

February 23, 2024

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Subject: GridLiance West (GLW) 2024 Annual Progress Report

Below is a summary of the generation resources listed in this report, categorized by resource type and in-service year. The generation resources included met the following criteria listed in the Progress Report Process: generation projects 200-megawatts (MW) or greater connected to the transmission system through step-up transformers, or any facilities that may have a significant impact on the reliability of the Western Interconnection. For hybrid resources, the MW values shown in the table below are approved values of power injection at the point-of-interconnection regardless of whether power injected is photovoltaic (PV), a battery energy storage system (BESS) or a combination of both.

Generation Resource Summary by Year				
Resource Type	2024	2025	2026	2027
Wind	-	-	-	-
PV only	-	-	-	-
BESS only	-	-	-	-
Hybrid PV and BESS	250 MW	250 MW	-	-
Light Rail	-		44 MW	-

In accordance with the Western Electricity Coordinating Council (WECC) Progress Report

Policies and Procedures, the following is GridLiance’s 2024 Annual Progress Report for transmission and generation facility additions and changes on the Bulk Electric System (BES) are:

Projects Not Included in the 2023 Annual Progress Report		
Transmission Projects		Expected In-Service
1	GLW Revised Core Upgrades – CAISO 2022-2023 TPP	12/2027
<p>Description: As part of their 2022-2023 Transmission Plan (TPP), the California Independent System Operator (CAISO) revised the scope of previously approved 2021-2022 TPP GLW Upgrades transmission project to add the following two new projects:</p> <ul style="list-style-type: none"> • Install a new Trout Canyon 500 kV bus and three 500/230 kV transformers at Trout Canyon. • Rebuild Trout Canyon – Sloan Canyon 230 kV DCTL lines to 500 kV DCTL lines.* <p>* This project element replaces the double circuit 230 kV lines from Trout Canyon to Sloan Canyon as described in the “Existing Projects Identified in the 2023 Annual Progress Report” section below.</p>		
2	GLW Beatty Area 230 kV Project – CAISO 2022-2023 TPP	12/2027
<p>Description: As part of their 2022-2023 TPP, the CAISO approved GLW to construct the following 230kV facilities in VEA’s Beatty area. The purpose of this project is to provide 230 kV transmission capacity for new generation proposed in the area. The Beatty 230 kV Project scope includes:</p> <ul style="list-style-type: none"> • Build a new Johnnie Corner 230 kV station and loop into the Pahrump – Innovation 230 kV line. • Expand existing Beatty, Lathrop, Valley Switch and Vista 138 kV substations to 230 kV Substations. • Build 32 miles Beatty – Lathrop 230 kV line next to the existing 138 kV line in an adjacent ROW. • Build 30 miles Johnnie Corner – Valley Switch – Lathrop 230 kV DCTL lines next to the existing 138 kV line in an adjacent ROW and • Install a second Johnnie Corner – Innovation and Johnnie Corner – Vista – Pahrump 230 kV line on the Innovation – Pahrump double circuit tower approved in 2021/22 TPP. 		
Generation Projects		Expected In-Service
3	Yellow Pine 3 – Q1654	Q4 - 2025

Description: A 250 MW hybrid solar PV and 255 MW BESS with maximum power injected at POI limited to 250 MW. Estimated in-service date is Q4 – 2025. Project owner is Yellow Pine Solar LLC. This project is expected to be added to the existing Sloan Canyon and Innovation 230kV RAS.

Point of interconnection: GLW's Trout Canyon 230 kV substation.

Existing Projects Identified in the 2023 Annual Progress Report

Transmission Projects Expected In-Service

1 GLW 230 kV Core Upgrades – CAISO 2021-2022 TPP (Waiver Approved) 12/2027

Description: As part of their 2021-2022 TPP, the CAISO approved a bundle of eight new GLW projects to upgrade GLW's existing facilities and add new transformer capacity. The seven projects listed below have approved WECC waivers of Significant Impact. The eighth project (Add a 500/230 kV transformer at Sloan Canyon and loop-in the Harry Allen to Eldorado 500 kV line at Sloan Canyon) modifies Path 81 and 89 and will require updates to WECC's Path Rating Catalog. The CAISO approved these projects for policy and economic reasons. In their 2022-2023 TPP the CAISO revised and added projects to the scope of GLW's bundled projects which are described in the "Projects Not Included in the 2023 Annual Progress Report" section above.

