

# REPLACE in a nutshell & Heating System Calculator

[replace-project.eu](https://replace-project.eu)

## streamSAVE Dialogue Groups

Feedback and tailored advice for behaviour  
changes - Small-scale RES for heating

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*Disclaimer: The views expressed in this presentation are the sole responsibility of the author and do not necessarily reflect the views of the REPLACE consortium*



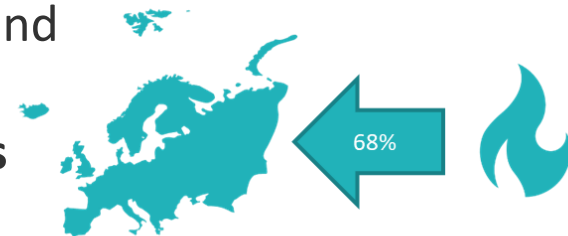
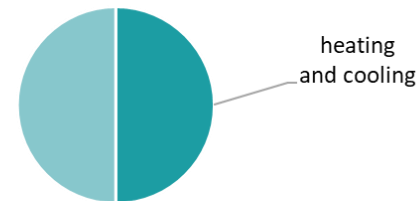
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# Situation on the European space heating market

- Heating and cooling sector (HC) involves
  - 50% of the European final energy consumption, is responsible for over 68% of all natural gas imports
  - 80 million out of 120 million installed space heating systems in Europe only achieve C or D label class
- **REPLACE** aims to boost the phase-out of inefficient and old HC systems by targeting consumers, investors/owners as well as intermediaries and **helps them to make informed decisions.**

European final energy consumption



# Situation on the European space heating market

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- These facts give rise to motivate end consumers
  - to replace their equipment as quickly as possible
  - with more efficient, environmentally friendly, alternative systems



# Objectives of H2020 REPLACE

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- Motivate and support people in **eight countries** to replace their **old, inefficient heating systems** with **clean alternatives**.
  - **Campaigns** draw attention to the issue and help people to do so
  - **Tools and information materials** help people make informed decisions
  - **Simple renovation measures** that reduce overall energy consumption are also part of the program.
- The project **focus** is on the **residential heating sector**.
- It is coordinated by the Austrian Energy Agency and runs **until October 2022**.



In REPLACE 9 pilot regions (> 8 mio inhabitants) create campaigns for replacing inefficient heating systems by new, clean climate friendly systems



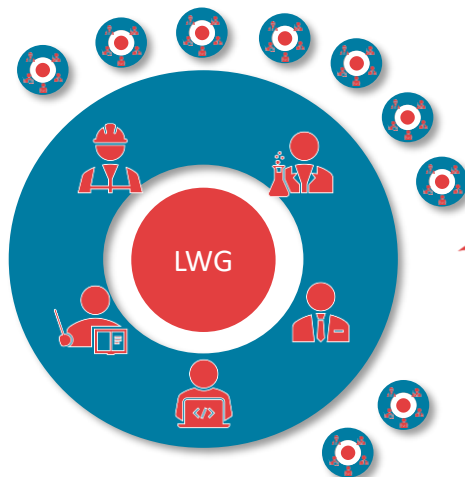
COUNTRY	TARGET REGION	INHABITANTS
AT	Federal State of Salzburg	550,000
DE	Bavarian Oberland	446,000
ES	Castilla y León Region	2,440,000
HR	Primorsko goranska County	300,000
BA	City of Zagreb incl. three bordering counties	1,400,000
BG	Canton of Sarajevo	400,000
RS	Rhodope Mountain Region	400,000
SI	City of Šabac	120,000
SI	Slovenia	2,070,000
MK	Skopje Region (Karpoš, Aerodrom, Gjoče Petrov)	200,000
<b>TOTAL</b>		<b>8,326,000</b>



