



NARUC
National Association of Regulatory
Utility Commissioners



Welcome to the NARUC-NASEO Initiative: **Comprehensive Electricity Planning in an Era of** **Load Growth** **Roadmaps and Resources Webinar**

September 14, 2026

Project Team: Danielle Sass Byrnett (NARUC), Kirsten Verclas (NASEO)
Katerina Stephan (RMI), Celia Tandon (RMI), Athindra Venkatraman (RMI)

Agenda



Overview of Comprehensive Electricity Planning Initiative



Introduction to Comprehensive Electricity Planning Roadmaps



Resource Library Demo



Use Case Discussion

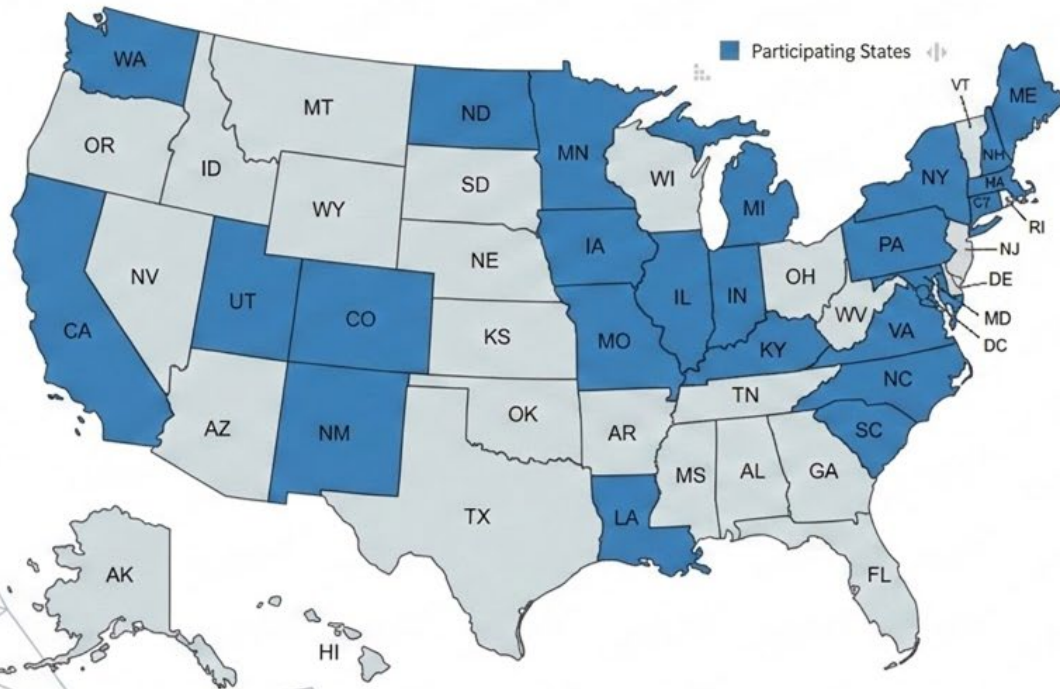


Q&A

This webinar is being recorded and will be available with the PPT slides at: www.naruc.org/core-sectors/electricity-energy/comprehensive-electricity-planning1

How we got here

28 state agencies from 24 states + DC



Jan-March 2025: Identify member motivations, trends, challenges with status quo, needs



April 2025: Interactive virtual workshop to review prior roadmaps, identify gaps, articulate learning needs



June-Dec 2025: Virtual learning and peer exchange sessions on leading edge planning with National Labs, experts, and members



Dec 2025 & Feb-Apr 2026: In-person member workshop to articulate visions for idealized planning processes; expert & stakeholder review

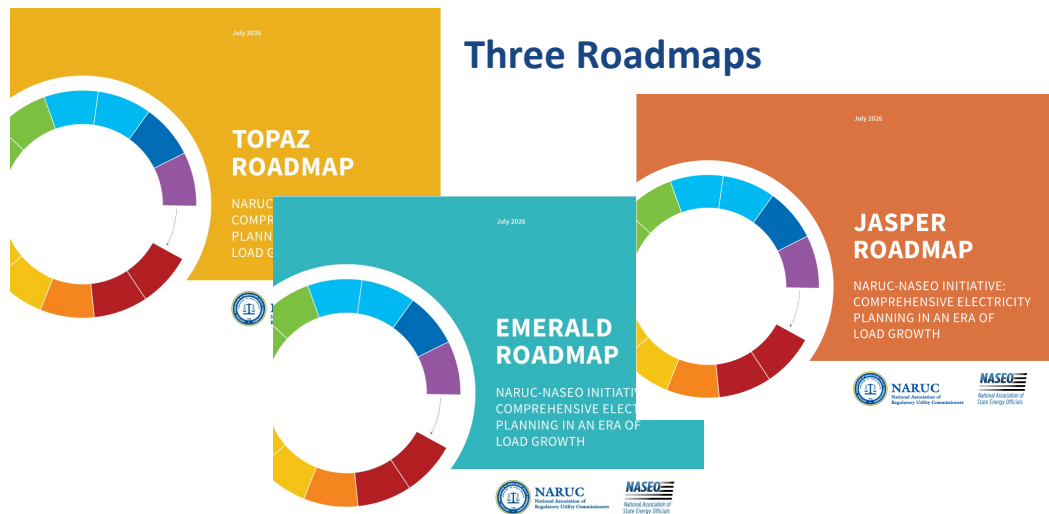


May-Aug 2026: Finalize roadmap publications & populate online library

Comprehensive Electricity Planning in an Era of Load Growth

Goal: Visions for State-led pathways toward a more resilient, efficient, and affordable grid that meets current and future electricity needs across the U.S.

Multiple approaches for **aligning distribution, resource, and transmission planning** to satisfy new loads and state goals.



Comprehensive Electricity Planning Resource Library

Search Filters

Planning Category:

Resource Type:

Topic:

Planning Scope:

Search

View definitions of the filter topics

PLANNING CATEGORIES

- Establish expectations & assumptions
- Develop scenarios
- Develop forecasts
- Identify system needs
- Identify solutions
- Evaluate solutions
- Finalize plan

Comprehensive Electricity Planning Roadmaps

Guidance, resources, and examples are filterable in online library tagged by planning category



July 2024

JASPER ROADMAP

NARUC-NASEO INITIATIVE:
COMPREHENSIVE ELECTRICITY
PLANNING IN AN ERA OF
LOAD GROWTH



NARUC
National Association of
Regulatory Utility Commissioners



NASEO
National Association of
State Energy Officials

are State
generation
DS
an
RTO/ISO market
Our state is seeking
to align
distribution,
generation, and
transmission
planning processes

Introduction

This roadmap document describes a vision for best-in-class comprehensive electricity planning, shown in a flowchart and accompanying descriptive text. This idealized planning process is viewed from the state perspective, specifically a collaboration between the State Public Utility Commission (PUC) and State Energy Office. The roadmap was the result of robust engagement with a cohort of National Association of Regulatory Utility Commissioners (NARUC) and National Association of State Energy Officials (NASEO) members drawn from 24 states and Washington, DC who joined the NARUC-NASEO Initiative: Comprehensive Electricity Planning in an Era of Load Growth. Initiative members attended virtual and in-person workshops to collaborate in articulating their priorities for better aligning distribution, resource, and transmission planning.

