



Worldwide Implementation Now *Boosting the economy with energy efficiency financing*

International Energy Agency, April 2009

- From the New Deal to responses to blackouts, history teaches us that crisis times can result in salutary reforms. Recent international economic developments—namely the international financial and economic crisis, combined with the volatility of energy prices—threaten to jeopardise our economic well being and our ability to address other goals like climate change mitigation. However this need not be so. Governments can, and should, face these challenges by turning them into an opportunity to kick-start the long awaited low-carbon revolution. **A central part of that revolution is energy efficiency, and the time for action in this area is now.**
- **International Energy Agency's (IEA) analysis shows that government policies can, and must, help the scaling up of investments in energy efficiency projects.** Governments' current framing of stimulus and rescue packages across multiple sectors of the economy—and most notably the finance sector through cash injection and guarantees—offer a great opportunity to encourage the financing and therefore implementation of key energy efficiency measures. These include the IEA's own recommendations on energy efficiency.¹
- The IEA recommends 25 fields of action across all sectors. One critical area is finance. **The current context of credit crunch and financial bailouts adds weight behind the need to implement the finance recommendations.**
- **Governments should strive to create enabling environments for private investors** through appropriate mechanisms such as risk sharing instruments or preferential rate loans. Providing increased information to customers, as well as training private investors' staff, are also necessary measures.

Economy wide abatement potentials

- The IEA *World Energy Outlook 2008 (WEO 2008)* estimates that over 54% of abatement measures to move to a 450 parts per million CO₂ concentration could be reached through the introduction of existing energy efficient technologies. The IEA also estimates that the energy efficiency recommendations could deliver over 8.2 GT of CO₂ emission abatement yearly by 2030 through the widespread and immediate implementation of the recommendations (IEA, 2008a).

Untapped end-use sector and electricity generation potential

- The buildings sector, currently responsible for 40% of world total energy consumption, is a key cluster of untapped efficiency potentials. The *Energy Technology Perspectives (ETP 2008)* cost curves reflect the current reality that energy efficiency measures in the buildings sector offer significant negative cost abatement opportunities. This being said, the majority of these measures have higher upfront costs—

¹ http://www.iea.org/Textbase/Papers/2008/ee_recommendations_brochure.pdf

and thereby call for increased financing from banks. The estimated savings from the complete implementation of the building recommendations is an annual 31.28 exajoules (EJ) by 2030. The recommendations covering appliances, equipment and lighting could save an additional annual savings of 21 EJ by 2030 (IEA, 2008a http://www.iea.org/G8/2008/G8_Towards_Sustainable_Future.pdf).

- IEA's industrial and transport sectors recommendations could save close to an annual 40.3 EJ by 2030, through the implementation of internationally recognized best practice technologies including co-generation (IEA, 2008a;). As for the transport sector, the *WEO 2008* estimates that worldwide fuel use for light-duty vehicles could be lowered by 21% or CO₂ emissions decreased by 590 Mt by 2030 in the 450 Policy Scenario. **Untapped energy efficient potentials are hidden across all sectors: buildings, industries and transport. All of these rely on the finance sector for implementation.**

Potential job creation

Investing in energy efficiency presents a unique combination of advantages: increasing energy security, economic sensitivity, and bettering the environment. In addition, the skilled labor required to implement energy efficiency measures could result in the creation of millions of jobs in the new low-carbon economy². **As such energy efficiency measures provide the additional comparative advantage of offering short and long term benefits.**

- United Nations' Environment Programme (UNEP) recently estimated that close to 1 million jobs could be created by 2020 in the European Union through the 20% target objective (UNEP *et al.*, 2008). In a shorter term perspective, the Green Recovery Program estimates that spending USD 100 billion over two years could create **2 million new jobs**³—with a particular focus on construction and manufacturing sectors (CAP, 2008)⁴. An American Council for an Energy Efficient Economy (ACEEE) report further underlines that the largest share of related jobs will be found in the building sector with two-thirds of all efficiency-related jobs (ACEEE, 2008). **In the present economic climate, energy efficiency measures can bring immediate results – in terms of both job creation and energy savings.**

Barriers to energy efficiency

- Despite the numerous advantages offered by investments in energy efficiency—a significant potential remains untapped. Market failures in the energy market explain this lingering potential. **Split-incentives which result in the consumer's insulation from the price signal**—for instance in a landlord/tenant situation—are estimated to account for 3 800 PJ of wasted energy each year (IEA, 2007).
- **The small size of energy efficient projects, their difficulty in being bundled, and their perceived high risks have discouraged investors and commercial banks** who, lacking the technical understandings of energy efficiency projects, tend to see them as too much effort for too little profit. The majority of needed energy efficiency financial requirements are for very small loans to cover higher upfront costs than those of less energy efficient technologies in insulation, appliances, windows, and heat, ventilation

² See http://www.unep.org/labour_environment/PDFs/Greenjobs/UNEP-Green-Jobs-Report.pdf

³ A report by American Solar Energy Society further claims that energy efficiency industry already created 8.6 million jobs in 2007.

⁴ The US through its Green Jobs Act of 2007 has contributed to train 35,000 a year in green collar jobs with a pledged USD 125 million.

and cooling systems. This higher upfront cost—with a six months to five years payback period—can prove detrimental to a portion of the population.

