

Endogenous energy efficiency improvement of large-scale retrofit in the Swiss residential building stock

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Economics - **LEURE**



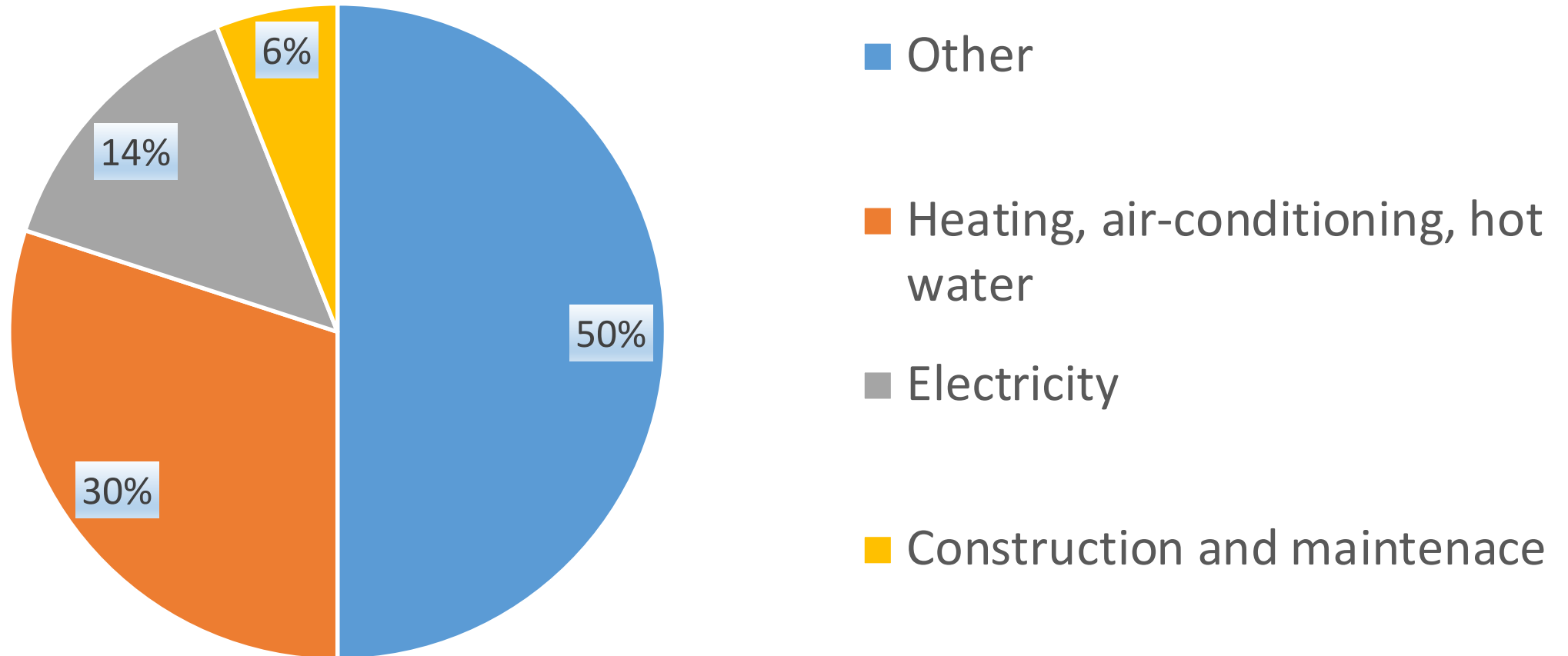
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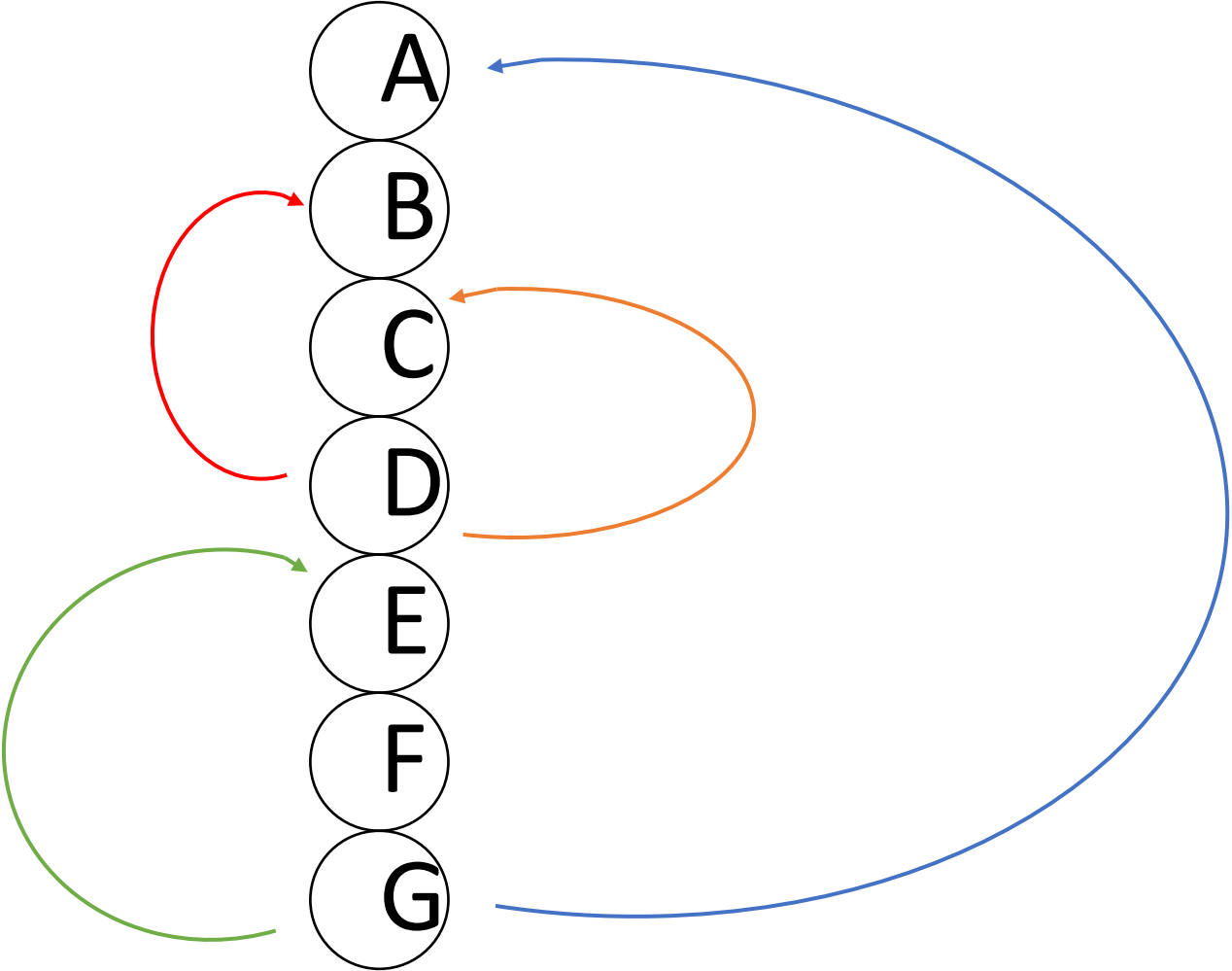


