APPLICATION FILING REQUIREMENTS
ENERGY STORAGE PROJECTS

PUBLIC SERVICE COMMISSION OF WISCONSIN
WISCONSIN DEPARTMENT OF NATURAL RESOURCES

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Application Filing Requirements
Energy Storage Projects

This document lists information required for a sufficient application for the construction of a new energy storage system (ESS), whether as a stand-alone project or as part of a larger electric generating facility or transmission line project application. Proposed projects that would exceed the cost thresholds described in Wis. Admin. Code § PSC 112.05(3) require a Certificate of Authority (CA) under Wis. Stat. § 196.49 from the Public Service Commission of Wisconsin (PSC). Proposed projects that would be large electric generating facilities as defined in Wis. Stat. § 196.491(1)(g) require a Certificate of Public Convenience and Necessity (CPCN) from the PSC.

If the proposed ESS is part of a larger project, it is recommended to combine the ESS application materials into the relevant sections of the generation facility or transmission line application. The combined application should be organized in the most logical manner possible and contain all filing requirement information for all proposed facilities.

The CPCN and CA are PSC certifications, but the applicant might also need to request certain Wisconsin Department of Natural Resource (DNR) permits. This document therefore also refers to information required for permits from the DNR under Wis. Stat. § 30.025.

Overall, the filing requirements are intended to assist applicants in organizing information consistently and to facilitate PSC and DNR application reviews.

Utility applications must include an analysis of project need and costs. Other types of applicants such as Independent Power Producers (IPP) may not be required to provide this information. In several sections of this Application Filing Requirements (AFR), IPPs proposing merchant plants and utilities are treated differently because of differences in the PSC's statutory authority. In those sections, such as Section 1.3, items that pertain only to utilities or to both utilities and IPPs are marked. In all other sections of this AFR where differences in treatment are not noted those sections apply to BOTH utilities and IPPs. Consult with PSC staff during the pre-application consultations to verify which filing requirements apply to a specific project.

Joint PSC/DNR Pre-Application Consultation Process

An applicant must consult with both the PSC and DNR prior to submitting its application under Wis. Stat. § 30.025(1m) and Wis. Admin. Code § PSC 4.70(1). This pre-application consultation process is a series of discussions with the staff of these two agencies. Each agency has its own requirements, but the two agency reviews interrelate.

A proposed project may require wetlands, waterway, construction storm water, and any other applicable permits from DNR. DNR Office of Energy staff can help determine permitting requirements during pre-application discussions. During the pre-application process, the PSC and DNR staff will identify the number of paper copies of the application that both state agencies may require.

Topics discussed during the pre-application process include:

- PSC and DNR staff contacts
- Applicable portions of the filing requirements for each agency
- Appropriate application formats and subject matter, such as for maps and tables
- Specific permits and approvals required for the project
- PSC's and DNR's projected review timelines and important milestones
- Site alternatives and project boundaries
- Appropriate type, scope, and timing of required field work (habitat assessments, wetland delineations, biological surveys, etc.).

During the pre-application period, the applicant should also solicit additional information from other interested persons through public outreach.

DNR Joint Application Needs

Like the PSC, the DNR requires a thorough joint application for the project review to proceed. The applicant must also consult DNR staff to ensure that particular requirements for the joint application review are met.

Permits and Application Requirements

DNR permits required for the project will be identified during the pre-application process and with the help of the applicant's Engineering Plan, described in the next subsection.

Under Wis. Stat. § 30.025, the two agencies must follow a common review timetable if impacts to wetlands and/or navigable waters are involved. For this reason, a complete application containing both DNR and PSC required information is submitted to both agencies at the same time. Specific DNR permit application requirements can be confirmed by the DNR Office of Energy's Energy Project Liaison staff (https://dnr.wi.gov/topic/Sectors/Energy.html). The requirements include information and materials needed for analysis of potential impacts to rare species and natural communities, and wetland or waterway construction permits.

Engineering Plan

An Engineering Plan required under Wis. Stat. § 196.491(3)(a)3. must be submitted to DNR before a CPCN application may be submitted to the PSC. The Engineering Plan must:

- Show the proposed facility locations.
- Describe the facilities, including major components that could have impacts to natural resources.
- Briefly describe the anticipated effects of the proposed facilities on air quality, water quality, wetlands, solid waste disposal capacity, and other natural resources.

Endangered Resources

Applications must include an Endangered Resources (ER) Review from the DNR or a Certified ER Reviewer, an ER Verification Form if the project is covered by the Broad Incidental Take Authorization (BITA) for No/Low Impact Activities, or a 'No actions required/recommended' finding from the DNR Natural Heritage Inventory (NHI) Public Portal, accessed at: http://dnr.wi.gov/topic/erreview/publicportal.html. The ER Review includes an analysis of the information contained in the NHI database to determine if there could be impacts to rare species and how to avoid/minimize those impacts. Specific ER screening requirements can be confirmed by the DNR Office of Energy's ER Review staff (https://dnr.wi.gov/topic/Sectors/Energy.html). The applicant should complete an ER screening early in the pre-application process to determine what, if any, field work should be completed. DNR may require fieldwork to be conducted (1) prior to submitting an application, (2) while the application is under review, (3) prior to the start of construction, and (4) post construction.

Wetlands and Waterways

The project area must be evaluated for the presence of wetlands and waterways and documentation of the evaluation must be submitted at the time of filing.

Wetlands

Project areas limited to temporary impacts may be evaluated for the presence of wetlands through conservative desktop methods or through a field evaluation. The conservative desktop method assumes that all areas mapped under "Mapped Wetlands" and "Wetland Soils & Indicators" layers on the DNR's Surface Water Data Viewer (SWDV) are wetland. Field evaluations are required for all projects that involve permanent wetland fill, regardless of desktop wetland mapping.

Waterways

All waterways mapped under the "Surface Waters" layer on the DNR's SWDV, and any additional field-identified waterways, shall be assumed navigable unless a navigability determination has been conducted by the DNR. If a navigability determination is requested, a navigability determination package shall be included in the application filing (see Section 9.1.3).

The applicant must submit a Waterway/Wetland Impact Location Table (DNR Table 1) and a Waterway/Wetland Environmental Inventory Table (DNR Table 2) for the entire project (including any alternative routes/areas). To complete the waterway sections of the DNR Tables,

all DNR-mapped waterways plus any field identified waterways must be included in these tables, regardless of a navigability determination being requested.

The tables must be updated throughout the review process as more accurate information becomes available. The wetland and waterway unique features that are used in the DNR tables must also be included in the attributes tables of the submitted Geographic Information Systems (GIS) data, as well as the wetland and waterway maps, that are part of the project application. **Submitted GIS data should be shapefiles only. Do not provide geodatabases or aerial imagery raster data**.

Other State Agencies

WisDOT Permits and Reviews

Wisconsin Department of Transportation (WisDOT) oversize and overweight permits may be required for transporting project components to construction sites. In addition, a review for high structure permits issued by WisDOT Bureau of Aeronautics may also be required if the project includes transmission line structures (See Section 3.4.2). Access points such as driveways may be regulated by WisDOT. Applicants should contact WisDOT at an early stage in project development and before submitting an application to the PSC to discuss the likely permitting needs for the project.

DATCP Application Needs

Utility-proposed projects may require an Agricultural Impact Statement (AIS) from the Department of Agriculture, Trade and Consumer Protection (DATCP). If the project is subject to AIS requirements, DATCP requires the submittal of a complete Agricultural Impact Notice for Non-Linear Projects and associated tables and GIS data. Applicants should contact the DATCP AIS program prior to submitting an application to the PSC to determine DATCP filing requirements. DATCP may require a paper copy of the PSC application and associated GIS data.

Application Formats

Application Tables

The tables submitted as part of the application such as cost and mailing list spreadsheets are to be submitted in Adobe Acrobat (*.pdf) as well as Microsoft Excel spreadsheets (.xlsx). All documents that are part of the application must be submitted to ERF directly, not as documents that are attachments to (embedded within) a single PDF. Mailing lists as part of the application should be submitted to ERF.

Any submitted mailing lists must be uploaded to ERF as Microsoft Excel (.xlsx) spreadsheets, be identical to the example shown below, and must meet the following format criteria as demonstrated below:

- Submit tables in Microsoft Excel (.xlsx).
- For property owners in the project area, replace full name or business name with “LANDOWNER(S) OR CURRENT RESIDENT(S)” in the “name” column.

- Do not use punctuation marks.
- Capitalize all data entries.
- Comply with current U.S. Postal Service mailing standards.
- Only use the Email Column if addresses are not more than one year out-of-date.
- Mailing list(s) should be possible to cross-reference with the submitted GIS parcel data through the name or address column, but do not add additional columns or formatting. Mailing lists should include property owners located up to one mile from the facilities that are part of the application.

Sample Mailing List Table

attention	name	address	city	state	zip	email
CITIZENS UTILITY BOARD	COREY SINGLETARY	16 NORTH CARROLL STREET	MADISON	WI	53703	SINGLETARY@WISCUB.ORG
CLEAN WISCONSIN	KATIE NEKOLA	634 WEST MAIN STREET STE 300	MADISON	WI	53703	KNEKOLA@CLEANWISCONSIN.ORG
	LANDOWNER/CURRENT RESIDENT	123 EAST STREET	MADISON	WI	53703	
	LANDOWNER/CURRENT RESIDENT	456 WEST STREET	MADISON	WI	53703	

Contact PSC staff regarding any questions about mailing list submittals.

Contact DNR Office of Energy's Energy Project Liaison staff (https://dnr.wi.gov/topic/Sectors/Energy.html) for questions regarding the two DNR tables.

Geographic Information System Submissions

GIS data files are now compatible with ERF and must be submitted to the docket via the ERF "Upload GIS Files (Public)" page.[1] GIS data files must be submitted in a format that is compatible with the current version of ArcGIS. Data file names should be descriptive of the contents.

Provide the following GIS-related items as part of the application:

- GIS data used to produce maps submitted as part of the application as detailed in Section 1.9. **Only provide shapefiles**. **Do not provide geodatabases or aerial imagery raster data**.
- A spreadsheet listing all GIS data files, a file description, the source of the data, and the date when the data was collected or published.

[1] Total file size limit per submission is 20 MB. Split files into multiple submissions as appropriate.

All GIS data from local to statewide resolution must be projected in "NAD 1983 HARN Wisconsin TM (Meters)" projection system.

Photographic and Line Drawing Submissions

- Line drawings must be in AutoCad and may be in either *.dwg or *.dxf format. The preference is *.dwg.
- Any photographic renderings (photo simulations) of proposed facilities on the existing landscape must be submitted in a high-resolution raster format.
- Scanned maps and diagrams that cannot be submitted in any other format must be submitted in *.gif format at a depth of 256 colors or less.

Application Size

Applicants are required to minimize the physical size of their applications by eliminating superfluous information not material to the case.

Only submit those pages relevant to the information requirement. Do not submit multi-page ordinances, land use plans, etc. unless the entire document would be helpful for context.

Minimize duplicative information. An appendix is the appropriate location for information that is referred to in several different sections of the application.

Submit only official correspondence between the applicant and state, local and federal government agencies. PSC staff needs to review this correspondence to verify that the applicant has applied for the necessary permits and to ascertain the status of the permit review. Do not include unofficial minutes of meetings, records of telephone conversations, or billings from the PSC or DNR.

Applications should be printed double-sided. Exceptions to this requirement are maps sized larger than 11 x 17 inches.

Confidential and CEII Materials

Organize the application so that all confidential materials are only in Appendices and separated from non-confidential materials. Submit confidential materials in compliance with the confidential materials handling procedures of each agency.

