

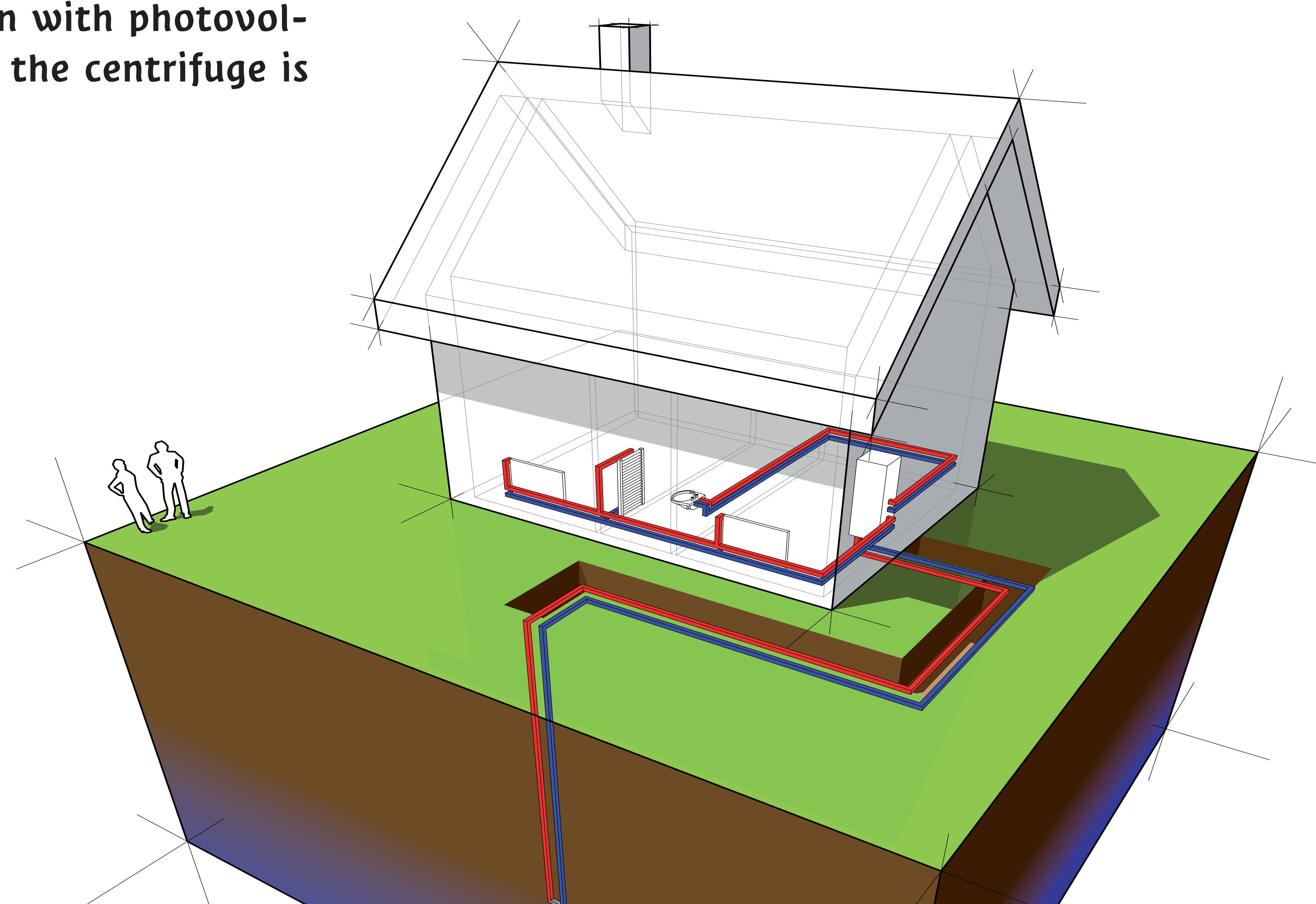


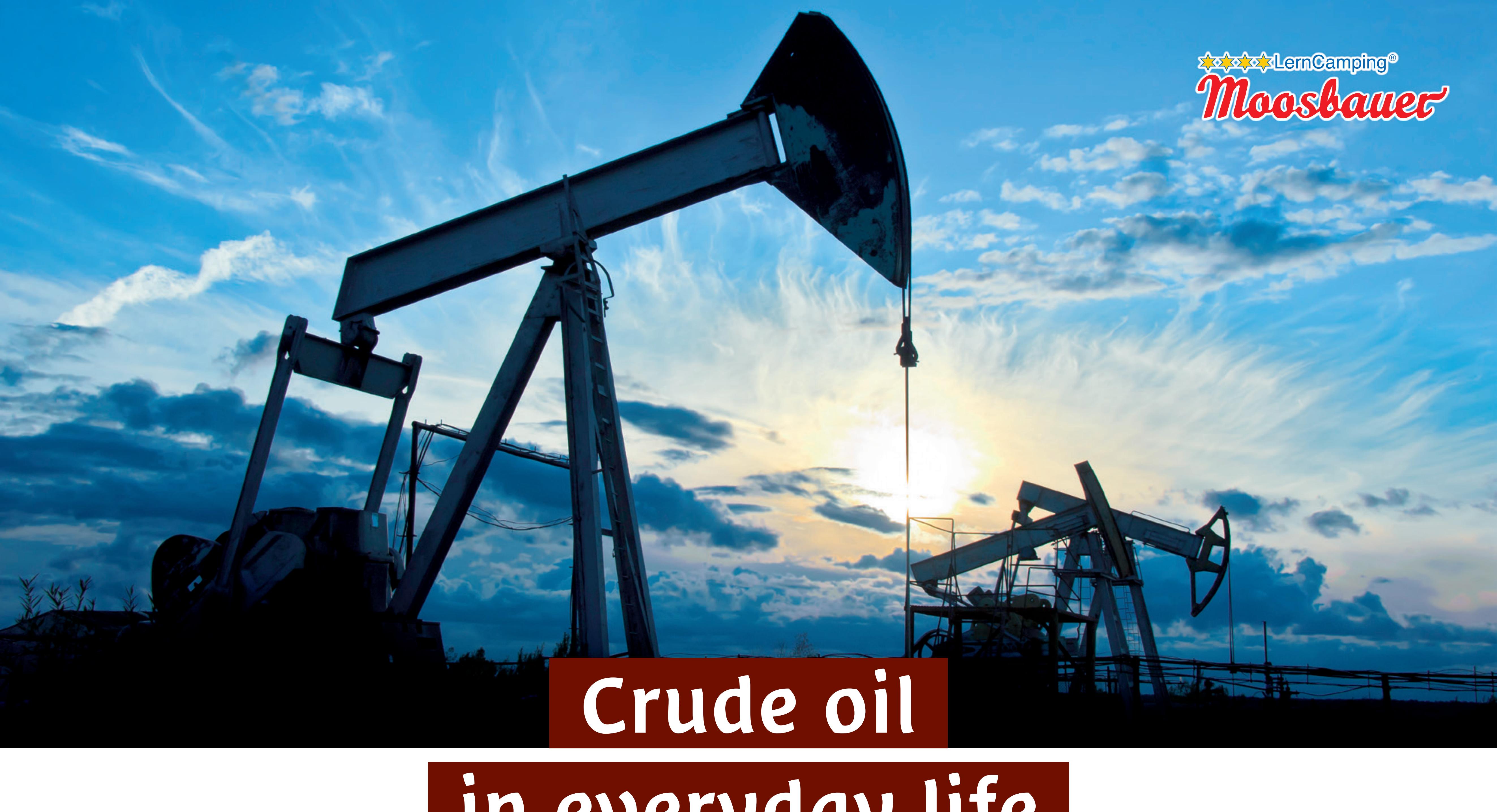
Energy at our feet – Geothermal energy

Geothermal energy is the term for using the heat generating from the earth. Basically, one differentiates between near surface geothermal energy, where heat is extracted using a centrifuge and deep geothermal energy, where hot water or steam is used for direct production of electricity.

In the discussion around renewable energy, geothermal energy is relatively unknown, even though geothermal energy is being used successfully since 1913 and could come to play a main role in the power supply on earth in the future to come. Geothermal energy is special in that it, just like ocean energy, has an ever-ready source of energy, as opposed to wind and sunshine.

On the energy market in South Tyrol geothermal energy has acquired a humble role in the last couple of years. Solely in the sector of near surface geothermal energy for heating and cooling purposes of private homes and hotels a slight increase could be noted. This technology is especially interesting in combination with photovoltaic units, since the power to operate the centrifuge is produced on site.



