

A Range of Steel Production in Japan towards 2050

Authors : Reina Kawase

Abstract : Japan set the goal of 80% reduction in GHG emissions by 2050. To consider countermeasures for reducing GHG emission, the production estimation of energy intensive materials, such as steel, is essential. About 50% of steel production is exported in Japan, so it is necessary to consider steel production including export. Steel productions from 2005-2050 in Japan were estimated under various global assumptions based on combination of scenarios such as goods trade scenarios and steel making process selection scenarios. Process selection scenarios decide volume of steel production by process (basic oxygen furnace and electric arc furnace) with considering steel consumption projection, supply-demand balance of steel, and scrap surplus. The range of steel production by process was analyzed. Maximum steel production was estimated under the scenario which consumes scrap in domestic steel production at maximum level. In 2035, steel production reaches 149 million ton because of increase in electric arc furnace steel. However, it decreases towards 2050 and amounts to 120 million ton, which is almost same as a current level. Minimum steel production is under the scenario which assumes technology progress in steel making and supply-demand balance consideration in each region. Steel production decreases from base year and is 44 million ton in 2050.

Keywords : goods trade scenario, steel making process selection scenario, steel production, global warming

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