

References to sustainable heating and cooling & district heating and cooling

C. whereas more must be done **both to reduce heating demands from buildings and to switch remaining demands away from burning imported fossil fuels in individual boilers towards sustainable heating and cooling options** in line with EU 2050 objectives;

(...)

E. whereas the share of renewables has slowly been increasing (accounting for 18 % of primary energy supply in 2012), but there is still huge potential at all levels, and the share of renewables, and of **recovered heat energy in heating and cooling**, in the Member States should be further increased;

(...)

T. points out the **huge untapped potential of using waste heat and district heating systems**, given that the excess heat available in Europe exceeds the total heat demand in all European buildings, and the fact that **50 % of the total EU heat demand can be supplied via district heating**;

(...)

P. whereas the most effective way of delivering on these joint objectives is **to empower and support local and regional authorities**, in conjunction with all relevant stakeholders, to apply a fully **integrated systems-based approach to urban planning**, infrastructure development, building and renovation of housing stock, and new industrial development, in order to maximise potential cross-overs, efficiencies and other mutual benefits;

(...)

Z. whereas **energy efficiency policies** should focus on the most cost-effective ways to improve buildings performance by reducing heat demands **and/or connecting buildings to high-efficiency alternatives**;

(...)

5. Calls for specific sustainable heating and cooling strategies to be developed at national level, **giving special attention to combined heat and power, cogeneration, district heating and cooling**, preferably based on renewables, as is stated in Article 14 of the Energy Efficiency Directive;

(...)

13. Considers that the **use of mapping resources** for heating purposes, appropriate architectural solutions, facility management best practices and urban design principles, including **urban level network solutions such as district heating and cooling**, in the planning of whole residential and commercial areas should be the basis for energy-efficient and low-emission construction in the various climate zones in Europe; underlines that a properly insulated building fabric has a high thermal storage capacity, resulting in significant heating and cooling savings;

14. Stresses that energy demand in the building sector is responsible for about 40 % of energy consumption in the EU, and a third of the natural gas use, and could be reduced by up to three quarters if the renovation of buildings is speeded up; highlights that 85 % of this energy consumption is used for heating and domestic hot water, and that, as such, modernisation of old and inefficient heating systems, increased utilisation of electricity from renewables, **better use of "waste heat" through highly efficient district heating systems**, and deep renovation of buildings with improved thermal insulation, remain key to delivering a more secure and sustainable approach to heat supply; recommends the continuation of increasing energy efficiency standards for buildings, taking account of and encouraging technical innovation, particularly as regards ensuring homogeneity of insulation; further recommends continued support for the construction of nZEBs;

(...)

20. Stresses the need to carry out **mapping of local heating and cooling potentials** throughout Europe, so that cities are better able to identify locally available resources, allowing them to contribute to increasing the EU's energy independence, boost growth and competitiveness through the creation of local, non-outsourcable jobs, and provide clean and affordable energy to consumers;

21. Calls on **local authorities to assess existing heating and cooling potential**, as well as future heating and cooling needs, in their areas, taking into account the potential of locally available renewable energy sources, **thermal energy from cogeneration and district heating volumes**;

(...)

27. **Stresses the importance of district energy networks that offer an alternative to more polluting systems for individual heating**, given that it is a particularly efficient and cost-effective means of delivering sustainable heating and cooling, integrating renewable energy sources, recovered heat and cold, and storing surplus electricity at times of low consumption, thereby offering flexibility to the grid; highlights the need to integrate a greater share of renewable energy sources, taking into account that over 20 % of district heating and cooling is already generated from renewable energy, in line with Article 14 of the Energy Efficiency Directive, which requires comprehensive assessments of the potential for efficient district heating and cooling; **calls for the modernisation and extension of existing district heating systems** to shift to high-efficiency and renewable alternatives; encourages the Member States to put in place **fiscal and financial mechanisms to encourage the development and use of district heating and cooling**, and to tackle regulatory barriers;

(...)