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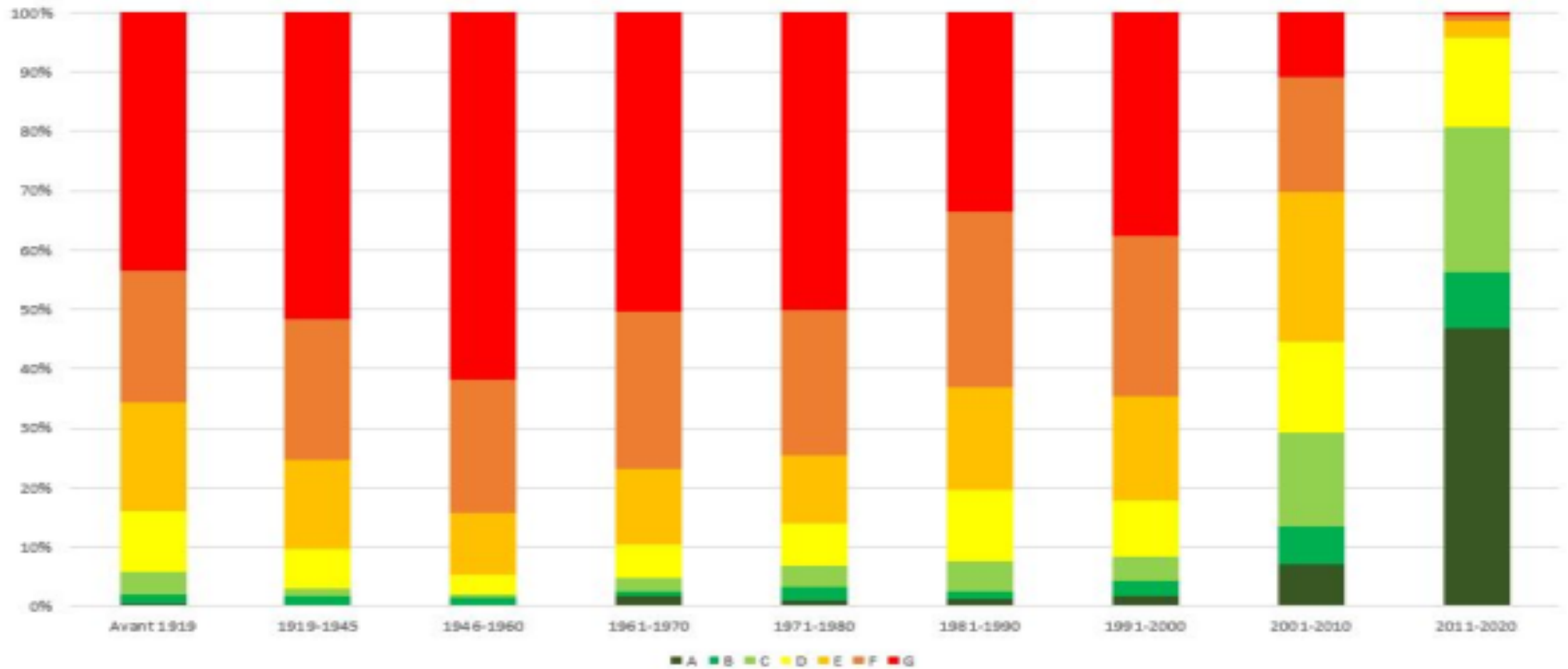
Bundesamt für Energie BFE

