



NorthernGrid

1

2

3

Proposed Study Scope for the 2024-2025 NorthernGrid Planning Cycle

4

5

Member Planning Committee Approval Date: January 21, 2025

6

1 Executive Summary

2 This Study Scope outlines the NorthernGrid 2024-2025 regional transmission planning process, as
3 required under FERC Orders No. 890 and 1000, in accordance with each Enrolled Party's Open
4 Access Transmission Tariff (OATT) Attachment K – Regional Planning Process and NorthernGrid
5 Planning Agreement.
6

7 The NorthernGrid Regional Transmission Plan evaluates whether transmission needs within the
8 NorthernGrid may be satisfied by regional and/or interregional transmission projects. The NorthernGrid
9 Regional Transmission Plan provides valuable regional insight and information for all stakeholders to
10 consider and use in their respective decision-making processes.
11

12 The study scope for NorthernGrid's 2024-2025 Regional Transmission Plan was developed using the
13 following process:

- 14 • Identification of the Baseline Projects of Enrolled Parties. Baseline Projects are the transmission
15 projects included in the Enrolled Parties' Local Transmission Plans.
 - 16 • Evaluation of combinations of the Enrolled Parties Baseline Projects and Alternative Projects to
17 identify whether there may be a combination that effectively satisfies all Enrolled Party Needs.
 - 18 • Use of power flow and production cost analysis techniques to determine if the modeled
19 transmission system topology meets the system reliability performance requirements and
20 transmission needs.
 - 21 • Selection of the Regional Combination that effectively satisfies all Enrolled Party Needs into the
22 NorthernGrid Regional Transmission Plan.
- 23
24
25
26
27
28
29
30
31
32
33
34

1 Overview of Key Observations:

2 Regional Summary of Needs

3 The regional needs were sourced from member data submissions, including load forecasts, resource
4 additions and retirements, anticipated transmission topology, and public policy requirements. Data
5 submissions were received from NorthernGrid's 13 members:

- 6 • Avista (AVA)
- 7 • Bonneville Power Administration (BPA)
- 8 • Chelan PUD (CHPD),
- 9 • Idaho Power Company (IPC)
- 10 • Montana Alberta Tie Line (MATL)
- 11 • NV Energy (NVE)
- 12 • NorthWestern Energy (NWMET)
- 13 • PacifiCorp East and West (PACE and PACW)
- 14 • Portland General Electric (PGE)
- 15 • Puget Sound Energy (PSE)
- 16 • Seattle City Light (SCL)
- 17 • Snohomish PUD (SNPD)
- 18 • Tacoma Power (TPWR)

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

1 Summary of NorthernGrid Data Submittals for the 2034 future.

- 2 • The total NorthernGrid footprint, non-coincident peak load is 61,867 MW in July
- 3 • There are 2,611 MW of planned retirements
- 4 • There are 72,099 MW of planned generation additions
- 5 • All assessed projects for the 2024-2025 cycle are listed in Appendix B.
- 6 • These are the Member-Driven Regional Transmission Projects
- 7 ○ Greenlink West 345 kV
- 8 ○ Greenlink West 500 kV
- 9 ○ Greenlink North 500 kV
- 10 ○ MATL 230 kV
- 11 ○ One Nevada #2 500 kV
- 12 ○ Gateway West: Anticline – Populus 500 kV
- 13 ○ Gateway West: (Segment E Phase 1) Populus – Cedar Hill 500 kV, Cedar Hill – Midpoint
- 14 500 kV, and Midpoint – Hemingway #2 500 kV.
- 15 ○ Gateway West: (Segment E Phase 2) Populus – Borah 500 kV, Borah – Midpoint 500 kV,
- 16 and Cedar Hill – Hemingway 500 kV.
- 17 ○ Blueprint projects
- 18 ○ Bonanza (new 500 kV substation in Oregon)/John Day to Bonanza
- 19 ○ Bethel-Round Butte
- 20 • There are two Non-incumbent Regional projects
- 21 ○ Cascade Renewable Transmission System
- 22 ○ Cross-Tie
- 23 • There are two Non-Incumbent Interregional projects
- 24 ○ Sagebrush 230 kV/500 kV
- 25 ○ Western Bounty Project 500 kV (DC)
- 26
- 27
- 28
- 29
- 30
- 31
- 32
- 33
- 34
- 35
- 36
- 37
- 38

1 Case Analysis

2 The NorthernGrid Regional Transmission Plan will assess the existing transmission system and
3 committed projects against combinations of planned and proposed transmission projects to
4 compare their ability to reliably serve the forecasted 2034 load and generation dispatch
5 conditions.

6
7 The NorthernGrid study effort will utilize a combination of posted power flow and production
8 cost base cases from the Western Electric Coordinating Council (WECC); these cases will be
9 modified for the purposes of this study. The hourly output from the production cost modeling
10 run will be used to select stressed conditions in the Western Interconnection for reliability
11 analysis. Multiple stress conditions will be analyzed for the 2024-2025 planning effort. Historical
12 flows in the interconnection suggest east to west from Idaho/Montana/Wyoming and north to
13 south into southern California are of interest. Recent operations suggest that flows in the
14 opposite direction occur frequently enough to warrant analysis. Typically, a heavy summer
15 condition results in thermal overloads and a light spring condition results in voltage excursions;
16 both conditions will get captured in this 2024-2025 analysis.

