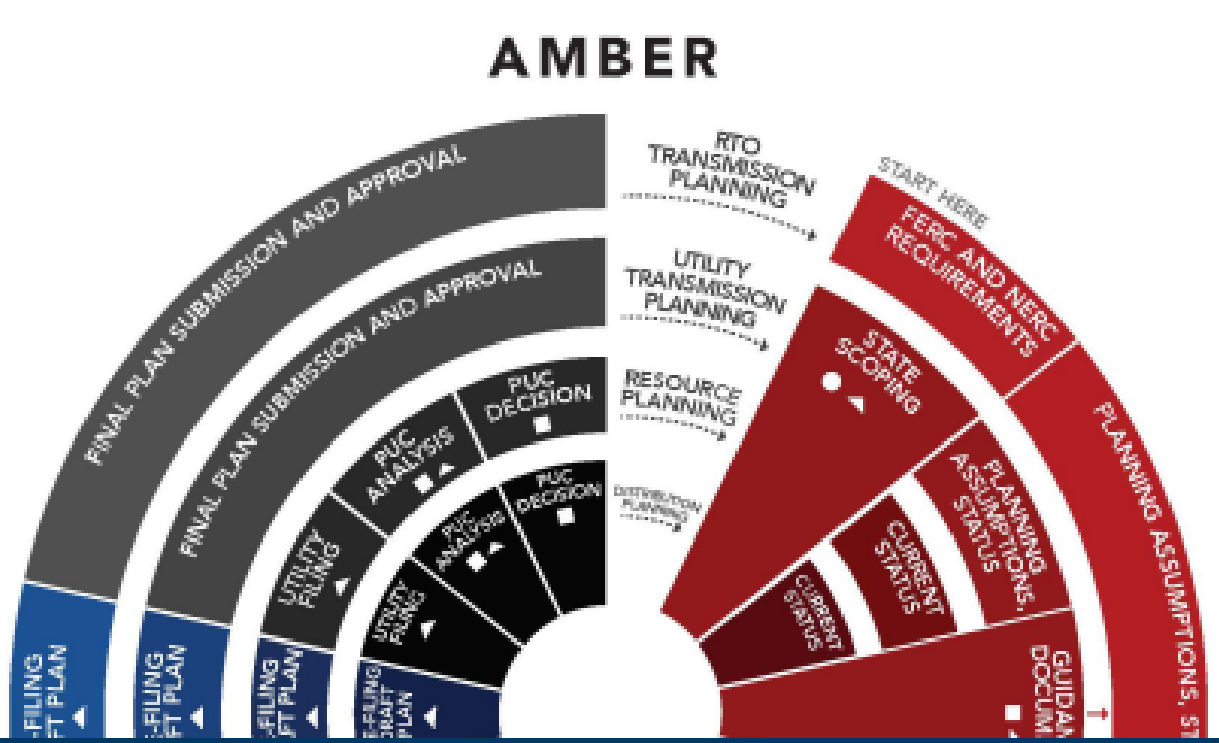
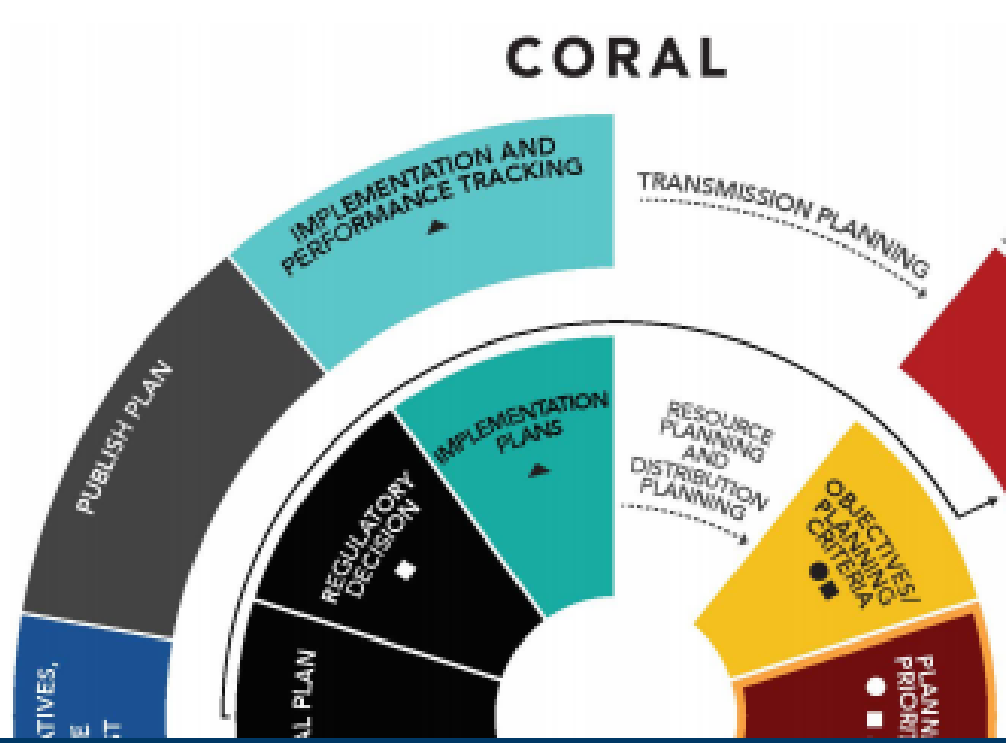




NARUC-NASEO Comprehensive Electricity Planning (CEP) Overview and Minnesota Actions

MINNESOTA
PUBLIC UTILITIES COMMISSION

Agenda

Time	Topic	
9:45	Introduction	Cmmr. Schuerger
9:50	Orientation to Effort	DeBleeckere
9:55	NARUC-NASEO Comprehensive Task Force Overview	NARUC-NASEO
10:15	Minnesota Experience and Task Force Results - Current Efforts and Activities - Amber Cohort Product and Outcomes	Rosier/DeBleeckere
10:30	Insights from Minnesota Stakeholders Participating in the Effort - Greg Ridderbusch, Connexus (SME) - Zac Ruzycki, Great River Energy (SME) - Doug Scott, Great Plains Institute (Facilitator) - Curt Volkmann, President, New Energy Advisors (SME)	
10:50	Q and A with NARUC/NASEO and Panelists	Commissioners
11:10	Conclusion and Wrap-Up	Rosier/DeBleeckere