- Rebuild to 230 kV double circuit from Desert View to Northwest.*
- Add a second 230 kV circuit from Innovation to Desert View.
- Rebuild the existing 230 kV single circuit from Pahrump to Innovation.
- Rebuild to 230 kV double circuit from Pahrump to Gamebird to Trout Canyon.
- Rebuild to 230 kV double circuit from Trout Canyon to Sloan Canyon.**
- Add a 138 kV phase shifter at Innovation substation to the planned 138 kV tie-line with NVE Energy.
- Upgrade VEA's Amargosa 230/138 kV transformer.

* This project element is listed in Paths 81 and 89 and will be part of the WECC Path Rating assessment for the new Sloan Canyon 500 kV substation. Paths 81 and 89 include the Harry Allen – Eldorado 500kV line which is being looped into the new 500kV Sloan Canyon bus.

** This project element is replaced with new double circuit 500kV lines from Trout Canyon to Sloan Canyon as described in the "Projects Not Included in the 2023 Annual Progress Report" section above.

Generation Projects Expected In-Service

1 ARES – Q1064 11/2026

Description: Advanced Rail Energy Storage (ARES) is a 44 MW light rail generation system to provide ancillary services to the CAISO power market. Project owner is ARES Nevada LLC. In 2023, 6.4 MW will be energized, with the remainder to be energized at some future unscheduled date.

Point of interconnection: GLW's Gamebird 230 kV substation.

Projects to be Removed from the Annual Progress Report

Transmission Projects	Withdrawal Date
None	
Generation Projects	Withdrawal Date
None	

Projects Placed In-Service Since the 2023 Annual Report

Transmission Projects	In-Service
1 Sloan Canyon 230kV RAS (Waiver Approved)	05/2023
Description: The new Sloan Canyon 230 kV remedial action scheme (RAS) was triggered by a generation project named Yellow Pine 2, a 250 MW PV plant interconnecting into GLW's Trout Canyon 230 kV Switching Station. Since the CAISO Transmission Planning Process has found that the Sloan Canyon 230 kV RAS has no significant impact on the GLW/VEA electrical system or neighboring systems, but in fact mitigates overloads caused by generation, GLW requested a Waiver of Significant Project Status in 2023 which was approved.	
2 Innovation 230 kV RAS (Waiver Approved)	05/2023
Description: The new Innovation 230 kV RAS was triggered by a new generation project named Yellow Pine 2, a 250 MW PV plant interconnecting into GLW's Trout Canyon 230 kV Switching Station. Since the CAISO Transmission Planning Process has found that the Innovation 230 kV RAS has no significant impact on the GLW/VEA electrical system or neighboring systems, but in fact mitigates overloads caused by generation, GLW requested a Waiver of Significant Project Status in 2023 which was approved.	
Generation Projects	In-Service
1 Yellow Pine 2 PV and BESS Project – Q1341	04/2023
Description: This is a 250 MW hybrid solar photovoltaic (PV) and 163 MW battery energy storage system (BESS). This project energized 125 MW in 2023 and the remaining 125 MW in 2024. Project owner is Yellow Pine 2 LLC.	
POI: GLW's Trout Canyon 230 kV Substation.	

GLW Request for Waiver: GLW is not seeking a path rating for the projects listed below and described in the “Projects Not Included in the 2023 Annual Progress Report” section above. Two new projects GLW requests a waiver of Significant Impact for projects are listed below.

