



Introduction on the topic of energy efficiency, regulatory instruments to promote energy efficiency

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Instruments to promote energy efficiency

Voluntary	Command and control	Regulatory	Fiscal	Market incentive
Labelling	Minimum standard	Tariff system	Tax exemption	White certificate
Educational	appliances	Time of use	Tax credit	
campaign	machines	Block tariff		
	buildings	Net metering		
	veichles			





From Labeling to minimum standards







- Energy labeling is traditionally a voluntary measure to inform the customers
- It can be combined with other information
- Can cover any energy consuming product/service/place
- Can be used to introduce ban on specific products
- Can be helpful for public procurement
- Very useful in off-grid system
- Gives quick information to calculate the Δ price of equipment versus Δ cost of energy





Phasing out incandescent bulbs in EU27

Inefficient bulbs will be banned from the market gradually							
			1 Sept. 2009	1 Sept. 2010	1 Sept. 2011	1 Sept. 2012	2013 onwards
* And inefficient frosted (non-clear						n-clear) bulbs of	all wattages
25	5 Watt						
<i>[</i>] 60	Watt						
<i>[</i>] 40) Watt and 2	25 Watt					
while a wide choice of more efficient replacements will remain available.							
improved incandescent bulbs							
CC	ompact fluo	rescent lan	nps				
light-emitting diodes (LEDs)							

This graph is a simplified representation of the process. The actual requirements in the Regulation are more detailed and are based on other lamp parameters. For a more complete presentation, see point I.2 in the full Frequently Asked Questions in the Professional Area of this website.



Energy Saving vs. Energy Consumption



- 2: Improved incandescent bulbs
- (class C of the energy label, halogen lamp with xenon gas filling) 3: Improved incandescent bulbs
- (class B of the energy label, halogen lamp with infrared coating)
- 4: Compact fluorescent lamps (CFLs)
- 5: Light-emitting diodes (LEDs)





Time of use



If I manage to reduce peak load I increase generating efficiency. This also mean a lower generating cost. Introducing a time of use tariff gives an incentive to customers to use electricity when cheaper thus reducing peak loads and increase overall efficiency





	Time of use				
	0am-6am	6am-12am	12am-2pm	2pm-8pm	8pm-12pm
F1					
F2					
F3					
	Monday - Friday				

	Time of use				
	0am-6am	6am-12am	12am-2pm	2pm-8pm	8pm-12pm
F1					
F2					
F3					
	Saturday and Sunday				

Time of use tariff example

- Cost of generation and system costs are higher during peak hours.
- Reducing load at peak hours has an economic and an energy efficiency advantage
- Tariffs can be designed to give a price signal in peak load.
- Generation cost and transmission costs per kWh are different at different hours. This could be introduced in regulated tariff components.
- Meter able to record time of use are clearly necessary





Demand side management





It is possible to ask the demand to participate to the market.

During peak hour it may be more economical to switch off some load rather than to switch-on marginal generating plants





Block tariff





	Montly co	nsumption kWh	Total cost	C£/kWh
CASE 1	80	80*60	4800	60
CASE 2	130	(100*60) + (30 *100)	9000	69
CASE 3	250	(100*60) + (50 *100)+ (100 *140)	25000	100

- Block tariff may be restricted to residential consumers only. It is both an energy efficiency and an access to energy measure.
- This may incentive small families consumers versus large families
- Different tariff components may be modulated into a block tariff (also according to the level of liberalization of market)
- Generation cost, transmission and distribution cost, fiscal components, storage-batteries, other cost recovery components (renewable incentives)





White certificate

- An obligation is set on public utilities/distributors/large final consumers to save energy at a % of their annual energy use/sales.
- The % increases in time
- When an energy efficiency project/programme is implemented a given amount of white certificate is issued.
- Each certificates equals 1Toe of savings.
- The regulator (or other governmental agencies) identifies the eligible project/technology/programme and quantifies the savings.
- White certificate are issued for a limited period of time after project implementation (5 years)
- Certificates can be traded.
- The costs of the mechanism may be transferred into final tariff or included in the licensing right.
- White certificates