According to Swiss Federal Office of Energy: 50 % of energy consumption in Switzerland is attributable to buildings:

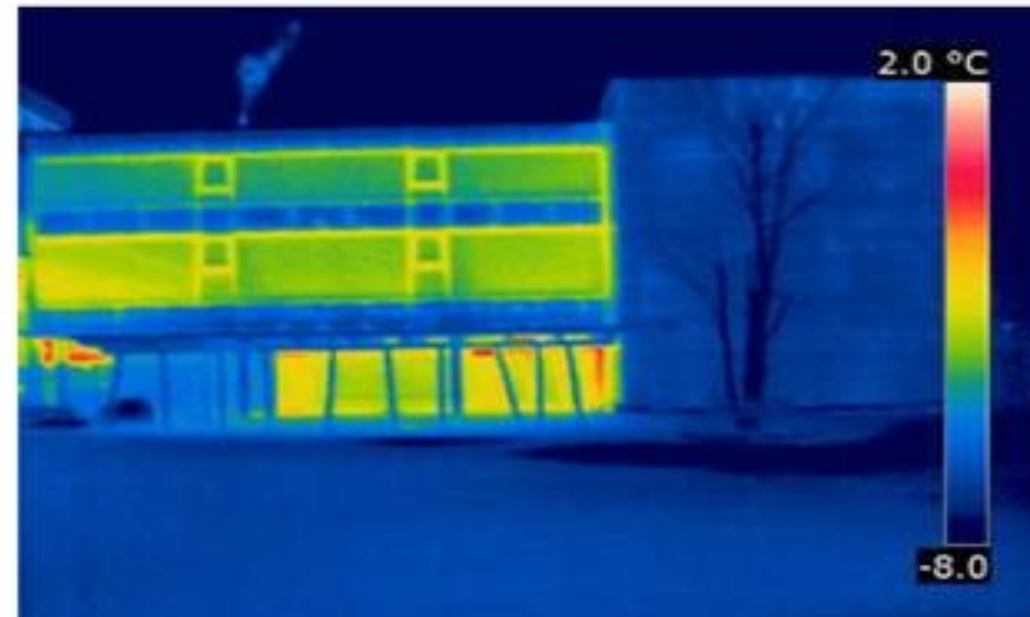
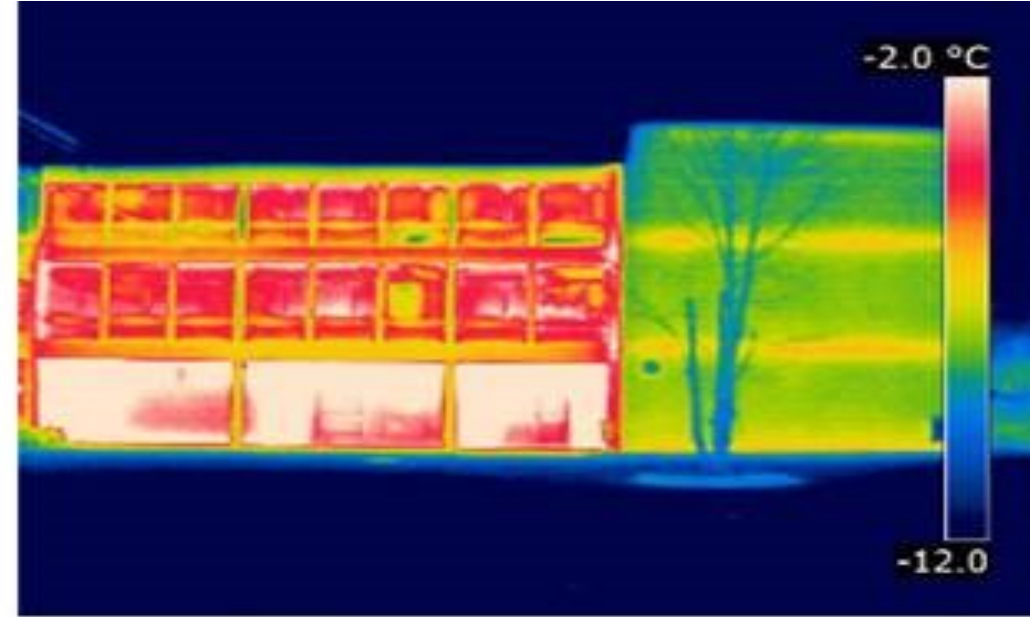