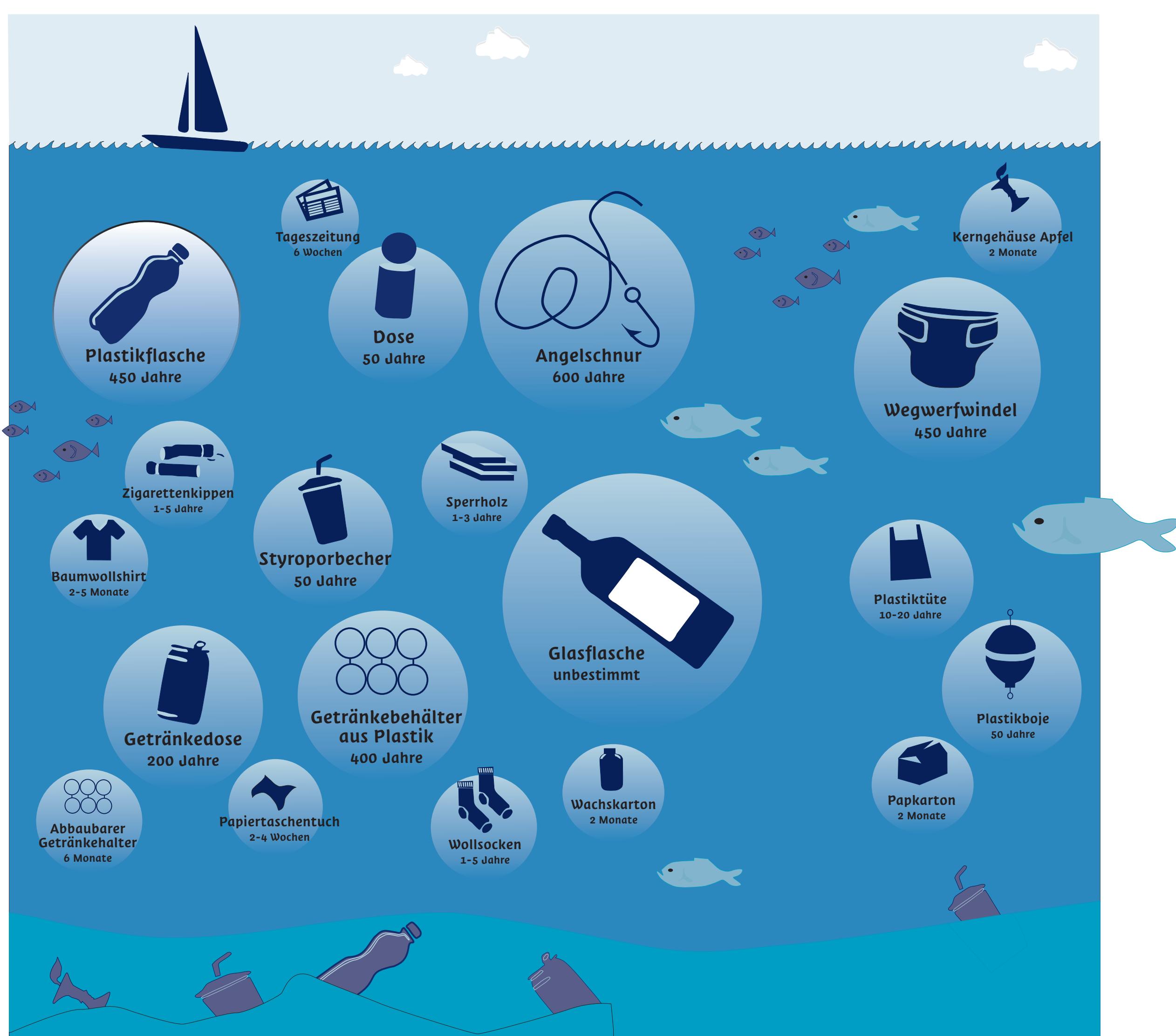


Crude oil in everyday life

Crude oil is found everywhere in daily life and modern industrial society without the resource crude oil is not imaginable. Up until the 1920-ies the main use of crude oil was as an illuminant. Today, more than 2/3 of the complete amount of crude oil is used as a source of energy for heating or in the production of electricity. Refined as petrol, kerosene or diesel, crude oil is used as fuel for automobiles, ships or airline carriers.

Crude oil can be found in some form in nearly all products used in daily life. The well-known polyvinyl chloride, short PVC, is attained from crude oil and can be found in window frames, floorings and medical devices like tubes. Polyurethane, also from crude oil, can be found in foam-filled upholstery and mattresses. On average 60 litres of crude oil is used to make a couch. Also based on crude oil and often found on the care-label: polyamide – the material from which synthetic fibres like nylon are made. Products for washing and cleaning are based on ethylene oxide, which is also produced from crude oil. From containers in the food industry (e.g. water bottles), over CDs and children's building blocks, to pharmaceutical products such as medicaments and cosmetics – so many things would not be possible if it were not for crude oil.

To reduce the huge mountains of rubbish and to preserve the diminishing resources and sources of energy, it is important to re-use or recycle materials or, even better, to completely eliminate the use of synthetic materials since they do not decompose completely, even in a million years.





Biogas

The anaerobic fermentation of animal and vegetable waste as well as organic waste is used for the production of biogas. Anaerobic fermentation means the reduction of biogenic material through microorganisms in the absence of oxygen. The resulting biogas consists of methane gas and can be used to produce electricity and heat in a gas-engine block heat and power plant.

In 2009 South Tyrol had a total of 48 bio gas facilities. In 31 of the facilities mainly waste from cattle breeding (semi-liquid manure and manure), but also waste from the food industry were used. In a further 16 facilities sewage sludge from sewage treatment is used and finally there is a modern biogas facility, where organic domestic waste is used.

The fermentation facilities for semi-liquid manure and manure is especially interesting for rural areas and farms, as the fermentation process produces energy and the residual digestate can be used as fertilizer.

