EVIA recommendations on Ventilation/IAQ in the EU BSO

EVIA recognises the value of the EU Building Stock Observatory (BSO) as a repository/database aimed at providing a better understanding of the energy performance of the building sector through reliable, consistent, and comparable data, that can also support the development of future policy making.

As the EU industry association representing the ventilation industry, EVIA therefore recognises the value of the BSO for driving more informed policy making on the contribution of energy efficient ventilation units to renovations aimed at decarbonising the building stock and in the formulation of policy designed to improve Indoor Air Quality (IAQ).

The lack of data on ventilation/IAQ across the Member States is a hinderance to efforts to promote IAQ in EU and Member State legislation and to reap the benefits this equipment brings in reducing the energy consumption of buildings. Providing a more robust data driven picture via the EU BSO will ultimately assist in securing IAQ improves at the Member State and the EU-level and in fully harnessing the energy efficiency of buildings thanks to controlled ventilation.

EVIA understands from discussions with DG Energy and other Commission services that IEQ/IAQ indicators are being considered for inclusion in the EU BSO in the next contracting period. However, EVIA has been invited in advance to submit suggestions as a guide on what such indicators could look like for IAQ/ventilation.

Ahead of the forthcoming terms of reference for the call for tenders EVIA, therefore submit the following two step proposal for including IAQ/ventilation in the EU BSO. EVIA's proposal recommends two steps as currently information on the performance of buildings related to concrete IAQ indicators is inconsistent across Member States as harmonised methodologies for calculating IAQ performance are not yet set at the EU level.

Step 1: Presence and Performance of Ventilation Systems:

- Mechanical Ventilation:
    - Residential building: presence of a system in the dwelling: yes or no?
        - If yes, what kind of system:
            - UVU?
                - If yes: demand controlled or constant airflow?
                - Date of installation available or estimated?
            - BVU?
                - If yes: demand controlled or constant airflow?
                - Date of installation available or estimated?

    - Non-residential building: presence of a system in the premises: yes or no?
        - If yes, what kind of system:
            - BVU?
                - If yes: demand controlled or constant airflow?
                - Date of installation available or estimated?
            - UVU?
                - If yes: demand controlled or constant airflow?
                - Date of installation available or estimated?

Justification

EVIA note from the Presentation given at the EU BSO stakeholder workshop that data on the presence of ventilation units/systems as a Technical Building System (TBS) is present to a certain extent in the EU BSO. However, as it stands the information is not displayed on the online dashboard. EVIA would support the inclusion of this data on the dashboard.

Presence of mechanical ventilation systems is to a large extent a proxy in itself for Indoor Air Quality (IAQ) in respect to the fact that the presence of a ventilation system enables an adequate air-renewal compared to a situation where there is no ventilation system or if the equipment is not performing appropriately.

A building not fitted with a ventilation system achieves air renewal through window airing resulting in substantial thermal losses. Ventilation systems limit these losses at a minimum while ensuring a sufficient air renewal. This equipment thus optimises the heating and cooling needs of the building and reduces its energy consumption compared to a situation where it is non-existent.

Further information on the presence of ventilation systems and their types in the building stock provides important information in respect to the energy efficiency of the equipment itself. Information on the age of the unit/system is a good indication of the energy savings that could be made by retrofitting the ventilation unit/system in the context of the EU's Renovation Wave Initiative. Understanding the stock of Units/systems installed before the introduction of the ecodesign requirements under Regulation (EU) 1253/2014 would be a strong indication of where energy savings could be made by retrofitting ventilation units/systems.

At a more granular level, information on the presence of Bidirectional Ventilation Units (BVUs) or Unidirectional Ventilation Units (UVUs), would be a useful tool as BVUs further increase the energy efficiency of the building via passive recovery of heat and cold from exhaust air, thereby reducing a buildings energy need. Similarly, data on whether a system includes demand control (smart) would highlight where investments could be made to deliver energy savings from a further optimised use of ventilation systems, functionalities that also deliver a satisfactory IAQ.

- Commissioning/Inspection:
  - Number of commissioning inspections
    - Ventilation system operating according to regulatory expectations.
    - Ventilation system not operating according to regulatory expectations.
  - Number of inspections
    - Ventilation system operating according to regulatory expectations.
    - Ventilation system not operating according to regulatory expectations.

Justification

EVIA support the inclusion of information related to the commissioning/inspection of ventilation systems in the BSO. Proper installation of ventilation units/systems via commissioning schemes is a foundation for ensuring the performance of the system when it is first installed so it can deliver the intended energy performance, whilst also ensuring adequate levels of Indoor Air Quality (IAQ) over time. The compliment to commissioning schemes are inspection schemes to ensure that the performance of the system is maintained over its lifetime.

EVIA would suggest initially limiting the information to those Member States that have implemented compulsory commissioning and/or inspection schemes in their national legislation, for example in Sweden. This information can be obtained from the Member States themselves and from the study conducted under Art. 19a of the EPBD by the Commission on inspections for standalone ventilation systems.

EVIA support the inclusion of an Article in the forthcoming revision of the EPBD requiring the Member States to introduce inspection schemes for stand-alone ventilation systems, equivalent to those for heating and air-conditioning under Articles 14 and 15, respectively. The revision of the EPBD should also be used to require Member States to introduce commissioning schemes or to include commissioning of TBSs in building certification.

Step 2: Specific IAQ Indicators:

- CO2 concentration
    - Member State maximum CO2 concentration rate or alternative CO2 requirement/indicator set or recommended for residential and non-residential buildings categories of reference.
- Room air relative humidity
    - Member State relative humidity range or alternative relative humidity requirement/indicator allowed or recommended for residential and non-residential buildings categories of reference.

Justification

EVIA note that information on the performance of buildings related to concrete IAQ indicators is inconsistent across the Member States and that harmonised methodologies for calculating IAQ performance are not yet set at the EU level. However, some Member States do employ calculation methodologies as the basis for compliance with IAQ requirements. Where Member States do employ IAQ calculation methodologies, and the data is collected it should be recorded in the EU BSO. EVIA would suggest including 'CO2 concentration' and 'Room air relative humidity' as they are commonly used as proxies for other IAQ parameters, i.e. VOC concentration and PMx concentration.

In the context of the revision of the EPBD, EVIA strongly supports provisions requiring Member States to implement IAQ performance calculations, where they do not already do so, as a step towards setting minimum IAQ performance criteria in the future. The EU BSO will constitute an important source of data to underpin policy making in this regard and for ventilation as well as for underlining need for the vast majority the percentage of the building stock to include IAQ in renovations to improve occupants' quality of life and health outcomes.

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About EVIA:

The European Ventilation Industry Association (EVIA)'s mission is to represent the views and interests of the ventilation industry and serve as a platform between all the relevant European stakeholders involved in the ventilation sector, such as decision-makers at the EU level as well as our partners in EU Member States. Our membership is composed of more than 40 member companies and 6 national associations across Europe, realising an annual turnover of over 7 billion euros and employing more than 45,000 people in Europe.

EVIA aim to promote highly energy efficient ventilation applications across Europe, with high consideration for health and comfort aspects. Fresh and good indoor air quality is a critical element of comfort and contributes to keeping people healthy in buildings.