This roadmap includes:

- A flowchart of the entire integrated or aligned planning process
- Brief descriptions and explanations of each section of the flowchart
- A color key—outlining each box in the flowchart—to allow for comparison with other cohort roadmaps. The colors align with seven generalized procedural and analytical planning steps that typically characterize electricity system planning processes.

While these practices may not reflect current planning across all jurisdictions, the roadmap describes what could be implemented over time as utility capabilities, data and analytical sources, resource availability, and regulatory frameworks evolve.

The roadmap is intended to support states considering taking actions to increase the alignment of their own electricity system planning processes by providing:

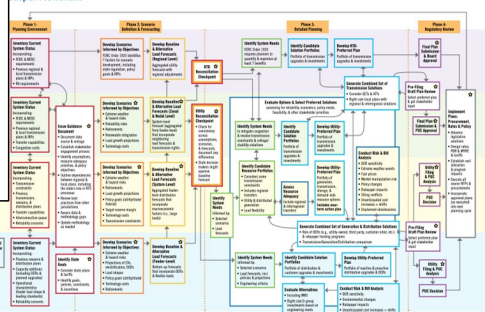
- A high-level understanding of the sequence of steps included in an electricity planning process
- Descriptions of ideal information flows and coordination points represented in the vision, as articulated by NARUC and NASEO members
- Starting points for all states, particularly those with similar characteristics to the Jasper cohort

Development of the Flowchart and Roadmap

An original set of five comprehensive electricity planning flowcharts and roadmaps were developed by a group of Commissioners and State Energy Office leaders from 15 states in 2018 to 2021. These resources were used by numerous states as starting points for enhancing their electricity planning processes. Given significant load growth projections and technological changes in the planning landscape since then, in 2023 NARUC and NASEO launched an

Jasper Roadmap - NARUC-NASEO Initiative: Comprehensive Electricity Planning in an Era of Load Growth | 5

Jasper Flowchart



Jasper Roadmap - NARUC-NASEO Initiative: Comprehensive Electricity Planning in an Era of Load Growth | 5

Phase 1: Planning Environment

The process steps carried out in Phase 1 set the common foundation for the rest of the planning cycles. Given information about the current electric system, including scheduled additions and retirements for the planning horizon, as well as policy objectives that the planning processes should consider, are articulated in Phase 1 and socialized with stakeholders through a guidance document before moving to Phase 2.

Phase 1 of the planning cycle incorporates previously approved or acknowledged utility short-term and long-term transmission plans, integrated resource plans, and distribution plans from among others. These plans inform the current system status, influencing planning assumptions and baseline system conditions for the planning cycle. The current system status also includes an inventory of existing and planned electricity assets, including the generation mix, interconnection queue status, and fuel supply conditions.

Phase 1 also identifies state goals to apply to the RPT, ISPP, and TPP planning processes. This step includes articulating the state goals for planning volumes, the practices that outline the intended planning process, and the planning process constraints. This should consider other state plans, including state energy equity, state energy, economic, land use, resilience, and disaster risk and mitigation plans.

State goals and current system status for ISPP, RPT, and TPP feed into the guidance document, a public document formally adopted or acknowledged by the State Utilities Commission or some equivalent. The guidance document serves as a common foundation or consistency check across RPT, ISPP, and Utility TPP while also providing state input to the RPT TPP purpose. It is to create a shared view of the current electric system status and policy objectives, so that data, methodologies, and planning assumptions can be reasonably aligned across planning processes. Achieving this alignment requires the development and sharing of data across multiple organizations and stakeholders.

The guidance document should also outline processes for stakeholder engagement and inter-agency coordination, including the respective roles of states, utilities, RTOs, and the Federal Energy Regulatory Commission (FERC) in transmission planning. As shown by the curved arrows in the flowchart, this coordination process is often iterative. Notably, a state may have less influence on the TPP of a multi-state RTO than on its jurisdictional utility's planning. For example, one state in an RTO may have a goal for 100% clean energy by a certain date, even if that goal is not shared by other states in the RTO. While the RTO TPP may not fully reflect that objective, the state's jurisdictional utility's transmission plans would incorporate it. Aligning the current status of regional and local transmission systems early in the planning process is critical to ensuring that planning assumptions, analyses, and outcomes remain relevant and consistent across jurisdictions.

1. FERC requires RTOs to incorporate both state policy and utility plans into their regional planning processes. "Local and regional transmission planning processes must consider transmission needs driven by state policy requirements established by state or federal policy requirements and evaluate proposed solutions to those transmission needs." Source: <https://www.ferc.gov/ferc-creates-guidelines-for-regional-transmission-planning>

5 | Jasper Roadmap - NARUC-NASEO Initiative: Comprehensive Electricity Planning in an Era of Load Growth

PLANNING CATEGORIES

- Establish expectations & assumptions
- Develop scenarios
- Develop forecasts
- Identify system needs
- Identify solutions
- Evaluate solutions
- Finalize plan
- White boxes: Coordination checkpoint

★ Stakeholder engagement

→ Information flows

↻ Iteration step (curved arrows)

RTO transmission planning

Utility transmission planning

Integrated resource planning

Integrated distribution system planning

Comprehensive Electricity Planning Roadmaps for Any State

Comprehensive Planning Poll #1

Webinar poll | 1 question | 36 of 54 (66%) participated

1. Which market structure and regulatory environment best represents your jurisdiction? (Single choice)

36/36 (100%) answered

Jasper: Vertically integrated within RTOs/ISOs (12/36) 33%

Topaz: Vertically integrated outside of organized market (12/36) 33%

Emerald: Restructured state (12/36) 33%

Choose Your Starting Points

	Jasper	Topaz	Emerald
Regulatory <i>Our state's investor - owned utilities...</i>	<i>own generation assets</i>	<i>own generation assets</i>	<i>do not own generation assets</i>
Market <i>Our state is located...</i>	<i>within an RTO/ISO market</i>	<i>outside of an RTO/ISO market</i>	<i>within an RTO/ISO market</i>
Planning Process <i>Our state is seeking to align...</i>	<i>distribution, generation, and transmission planning processes</i>	<i>distribution, generation, and transmission planning processes</i>	<i>distribution planning processes with bulk power decisions</i>

