

Here are my suggestions about the barriers which are delaying the widespread diffusion of energy efficiency technologies and how to breach these barriers.

1. The most important barrier to a widespread use of energy efficiency technologies is the **conflict of interest of utilities:**

- Utilities have no interest in reducing their revenues through energy savings. The scarcity of white certificates is a demonstration that they are not working enough to reach their objectives.
- Utilities are lobbying governments in order to avoid regulations which may hurt their revenues. They ask and often obtain from Governments and Energy Authorities any kind of bureaucratic complications in order to delay, discourage and reduce the cost-effectiveness of any energy efficiency or renewable energy technology.
- Utilities are trying to hamper the diffusion of the most promising energy saving technologies (which also are the most promising in reducing their revenues). Here are two significant case histories about micro-CHP, which are well known to allow a 30% efficiency improvement over separate production of heat and electricity and, even more important, to allow consumers to pay for the gas with the revenue of electricity and to get the heating for free!
CASE HISTORY # 1 - Volkswagen launched in 2010 in Germany its 20 kWe EcoBlue micro CHP. However it cannot be bought by privates, because it is produced exclusively for LichtBlick. Since condominium-sized CHP systems can be economically built by only a handful of car manufacturers, utilities may readily sign exclusive purchasing contracts with car manufacturers, in order to avoid that these systems may be bought by privates.
CASE HISTORY # 2 - Baxi launched in 2009 in UK EcoGen micro CHP boiler for single homes based on a free-piston Stirling engine. However it cannot be bought by privates, because it is produced exclusively for British Gas. Since the technology of free-piston Stirling engines is in the hands of only two american companies, utilities may easily succeed in avoiding that these systems become available to privates.

Two kinds of EU regulations may prevent utilities from slowing the energy efficiency effort:

- **To introduce in all EU countries the reversible electricity counter, without any bureaucratic complications, for micro-CHP systems, authorizing condominiums as energy producers by means of micro-CHP.**
- **To ban any exclusive purchasing contract between utilities and producers of micro-CHP systems, as well as of any other system for energy efficiency.**

2. The second most important barrier to energy efficiency is the **conflict of interest of builders and building owners, who have no interest to pay for energy efficiency systems, since the energy bills are not paid by them.**

The only way to break this conflict of interest is to introduce EU regulations for:

- **The mandatory retrofit of buildings, both residential, office buildings and commercial centers, with selected technologies of proven energy efficiency.** These technologies may include: double glazing, thermal insulation, CHP, CCHP (trigeneration).
- **The chargeability to tenants of a defined annual depreciation of capital investments in energy efficient technologies.**
- **The eligibility of condominiums as high solvency subjects of loans for energy efficient technologies.**

3. The third most important barrier to energy efficiency is the **ESCO approach of Energy Service Contracting to financing energy efficiency measures. The amount of credit that an ESCO can borrow is definitely lower than that of their potential customers and of their assets. Moreover, the uncertainty about future energy tariffs, because of the long duration of an energy service contract, may delay or even hamper any decision by the potential customer.**

The same EU regulations described in paragraph 3 may be effective in breaching even this barrier.

4. The fourth most important barrier to energy efficiency is the lack of knowledge of potential customers about the technologies for energy efficiency, their benefits and their payback time.

The remedy to this lack of knowledge is relatively easy, by means of **media communication, downloadable files, printed guides distributed to citizens and education in schools.**

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