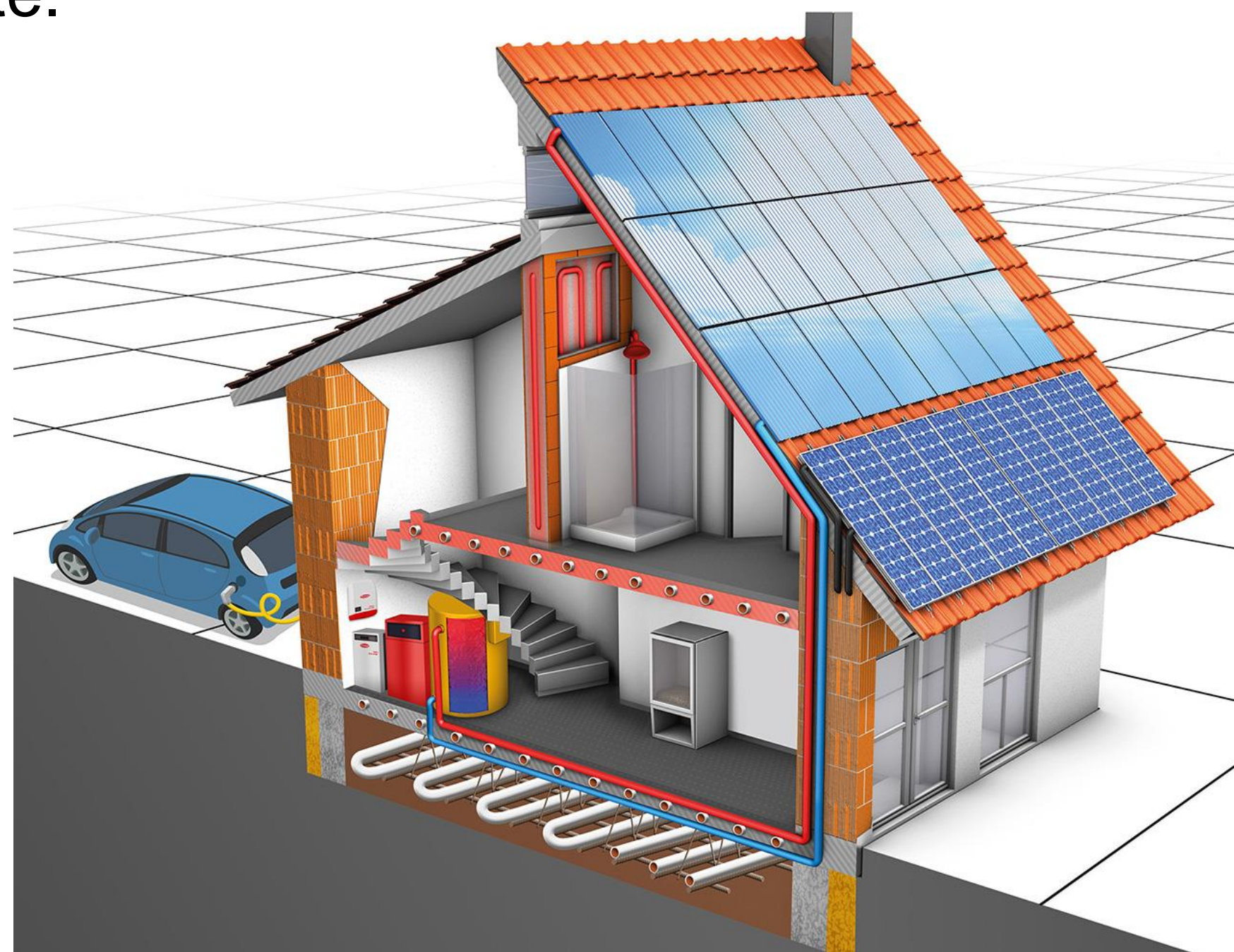


SONNENHAUS 4.0: SOLAR SELF- SUFFICIENT BUILDINGS IN CITIES

SONNENHAUS 4.0 – The Nearly Zero Energy Building of the Future

According to OECD, nearly 70 percent of world population will live in urban areas at midcentury. Thus the Energy Performance of Buildings Directive was launched by the EU Commission in 2016 to help promote the use of smart technology in buildings. Under the Directive all new buildings must be nearly zero energy buildings by 31. December 2020 (public buildings by 31. December 2018).

In Austria the directive can be accomplished not only by efficiency measures like additional thermal building insulation and airtightness, but also by using local renewable energy sources like solar energy. So the Austrian regulation favors a dual approach in order to help the concept of SONNENHAUS to disseminate.



The SONNENHAUS concept covers thermal energy demand of buildings by using the sun over the whole year. The innovative concept combines low energy buildings with different storage options as water tank and building components. Several built SONNENHAUS already prove the concept as a cost efficient way to fulfil the Energy Performance of Buildings Directive which will be in force after 2020. In future also photovoltaic and e-mobility is an integrated part of the energy concept, as recent buildings show.

Example Buildings

Example 1: Single-Family “E4 ZIEGELHAUS 2020“, located in the city Zwettl (AT)



Single family “e4 Ziegelhaus 2020” with 60 % solar supply annually, using 34 kW (48 m²) solar thermal, 9,6 m³ water tank and partially brick wall components as heat storage (Source: Wienerberger AG)

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Example 2: Event Location and Living House „VITAL SONNENHAUS PRO“, located in the city Schwertberg (AT)



Event Location and living house with 70 % solar supply annually, using 56 kW (80 m²) solar thermal, 4.5 m³ water tank and building components as heat storage. Additional 9,5 kWp (71m²) PV and 9,6 kWh electricity storage for electricity supply. (Source: Bauhütte Leitl-Werke GmbH)

Example 3: Multi- Family SONNENHAUS located in the city Chemnitz (DE)



Multi-family SONNENHAUS with 50 % solar supply annually, using 222 kW (317 m²) solar thermal and a 200 m³ long term storage tank (Source: FASA AG)

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<https://www.klimafonds.gv.at/ausschreibungen>



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