29. Stresses that in **dense urban agglomerations** it is imperative that the use of **inefficient and unsustainable individual or district heating/cooling systems gradually be replaced with efficient district heating/cooling systems** or are modernised with state-of-the-art heating/cooling technologies, shift to high-efficiency local cogeneration systems and renewable alternatives;

(...)

34. Highlights the **huge potential of clustering energy and resource flows** to save primary energy use, especially in industrial environments, where, according to the cascading system, excess heat or cold from one process can be re-used in another one that demands less extreme temperatures, and, **where possible, in heating and cooling buildings via district heating systems**;

(...)

37. Agrees with the Commission that, as stated in the heating and cooling strategy, **the economic potential of cogeneration is not exploited**, and calls on the Commission and the Member States to **further promote high-efficiency cogeneration and district heating**, in line with the Commission's communication on the state of the Energy Union (2015(0572));

38. Takes the view that a **system-level approach on cooling** is required, including for the built environment and other activities, such as transport refrigeration;

(...)

41. Takes the view that the Member States should explore the possibility of using heat from geothermal waters, from energy recovered directly from industrial processes and from other lower-temperature heat sources, such as heat contained in deep-sea mines for heating (cooling), which could, **with the help of huge heat pumps, heat whole towns through existing and new district heating networks**, not just individual buildings, if suitable district heating infrastructure is available or developed;

42. Stresses the role of technologies capable of reducing both thermal energy demand and greenhouse gas emissions, such as the use of low-enthalpy geothermal energy, **renewable-based heating/cooling districts**, small-scale tri- or co-generating power plants burning natural gas and/or biomethane, or combinations of these;

(...)

48. Calls on the Member States to use legal and economic means to accelerate the gradual phasing-out of outdated solid-fuel furnaces with an energy efficiency level of less than 80 %, and to replace them, where possible, with efficient, **sustainable heating systems at local level (such as district heating systems)** or micro level (such as geothermal and solar systems);

51. Calls on the Commission to draw up a plan, as part of the 'waste to energy' programme, to promote and exploit the potential contribution of the **sustainable use of organic waste to heating and cooling connected to district heating and cooling systems**;

(...)

55. Stresses that **renewable-based district heating prevents the spread of more polluting individual heating systems**, which increase air pollution in residual areas and are much more difficult to control than **widespread district heating systems**; emphasises, however, that infrastructure and climate conditions vary within the Union and that these systems often need modernising in order to enhance their efficiency; calls, therefore, for an analysis of **the need to support district heating infrastructure, and of taxation practices as regards renewable energy sources and district heating**;

(...)

64. Stresses the **benefits of research and technological innovation for European industry**, strengthening its competitive advantage and commercial viability, as well as contributing to the EU's energy and climate goals; highlights, in this context, the **need for increased research, development and innovation in the field of energy efficiency and renewable heating and cooling (RHC) technologies**, with a view to reducing costs, enhancing performance and increasing deployment and integration into the energy system; calls on the Commission to work with sector stakeholders to maintain updated technology roadmaps on RHC to coordinate, track and identify gaps in RHC technology development;

(...)

67. Takes the view that progress should be made under the Horizon 2020 framework programme in R&D relating to sustainable and efficient heating and cooling systems and materials, such as small-scale renewable generation and storage solutions, **district heating and cooling systems, cogeneration** and insulation materials, as well as innovative materials such as structural window glass that lets in high levels of short-wave radiation (sunlight) from outside and lets out only a minimum of the long-wave thermal radiation that would otherwise escape to the outside;

(...)

79. Underlines the importance of ensuring **access to finance**, both short- and long-term, for investments in projects of all sizes related to the **modernisation of the heating and cooling sector, including for district heating and cooling**, the upgrading of relevant grid infrastructure, the modernisation of heating systems, including a shift to renewable sources, and an acceleration in the rate of building renovation;