Project 1 Request for Waiver of Significant Status:

- a) **Project name:** GLW Core Upgrades Revised Scope approved in the CAISO 2022-2023 TPP.
- b) **Project purpose:** The CAISO approved these projects for policy and economic reasons. Policy reason is to “ensure deliverability of resources that are needed to meet the state’s policy goals and resource adequacy needs. As part of their 2022-2023 TPP, CAISO revised the scope of previously approved GLW 230 kV Upgrades transmission project in their 2021-2022 TPP to add the following two new projects.

c) **Brief project description, including expected termination points:**

- Install a new Trout Canyon 500 kV bus and three 500/230 kV transformers at Trout Canyon.
- Rebuild Trout Canyon – Sloan Canyon 230 kV DCTL lines to 500 kV DCTL lines.*

* This project element replaces the double circuit 230 kV lines from Trout Canyon to Sloan Canyon as described in the “Existing Projects Identified in the 2023 Annual Progress Report” section below.

- d) **Expected date of release to operations:** December 2027.
- e) **Expected operating voltage:** 500 kV.
- f) **Description of how the Project, has been coordinated through a transmission planning forum, such as a Regional or Subregional Planning Group, or another appropriate forum. The description should include references to any transmission studies performed.**
- The CAISO studied and recommended the GLW Upgrades project in their 2022-2023 Transmission Planning Process which is a process open to stakeholders and affected systems. The CAISO performed a NERC reliability assessment of the project as well as economic and policy evaluations. Reliability results and cases studied can be found on the CAISO website at the following link:

<http://www.caiso.com/planning/Pages/TransmissionPlanning/Default.aspx>

Project 2 Request for Waiver of Significant Status:

- a) **Project name:** GLW Beatty 230 kV Project approved in the CAISO 2022-2023 TPP.
- b) **Project purpose:** As part of their 2022-2023 TPP, the CAISO approved GLW to construct the following 230kV facilities in VEA’s Beatty area. The purpose of this project is to provide 230 kV transmission capacity for new generation proposed in the area. The Beatty 230 kV Project scope includes:

c) Brief project description, including expected termination points:

- Build a new Johnnie Corner 230 kV station and loop into the Pahrump – Innovation 230 kV line.
- Expand existing Beatty, Lathrop, Valley Switch and Vista 138 kV substations to 230 kV Substations.
- Build 32 miles Beatty – Lathrop 230 kV line next to the existing 138 kV line in an adjacent ROW.
- Build 30 miles Johnnie Corner – Valley Switch – Lathrop 230 kV DCTL lines next to the existing 138 kV line in an adjacent ROW and
- Install a second Johnnie Corner – Innovation and Johnnie Corner – Vista – Pahrump 230 kV line on the Innovation – Pahrump double circuit tower approved in 2021-2022 TPP.

d) Expected date of release to operations: December 2027.

e) Expected operating voltage: 230 kV.

f) Description of how the Project, has been coordinated through a transmission planning forum, such as a Regional or Subregional Planning Group, or another appropriate forum. The description should include references to any transmission studies performed.

- The CAISO studied and recommended the GLW Upgrades project in their 2022-2023 Transmission Planning Process which is a process open to stakeholders and affected systems. The CAISO performed a NERC reliability assessment of the project as well as economic and policy evaluations. Reliability results and cases studied can be found on the CAISO website at the following link:

<http://www.caiso.com/planning/Pages/TransmissionPlanning/Default.aspx>

Comprehensive Progress Report for CAISO 2021-2022 TPP GLW Core Upgrades
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The purpose of the Comprehensive Progress Report is for the project sponsor to demonstrate that the project sponsor has met its obligations to be compliant with the NERC Reliability Standards and WECC Criteria.

After the project is made public, at a point that would allow opportunity for WECC member review and input, the project sponsor or Interconnecting Utility will submit the Comprehensive Progress Report to the WECC technical staff and StS members. The project would be considered in compliance with these procedures if the Comprehensive Progress Report was submitted at a point in the development process that would allow changes to the Plan of Service, if indicated by WECC member review and input.

