

# Appendix 1

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## Acronyms

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|                      |   |                        |  |
|----------------------|---|------------------------|--|
| <b>AAAS</b>          | American Association for the Advancement of Science       | <b>C4MIP</b>           | Coupled Carbon Cycle Climate Model Intercomparison Project |
| <b>AC</b>            | alternating current                                       | <b>Ca</b>              | CO <sub>2</sub> concentration in the air                   |
| <b>ACC</b>           | American Chemistry Council                                | <b>CAFE</b>            | corporate average fuel economy                             |
| <b>ACE</b>           | Accumulated Cyclone Energy                                | <b>CAM</b>             | crassulacean acid metabolism                               |
| <b>ACS</b>           | American Cancer Society                                   | <b>CARB</b>            | California Air Resources Board                             |
| <b>AEMO</b>          | Australian Energy Market Operator                         | <b>CBA</b>             | cost-benefit analysis                                      |
| <b>AGW</b>           | anthropogenic global warming                              | <b>CBD</b>             | cerebrovascular disease                                    |
| <b>AMI</b>           | acute myocardial infarction                               | <b>CC</b>              | combined cycle (natural gas)                               |
| <b>AMO</b>           | Atlantic Multidecadal Oscillation                         | <b>CCS</b>             | carbon capture and sequestration (storage)                 |
| <b>AMOC</b>          | Atlantic Meridional Overturning Circulation               | <b>CDC</b>             | U.S. Centers for Disease Control and Prevention            |
| <b>ANPP</b>          | aboveground net primary production                        | <b>CER</b>             | cumulative excess [mortality] risk                         |
| <b>AO/NAO</b>        | Arctic Oscillation/North Atlantic Oscillation             | <b>CF</b>              | capacity factor  |
| <b>APS</b>           | atmospheric pollen season                                 | <b>CGE</b>             | computable general equilibrium                             |
| <b>AR5</b>           | Fifth Assessment Report                                   | <b>CH<sub>4</sub></b>  | methane  |
| <b>aSAH</b>          | aneurysmal subarachnoid hemorrhage                        | <b>CHD</b>             | coronary heart disease                                     |
| <b>BAI</b>           | basal area index  | <b>CMIP</b>            | Coupled Model Intercomparison Project                      |
| <b>BCA</b>           | benefit-cost analysis                                     | <b>CO</b>              | carbon monoxide  |
| <b>BEA</b>           | U.S. Bureau of Economic Analysis                          | <b>CO<sub>2</sub></b>  | carbon dioxide   |
| <b>BHC</b>           | Bradford Hill Criteria                                    | <b>CO<sub>2e</sub></b> | carbon dioxide equivalent                                  |
| <b>BLM</b>           | U.S. Bureau of Land Management                            | <b>COPD</b>            | chronic obstructive pulmonary disease                      |
| <b>BOD</b>           | biological oxygen demand                                  | <b>CPP</b>             | Clean Power Plan   |
| <b>BP</b>            | before present  | <b>CT</b>              | combustion turbine (natural gas)                           |
| <b>BTU</b>           | British thermal unit                                      | <b>CVD</b>             | cardiovascular disease                                     |
| <b>C</b>             | carbon; also Celsius                                      | <b>CWP</b>             | crop water productivity                                    |
| <b>C<sub>3</sub></b> | C <sub>3</sub> carbon fixation pathway for photosynthesis | <b>DC</b>              | direct current   |
| <b>C<sub>4</sub></b> | C <sub>4</sub> carbon fixation pathway for photosynthesis | <b>DIC</b>             | dissolved organic carbon                                   |
|                      |   | <b>DM</b>              | dry matter   |
|                      |   | <b>DMS</b>             | dimethyl sulfide   |