Confidential project documents, such as an Endangered Resources Review and cultural resource documents, must be submitted confidentially to the PSC and DNR.

Prior to submitting any critical energy infrastructure information (CEII) related to the project, contact the Commission staff docket coordinator for instructions regarding how to do so.

PSC Electronic Regulatory Filing (ERF) System

The ERF system is the official file for all dockets considered by the Commission. Use the ERF system to post all confidential and non-confidential application materials, including all materials provided to DNR. No joint application materials should be provided separately to DNR through

the DNR's E-Permitting site, unless specifically requested to do so, but should be posted to ERF. Both the initial application and the complete application must be submitted using the ERF system.

Instructions for submitting documents to the ERF system can be found on the PSC web site.

Application Completeness

For CPCNs, PSC and DNR staff will examine the application during a 30-day completeness review period as required under Wis. Stat. § 196.491(3)(a)(2). The applicant will be notified if an application is deemed complete by the end of the 30-day period. If the application is found to be incomplete, PSC will send the applicant a letter identifying the deficiencies. The applicant may then submit revised or supplemented application materials to the PSC and DNR for a new 30-day application completeness review. There is no statutory time limit for an applicant to submit the revised or supplemental materials in order to remedy identified deficiencies. Applicants should be aware that complete applications rarely answer all the questions that the PSC and DNR must address. It is likely that applicants will be called upon to provide additional information and data to support their applications throughout the review process. Applicants will be expected to respond to all staff inquiries made subsequent to a determination of completeness in a timely, complete, and accurate manner.

An applicant must upload a transmittal letter to the PSC ERF verifying that all application documents have been submitted. PSC and DNR staff will examine CPCN applications for completeness under the 30-day completeness review period once the transmittal letter is received. If an application is deemed incomplete, the applicant must submit a new transmittal letter with their refiled application to indicate all documents comprising the resubmission have been filed.

Filing the Application

An applicant should notify PSC of its intent to file an application with PSC no later than 30 days prior to the submission. Notice of intent to file can be sent to PSCDLDERAConstruction@wisconsin.gov.

For CA applications, check with PSC case coordinator and DNR during the pre-application process to determine how the application should be filed and how many paper copies are necessary. Electronic versions of all submitted application materials must be sent to both the PSC and DNR. Submit, via ERF, a transmittal letter, verifying to the PSC and DNR that all application materials have been uploaded.

For CPCN applications, a two-step process must be followed.

Step 1 – Initial CPCN Applications

- Send to the PSC docket coordinator and DNR Office of Energy project manager the number of paper copies of the non-confidential portion of the application agreed upon by PSC staff and the applicant plus one paper copy of each of the required DNR water, waste management, and air permit applications.

- Coordinate with PSC[2] and DNR[3] to submit the following:
  - The entire non-confidential portion of the application in Adobe Acrobat (*.pdf) format.
  - Microsoft Excel (.xlsx) versions of tables.
  - GIS data that support all maps submitted in the application and/or requested in these filing requirements.[4] **Only provide shapefile GIS data. Do not provide geodatabases or aerial imagery raster data.**
- File with PSC Records Management, using confidential material handling procedures, electronic versions of confidential portions of the application including spreadsheets, NHI unredacted materials, etc., as described in the PSC ERF Filing Policy/Procedures guide.[5]

Post to the PSC ERF, all application materials both confidential and non-confidential, including all materials provided to DNR. Submit, via ERF, a transmittal letter, verifying to the PSC and DNR that all application materials have been uploaded.

Prior to submitting any CEII related to the project, contact the Commission staff docket coordinator for instructions regarding how to do so.

Step 2 – After CPCN Application Is Deemed Complete

The PSC may require as many as five complete paper applications. Again, check with the PSC case coordinator to verify the appropriate number of paper applications. Applicants are encouraged to reuse applicable portions of the initial applications in order to create the required number of complete paper applications. Upon the PSC declaring the application to be complete, submit the following:

- Send to the PSC case coordinator and DNR Office of Energy project manager, paper versions of the non-confidential portions of the complete application. Again, the PSC encourages the reuse of unchanged portions of the initial applications.
- Send to the PSC case coordinator and DNR Office of Energy project manager, paper copies of the confidential portions of the application. Do NOT send paper copies of CEII material.
- Coordinate with PSC and DNR to electronically submit the following:
  - The non-confidential portion of the complete application in Adobe Acrobat (*.pdf) format.
  - Microsoft Excel (.xlsx) versions of the PSC- and DNR-required tables.
  - Any updated GIS data or modeling data.

[2] Contact the PSC Case Coordinator of the docket for instructions.
[3] Contact the Water Reg/Zoning Specialist at DNR Office of Energy assigned to your application for instructions.
[4] Consult Section 1.9 of this document for a detailed description on how this data should be organized.
[5] Contact PSC Records Management Unit at pscrecordsmail@wisconsin.gov with any questions on filing confidential materials.

- Using confidential material handling procedures, as described in the ERF Filing Policy/Procedure Guide, file with PSC Records Management, confidential appendices, spreadsheets, etc.

Post to ERF the revised complete application (confidential and non-confidential).

Prior to submitting any CEII related to the project, contact the Commission staff docket coordinator for instructions regarding how to do so.

Public Copies of Applications

For CPCN Applications: Electronic copies of the initial application and of the complete application must be sent to the clerks of municipalities and towns in the project area, and to the main public libraries that serve the project area (Wis. Stat. § 196.491 and Wis. Admin. Code § PSC 111.51).

Within 10 days of filing a CPCN application, the Commission shall send electronic copies of the application to municipalities, towns, and libraries. At the request of a clerk or library, a paper copy of the application must be sent. Under Wis. Admin. Code § PSC 111.51, the Commission may fulfill this obligation by directing the applicant to conduct the mailings. In this case, proof of delivery will be required. The application must be accompanied by an approved statement on the initial page of the electronic document explaining that this is an initial application and that it may differ from the application that the Commission deems complete.

Within 10 days after the Commission determines that an application is complete or the application is considered to be complete, the Commission must send an electronic copy of the complete application to municipalities, towns, and libraries. At the request of a clerk or library, a paper copy of the application must be sent. The Commission may fulfill this obligation by directing the applicant to conduct the mailings. In this case, proof of delivery is required.

For CA Applications: There are no requirements for distributing copies of CA applications to the public.

Contact for Questions

If you have questions about the Application Filing Requirements, visit the PSC website at: https://psc.wi.gov/Pages/ForUtilities/Energy/FilingRequirements.aspx for information. Initial questions can be directed to the Environmental Review Coordinator listed on that website.

Application Filing Requirements
Energy Storage Projects

An application must contain the following information, or a showing must be made as to why the information is not applicable. The application's organization should follow the major format and numbering system of these filing requirements. If the proposed ESS is part of a larger project such as a proposed transmission line or electric generating facility, it is recommended to combine the ESS application materials into the larger application, provided the organization of the application remains clear and easy-to-understand. If the ESS includes a substation or generator tie-line as part of the application, information on the substation and generator tie-line may be presented within the related sections of the larger ESS application. There are separate application filing requirements for electric generating facilities, transmission lines, and substations on the PSC website. Questions about the applicability of specific information requirements should be discussed with PSC and DNR staff during pre-application consultation.

Project Area and Site Alternatives

Under Wis. Stat. §§ 1.11, 196.025(2m)(c) and 196.491(3), and Wis. Admin. Code ch. PSC 4, the Commission decision for all CPCN and CA projects must include an evaluation of alternatives. These alternatives include:

Alternative Project Areas

For this analysis the application must describe the method and factors used to evaluate and eliminate competing project areas and why the proposed project site is the applicant's chosen option.

Alternative Sites

The applicant must provide alternative sites for the Commission to consider. Wisconsin Admin. Code § 111.53(1)(f) states the site-related information that must be provided for each of two proposed power plant sites for large electric generation facility CPCN applications. ***Alternative sites must be viable and true alternatives to proposed sites.*** Facilities that are necessary to support the proposed and alternative sites should be labeled accordingly (i.e. access roads, collector circuits, or substation locations for the proposed or alternative sites).

For utility projects requiring a CPCN an additional evaluation of alternative methods of supply is also required.

Alternative Methods of Supply

Describe the alternative methods of supply considered in the course of developing the proposed project including a no-build option. Alternative forms of supply can include other forms of renewable energy such as wind, biomass, fuel cells etc. For a utility project, an alternative source of supply could also be a purchase power contract. This requirement that alternative methods of supply must be described does not apply to a CPCN application for a wholesale merchant plant, as defined in Wis. Stat. § 196.491(1)(w).

Do not break a single project into two or more smaller projects in order to avoid the regulatory review process under Wis. Stat. § 196.491(3) or to avoid the regulatory review process under Wis. Stat. § 196.49 (Wis. Admin. Code § PSC 112).

1. Project Overview

1.1. Project Facilities

1.1.1. Provide a brief description of the proposed project, including but not limited to the underlying energy storage technology, nameplate capacity, how the proposed project would be interconnected, and how it would be operated.

1.1.2. Identify the corporate entity or entities that would own and/or operate the proposed facilities including their names, addresses, and percent of ownership

1.1.3. Provide a list of all cities, villages, and townships and their respective counties that would be directly affected by the proposed facilities.

1.1.4. Provide contractual agreements between the developer and utilities to construct, finance, lease, use, or own the facilities.

1.1.5. Identify the type of ESS proposed including any planned additions, possible expansions or other modifications that have been evaluated for the future.

1.1.6. Identify each proposed energy storage unit, including its type, size, and the general mechanism of energy storage.

1.1.7. Identify pipelines, truck/train loading and unloading areas, and temporary or permanent on-site storage for:

1.1.7.1. Materials supply – pipeline, train, truck, etc. plus on-site storage tanks or piles.

1.1.7.2. Water supply and discharge.

1.1.7.3. Steam delivery.

1.1.7.4. Waste disposal – pipeline, train, truck, etc. plus on-site storage tanks or piles.

1.1.8. Identify any new or modified electric transmission lines and other electric transmission facilities that might be needed. Include information on who

would build the transmission line and interconnection. Describe the specific interconnection queue process the project is participating in.

1.1.8.1. If applicable, provide any associated MISO interconnection studies such as Definitive Planning Phase, Facility Interconnection Agreements, and any signed generator interconnection agreement.

1.1.8.2. If applicable, provide the associated MISO interconnection queue position number.

1.1.9. Provide an estimate of the expected life span for the facilities.

1.1.10. Describe how the facilities would be decommissioned at the end of their life span. Describe expected decommissioning actions and timelines.

1.1.10.1. Provide an estimate of the cost of and source of funding for decommissioning. State whether financial security would be provided to cover decommissioning costs, including the amount of time it would be provided.

1.1.10.2. State how the start of decommissioning would be decided, including a description of what constitutes site abandonment.

1.1.10.3. State whether a participating landowner could be responsible for decommissioning costs in any situations.

1.2. Project Sites

Describe and the following items that are applicable to the proposed project:

1.2.1. Locations and footprints of the Proposed site and Alternative site(s).

1.2.2. General geology, topography, land cover, and land use of each site.

1.2.3. Any special or unique natural or cultural resources.

1.2.4. Adjacent areas of residential concentrations.

1.2.5. Existing area utilities, including electric transmission, natural gas, and water.

1.2.6. Expected connecting utilities.

1.2.7. Railroad lines and potential connections to them.

1.3. Site Selection Process

1.3.1. Describe the site screening and selection process used to determine the Proposed site and Alternative site(s).

1.3.2. List individual factors or site characteristics used in site selection.

1.3.3. Provide information on how individual factors and site characteristics were weighted for your analysis and why specific weights were chosen.