TIME →

PLANNING SCOPE

Phase 1: Planning Environment

TPP-RT0: Economic, Policy, Regional Reliability Projects

Inventory Current System Status Incorporating:

- FERC & NERC requirements
- Previous regional & local transmission plans & IRPs
- RA requirements

Develop Scenarios **Informed by Objectives**

FERC Order 1920 identifies 7 factors for scenario development, including state regulation, policy goals & IRPs

Develop Baseline **Informed by Objectives** **Alternative Load Forecasts (Regional Level)**

Aggregated utility forecasts with regional adjustments

Identify System Needs

FERC Order 1920 requires planners to quantify & maximize at least 7 benefits

Identify Candidate Solution Portfolios

Portfolio of transmission upgrades & investments

Develop RTO-Preferred Plan

Portfolio of transmission upgrades & investments

Generate Combined Set of Transmission Solutions

Consider GETs & ATIs
Right-size local plans with regional & interregional solutions

Pre-Filing Draft Plan Review

Select preferred plan & get stakeholder input

Final Plan Submission & Board Approval

Implement Plans: Procurement, Rates & Policy

- Advance legislative solutions
- Design rates, PBR & MYRP, & tariffs
- Establish cost allocation & program impacts
- Execute all source RFPs & procurements
- Incorporate approved plans (as executed) into next planning cycle

Phase 2: Scenario Definition & Forecasting

Develop Scenarios **Informed by Objectives**

- Extreme weather & hazard risks
- Reliability risks
- Retirements
- Renewable integration
- Load growth projections
- Technology costs

Develop Baseline **Informed by Objectives** **Alternative Load Forecasts (Zonal & Nodal Level)**

System-level forecast (aggregated from feeder-level) that incorporate neighboring load forecasts & transmission rights

Identify System Needs

Check for consistency across transmission assumptions, scenarios, & forecasts; document any differences
State decision makers might approve baseline forecast

Identify Candidate Solution Portfolios

Portfolio of transmission upgrades & investments

Develop Utility-Preferred Plan

Portfolio of transmission upgrades & investments

Generate Combined Set of Transmission Solutions

Consider GETs & ATIs
Right-size local plans with regional & interregional solutions

Pre-Filing Draft Plan Review

Select preferred plan & get stakeholder input

Final Plan Submission & PUC Approval

Implement Plans: Procurement, Rates & Policy

- Advance legislative solutions
- Design rates, PBR & MYRP, & tariffs
- Establish cost allocation & program impacts
- Execute all source RFPs & procurements
- Incorporate approved plans (as executed) into next planning cycle

Phase 3: Detailed Planning

Identify System Needs

mitigate congestion & resolve transmission constraints & voltage/stability violations

Identify Candidate Solution Portfolios

Portfolio of transmission upgrades & investments

Develop Utility-Preferred Plan

Portfolio of transmission upgrades & investments

Generate Combined Set of Transmission Solutions

Consider GETs & ATIs
Right-size local plans with regional & interregional solutions

Pre-Filing Draft Plan Review

Select preferred plan & get stakeholder input

Final Plan Submission & PUC Approval

Implement Plans: Procurement, Rates & Policy

- Advance legislative solutions
- Design rates, PBR & MYRP, & tariffs
- Establish cost allocation & program impacts
- Execute all source RFPs & procurements
- Incorporate approved plans (as executed) into next planning cycle

Phase 4: Regulatory Review

Identify System Needs

mitigate congestion & resolve transmission constraints & voltage/stability violations

Identify Candidate Solution Portfolios

Portfolio of transmission upgrades & investments

Develop Utility-Preferred Plan

Portfolio of transmission upgrades & investments

Generate Combined Set of Transmission Solutions

Consider GETs & ATIs
Right-size local plans with regional & interregional solutions

Pre-Filing Draft Plan Review

Select preferred plan & get stakeholder input

Final Plan Submission & PUC Approval

Implement Plans: Procurement, Rates & Policy

- Advance legislative solutions
- Design rates, PBR & MYRP, & tariffs
- Establish cost allocation & program impacts
- Execute all source RFPs & procurements
- Incorporate approved plans (as executed) into next planning cycle

PP-Utility: Local Economic Reliability Projects

Inventory Current System Status Incorporating:

- FERC & NERC requirements
- Previous regional & local transmission plans & IRPs
- Transfer capabilities
- Congestion costs

Develop Scenarios **Informed by Objectives**

- Extreme weather & hazard risks
- Reliability risks
- Retirements
- Renewable integration
- Load growth projections
- Technology costs

Develop Baseline **Informed by Objectives** **Alternative Load Forecasts (Zonal & Nodal Level)**

System-level forecast (aggregated from feeder-level) that incorporate neighboring load forecasts & transmission rights

Identify System Needs

Check for consistency across transmission assumptions, scenarios, & forecasts; document any differences
State decision makers might approve baseline forecast

Identify Candidate Solution Portfolios

Portfolio of transmission upgrades & investments

Develop Utility-Preferred Plan

Portfolio of transmission upgrades & investments

Generate Combined Set of Transmission Solutions

Consider GETs & ATIs
Right-size local plans with regional & interregional solutions

Pre-Filing Draft Plan Review

Select preferred plan & get stakeholder input

Final Plan Submission & PUC Approval

Implement Plans: Procurement, Rates & Policy

- Advance legislative solutions
- Design rates, PBR & MYRP, & tariffs
- Establish cost allocation & program impacts
- Execute all source RFPs & procurements
- Incorporate approved plans (as executed) into next planning cycle

Integrated Resource Planning (IRP)

Inventory Current System Status Incorporating:

- Transmission constraints
- Previous transmission, resource, & distribution plans
- Transfer capabilities
- Interconnection queue
- Reliability concerns

Develop Scenarios **Informed by Objectives**

- Extreme weather & hazard risks
- Retirements
- Policy goals (utility/state/federal)
- Load growth projections
- Target reserve margin
- Technology costs
- Transmission constraints

Develop Baseline **Informed by Objectives** **Alternative Load Forecasts (System-Level)**

Aggregated feeder-level distribution forecasts that incorporate macroeconomic factors (i.e., large loads)

Identify System Needs

Selected scenarios
Load forecasts

Identify Candidate Solution Portfolios

Considers some transmission constraints
Includes regional transfers
Utility & distributed generation
Load flexibility

Develop Utility-Preferred Plan

Portfolio of transmission upgrades & investments

Generate Combined Set of Transmission Solutions

Consider GETs & ATIs
Right-size local plans with regional & interregional solutions

Pre-Filing Draft Plan Review

Select preferred plan & get stakeholder input

Final Plan Submission & PUC Approval

Implement Plans: Procurement, Rates & Policy

- Advance legislative solutions
- Design rates, PBR & MYRP, & tariffs
- Establish cost allocation & program impacts
- Execute all source RFPs & procurements
- Incorporate approved plans (as executed) into next planning cycle

