EPRI

Bee Better Certified Electric

Project Scoping Report

2022 TECHNICAL REPORT

Bee Better Certified Electric

Project Scoping Report

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ABSTRACT

Beginning in 2021, EPRI launched a two-year project with The Xerces Society for Invertebrate Conservation to develop a nationally recognized, third-party verified, voluntary pollinator certification program for electric power companies: *Bee Better Certified Electric*. This document outlines the goals, rationale, and process for the certification as well as the underlying criteria that will be used by third-party verifiers to assess specific sites.

The certification will be available in the United States for the following eligible land asset types: ground-mounted solar arrays, traditional power plants (coal, natural gas, and nuclear), hydroelectric property, substations, and electric transmission rights-of-way (ROWs). Within these asset types, the focus is on land over which companies have authority and control and that are part of a vegetation management program. Distribution lines and land around wind generation sites are not being considered at this time. Certification under *Bee Better Certified Electric* applies to individual sites or segments and is not a blanket certification for entire organizations or companies.

This report is intended to guide the development of the U.S.-based *Bee Better Certified Electric* certification, including the underlying specific measurable criteria, and to serve as a reference for participating stakeholders regarding purpose, approach, and boundaries. This report provides the background for stakeholders to participate in the comment period for the draft criteria that third-party verifiers will use to determine site-level qualification.

Keywords
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PRIMARY AUDIENCE: Owners, operators, and landowners of solar energy facilities; utility integrated resource planners

SECONDARY AUDIENCE: Environmental, renewable energy, and sustainability managers at electric power companies; government agency leaders

KEY RESEARCH QUESTIONS

- What are elements of a voluntary, defensible, site-level certification for power companies related to pollinator habitat?
- Does the measurable criteria for performance need to change based on site characteristics (linear areas under transmission lines, smaller sites for substations, or hundreds of acres for large-scale solar arrays)?
- Does the criteria change to account for surrounding land use (such as rural, agriculture, and urban uses)?
- How can a third-party verified certification program account for the complexities of power company land asset types, land authority and control agreements, and existing vegetation management laws?
- What is an appropriate balance between the ideal circumstances for pollinators and the realities of habitat management on working land?

RESEARCH OVERVIEW

Beginning in 2021, EPRI launched a two-year project with The Xerces Society for Invertebrate Conservation to develop a nationally recognized, third-party verified, voluntary pollinator-focused certification program for electric power companies: *Bee Better Certified Electric*. This effort advances a science-based certification process to verify that vegetation on power company land assets is managed in a manner that supports pollinators.

KEY FINDINGS

- Given a large, diverse, and worldwide range of land assets, the electric power industry and new energy developers hold an influential and growing role in the decisions and implications of land management.
- With a large increase in land devoted to electricity generation projected for the future, interest in the overlap between land-based activities of electric power companies and pollinator conservation is expanding.
- While there are challenges, there are also many opportunities and interest from power companies and stakeholders in legitimate approaches to protecting habitat while also delivering safe, affordable, and reliable electricity.
- The effort is designed to employ an active, transparent, and participatory process to develop the *Bee Better Certified Electric* criteria.
- The *Bee Better Certified Electric* criteria development phase will rely on input from representatives of scientific, technical, and industry organizations. The Working Group consists of experts across relevant fields meeting on a regular basis to draft the criteria, while public review is intended to invite a large set of interested stakeholders to review the draft criteria.

- Release of the final *Bee Better Certified Electric* criteria is expected in early 2023.

WHY THIS MATTERS

Some power companies are expressing interest in implementing meaningful pollinator conservation actions on their managed lands that are compatible with their primary goal of delivering electricity. Electric power developers, generators, and distributors manage a variety of land types. *Bee Better Certified Electric* is intended to provide a set of criteria that allow managers to select a land management implementation approach while creating a verifiable outcome that has positive pollinator benefits across land types and climates.

The certification is for land over which power companies have authority and control and that is part of a vegetation management program. As an initial step, the following land asset types will be considered: solar energy sites, transmission line corridors, substations, power plants, and hydroelectric facilities.

HOW TO APPLY RESULTS

This report is intended to guide the development and finalization of detailed *Bee Better Certified Electric* criteria and serve as a reference for participating stakeholders with regard to the purpose, approach, and boundaries of the effort.

LEARNING AND ENGAGEMENT OPPORTUNITIES

- EPRI's Power-in-Pollinators Initiative – the funding support for developing the criteria for *Bee Better Certified Electric* – supports knowledge transfer webcasts on pollinator conservation, spearheads the release of tools and resources for land use planning and management, translates current pollinator science, and supports participating companies in accurately communicating their pollinator conservation efforts.
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PROGRAM: EPRI Power-in-Pollinators Initiative

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ACRONYMS

EPRI	Electric Power Research Institute
NERC	North American Electric Reliability Corporation
PPA	Power Purchase Agreement
PV	Photovoltaic
ROWs	Rights-of-Way
USDA	U.S. Department of Agriculture

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INTRODUCTION AND BACKGROUND

Beginning in 2021, EPRI launched a two-year project with The Xerces Society for Invertebrate Conservation (Xerces) to develop a nationally recognized, third-party verified, voluntary pollinator certification program for electric power companies: *Bee Better Certified Electric*. This effort establishes a science-based certification for solar sites, transmission rights-of-way (ROWs), substations, and power plant sites to verify that vegetation is managed in a manner that supports pollinator conservation.

