HELLENIC ASSOCIATION OF PHOTOVOLTAIC COMPANIES

3/6/2021

Public Consultation – Cost of New Entry

Regarding the Cost of New Entry, HELAPCO would like to comment on the costs cited for PV and storage.

1. Residential PV

The Cost of New Entry cited (550 k€/MW) is extremely low and is not reflecting market reality. First, we should define what we mean by "residential" as costs vary considerably in this microscale. A 3 kW PV system costs more on a kW-basis than a 10 kW system. The following benchmark costs for 2021 cover the full cost of various residential systems:

3 kW: 1250-1300 k€/MW plus 24% VAT
10 kW: 800-1000 k€/MW plus 24% VAT

The economic lifetime of such systems is at least 25 years.

2. Commercial PV

Again, we should make clear if by "commercial" we mean systems up to 250 kW as is usually the case in literature or utility-scale PV power plants. Once again, this Entry Cost (400 k€/MW) is rather low, and it reflects just the EPC cost (low end) and not the full cost. If everything is included, then a realistic benchmark cost is 500-550 k€/MW for large scale PV plants which are connected to HV (150 kV) or even UHV (400 kV) and thus connection costs are relatively high.

The economic lifetime of such systems is at least 25 years.

3. Storage

The Cost of New Entry cited for large-scale batteries (700 k€/MW) does not reflect current market realities. First, it makes more sense to express costs for batteries according to their energy capacity (MWh) rather than their power capacity (MW). The following tables show actual costs for 2022 for various capacities.

k€/MWh for 1 MW/ 1 MWh		
Low	Average	High
300	375	445

k€/MWh for 1 MW/ 2 MWh		
Low	Average	High
225	290	355

k€/MWh for 1 MW/ 4 MWh		
Low	Average	High
190	250	310

Annual fixed cost (FOM) for large scale batteries is $6-15 k€/MW, while smaller scale batteries are assumed to have zero maintenance cost. Expressed as a percentage of BESS CAPEX, FOM is in the order of 0.5% of CAPEX.