

EERE Editorial Style Guide

April 30, 2021

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EERE Style Guide Instructions

The Office of Energy Efficiency and Renewable Energy (EERE) Style Guide is an essential tool for preparing publications, exhibits, and websites. It features formatting, spelling, punctuation, capitalization, grammar, and usage guidelines.

Why Use This Guide?

This guide promotes the accuracy, consistency, and professionalism required for effectively communicating EERE's capabilities and accomplishments in research and development.

How to Use This Guide

Consult this guide first when you develop or edit a publication or website for EERE. The entries, listed in alphabetical order, are selectable in the left navigation pane of the PDF. You can also use the Table of Contents to find entries.

If the entry you seek is not included, consult these style and reference guides in the following order:

- [*The Associated Press Stylebook*](#)* (AP Style)
- [*Merriam-Webster's Collegiate Dictionary*](#)
- [*The Chicago Manual of Style*](#). * (Chicago Style)

* Available by subscription only.



a, an

Use “a” before any acronym or word that begins with a consonant sound. Use “an” before any acronym or word that begins with a vowel sound. An acronym is pronounced as a word (e.g., a HEPA filter); an initialism is pronounced as its letters (e.g., an NGO).

a light-water reactor; an LWR

a NASA astronaut

a request for proposals; an RFP

a Project Management Plan; a PMP

abbreviations, acronyms, and initialisms

An **abbreviation** is a shortened form of a word used in place of the full word. An **acronym** is a word formed from the first letters of each of the words in a phrase or name. An **initialism** is similar to an acronym, but it is pronounced by its letters.

Include a glossary or list of acronyms if your publication is at least 50 pages and contains at least 20 acronyms.

Abbreviations

Corp.

Blvd.

FedEx

Acronyms

NASA

laser

Initialisms

DOE

EERE

Spell out the full name on first use, followed immediately by the abbreviation/acronym/initialism in parentheses. To avoid confusion, try not to use too many in a sentence or paragraph.

Avoid abbreviations, acronyms, and initialisms unless the phrase appears more than once or if they are better recognized than the full name (e.g., NASA, PG&E). Similarly, avoid using in headlines or page headers unless well recognized.

Exception: Acronyms and initialisms may be used for EERE News and blog items distributed via GovDelivery. Headlines should be written to be relatable and easy to understand.

Common abbreviations/acronyms/initialisms that do not require spelling:

no. (number)

centimeter (cm)

vs. (versus)

meter (m)

ASAP (as soon as possible)

foot (ft.)

R&D (research and development)

pound (lb.)

Web content. The above guidelines apply to web content as well but try to avoid abbreviations/acronyms/initialisms and use a shortened version of the name on second reference. If you can't avoid, define it the first time used on each webpage.

Technical measurement units. Spell out a technical abbreviation in full in text when used without numerals.

Abbreviate units of measurement when they are used with a numeral or numeric value. With a few exceptions (such as %, °, \$, <, and ¢), use a space to separate them from numerals.

In text without numeral

“a few centimeters” not “a few cm.”

In text with numeral

15 cm	15%
15 m	\$15
15 dB	<15 W

Pluralization. Use a small s (no apostrophe) for plurals of most abbreviations. For plurals of units of measurement, omit the s.

PUCs not PUC’s	6 m, not 6 ms
CFCs, not CFC’s	75 dB, not 75 dBs
15 cm, not 15 cms	40 W, not 40 Ws

Possessiveness. If the possessive is used with a name or term, the apostrophe should go after the spelled-out name or term but not with the acronym/abbreviation/initialism. Preference is to write in a way that avoids use of the possessive.

The U.S. Department of Energy’s (DOE) Office of Energy Efficiency and Renewable Energy (EERE) is in charge of the program.

Abbreviating equations and references. You can abbreviate “equation” and “reference” when used with numbers. Spell them out at the beginning of a sentence.

See Eq. 1-1, Eq. 2-7, and Ref. 10.

Equation 2-1 shows the relation.

Abbreviating in journals. For a journal article, consult the publisher’s or professional society’s guidelines for abbreviations, if available.

abstract

An abstract usually accompanies a journal article or conference paper. It is an important indexing and research tool. An abstract is usually 200 to 250 words in length and the content summarizes and highlights the major points of the journal article, conference paper, or report. It may also include a brief description of the purpose, scope, and methods used to reach the conclusions.

academic degrees

Avoid the use of academic degrees unless it’s absolutely necessary to establish credentials. Use the abbreviations after a name and set it off with periods, e.g., Ph.D., B.A., M.A., and LL.D. (exception: MBA). Use them only on first reference. Also, use an apostrophe in bachelor’s,

master's degree, etc. Neither Bachelor of Arts nor Master of Science includes a possessive apostrophe.

She has a master's degree in engineering.

He has a Bachelor of Arts from Penn State University.

Jane Doe, Ph.D., spoke at the conference.

acknowledgments

Acknowledge the reviews, funding, and other assistance of individuals and groups in EERE technical reports and papers. Acknowledgments can go in a preface or foreword in a technical report, or they can be on a separate page if they are extensive. They also often follow the main text in professional journal articles. Journals usually contain examples or instructions for authors.

acronyms

See [abbreviations, acronyms, and initialisms](#).

addresses

Use U.S. Postal Service abbreviations (CO for Colorado and DC for District of Columbia) for states listed in bibliographies, references, and full addresses (when they include streets or post office boxes).

P.O. Box 123
Denver, CO 80101

In text, when referring to a state with a city or by itself, spell out the state name in full, except for the District of Columbia (D.C.).

The state energy office is stepping up solar retrofit activities in Massachusetts.

See also [states and countries](#).

air conditioning

Air conditioning is two words when used as a noun and hyphenated when used as an adjective.

Air conditioning is energy intensive.

The efficiency of the air-conditioning system can be improved.

American Recovery and Reinvestment Act of 2009, ARRA

Spell out the full name on first reference, use "Recovery Act" in subsequent references instead of "ARRA." Do not put "Recovery Act" in parentheses.

Correct

The American Recovery and Reinvestment Act of 2009 was designed to spur economic growth while creating new jobs and saving existing ones. Through the Recovery Act, DOE invested billions to support a wide range of clean energy projects.

Incorrect

The American Recovery and Reinvestment Act of 2009 (ARRA)

ampersand (&)

Ampersands should be used with acronyms and initialisms (e.g., R&D), left navigation menus, right navigation menus, and a website's top banner (but not the heading). Ampersands are used in an official company or initiative names. Do not use "&" to mean "and" in other situations.

Correct

PG&E

Leadership in Energy & Environmental Design

R&D

Incorrect

R and D

Research & Development

appendices or appendixes

Include detailed background or technical information in one or more appendices (preferred spelling, but either is acceptable). Large, detailed tables belong in an appendix. If more than one appendix, title each with letters (Appendix A, B, C, etc.) and name figures and tables to correspond to the title (Figure A-1, Table B-2, etc.). If only one appendix, title it "Appendix" rather than "Appendix A."

assure, ensure, and insure

Assure means to give confidence. **Ensure** means to make certain. **Insure** means to obtain insurance.

The manufacturer assured the group the equipment would work properly.

Ensure the lid is fitted properly before starting the experiment.

The laboratory must insure the new equipment before it can be used.

author-date citations

Following is the preferred style for EERE reports and papers. Do not use a comma between the author's last name and the year. See [references and citations](#).

Greenhouse effects and global climate change are controversial and critical issues that impact the energy industry, government policymaking, and society (Holdren 2001; Kalicki and Goldwyn 2005).



balance of systems, BOS

Balance of systems (not system) represents all components and costs other than the photovoltaic modules/array. It includes design costs, land, site preparation, system installation, support structures, power conditioning, operation and maintenance costs, indirect storage, and related costs.

Whether you decide to connect your home renewable energy system to the electric grid or not, you will need to invest in some additional equipment (called “balance of systems”) to condition the electricity, safely transmit the electricity to the load that will use it, and/or store the electricity for future use.

Several analyses have examined non-module PV system hardware costs, including the costs of power electronics and other BOS hardware elements.

bandgap

Bandgap (one word, noun or adjective) is a property that signifies the minimum amount of energy needed to free electrons so that the semiconductor material in a solar cell can conduct electricity. The bandgap determines the amount and type of light a semiconductor absorbs in a solar cell.

NREL’s research shows that Ga₂ O₃ has the potential to have a 3–5X higher bandgap, as well as a 2–3X higher operating temperature compared to silicon.

baseload

The average amount of electric power that a utility must supply in any period. Baseload refers to the minimal load that is always there.

Do not use this term in reference to a generation source, as this usage is outdated and not consistent with how the modern electricity system works. Instead, focus on the attributes of resources and the services they provide to the system.

Flexible CHP systems are an on-site electricity generation resource that efficiently provide both an electrical baseload and surplus.

bibliography

A bibliography is a list of works that are related to your subject or publication but not cited, either by author or by number, in text. Alphabetize works in bibliographies according to the last name of the first author. Some bibliographies are titled “For Further Reading.” Compile in-text citations of literature and other sources in a list of references. See [references and citations](#).

bioeconomy

A global transition to the sustainable use of energy from renewable biomass resources.

An analysis reported in *Nature* concluded that U.S. revenues from the bioeconomy amounted to more than \$324 billion in 2012.

bioenergy

Energy produced from biomass, including biofuels and biopower.

Traditional focuses on biofuels and bioenergy have been expanded to include the energy and carbon efficiency of biomass conversion, as well as bioproducts, biochemicals, and biomaterials.

bioenergy feedstocks

Biomass and waste materials that can be used to produce biofuels, bioproducts, and biopower. The raw materials undergo preprocessing operations (baling, grinding, leaching, blending, pelleting, or packaging) to meet quality characteristics for conversion at a biorefinery.

Examples of bioenergy feedstocks include corn stover, switchgrass, and woody biomass.

biofuels

Liquid or gaseous fuels such as ethanol, methanol, methane, and hydrogen that are produced from biomass feedstocks. “Drop-in” biofuels are liquid or gaseous fuels that are compatible with existing vehicles and fuel distribution and storage infrastructure, such as renewable natural gas, renewable gasoline, renewable diesel, and renewable jet fuel.

This work will help researchers realize the potential of an algal biofuel industry capable of producing billions of gallons per year of renewable diesel, gasoline, and jet fuels.

biomass

An energy resource derived from plant- and algal-based materials or organic waste streams. It includes agricultural residues, forest resources, perennial grasses, woody energy crops, algae, wet wastes (e.g., biosolids), sorted municipal solid waste, urban wood waste, food waste, biogas, and other waste streams. Biomass and waste are valuable energy resources as they can be converted to fuels, chemicals, or power.

Idaho National Laboratory’s (INL) Bioenergy Feedstock Library is a biomass repository and research tool that contains information about the chemical, physical, and conversion performance properties of more than 90 crop types and factions from across the United States.

biopower

Electric power or heat derived from bioenergy feedstocks through direct combustion of the feedstock, through gasification and then combustion of the resultant gas, or through other thermal conversion processes. Power is generated with engines, turbines, or other equipment. Biopower technologies convert renewable biomass fuels into heat and electricity using processes similar to those used with fossil fuels.

bioproducts

Products, materials, or chemicals derived from bioenergy feedstocks. Examples include ethanol, plastics, polymers, and formic acid.

