9. Acronyms and Abbreviations

$/kWh	Dollars per kilowatt-hour
$(NH_4)_2CO_3$	Ammonium carbamate
°C	Degrees Celsius
µL/mg	Microliter per milligram
µm	Micron
1-D	One-dimensional
21CTP	21st Century Truck Partnership
2M2B	2-methyl-2-butene
3-D	Three-dimensional
5M	Five molarity
AC	Alternating current
ACC	Adaptive cruise control
ACE	Advanced Combustion Engine
ACEC	Advanced Combustion & Emissions Control
ACI	Advanced compression ignition
ADA	Americans with Disabilities Act
ADMM	Alternating direction method of multipliers
AEC	Advanced Engine Combustion
AEC	Advanced Engine Crosscut, Advanced Engine Combustion
AFIDA	Advanced fuel ignition delay analyzer
AFM	Atomic force microscopy
AFV	Alternative fuel vehicles
Ah	Amp-hours
Al	Aluminum
Al_2O_3	Aluminum oxide

ALD	Atomic layer deposition
ALS	Advanced Light Source
AMBER	Advanced Model Based Engineering Resource
AMD	Automated mobility district
AMFI	Additive-mixing fuel injection
AMO	Advanced Manufacturing Office
AMR	Annual Merit Review
ANL	Argonne National Laboratory
ANSI	American National Standards Institute
API	Application programming interface
APS	Advanced Photon Source
ARPA-E	Advanced Research Projects Agency – Energy
ASI	Area specific impedance
ASTM	American Society for Testing and Materials
ATC	Advanced traffic control
ATCS	Adaptive traffic control system
ATF	Automatic transmission fluid
ATM	Active traffic management
ATS	Aftertreatment system
ATSC	Active traffic signal control
AV	Automated vehicle, or Autonomous vehicle
AVCEM	Advanced Vehicle Cost and Energy-Use Model
Ba	Barium
BCDI	Bragg-coherent diffraction imaging
BCP	Block co-polymer
BEAM	Behavior, Energy, Autonomy, and Mobility
BES	Basic Energy Sciences
BETO	Bioenergy Technologies Office

BEV	Battery electric vehicle
Bio-ACN	Bio-acrylonitrile
BMR	Battery Materials Research
BMS	Battery management system
BMS	Behavioral Micro-Simulation, developed by RPI
BNL	Brookhaven National Laboratory
BOL	Beginning of life
BP	Budget period
BSFC	Brake-specific fuel consumption
BTE	Brake thermal efficiency
BTMS	Behind-the-meter storage
C	Carbon
C	Coulomb
C_2H_4	Ethylene
CA50	Crank angle position in which 50% of heat is released
CACC	Cooperative adaptive cruise control, coordinated adaptive cruise control
CAE	Computer-aided engineering
CAEBAT	Computer-aided engineering of batteries
CAISO	California Independent System Operator
CALPHAD	CALculation of PHAse Diagrams
CalTrans	California Department of Transportation
CAMP	Cell Analysis, Modeling, and Prototyping Facility
CARB	California Air Resources Board
CAV	Connected and autonomous vehicle
CAVESIM	Connected and Automated Vehicle Energy Simulation
CC	Cruise control
CC/CV	Constant current/constant voltage
CCV	Closed crankcase ventilation

Ce	Cerium
CE	Coulombic efficiency
CEI	Cathode-electrolyte interphase
CeO_2	Cerium oxide (ceria)
CF	Carbon fiber
CF_3-EC	1-(trifluoromethyl)ethylene carbonate
CFD	Computational fluid dynamics
CFN	Center for Functional Nanomaterials
CFR	Cooperative fuel research
CFRP	Carbon fiber-reinforced polymer
CH_4	Methane
CHA	Chabazite
CHT	Conjugate heat transfer
CI	Compression ignition
Cities-LEAP	Cities Leading through Energy Analysis and Planning
CLEERS	Cross-cut Lean Exhaust Emissions Reduction Simulations
CLSVOF	Coupled level set volume of fluid
cm	Centimeter
CMC	Carboxymethyl cellulose
CN	Cetane number
CNG	Compressed natural gas
CNO	Cyber network operations
CNT	Carbon nanotube
CO	Carbon monoxide
Co	Cobalt
CO_2	Carbon dioxide
Co_2Ni/LiOH	Cobalt and Nickel particles embedded in LiOH as a catalyst
Co-Ex	Co-extrusion

