WECC Update

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System Adequacy Department

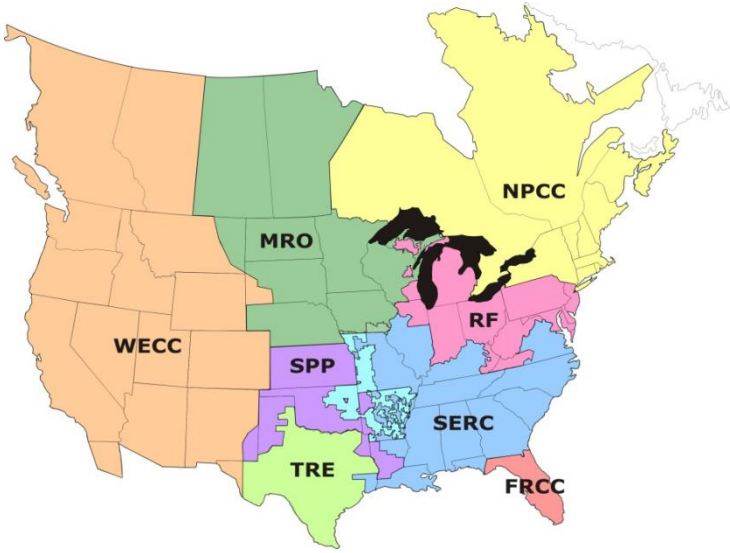
Overview

- WECC Functions
- 2015 Transmission Report
  - Study Findings
  - Recommendation
- 2026 Common Case Dataset
  - Results
  - Continuing work
- Questions & Answers

WECC Functions

- **What we do:**
  - Compliance Monitoring and Enforcement
  - Standards Development
  - **Reliability Planning and Performance Analysis**

WECC's mission is to promote and foster a reliable and efficient bulk electric system



System Adequacy Planning (SAP)

- Transmission Expansion Planning department merge with WECC Loads and Resources
- Objectives
  - Oversee and maintain public planning databases and models
  - Facilitate and coordinate Interconnection-wide planning processes
  - Prepare Interconnection-wide Transmission Reports
  - Produce reliability assessments for WECCs fleet of resources

Analysis in SAP

What Reliability Challenges Might WECC Face?

Near Term

- Resource Adequacy
- Stability
- Cascading Outages

Long Term

- Congestion
- Transmission Expansion
- Flexibility

2015 Transmission Report

- Analytical program for 2014-2015 designed to identify potential risks to reliability as well as opportunities for reliability improvement.
- The 2015 report describes and identifies overarching themes and recommendations based on multiple study results.
- 2015 Transmission Report

Study Results and Recommendations

Case	Expected Impacts relative to Common Case				
	Heaviest Path Utilization	Total Variable Production Cost	CO_2 Emissions	Dump Energy[1]	Proportion of Renewable Energy
PC2 Low Loads	↓	↓	↓	↓	↑
PC3 High Loads	↑	↑	↑	↑	↓
PC4 High Hydro	↑	↓	↓	Unknown	Unknown
PC5 Low Hydro	↓	↑	↑	Unknown	↓
PC6 High NG price	↑	↑	↑	↑	Unknown
PC7 Low NG price	↓	↓	↓	↓	Unknown
PC 10 High CO_2 $	↓	↑	↓	↓	Unknown
PC 11 Low CO_2 $	↓	↑	↓	Unknown	Unknown