17

18 Cost Allocation

19 PowerBridge submitted developer qualification information which was reviewed by the Cost Allocation
20 Task Force resulting in the approval of PowerBridge as a Qualified Developer for this planning cycle.
21 PowerBridge submitted the Cascade Renewable project.

22 TransCanyon submitted developer qualification information which was reviewed by the Cost Allocation
23 Task Force resulting in the approval of TransCanyon as a Qualified Developer for this planning cycle.
24 TransCanyon Transmission submitted the Cross-Tie project.

25

26

27

28

29

30

31

32

33

34

1	Table of Contents	
2	Contents	
3	Executive Summary.....	2
4	Overview of Key Observations:.....	3
5	Table of Contents.....	6
6	Introduction and Purpose Statement.....	7
7	Regional Transmission Plan Development.....	8
8	Regional Transmission Plan Development Process Overview.....	8
9	General Schedule and Deliverables.....	8
10	Stakeholder Engagement.....	8
11	Regional Summary of Needs.....	9
12	Current and Committed Project Transmission System.....	9
13	Data Submission Summary.....	10
14	Local Transmission Projects.....	11
15	Loads Summary.....	11
16	Resources Summary 2024-2034.....	12
17	Transmission Service Obligations.....	12
18	Regional and Interregional Transmission Projects.....	13
19	Member-Driven Transmission Projects.....	14
20	Non-Incumbent Transmission Projects.....	14
21	Alternative Projects.....	15
22	Public Policy Requirements Summary.....	16
23	Approach.....	16
24	Key Observations.....	16
25	Case Analysis.....	16
26	Methodology and Assumptions Overview.....	16
27	Analysis Objectives.....	17
28	Performance Criteria.....	17
29	Base Case Conditions.....	17
30	Evaluation of Regional Transmission Project Combinations.....	17
31	Impacts on Neighboring Regions.....	18
32	Cost Allocation.....	18

1	Introduction	18
2	Qualified Developers.....	18
3	Benefits and Beneficiary Analysis	18
4	Appendix A: Generation Changes	19
5	Appendix B: Projects Assessed in 2024-2025 Cycle	20
6	Appendix C: Full list of the Regional Combinations	21
7	Appendix D: Resource changes by State.....	22

8
9

10 Introduction and Purpose Statement

11 The objective of the transmission planning study is to produce the NorthernGrid Regional Transmission
 12 Plan, through the evaluation and selection of regional and interregional projects that effectively satisfy
 13 all the transmission needs within the NorthernGrid region. The regional needs were sourced from
 14 member data submissions, including load forecasts, resource additions and retirements, projected
 15 transmission, and public policy requirements.

16 The committees for NorthernGrid are as follows:

- 17 • **The Member Committee (MC)** is composed of NorthernGrid member representatives. The MC is
 18 responsible for membership approval, budget development and approval, and vendor
 19 management.
- 20 • **The Member Planning Committee (MPC)** is composed of transmission planner representatives
 21 from all NorthernGrid members. The MPC is responsible for development of the Regional
 22 Transmission Plan.
- 23 • **The Enrolled Parties Planning Committee** is composed of Federal Energy Regulatory
 24 Commission (FERC) jurisdictional utilities. Collectively these members are responsible for
 25 regional transmission planning compliance. There are two sub-committees of this primary
 26 committee:
 - 27 ○ **The Enrolled Parties and States Committee (EPSC)** is responsible for state engagement
 28 in the regional transmission planning process.
 - 29 ○ **The Cost Allocation Task Force (CATF)** is composed of enrolled parties and states
 30 representatives and is responsible for cost allocation compliance.

31

1 Regional Transmission Plan Development

2 Regional Transmission Plan Development Process Overview

3 NorthernGrid began the process to develop a regional transmission plan by requesting members to
 4 submit data pertaining to forecasted loads, resource additions and retirements, transmission additions
 5 and upgrades, and public policy requirements. The plan spans the 2024-2034 time period.

6 The Regional Transmission Plan will be developed over the course of two years, beginning March 31,
 7 2024, and ending December 31, 2025. A summary of the key deliverables in Year 1 and Year 2 is included
 8 below. Deliverables not defined by Attachment K are subject to change.

