C.H.A.N.G.E.R.S. - 2.0

HOUSE RENOVATIONS

https://changers2.eu/

Co-funded by
the European Union

BSC
Poslovno podporni center Kranj
Regionalna razvojna agencija Gorenjske

Rights of Use

Statement of originality

This output contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

Clarifying important concepts and terms

The list below contains the main concepts to be used in this methodology:

- **Energy** – is an abstract physical quantity that relates to the capacity to produce action and/or movement, which can be expressed in many forms: kinetic, chemical, potential, etc.
- **Energy poverty** – is the inability of households to maintain adequate levels of energy services at an affordable cost.
- **Climate Change** – refers to global climate variation or regional climate changes that occur over decades and affect the balance of ecosystems.
- **Sustainable Development** – ”meeting the needs of the present without compromising the ability of future generations to meet their own needs”. (UN, 1987)
- **Intergenerational Commitment** - is a moral and ethical obligation related to sustainability which includes the defence of a healthy environment as a duty and inalienable right of current and future generations.

Module 3 – House renovations

Connection to WP3

WP3 structure	WP3 unit topics
1. Living sustainably *Aim: To reflect on personal values, identify and explain how values vary among people and over time, while critically evaluating how they align with sustainability values*	1A - Intergenerational Responsibility 1B – Waste 1C - Green Economy
2. Problems of the world today *Aim: To manage transitions and challenges in complex sustainability situations and make decisions related to the future in the face of uncertainty, ambiguity and risk.*	2A - Adaptation to climate change 2B - Mitigation to climate change
3. Energy: Resources, Poverty & Sustainability *Aim: To identify own potential for sustainability and to actively contribute to improving prospects for the community and the planet.*	3A - Energy resources 3B - Energy poverty 3C - Energy sustainability 3D - Sustainable mobility

WP4 TRAINING MODULES
1. Green ABC
2. House performance
3. House renovations
4. Waste
5. Sustainable mobility
6. Sustainable food
7. Biodiversity and zero pollution

Module 3 – House renovations
Lesson Plan 1 – Energy Resources

Aim: To identify own potential for sustainability and to actively contribute to improving prospects for the community and the planet.

Objectives: To know the different energy sources and advantages/ disadvantages of their use.

Proposed Activities from WP3-A1

1. Distinguish renewable energy sources from non-renewable energy sources. Give examples of renewable energy sources and non-renewable energy sources. Let participants research advantages and disadvantages of using renewable and non-renewable energy sources. Help seniors understand the need for efficient and sustainable use of natural resources to ensure their viability on an over time scale adequate for their recovery.

Module 3 – House renovations
Lesson Plan 2 – Energy Sustainability

Aim: To identify own potential for sustainability and to actively contribute to improving prospects for the community and the planet.

Objectives: Recognize the use of renewable energy and the promotion of energy efficiency as two fundamental pillars for energy sustainability. Participate in actions to promote energy efficiency.

Proposed Activities from WP3-A1

1. a) Relate energy efficiency to the use of technologies and processes that reduce as much as possible the waste of energy at all stages. Start a discussion and help participants identify behaviours that promote the "Rational Use of Energy" and consequent reduction of energy waste.
1. b) Let seniors reflect on how the use of renewable energy allied to energy efficiency enables a more sustainable management of energy resources locally and globally.
2. Discuss the possibility of seniors promoting information and awareness campaigns for the efficient use of energy and taking part in initiatives that promote the efficient use of energy.

Understanding Seniors' Needs

1) Seniors prefer practical information over scientific or theoretical knowledge.

2) Information that they can apply in their daily lives.

3) Tailoring content to meet their needs enhances engagement and understanding.

Importance of Energy Efficiency

- One of the simplest and most economical methods to slow climate change.
- In order to achieve net-zero emissions of carbon dioxide through decarbonisation, energy efficiency in buildings is also a crucial factor.
- Energy efficiency is essential for reducing energy consumption and lowering utility bills.

