

## EPEE's Position Paper on the revision of the Renewable Energy Directive - Decarbonizing the heating and cooling sector through renewables and energy system integration

### *Executive summary*

- EPEE fully supports the higher climate ambition in the 2030 Climate Target Plan and is in full agreement with the Commission's Climate Target Plan and Energy System Integration Strategy as concerning the reduction of greenhouse gas emissions and a more efficient use of energy sources in the heating and cooling sector.
- Decarbonisation of the H&C sectors depends on a rapid deployment of renewable heating and cooling solutions. This needs to be enabled by an increased, binding target for renewables in heating and cooling in Article 23 of the Renewable Energy Directive (REDII).
- Measures to increase the share of renewables in heating and cooling provided in REDII Article 23 should be expanded and made more detailed.
- The accounting framework for renewables in heating and cooling should favour the most efficient and sustainable solutions, such as heat pumps.
- District heating and cooling (DHC) represents one of the most cost-effective solution for facilitating the overall decarbonisation of the H&C sector. The renewable energy target for DHC should be increased and binding. Furthermore, DHC fulfil a crucial role in energy system integration by enabling the uptake of waste heat and cold. Feeding waste heat and cold into DHC systems, as well as its uptake on-site, should be further promoted.
- New buildings and buildings undergoing major renovation should be powered entirely by renewables, when this is technically feasible. To support this, Article 15 of the REDII should introduce a minimum benchmark for renewable energy use in buildings, as well as a stronger assessment obligation for the renewables potential in buildings to ensure buildings are integrated into the wider energy system.

### **Introduction**

The Commission's impact assessment on raising the 2030 GHG reduction target and the subsequent publication of the 'Fit for 55 package' have affirmed the key role of heating and cooling (H&C) in meeting EU climate goals, as a sector with a particularly high potential for decarbonisation. EPEE fully supports the higher climate ambition in the 2030 Climate Target Plan and believes that the supporting targets on renewable energy and energy efficiency need to be increased in a coherent manner and in a mutually supportive fashion. Heating and cooling (H&C), as well as the building sector more broadly, offer a large cost-effective potential to reduce emissions through the integration of renewable energy. This potential is not reflected in the

current targets and measures for renewable energy in H&C, as well as district heating and cooling (DHC).

Close to 80% of the final energy consumption related to H&C in the EU is currently still based on burning fossil fuels. An accelerated effort to integrate renewable energy sources through energy efficient electrification is therefore urgently necessary if the EU is to meet its ambitious decarbonization goals. A major driver of change will be the replacement of coal, fossil gas and oil heating systems with renewable heat supplied via individual heat pumps and district heating & cooling systems. Decarbonising heat in this manner must be a major priority for the EU if it hopes to meet its new more ambitious climate goals for 2030 and beyond. The Renewable Energy Directive (REDII) needs to provide the right targets, framework and signals to enable this fundamental transformation.

To this end, EPEE recommends that the provision in the Renewable Energy Directive (REDII) on heating and cooling should be revised along the lines outlined in this paper.

### **A strong target and support framework for renewables in heating and cooling (Article 23)**

- **A binding target for RES share in H&C**

Article 23 of the REDII establishes an indicative target for increasing the share of renewable heating and cooling (RES-H&C). This target is currently an additional 1.3% per year, calculated as an annual average for 2021-2025 and 2026-2030. To fulfil the updated ambitions of the 2030 Climate Target Plan, the share of renewable heating and cooling (RES-H&C) is expected to rise to 39%-41% by 2030. However, measures detailed in Member States' National Energy and Climate Plans (NECPs) to increase the share of renewables in the heating and cooling sector fall short on delivering even the EU's current goals, let alone the updated ambition.

The support of a more ambitious and mandatory RES-H&C target is therefore needed to guide policy and investment decisions.

- **More detailed measures to ensure better heat planning and investment support**

The list of current measures provided in REDII that Member States can use to increase the share of renewables in heating and cooling should be expanded and made more detailed. More detailed measures would offer more sectoral guidance to Member States and help to define the boundaries of normative, financial and technical support schemes. Increased guidance on how to promote the roll out of renewable heating and cooling solutions, e.g. for waste heat and cold utilization or heat pump technologies, would furthermore help speeding up deployment.