9

10 General Schedule and Deliverables

11



12

13 Figure 1: General Timeline of Deliverables

14 Stakeholder Engagement

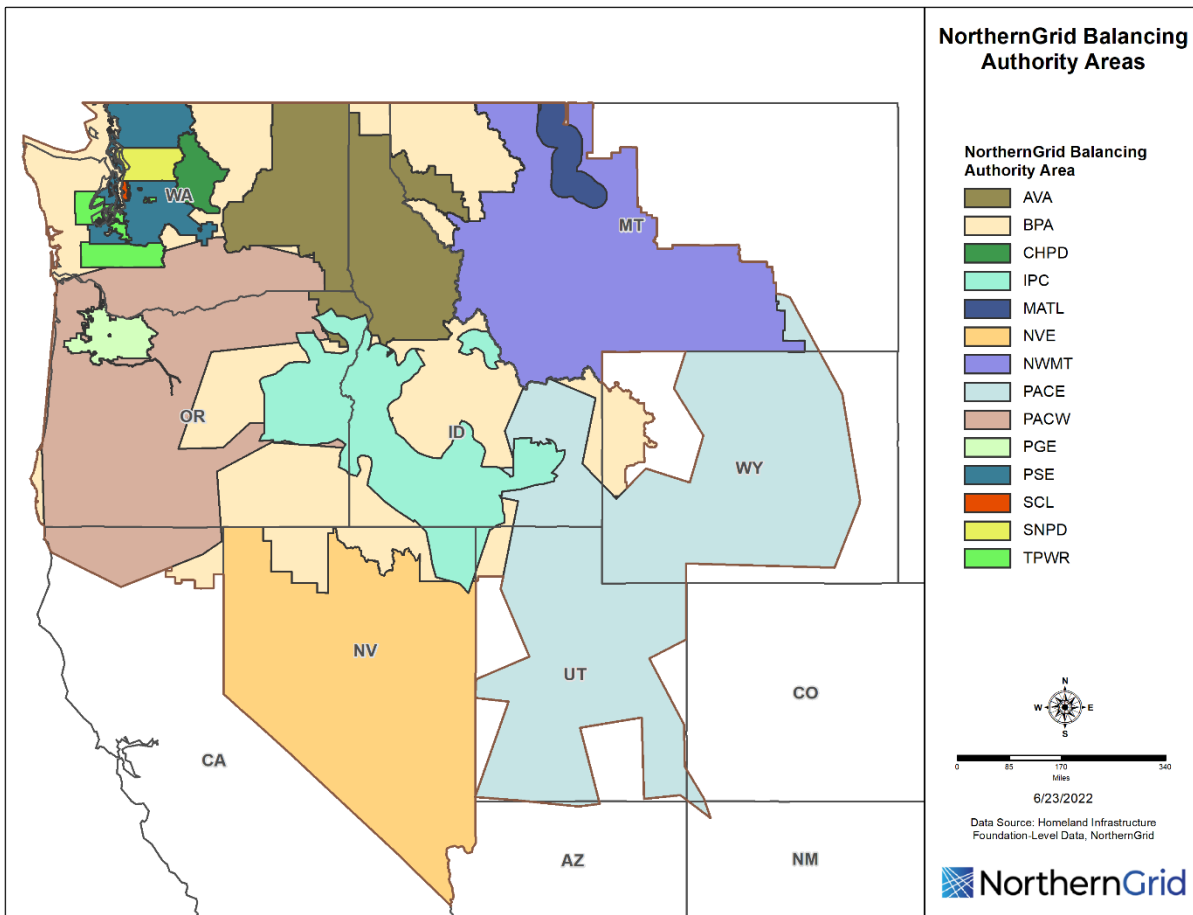
15 Stakeholders including state agencies are invited to participate in the public meetings and comment
 16 periods. They will also have active involvement in the development of the Regional Transmission Plan.
 17 The first period for stakeholder comments begins with the publishing of the Draft Study Scope. There
 18 are three main opportunities to provide comment, and they are in response to the following
 19 publications: the Draft Study Scope, the Draft Regional Transmission Plan, and the Draft Final Regional
 20 Transmission Plan.

21

1 Regional Summary of Needs

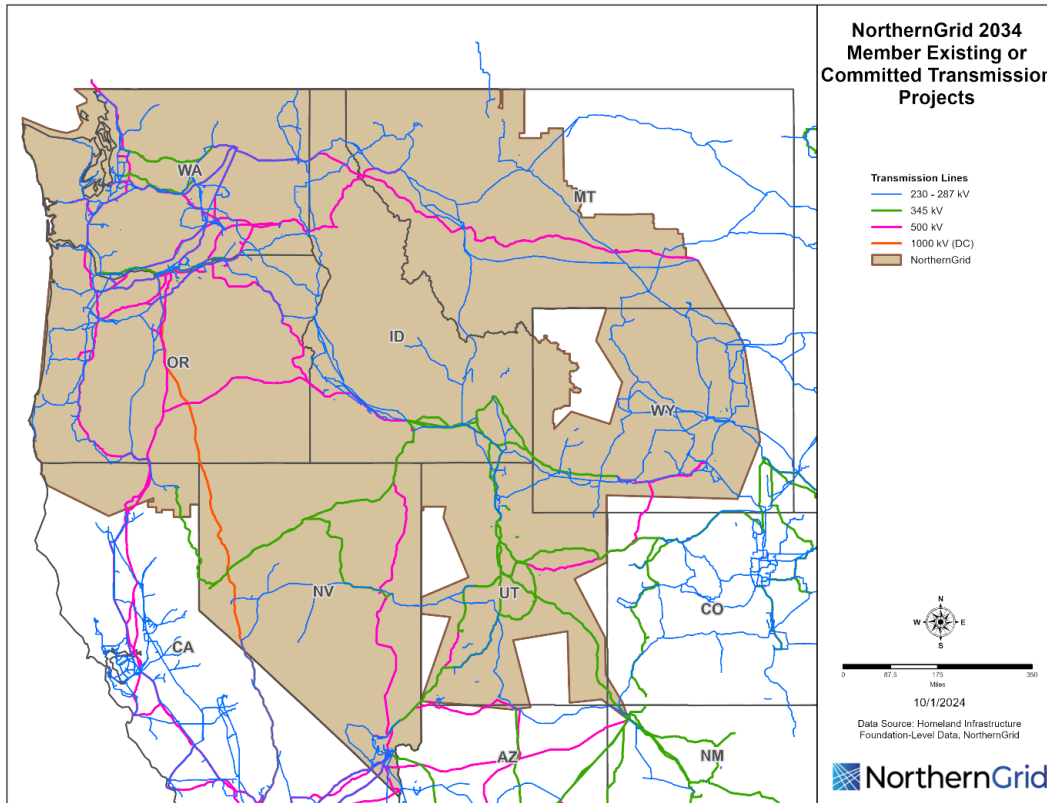
2 Current and Committed Project Transmission System

