

Brussels, 21 June 2021

## AIOTI Response to EPBD Revision

### SUMMARY

The Inception Impact Assessment for the revision of the EPBD proposes 3 different pathways.

- AIOTI strongly supports Option 3 'Amend the EPBD' as we are convinced this to be crucial to achieving the Renovation Wave objectives. We support the clear focus on 1) introduction of minimum energy performance standards in combination with deep renovation definition focusing on minimum individual and collective living quality, 2) updating the EPC framework and 3) developing a new vision for buildings.
- AIOTI strongly believes that Option 2 'Non-regulatory measures', especially transition and financial support mechanisms and supply chain capacity, are key enablers.
- Recent publications, assessing Long-term Renovation Strategies and their non-compliance with the EPBD objectives of climate-neutrality by 2050<sup>1</sup>, assessments of the social and cultural influences on energy consumption<sup>2</sup>, and the current unacceptable low deep renovation rates, clearly show that Option 1 'No policy change' is far from being a responsible option.

AIOTI would like to emphasize the need for the most effective synchronization of both regulatory and non-regulatory measures for the upcoming revision of the EPBD.

### Detailing our comments and recommendations

#### Option 3: Amend the EPBD

##### 1) Introduction of Minimum Energy Performance Standards (MEPS) in combination with deep renovation definition

The Commission proposes the phased introduction of mandatory minimum energy performance standards as a central element of the EPBD revision. AIOTI agrees with the Commission proposal that a clear trajectory of meeting the newly set energy performance level, is most supportive in a massive acceleration of the envisioned renovation wave. A regulated minimum standard alone, however, is not enough, as concluded from reviewing use of MEPS in Member States.<sup>3</sup>

AIOTI suggests that the introduction of MEPS in the EPBD revision should include the building of a fundamental demand drive – from 'push' to 'pull'. The good news is that consumers demand sustainability when they shop, invest, work and travel<sup>4</sup>.

<sup>1</sup> [On the way to a climate-neutral Europe – Contributions from the building sector to a strengthened 2030 climate target BPIE - Buildings Performance Institute Europe](#)

<sup>2</sup> [Energy Demand Challenges in Europe – Implications for policy, planning and practice](#)

<sup>3</sup> <https://www.raponline.org/knowledge-center/filling-the-policy-gap-minimum-energy-performance-standards-for-european-buildings/>

<sup>4</sup> <https://www.ibm.com/thought-leadership/institute-business-value/report/sustainability-consumer-research>

AIOTI strongly recommends the implementation of data-driven community outcomes, connecting consumers, suppliers, investors and authorities, building on the general public awareness.

Data (from IoT devices) is needed to quantify current energy performance levels, helps identifying applicable renovation options and validates the new energy performance level in relation to MEPS. In the section below “Updating the EPC framework” details are described how data and digital EPC’s will define a new standard for transparency in building energy performance.

Community outcomes: Many studies have brought forward that large-scale home renovation will deliver a wide range of benefits, not only to the individual homeowner/user but to industry and society as well<sup>5</sup>. Connecting the beneficiaries of the identified and validated outcomes has shown to be a strong accelerator mechanism in community transformations<sup>6</sup>. Connecting agreed and validated outcomes to a challenge at scale, aligns different actors that otherwise stay in opposite positions.

With respect to successful implementation of MEPS, it is recommended to design an implementation roadmap along lines of community outcomes, in combination with accelerated implementation of IoT solutions that are needed to generate baseline insights, as well as helping identifying renovation solutions and validating outcomes.

The community aspect is considered a critical element. The challenge of reducing emissions through increased energy efficiency is of such scale and should be reached in such a limited timeframe, that it requires an ALL-IN approach, which is a transformation by definition. We strongly believe that data-supported community decision-making is the key to accelerating the renovation challenge to meet the MEPS. The upside of a community approach is the resulting economy-of-scale which will reduce investment levels significantly.

Following the recommended key implementation structure of data-driven community outcome contracting, structures are needed to ensure the acceptance and execution of these kind of contracts. This should include the availability of differentiated financial support solutions, engaged and educated supply chain, clear understanding of obligations and outcomes, supported and facilitated by clear and simple legislative and regulatory structures aiming to accelerating the collective cooperation.

Deep renovation standard: MEPS will have a huge impact on the actual renovation investments, necessary to address the MEPS and maybe even create more ambitious energy efficiency outcomes. We believe that is key to agree on both the targeted outcome in terms of minimum living quality<sup>7</sup>, as well as the building energy performance to guarantee that living quality. This is important to prevent unintended consequences from for example high insulation efforts without ensuring good ventilation. A very relevant topic in the current pandemic.

