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P9_TA(2020)0227

Maximising the energy efficiency potential of the EU building stock

European Parliament resolution of 17 September 2020 on maximising the energy efficiency potential of the EU building stock (2020/2070(INI))

(2021/C 385/08)

The European Parliament,

— having regard to the Treaty on the Functioning of the European Union (TFEU), and in particular to Article 194 thereof,

— having regard to the European Pillar of Social Rights proclaimed by Parliament, the Council and the Commission at the Social Summit for Fair Jobs and Growth in Gothenburg on 17 November 2017,

— having regard to the Agreement adopted at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21) in Paris on 12 December 2015 (the Paris Agreement),

— having regard to the Commission communication of 11 December 2019 on the European Green Deal (COM(2019)0640),

— having regard to the Commission communication of 28 November 2018 entitled 'A Clean Planet for all — A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy' (COM(2018)0773),

— having regard to the Commission communication of 10 March 2020 entitled 'A New Industrial Strategy for Europe' (COM(2020)0102),

— having regard to the Commission communication of 11 March 2020 entitled 'A new Circular Economy Action Plan — For a cleaner and more competitive Europe' (COM(2020)0098),

— having regard to the Commission communication of 20 September 2011 entitled 'Roadmap to a Resource Efficient Europe' (COM(2011)0571) and the environmental footprint for products announced therein,

— having regard to the European Court of Auditors Special Report 11/2020 of 28 April 2020 entitled 'Energy efficiency in buildings: greater focus on cost-effectiveness still needed',

— having regard to the European Council conclusions of 12 December 2019,

— having regard to the Council conclusions of 25 June 2019 on the future of energy systems in the Energy Union to ensure the energy transition and the achievement of energy and climate objectives towards 2030 and beyond,

— having regard to the 'Pact of Amsterdam — The Urban Agenda for the EU' agreed at the informal meeting of EU ministers responsible for urban matters on 30 May 2016,

— having regard to the Leipzig Charter on Sustainable European Cities adopted at the informal meeting of EU ministers responsible for urban development on 24 and 25 May 2007,

— having regard to Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, as amended by Directive (EU) 2018/2002 of the European Parliament and of the Council of 11 December 2018 amending Directive 2012/27/EU on energy efficiency ([1]),

([1]) OJ L 328, 21.12.2018, p. 210.

— having regard to Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings, as amended by Directive (EU) 2018/844 of the European Parliament and of the Council of 30 May 2018 amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency ([2]),

— having regard to Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources ([3]),

— having regard to Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council ([4]),

— having regard to Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU ([5]),

— having regard to Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity ([6]),

— having regard to Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC ([7]),

— having regard to Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity ([8]),

— having regard to Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy ([9]),

— having regard to Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora ([10]),

— having regard to its resolution of 15 January 2020 on the European Green Deal ([11]),

— having regard to its resolution of 28 November 2019 on the climate and environment emergency ([12]),

— having regard to its resolution of 14 March 2019 on climate change — a European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy in accordance with the Paris Agreement ([13]),

— having regard to its resolution of 25 October 2018 on the deployment of infrastructure for alternative fuels in the European Union: time to act! ([14]),

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([2]) OJ L 156, 19.6.2018, p. 75.
([3]) OJ L 328, 21.12.2018, p. 82.
([4]) OJ L 328, 21.12.2018, p. 1.
([5]) OJ L 158, 14.6.2019, p. 125.
([6]) OJ L 158, 14.6.2019, p. 54.
([7]) OJ L 88, 4.4.2011, p. 5.
([8]) OJ L 283, 31.10.2003, p. 51.
([9]) OJ L 327, 22.12.2000, p. 1.
([10]) OJ L 206, 22.7.1992, p. 7.
([11]) Texts adopted, P9_TA(2020)0005.
([12]) Texts adopted, P9_TA(2019)0078.
([13]) Texts adopted, P8_TA(2019)0217.
([14]) Texts adopted, P8_TA(2018)0438.

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— having regard to its resolution of 6 February 2018 on accelerating clean energy innovation ([15]),

— having regard to its resolution of 13 September 2016 on Towards a New Energy Market Design ([16]),

— having regard to its resolution of 13 September 2016 on an EU Strategy on Heating and Cooling ([17]),

— having regard to Rule 54 of its Rules of Procedure,

— having regard to the opinion of the Committee on the Environment, Public Health and Food Safety,

— having regard to the report of the Committee on Industry, Research and Energy (A9-0134/2020),

A. whereas buildings are responsible for approximately 40 % of energy consumption and 36 % of CO_2 emissions in the EU and, therefore, their deep, including staged deep, renovation is crucial to achieve the EU's 2050 net-zero greenhouse gas (GHG) emissions objective;

B. whereas the building sector is the single largest energy consumer in the EU, and 97 % of the EU building stock is not energy efficient, with only 0,2 % of the EU's residential buildings subject to deep, including staged deep renovations, each year, and whereas over 94 % of today's buildings will still be standing in 2050, and most of the homes, schools and offices that we will be occupying then have already been built;

C. whereas space and water heating accounts for approximately 80 % of household energy consumption, as half of the EU's buildings have individual boilers that were installed before 1992, with an efficiency of 60 % or less, and whereas 22 % of individual gas boilers, 34 % of direct electric heaters, 47 % of oil boilers and 58 % of coal boilers are older than their technical lifetime;

D. whereas increasing renovation rates to almost 3 % and renovating 210 million existing buildings could create up to 2 million jobs ([18]) in the construction sector, which accounts for about 9 % of the Union's GDP and is an important part of the recovery strategy after the COVID-19 crisis, and could contribute to a clean economy as part of the European Green Deal;