3 The NorthernGrid system is depicted below in Figure 2: NorthernGrid Balancing Authority Areas and the
 4 existing transmission is depicted in Figure 3: NorthernGrid Existing or Committed Transmission. The
 5 Boardman to Hemingway 500 kV project (B2H) and the Gateway South transmission projects (placed in-
 6 service Q4 2024) are included in Figure 3 because they are Committed Projects and will be assumed in-
 7 service for the planning analysis.



8
 9 *Figure 2: NorthernGrid Balancing Authority Areas*

10



1
2 *Figure 3: NorthernGrid Existing or Committed Transmission Projects*

3 **Data Submission Summary**

4 This section summarizes the data submission results that NorthernGrid received from its 13 members.
 5 The NorthernGrid is made up of Avista (AVA), Bonneville Power Administration (BPA), Chelan PUD
 6 (CHPD), Idaho Power Company (IPC), Montana Alberta Tie Line (MATL), NV Energy (NVE), NorthWestern
 7 Energy (NWM), PacifiCorp East and West (PACE and PACW), Portland General Electric (PGE), Puget
 8 Sound Energy (PSE), Seattle City Light (SCL), Snohomish PUD (SNPD), and Tacoma Power (TPWR). The
 9 member Balancing Authority Areas (BAA) are illustrated in Figure 2.

10 The NorthernGrid members that are registered as Balancing Authority Areas are required to submit a
 11 ten-year load and resource forecast to the Western Electricity Coordinating Council (WECC) annually.
 12 This forecast includes identification of forecasted generation resources and transmission facilities.
 13 NorthernGrid leverages this submission for the biennial Regional Transmission Plan. Each member
 14 submitted their data and NorthernGrid summarized the data pertinent to the NorthernGrid region: load,
 15 generation resource retirements, generation resource additions, and 230 kV and above transmission
 16 additions. Resource additions do not necessarily reflect *planned* resource additions but may represent
 17 *conceptual* resource needs required to meet public policy goals. Conceptual resource needs are based
 18 on the existing Integrated Resource Plan (IRP) preferred portfolios and may change during subsequent
 19 Biennial Planning Cycles.

20

1 Local Transmission Projects

2 The NorthernGrid members have projected the need for new and upgraded transmission system
 3 projects in the local transmission planning processes. These projects primarily support local load service
 4 and reliability and have not been deemed to be regionally significant. Projects that have been deemed
 5 to be regionally significant are listed in Appendix B: Projects Assessed in 2024-2025 Cycle.

6 Loads Summary

7 *Table 1: NorthernGrid Loads*

	NG Study Cycle 2022-2023 (MW)	NG Study Cycle 2024-2025 (MW)	%Increase
Jan	49,264	55,235	12%
Feb	47,454	53,645	13%
Mar	44,994	49,991	11%
Apr	42,608	48,057	13%
May	44,277	48,463	9%
Jun	51,652	59,093	14%
Jul	54,887	61,867	13%
Aug	53,900	61,244	14%
Sep	47,818	54,490	14%
Oct	43,769	49,474	13%
Nov	45,409	52,558	16%
Dec	49,564	55,787	13%

8 Table 1: NorthernGrid Loads represents the cumulative non-coincident peak load for each of the
 9 utilities that make up the NorthernGrid footprint. Overall, the NorthernGrid footprint load for 2034 is
 10 expected to be approximately 13% higher than the updated load prediction for 2032. The peak loading
 11 condition for NorthernGrid occurs in the summer which is consistent with the 2022-2023 cycle.

12

1 Resources Summary 2024-2034

 2 There are approximately 72 GW of resources being developed within the NorthernGrid region along
 3 with approximately 2.5 GW of resources being retired.