Scientists engineering microbes for renewable fuels and bioproducts have developed a fast, efficient way to identify the most promising varieties.

biorefinery

A facility that converts biomass or waste resources into biofuels, bioproducts, and biopower. The biorefinery concept is analogous to a petroleum refinery, where a slate of multiple fuels and products are produced from a petroleum feedstock.

The biorefinery in Emmetsburg, Iowa is the nation's first commercial-scale cellulosic ethanol plant to use corn waste as a feedstock.

British thermal unit, Btu

The abbreviation for “British thermal unit” is Btu. Btu is used for both singular and plural cases and should be initial-capped.

A requirement for significant reduction in the maximum Btu input rate of decorative vented gas fireplaces would impose substantial burdens on manufacturers.

Estimates show that the energy savings in the United States due to light-duty plug-in electric vehicles in 2019 was 44.8 trillion Btu, up 47% from 2018.

bullets

A bulleted list requires at least two items.

Make bulleted lists parallel in construction (begin all the items in the list with the same part of speech, such as a verb or a noun).

- Make sure items are either all phrases or all complete sentences.
- Punctuate all items consistently.

Punctuating bulleted lists. Begin each item with a capital letter and end each item with a period or other terminal punctuation (e.g., !, ?), except when the bulleted items consist of short noun phrases or single words. In such cases, punctuate only the final bullet.

Generally, EERE prefers AP Style over Chicago Style on punctuating bulleted lists, except when AP Style end-punctuates each short phrase or single-word bullet. EERE makes an exception to this, preferring that short phrases and single-word bullets omit end punctuation, except for the final bullet. See [lists](#).

Short phrases or single-word list punctuation

FOAs issued in the last three years:

- DE-FOA-0002168
- DE-FOA-0002032
- DE-FOA-0001847.

Complete sentence punctuation

Use bulleted lists sparingly to:

- Highlight important items.
- Draw attention to main points.
- Help readers find information.

Do not use commas or semicolons at the end of bullets.

Incorrect

In response to the President's executive order, we are:

- Investing in supply-chain research and development,
- Soliciting advice from private industry, and
- Accelerating the development of new energy-storage technologies.

Use numbered or lettered lists instead of bullets if you want to refer to items in a list or procedure elsewhere in the text.

Steps needed to execute the order include:

- 1) Request the form.
- 2) Identify the target.
- 3) Complete the form, including all boxes.
- 4) Obtain PA approval of request.

Concerning Step 2, consult the database to identify the target accurately, including all descriptors.

Formatting. In text, the first level of bullet is indented 0.25 in., and text begins at the 0.5-in. mark. Each subsequent level of bullet is sequentially indented 0.5 in. In lists of items that are more than one line, each bulleted item is followed by a 6-pt. space.

Web content. Except for the indenting and spacing formats for reports, all the above guidelines apply.

A Cascading Style Sheet (CSS) governs web content on energy.gov. Web coordinators should check that the bulleted paragraph type they use has the correct spacing, as the energy.gov style does allow some flexibility. When formatting bullets on the website, there should be a space between the text above the bullets and the first bullet. To help facilitate scanning, consider a space between each bulleted item when the bulleted text is long.



capitalization

Proper names. These include government programs, official projects, formal groups, organizations, companies, titles when they precede a name (use lowercase in titles that follow the name), specific geographic areas or features, and ethnic groups.

For companies and products with stylized lowercase or “camel cap” names (e.g., iPod), use the company’s or product’s preferred capitalization.

Sandia National Laboratories

American Wind Energy Association

President and Chief Executive Officer Christine Johnson; Christine Johnson, president and chief executive officer

the Southwest

Lake Powell

the Colorado River

African, Asian, Caucasian, Hispanic, or Native Americans

Taxonomic names. For botanical and zoological divisions, capitalize the names of all divisions higher than species: genera, families, orders, classes, and phyla. Put genera, species, and varieties in italics. Spell out at first mention and then abbreviate after.

Clostridium thermocellum (first mention)

C. thermocellum (subsequent)

Escherichia coli (first mention)

E. coli (subsequent)

Headings, table titles, figure titles, and captions. Capitalize the main words of table titles and most headings and subheadings, including the second word in a hyphenated term. Verbs, including “is” and “are,” are always capitalized.

Do not capitalize articles (a, an, the); conjunctions (and, or, nor, but); or prepositions (for, of, to) unless they begin the title or heading.

Exception: If the heading takes up multiple lines, and the article or preposition comes at the beginning of a line, capitalize the article or preposition. (Applies mainly to printed products, as headlines on digital platforms may adjust automatically.)

PV Program Five-Year Plan

Table 1. Number and Frequency of Defects in Six Samples

Development of Method to Detect Anomalies

Department of Energy Announces Tribal Grant Relief Due to COVID-19

Even Equal Pay Day Is Not Equal

Capitalize only the first word and proper nouns in figure captions.

Figure 1. Results for the electrochromic window

Results for *E. coli*

Follow the style recommended by your professional society or journal publisher regarding “figure” and its abbreviation (Fig.) when you prepare a paper or an article for submission. Many societies and publishers recommend lowercasing everything but the first word and proper nouns in table titles, subheads, and captions.

States. Capitalize the names of states but capitalize “state” only when it appears with an official name, such as Kansas State Legislature. On second reference, state is never capitalized; however, Legislature is.

Capitalize “legislature” when preceded by the name of a state: the Kansas Legislature. Retain capitalization when the state name is dropped but the reference is specifically to that state’s legislature.

the state of Colorado

Washington state

The forecast does not apply to the states below the Mason-Dixon line.

The Pennsylvania State University (Penn State)

The Washington State Legislature is winding up; both houses of the Legislature adjourned today.

Titles (professional). Capitalize titles when they precede the person’s name. Lowercase titles and names of groups when they follow the name.

Former or future titles are also capitalized when preceding the person’s name. Except for “Acting,” which EERE prefers to capitalize, lowercase qualifiers (e.g., former, deposed, presumed).

The Secretary of Energy was appointed in 2017.

Secretary of Energy John Doe attended the conference.

John Doe, the current secretary of energy, previously served as the deputy secretary of energy.

Chief Operating Officer Mark Wilson

Mark Wilson, the chief operating officer

former Secretary of State Henry Kissinger

Acting Chief of Police Robert Hand

Titles (composition). Titles of books, movies, plays, poems, albums, songs, operas, radio and television programs, lectures, speeches, and works of art. Capitalize all words in a title except

articles (a, an, the); prepositions of three or fewer letters (for, of, on, up); and conjunctions of three or fewer letters (and, but, for, nor, or, so, yet) unless any of those start or end the title.

Gone With the Wind

Applied Physics Letters

The Denver Post

Science

Trade names. Commonly used government-owned trademarks should use the trademark notice symbols. Include the symbol in first use in heading and in body text; thereafter, omit the symbol.

Capitalize trade or brand names for third-party trade names (Kleenex, Pyrex). Do not use trademark notice symbols with third-party products or services.

Refer to the company's literature or stationery if you're not sure. See also the online database of [current trademarks](#).

Common government-owned names and symbols

BUILD4SCALE™

EnergyPlus®

ENERGY STAR®

H2@SCALE™

Home Energy Score™

HydroGEN Advancing Water Splitting Materials™

RACE TO ZERO™

RAPID TOOLKIT®

Solar Decathlon®

SOLSMART®

captions

Accompany all substantive photos, figures, and images with a caption. Begin captions with a capitalized word and use lowercase thereafter, except for proper nouns and capitalized abbreviations.

General operation of electrolysis process for water splitting for a proton-conducting system

A simplified schematic of the Drake Landing Solar Community in Canada

Don't include a period at the end of a caption unless it's a complete sentence or there is a subcaption. A complete sentence with a verb describing the action in the photo is preferred.

If one or more full sentences follow the incomplete sentence (as a continuing caption or subcaption), each should have a period. Don't bold subcaptions.

Figure 2-1. Photoconductivity spectra of a composite CIS thin film. Inset: The probable energy band diagram.

Captions that accompany a photograph should credit the photographer, including name, organization, and year, if available. The credit should be italicized and does not include a period.

Parabolic trough collectors concentrate the sun's energy on an oil-filled tube running along the focal line of the parabolic trough. *Photo by Randy Montoya, Sandia Labs*

Follow [EERE Communications Standards and Guidelines](#) regarding placement, formatting, and font use in figures and captions.

See [figures](#) and [photographs](#).

chemical terms

Do not use a hyphen in most chemical expressions, even when the terms are used as modifiers. Use a hyphen after prefixes when it is the standard for certain chemical formulas. Use a hyphen to indicate mixtures or combinations.

No hyphen

carbon dioxide levels

hydrogen ion activity

Standard

L(+)-2, 3-butanediol

trans-glycol

Mixtures or combinations

hexane-benzene

citations

See [references and citations](#) for guidance on author-date and numbered citations.

cleantech

Cleantech (one word, no hyphen, no capital T) is typically used in reference to investments in sustainable technologies, including renewable energy and energy efficiency. Don't use as a shortened form of "clean technology" in other references.

One big mistake when pitching a cleantech idea is not clearly stating who would potentially buy the product and why.

close-spaced sublimation

The term is not "closed-space sublimation" nor "close-space sublimation."

The research determined whether it was possible to produce an open-circuit voltage (Voc) greater than 1.1 V using close-spaced sublimation.

cogeneration

Do not use a hyphen.

Conventional large cogeneration systems are well developed, widely deployed, and utilize readily available thermal technologies.

colons

Colons formally introduce a numbered or bulleted list, series, question, or amplification. They can also separate the parts of a ratio.

Capitalize the first word after a colon only if it is a proper noun or the start of a complete sentence.

We test three types of collectors: flat plates, evacuated tubes, and parabolic troughs.

We test three types of collectors:

- Flat plates
- Evacuated tubes
- Parabolic troughs.

We added enough water to obtain a 3:1 dilution.

Use a colon when a noun (such as “the following”) introduces a list in text.

The electric efficiencies, thermal output, and potential overall efficiency are shown in the following chart:

Don’t use a colon after a verb or preposition that precedes or introduces a list (are, includes, to, with, between, etc.).

The research areas include exploration and characterization, subsurface accessibility, and subsurface enhancement and sustainability.

Commas, not colons, usually follow words such as “that is,” “namely,” or “such as.”

Reducing the cost of cement materials in geothermal well construction can follow a similar path to that of reducing casing; that is, using less material, developing alternative approaches, and investigating leaner casing designs.

commas

Use a comma to separate items in a series, including the next-to-last word in the series (also known as the serial comma). EERE prefers Chicago Style over AP Style on this issue.

We develop solar thermal, wind, biomass, and photovoltaic energy technologies.

Comma placement is key in resolving ambiguity. Consider: “We will strengthen U.S. leadership by developing public-private partnerships, technology and interconnection standards, and the dissemination of high-quality market data.” Should a comma follow “technology”? Does it mean “technology standards” and “interconnection standards? Or are “technology and interconnection standards” one entity?