Another important element here, is the realization that renewing our built environment creates an immense opportunity to adjust the lay-out of building blocks to create more open and socially safe conditions. An immense factor in mental health issues and important factor of collective living quality.

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<sup>5</sup> <https://www.raponline.org/knowledge-center/case-studies-minimum-energy-performance-standards-for-european-buildings/>

<sup>6</sup> <https://policyoptions.irpp.org/magazines/november-2019/heres-a-way-for-governments-to-buy-positive-outcomes/>

<sup>7</sup> [https://www.hud.gov/sites/documents/REAL\\_COST\\_POOR\\_HOUSING.PDF](https://www.hud.gov/sites/documents/REAL_COST_POOR_HOUSING.PDF)

<sup>8</sup> [http://publications.europa.eu/resource/cellar/5187e545-78ab-11e6-b076-01aa75ed71a1.0001.02/DOC\\_1](http://publications.europa.eu/resource/cellar/5187e545-78ab-11e6-b076-01aa75ed71a1.0001.02/DOC_1)

IoT solutions are seen as key elements connecting individual situation to a larger context, ensuring that all stakeholders have access to data necessary to deliver renovation solutions at scale and speed. IoT solutions enable connecting actual insights from different domains including lifecycle emissions, climate resilience, health and environment to be considered in real time.

## 2) Updating the EPC framework

The Commission is targeting the strengthening of the EPC framework as part of the EPBD revision. So far the EPC framework is widely used for both gathering energy performance data on the existing building stock as well as a policy tool for renovation regulations. AIOTI suggest the following to strengthen the framework in the context of the EPBD revision:

- a. (Continuous) availability of data: Availability of data on the energy performance of a building is essential for ensuring the real intended impact of emission reduction. In more practical terms, for example energy grid operators are highly dependent on the availability of energy performance data for daily energy management and grid investments. Also the building user(s) are dependent on the availability of data for the optimization of energy consumption, cost and comfort. An EPC should therefore not only be a theoretical exercise, but an active continuous framework. Sensors and automated evaluation of actual consumption patterns into actual building energy performance are tangible elements to make an EPC more a dynamic continuous framework, rather than a theoretical one time exercise.
- b. Reliability of data: This continuous monitoring and evaluation requires standards to ensure the reliability of the data and the actual EPC performance over time. Automated sensor calibration and un-changeable data-logging are essential. Blockchain-based solutions are designed for these applications (and have proven themselves), ensuring low-cost and reliable availability of data. Even 'sanctions' like not meeting EPC performance, could be executed automatically.
- c. Ownership of data: We think it is of utmost importance that data is owned by its data generator. Closing the digital divide requires solutions that ensure acknowledgement of ownership. Explicit consent for data use to what purpose is essential.
- d. Accessibility of data: Standardized open access to data is essential to prevent consequences of choosing certain platforms. Through open access design, under the condition of explicit data use consent, a wealth of opportunities can be addressed, ranging from local energy (or other) optimization to large-scale renovation planning, social design and more.
- e. Digital EPC contract: Turning EPC's to Digital EPC contracts is essential in better engaging suppliers, home owners and authorities in the field of maintaining energy performance and as such connecting building energy performance to city climate targets. Digital EPC's will lead to actual insights in energy performance and performance over time. Actual insights are valuable input in balancing energy consumption and supply, e.g. optimizing grid use, actively steering energy consumption from appliances. Performance over time provides key data on the intended outcome of the EPC, meaning actual emission reduction and efficient use of energy.

- f. Essential for MEPS: Reliable, actively owned and accessible data on the energy performance of buildings, e.g. in the form of a digital EPC, on the one hand will give home owners an active trigger to maintain a certain energy performance and as such a budget control mechanism. On the other hand will this data give (local) governments the ability to verify the meeting of targets.
- g. Neighborhood EPC Contracts: Bringing home owners and home users together in a digital neighborhood EPC is an engaging way in building community engagement. This is an important element of activating ownership in the energy transition at a local level and an important tangible translation of city climate targets to citizen contribution.
- h. Digital Building Logbooks/Building Renovation Passport : digital building logbooks will allow owners, users, authorities and all relevant construction and installation actors to have up-to-date information on a building, including its (energy) performance. This way e.g. building renovation planning and/or renovation performance can be accelerated, while accelerating the required digitalization of the building and installation sector.
- i. Financing industry: Availability of reliable data in quantity and over time, is essential to connect and commit the financial sector in the acceleration of renewing the built environment. Improved availability of data will change the relationship funder – funded through better risk-rating, asset performance management and will lead to more standardized outcome-based funding solutions, unlocking the impact of large-scale renovations in a wider field of co-benefits, opening innovation in new collective impact funding solutions.