 4 All future resources are based on member resource planning processes. The Enrolled Parties determine
 5 resource additions through the development of their Loads and Resources needed for base case
 6 development. In some instances, the Integrated Resource Planning (IRP) requirements needed to meet
 7 state mandate may inform the development of the Loads and Resources data. Many of the resource
 8 additions presented are based on the existing IRP preferred portfolio which may change during
 9 subsequent biennial planning cycles. Members may include conceptual resource additions beyond what
 10 is included in their Loads and Resources submittal to more closely align resource needs with goals set
 11 forth by public policy requirements.

 12 *Table 2: Generation Changes for the NorthernGrid Footprint*

Fuel Type	Addition (MW)	Retirement (MW)
Battery Storage	20,632	
Biodiesel	711	
Blast Furnace Gas	118	
Coal	99	2,116
Geothermal	123	70
Landfill Gas		15
Natural Gas	4,083	118
Non-Emitting	1,214	
Nuclear	1,997	
Pumped Storage	853	
Solar	22,259	126
Solid Waste	5	
Water	1,006	17
Wind	18,999	149
Grand Total	72,099	2,611

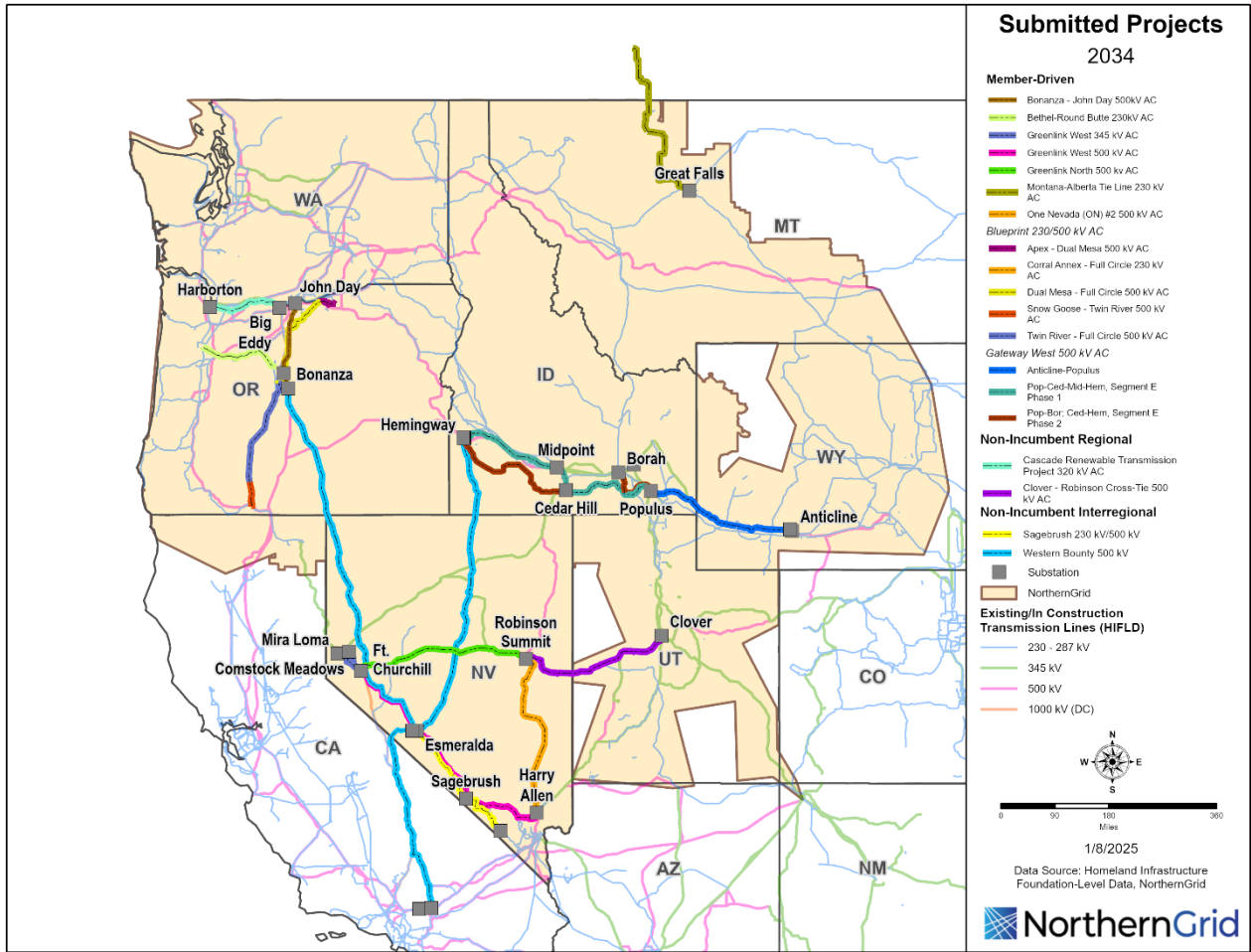
13

14

 15 **Transmission Service Obligations**

 16 Like loads, resources, and public policy, transmission service obligations may drive transmission
 17 development. The NorthernGrid members are encouraged to submit all transmission service data that is
 18 used in the development of their local transmission plan so that it may be considered during the
 19 development of the Regional Transmission Plan. No regionally significant transmission service
 20 arrangements were submitted for consideration into the 2024-2025 Study Plan.

