

Example of dilemmas for low consumption house

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Our house



Build 1934-5

Reconstruction 2009-10

3 bedrooms, living room,
kitchen

145 m²

Family of four

Prague's weather

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Average high °C	1.5	3.2	8.2	14.5	19.5	22	24.7	24	18.9	13.2	6.2	2.1	13.2
Average low °C	-3.8	-3.4	0.1	3.1	8.5	11	12.9	12.7	8.8	4.9	0.8	-2.5	4.4
Mean sunshine hours	50	72.4	124.7	167.6	214	218.3	226.2	212.3	161	120.8	53.9	46.7	1,667.90

Our house

Reconstruction

- 14 cm insulation
- Roof and ground floor insulation
- Triple glazing windows
- Solar system

Costs/subsidies

- Insulation/subsidy: EUR 23600/9700
- Solar system/subsidy: EUR 4300/2100
- Total investment: EUR 52800
- Payback period 14,5 years (without subsidy) 25 years

Heating

- **wood**

hot air distribution

3 m³ hard wood – approx. 3500kWh

- **gas** (supplementary)

water radiators + floor heating

also used for cooking and hot water

Approx. 1500kWh (total consumption is 3000kWh)

**Low consumption house 41,3
kWh/m²/year**

Based on real consumption



Hot water

Solar system:

4,4 m², boiler 300l

No additional heating: April 15-October 15 (6 months)

Gas boiler supplementary
(also used for heating)



Get away from gas options

- Pellets & hot water to electricity
 - Easy to connect to existing system
 - New chimney, limited storage space, not completely automatic
- Recuperation & hot water to electricity
 - Major reconstruction needed for air distribution, lot of space is required
- Electric heating (using hot water)
 - Cheapest option, easy to connect to current systems
 - Lowest efficiency
- Heat pump 60°
 - Easy to connect to existing system
 - Some construction work needed (connecting to outside ventilator), moderate efficiency, expensive
- Heat pump 35° & hot water to electricity
 - Most efficient system
 - Major reconstruction needed (installing floor heating in two floors)

Get away from gas options

	Costs (EUR)	
Pellets & hot water to electricity	3 400	Cost depends on storage option
Recuperation & hot water to electricity	12-18 000	Construction costs are difficult to estimate
Electric heating (using hot water)	400	
Heat pump 60°	7 100	
Heat pump 35° & hot water to electricity	9 900	Floor heating on two floors

Thanks for your attention!

For more information

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