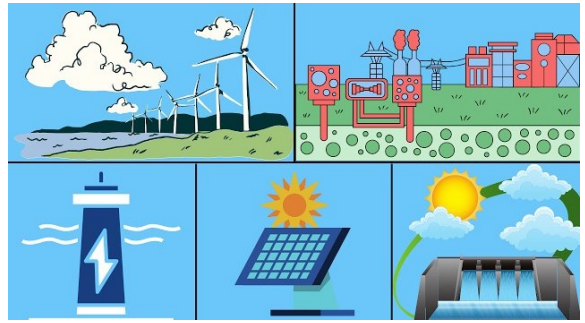
Overview of Energy Sources

1) Different energy sources commonly used in homes, including electricity, natural gas, biomass, and heating oil.

2) Highlight the advantages and disadvantages of each energy source to help seniors make informed decisions.

Advantages and Disadvantages of Different Energy Sources

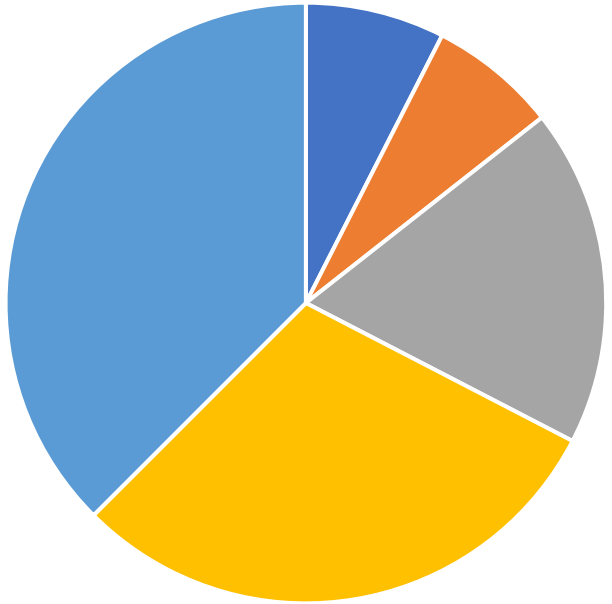
1. **Electricity:** convenient but can be costly; renewable options available.
2. **Natural gas:** efficient for heating but a fossil fuel with environmental concerns.
3. **Biomass:** affordability and independence, they also have environmental and health aspects that need to be carefully considered.
4. **Heating oil:** common for heating but can be expensive and environmentally harmful.



Introduction to Renewable Energy

- Renewable energy sources such as solar, wind, biomass and geothermal offer sustainable alternatives to traditional fossil fuels.

- In 2022, renewable energy sources made **up 41.2%** of gross electricity consumption in the EU.



Sources of renewable energy in gross electricity consumption in the EU, 2022

all other renewables | solid biofuels | solar | hydro | wind

Solar Energy

- Solar panels convert sunlight into electricity, providing clean, one of the most promising renewable energy sources.
- IMPORTANT: installation process, maintenance requirements, savings

Wind Energy

- Wind turbines harness wind power to generate electricity, particularly suitable for rural areas with consistent wind patterns.

Benefits and challenges:

\+ clean and renewable

\+ cost-effective; low operating cost

\+ creates new jobs

– noise concerns

– visual impact

Biomass

- Biomass energy comes from organic materials such as wood and agricultural waste.
- It can be converted into heat, electricity, or biofuels.

Benefits and challenges:

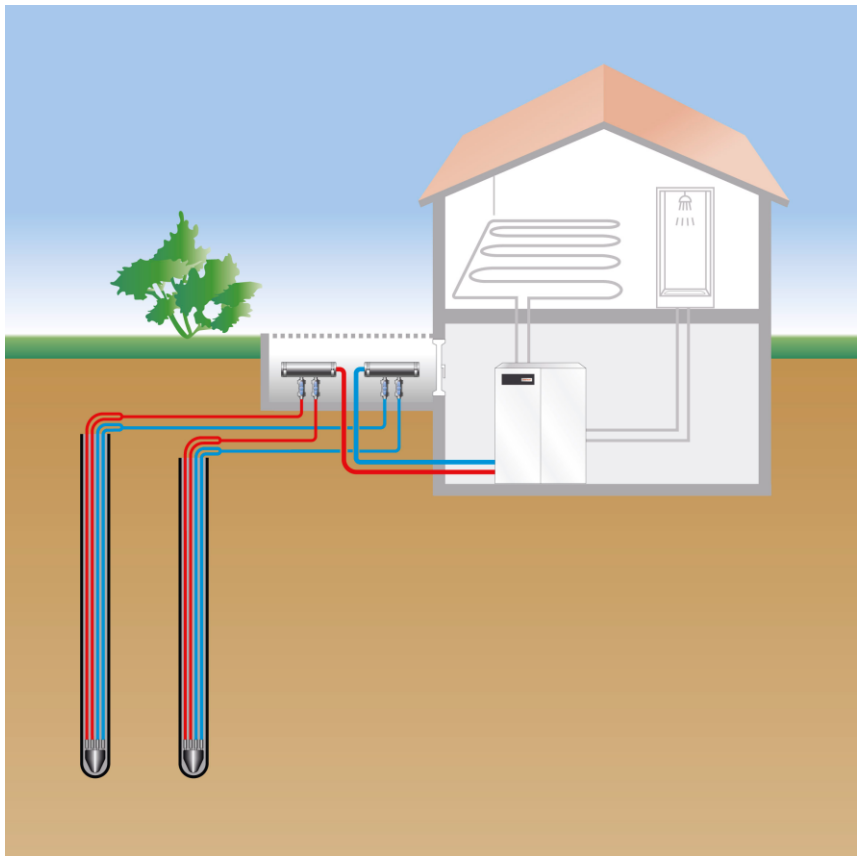
+ renewable and sustainable
+ widespread availability
+ waste reduction and recycling
+ supports rural development
– greenhouse gas emissions (releases many other greenhouse gases, most notably nitrogen oxides, carbon monoxide, and methane)
– land use; competition with food production

Geothermal Energy

- Geothermal heat pumps use the earth's natural heat to provide heating, cooling, and hot water.

Advantages of geothermal energy:

+ high efficiency
+ low operating costs
+ reliable and emits low levels of greenhouse gases



C.H.A.N.G.E.R.S.

Promoting Energy Efficiency and Renewable Energy

Promoting Energy Efficiency and Renewable Energy

1. Highlighting the importance of integrating energy-efficient practices and renewable energy technologies into home renovations is crucial for seniors to enhance the sustainability and affordability of their homes.

2. By adopting these practices, seniors can not only reduce their environmental footprint but also enjoy long-term cost savings on energy bills.

Tips how to save on energy bills

- Do an energy audit.
- Give your thermostat a nudge.
- Adjust your fridge and freezer temperature.
- Keep up with routine maintenance.
- Take shorter showers.
- Wash clothes in warm or cold water.

- Adjust the temperature on your water heater.
- Buy/change energy-efficient devices.
- Ask about discounted rates.
- Switch to LED lighting.
- Install dimmer switches.
- Use smart power strips.

Advantages/Disadvantages of Renewable Energy Sources

+ Environmental Benefits
+ Long-term availability
+ Energy Security
+ Cost Savings and Stability
+ Job Creation and Economic Development

– Intermittency and Variability
– Resource Limitations
– Land and Habitat Impact
– High Initial Costs

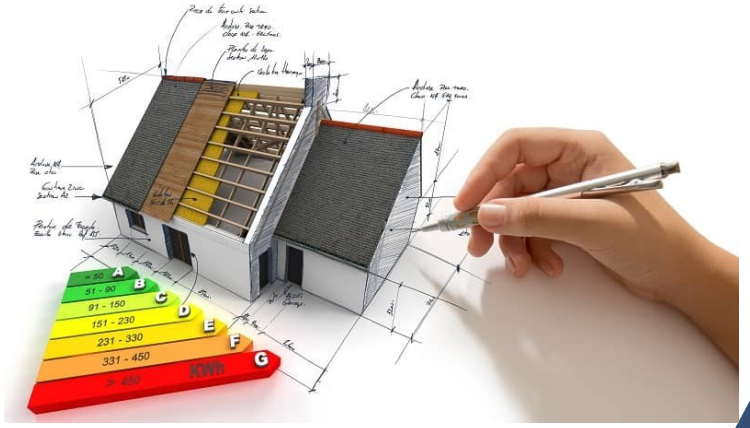
C.H.A.N.G.E.R.S.

Practical Tips for Energy-Efficient House Renovation

Practical Tips for Energy-Efficient House Renovation

When planning home renovations with a focus on energy efficiency, seniors can implement various practical strategies to maximise the effectiveness of their efforts, resulting in enhanced comfort, reduced energy costs, and a more sustainable living environment.