As one of the main disadvantages of using renewable heat lies in the short-term investment needed to install heating/cooling systems, financial support measures should be particularly encouraged. In this context, the Commission should also support the sharing of 'Best Practices' among Member States, based on the recent National Energy and Climate Plans (NECPs) and Long-Term Renovation Strategies (LTRS). Examples of such practices include subsidy schemes and tax

breaks for renewables, district heating systems and heat pumps, as introduced by Finland, Denmark, Germany, Poland and others. In addition, pricing instruments should be considered as a policy priority and, in order to strengthen the cost competitiveness of renewable electricity, the adjustment of the taxation of energy carriers (i.e. taking account of their carbon costs) is urgently required. As pointed out in the Energy System Integration strategy, carbon costs are currently not at all internalized in the space heating/cooling sector and this needs to be urgently addressed to incentivize a switch to energy-efficient and sustainable H&C options.

Measure provided by REDII Article 23 should ensure long-term planning of renewable H&C and a comprehensive inclusion of H&C in urban planning. To this end, measures such as the carrying out of comprehensive renewable energy potential assessments, heat and cold planning and implementation at the appropriate level (local, municipal, regional) and the development of long-term strategies for decarbonising heating and cooling should be reinforced and, if necessary, also binding.

- **Adjust the accounting methodology for the target to promote the most sustainable heating and cooling solutions**

The current accounting methodology towards the RES-H&C target under Article 23 needs to be improved to better promote heating and cooling electrification. Electricity serves an increasingly important role in heating and cooling which currently is not reflected in the accounting under REDII. Electrically powered heat pumps are disadvantaged by the current RES-H&C accounting framework, which does not allow for the renewable portion of electricity consumption to be counted towards the target.

EPEE recommends, therefore, that the accounting methodology be revised to allow renewable electricity to count towards the RES-H&C target. This should further be accompanied by a multiplier for technologies that transfer ambient heat/cold to buildings, similar to what is already implemented for renewable electricity counting towards the RES transport target. This would ensure a relative advantage to renewables such as ambient heat/cold and help to overcome the barriers these solutions face in their broad deployment. These adjustments would enable reversible heat pumps to deliver a higher proportion of the RES-H&C target and fulfil their fundamental role in the decarbonization of the sector as envisaged by the EU's 2030 Climate Target Plan.

While accounting for electricity in H&C can give a more accurate representation of the increasingly electrified H&C sector, it will be important to balance incentives for electrification and decarbonization of the grid with measures to promote energy efficiency. It is important to ensure that the Energy Efficiency First principle always applies in order not to incentivize less efficient heating solutions (e.g. direct electric heating) over the most efficient ones (e.g. heat pumps).

Finally, the need for cooling is expected to grow and play an even more significant role in the future. As a result, a solution to incorporate space cooling in the calculation of the share of renewable for heating and cooling is required; note that this will require the adoption of a separate delegated act under REDII. EPEE considers that renewable cooling can be an important contributor to decarbonization provided this definition is formulated in an inclusive, technology-neutral way. All renewable energy supplies should be considered as eligible. Furthermore, renewable cooling technologies should be able to actively cope with the variable nature of renewable energy by providing demand-side flexibility, which should be considered a key criterion.

### **Renewables in district heating and cooling (Art. 24)**

District heating and cooling (DHC) represents one of the most cost-effective solution for facilitating the overall decarbonisation of the H&C sector and should be promoted accordingly. Similar to the RES-H&C target under Article 23, the RES target for DHC in Article 24 of the REDII should therefore be increased and made binding. As a complementary measure, the definition of efficient DHC set in the Energy Efficiency Directive and referenced in REDII Article 24(4), should be amended to remove the possibility to satisfy the definition with fossil fuels.

- **Stronger measures to fully exploit the potential of waste heat and cold uptake and facilitate energy system integration**

REDII Article 24(4) should ensure that waste heat and cold owners have access to district heating & cooling networks (DHC) to make sure this underutilized resource is taken up more broadly. The value of waste heat & cold is often insufficiently visible for the owner, for instance in data centers or supermarkets. At the same time, a large, untapped potential for waste heat and cold uptake also exists in the residential sector, and it should be possible for consumers to feed renewable heat and cold or waste heat and cold into the network by providing for the appropriate prosumer rights in the REDII. Clear and straightforward provisions on access to the DHC network would help owners of waste heat and cold to correctly value the heat and assess the amortization time for their investments. Access can be given directly or through different forms of collaboration and mixed ownership between DHC operators and waste heat/cold owners. In this regard, EPEE recommends that existing best practices among Member States should be better promoted.

