outPHit

Deep retrofits made faster, cheaper and more reliable

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 957175. The presented contents are the author's sole responsibility and do not necessarily reflect the views of the European Union. Neither the CINEA nor the European Commission are responsible for any use that may be made of the information contained therein.

outPHit wants to…

*…lower the barriers to the uptake of high quality deep retrofits by pairing **prefabrication** and **streamlined processes** with the rigour of the **EnerPHit Standard** for renovations according to Passive House principles.*

The challenge

Our buildings are inefficient

They contribute up to 40% of total emissions, amplifying climate change and energy poverty

Deep retrofits are needed

Their accessibility and delivery at the speed, cost and quality necessary are a challenge

© Bouwbedrijf Joziasse Goese Polder

The case for energy savings

Our international goal of zero emissions by 2050 is full of contingencies

→ To get to zero emissions, we have to go **100% renewable**

→ To be able to go 100% renewable, we need to ensure we have **enough supply to meet our need**

→ This means increasing supply **and** reducing need

→ Reducing need REQUIRES a focus on **energy efficiency first**!

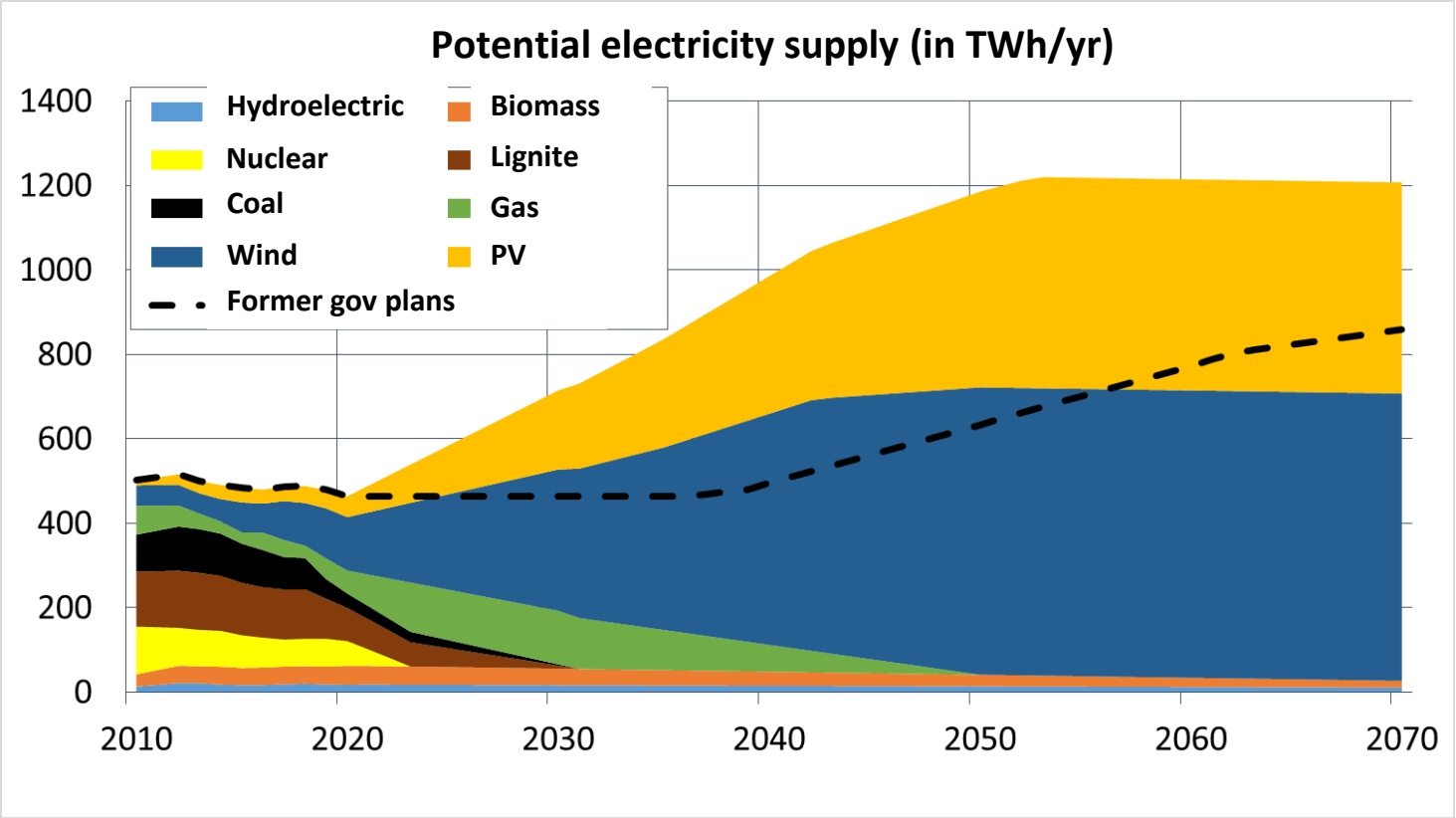
An example from Germany

With the current government's ambitious plans, Germany's total potential for renewables in 2070 will be ca. 1200 TWh annually

Of this, only ca. 400 TWh will be available for our buildings

Results of a 2021 Passive House Institute study by Jürgen Schnieders

An example from Germany



Results of a 2021 Passive House Institute study by Jürgen Schnieders

An example from Germany

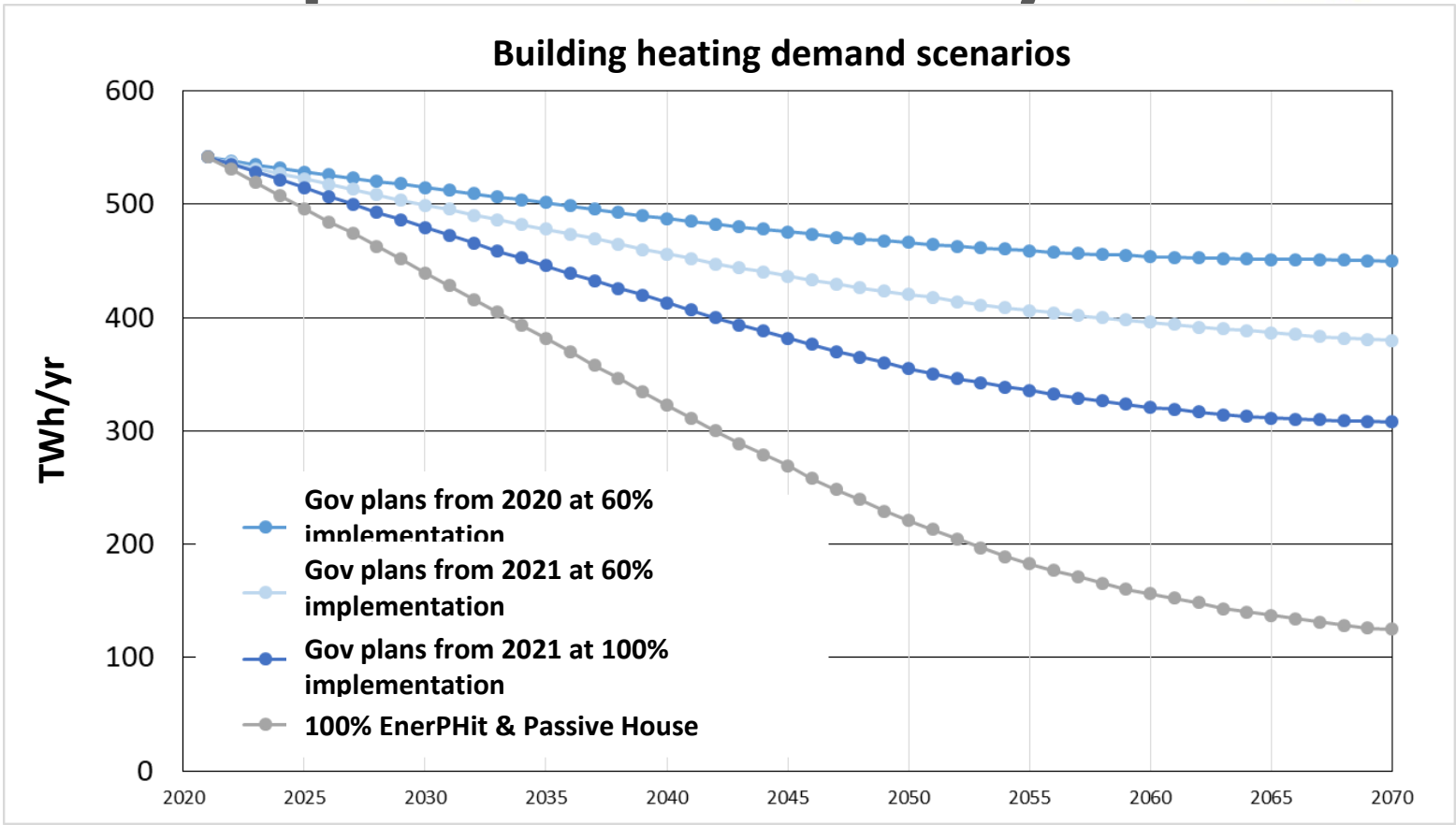
Business as usual building and renovation to 2020 German standards would amount to an energy demand of ca. 780 TWh/yr by 2070