E. whereas the EU Building Stock Observatory (BSO) plays a key role in monitoring and improving the overall energy performance of buildings in the EU through data that is reliable, consistent and easy to compare;

F. whereas the quality of life of all citizens can be improved by taking measures to improve the energy efficiency of the EU's building stock, and therefore the main challenge is to alleviate the burden on the estimated 50 million households in the European Union experiencing energy poverty, reduce energy bills and deliver comfortable, affordable and energy-efficient housing for all;

([15]) OJ C 463, 21.12.2018, p. 10.
([16]) OJ C 204, 13.6.2018, p. 23.
([17]) OJ C 204, 13.6.2018, p. 35.
([18]) Ürge-Vorsatz, Diana, Tirado-Herrero, Sergio, Fegyverneky, Sándor, Arena, Daniele, Butcher, Andrew and Telegdy, Almos, *Employment Impacts of a Large-Scale Deep Building Energy Retrofit Programme in Hungary*, 2010; Janssen, Rod and Staniaszek, Dan, *How Many Jobs? A Survey of the Employment Effects of Investment in Energy Efficiency of Buildings*, The Energy Efficiency Industrial Forum, 2012.

G. whereas the World Health Organization (WHO) estimates that people spend approximately 90 % of their time indoors in residential and non-residential buildings and that over half a million Europeans die prematurely every year because of poor indoor air quality ([19]), and whereas proper ventilation by opening up windows improves the air quality in people's homes, as well as providing natural daylight, making them more healthy, which has become central, especially during the current COVID-19 crisis;

H. whereas it has called 'for the Energy Efficiency Directive (EED) and Energy Efficiency of Buildings Directive (EEBD) to be revised in line with the EU's increased climate ambition, and for their implementation to be reinforced, through binding national targets' ([20]);

I. whereas upwards of EUR 282 billion by way of investment in the renovation of the European building stock, as well as a smart combination of rigorous implementation of existing policies, new policy initiatives to phase out the worst energy performing buildings, further and adequate financing mechanisms, and investments in innovative solutions are necessary to achieve an energy-efficient building stock, as well as the Union's 2030 energy efficiency target;

J. whereas integrated renovation programmes (IRPs) aim to be holistic, putting energy efficiency first, and focus on the broader neighbourhood ecosystems, comprising high energy reduction targets for individual buildings, are based on best practice and understood to consist of three main pillars:

(a) construction typology and building materials, requiring in-depth knowledge of the age, use and construction method of buildings, and of the energy savings potential they represent, as well as a description of the types of materials to be used throughout the course of a renovation, including their life-cycle impact;

(b) provision of and access to sustainable energy sources, namely on-site and nearby renewables, including district heating or cooling systems, or using the thermal storage capacity of buildings, vehicle-to-X services and other flexibility options enabling sector integration;

(c) community/societal benefits, namely the integration of local communities into all energy renovation projects and programmes in order to tackle issues such as energy poverty, a lack of technical and/or financial resources and information gaps;

K. whereas the implementation of this three-pillar approach ensures that IRPs are devised and implemented in a way that focuses on the wider benefits that can be provided through energy renovations to people and communities, such as energy efficiency, climate change resilience, industrial competitiveness, sustainability, social inclusion and accessibility;

Neighbourhoods and communities

1. Highlights the role of neighbourhoods and communities, as well as other actors such as local and regional authorities and SMEs, in IRPs, as a holistic approach to renovation, in order to achieve a highly energy-efficient and climate-neutral building sector by 2050 in line with the Energy Performance of Buildings Directive (EPBD);

2. Demands that building and renovation policies be holistic and inclusive, contribute to EU climate goals, include IRPs that integrate local value chains, social services and affordability, smart readiness, an adequate, healthy indoor climate and environmental quality, mobility, technical, industrial and energy-efficient functions of buildings, and enable on-site or

([19]) World Health Organization: *Over half a million premature deaths annually in the European Region attributable to household and ambient air pollution*, 2018.

([20]) European Parliament resolution of 15 January 2020 on the European Green Deal, Texts adopted, P9_TA(2020)0005.

nearby renewables production and exchange, and demand-side flexibility, as well as using excess heat and cold from nearby industrial facilities, local transport systems, or waterways where this is a sustainable option;

3. Highlights the important role that citizens play in the renovation of the residential buildings stock and the importance of creating efficient tools, best practices and making all possible information and knowledge available at local level, including opportunities related to technologies (i.e. smart meters); recognises, furthermore, the impetus given by energy communities through bringing citizens together, informing and engaging them in starting their own renovations and/or generation of renewable energy, and calls for a comprehensive package of policy measures to scale up these approaches;

4. Calls on the Commission to assess the impact of the gentrification and 'renoviction' of neighbourhoods, as well as gender disparities and the situation of vulnerable citizens; considers that a community approach, in addition to safeguards at regulatory level, could preserve existing communities, as well as create incentives that are essential to maximise energy efficiency and to leverage the necessary private and public investments; stresses the need to support the most vulnerable citizens by enabling their access to dignified living conditions, comfort and health, and highlights the important role of social housing;

5. Underlines the fact that the ownership of buildings, tenancy laws and the number of homeowners and tenants, as well investment opportunities and housing support schemes, weather conditions and energy systems, vary across Member States; believes that a 'renovation wave' strategy must take the different circumstances relevant to each Member State into account, also in accordance with the integrated national energy and climate plans (NECPs); underlines in particular that renovations should not lead to an unbearable rental cost burden for tenants;

6. Underscores the extent of energy poverty across the Union, which is estimated to affect up to 50 million households ([21]); believes that the renovation wave and the upcoming related initiatives should have as one of their core objectives ending energy poverty and ensuring healthy and safe living conditions for all; welcomes the Commission's intention to pay particular attention to the renovation of energy-poor households and underlines the importance of adopting energy-saving measures, promoting energy-efficient consumption habits and behavioural change; stresses that the public sector must be a leader in this field;

