**NIAM activity on PM2.5**

As one of our first activities in NIAM we would like to look at how countries are addressing PM2.5 pollution, including how they model it, how they assess the health impacts, and how this feeds into policy. As a first step we are gathering information on current work in this area towards organisation of a virtual meeting in November.

If you are interested in participating please register your interest with an e.mail to [h.apsimon@imperial.ac.uk](mailto:h.apsimon@imperial.ac.uk). And if you are already working in this area we shall be grateful if you can also send a response to the questions below which will help us in planning a focus on this topic.

1. **Modelling PM2.5**

If you model PM2.5 concentrations in your country:-

1. Do you use GAINS, or independent modelling- in which case please give brief details. We use FRES-model (syke.fi/projects/fres; syke.fi/emissionmap) high resolution emissions with source-receptor matrices. Sometimes in connection with FMI SILAM-model.
2. What distance scales do you cover- e.g. European, national, city: and with what spatial and temporal resolution? National, 250 m, monthly in results, 1 hour in emissions
3. What components of PM2.5 do you include- e.g. primary PM2.5, secondary inorganic aerosol, secondary organic aerosol, natural dust etc? primary PM2.5 when with SRM, secondary PM and everything when with FMI
4. What emissions data do you use e.g. a national inventory. Are there particular sources you think are uncertain, missing, or would like to discuss? FRES-model (syke.fi/emissionmap), important topics: 1) residential wood combustion: a) how much of condensables/secondary organics are / should be taken into account in emission factors / matter of emission measurement method; b) what methods are used in gridding / downscaling of emissions; 2) traffic non-exhaust / road dust emissions: are / should resuspension emissions be taken into account (as they are often not taken into account in emission inventories)
5. Have you undertaken validation of your model against measurements, and if so what measurements do you have available to use
6. What do you think are the most important uncertainties or aspects of PM2.5 modelling that you would like to discuss see iv
7. **Assessing health impacts**

The health impacts of PM2.5 are a major driver to reduce air pollution.

1. We are interested in how you use data on concentrations of PM2.5, either modelled or measured or both, to assess human exposure and health impacts? modelled mainly
2. If you undertake such assessments of health impacts of PM2.5, do you follow WHO guidance and base this on total mass of PM2.5, or do you focus on particular components and/or differentiate relative toxicity? total mass of PM2.5
3. What health impacts do you consider e.g. mortality, asthma etc; and what risk coefficients do you use? In collaboration with National Institute for Health and Welfare THL
4. Do you assess the economic costs of health impacts, and if so what do you include e.g. life years lost, hospital/medical costs, loss in productivity/working days lost etc.? Yes, Kukkonen et al. 2020 <https://doi.org/10.5194/acp-20-9371-2020>; https://www.syke.fi/en-US/Research\_\_Development/Research\_and\_development\_projects/Projects/Air\_Pollution\_Damage\_Cost\_Model\_for\_Finland\_IHKU/Air\_Pollution\_Damage\_Cost\_Model\_for\_Finl(43265)
5. **Policy applications**

We are also interested in the application of your work, particularly as input to development of policy.

1. How do you relate your work to environmental goals e.g. compliance with regulations, or comparison with WHO guidelines? comparison with WHO guidelines, fulfilling national strategies, e.g. Air Pollution Prevention Plan 2030
2. **Publications**

Have you published your work, in which case please give references is available?

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5. Savolahti, M. 2020. Climate and health impacts of residential wood combustion in Finland. Aalto University publication series Doctoral dissertations, 1799-4942 ; 32. <http://urn.fi/URN:ISBN:978-952-60-8966-9>.
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7. Savolahti M., Karvosenoja N., Soimakallio S., Kupiainen K., Tissari J. and Paunu V.-V. 2019. Near-term climate impacts of Finnish residential wood combustion. Energy Policy 130, 110837. https://doi.org/10.1016/j.enpol.2019.06.045
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17. **Questions**

Are there particular aspects of questions that you would like NIAM to address on PM2.5, including at the virtual meetings proposed for November.

Please e.mail your response to Helen ApSimon: h.apsimon@imperial.ac.uk