Here are some key tips.....



Practical Tips for Energy-Efficient House Renovation

1. Upgrading Insulation:

- Adequate insulation is essential for maintaining comfortable indoor temperatures and reducing heating and cooling costs.

2. Sealing Air Leaks:

- Air leaks around windows, doors, and pipelines can significantly impact energy efficiency by allowing conditioned air to escape.

3. Installing Energy-Efficient Devices:

- Devices represent a significant share of household energy consumption.

4. Implementing Simple DIY Projects

- Installing programmable thermostats, LED light bulbs, and low-flow faucets improves the energy efficiency of homes.

Energy Efficiency Label

This certification is mandatory in Europe for the following types of household appliances:

- Refrigerators and freezers
- Washing machines, dryers, and dishwashers
- Electric ovens and microwaves
- Television sets and monitors
- Domestic light sources

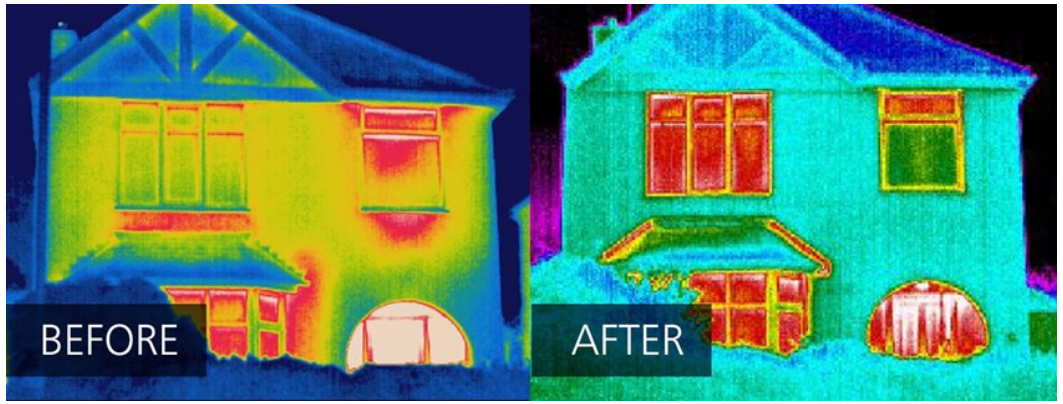
Energy efficiency is measured using the following scale:

- The most efficient: A, B, C
- Moderate consumption: D, E
- High consumption: F, G

Class Exercise

Successful Energy-Efficient Renovations

Showcase examples of energy-efficient home renovations, including before-and-after photos and testimonials from homeowners.



Discuss:

1. Comfort improvement
2. Cost savings
3. Environmental benefits
4. Government incentives

Savings…..

- **Insulation:** from 10% to 50% on your heating/cooling bills, depending on the current level of insulation and the climate where you live.
- **Energy-Efficient Windows and Doors:** up to 15%
- **High-Efficiency HVAC Systems:** Upgrading to a high-efficiency heating, ventilation, and air conditioning (HVAC) system can save homeowners up to 20% to 30%
- **Energy-Efficient Appliances:** Switching to energy-efficient appliances, such as refrigerators, dishwashers, and washing machines, cooking appliances…around 20%
- **LED Lighting:** Replacing traditional incandescent or CFL light bulbs with energy-efficient LED bulbs can save homeowners up to 75% on lighting costs.

References

- European Commission: Electricity from renewable sources up to 41% in 2022
- Green match: Are the Advantages and Disadvantages of Renewable Energy?
- TEPN Gorenjske 2019: https://www.gov.si/assets/ministrstva/MKRR/DRR/RRP-2021_2027/RRP-Gorenjske-razvojne-regije.pdf
- EnergySAGE: The advantages and disadvantages of renewable energy
- European Commission: Understanding the Energy Label

Images

- Image by Freepik

C.H.A.N.G.E.R.S. - 2.0

Visit our website for more training materials and tools:

https://changers2.eu/

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.
"Change Household Attitudes for a Non-wasteful, Green environment and Energy-consciousness addressing Rural Seniors" project number: 2022-1-HU01-KA220-ADU-000089052