**Types of trucks:**

BEV trucks

Diesel trucks

FCEV trucks

**Input Fiels:**

**Calendar dates:**

Base Year

Final year of usage

**User data:**

Duration of use

Average annual Mileage

**Energy data:**

Fuel costs

Co2 costs

Ad blue cost

Electricity cost

H2 cost

**Infrastructure data:**

Infrastructure costs for electric charging stations

Infrastructure costs hydrogen filling station

**Basic Costs:**

Drive power in kw

Range in km

Reserve in km

Consumption(150kwh/km)

Cost of truck

Percentage of depreciation in 5 years

**Operation costs:**

Energy costs per year

Maintenance costs per year

Wheels / tires per year

Taxes per year

Insurance per year

Great per km from table

Distance share for great

CO2 compensation from table Other per km)

**Output fields:**

COST depreciation and COST from operations

Depreciation over term COST from loss of value

COST from infrastructure

COST energy costs / km COST CO2 costs / kmCOST maintenance costs / km COST wheels/tires costs / km COST taxes / km

COST insurance costs / km

COST toll costs / km

COST CO2 compensation costs / km COST other / km

COST total operating costs/km

Total COST

CO2 balance GHG market value in €/year

CO2 balance GHG market value in €/operating time)

Formulas for TCO calucalation:

COST Depreciation and COST from Operations:

o COST Depreciation = Cost of Truck * (1 - (Percentage of Depreciation in 5 years / 100))

o COST from Operations = Energy Costs per Year + Maintenance Costs per Year + Wheels/Tires Costs per Year + Taxes per Year + Insurance per Year + (Great per km from Table * Distance Share for Great)

Depreciation over Term:

o Depreciation over Term = Cost of Truck - COST Depreciation

COST from Infrastructure :

o COST from Infrastructure = Infrastructure Costs for Electric Charging Stations (for electric vehicles) + Infrastructure Costs Hydrogen Filling Station (for hydrogen vehicles)

COST Energy Costs per km :

o COST Energy Costs per km = Energy Costs per Year / (Duration of Use * Average

Annual Mileage)

COST CO2 Costs per km :

o COST CO2 Costs per km = (CO2 Costs / 100) / (Duration of Use * Average Annual Mileage)

COST Maintenance Costs per km :•

o COST Maintenance Costs per km = Maintenance Costs per Year / (Duration of Use * Average Annual Mileage)

COST Wheels/Tires Costs per km :

o COST Wheels/Tires Costs per km = (Wheels/Tires Costs per Year) / (Duration of Use * Average Annual Mileage)

COST Taxes per km :

o COST Taxes per km = Taxes per Year / (Duration of Use * Average Annual Mileage)

COST Insurance Costs per km :

COST Insurance Costs per km = Insurance per Year / (Duration of Use * Average Annual Mileage)

COST Toll Costs per km (if applicable):

COST Toll Costs per km = Total Toll Costs / (Duration of Use * Average Annual Mileage)

COST $CO_2$ Compensation Costs per km (if applicable):

COST $CO_2$ Compensation Costs per km = $CO_2$ Compensation from Table / (Duration of Use * Average Annual Mileage)

COST Total Operating Costs per km :

COST Total Operating Costs per km = COST Energy Costs per km + COST $CO_2$ Costs per km + COST Maintenance Costs per km + COST Wheels/Tires Costs per km + COST Taxes per km + COST Insurance Costs per km + COST Toll Costs per km + COST $CO_2$ Compensation Costs per km

Total COST :

Total COST = COST from Depreciation + COST from Operations + COST from Infrastructure

$CO_2$ Balance GHG Market Value in €/year:

$CO_2$ Balance GHG Market Value in €/year = ($CO_2$ Compensation from Table * Average Annual Mileage) / 100

$CO_2$ Balance GHG Market Value in €/Operating Time:

$CO_2$ Balance GHG Market Value in €/Operating Time = $CO_2$ Balance GHG Market Value in €/year / Duration of Use