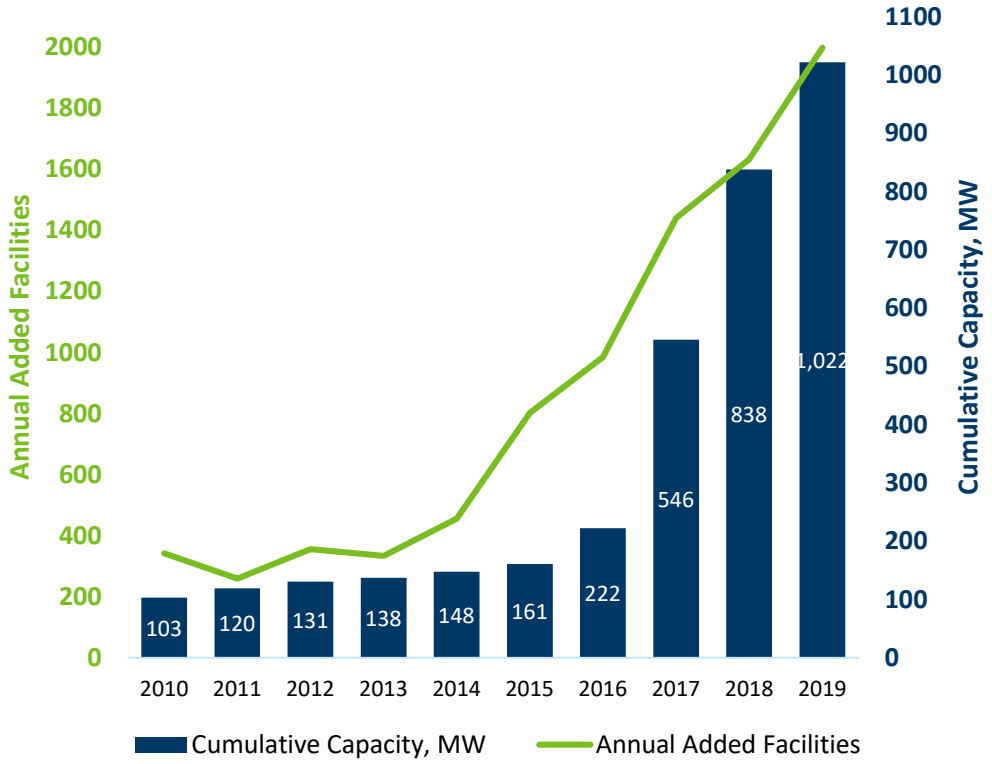
2

Minnesota and Integrated Planning Today

"**As energy production and consumption changes, we want the region to be in the best possible position to power our communities and have the energy resources to attract new businesses**," added Walz. "**Without a robust regional transmission plan, the region is at risk of being left in the dark**."

[10-15-2020 Governor Walz Appointed Chair of Midwestern Governors Association (mn.gov)]

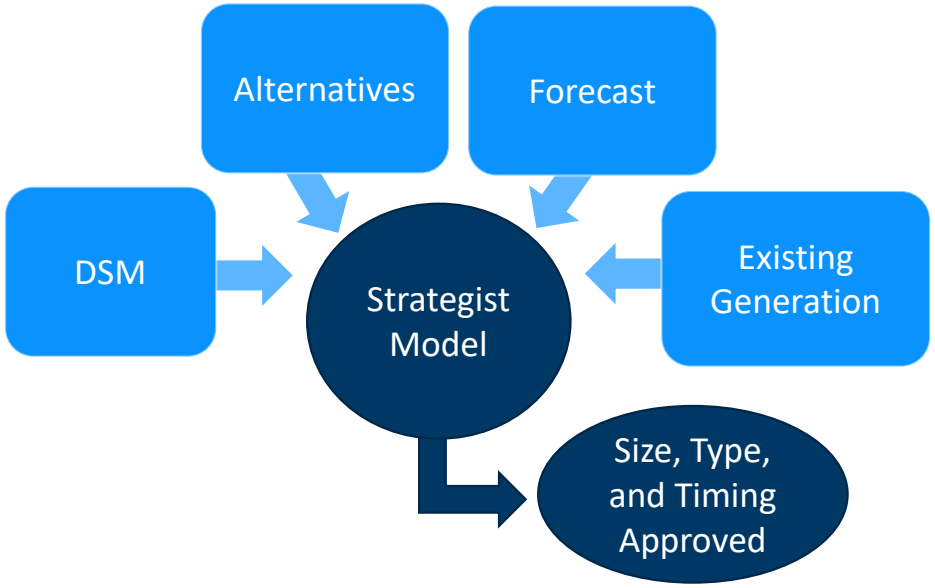
Top-Down and Bottom-Up Planning Needs



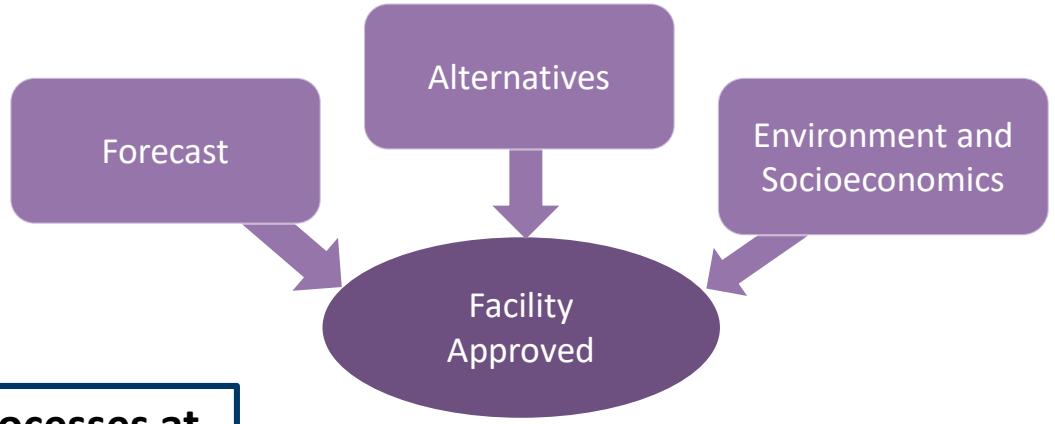
Source: Annual MN Utility DER Reports, Docket 20-10. Data available: https://mn.gov/puc/energy/distributed-energy/data/