- 1 Regional and Interregional Transmission Projects
- 2 Enrolled Parties as well as Developers submitted the regional projects depicted below.



3
4 *Figure 4: Submitted Regional and Interregional Transmission Projects*

5
6
7
8
9
10
11

1 Member-Driven Transmission Projects

2 The projects submitted by the Enrolled Parties are as follows:

3 Gateway West- A suite of seven project segments will be evaluated for Gateway West. These are:

- 4 Populus – Cedar Hill 500 kV
- 5 Cedar Hill – Hemingway 500 kV
- 6 Populus – Borah 500 kV
- 7 Borah – Midpoint 500 kV
- 8 Midpoint – Hemingway #2 500 kV
- 9 Midpoint – Cedar Hill 500 kV
- 10 Anticline – Populus 500 kV

11

12 For analysis, the Gateway West segments west of Populus (Segments E) will be grouped into two
13 phases:

14 Gateway West Segment E Phase 1: Populus – Cedar Hill 500 kV, Cedar Hill – Midpoint 500 kV,
15 and Midpoint – Hemingway #2 500 kV

16 Gateway West Segment E Phase 2: Populus – Borah 500 kV, Borah – Midpoint 500 kV, and Cedar
17 Hill – Hemingway 500 kV

18

19 Gateway Central – Limber Area (local transmission needs)

20 Addition of Limber 500 kV, 345 kV, & 138 kV substation

21 Limber – Terminal #1 and #2 345 kV lines

22 One Nevada #2- 500 kV #2 from Harry Allen to Robinson Summit. Also includes upgrades to the 345 kV
23 system.

24 Greenlink West and North projects.

25 MATL- MATL proposed a conversion of the MATL to direct current. The rating will increase to a
26 maximum of 500 MW.

27 Bonanza/John Day Bonanza- New 500 kV Bonanza substation with connection to the John Day 500 kV.

28 Blueprint 500 kV Projects- Construct approximately 170 miles of new 500 kV transmission between
29 Snow Goose substation near Klamath Falls, Oregon and the new Full Circle substation near Redmond,
30 Oregon. Construct approximately 150 miles of new 500 kV transmission between Full Circle substation
31 near Redmond, Oregon and Apex substation near Boardman, Oregon.

32 Bethel – Round Butte Rebuild and expand existing 98 mile Bethel – Round Butte 230 kV transmission line
33 to 500 kV, connecting the new Lambert substation near Salem, Oregon to the new Mountain View
34 substation near Madras, Oregon.

35 Non-Incumbent Transmission Projects

36 The NorthernGrid regional planning process allows non-incumbent and merchant transmission
37 developers to submit projects for analysis. Several non-incumbent or merchant transmission projects
38 were received during the submission period. They are further classified into regional and interregional

1 transmission projects based on whether the project terminals are within the region or interconnect
2 between regions, i.e. interregional.

3 Cascade Renewable Transmission System- PowerBridge is proposing to construct the Cascade
4 Renewable Transmission System Project. This Project is a 100-mile, 1,100 MW transfer capacity +/- 400
5 kV HVDC underground cable (95 percent installed underwater) interconnecting with the grid through
6 two +/- 1100 MW AC/DC converter stations interconnecting with the AC grid at Big Eddy and Harborton
7 substations. There are no proposed generation resources associated with the transmission line.
8 PowerBridge is a Qualified Developer seeking Regional Cost Allocation.

9 Cross-Tie Transmission Project- TransCanyon LLC is proposing the Cross-Tie Project, a 1,500 MW, 500 kV
10 single circuit HVAC transmission project that will be constructed between central Utah and east-central
11 Nevada. The project connects PacifiCorp's planned 500-kV Clover substation with NV Energy's existing
12 500 kV Robinson Summit substation; both substations reside in the NorthernGrid footprint.
13 TransCanyon is a Qualified Developer seeking Regional Cost Allocation.

14

15 Western Bounty Project- ENGIE North America is proposing the Western Bounty Transmission System
16 project, which is an interregional, +/- 525 kV HVDC transmission system that would enable 12 gigawatts
17 of transmission capacity between the central 'hub' in Nevada and the project's 4 termination points:
18 SCE's Lugo-Vincent 500 kV line and LADWP's Adelanto Substation in California, BPA's Grizzly Substation
19 in Oregon, and Idaho Power's Hemingway Substation in Idaho. ENGIE North America is not seeking
20 Interregional Cost Allocation.

21 SageBrush Project- GridLiance is proposing an interregional project with upgrades in the southern
22 portion of Nevada between Nevada and California. GridLiance is not seeking Interregional Cost
23 Allocation.

24 [Alternative Projects](#)

25 The Enrolled Parties Planning Committee did not identify any Alternative Projects: no Alternative
26 Projects were carried over from the 2022-2023 cycle and no new Alternative Projects were submitted at
27 the beginning of the 2024-2025 planning cycle.

