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$data, 'Total_Carbon' => $item_carbon ]; $parsed_bom[] = $item; $total_material_emissions += $item_carbon; if
($item_carbon > $max_material_carbon) { $max_material_carbon = $item_carbon; $top_material_hotspot =
$data; } } } // SCOPE 1: Direct Emissions (Assumed minimal/zero for factory_gate PCF) $scope1_emissions = 0.0; // SCOPE
2: Purchased Electricity (Manufacturing) $non_renewable_energy_kwh = $energy_intensity_kwh_unit * (1 -
$renewable_energy_usage_percent / 100); $scope2_emissions = $non_renewable_energy_kwh *
$electricity_ef_china_kgCO2e_kWh; // SCOPE 3: Value Chain Emissions // S3-C1: Purchased Goods & Services (Materials) -
already $total_material_emissions // S3-C4: Upstream Transportation & Distribution $transport_emissions =
($product_total_mass_kg / 1000) * $transport_distance_km * $transport_ef_road_kgCO2e_tkm; // S3-C11: Use of Sold
Products $use_phase_emissions = $energy_consumption_in_use_kwh * $electricity_ef_china_kgCO2e_kWh; // S3-C12: End-
of-Life Treatment of Sold Products $mass_recycled_kg = $product_total_mass_kg * ($recyclability_percentage / 100);
$mass_landfilled_kg = $product_total_mass_kg - $mass_recycled_kg; $eol_emissions = ($mass_recycled_kg *
$recycling_credit_kg_CO2e_per_kg) + ($mass_landfilled_kg * $landfill_ef_kg_CO2e_per_kg); // Total Scope 3
$scope3_emissions = $total_material_emissions + $transport_emissions + $use_phase_emissions + $eol_emissions; //
Total PCF $total_pcf = $scope1_emissions + $scope2_emissions + $scope3_emissions; // Format values for display
$total_pcf_display = number_format($total_pcf, 2); $carbon_intensity_display = number_format($total_pcf / $quantity,
2); // Assuming quantity is 1.0 // Lifecycle Breakdown for Chart (positive contributions, EoL as a separate credit/debit)
$lifecycle_stages = [ ['name' => 'Raw Materials', 'value' => $total_material_emissions, 'class' => 'materials'], ['name' =>
'Manufacturing', 'value' => $scope2_emissions, 'class' => 'production'], ['name' => 'Logistics', 'value' =>
$transport_emissions, 'class' => 'logistics'], ['name' => 'Use Phase', 'value' => $use_phase_emissions, 'class' => 'use'], ];
$gross_positive_contributions_sum = array_sum(array_column($lifecycle_stages, 'value')); // Determine primary emission
scope $scopes_data = [ ['name' => 'Scope 1', 'value' => $scope1_emissions], ['name' => 'Scope 2', 'value' =>
$scope2_emissions], ['name' => 'Scope 3', 'value' => $scope3_emissions], ]; usort($scopes_data, function($a, $b)
{ return $b['value'] <=> $a['value']; }); $primary_emission_scope = $scopes_data['name']; ?>

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Product Carbon Footprint for

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Report by ()

kg CO2e

Total Carbon Footprint

powered by carboncalcpcf.com

Total Footprint

kg CO2e

For 1.0 unit of ""

Carbon Intensity

kg CO2e / unit

Per functional unit

Top Material Hotspot

Contributing kg CO2e

Primary Emission Scope

Accounts for % of total