CPEC	Close proximity electromagnetic carbonization
CpK	Process capability index
CPU	Central processing unit
Cr	Chromium
CR	Compression ratio
CRADA	Cooperative research and development agreement
CRM	Coordinated ramp metering
Crr	Coefficient of rolling resistance
C-SAM	C-mode scanning acoustic microscope
CSI	Convergent Science Inc.
cSt	Centistokes
CSU	Colorado State University
CTE	Coefficient of thermal expansion
CTE	Center for Transportation and the Environment
CTP	Coal tar pitch
Cu	Copper
Cu-Al	Copper-aluminum
CUC	Clean-up catalyst
CuCl	Copper chloride
Cu-Sn	Copper-tin
CV	Connected vehicle
CVE	Common vulnerabilities and exposures
CY	Calendar year
DAS	Deputy Assistant Secretary
DBC	Database Container
DBC	Direct-bond copper
DC	Direct current
DCFC	Direct current fast charging

DDI-PFS	Double direct-injection – partial fuel stratification
DEER	Directions in Engine-Efficiency and Emissions Research
DEF	Diesel exhaust fluid
DEMS	Differential electrochemical mass spectroscopy
DER	Distributed energy resources
DFI	Ducted fuel injection
DFT	Density functional theory
DHS	U.S. Department of Homeland Security
DI	Direct injection
DIE	Digital image correlation
DISI	Direct injection spark ignition
DISI	Direct injection spark ignition
DNS	Direct numerical simulations
DOC	Diesel oxidation catalyst
DOD	Depth of discharge
DOE	U.S. Department of Energy
DOI	Duration of injection
DOT	U.S. Department of Transportation
DPF	Diesel particulate filter
D_s	Diffusion coefficient
DSC	Differential scanning calorimetry
DSC	Differential scanning calorimeter
DSL	Dimple step-lipped
DSRC	Dedicated short-range communications
DTNA	Daimler Trucks North America
DWPT	Dynamic wireless power transfer
DWPT	Dynamic wireless power transfer
Dy	Dysprosium

E10	10% ethanol content gasoline
EB	Electron beam
EC	Ethylene carbonate
ECN	Engine Combustion Network
ECN	Engine Combustion Network
Eco-CAC	Eco-Cooperated Automated Control
ECU	Engine control unit
ECV	Electric and commercial vehicle
ED	Electron diffraction
EDV	Electric drive vehicle
EEI	Electrode-electrolyte interface
EEL	Energy-efficient logistics
EELS	Electron energy loss spectroscopy
EEMS	Energy Efficient Mobility Systems
EERE	Energy Efficiency and Renewable Energy
EET	Electrical, electrochemical, and thermal
EGAI	End-gas auto-ignition
EGR	Exhaust gas recirculation
EH	Electro-hydraulic
EHA	Electro-hydraulic actuator
EHN	2-ethylhexyl nitrate
EIS	Electrochemical impedance spectroscopy
ELM	Electric last mile
ELT	Electrification Technologies
EM	Electromagnetic
EMC	Ethyl methyl carbonate
EOL	End of life
EPA	U.S. Environmental Protection Agency

EPM	Employer-provided mobility
EPRI	Electric Power Research Institute
E-S	Electrolyte-sulfur
ES-C2M2	Electricity Subsector Cybersecurity Capability Maturing Model
ESR	Equivalence series resistance
EV	Electric vehicle
EVI-Pro	Electric Vehicle Infrastructure Projection Tool
EVSE	Electric vehicle supply equipment
F	Fluorine
FAF	Freight analysis framework
FAST	Friction stir assisted scribe technology
FASTSim	Future Automotive Systems Technology Simulator
FCA	Fiat Chrysler Automobiles
FCEV	Fuel cell electric vehicle
FDS	Flow drill screw
FE	Fuel economy
FE	Fuel efficiency
Fe	Iron
FEA	Finite element analysis
FEC	Fluoroethylene carbonate
FEM	Finite element analysis
FHWA	Federal Highway Administration
FIB	Focused ion beam
FOA	Funding Opportunity Announcement
FOM	Figure of Merit
FSW	Friction stir welding
FTIR	Fourier transform infrared
FTP	Federal Test Procedure