1.3.4. Explain in detail how brownfields were considered in the selection of sites to propose [Wis. Stat §§ 196.491(3)(d)8. and 196.49(4)].

1.3.5. Provide a list of all sites reviewed, with weighted scores if applicable, for each siting factor or characteristic used in the site selection analysis process, including the brownfield requirement.

1.3.6. Provide a narrative describing and justifying why the Proposed site was chosen over the Alternative(s).

1.3.7. If two Alternative sites are different configurations on the same parcel of land, explain why they were selected as alternatives, and justify why they are true and suitably distinct alternatives for the Proposed site.

1.4. Other Agency Correspondence/Permits/Approvals

1.4.1. Provide copies of all official correspondence between the applicant and all state, federal, and local government agencies.[6]

1.4.2. Provide a list of all state and federal permits/approvals that would be required for this project and their status.

1.4.3. Provide a list of all local permits and/or ordinances that apply to the proposed project and the status of those permits.

1.4.4. Identify what sites or easements would need to be acquired. State whether condemnation could be used to acquire these sites and easements. State whether a purchase agreement has already been negotiated with the site owner(s).

1.4.5. If any portion of the associated facilities would occupy property or easements owned by railroad or pipeline companies or WisDOT, provide documentation from these entities that the sharing is acceptable to the entity, if possible.

1.5. PSC Review

1.5.1. State if the application is for a Certificate of Authority (CA) or a Certificate of Public Convenience and Necessity (CPCN) under Wis. Stat. §§ 196.49 and 196.491.

1.5.2. Discuss if the proposed project is contingent or part of a transmission, substation, or generation project, either under another docket or not yet submitted to the Commission.

1.6. General Construction Schedule

1.6.1. Provide the anticipated general construction schedule.

1.6.2. Provide a description of all major construction activities including any temporary roads, dewatering wells, stream enclosures or re-routing, or other facilities or landscape changes required during construction.

[6] The applicant must continue to submit copies of all official correspondence between the applicant and any federal, local government, or other state agency while the application is under review.

1.6.3. Identify any potential seasonal or regulatory construction constraints by facility and major component.

1.6.4. Identify all critical path items.

1.6.5. Generally, discuss any generation, transmission, and distribution outage constraints that may have to be accommodated. Include any documentation pertaining to discussions with MISO, transmission/generation owners, and distribution utilities about such constraints.

1.6.6. Provide documentation for all discussions with pipeline operators pertaining to maintaining safety and reliability of any pipeline during construction.

1.7. Project Costs (Utilities Only)

1.7.1. Provide the anticipated overall costs for the proposed project (see Section 4.0).

1.8. Project Area Maps

1.8.1. Provide project maps that use the best and most recent data available. Maps must clearly portray the project in a format and scale that is unambiguous and easy to understand. Labels and symbology used on the maps must be clearly visible. The scale of the maps, the number of map sets necessary to show all relevant data, and whether they will be submitted electronically or on paper will be discussed during pre-application consultations.

- Aerial imagery not more than three years old.
- Project data:
  - Proposed and alternative sites (as applicable),
  - Proposed ESS fenced area,
  - Proposed ESS units,
  - Proposed access roads,
  - Proposed parking areas
  - Proposed laydown/storage areas,
  - Proposed electric poles (distribution and transmission) associated with the ESS,
  - Proposed new or altered distribution and transmission right-of-way (ROW), and;
  - Proposed associated facilities and features, etc., including storm water detention ponds.
- Project area environmental data:
  - Rivers, lakes, and other waterways,
  - Wetlands,
  - Soils,

- NHI rare species occurrences (confidential)[7],
- Topographic maps, and;
- Floodplains.

- Parcel data within one-half mile of the proposed site:
  - Private properties,
  - Public properties (symbolized differently than private properties),
  - Tribal or other types of properties,
  - Political subdivision boundaries, and;
  - Township, range, section divisions.

- Land use within one-half mile of the proposed site:
  - Land cover,
  - Zoning,
  - Active mines and quarries,
  - Sensitive sites (for example daycare centers, schools, hospitals, cemeteries, etc.),
  - Airports, airstrips (public and private), and;
  - Recreation areas, trails.

- Utility/infrastructure data:
  - Roads, highways, interstates, railroad lines;
  - Existing transmission, water and/or natural gas pipelines, and other applicable infrastructure, especially if the project involves connecting to an existing utility;
  - Existing distribution lines that would be modified or relocated due to the proposed project or are in the project area, and;
  - Applicable infrastructure ROWs (*e.g.,* DOT, pipeline, electric distribution, electric transmission, railroad, trail).

- DNR-required information such as locations of possible Chapter 30 activities (*e.g.,* grading, riprap), temporary clear span bridges, Wisconsin Wetland Inventory, wetland/waterway field data, hydric soils, etc.

1.9. GIS Data

Provide GIS data with attributes only as listed and described below[8]. GIS attribute table information should be clearly labeled to identify fields and feature names. GIS data should be shapefiles only. Do not provide geodatabases or aerial imagery raster data.

[7] Do not submit confidential GIS data for NHI rare species occurrences.
[8] Each numbered item or sub-item (whichever is most granular) should be its own shapefile (e.g. 1.9.2.1 and 1.9.2.2 should be separate, also all facilities described in 1.9.4 and 1.9.5 should all be in the same shapefile).

1.9.1. Project area boundary.

1.9.2. Proposed ESS site components including:

1.9.2.1. Perimeter of entire parcel acquired or to be acquired (polygon).

1.9.2.2. Perimeter of fenced areas (polygon). Include area in acres.

1.9.2.3. ESS footprint (polygon). Include area in acres.

1.9.2.4. All inverters (point).

1.9.3. Alternative ESS site components including:

1.9.3.1. Perimeter of fenced areas (polygon). Include area in acres.

1.9.3.2. ESS footprint (polygon). Include area in acres.

1.9.3.3. All inverters (point).

1.9.4. Access roads, differentiated between permanent and temporary, for proposed ESS site (polygon).

1.9.5. Access roads, differentiated between permanent and temporary, for alternative ESS site (polygon).

1.9.6. Underground collector circuits (line) for proposed ESS site. Include number of conductors, voltage and the installation method.

1.9.6.1. Bore pits for trenchless installation (point) for proposed ESS site.

1.9.7. Underground collector circuits (line) for alternative ESS site. Include number of conductors, voltage, and the installation method.

1.9.7.1. Bore pits for trenchless installation for alternative ESS site.

1.9.8. Overhead collector circuits (line). Include voltage.

1.9.9. Laydown areas (polygon).

1.9.10. Temporary matting (polygon).

1.9.11. Electric distribution lines within and up to one mile of the project area boundary (line). If known, include voltage of each line and phases present (e.g. A, B, and/or C).

1.9.12. Electric transmission lines within and up to one mile of the project area boundary identified by voltage (line). Include voltage.

1.9.13. Natural gas high-pressure pipelines within and up to one mile of the project area boundary (line).

1.9.14. New substation components including:

1.9.14.1. Perimeter of entire parcel acquired or to be acquired (polygon).

1.9.14.2. Perimeter of substation (polygon).

1.9.14.3. Access road (polygon).

1.9.14.4. Other facilities such as a retention pond or storm water management (polygon).

1.9.15. Expansion of an existing substation components including:

1.9.15.1. Perimeter of original substation and of expanded area (polygon).

1.9.15.2. Boundary showing any new land acquisition (polygon).

1.9.15.3. If known, all new power lines and reconfigured line work (line).

1.9.15.4. All collector circuits entering the substation (line).

1.9.15.5. Other facilities such as permanent storm water management features (polygon).

1.9.16. O&M Building components including:

1.9.16.1. Perimeter of property acquired (polygon).

1.9.16.2. Perimeter of building (polygon).

1.9.16.3. Perimeter of other buildings (polygon).

1.9.16.4. Perimeter of parking lot (polygon).

1.9.16.5. Access road (polygon).

1.9.17. Delineated wetlands in the project area (polygon). See Section 9.

1.9.18. Field identified waterways in the project area (polygon). See Section 9.

1.9.19. Land cover/Vegetative communities in project area (polygon).

1.9.20. All parcels within one mile of the project area (polygon). Include landowner name and address.

1.9.21. All residences within one mile of the project area boundary (point). Include landowner name and address.

1.9.22. All industrial/commercial facilities within one mile of the project area boundary (point). Include facility name, ownership name, and address.

1.9.23. All sensitive sites, including schools, daycares, hospitals, nursing homes, places of worship, and cemeteries within one mile of the project area boundary (point). Include facility name, ownership name, and address.

1.9.24. Confined animal operations[9] (point):

- All confined animal operations within and up to 0.5 miles of the project route centerlines.
- For each confined animal operation provide attribute data that identifies the type of animal(s), the number of confined animals, and the name of the landowner.

[9] Any farming operation that has animals confined in building(s). Not limited to dairy operations, a specific number of animals, or the DNR's definition of Concentrated Animal Feeding Operations (CAFO).

1.9.25. All other buildings within 300 feet of the project area boundary (point). Include type of building.

1.9.26. All public lands within one mile of the project area boundary (polygon).

1.9.27. All properties enrolled in the Conservation Reserve Program within 300 feet of the project area (polygon). Information would be dependent on authorization from landowners to release CRP information. Work with PSC staff if any information is considered sensitive and/or confidential.

1.9.28. All properties known to be enrolled in a conservation easement within one mile of the project area boundary (polygon). Include entity that holds rights to conservation easement (e.g. state/federal government, private land trust, etc.).

1.9.29. All communication infrastructure within one mile of the project area (point). Include radio, television, microwave towers, and any NEXRAD or Doppler weather radar installations.

1.9.30. All public and private airport runways and landing strips within and up to 10 miles of the project area boundary (line). Include facility name and public status.

1.9.31. Local zoning designations within one mile of the project.

1.10. Mailing Lists

1.10.1. Provide Microsoft Excel (.xlsx) mailing lists in an acceptable format, and that are able to be cross-referenced with GIS parcel data as described in the Introduction, page viii.

1.10.2. Identify the sources of the information contained in the mailing lists and discuss the potential for inaccuracies in the data set (new development, poor data, etc.).

1.10.3. Provide a list of libraries that the application will be mailed to.

1.10.4. Mailing lists must include:

1.10.4.1. All property owners and residents within one mile of the Proposed and Alternative sites. It is strongly recommended that applicants consult with PSC staff to ensure that the coverage is appropriate considering the project type, surrounding land use, etc. Include properties on both sides of a street or road.

1.10.4.2. All public property owners such as schools or other government entities within 0.5 mile.

1.10.4.3. The clerks and chief executive officers of the counties, towns, villages, or cities in which the routes or other proposed facilities would occupy. Also include on this list the main public library in each county the proposed facilities would occupy.

1.10.4.4. The Regional Planning Commissions in whose jurisdictions the facilities would be built.

1.10.4.5. Applicable state and federal agencies.

1.10.4.6. Tribal government representatives for Native American Tribes that hold off-reservation treaty rights in Ceded Territory. This only applies to projects within the following counties: Ashland, Barron, Bayfield, Burnett, Chippewa, Clark, Douglas, Dunn, Eau Claire, Florence, Forest, Iron, Langlade, Lincoln, Marathon, Marinette, Menominee, Oconto, Oneida, Polk, Portage, Price, Rusk, Sawyer, Shawano, St. Croix, Taylor, Vilas, Washburn, and Wood County.

