Olga Ivanova Abstract

We have performed the ex-ante assessment of the identified detailed technical improvement options in the areas of Built Environment, Energy, Transport, ICT and Waste with the economic-environmental model EXIOMOD. EXIOMOD is a large scale and highly detailed world model built on the detailed environmentally-extended database EXIOBASE. It is a macro-economic 'computable general equilibrium' (CGE) model that divides the global economy in 44 countries and a Rest of World, and 164 industry sectors per country. The model includes 5 types of households, a representation of 29 types greenhouse gases (GHG's) and non-greenhouse gases (non-GHG's) emissions, different types of waste, land use and use of material resources (80 types). Economic, social and environmental impacts of packages of technical improvement options are calculated relative to the baseline scenario that is consistent with the EU baseline scenario and includes assumptions from latest Europe Aging Report 2012 and PRIMES runs for Energy roadmap. The impacts of six packages of technical improvement measures have been assessed: (1) Built Environment area, (2) Transport area, (3) Energy area, (4) Waste area, (5) ICT area and (6) all improvement areas combined. The methodology that we have used links the micro-level information from Life Cycle Inventories and the outcomes of energy system model TIAMS with the macro-level analysis in a CGE framework. The challenges of such hybrid modelling approach is properly identified and tackled.