Use a comma to separate the parts of a compound sentence linked by a coordinating conjunction (and, but, or, nor) when each part has its own subject and verb (unless they’re very short).

I laughed at the unintentional joke, but she frowned.

Use commas to set off nonessential or nonrestrictive words, phrases, and clauses from the rest of the sentence. The commas signal that the information between them is something extra and not essential to the sentence meaning.

The subsystem, which takes a day to install, will be delivered in two weeks.

Do not use commas to set off restrictive words or phrases that are essential to the sentence meaning.

Only the sensors that were attached to the outer edge failed. (essential phrase)

The system will work efficiently only if it includes storage. (essential phrase)

See also [which and that](#).

Use commas to enclose the state name when it follows a city and the year when it follows the month and day.

The test systems in Gardner, Massachusetts, are performing well.

The next test sites will be in Golden, Colorado, and Chapel Hill, North Carolina.

On April 11, 2019, the committee members completed five of the six objectives.

Do not use a comma to separate compound subjects or compound verbs.

Theorists and nonspecialists alike agree on the importance of the discovery. (No comma between the two parts of the compound subject.)

The researchers rolled out the thin metal sheet and formed it into coils. (No comma between the two parts of the compound verb.)

[compose and comprise](#)

“Composed of” is correct; “comprised of” is incorrect.

The United States is composed of 50 states.

The department comprises four groups; each group is composed of five to seven scientists, technicians, and support staff.

[compound words and modifiers](#)

Verb phrases (verb, noun, and adjective forms). Verb phrases that contain an adverb (*build up*, *set up*, *start up*, *break down*) are usually written as two words. The noun and adjective forms of these words are either one word (no hyphen) or a hyphenated form of the words. However, there are exceptions. Refer to the dictionary for the correct spelling.

We observed the slow buildup of biofouling on the blades.

We helped with the setup.

The start-up costs were higher than we estimated.

I think I’m having another breakdown.

Compound modifiers with and without hyphens. Use a hyphen to indicate that words have been combined into a compound modifier—a descriptive expression of two or more words that form one new meaning. For example, in the term “flat-plate collector,” “flat-plate” is the compound modifier.

low-level radiation

last-minute addition

fatigue-induced wear

five-year plan

nine-story building

ground-source heat pump

Although modern writing often eliminates hyphens, they help prevent ambiguity. To see how adding the hyphen can prevent confusion, consider: “The scientists tested a new defect causing gas,” versus “The scientists tested a new defect-causing gas.”

In the first example, the scientists might seem to have been testing a defect; in the second example, it’s clear that they have tested a gas.

Compound words containing prefixes and suffixes. No hyphen is needed between many prefixes and suffixes and the root words, unless the root word is a proper noun.

Use a hyphen if the word that follows is a proper noun, or is capitalized, e.g., pre-Civil War.

Use two hyphens to join double prefixes, e.g., sub-sub-paragraph.

Prefixes that usually require a hyphen include “ex,” “self,” and “quasi.” See [hyphens](#).

Compound words containing prefixes and suffixes that don’t need a hyphen:

multidimensional

prescreening

multiyear

postdoctoral

reevaluated

retroactive

threefold, hundredfold (but 100-fold)

nonspecialist

subassembly

[comprise and compose](#)

See [compose and comprise](#).

[concentrating photovoltaics, CPV](#)

A solar technology that uses lenses or mirrors to concentrate sunlight onto high-efficiency solar cells.

He designs custom data acquisition systems for a wide variety of concentrating photovoltaics (CPV) and flat-plate PV projects.

concentrating solar-thermal power, CSP

A solar technology that uses mirrors to reflect and concentrate sunlight onto receivers that convert solar energy to heat. This thermal energy is then used to produce electricity with a steam turbine or heat engine driving a generator.

This project will seek to integrate multiple thermochemical energy storage components into a CSP design that enables a plant to have multiple storage durations, including daily and long-term.

Congress and congressional

Capitalize “U.S. Congress” and “Congress” when referring to the U.S. Senate and House of Representatives. Lowercase “congressional” unless it is part of a proper name.

The U.S. Congress is reviewing congressional salaries. A full list is available in the *Congressional Record*.

consortia, consortium

Consortia is the plural of consortium (two or more consortia).

cooperative research and development agreement, CRADA

On first reference, use lowercase for “cooperative research and development agreement” because it’s not a proper noun. On second reference, use the acronym “CRADA.”

COVID-19, coronavirus disease 2019

On February 11, 2020, the World Health Organization announced an official name for the disease that caused the 2019 novel coronavirus outbreak. The new name of this disease is coronavirus disease 2019, abbreviated as COVID-19. EERE preference is to follow the style established by the CDC. See <https://www.energy.gov/covid/doe-safety-strategy>.

The DOE COVID-19 Coordination Team is responsible for establishing, implementing, and monitoring compliance with the health and safety requirements specified in this plan.

coproduction

A method of generating two useful products simultaneously. It often refers to combined-heat-and-power systems that produce both electricity and heat (e.g., steam). It also can refer to the joint production of electricity and hydrogen.

The renewable electrolysis platform integrates renewable generation with hydrogen electrolyzers and storage infrastructure to help utilities and developers study the coproduction of electricity and hydrogen.

countries and states

See [states and countries](#).

country

Always lowercase unless part of a proper noun.

Gas prices increased across the country during the 1970s.

criteria, criterion

“Criterion” is a singular noun (one criterion), and “criteria” is the plural (two or more criteria).

While evaluation criteria provide comparability and adherence to stated objectives, the first criterion should be closely examined.

D ▶

dashes (em)

Use dashes (often called “long dashes” or “em dashes”) to set off parenthetical (nonessential but often illustrative) information. Also use dashes to set off a list of items separated by commas. EERE prefers no spaces around the dash.

The polymer components of the cell walls—cellulose, hemicellulose, and lignin—provide the feedstocks for these chemicals.

Use an em dash to signal that an important point is going to be made or that a change in the construction of the sentence follows.

The presentation concluded with a discussion of the two project factors that concern contractors the most—cost and time.

The major omission in the project assessment was the delay caused by the circuit failures—everyone knew about it, but no one mentioned it to the reviewers.

Typically, commas, colons, and semicolons can be used in place of dashes, but dashes add special emphasis.

Dashes (en)

Use shorter “en dashes” (rather than a hyphen or em dash) to indicate a range or to substitute for the word “to.” Note: AP Style does not use en dashes.

25–45 cm²

Jan. 16–Feb. 3, 2011

2–5 runs per hour

pages 1–5

See sections 3.1–3.6

In date spans, do not use “from” with an en dash.

Correct

Incorrect

from Jan. 16 to Feb. 3; Jan. 16–Feb. 3

from Jan. 16–Feb. 3

Do not use an en dash (or hyphen) to mean “and;” the word “between” is followed by the word “and” (not “to”).

Correct

between 25 and 30

Incorrect

between 25–30

data, datum

“Data” is the plural of “datum.” The word “data” typically takes singular verbs and pronouns when writing for general audiences and in data journalism contexts. In scientific and academic writing, plural verbs and pronouns are preferred.

Scientific and academic audiences

Assorted data were collected and filed.

A datum escaped his count.

General audiences

The data is sound.

data in tables

Place a zero to the left of the decimal in any number less than 1 in text and tables (e.g., 0.5, 0.039). Align columns of numerals vertically on the decimals. When the units of measurement for the data are different, alignment is not necessary (but be sure to specify the units).

Ambient Temperature	Lumen Multiplier	
	First Generation	Second Generation
0°C (32°F)	---	1.02
10°C (50°F)	1.04	1.01
15°C (59°F)	1.03	---
25°C (77°F)	1.00	1.00
40°C (104°F)	0.96	0.99
50°C (122°F)	0.92	0.97

When the units of measurement for the data are different, alignment is not necessary (but be sure to specify the units).

Use Case	Application or Technology	Baseline	2030 Cost Target
1: Facilitating an Evolving Grid	Flow batteries	\$360/kWh ¹	\$200/kWh system cost
3: Electrified Mobility	Vehicle batteries	\$143/kWh ²	\$80/kWh battery pack cost ³

dates

Use the month, numeral, and year for announcements and publicity that convey deadlines or events. Follow American date order convention: month, day, year.

September 20, 2021

The event is scheduled for September 20, 2021, at 10 a.m. ET.

When a month is used with a specific date, abbreviate only Jan., Feb., Aug., Sept., Oct., Nov., and Dec. Spell out when using alone or with a year alone.

The webinar will be held Jan. 5, 2019.

The conference took place in January 2018.

The workshop series ended in January.

Use common month abbreviations when a full date is provided. Use cardinal numbers for the day.

Jan. 1, 2010

May 6, 1990

When a phrase lists only a month and a year, do not separate the year with commas.

Correct

September 2020

Incorrect

July, 2017

When a phrase refers to a month, day, and year, set off the year with commas.

Feb. 14, 2013, was the target date.

Date ranges use the en dash with no spaces. Do not use ordinal numbers (2nd, 3rd, 4th) unless writing prepared remarks or a speech, e.g., “On January 1st, the president announced ...”.

Correct

Jan. 1–5, 2019

Incorrect

Jan. 1 to 5, 2019

January 1st through 5th, 2019

Decades do not include apostrophes unless preceded by “the.”

A woman in her 50s

the '90s; the mid-‘90s

The 1860s saw the breakup of the Union.

See [months and years](#).

decision maker

Decision maker is two words, but decision-making is hyphenated when used as a compound modifier. Note: AP Style hyphenates both decision-maker and decision-making.

The PUC acts as the decision maker on the issue.

decision-making process

degree symbol

Place the degree symbol (°) next to the symbol for the temperature scale, with no space. Repeat the degree symbol in ranges. Express kelvins as K rather than as °K; leave a space before the K.

36°C

32°–36°C

85°F

85 K

Department of Energy

See [U.S. Department of Energy](#).

desalination

The process of removing salt from seawater.

NREL scientists are actively researching desalination capabilities by partnering with technology leaders on several groundbreaking projects.

disclaimer

DOE requires that EERE publications include a disclaimer. The disclaimer used depends on the type of publication. See [EERE-Branded Publications Developed by Third Parties](#)

dish/engine systems

Use a slash rather than a hyphen. The dish/engine system is a concentrating solar power (CSP) technology with two major parts: the solar concentrator and the power conversion unit.

Dish/engine systems use a parabolic dish of mirrors to direct and concentrate sunlight onto a central engine that produces electricity.

dollars

Express thousands of dollars using a comma.

\$5,000

Express millions, billions, and trillions of dollars in decimal points, followed by the word. It is acceptable to use the abbreviation “M” or “B” in headlines.

\$3 million budget

\$1.2 billion

DOE Announces \$3M in Funding

In technical reports and papers, use a dollar sign to express costs less than \$1.

\$0.25

\$0.06 per kilowatt-hour

No hyphens are used, even when the phrase is used as an adjective.

Congress passed a \$4.2 trillion budget just before midnight.

E ►

e.g. and i.e.