7. Highlights the immediate success of 'one-stop-shops', for the energy renovation of buildings as transparent and accessible advisory tools from the client perspective, fostering the aggregation of projects and replicable models, the provision of information about third-party financing, coordinating and accompanying renovations, as well as providing capacity building for municipalities, and the active involvement of local actors such as energy communities, consumer organisations, local business associations, including from the construction industry, and housing cooperatives throughout the process;

8. Recalls that both public and private efforts are required to achieve concrete results in the field of energy efficiency for the current building stock; underlines the necessity of not only creating, but also sustaining one-stop-shop advisory services in order to continuously feed the market with a pipeline of projects, including smaller-scale projects; believes that the creation of a one-stop-shop at a regional or local level will provide better access to financing mechanisms;

9. Welcomes the European Green Deal proposal on open platforms; stresses that they must be transparent, multi-level and inclusive, encompassing a broad range of stakeholders and allowing fragmentation in the building sector to be bridged; recalls that the platforms must serve the objective of achieving a highly energy-efficient and decarbonised building stock by 2050, and believes that they should be the tool to address the barriers to renovation and to engage citizens in the pursuit of consensus on the basis of community needs;

([21]) Commission communication of 11 December 2019 on The European Green Deal (COM(2019)0640).

10. Underlines that regional platforms should set measurable targets, work towards roadmaps and hold regular exchanges with the existing EED, EPBD and Renewable Energy Directive (RED) ([22]) Concerted Action platforms, as well as existing agencies and bodies in the Member States to maximise their impact; is convinced that the platforms are an important tool for the implementation of integrated building renovation programmes and to support Member States in the execution of their long-term renovation strategies;

11. Takes note of the New Leipzig Charter to be adopted during the German Presidency and shares the view that cities play a key role in dramatically reducing GHG emissions and enhancing energy efficiency; considers that the renovation of buildings will contribute largely to these objectives, while promoting just, green and productive cities through resilient neighbourhoods; calls on the German Presidency of the Council of the EU, the Commission and the Member States to ensure that cities are equipped with the necessary and directly accessible funding resources for renovation measures, especially in the light of the need for economic recovery;

12. Calls on the Commission to adopt a policy facilitating IRPs at community and regional level in the Member States providing for deep renovations, including staged deep renovations, and taking buildings' needs into account in an inclusive and interactive manner; stresses the opportunity to secure more on-site and nearby renewable energy solutions or to demand response mechanisms through IRPs; calls on the Commission to step up work on the Covenant of Mayors for Climate and Energy and the EU City Facility; further highlights, in this context, the major importance of the urban agenda and the urban partnership;

13. Calls on the Member States to empower their local administrations with a view to rolling out IRPs at neighbourhood and community level, while putting citizens at the centre and adequately reconciling renovations with the preservation of the European tangible historical heritage (monuments and buildings), requiring local authorities to provide feedback on the results achieved, as well as on best practices for future policy design at national level;

14. Calls on the Member States to create a framework for overcoming split incentives, for example through the provision of accurate information, appropriate incentives and effective enforcement ([23]), and to give adequate consideration to families and communities living in energy poverty through a regulatory framework to avoid renovictions, for example, by requiring an appropriate share of deeply renovated building floor area to be reserved for them, or through prioritising buildings with higher energy consumption or energy waste when designing IRPs, and through limits on rent increases, provided this does not restrict the capacity to undertake energy efficiency renovations;

15. Calls on the Commission to set up a support service for citizen-led renovation projects, as well as to issue implementing guidelines to Member States regarding the concepts of an enabling framework and level playing field for energy communities introduced by the Electricity Market Directive ([24]) and the RED, so as to ensure successful implementation and fully recognise the benefits of citizen-led energy projects;

16. Calls on the Commission to immediately launch platforms, as indicated in its communication on the European Green Deal, and include these platforms as a key priority in the IRPs; stresses that the IRPs should be accompanied by EU initiatives circulating best practices on the replicability of programmes, the dissemination of capacities, sector integration, and safeguards for communities in energy poverty, in line with the commitments of the EPBD;

([22]) Directive (EU) 2018/2002 of the European Parliament and of the Council of 11 December 2018 amending Directive 2012/27/EU on energy efficiency (OJ L 328, 21.12.2018, p. 210); Directive (EU) 2018/844 of the European Parliament and of the Council of 30 May 2018 amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency (OJ L 156, 19.6.2018, p. 75); Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (OJ L 328, 21.12.2018, p. 82).

([23]) Castellazzi, L., Bertoldi, P., Economidou, M., *Overcoming the split incentive barrier in the building sectors: unlocking the energy efficiency potential in the rental & multifamily sectors*, Luxembourg, Publications Office of the European Union, 2017, https://publications.jrc.ec.europa.eu/repository/bitstream/JRC101251/ldna28058enn.pdf

([24]) Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (OJ L 158, 14.6.2019, p. 125).