3

Resource Plans



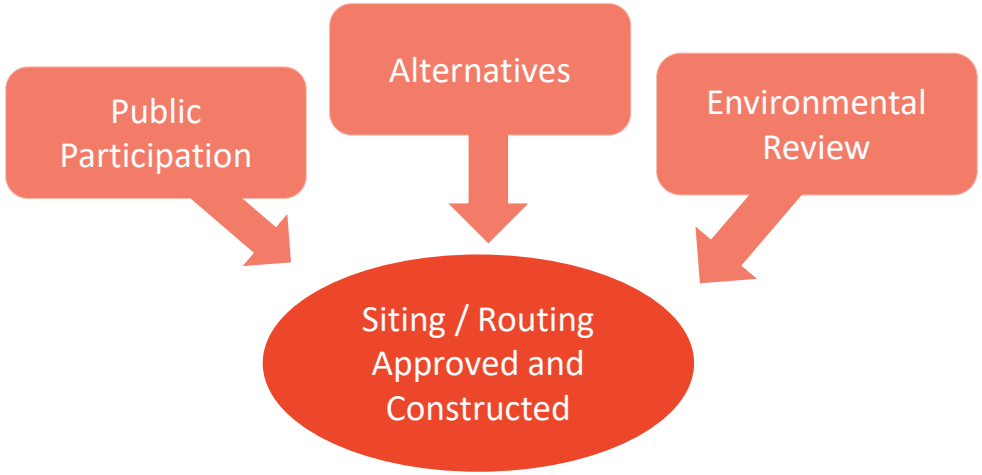
Certificate of Need



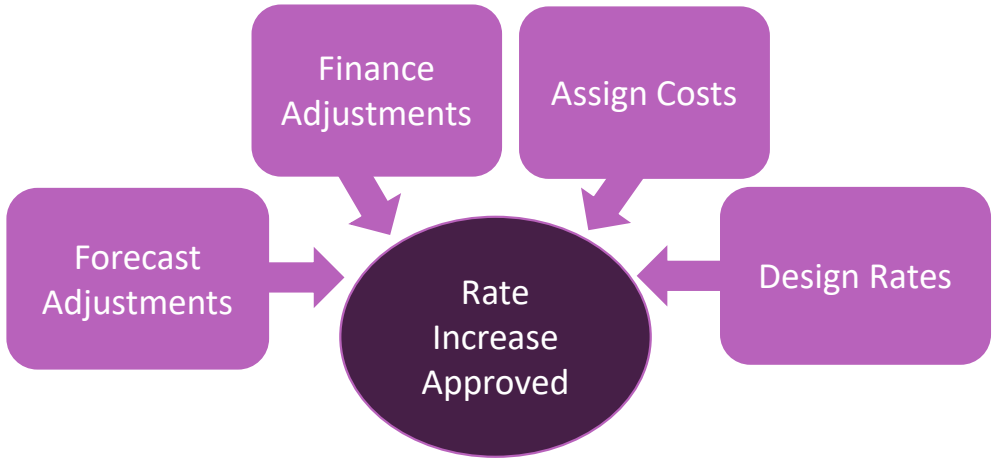
Four Historic Processes at the MN PUC

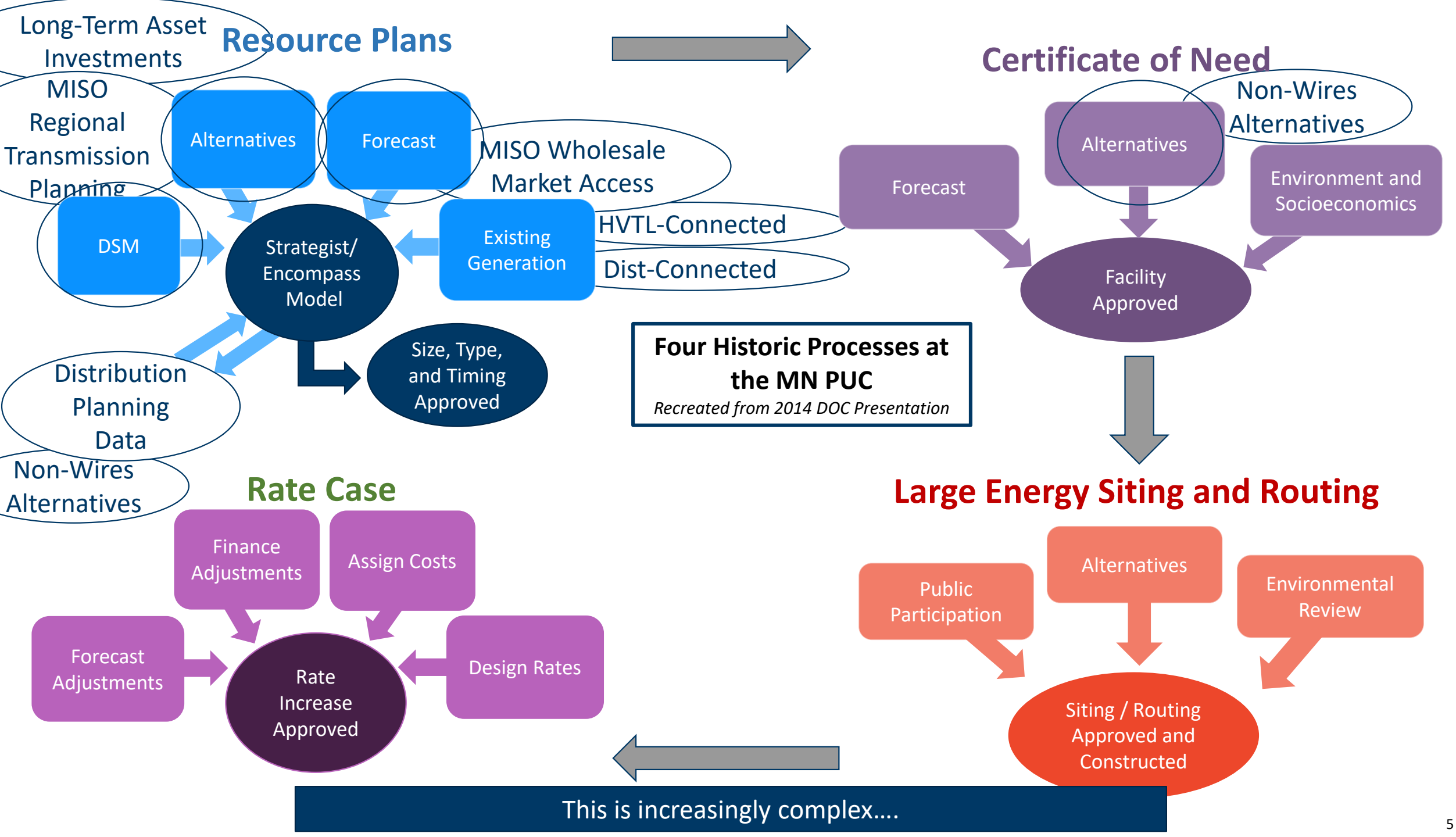
Recreated from 2014 DOC Presentation

Siting and Routing



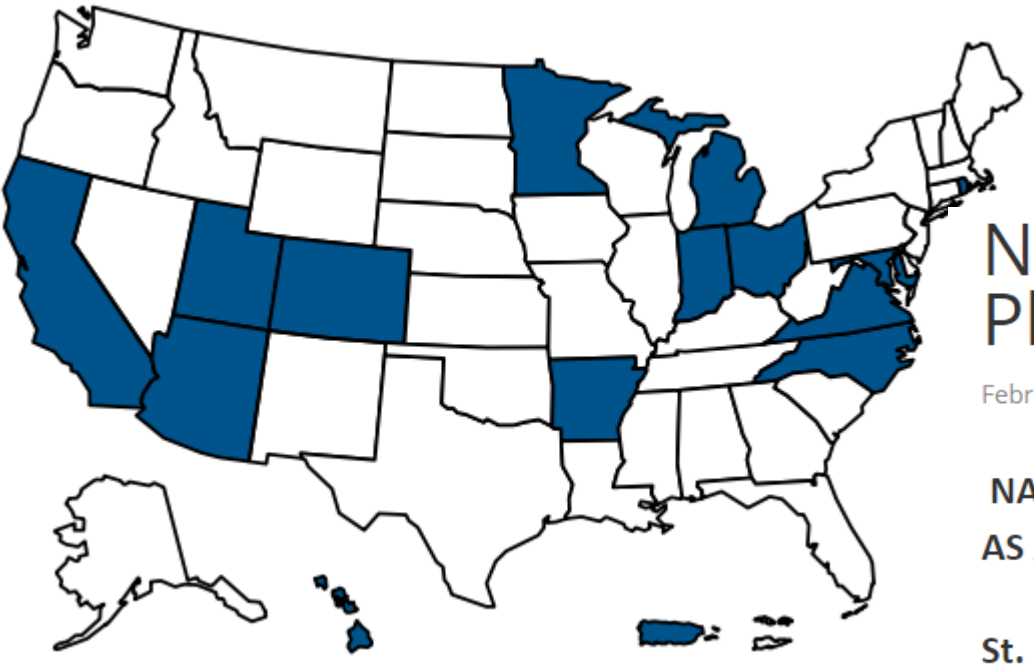
Rate Case




Long-Term Asset Investments
Resource Plans
MISO Regional Transmission Planning
Alternatives
Forecast
MISO Wholesale Market Access
DSM
Strategist/ Encompass Model
Existing Generation
HVTL-Connected
Dist-Connected
Size, Type, and Timing Approved
Distribution Planning Data
Non-Wires Alternatives
Certificate of Need
Non-Wires Alternatives
Alternatives
Forecast
Environment and Socioeconomics
Facility Approved
Four Historic Processes at the MN PUC
Recreated from 2014 DOC Presentation
Rate Case
Finance Adjustments
Assign Costs
Forecast Adjustments
Rate Increase Approved
Design Rates
Large Energy Siting and Routing
Public Participation
Alternatives
Environmental Review
Siting / Routing Approved and Constructed
This is increasingly complex….