Number of Hours At or Exceeding Metrics

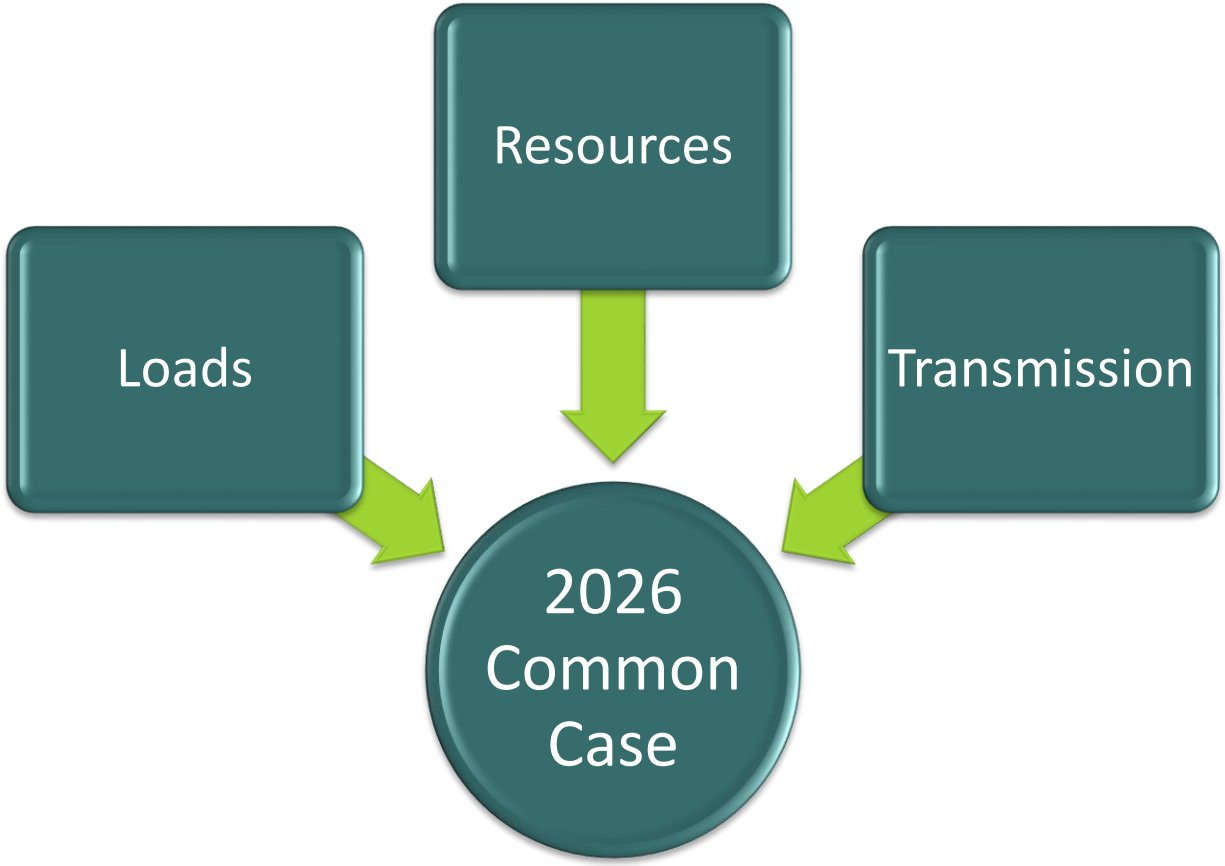
Path and Metrics[1]		PC1 – Common Case	PC2 – High Load	PC5 – Low Hydro	PC20 – Coal Retirement	PC22—High Renewables
P01 Alberta-British Columbia (E-to-W)	75%	66	1183	1064	368	1072
	90%	22	773	670	184	684
	99%	6	564	502	102	480
P18 Montana-Idaho (E-to-W)	75%	527	456	193	563	1778
	90%	231	171	73	206	794
	99%	131	74	23	89	424
P26 Northern-Southern CA (N-to-S)	75%	854	1707	306	923	1744
	90%	353	742	114	332	842
	99%	195	457	58	177	501
P31 TOT 2A (N-to-S)	75%	11	26	5	712	1320
	90%	0	15	1	296	838
	99%	0	13	1	155	583
P45 SDG&E-CFE (N-to-S)	75%	321	297	258	707	1780
	90%	204	185	121	477	1506
	99%	144	134	84	381	1349
P48 Northern NM (NW-to-SE)	75%	1246	1985	947	184	237
	90%	164	357	71	4	20
	99%	7	24	1	0	0
P52 Silver Pk-Control (W-to-E)	75%	2984	4126	4121	3010	2932
	90%	1948	2828	2764	2038	2055
	99%	0	0	0	0	0
P60 Inyo-Control (E-to-W)	75%	6103	6003	6789	3359	3248
	90%	4019	3754	4798	2181	1501
	99%	2725	40	3342	1624	803
P83 Montana Alberta Tie (N-to-S)	75%	1058	3681	739	1794	4245
	90%	361	2531	277	934	3285
	99%	156	1945	142	572	2722