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Finance

17. Highlights that initial investment costs, complex finance schemes, split incentives (tenant-owner dilemma), medium/long-term payback times, regulatory and administrative barriers, including for buildings with multiple owners, the design of existing support and a lack of a predictable long-term policy framework act as significant barriers to investments;

18. Emphasises that, in the context of the COVID-19 recovery and its impact on public and private finances, financing schemes should incentivise and prioritise deep, including staged deep, renovations aiming to achieve the 2050 climate neutrality targets, with adequate incentives, as well as targets, to achieve a highly energy-efficient and decarbonised building stock; believes this is a precondition for considering building renovations as sustainable long-term investments; underlines the role of cost effectiveness indicators including co-benefits in this respect;

19. Highlights that the Member States should provide clear guidelines and outline measurable, targeted actions, as well as promote equal access to financing, including for the worst performing segments of the national building stock, energy-poor consumers, social housing, and households subject to split-incentive dilemmas, while taking affordability into account;

20. Stresses that homeowners, in particular low-income and energy-poor homeowners, housing associations and cooperatives, public housing providers and local authorities, should be supported in making their building stock and the built environment climate resilient, for example through grants or financial instruments based on the additionality of multiannual financial framework (MFF) funding, national budgets and private sector sources;

21. Considers that prioritisation of funding for energy efficiency renovations in each relevant European fund is required, as well as strong coordination to find synergies, facilitate blending, aggregate projects and build up project pipelines, in order to ensure the timely absorption of funds; calls on financial institutions to dedicate significant resources to capacity building and technical assistance; underlines that at least EUR 75 billion a year in EU incentives, in addition to continuous and stable financing at European, national and regional level, as well as private investment, is required to ensure deep renovations towards a highly energy-efficient and decarbonised building stock by 2050; calls on the co-legislators to ensure the necessary funding within the European economic recovery plan, not least to help those in society who would most benefit from renovations;

22. Welcomes the findings demonstrating that there is a price premium for highly energy-efficient buildings ([25]), which ensures building owners have a return on investment, but recognises the need to reduce the cost of housing, construction and renovation in general;

23. Highlights the need to ensure adequate and simple access to credit and finance to help SMEs, communities and families to undertake the renovations needed to the existing building stock;

24. Welcomes the available financing possibilities for building renovations such as green subsidies, tax and loan incentives; acknowledges the role of the European Structural and Investment Funds (ESI Funds) in the financing of energy efficiency projects and in defining energy efficiency as a specific objective for regional development in the period 2021-2027; underlines the role of the European Investment Bank Group in providing loans, guarantees and financial instruments, such as the Private Finance for Energy Efficiency (PF4EE), the Smart Finance for Smart Buildings guarantee facility, and the InvestEU Fund, also allowing the financing of social housing renovation projects;

([25]) Hyland, Marie, Lyons, Ronan, Lyons, Sean, *The value of domestic building energy efficiency — evidence from Ireland, Energy Economics*, Vol. 40, 2012; Mangold, Mikael, Österbring, Magnus, Wallbaum, Holger, Thuvander, Liane, Femenias, Paula, *Socio-economic impact of renovation and retrofitting of the Gothenburg building stock, Energy and Buildings*, Vol. 123, 2016.

25. Draws attention to Member States' good practices such as using the EU emissions trading system (ETS) revenues, blending, ensuring the needs of low income households are recognised and using EU regional funds as guarantees and revolving funds; stresses that there is the possibility to finance training in the domains of renewable energy, as well as in energy and resources efficiency, under the Just Transition Fund;

26. Underlines the need to increase absorption rates of funds by removing barriers, especially through technical assistance, less complex criteria and simplification of blending with other funds; regrets the fact that the size of projects under the European Local Energy Assistance (ELENA) facility remains large, and that smaller projects and projects dealing with communities need further support and aggregation; considers the EU City Facility as a potentially very powerful support mechanism for cities to develop IRPs, which should be continued and also provide support to smaller projects;

27. Recognises the important role of grants for research and innovation; considers it necessary to provide continuous and stable financing for IRPs, both from European and national sources, without interruptions caused by different budget planning measures;

28. Considers that the Member States must ensure that all IRPs set aside funds to tackle energy poverty, accessibility and technical and infrastructure barriers for vulnerable and low income households, allowing them to benefit from adequate, healthy and energy-efficient housing and be part of neighbourhood renovation programmes; asks for the development and sharing of best practices with innovative finance instruments such as on-built financing and schemes, including energy efficient mortgages, EuroPACE loans and RenOnBill loans;

29. Notes the role of both regional authorities and the European Investment Bank in providing financial support through public sector loans that will incentivise commercial banks, pension funds and the private sector, especially SMEs, to further invest in building renovation, for example through public credit guarantees and innovative financing methods;

30. Acknowledges the role that new business models such as energy performance contracting, citizen-led renovations, energy communities and energy service companies can play in renovations and, in particular, off-balance sheet financing for social housing, housing corporations and business parks; underlines the need to link the funding intensity to the energy efficiency level achieved, as required by the EPBD, and suggests adding a premium on energy plus buildings; urges the Commission to issue implementing guidelines on the relevant provisions within the 'clean energy for all Europeans' package, in particular to create an enabling framework by requiring regular consultations to understand market needs, and encourage the blending of private and public funds, the use of clear templates for contracts and specific procurement procedures with further clarifications on correctly accounting for building efficiency-related public investments;

31. Calls on the Commission to revise energy efficiency targets upwards, as required by the EED, starting by increasing the headline target for 2030 based on a proper impact assessment and in a predictable manner, and to propose minimum annual renovation rates for buildings and policy measures ensuring deep, including staged deep renovations creating financial triggers and investment stability;

32. Calls for the European institutions to ensure that the respective funds of the new MFF prioritise dedicated amounts for energy efficiency and building renovations, with clear conditions and timeframes, including technical assistance, to ensure adequate absorption rates; highlights the importance of EU guarantees for investments, the blending of funding sources, as well as grant components, to trigger residential energy efficiency renovations; acknowledges the role and the successful model of the European Fund for Strategic Investments (to be replaced by InvestEU); calls for a prioritisation of funding for the energy efficiency of buildings within the InvestEU sustainable infrastructure window and for the reservation of dedicated amounts for energy efficiency as a specific objective for regional development that must be reflected in the respective Member State Partnership Agreements signed with the Commission;

33. Calls on the Commission to lift the financial and non-financial barriers to higher absorption rates of the regional funds set aside for integrated building renovation by 2021;