Orientation

Participating States and Territories



NARUC-NASEO Comprehensive Electricity Planning Task Force

February 13, 2019 | Press Release, Announcements and Notices

NARUC-NASEO COMPREHENSIVE ELECTRICITY PLANNING TASK FORCE SELECTS MINNESOTA AS A MEMBER STATE

St. Paul, Minnesota — The Task Force for Comprehensive Electricity Planning has announced that Minnesota was named one of 16 states to represent the National Association of Regulatory Utility Commissioners and the National Association of State Energy Officials on the joint task force. Minnesota will be represented on this

NARUC NASEO Task Force Leaders

Danielle Sass Byrnett · 1st

Director, Center for Partnerships & Innovation

NARUC

Johanna Zetterberg · 2nd

Senior Advisor, Office of Electricity at U.S. Department

US DOE

Kirsten Verclas

Washington D.C. Metro Area · 500+ connections

NASEO

Recent Minnesota PUC and Regional Activities

National

- NARUC taskforces, committees, and workgroups
- North American Electric Reliability Corporation (NERC)
- Shared learning with other state Commissions

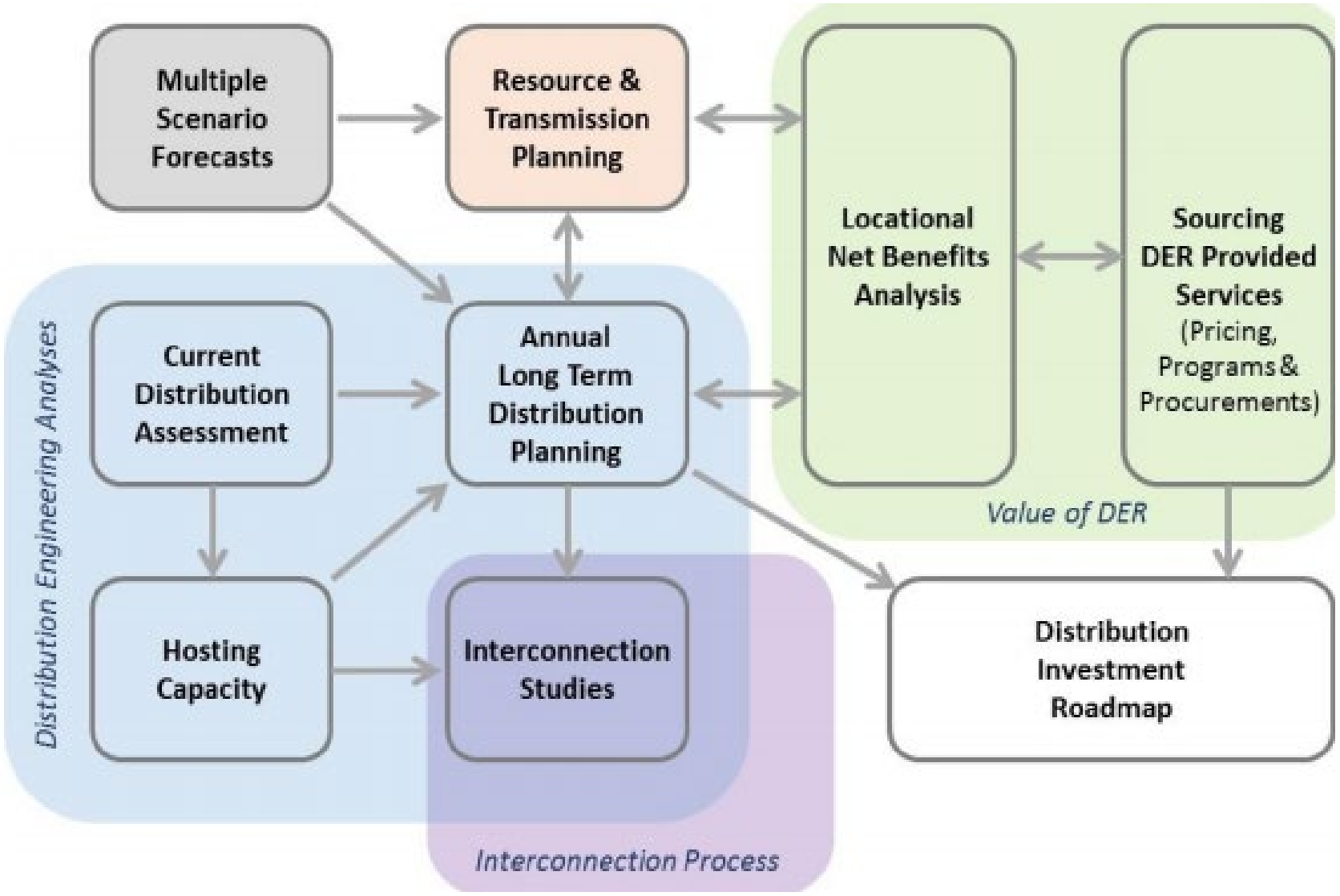
Regional

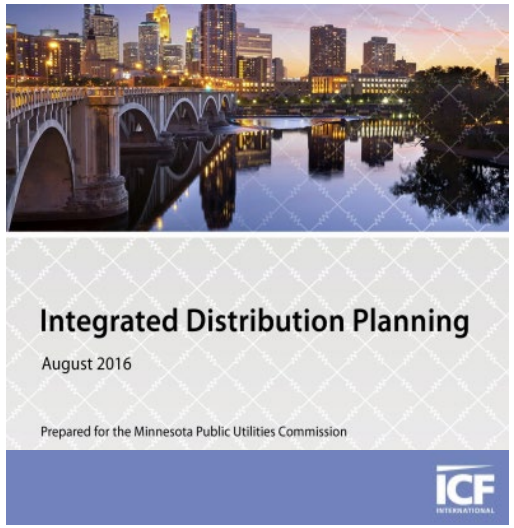
- MISO
- Organization of MISO States (OMS)
- Hosting Trainings

Minnesota

- Dockets
- Dept. Of Energy Technical Assistance
- Workgroups

ICF/DOE MN DSP Report Recommendation





What Occurred?

