

Phase-out legislations for fossil fuel boilers

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08.07.2021

ECF heating hub

Outline

- Part 1: Analysis of options for phasing out fossil fuels for heating and comparison of national approaches in EU Member States
 - Part 2: Legal analysis
 - Analysis of options for legislative framework to support the phase-out of fossil fuels for heating at EU level
 - Implications for national legislations
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A rapid phase-out of fossil fuels for heating is needed to meet EU energy and climate targets

- The **decarbonisation of the buildings** sector is a key element for reaching climate neutrality in the EU.
- Typical lifetimes of boilers of 20-25 years requires **rapid action** to phase-out the installation of boilers using fossil fuels.

Agora Energiewende (2021):
Full phase-out of installation of boilers using fossil fuels for heating by 2025 to meet German climate target










IEA net zero scenario:
phase-out of oil and gas for heating starting from 2025 needed to achieve net zero by 2050

Restrictions on the use of fossil fuels: Bans and use obligations for renewable energies

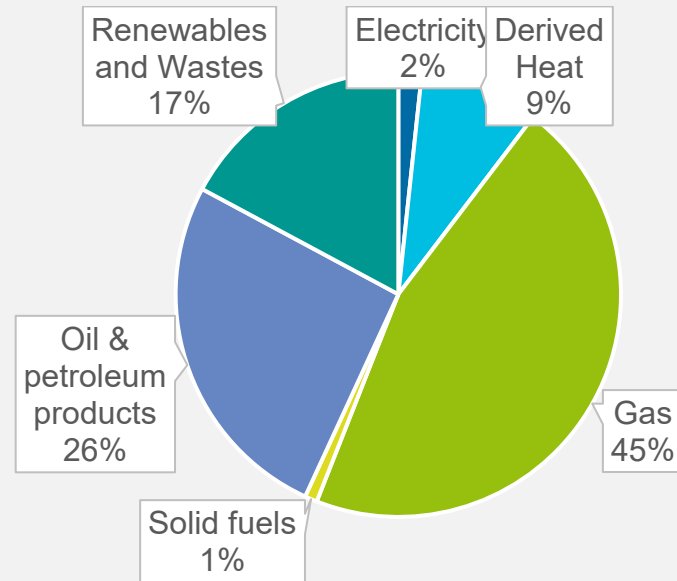
- Restrictions can be introduced in several ways:
 1. **Ban on the installation and/or use of heating equipment** (e.g. ban of the installation of oil boilers)
 2. **Ban on the use of fuels** for heating (e.g. ban on the use of oil for heating).
 3. **Use obligations for renewable energies** (e.g. mandatory share of X% renewable energy)
 4. Ban on **selling fossil fuels** for heating
- Restrictions can be limited to selected building segments (e.g. new buildings), to selected fuels (e.g. oil), and to selected „zones“ (e.g. district heating)
- Restrictions can be limited to a share of the energy demand (e.g. ban on mono-fuel boilers, obligation to (partially) use renewables)

Overview of approaches in selected countries

	Ban on boilers	Obligation for renewables	Ban on use of fuels
National level			
Regional level			
Spatial coverage (zoning)			

Germany: Ban on oil boilers and use obligations

Background



Scope and implementation dates

Ban on oil boilers

- From 2026: Installation of mono-fuel oil boilers in new and existing buildings
- Hybrid heating systems are not covered by the legislation

Use obligation for renewable energies in new buildings (national)

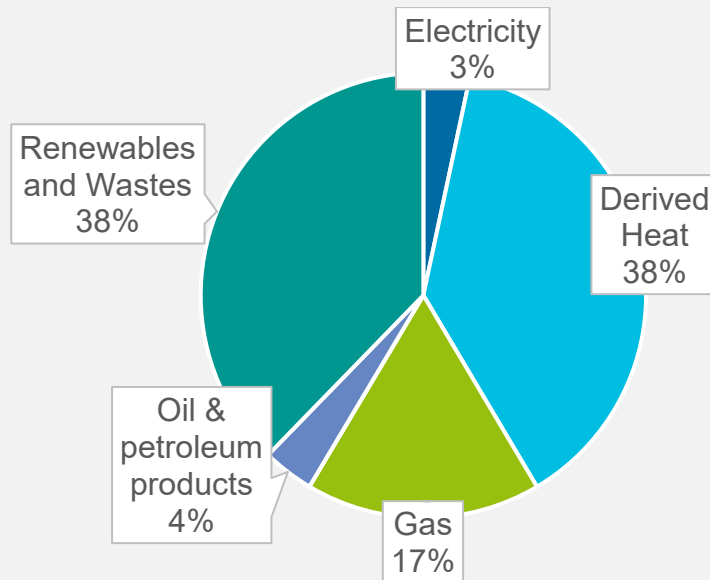
- Mandatory share of renewable energies for heating in new buildings