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34. Calls for stepping up the capability of the ELENA facility and the European Investment Bank to give tailored and direct financial and technical assistance to local authorities, as well as specific guidance to Member States in the context of the COVID-19 recovery plans;

35. Calls on the Commission to study the feasibility of channelling ETS revenues into energy efficiency actions such as for building renovations, including safeguarding mechanisms against fluctuations, and the feasibility of earmarking a portion of the auctioning revenue at EU level; calls on the European Investment Bank and national financial institutions to provide support for project developers throughout the project cycle and to set a fixed grant proportion to make renovations attractive and affordable for citizens;

36. Calls on the Commission and the Member States to create flexible models for the synergies of different financial programmes and instruments for financing energy efficiency in buildings; requests, furthermore, in line with the European Court of Auditors report ([26]), to adopt a cost effectiveness approach for energy efficiency renovations of buildings; encourages a thorough monitoring of the cost efficiency of operational programmes based on the costs per saved unit of CO_2; further believes that the Commission should ensure that national administrations respect the principles of cost effectiveness and effectiveness for the purpose of energy saving when granting EU money to renovation projects;

37. Calls on the Commission to further facilitate the use of public private partnerships (PPPs), such as PF4EE, relating to smart and sustainable financing, and identifying possible local investment concepts;

38. Calls on the Commission to revise EU State aid rules, including for investments by small and medium-sized enterprises (SMEs), in order to create an enabling framework for energy efficiency measures and foster IRPs, including the installation or refurbishment of district heating systems through simplified procedures and adequate thresholds, as well as scrapping schemes for fossil fuel heating devices and inefficient appliances when replaced by individual or collective renewables-based heating, or excess heating; underlines, however, that any revision of EU State aid rules must primarily contribute to equal treatment and increased competition;

Construction technologies and building materials

39. Highlights the need to decrease costs, speed up duration, effectivity, reliability and integration to increase IRPs through creating open and competitive renovation markets, industrially produced, sustainable prefabricated elements, as well as recognising the potential of existing technologies in integrating renewables into building materials, which can be used as multifunctional cladding elements for the refurbishment of existing building stock, and to engage in serial and district renovations; underlines the role of the off-site prefabrication of components in acceleration, scale and cost effectiveness; notes that best practices on building renovations in different buildings' segments exist in Member States that now need to be replicated and to be scaled up in order to achieve results; stresses the benefit of increased research efforts in this area;

40. Emphasises the importance of flexibility in the choice of technologies used for renovation and construction; believes that all available technologies should be applied in an objective-driven approach to speed up the decarbonisation of the building stock; underlines that the use of renewable energy plays a crucial role in such decarbonisation; stresses the importance of decarbonised district heating and cooling with integrated storage for more connected and integrated communities; calls, therefore, on the Commission and the Member States to actively promote and incentivise the full integration of renewable energies into the building sector;

41. Calls on the Commission to support research and development (R&D) programmes for efficient construction materials and, taking into account the social situation, calls for a low-cost renewable energy-based heating system to be implemented in rural and remote areas; points to the Danish best practice concerning heat decarbonisation through community-owned district heating networks powered by solar heat, heat pumps and biomass;

([26]) European Court of Auditors Special Report 11/2020 of 28 April 2020 entitled 'Energy efficiency in buildings: greater focus on cost-effectiveness still needed', https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=53483

42. Highlights the need to inform consumers and incentivise them to replace old, inefficient heating and cooling technologies with modern, highly-efficient and renewable solutions, particularly when deciding on replacements, while recognising that fossil fuels, especially natural gas, currently play a role in heating systems for buildings; calls on the Commission and Member States to propose scrapping schemes in accordance with the circular economy and to use efficiency labelling and advice during routine check-ups to accelerate replacements; calls on Member States to establish a roadmap to phase out fossil fuel-based heating and cooling technologies as part of their NECPs;

43. Points out Europe's leadership in building integrated photovoltaics; suggests that renewable energy technologies in general be recognised as a key strategic value chain and further suggests a European solar rooftop programme for the upcoming renovation wave;

44. Underlines the importance of the energy efficiency first principle being streamlined into all policies and measures, also in reducing the energy needs for heating, cooling and hot water and energy uses for lighting and ventilation, while bringing about the electrification of the residual demand through renewable energy combined with heat pumps or efficient district heating and cooling systems using renewable energy, as well as in load management and flexibility;

45. Points out the need to remove barriers, improving access to the grid, including, inter alia, the need for harmonisation and simplification of permits for SMEs, and underlines the need to plan IRPs in order to achieve synergies, for example, in building accessibility, seismic and fire safety, electro-mobility (including pre-cabling and charging points for electric vehicles), improving buildings' climate resilience, including through creating green spaces, roofs and walls, which improve water management and help increase urban biodiversity;

46. Recalls that fire safety aspects should be considered during the design, selection of materials, construction, renovation and operation of buildings in order to improve prevention, detection, early suppression, evacuation, compartmentation, structural resistance and fire-fighting, as well as the relevant competencies of professionals involved during design, construction and renovation;

47. Considers that energy-efficient buildings should be healthy, affordable, safe and sustainable; underlines the importance of embodied energy, sustainability in buildings, resource efficiency, thermal comfort, improved air quality, a heathy indoor climate, as well as life-cycle approaches in line with the circular economy, and the need for the strategy for a sustainable built environment to take a holistic and integrated approach; highlights, in this context, the importance of including passive and natural elements in building design and the huge potential of exploiting building skin surfaces, turning the built environment into a decentralised renewable energy producer, while saving land and landscape areas;

