing the environmental and social costs of GHG emissions with a carbon price could be the best way to reduce global GHG emissions. A carbon price would harm carbon-intensive energy use, increasing costs and decreasing shareholder value for many of the firms you represent that are heavily dependent on fossil fuels, at least in the near term. However, a carbon price would create incentives for boosting energy efficiency. Carbon price revenue could also be used to help offset R&D and up-front costs your constituents need to finance energy efficiency projects. If there is a carbon price, consider the effect on your investments that are heavily reliant on fossil fuels (car, truck, real estate, and electric power industries), along with the potential to promote investment and profitability in technologies and systems that boost energy efficiency (electric vehicles, public transportation, building energy efficiency, and education and behavior change programs).
 4. Lobby and negotiate. Your constituents should not be asked to bear the burden of limiting climate change. Other groups have the ability to take action that can mitigate GHG emissions and limit climate change. *Energy Supply* can propose policies to tax fossil fuels and invest their substantial financial capital in R&D to develop breakthrough cost reductions in clean energy. Although CO₂ from fossil fuel use contributes the most to climate change, other gases, including methane (CH₄) and nitrous oxide (N₂O), are potent GHGs, and their impact is growing. Global agriculture and forestry practices contribute greatly to emissions of these gases. The *Land & Agriculture* group can propose policies to reduce CH₄ and N₂O emissions that can help limit climate change. The population group can promote policies to limit future population growth, particularly in developing nations.

¹ 25 Energy Efficiency Policy Recommendations, IEA (2011) and World Energy Outlook, IEA (2012)

² <http://thinkprogress.org/climate/2013/10/17/2801231/world-energy-efficiency/>

³ <http://thinkprogress.org/climate/2014/04/10/3425406/japan-energy-efficiency-replacement/>

⁴ http://www1.eere.energy.gov/seeaction/pdfs/customerinformation_behavioral_status_summary.pdf.