

## Lesson 8

### CO2 saving

Electricity from solar panels not only saves you a nice amount of money, but solar panels also save quite a lot of CO<sub>2</sub> emissions. Gray electricity that comes from the grid has about 556 grams of CO<sub>2</sub> emissions per kWh. with an average set So 10 solar panels, you save about 1,500 kg of CO<sub>2</sub> per year. That is about 50% what an average car per year emits when it has driven 15,000 km in a year.

You also save a lot of CO<sub>2</sub> by heating your home with a heat pump. By an average home (120m<sup>2</sup>) with natural gas, you emit +- 1,900 kg of CO<sub>2</sub> per year. Heating the exact same home with an average heat pump requires 2,280 kWh of electricity per year.

The amount of CO<sub>2</sub> emitted in making that power depends on its origin, and in the worst case, fossil fuels (gray power) are used for that purpose. But even in that , situation the heat pump can an excellent reduction the in of CO<sub>2</sub>.

- **Assuming use of gray electricity, the emissions are equal to 2,280 kWh x 0.556 kg= 1,268 kg CO<sub>2</sub> per year. This is 637 kg CO<sub>2</sub> less than the central heating boiler, and thus a 33% reduction.**
- **With the assumption of green power, emissions are equal to 2,280 kWh x 0.400 kg= 912 kg CO<sub>2</sub> per year. So the decrease in emissions is about 52%.**

So when you a heat pump and solar panels, your power comes from your own solar panels (provided they generate enough). As a result, therefore you will emit almost no CO<sub>2</sub> heating your home!for