## Climate Change Reconsidered II: Fossil Fuels

|                         |  |                                    |   |
|-------------------------|--|------------------------------------|---|
| <b>DOC</b>              | dissolved organic carbon   | <b>GIMMS</b>                       | Global Inventory Modeling and Mapping Studies   |
| <b>DoD</b>              | U.S. Department of Defense                                       | <b>GISS</b>                        | Goddard Institute for Space Studies   |
| <b>DICE</b>             | Dynamic Integrated Climate-Economy                               | <b>GJ</b>                          | gigajoule   |
| <b>DOI</b>              | U.S. Department of Interior                                      | <b>gNDVI</b>                       | Normalized Difference Vegetation Index over the Growing Season  |
| <b>DTR</b>              | diurnal temperature range  | <b>GNP</b>                         | Gross National Product  |
| <b>ECE</b>              | extreme climate event  | <b>GPP</b>                         | gross primary production  |
| <b>ECS</b>              | equilibrium climate sensitivity                                  | <b>gr</b>                          | gram(s)   |
| <b>EDF</b>              | Environmental Defense Fund                                       | <b>GSP</b>                         | gross state product   |
| <b>EIA</b>              | U.S. Energy Information Administration                           | <b>GtC</b>                         | gigatons of carbon  |
| <b>EJ</b>               | exajoule   | <b>GW</b>                          | gigawatt  |
| <b>EKC</b>              | Environmental Kuznets Curve                                      | <b>H<sub>2</sub>O<sub>2</sub></b>  | hydrogen peroxide   |
| <b>ENSO</b>             | El Niño-Southern Oscillation                                     | <b>H<sub>2</sub>SO<sub>4</sub></b> | sulfuric acid   |
| <b>EPA</b>              | U.S. Environmental Protection Agency                             | <b>H<sub>2</sub>S</b>              | hydrogen sulfide  |
| <b>EROI</b>             | energy return on investment                                      | <b>HadCRUT</b>                     | dataset of monthly instrumental temperature records   |
| <b>ESA</b>              | Endangered Species Act   | <b>HEI</b>                         | Health Effects Institute  |
| <b>EU</b>               | European Union   | <b>HEM</b>                         | Heritage Energy Model   |
| <b>EVI</b>              | Enhanced Vegetation Index  | <b>HNO<sub>3</sub></b>             | nitric acid   |
| <b>F</b>                | Fahrenheit   | <b>IAC</b>                         | InterAcademy Council  |
| <b>FACE</b>             | free-air CO <sub>2</sub> enrichment                              | <b>IAM</b>                         | integrated assessment model   |
| <b>FAOCE</b>            | free-air ozone and CO <sub>2</sub> enrichment                    | <b>IEA</b>                         | International Energy Agency   |
| <b>FAO</b>              | Food and Agriculture Organization of the United Nations          | <b>IER</b>                         | Institute for Energy Research   |
| <b>Fe</b>               | iron   | <b>IHD</b>                         | ischaemic heart disease   |
| <b>FERC</b>             | U.S. Federal Energy Regulatory Commission                        | <b>IPAT</b>                        | equation where I is environmental impact, P is human population, A is per-capita affluence, and T is technological innovation |
| <b>FJC</b>              | Federal Judicial Center  | <b>IPCC</b>                        | United Nations' Intergovernmental Panel on Climate Change   |
| <b>FME</b>              | free-market environmentalism                                     | <b>IPCC 2007-I</b>                 | Intergovernmental Panel on Climate Change – Group 1 Contribution  |
| <b>FOIA</b>             | Freedom of Information Act                                       | <b>IPCC 2007-II</b>                | Intergovernmental Panel on Climate Change – Group II Contribution   |
| <b>FUND</b>             | Climate Framework for Uncertainty, Negotiation, and Distribution | <b>IPCC 2007-III</b>               | Intergovernmental Panel on Climate Change – Group III Contribution  |
| <b>FWS</b>              | U.S. Fish and Wildlife Service                                   | <b>IPCC-FAR</b>                    | Intergovernmental Panel on Climate Change – First Assessment Report   |
| <b>FY</b>               | fiscal year  | <b>IPCC-SAR</b>                    | Intergovernmental Panel on Climate Change – Second Assessment Report  |
| <b>GAM</b>              | generalized additive model                                       | <b>IPCC-TAR</b>                    | Intergovernmental Panel on Climate Change – Third Assessment Report   |
| <b>GAO</b>              | U.S. Government Accountability Office                            | <b>IPCC-AR4</b>                    | Intergovernmental Panel on Climate Change – Fourth Assessment Report  |
| <b>GCM</b>              | General Circulation Models                                       |                                    |   |
| <b>GCSC</b>             | General Crisis of the Seventeenth Century                        |                                    |   |
| <b>GDP</b>              | Gross Domestic Product   |                                    |   |
| <b>GDP<sub>pc</sub></b> | Gross Domestic Product per capita                                |                                    |   |
| <b>GHG</b>              | greenhouse gas   |                                    |   |
| <b>GIGO</b>             | garbage in, garbage out  |                                    |   |