The abbreviation for the Latin phrase *exempli gratia* (e.g.) means “for example.” The abbreviation for the Latin phrase *id est* (i.e.) means “that is.” Both e.g. and i.e. are always followed by a comma. Do not italicize e.g. or i.e.

Use a semicolon before “i.e.” and “e.g.” and a comma after them when a clause (with a subject and verb) follows them.

Making nanotechnology more scalable and manufacturable through new processes, e.g., nanotechnologies that can operate in room-temperature environments.

The team started with a recent development discovered during the conversion of methanol to fuels, i.e., the production of branched C4–C7 hydrocarbons while using beta zeolite catalysts.

Bring any two items; e.g., sleeping bags and tents are in short supply.

electric vehicle, EV

Electric vehicles, also known as plug-in electric vehicles, derive all or part of their power from electricity supplied by the electric grid.

There are two basic types of EVs: all-electric vehicles (AEVs) and plug-in hybrid electric vehicles (PHEVs).

ellipses, ellipsis

To shorten a quote, use ellipsis marks (three periods with a space on each side ... or the ellipsis symbol) to indicate the omission.

If the words preceding the ellipsis form a grammatically correct sentence, put a period at the end and follow it by an ellipsis. Usually, ellipses aren’t needed at the beginning or end of quotes, just within them. To add a word(s) to the quote, enclose the added word or words in brackets to show it’s not part of the original quotation.

When quoting whole paragraphs but omitting text between any two of them, center three asterisks with spaces between them (* * *) between the paragraphs quoted. See also [quotation marks](#).

A participle is “a word having the characteristics of both verb and adjective ... [that] shows such verbal features as tense and voice. ...”

email

Acceptable in all references for “electronic mail” without a hyphen between the “e” and mail. Use a hyphen with other e- terms: e-book, e-business, e-commerce.

I sent an email to everyone involved with the project.

Energy Department

On first reference only, “Energy Department” may be used in communications to the press. See [U.S. Department of Energy](#).

Today, the Energy Department announced Round One winners of the Geothermal Manufacturing Prize.

ENERGY STAR

Always shown in all capitals, the first use of ENERGY STAR should include the registration mark (®), except when the first use occurs in a headline or header. In that case, include ® in the first use in the body. After first use, do not repeat the ®. There is no space between ENERGY STAR and the mark.

Headline

What Is ENERGY STAR?

Body Content

ENERGY STAR® is the government-backed symbol for energy efficiency, providing simple, credible, and unbiased information that consumers and businesses rely on to make well-informed decisions.

enhanced geothermal system, EGS

While enhanced geothermal system (EGS) is preferred, it may also be referred to as “engineered geothermal system.”

A man-made enhanced geothermal system (EGS) can extract the abundant heat resource located tens of thousands of feet below the surface and put it to good use.

ensure, insure, and assure

See [assure, ensure, and insure](#).

equations

All equation terminology must be defined and used consistently in text and in subsequent equations, figures, and tables.

The conductive heat flow equation is:

$$dQ/dt = AKdT/dx$$

where

dQ/dt = the time rate of heat transfer

A = the area of an end contact

K = the thermal conductivity

dT/dx = the thermal gradient.

et al.

An abbreviation for the Latin phrase, *et alia* (neuter plural), meaning “and others.” Most commonly, et al. indicates other contributors (authors, editors, etc.) in a reference list. Always follow et al. with a period; do not italicize.

Feynman, Hawking, Sagan, et al.

The technical report, “New Approaches to Distributed PV Interconnection: Addressing Emerging Issues,” (McAllister et al. 2019) describes the emerging issues and various approaches being explored by the states.

etc.

Abbreviation for the Latin phrase, *et cetera*, meaning “and other things.” Avoid “etc.” if possible. Don’t add it to the end of a list beginning with “for example,” or the abbreviation “e.g.,” because each word in the list is an example, but “etc.” is not. Etc. always ends in a period because it is an abbreviation. If “etc.” is at the end of a sentence, it is always preceded by a comma.

Letters, packages, etc., should go here.

Information needed includes compatible user interface, complete system wiring diagram (not just a one-line diagram), any needed black-box control devices, housings, cables, connectors, etc.

e-terms

Use a hyphen in terms that include “e” as an abbreviation for electronic, except for “email,” which does not require a hyphen.

e-book

e-business

e-commerce

executive summary

An executive summary should appear before the table of contents. A summary is not usually needed in a short report. An executive summary can be as much as 5% to 10% of the document. It should stand independently of the full report, as they are frequently published as separate documents. Include a brief statement of the problem or proposal, background information, a concise analysis, and the main conclusions.

See [EERE Communications Standards](#).

F ►

federal

“Federal” should not be capitalized unless it’s part of a proper noun. Capitalize “federal” as part of formal names. Use lowercase to distinguish it from state, county, city, or local entities.

Federal Trade Commission
Federal Communications Commission
federal government
federal court
federal judge

figures

Figures include line drawings, graphs, charts, diagrams, schematics, flow charts, illustrations, and photographs. Number figures in a simple sequence (e.g., Figure 1, Figure 2). In long reports, papers, or book chapters, include section or chapter numbers in the figure numbers (e.g., Figure 1-1, Figure 1-2, Figure 2-1). All figures should include a figure title (minimum). A caption is optional but desired.

In print, use a consistent line weight in figures. Computer-generated figures must be clear so they can be reproduced easily. No period is needed after a caption if it is an incomplete sentence.

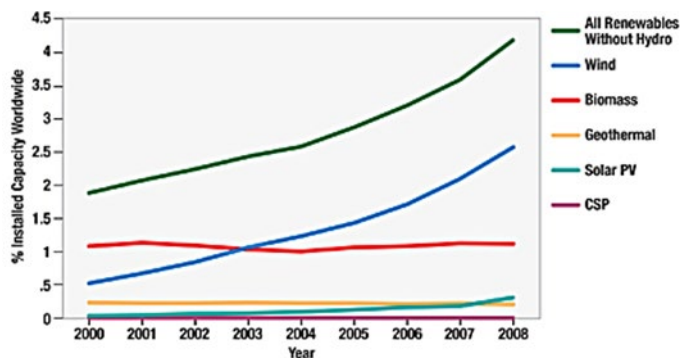


Figure 1. Renewables as a percent of total installed capacity worldwide

If one or more full sentences follow the incomplete sentence (as a continuing caption or subcaption), each caption (including the opening incomplete sentence) should have a period. Don't bold subcaptions.

Figure 2-1. Photoconductivity spectra of a composite CIS thin film.
Inset: the probable energy band diagram.

See [EERE Communications Standards and Guidelines](#) on placing and formatting figures, titles, and captions.

fiscal year, FY

Spell out “fiscal year” (e.g., Fiscal Year 2020) the first time; thereafter, abbreviate it using two capitals followed by a space before the full year. Always capitalize Fiscal Year when referring to a specific year.

The abbreviation, FY##, may be used to save space in charts and graphs. On websites, always spell out “fiscal year.”

Fiscal Year 2020

FY 2001

The accounting ended with the fiscal year.

footnotes

Use footnotes for explanatory or supplementary information. Preferably, place explanations, details, contradictions, and examples in the text rather than in footnotes.

In-text references may be used to cite others' works, but if sources are cited using footnotes, then a complete citation should be included (author, year, title, and/or hyperlink, at a minimum). Cited sources should be readily found if searched.

For all EERE technical publications, citations/footnotes should be consistent, using the predominate style followed by the author in accordance with professional citation standards.

Use superscript numerals for footnote numbering. Mark the footnotes to tables in EERE reports with superscript letters: ^a, ^b, ^c, etc. The footnote number follows all punctuation marks except the dash, which it precedes.

We discussed these three stages of writing¹—prewriting, writing, and revising.

Magnetocalorics, which have been used for cryogenic refrigeration since the 1930s, became an area of active research for room temperature applications after Pecharsky and Gschneidner (1997) first demonstrated the “giant magnetocaloric effect.”²

¹ Christa Riddle, 2015. “The 3 Steps of Successful Writing: Prewriting, Writing, and Rewriting.” <https://allaboutwritingconsulting.com/2015/03/the-3-steps-of-successful-writing-prewriting-writing-rewriting/>.

² The larger temperature differences are required for commercial viability of near room-temperature refrigeration.

For more guidance on footnote style: <https://www.easybib.com/guides/citation-guides/chicago-turabian/footnotes/>

See [references and citations](#).

fractions

Use words instead of numerals for simple fractions in text. See also [equations](#).

a third of the way

one-fifth its actual size

three-fourths of the participants

Write out complex fractions with numerals separated by a slash.

1/64

5-1/2 days afterward

23/32

2-1/2 times greater

Display complex, built-up fractions by centering them vertically between two parts of a paragraph.

$$\ln\left(\frac{N_c}{n} \times \frac{\eta}{1-\eta}\right)$$

Place a zero to the left of the decimal in fractions less than 1.

0.125

0.006



geofluid

Any subsurface fluid, such as groundwater, geothermal fluids, basinal brines, petroleum, or magmatic fluid.

This humidified cycle can make use of low-temperature geofluid water, normally applied only for heating, to generate power at higher geofluid efficiencies than typical geothermal cycles.

geographic information system, GIS

Do not capitalize “geographic information system” unless used as part of a proper noun. Do not use “geographical.” GIS is considered a well-known acronym and can be used on first reference.

She developed a GIS database, verified and validated by a third party, which displays annual and monthly average wave power.

geographic regions

Capitalize regions of the United States when they appear by themselves. See [states and countries](#).

the East, the West, the North, and the South

the Southeast, the Northeast, the Southwest, the Pacific Northwest

the Midwest, the East Coast, the West Coast, the Gulf Coast

Don’t capitalize words that merely describe general areas in the country or areas of a state.

the eastern United States

southwestern Nebraska

northern Atlanta

the midwestern states

Capitalize widely known geographic sections.

Southern California

West Texas

the South Side of Chicago

the Lower East Side of New York

geopressured geothermal resource

In oil and gas production, co-produced fluid (brine) may be trapped under an impermeable layer of caprock while a layer of sediment rapidly builds over it. The weight of the sediment layer on the trapped fluids results in elevated pressures. These fluids are called geopressured resources; temperatures typically range from 90°C to 200+°C.

An onsite geopressured-geothermal resource hybrid cycle 1 MW plant used a mixture of methane and geothermal brine fluids.

Geothermal Electric Technology Evaluation Model, GETEM

Built by Idaho National Laboratory, GETEM is an Excel-based tool used to estimate the Levelized Cost of Energy for definable geothermal scenarios.

Electrical power generation is the sole geothermal use considered by GETEM, which does not provide assessment capabilities for geothermal direct-use or geothermal heat pumps.

geothermal heat pump, GHP

Geothermal heat pumps (GHPs), sometimes referred to as ground-source or water-source heat pumps, have been used as heating and cooling appliances since the late 1940s. They use the constant temperature of the earth as the exchange medium instead of the outside air temperature.

The heating efficiency of geothermal heat pumps (GHP) is indicated by their coefficient of performance (COP), which is the ratio of heat provided in Btu per Btu of energy input.

gigawatt, GW

A unit of power equal to 1 billion watts, 1 million kilowatts, or 1,000 megawatts.

