

Developing the Cost-Estimation Technique When Switching to Best Available Power Technologies

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Abstract—The Federal Law of July 21, 2014, no. 219-FZ “On Amendments to the Federal Law ‘On Environmental Protection’ and individual legislative acts of the Russian Federation” established new principles of environmental policy providing for a substantial reduction of the negative anthropogenic impact on the environment. For this purpose, objects of Category I have been identified that have a significant negative impact on the environment and are related to the areas of best available technologies (BATs). For the methodological support of switching heat and power enterprises to BATs, a BAT reference document (BREF) 38-2017 “Combustion of Fuel in Large Plants for the Purpose of Energy Production” has been approved. Its task is to determine a list of marker pollutants, technological indicators of pollutant emissions, and best available technologies recommended for introduction at thermal power plants (TPPs) in order to reduce harmful emissions into the atmosphere. The article is devoted to the cost estimation when switching to best available technologies—one of the most acute issues of the power industry. The article presents the main provisions of the methodology for estimating capital and operating costs in switching thermal power plants to BATs, which were developed during joint research of the EIPC and MPEI. The approach proposed in the framework of the developed methodology can significantly reduce the amount of information analyzed and ensure the high reliability of estimates at the same time. The volume of representative samples necessary for a correct cost estimation of implementing measures to reduce power plants’ harmful emissions at facilities that fail to meet the BAT requirements is calculated. The range of total costs for the implementation of environmental-protection measures at existing power facilities that do not comply with the BAT principles in the wider heat and power industry has been determined.

Keywords: best available technologies, power industry, pollutants, reduction of emissions, technological indicators, BAT information and technical reference book, cost estimation when switching to BAT

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