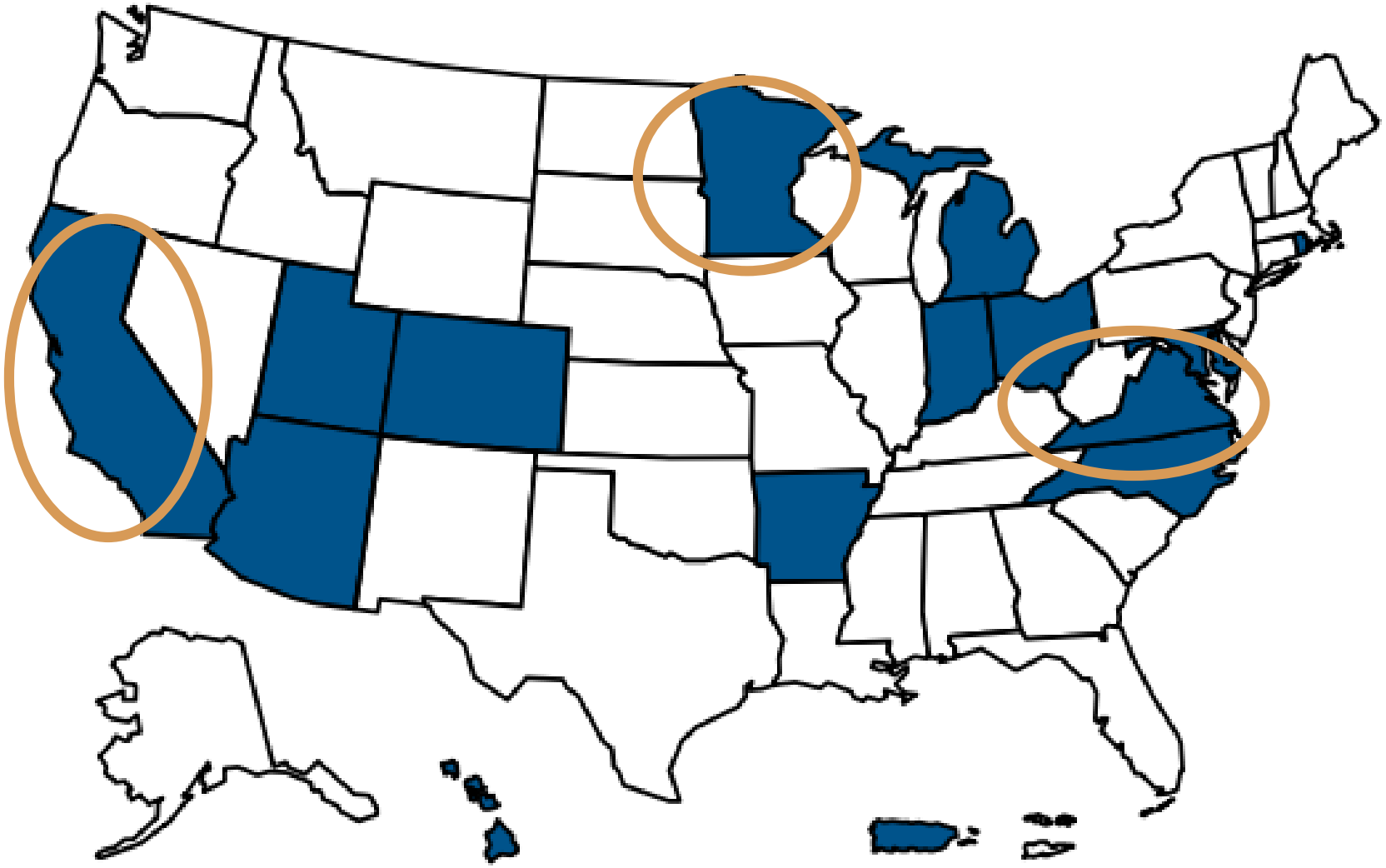
Amber Cohort Facilitated by: Lorenzo Kristoff, Independent Consultant; Melissa Pauley, US DOE

CA Energy Commission: Bryan Early, Cmmr. Andrew McAlister
CA PUC: Simon Baker, Cmmr. Lianne Randolph
MN DOC: Deputy Cmmr. Joe Sullivan, Jessica Burdette, Lise Trudeau
MN PUC: Cmmr. Matt Schuerger, T. DeBleeckere, Michelle Rosier
VA Dept. of Mines: David Essah, Al Christopher, Michael Skiffington
VA Corporation Commission: Chair Judy Jagdmann; T. Faherty

Denver April 2019	Columbus November 2019	Virtual - September 2020 and November 2020	
Workshop 1 Understanding State of Planning, Vision of Optimized Alignment, Assess Needs	Workshop 2 Consideration of Alternatives, Systemic Changes Needed, Barriers, SME Input, Draft Process Map	Workshop 3 Solution Generation, Pressure Testing of Process Maps, Create Roadmap	Workshop 4 Share State-Based Actions, Plans for Non-Participating States, Finalization of Roadmaps and Process Maps

Outcome = Optimal Planning Process Map and Instructions (Roadmap) for an Amber-Like State (RTO, V-IOU, All Planning Types)

NARUC/NASEO Task Force - Amber Cohort



Minnesota Connections

Minnesota PUC and Energy Office Participants	Minnesota-Related Stakeholders (Role) *Facilitator or Subject Matter Expert (SME), Presenter*
MN PUC Commissioner Matt Schuerger	Michael Bull, Center for Energy and the Environment (SME)
MN PUC (Former) Commissioner Dan Lipschultz	Rao Konidena, RAKON Energy (SME)
MN DOC Assistant Commissioner, Joseph Sullivan	Nancy Lange, Former MN Commissioner (SME)
MN DOC ERP Manager, Jessica Burdette	Greg Ridderbusch, Connexus Energy (SME)
MN PUC Staff - Tricia DeBleeckere	Zac Ruzycki, Great River Energy (SME, Presenter)
MN PUC Staff - Michelle Rosier	Doug Scott, Great Plains Institute (Facilitator)
MN DOC Staff – Lise Trudeau	Craig Turner, Dakota Electric (SME)
	Chris Villarreal, Plugged-In Strategies (SME)
	Curt Volkmann, New Energy Advisors (SME)
	Tim Woolf, Synapse Energy Economics (SME)
	Carl Linvill (SME) RAP /John Shenot (Facilitator) RAP

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Minnesota Connections

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	Curt Volkmann, New Energy Advisors (SME)
	Tim Woolf, Synapse Energy Economics (SME)
	Carl Linville (SME) RAP /John Shenot (Facilitator) RAP

NARUC/NASEO was cognizant of Commission ex parte restrictions and SME placement within cohorts. NARUC/NASEO vetted and ensured that there were no conflict of interest or ex parte violation issues between states and SME participation.

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Five State Teams ("Cohorts")

15 states | 5 cohorts

Vertically Integrated

Coral

- Within organized markets

Turquoise

- Outside organized markets

Amber

- Within organized markets

Silver

- Outside organized markets

Tackling alignment of distribution, resource, and transmission planning

- *Pragmatic state; works collaboratively in region; operates in 2 RTOs*

- *Anticipates range of energy policies; juggles urban vs. rural needs: long distances between load centers; transmission challenges*

- *State is facing increasing weather-related damages and costs; new transmission and generation siting requests coming in*

Tackling alignment of distribution and resource planning

Coastal state vulnerable to weather-related natural disasters; experiencing flat to declining load

Restructured

Jade

- Within organized markets

Focused on integrated distribution planning (combined with other state / utility energy planning and programs)

- *Retail competition in state; dynamic policy environment; impacted by cold-weather events*

Consideration of Transmission Planning

State of Amber Persona

State of Amber Persona		
Regulatory	*Our state's investor-owned utilities…*	…own generation assets
Market	*Our state is located…*	…within an RTO / ISO market
Planning Processes	*Our state is seeking to align…*	…distribution, resource, and transmission planning processes

Planning Processes in Minnesota

Regional Transmission Planning Processes (MISO – MTEP, LRTP, etc.)

Local/State Reliability Transmission Planning (Biennial Transmission Plans)

Integrated Resource Planning

Integrated Distribution System Planning

Phases of Comprehensive Planning

Phase 1: System Status & Policy Objectives	Phase 2: Forecasting & Scenarios Definition	Phase 3: Detailed Planning	Phase 4: Utility Filing & Regulatory Review
Regional Transmission Planning Processes (MISO – MTEP, LRTP, etc.)			
Local/State Reliability Transmission Planning (Biennial Transmission Plans)			
	Integrated Resource Planning		
	Integrated Distribution System Planning		

Advanced Work Conducted for Comprehensive Planning

Regional Transmission Planning Processes (MISO – MTEP, LRTP, etc.)

