Regional Transmission Expansion Planning (RTEP) Project
2013 Plan Outline

Western Electricity Coordinating Council
February 12, 2013
# Table of Contents

Glossary of Acronyms Used........................................................................................................ 3  
Plan Development Schedule ..................................................................................................... 3  
Introduction ............................................................................................................................... 4  
Philosophy behind the organization of the Plan........................................................................ 4  
Plan Sections .............................................................................................................................. 5  
  1. Background and Context – 50 pages.............................................................................. 5  
  2. Plan Summary – 100 pages .................................................................................................. 5  
  3. Data and Assumptions – 150 pages .................................................................................. 6  
  4. Tools and Models – 150 pages ........................................................................................ 6  
  5. 10-Year Study Report – 250 pages................................................................................. 6  
  6. 20-Year Study Report – 200 pages ................................................................................. 7  
  7. WECC Path Report – 250 pages ..................................................................................... 7  
  8. Appendices – 700+ pages ............................................................................................... 8  
Brochures (Printed materials)..................................................................................................... 8
Glossary of Acronyms Used

ATC: available transfer capacity
DSM: demand-side management
EDTF: Environmental Data Task Force
EE: energy efficiency
G&T: generation and transmission
LTPT: Long-term Planning Tool
NREL: National Renewable Energy Laboratory
PCM: production cost model
RPS: renewable portfolio standard
RTEP: Regional Transmission Expansion Planning
SME: subject matter expert
SPSG: Scenario Planning Steering Group
TAS: Technical Advisory Subcommittee
TEPPC: Transmission Expansion Planning Policy Committee
TSS: Technical Studies Subcommittee
VGS: Variable Generation Subcommittee
WECC: Western Electricity Coordinating Council
WGA: Western Governors’ Association

Plan Development Schedule
Introduction

The WECC 2013 Interconnection-wide Transmission Plan (Plan) is the product of TEPPC’s 2011 and 2012 Study Programs and other activities under WECC’s RTEP program.

The purpose of the 2013 Plan Outline is to convey the proposed organization of the Plan, describe key Plan inclusions, and to identify which stakeholder group (e.g., SPSG, TAS, and TEPPC) is the primary review and approval body for the first draft. Importantly, the WECC Board approves the final Plan in its entirety based on a recommendation from TEPPC.

Each numbered section of this document gives a brief description of each segment of the Plan and includes who the primary author and review group is for that segment. Each numbered section also contains an outline of major inclusions and the associated primary review group.

Philosophy behind the organization of the Plan

The organization of the 2013 Plan leverages both the best practices and lessons learned from previous TEPPC and other's documents. This approach creates product consistency over time and assures the Plan has leveraged the learning model under which TEPPC operates.

The Plan is voluminous. There will be over 1300 pages of WECC-authored material, plus over 700 pages of appendices covering the numerous technical topics that have contributed to the Plan development. This fact, coupled with the breadth of the Plan’s audience, necessitates that the information in the Plan be separated into major sections. This enables audience segmentation and electronic files that can be downloaded and viewed reasonably.

The Plan will be published electronically in the sections described below. In addition, there will be a number of printed publications targeted at specific audiences.
Plan Sections

1. Background and Context – 50 pages

The Background and Context section of the Plan is designed to give readers at all levels an understanding as to why the Plan is created, its value propositions, and the structure by which it is created. It sets the tone for the rest of the document and will heavily leverage past documents authored under the RTEP program.

This section will be authored primarily by WECC staff with assistance from ad-hoc volunteers. TEPPC will serve as the primary review group.

- Why do we plan?
  - Discussion of planning drivers and outcomes
  - What is “Interconnection-wide” planning?
  - Factors that impact transmission planning
  - Understanding risk
- Planning process description
  - Planning protocol
  - Considerations in the planning process (e.g., reliability, public policy, environmental, water)
- Stakeholder foundation of transmission planning at WECC
  - Organizational structure and description
  - Commitment to stakeholder engagement
  - Decision making through stakeholder collaboration
- Structure of the 2013 Plan
  - Approach
  - Discussion of the various sections (e.g., target audience, intended uses)
  - What does success look like?
  - Plan development timeline
- Plan implementation
  - What are the next steps in implementing the Plan?

2. Plan Summary – 100 pages

The Plan Summary section is designed to provide a synopsis of WECC’s message to the Western Interconnection. It is written to be understood by audiences that are familiar with the electric power industry and written with sufficient detail that further reading is not necessary for most audiences.

This section will be authored primarily by WECC staff and various workgroups. The primary review groups are TAS, SPSG, or TEPPC, depending on the subject matter.

