

P2P Solar Energy Trading - Documentation

Step 01: Registration of Producer and Consumer

- Each user register in BB either using `BB.registerAsConsumer()` for `EOA_C` and `BB.registerAsProducer()` for `EOA_P`.

Step 02: Producer will set Energy Rate and activate supply status

- Interested producer $p \in \text{EOA_P}$, will set their energy rate R_p (in Eth/kWh) using `BB.setEnergyRate()`.
- Producer will activate supply status using `BB.activate()` by feeding the W_p, T_p values

Step 03: Consumer deposits some eth into BB

- Every Interested $c \in \text{EOA_C}$ will deposit desired eth into BB.

Step 04: Consumer request for energy from `EOA_P`

- Consumer $c \in \text{EOA_C}$, can able to choose the producer from `EOA_P`(by looking W_p, T_p value) to get solar energy
- Consumer will also provide W_c, t_c value to chosen `EOA_P`.

Step 05 : Request approve or deny by producer

- If producer want to approve the request made by consumer to full fill his/her demand , then `BB.accept()` followed by the physical transmission of solar energy using electric cables.

Step 06: Energy data M_p feeding into Blockchain directly

- The energy consumer value M_p , will be directly feed into BB in certain interval of time.

Step 07: Energy need fulfilled and billing

- As the energy demand of consumer will be fulfilled by producer, BB will automatically trigger `BB.settlePayment()` (the bill settlement phase).
- Based on the M_p value , R_p , total billing amount is calculated.

Step 08: Producer gets the money

- As the bill is generated, the money is transferred from BB to respective producer $p \in \text{EOA_P}$.