Study Results and Recommendations

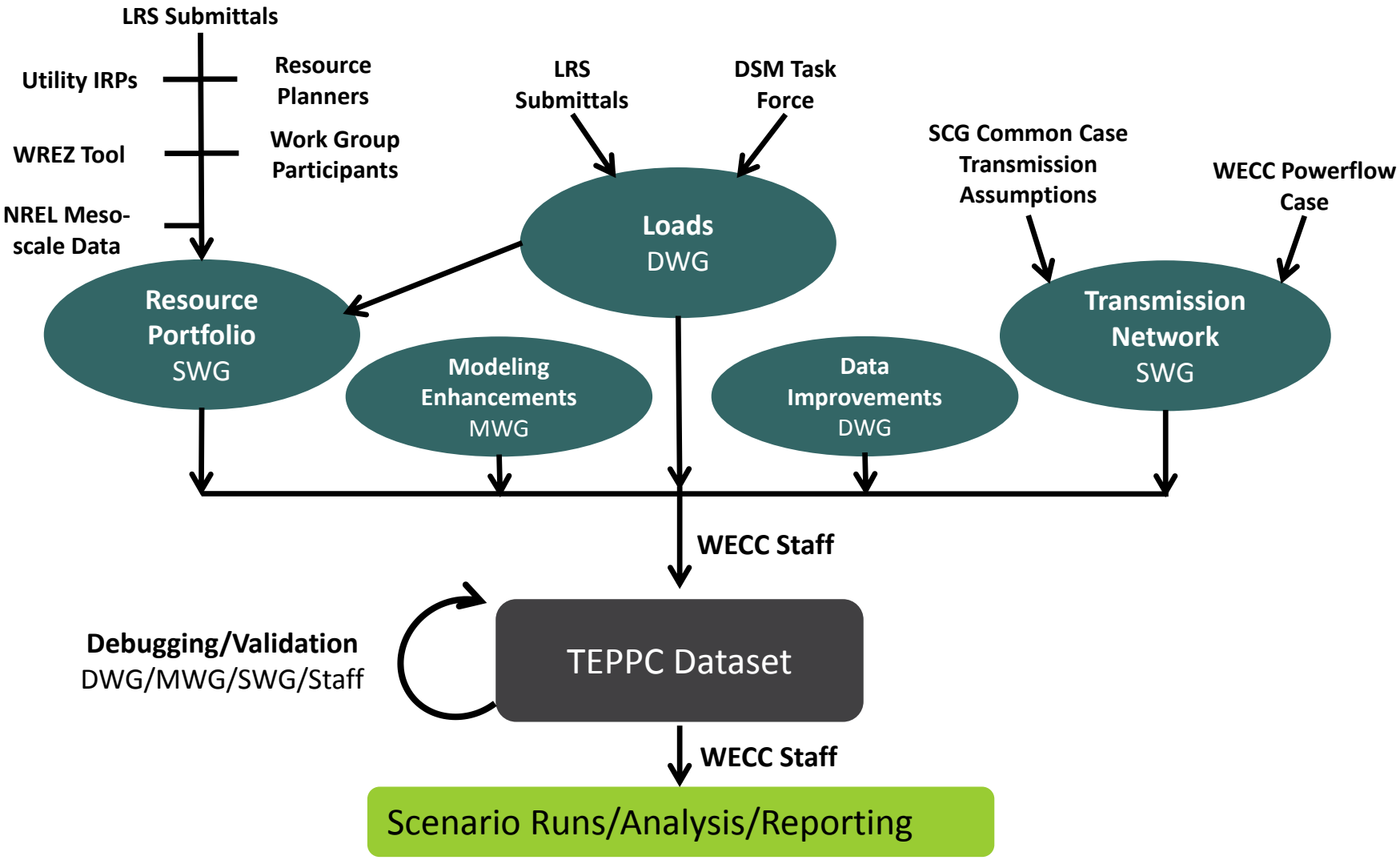
- Recommendations
  - Uncertainties in Planning
  - Expected Future Grid
  - Need for Greater Collaboration and Improved Base Case Review
  - Continue Investigation of Variable Resource Integration

2026 Common Case

2026 TEPPC Common Case – Major Assumptions



Dataset Building Activities



2026 Common Case Transmission Assumptions

2026 Common Case Transmission Assumptions (CCTA)

The purpose of the CCTA is to provide a basic set of facilities that TEPPC can use as a starting point for their own studies. The CCTA is a list of facilities that are expected to be in-service by 2026.

