

Solar Thermal & LPG to decarbonise local heat - a winning case

Joint paper of Solar Heat Europe and Liquid Gas Europe

The next decade will be essential to achieve the European goal of carbon neutrality by 2050. The European heating and cooling sector represents 51% of the final energy consumption and is responsible for approximately 27% of the EU carbon emissions. Taking into consideration that the EU heating market is twice the size of the electricity one, European, national, and local policymakers need to take tangible and fast actions to decarbonise this sector. This will be a fundamental step towards the transition to a sustainable energy mix.

Heating is a challenging area to decarbonise, especially in rural areas. There are more than 40 million European households located in rural areas that are not connected to the gas grid. Hybrid technology combining the environmental benefits and reliability of solar thermal and LPG, increasingly bioLPG, a renewable gas distributed off the grid, presents an exciting opportunity for their local heat generation.

Solar Heat Europe and Liquid Gas Europe promote a mixed technology approach to heating and cooling to facilitate decarbonisation of this sector and contribute to a further deployment of renewables and smart system integration in rural Europe.



Journey towards sustainable heating

On the journey to climate neutrality and a fully sustainable heating sector, the uptake of cost-efficient renewable heating and cooling sources must be further promoted.

Thanks to LPG condensing boilers, which can seamlessly switch to bioLPG, paired with solar thermal or other renewable heating and cooling applications, Europeans can progressively enjoy a clean, secure, and efficient energy mix. The shift towards a 100% renewable energy mix should also comply with the current carbon budget, which will require urgent actions and a drastic reduction of our carbon emissions.

Such a transition is in line with the ambition of increasing the uptake of renewables including renewable gas in an affordable way. Without having to resort to expensive future retrofitting of a heating system, over time local homeowners and businesses can substantially reduce carbon and air pollutant footprint. Hybrid solutions have proven to be an effective way to transition towards renewables especially in Southern European regions.

Planning the replacement of inefficient heating systems

The replacement of old and inefficient heating and cooling installations should be prioritised. Currently, consumers tend to change their heating systems when their appliance breaks down and they need a quick fix. For homeowners, often the high running costs of direct electric heating, or the high upfront cost of renovation works are limiting factors to switch from carbon-intensive fuels such as heating oil and coal.

To scale the benefits of hybrid solutions off the grid, the heating system replacement should be carefully planned and possibly staged. Member States and local authorities must encourage removing old and inefficient heating systems, also to lower energy bills.

Incentives might range from awareness-raising campaigns to giving comprehensive information on the benefits of new appliances to financial support for switching to cleaner alternatives as hybrid systems combining solar thermal and LPG, gradually phasing in bioLPG.