This is almost twice the amount available for our buildings!

Building and renovating 100% to Passive House principles can get us down to less than 150 TWh/yr by 2070

Results of a 2021 Passive House Institute study by Jürgen Schnieders

An example from Germany



Results of a 2021 Passive House Institute study by Jürgen Schnieders

The case for energy savings

A RECAP: To get to zero, we need to go 100% renewable – but doing so REQUIRES a focus on energy efficiency!

- → In 2070, Germany's potential for renewables will be ca. 1200 TWh/yr – of this, **only ca. 400 TWh** will be available for buildings
- → But **business as usual** building and renovation would amount to an energy demand of **ca. 780 TWh annually**!
- → Building and renovating 100% to **Passive Houe principles** can get us down **to less than 150 TWh – a number compatible with our goals!**

A focus on quality, comfort and high performance is KEY!

Results of a 2021 Passive House Institute study by Jürgen Schnieders

The outPHit answer

How do we bring our buildings in line with international climate goals? How do we make them fit for the future?

#1 Make retrofits **simpler, faster and cheaper**

Streamlined approaches and prefabrication

#2 Lock in **high energy performance and quality**

The EnerPHit Standard for retrofits in line with Passive House principles

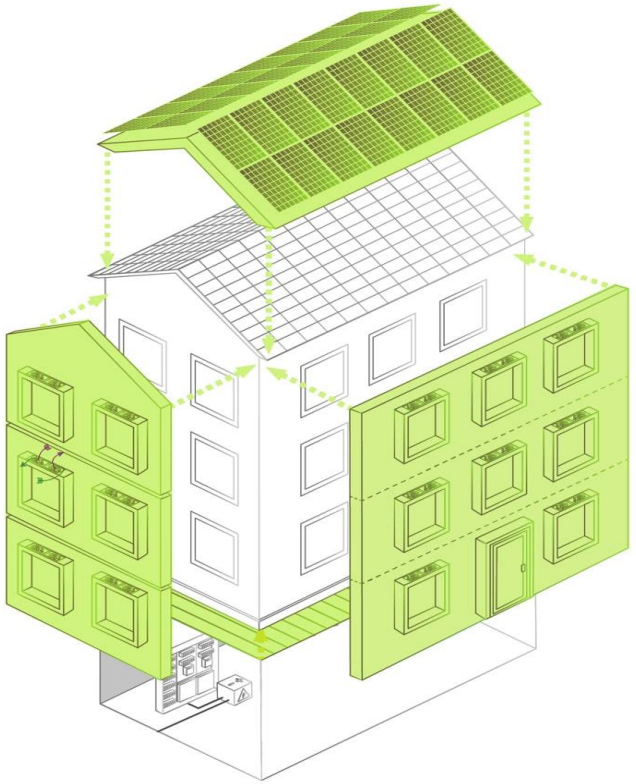
The outPHit answer – Part 1

Streamlining

- Optimal organisation of actors in the process via superior coordination
- Timely information for informed decision making

Prefabrication

- Brings actors, components and steps together for most decisions off-site and in advance
- Reduction of retrofit times and costs

