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Assessing the Atmospheric Pollution of Energy Facilities for Supporting Energy Policy Decisions

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The impacts of different energy facilities on the environment and human health are a matter of interest and concern throughout the world. For example, fossil fuels are one of the energy sources of more undesirable effects on the environment, but this energy is still one of the most competitive at the market, especially for the developing countries. However, it is necessary to find out a balance between the costs of achieving a lower level of environmental and health injury and the benefits of providing electricity at a reasonable cost.

With a view to solving the current deficit in energy production (mainly in electricity generation) in the light of major transformations in the energy sector, the Cuban Government is evaluating ways of incorporating new sources and technologies and the expansion of existing capabilities. In this context non-fossil energy sources will play an increasingly important role.

The present work shows the results obtained in the frame of the IAEA Technical Cooperation Project CUB7007. The project integrated several tools and methodologies in the field of air quality modelling and its assessment, emissions measurement and nuclear techniques.

The main objective was to assess atmospheric pollution from various energy facilities for supporting energy policy decisions by incorporating nuclear techniques (proton-induced X-ray emission, neutron activation and X-ray fluorescence) for estimating the elementary composition of particulate matter.

As results were consolidated national laboratories in the application of nuclear and non-nuclear techniques to support environmental studies, especially for the analysis of emissions in chimneys and ambient air sampling. Moreover, all energy technologies considered in the national strategy of development were assessed.

Country or International Organization

Cuba

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