Between 2015 and 2017, Xerces and Oregon Tilth (a certification body) developed Bee Better Certified for food and farms, with financial underwriting from the U.S. Department of Agriculture (USDA). The Bee Better Certified food production criteria reflect the most up-to-date scientific understanding of the threats pollinators face on farms and techniques that help mitigate these threats. Today, Bee Better Certified food can be found at local and national grocery stores. The Bee Better Certified seal provides public recognition for farmers and businesses that adopt management practices that support pollinators and give consumers confidence that their purchasing decisions benefit pollinators. *Bee Better Certified Electric* builds on the existing science-based criteria for food and farms.

EPRI is interested in developing a voluntary and defensible site-level certification for power companies related to pollinator habitat that adds credibility, consistency, and rigor to the practice of pollinator conservation and associated labeling and public communication.

EPRI's Power-in-Pollinators Initiative (Figure 1-1), the source of funding for developing *Bee Better Certified Electric*, supports knowledge transfer webcasts on pollinator conservation, spearheads the release of tools and resources for land use planning and management, translates current pollinator science for company application, and supports participating companies in accurately communicating their pollinator conservation efforts (Figure 1-2).

This third-party certification will not be appropriate and/or possible for all projects, ecological conditions, or companies.

Figure 1-1
EPRI Power-in-Pollinators Initiative 2022

Figure 1-2
Examples of pollinator habitat on land assets managed by power companies. Credit: EPRI 2021 Pollinator Power Party Calendar (3002020257)

Rationale

Electric power company landholdings offer a unique opportunity for pollinator conservation because they consist of millions of acres of vegetated land with potential to support habitat. For example, transmission line ROWs, land around substations, solar sites, and areas upland of hydroelectric sites, are often maintained as compatible low-growing plant communities consisting of shrubs, grasses, forbs, and ferns. Corridors of transmission line ROWs in conjunction with substations, solar arrays, and other power infrastructure might support pollinators and provide habitat connectivity across landscapes, helping to ensure pollinator survival. Some power companies are pursuing pollinator conservation actions on lands they manage using methods that are compatible with their primary goal of delivering safe, affordable, and reliable electricity, for which they would like to seek certification.

Various voluntary habitat certification, communication, signage, and/or recognition programs exist along with state-level pollinator-friendly solar scorecards (EPRI, 2021). Some of these programs are considered “pay to play,” others include an application and acceptance, some are based on self-reporting of site conditions, and some include on-site monitoring. Of note, one program certifying transmissions systems based on specific vegetation management principles

was developed and is operated by the Right-of-Way Stewardship Council;[1] this certification is third-party verified by Dovetail Partners, which oversees the program and does not specifically consider pollinators.

EPRI's motivation is to create an approach to support companies seeking a rigorous certification related specifically to pollinator habitat, on a site-specific basis, and across their land asset types, which differs from other voluntary programs currently available to power companies. This project will continue to carefully review the existing comparable certification and labeling programs to avoid unnecessary burden for power companies seeking to participate in multiple certification efforts.

With pollinator issues becoming increasingly important to the public, it is useful for companies to have access to rigorous backing for their pollinator conservation claims. *Bee Better Certified Electric* can help reduce the potential for greenwashing claims against companies with "pollinator-friendly" practices and may provide a means for highlighting and communicating company efforts to preserve these critical habitats, thus showing value to shareholders and customers.

EPRI is keenly aware that a certification developed in a closed room by a limited set of people is unlikely to yield a valuable and well-considered outcome. Indeed, the process by which this certification is developed is critical to ensuring that the certification considers the needs of all parties: the land managers, the pollinators, and the public. EPRI has therefore prioritized the process of this effort over speed of execution, as further described below.

This Scoping Report

This is a scoping report for the development of *Bee Better Certified Electric*, intended to outline the goals, rationale, and process for the development of the certification criteria and to clarify which land asset types managed by power companies are included. This report is intended to guide the development of detailed criteria underlying the *Bee Better Certified Electric* certification and to serve as a reference for participating stakeholders with regard to the purpose, approach, and boundaries of the effort. Currently, the certification only applies within the United States.

[1] "Right-of-Way Stewardship Council." 2022. www.rowstewardship.org. https://www.rowstewardship.org/

2
GOALS AND PROCESS

Bee Better Certified Electric is a voluntary certification for those projects seeking a level of verified third-party credibility that cannot be attained with other voluntary habitat recognition programs or scorecards. Opportunities will be considered for harmonizing with existing efforts with which companies may already be engaged. This is important as it can reduce the cost of participation, which can minimize negative impacts to investors and electricity customers.

The primary goal of *Bee Better Certified Electric* is to support pollinators on lands managed by power companies through a set of detailed criteria that are:

- Science-based
- Measurable
- Verifiable by a third party
- Applicable to various land types and climates
- Achievable without unreasonable cost or hardship
- Secondary goals for *Bee Better Certified Electric* include the following:
- Incorporate proactive and leading practices for land management that support conservation of pollinators and pollinator habitat.
- Enable certified companies to highlight and communicate pollinator achievements of their organizations and projects without risk of greenwashing claims.
- Integrate pollinator conservation with affordable, safe and reliable electricity.
- Recognizing that technology, scientific knowledge, and conservation values evolve, *Bee Better Certified Electric* will be responsive to the periodic need for change. Following the successful model of the agricultural Bee Better Certified, there will be annual review and revision of the

Box 1: *Bee Better Certified Electric* at a Glance

Electric power developers, generators, and distributors manage a variety of land types. *Bee Better Certified Electric* is intended to provide a set of criteria that are applicable to various land types, ecoregions, and climates.

Definitions:

Criteria are individual metrics that can be verified.

A *Standard* is the collective group of criteria.

Certification is verification that the criteria have been met.

A *pollinator* is an animal that moves pollen from the male anther of a flower to the female stigma of a flower. The use of *pollinator* in this document refers primarily to insect pollinators.

