



Energy efficiency and climate policy

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As we speak, the energy ministers of IEA countries are meeting in Paris to discuss today's and tomorrow's energy problems. This year again, energy efficiency is high on their agenda.

Reasons for this are clear: by cutting our energy consumption without cutting the services delivered to energy users, we reach all three major goals of energy policy.

- Energy security.
- Economic performance and welfare, through lower cost to energy users.
- Environment, with lower CO₂ emissions from fossil fuels.

Let us be clear on the role of energy efficiency in fighting climate change. It is not the one and only solution to cutting CO₂ emissions from energy. We will need a mix of technologies and policies, both addressing today's situation and preparing for tomorrow's challenge of more ambitious GHG reductions.

But our projections show that energy efficiency, on the end-use side alone, would contribute at least half, to two thirds of CO₂ reductions needed globally between now and 2050.

To understand what energy efficiency can deliver, let's first recall what it is contributing to today's energy picture. Looking at most IEA countries¹ [accounting for 80% of total primary energy use of IEA countries], we find that energy demand would have been 56% higher than today's level, if we had not made efforts to improve energy efficiency. Emissions would be 4 billion tonnes of CO₂ higher, for this same group of IEA countries.

In fact, over the last three decades, energy efficiency has been the first source of energy – an energy source that does not emit CO₂.

But the picture on energy efficiency is not rosy: our efforts have been much less since 1990 than they were between 1973 and 1990: energy efficiency needs a stronger push, a push that is entirely justified by its potential contribution to the global environment, to energy security, and to economic welfare.

For every energy end-use, there is a potential for doing more with less energy, with technologies that are available, but not systematically picked up by the market. Many barriers stand in the way to a more rational use of energy. All too often, for instance, the investor in energy efficiency does not reap the benefits from lower energy cost, and investment does not happen. Given the overall economic gain brought by energy efficiency, policy intervention is fully justified in such cases.

Another barrier is the lack of consumers' information. Ideally, end-use equipment should be compared on the basis of their full life-cycle cost, not on their price of purchase. Labelling schemes have proven helpful in this case: whenever they were applied, they have helped to transform the market. As an example, less efficient fridges have more or less disappeared from the shops after energy efficiency labels were introduced.

Existing technologies can deliver identical services (mobility, heat, light, and electricity) at lower overall cost.

In our projections to 2030, we find that every dollar invested in more efficient electrical appliances saves 2.2 dollars in electricity generation and distribution investments – not to mention the saved fuel.

¹ These countries are: Australia, Denmark, Finland, France, Germany, Italy, Japan, Norway, Sweden, United Kingdom, United States.

Let me give you more specific examples from IEA work. Lighting, in our homes, offices, streets, and cars, consumes 19% of all electricity – the equivalent of all the power produced by natural gas. If we use best available technologies that provide the same quantity of light at least-lifecycle cost, the cumulative savings to consumers will amount to some 2.6 trillion dollars between 2008 and 2030. A total of 16 billion tonnes of CO₂ would be avoided. And the cost of avoided emissions would be negative, at minus 156 dollars per tonne of CO₂.

All too often, you will hear that more efficient appliances are more expensive. We find that for consumer appliances like fridges, setting a standard on minimum energy performance has led to substantial energy savings (from 10 to 60%), without any increase in appliances cost, quite the contrary. If manufacturers are given proper visibility, they can deliver more efficient products without an increase in prices for consumers.

There is a long list of energy efficiency improvements that would come at negative cost to society. It includes even the capital stock in place now. Existing buildings could be made 50% more efficient. An extra 15% improvement in fuel efficiency of cars is also within reach by 2030. Even heavy industry, which is especially cost-conscious when it comes to energy, could save between 10 and 30% of its energy use in the coming decades.

We have learned that energy efficiency does not just happen. We need governments to set standards, to introduce information labels. Governments can also show the way with bulk purchase of more energy efficient equipment hence contributing to transform markets and lower costs for all.

These decisions are often in the hands of many different ministries, which is why we believe the message must come from the very top of government. At their summit in Gleneagles, the G8 leaders sent such a message. They mandated the IEA to advice on clean energy strategies, and to identify best policy practice for energy efficiency. We will soon release information on these.

We have also made concrete recommendations to our Ministers and to the G8. If implemented, these simple measures could reduce CO₂ emissions by some several hundreds of millions of tonnes. And we are ready to deliver more. We hope our governments act on these soon.

The potential for energy efficiency improvement is enormous – IEA work and other analyses summarised by the IPCC provide compelling evidence. But like other energy sources, the potential sits underground if it's not explored and then extracted. For this, we will need more targeted policies, proper market structures and incentives, and a strong policy signal that does not fluctuate with energy prices. The challenge of reducing CO₂ emissions at least cost requires that much.

Thank you.