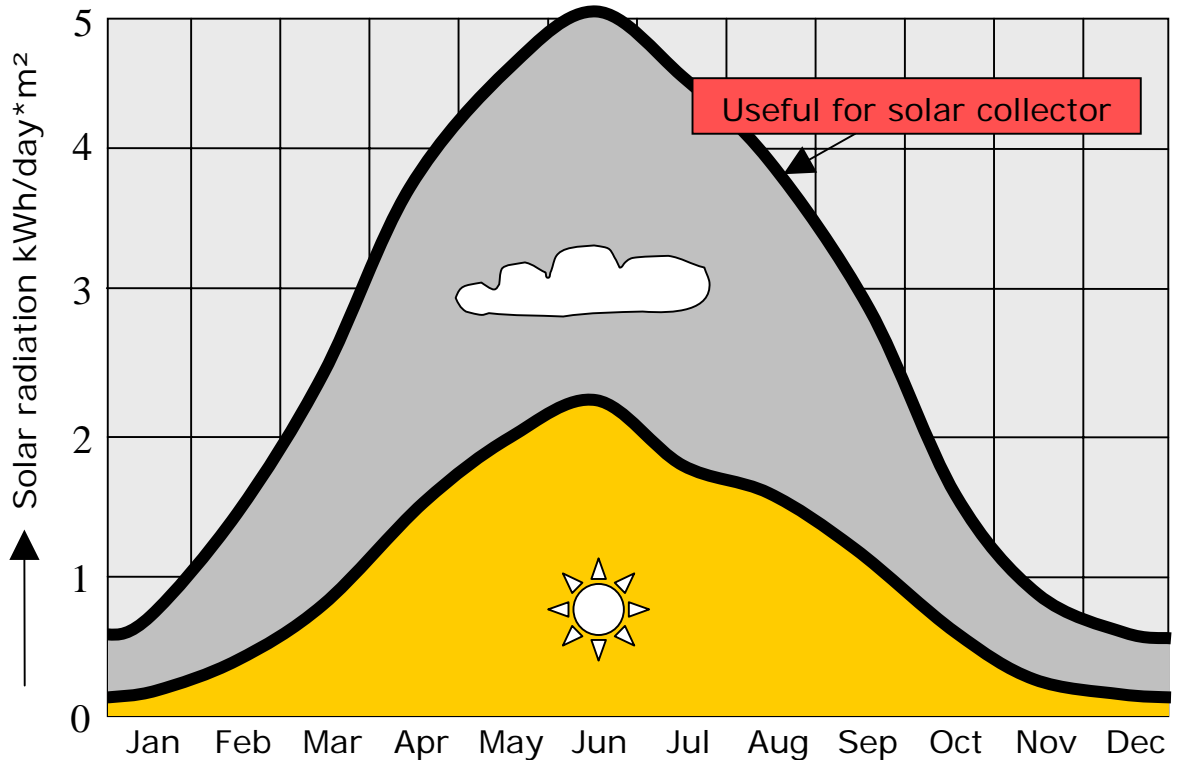


Western European climate conditions



SOLAR RADIATION:

Solar radiation consists of two components, direct sunlight (sunny weather), and diffuse sunlight (cloudy weather). In western Europe the diffuse cloudy component is more important than the direct component as shown in the graph. The two components both contribute to the useful energy for a solar system.

The total useful solar energy in western Europe is therefore still high compared to much sunnier regions. The total yearly useful solar energy in west European countries is still not less than half the amount of solar radiation available in extreme sunny area's (like north Africa).

DRAIN-BACK SYSTEM:

Climate conditions vary a lot in western Europe. Ambient temperatures between -20°C and +35°C and solar radiation levels between 0 W/m² and 1100W/m² are not unusual. The drain-back system is designed for those conditions and simply drains the water down from the collector to the drain-back tank to protect the system from freezing and overheating.

SOLAR FRACTION:

On average a standard solar system will provide a solar fraction of 50%. Which means that 50% of the yearly hot water usage will be heated by solar energy. To ensure a hot shower for the user the rest will be heated by an auxiliary heating source. (boiler, electrical element, etc.) In summer time stretching from April to September the solar fraction will be 90%. During winter time the solar fraction will drop to 25%.

APPLICATIONS:

Small to large domestic hot water systems, industrial process and swimming pool heating.