FY	Fiscal year
g	Gram
GaN	Gallium nitride
GATE	Graduate Automotive Technology Education
GBDI	Groundless barrier discharge igniter
GBDP	Grain-boundary diffusion process
GCI	Gasoline compression ignition
GCI	Gasoline compression ignition
GC-MS	Gas chromatography mass spectroscopy
GDBI	Groundless dielectric barrier discharge
GDI	Gasoline direct injection
GDP	Gross domestic product
GHG	Greenhouse gas
GIS	Geographic information system
GITT	Grid Integration Tech Team
GI-XRD	Glancing incidence X-ray diffusion
GM	General Motors
GMU	George Mason University
GPa	Gigapascal
GPF	Gasoline particulate filter
GPS	Global positioning system
GPU	Graphics processing unit
Gr	Graphite
GREET®	Greenhouse gas, Regulated Emissions, and Energy use in Transportation model
GSA	Global sensitivity analysis
GSIR	Gas-solid interface reaction
GTFS	General transit feed specification
GW	Gigawatt

H_2	Hydrogen
H_2O	Water
HATCI	Hyundai Kia America Technical Center
HC	Hydrocarbon
HCCI	Homogeneous charge compression ignition
HCE	High-concentration electrolytes
HCE	High consequence events
HCL	Hydrochloric acid
HCT	Hydrocarbon trap
HD	Heavy-duty
HDV	Heavy-duty vehicle
HECC	High-efficiency clean combustion
HEV	Hybrid electric vehicle
HH	Household
HHEA	Hydraulic-hybrid electric architecture
HIL	Hardware-in-the-loop
HOH	Highly ordered hierarchical
HOMO	Highest occupied molecular orbit
HOV	Heat of vaporization
HPC	High performance computing
HPPC	Hybrid pulse power characterization
HP-RTM	High-pressure resin transfer molding
HRE	Heavy rare earth
HRTEM	High-resolution transmission electron microscopy
HXN	Heat exchanger
I	Interstate
i_0	Exchange current
I2V	Infrastructure to vehicle

IC	Internal combustion
ICE	Internal combustion engine
ICL	Irreversible capacity loss
ICME	Integrated computational materials engineering
ICNIRP	International Commission on Non-Ionizing Radiation Protection
ICP-MS	Inductively coupled plasma mass spectroscopy
IGBT	Insulated-gate bipolar transistor
IIT	Illinois Institute of Technology
ILSS	Interlaminar shear strength
IMAP	Intake manifold absolute pressure
IMEP	Indicated mean effective pressure
IMRI	Irvine Materials Research Institute
IMS	Insulated metal substrate
INL	Idaho National Laboratory
IP	Intellectual property
IPM	Interior permanent magnet
IR	Infrared
ISFC	Indicated specific fuel consumption
ITE	Institute of Transportation Engineers
ITS	Institute of Transportation Studies
JM	Johnson Matthey
JPL	Jet Propulsion Laboratory
K	Kelvin
K	Thermal conductivity
KAUST	King Abdullah University of Science and Technology
KDAS	Deputy Assistant Secretary for Transportation
kg	Kilogram
kHz	Kilohertz

kJ/mol	Kilojoules per mole
km	Kilometer
KPI	Key performance indicator
kW	Kilowatt
kWh	Kilowatt-hour
L	Liter
L2	Level 2
L_2S	Lithium sulfide
LA Metro	Los Angeles County Metropolitan Transportation Authority
LANL	Los Alamos National Laboratory
LBNL	Lawrence Berkeley National Laboratory
LCCF	Low cost carbon fiber
LD	Light-duty
LDV	Light-duty vehicle
LECM	Large engine control module
LES	Large eddy simulation
LEV	Low-emission vehicle
LEVIII	Low-emission vehicle level III
LFO	Li_5FeO_4
LFP	Lithium-iron phosphate
Li	Lithium
Li_2CO_3	Lithium carbonate
Li_2O	Lithium oxide
Li_2S	Lithium sulfide
Li_3N	Lithium nitride
LiBOB	Lithium bis(oxalato)borate
$LiCoO_2$	Lithium cobalt oxide
LiF	Lithium fluoride

