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On 17 December 2015 the European Commission published its Draft Issue Paper 3 on 'Smart Cities and Communities' in the course of the new SET-Plan process. The DHC+ Technology Platform warmly welcomes this initiative and supports the approach to clarify research needs in specific areas and matching them to the pillars of the Energy Union.

The DHC+ Technology Platform acknowledges the strong focus on cities. As urban areas are responsible for 70% of Europe's energy consumption they play a crucial role for the decarbonisation of the EU's energy system. Within cities buildings consume the biggest share of energy followed by transport. The main energy service this energy is used for is the coverage of thermal needs, i.e. heating or cooling. Accordingly, smart city actions must – amongst others - concentrate on ways to cover thermal needs in urban areas in a smart way. To achieve this, smart buildings must be linked with smart urban energy systems. District Heating and Cooling have an important role to play in these systems as they provide the means to link local thermal resources with buildings, integrate RES and residual resources, store thermal energy and build a flexible system.

This issue paper makes the link between buildings and local systems by concentrating on three targets, i.e. smart appliances and smart management systems, interfaces and technologies for blocks and districts, and technologies and systems for new and refurbished buildings. The paper also recognizes the importance synergies between ICT and grid management, local resources and smart systems and mentions many issues that need to be tackled. DHC+ welcomes all these points as important pillars of future Smart Cities.

Nevertheless, the DHC+ Technology Platform identified a number of points in the current paper that need clarification.

In the list of needs, the paper identifies a high share of self-consumption as need. Self-production and self-consumption can play a valuable role in the energy system but only if the framework setting mirrors this system. The potential for self-production on the building site in urban areas is comparably low due to a lack of space and architectural constraints. Additionally, self-production of renewable energy on the buildings site within urban areas is mainly a matter of power. In most cases it is more efficient and 'smart' to utilize thermal resources on a district level. This utilization should not be excluded from the scope of self-production and self-consumption but treated equally to onsite self-production.

The paper furthermore states that nearly zero energy districts/blocks need to be created through the smart interconnection of buildings. DHC+ would like to point out that NZEDs are not just about interconnecting buildings but that the system component plays a crucial role. As pointed out above, local resources in urban areas can often be utilized in a more efficient manner when done so on a district level rather than on the individual building level. Accordingly, NZEDs do not only build upon integrated buildings but on the integration of buildings within the local/district energy system. Accordingly, this issue needs to be tackled.

In line with this, the proposed target should not be technologies to interconnect buildings to create NZEDs but to integrate buildings and energy systems on the district level.

Therefore, the DHC+ Technology Platform would also like to point out that the criteria that are proposed to monitor this target are not fit for purpose for the mentioned reasons. The criterion to be monitored should not be the amount of energy exchanged between buildings but the amount of energy distributed (thermal and electrical) within the local/district energy system which includes the energy shifted between buildings. As energy in smart cities is not limited to electricity, the criterion on peak improvement is also not limited to power but needs to consider thermal needs. Additionally, the costs heavily depend on the energy density, i.e. the thermal demand density in an area.

DHC+ would like to ask the European Commission to take these points in consideration. Priority actions in this area concern the integration of thermal energy systems in urban areas. The further development of low-temperature District Heating, advanced District Cooling schemes, the integration of renewable resources and especially residual heat are crucial for the further development of Smart Cities and Communities.

The DHC+ Technology Platform is an initiative set up under the umbrella of Euroheat & Power and represents the voice of Research & Innovation for District Heating and Cooling in Europe and beyond. <http://www.dhcplus.eu/>