Lifecycle GHG Emissions of Today's Compact Class Vehicles when Operated Solely in the City (above) or on the Highway (below) in Relation to Distance Driven, Assuming Continued Progress of Energy Transition

City: Gasoline v. Electric (25 kWh) (100,000 km) 50 GHG emissions [in tons of CO₂ equivalents] 45 Electric (Sensitivity City) 40 Gasoline (Sensitivity City) Electric (Base case) 35 Base case (35 kWh, city/highway mix) 30 25 -29% 20 15 10 Additional emissions for 25 kWh electric vehicle 5 5 0 60,000 10,000 50,000 100,000 20,000 30,000 40,000 10,000 80,000 90,000 110,000 120,000 160,000 190,000 10,000 180,000 200,000 130,000 140,000 150,000 0 Distance driven [in km] Highway: Diesel v. Electric (60 kWh) (200,000 km) 50 GHG emissions [in tons of CO₂ equivalents] 45 Electric (Sensitivity Highway) Diesel (Sensitivity Highway) 40 Electric (Base case) 35 Base case (35 kWh, city/highway mix) 30 25 20 15 Additional emissions for 60 kWh electric vehicle 5 10 5 Manufacturing of conventional vehicle 0 190,000 10,000 20,000 40,000 60,000 80,000 90,000 100,000 30,000 50,000 10,000 110,000 120,000 130,000 140,000 150,000 160,000 10,000 180,000 200,000 0 Distance driven [in km]

Figure 12

Note: Power generation mix based on Pehnt et al. (2018); Consumption: Elektric: 12 kWh/100 km (25 kWh battery, city) and 24 kWh (60 kWh battery, highway); gasoline: 6.1 l / 100 km (city) and diesel: 5.7 l/100 km (highway) IFEU calculations