

**Worldwide Implementation Now**  
**- *the essential role of energy efficiency***

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**29 April, 2008**

**EE Global 2009, Paris**

**Slide 1**

It is my pleasure to chair this closing session of the Energy Efficiency Global Forum and Exposition.

Let me thank and congratulate the organisers—Alliance to Save Energy—for this successful and important event. This 3-day conference has done a great deal in placing energy efficiency at the top of the agendas of policy makers.

I would especially like to welcome the distinguished speakers in this session – Pascal Dupuis, Jean-Pierre Benqué, Jaana Remes, Douglas Howe, and Bjorn Stigson.

Before discussing energy efficiency in greater deal, let me tell you a little about the organisation I represent - the IEA. The IEA was created in 1974 as a 'counterbalance' to OPEC. Our core mission was to assist in times of supply disruption. Our member countries are required to hold stocks of at least 90 days of net oil imports. Energy security was our primary aim. Today, our mission is much broader and encompasses energy efficiency and climate change.

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So, let's begin by looking at the impact energy efficiency has already had on our world to date. This chart shows that energy efficiency has delivered significant benefits already.

A study of 11 IEA member countries <sup>1</sup>shows that without energy efficiency improvements, total energy use would have been 58% higher in 2005 than it actually was.

So, in a very real sense, energy efficiency can be considered the most important fuel; more important than oil itself.

Energy efficiency enables us not only to lower CO<sub>2</sub> emissions, it also helps us enhance our energy security. By consuming less, we rely less on traditional sources of energy such as oil and gas.

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<sup>1</sup> Australia, Denmark, Finland, France, Germany, Italy, Japan, Norway, Sweden, the United Kingdom and the United States.  
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But we must not become complacent.

IEA analysis shows that the indicative rate of energy efficiency has dropped significantly in recent years.

In the period from 1973 to 1990 energy efficiency improved at around 2% per year. And it outpaced increased energy use by four times.

But between 1991 and 2005, the trend was very different; energy efficiency improved by a rate of less than 1%. And increased energy use was greater than improvements in energy efficiency.

In other words, we are being less efficient with our energy than we were. This may be partly due to the lower price of oil.

We must change this course, and we must do so now if we are to ensure a secure and sustainable energy future.

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And let us not forget the urgency of the task at hand.

The energy sector accounts for more than 80% of global CO<sub>2</sub> emissions and 60% of greenhouse gases.

In WEO-2008 business as usual scenario, emissions from the energy sector in OECD countries are rather stable. But an increasing share of these emissions will come from non-OECD countries.

Between 2006 and 2030, global CO<sub>2</sub> emissions from energy will jump by 45%. Most CO<sub>2</sub> emissions will come from coal in non-OECD countries.

This trajectory of a 45% growth in emissions puts the world on track for a global temperature increase of around 6 degrees to the end of the century. This is a disastrous road! We must take action.

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In light of this climate change challenge that we are facing, the IEA's *World Energy Outlook 2008* set out two alternative energy policy scenarios to take the world to a lower emissions

future: 550 ppm and 450 ppm CO<sub>2</sub> stabilisation; this equates to a 3 degree increase and a 2 degree increase, respectively.

This graph shows trajectories for energy-related CO<sub>2</sub> emissions to 2030 in the different scenarios, assuming 3.3% global GDP growth to 2030. But this chart shows that 2/3 of emissions reductions must take place in non-OECD countries. This is because that is where the most economic growth will occur. GDP growth in OECD countries will be 2% per annum, but in non-OECD countries, it will be 4.7% per annum; more than double that of OECD countries.

As you can see from this chart, in the 450 ppm scenario, energy efficiency plays the largest role in reducing CO<sub>2</sub> emissions. Globally, in the 450ppm scenario energy efficiency represents 54% of CO<sub>2</sub> reductions. And when we look at non-OECD countries, this increases to 59%. This is enormous. Enhancing energy efficiency in this way is nothing less than an energy revolution.