LiFSI	Lithium bis(fluorosulfonyl)imide
LiO_2	Lithium superoxide
LiOH	Lithium hydroxide
LiPAA	Lithium polyacrylate
LiPON	Lithium phosphorus oxynitride
Li-SiO_2	Lithium-silicon dioxide
LisTFSI	Lithium bis(trifluoromethanesylfonyl)imide
$Li_xP_yS_z$	Organo-lithium-phospho-sulfide
Li_xSi	Lithium silicon
Li_xS_y	Organo-lithium sulfide
LLNL	Lawrence Livermore National Laboratory
LLTO	Lithium lanthanum titanate
LLZO	Lithium lanthanum zirconate
LMR	Lithium-manganese rich
LOS	Level of service
LPG	Liquefied petroleum gas
LPS	Lithium phospho-sulfide
LRLO	Lithium-rich layered oxide
LRTM	Lithium-rich transition metal
LTAT	Low-temperature aftertreatment
LTC	Low-temperature combustion
LTC	Low-temperature carbonization
LTGC	Low-temperature gasoline combustion
LTP	Low-temperature plasma
LTP-ACI	Low-temperature plasma advanced compression ignition
LUMO	Lowest unoccupied molecular orbit
MA3T	Market Acceptance of Advanced Automotive Technologies
MA3T-MC	MA3T-Mobility Choice

MaaS	Mobility-as-a-system
mAh	Milliamp-hour
mAh/cm^2	Milliamp-hour per square centimeter
mAh/g	Milliamp-hours per gram
MCA	Multicomponent alloy
MCCI	Mixing-controlled compression ignition
MCE	Multi-cylinder engine
MCV	Manually controlled vehicle
MD	Molecular dynamics
MD	Medium-duty
MDS	Mobility decision science
MDV	Medium-duty vehicle
MEC	Metropolitan Energy Center
MEP	Mobility energy productivity
Mg	Magnesium
mg	Milligram
mg_s/cm^2	mg_{sulfur}/cm^2
MHDV	Medium- and heavy-duty vehicle
mi	Mile
Micro-CT	Micro-computed tomography
ML	Managed lane
ml	Milliliter
ML	Machine learning
MM	Multi-mode
MMC	Metal-matrix composites
Mn	Manganese
MnO_2	Manganese oxide
MnO_x	Oxides of manganese

MOC	Model predictive control
MON	Motor octane number
MOSFET	Metal oxide semiconductor field-effect transistor
MOU	Memorandum of Understanding
MOVES	Motor Vehicle Emission Simulator
MPG	Miles per gallon
MPH	Miles per hour
MPO	Metropolitan Planning Organization
MS	Mass spectroscopy
MTBF	Mean time between failures
MTC	Metropolitan Transportation Commission
N/A	Not applicable
N:P	Negative-to-positive ratio
N_2	Nitrogen
N_2O	Nitrous oxide
Na	Sodium
NACTO	National Association of City Transportation Officials
NASA	National Aeronautics and Space Administration
Nb	Niobium
NB	Northbound
NCA	Nickel cobalt aluminum oxide
NCF	Non-crimp fabrics
NDA	Non-disclosure agreement
NDE	Non-destructive evaluation
NEMA	National Electrical Manufacturers Association
NERSC	National Energy Research Scientific Computing Center
NG	Natural gas
NH_3	Ammonia

NHTS	National Household Traveler Survey
NHTSA	National Highway Traffic Safety Administration
Ni	Nickel
NMC	Nickel manganese cobalt oxide
NMFTA	National Motor Freight Traffic Association
NMOG	Non-methane organic gas
NMP	N-methyl-2-pyrrolidone
NMR	Nuclear magnetic resonance
NN	Neural network
NO	Nitric oxide (nitrogen monoxide)
NO_2	Nitrogen dioxide
NO_x	Oxides of nitrogen
NREL	National Renewable Energy Laboratory
NSC	NO_x storage component
NTC	Negative temperature coefficient
NTRC	National Transportation Research Center
NVH	Noise, vibration, and harshness
NYC	New York City
O_2	Oxygen
O_3	Ozone
OC	Oxidation catalyst
OCM	Oxidative coupling of methane
OCP	Open-circuit potential
OCV	Open circuit voltage
O-D	Origin-destination
OEM	Original equipment manufacture
OEMS	Online electrochemical mass spectroscopy
OHC	Oxidation half cycle

OI	Octane index
ORC	Organic Rankine cycle
ORNL	Oak Ridge National Laboratory
OSC	Oxygen storage capacity
PAA	Polyacrylic acid
PAC	Plasma-assisted combustion
PAH	Polycyclic aromatic hydrocarbon
PAN	Polyacrylonitrile
PBO	Polybenzoxazole (thermoplastic)
PBT	Polybutylene terephthalate (thermoplastic)
PC-ACI	Pre-chamber advanced compression ignition
PCC	Phase-change cooling
Pd	Palladium
PE	Polyethylene
PEGDA	Polyethylene (glycol) diacrylate
PEO	Polyethylene oxide
PEO-PS	Polyethyleneoxide-polysulfide
PEV	Plug-in electric vehicle
PF_6	Hexafluorophosphate
PFC	Power factor correction
PFD	Parameterized fundamental diagram
PFI	Port fuel injection
PHEV	Plug-in hybrid electric vehicle
PHI	Physical Electronics Inc.
PI	Principal Investigator
PIV	Particle image velocimetry
PLV	Projected liquid volume
PM	Particulate matter