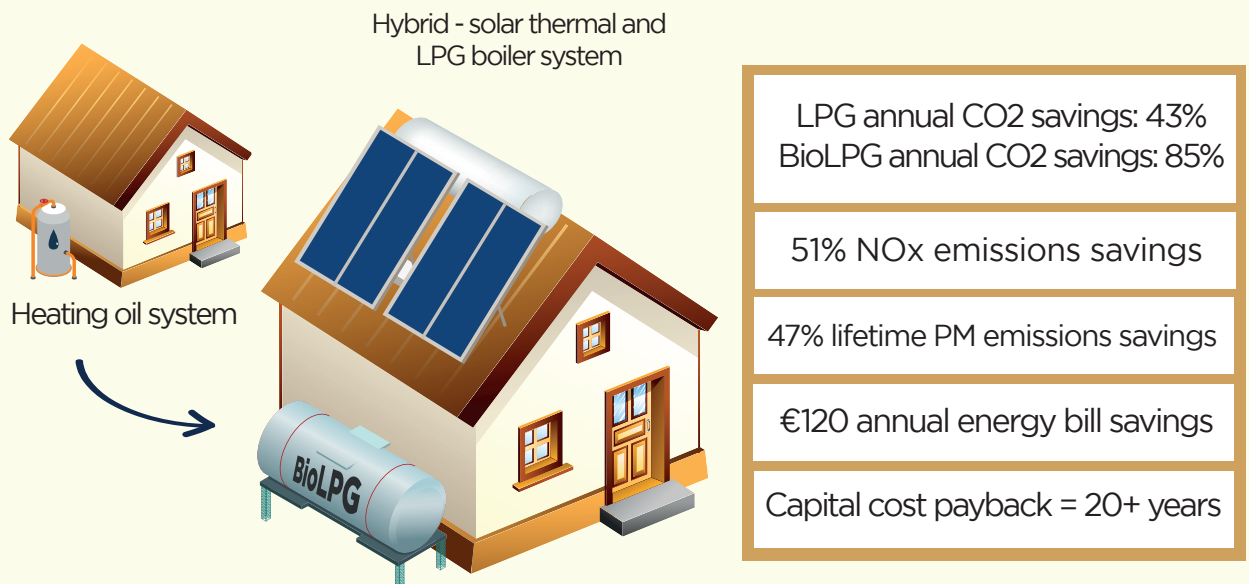
2030: a crucial milestone

The only way to reach climate neutrality by mid-century is to take decisive actions in the coming years. The upcoming revision of climate legislation will have an enormous impact on the heating and cooling sector, also in rural areas. With heating installations' average lifetime of 20 years or longer, one can imagine that every system installed in 2030 or after, will potentially be still in use by 2050.

This means that as of 2030 heating and cooling systems newly installed by homeowners, businesses and manufacturers must be partly or fully renewable based. Carbon and air pollutant emissions from residential, commercial and industrial heating off the grid can be drastically reduced with existing solutions, such as solar thermal technology and increasingly bioLPG. By effectively using hybrid solutions, the local heat generation can be decarbonised in an affordable way. But the radical shift towards sustainable heating solutions requires strong and urgent actions.

A practical example

Liquid Gas Europe's analysis takes a typical single-family home in Mediterranean Spain and quantifies the impact of switching from an old oil boiler to a hybrid combination of a solar thermal system and a new LPG boiler. It is considered that, from 2030, the boiler is fuelled by bioLPG.



Solar Heat Europe & Liquid Gas Europe policy recommendations

- 1 Hybrid solutions** — coupling LPG condensing boilers with renewable-based heating solutions such as solar thermal collectors — should be supported in European rural areas
- 2 European and national legislation** should incentivise investments in the transition to sustainable heating solutions, in particular, locally generated renewable heating and cooling and renewable gases produced in European rural areas
- 3 The Renovation Wave** should not be limited to incentivising building insulation, but also take a comprehensive approach and focus on the cost-effective modernisation of heating and cooling systems
- 4 The replacement of old and inefficient** space and water heating systems with new, efficient and preferably renewable appliances, such as solar thermal and an LPG boiler with the 'locked-in' seamless transition to bioLPG, should be planned and possibly done in stages

About Solar Heat Europe

Solar Heat Europe/ESTIF's mission is to achieve the prioritisation and acceptance for solar heat as a key element for sustainable heating and cooling in Europe and to work for the implementation of all necessary steps to realise the high potential of solar heat. With members in more than 15 European countries, Solar Heat Europe represents directly or indirectly over 90% of the industry, across the value chain.

Solar Heat Europe also ensures that solar heat technology develop and grow in Europe through different actions such as providing information and statistics on the sector or by advocating for better regulation or encouraging the EU policy makers to shape a favourable environment for heating and cooling technology.



About Liquid Gas Europe

Liquid Gas Europe is a European association composed of national Liquefied Petroleum Gas (LPG) associations, the main European LPG suppliers, distributors and equipment manufacturers. With the support of its working groups composed of industry experts, Liquid Gas Europe is actively involved in concrete initiatives and programmes to ensure the sustainable, safe and efficient development of LPG and bioLPG in Europe.

Liquid Gas Europe's Mission is to ensure the EU policy community embrace our vision to establish LPG and bioLPG as the alternative energy of choice supporting the EU policy agenda.



LPG - The smart alternative,
everywhere you need it