Optiminastic | CarbonCut — Marketing CO_2e Calculation Framework

This document provides the official methodology used by Optiminastic | CarbonCut to calculate carbon emissions (CO_2e) generated through marketing activities. The framework follows the GHG Protocol, ensuring global credibility and alignment with Scope 1, 2, and 3 reporting requirements.

Master Equation

The general equation to calculate marketing-related CO_2e is:

$$CO_2e\_marketing = \Sigma_c \, \Sigma_i \, (Q\_{c,i} \times EF\_{c,i}) + \Sigma_a \, (A\_a \times EF\_a)$$

Where:
- $Q\_{c,i}$ = activity data for channel c, item i (kWh, km, kg, GB, hours, impressions, etc.)
- $EF\_{c,i}$ = emission factor (kg CO_2e per unit)
- A_a = allocated overheads/embodied components (e.g., office energy allocation)
- EF_a = matching emission factor for overheads

Important: Always report offsets separately. Do not net them into gross emissions.

Channel Plug-in Equations

1) Ad production (film/photo/audio shoots)
$$CO_2e\_prod = (Travel\_km \times EF\_mode) + (Power\_kWh \times EF\_grid) + \Sigma(Materials\_kg \times EF\_mat) + (Cloud\_GB\text{-}months \times EF\_cloud)$$

2) Digital / Programmatic Media
$$CO_2e\_digital = I \times ((E\_ad\text{-}tech + E\_ad\text{-}server + E\_CDN) / I + (Data\_GB / I \times EI\_network)) \times EF\_grid + (I \times t\_view \times P\_device \times EF\_grid)\_optional$$

3) Search & Social Ads (paid)
$$CO_2e\_paid = U \times ((E\_platform + E\_ad\text{-}delivery) / U + (Data\_GB / U \times EI\_network)) \times EF\_grid$$

4) Owned Social Posts (organic)
$$CO_2e\_owned = N\_posts \times (E\_creation + E\_upload) \times EF\_grid + (Views \times t\_view \times P\_device \times EF\_grid)\_optional$$

5) Email Marketing
$$CO_2e\_email = S \times ((Data\_GB / S \times EI\_network) + (E\_ESP / S)) \times EF\_grid + (Opens \times t\_read \times P\_device \times EF\_grid)\_optional$$

6) Website / Landing Pages
$$CO_2e\_web = Visits \times ((Bytes/Visit \times EI\_network) + (E\_origin/CDN / Visit)) \times EF\_grid + Hosting\_kWh \times EF\_grid$$

7) Print (flyers, magazines, inserts)

$CO_2e\_print = \Sigma(Paper\_mass\_kg \times EF\_paper) + (E\_printing\_kWh \times EF\_grid) + (Freight\_ton\text{-}km \times EF\_mode)$

8) Out-of-Home (OOH)

Static OOH: $CO_2e\_static = (Materials\_kg \times EF) + (Install\_trips\_km \times EF\_vehicle) + (Disposal\_kg \times EF\_waste)$

Digital OOH: $CO_2e\_DOOH = (P\_screen \times hours) \times EF\_grid + (Data\_GB \times EI\_network \times EF\_grid)$

9) Events / Experiential

$CO_2e\_events = (Venue\_kWh \times EF\_grid) + (Booth\_materials\_kg \times EF\_mat) + (Attendee\_travel\_pkm \times EF\_mode) + (Freight\_ton\text{-}km \times EF\_mode) + (Catering\_portions \times EF\_menu)$

10) Influencer & Creator Marketing

$CO_2e\_creator = Production\_footprint + Travel + Cloud/Editing + Content\_delivery$ (use §2–5 formulas)

11) PR & Press

$CO_2e\_PR = Print + Parcel\_freight + Events + Travel$ contributions

12) Giveaways / Merchandise

$CO_2e\_swag = \Sigma(Item\_mass\_kg \times EF\_material) + (Freight\_ton\text{-}km \times EF\_mode) + (Packaging\_kg \times EF)$

13) Martech & Cloud Services

$CO_2e\_martech = (Cloud\_kWh \times EF\_grid(region))$

14) Team Travel

$CO_2e\_travel = \Sigma(Distance\_km \times EF\_mode/class)$

15) Office Energy Allocation

$CO_2e\_office{\rightarrow}mktg = (Office\_kWh \times EF\_grid) \times Allocation\_share$

Contact

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