Transportation in a Climate-Constrained World

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Abbreviations

ASK  Available seat kilometer
bbl  Barrel (1 bbl = 42 gal = 159 L)
BTL  Biomass-to-liquids
CAFE  Corporate Average Fuel Economy
CBO  Congressional Budget Office
CCSP  Climate Change Science Program
CTL  Coal-to-liquids
CH₄  Methane
CNG  Compressed natural gas
CO₂  Carbon dioxide
DOC  Direct operating costs
E  Energy
EJ  Exajoule (10¹⁸ joules)
E/PKT  Passenger travel energy intensity
EPPA  The MIT Emissions Prediction and Policy Analysis model
EPPA-Ref  EPPA reference run
ETS  Emissions Trading Scheme
FTP-75  Federal Test Procedure-75
g  Grams
gCO₂-eq  Grams of CO₂ equivalent
gal  U.S. gallon (1 gal = 3.785 L)
GGE  Greenhouse gas emissions
GHG  Greenhouse gas
GE  Gasoline equivalent
GJ  Gigajoule (10⁹ joules)
GTL  Gas-to-liquids
GDP  Gross domestic product
GWP  Gross world product
Abbreviations

ha Hectare
hp Horsepower (1 hp = 0.746 kW)
I Investments
ICAO International Civil Aviation Organization
IEA International Energy Agency
IPCC Intergovernmental Panel on Climate Change
J Joule
kg Kilograms
km Kilometer (1 km = 0.622 miles)
kW Kilowatts
kWh Kilowatt hour
L Liter (1 L = 0.264 gallon)
lbs Pounds (1 lb = 0.454 kg)
LDV Light-duty vehicle (automobiles and light trucks, i.e., minivans, vans, pickup trucks, and sport-utility vehicles)
LCB Lifetime CO2 burden
L/D Lift-to-drag ratio
Li-ion Lithium ion
LNG Liquefied natural gas
MBTE Methyl tertiary-butyl ether
MER Market exchange rates
MJ Megajoule (1 million joules)
mpg Miles per gallon
NextGen Next Generation Air Transportation System
NiMH Nickel metal hydride
NOx Nitrogen oxides
N2O Nitrous oxide
NRC National Research Council
OPEC Organization of Petroleum Exporting Countries
PAX Number of passengers
PJ Petajoule (1015 joules)
pkm Passenger kilometers
pmi Passenger mile
PKT Passenger kilometers traveled
PNGV Partnership for a New Generation of Vehicles
ppmv Parts per million by volume
PPP Purchasing power parity
Q Net energy content
SESAR  Single European Sky Air Traffic Management Research ini-
tiative
SFC   Specific fuel consumption
SRES  IPCC Special Report on Emission Scenarios
UN   United Nations
V   Speed
vkm   Vehicle kilometer
VKT   Vehicle kilometers traveled
VLJ   Very light jet (jet-engine-powered aircraft with a weight
      below 4.5 tons [10,000 lbs])
vmi   Vehicle mile
W   Weight
Wh   Watt hours
ZEV   Zero-Emission Vehicle