U.S. Climate Change Technology Program

Strategic Plan

TABLE OF CONTENTS

FIGURES

TABLES

BOXES

ACRONYMS AND ABBREVIATIONS

ABR Advanced Burner Reactor
AFCI Advanced Fuel Cycle Initiative
AFV Alternative Fuel Vehicles
AGAGE Advanced Global Atmospheric Gases Experiment
ANL Argonne National Laboratory
APS Aerosol Polarimetery Sensor
AUV Autonomous Underwater Vehicles

BC Black Carbon
BES Office of Basic Energy Sciences, U.S. Department of Energy
BESAC Basic Energy Sciences Advisory Committee
BP British Petroleum
Btu British Thermal Unit

CCCSTI Committee on Climate Change Science and Technology Integration
CCP Carbon Capture Project
CCS Carbon Capture and Sequestration
CCSP U.S. Climate Change Science Program
CCTP U.S. Climate Change Technology Program
CDIAC Carbon Dioxide Information Analysis Centre
CEM Continuous Emissions Monitor
CETC Natural Resources Canada CANMET Energy Technology Center
CEQ Council on Environmental Quality
CFC Chlorofluorocarbon
CH_4 Methane
CHP Combined Heat and Power (system)
CMM Coal Mine Methane

CMOP	Coalbed Methane Outreach Program
CO_2	Carbon Dioxide
COL	Construction and Operating License
CSLF	Carbon Sequestration Leadership Forum
CSP	Competitive Solicitation Program
CSRP	Carbon Sequestration Regional Partnerships
CT	Computed Tomography
CVD	Chemical Vapor Deposition
DAI	Dangerous Anthropogenic Interference
DG	Distributed Generation
DOC	U.S. Department of Commerce
DoD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOI	U.S. Department of the Interior
DOS	U.S. Department of State
DOT	U.S. Department of Transportation
DPC	Domestic Policy Council
ECBM	Enhanced Coal-Bed Methane
EIA	Energy Information Administration
EJ	Exajoule (10^{18} Joules)
EMF	Energy Modeling Forum, Stanford University
EOR	Enhanced Oil Recovery
EPA	U.S. Environmental Protection Agency
ESP	Early Site Permit
Euratom	European Atomic Energy Community
EU	European Union
FACE	Free-Air CO_2 Enrichment
FACTS	Flexible Automated Control Transmission Systems
FC	Fuel Cell
FCT	Fuel Cell Turbine
FES	Fusion Energy Sciences, U.S. Department of Energy, Office of Science
FFRDC	Federally Funded Research and Development Center
FHA	Federal Highway Administration
FTC	Federal Trade Commission
FTIR	Fourier Transform Infrared Spectroscopy
FY	Fiscal Year
GDP	Gross Domestic Product
Gen IV	Generation IV
GEO	Group on Earth Observations
GEO-SEQ	Geological Sequestration (project)
GEOSS	Global Earth Observation System of Systems
GHG	Greenhouse Gas
GIF	Generation IV International Forum (nuclear power)
GOSAT	Greenhouse Gas Observing SATellite
Gt	Gigatonnes (10^9 tonnes or metric tons)
GtC	Gigatonnes (10^9 tonnes or metric tons) of Carbon
GtC-eq.	Gigatonnes (10^9 tonnes or metric tons) of Carbon Equivalent (emissions)
GWP	Global Warming Potential
H_2	Molecular Hydrogen
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutants
HCFC	Hydroclorofluorocarbon (refrigerant)
HFC	Hydrofluorocarbon
HHS	U.S. Department of Health and Human Services
HNLC	High Nutrient, Low Chlorophyll
HSHL	High Spectral Resolution LIDAR
HTS	High-Temperature Superconductivity (e.g. wire)
HVACR	Heating, Ventilation, Air Conditioning, and Refrigeration
HVDC	High Voltage Direct Current
IAEA	International Atomic Energy Agency
ICF	Inertial Confinement Fusion
IEA	International Energy Agency
IEOS	Integrated Earth Observation System
IFE	Inertial Fusion Energy
IGCC	Integrated Gasification Combined Cycle
IMSS	Image Multi-Spectral Sensor
IPCC	Intergovernmental Panel on Climate Change
IPHE	International Partnership for the Hydrogen Economy
ITER	International Thermonuclear Experimental Reactor (Latin for "the way")
ITS	Intelligent Transportation Systems
IWG	Interagency Working Group
kg	Kilogram
kW	Kilowatt
kWe	Kilowatt (electric)
kWh	Kilowatt-hour
LANL	Los Alamos National Laboratory
LCCP	Life-Cycle Climate Performance
LED	Light-Emitting Diode
LFG	Landfill Gas
LH_2	Liquefied Hydrogen
LIBS	Laser Induced Breakdown Spectroscopy
LIDAR	Light Detection and Ranging
LNLC	Low Nutrient, Low Chlorophyll
MEA	Monoethanolamine
MFE	Magnetic Fusion Energy
MiniCAM	Mini Climate Assessment Model (Pacific Northwest National Laboratory)
MM	Measuring and Monitoring
MOF	Microporous Metal Organic Frameworks
mpg	miles per gallon
mph	miles per hour