Integrated Distribution System Planning (IDSP)

Inventory Current System Status Incorporating:

- Previous resource & distribution plans
- Capacity additions (including DERs & planned upgrades)
- Operational characteristics (feeder load shape & loading standards)
- Reliability concerns

Develop Scenarios **Informed by Objectives**

- Extreme weather & hazard risks
- Projections of EVs, electrification, DERs
- Load shapes
- Policy goals (utility/state)
- Technology costs
- Retirements

Develop Baseline **Informed by Objectives** **Alternative Load Forecasts (Feeder-Level)**

Bottom-up forecasts that incorporate DERs & flexible loads

Identify System Needs

Selected scenarios
Load forecasts

Identify Candidate Solution Portfolios

Portfolio of distribution & customer upgrades & investments

Develop Utility-Preferred Plan

Portfolio of reactive & proactive distribution upgrades & DERs

Generate Combined Set of Generation & Distribution Solutions

Role of DERs (e.g., utility-owned, third party, customer-sited, etc.) & ratepayer funding programs
Transmission/Generation/Distribution comparison

Pre-Filing Draft Plan Review

Select preferred plan & get stakeholder input

Final Plan Submission & PUC Approval

Implement Plans: Procurement, Rates & Policy

- Advance legislative solutions
- Design rates, PBR & MYRP, & tariffs
- Establish cost allocation & program impacts
- Execute all source RFPs & procurements
- Incorporate approved plans (as executed) into next planning cycle

Issue Guidance Document

- Document data source & vintage
- Establish stakeholder engagement process
- Identify assumptions, resource adequacy priorities, & policy objectives
- Outline dependencies between regional & local plans, including the state's role in RTO processes
- Review best practices from other jurisdictions
- Assess data & methodology gaps
- Update methodology as needed

Identify State Goals

- Consider state plans & tariffs
- Identify goals, policies, constraints, & incentives

Conduct Risk & Bill Analysis

- DER sensitivity
- Extreme weather events
- Fuel prices
- Market manipulation risk
- Ratepayer impacts
- Siting conflicts
- Unanticipated cost increases + shifts
- Unplanned obsolescence

Evaluate Alternatives

- Including NWS
- Right-size D-group investments based on engineering needs & budget constraints

Conduct Risk & Bill Analysis

- DER sensitivity
- Environmental changes
- Ratepayer impacts
- Unanticipated cost increases + shifts
- Unplanned obsolescence

Utility Filing & PUC Analysis

PUC Decision

Utility Filing & PUC Analysis

PUC Decision

Utility Filing & PUC Analysis

PUC Decision

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- ☐ White boxes: Coordination checkpoint
- ★ Stakeholder engagement
- Information flows
- ↪ Iteration step (curved arrows)

RTO transmission planning

Utility transmission planning

Integrated resource planning

Integrated distribution system planning

★ Stakeholder engagement

→ Information flows

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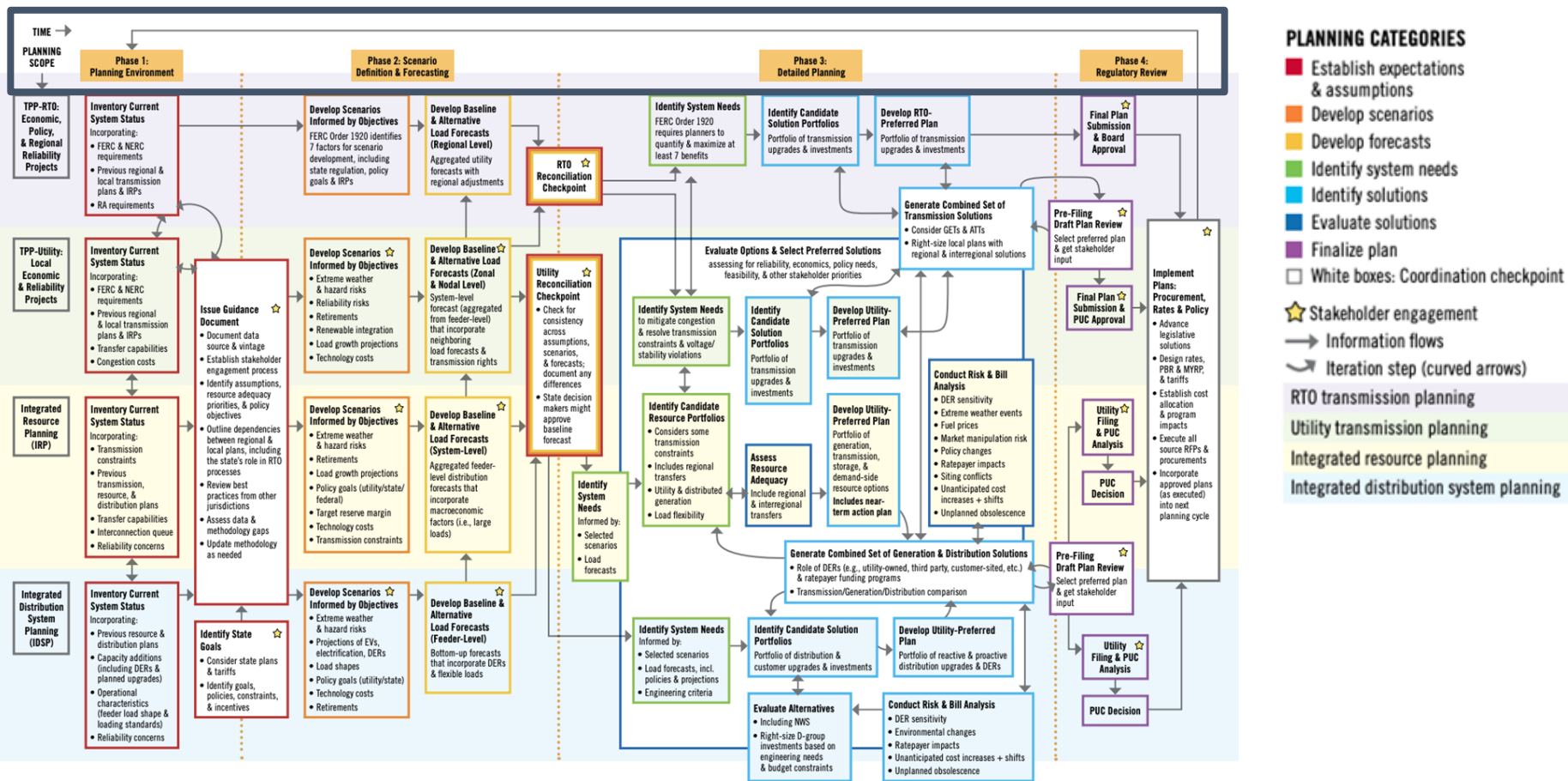
RTO transmission planning