PM	Permanent magnet
PMI	Particulate matter index
PMT	Personal miles traveled
PN	Particle number
PNA	Passive NO_x adsorber
PNNL	Pacific Northwest National Laboratory
POLARIS	Planning and Operations Language for Agent-based Integrated Simulation
POLARIS	Planning and Operations Language for Agent-based Regional Integrated Simulation
POSS	Polyhedral oligomeric SilSesquioxane
PP	Petroleum pitch
ppm	Parts per million
PPS	Porous polyethylenimine
PPT	PowerPoint
PQILE	Polymer in “quasi-ionic liquid” electrolyte
PRF	Primary reference fuel
PRF90	Primary reference fuel 90
PS	Polysulfide
PSU	Pennsylvania State University
Pt	Platinum
PTO	Power take-off
PVDF	Polyvinylidene difluoride
PWM	Pulse-width modulation
Q	Quarter
Q&A	Question and answer
R&D	Research and development
R&D	Research and development
RANS	Reynolds-averaged Navier-Stokes
RASIC	Responsible – approving – supporting – informed - consulted

RCCI	Reactivity-controlled compression ignition
RCM	Rapid compression machine
RCM	Rapid compression machine
RD5-87	87 octane research gasoline
RDE	Real-driving emissions
Rh	Rhodium
RHC	Reduction half cycle
RIXS	Resonant inelastic X-ray scattering
RMSE	Root mean square error
RNG	Renewable natural gas
ROI	Rate of injection
ROI	Return on investment
RON	Research octane number
RPI	Rensselaer Polytechnic Institute
rpm	Revolutions per minute
RSR	Resistance spot rivet
s	Second
S	Siemen
S	Sulfur
SACI	Spark-assisted compression ignition
SAE	Society of Automotive Engineers
SAR	Silica to alumina ratio
SAW	Surface acoustic wave
SBR	Styrene butadiene rubber
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCE	Single-cylinder engine
SCO	Selective catalytic oxidation

SCOTE	Single-cylinder oil test engine
SCR	Selective catalytic reduction
SCRF	Selective catalytic reduction on filter
Se	Selenium
SEI	Silicon electrolyte interface
SEI	Solid electrolyte interphase
SEISta	Silicon Electrolyte Interface Stability
SEM	Scanning electron microscope
ShAPE™	Shear Assisted Processing and Extrusion
SHP	Self-healing polymer
SHPB	Split Hopkinson pressure bar
Si	Silicon
SI	Spark ignition
SIA	Structurally isomorphous alloy
SiC	Silicon carbide
SiMo	Silicon-Molybdenum
SIMS	Secondary ion mass spectroscopy
SiO_2	Silicon dioxide (silica)
SiO_x	Silicon oxides
Si-Sn	Silicon-tin
SLAC	Stanford Linear Accelerator Center
SMART	Systems and Modeling for Accelerated Research in Transportation
SMC	Soft magnetic composites
SME	Subject matter expert
Sn	Tin
SNL	Sandia National Laboratories
SO_2	Sulfur dioxide
SOC	State of charge

SOH	State of health
SPIN	Smart power integrated node
SPR	Self-pierce rivet
SPRDE	Stationary probe rotating disk electrode
SR	Steam reforming
SR	State Route
SSE	Solid-state electrolyte
SSRL	Stanford Synchrotron Radiation Lightsource
ST1	SuperTruck 1
ST2	SuperTruck 2
STEM	Scanning Tunneling Electron Microscopy
STRIDE	Spoofing, Tampering, Repudiation, Information disclosure, Denial of service, and Elevation of privileges
STTR	Small Business Technology Transfer
SULEV30	Super ultra-low emissions vehicle 30
SUMO	Simulator of Urban Mobility
SUNY	State University of New York
SVTrip	Stochastic vehicle trip
SW	Software
SWPT	Stationary wireless power transfer
SwRI	Southwest Research Institute
SWTP	Static wireless power transfer
S_xSe_y	Composition of Sulfur and Selenium in a composite
T	Temperature
Ta	Tantalum
TBA	Tetrabutylammonium
TBC	Thermal barrier coating
TC	Thermocouple

