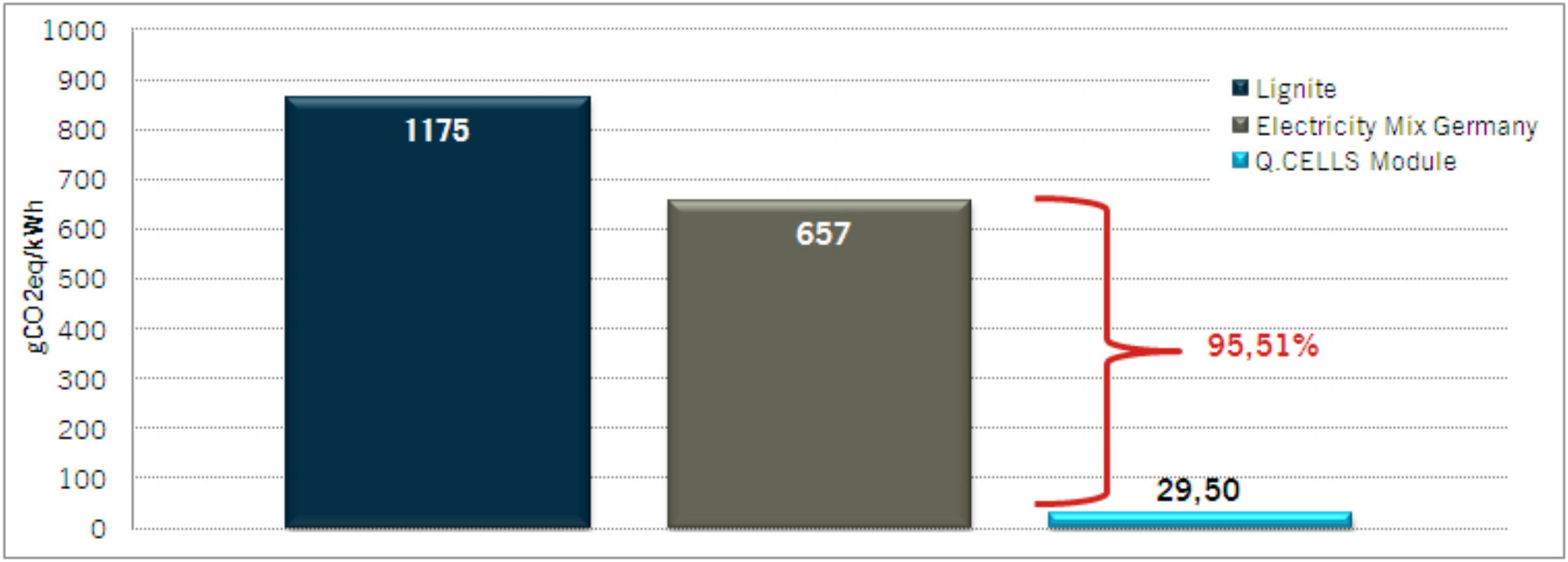

What is the Carbon Footprint?

The carbon footprint comprises the carbon dioxide equivalent emissions of a product througout its complete life cycle and relates it to the electricity produced during the use phase. In case of a PV module CO2 is emitted during production and saved while generating green electricity. With this indicator PV-Systems can be compared to conventional electricity generation methods (e.g. coal combustion).

Which stages in the life cycle are accounted for?

Silicon extraction, ingotting, wafer production, cell processing, module conversion, packaging, transport, installation, use and disposal. Recycling is not included so far because there is currently no reliable and precise data from the recycling industry. With addition of recycling in the model, the environmental performance of the products will increase.

What data is included in these stages?

Energy use, water use, raw materials, waste, waste water, emissions, construction of production halls.

What is the underlying lifetime?

30 years for modules and installations, inverters are accounted for with 15 years.

On which location is the data based?

Depending on the solar irradiance (insolation) the PV modules generate different output. Here the location of electricity production is Toulouse with an irradiance of 1535 kWh/m². The modules tilt is 34° (optimal).

Additional information:

All values relate to a complete 3kWp slanted roof PV system with grid connection.

The production of main components is modelled Q.CELLS specific (e.g. transport routes, countries of material supply, cell and module production).

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