



How Air Quality Modelling Can Support the Development of Regulations at Environment and Climate Change Canada

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The Air Quality Policy-Issue Response Section (REQA), within the Meteorological Service of Canada (Environment and Climate Change Canada ECCC), supports the development of different Regulatory Impact Analysis Statements (RIAS), which form the cost benefit documentation for any regulatory publication targeting the control of various sectors (industrial, transportation and energy). The results are the foundation of the environmental and health cost benefit analysis included in the RIAS. REQA's work contributed to the publication of many regulations in the Canada Gazette along with the development of the Canadian Ambient Air Quality Standards (CAAQS) for ozone, fine particulate matter, SO₂ and NO₂.

For many years, REQA has modelled air quality using the regional air quality model AURAMS (A Unified Regional Air-Quality Modelling System) at 45-km resolution. REQA is now changing its model for the Global Environmental Multiscale - Modelling Air quality and CHemistry (GEM-MACH). GEM-MACH is the operational Regional Air Quality Deterministic Prediction System used by ECCC on a daily basis to forecast air quality across North America and especially in Canada. This 10-km resolution model presents a major improvement for modelling regulations related to air quality issues.

In addition to policy support, REQA is expanding its service offering to high resolution and urban modelling. These new services allow REQA to answer different questions related to air quality at a smaller scale than the one considered for regulations.

An overview of the expertise developed by REQA, the improvement of using a higher resolution model for regulation purposes, as well as the new modelling capabilities, will be presented.