## Appendix 1: Acronyms

|                        |   |                       |  |
|------------------------|---|-----------------------|--|
| <b>IPCC-AR5</b>        | Intergovernmental Panel on Climate Change – Fifth Assessment Report | <b>NAAQS</b>          | National Ambient Air Quality Standards                 |
| <b>IRR</b>             | incidence rate ratio  | <b>NaCl</b>           | sodium chloride  |
| <b>IS</b>              | ischemic stroke   | <b>NAE</b>            | National Academy of Engineering                        |
| <b>ISEE</b>            | International Society for Ecological Economics                      | <b>NAO</b>            | North Atlantic Oscillation                             |
| <b>ITS</b>             | Investment Tax Credit   | <b>NAPAP</b>          | National Acid Precipitation Assessment Program         |
| <b>IWG</b>             | Interagency Working Group on the Social Cost of Carbon              | <b>NARR</b>           | North American Regional Reanalysis                     |
| <b>IWUE (iWUE)</b>     | intrinsic water use efficiency                                      | <b>NAS</b>            | National Academy of Sciences (USA)                     |
| <b>K</b>               | Kelvin  | <b>NASA</b>           | National Aeronautics and Space Administration (USA)    |
| <b>ka</b>              | thousand years  | <b>NCDC</b>           | National Climatic Data Center                          |
| <b>kcal</b>            | kilocalorie   | <b>NDVI</b>           | Normalized Difference Vegetation Index                 |
| <b>kPa</b>             | kilopascal, a measure of pressure                                   | <b>NEMS</b>           | National Energy Modeling System                        |
| <b>kWh</b>             | kilowatt hour   | <b>NETL</b>           | National Energy Technology Laboratory                  |
| <b>kWhe</b>            | kilowatt hour of electricity  | <b>NFI</b>            | National Forest Inventory                              |
| <b>kWh<sub>t</sub></b> | thermal kilowatt hour   | <b>NH<sub>4</sub></b> | ammonium   |
| <b>J</b>               | joule   | <b>NH</b>             | Northern Hemisphere                                    |
| <b>JI</b>              | joint implementation  | <b>NHL</b>            | northern high latitudes                                |
| <b>LAI</b>             | leaf area index   | <b>NIPCC</b>          | Nongovernmental International Panel on Climate Change  |
| <b>LCOE</b>            | levelized cost of electricity                                       | <b>NMMAPS</b>         | National Morbidity, Mortality and Air Pollution Study  |
| <b>LED</b>             | light-emitting diode  | <b>NOAA</b>           | U.S. National Oceanic and Atmospheric Administration   |
| <b>LGM</b>             | Last Glacial Maximum  | <b>NOAEL</b>          | no observed adverse effect level                       |
| <b>LIA</b>             | Little Ice Age  | <b>NO</b>             | nitric oxide   |
| <b>LIG</b>             | last interglacial   | <b>NO<sub>x</sub></b> | nitrogen oxides  |
| <b>LNT</b>             | linear-no threshold   | <b>NPP</b>            | net primary productivity (production)                  |
| <b>LOAEL</b>           | lowest observed adverse effect level                                | <b>NRDC</b>           | Natural Resources Defense Council                      |
| <b>LST</b>             | land surface temperature  | <b>NSPS</b>           | New Source Performance Standards                       |
| <b>m</b>               | meter   | <b>NUE</b>            | nitrogen use efficiency                                |
| <b>Ma</b>              | million years   | <b>O<sub>3</sub></b>  | ozone  |
| <b>Ma BP</b>           | million years before present  | <b>OECD</b>           | Organisation for Economic Co-operation and Development |
| <b>MAAT</b>            | mean annual air temperature   | <b>OHCA</b>           | out-of-hospital cardiac arrest                         |
| <b>MBtu</b>            | million British thermal units                                       | <b>OIRA</b>           | U.S. Office of Information and Regulatory Affairs      |
| <b>MeHg</b>            | methylmercury   | <b>OMB</b>            | U.S. Office of Management and Budget                   |
| <b>MMT</b>             | minimum mortality temperature; also million metric tons             | <b>OTC</b>            | open-top chamber                                       |
| <b>MMTS</b>            | maximum-minimum temperature sensor                                  | <b>PAGE</b>           | Policy Analysis of the Greenhouse Effect               |
| <b>MTCE</b>            | million tons of carbon equivalent                                   | <b>PAR</b>            | populations at risk                                    |
| <b>MW</b>              | megawatt  | <b>Pb</b>             | lead   |
| <b>MWP</b>             | Medieval Warm Period  |                       |  |
| <b>N</b>               | nitrogen  |                       |  |
| <b>N<sub>2</sub>O</b>  | nitrous oxide   |                       |  |