# Developing and testing of campaigns by 9 local working groups

## LWG composition

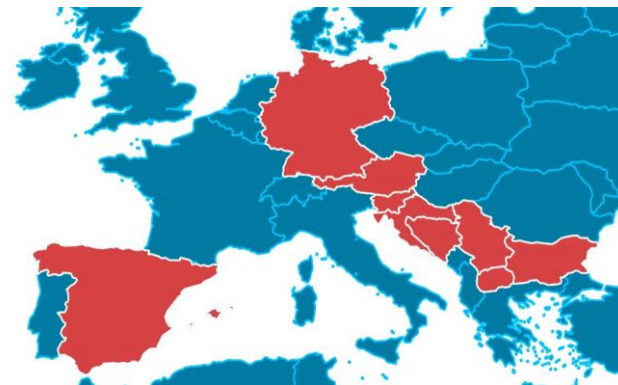
- Regional authorities
- Policy makers
- Municipalities
- Energy advisers
- Installers
- Chimney sweepers
- Equipment manufacture
- Equipment wholesale
- ESCOs
- Local/regional managers
- Ministries in charge
- Funding bodies
- Energy agencies
- Etc.



local  
working  
groups



campaigns  
in  
pilot regions



Offer of tailor-made „activity packages“  
addressing and reducing main barriers



# Tools and info materials support end consumers to make informed decisions

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- **Heating matrices** (which heating system fits to my house)
  - [replace-project.eu/replace-heating-matrix](https://replace-project.eu/replace-heating-matrix)
- Replace Your Heating System **Calculator** (an easy do it yourself energy advice)
  - [energieinstitut.at/tools/Replace](https://energieinstitut.at/tools/Replace)
- **Heating replacement Handbook** for end consumers, **Handbook** for professionals
  - [replace-project.eu/technology-guides](https://replace-project.eu/technology-guides)
- **Best Practice Examples** of heating system replacements
  - [replace-project.eu/best-practice/](https://replace-project.eu/best-practice/)



# Heating matrices

Za projekat financirano reprodukcijom iz inovacijskog programa "Kvalitetna zidna izolacija 2020" - aktivna agencija za inovacije + podizanje standarda do 5000000

replac

OGREVALNA MATRIKA

Sistem ogrevanja	Tip stanovanja/kuće / energijski razred				Prilagođeno za sistem za pripremu sanitarnog vode	Vetna / sončna energija			
	Toplotna mreža <sup>1</sup> ≤ 10 kWh/m² a (A1)	Toplotna mreža <sup>1</sup> ≤ 15 kWh/m² a (A2)	Niskotemperaturna mreža <sup>1</sup> ≤ 15 kWh/m² a (B)	Energetski učinkovita mreža <sup>1</sup> ≤ 40 kWh/m² a (C)	Energetski neefikasna mreža <sup>1</sup> ≤ 100 kWh/m² a (D)	Energetski neefikasna mreža <sup>1</sup> > 100 kWh/m² a (E, F, G)	galvni opremljeni sistem	Toplotna črpalka + sončna elektrarna	Prilagođeno odjem Smart Grid
<b>Sistem pasivne hiše</b> Ugodno prezagrevanje z ogrevanjem zraka									
<b>Kombinacija prisilnega prezagrevanja in toplotne črpalke</b> prezagrevanje + toplotna črpalka za ogrevanje				①			+	++	
<b>Toplotna črpalka, ki temelji na izkoriščanju podtalnice<sup>2</sup></b> niskotemperaturni sistem temperatura grelnega medija je navzgor omejena s temperaturo 40°				①			+	++	++
<b>Toplotna črpalka, ki temelji na izkoriščanju toplote zemlje<sup>3</sup></b> niskotemperaturni sistem temperatura grelnega medija je navzgor omejena s temperaturo 40°				①			+	++	++
<b>Toplotna črpalka, ki temelji na izkoriščanju toplote zunanjega zraka</b>	①	①	①	①	①	①	+	++	++ ①
<b>Biomasi kotli na pelete</b> z vmesnim posrednikom				①			++	++	
<b>Biomasi uplinjevalni kotli</b>				①			++	+	
<b>Daljnoko ogrevanje</b> biomasa/toplovod/plin				①			+	++	
<b>Toplovodni kamin (drva/peleti)</b> Hišno ogrevanje z vmesnim skladiščem				①			++	+	
<b>Kamin/kaminska peča/krušna peč</b> brez vodnega sistema za odvajanje toplote				①			+	++	
<b>Podporni sistem: Direktno električno ogrevanje (npr. IR paneli)</b>				①			++	++	

Zelo priporočljivo Priporočeno Manj priporočljivo Ni priporočljivo Tehnično niso primerne