In the first nine months of 2019, the United States installed 7.1 GW of photovoltaic power.

glossaries and nomenclatures

If a report or paper includes many mathematical or Greek symbols or technical terms, consider defining them in a glossary or nomenclature. Arrange the list alphabetically, and group Greek letters and definitions alphabetically in a separate list. Nomenclatures are usually in the front of a report, before the Table of Contents. Glossaries usually go in the back, before the references.

A less formal List of Terms may be used in place of the more formal glossary or nomenclature.

Google Earth and Google Maps

Google Earth satellite images and Google Maps terrain images need attribution, which is included in Google images with copyright notices such as “©2019 Google, Map Data ©2020 Tele Atlas.” Remove the Google logo and attribution text if already included in image content.

See [Google Earth Permissions](#) for latest guidance.

In print, if attribution does not fit on the image or map, put separate attribution text directly adjacent to it.

In video, attribution must appear on-screen for the duration the map or image is shown; including attribution credits only does not suffice.

If the Google Earth image is altered (e.g., text or graphics added), the image is legal only if Google Earth software made the alteration and the correct attribution is included. Any other image alteration using other software is strictly prohibited.

Derivative works are prohibited. For example, EERE cannot combine multiple static map images into one larger map.

government

Never capitalize (unless first word of a sentence) and never abbreviate. See also [federal](#).

the federal government

a state government

the U.S. government

governmentwide

No hyphen.

The report examined the most promising opportunities to advance energy technologies, infrastructure, and governmentwide policy.

green tag

Avoid the term “green tag.” The term “renewable energy certificate” is preferred.

H ▶

heat mining

A concept (analogous) to convey harvesting or producing the planet’s natural geothermal resources (thermal energy).

Accordingly, if current experimental techniques are perfected, the thermal energy could be “mined” from those vast areas of the Earth containing sufficiently hot rock but insufficient available water.

hybrid electric vehicle, HEV

This phrase contains no hyphens.

Hybrid electric vehicles (HEVs) combine the benefits of gasoline engines and electric motors.

hyphens

Use a hyphen between prefixes and proper nouns (but not common nouns) or dates, whether they're used as nouns or modifiers.

non-EERE
mid-1990s
trans-American
pre-Civil War

No hyphen

nonprofit
prescreening

Use a hyphen for clarity or to prevent confusion. Consider: “The scientists tested a new defect causing gas,” versus “The scientists tested a new defect-causing gas.”

In the first example, the scientists might seem to have been testing a defect; in the second example, it's clear that they have tested a gas.

See [compound words and modifiers](#).

Use two hyphens when adding a prefix to a word that already contains a prefix, even when there is no hyphen after the prefix in the original word.

non-self-limiting
sub-sub-head

Don't use a hyphen in common unit modifiers that are not ambiguous or confusing.

high school students
solar radiation resource
solar thermal electric systems

Don't use a hyphen when multiple words of a compound modifier are capitalized.

Bronze Age tools
Biofuels Program objectives
Nobel Peace Prize nomination

Don't use a hyphen with a compound modifier containing an adverb ending in “-ly.”

highly efficient motor
frequently missed deadlines
heavily skewed results

Omit hyphens if a sentence is rewritten so that the compound modifier comes after the noun it describes.

We purchased state-of-the-art lab equipment.

We purchased lab equipment that reflects the state of the art.

They made some last-minute adjustments.

They made some adjustments at the last minute.

When numbers are used in modifiers, retain all the necessary hyphens, or rewrite the sentence to omit the hyphens.

Numbers with modifiers and hyphens

2-ft.-diameter pipes

13-cm-wide substrate

Numbers with modifiers but without hyphens

pipes that are 2 ft. in diameter

a substrate that is 13 cm wide

Use a hyphen if the prefix ends in a vowel and the word that follows begins with the same vowel.

co-op

co-occur

intra-arterial

anti-immune

Exceptions

cooperate, coordinate, and double-e combinations such as preestablish, preeminent, preeclampsia, preempt



i.e. and e.g.

See [e.g. and i.e.](#)

insure, assure, and ensure

See [assure, ensure, and insure](#).

intermittent

Do not use “intermittent” when referring to wind energy. Instead, use the word “variable.” “Intermittent” implies a binary on/off condition, whereas “variable” encompasses the way wind changes speed and direction.

Correct

The power grid was experiencing intermittent outages.

Incorrect

Intermittent wind caused insufficient power generation.

internet

Lowercase “internet.”

The story was all over the internet.

inverter

A device that converts direct current (DC) electricity to alternating current (AC), either for stand-alone systems or to supply power to an electricity grid.

DOE has funded R&D for smart-grid ready inverters that capture the full value of distributed photovoltaic (PV).

italics

Use italics (sparingly) to emphasize a word or phrase or bring attention to it.

Never operate equipment that has a yellow danger tag.

Use italics for foreign words and phrases, such as *in situ*, *in vivo*, and *inter alia*; however, if the word or phrase is commonly used in your field, omit the italics.

Use italics for hyphenated prefixes to chemical formulas, such as *cis-*, *trans-*, *o-*, *m-*, and *p-*.

trans-1, 2-dibenzoylene

cis-2-butene

Italicize titles of long-form published or publicly released documents, including reports.

2016 Renewable Energy Data Book

Virginia Residential Energy Code Field Study: Baseline Report

Use italics for book titles and the names of journals, newspapers, and magazines, in main text and in references, footnotes, and bibliographies. Titles of journal and magazine articles are given in regular type within quotation marks.

Cohen, M.A., P.A. Kauzmann, and D.S. Callaway. 2016. “Effects of Distributed PV Generation on California’s Distribution System, Part 2: Economic Analysis.” *Solar Energy* 128, 139–152, 2016.

Applied Physics Letters

The Denver Post

“Solar Chimney Theory: Basic Precepts”

Use italics in taxonomic names. Unless you’re discussing a genus in a general way, use italics to refer to specific genera, species, and varieties.

Clostridium thermocellum

C. thermocellum

it's and its

“It’s” is a contraction of two words, “it is.” “Its” is the possessive form of “it.” Similar to “his,” “hers,” and “ours,” the possessive “its” never includes an apostrophe.

It’s a shame that the company lost its biggest investor.

K ►

Kalina cycle

Kalina is always capitalized. Developed by Dr. Alexander Kalina, the Kalina cycle is a thermodynamic process for converting thermal energy into usable mechanical power.

The Kalina cycle uses a solution of two fluids with different boiling points for its working fluid.

kelvin, K

Lighting color temperature is measured in kelvin (K) temperature. When referring to the Kelvin temperature scale, use a capital K. If referring to the unit of temperature, lowercase when spelling out but capitalize the symbol. Express kelvins as K with no degree sign; leave a space before the K.

The kelvin is the fundamental unit of the Kelvin scale.

Higher kelvin temperatures (3600–5500 K) are what we consider cool and lower color temperatures (2700–3000 K) are considered warm.

kilowatt, kW

One thousand watts. As with all measurements, spell out on first mention.

An electric heater consuming 1000 watts (1 kilowatt) and operating for one hour uses one kWh of energy.

kilowatt-hour, kWh

The kilowatt-hour is a unit of energy equal to one kilowatt of power sustained for one hour.

Electrical energy is typically sold to consumers in kilowatt-hours (kWh).

L ►

laboratory and lab

EERE follows AP style, which capitalizes “laboratory” or “lab” only when used with a laboratory’s proper name. Lowercase in all other references. Exceptions may be made per Front Office preference. See [national laboratory](#).

The National Renewable Energy Laboratory (NREL) is a U.S. Department of Energy national laboratory. The lab is known for its research and development in renewable energy and energy efficiency.

life cycle

Life cycle is two words and is never hyphenated, even in adjective form, per AP style.

life cycle studies

light bulb

Light bulb is two words.

A-type lamps are considered the classic type of light bulb used for general-purpose lighting.

lists

Lists may be numbered or bulleted. Use numbered or lettered lists instead of bullets when it's necessary to refer to those items elsewhere in the text.

Listed items should be parallel in construction (begin all the items in the list with the same part of speech, such as a verb or a noun).

Capitalize the first word following each number and end each item with a period or other terminal punctuation (e.g., !, ?), except when the listed items consist of short noun phrases or single words. In such cases, punctuate only the final item.

Generally, EERE prefers AP Style over Chicago Style on punctuating lists, except when AP Style end-punctuates each short phrase or single-word item. EERE makes an exception to this, preferring that short phrases and single-word lists omit end punctuation, except for the final list. Do not use commas or semicolons at the ends of listed items.

The top three new EERE projects that incorporate circular economy concepts include:

1. Plastics upcycling, with a goal to develop solutions for highly recycle plastics or biodegradable bio-based plastics.
2. REMADE Institute, focused on technologies to mitigate the technical and economic barriers that prevent greater material recycling, recovery, remanufacturing, and reuse.
3. Waste reduction pilot, launched in July 2019 to address the 2.7 billion tons of industrial solid waste and more than 260 million tons of municipal solid waste the U.S. generates annually, including plastic waste.

An alternative is to list a few items or procedures in paragraph format and number them (1) one, (2) two, (3) three, etc.

See [bullets](#).

lithology

The study of rocks, particularly the character of a rock formation.

Examples are predominantly granitic in composition, but other metamorphic and igneous lithologies may also be suitable.

low-e

Abbreviation for “low-emissivity.” It refers to low-e storm windows, which have a low-e coating or glazing on them—a thin layer deposited directly on the surface of one or more panes of glass. The coating increases the window’s energy efficiency by reflecting radiant heat. The usage is always lowercase, unless it begins a sentence.

Coated with an ultra-thin, virtually invisible layer of metal, low-e windows reflect infrared heat back into the home.

M ►

Manufacturing USA®

Manufacturing USA® comprises 14 national manufacturing institutes. Each institute is a unique public-private partnership, jointly funded by government and private industry, focused on a different advanced manufacturing technology area.

mathematical symbols

Leave a space on either side of mathematical symbols used as operation signs (minus, plus, times). The slash (a/b) or division sign is an exception.

Leave a space between numerals and symbols of measurement such as cm and Å.

$T_{\text{in}} - T_{\text{amb}}$

$^{\circ}\text{C} \times 1.8$

24 cm

1.058 Å

Do not leave a space between symbols such as $>$, $<$, and the numeral unless they are operation signs in an equation.

Do not leave a space between numerals and the symbols for degrees, dollars (or cents), and percent).

<0.1

\$100

$2/3$

17%

32°

measurement units

See [units of measurement](#).

megawatt, MW

A unit of power equal to one million watts, especially as a measure of the output of a power station. Megawatt should be spelled out on first mention and abbreviated MW after that. If megawatts is used only once, then do not give the initialism (MW).

The global sales of electrolyzers in 2017 were estimated to be 100 megawatts (MW) per year.

megawatt-hour, MWh

A megawatt-hour (MWh) is a unit of measure of electric energy. A MWh is 1,000 kilowatt-hours (kWh). Megawatt-hour should be spelled out on first mention and abbreviated MWh after that.