What *Bee Better Certified Electric* Is and Is Not:

- A performance-based certification with criteria that relate to measurable achievements and performance. Certification will not be provided for plans or intentions.
- A project-/site-level certification, not a system or company-wide certification.
- Not applicable for sites that have been used as regulatory compliance mitigation for other projects.
- Not intended to tell managers *HOW* to achieve the performance outcomes. This leaves flexibility to accommodate site-specific conditions in how outcomes/performance are realized.

Process

The process for development of the *Bee Better Certified Electric* program consists of 5 phases:

- Develop and utilize a project working group
- Release scoping report and draft criteria for public review and comment
- Finalize and publish the criteria.
- Develop third-party certifier training and power company application documents
- Open program for companies to apply.

Appendix C provides the overview and timeline of this process.

On an ongoing basis, Xerces and EPRI may develop a steering committee to 1) periodically review and revise criteria to ensure that the requirements reflect the best available science while remaining achievable and accessible to electric power companies and energy developers, and 2) oversee recertification of third-party verifiers.

Bee Better Certified Electric will ultimately be a Xerces certification program. EPRI is interested in ensuring that the program is developed and implemented in a way that fully considers the needs of pollinators, power companies, and the public. Xerces will "own" the certification program, and only qualified and trained third-party verifiers will be eligible to evaluate projects against the criteria.

Project Working Group

To develop the *Bee Better Certified Electric* criteria, Xerces and EPRI recruited a core team of diverse advisors to form the Working Group (Table 2-1). Advisors were recruited based on their relevant expertise or role: pollinator scientist, restoration practitioner, power company managers, and investors. This group met regularly between November 2021 and October 2022 to develop this Scoping Report and will continue to meet in the future to develop the draft criteria.

Table 2-1
***Bee Better Certified Electric* Working Group**

NOTE: NO ASSUMPTION CAN BE MADE REGARDING ENDORSEMENT OR CONCURRENCE WITH SPECIFIC OUTCOMES OR DECISIONS FROM SPECIFIC WORKING GROUP MEMBERS.

Name	Organization	Expertise/Role
Moderators		
Eric Lee-Mäder	Xerces	Program Manager
Jessica Fox	EPRI	Program Manager
Liz Robertson	Xerces	Project Coordinator
Working Group		
William Maidment	ENGIE	Civil Engineer, Solar Owner, Operator
Lewis Payne	New York Power Authority	Rights-of-way and Environmental Manager
Kathleen Ave	SMUD	Sr. Climate Program Manager
Chuck Sheppard	Bonneville Power Administration	Manager of Vegetation and Forestry
Kevin Atkins	Ameren Services Company	Sr. Environmental Manager
Matthew Shackelford	DTE Energy	Environmental Manager
Josh Burnette	Tennessee Valley Authority	Land Manager
Beth Markhart	WEST, Inc.	Senior Restoration Ecologist
Rebecca R. Hernandez	UC Davis, Wild Energy Initiative	Professor, Department of Land, Air, and Water Resources
Tom Karas	Minnesota Native Landscapes	Restoration Contractor
Claudio Gratton	University of Wisconsin – Madison	Pollinator Ecologist
Ben Bowell	Oregon Tilth	Certification Expert
Zara Dowling	University Massachusetts, Clean Energy Extension	Research Fellow
Cameron Newell	Xerces	Ecological Certification Expert
Stephanie Frischie	Xerces	Restoration Expert, Plant Materials
Teresa Kim	JP Morgan	Financial Investment Manager

The Working Group's purpose is to develop a detailed set of *criteria* that are compatible with energy production and electric company land use. While the focus is on the development of criteria that support wild bees, these criteria will also support other insect pollinators such as butterflies, moths, wasps, beetles, and flies. At a macro level, these criteria will emphasize protection, persistence, and/or maintenance of native plant species where possible as well as limiting disturbance to likely pollinator nesting, foraging, and breeding sites.

The final task of the Working Group will be to reconcile public comments on the draft criteria. As facilitators, Xerces and EPRI will finalize the criteria with a goal to uphold the underlying purpose of the criteria, while being responsive to all input and comments.

Examples of insights from the Working Group include the following:

- Habitat loss due to a variety of land use changes is one of the primary drivers of biodiversity declines. Vegetation management and conservation practices that avoid further loss of biodiversity may support an emerging shift in priorities regarding the manner in which electricity is generated and delivered to end users.
- This Bee Better Electric certification should be voluntary and is not intended to be adopted by regulators as a condition of operating licenses or permits.
- To be credible, *Bee Better Certified Electric* criteria must incentivize the protection of intact natural areas and at-risk pollinator species where they occur. A certification that is achievable despite a preponderance of ecological harm, is unlikely to withstand scientific scrutiny.
- The certification should enable power companies to implement vegetation management protocols that enhance biodiversity while still providing safe, affordable, and reliable power.
- It is not appropriate for all projects and locations to implement pollinator conservation measures, or for all projects to implement measures to the same extent or intensity. Not all sites or circumstances will be appropriate for a Bee Better Electric certification. In particular, surrounding land use and economic factors need to be considered on a site-specific basis.

Public Review and Comment

The draft certification standards will be released for review and an open comment period from a broad set of stakeholders including industry, independent scientists, and conservation advocates. Feedback from the public comment period will be reviewed by the Working Group and incorporated where possible into the final certification standards. The public review period is intended to ensure broad participation by a diverse cross section of interested stakeholders.

Third-Party Verifier Training and Application Documents

Upon the publication of a final set of criteria, the next action will be to develop the process for becoming a qualified independent third-party certifier as well as the supporting documents for power companies to submit to a qualified verifier. Xerces has previously conducted these actions with the existing Bee Better farm and food certification:

- Train qualified certification inspectors (i.e., verifiers).
- Create a framework for issuing certificates.
- Develop procedures for identifying and responding to noncompliance issues.
- Establish licensing guidelines for use of the Bee Better Seal for marketing and public outreach by certified companies.