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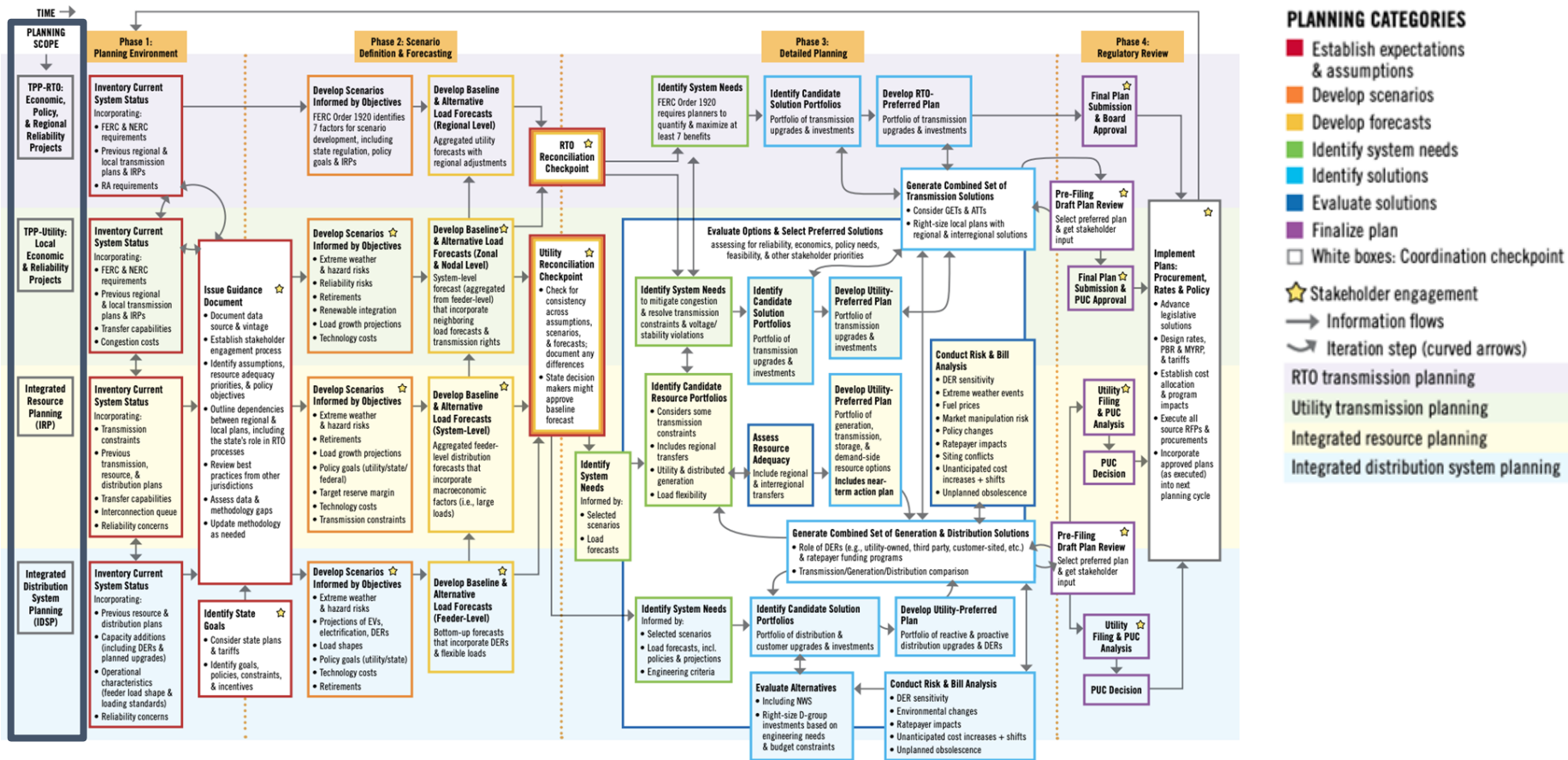
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Integrated distribution system planning

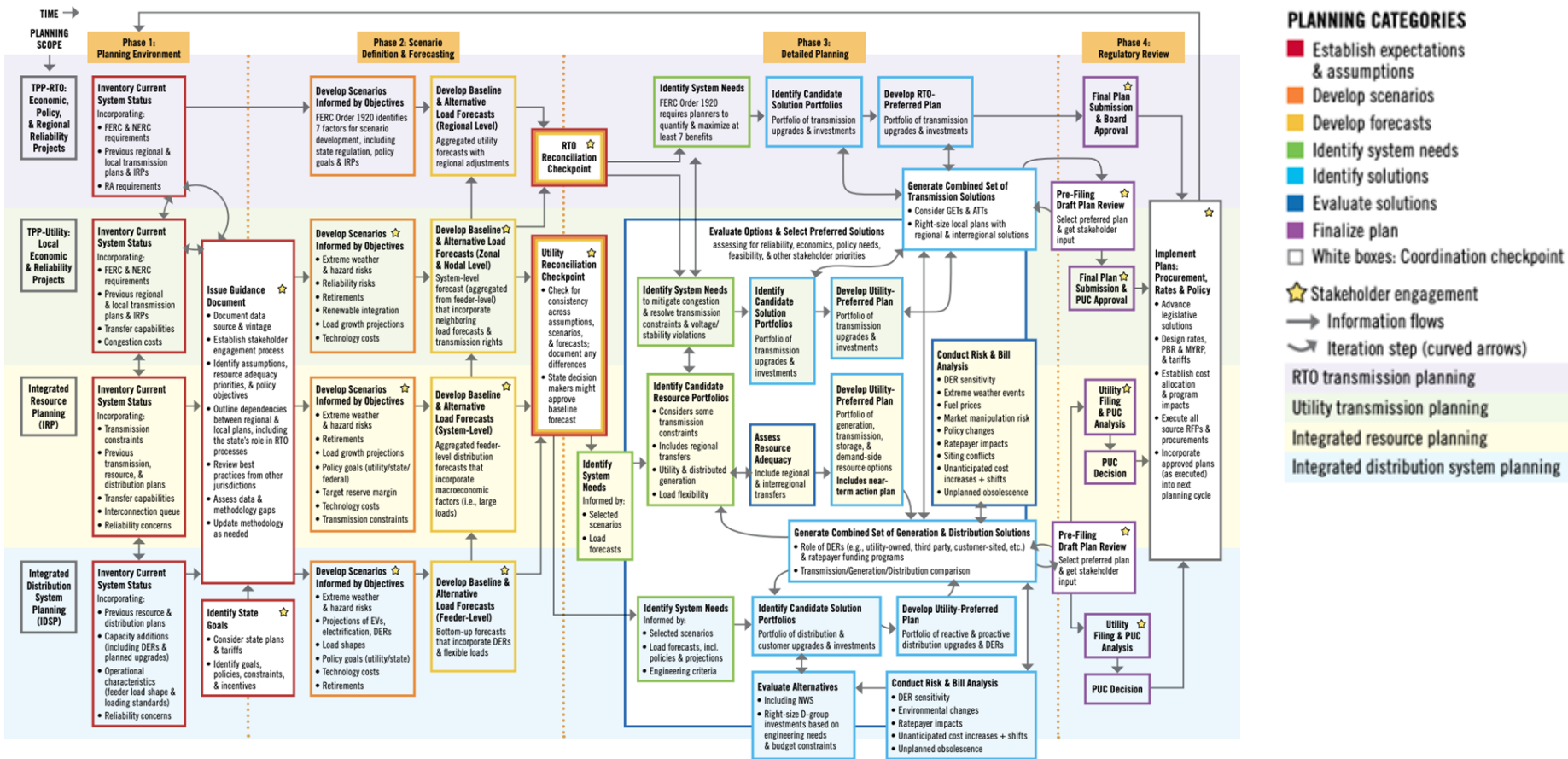
Jasper Flowchart: Vertically integrated within RTO/ISO