Since the following projects will not go through the Path Rating Process, then the Comprehensive Progress Report does not include the items (6-11) as described in the WECC’s “WECC Progress Report Policies and Procedures” document. The content of the Comprehensive Progress Report below does include the following as mandatory:

1. The requirements specified under the Initial Progress Report.

Physical Description of Project: As part of their 2021-2022 TPP, the CAISO approved a bundle of eight new GLW projects to upgrade GLW's existing facilities and add new transformer capacity. The seven projects listed below have approved WECC waivers of Significant Impact. The eighth project (Add a 500/230 kV transformer at Sloan Canyon and loop-in the Harry Allen to Eldorado 500 kV line at Sloan Canyon) modifies Path 81 and 89 and will require updates to WECC's Path Rating Catalog. The CAISO approved these projects for policy and economic reasons. In their 2022-2023 TPP the CAISO revised and added projects to the scope of GLW's bundled projects which are described in the "Projects Not Included in the 2023 Annual Progress Report" section above.

- Rebuild to 230 kV double circuit from Desert View to Northwest.
- Add a second 230 kV circuit from Innovation to Desert View.*
- Rebuild the existing 230 kV single circuit from Pahrump to Innovation.
- Rebuild to 230 kV double circuit from Pahrump to Gamebird to Trout Canyon.
- Rebuild to 230 kV double circuit from Trout Canyon to Sloan Canyon.**
- Add a 138 kV phase shifter at Innovation substation to the planned 138 kV tie-line with NVE Energy.
- Upgrade VEA's Amargosa 230/138 kV transformer.

* This project element is listed in Paths 81 and 89 and will be part of the WECC Path Rating assessment for the new Sloan Canyon 500 kV substation. Paths 81 and 89 include the Harry Allen – Eldorado 500kV line which is looped-in to the new 500kV Sloan Canyon bus.

** This project element is replaced with new double circuit 500kV lines from Trout Canyon to Sloan Canyon as described in the "Projects Not Included in the 2023 Annual Progress Report" section above.

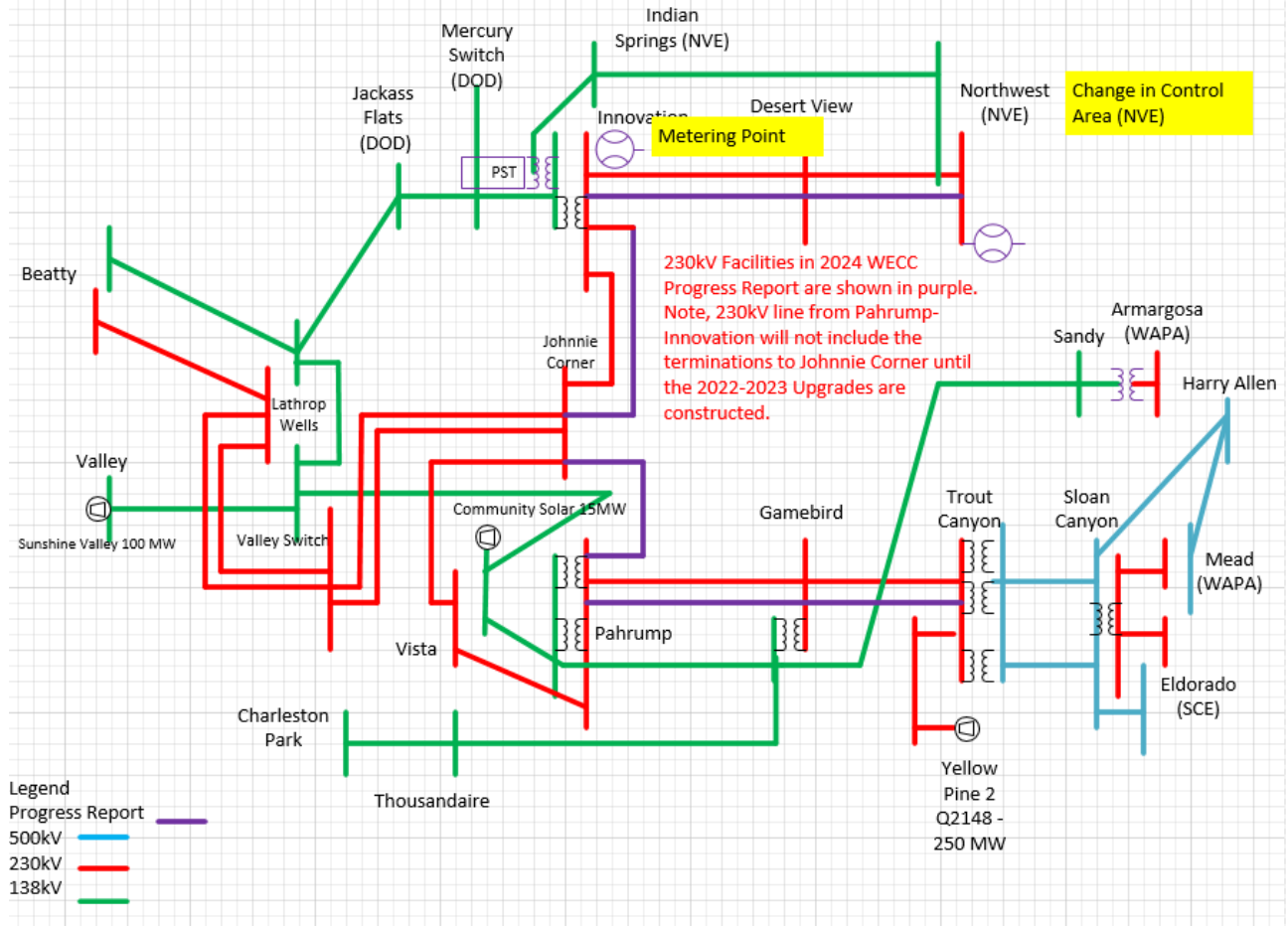
Planned Operating Date: December 2027.