## Climate Change Reconsidered II: Fossil Fuels

|                         |  |                         |   |
|-------------------------|--|-------------------------|---|
| <b>PCT</b>              | potential compensation test  | <b>SRES</b>             | Special Report on Emission Scenarios                  |
| <b>PDO</b>              | Pacific Decadal Oscillation  | <b>SST</b>              | sea surface temperature                               |
| <b>PET</b>              | physiologically equivalent temperature   | <b>STPR</b>             | social time preference rate                           |
| <b>PETM</b>             | Palaeocene-Eocene Thermal Maximum  | <b>TAR</b>              | Third Assessment Report                               |
| <b>Pg</b>               | petagram (one billion metric tonnes)   | <b>TBE</b>              | tick-borne encephalitis                               |
| <b>PGD</b>              | Plant Growth Database  | <b>TBEV</b>             | tick-borne encephalitis virus                         |
| <b>pH</b>               | a measure of acidity or basicity   | <b>Tcf</b>              | trillion cubic feet                                   |
| <b>PM</b>               | particulate matter   | <b>tCO<sub>2e</sub></b> | ton of CO <sub>2</sub> equivalent                     |
| <b>PM<sub>2.5</sub></b> | particles less than or equal to 2.5 µm (micrometer)  | <b>TFR</b>              | total fertility rate                                  |
| <b>PM<sub>10</sub></b>  | particles less than or equal to 10 µm in diameter (about one-seventh the diameter of a human hair) | <b>Tg</b>               | teragram  |
| <b>PPA</b>              | power purchase agreement   | <b>Tmax</b>             | maximum temperature                                   |
| <b>ppb</b>              | parts per billion  | <b>Tmin</b>             | minimum temperature                                   |
| <b>ppm</b>              | parts per million  | <b>Topt</b>             | optimum temperature                                   |
| <b>ppmv</b>             | parts per million by volume  | <b>TRW</b>              | tree-ring width                                       |
| <b>PPP</b>              | purchasing power parity  | <b>TW</b>               | terawatt  |
| <b>PRIO</b>             | Peace Research Institute of Oslo   | <b>TWh</b>              | terawatt hour   |
| <b>PTC</b>              | Production Tax Credit  | <b>UAH</b>              | University of Alabama Huntsville                      |
| <b>PV</b>               | photovoltaic   | <b>UCD</b>              | unusually cold day                                    |
| <b>PVC</b>              | polyvinyl chloride   | <b>UN</b>               | United Nations  |
| <b>RCP</b>              | representative concentration pathway   | <b>UNEP</b>             | United Nations Environment Program                    |
| <b>RD</b>               | respiratory disease  | <b>UNFCCC</b>           | United Nations Framework Convention on Climate Change |
| <b>RF</b>               | radiative forcing  | <b>USDOE</b>            | U.S. Department of Energy                             |
| <b>RIA</b>              | regulatory impact analysis   | <b>USHCN</b>            | U.S. Historical Climatology Network                   |
| <b>RPM</b>              | revolutions per minute   | <b>UV</b>               | ultraviolet   |
| <b>RR</b>               | relative risk  | <b>VOC</b>              | volatile organic compound                             |
| <b>RSV</b>              | respiratory syncytial virus  | <b>VWC</b>              | virtual water content                                 |
| <b>RTI</b>              | respiratory tract infection  | <b>W</b>                | watt  |
| <b>RWP</b>              | Roman Warm Period  | <b>WCED</b>             | World Commission on Economic Development              |
| <b>SARS</b>             | sudden acute respiratory disease   | <b>WGI</b>              | Working Group I of IPC                                |
| <b>SCC</b>              | social cost of carbon  | <b>WGII</b>             | Working Group II of IPCC                              |
| <b>SCD</b>              | sudden cardiac death   | <b>WGIII</b>            | Working Group III of IPCC                             |
| <b>SEPP</b>             | Science and Environmental Policy Project   | <b>WHO</b>              | World Health Organization                             |
| <b>SLR</b>              | sea-level rise   | <b>WMO</b>              | World Meteorological Organization                     |
| <b>SO<sub>2</sub></b>   | sulfur dioxide   | <b>WTA</b>              | willingness to accept                                 |
| <b>SO<sub>3</sub></b>   | sulfur trioxide  | <b>WTP</b>              | willingness to pay                                    |
| <b>SOC</b>              | soil organic carbon  | <b>WUE</b>              | water use efficiency                                  |
| <b>SOM</b>              | soil organic matter  | <b>YLL</b>              | years of life lost                                    |
| <b>SPM</b>              | Summaries for Policymakers   | <b>Zn</b>               | zinc  |