28

29

30

31

32

1 Public Policy Requirements Summary

2 Approach

3 NorthernGrid evaluated regional transmission needs driven by Public Policy Requirements by first
4 identifying a list of enacted public policies that impact resource and local transmission plans in the
5 NorthernGrid planning region. This data was procured through the NorthernGrid data submission
6 process and polling of members to inquire about enacted policies that are driving their regional
7 transmission needs. NorthernGrid identified enacted public policies in the states within the
8 NorthernGrid region.

9 Key Assumptions

- 10 • Enacted policies include local, state, and federal policies for the NorthernGrid member service
11 area.
- 12 • Analysis focuses on enacted policies (through 2034) that address the type of energy portfolio to
13 be delivered.
- 14 • Non-enacted policies are not included in the analysis.
- 15 • Policies pertaining to energy purchases or corporate goals are not included.
- 16 • WECC will provide an initial production cost model, but it is the responsibility of the
17 NorthernGrid members to verify.
- 18 • Each member's IRP process incorporates public policy and the NorthernGrid members evaluate
19 their IRP to determine the data that is submitted.

20 Key Observations

- 21 • There are enacted public policies in six of the eight states, including the Renewable Portfolio
22 Standards (RPS) that exist in Washington, California, Oregon, Montana, Nevada, and Utah.
- 23 • There are no identified public policy requirements that are driving regional transmission needs
24 in Wyoming and Idaho.

25 Case Analysis

26 Methodology and Assumptions Overview

27 This methodology defines the analysis objectives, conditions (NorthernGrid transmission system
28 path stressing, power flow direction, imports/exports) necessary to assess the ability of the
29 transmission system to support the 2034 loads and resource, types of analysis, performance
30 criteria, paths to monitor, case checking and tuning (reactive devices, phase shifting
31 transformers) and contingencies. This process is designed to meet Order 890 and 1000 planning
32 requirements and is not intended to evaluate market efficiencies.

1 Analysis Objectives

2 The NorthernGrid Regional Transmission Plan will assess the existing transmission system and
 3 committed projects against combinations of planned and proposed transmission projects to
 4 compare their ability to reliably serve the forecasted 2034 load and generation dispatch
 5 conditions.
 6

7 Performance Criteria

8 The power flow simulations will be monitored for compliance with the North American
 9 Electric Reliability Corporation (NERC) Reliability Standard TPL-001-5.1 and WECC Criterion TPL-001-
 10 WECC-CRT-4 and TOP specific standards. The reliability standard requires transmission facilities to
 11 operate within normal and emergency limits. The criterion further defines the default base planning
 12 criteria for steady-state, post-contingency, dip, and recovery voltage along with oscillation dampening.
 13 The WECC criteria also allow for transmission planners to apply a more or less stringent criterion for
 14 their own system provided they gain agreement or allowance, respectively.

15 Base Case Conditions

16 The following conditions have been identified as being of the most interest to the NorthernGrid
 17 footprint:

18	1. Heavy system loading, lower renewable generation output	1/2/34, 22:00
19	2. North to South, East to West interface flows	9/5/34, 18:00
20	3. Low Hydro/End of Summer conditions	8/11/34, 17:00
21	4. East to West interface flows	11/16/34, 15:00
22	5. West to East interface flows	8/21/34, 07:00
23	6. South to North interface flows	3/9/34, 21:00
24	7. Summer peak loading condition	7/9/34, 14:00
25	8. Winter peak loading condition	12/6/34, 10:00
26	9. West of Cascades, North	6/18/34, 16:00

27 Evaluation of Regional Transmission Project Combinations

28 To determine whether transmission needs within the NorthernGrid may be satisfied by regional
 29 transmission projects, NorthernGrid evaluates the proposed regional and interregional (if any)
 30 transmission projects independently and in regional combinations. The regional combinations are
 31 determined by the MPC based on their knowledge of the NorthernGrid Region. The regional
 32 combinations are shown in Appendix C: Full list of the Regional Combinations.
 33
 34
 35

1 Impacts on Neighboring Regions

2 As stated above, the power flow cases represent the entire western interconnection. Therefore, during
3 the power flow analysis NorthernGrid will monitor for NERC standard and WECC criterion violations
4 occurring in the neighboring regions. Upon identification of a violation in a neighboring region,
5 NorthernGrid will coordinate with the region to confirm validity and whether the violation is due to an
6 existing condition. Mitigation plans for a violation will be determined in accordance with the
7 NorthernGrid Member tariffs and planning agreement.

8 Cost Allocation

9 Introduction

10 Regional project cost allocation is one of the FERC Order 1000 transmission planning reforms. The
11 NorthernGrid FERC jurisdictional entities, the Enrolled Parties, describe the requirements for a project in
12 their OATT Attachment K. The process begins with the sponsor/developer becoming qualified. The
13 following developers submitted information and were determined to be qualified.

14 Qualified Developers

15 PowerBridge submitted developer qualification information which was reviewed by the Cost Allocation
16 Task Force (CATF) resulting in the approval of PowerBridge as a Qualified Developer for this planning
17 cycle. PowerBridge submitted the Cascade Renewable Transmission System project.