Shepherds Flat is expected to generate 1,800,000 megawatt-hours (MWh) of clean energy each year.

memoranda, memorandum

The plural of “memorandum” can be either “memoranda” or “memorandums.”

The White House issued several memoranda on the topic.

metric conversions

For quick online conversions of English units of measurement to metric units, see the [Digital Dutch Unit Converter](#) or the [Internet French Property Measuring Units Converter Table](#).

metric system

Shorthand for the SI (Système International d’Unités; International System of Units). See [SI \(Metric\) System](#).

microgrid

A microgrid is a local energy grid with control capability, which means it can disconnect from the traditional grid and operate autonomously. Microgrids can also be used for demand response, time-of-use pricing, and other reasons. Microgrid is one word.

A microgrid allows communities to be more energy independent and, in some cases, more environmentally friendly.

microseismic events

Microseismic is one word, no hyphen. In seismology, a microseism is defined as a faint earth tremor. Since about 2000, the term has become strongly associated with passive seismic monitoring of oil and gas production effects, borehole-related phenomena, and especially hydraulic fracture stimulation or fracking. When a microearthquake occurs as a result of industrial activity such as mining or hydraulic fracturing, it is referred to as a microseismic event.

In many cases, the pore pressure required to shear favorably oriented joints can be very low, and vast numbers of microseismic events occur as the pressure migrates away from the well bore in a preferred direction associated with the direction of maximum principal stress.

months and years

Capitalize months. When a month has a specific date, abbreviate all months using first three letters, followed by a period.

The workshop is scheduled for Jan. 9, 2020.

Spell out months when used alone or only with the year; omit commas when the month and year appear together.

The event took place in October 2018.

When a phrase refers to a month, day, and year, set off the year with commas.

February 14, 2013, was the target date.

Abbreviate all months in tables; however, omit the period.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Use lowercase s (no apostrophe) to show the plural of a decade expressed with numerals.

the 1990s

the mid-1990s

the '90s

multijunction solar cell

This term is preferred over “tandem solar cell.” A multijunction (MJ) solar cell is a solar cell with multiple p–n junctions made of different semiconductor materials.

The new CSP equipment uses high-intensity silicon vertical multijunction solar cells.

multiplication symbols

Be as consistent as possible in using multiplication symbols; as appropriate, choose one symbol (× or ·) or omit the symbol and use proximity or parentheses: ab, (ab) (cd), etc. When using symbols × or ·, spaces should be inserted before and after each.



nation

Always lowercase “nation” when referring to the United States.

Our nation is a leader in renewable energy markets.

Air quality improved across the nation during the COVID-19 pandemic.

national laboratory

DOE has 17 national laboratories. EERE follows AP Style, which only capitalizes “laboratory” or “lab” when used with a laboratory’s full proper name. Lowercase all other references. Exceptions may be made per Front Office preference.

See [laboratory and lab](#).

One important reason for establishing America's national laboratory system immediately after World War II was to provide a home for large-scale, costly scientific facilities that universities could not afford.

Oak Ridge National Laboratory unveiled Summit as the world's most powerful and smartest scientific supercomputer.

nonattainment

Spell as one word, no hyphen.

Fuel cell systems are an ideal power source for industries where a high premium is placed on the reliability of electric power, in regions where low emission levels are required (such as urban and nonattainment areas), and in grid-constrained areas.

noncondensable gas

Any gas that does not condense (change from vapor to liquid) under pressure.

The steam, along with its noncondensable gases, is routed to the power plant and used to produce electricity for the Big Island of Hawaii.

numbers

Units of measurement and mathematical expressions. Use numerals with units of measurement and time. Also see [time](#), [dates](#), [percent](#), and [addresses](#).

2-1/2 hours	87 years
4.5 months	6 liters
36 cm	25 kW

Use numerals to imply arithmetical values or manipulation.

a factor of 3	a ratio of 4:5
multiplied by 2	values of 1 and 48

Express measurement errors as: 6 nm ± 0.2 nm. Leave a space between the number and the unit of measurement (0.2 nm) and put spaces around the operation sign; when the measurement error appears by itself, omit the space between the sign and the number.

6 nm ± 0.2 nm

The measurement error is ±0.2 nm.

Time. With units of time, spell out numbers less than 10 consistently (applies to outreach communications products, not technical reports and papers).

five-year plan	30 minutes
two-hour test	five seconds
three-week turnaround	

Aligning numbers. Align numbers with a common measurement unit by decimals inside a table column. Put a zero before the decimal in numbers smaller than one.

Ambient Temperature	Lumen Multiplier	
	First Generation	Second Generation
0°C (32°F)	---	1.02
10°C (50°F)	1.04	1.01
15°C (59°F)	1.03	---
25°C (77°F)	1.00	1.00
40°C (104°F)	0.96	0.99
50°C (122°F)	0.92	0.97

If all the numbers in a column do not share the same measurement unit, center the numbers in the column and specify the measurement unit. See [data in tables](#).

Use Case	Application or Technology	Baseline	2030 Cost Target
1: Facilitating an Evolving Grid	Flow batteries	\$360/kWh ¹	\$200/kWh system cost
3: Electrified Mobility	Vehicle batteries	\$143/kWh ²	\$80/kWh battery pack cost ³

Fractions and decimals. Spell and hyphenate simple fractions or express them (more complex fractions) in numerals with a slash.

one-fifth or 1/5

1/64 (but not 1/64th)

Use a hyphen to separate the integral and fractional parts of a mixed number or, convert the fraction to a decimal.

2-1/2 cm in diameter

2.5-cm-diameter solar cell

For numbers of 1 million or more, use the numeral (and a decimal, if necessary) and the words million, billion, etc.

1.1 million households

3.5 billion people

\$2.5 million in funding

Precision and numbers. Decimalization should not exceed two places in textual material unless there are special circumstances, e.g., measurement uncertainty analysis, which calls for measurement precision to a significant digit to the right of a decimal point, such as two or three digits (hundredths or thousandths). **Check with an expert before changing the number of digits to the right of the decimal or rounding the numbers.** For amounts less than 1, use the numeral zero before the decimal point. See also [standard errors](#).

Energy reduction per pole in this area was 59.3% compared to the QMH lighting system.

0.96

Punctuating numbers. Use a comma to separate groups of three digits in numbers.

5,182

113,728

2,225,000

Ranges of numbers. Use an en dash (which is shorter than an em or long dash) with no spaces. If the word “of” or “from” occurs before the range, then use the word “to.”

To express a range between some number and another number, always use “and” with “between.”

Note that some symbols, e.g., ° and %, are repeated in a range.

- 15%–25%
- 6–12 cm
- 10–20 m²
- from 32° to 40°C
- from 66 to 80 V
- between 8 and 12 m (not “between 8 to 12 m”)
- \$3 million–\$4 million

Scientific notation. Express multiples of SI (metric) units in powers of 10 with the prefix and technical abbreviations.

mm (millimeters, 10⁻³ m)

MJ (megajoules, 10⁶ J)

Use standard scientific notation to express very small and very large numbers. Avoid using M to mean “thousands” and MM to mean “millions”; use a capital M for “mega,” or millions, as in MW for “megawatts.”

2.5×10^{-3}

3.56×10^6

Spelling out numbers. Except with units of measurement and time, spell out numbers less than 10. EERE prefers “more than” to “over” to indicate greater numerical value. See [units of measurement](#), [time](#).

eight experimental runs

three species of yeast

Salaries went up more than \$20 a week. (preferred)

Salaries went up over \$20 a week.

Spell out all numbers at the beginning of a sentence.

Fifteen trials later, the results were the same.

Thirty-five participants attended the seminar.

When a sentence contains one or more numbers greater than nine that are related to a smaller number, use numerals for all of them.

The results were the same in 3, 12, and 18 trials.

The contractor tested 8 devices in May, 12 in June, and 9 in July.

Spell out the first of two adjacent numbers unless the first one requires three or more words. See also [fractions](#).

ten 5-kW arrays

thirty-two 4-cm² devices

135 16-cm collectors



[parentheses](#)

Use parentheses as appropriate for explanatory material in text.

Parentheses in equations. In equations, use parentheses, brackets, and braces in this sequence (which may be repeated as needed).

{[()]}

Parentheses with measurements. Use parentheses around English measurements that follow SI (metric) measurements.

3.1 m/s (7 mph)

Parentheses in citations. When using parentheses in text, such as for author-date references or for parenthetical (added) information, place a comma after the parentheses, not before them.

In earlier research (Jones 1989), we showed how quantities of lipids could be increased by this method.

Nested parentheses in text. In body copy, use parentheses, brackets, and braces in this sequence, which may be repeated as needed: ([{ }]).

(The data presented here [originally derived from Mason {1998}] should not be used for location-specific analyses.)

[pascal, Pa](#)

The standard SI unit for pressure or stress (also, bar). The pascal is a measure of perpendicular force per unit area. It is equivalent to one newton per square meter. A megapascal equals 1,000,000 pascals.

The small rocket engine produces 100,000 (105) Pa of pressure.

percent, %, and percentage

Use the symbol % with numerals; use “percent” when spelling out numbers at the beginning of a sentence. To determine whether “percent” or % is singular or plural, consider the noun following it. If the next noun is a plural, use a plural verb; if it’s singular, use a singular verb.

Do not confuse percent with percentage point. A change from 10% to 13% is a rise of 3 percentage points. This is not equal to a 3% change; rather, it’s a 30% increase.

The maximum glucose yield was 60%.

Six percent of the pipes were rusty.

More than 10% of that amount was allocated to planning.

When there is no number, use the word “percentage,” unless people in the field use a different terminology, such as “percent difference.”

This table shows the percentages of government buildings having solar roofs, by state.

phenomena, phenomenon

“Phenomenon” is singular; “phenomena” is plural.

Surface and interface phenomena often control the properties of materials and device structures used in energy-harvesting and storage applications.

phone numbers

Do not use parentheses around area codes in phone numbers. Use hyphens to separate the digits in phone numbers.

303-275-3658

011-44-20-7535-1515

1-800-555-5555

303-275-3658, ext. 2.

photographs

When using an image, credit the photographer or other source for legal purposes. The credit should include at minimum, Name, Organization, and Year (if available). The photo credit has no end punctuation.

Provide a caption in conformance with the style format of the content. If the photograph is intended for web posting, an alternate text caption describing the image should be provided and it should describe what is happening in the photo, not repeat the caption. See [captions](#).

Photo courtesy of John Smith, National Renewable Energy Laboratory, 2018

Photo: John Smith, NREL, 2018

photovoltaics and photovoltaic, PV

“Photovoltaics” is a singular noun. “Photovoltaic” is an adjective. The acronym “PV” can be a noun or an adjective, but do not pluralize it. PV is one form of solar electricity, but it is not interchangeable with that term. Solar electricity can also be generated from CSP technologies.

Projects focus on a wide variety of topics including photovoltaics, concentrating solar-thermal power, and power electronics.

One example of market-transforming innovations from other industries is solar photovoltaic technology.

policymaker, policymaking

“Policymaker” and “policymaking” are both spelled as one word.