The following Tribes hold off-reservation treaty rights in Ceded Territory:

- Bad River Band of Lake Superior Chippewa Indians
- Lac Courte Oreilles Band of Lake Superior Chippewa Indians
- Lac du Flambeau Band of Lake Superior Chippewa Indians
- Red Cliff Band of Lake Superior Chippewa Indians
- St. Croix Chippewa Indians of Wisconsin
- Sokaogon Chippewa Community (Mole Lake Band of Lake Superior Chippewa Indians).

2. Project Need Analyses

2.1. Project Need

Independent Power Producers (IPP) (merchant plants) skip to Section 2.3.

Sections 2.1 and 2.2 apply to utilities only.

2.1.1. Summarize the purpose/need for the project with an overview of the supporting data, including the energy efficiency analysis.

2.1.2. Provide the applicant's annual peak demand and total energy forecast for the next 20 years. Provide a description of the demand and energy profile. Any changes in the peak demand and total energy profile over the forecast period should be fully explained.

2.1.3. Provide generation capacity expansion modeling in a software program like EGEAS, PLEXOS, or similar for a period of 25 years, plus a 30-year extension period to ensure proper book value calculations. Coordinate with Commission staff[10] to electronically submit the generation capacity expansion modeling data set(s). In addition to filing the generation capacity expansion modeling data set(s), a document describing the filing

[10] Contact the PSC Case Coordinator at for instructions.

and making any necessary request for confidential treatment should be filed on the Commission's ERF system.[11]

2.1.3.1. Provide a narrative description of the applicant's 25-year optimal generation expansion plan.

2.1.3.2. Describe assumptions about the availability of purchased power. Describe how market purchases were analyzed and why they were rejected as alternatives.

2.1.3.2.1. Identify and justify the costs used for the purchased power forecast.

2.1.3.2.2. Identify and justify the market price forecasts for energy used to charge facility in the first year of operation and levelized in nominal terms over the life of the unit or facility (over the 20-25 year study period).. Identify all cost escalation factors used in the estimate. (Wis. Admin. Code § PSC 111.53(1)(c)3)

2.1.3.3. Provide the comparative costs of the fuel alternatives identified.

2.1.3.4. Discuss the effects of the project on costs of operation and on the quality and reliability of the applicant's service.

2.1.4. Identify the applicant's plant retirements forecast over the next 10 years.

2.1.4.1. Provide all Attachment Y and Y-2 retirement or economic suspension studies performed by MISO for any of the applicant's existing plants.

2.1.4.2. Provide the applicant's capacity position and planning reserve margin forecast for the next 10 years.

2.1.5. Describe how the existing and expected applications for generation from Independent Power Producers (IPPs) have been factored into your forecast.

2.1.6. Conduct an energy efficiency analysis, according to the following steps:

2.1.6.1. Provide a description of the existing services available to customers, including any demand response programs or voluntary energy efficiency programs operated by the applicant.

2.1.6.2. Incorporate energy efficiency and demand response with the generation expansion planning modeling conducted under Section 2.1.1. Describe how energy efficiency or demand response have been incorporated into the expansion planning model, distinguishing between modeled as included in the load forecasts or as a selectable alternative. It may be appropriate for analysis to address multiple different scenarios that distinguish

[11] Contact PSC Records Management staff at PSCRecordsMail@wisconsin.gov for specific filing requirements.

between options for reducing, altering, and eliminating the project need.

2.1.6.3. Indicate the amount of energy efficiency and demand response needed to reduce, alter, or eliminate the need for the project. This analysis should clearly identify and distinguish the amount of energy efficiency and demand response assumed to be achieved through Focus on Energy and utility programs from the additional energy efficiency and demand response needed to affect the project.

2.1.6.4. Provide an analysis identifying the feasibility of achieving the amount of energy efficiency and demand response needed to reduce, alter, or eliminate the need for the project. This analysis should take into account:

2.1.6.4.1. A clear definition of the energy efficiency and demand response programming options considered by the utility, and the potential savings, defined as the reduction in energy and capacity associated with the programs, that are available through those options;

2.1.6.4.2. The cost-effectiveness of available energy efficiency and demand response options, relative to the costs per unit of the proposed project;

2.1.6.4.3. The total savings required to reduce, alter, or eliminate the need for the project, and the corresponding financial investment required to achieve those savings; and

2.1.6.4.4. The utility's ability to implement new or expanded programs to achieve available savings.

2.2. Energy Alternatives and Energy Priorities Law

2.2.1. Describe non-energy storage supply alternatives to the proposed project that were considered, and the reason(s) for rejecting each in favor of the proposed project.

2.2.2. Describe alternative energy storage technologies to the proposed project that were considered, and the reasons for rejecting each in favor of the proposed technology.

2.2.3. Discuss a no-build alternative and its potential impact on electrical supply and environmental impact.

2.2.4. Based on the analysis conducted in Section 2.1.6., discuss the feasibility of load reduction (energy efficiency, conservation, and demand response) as an alternative to all or part of the proposed project. (Wis. Admin. Code § PSC 111.53(1)(d)1.)

2.2.5. Provide analyses that examines the proposed project's cost-effectiveness, technical feasibility and environmental soundness in meeting the energy

demand with respect to the Energy Priorities Law. (Wis. Stat. §§ 1.12(4) and 196.025(1).)

2.3. MISO and Wholesale Market Competition

2.3.1. Describe how the project would be treated in the MISO market.

2.3.2. Identify regulatory or market compliance requirements with which the proposed facility would have to comply to participate in capacity and/or energy markets. Explain how the proposed facility will comply with each identified requirement.

2.3.3. Describe the potential effect of the proposed project on wholesale market competition. If modeling the impact of the project on the wholesale market is necessary, the modeling should be done using PROMOD or similar software. Provide an analysis of the Herfindahl-Hirschman Index market concentration impact of the proposed project. Discuss whether the cost of energy from the proposed plant would lower or increase the cost of wholesale energy and if so, how. (Wis. Stat. § 196.491(3)(d)7.)

3. Project Engineering - Technical Description and Ancillary Facilities

3.1. Projected Energy Production and Consumption

Provide a complete energy production and consumption assessment for the project. This report should include, at a minimum:

3.1.1. The following fundamental operating characteristics:

3.1.1.1. Rated power capacity (MW, AC, and DC)

3.1.1.2. Maximum load under charge (MW_{AC})

3.1.1.3. Rated energy storage capacity (MWh)

3.1.1.4. Storage duration (h)

3.1.1.5. Cycle lifetime (h)

3.1.1.6. Round-trip efficiency (%)

3.1.1.7. Generator heat rate (if applicable) (Btu/kWh)

3.1.1.8. Auxiliary power usage (MW)

3.1.2. Gross and net capacity factors on a seasonal basis (explain the method used to calculate the capacity factors and provide the data used).

3.1.3. Estimated energy production/consumption of project, including:

3.1.3.1. Estimated gross energy supplied.

3.1.3.2. Estimated gross energy consumed.

3.1.3.3. Estimated production losses, separated by source (energy conversion losses, collection/distribution losses, etc.).

3.1.4. Estimated hours of operation and capacity on a daily, weekly, seasonal, and annual basis. (Wis. Admin. § PSC 111.53(1)(a)(3).)

3.1.5. A detailed typical maintenance schedule for the proposed project, including estimated duration and frequency of maintenance outages projected for the proposed project on an annual basis, and the impact of such outages on the net capacity factor. Discuss how maintenance and other outages have been incorporated in the overall energy production and consumption assessment.

3.1.6. Estimate the degradation rate of the energy storage system. Discuss how degradation has been incorporated in the overall energy production and consumption assessment.

3.1.7. Describe the proposed project's black start capabilities, if applicable.

3.2. Technology Type and Characteristics

3.2.1. Describe how the proposed project would interact with and/or operate on the bulk electric system. State whether the project will be used for any of the following purposes: energy arbitrage, generation capacity deferral, ancillary services, ramping, transmission and distribution capacity deferral, or end-user application (e.g., managing energy costs, power quality and service reliability, renewable curtailment).

3.2.2. Describe the proposed energy storage system (technology and major components required), including the mechanism of energy storage and extraction. Support with diagrams, drawings, and simulations, as necessary.

3.2.3. If a purchase agreement has been signed, identify the manufacturer and model of the energy storage system to be used. If a purchase agreement has not been signed, identify the manufacturer(s) and model(s) of energy storage systems currently under consideration.

3.2.4. Provide the technical characteristics of primary energy storage components, including:

3.2.4.1. Physical dimensions.

3.2.4.2. Mechanical/chemical characteristics (e.g., flywheel speed(s), pressure value(s) for compressed fluid systems, battery chemistry).

3.2.4.3. Material.

3.2.4.4. Power/performance curve.

3.2.4.5. Tolerances for extreme weather events or physical damage.

3.2.5. Provide the technical characteristics of any converters/inverters, including whether they are grid forming or grid following.

3.2.5.1. If the project contains grid-forming components, describe the considerations evaluated in selecting those components.

3.2.6. Provide the technical characteristics of any energy component housing.

3.2.7. Provide the typical distances between blocks or units, access roads, and fences.

3.2.8. Provide a one-line schematic of a typical unit, including energy collection/conversion technology.

3.2.9. Describe any necessary supporting facilities directly involved in the energy storage mechanism, for example those related to fuel delivery and unloading, cooling water systems, and air pollution control.

3.2.10. Describe any proposed additions, possible expansions or other modifications that have been evaluated for the future. Describe the purpose for each. Support with similar graphics to those of Section 3.2.2.

3.2.11. Provide the facilities' physical dimensions and expected appearance.

3.2.11.1. Provide detailed scale drawings and/or simulations of all the Proposed and Alternative facilities for the sites and their footprints.

3.2.11.2. Photo simulations are desirable. (In order to be certain that any photo simulations provided in an application will be useful, please consult with PSC staff before preparing and submitting photos.)

3.2.12. List any components that will be DC coupled with the primary energy storage system.

3.3. Other Project Facilities

3.3.1. Describe the collector system proposed, including the following information:

3.3.1.1. Total length of collector circuits required – separated by circuit type (overhead vs. underground).

3.3.1.2. Collector circuit voltage to be used.

3.3.1.3. Transformer type, location, and physical size of transformer pad at each site.

3.3.1.4. For underground collector circuits:

3.3.1.4.1. Conductor to be used.

3.3.1.4.2. Describe installation type and how lines would be laid (open-cut trench, vibratory plow, directional bore, etc.). Provide scale drawing of underground circuit.

3.3.1.4.3. Depth and width of trench, and minimum depth of soil cover over circuits (if applicable).

3.3.1.5. For overhead collector circuits:

3.3.1.5.1. Size of pole to be used.

3.3.1.5.2. Engineering drawing of structure to be used.

3.3.2. Describe the type of foundation or foundations to be used for each part of the project. If more than one type of foundation may be needed describe each and identify under what circumstances each foundation type would be used. Include the following:

3.3.2.1. How the various foundations would be installed (e.g. direct imbed, excavation for pouring of concrete footings, etc.).

3.3.2.2. Dimensions, surface area and depth required for each foundation.

3.3.2.3. Amount of soil excavated for each foundation type.

3.3.2.4. How excavated soils would be handled including disposal of excess soil.

3.3.2.5. Materials to be used for the foundation. In particular, include:

3.3.2.5.1. Approximate quantity and type of concrete required for typical foundation.

3.3.2.5.2. Materials required for reinforcement.

3.3.2.6. Provide technical drawings of each foundation type to be used showing foundation dimensions.

3.3.2.7. Describe how foundation or support installation would address the risk of frost heave on facilities.

3.3.3. Provide information on any perimeter fencing that would be used around the energy storage system. Describe any requirements on the fencing around the site(s).