48. Stresses the need for the adequate management and reduction of construction and demolition waste; notes that collection and take-back schemes and sorting facilities should be created to ensure the appropriate and safe handling of all construction waste, as well as for the recycling or reuse of building materials, for the safe handling, removal and substitution of hazardous substances in waste streams in order to protect the health of occupants and workers, as well as the environment; believes that a circular economy labelling system, based on environmental standards and criteria for materials linked to their potential for easy and low-energy reintroduction into the value chain, especially taking into account the role of secondary raw materials, should be established; notes that the existing Environmental Product Declaration approach must be widened and that it should be used as input for building assessment such as the Level(s) framework; calls on the Commission to propose concrete measures on these issues as part of the circular economy action plan and the strategy for a sustainable built environment;

49. Highlights that cities will be increasingly subject to higher temperatures in summer due to climate change; highlights further the multiple benefits of green infrastructure solutions in improving air quality, comfort and climate resilience, in substantially reducing energy needs, helping to restore the water cycle and support urban biodiversity, while contributing to circularity principles; calls on the Commission and the Member States to incentivise the use of natural and low-carbon building materials, the deployment of green rooftops and walls, cool surfaces and other passive techniques during major building renovations and the construction of new buildings; calls on the Commission to take these considerations into account and promote green infrastructure solutions and biodiversity features in the renovation wave initiative;

50. Recalls that sustainable building materials such as certified wood are essential for achieving low-carbon and long-lasting building stock, and that construction opens up an opportunity to store carbon in bio-based building products within the limits of sustainable availability;

51. Highlights the importance of reviewing the existing harmonised standards in order to cover the sustainability performance of construction products that should be coherent with the common European approach for life-cycle calculation and existing European standards, i.e. EN 15978 for buildings and EN 15804 for construction products; stresses that, when designing renovations, the energy and climate impact of the entire lifecycle of the building should be optimised in line with the circular economy objectives, taking into account the effects of the manufacture, use and design on recyclability, the recycling of construction products and waste and the equipment needed for repairs; calls on the Commission to address these in the circular economy strategy and to revise, by 2021, Regulation (EU) No 305/2011 on harmonised conditions for the marketing of construction products ([27]) to allow the good functioning of the internal market for these products and reward technological research and innovation aimed at supporting the renovation and construction of highly energy-efficient buildings;

52. Calls on the Commission to further identify best practices for IRPs to also include historic and heritage buildings; acknowledges the specificity and the fragility of heritage buildings, and believes that, in the vast majority of cases, the protection of buildings and increased energy performance can be reconciled, while underlining that the renovation of heritage buildings should always be carried out in compliance with the national rules on conservation, the 1964 Venice Charter for the Conservation and Restoration of Monuments and Sites, and the original architecture;

53. Underlines the need to ensure real energy savings through verification by certified experts and monitoring of energy performance after renovation, as this will ensure high quality renovations, improved investment opportunities and higher cost effectiveness ([28]);

54. Calls on the Member States to maximise and promote the reuse, recycling, and recuperation of materials, including in their procurement strategies and publicly financed renovation and construction projects, for example by reviewing green public procurement (GPP) ([29]) targets and through streamlining energy efficiency, environmental and social criteria for building renovations, while ensuring a level playing field in public tenders; recalls the importance of locally sourced building materials in order to preserve building traditions, ensure materials best suited to each region's climate conditions and to cut emissions and transportation costs;

Standards, skills and healthy buildings

55. Underlines the importance of co-benefits with renovation requirements at trigger points, as such requirements not only lead to energy savings, but also increase the property's value and provide support to overcome barriers such as split incentives; believes that deep, including staged deep, renovation of the worst performing buildings should be prioritised, notably by setting minimum energy performance standards (MEPS), which are essential for investment in renovation and should apply horizontally, while being based on the existing national energy labels; considers that such measures benefit occupants and could help to lift citizens out of energy poverty ([30]); observes the low levels of deep renovations at an expected rate of 0,2 %; suggests the examination and introduction of minimum renovation rates in order to meet the 2050 climate neutrality targets;

56. Underlines that progressively tightened MEPS help to operationalise long-term renovation strategies, when correctly planned and phased in, and create investment security for the market, especially if accompanied by capacity building, tailored advice, technical assistance and financial support;

([27]) Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC (OJ L 88, 4.4.2011, p. 5).

([28]) European Court of Auditors, op. cit.

([29]) Commission communication of 16 July 2008 entitled 'Public procurement for a better environment' (COM(2008)0400).

([30]) Commission Staff Working Document — Impact Assessment accompanying the document Proposal for a Directive of the European Parliament and of the Council amending Directive 2010/31/EU on the energy performance of buildings (SWD(2016)0414).

57. Calls for a stronger evidence-based approach which will, by using reliable and strengthened data, allow energy efficiency in buildings and cost-effective measures to be estimated accurately, fostering a level-playing field for 'best practices' in cost-effective solutions in the EU;

58. Is convinced that the introduction of a building renovation passport to foster, coordinate and track continued improvements and to monitor renovation depth and energy performance benefits house owners, building operators and tenants, who should have access to the renovation passport; stresses that this renovation passport should be a common EU tool adapted to national and regional particularities in order to address the challenges posed by building stock heterogeneity and aligned to the existing energy performance certification of buildings;

59. Stresses the importance of consolidating building information into a single digital tool; considers that this should include materials' circularity potential, the evaluation of indoor air quality factors, including from a health and safety perspective, and robust indicators based on existing environmental tools and standards;

60. Stresses the importance and potential of the Just Transition Fund within the context of the recovery plan after the COVID-19 crisis for the training and qualification of workers in the construction and renovation sectors, and to upskill and re-skill workers in affected regions, including the digitalisation of companies for the transition to a carbon-neutral economy;