The option helps policymakers to enable energy reduction goals for buildings and to increase transparency and consumer information around the home buying process.

pressure

Use the standard SI unit for pressure or stress, which is the [pascal \(Pa\)](#) or the bar. The bar is a metric unit of pressure, but not part of the International System of Units (SI). Bar is defined as exactly equal to 100,000 Pa (100 kPa).

Non-SI units include psi (pounds per square inch), millimeters of mercury, torr, and atmospheres, which are still in relatively widespread use.

The small rocket engine produces 100,000 (105) Pa of pressure.

principal and principle

“Principal” means “chief,” “main,” or “first,” such as the principal investigator in a research project or the principal of a high school. “Principle” refers to a belief, value, or rule.

“Guidance for Developing Principal Design Criteria for Non-Light-Water Reactors” helps developers align their concepts with relevant NRC regulations for nuclear power plants.

The Energy Literacy video series highlights the seven essential principles of energy to help engage students in energy.

psi, pounds per square inch

The product hydrogen exits the PSA at 300 psi and is compressed for storage in metal cylinder storage tanks (2,500 psi max pressures).

Q▶

quotation marks

Use quotation marks for direct quotes and the titles of articles, papers, and reports. Use “curly” or “fancy” quotation marks instead of inch marks ("). In Microsoft Word, go to Insert → Symbols → Left (or Right) Double Quotation Mark.

Place commas (and periods) inside quotation marks; place semicolons, question marks, dashes, and exclamation points outside quotation marks unless they’re part of the quotation.

Use single quotation marks to indicate a quotation within material already enclosed in double quotation marks.

“Let’s meet again in six months,” the chairman said, “to discuss our progress.”

She presented a paper, “Materials Research in Silvered Polymer Reflectors.”

“The results are in,” he said.

“Can you hear me?” she asked.

Did he really say, “I don’t believe you”?

“Explain what you mean by ‘confidence,’” she said.

Block quotations. When quotations are longer than two or three lines, begin them on the next line and indent them on each side. No quotation marks are needed around block quotations. Use standard double quotation marks for quotes within block quotations.

The history of earthquake science began in the late 19th century, as described by Chris Jones, below.

The modern concept of earthquake mechanisms began in the 1880s, when G.K. Gilbert, an American geologist, theorized that earthquakes were the result of displacement along geological faults (Gilbert 1890). In 1910, H.F. Reid suggested that earthquakes were the result of a phenomenon called “elastic rebound”, based on observations of the great 1906 San Francisco earthquake (Reid 1910). This theory states that an earthquake is generated by a rupture or sudden displacement along a fault strained beyond its elastic strength.*

* Chris Jones, *History of the Science of Earthquakes*, GPO, Washington, D.C., 1982.

With in-text quotations, place reference numbers, superscripts, and author-date citations outside quotation marks. Place them after the final punctuation of the last sentence in a block quotation.

“EIA forecasts renewable penetration to reach 38 percent and 17 GW of energy storage capacity will be added to the U.S. electric grid by 2050.”¹

See [footnotes](#), [references and citations](#).



Rankine cycle

A Rankine cycle is a thermodynamic cycle used in steam turbines to convert heat energy into work. Rankine is a proper noun; always capitalize.

Concentrating solar power (CSP) plants often rely on the Rankine cycle.

ratios

EERE prefers using a colon to indicate a ratio. However, some industries (such as the American automotive industry) use a slash to express a ratio. Note: AP Style doesn’t use the colon, instead “a ratio of 2-to-1,” a 2-1 ratio,” “a 2-1 majority.”

We prepared a 3:1 dilution.

The engine is designed to have an optimum air/fuel ratio.

references and citations

References cited allow others to place the work in the context of the published literature and lend credibility to published work.

A complete citation source is required [author, year, title, and/or hyperlink, at a minimum]. For all EERE technical publications, citations/footnotes should be consistent. Use the predominate style per professional citation standards.

EERE prefers in-text author-date references over numbered footnotes or endnotes.

Place works consulted (but not cited in the text) in a bibliography. To prepare a manuscript for a publisher other than EERE, follow that publisher's preferred reference style.

All EERE-funded reports are required to include an attribution to the sponsoring program at the program or subprogram level. This means that articles or reports funded by EERE through a financial assistance award (such as a grant or cooperative agreement), including national labs or other 3rd parties, must include the appropriate [Publication Acknowledgement Statement](#).

See [footnotes](#).

In-text reference

Several experts (Wendt et al. 2019; McLing et al. 2019) have given a detailed description of RTES reservoir configuration, heat source requirements, heat recovery power cycle configuration, and operating principles.^{1,2}

Footnote references

- 1 Wendt, D., H. Huang, G. Zhu, P. Sharan, K. Kitz, S. Green, J. McLennan, J. McTigue, and G. Neupane. 2019. *Flexible Geothermal Power Generation utilizing Geologic Thermal Energy Storage: Seedling Project Final Report*. Idaho National Laboratory, INL/EXT-19-53931.
- 2 McLing T. L., D. Wendt, P. Dobson, C. Doughty, N. Spycher, D. Roberson, and J. McLaughlin. 2019. *Dynamic Earth Energy Storage: Terawatt-Year, Grid-Scale Energy Storage using Planet Earth as a Thermal Battery (GeoTES): Seedling Project Final Report*. Idaho National Laboratory, INL/EXT-19-53932.

renewable energy certificate

The renewable energy certificate is not a proper noun and should not be capitalized. This term is preferred over “renewable energy credit” or “green tag.”

Several renewable energy certificates were awarded to participants.

renewable portfolio standard

Capitalize “renewable portfolio standard” only when a state name precedes it.

Renewable energy certificates have been proposed under California Renewable Portfolio Standards.

rheology

The branch of physics that deals with the deformation and flow of matter, especially the non-Newtonian flow of liquids and the plastic flow of solids.

Samples of Tank 22 with various solids content will be prepared for settling and rheology.



Sankey diagram

A standard model used in science and engineering to represent heat balance, energy flows, material flows, and life cycle assessment of products. Sankey is a proper noun; always capitalize.

The onsite generation Sankey diagram shows offsite inputs of fuel and electricity that flow to conventional boilers, combined heat and power (CHP), and other steam- and/or electricity-generating systems.

scientific notation

Standard scientific notation represents a number as a factor multiplied by a power of 10; 3,560,000 is expressed as 3.56×10^6 . This is useful for very large and very small numbers, especially in non-SI units. Also use certain standard prefixes, many of which are listed to the right with their abbreviations.

Choose a prefix that permits the numerical value to fall between 0.1 and 1,000 (62 kW rather than 62,000 W).

10^{24}	yotta	Y
10^{21}	zetta	Z
10^{18}	exa	E
10^{15}	peta	P
10^{12}	tera	T
10^9	giga	G
10^6	mega	M
10^3	kilo	k
10^2	hecto	h
10^1	deka	da
10^{-1}	deci	d
10^{-2}	centi	c
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p
10^{-15}	femto	f
10^{-18}	atto	a
10^{-21}	zepto	z
10^{-24}	yocto	y

semicolons

Semicolons indicate a stronger or more important break in the flow of words than a comma.

Use semicolons in compound sentences (those with more than one subject and more than one verb) without conjunctions. When clauses in a sentence are closely related in meaning, a semicolon is an appropriate dividing punctuation mark. Note that the words “and,” “but,” “or,” and “nor” do not follow semicolons.

It was difficult to reproduce the experiment; the material Smith and Jones used was not widely available.

Of the 13 samples, only one did not degrade; others deteriorated an average of 8%.

Use semicolons with conjunctive adverbs, except “yet” and “so,” which are usually preceded by commas in a complex sentence. Use a semicolon before such conjunctive adverbs as “then,” “however,” “thus,” “therefore,” “hence,” “accordingly,” “moreover,” “nevertheless,” “consequently,” “besides,” “indeed,” and “subsequently”; place a comma after the adverb. Use a semicolon before “i.e.” (“that is”) and “e.g.” (“for example”) and a comma after them when a clause (with a subject and verb) follows them; use a comma when a phrase or list follows.

Before conjunctive adverbs

We used the Schartz-Metterklume method in the experiment; however, the problems with this method are well known.

Energy requirements are often expressed in quads, or quadrillion Btu; therefore, this report describes the number of quads supplied annually by each option.

Exception: so

The contractor’s representative was out, so I left a message.

Before e.g.,

Bring any two items; e.g., sleeping bags and tents are in short supply.

Use semicolons in a series. When items in a series contain internal punctuation (e.g., commas) or are very long, separate them with semicolons. In those cases, a conjunction can follow the last semicolon.

Internal punctuation

The contaminants in the sample were TCE, 150 ppb; toluene, 220 ppb; and benzene, 265 ppb.

Promising new technologies demonstrated at the exposition included advanced wind turbines; polycrystalline, thick-film, and thin-film solar cells; fast-growing energy crops; and fuel cells.

Long series

The vendor assured us that the replacement parts were on order; that the parts would be delivered as soon as they arrived; and that the delay in shipment was unavoidable.

SI (metric) system

EERE follows national and scientific society policies by using the SI (Système International d'Unités; International System of Units) or the metric system to express technical measurements. English units (also known as Imperial) may follow metric ones or be used alone in special cases, when appropriate for a publication's audience. See also the [National Institute of Standards and Technology](#).

He vowed to walk 62 miles (100 kilometers) in a week.

He vowed to walk 100 kilometers (62 miles) in a week.

slash (solidus)

The slash (also solidus, slant, shilling mark, or virgule) is a versatile symbol that has mathematical as well as textual functions. The slash is specific to language (preferred: slash, stroke, virgule, oblique) while the solidus is specific to the fraction symbol and Unicode (encoding method).

Use a slash in fractions.

Use a slash to express a quotient in text when you do not need to use a displayed equation.

Use a slash in superscript and subscript fractions.

These structures yield photoluminescence lifetimes that are related to bulk lifetime by the expression, $x^{1/2}$.

In text, use a slash to indicate some junctions, interfaces, and components.

With abbreviated units of measurement, the slash stands for “per.” But spell out “per” when units of measurement are spelled out.

Junctions/interfaces

gas/liquid interface

1-butyl acetate/acetic acid/water (3:1:1)

Per as slash

2 g/cm²

355 W/m²

Per spelled out

several cubic meters per second

a few cents per kilowatt-hour

smart grid

Lowercase “smart grid” unless it begins the sentence.

A video on the smart grid explains its impacts.

solar cell interfaces

Use a slash rather than a hyphen to designate solar cell interfaces or layers.

CdTe/CdS²

GaInP/GaAs²

solar conversion efficiency

Define in outreach communications products as “the percentage of sunlight striking a solar cell that is converted into electricity.” A definition is often unnecessary in technical publications.

Due to the many recent advances in solar cell technology over the last few years, average solar conversion efficiency has increased from 15% to 20%.

Solar Decathlon

In all communications, either physical or digital, use U.S. Department of Energy Solar Decathlon[®] on the first instance in that document or webpage. Afterwards, use “Solar Decathlon” with no registered trademark symbol. There is no space between the [®] and Solar Decathlon.

The U.S. Department of Energy Solar Decathlon[®] is a collegiate competition, initiated in 2002, that showcases solar technologies.

solar electricity

This term can be used interchangeably with “photovoltaic power,” “PV power,” or “PV electricity.”