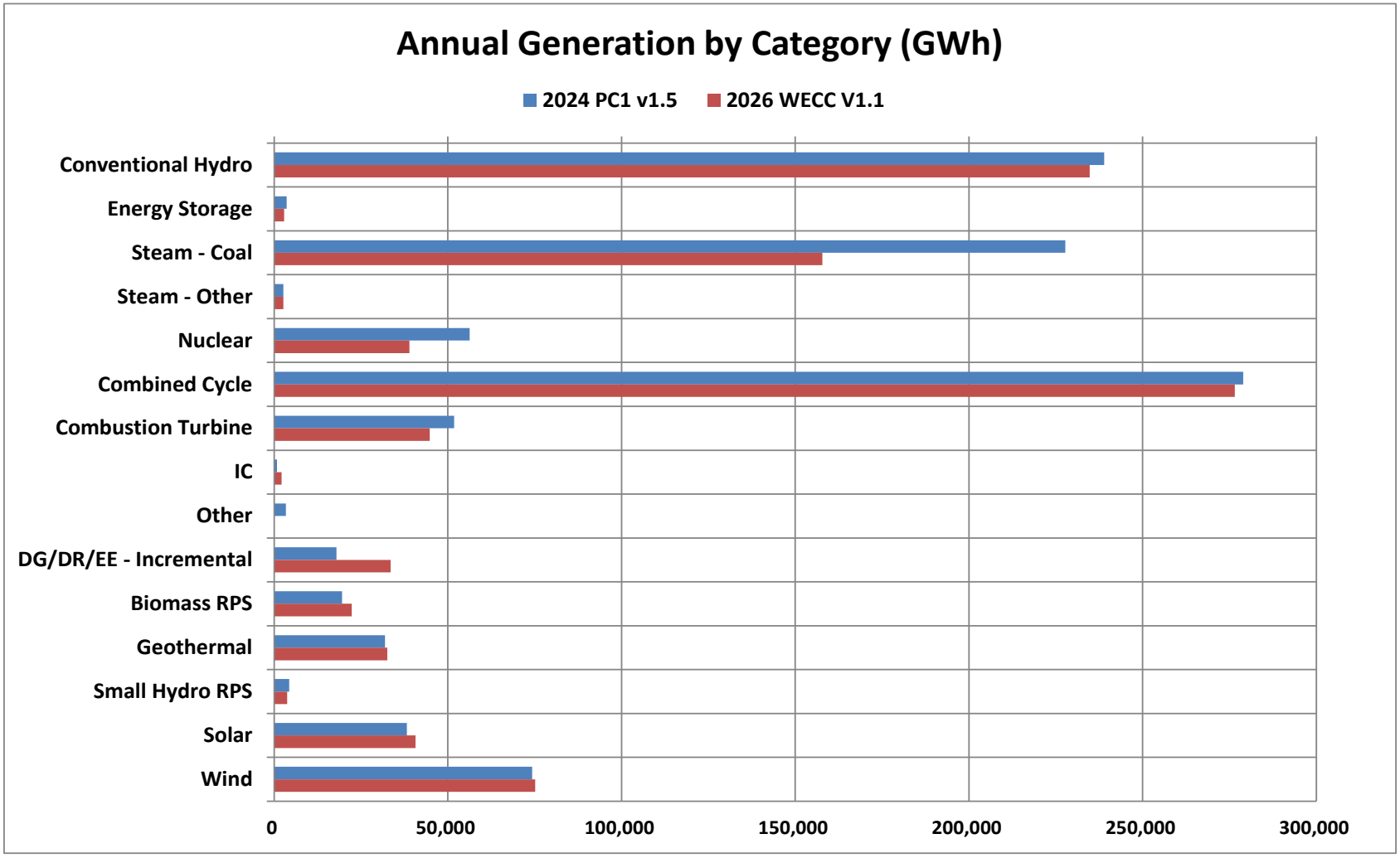
(1) Boardman – Hemingway (B2H) [500 kV]
(2) Delaney – Colorado River (Ten West Link)
(3) Delaney – Palo Verde [500 kV]
(4) Delaney – Sun Valley [500 kV]
(5) Energy Gateway: Wallula – McNary [230 kV]
(6) Energy Gateway South: Aeolus – Mona [500 kV]
(7) Energy Gateway West: Bridger – Populus [500 kV]
(8) Energy Gateway West: Windstar – Jim Bridger [230-500 kV]
(9) Energy Gateway West: Midpoint – Hemingway [500 kV]
(10) Energy Gateway West: Populus – Midpoint [500 kV]
(11) Energy Gateway West: Populus – Cedar Hill – Hemingway [500 kV]
(12) Harry Allen – Eldorado (Centennial II) [500kV]
(13) I-15 Corridor Reinforcement Project (Castle Rock – Troutdale)
(14) Morgan – Sun Valley [500 kV]
(15) Pawnee – Daniels Park
(16) West of McNary Reinforcement Project Group 2 (Big Eddy – Knight)