61. Highlights that building renovation projects should always lead to healthy, mould-free buildings, taking into account indoor environmental quality (IEQ); emphasises that the revision of standards for air quality, thermal conditions and other indoor-related health and comfort aspects, including sufficient daylight and mechanical ventilation, contributes to the health and productivity of building users and enhances their work or learning performance, as well as ensuring significant welfare savings, thereby reducing Member States' public expenses and benefiting the EU's economy and its citizens as a whole;

62. Stresses the need to ensure an adequate level of know-how of building maintenance and use by professionals and building occupiers, including behavioural change, to fully reap the benefits associated with increased energy performance;

63. Calls on the Commission to launch an EU skills and information initiative in the renovation and building sector, which includes a gender dimension, in order to engage with stakeholders in retraining, upskilling and capacity building, with a focus on employment, in particular to attract young people to work in the renovation sector; underlines that ensuring quality, compliance and safety requires the professionals involved during the design and construction/renovation phases to be in possession of adequate competencies and skills, and that this includes intermediaries, such as installers, architects or contractors; calls on Member States to develop a national strategy for improving skills in the construction sector, focusing on energy efficiency, material sustainability and circularity, passive techniques and renewables integration, including self-consumption and digital solutions, and to provide specific support to workers in micro, small and medium-sized enterprises;

64. Calls on the Commission to support skills and innovation for IRPs through the Just Transition Fund, targeted Marie Skłodowska-Curie actions and the Erasmus+ programme, and to establish a Horizon Europe mission on the renovation of communities and neighbourhoods, as well as the Education, Audiovisual and Culture Executive Agency (EACEA) to promote and implement a strategic skills alliance for the construction sector, aimed at designing and delivering common training content to tackle existing skill gaps; calls equally on individuals, enterprises and organisations to make use of the Skills & Education Guarantee Pilot and similar schemes for training, upgrading skills and education in the renovation sectors;

65. Calls on the Commission to release in-depth impact assessments of building, occupier and tenure typologies by 2022, and to develop a legislative framework for the introduction of MEPS for existing buildings that are to be progressively tightened over time in line with the 2050 objective; underlines that such standards would help operationalise the pathway to a highly energy-efficient and decarbonised building stock by 2050 at the latest, and can give visibility and security to the market regarding the transformation of the existing building stock; stresses that MEPS at national level should be accompanied by a comprehensive package of policy measures, including at least information and the provision of tailored advice to citizens and appropriate financing support;

66. Calls on the Commission and Member States to introduce expedited digital building renovation passports by 2025, including a section providing information on improved indoor air quality and healthy buildings;

67. Calls on the Commission to develop an 'EU climate calculator' (ECC) as part of its 'renovation wave' that will ensure accurate and easy understandable labelling for building materials, products and services related to the renovation of the EU building stock in the run-up to 2050; stresses that the ECC should ensure a level playing field for the key actors that are a part of, or related to, the IRPs' GHG footprint within the EU building stock and that such a 'holistic approach' would pave the way for positive behavioural effects by EU citizens, industries and SMEs; stresses that the concept must be based on the principles of the circular and lifecycle economy in order to drive demand for climate-friendly goods 'made in Europe', strengthening the competitiveness of the EU building sector; suggests to the Commission that it use already known scientific methods when estimating GHG emissions, for example by taking inspiration from its 'product environmental footprint';

68. Calls for the upcoming revision of the EED to include an increased level of ambition in Articles 3, 5 and 18, and to develop a new approach to defining the building standards which comply with EU energy and climate targets when revising the EPBD;

69. Calls on the Commission to review the impact of Energy Performance Certificates (EPCs) across Member States and to strengthen existing provisions; notes that the reliability, consistency and comparability of EPCs across the EU should be improved so that EPCs become a trusted market tool to assess the performance and quality of buildings, especially for the financial sector;

Digitalisation and reliable data

70. Considers digitalisation as an enabler for the active participation of citizens in the energy system through distributed generation, storage, flexibility and sector integration and coupling; underlines the role of digitalisation and data in the acceleration of the planning, implementation, control and monitoring of the renovation plans' results, as well as for a more efficient planning and management of energy;

71. Calls on the Commission to look into the reliability and the lack of building-related data and take into account how the further use of digitalisation can contribute positively in order to ensure a strong evidence-based approach when adopting policies related to energy efficiency and renovations; recognises the need to digitalise national EPC databases, building data and other construction information to be available when applying for a digital building passport and other smart building applications;

72. Considers the 'Internet of Things' as a means to measure the real impact of renovation on the energy performance of buildings and an enabler of large-scale cost-effective renovation strategies; highlights the potential role that integrated artificial intelligence could play in data analysis and in the monitoring, management and adjustment of energy consumption in buildings;

73. Considers that the digitalisation of buildings and construction technologies are key drivers for greater energy efficiency; invites all local, regional, national and European actors involved to play a proactive part in the promotion of digitalisation;

74. Highlights the benefits of very high capacity networks for communications infrastructure in fostering smart homes, which are understood as those integrated into a wider digital energy eco-system that enable buildings to benefit from and provide smart functionalities and allow energy integration and savings in various sectors of the economy, including demand-side response and optimisation of energy use inside the building such as smart appliances, home automation appliances, electric heat pumps, battery storage, charging points for electric vehicles and smart meters among other digital technologies; welcomes the aim of the revised EPBD to further promote smart buildings technologies, through a smart readiness indicator (SRI) as a support tool in rating the smart readiness of buildings and raising awareness among building owners and occupants about the value of building automation and control systems (BACSs) for the overall performance of buildings, whose applications under Articles 14 and 15 should be widened;