- Observations and recommendations
  - General
  - 10-Year
  - 20-Year
  - Follow-up actions
• 10-year outlook
  o 2022 Common Case
  o Alternatives (i.e., amalgamation of other study cases)
  o Discussion of uncertainty
• 20-year outlook
  o 2032 Reference Case
  o Scenarios (i.e., short version of the scenario planning report)
  o Other cases
  o Discussion of energy futures
• Summaries of other sections as necessary to ensure appropriate background and context (see above, Section 1)

3. Data and Assumptions – 150 pages

This section is a detailed explanation of the sources of data and assumptions used in the Plan. The purpose is to describe the pedigree of information used in the Plan analyses. In addition to presenting a foundation for credibility, this section provides others who wish to use this data in their work with the information necessary to defend its use.

This section will be authored primarily by WECC staff, contractors, and various workgroups. The primary review group is the workgroup who had front-line input on the subject matter.

• Discussion of data and assumption sources
  o Load (e.g., growth projections, EE, DSM)
  o Generation (e.g., Common Case assumptions, new generation)
  o Transmission (e.g., Common Case assumptions, new projects)
  o Policy (e.g., RPS, CO2)
  o Costs (e.g., commodity costs, G&T capital costs)
  o Reliability (e.g., reserve margins, path limits)
  o Environmental (e.g., environmental risk factors, water availability)

4. Tools and Models – 150 pages

The purpose of this section is to describe the various tools and models used in the Plan analyses. In addition to providing readers with the details on how data is turned into results, this section also creates the technical justification for others’ use of these tools and models.

This section will be authored primarily by WECC staff. The primary review group is TAS.

• PCM
  o 2022
  o 2010
• LTPT
• Capital cost calculator
• Power flow and dynamic models

5. 10-Year Study Report – 250 pages

The 10-Year Study Report contains the detailed study report for each study conducted in the 2011 and 2012 TEPPC Study Programs. The section is designed for SMEs looking for specifics
on a particular study case. This section is used to fulfill the obligations to study requestors as described in the TEPPC Planning Protocol.

This section will be authored primarily by WECC staff and various workgroups. The primary review group is TAS.

- Discussion of 2011 and 2012 TEPPC Study Programs
- Discussion of the process used to process the study cases
- Study case discussions
  - Overarching themes and conclusions
  - 2022 Common Case
  - Stakeholder study requests
- Discussion of reliability impacts
  - Reliability review
  - Interconnection issues
- Operational issues
  - Integration


The 20-Year Study Report contains the detailed study report for the long-term planning scenarios and other studies completed as part of the 2012 TEPPC Study Program. The section is designed for those interested in further detail on the 20-year studies. Importantly and in contrast to the 10-Year Study Report, the expected audience is broader. Thus, the language will be crafted to be understood not only by SMEs but also by those familiar to the subject matter.

This section will be authored primarily by WECC staff and various workgroups. The primary review groups are the SPSG and TAS.

- Discussion of 2011 and 2012 TEPPC Study Programs
- Scenario planning report
- Discussion of the process used to process the scenarios and study cases
  - Scenario metrics
- Study case discussions
  - Overarching themes and conclusions
  - Scenario study results
  - Environmentally-preferred corridors for identified transmission expansion (i.e., line bending)
  - Other 20-year study results

7. **WECC Path Reports – 250 pages**

The WECC Path Reports are designed to provide a summary of Plan results for major paths. In addition, this section contains the regular update of the historical path utilization that was previously released separately.

- Path descriptions and current events for 25 paths
- Historical path flows, schedules, and ATC
- Summary of 10-year observations
8. Appendices – 700+ pages

The appendices are documents written by others or under WECC contract that have been used as technical support for the Plan. These have been completed and are not subject to further review.

- Cost of cycling report (NREL, Intertech-Aptech)
- Recommendations for Minimizing Environmental Risks of Transmission (WECC EDTF, ICF)
- Capital cost report – generation and transmission (E3 and Black & Veatch)
- WGA water report (WGA and Sandia National Laboratory)
- Demand-side resource report (Lawrence Berkeley Laboratory)
- Reliability analysis report (WECC TSS)
- Integration of Variable Generation report (WECC VGS)

Brochures (Printed materials)

As in 2011, a number of printed publications based on the 2013 Plan will be produced. Each is designed for the specific purpose of reaching out to various stakeholder groups with key information about the 2013 Plan. These documents are approved by management through the Communications and External Affairs department.

- Executive Summary
- Plan Summary
- Planning for Policy Makers