

## AIOTI Response to Energy Efficiency Directive (EED) recast

### SUMMARY

The EED builds on the European Green Deal, in which the Commission set out “a new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use. It also aims to protect, conserve and enhance the EU's natural capital, and protect the health and well-being of citizens from environment-related risks and impacts.

- AIOTI strongly supports this strategy
- AIOTI strongly supports the reduction of GHG emissions of at least 55% by 2030 compared to 1990 as a concrete element of this strategy
- AIOTI believes that an earlier date than 2050 needs to be set for the European Union to achieve carbon neutrality, given the current climate facts (e.g. IPCC report August 2021) and lack of clear 1,5C measures agreement in the recent COP26 (nov 2021).
- AIOTI strongly supports prioritisation of the principle to increase energy efficiency, meaning a realizing of a certain output with minimum energy consumption.
- To this matter AIOTI perceives the proposed EED recast as an attempt to try to impact detailed energy consumption equipment, while not seeing the bigger integral impact. AIOTI fears that the current EED approach will only create a gradual and laborious increase of energy efficiency.
- AIOTI misses the clear implication of the Green Deal ambition in the EED, as is now proposed in (50) ‘Not promote activities that are not environmentally sustainable such as use of solid fossil fuels’. In our view it would be logical to state the ban of solid, liquid or gaseous fossil fuels for energy generation in favour of no-emission, renewable solutions. We believe that sufficient alternatives are available, it will strengthen the position of the EU, by strongly reducing dependency from fuel imports to EU, as well as generating the co-benefits of introducing renewable energy sources to health, air quality, GHG emission reduction and more. Technical solutions from the wide IoT field are already available to ensure optimal use at scale.

AIOTI would like to emphasize the need for integral approaches to the Green Deal ambition, meaning designing back from the future ambition. Rather than trying to enforce an optimization from our current implemented solutions. Based on for example the IPCC report of August 2021, it is clear we need giant leaps in transforming our society and economy, instead of small optimization steps.

In particular, IoT and Edge Computing are two elements in a larger family of technologies to deliver effective and sustainable systems. Currently many enabling technologies, like IoT, edge computing, smart connectivity, AR/VR, AI/ML and distributed ledger technologies are being deployed and used in many facets of the economy and vertical industry domains. The use of those enabling technologies can support sustainable solutions that will be able to achieve the objectives of the European Green Deal and Energy Efficiency. Those technologies, such as IoT, edge computing and smart connectivity can function as enablers of such solutions and at the same time their use will enable energy networks and consumers to become more energy efficient in general, thereby reducing energy consumption at a time when the future of our environment depends on it. These enabling technologies are supported by an evolved ICT infrastructure addressing the connectivity and computing horizontal features.

## DETAILED COMMENTS AND RECOMMENDATIONS

- 1) Focus on IoT and Edge computing technologies as being enabling technologies that support the increase of energy efficiency, using e.g., monitoring, control and maintenance of energy in most industrial domains, e.g., Manufacturing, Energy, Buildings, Agriculture, Smart City, Mobility.
- 2) Focus on energy efficient heating, cooling generation for residential application, and increased level of insulation; (50) heating demand

AIOTI embraces the focus on the built environment in order to reduce energy consumption and GHG emission. It is easy to envision technical controls to optimize energy consumption versus output in heating and cooling. In this respect the EED is supportive to more district heating and cooling.

AIOTI perceives the proposed measures as supporting a substitution strategy and would like to warn for unintended consequences. The fundamental flaw we want to point to is that people do NOT need heat or cooling. People need COMFORT or in other words Quality of Living, in line with the SDGs and the ambition of the Green New Deal. Quality of Living includes elements like temperature comfort, light comfort, sound comfort, inner air quality comfort, affordability through minimal energy consumption and maximizing (renewable) energy self-generation, minimizing water consumption. From a technical perspective the temperature and air comfort is optimizing relative humidity, temperature and O<sub>2</sub>/CO<sub>2</sub> levels.

Already 10-20% on average of all homes in EU suffer from humidity problems, leading to mould issues, leading to chronic health issues and as such driving a yearly increase of health and care costs (Source: BPIE). Strongly pushing for insulation and (convection-based) heating and cooling, will only deteriorate the inner climate conditions in most homes, and will lead to unintended energy losses from more opening of windows to get fresh air in. An experience that is known already for years since the extra insulation of homes was promoted, resulting from the separated approach towards humidity, temperature (heating, cooling) and O<sub>2</sub>/CO<sub>2</sub> control.

Based on the experiences from the passive home design and building industry, active home design approach and the energy, cost and co-benefit comparison, AIOITI sees the EU-wide required home renovation wave as an important driver for the introduction of ventilation based home comfort systems. There are solutions offered and implemented that integrate all the elements of humidity, temperature (both heating and cooling) and O<sub>2</sub>/CO<sub>2</sub> control in a very energy efficient way. These solutions use a heatpump-based ventilation approach and generate domestic hot water in the same system.

That proposed strategy serves multiple targets at the same time: increasing energy efficiency in homes, accelerate renovation initiatives, minimise GHG emissions, implement both heating and cooling capacity, increase healthy living conditions, reducing health costs. Not to forget the impact on productivity from better comfort, elimination of air-borne viruses and bacteria, VOC and more when using an ionizer extension. In combination with locally generated renewable energy this leads to resilient districts.

IoT solutions are already available to manage and control multiple outcome optimization for smart districts, accelerating the renovation wave and intended outcomes in energy efficiency, GHG reduction and affordability.

This strategy is already implemented in renovation projects in Denmark, Netherlands and Germany. District heating and cooling projects are 'just' infrastructure projects, that will take on average 5-7 years from inception to realization, costing millions of Euros, providing only partial solutions, maintain GHG emission during the project realization, drive to extra costs for home owners (less affordability) and drive centralized solutions through vendor lock-in. Not taking into account that the capacity to build these infrastructures is not near enough to be ready by 2050. From a resilience point of view not the optimal outcome.

We hope that this detailed analysis proves that an integral approach 'designing from the future' in combination with actual market accepted solutions, provides the outcomes the EED is trying to enforce.

AIOITI is at your disposal for further insights and input.

## ABOUT AIOTI

AIOTI is the multi-stakeholder platform for stimulating IoT Innovation in Europe, bringing together small and large companies, start-ups and scale-ups, academia, policy makers and end-users and representatives of society in an end-to-end approach. We work with partners in a global context. We strive to leverage, share and promote best practices in the IoT ecosystems, be a one-stop point of information on all relevant aspects of IoT Innovation to its members while proactively addressing key issues and roadblocks for economic growth, acceptance and adoption of IoT Innovation in society.

AIOTI's contribution goes beyond technology and addresses horizontal elements across application domains, such as matchmaking and stimulating cooperation in IoT ecosystems, creating joint research roadmaps, driving convergence of standards and interoperability and defining policies. We also put them in practice in vertical application domains with societal and economic relevance.