Project Status: The project is currently in the design, engineering, permitting and procurement stages of development. GLW has recurring internal meetings to develop the project.

2. A one-line and geographic diagram of the project showing points of interconnection, metering points, adjacent path locations, and control area boundaries.

The SLD below illustrates those BES facilities in the comprehensive progress report (see purple 230kV facilities). These include all the facilities mentioned in part 1 above as well as metering locations and a change in CAISO control area to NVE's control area.

2024 WECC Progress Report SLD



3. Models and data that can be used by transmission planning software programs. This may include a block diagram, transfer functions, equations, and complete descriptions of the software modeling needed to study the new facility using transmission planning software programs. This information is not required if the necessary models are already available in the transmission planning software programs.

Not required as the necessary models are already available in the transmission planning software programs used in the CAISO 2021-2022 TPP.

4. A project milestone schedule that covers the current period through initial operation of the project. This schedule should be sufficiently detailed to allow for monitoring by the StS members.

Project Milestone Schedule:

Milestone	Draft Expected Date
Engineering, permitting and procurement	2024-2026
Construction	2026-2027
Testing and trial operation	12/2027
In Service Date	12/2027
Commercial operation date	12/2027

- 5. A summary of transmission studies performed, or information on where the transmission studies can be located. With respect to impacts on other systems, the specific contingencies in the following table must be evaluated:**

Transmission study information is located on the CAISO’s website using the following link and scrolling down to the 2021-2022 Transmission Plan under the “Previous transmission planning processes” heading.

<http://www.caiso.com/planning/Pages/TransmissionPlanning/Default.aspx>

Transmission study information available includes: The CAISO Board Approved Plan (use a search function of “GLW” to see relevant GLW information), Appendix A (system data), Appendix C (Reliability Assessment Study Results), Appendix E (Project Need and Description), Appendix F (Contingencies on the ISO System that may Impact Adjacent Systems), and a link to the planning process (recopied below):

<https://stakeholdercenter.caiso.com/RecurringStakeholderProcesses/2021-2022-Transmission-planning-process>

The CAISO planning standards used in this study are available via the following link.