3
CERTIFICATION SCOPING AND ELIGIBLE LANDS

In the development of the draft criteria, the primary focus was on vegetation management practices such as plant selection, retention of pre-disturbance desirable perennial vegetation, woody growth suppression, seed planting, seasonal timing of management activities, and biological, chemical, and physical weed management.

Additional vegetation management criteria may include proactive scouting for invasive species and practices consistent with an approach known as Integrated Vegetation Management (IVM) from Part 7 of the ANSI A300 Integrated Vegetation Management Standard and companion publication, Best Management Practices. Recognizing the paramount need for safe, reliable, and effective delivery of electricity, as well as the economics of vegetation management, a certification must balance achievability and pollinator conservation value.

Eligible Lands

Based on scientific and trade literature (see References and Resources), and feedback from the Working Group, the following land asset types will be considered: ground-mounted solar, transmission line corridors, substations, power plants, and hydroelectric facilities. Conservation actions considered for this certification will take place on land over which companies generally have authority and control and are part of a vegetation management program.

Box 2: *Bee Better Certified Electric* Criteria: <u>In-Scope Land Assets</u>

The following land asset types are included in certification criteria development:

- Solar sites, transmission line corridors, substations, power plants, and hydroelectric facilities.
- Within these land assets, the certification focuses on land over which companies generally have authority and control, and that have managed vegetation.

This current effort for criteria development **excludes** surplus land assets, retired landholdings, and sites secondarily related to electric power such as coal combustion product sites. Distribution lines are out of scope for the current criteria for a number of reasons. Chiefly, in contrast to transmission corridors, distribution lines account for a relatively small land area, are not wide, and tend to be located adjacent to roadways. Moreover, due to the minimal active vegetation management activities typically performed on wind farms, lands associated with wind generation will be excluded in the current criteria. These and other landholdings may be incorporated into later versions of the criteria.

Following is a brief description of the typical characteristics and basic legal requirements associated with the asset types, which should assist stakeholders in understanding characteristics of land assets for which *Bee Better Certified Electric* criteria is being developed. These are not comprehensive summaries and specific site conditions will vary.

Transmission Rights-of-Ways (ROWs)

Transmission ROWs are the linear corridors along and under the path of transmission lines (Figure 3-1). The land under these lines is not typically owned by the power company and in about 90% of the cases, is managed via an easement (EPRI, 2019).

Figure 3-1
Transmission corridor in California with ground mounted solar in the distance
Credit: S. Frischie, The Xerces Society

Basic Requirements

Vegetation under transmission lines is managed to limit the growth of incompatible vegetation, primarily shrubs and trees that may attain heights within the clearance distances from lines or towers. Herbicide application, mowing, trimming, hand cutting, and grinding are common practices used to maintain transmission ROWs clear of plants over specified height thresholds. The frequency of vegetation management is generally based on the ecosystem's growth characteristics and the width of the ROW corridor, or roughly every three to five years for a single line segment (EPRI, 2019).

Habitat Potential

When managed with appropriate timing and targeted use of herbicides, mowing, trimming, or adding plant species, the open, sunny environment of ROWs has the potential to support a variety of plant species for pollinator habitat (Russo, et al, 2021). The untilled soil in established ROWs has the potential to provide nesting sites for native bees (EPRI & Xerces, 2018). Thousands of herbaceous plant species providing food and shelter for pollinators can grow in ROW conditions without posing a safety or reliability risk to the grid. Some of these plants may grow spontaneously in ROWs, while other compatible pollinator habitat species can be added through seed mixes or transplants.

From a conservation perspective, the linear shape and continental network of transmission ROWs poses opportunities and risks. Corridors of habitat allow plants and animals to move

according to their behavior or ability to disperse (Tewksbury et al., 2002). This movement and interaction help to maintain populations that are not genetically or physically isolated and are therefore less vulnerable to decline. Corridors are especially important in highly fragmented and altered ecosystems for providing connections between patches of habitat (Haddad et al., 2015).

Some challenges to managing ROWs as pollinator habitat are the easements or lease agreement terms and conditions that may vary widely and/or constrain options for vegetation management. The majority of land in ROWs is not owned by the power company responsible for maintaining the lines. In fact, the land is managed via leases or easements with the property owner, and the power company may not have control over the property owner actions and decisions. Additionally, vegetation management is often performed by prescheduled contractors, which may limit the flexibility to target seasonally appropriate maintenance strategies to support pollinators. Contractors may need additional training, knowledge, or capacity to meet changing requirements and expectations for managing quality pollinator habitat. Another important challenge to recognize and address is the potential for invasive plant species to be introduced and spread in ROWs. Invasive plant species can outcompete native plants and reduce the overall diversity of plants, pollinators, and other wildlife at a site. Tools to recognize and manage invasive species while minimizing their negative effects on pollinators is a critical part of managing ROWs as pollinator habitat (Gardiner et al., 2018).

Substations

Substations are facilities where electrical current is converted from higher to lower voltages between the network of generation sites and transmission and distribution lines (Figure 3-2). Substations often have relatively small footprints, typically 1–15 acres, though they can be greater than 50 acres near generating facilities. Substations are located in rural, suburban, and urban settings and most are outdoor, though some are enclosed in buildings or other structures.

Figure 3-2
Substation near West Milford, WV. Credit: FirstEnergy Corp., Flickr.