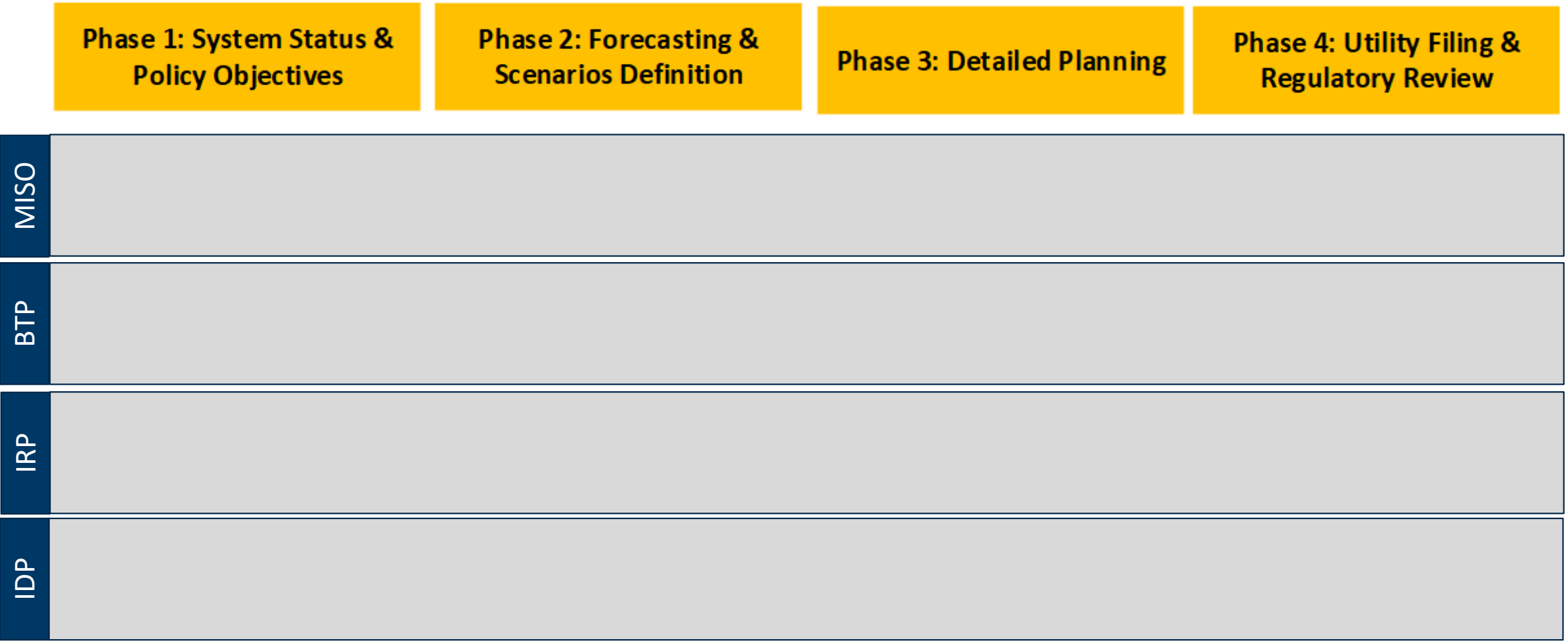
Local/State Reliability Transmission Planning (Biennial Transmission Plans)