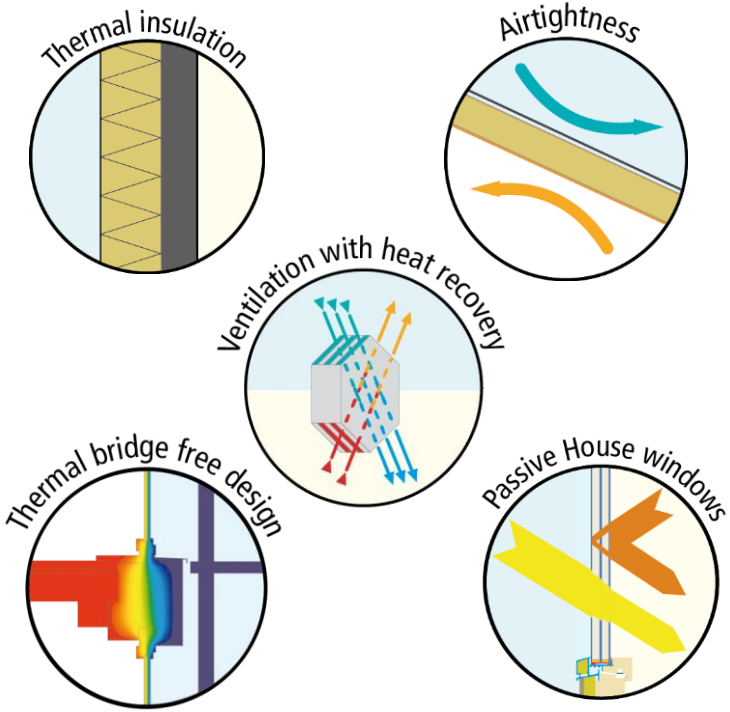


Serial renovation | © ecoworks

The outPHit answer – Part 2

The EnerPHit Standard

- A sound basis in Passive House principles
- A focus on quality, comfort and outstanding performance



Passive House principles | © Passive House Institute

EnerPHit Certified Retrofit Passive House Institute

EnerPHit requirements
Passive House components and very low annual space heating demands*

*climate dependent; in Europe from 15 to 30 kWh/m²a

Our Work

outPHit is addressing barriers to high quality deep retrofits such as cost, complexity and time

real life
case studies
across Europe

high performance renovation systems and concepts

tools for decision making

quality assurance safeguards

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 957175. The presented contents are the author's sole responsibility and do not necessarily reflect the views of the European Union. Neither the CINEA nor the European Commission are responsible for any use that may be made of the information contained therein.

Our Work

- **INTEGRATING** streamlined and pre-fab processes with EnerPHit performance
- **SUPPORTING** component suppliers to improve products
- **CRAFTING** a certification scheme for whole house renovation systems as well as tools and guides to support decision making

© ecoworks

Our Work

- **DRAFTING** simplified monitoring and approval concepts for the renovation design stage
- **ENCOURAGING** a one-stop-shop business model for deep renovation
- **BOOSTING** demand for streamlined, high performance approaches by involving stakeholders in the promotion of findings

What to expect

outPHit

Renovation systems

Tender documents

Performance **certification scheme**

Financial and technical **monitoring**

Technical **equipment packages**

Deep **renovation guidelines**

Contracting concepts

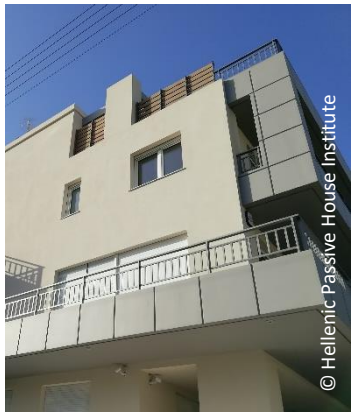
Renovation **system certification**

Manufacturer **support**

A municipal **practitioner network**

Design-stage approval **concepts**

Case Studies



17 case studies comprising

- **27 566 m² of floor area**
- **201 residential units and 3 non-residential buildings**
- **Across 5 European countries**

The case studies represent

- **a ca. € 30 million budget to for retrofits**
- **many project typologies, occupancy types, uses and local construction traditions**

The Facts

- **PROJECT LEAD** Passive House Institute
- **PROJECT PARTNERS** 10 partners from 8 countries (AT, BE, FR, DE, GR, NL, ES, BG)
- **PROJECT DURATION** 36 months, until August 2023
- **OVERALL BUDGET** € 2.5 million
- **FUNDING AUTHORITY** European Union’s Horizon 2020 programme

© VAND Arquitectura

Project team

outPHit

Passive House Institute

International PASSIVE HOUSE Association iPHA

Climate Alliance

universität innsbruck

Passief Bouwen

HELLENIC PASSIVE HOUSE INSTITUTE

EnEffect

ecoworks

NHT

PROPASSIF la transition en action

VAND PASSIVHAUS ARQUITECTURA

Want to learn more?

Get in touch at *insert your mail*

or visit **outphit.eu**