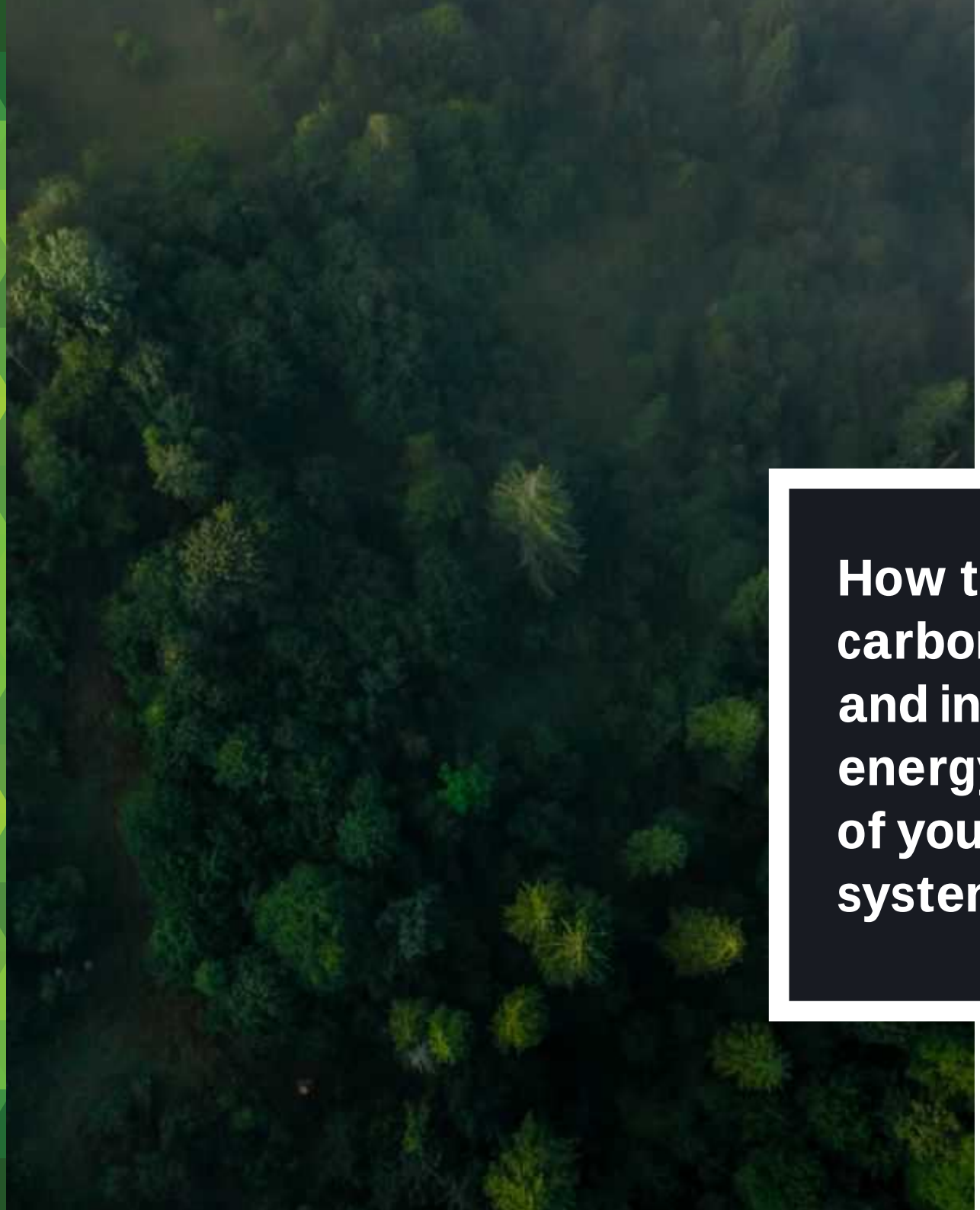

Interreg
Alpine Space

EUROPEAN UNION

BB-CLEAN

European Regional Development Fund

How to lower carbon footprint and increase energy efficiency of your heating system

4 HEATING SYSTEMS

This project is co-financed by the European Regional Development Fund through the Interreg Alpine Space programme.

SUITABILITY GUIDELINE

These guidelines were developed within the BB-Clean project to the help the end user. 4 guidelines are focused on important topic of reducing emissions. Choosing a right heating system can be a difficult task. To help you choose, check suitability guideline for heating systems below.

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Heating system	Symbol	Advantages	Caution
Wood pellets		o Suitable for all buildings o Low fuel costs (regional differences) o High operating convenience o CO_2-neutral o Regional added value (regional differences) o Combination with solar thermal plant	o Storage room for wood pellets and suitable chimney are required o Buffer storage guarantees optimal efficiency o Quality and origin of pellets essential (ENplus certificate)
Firewood		o Low (no) fuel costs (e.g., using own wood) o CO_2-neutral o Regional added value o Combination with solar thermal plant	o Storage room for firewood and suitable chimney are required o Buffer storage recommended o Quality and origin of firewood essential
Wood chips		o Low (no) fuel costs (e.g., using own wood) o High ease of use o CO_2-neutral o Regional added value o Combination with solar thermal plant	o Storage room for wood chips (access for delivery) and suitable chimney are required o Buffer storage recommended o Quality and origin of wood chips essential
Geothermal heat pump		o Recommended for houses with very good thermal insulation o No dirt & low noise emissions during operation o Low space requirement in the building o High ease of use & low operating costs o CO_2-neutral operated with renewable electricity	o Not suitable for buildings with high heating demand → low temperature system (underfloor heating) is necessary o Permission for vertical deep drilling necessary o Appliances with high coefficient of performance (COP>4) are required

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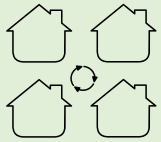
Heating system	Symbol	Advantages	Caution
Air heat pump		o Recommended for houses with very good thermal insulation o No dirt emissions during operation o Low space requirement in the building o High ease of use o CO_2-neutral operated with renewable electricity o Low operating costs	o Not suitable for buildings with high heating demand → low temperature system (underfloor heating) is necessary o Devices with high coefficient of performance (COP>4) are required o Attention to the location of outdoor devices due to possible noise emissions
District heating		o No dirt & noise emissions during operation o Low space requirement o High operating comfort o Low maintenance costs	o Location with district heating grid necessary o Heat supply contract o High investment costs
Gas		o No dirt and low noise emissions during operation o Low space requirement o High ease of use o Low PM-emissions o Use of Biogas is CO_2-neutral	o Use condensing boiler o Increase of efficiency through a combination with solar thermal plant and low temperature systems (underfloor heating) o Possible legal restrictions for installations in new and refurbished buildings o CO_2-emissions

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Heating system	Symbol	Advantages	Caution
Oil		o High ease of use o No dirt and minimal noise emissions during operation	o Use condensing boiler o Increase of efficiency through a combination with solar thermal plant and low temperature systems (underfloor heating) o Oil storage space required o Possible legal restrictions for installations in new and refurbished buildings o CO_2-emissions

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LITERATURE

For more information visit BB-Clean website:

https://www.alpine-space.eu/projects/bb-clean/en/home

1. Energieagentur Steiermark, „Ratgeber H1 - Vergleich Heizsysteme.“ [Online].
http://www.net-eb.at/download/Ratgeber/H1_Heizsysteme.pdf

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