MSPI	Multi-angle SpectroPolarimetric Imager
MtC	Megatonnes Carbon
MWe	Megawatt electric
N_2O	Nitrous Oxide
NACP	North American Carbon Program
NAE	National Academy of Engineering
NAS	National Academy of Sciences
NASA	National Aeronautics and Space Administration
NEC	National Economic Council
NEPO	Nuclear Energy Plant Optimization (Program)
NCCTI	National Climate Change Technology Initiative
NERAC	Nuclear Energy Research Advisory Committee
NETL	National Energy Technology Laboratory
NH_3	Ammonia
NIF	National Ignition Facility
NNSA	National Nuclear Security Administration, U.S Department of Energy
NO_X	Nitrogen Oxides
NOAA	National Oceanic and Atmospheric Administration
NRC	National Research Council or Nuclear Regulatory Commission
NRCan	Natural Resources Canada
NREL	National Renewable Energy Laboratory
NSC	National Security Council
NSCR	Non-Selective Catalytic Reduction
NSF	National Science Foundation
NSTX	National Spherical Torus Experiment
NVFEL	National Vehicle and Fuels Emission Laboratory
OC	Organic Carbon
OCO	Orbiting Carbon Observatory
ODS	Ozone-Depleting Substance
OMB	Office of Management and Budget
ONR	Office of Naval Research
ORNL	Oak Ridge National Laboratory
OSTP	Office of Science and Technology Policy
PEM	Polymer Electrolyte Membrane
PFC	Perfluorocarbons
PM	Particulate Matter
PNNL	Pacific Northwest National Laboratory
POU	Point Of Use
PPPL	Princeton Plasma Physics Laboratory
PV	Present Value
Quad	Quadrillion Btus (10^{15} Btus)
R&D	Research and Development. Also used generically to mean RD&D and RDD&D
RD&D	Research, Development, and Demonstration
RDD&D	Research, Development, Demonstration, & Deployment
RFI	Request for Information
SCR	Selective Catalytic Reduction
SF_6	Sulfur Hexafluoride
SNAP	Significant New Alternatives Program
SOFeX	Southern Ocean Iron Fertilization Experiment
SOIREE	Southern Ocean Iron Enrichment Experiment
SO_X	Sulfur Oxides
SQUIDS	Superconducting Quantum Interference Devices
SRES	Special Report on Emissions Scenarios (of the IPCC)
T&D	Transmission and Distribution
TgC	Teragrams of Carbon
Tg CO_2	Teragrams Carbon Dioxide
Tg CO_2-eq.	Teragrams Carbon Dioxide Equivalent (emissions)
UN	United Nations
UNDP	United Nations Development Program
UNEP	United Nations Environmental Program
UNFCCC	United Nations Framework Convention on Climate Change
USAID	U.S. Agency for International Development
USDA	U.S. Department of Agriculture
USGEO	United States Group on Earth Observation
VAM	Ventilation Air Methane
VOC	Volatile Organic Compounds
W/m^2	Watts per Square Meter
WCRP	World Climate Research Program
WG	Working Group
WMO	World Meteorological Organization
WOCE	World Ocean Circulation Experiment
WRE	T. Wigley, R. Richels, and J. Edmonds