Basic Requirements

Several North American Electric Reliability Corporation (NERC) requirements limit access, address visibility, and mandate avoidance of attracting wildlife that could damage or interfere with substation equipment and function. Included in and because of these requirements, substation interiors are frequently built and maintained to be free of vegetation, typically using gravel or pavement. In some locations, local weed ordinances also apply to substations.

Habitat Potential

Due to the regulatory requirements listed above, opportunities for pollinator habitat on substation sites are likely limited to areas immediately outside of the fence that can be managed as low-height pollinator meadows. Substations with sufficient acreage could include a hedgerow along the property boundary as another type of pollinator habitat that is compatible with the restrictions on vegetation within the substation equipment footprint.

Solar Sites

Ground-mounted solar generating sites typically consist of photovoltaic (PV) panels or concentrating solar thermal collectors that are mounted on posts. The sizes of solar generating sites range from a few kilowatts of capacity to hundreds of megawatts, the latter of which may occupy thousands of acres. Large, ground-based sites are often enclosed by a security fence.

Basic Requirements:

At solar generating sites, vegetation height is maintained short enough to prevent shading of panels, keep the supporting structures clear of vegetation, allow access to PV equipment, and prevent fires on site (Figure 3-3). Solar sites are required to comply with stormwater and erosion revegetation standards, and groundcover must be established after the site is constructed. Periodic cleaning to remove dust from the panels may be beneficial at sites where dust accumulation is not sufficiently removed by precipitation.

Figure 3-3
Ground-mounted solar

Habitat Potential

The need to limit overall vegetation height to avoid panel shading is often compatible with pollinator habitat. Options for managing vegetation height include species selection in seed mix design, precise placement of plant species relative to the arrays, and appropriately timed rotational mowing and/or grazing. There is not a single "one size fits all" vegetation solution for solar projects but likely a range of options for providing pollinator resources.

Additionally, site perimeter areas such as oddly shaped corners without panels but within the footprint of the site, can be planted and managed as habitat with fewer restrictions on vegetation height. Hedgerows of flowering shrubs, small trees, bunch grasses, and taller wildflowers can provide habitat outside of fences and along the site perimeter. This option can provide an aesthetic, living screen in locations or neighborhoods where the expanse of panels may be considered unsightly or serve as a wind buffer to reduce dust.

One challenge to creating and maintaining pollinator habitat at solar generating sites is that decision authority to incorporate pollinator habitat into a solar development varies throughout the project life cycle, and the company that develops the project may not be the long-term owner. Power companies may own generating sites or they may purchase electricity through power purchase agreements (PPAs), rather than owning the sites outright. The incorporation of habitat requirements into purchase agreements for sites with appropriate habitat may be one method that allows habitat development on sites where the owner/operator may not be the company distributing the power to end users. Given the competitive environment for solar developers, pollinator habitat requirements sometimes raise concerns about adding complexity and lengthening development timelines.

Power Plants

The land surrounding nuclear, coal, oil, and natural gas plants has potential to be managed as pollinator habitat with appropriate choices regarding herbicide use, revegetation/restoration, mowing, and invasive species management that also meet requirements for safety and reliability. Power plants include land that is legally required as a buffer area for visual screening, safety, and security.

Basic Requirements

NERC requirements cover vegetation management and require certain buffer distances for safety and security.

Habitat Potential

A wide range of habitat – including low-stature meadows, wetlands, and hedgerows or border plantings – may be appropriate for some power plant sites.

Hydroelectric Generating Sites

Most hydroelectric generating facilities consist of distinct areas with a dam, turbines, reservoir, upland habitat, and opportunities for recreation on land and water (Figure 3-4).

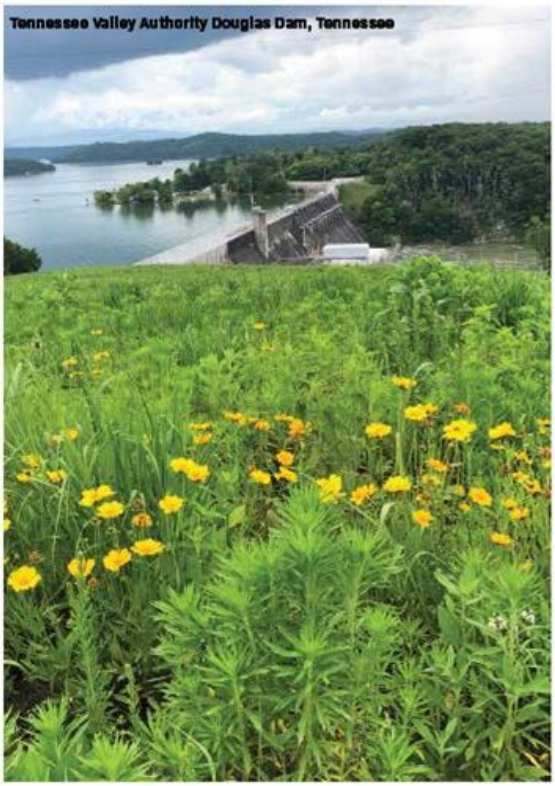

Figure 3-4
Pollinator habitat in the upland area of a hydro generating site
Credit: EPRI 2021 Pollinator Power Party Calendar (3002020257)

Basic Requirements

The Federal Energy Regulatory Commission (FERC) limits vegetation height to less than 12 inches in some cases.

Habitat Potential

The land around reservoirs can potentially be managed for herbaceous, wetland, and forest vegetation as pollinator habitat.

4
SUMMARY

The next step for this effort is the development of measurable and verifiable criteria against which projects can be assessed by third-party verifiers. The draft criteria covers ground-mounted solar arrays, traditional power plants (coal, natural gas, and nuclear), hydroelectric property, substations, and electric transmission ROWs. Within these asset types, the focus is on land over which companies have authority and control that involve vegetation management. Distribution lines and land around wind generation sites are not being considered at this time. Certification under *Bee Better Certified Electric* applies to individual sites or segments and is not a blanket certification for organizations, companies, or entire land asset types (i.e., all substations, all ROWs).