Use obligation for renewable energies in existing buildings (regional: Baden-Württemberg and Hamburg)

- Mandatory share of 15% renewables when exchanging the heating system

Denmark: Obligation for renewables (connected to zoning)

Background

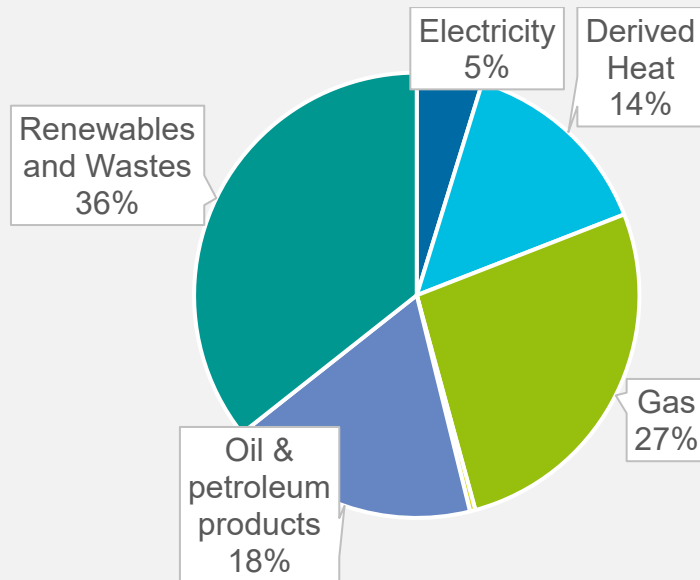


Scope and implementation dates

- Since 2013: Installation ban on fossil oil and gas boilers in new buildings (BR10)
- Since 2016: Installation ban on fossil oil boilers in existing buildings
- Since 2018: General obligation for renewables (with some exemptions)

Austria: Ban on installation of oil boilers

Background



Scope and implementation dates

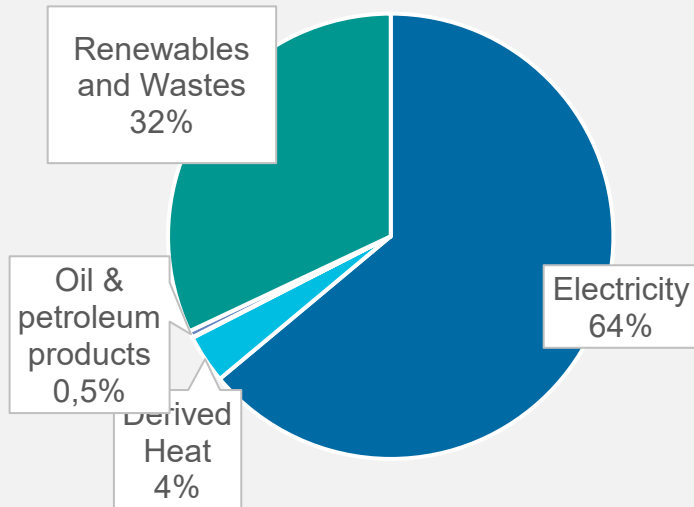
- Since 2020: Ban on installation of central heating boilers running on **liquid or solid fossil fuels** in new buildings
- Additional regional legislations

Planned:

- From 2021: Installation of **oil/coal** boilers when boiler is exchanged
- From 2025 on: Replacement obligation for old **oil** boilers; Installation ban for **natural gas** boilers in new buildings (planned)
- From 2035 on: Mandatory exchange of all **fossil oil** boilers (planned)

Norway: Ban on use of mineral oil

Background

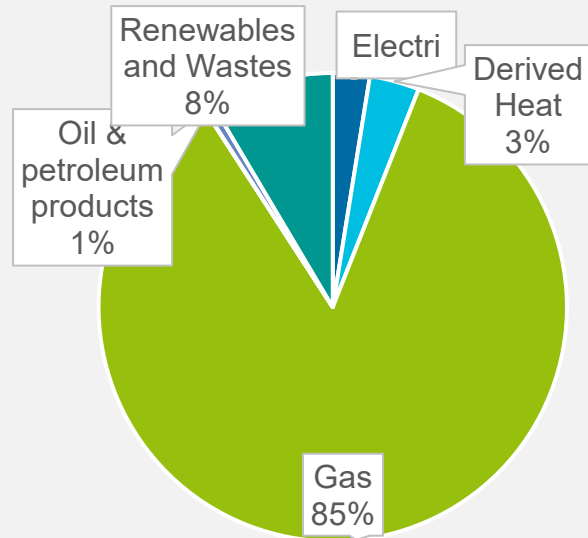


Scope and implementation dates

- Since 2020: Banning of the use of mineral oil for heating of (new and existing) buildings (transition period since 2017)