### 3) Developing new vision for Buildings

The Commission announces that requirements for new buildings and measures fostering sustainable mobility might need to be updated, developing a new vision for buildings.

AIOTI suggests taking into account the following in the context of a new vision for buildings:

Buildings are key in creating thriving and equitable communities: Communities are central to the strategy of the European Commission<sup>9</sup>, which we fully support and embrace. Foundational to this is the removal of inequalities in basic living conditions. This is where the renewal of the built environment has a key role to play, in providing minimum living quality for all. From this perspective we strongly recommend the EPBD revision not to just focus on individual building performance, but rather make the EPBD revision a key driver to accelerate the creation of thriving and equitable communities through collective action in renewing our built environment into a societal supportive infrastructure.

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<sup>9</sup> [https://ec.europa.eu/info/sites/default/files/research\\_and\\_innovation/funding/documents/ec\\_rtd\\_horizon-europe-strategic-plan-2021-24.pdf](https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/ec_rtd_horizon-europe-strategic-plan-2021-24.pdf)

Adaptability to needs and external impact: We would like to point to the challenge we all face to decide on investments to meet MEPS targets. The EPBD revision is an immense opportunity to drive other outcomes than just energy performance. An immense challenge we are facing is how to ensure that the renewal investments are able to provide prevention to the impact of increasingly frequent weather events. Learnings from system dynamics show that maximizing local sustainability provides the maximum adaptation capability of the whole system<sup>10</sup>. From these learnings we strongly suggest to use the EPBD revision to provide guidance on increasing community sustainability through community energy performance and energy reliability. We strongly believe that sustainable communities are accelerated through local energy generation and consumption, in opposition to central energy generation systems.

Regenerative by design: Sustainability is the first milestone we need to meet as humanity to have at least a break-even with the capacity of Earth to provide us what we need. However, the challenge mankind faces, is the significant reduction of CO<sub>2</sub> from the atmosphere from the current 420ppm back to the 'sustainable' level of approximately 300ppm<sup>11</sup>. This reduction requires a regeneration focus, making nature better than we have now. Through the system of renewing the built environment, generating renewable energy, the operation of our buildings and re-use of materials at the end-of-life, it is recommended to drive for regenerative capacity in this system.

IoT is key enabler: The proposed new vision on buildings as key driver for thriving and equitable communities, with adaptation capacity to withstand increasingly frequent weather events and regenerative by design, is only possible through insights in status and development of performance of a building, collection of buildings, communities and cities. The capacity of society to operate, maintain and control energy performance at low investment and cost, in a transparent way, requires all the data conditions that have been detailed in the previous section, supporting data-driven decision-making and progress tracking. This is where IoT has a key enabling role to play.

## Option 2: Non-regulatory measures

In addition to the regulatory elements outlined above, AIOTI would like to highlight the importance of the following non-regulatory measures, as proposed in Option 2:

Support measures: transition and financing

Transition: Fundamentally a transition can only take place, through the active participation of all involved stakeholders. The consequence is the need for an engagement process and strategy aiming at making communities taking ownership and driving their community development, including the built environment. We believe that building data-driven decision making is one of the critical capacities that needs to be implemented in communities for accelerating the implementation of MEPS. Local governments will have to play an active facilitation role in this.

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<sup>10</sup> <https://donellameadows.org/archives/leverage-points-places-to-intervene-in-a-system/>

<sup>11</sup> IPCC

Financing: The immense scale of built environment renewal that we face, requires a new approach to finance solutions. We strongly believe that the current assumption that each home owner needs to pay individually for the renewal, is not the way to go. This will only slowing the transition and increase community inequality. We believe that long-term investments solutions are needed, that drive the required energy performance transition, but at the same time drive the equitable community impact that the Commission envisions.

The presented community outcome-driven contracting is an example how this could work.

Public investments, EU Funds, is the money that is meant to drive community development, and as such we suggest use the implementation of new MEPS, as an accelerator for designing and implementing societal responsible financing solutions.

It may be clear that IoT solutions, like blockchain based smart contracts, are keys to enable aligned investing and outcomes validation.

Supply chain capacity

Key to success for the Renovation Wave to take shape, is the capacity of supply chains in the building- and construction sector as well as IoT sector to meet the demand. In this respect it will be crucial for the Member States to upskill the current workforce, and stimulate the automation and digitalization of the construction sector. Reliable accreditation of professionals as well as built-in EPC validation will be essential in delivering and maintaining EPC performance quality, as described above.

## CONCLUSION

In conclusion AIOTI suggests that the measures proposed in Option 3 and the non-regulatory measures in Option 2, should be implemented in a concerted way, in the context of the upcoming EPBD revision as to accelerate the renewal of the built environment in Europe including the development of thriving of equitable communities.