Given a large, diverse, and worldwide range of land assets, the electric power industry and energy developers hold an influential and growing role in land management decisions. With a large increase in land devoted to electricity generation projected for the future, interest in the overlap and synergy between land-based activities of electric power companies and conservation needs is expanding, as demonstrated through the current body of research publications and reports (Berg et al., 2016; Dolezal et al., 2021; Dupras et al., 2016; EPRI, 2019; Hernandez et al., 2019; Wagner et al., 2019; Walston et al., 2021), focused initiatives (EPRI Power-in-Pollinators Initiative; Hess and Hess, 2020), Department of Energy research (Macknick et al., 2013), and state-level solar scorecards for pollinator habitat (EPRI, 2021). While there are challenges, there are also many opportunities (Appendix D) and interest from power companies and stakeholders in identifying legitimate approaches to protecting habitat while also delivering safe, affordable, reliable electricity.

Summary of Bee Better Electric Certification

Purpose: Some power companies are expressing interest in implementing meaningful pollinator conservation actions on their managed lands that are compatible with their primary goal of delivering safe, affordable, reliable electricity. *Bee Better Certified Electric* is intended to provide a set of criteria that allow managers to select a land management approach, create verifiable outcomes, and have positive pollinator benefits across land types and climates.

Land Assets: The certification is for land over which power companies have authority and control and which is part of a vegetation management program. As an initial step, the following land asset types will be considered: solar energy sites, transmission line corridors, substations, power plants, and hydroelectric facilities.

Process: The effort is designed to employ an active, transparent, and participatory process to develop the criteria. The criteria development phase will rely on input from representatives of scientific, technical, and industry organizations serving as a Working Group that meets on a regular basis to draft the criteria. This will be followed by a broad public comment period. Conflicting input will be carefully considered by the Working Group; if consensus is not possible, EPRI and Xerces will make a final decision and document the reasoning.

Output: The effort will result in published *Bee Better Certified Electric* criteria for trained third-party verifiers to use with interested electric power companies and power developers.

Schedule: Release of the final *Bee Better Certified Electric* criteria is expected in early 2023.

5
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For Further Reading

EPRI Power-in-Pollinators Initiative http://www.epri.com/pollinators

Bee Better Certified https://beebettercertified.org/

NERC https://www.nerc.com/Pages/default.aspx

Powerlines for Pollinators https://www.segrasslands.org/blog/2019/6/17/the-importance-of-rights-of-way-to-sun-loving-grassland-species

Right-of-Way Stewardship Council http://www.rowstewardship.org/

Transmission Line Ecology. Rights-of-Way Ecological Research at Penn State. https://sites.psu.edu/transmissionlineecology/

A

ABOUT XERCES SOCIETY AND EPRI

About the Xerces Society: The Xerces Society for Invertebrate Conservation is an international nonprofit organization that protects the natural world through the conservation of invertebrates and their habitats. The name (pronounced ZER-sees) comes from the now-extinct Xerces blue butterfly (*Glaucopsyche xerces*), the first butterfly known to go extinct in North America.

Since 1971, Xerces has produced groundbreaking publications, trained thousands of land managers to conserve habitat, and raised awareness about the importance and plights of invertebrates in forests, prairies, deserts, and oceans.

Xerces is a science-based conservation organization, working with diverse partners that include scientists, land managers, educators, policymakers, farmers, and communities. By utilizing applied research, providing educational resources, and building community, the organization endeavors to advance meaningful long-term conservation.

About the EPRI and Power-in-Pollinators Initiative: EPRI conducts research, development, and demonstration projects for the public benefit, both domestically and internationally. As an independent, nonprofit organization, EPRI explores electricity generation, delivery, and use. In collaboration with the electricity sector, agencies, environmental groups, and power customers, EPRI works to enhance quality of life by making electric power safe, reliable, affordable, and environmentally responsible.

In 2017, EPRI created a collaborative initiative to accelerate the pace, scale, and effectiveness of electric power companies' pollinator projects. This effort is now the largest collaboration in North America designed specifically to support power companies and pollinators. EPRI's Power-in-Pollinators Initiative enables the participating companies (Figure 1-1) to review the state of pollinator science, discuss corporate efforts, and identify high-value actions and collaborations. Since launching the Power-in-Pollinators initiative, EPRI has supported knowledge transfer webcasts on pollinator conservation, spearheaded the release of informational tools and resources for land use planning and management, and worked to empower participating companies in efforts to communicate their pollinator conservation achievements. In June 2022, EPRI hosted the third annual Pollinator Power Party to celebrate pollinators and increase awareness, educate, and highlight accurate science about pollinators and the role they play in daily life; the party reached more than 2.7 million people worldwide in 2022 (www.epri.com/pollinators).

EPRI has completed extensive work related to sustainability programs, communication, reporting, and metrics. EPRI spearheads the Energy Sustainability Interest Group of approximately 40 companies working on strategic sustainability issues. EPRI has been working at the intersection of water and biodiversity conservation, reporting, and communication for more than 20 years.

B
SUSTAINABILITY CERTIFICATIONS AND REPORTING

Hundreds of voluntary sustainability standards and metrics are currently in use by businesses internationally, consisting of both consumer-facing standards and business-to-business standards. Many electric power companies complete annual reports to Carbon Disclosure Project (CDP), Global Reporting Initiative (GRI), Sustainability Accounting Standards Board, CEO Water Mandate, and others. The majority of power companies also publish annual corporate sustainability reports and respond to shareholders, investors, and their customers. When accompanied by a formal auditing or third-party verification process, these reporting efforts and "standards" (sets of criteria) are a more formally true certification and carry more credibility than self-assigned or pay-to-label approach.