Even if you can’t directly purchase and install a solar system because you rent your home, you may still benefit from switching to solar electricity.

sources

Include the sources of all figures and tables originally published by others, especially those outside EERE. If figures or tables come from a copyrighted publication, permission may be needed to reproduce them. Add the source at the end of a figure caption or in a note following a table. See [references and citations](#), [captions](#), [photographs](#).

Source: Hansen, W.L.; Pearton, S.J.; Haller, E.E. (1984). *Appl. Phys. Lett.* 44:606.

spaces

Use only one space after a colon and between sentences.

Correct

Use only one space between one sentence and the next. This is the correct way to format the next sentence.

standard errors

Express standard measurement errors as shown. A space is used before and after the symbol.

6.0 nm ± 0.2 nm

state implementation plan

Capitalize “state implementation plan” only when a state or organization name precedes it.

The Connecticut Department of Environmental Protection incorporated emission reduction strategies into its U.S. Environmental Protection Agency State Implementation Plan for air quality.

states and countries

States. In text, consistently spell out states’ names rather than using U.S. Postal Service abbreviations. A comma is needed between a city and a state name, and also after a state or country name, unless ending a sentence.

D.C. may be used for the District of Columbia in text, in both formal and informal publications. When including addresses or state names in full addresses (containing streets and cities), contact lists, reference lists, and bibliographies, however, use the following postal abbreviations:

AL, AK, AZ, AR, CA, CO, CT, DC, DE, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI, WY (PR, VI).

Note: EERE takes exception to AP Style, which never abbreviates eight states: Alaska, Hawaii, Idaho, Iowa, Maine, Ohio, Texas, and Utah.

California (rather than CA), Colorado (rather than CO), Wyoming (rather than WY)

He was traveling from Nashville, Tennessee, to Austin, Texas, en route to his home in Albuquerque, New Mexico.

She was born in Padua, Italy, in 1980.

Always lowercase state or states, per typical common noun capitalization.

The residential building stock database contains modeled data on housing type and housing energy expenditures for each U.S. census tract, city, county, and state.

She lives in New York state.

The apples come from Washington state.

Countries. Do not abbreviate the names of countries (including the United States) when they are used as nouns. Use U.S. as the adjective form. See [United States and U.S.](#)

the United States

U.S. DOE program

U.S. population

Always lowercase country or countries, per typical common noun capitalization.

The average pool pump energy bill is probably higher in Florida than in many other areas of the country because of the long swimming season.

statistical terms

When referring to statistical or graphical terms, use a hyphen but no italics. Also, do not use capital letters.

p-value

t-test

y-axis

supercritical fluid

A supercritical fluid is any substance at a temperature and pressure above its critical point, where distinct liquid and gas phases do not exist, but below the pressure required to compress it into a solid.

We explore the fundamental connection between properties of a supercritical fluid and observed behavior of the flow by comparing simulations of a supercritical carbon dioxide round jet to canonical simulations using an ideal gas model.

systems integrator

The correct term is “systems integrator,” not “system integrator.” A systems integrator is a person or company that specializes in bringing together component subsystems into a whole and ensuring that those subsystems function together, a practice known as systems integration. They often solve problems of automation.

Systems integrators and installers should work to develop large megawatt-scale energy storage system (ESS) solutions for repurposed PEV batteries that minimize integration, balance of system, and installation costs.



tandem solar cell

The preferred term is “multijunction solar cell.” See [multijunction solar cell](#).

taxonomic names

See [capitalization](#) and [italics](#).

temperature

Use a degree symbol (°) with temperatures expressed in the Celsius and Fahrenheit scales but not with kelvins (use K). Don’t leave a space between the number and the letter for °C and °F, but leave a space between the number and K. See also [degree symbol](#).

72°F

0 K

that and which

See [which and that](#).

III-V solar cell

This term refers to a cell composed of semiconducting materials from Group III (e.g., gallium) and Group V (e.g., arsenic) elements of the periodic table.

NREL develops technologies to drastically lower the cost of III-V solar cells while maintaining their conversion efficiency, thus enabling their use in conventional flat-plate and low-concentration applications.

time, time zone

Use lowercase a.m. and p.m. (with periods) to denote “ante meridiem” and “post meridiem” (before and after noon). Use a colon to separate hours from minutes except for the top of the hour. EERE preferred style for time zone is ET, CT, MT, and PT (Eastern Time, Central Time, Mountain Time, and Pacific Time). Omit Daylight (D) and Standard (S) initials.

11 a.m. (not 11:00 a.m.)

3:30 p.m. PT

Except when writing a news story, avoid time-sensitive phrases (such as “last week,” or “this year”). If you feel the need to add time-sensitive phrases, use recent, soon, and current. Content that uses time-sensitive words rapidly becomes out-of-date. Specific dates are preferred.

See [numbers](#).

title (professional)

Titles (professional). Capitalize titles when they precede the person’s name. Lowercase titles and names of groups when they follow the name.

Former or future titles are also capitalized when preceding the person’s name. Except for “Acting,” which EERE prefers to capitalize, lowercase qualifiers (e.g., former, deposed, presumed).

The Secretary of Energy was appointed in 2017.

Secretary of Energy John Doe attended the conference.

John Doe, the current secretary of energy, previously served as the deputy secretary of energy.

Chief Operating Officer Mark Wilson

Mark Wilson, the chief operating officer

former Secretary of State Henry Kissinger

Acting Chief of Police Robert Hand

See [capitalization](#).

trademark symbols

Use trademark symbols with trademarked programs and products owned/registered by DOE or affiliated national laboratories or lab operators. Use a trademark only on first mention; there is no space before the symbol.

Do not use trademark symbols (® or ™) with third-party products.

Commonly used government-owned trademarks that should use the trademark notice symbols are shown below. This list is not all-inclusive.

BUILD4SCALE™

EnergyPlus® (word and design/logo registered trademarks)

H2@SCALE™

Home Energy Score™

HydroGEN Advancing Water Splitting Materials™

RACE TO ZERO™

RAPID TOOLKIT®

Solar Decathlon®

SOLSMART®

ENERGY STAR®



unit modifiers

See [compound words and modifiers](#); see [hyphens](#).

United States and U.S.

Spell out “United States” when it is used as a noun. The abbreviation “U.S.” is acceptable when it is used as an adjective, although “American” is preferred.

The United States is a leader in renewable energy markets.

The global markets for renewable energy are stronger than the U.S. markets.

units of measurement

Use numerals with units of measurement and time in technical papers and reports, even when the number is less than 10. In some outreach communications products, spell out numbers less than 10, especially with units of time.

Except with \$, °, and %, leave a space between the numeral and the unit.

Use non-SI (Système International d’Unités) or nonmetric measurement units (English or Imperial units) instead of metric units only when they are the industry standard. Otherwise, state metric units first, followed by English equivalents in parentheses.

For numbers of 1 million or more, use the numeral (and a decimal, if necessary) and the words million, billion, etc.

See [numbers](#).

2 kW

7 cm²

16.8%	5 years
3 m	\$2 billion
8-hour days	45°
300 Btu	38.1 m (125 ft)

URL, uniform resource locator

Uniform resource locators, or URLs, are essentially web addresses. On websites, URLs should be embedded in text. “URL” is widely known and can be used without spelling out on first reference; however, EERE preference is to use “website” over “URL” in copy.

In print, URLs should not be embedded in text. If a URL extends beyond one line of text, add a break at a slash. Also, in general, don’t include the https:// prefix on most URLs — but test before removing it. Shorten URLs as much as possible (e.g., remove unnecessary trailing such as /index.html) while ensuring functionality.

When embedding URLs as hyperlinks in digital content, best practice is to keep the hyperlink as short as possible, ideally three words or fewer.

More information is available on the [Wind Energy Technologies website](#).

See [energy.gov](#) for more information.

U.S. Department of Energy, DOE

The preferred name of the department for all outreach materials. When spelling it out, “U.S.” should precede “Department of Energy” to distinguish it from other state and international departments. However, “U.S.” should not be included with the acronym “DOE.”

On second reference, “the Department” may be used in place of the DOE initialism. Avoid using “the Department” if the content references other federal agencies that could be confused with the Department of Energy.

If the possessive is used with the name, the apostrophe should go after the spelled-out name or term but not with the DOE initialism. Preference is to write in a way that avoids use of the possessive.

The U.S. Department of Energy’s (DOE) Office of Energy Efficiency and Renewable Energy (EERE) is in charge of the program.

Under the U.S. Department of Energy (DOE), the Office of Energy Efficiency and Renewable Energy (EERE) is in charge of the program.

On first reference, and only on first reference, “Energy Department” may be used in communications to the press.

Avoid using “the DOE.”

W ►

watt

Watt is the SI unit of power, equivalent to one joule per second, corresponding to the power in an electric circuit in which the potential difference is one volt and the current one ampere. The symbol is W. See also [kilowatt](#), [megawatt](#), [gigawatt](#).

1,000 watts of electricity

1,000-watt output

Luminous efficacy of solid-state lighting is measured in lumens per watt (lm/W).

web terms

Web terms (single and compound) are one word, lowercase.

World Wide Web is a proper noun and should be initial-capped. “Web” alone, if used as shorthand for the World Wide Web, should be capitalized. It should not be capitalized when used as an adjective, e.g., web-based training, web tool, web content.

the Web

webinar

webpage

webmaster

homepage

website

webcast

which and that

Standard American English uses “which” for nonrestrictive (nonessential) phrases and clauses and “that” for restrictive (essential) phrases and clauses.

When a phrase or clause is not essential to the meaning of a sentence, use the relative pronoun “which” and enclose the phrase or clause in commas.

When a phrase or clause is essential to the meaning of a sentence (that is, the sentence would not make sense without it), use “that” and leave out the commas.

Which

The paper, which she has been working on for three weeks, discusses string theory.

That

The paper that he completed recently will be presented in New York; the paper that he finished last summer will be presented in Philadelphia.

who and whom

Who is the pronoun used for references to human beings and to animals with a name. Who is grammatically the subject (never the object) of a sentence, clause, or phrase.

Whom is used when someone is the object of a verb or preposition.

Who

The woman who rented the room left the window open.

Who is there?

Whom

The woman, with whom she visited, left in a hurry.

Whom do you wish to see?

work-for-others agreement, WFO agreement

Lowercase “work-for-others agreement” because it’s not a proper noun. The acronym “WFO” refers only to “work for others;” therefore, “WFO agreement” is correct.

Work-for-others (WFO) agreements permit DOE laboratories and facilities to conduct work for other federal agencies and non-federal entities (including state and local governments, universities) on a reimbursable basis.

Y ▶

years and months

See [months and years](#).

Z ▶

zero

For numbers less than one, place a zero before the decimal.

0.5

0.125

0.00125

zero energy building

The term may be used to indicate an energy-efficient building where, on a source energy basis, the actual annual delivered energy is less than or equal to the on-site renewable exported energy. Similar terms include net zero, zero energy campus, zero energy portfolio, and zero energy community.

Zero energy buildings produce at least as much energy as they consume on an annual basis.