3.3.3.1. Describe any site access control (e.g. fences or gates).

3.3.3.2. Describe any setbacks from sensitive resources or storm water management considerations in perimeter fencing locations.

3.3.3.3. Provide copies of federal or state standards and the most up-to-date industry best-practices for fencing and setbacks, and describe whether and how the project would be compliant with each.

3.3.4. Describe the site lighting plan during project construction and while the project is in service.

3.3.4.1. Provide copies of any local ordinances relating to lighting that could apply.

3.4. Interconnection and Substation

3.4.1. State which type of interconnection process is being pursued (generator interconnection queue, surplus generator interconnection request, generation replacement, or similar). For transmission interconnections, indicate where the project is in the MISO Queue and provide copies of the

latest draft or final MISO report for the project interconnect. During the PSC review process applicant must continue to supply the latest reports from MISO.

3.4.2. Provide a general description of the interconnection facilities required for full operation of the proposed project, including the generator tie-line. Identify transmission/distribution line end points, length of line, voltage, and substation and/or switching station requirements. In addition, provide details on:

3.4.2.1. Whether the installation will be overhead or underground.

3.4.2.1.1. If overhead, describe the types of structures (single-pole/H-frame, direct embed/concrete caisson, typical span length, etc.) that would be constructed, including the height of the structures. Provide the line configuration (single-circuit, double-circuit, etc.).

3.4.2.1.2. If underground, identify the installation method(s), such as directional bore, open-cut trench, plow, etc. Describe the number and type of lines that will be contained within the underground conduit.

3.4.2.2. The right-of-way (ROW) dimensions (length, width, area) needed for the transmission/distribution line and the status of any easements or other land agreements with property owners.

3.4.3. State which entity will be responsible for the construction of the interconnection facilities, including transmission/distribution line. Describe all communications and agreements, official or otherwise, with the transmission or distribution owner. These can include definitive phase planning (DPP) studies and any signed generator interconnection agreements, or more informal meeting notes or letters.

3.4.4. State whether construction of a new substation or switchyard, or modifications to existing facilities would be needed for the interconnection. If so:

3.4.4.1. Describe which company would own and operate the facilities, and which company would conduct any ground disturbing construction for the facilities.

3.4.4.2. Describe, diagram, and map the substation associated with the facility. Identify and diagram lengths, widths, and heights of substation components.

3.4.4.3. Identify voltages and exit pathways for transmission lines of different voltages.

3.5. Operations and Maintenance Building (if Applicable)

3.5.1. Describe the purpose and use of the proposed O&M building.

3.5.2. Provide the number of full-time employees that would be working at the facility.

3.5.3. Provide the size (in acres) of the land purchase required for the facility.

3.5.4. Provide a drawing or diagram of the O&M building with dimensions including square feet.

3.5.4.1. Indicate the actual size of the building in square feet, and the size of any permanent driveways for the building to be constructed.

3.5.4.2. Describe the type of building to be constructed (metal, frame, etc.).

3.5.5. Describe any security plans for the property (fences etc.).

3.5.6. Describe construction procedures (in the sequence as they would occur), including erosion control practices.

3.5.7. Describe associated permanent storm water management facilities that will be constructed, or expansion/modification of existing storm water treatment facilities, to comply with applicable post-construction performance standards in Wis. Admin. Code §§ NR 151.121 through 128. Identify the locations of the point(s) of collection and discharge.

3.6. Hazardous Chemicals (Including Gases) and Waste Storage Areas

3.6.1. Provide a list of all hazardous chemicals to be stored and/or used on-site during construction and during operation (including liquid fuel). Describe spill containment and cleanup measures. Discuss Spill Prevention Control and Countermeasure and Risk Management planning for the listed hazardous chemicals.

3.6.2. Identify the location and capacity of each solid waste reuse/recycling and disposal facility utilized in the handling of waste products from the project.

4. Project Costs (Utilities Only)

Cost tables should be based on the projected in-service year. Tables must be submitted in a Microsoft Excel (.xlsx) format, in addition to Adobe Acrobat (*.pdf) format.

4.1. Capital and Construction Costs

4.1.1. Provide table(s) detailing the estimated capital cost of the completed energy storage facility and all related facilities, separated by major plant account codes (PAC). Provide a breakdown within each PAC and a subtotal. Include, at least, the following PACs:

4.1.1.1. Land and Land Rights;

4.1.1.2. Structures and Improvements;

4.1.1.3. Energy Storage Equipment;

4.1.1.4. Collector System

4.1.1.5. Invertors

4.1.1.6. Computer Hardware

4.1.2. Describe how the cost estimates for each category were calculated. Describe the class of estimate for the proposed project.

4.1.2.1. Identify all cost escalation factors used in the estimate. (Wis. Admin. Code § PSC 111.53(1)(c)1.)

4.1.3. Provide details pertaining to other capital costs to the extent applicable, including:

4.1.3.1. If the applicant intends to accrue Allowance for Funds Used During Construction (AFUDC), provide the estimated AFUDC amount and details about how the amount was estimated, including any calculations or assumptions that went into the development of the AFUDC projection.

4.1.3.2. Indicate whether contingency costs are included in the cost estimate for the project. If so, provide the estimated contingency costs and provide an itemized breakdown of contingency costs, by category of function. Further, describe the applicant's method for calculating or determining the contingency costs and provide justification for calculating the contingency costs in this manner. If contingency costs are not included in the cost estimate for the project, explain why this is unnecessary and how unforeseen costs will be accounted for.

4.1.3.3. If the proposed project's capital costs include Engineering and/or Pre-certification costs, describe how these cost estimates were determined. Provide documentation where applicable.

4.1.4. Describe estimates related to ongoing operations and maintenance costs related to the proposed project after being placed in-service and how those estimates were calculated.

4.1.5. Identify the cost of any property being retired. (Wis. Admin. Code § PSC 112.06(1m)(e).) Identify potential stranded and salvage costs for any prematurely abandoned or retired assets.

4.1.6. Provide the gross costs of alternative methods or locations that the electric utility considered for accomplishing the purpose of the project, with the reasons for rejecting the alternatives. (Wis. Admin. Code § PSC 112.06(1)(f).)

4.2. Proposed Method for Financing the Project

4.2.1. The complete terms and conditions of any lease arrangements.

4.2.2. Identification of any affiliated interest approvals required for each unit.

4.2.3. If applicable, a demonstration of how the conditions of Wis. Stat. § 196.52(9)(a)3(b) on leased generation contracts have been met.

4.2.4. Comparisons of contracts between costs of the proposed project as a leased generation project, as a rate-based proposal, or as competitive bids received.

4.3. Forecasted Costs

4.3.1. Provide an estimation of the forecasted cost of charging and forecasted revenue from discharging the proposed project on an annual basis. Provide a description of all cost escalation factors used and other significant supporting data.

4.3.2. Provide an estimation of the annual total cost, calculated as capital and production costs for the first year of operation (mills per net kWh generated) levelized in nominal terms over the life of the facility. Include all cost escalation factors used and other significant supporting data. (Wis. Admin. Code § 111.53(1)(c)4.)

4.3.3. Provide an estimation of the useful life of facility, based on depreciation rates established by the Commission. (Wis. Admin. Code § 111.53(1)(c)5.)

4.4. Transmission Costs, if Applicable

4.4.1. Provide table(s) detailing the projected total costs for each proposed electric transmission route broken into the major categories listed below. Indicate if project costs include AFUDC. Each major category of costs should be broken down into logical components and/or contracts.

4.4.1.1. Material Costs

4.4.1.2. Labor Costs

4.4.1.3. Other Costs

4.4.1.4. Pre-certification Costs

4.4.1.5. High-Voltage Transmission Impact Fees (Wis. Stat. § 196.491(3g).)

4.4.1.6. O&M Costs

4.4.2. Underground construction costs (if any) separate from overhead construction costs.

4.4.3. Separate costs of any substation construction. Provide substation costs separated by the appropriate PACs.

4.4.4. For 345 kV projects, a summary table of total costs (transmission and substation) for each proposed route, broken down by the following voltage classes.

4.4.4.1. 345 kV

4.4.4.2. Less than 345 kV

4.4.4.3. Distribution

5. Safety

5.1. For ESS technologies using batteries (BESS), including solid-state batteries, or any other ESS technology where fire risks are present:

5.1.1. Describe the fire suppression systems planned to be used with the BESS. State whether materials or systems that contain per- and polyfluoroalkyl substances (PFAS) are under consideration for any fire suppression systems. If water would be used for any part of fire suppression, provide information about the water source(s) that would be used for and affected by any fire suppression system or by local fire departments during a BESS fire event. Include details about any new infrastructure needed to supply water to all areas of the project site and the estimated cost of that infrastructure. State whether a backup system is planned in case of the failure of the primary fire suppression system.

5.1.2. Discuss all measures the applicant would take to contain and prevent BESS chemicals from contaminating local surface water, groundwater, or soil, including during any BESS fire suppression activities.

5.1.3. Identify the types of chemicals that could become airborne in the event of a BESS fire, including any that may be hazardous.

5.1.4. Provide evidence to demonstrate the proposed project would comply with NFPA 855, UL 9540 testing protocols for battery systems.

5.2. For all ESS technologies, including BESS:

5.2.1. Describe any known potential safety hazards or risks associated with the proposed ESS technology, such as fire risks for BESS.

5.2.2. Describe how the proposed project has been designed to minimize and mitigate the safety hazards and risks identified in Section 5.2.1 in addition to thermal runaway, fires, off-gassing, leaks, explosions, and other dangerous malfunctions of the technology.

5.2.3. If a Hazard Mitigation or Emergency Response Plan has been developed for the project, supply each such plan. If not, generally describe the process for developing each plan and the anticipated components of each plan; supply each such plan when created.

5.2.4. Describe methods and technologies that will be put in place for hazard detection, including detection of heat, smoke, and the release of dangerous chemicals.

5.2.5. Discuss the measures that would be taken to notify residents in the area of, and prepare them for, any emergency situation at the ESS that may result in hazards to health or property.

5.2.6. Describe the extent to which local fire and emergency responders would receive initial training and refresher trainings on the applicable ESS hazards and proper emergency response, as well as updates to best practices in dealing with ESS emergencies. Provide specific details on the

frequency of trainings, anticipated training topics, and confirm if trainings would be conducted throughout the lifecycle of the project.

5.2.7. Provide a record of all discussions with local municipal entities, including fire protection and emergency response units, to support the proposed ESS location. Include any feedback incorporated into the planning process as suggested by municipal entities. Detail any ongoing memo of understanding or joint development agreement discussions with appropriate local or county entities, particularly how they pertain to emergency response responsibilities (such as fire protection), training costs, purchase of equipment, and protection of surface water and groundwater resources in any case where contaminants may be released in a catastrophic failure scenario.

5.2.8. Identify and provide relevant portions of safety codes that are applicable to the project and discuss the ways in which the project will be in compliance with each. Additionally, provide details regarding any ongoing testing or evaluation requirements to maintain compliance, including the cadence of necessary testing or maintenance.

5.2.9. Discuss any plans to routinely assess ESS equipment for damage due to severe weather, and how damaged equipment would be handled.

6. Site and Construction Information

6.1. Project Description

Provide descriptions, diagrams, and graphics for the proposed project that include the following details:

6.1.1. The location, size, and dimensions of the proposed ESS site, which should be inclusive of any access roads, crane pads (if necessary), storm water management ponds or basins, and any other associated facilities.

