University : Universitas Negeri Semarang
Country : Indonesia
Web Address :unnes.ac.id/sdgs

The total carbon footprint (CO2 emission in the last 12 months, in metric tons)

Calculation of Carbon Footprint on Campus Universitas Negeri Semarang
The Carbon footprint calculation can be conducted based on the stage of calculation as stated in http://carbonfootprint.org, which is the sum of electricity usage per year and transportation per year.

• **Carbon Footprint Per Year**
Total emissions divided by open space area per total people
Notes:
Total emissions come from:
o Electricity usage per year (5,224,741 KwH)
o Transportation per year: Bus, Car, Motorcycle
Example of calculation:
o Total people = Estimated total population in campus
=

• Electricity Usage Per Year
CO2 emission from electricity
= (electricity usage per year in KwH / 1000) x 0.84
= (5,224,741 KwH/1000) x 0.84
= **4388.78 metric ton**
Notes:
Electricity usage per year in UNNES = **5,224,741 KwH**
0.84 is the coefficient to convert KwH to Metric ton (source: www.carbonfootprint.com)

• **Transportation Per Year (Bus)**
= (Number of shuttle bus in your University * total trips for shuttle bus service each day * approximate travel distance of a vehicle each day inside campus only (in kilometers) * 240/100) * 0.01
= **((50 x 40 x 2 x 240)/100)) x 0.01**
= **96 metric ton**
Notes :
240 is number of working days per year
0.01 is the coefficient (source: www.carbonfootprint.com) to calculate the emission in metric ton per 100 km for bus

• **Transportation Per Year (Car)**
= (Number of cars entering your University * 2 * approximate travel distance of a vehicle each day inside campus only (in kilometers) * 240/100) * 0.02

= **((866 x 2 x 2 x 240)/100)) x 0.02**
= **166.27 metric ton**
Notes :
240 is number of working days per year
0.02 is the coefficient (source : www.carbonfootprint.com) to calculate the emission in metric ton per 100 km car

• **Transportation Per Year (Motorcycle)**
= (Number of motorcycle entering your University * 2 * approximate travel distance of a vehicle each day inside campus only (in kilometers) * 240/100)* 0.01
= **((17182 x 2 x 2 x 240)/100)) x 0.01**
= **1649.47 metric ton**
Notes :
240 is number of working days per year
0.01 is the coefficient (source: www.carbonfootprint.com) to calculate the emission in metric ton per 100 km for motorcycle

• **Total Emission Per Year**
= total emission from electricity usage + transportation (bus, car, motorcycle)
= **4388.78 + (96 + 166.27 + 1649.47)**
= **6,300.52 metric ton**
Carbon footprint per year
= Total emissions divided by open space area per total people
= **6,300.52 / 51,211**
= **0.12 metric ton**

Description:
Total emission per year in 2020/2021 is **6,300.52** metric ton, with average carbon footprint for each people in campus is **0.12** metric ton.