Integrated Resource Planning

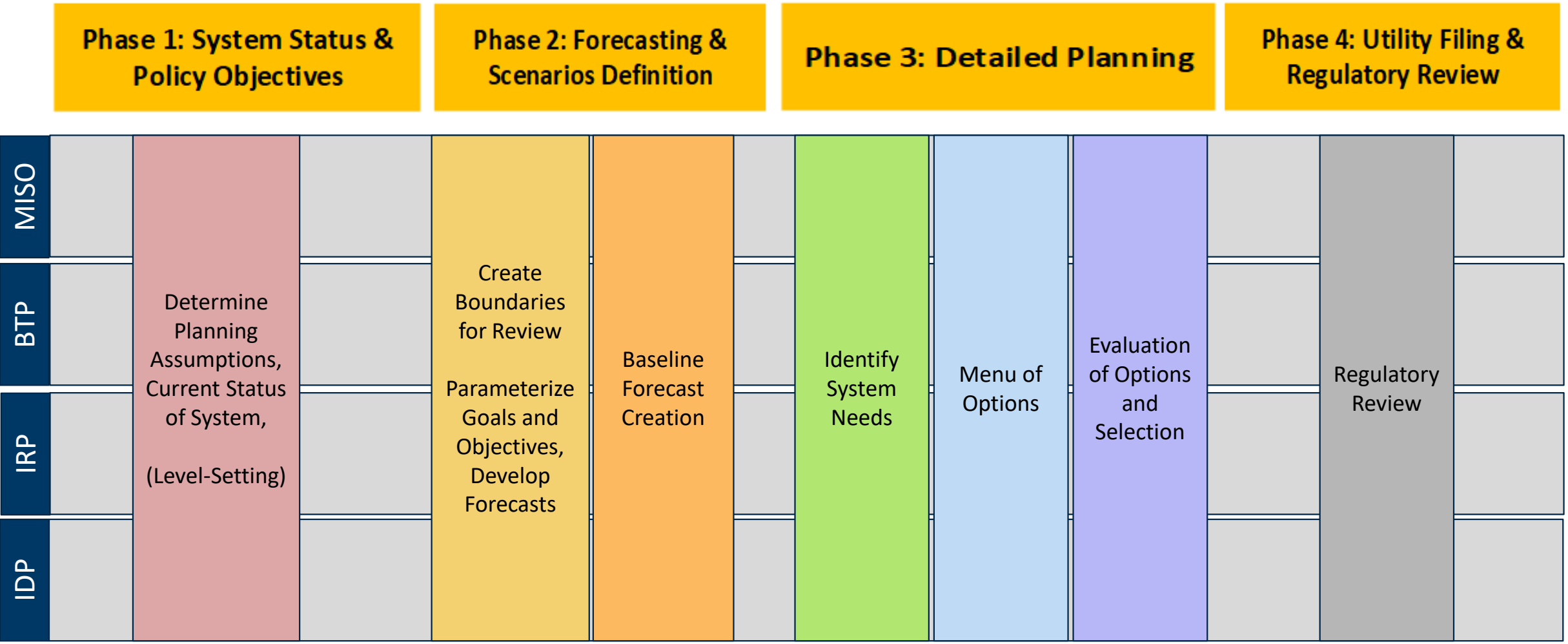
Integrated Distribution System Planning

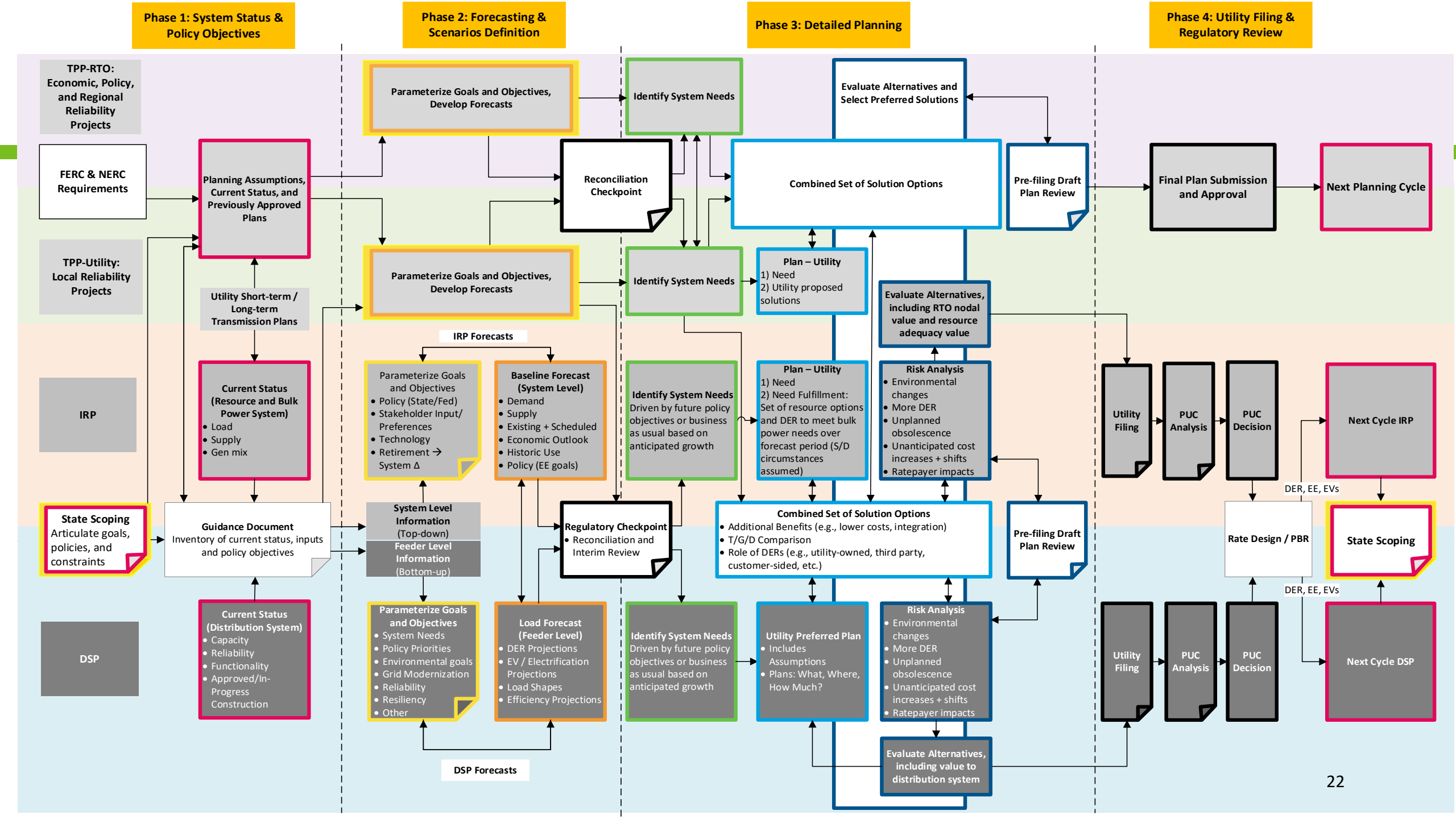
Information Flow in Comprehensive Planning