6.1.2. The topography, land cover, zoning, and land use of the proposed ESS site.

6.1.3. Layout of the proposed ESS equipment on the overall site.

6.1.4. Dimensions of the property boundaries and ESS fenced area.

6.1.5. Vertical profile and topography of the proposed ESS and the hosting property.

6.1.6. For any electric structures or lines (transmission and distribution) that would be constructed outside of the fence line of the proposed ESS, include the following:

6.1.6.1. Electric line configuration (such as single-circuit or double-circuit with existing line, overhead or underground, conductor replacement or new construction, etc.).

6.1.6.2. A description and location of any proposed ROWs (for example new ROW, partially overlapping existing transmission ROW, completely within existing ROW, etc.).

6.2. Construction Impacts

Describe the construction impacts of the proposed project and any proposed associated facilities, including:

6.2.1. The area and depth of excavations.

6.2.2. The type of construction machinery that would be used.

6.2.3. The construction disturbance zone, including access from public roads and laydown areas.

6.2.4. For transmission or distribution electric lines proposed to be constructed outside of the ESS fenced area, provide the following:

6.2.4.1. Construction methods for the electric lines.

6.2.4.2. A description of any unique construction methods (*e.g.,* directional boring, jack and bore, helicopter, vibratory caissons, etc.).

6.2.4.3. Details on additional laydown areas or access roads.

6.2.5. If grading, land leveling, or any other activity that would result in a change in topography or vegetative or non-vegetative soil cover will occur provide the following information as fully as possible. If technical details are not available, discuss the goals and practices generally:

6.2.5.1. Indicate the maximum area (sq. ft. or acres) of disturbance that would occur at a given time.

6.2.5.2. Describe how spoil materials would be managed on and off-site.

6.2.5.3. Describe erosion and sediment control practices (e.g. sedimentation basins) that by design will be employed to result in a discharge of no more than five tons per acre per year of the sediment load carried in runoff from initial construction to final grading.

6.2.5.4. Describe any structural practices that will be used to divert flow away from exposed soils, store runoff or otherwise limit runoff and the discharge of sediment. State whether the practices are temporary (used during construction) or permanent (to be used during the operational life of the project).

6.3. Workforce

6.3.1. Provide information on the workforce size and skills required for project construction and operation.

6.3.2. Describe efforts that would be undertaken to recruit Wisconsin residents to fill employment opportunities created by the construction of the proposed project.

6.3.3. Describe efforts to collaborate with state-registered apprenticeship programs.

6.3.4. Provide an estimate of the number of Wisconsin residents and out-of-state workers that would be employed on-site to construct the proposed project.

7. Natural Resource Impacts

7.1. Forested Lands

Forested lands[12] are defined as an upland area of land covered with woody perennial plants reaching a mature height of at least six feet tall with definite crown (closure of at least ten percent). For the purposes of these AFRs, forested lands would not include narrow windbreaks located between agricultural areas, but would include shrublands and forested riparian areas.

7.1.1. Describe the forested lands that would be impacted by the proposed project. Include the following information in the description:

- Type of forest,
- Dominant species,
- Average age, size of trees,
- Ownership (private, county, etc.), and
- Use (recreation, timber, riparian habitat, etc.).

7.1.2. Identify any ESS site land that is enrolled in either Managed Forest Law or Forest Crop Law and discuss how the proposed project would affect their enrollment.

7.1.3. Describe the planned time of year for tree-clearing activities.

7.1.4. Provide specific details for mitigating or minimizing construction impacts in and around forest lands.

7.2. Grasslands

Grasslands[13] are defined as lands covered by non-cultivated herbaceous (non-woody) vegetation predominated by perennial grasses and forbs.

7.2.1. Describe the grasslands that would be impacted by the proposed project. Include the following information in the description:

- Type of grassland (prairie, pasture, old field, etc.),
- Dominant species,

[12] Forested lands definition adopted from Wiscland 2 Land Cover User Guide 2016 accessed at: https://p.widencdn.net/8ghipa/Wiscland_2_User_Guide_September_2016.
[13] Grasslands definition adopted from Wiscland 2 Land Cover User Guide 2016 accessed at: https://p.widencdn.net/8ghipa/Wiscland_2_User_Guide_September_2016.

- Ownership (private versus public), and
- Use (agricultural, non-productive agricultural, recreation, natural area, etc.).

7.2.2. Identify any ESS site land that is enrolled in the Conservation Reserve Program and discuss how the proposed project would affect enrollment.

7.2.3. Provide specific details for mitigating or minimizing construction impacts in and around grasslands.

7.3. Invasive Species

7.3.1. Describe areas where invasive species or disease-causing organisms have been observed or are a concern for the construction of the project (*e.g.,* invasive plants, oak wilt, emerald ash borer, etc.). State if invasive species surveys have occurred or will be conducted. If invasive species surveys have been conducted, provide documentation showing where surveys occurred and locations of invasive species found, indicating which species.

7.3.2. Describe mitigation methods that would be used to avoid the spread of invasive plants or disease-causing organisms and comply with Wis. Admin. Code ch. NR 40, such as cleaning of machinery, etc.

7.4. Conservation Easements

7.4.1. Identify conservation easements that may be impacted by any proposed construction activities.

7.5. Restoration of Disturbed Areas

Provide a detailed re-vegetation and site restoration plan which discusses the following items:

7.5.1. Type of re-vegetation proposed for impacted areas (e.g. traditional restoration seed mixes, specialty native seed mixes for restoration of high-quality habitats or habitat enhancement such as seeding with a pollinator species).

7.5.2. Vegetative monitoring criteria (number of post-construction years or percent cover achieved) and methods.

7.5.3. Invasive species monitoring and management.

8. Community Impacts

8.1. Communication with Potentially Affected Public

8.1.1. List all attempts made to communicate with and provide information to the public.

8.1.2. Provide a description of public information meetings and who was invited.

8.1.3. Submit copies of public outreach mailings and handouts.

8.1.4. Provide electronic copies of written public comments (*e.g.,* letters, emails, forms, etc.) submitted prior to filing the application with the PSC.

8.2. Community Issues

8.2.1. Describe the extent to which the proposed project would result in any potential changes to the electromagnetic fields in the project vicinity.

8.2.2. Discuss any recycling or repurposing actions that would be used to dispose of ESS facility components at the end of their useful life, including after component damage or failure.

8.2.3. Describe the disposal process for project components. State whether recycled and disposed components would be taken to an approved offsite licensed solid waste disposal facility, both during the operational lifespan of the project and during the decommissioning process. State what components, if any, would remain on the property following decommissioning.

8.2.4. Discuss any concerns that groups or potentially impacted communities have raised.

8.3. Land Use Plans

8.3.1. Provide copies of any land use plans and zoning ordinances affecting the project area, including two miles of the immediate project boundary. Provide only the page(s) directly applicable to the project and relevant plan/ordinance language. (These can include recreational plans, agricultural land use plans, etc.).

8.3.2. Describe any zoning changes needed for the project. Include a complete list of the entities responsible for any zoning changes, a description of the process required, and the schedule and anticipated outcome for the necessary zoning changes.

8.4. Agriculture

For all project facilities, provide the following:

8.4.1. Describe the type of farming that could be impacted by the proposed project, such as pasture, row crops, or other type (*e.g.* orchards, tree plantations, cranberry bogs, etc.).

8.4.2. The amount of land that would no longer be farmed.

8.4.3. Any impacts to farming operations (including windbreaks) from the construction or operation of project facilities.

8.4.4. Specific plans for mitigating or minimizing construction impacts in and around agricultural lands.

8.4.5. Agricultural Impact Statement (AIS) - Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP). Any project involving the actual or potential exercise of powers of eminent domain affecting a farm operation must submit one of the following:

8.4.5.1. A completed Agricultural Impact Notice (see DATCP web site and search "Agricultural Impact Notice" for appropriate form or contact DATCP).

8.5. A release letter from DATCP stating that an AIS will not be written for this proposed project.Archaeological and Historic Resources

Confidential information includes only the specific location details of archaeological and human burial sites (e.g. maps or portions of text that describe precise locations such as USGS data).[14, 15] Confidential information should be submitted on ERF as a confidential version in addition to a redacted public version. The Wisconsin Historical Society (WHS) can provide a list of qualified archaeologists, architectural historians, human burial specialists, or tribal preservation officers who may be required to perform steps of this review. Access to the Wisconsin Historic Preservation Database (WHPD) is required to complete this review. Access to WHPD is free at the WHS headquarters or can be used online for a fee. Depending on the outcome of this review, the Commission may be required to consult with the State Historic Preservation Office (SHPO). SHPO consultation may take up to an additional 30 days. The *Guide for Public Archeology in Wisconsin*, provides information about best management practices.[16] Work with SHPO to submit any updated records to WHPD (i.e. new reports, updates to sites or buildings, etc.).

8.5.1. Identify and provide a description as well as confidentially-filed maps of all WHPD properties (i.e., archaeological sites, historic buildings and districts, and human burial sites recorded on WHPD) within the project's area of potential effect (APE). Maps of archaeological and burial sites must be submitted confidentially. For archaeological and historic sites, the APE is comprised of the physical project area where any ground disturbing activity may occur (e.g. digging, heavy equipment movement, etc.). For historic buildings and districts, the APE consists of the distance that the project may be visible from the outside of the project area.

8.5.2. For WHPD properties within the APE, determine the boundaries, historic significance, and integrity of each resource as they apply to Wis. Stat. § 44.36(2), which is the state register of historic places criteria. Additional field surveys may be required to make these determinations. In some cases, such as a landowner not granting land access, field surveys may instead be performed following the approval of a project.

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[14] Wis. Stat. § 157.70(2)(a): information in the catalog related to the location of any burial site, the disclosure of which would be likely to result in the disturbance of the burial site or the cataloged land contiguous to the burial site, is not subject to § 19.35(1).

[15] Wis. Stat. § 44.48(1)(c): The director may keep any specific information regarding archaeological resources closed to the public if the director determines that disclosure of the information would be likely to result in disturbance of the archaeological resources.

[16] *Guide for Public Archeology in Wisconsin*. The Wisconsin Archeological Survey. 2012.

8.5.3. Identify the potential project effects on each WHPD property within the APE that meets the Wis. Stat. § 44.36(2) historic property criteria.

8.5.4. Describe modifications to the project that would reduce, eliminate, avoid, or otherwise mitigate effects on the WHPD properties within the APE that meet the historic property criteria. Examples of modifications include changes to construction locations, modified construction practices (e.g. use of low-pressure tires, matting, etc.), placement of protective barriers and warning signage, and construction monitoring.

8.5.5. For human burial sites within the APE, contact WHS to determine whether a Burial Site Disturbance Authorization/Permit is required.

8.5.6. Provide an unanticipated archaeological discoveries plan. The plan should outline procedures to be followed in the event of an unanticipated discovery of archaeological resources or human remains during construction activities for the project.

8.5.7. Notify Wisconsin Tribal Historic Preservation Officers of any Native American human burial sites and significant prehistoric archaeological sites within the APE.

8.6. Residential Areas

8.6.1. Provide any setback distances for project facilities (including ESS units, fence lines, and access roads) to the following:

- Residences,
- Roads,
- Community buildings,
- Driveways,
- Property lines.

8.6.2. Discuss anticipated impacts to residential neighborhoods and communities such as noise, dust, duration of construction, time-of-day of construction, road congestion, impacts to driveways, etc.

8.6.3. Discuss how anticipated impacts would be mitigated.

8.6.4 Discuss the property value concerns that have been communicated to the applicant for each site.

8.6.5 Locate and describe hospitals, schools, daycare facilities, and retirement homes within one half mile of the project facilities, or locate and describe the closest of each if one does not exist within a half mile.

8.7. Aesthetic Impacts

8.7.1. Discuss the potential aesthetic issues associated with the proposed ESS as it relates to the surrounding land uses.