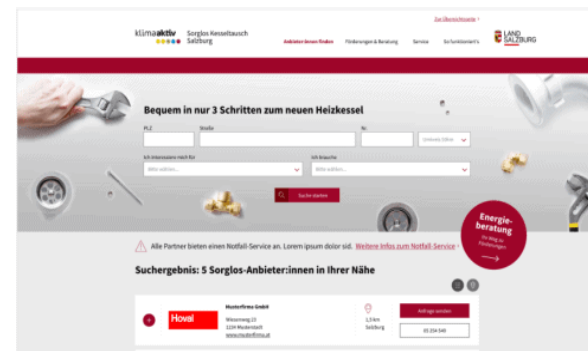


# REPLACE in action!

## One-stop shop in Austria



An **internet platform** of the pilot initiative, to select a provider in their vicinity. The provider undertakes to **install** climate-friendly heating systems, **carries out heating checks** to save energy and provides a mobile heating container in the event of a heating system failure, thus creating time for the exchange.



# REPLACE in action!

## A new subsidy scheme in Spain



The project partners made more knowledge about biomass directly available to end customers: 200 houses and 200 boilers are getting an information label.

10 info hubs have been established.

A new subsidy scheme developed by EREN is helping to switch a total of 10 MW of residential boiler capacity from fossil fuels to biomass within some months.



# REPLACE in action!

## Fuel oil boilers decrease in Slovenia

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Everyone who wants to apply for a subsidy for climate-friendly heating is automatically recommended to use REPLACE Calculator.

Campaign “Replace fuel oil for the sake of the environment” resulted in replacement over 130 fuel oil boilers with heat pumps.



**ZAMENJAJ OLJE  
ZA OKOLJE**



# Heating system replacement calculator: OBJECTIVES

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- Give orientation and enable **informed decisions** in the **residential heating sector** (end consumers, investors, owners etc.)
- **Replacement** of an existing, old
  - fuel oil
  - natural gas
  - coal or log-wood
- **heating system** (boiler or ovens; depending on region)
- by **new, clean and climate-friendly** solutions.



# Heating system replacement calculator: SCOPE

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- When looking for a new heating system, there are **many things to consider**:
  - What **technologies and fuels are available**?
  - Which **subsidy programs** can be taken into account, how does the affect costs?
  - What about the **cost of heating** when I look at **more than just the initial cost**?
- This calculator gives **answers based on annual full costs**.
- Should be able to **find the best solution for one house**
  - e.g.together with your energy consultant or your installer



# Heating system replacement calculator: DISSEMINATION

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- REPLACE your **Heating System Calculator**
  - free of charge** “energy advise” tool
  - [energieinstitut.at/tools/Replace](https://energieinstitut.at/tools/Replace)
- **White-label tool option**; Businesses, installers, energy advisers, municipal energy offices etc. can **integrate** the **Calculator via a frame** into their own website or **place a link** to the Calculators landing page on the **own website**.
- Please **contact** your national REPLACE project partner
- The calculator will be **hosted until 30.11.2025**.



# Heating system replacement calculator: FEATURES

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- Based on the Austrian klimaaktivHexit calculator (of the Ministry for Climate Action).
- The **calculator is tailored** to the situation
  - in **8 European target regions** (AT, BiH, DE, BG, ES, HR, MK, SL) and
- **works in 7 languages** (incl. EN for every region)
- features **technical and economical default values**
  - applying to heating system renovations in residential buildings,
  - ranging from single-family houses to
  - block of flats with up to 20,000 l/a heating oil equivalent (i.e. 20 MWh/a).



# Heating system replacement calculator: RESULTS

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- **Annual full heating costs, i.e.**
  - **full cost comparison** of the
    - annuity of reference investment,
    - service and maintenance, fuel and CO2 costs
    - any subsidies available in the 8 target regions (if any) are considered.
- **Annual cost savings and annual CO2 emissions avoided**
  - compared to existing heating system.





# The way it works

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## Step 1

- the actual energy consumption of the heated building
- the type of existing heat delivery and hot water preparation system

## Step 2

- the possibility of a connection to a local or district heating network
- the availability of a solid biomass fuel storage room
- the accessibility with a wood pellets lorry

**Step 3**= results, i.e. techno-economical comparison of green alternatives



# Demonstration by example

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[energieinstitut.at/tools/Replace](https://energieinstitut.at/tools/Replace)



## Contact

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# Thanks for your attention!

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[www.replace-project.eu](http://www.replace-project.eu)



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