Common Planning Themes

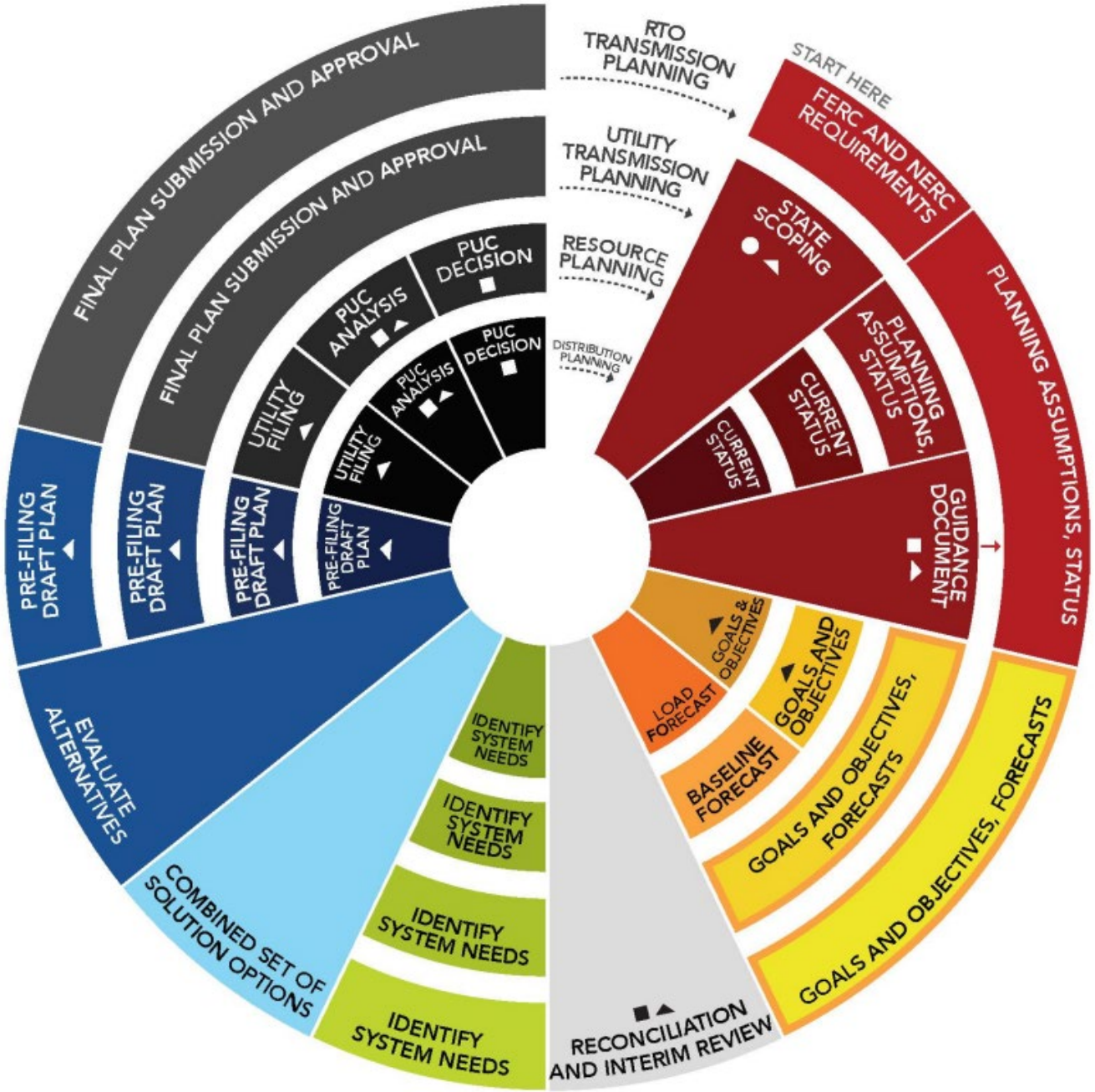


Common Planning Themes




Phase 1: System Status & Policy Objectives
Phase 2: Forecasting & Scenarios Definition
Phase 3: Detailed Planning
Phase 4: Utility Filing & Regulatory Review
TPP-RTO: Economic, Policy, and Regional Reliability Projects
TPP-Utility: Local Reliability Projects
IRP
DSP
FERC & NERC Requirements
Planning Assumptions, Current Status, and Previously Approved Plans
Utility Short-term / Long-term Transmission Plans
Current Status (Resource and Bulk Power System)
• Load
• Supply
• Gen mix
State Scoping
Articulate goals, policies, and constraints
Guidance Document
Inventory of current status, inputs and policy objectives
Current Status (Distribution System)
• Capacity
• Reliability
• Functionality
• Approved/In-Progress Construction
Parameterize Goals and Objectives, Develop Forecasts
Parameterize Goals and Objectives, Develop Forecasts
IRP Forecasts
Parameterize Goals and Objectives
• Policy (State/Fed)
• Stakeholder Input/ Preferences
• Technology
• Retirement → System Δ
Baseline Forecast (System Level)
• Demand
• Supply
• Existing + Scheduled
• Economic Outlook
• Historic Use
• Policy (EE goals)
System Level Information (Top-down)
Feeder Level Information (Bottom-up)
Parameterize Goals and Objectives
• System Needs
• Policy Priorities
• Environmental goals
• Grid Modernization
• Reliability
• Resiliency
• Other
Load Forecast (Feeder Level)
• DER Projections
• EV / Electrification Projections
• Load Shapes
• Efficiency Projections
DSP Forecasts
Reconciliation Checkpoint
Regulatory Checkpoint
• Reconciliation and Interim Review
Identify System Needs
Identify System Needs
Identify System Needs
Driven by future policy objectives or business as usual based on anticipated growth
Identify System Needs
Driven by future policy objectives or business as usual based on anticipated growth
Evaluate Alternatives and Select Preferred Solutions
Combined Set of Solution Options
Plan – Utility
1) Need
2) Utility proposed solutions
Plan – Utility
1) Need
2) Need Fulfillment: Set of resource options and DER to meet bulk power needs over forecast period (S/D circumstances assumed)
Utility Preferred Plan
• Includes Assumptions
• Plans: What, Where, How Much?
Evaluate Alternatives, including RTO nodal value and resource adequacy value
Risk Analysis
• Environmental changes
• More DER
• Unplanned obsolescence
• Unanticipated cost increases + shifts
• Ratepayer impacts
Combined Set of Solution Options
• Additional Benefits (e.g., lower costs, integration)
• T/G/D Comparison
• Role of DERs (e.g., utility-owned, third party, customer-sided, etc.)
Risk Analysis
• Environmental changes
• More DER
• Unplanned obsolescence
• Unanticipated cost increases + shifts
• Ratepayer impacts
Evaluate Alternatives, including value to distribution system
Pre-filing Draft Plan Review
Pre-filing Draft Plan Review
Final Plan Submission and Approval
Next Planning Cycle
Utility Filing
PUC Analysis
PUC Decision
Next Cycle IRP
DER, EE, EVs
Rate Design / PBR
State Scoping
DER, EE, EVs
Utility Filing
PUC Analysis
PUC Decision
Next Cycle DSP

AMBER


RTO TRANSMISSION PLANNING
UTILITY TRANSMISSION PLANNING
RESOURCE PLANNING
DISTRIBUTION PLANNING
START HERE
FERC AND NERC REQUIREMENTS
PLANNING ASSUMPTIONS, STATUS
STATE SCOPING
PLANNING ASSUMPTIONS, STATUS
CURRENT STATUS
CURRENT STATUS
GUIDANCE DOCUMENT
GOALS & OBJECTIVES
LOAD FORECAST
GOALS AND OBJECTIVES
BASELINE FORECAST
GOALS AND OBJECTIVES, FORECASTS
GOALS AND OBJECTIVES, FORECASTS
RECONCILIATION AND INTERIM REVIEW
FINAL PLAN SUBMISSION AND APPROVAL
FINAL PLAN SUBMISSION AND APPROVAL
PUC DECISION
PUC ANALYSIS
UTILITY FILING
PUC DECISION
PUC ANALYSIS
UTILITY FILING
PRE-FILING DRAFT PLAN
PRE-FILING DRAFT PLAN
PRE-FILING DRAFT PLAN
PRE-FILING DRAFT PLAN
EVALUATE ALTERNATIVES
COMBINED SET OF SOLUTION OPTIONS
IDENTIFY SYSTEM NEEDS
IDENTIFY SYSTEM NEEDS
IDENTIFY SYSTEM NEEDS
IDENTIFY SYSTEM NEEDS

Minnesota Stakeholder Insights

Zachary Ruzycki ·
Manager, Power Supply Planning
Great River Energy

Doug Scott
Vice President, Strategic Initiatives
Great Plains Institute

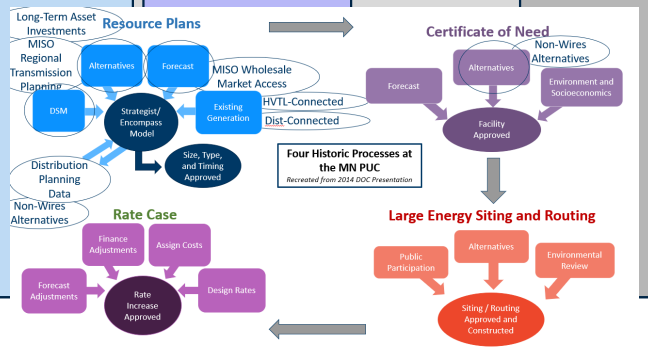
Greg Ridderbusch ·
Connexus Energy

Curt Volkmann ·
President - New Energy Advisors, LLC

Q and A with Panelists and NARUC

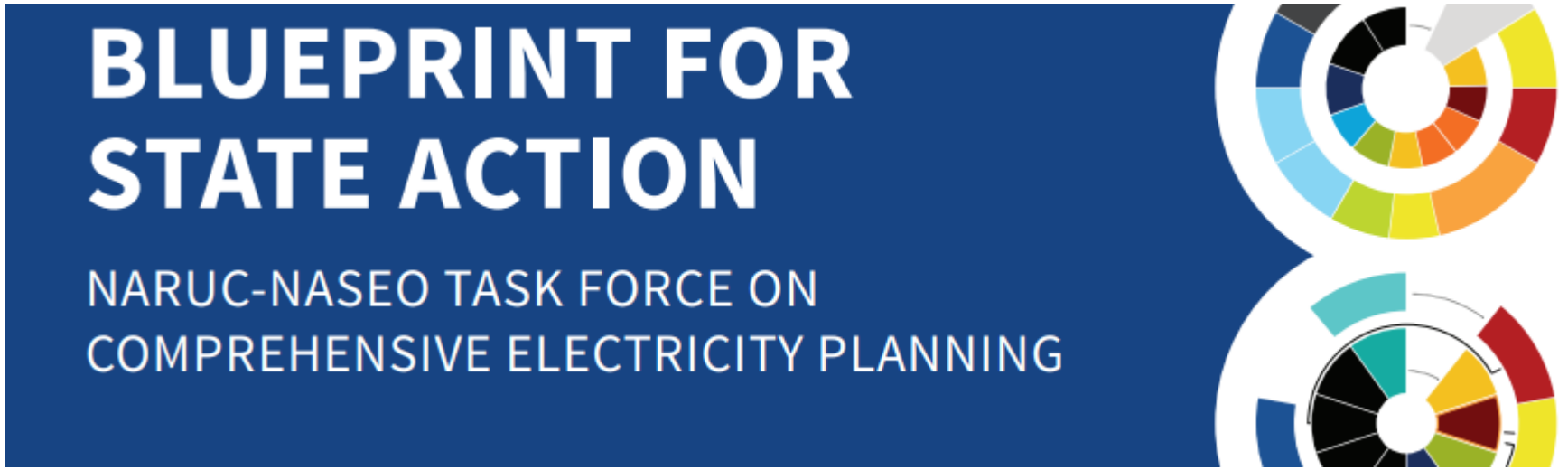
Conclusion

	Phase 1: System Status & Policy Objectives	Phase 2: Forecasting & Scenarios Definition	Phase 3: Detailed Planning				Phase 4: Utility Filing & Regulatory Review
MISO	Determine Planning Assumptions, Current Status of System, (Level-Setting)	Create Boundaries for Review Parameterize Goals and Objectives, Develop Forecasts	Baseline Forecast Creation	Identify System Needs	Menu of Options	Evaluation of Options	Regulatory Review
BTP							
IRP							
IDP							



Relevant Links and Information

NARUC NASEO CEP Task Force Overview Fact Sheet

Coordinated Planning Process Task Team (misoenergy.org)

Blueprint for State Action (naruc.org)