

Electric Vehicle (EV) Charging Module

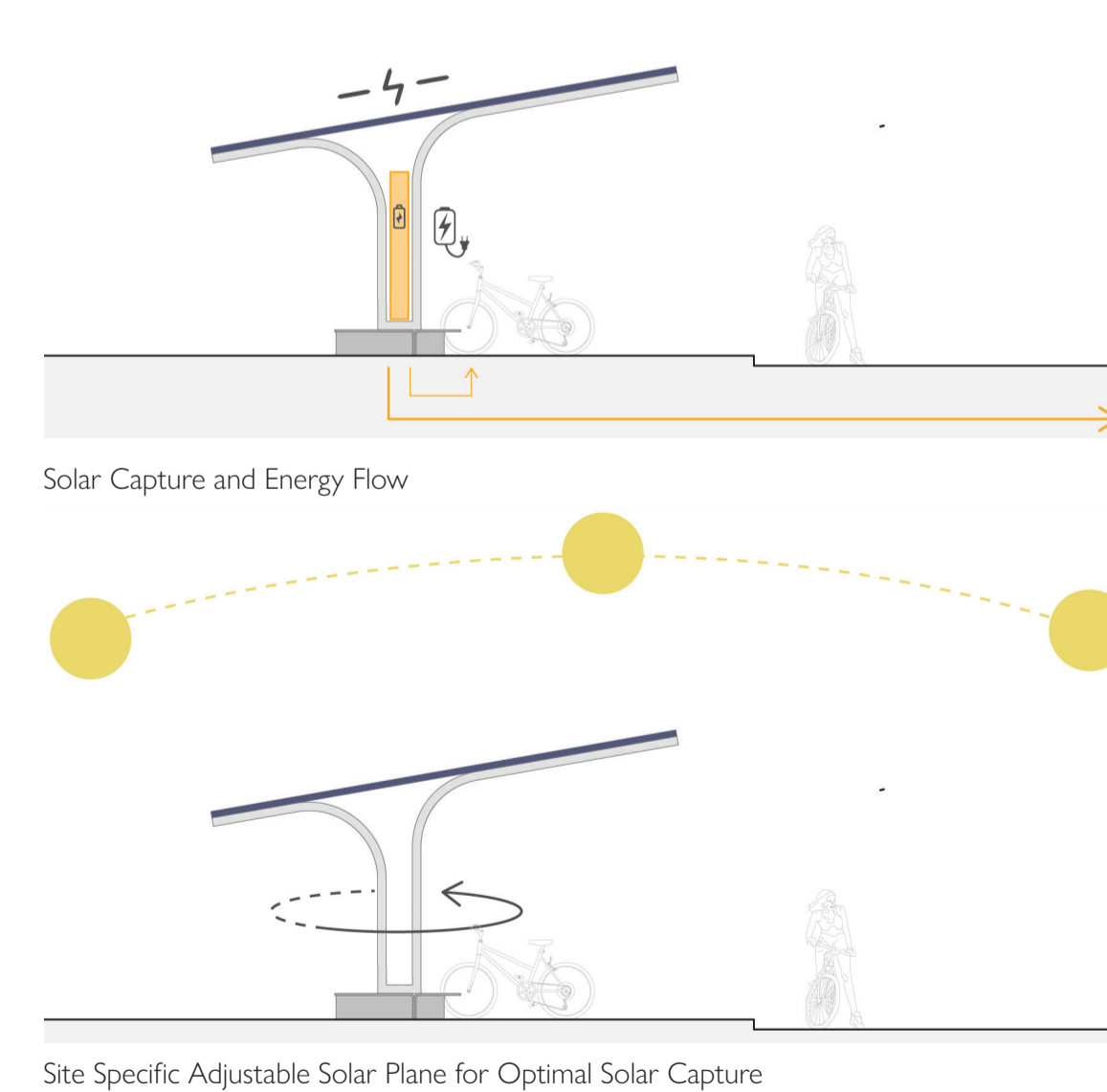
Electric cars are gaining popularity throughout Europe. Mannheim must embrace this shift to create a green city. The ability to charge conveniently within the urban realm is key to increasing their widespread use and marries with the aspiration of a new model of distributed energy resources. The solar powered car charging module incorporates a battery to store power and is connected to the grid to exchange excess produced energy or draw from the grid should the module not produce enough electricity.

Energy Production Calculation (Per Module)

Solar Panel Area = 15.2 m²
 Energy Production Per Hour = 16264.8 kWh
 Energy Production Per Year = 36807 MWh
 Solar Panel Efficiency of 20%

Energy Production Per Annum: 7361.43 MWh

Based on the following site information:
 Sunlight on Site = 1075 kWh/m²
 Daylight Sunlight Hours 2023 = 6.2



Electric Bike Charging Module

Electric Bikes provide an effective means of localised city transportation for all generations and all fitness levels. There are currently very limited or non-existent public charging facilities for electric bikes. We therefore propose a solar powered electric bike charging station which enables bikes to be charged whilst locked up. The module incorporates a battery to store power and is connected to the grid to exchange excess produced energy or draw from the grid if necessary.

Energy Production Calculation (Per Module)

Solar Panel Area = 15.2 m²
 Energy Production Per Hour = 16264.8 kWh
 Energy Production Per Year = 36807 MWh
 Solar Panel Efficiency of 20%

Energy Production Per Annum: 7361.43 MWh

Based on the following site information:
 Sunlight on Site = 1075 kWh/m²
 Daylight Sunlight Hours 2023 = 6.2

