Segment , Technology

**Input:**

Vehicle lifetime

Discount rate

Annual mileage

Annual idling hours

Fuel cost ($/fuel unit):

On-road average fuel consumption rate (fuel unit/mile):

Idling fuel consumption rate (fuel unit/hour)

Vehicle cost:

Vehicle range (miles):

Average refueling range level (%):

Refueling speed (fuel unit/hour; e.g., electricity, KW):

Design refueling queuing time (hr/time):

Annual total refuel time budget (hr):

Penalty cost on additional refuel time ($/hr):

Market share

**Cost function**

Annualized cost to PV

**Vehicle cost**

**Fuel cost**

**Refuel cost**

Total annual refuel time:

Queuetime 🡪 searching time

Refuel time = 10 min

Y=a\*x^b

Y = search time

x = hydrogen station availability, ranging from 0% to 100%

100% means current gasoline station availability