In parallel, it is imperative that district heating and cooling systems are better integrated in EU, national and local energy infrastructure planning. The relevant national and local authorities should be obliged and enabled to prepare the necessary plans (heat & cold plans, energy plans, energy infrastructures plans, spatial plans, etc.) and be better informed about the benefits of renewable DHC. Planning cooperation between local authorities, DHC system operators and waste heat/cold generating sectors should be ensured as well.

Whilst recognising the multiple benefits of waste heat and cold fed into DHC networks, the policy framework should also promote direct use of waste heat/cold on-site. Facilities like supermarkets

– that are in need of both H&C – can efficiently utilize the waste heat generated from the cooling systems to heat other parts of the premises.

### **Renewable energy in buildings (Art. 15)**

- **Introduce a binding benchmark for the use of renewable energy in buildings**

Buildings account for 40% of energy use in the EU, and heating and cooling is responsible for around 50- 80% of that energy consumption. Three quarters of heating and cooling in buildings is still supplied from fossil fuels. However, according to the higher climate targets the EU building stock should be carbon-neutral by 2050, which will require ambitious measures to promote the use of renewable energy in buildings to be introduced now. REDII Article 15 should therefore be revised to include a binding benchmark, setting a minimum level for RES use in building stocks. A requirement to translate this benchmark into building codes should be introduced in the parallel revision of the Energy Performance of Buildings Directive (EPBD).

This benchmark should be designed in a way that new buildings and buildings undergoing major renovation should be powered entirely by renewables, provided that this is feasible, and in line with technological development. In order to align such targets with the Energy Efficiency First (EE1st) principle, measures should go hand-in-hand with ambitious policies to promote energy efficient H&C systems.

- **Integrate buildings into the wider energy system through renewable heating and cooling systems**

The EU Strategy for Energy System Integration projects that by 2030 roughly 40% of residential buildings and 65% of commercial buildings will be heated by electricity. Assuming that the EE1st principle is applied, most of these buildings should be equipped with one or several heat pumps. Heat pumps foster sector coupling by linking up the electricity sector with the thermal energy sector. Beyond storing the energy needed for an individual household, heat pumps combined with thermal heat and cold storage can also serve to provide intermediate storage for excess electricity on the grid. Thermal heat and cold storage technologies are widely available. Despite representing the most economical storage method, they remain underutilised in most EU markets. In the context of the ambitious governmental policies to foster deep renovation at the national level, electrification through heat pumps can be part of the core of EU and national efforts for energy system integration in the H&C and buildings sectors, as it allows to fully exploit the synergies between the two, whilst integrating renewables and placing buildings at the centre of the energy system.

Consumers should be empowered to shift their electricity consumption to a time period most suitable for the grid, and financial incentives should be put in place to reward such behaviour. Consumers could also sell any surplus electricity they generate locally to the grid, where it could be distributed to other users or stored as heat or cold. Changes in electricity use can be motivated by establishing time-based tariffs that reward end-users for lowering their electricity consumption during peak hours or when they sell the electricity they generate. This way, the



greater initial investment for heat pumps and thermal storage tanks could be partially offset by future income from grid providers that appropriately remunerate end-users for purchasing or selling electricity in this manner.

To further support these solutions, EPEE recommends strengthening the current assessment obligations for renewables in buildings under Art. 15(4) of REDII or the introduction of a stringent separate assessment obligation under REDII. Either approach can succeed, as long as the coherence between the RED and EED is ensured, and duplication is avoided. Further, to encourage the increased uptake of renewable energy in heating and cooling, EPEE is strongly in favour of mandatory long-term strategies for heating and cooling decarbonization and proposes that this measure be used to strengthen the heating and cooling assessment in the National Energy and Climate Plans (NECPs). This would help to encourage more strategic approaches to heating and cooling in urban planning and encourage Member States to properly exercise their duty of mainstreaming renewable energy in heating and cooling as foreseen by Art. 23 REDII.

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#### ***About EPEE:***

The European Partnership for Energy and the Environment (EPEE) represents the refrigeration, air-conditioning and heat pump industry in Europe. Founded in the year 2000, EPEE's membership is composed of over 50 member companies as well as national and international associations from three continents (Europe, North America, Asia). With manufacturing sites and research and development facilities across the EU, which innovate for the global market, EPEE member companies realize a turnover of over 30 billion Euros, employ more than 200,000 people in Europe and also create indirect employment through a vast network of small and medium-sized enterprises such as contractors who install, service and maintain equipment. Please see our website (<https://www.epeeglobal.org/>) for further information.