TCI	Turbulent chemistry interaction
TCO	Total cost of ownership
TDC	Top dead center
TEEM	Transportation Energy Evolution Modeling program at ORNL
TEM	Transmission electron microscopy
Tg	Glass transition temperature
TGA	Thermogravimetric analyzer
TI	Technology Integration
Ti	Titanium
TiB_2	Titanium diboride
TLPS	Transient liquid phase sintering
TM	Transition metal
TMAC	Test Machine for Automotive Crashworthiness (at ORNL)
TMC	Technology Maintenance Council
TNC	Transportation network company
TNO	Titanium niobium oxide
TOF	Time of flight
TPA	Three pressure analysis
TPG	Thermal pyrolytic graphite
TPO	Transportation Planning Organization
TPS	Transient Plasma Systems
TRB	Transportation Research Board
TRF	Toluene reference fuel
TRL	Technology readiness level
TSDC	Transportation secure data center
TSRC	Transportation Sustainability Research Center
TTI	Texas Transportation institute
TTSI	Total Transportation Services, Inc.

Tv	Vitrimer transition temperature
TWC	Three-way catalyst
U.S.	United States
U.S. DRIVE	U.S. Driving Research and Innovation for Vehicle efficiency and Energy sustainability
U.S. EPA	U.S. Environmental Protection Agency
UC Davis	University of California, Davis
UCB	University of California at Berkeley
UCB	University of California at Berkeley
UCF	University of Central Florida
UD	Unidirectional (carbon fiber)
UH	University of Houston
UHMWPE	Ultrahigh molecular weight polyethylene
UIC	University of Illinois at Chicago
UK	United Kingdom
UMEI	University of Michigan Energy Institute
UPS	United Parcel Service
UQ	Uncertainty quantification
USABC	U.S. Advanced Battery Consortium
USCAR	United States Council on Automotive Research
USW	Ultrasonic welding
UT	University of Tennessee
UT	University of Texas
UV	Ultraviolet
UVa	University of Virginia
UW	University of Wisconsin
V	Vanadium
V	Volt

V2B	Vehicle to bus
V2G	Vehicle to grid
V2I	Vehicle to infrastructure
V2V	Vehicle to vehicle
V2X	Vehicle to anything
VAD	Vehicle awareness device
VAN	Vehicle Analysis (VTO program)
VASP	Vienna Ab initio Simulation Package
VB	Visual Basic
VC	Vinylene carbonate
VCD	Vehicle communication device
VGI	Vehicle-grid integration
VI	Viscosity index
VIL	Vehicle-in-the-loop
VIUS	Vehicle Inventory and Use Survey
VMT	Vehicle miles traveled
VN-Cu	Vanadium nitride doped with copper
VOF	Volume of fluid
VOTT	Value of travel time
VSA	Vehicle speed advisory
VSL	Variable speed limit
VTO	Vehicle Technologies Office
VTTI	Virginia Tech Transportation Institute
WECC	Western Electricity Coordinating Council
WERC	Wisconsin Engine Research Consultants
WGS	Water gas shift
Wh/kg	Watt-hour per kilogram
WHR	Waste-heat recovery

WM	Waste Management, Inc.
WPI	Worchester Polytechnic Institute
WPT	Wireless power transfer
wt. %	Weight percent
WTF	Workflow Task Force
WTS	Whole Traveler Survey
WTW	Well to wheels
X	Times
XANES	X-ray absorption near-edge structure
XAS	X-ray absorption spectroscopy
XCT	X-ray computed tomography
xEV	Reference to an electric vehicle, including battery electric vehicle (BEV), hybrid electric vehicle (HEV), plug-in hybrid electric vehicle (PHEV), etc.
XFC	Extreme fast charging
XPS	X-ray photoelectron spectroscopy
XRD	X-ray diffraction
YSI	Yield sooting index
ZANZEFF	Zero-Emission and Near-Zero Emission Freight Facilities
ZDDP	Zinc dialkyldithiophosphate
Zero-RK	Zero-order Reaction Kinetics
Zn	Zinc
Zr	Zirconium
ZrO_2	Zirconium dioxide (zirconia)
ZSM-5	Zeolite Socony Mobil -5

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