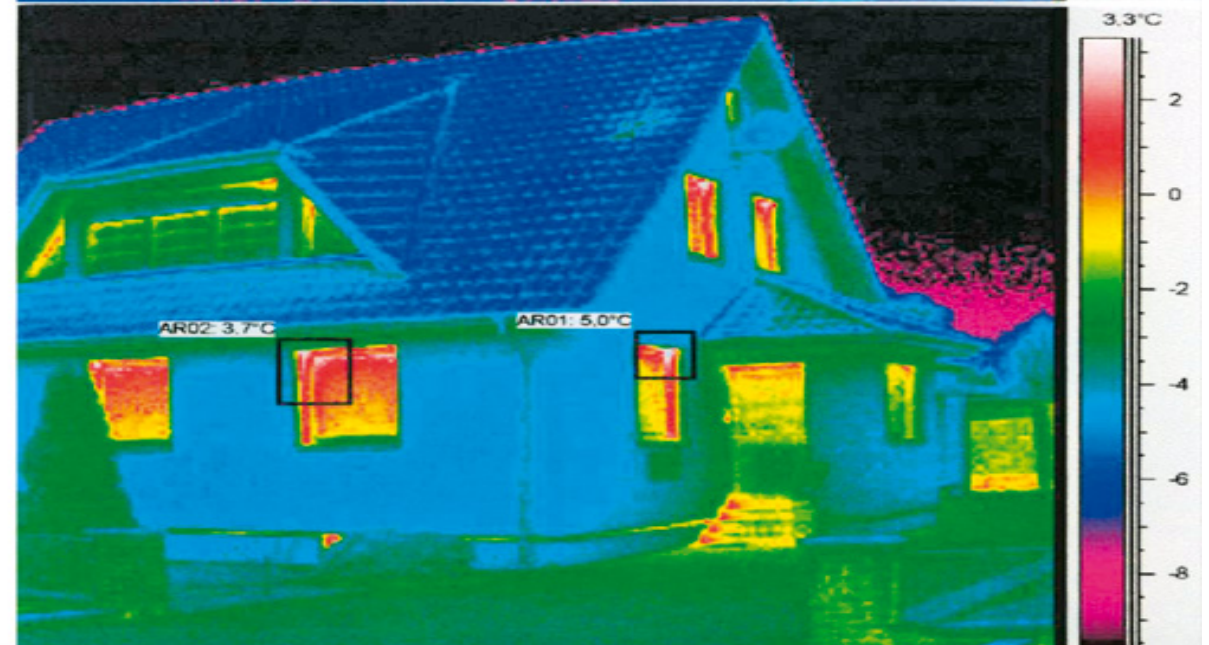
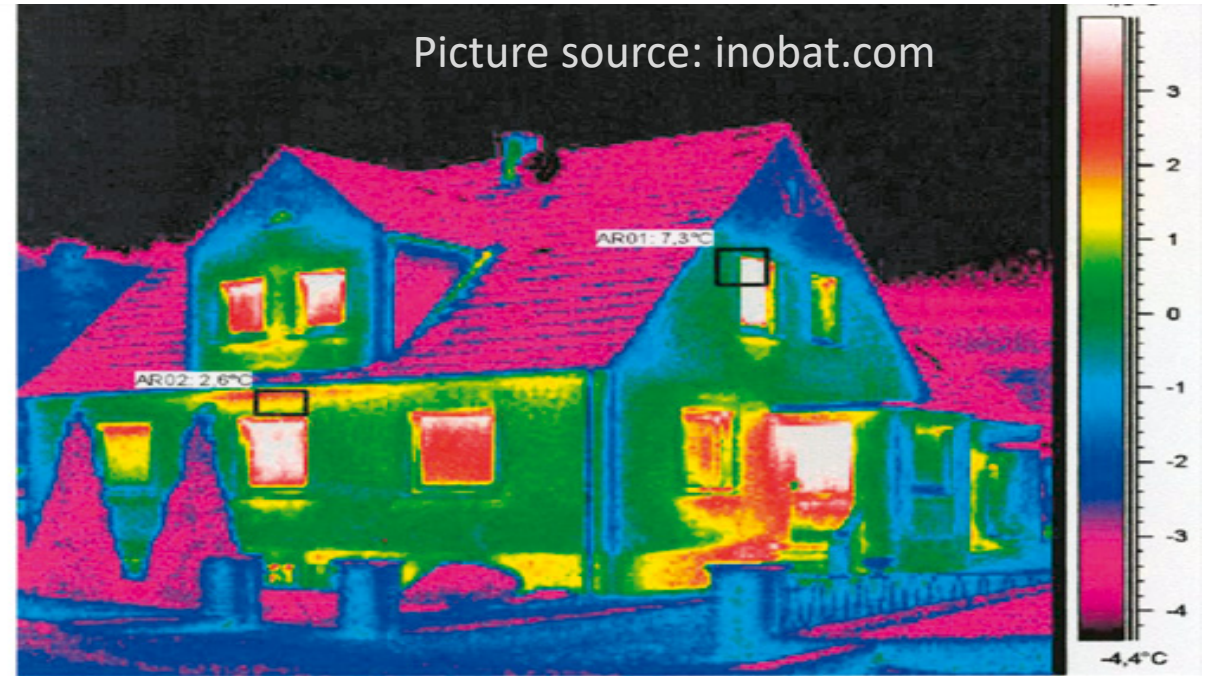


