Wood to electricity, and comparison to photovoltaic production

a)
Using a photosynthetic efficiency of 0.6% from a yearly mean irradiation of 140 W/m^2 (Switzerland), how much dry wood (average density 0.56 kg/m^3) is grown every year renewably in all Swiss forest (=11'000 km^2 = 26% of the total country area) ? (use LHV_dry of 17 MJ/kg)

Exploiting this wood via combustion and steam cycles into electricity with a conversion of 20% (10 MWth plants), how much electricity can this generate annually?

140 W/m^2 * 0.6% = 0.84 W/m^2
0.84 W/m^2 * 11 10^9 m^2 = 9.24 GW
9.24 GW * (3600*24*365.25) = 292 PJ
LHV 17 MJ/kg
Hence 292 PJ / 17 MJ/kg → 17 10^9 kg = 33 mio m^3 (with density 0.56 kg/m^3)
292 PJ * 20% electrical efficiency = 58 PJ = 16.2 TWhe
This is 25% of Swiss electrical generation of 65 TWhe.
In reality only around 5 million m^3 of wood is recovered from Swiss woods every year, more for construction than energy purposes, and for very little electricity generation.

b)
Using the solar irradiation in photovoltaic panels (20% efficient) installed on all ~138 km^2 well oriented roof surface (Switzerland), how much solar electricity can this generate ?

140 W/m^2 * 138.10^6 m^2 * 20% efficiency = 3.864 GW
3.864 GW * (24*365.25) = 33.9 TWh
This is over half of Swiss electrical generation (65 TWh).

c)
Compare and comment both options. In Switzerland annual electricity generation is around 65 TWhe.

The forest area (11'000 km^2) is 80 times larger than the available PV panel area (138 km^2) for photonic capture for the whole country. However, capture efficiency of solar irradiation is (20%/0.6%)=33 times more efficient with direct PV than for biomass fuel storage, and biomass fuel to electrical conversion loses another factor of 5 (20%). In the end, PV-electricity production is then (33 x 5 = 167 times efficiency advantage, to 80 area disadvantage) 2 times larger than wood-electricity (33 TWhe vs 16 TWhe). Another conclusion is that 1 m^2 (6 m^2) of PV panel is equal to 167 m^2 (1000 m^2) of forest for the same annual electricity generation, based on the numbers used.