<http://www.caiso.com/planning/Pages/TransmissionPlanning/Default.aspx>

Contingencies and Performance Requirements for Assessment of Impacts on Other Systems

Contingency	Performance Requirements on Other Systems (Results)
Failure of a circuit breaker associated with a Remedial Action Scheme to operate when required, following: 1) the loss of any element without a Fault; or 2) a permanent phase-to-ground Fault, with Normal Clearing, on any transmission circuit, transformer or bus section.	No inconsistencies with NERC Reliability Standard Requirements such as PRC-012 R4.1.5 (or its successor) were identified.
A credible common mode outage of two generating units connected to the same switchyard.	No cascading was identified.

Comprehensive Progress Report for CAISO 2021-2022 TPP GLW Upgrades – Sloan Canyon 500kV Substation:

The purpose of the Comprehensive Progress Report is for the project sponsor to demonstrate that the project sponsor has met its obligations to be compliant with the NERC Reliability Standards and WECC Criteria.

After the project is made public, at a point that would allow opportunity for WECC member review and input, the project sponsor or Interconnecting Utility will submit the Comprehensive Progress Report to the WECC technical staff and StS members. The project would be considered in compliance with these procedures if the Comprehensive Progress Report was submitted at a point in the development process that would allow changes to the Plan of Service, if indicated by WECC member review and input.

This project is progressing through a Path Rating Impact Assessment study as a precursor to more detailed studies. This Comprehensive Progress Report does not include the items (6-11) as described in the WECC's "WECC Progress Report Policies and Procedures" document, as data for those items are not yet available. The content of the Comprehensive Progress Report below does include the following as mandatory:

1. The requirements specified under the Initial Progress Report.

Physical Description of Project: As part of their 2021-2022 TPP, the CAISO approved a project to add a 500/230 kV transformer at Sloan Canyon by looping-in the Harry Allen to Eldorado 500 kV line at Sloan Canyon. The CAISO approved these projects for policy and economic reasons.

- Add a 500/230 kV transformer at GLW's Sloan Canyon substation.
- Provide a 500kV source by looping-in the Harry Allen – Eldorado 500k line.

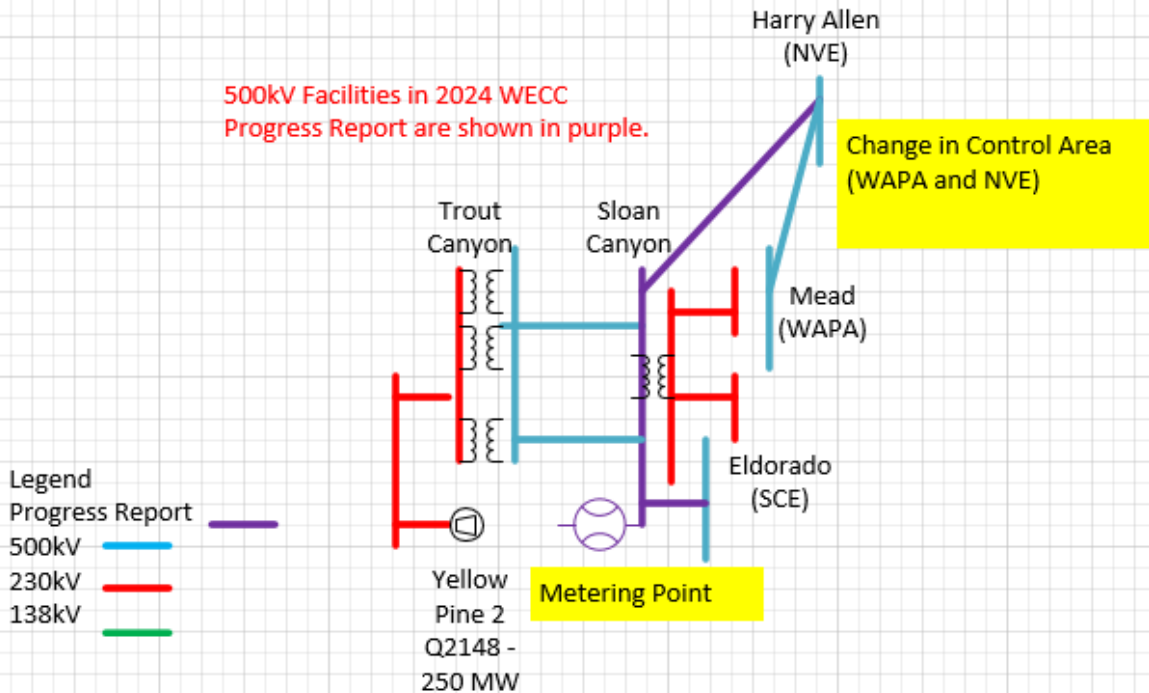
Planned Operating Date: December 2027.

