Transformer

cables, thermal cutoff

Pavement replacement

Pedestal

Charger

Network with communication, payment-gathering information

Equipment costs

 Installation costs – time (labor) and material

New circuit breaker / thermal cutoff ?

Electrtical panel upgrade?

Conduit and wiring

EV maintanence fees = 300/year for lvl 1,2, 2000/year for lvl 3

<https://www.ohmhomenow.com/electric-vehicles/ev-charging-station-cost/>

<https://propertymanagerinsider.com/how-much-do-ev-charging-stations-cost/>

<https://www.evoenergy.co.uk/technologies/ev-charging-business/>

<https://theicct.org/sites/default/files/publications/ICCT_EV_Charging_Cost_20190813.pdf>

<https://americas.hammondpowersolutions.com/en/resources/electric-vehicle-charging-stations>

<https://library.e.abb.com/public/b61c9ed2dfbb4092bf8a6af6641e5814/9AKK107992A5723_ABB%20EL-Beyond%20the%20Charger.pdf?x-sign=GjvACfKTFx5HgZcy72tl9A3IUiU1CAje5taOFxWiFoicGL6tGIgzvJTkB8qzYoEQ>

how many transformers needed

|  |  |  |  |
| --- | --- | --- | --- |
|  | level 1 | level 2 | level 3 |
| Charger | Yes | Yes | Yes |
| Pedestal | Yes | Yes | Yes |
| Network + Payment-gathering | Yes (for business) | Yes (for business) | Yes (for business) |
| Conduit and wiring | Yes | Yes | Yes |
| Pavement replacement | Depends | Depends | Depends |
| Transformer | No | Depends | Yes |
| Electrical Panel Upgrade | Depends | Probably yes | Probably yes |
| New circuit breaker, disconnects | Depends | Probably yes | Probably yes |
| Switchboards |  |  | yes |
| Labor | Yes | Yes | Yes |

Charging point cost:

* Charger, Pedestal, Network + Payment-gathering, Conduit and wiring, Labor

Infrastructure cost:

* Transformer, Electrical Panel Upgrade, New circuit breaker, disconnects, Switchboards

To do:

* write the lit review
* how to put websites/ articles as reference?
* Set up constraint for choosing supermarkets – done
* Predict current demand and calculate the distance

Most papers don’t include slow and rapid chargers,

Most papers minimise energy loss