Such a revolution equates to to global capacity additions every year of:

- 18 000 wind turbines (of average size of 3MW each)
- 30 GW of other renewables (biomass + solar + geothermal + ocean + tidal), i.e. the equivalent of 300 solar plants of 100 MW each.
- 50 hydro plants (of around 1000 MW capacity)
- 30 coal and gas plants integrated with CCS technology
- 20 nuclear power plants (of around 1000 MW capacity each)

I need to add that, for the 450 ppm scenario, by 2030, the price of carbon would be around \$180/t-CO<sub>2</sub> (= around \$70/barrel).

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To assist governments in taking this action, the IEA has identified 25 best policy practices across 7 areas of activity, which we recommended to the G8 last year. We provided these to the G8 in 2008 and are providing them with a report this year on whether these recommendations have been implemented.

And we will be providing a progress report on these recommendations to the G8 Summit this July.

These recommendations show significant energy savings across buildings, appliances, lighting, transport and industry.

The energy savings potential in the building sector is worth noting because buildings account for 40% of energy use. Renovating them to meet high energy efficiency standard and replacing outdated heating systems would cut this percentage in half. These actions would

also create many more jobs in manufacturing and building trades. So, for economic stimulus, buildings is a key sector.

Energy efficiency can also be increased by revising building codes for new buildings and by providing incentives for “passive energy houses” and zero-emission buildings.

With these 25 recommendations, we know what to do. What we have to do now is implement and then implement and then implement.

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If implemented globally and without delay, these 25 measures combined would save 8.3 Gt of CO<sub>2</sub> by 2030.

This is more than the current energy-related CO<sub>2</sub> emissions of the USA and Japan combined. So, there is huge potential for savings here.

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We estimate that over 93 exajoules could be saved if all 25 IEA energy efficiency recommendations are implemented.

For example, if mandatory minimum energy efficiency standards were adopted for major appliances, between 7.6 and 10.9 exajoules could be saved. 2-2 GT of CO<sub>2</sub> could be saved per year.

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But the IEA is doing more than just providing these 25 EE recommendations.

The G8 leaders in Hokkaido asked the IEA to develop global energy technology roadmaps and we are working hard on these.

Here you can see a complete list of the technologies we will be working on. So far, we have identified 19 roadmaps, on both the supply side and the demand side.

On the demand side, half of these roadmaps relate to improving energy efficiency. We have already started work on plug-in and electric vehicles and - in conjunction with the WBCSD – efficiency in the cement industry.

We are taking a holistic approach. For example, with electric vehicles, there is no point having such vehicles unless power generation is carbon-free.

The IEA has calculated that around USD 15 trillion must be spent globally on research, development, demonstration and deployment of these technologies in order to make them fully commercial, with the vast majority of the money spent on deployment (USD 14 trillion).

We believe that these roadmaps can help direct how this money is spent and ensure earlier commercialisation of these technologies.

The IEA has been also asked to host the Secretariat for the International Partnership for Energy Efficiency Cooperation (IPEEC). IPEEC will bring together the G8, Brazil, China, India and Korea, Mexico and the EC, with more countries expected to join in the near future. IPEEC will enable countries to work together to promote energy efficiency globally. And the IEA wants to continue its work in energy efficiency as much as possible.

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Let me conclude with a few, final remarks:

Energy efficiency must play a key role if we are to ensure that our future is cleaner, but also more secure. By being more efficient with our energy, we rely less on oil and gas from producing countries. At the same time, we can lower our CO<sub>2</sub> emissions.

However, the IEA's research shows that because of the current financial or economic crisis, many EE projects are now perceived as high-risk and are having difficulty attracting private investors. This is troubling.

But today's economic stimulus packages provide an excellent opportunity to ensure greater energy efficiency. The IEA calculates that IEA member countries have committed or plan to commit close to USD 128 billion towards EE through initiatives such as stimulus packages.

This is very good news. Framing stimulus and rescue packages to ensure a scaling-up of energy efficiency during these difficult times will mean a triple win in the future. It will boost the economy and create jobs; help kick-start the transition to a much-needed low-carbon economy; and possibly help facilitate a climate agreement in Copenhagen.

The IEA will be closely monitoring the impact of such packages in the months to come, and we will be reporting to the G8 Summit and the G8 Energy Ministers' Meeting on these impacts. We will look not only at EE but at energy investment as a whole.

The timing is now—what we need is World-wide Implementation Now (W.I.N), to ensure we do not lose the chance for a cleaner, more secure and sustainable future.

Thank you.