8.7.2. Describe the plans for landscaping or other measures used to mitigate the potential aesthetic impacts to the surrounding land uses.

8.8. Parks and Recreation Areas

8.8.1. Identify any parks and recreation areas or trails that may be impacted by the proposed project and the owner/manager of each recreation resource.

8.8.2. Provide any communications with these owners/managers.

8.8.3. Discuss how short- and long-term impacts to these resources would be avoided and minimized, including access.

8.9. Existing Infrastructure

8.9.1. Identify the location of all private and public airports/airstrips in the project area and describe the airports/airstrips, their runways (length, orientation), and type of use.

8.9.2. Describe any potential for impact to aircraft safety and intrusion into navigable airspace (runway approaches).

8.9.3. Identify potential construction limitations and permit issues.

8.9.4. Provide documentation of consultation with the WisDOT Bureau of Aeronautics and the FAA if transmission line structures or other tall structures are anticipated to be constructed.

8.9.5. Identify any underground pipeline in the project area, including the material transported and owner of the pipeline.

8.9.6. Describe any risk analysis conducted when siting the ESS facilities within a "potential impact radius" of any natural gas pipelines in the area. Provide a description of how any risks to existing facilities could be mitigated.

8.10. Noise

Provide an evaluation of the predicted noise levels anticipated to occur as a result of the proposed project by answering the following items. As a reference, the PSC Conventional Electric Power Plant Noise Protocol for New and Existing Facilities provides a methodology for the following analysis that may be adapted for use at an ESS location.

8.10.1. Provide existing (ambient) noise measurements that characterize the existing noise levels near local residences or sensitive sites.

8.10.2. Describe the anticipated noise levels at local residences and sensitive sites, including the information used to predict those noise levels (i.e. equipment manufacturer's specifications, noise modeling programs used).

8.10.3. Provide copies of any local noise ordinance.

8.10.4. Provide equipment manufacturer's description of noise attenuating methods and materials used in the construction of proposed facilities.

8.10.5. Describe how noise complaints would be handled.

8.10.6. Discuss any mitigation measures that could be used to address noise complaints during the operation of the project.

9. Waterway/Wetland Permitting Activities

This section covers information required by DNR for wetland and waterway permits. The following subsections apply to all proposed project sites or routes. See the Wetlands and Waterways section of the Introduction portion of this document on what to include in DNR Tables 1 and 2 regarding waterway resources. Questions about this section should be directed to DNR Office of Energy's Energy Project Liaison staff.

9.1. Waterway Activities

This section should be consistent with the waterways included in DNR Tables 1 and 2 and associated maps. This section should apply to the proposed and alternative sites/routes (if applicable) and their associated facilities (including associated driveways and permanent storm water management features to be constructed).

9.1.1. Identify the number of waterways present, including DNR-mapped waterways and additional field identified waterways, assuming all waterways are navigable until a navigability determination is conducted (if requested). Also identify the number of times the waterway meanders in and out of the project area and indicate the number of waterway crossings. Provide an overall project total, as well as broken down by the proposed site and the alternative site and their associated facilities.

9.1.2. Identify any waterways in the project area that are classified as Outstanding or Exceptional Resource Waters, Trout Streams, Wild Rice Waters, and/or Wild or Scenic Rivers.

9.1.3. State if you are requesting DNR staff perform a navigability determination on any of the DNR mapped waterways and/or field identified waterways that will be impacted and/or crossed by project activities. If a navigability determination is requested, provide the following information in a separate appendix with the application filing:

- A table with columns for:
  - The crossing unique ID,
  - Waterbody Identification Code (WBIC) for each waterway (found in the Surface Water Data Viewer or in the GIS data for the DNR mapped waterways),
  - Latitude and longitude for each crossing,
  - Waterway name,
  - Waterway characteristics from field investigation, and
  - Any other pertinent information or comments.
- Site photographs, clearly labeled with the photo number, direction, date photo taken, and crossing unique ID. A short description of what the photo is showing, and any field observation must also be included in the caption.

- Project map showing the following:
  - Aerial imagery (leaf-off, color imagery is preferred),
  - DNR mapped waterways (labeled with their unique ID),
  - Field identified waterways (labeled with their unique ID),
  - The location of each site photograph taken (labeled with the photo number),
  - The project area, and
  - Call out box/symbol for each DNR mapped waterway crossing where the navigability determination is requested (labeled with their unique ID).

9.1.4. Provide the following information for all project facility locations:

9.1.4.1. How many waterway crossings are proposed to be traversed with equipment and how that crossing will be accomplished (i.e. placement of temporary clear span bridges (TCSB), use of existing bridge or culvert, driving on the bed, etc.).

9.1.4.2. How many structures are proposed to be placed below the ordinary high-water mark (OHWM) of a waterway. Indicate if structures are temporary or permanent.

9.1.4.3. Indicate if any other waterways would be impacted and/or crossed by other construction activities regulated under Chapter 30 Wis. Stats. (i.e. placement of a new storm water pond within 500 feet of a waterway, stream relocation, staging areas, placement of riprap, etc.).

9.1.4.4. For underground installation only: Indicate the amount of waterway crossings via underground installation and specify the installation method (i.e. X waterways will be bored, Y waterways will be trenched, etc.).

9.1.5. Provide the methods to be used for avoiding, minimizing, and mitigating construction impacts in and near waterways. This discussion should include, but not be limited to, avoiding waterways, installation methods (i.e. directional bore versus open-cut trenching or plowing), equipment crossing methods (i.e. for temporary access, the use of TCSB versus temporary culvert; for permanent access, the use of permanent bridge versus permanent culvert), sediment and erosion controls, invasive species protocols for equipment, etc.

9.1.6. For waterways that will be open-cut trenched, provide the following:

9.1.6.1. State if any waterways are wider than 35 feet (measured from OHWM to OHWM).

9.1.6.2. The machinery to be used, and where it will operate from (i.e. from the banks, in the waterway channel) and if a TCSB is needed to access both banks.

9.1.6.3. The size of the trench (length, width, and depth) for each waterway crossing.

9.1.6.4. Details on the proposed in-water work zone isolation/stream flow bypass system (i.e. dam and pump, dam and flume, etc.).

9.1.6.5. Duration and timing of the in-stream work, including the installation and removal of the isolation/bypass system and the trenching activity.

9.1.6.6. How impacts to the waterway will be minimized during in-water work (i.e. energy dissipation, sediment controls, gradually releasing dams, screened and floating pumps, etc.).

9.1.6.7. How the waterway bed and banks will be restored to pre-existing conditions.

9.1.7. For waterways that will be directionally bored, provide the following:

9.1.7.1. The location and size of any temporary staging and equipment storage.

9.1.7.2. The location and size of bore pits and their distance from waterways.

9.1.7.3. Provide a contingency plan for bore refusal and a plan for the containment and clean-up of any inadvertent releases of drilling fluid (e.g. a frac-out).

9.1.8. For waterways that will have a TCSB installed across them, provide the following:

9.1.8.1. Description of the TCSB proposed, including dimensions, materials, and approaches. Verify the TCSB will completely span the waterway.

9.1.8.2. State if any waterways are wider than 35 feet (measured from OHWM to OHWM), and/or if any in-stream supports will be used.

9.1.8.3. State how the TCSB placement and removal will occur (i.e. carried in and placed with equipment, assembled on site, etc.) and if any disturbance would occur to the bed or banks for the installation and removal, including bank grading or cutting.

9.1.8.4. Duration of the placement of the TCSB.

9.1.8.5. Sediment controls that will be installed during the installation, use, and removal of the TCSBs.

9.1.8.6. How the TCSBs will be inspected during use and how they will be anchored to prevent them from being transported downstream.

9.1.8.7. State if the required 5-foot clearance will be maintained, or if the standards in NR 320.04(3), Wis. Admin. Code will be complied with.

9.1.8.8. How the waterway bed and banks will be restored when the TCSB is removed.

9.1.9. Describe the proposed area of land disturbance and vegetation removal at waterway crossings. Include a description of the type of vegetation to be removed (e.g. shrub, forest), and if this vegetation removal will be temporary (allowed to regrow) or permanent (maintained as cleared).

9.1.10. If any of the following activities are proposed, provide the information as detailed on the applicable permit checklist:

New culvert placement: https://apps.dnr.wi.gov/doclink/forms/3500-130.pdf

OR

https://dnr.wisconsin.gov/sites/default/files/topic/Waterways/checklist/IP/IP-culvert.pdf (General Permit) or (Individual Permit)

New permanent bridge placement: https://apps.dnr.wi.gov/doclink/forms/3500-130.pdf

OR

https://dnr.wisconsin.gov/sites/default/files/topic/Waterways/checklist/IP/IP-bridgeTempCross.pdf (General Permit, no in-stream supports) or (Individual Permit, in-stream supports)

New storm water pond placed within 500 feet of a waterway: https://dnr.wisconsin.gov/sites/default/files/topic/Waterways/GP_23_2023_Ponds.pdf

9.2. Wetland Activities

This section should be consistent with the wetlands included in DNR Tables 1 and 2 and associated maps. This section should apply to the proposed and alternative sites/routes (if applicable) and their associated facilities (including associated driveways and permanent storm water management features to be constructed).

9.2.1. Describe the method(s) used to identify wetland presence and boundaries within the project area (i.e. wetland field delineation, wetland field determination, conservative desktop review, etc.). If conservative desktop review was the only method used to identify the presence of wetlands, state if any areas will be field-verified (and when). If a combination of methods were used, describe which project areas utilized which method. The associated delineation report and/or desktop review documentation should be uploaded to the PSC's website as part of the application filing.

9.2.2. Identify the number of wetlands present and by wetland type, using the Eggers and Reed classification. Provide as an overall project total, as well

as broken down by the proposed site and the alternative site(s) (if applicable) and their associated facilities.

9.2.3. Wetland functional values:

9.2.3.1. Discuss the existing functional values of the wetland present. Functional values include but are not limited to floristic diversity, fish and wildlife habitat, flood storage, water quality, groundwater discharge and recharge, public use, etc.

9.2.3.2. Discuss how the project may impact existing functional values of wetlands.

9.2.3.3. Provide Wisconsin Rapid Assessment Methodology (WRAM) forms, or other assessment methodology documentation, if completed.

9.2.4. Identify any wetlands in the project area that are considered sensitive and/or high-quality wetlands, including, but not limited to:

9.2.4.1. Any wetlands in or adjacent to an area of special natural resource interest (ASNRI) (NR 103.04, Wis. Admin. Code).

9.2.4.2. Any of the following types: deep marsh, northern or southern sedge meadow not dominated by reed canary grass, wet or wet-mesic prairie not dominated by reed canary grass, fresh wet meadows not dominated by reed canary grass, coastal marsh, interdunal or ridge and swale complex, wild rice-dominated emergent aquatic, open bog, bog relict, muskeg, floodplain forest, and ephemeral ponds in wooded settings.

9.2.4.3. Any wetlands with high functional values based on factors such as abundance of native species and/or rare species, wildlife habitat, hydrology functions, etc.

9.2.5. Provide the following:

9.2.5.1. The number of wetlands that would have construction matting placed within them to facilitate vehicle access and operation and/or material storage. Provide the total amount of wetland matting, in square feet.

9.2.5.2. The number of structures that would be constructed within wetlands. Indicate if structures are temporary or permanent. Provide the total square footage of permanent and temporary wetland impact for the placement of structures.

9.2.5.3. How many wetlands will have permanent fill placed within them. Provide the total amount of permanent wetland fill, in square feet.