Distribution of the Energy Reference Area



Thermal image of the house. Do you need a Home Energy Audit?





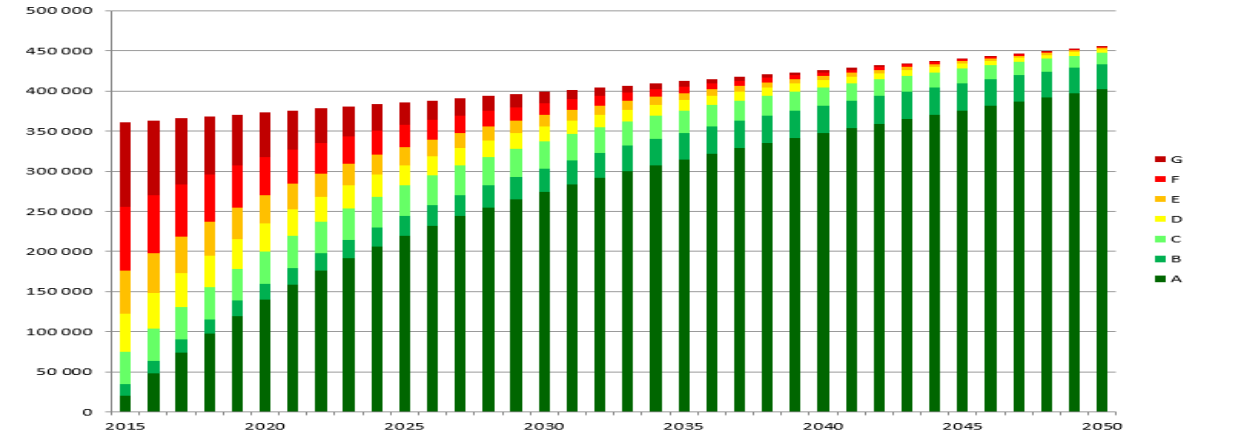
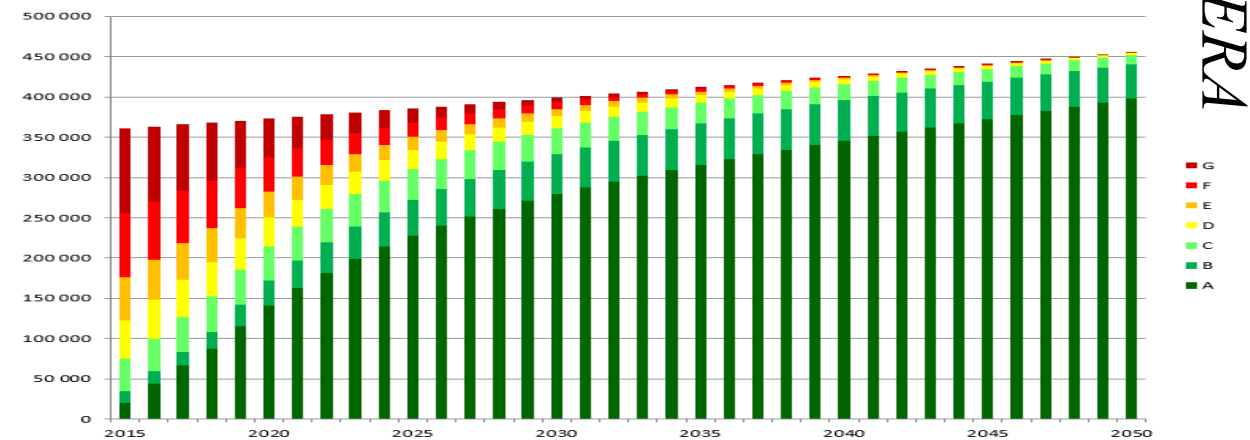
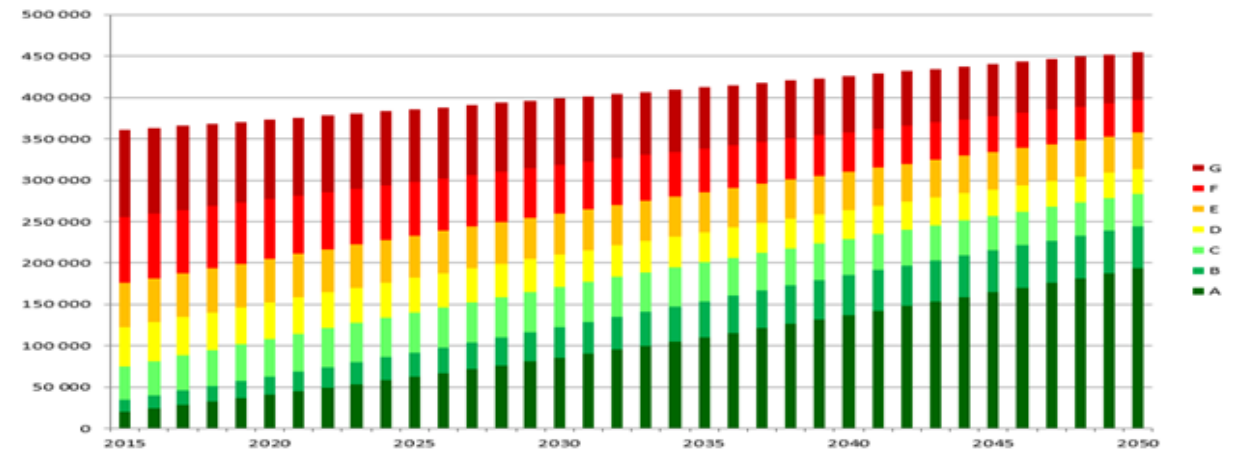
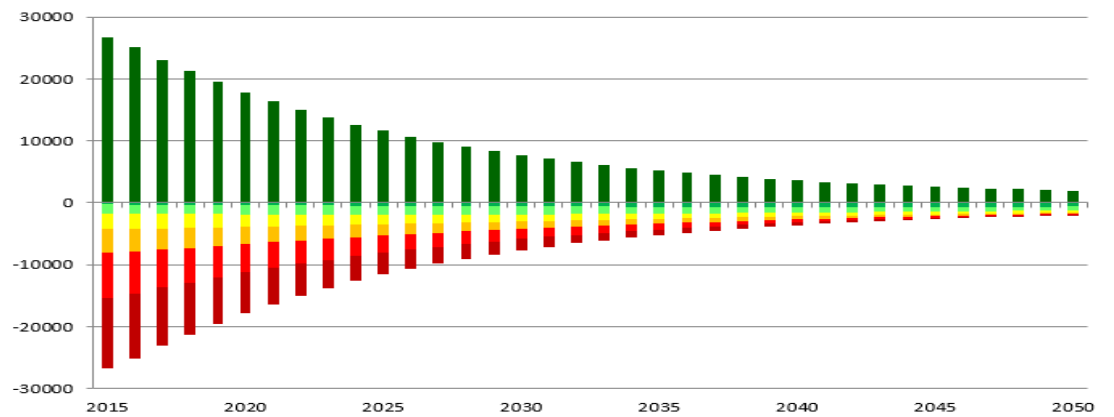
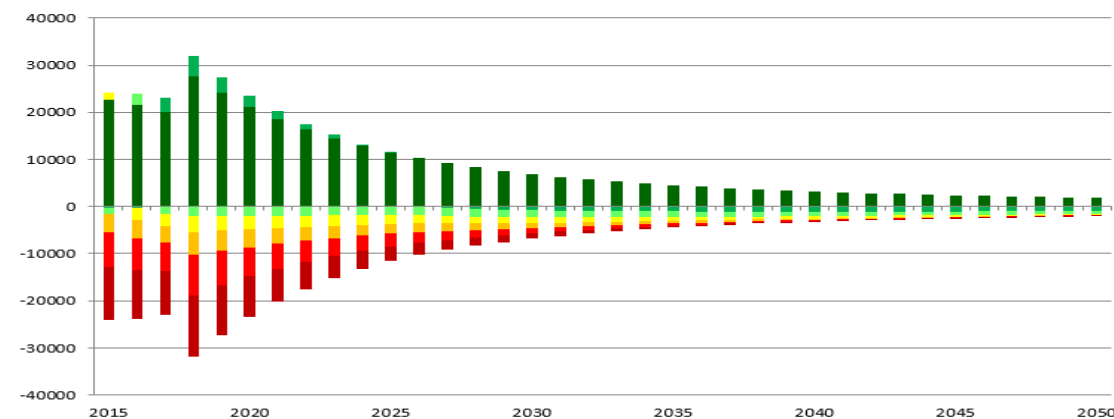
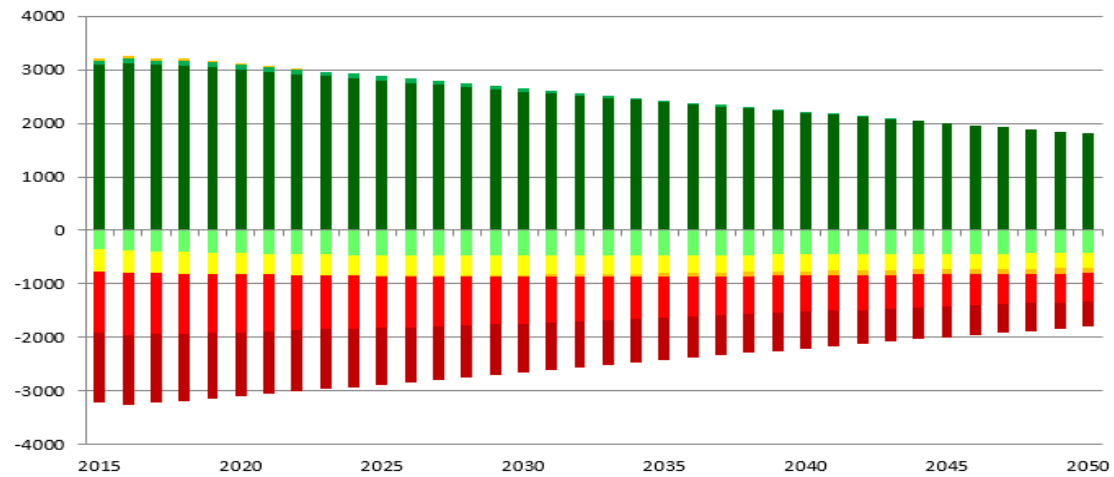


Picture source: Google

5 Scenarios were conducted:

- ☐ Reference scenario
- ☐ Information level scenarios {1,2,3,4}
- ☐ Subsidy on retrofit
- ☐ Tax on fossil energy (CO2 tax)
- ☐ Combining economic instruments

Retrofit



ERA

Take-Home Message

- In 2050 without new **government policies**, CO2 **emissions decrease by 42%** with respect to the current level
- Investment corporations & pension funds and typical household landlords **do not** implement **retrofit** investment due **to lack of economic incentive**, i.e. the **refurbishment cost is too high**
- Increasing **information level does not** significantly **change** the **behavior** of these groups
- If we **combine information level** with a **subsidy or CO2 tax** we can achieve a **deep decarbonization pathway**

