EU Rural Renovation Reality in support of the Renovation Wave

The European Commission has proposed a 'Renovation Wave for Europe' strategy, with the aim of doubling annual energy renovation rates by 2030. Renovations are meant to enhance the quality of life for people living in and using the European building stock, create green jobs and reduce Europe's greenhouse gas emissions.

It is crucial that the energy needs of European rural businesses and communities and the state of the rural building stock are considered in these initiatives. If given sufficient attention, improvements on this particular building stock would facilitate the implementation of the European Green Deal and enable Europe to deliver a Just Transition to all its citizens.

The FREE Initiative conducted a study across EU Member States and developed the following rural-energy conclusions:

TIMELY TRANSITION

Replacing old polluting heating systems is a popular[iii] way to immediately reduce consumer bills, energy use, and carbon emissions.

- Policies supporting the replacement of polluting heating systems can support the decarbonisation and greening of the EU's building stock.
- The majority of oil and coal boilers operating in European rural areas today are more than 10 years old.

RESPONSIBLE RECOVERY

New heating systems lower air pollution. Air quality must be considered in the renovation wave.

- The replacement of old heating systems can lower air pollution.
- 400,000 Europeans die prematurely from $PM_{2.5}$ exposure annually. Studies suggest a link between COVID, air quality, and the combustion of certain fuels. Future energy policies should consider air quality and tackle dirty heating.

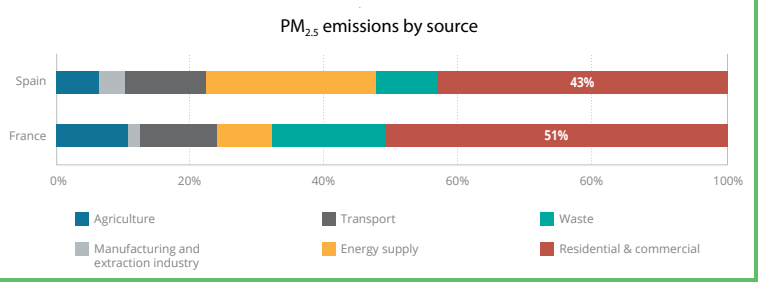
Responsible recovery - air quality must be considered in upcoming policy decisions

- Across Europe, over 400,000 premature deaths per year are caused by exposure to $PM_{2.5}$[i].
- Studies suggest that high levels of air pollution are associated with higher incidence of COVID-19 deaths[ii].
- Heating fuel decisions are known to influence ambient and indoor air pollution levels, including in rural areas.
- 42% of EU-28 background rural air quality measurement stations reported $PM_{2.5}$ concentrations that exceeded WHO guidelines in 2017.

In the context of the Zero-Pollution Action Plan, tackling air quality must be at the heart of upcoming policy decisions which impact the fuel and energy consumption of fuels across Europe. Reducing air pollution is consistent with policy decisions to mitigate harmful effects of greenhouse gas. Indeed, the Commission's ETD consultation notes that the revised directive should "better tackle environmental concerns, like air pollution."

CASE STUDY: contribution of Spanish and French buildings to harmful air POLLUTION

- $PM_{2.5}$ can penetrate the lungs and enter the blood system. Chronic exposure to particles adds to the risk of developing cardiovascular and respiratory diseases, and lung cancer.
- In 2017, 33,000 premature deaths in France and 24,000 in Spain were attributable to $PM_{2.5}$ emissions.
- 51% of all $PM_{2.5}$ emissions in France are derived from households and businesses, and 43% in Spain.

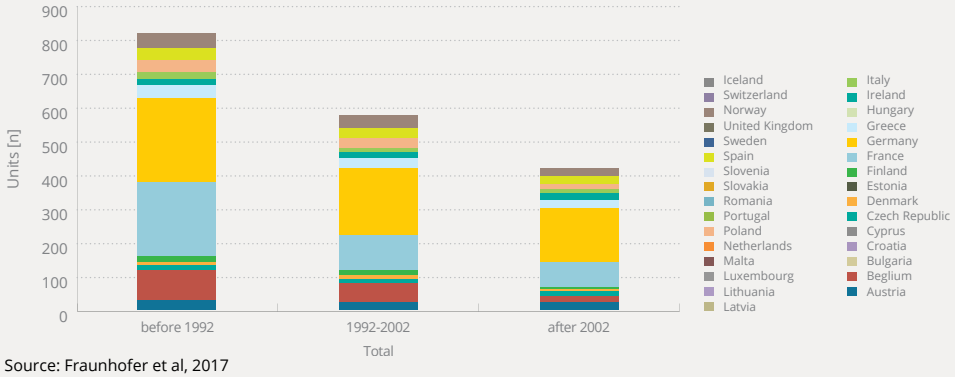


A FREE (Future of Rural Energy in Europe) report with data provided by Ecuity Consulting and supported by SHV Energy

Timely transition - replacing old polluting heating systems is a popular[iii] and cost-effective policy to achieve immediate benefits

- Studies[iv] suggest that a significant portion of oil and coal boilers operating in Europe today are more than 25 years' old, and the majority are more than 10 years' old – see Figure 1 below.
- Consumer research suggests that households prefer the status quo and seek to minimise disruption. Replacing old heating systems with similar low-carbon solutions should be supported by policy.

Figure 1 - construction year of oil boilers across European markets



Source: Fraunhofer et al, 2017

In the renovation wave, heating systems replacements are a popular and cost-effective policy to deliver energy efficiency and emission reductions.

CASE STUDY:
oil-heated homes in Ireland and Germany

- There are around 6mn oil boilers currently installed in German homes (DBI). Replacing this stock of the oldest 50% with a new, condensing LPG boiler could save around 4mn tonnes in CO_2 emissions.
- Germany's target is to reduce emissions from buildings by 45 $MtCO_2$ (117 $MtCO_2$ to 72 $MtCO_2$) by 2030. The switch from the oldest oil boilers to **LPG would enable ~10% of this CO_2 reduction**.
- This reduction from the transition away from heating oil would be equivalent to the annual emissions of approximately 2 million German cars[v].
- In Ireland, 70% of the rural housing stock use heating oil. Over 27% of these oil heating systems were installed before 2000 and are therefore old and inefficient.

RURAL ENERGY MATTERS

130 million people live in rural areas across Europe. Policy decisions made as part of the upcoming revisions of several Directives (Energy Efficiency, Renewable and Energy Taxation) and the Renovation Wave will impact millions of Europeans living in rural communities.

Rural communities matter and need to be understood. To deliver a just energy transition, policy should reflect conditions in rural areas. This publication provides information to better highlight energy and environmental issues faced by rural communities.

i EEA (2020) Air quality in Europe 2019

ii See Wu et al (2020), Pozzer et al (2020), and Thakur et al (2020) amongst other studies

iii Consumers naturally prefer the status quo and prefer minimising disruption by replacing their existing heating system with a similar alternative, rather than changing the system all together. Insight from: Savanta ComRes (2019) *Eurogas: Energy Survey*

iv Fraunhofer et al (2017) *Mapping an analyses of the current and future heating/cooling fuel deployment*

v Annual average emission of German passenger cars (approx. 2 tonnes/year) taken from Transport & Environment (2018)