Blue text – Indicated "Under Construction"

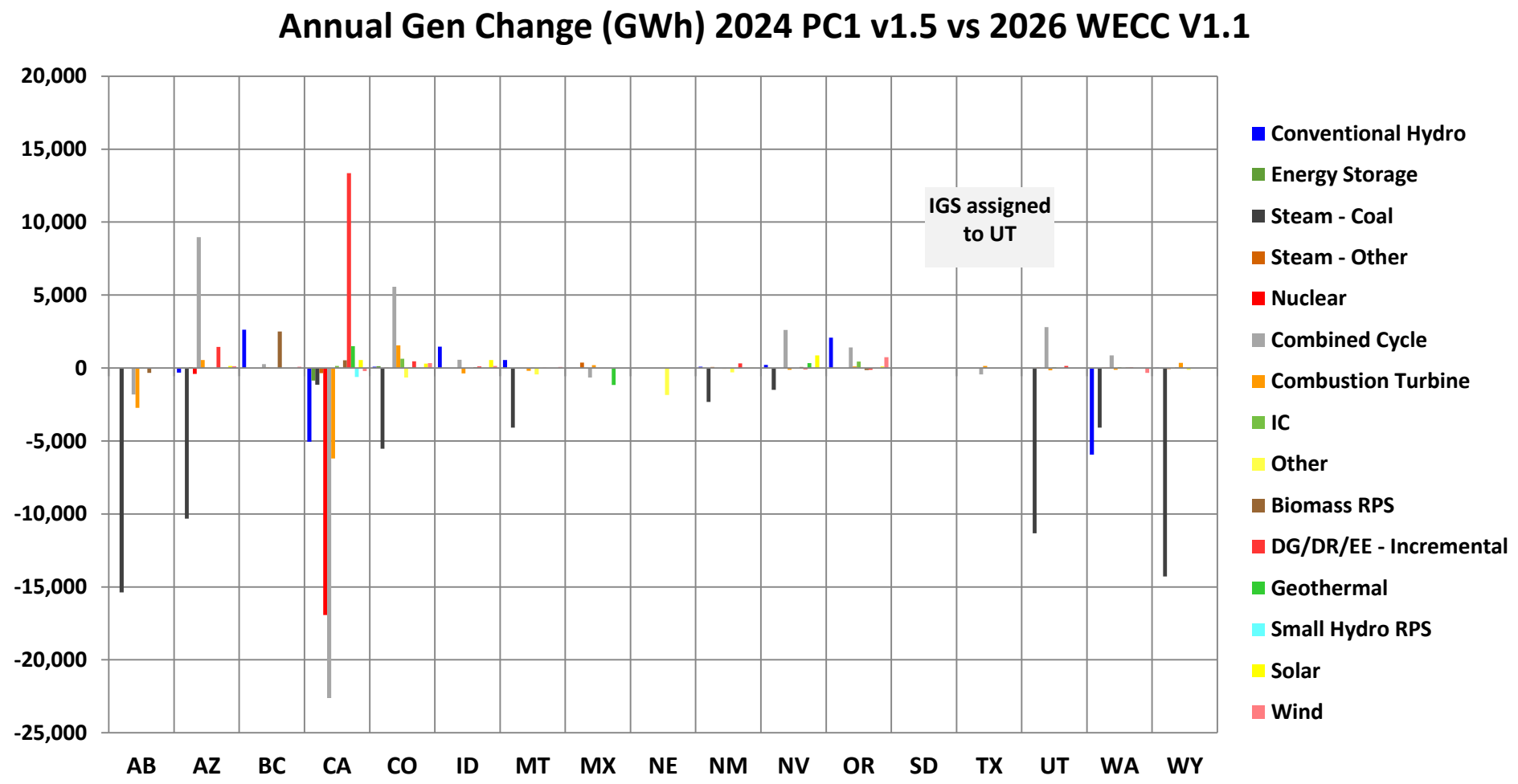
Regional Planning Coordination Group (RPCG)