A contemporary history of certifications begins with professional licensing and educational accreditation (historical systems that are centuries old), with an evolution into materials and manufacturing during the industrial revolution. Some early industrial certifications in North America focused on sanitary plumbing fixtures and systems. Recent voluntary certifications have focused on triple bottom line benefits (economic, environmental, and social values), sometimes weighing one of those three benefits more strongly than the others. Several of these contemporary certifications (sometimes called ecolabels) emerged with backing from international development organizations where prized ecosystems coincided with economic activities, particularly in the production of coffee, chocolate, and timber. By establishing baseline standards (voluntary guidelines) – and verifying that operators meet those standards – manufacturers/processors and consumers now have access to foods and products that qualify for certification as Fairtrade, Rainforest Alliance, Organic, and much more.

Wood and paper products are now frequently labeled with either the Forest Stewardship Council (FSC) or Sustainable Forestry Initiative (SFI) certifications. Similarly, in 1993, the U.S. Green Building Council and the Natural Resources Defense Council launched the Leadership in Energy and Environmental Design (LEED) certification, which today certifies nearly 100,000 buildings. Another example is carbon credits. Three formal carbon credit verification organizations require third-party review (Verified Carbon Standard, American Carbon Registry, and Climate Action Reserve). A less formal space of "carbon quantification" is also available for self-assigned credits that do not require any third-party verification or audit.

Another need that third-party certification meets is the ability to quantifiably measure and communicate which companies, products, or projects are legitimately making positive contributions to conservation or sustainability compared to those that make claims with no verifiable basis, i.e., "greenwashing."

Accreditation: The credibility of any certification depends on the compliance verification or auditing process. Global certification coalitions such as the Global Ecolabelling Network (GEN) and the International Social and Environmental Accreditation and Labelling Alliance (ISEAL) promote codes of good practice, including robust compliance verification by third-party

certification bodies (independent auditing firms that specialize in standards verification). Of particular relevance to electric utilities, the Right-of-Way Stewardship Council oversees voluntary accreditation for utility companies that follow best practices for integrated vegetation management for biodiversity and security goals across their entire system.

It is considered a best practice for standards verification and issuance of a certification to be conducted by an independent body, rather than directly by the organization that developed the certification standards. For example, to protect against unethical influence or inducement, a non-governmental organization (NGO) that creates a sustainability standard is ideally not directly verifying compliance and issuing certification to a company. Rather, like a court judge, an independent certifying body acts as an impartial auditor in verifying standards compliance and issuance of certification. Some global certification coalitions (and sometimes the public at large) do not recognize the credibility of "self-certification" schemes in which a company or brand audits itself for standards compliance and makes public claims about meeting a certification standard.

Bee Better Certified (Food and Farm Certification): The Bee Better Certified seal provides recognition for farmers and businesses that adopt farm management practices that support pollinators, giving consumers confidence that their purchasing decisions benefit pollinators and the farmers working to protect them.

Between 2015 and 2017, the Xerces Society and Oregon Tilth (a leading certification body) developed Bee Better with financial underwriting from the USDA. Upon launch, the certification was trialed at 13 farms located from California to New England. Those pilot-phase farms included both organic and conventional operations, ranging in size from 15 acres to over 5,000 acres, and growing an array of crops including almonds, blueberries, grain, vegetables, apples, and wine grapes. To date, over 20,000 acres of farmland have achieved Bee Better certification.

To ensure that the Bee Better Production Standards (for agriculture) were achievable yet rigorous, Xerces developed a multistep standards creation and review process:

1. Xerces pollinator biologists evaluated scientific literature to identify key habitat implementation and pesticide mitigation techniques that supported pollinators. These documented techniques were cross-referenced with extensive real-world habitat field trials.
2. Xerces convened a team of experts from fields including bee biology, pollination ecology, pesticide mitigation, agriculture, food industry ingredient sourcing, and retail to develop the Bee Better Certified Production Standards. Xerces also included farmers in this process to ensure that the perspectives of the growers adopting the standards were reflected. Many of these experts joined the Bee Better Certified Advisory Board to continue providing insight that improves the program's functionality.
3. The standards development team asked a larger group of experts to review the standards and provide feedback. This feedback was then incorporated into the standards.
4. Oregon Tilth evaluated the standards to ensure that each one was verifiable during their on-site inspection process. They assisted Xerces in the creation of recordkeeping forms and helped identify actions that could bring farmers out of compliance with the standards.

The result of this process is a set of production standards that reflect the most up-to-date scientific understanding of the threats pollinators face and state-of-the-art techniques that help mitigate these threats.

While the need or demand for a pollinator-themed food/farm certification was initially questioned by Xerces, requests for this certification from the food industry ultimately led to the launch. Additionally, consumer research, conducted by University of Maine researchers has repeatedly detected a strong consumer bias and willingness to pay for products with pollinator-focused label claims. This trend has been validated by additional market research by Xerces showing increased consumer willingness to pay for wines with the Bee Better Certified seal on the bottle. Finally, in 2021, Walmart, the world's largest fresh produce retailer, moved to require all of their fresh produce suppliers to achieve one of a dozen ecolabel certifications. Bee Better Certified was the first certification listed on their approved options.

These growth trends reveal a positive consumer and business-to-business demand for the Bee Better concept. The electric power industry is well positioned to adopt this model, leverage the growth of the Bee Better brand and enhance public awareness of the benefits of expanded utility and community-scale solar projects. Although the marketplace and customer relationships are different in the electricity sector compared to food sector, there is still space for providers to offer a range of choices to meet customer expectations for sustainability.