75. Highlights the importance of smart grids as enablers for the efficient integration of renewables into electricity grids and encourages the search for new opportunities with interfaces with transmission system operators (TSOs) and distribution system operators (DSOs) for better energy efficiency and electricity services; stresses that smart buildings connected to nano- or micro-grids can ensure improved stability of electrical supply and availability of heating/cooling systems;

76. Underlines that housing and consumer rights require social safeguards, data protection, respect for privacy and consent in line with the provisions of the General Data Protection Regulation (GDPR); stresses that the digital solutions provided during renovations should be intuitive, simple and interoperable, while their installation must be accompanied by the necessary training, information and support to occupants; underlines the potential of non-intrusive digital technologies in this respect;

77. Calls on the Commission to evaluate the need to review the charging infrastructure requirements in the EPBD; stresses that smart charging infrastructure is a precondition for an increase in clean electro-mobility;

Renovation wave

78. Views the renovation wave as an opportunity to achieve an energy-efficient and climate-neutral building stock by 2050 through an action plan for IRPs with a focus on communities, especially for those in energy poverty, and to provide healthy, decent, affordable and energy efficient buildings where people can reach their full potential in line with the European Green Deal and the net-zero emissions target for 2050, that can be implemented in full synergy also with the new industrial strategy for Europe, the SME strategy for a sustainable and digital Europe, the circular economy strategy, the Just Transition Mechanism and the recovery instruments, as well as the strategies on making Europe fit for the digital age;

79. Is convinced that the renovation wave can mitigate the impact of the COVID-19 crisis, by stimulating national and local economies, and, for example, fostering high-quality and essential jobs in the construction and renewable energy industries and supporting micro, small and medium-sized enterprise (SME) workers who make up 97 % of the sector, and ultimately triggering multiple opportunities and various benefits that could be obtained through improved energy efficiency in the European building stock, including social and environmental co-benefits; emphasises that the renovation wave can play an important role in a sustainable recovery and can be central to any post-COVID-19 recovery plans; stresses, therefore, that the Commission should not delay this proposal and should be in charge of providing an overview of all available funding options;

80. Requires an ambitious implementation of the Clean Energy Package; underlines the role of NECPs in maximising opportunities in the building sector; confirms its dedication to closely following the implementation of this and all other provisions, and calls on the Commission to ensure the enforcement of the measures included in the revised EPBD;

81. Calls on the Commission to make the energy efficiency first principle central to the process of the renovation of the EU building stock in line with the Energy Union Governance Regulation;

82. Welcomes the Member States' long-term renovation strategies (LTRSs) in setting out 2030 and 2040 milestones towards the climate neutrality objective; expresses its concern at the significant delays on the part of many Member States in submitting their LTRS; invites these Member States to seize the opportunity to comply with their legal obligations under the EPBD and submit the delayed LTRSs; encourages governments to implement innovative policies to actively involve citizens in energy efficiency programmes; considers that LTRSs should be recognised as a key instrument for planning, measuring progress and the achievement of energy efficiency objectives;

83. Highlights that a highly energy-efficient decarbonised building stock should be achieved through significantly reducing energy consumption with the implementation of strong and enabling energy efficiency policies, while covering residual needs with renewable energy; underlines that building renovations should be integrated with wider efforts to decarbonise the energy system and go hand in hand with investments in, for example. efficient district energy networks and

heat pumps by taking a system/district approach that integrates all potential efficiency measures such as excess heat recovery; stresses the need to define concrete actions to realise identified potentials for high-efficiency co-generation and district heating; underlines that this systemic approach is needed in order to achieve the transition to a highly energy efficient, fully renewables-based economy and ensure alignment with the objective of limiting global warming to under 1,5 °C;

84. Welcomes the announcement made by the Commission to promote renovations in schools, hospitals and housing for those in need, in particular the public building stock, which is often in the worst condition; yet highlights the challenge of addressing the large residential building stock representing 75 % of the built floor space in the EU;

85. Concurs with the analysis that there are a large number of benefits that accompany energy efficiency renovations in buildings such as better learning, faster recuperation, and lifting people out of energy poverty; points to improved indoor and outdoor air quality, emission reductions, energy efficiency increases, improved thermal comfort and the reduction of dependency on imports; calls for the systematic inclusion of these benefits in IRPs;

86. Calls on the Member States to launch cross-sectoral, country-specific and tailored communication campaigns on the multiple opportunities and various benefits obtained through improved energy efficiency of the building stock, as well as to provide information about one-stop-shops and financing opportunities available, including from EU level;

87. Calls on the Commission to enshrine the renovation wave's measures into new and revised EU legislation and review the 2030 climate and energy targets while fully respecting the principle of subsidiarity and cost-efficiency, to enable synergies between different pieces of legislation and to put them on a trajectory towards climate neutrality, while ensuring that energy efficiency measures, including the renovation of buildings, is integrated as a key policy to fill the gap in the 2030 targets; underlines the need for financial support to ensure the affordability of housing for owners and tenants;

88. Calls on the Commission to assess the LTRSs and issue recommendations to the Member States highlighting both existing gaps and best practices; calls on the Member States to monitor implementation and revise their LTRSs every 5 years in line with the United Nations Framework Convention on Climate Change (UNFCC) stock-taking cycle and its ratchet-up architecture, to make sure that the objective of a highly energy-efficient and climate-neutral building stock is met; calls on the Member States to embrace LTRSs as a tool for setting out an economic stimulus and recovery path, requiring their ambitious, detailed and urgent finalisation; calls on those Member States which have not yet done so to submit their LTRSs as a matter of urgency;

89. Calls for the inclusion of the building and renovation sectors, especially micro, small and medium-sized enterprises, in recovery packages; calls for the prioritisation of investments in building renovations towards a highly energy-efficient and renewable-based building stock in the economic stimulus plan;

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90. Instructs its President to forward this resolution to all EU institutions and the Member States.