CAISO – California Independent System
CTPG – California Transmission Planning Group
CG – Columbia Grid
CCPG – Colorado Coordinated Planning Group
NTTG – Northern Tier Transmission Group
SIERRA – Sierra Subregional Planning Group
SWAT – Southwestern Area Transmission
AESO – Alberta Electric System Operator
BCCPG – BC Coordinated Planning Group

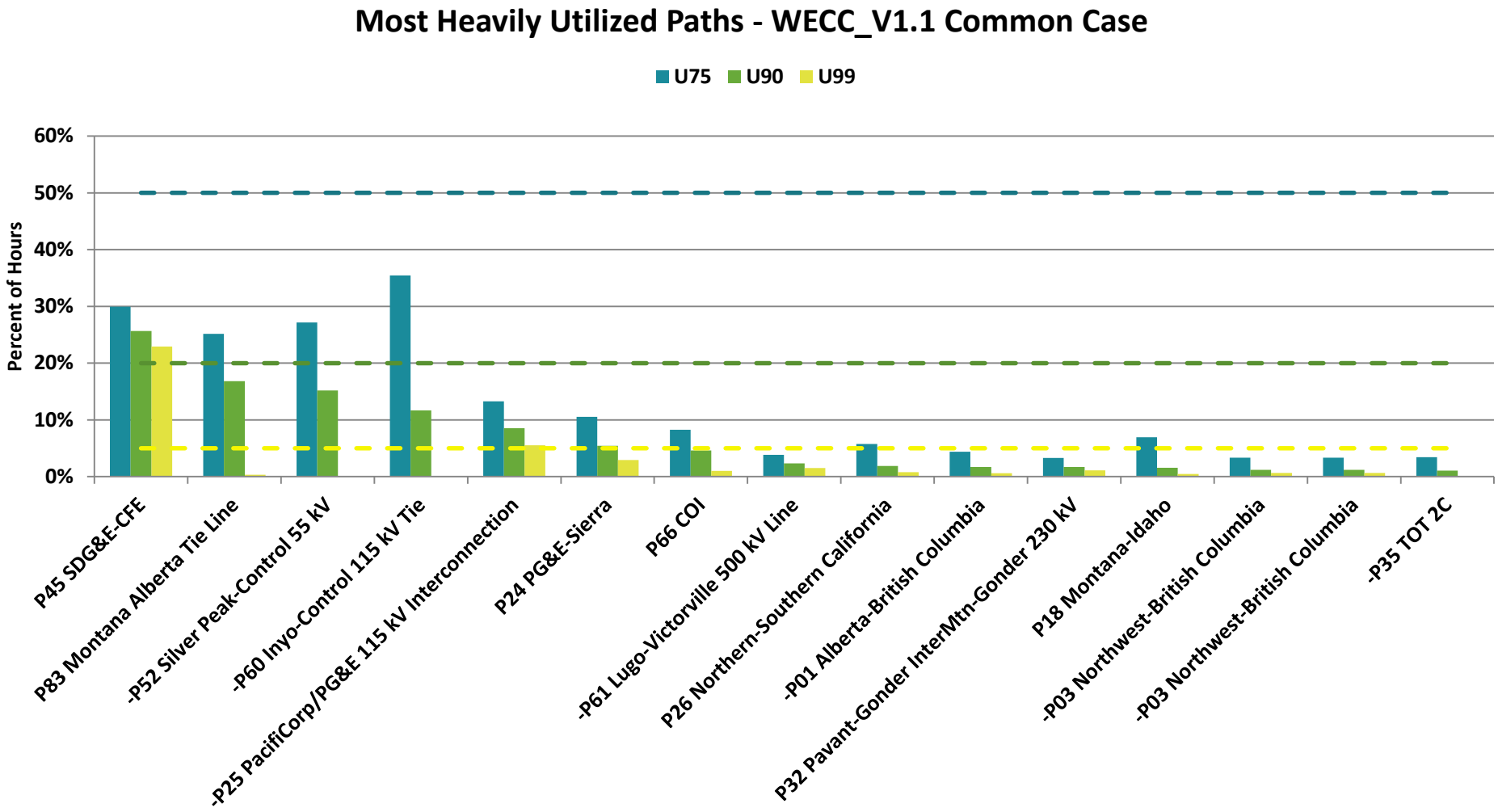
2026 Common Case Results



2026 Common Case Results

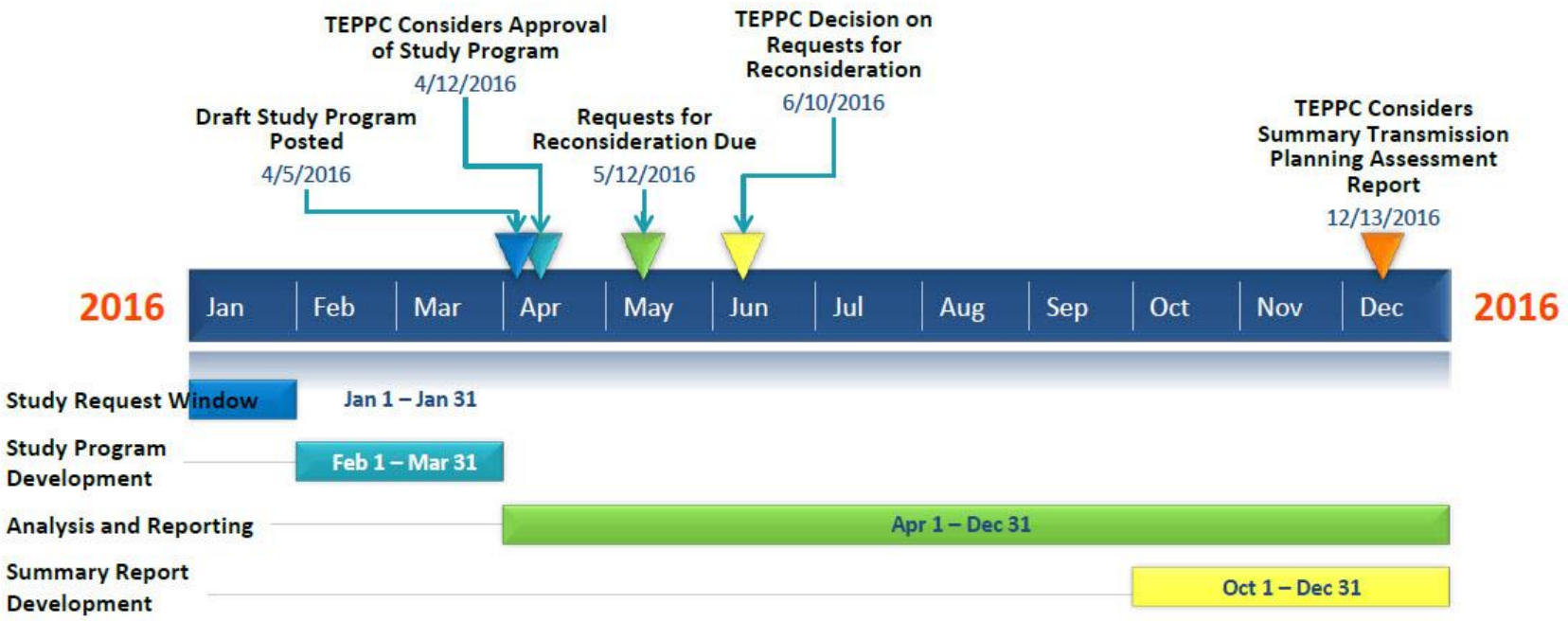


2026 Common Case Results



Continuing Work and Next Steps

- Continued work and stakeholder review of 2026 Common Case
- 2016 Study Program



Questions

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