**Appendix A. Theoretical barriers to EE against the policy drivers to EE**

*Sources: Cagno et al. 2013, ISO, 2011; McKane et al., 2008; McKane et al., 2009; Mallett et al., 2011; Schleich, 2011; Mostert, 2010; Limaye, 2011; World Bank 2002; EU, 2011*

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| **Table 1. Internal barriers and policy drivers to EE:**  |
| **Barrier type:** | **Barrier name:**  | **Policy drivers type:**  | **Policy drivers:**  |
| *Economic* | Low capital availability | *Economic*  | Tax incentives/deductions/rebates; EE grants and low int. loans; Public-private partnerships (PPPs) on private finance support; Support for EPC contracting. |
|  | Hidden costs | *Prescriptive*  | Mandatory EnMS (formal EE manager training and awareness on EE technologies); Mandatory energy manager and training schemes; Mandatory audits; Energy performance standards and labelling; Mandatory electricity business EE services. |
|  |  | *Supportive*  | Coordination with energy org. and industry associations; Support for EPC contracting.  |
|  | Intervention related risks | *Prescriptive*  | Mandatory EnMS (EE investments rate of return to include non-energy-co-benefits).  |
|  |  | *Economic*  | Tax incentives/deductions and rebates; EE funds, grants and low int. loans; Adjusted energy subsidies and pricing policies; Increased taxes on energy end-use. |
| *Behaviour.* | Lack of interest in EE interventions | *Supportive*  | Awareness and ed. campaigns; Sustainable energy training schemes; Ind. association coop. |
|  |  | *Prescriptive*  | Consumption info. on energy bills; Quantitative EE targets; Energy performance certificate; |
|  |  | *Economic* | Mandatory EnMS (energy baseline). Adjusted energy subsidies and pricing policies; Increased taxes on energy end-use.  |
|  | Other priorities, Inertia | *Prescriptive*  | End-user EE obligations; Energy performance certificate; Mandatory EnMS (management commitment, internal EE design, action plan).  |
|  | Imperfect evaluation criteria | *Prescriptive*  | Mandatory EnMS (EE procurement database, energy review, performance indicators).  |
|  |  | *Supportive*  | Industry associations; Energy centres and Org.; ESCOS advisory services; Voluntary Agreements. |
|  | Lack of sharing the objectives | *Prescriptive*  | Mandatory EnMS (management communication).  |
| *Organisat.* | Low status of EE | *Prescriptive*  | Mandatory EnMS (energy manager prerogatives, EE objectives and targets).  |
|  | Divergent interests | *Prescriptive*  | Mandatory energy manager; Mandatory EnMS (EE responsibilities).  |
|  | Complex decision chain | *Prescriptive*  | Mandatory EnMS (EE structure and responsibilities); Mandatory energy manager.  |
|  | Lack of time | *Prescriptive*  | Mandatory energy manager; Mandatory EnMS (EE policy and responsibilities).  |
|  | Lack of internal control | *Prescriptive*  | Mandatory EnMS (control systems/audits/monitoring pract.).  |
| *Compet.* | Id. Inefficiencies and, or opportunities | *Prescriptive*  | Mandatory EnMS (energy review, performance indicators, monitoring); EE training certificate. |
|  | Implementing the interventions | *Prescriptive*  | Mandatory EnMS (assigned resp., training, awareness, communication, impl. guidelines).  |
| *Awareness related* | Lack of awareness or ignorance on the opp.  | *Supportive*  | Awareness and ed. Campaigns; Industry associations; Energy centres and org. |
|  |  | *Prescriptive*  | Electricity business EE services.  |
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| **Table 2. External barriers and policy drivers to EE:**  |  |
| **Barrier type:** | **Barrier name:**  | **Policy drivers type:**  | **Policy drivers:**  |
| *Market* | Energy prices distortion | *Economic*  | Adjusted energy subsidies and pricing policies; Public benefits charge for EE.  |
|  |  | *Prescriptive*  | Quant. EE targets and saving obligations; Int. resource planning for electricity businesses. |
|  | Low diffusion of technology | *Economic*  | EE R. and D. funds/grants; EE sub.; Tax incentives/ded./rebates; Customs/duty exemptions.  |
|  |  | *Prescriptive*  | Minimum energy performance standards; EE labelling.  |
|  | Low diffusion of information | *Supportive*  | Awareness and educational campaigns; Sustainable energy training schemes  |
|  |  |  | Energy centres and Org.; Industry associations sup.; Support on ESCOS advisory services dev. |
|  |  | *Prescriptive*  | Electricity business EE services; Mandatory consumption info. on energy bills.  |
|  | Market risks | *Economic*  | Adjusted energy subsidies and pricing policies; Taxes on fossil fuel energy consumption.  |
|  | Difficulty in gathering ext. skills | *Prescriptive* *Supportive*  | Electricity business EE services. Energy centres and Org.; Ind. Associations; ESCOS advisory services; Voluntary agreements. |
| *Gov.**politics* | Lack of proper regulations | *Prescriptive*  | Minimum energy performance standards; EE labelling.  |
|  | Distortion in fiscal policies | *Economic*  | Adjusted energy subsidies and pricing policies.  |
| *Tech./**services suppliers* | Lack of interest in EE | *Prescriptive* *Economic*  | Minimum energy performance standards; EE labelling. EE R. and D. funds and grants; Tax incentives/ded./rebates; Customs/duty exemptions. |
|  | Technology suppliers not updated | *Prescriptive*  | Minimum energy performance standards.  |
|  | Scarce communication skills | *Prescriptive*  | EE labelling; Operations manual code of contents.  |
| *Designers and* | Tech. characteristics not adequate | *Supportive*  | Cooperation with Industry associations; Voluntary agreements pilot projects.  |
| *Manufact.*  | High initial costs | *Economic*  | EE R. and D. funds and grants; EE subsidies; Low interest loans.  |
| *Energy suppliers* | Scarce communication skills | *Prescriptive*  | Electricity business EE services; Consumption info. on energy bills code of contents.  |
|  | Distortion in energy prices | *Prescriptive*  | Integrated resource planning; EE obligations. |
|  | Lack of interest in EE | *Prescriptive*  | EE licence conditions for electricity retail; Mandatory sourcing of EE; defined EE outcomes.  |
| *Capital suppliers* | Cost for investing capital availability | *Eco./Supp.*  | PPPs - loans, technical assistance to local banks, credit/risk guarantees;  |
|  | Diff. in id. the quality of the invest. | *Eco./Supp.*  | Standards/protocols on measurement; EE perf. benchmarking database, ESCOS adv. services. |