Ref: Para 1.1 Sub-para (a) bullet point (ii)

ASM II D is also applicable for supply side EE and fuel switch projects. While computing the emission reductions using the concept of energy / fuel use for the same quantity / quality of output (e.g. steam, hot water) use of IPCC default emission factors is quite common.

IPCC default emission factors for different fuels (and also the emission factors computed using the calorific value of the fuel), considers a pre-determined oxidization factor for different fuels (e.g. 99.5 percent for natural gas, 98 percent for coal etc.).

In actual practice in a pre-project activity the level of oxidization of carbon in the fuel may be much below these pre-defined levels. There can be many reasons for this to happen like fuel slippage, incomplete combustion due to poor equipment design, incomplete combustion due to inadequate air / oxygen supply.

An activity may reduce the fuel consumption by achieving a higher level of oxidization of carbon in the fuel. This will show reduction in the fuel consumption (and hence GHG emissions) in case of use of suggested approach of computing emission reductions purely on the basis of reduction in the fuel consumption, whereas there may not be any real reduction in the emission of GHG. In this regard it needs to be appreciated that the use of fossil fuels leads to emission of carbon dioxide only in case the carbon in the fuel is oxidized (being an exothermic chemical reaction this generates heat). Incomplete combustion while on the one hand would lead to higher fuel consumption while on the other hand would lead to computation of higher (higher than actual) GHG emissions in the baseline situation. The un-burnt carbon in the fuel may escape as fine carbon particles with the stack gases, or may find its way in the ashes (as in case of coal). This un-burnt carbon would stay in the atmosphere and in the land mass for infinite time. Contrary to the carbon in biomass the carbon in the fossil fuels does not decay and stays as such forever without any emissions of GHG. As a matter of fact this may be a problem in other AMSs and AMs which are applicable to supply side energy efficiency and fuel switch projects.

Following are some of the approaches which may be used to tackle this problem:

A. Restrict the applicability of ASM IID, wherein it may be explicitly mentioned that the methodology is not applicable to supply side EE/ Fuel switch measures.
B. Make provision in the methodology to determine / measure actual oxidization level in the baseline and modify the algorithm for computing baseline emissions to take care of the actual level of oxidization of carbon in the fuel.