Project Status: The project is currently in the design, engineering, permitting and procurement stages of development. This project is progressing through a Path Rating Impact Assessment study as a precursor to more detailed studies. Specific data for Progress Report items 6-11 are not yet available.

2. A one-line and geographic diagram of the project showing points of interconnection, metering points, adjacent path locations, and control area boundaries.

The SLD below illustrates those BES facilities in the comprehensive progress report (see purple 5000kV facilities). These include the new Sloan Canyon 500kV substation, metering locations, and a change in CAISO control area to WAPA and NVE's control areas.

2024 WECC Progress Report SLD



3. Models and data that can be used by transmission planning software programs. This may include a block diagram, transfer functions, equations, and complete descriptions of the software modeling needed to study the new facility using transmission planning software programs. This information is not required if the necessary models are already available in the transmission planning software programs.

Not required as the necessary models are already available in the transmission planning software programs used in the CAISO 2021-2022 TPP.

4. A project milestone schedule that covers the current period through initial operation of the project. This schedule should be sufficiently detailed to allow for monitoring by the StS members.

Project Milestone Schedule:

Milestone	Draft Expected Date
Engineering, permitting and procurement	2024-2026
WECC Path Rating Process	2024-2026
Construction	2026-2027
Testing and trial operation	12/2027

In Service Date	12/2027
Commercial operation date	12/2027

5. **A summary of transmission studies performed, or information on where the transmission studies can be located. With respect to impacts on other systems, the specific contingencies in the following table must be evaluated:**

Transmission study information is located on the CAISO’s website using the following link and scrolling down to the 2021-2022 Transmission Plan under the “Previous transmission planning processes” heading.

<http://www.caiso.com/planning/Pages/TransmissionPlanning/Default.aspx>

Transmission study information available includes: The CAISO Board Approved Plan (use a search function of “GLW” to see relevant GLW information), Appendix A (system data), Appendix C (Reliability Assessment Study Results), Appendix E (Project Need and Description), Appendix F (Contingencies on the ISO System that may Impact Adjacent Systems), and a link to the planning process (re copied below):

<https://stakeholdercenter.caiso.com/RecurringStakeholderProcesses/2021-2022-Transmission-planning-process>

The CAISO planning standards used in this study are available via the following link.

<http://www.caiso.com/planning/Pages/TransmissionPlanning/Default.aspx>

Contingencies and Performance Requirements for Assessment of Impacts on Other Systems

Contingency	Performance Requirements on Other Systems (Results)
Failure of a circuit breaker associated with a Remedial Action Scheme to operate when required, following: 1) the loss of any element without a Fault; or 2) a permanent phase-to-ground Fault, with Normal Clearing, on any transmission circuit, transformer or bus section.	No inconsistencies with NERC Reliability Standard Requirements such as PRC-012 R4.1.5 (or its successor) were identified.
A credible common mode outage of two generating units connected to the same switchyard.	No cascading was identified.

Items 6-11: This project is progressing through a Path Rating Impact Assessment study as a precursor to more detailed studies. However, this Comprehensive Progress Report does not include the items (6-11) as described in the WECC’s “WECC Progress Report Policies and Procedures” document, as data for those items are not yet available.

If you have any questions regarding GLW's 2024 Annual Progress Report, please contact me at Jaime.Hoffman@nexteraenergy.com and DL-GLW-Planning@nexteraenergy.com

Sincerely,

A handwritten signature in black ink that reads "Jaime Hoffman". The signature is stylized with a large, sweeping initial "J" and "H".

Jaime Hoffman
Director Development, GridLiance West LLC

Cc:
STS Members

WECC Staff

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