Netherlands: Ban on connection to gas grid

Background



Scope and implementation dates

- Since 2018: No obligation for gas network operators to connect new buildings
→ Effectively ban on gas boilers as obligation required for connection (possible granting of exemptions by local authorities)
- „Gas-free district approach“: Municipal planning for phasing out gas for heating.

Success factors for ambitious phase-out legislations

- Large coverage of building segments, e.g. new buildings, existing buildings; residential and non-residential buildings
- Coverage of fuels: Gas and oil
- Mandatory renewable share: High share in use obligations/limited options for hybrid to avoid lock-in effects
- Time frame for introduction of the legislation

Challenges and opportunities of phase-out legislations



Uncertain role of „new fuels“: biogas, hydrogen and synthetic fuels:

- Heating equipment can be used both for fossil fuels and for new fuels → A ban on heating equipment also affects the use of such fuels
- Risk of lock-in effects when blending of fossil fuels and new fuels: Gas infrastructure remains active
- Spatial planning can play an important role for allocating areas in which the gas infrastructure is maintained (e.g. „gas free districts“ approach in the Netherlands)

A staged introduction (e.g. with increasing shares) can support the transformation of the market and increase acceptance for the legislation

Minimum shares should be at least 30% to avoid the combination of oil/gas boilers and solar thermal → risk of lock-in

Ban on boilers – vs use obligations

	Ban on boilers	Ban on fuels/Use obligation for renewable energies
PRO 	<ul style="list-style-type: none"> • Effective in transforming the market for heating equipment • Relatively easy to control at installation 	<ul style="list-style-type: none"> • Opportunity for staged introduction with increasing mandatory RES-shares • Directly addresses the need to decarbonize heating
CON 	<ul style="list-style-type: none"> • Boilers can, in principle, be used also for non-fossil fuels • Effectiveness is reduced with exemptions 	<ul style="list-style-type: none"> • Compliance needs to be controlled continuously • Obligations with low RES-shares can create lock-in effects

Opportunities and challenges for phase-out legislations at EU level – Possible legislative approaches

- **Renewable Energy Directive:**
Strengthening the provisions specified in Art. 15(4) on the use of minimum levels of energy from renewable sources in buildings
- **Energy Performance of Buildings Directive:**
 - Ambitious (N)ZEB-requirements for all existing buildings including minimum RES use
 - Including requirement for renewable heating in provisions for MEPS
- **Energy Efficiency Directive:**
Strengthening the provisions on public buildings under Art. 5 EED
- **Ecodesign Directive:**
Phase-out could be introduced through efficiency requirements

The current provisions under the Ecodesign Directive leave room for national phase-out legislations

- Example: Notification on German 1st BIMSchV (2020):
 - Germany notified the Commission in 2019 of its wish to maintain certain national provisions for solid fuel boilers, in accordance with the German Regulation on small and medium-sized combustion units.
 - The provisions include, among others, **emission limit values** and a measurement methodology that differs from the one in the ecodesign implementing regulation as well a **restriction on the admissible fuels**.
 - The provisions on emission limits are admitted by the Commission on the basis of Article 114(4) TFEU on the grounds of human health and the protection of the environment.
 - Regarding the request on the restriction on the use of fuels, the Commission concludes usable fuels are thus not a harmonised ecodesign requirement, such that no notification is required/admissible

Conclusions (preliminary)

- Several Member States have implemented phase-out regulations with varying degrees of coverage and stringency.
- The role of „green gases“ needs to be addressed in phase-out regulations, where spatial planning can play a role.
- Provisions on the phase-out of fossil fuels at EU level can be introduced in the RED or EPBD aside from the Ecodesign Directive. Any new provisions should explicitly allow/encourage more stringent approaches by Member States.
- The current Ecodesign implementing regulations do not inhibit the introduction of phase-out regulations at national level. With a potential extension including provisions on the use of fuels, there is a risk for limiting the opportunity for MS to introduce requirements going beyond the Ecodesign provisions.

Thank you!

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Further reading (in German):

https://www.umweltbundesamt.de/sites/default/files/medien/5750/publikationen/2021-01-25_texte_16-2021_fossile_brennstoffe.pdf

Publication of report in English foreseen for September!