Heat pump market: state of play and outlook in view of the « fit for 55 » package

Policy developments – expectations from the fit for 55 package on heat pump market development

Jozefien Vanbecelaere, EHPA
Legislation covering Heat Pumps

Clean energy 4 all Europeans package
- Energy efficiency directive EED
- Energy performance of buildings directive EPBD
- Renewable energy directive RED
- Governance Regulation
- Electricity market design

Energy efficiency on systems level (+calculations for HP)
- Comprehensive assessments on heating and cooling
- New builds, renovation strategy + modernisation of H&C
- Smart buildings
- Definitions: renewable energy / renewable cooling
- Sectorial target for renewable heating / cooling
- National energy and climate plans (NECP)
- Improved data situation
- Flexible tariffs, smart grids

F-gas regulation
- Ecodesign regulations
- Long term strategy
- National legislation

Reduction of F-Gas related emissions
- Requirements (combi-)boilers, airco & smart appliances
- fossil molecules ➔ green molecules (H2/CH4) or biomass
- F-gas, taxation, certification requirements, standards

If not successful
- - -
“I want Europe to become the first climate neutral continent in the world by 2050. To make this happen, we must take bold steps together ... . A two-step approach is needed to reduce CO₂ emissions by 2030 by 50, if not 55%.”

President Ursula von der Leyen

EHPA market and policy report | 25.3.2021 | ISHdigital Frankfurt
EU Green Deal & Climate Law

- EU Strategy for Energy System Integration
- EU Renovation Wave Communication
- Fit for 55% package (Revision of 15 initiatives)
  - More renewable energy
  - More energy efficiency
  - Internalisation of the external effects of fossil energy use

Build on heat pumps
EU Energy systems integration strategy

- 10 – 15 mio office & commercial buildings
- 90 mio residential single family units
- 15 mio residential multi family units
- 65%
- 7-10 mio heat pumps
- 42 mio heat pumps
- 40%

+ industry

todays HP stock x 4
Renovation wave: the target

- Decarbonisation of heating and cooling
- Double the renovation rate
- Foster deep energy renovation: schools, public buildings
- Renovate the 35 million least performing buildings by 2030
- Allow for affordable and sustainable design via New European Bauhaus
Industry can deliver, but «We need framework conditions, that trigger end-user demand»
Fit for 55 – trigger end-use demand for Heat Pumps!

01 Align Policies on efficient AND renewable heating and cooling
- A comprehensive and ambitious heating decarbonisation roadmap
- Incentivize technologies that are simultaneously efficient and renewable
- Incentivize fuel switching in the EED

02 Unlock the full potential of heat pump technologies
- Ambitious and binding target for renewables in heating and cooling
- Enlarge the concept of waste heat to circular energy
- Address energy savings from industrial heat pumps, thermal storage and flexibility

03 Guide citizens to efficient and renewable heating and cooling solutions for their buildings
- One stop-shops for heating and cooling renovations
- Increased requirements on renewable and efficient heating in buildings
- More attractive training and certification for heat pump installers

04 Review energy pricing to guide end-users towards the most energy-efficient solutions
- Re-balance taxation of different energy carriers
- Internalise external effects of fossil energy use through carbon pricing
- Implement legislation to valorise flexibility
Fit for 55 – trigger end-use demand for Heat Pumps!

Align Policies on efficient AND renewable heating and cooling
- A comprehensive and ambitious heating decarbonisation roadmap
- Incentivize technologies that are simultaneously efficient and renewable
- Incentivize fuel switching in the EED
Align policies on efficient AND renewable Heating & Cooling

- Comprehensive **assessments** on H&C (EED) - by December 2020
- Renewable **assessments** in H&C (RED) - by December 2020
- Long-term renovation **strategies** (EPBD) – by April 2020
- **NECPs** – by December 2019

- Align timing: assessing before planning
- Incentivise renewable AND efficient heating and cooling
Fit for 55 – trigger end-use demand for Heat Pumps!

Unlock the full potential of heat pump technologies
- Ambitious and binding target for renewables in heating and cooling
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Binding RES H&C target
http://ec.europa.eu/eurostat/de/web/energy/data/shares

< 1pp annual increase of renewable share
Incentivise circular energy use

Market potential industrial waste heat recovery

Extend to commercial and residential sector

Source: Dryficiency project – Aalborg university
Fit for 55 – trigger end-use demand for Heat Pumps!

Guide citizens to efficient and renewable heating and cooling solutions for their buildings

- One stop-shops for heating and cooling renovations
- Increased requirements on renewable and efficient heating in buildings
- More attractive training and certification for heat pump installers
One-stop shops

Ali Sheridan & Family
“There’s a lot to take in in terms of paperwork. SuperHomes held our hand on a lot of that and gave us very clear guidelines. They were always on the end of the phone.”.

Shay And Olive Aylward
“I would highly recommend it to everybody who can get it done. Our neighbours have been calling to see the system outside and to experience what the house is like”.

Source: https://superhomes.ie/
Effect of min. share of RES in Flanders

Min. share of renewable heat in buildings

Source: https://apps.energiesparen.be/energiekaart/vlaanderen/epb-hernieuwbaar-nb-ler
Fit for 55 – trigger end-use demand for Heat Pumps!

Review energy pricing to guide end-users towards the most energy-efficient solutions

- Re-balance taxation of different energy carriers
- Internalise external effects of fossil energy use through carbon pricing
- Implement legislation to valorise flexibility
Carbon pricing: make the best technology also the most affordable one

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<thead>
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<th>Fossil boiler technology</th>
<th>Heat pump technology</th>
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Balance taxation of energy carriers

Levies and taxes (including VAT) on residential gas and electricity prices (euro cents per KWh), average in 2020

Source: RAP report pricing is just the icing – EC 2020 energy prices and costs in Europe
The way forward

Adjustment of production possible (+15%pa)

+ 

Activate end-user demand

= 

A decarbonised buildings stock

Industry is ready

Align policy
Unlock full HP potential
Guide consumers
CO₂ price signal

+ support poorer households

An industrialisation opportunity
Legislation covering Heat Pumps

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Reduction of F-Gas related emissions
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Transition towards a zero-CO₂ emission society
More ambitious targets
Extension ETS to heating sector: price for CO₂-emission
Rebalance taxation different energy carriers
Renovation wave
Energy System integration

European Green Deal & Climate law

- Revision EED, RED, EPBD
- ETS on building sector
- Energy Taxation Directive
- Long term strategy
- National legislation

Fossil molecules → green molecules (H₂/CH₄) or biomass
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If not successful

- National legislation
- Ecodesign regulations
- F-gas regulation
EU electricity grid is ready for 50 million Heat Pumps