18 TransCanyon submitted developer qualification information which was reviewed by the CATF resulting
19 in the approval of TransCanyon as a Qualified Developer for this planning cycle. TransCanyon submitted
20 the Cross-Tie project.

21 Benefits and Beneficiary Analysis

22 If the Sponsored Project is selected into the plan as meeting Enrolled Party or Parties need, the project
23 benefits and beneficiaries will be determined. The cost allocation metrics and analysis process is
24 described in each Enrolled Party's OATT Attachment K – Regional Planning Process.

1 Appendix A: Generation Changes

2 *Table 3: Generation Additions and Retirements by Utility*

NorthernGrid Entity	Addition (MW)	Retirement (MW)
BPAT	404	
IPCO	4,888	842
NEVP	8,222	1,073
NWMT	2,679	
PACE	34,100	326
PACW	11,586	
PGN	2,705	
PSEI	6,558	370
SCL	932	
SNPD	25	
Grand Total	72,099	2,611

3
4
5
6
7
8
9
10
11

1 Appendix B: Projects Assessed in 2024-2025 Cycle

Owner	Project Name
IPCO	Gateway West Segment E Phase 1: Cedar Hill – Midpoint 500 kV
IPCO	Gateway West Segment E Phase 1: Midpoint – Hemingway #2 500 kV
IPCO	Gateway West Segment E Phase 2: Populus – Borah 500 kV
IPCO	Gateway West Segment E Phase 2: Borah – Midpoint 500 kV
IPCO	Gateway West Segment E Phase 2: Cedar Hill – Hemingway 500 kV
NEVP	Harry Allen - Northwest #2 400-599 kV (portion of Greenlink West)
NEVP	Harry Allen / Eldorado 400-599 kV #1 (SNIP)
NEVP	Northwest - Ft. Churchill 500 kV (Greenlink West)
NEVP	Ft. Churchill - Mira Loma 345 kV
NEVP	Ft. Churchill - Comstock Meadows 345 kV
NEVP	Ft. Churchill - Robinson Summit 525 kV (Greenlink North)
NEVP	Harry Allen - Robinson Summit 525 kV #2 (ON line #2)
NEVP	Robinson Summit - Clover 525 kV (Cross-Tie)
NEVP	Shaffer Substation
NEVP	Tracy E - Lantern
NEVP	Lantern - Valmy
NEVP	Fort Churchill - Captain Jack (Greenlink 3)
NEVP	Lantern – Comstock Meadows 345 kV line
NEVP	Ft. Churchill to Comstock Meadows 345 kV #1 (Second 345 kV line)
PACE	Gateway West Segment E Phase 1: Populus – Cedar Hill 500 kV
PACE	Gateway West: Anticline – Populus 500 kV
PACW	Apex to B2H Switching Station 500 kV Line (Apex to Maverick)
PACW	Snow Goose-Full Circle 500 kV Line (Blueprint South)
PACW	Full Circle-Apex 500 kV Line (Blueprint North)

2

3

4

1 Appendix C: Full list of the Regional Combinations

Regional Combination	All Greenlink Projects	MATL	One Nevada #2	Gateway West, Anticline-Populus	Gateway West, Populus-Cedar Hill-Midpoint-Hemingway	Gateway West, Populus-Borah-Midpoint, Cedar Hill-Hemingway	Cascade Renewable Transmission System	Clover-Robinson (Cross-Tie)	Sagebrush (Interregional)	Western BOUNTY (Interregional)	Blueprint	Bonanza/John Day to Bonanza	Bethel Round Butte (Lambert Mountain View)
1													
2	x	x	x	x	x	x					x	x	x
3	x	x	x	x	x	x	x	x			x	x	x
4	x	x	x	x	x	x	x	x	x	x	x	x	x
5							x						
6								x					
7	x		x					x					
8	x		x					x	x	x			
9	x		x										
10	x												
11	x							x					
12				x	x								
13				x	x	x							
14				x									
15				x	x	x				x			
16	x		x	x	x	x							
17	x	x	x	x	x	x		x					
18	x	x	x	x	x	x	x						x
19								x					
20	x	x	x	x	x	x					x		
21	x	x	x	x	x	x						x	
22	x	x	x	x	x	x							x

2
3
4
5
6
7

1 Appendix D: Resource changes by State

2

	Fuel Type	ID	MT	NV	OR	UT	WA	WY	Grand Total
Addition	Battery Storage	4,012	303	3,208	3,438	3,710	2,921	3,041	20,632
	Biodiesel						711		711
	Blast Furnace Gas			118					118
	Coal							99	99
	Geothermal	30		93					123
	Natural Gas		293	705		858		2,227	4,083
	Non-Emitting							1,214	1,214
	Nuclear	462				690		845	1,997
	Pumped Storage		653		200				853
	Solar	4,225	425	3,243	2,763	7,980	2,349	1,274	22,259
	Solid Waste			5					5
	Water			1,000	6				1,006
	Wind	1,115	2,491		3,687		2,770	8,935	18,999
Retirement	Coal		370	712				1,034	2,116
	Geothermal			70					70
	Landfill Gas			15					15
	Natural Gas			118					118
	Solar			126					126
	Water			13					13
	Wind			149					149

3