9.2.5.4. How many shrub and/or forested wetlands would be cleared for construction. Provide the total amount of shrub and/or forested wetland conversion, in square feet.

9.2.5.5. How many wetlands will be impacted and/or crossed by other construction activities regulated under 281.36 Wis. Stats. (i.e. road building activities such as grading and cutting, substation upgrades, new tie-ins, vehicle/equipment access across wetland resulting in soil mixing or soil rutting, etc.).

9.2.5.6. For underground installation only: how many wetlands will be crossed by collection lines and specify the installation method (i.e. X wetlands will be bored, Y wetlands will be trenched, etc.).

9.2.6. Describe the sequencing of matting placement in wetlands and the anticipated duration of matting placement in wetlands. For matting placed in any wetland for longer than 60 consecutive days during the growing season, prepare and submit a wetland matting restoration plan with the application filing.

9.2.7. For wetlands that will be open-cut trenched, provide the following:

9.2.7.1. Provide details on the total disturbance area in wetland, including how total wetland disturbance was calculated. Include the size of the trench (length, width, and depth), where stockpiled soils will be placed (i.e. in upland, in wetlands on construction mats, etc.), and where equipment will operate.

9.2.7.2. Provide details on the proposed trench dewatering, including the method(s) that may be used (pumps, high-capacity wells, etc.), how discharge will be treated, and where the dewatering structure will be located.

9.2.7.3. Duration and timing of the work in wetlands.

9.2.7.4. How the wetlands will be restored to pre-existing conditions.

9.2.8. For wetlands that will be directionally bored, provide the following:

9.2.8.1. How bored wetlands and associated bore pits will be accessed.

9.2.8.2. The location and size of any temporary staging and equipment storage.

9.2.8.3. The location and size of bore pits and the distance from wetlands.

9.2.8.4. Provide a contingency plan for bore refusal and a plan for the containment and clean-up of any inadvertent releases of drilling fluid (e.g. a frac-out).

9.2.9. For wetlands that will be plowed, resulting in a discharge of fill (soil mixing and/or soil rutting), provide the following:

9.2.9.1. Provide details on the total disturbance area in wetland, including how total wetland disturbance was calculated.

9.2.9.2. Duration and timing of the work in wetlands.

9.2.9.3. How the wetlands will be restored to pre-existing conditions.

Note: Plowing through saturated or wet/soggy wetlands would likely result in soil mixing and rutting, and thus the plowing would then be 281.36 Wis. Stats. regulated activity.

9.2.10. For wetlands that will be crossed/accessed by vehicle/equipment resulting in a discharge of fill (soil mixing and/or soil rutting), provide the following:

9.2.10.1. Provide details on the total disturbance area in wetland, including how total wetland disturbance was calculated.

9.2.10.2. Duration and timing of the work in wetlands.

Note: Vehicle/equipment access through saturated or wet/soggy wetlands would likely result in soil mixing and rutting, and thus the plowing would then be 281.36 Wis. Stats. regulated activity.

9.2.11. For wetland vegetation that will be cleared or cut for construction, provide the following:

9.2.11.1. Justification for why wetland trees and shrubs are proposed to be cleared, and what construction activity the clearing is associated with (e.g. transmission line installation, off-ROW access road, staging area, etc.).

9.2.11.2. The timing and duration of vegetation removal.

9.2.11.3. Describe the type of equipment that will be used, and if the vegetation removal will result in soil disturbance, including rutting and soil mixing.

9.2.11.4. The type of wetland and type of vegetation to be cleared.

9.2.11.5. State if tree and shrubs that are removed will be allowed to regrow or be replanted, or if cleared areas will be kept free of trees and shrubs long-term.

9.2.11.6. Indicate the plan for handling and disposing of the debris (brush piles, tree trunks, wood chips, etc.) resulting from vegetation clearing in wetlands. State if debris would be removed from all wetlands to be cleared and disposed of in upland or other non-wetland locations.

9.2.11.6.1. If debris is not proposed to be removed from all wetlands during clearing, explain why disposal in non-wetland areas is not feasible.

9.2.11.6.2. If debris is not proposed to be removed from all wetlands during clearing, state how debris left in wetland will not restrict re-vegetation growth, will not alter surface elevations, and will not obstruct water flow. If wood chips will be placed in wetlands, state the depth (in inches) proposed.

9.2.11.6.3. If debris is not proposed to be removed from all wetlands during clearing, state how these wetlands will be monitored to ensure re-vegetation growth, surface elevations, and water flow are not impacted, and that the proposed depth of chip cover is adhered to. If re-vegetation growth becomes impeded, surface elevations become altered, and/or water flow becomes obstructed from wood chip placement, state how these impacts will be addressed and corrected, if they should occur.

9.2.12. Provide the methods to be used for avoiding, minimizing, and mitigating construction impacts in and near wetlands. This discussion should include, but is not limited to, how wetland impact was first avoided then minimized by shifting the project boundary, relocating structures and/or fill outside of wetland, minimizing construction ROW through wetland, by installation methods (i.e. directional bore versus open-cut trenching, soil segregation during trenching, etc.), equipment crossing methods (i.e. use of construction matting, frozen ground conditions, etc.), sediment and erosion controls, invasive species protocols for equipment, etc. Additional guidance to prepare this discussion can be found here: https://widnr.widen.net/s/fxdd8pmqgg/paasupp3utility.

9.2.13. Indicate if an environmental monitor will be employed during project construction and restoration activities. If so, describe the monitors roles and responsibilities, frequency of visits, etc.

9.2.14. Describe how all wetlands within the project area will be restored. This discussion should include details on the seeding plan, maintenance and monitoring, restoring elevations and soil profiles, restoring wetland hydrology, etc.

9.3. Wetland and Waterway Locations, Impacts, and Crossings

Provide the following map sets, as described below, for each proposed and alternative sites/routes (if applicable) and their associated components. Each map set should include an overview or index page that includes page extents for the corresponding smaller-scale map pages within the remainder of the map set. The smaller-scale map pages should show the project and resources in greater detail, include pages numbers to reference to the overview page, and have consistent scales throughout the pages.

9.3.1. Aerial Map Imagery showing the following:

- Delineated wetlands, labeled with the feature unique ID,
- Wisconsin Wetland Inventory (“Mapped Wetlands” SWDV layer) and hydric soils (“Wetland Indicators & Soils” SWDV layer), if a delineation was not conducted,
- DNR-mapped waterways, labeled with the feature unique ID,

- Field identified waterways, labeled with the feature unique ID,
- Vehicle crossing method of waterways for both permanent and temporary access, labeled by the crossing method (i.e. TCSB, installation of culvert, installation of bridge, installation of ford, use of existing culvert, use of existing bridge, use of existing ford, driving on the bed),
- ROW,
- Locations of temporary and permanent structures,
- Transmission line route,
- Segment names and nodes,
- Access paths (both on and off-ROW). Off-ROW access roads should be labeled with an identifying name or number,
- Staging areas, laydowns, and any temporary workspaces, such as crane pads (labeled with identifying name or number),
- Footprint of any associated new substations and/or footprint of existing substations to be expanded, and associated driveways and permanent storm water management features to be built (ponds, swales, etc.),
- Placement of construction matting in wetlands,
- Underground line installation only: symbolize the line route to indicate installation method (directional bore, open-cut trench, plow etc.). This includes the excavation areas in wetlands (i.e. bore pits, open-cut trench, etc.), and
- Locations of any other waterway or wetland impacting activity regulated under Wis. Stats. Chapter 30 and 281.36.

9.3.2. A map showing which method(s) were used to identify wetland presence and boundaries within the project area (i.e. wetland field delineation, wetland field determination, conservative desktop review).

10. Endangered, Threatened, Special Concern Species, and Natural Communities

In the *Introduction*, *page vi* of this document, additional details are provided on how to perform an Endangered Resources (ER) screening and about performing habitat assessments, if required.

10.1. Habitat Screening

10.1.1. Submit results from any habitat assessments and biological surveys for the proposed project, if completed or if required to be completed per the Endangered Resources Review (ERR). If surveys or assessments are required to be completed prior to construction but have not yet been

completed, state when these surveys will be completed. Results from additional surveys conducted during the review of the application, prior to the start of construction, and/or post-construction must be submitted as they are completed.

10.2. Federal ESA Review

10.2.1. Provide an evaluation of impacts to federally threatened or endangered species.

10.2.2. Provide communications with U.S. Fish and Wildlife Service, as applicable.

10.3. State ER Review

10.3.1.1. Provide a copy of the completed ER Review and all supporting materials for all project areas, including all applicable components such as off-ROW access routes, substations, and electric lines (transmission or distribution).

10.3.1.2. For all project facilities and areas impacted by construction, discuss potential impacts to rare species as identified in the completed ER screening and/or field assessments.

10.3.1.3. For any required follow-up actions that must be taken to comply with endangered species law, discuss how each required action would affect the proposed project, and how the required action would be complied with.

10.3.1.4. For any recommended follow-up actions to help conserve Wisconsin's rare species and natural communities, discuss if and how any recommended actions would be incorporated into the proposed project.

10.3.1.5. If any recommended follow-up actions are not planned to be incorporated into project construction or operation, state the reasons why.

11. DNR Information regarding Erosion Control and Storm Water Management Plans (not PSC requirements)

This section serves as guidance for development of Erosion Control and Storm Water Management Plans associated with DNR NR 216 Permits. These are not requirements for a PSC CPCN or CA.

11.1. Erosion Control and Storm Water Management Plans

DNR requires a detailed description of temporary and permanent erosion and sediment control measures to be utilized during and after construction of the project.

If the project would involve one or more acres of land disturbance, the applicant's request for permits under Wis. Stat. § 30.025 must identify the need for coverage under the Construction Site Storm Water Runoff General Permit [PDF] from

DNR. The permit application itself must be submitted through DNR's electronic Water Permits system after the PSC order. This permit may also authorize construction site dewatering discharges under certain conditions.

The Storm Water Permit and Wis. Admin. Code ch. NR 216 require a site-specific Erosion Control Plan, Site Map, and Storm Water Management Plan. The permittee would be required to implement and maintain, as appropriate, all erosion and sediment control practices identified in the plans from the start of land disturbance until final stabilization of the site. Final stabilization means that all land-disturbing construction activities at the construction site have been completed and that a uniform perennial vegetative cover has been established with a density of at least 70 percent of the cover for the unpaved areas and areas not covered by permanent structures or equivalent stabilization measures.

The Erosion Control Plan, Site Map, Storm Water Management Plan, and any supporting documentation (such as modeling input/output, design specifications, geotech/soil report, site photos, etc.) must be submitted with the Storm Water Permit application through the DNR's ePermitting system.

Erosion Control Plan - See Wis. Admin. Code § NR 216.46 for details regarding information required in the Erosion Control Plan as part of a complete permit application. Sections include:

- Site-specific plans.
- Compliance with construction performance standards in Wis. Admin. Code § NR 151.11.
- Details about the site and the project.
- List and schedule of construction activities.
- Site map(s) with site, project, and erosion and sediment control details.
- Description of temporary and permanent erosion and sediment controls.
- Compliance with material management, velocity dissipation, and inspection schedule requirements.

Storm Water Management Plan – See Wis. Admin. Code § NR 216.47 for details regarding information required in the Storm Water Management Plan as part of a complete permit application. Sections include:

- Compliance with applicable post-construction performance standards in Wis. Admin. Code § NR 151.121 through § NR 151.128.
- Description of permanent storm water management practices at the site and technical rationale.
- Groundwater and bedrock information if using permanent infiltration devices.
- Separation distances of permanent storm water management practices from wells.

- Long-term maintenance agreement for site vegetation and any other permanent storm water management features.

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