C
CRITERIA DEVELOPMENT WORKING GROUP AND PUBLIC COMMENT PROCESS

Level 1: Working Group

Criteria for Participation: Subject matter expert by invitation

Description: The Working Group will hold specific expertise and work at a regular cadence to create the draft criteria across all land asset types being considered. The Working Group will be formed based on individual qualifications, experience, and commitment. Participation requires public recognition by name and association. Working Group experts are invited to participate and may not transfer their role to another person in their organization or send "proxies" to the meetings.

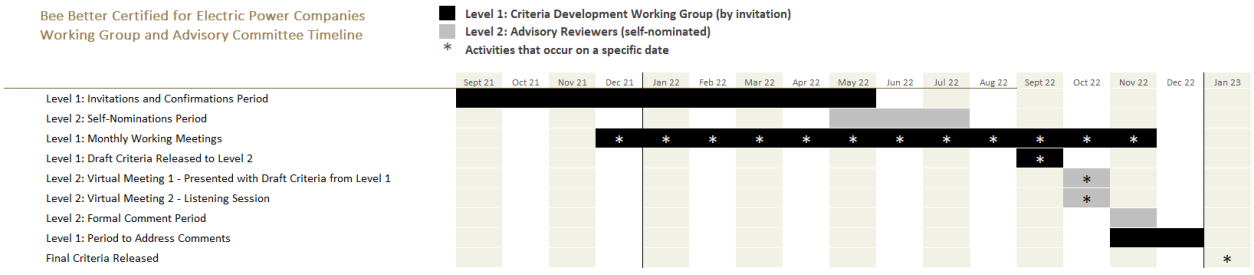
Experts

- Scientists/Research/Academic (4–5 people)
- Vegetation Manager/Conservation Practitioner (3–4 people)
- Industry/Executive Perspective (4–5 people)
- Customer Perspective (1–2 people)
- Certification Expert (1–2 people)

Level 2: Public Review and Comment

Criteria for Participation: Reviewers are requested to read background materials and study the draft criteria prior to providing comments.

Description: The public can review the Working Group efforts, specifically by commenting on the draft criteria. There is no requirement to list one's name/affiliation as a reviewer. Summaries of the number of experts and their general profile type (such as academic researcher, practitioner, and power company employee) will be included in the published document(s). EPRI anticipates that the public comment period will be open for four weeks, with notice occurring via email and social media.



D
CERTIFICATION PROCESS

A number of supporting documents will be necessary before *Bee Better Electric* is operational. The primary document will be the Bee Better Plan, which is necessary for the project applicant to submit. A few additional documents may also be necessary. The documents created for the farming Bee Better Certification are examples of what may be developed, as seen here: Document Center ⋆ Bee Better Certified™

Figure D-1 provides an overview of the anticipated process for *Bee Better Certified Electric*.

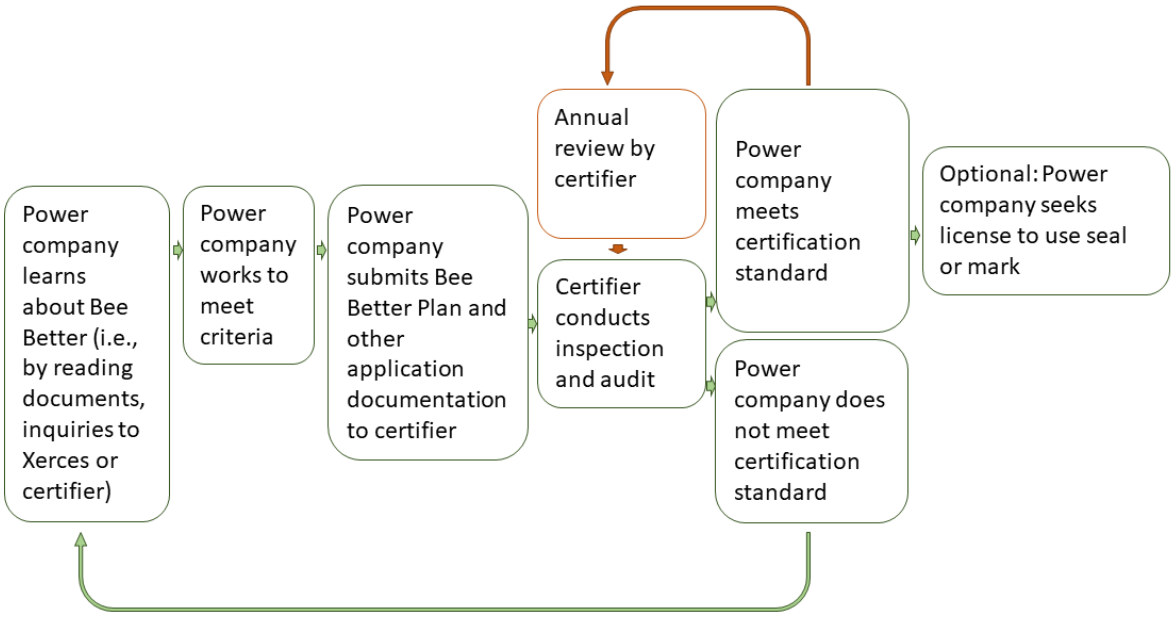


Figure D-1
Certification process for *Bee Better Certified Electric*

About EPRI

Founded in 1972, EPRI is the world's preeminent independent, non-profit energy research and development organization, with offices around the world. EPRI's trusted experts collaborate with more than 450 companies in 45 countries, driving innovation to ensure the public has clean, safe, reliable, affordable, and equitable access to electricity across the globe. Together, we are shaping the future of energy.

Program:

Power-in-Pollinators Initiative

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