- **As such the current credit crunch could be seen as another obstacle to investing in the scale up of energy efficiency. However it need not be so.** Nor can we hope to achieve a robust recovery without a more energy efficient economy that demands fewer energy resources for its operation. **Increased independence from energy sources, as well as long term economic sensibility, render energy efficiency projects sound investments for both customers and governments, if not for financial institutions.** It is for governments to include in their stimuli packages the incentives that i- empower the private sector to provide the financial resources needed for the recovery and; ii- ensure the resources fund more energy efficient infrastructures.

Governments should strive to create opportunities for private sector investment in energy efficiency

- **So what should governments do?** IEA analysis reveals three critical components of policy packages which have successfully helped overcome some of the barriers to energy efficiency investments:
 - Public-Private Partnerships (PPPs) for energy efficiency most commonly appear in the form of preferential rate loans, wherein the government subsidises the private sector so that financial institutions can offer customers reduced rate loans. For example, through its Grenelle de l'Environnement, France has most recently renewed its commitment of offering 0% interest rate loan for home retrofitting energy efficiency projects up to EUR 30,000. **The case of the German KfW is another successful example of PPPs.** KfW which was created with the funding of the post-WWII rescue package—the Marshall fund—has contributed to the retrofitting of close to a million dwellings from 1996 to 2004, through the provision of preferential rate loans. **The KfW mechanism has proven very effective at overcoming financial barriers and creating an energy efficiency market for the implementation of projects.**
 - **Risk sharing mechanisms are critical to successful public-private collaboration.** The Flat-35 developed in Japan rightly illustrates the principle of risk-sharing agreements wherein the government guarantees a fixed interest rate in its loans to financial institutions, which in turn provide a fixed and reduced rate of interest to their customers in exchange for an energy consumption reduction certificate. Initiated in 2003, **this scheme led to the refurbishment of over 100,000 dwellings in 3 years.**
 - **Staff training** is another core element to successful policy packages. Overcoming the information failure within financial institutions with appropriate capacity building on energy efficiency specificities is key to the sustainability of any measures to trigger increased energy efficient investments⁵.
- **Overall, policy packages that create enabling environments by reassuring investors—through appropriate tools—while simultaneously training their staff, and providing more information to customers, have proven most successful in creating sustainable energy efficiency markets.**

⁵ See IEA (2008b) *Promoting Energy Efficiency Investments: case studies in the residential sector* OECD/IEA, Paris

Stimulus Packages: a unique opportunity to implement the IEA's energy efficiency recommendations

- **Framing stimulus and rescue packages across multiple sectors of the economy**—and most notably the finance sector—**provides governments with a great opportunity to influence private sector.**
- Governments should condition their guarantees and cash injections on private institutions' commitment to offer energy efficient loans⁶, require them to train their staff on energy efficient products, and institutionalise collaboration between public-private sector to provide energy efficiency guidance.
- Parts of the estimated total size of rescue packages planned so far—USD 1.3 trillion⁷—could be used for training financial institution's staff in energy efficiency, or for the review of governments fiscal programmes, ensuring no disincentives to energy efficiency remain.
- Committed and planned investments by IEA member countries indicate that close to USD 128 billion are earmarked for energy efficiency—so far few governments have imposed any direct efficiency obligations on banks. **Germany's recent commitment to inject EUR 3 billion in KfW is commendable and should be met by others. So should the US's promise to retrofit 75 % of federal buildings and improve energy efficiency in 2 million American homes⁸. Japan's commitment to provide interest free loans for environment investors should also be commended.⁹**

The time for action is now

- The many advantages of energy efficiency place it at the top of politicians' current agenda. Improving financing mechanisms and incentives for energy efficiency is good policy in good times. **In today's times of reconstruction, it ensures that the energy consumption prologue is not our energy consumption future as we emerge from the global recession.**
- But timing is crucial. **The IEA believes that the time for energy efficiency is NOW—even in these tough times.** Despite the recent fall in energy prices—biased by the temporary halt in demand—**we cannot afford to be back to business as usual when the global economy is kick started.** Framing stimulus and rescue packages to ensure a scaling up of energy efficiency now will be a triple win by: i- boosting the economy and creating jobs; ii- setting off the transition to a long awaited low-carbon economy; and iii- leading by example, thereby possibly facilitating the coming to terms of a climate agreement in Copenhagen.
- The timing is right. **What is needed is the political will to implement, implement, implement.**

⁶ Please refer to http://www.iea.org/textbase/Papers/2008/G8_EE_2008.pdf for the complete list of IEA recommendations

⁷ This number includes the guarantees provided by governments to banks

⁸ Please refer to the longer version document available at www.iea.org for a summary table of the committed plan of action by IEA member countries so far.. The table also include a column matching those efforts with IEA recommendations on Finance

⁹ Another example of successful stimulus introduced by Government to improve sustainable energy infrastructure is the 2007 United States Energy Security and Independence Act (EISA, 2007)(section 471) which includes an innovative local government energy efficiency funding mechanism, which authorizes up to USD 750 million annually in the form of loans and grants to local governments and higher education institutions. This funding is a stimulus for improving sustainable energy infrastructure, including district energy and combined heat and power and other clean energy technologies.

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