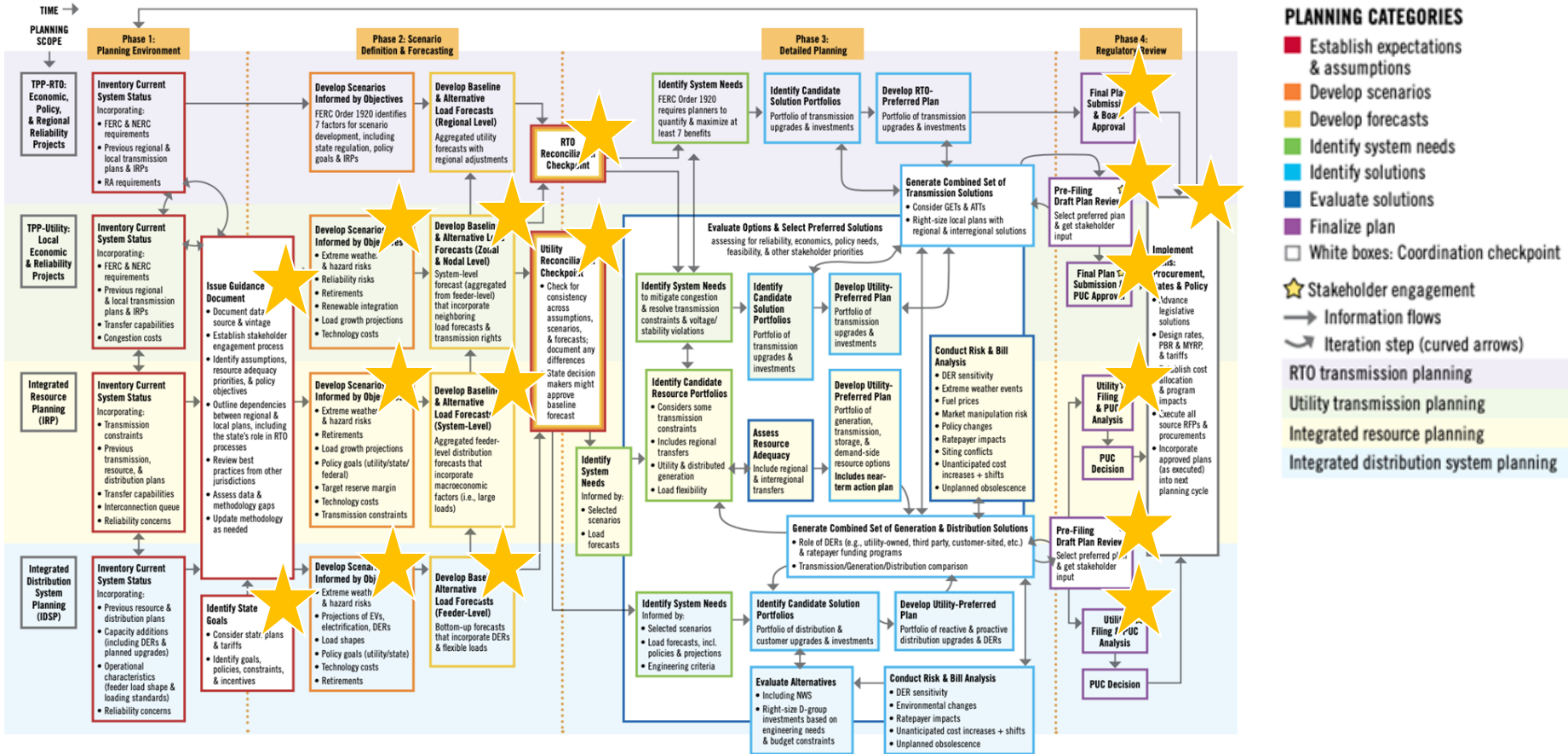
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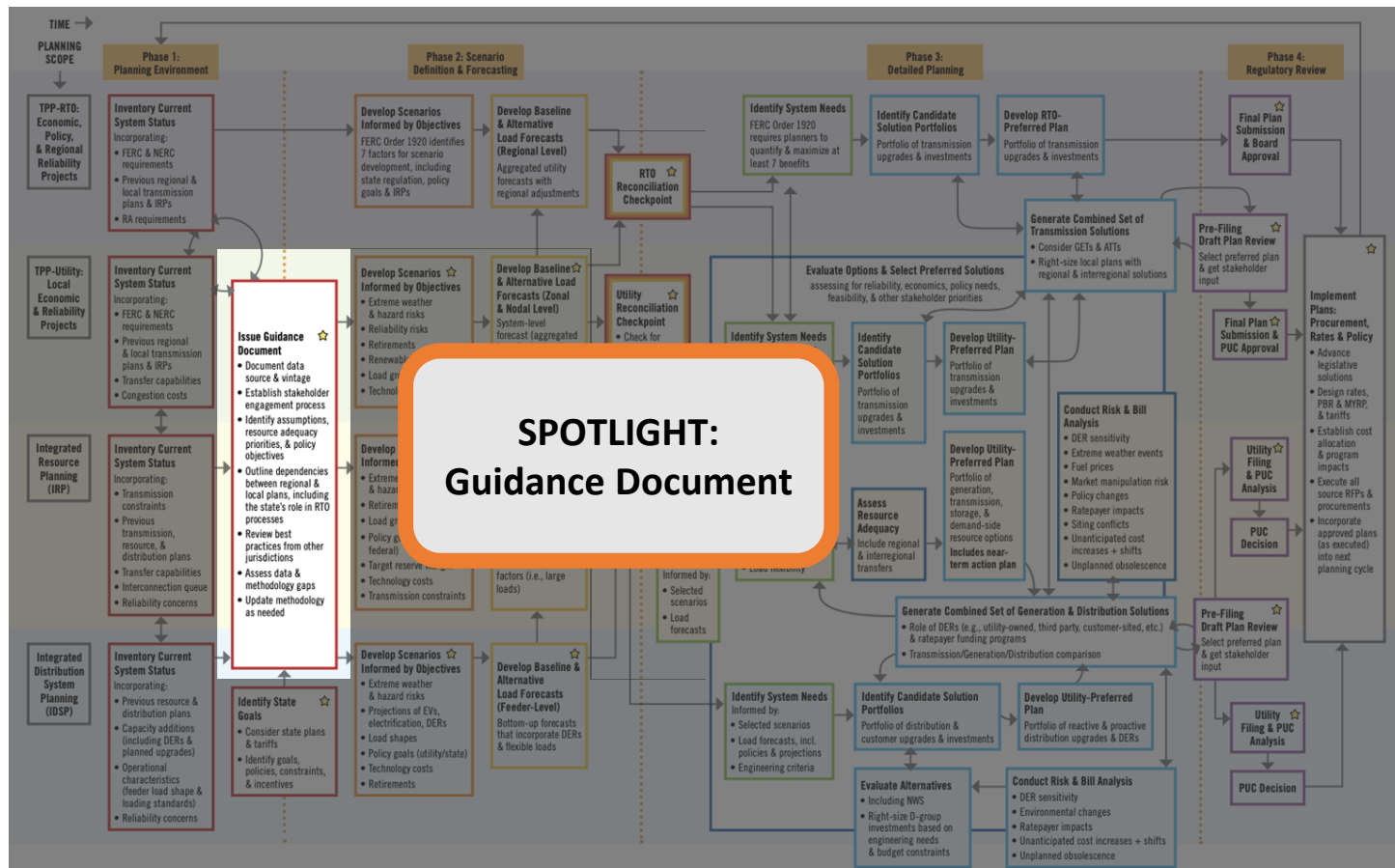
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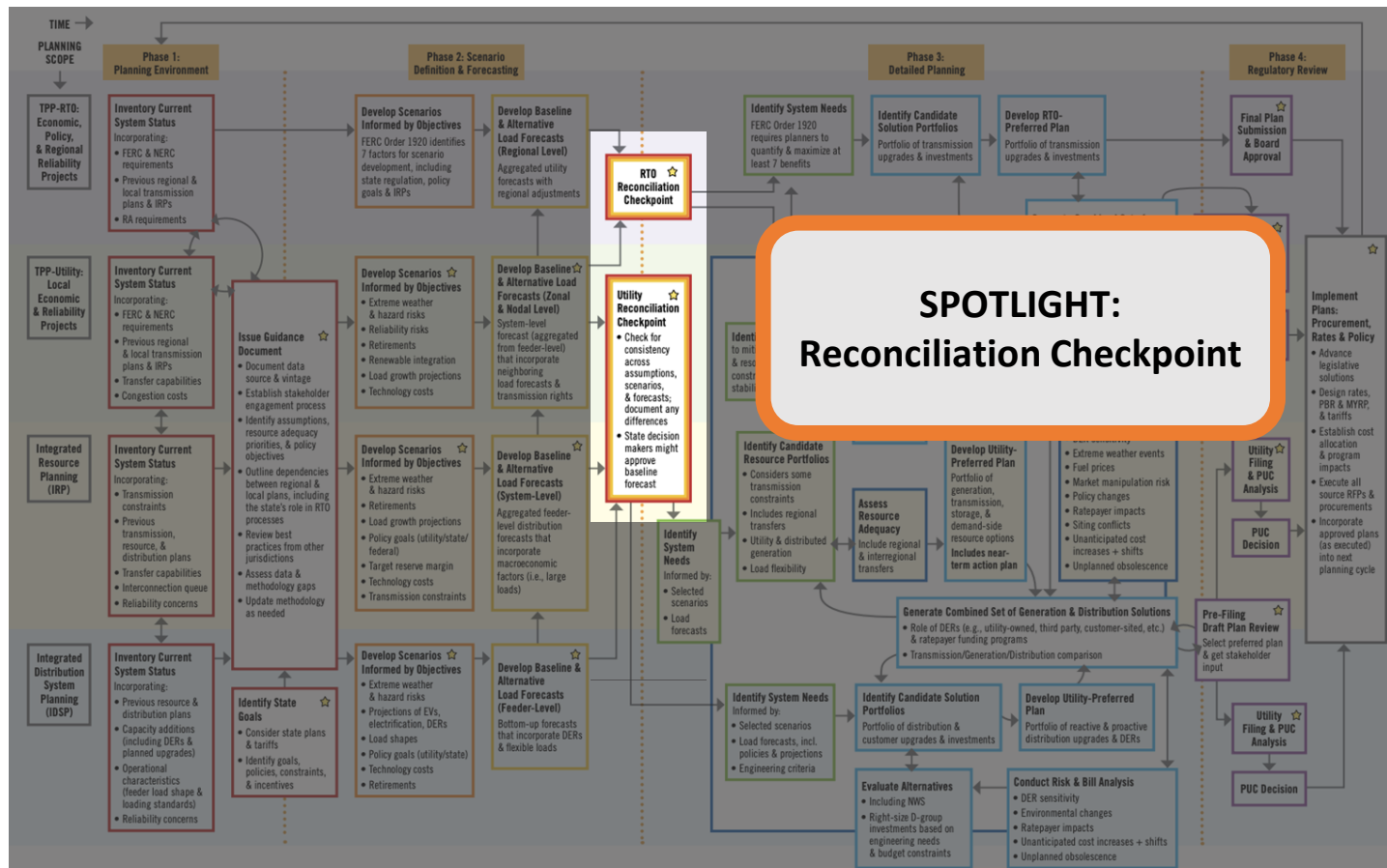
Jasper Flowchart:



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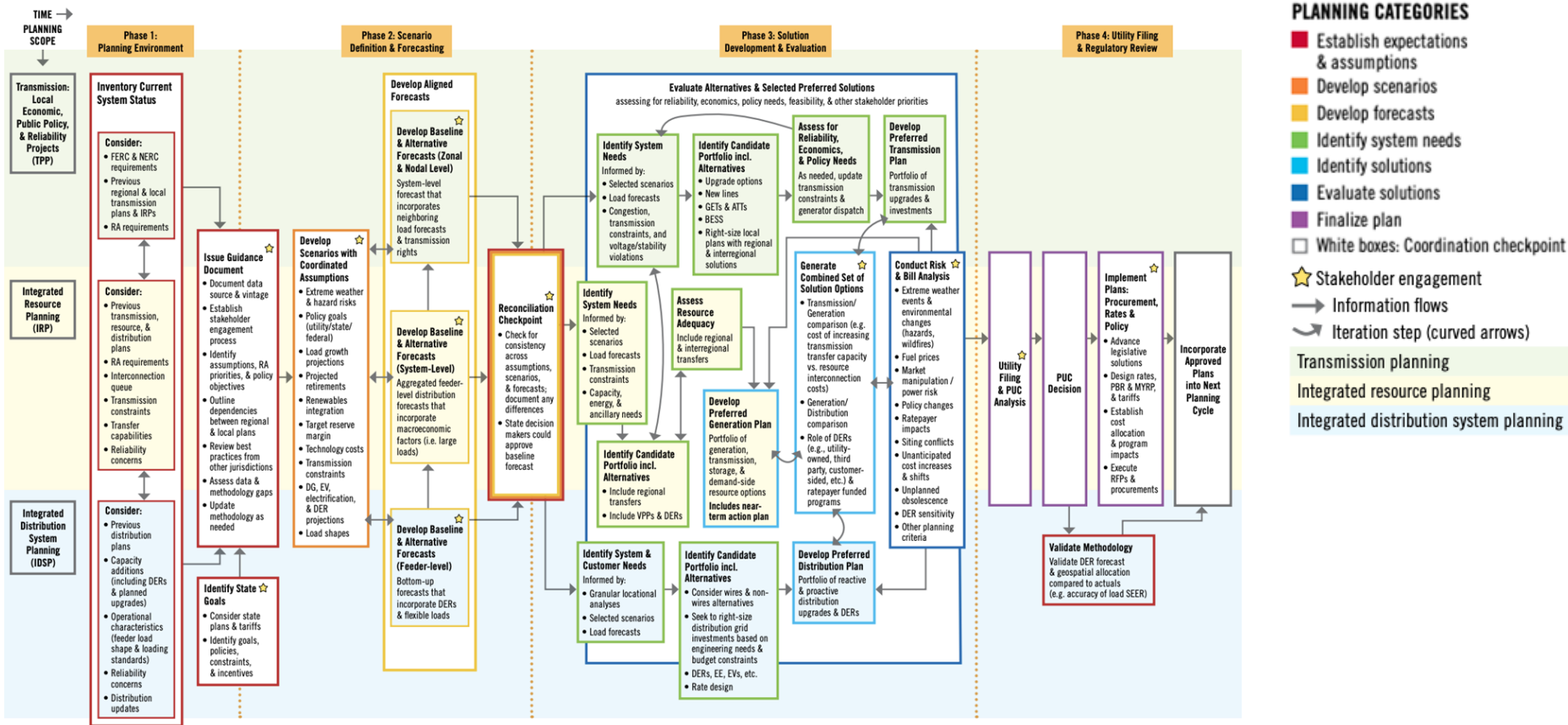
Jasper Flowchart:



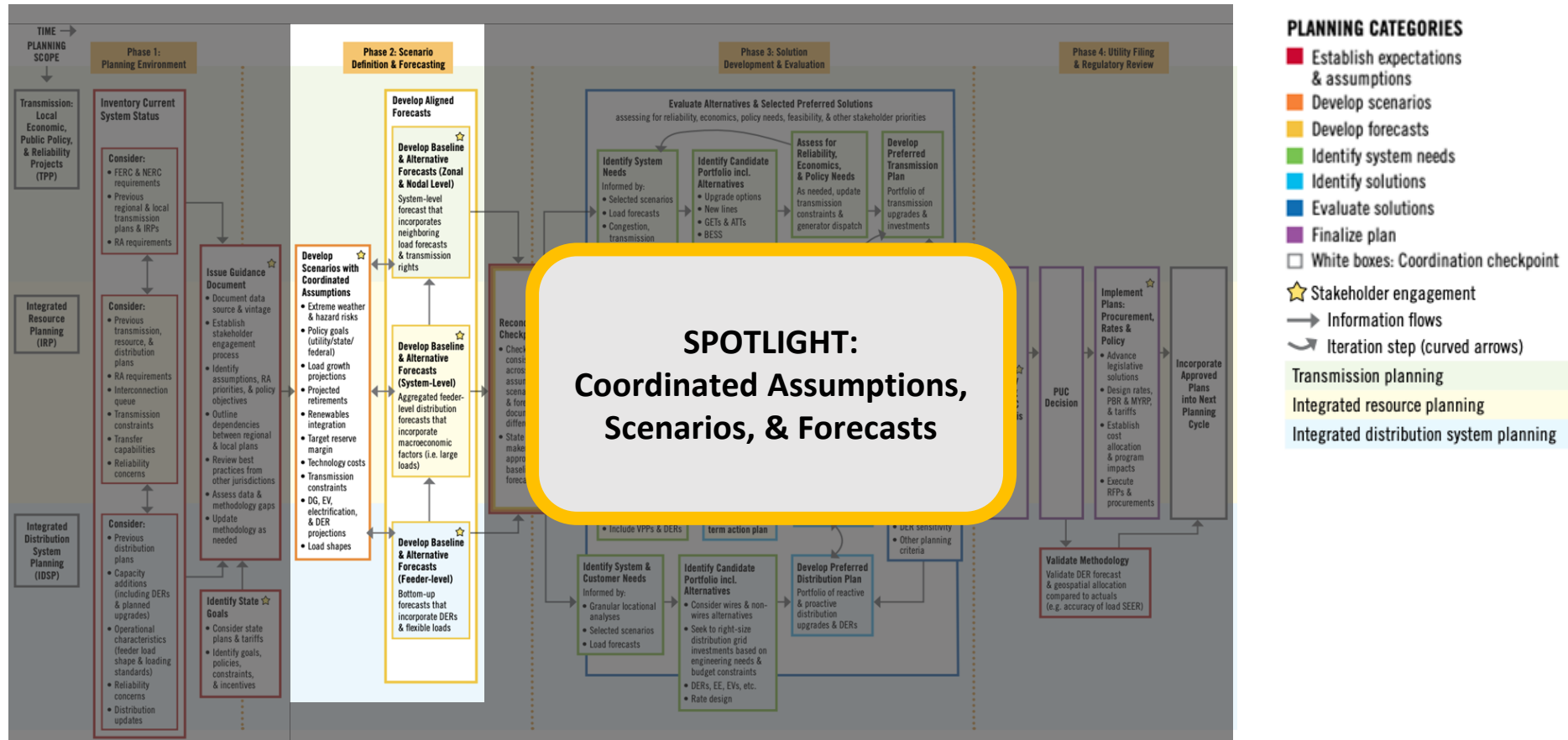
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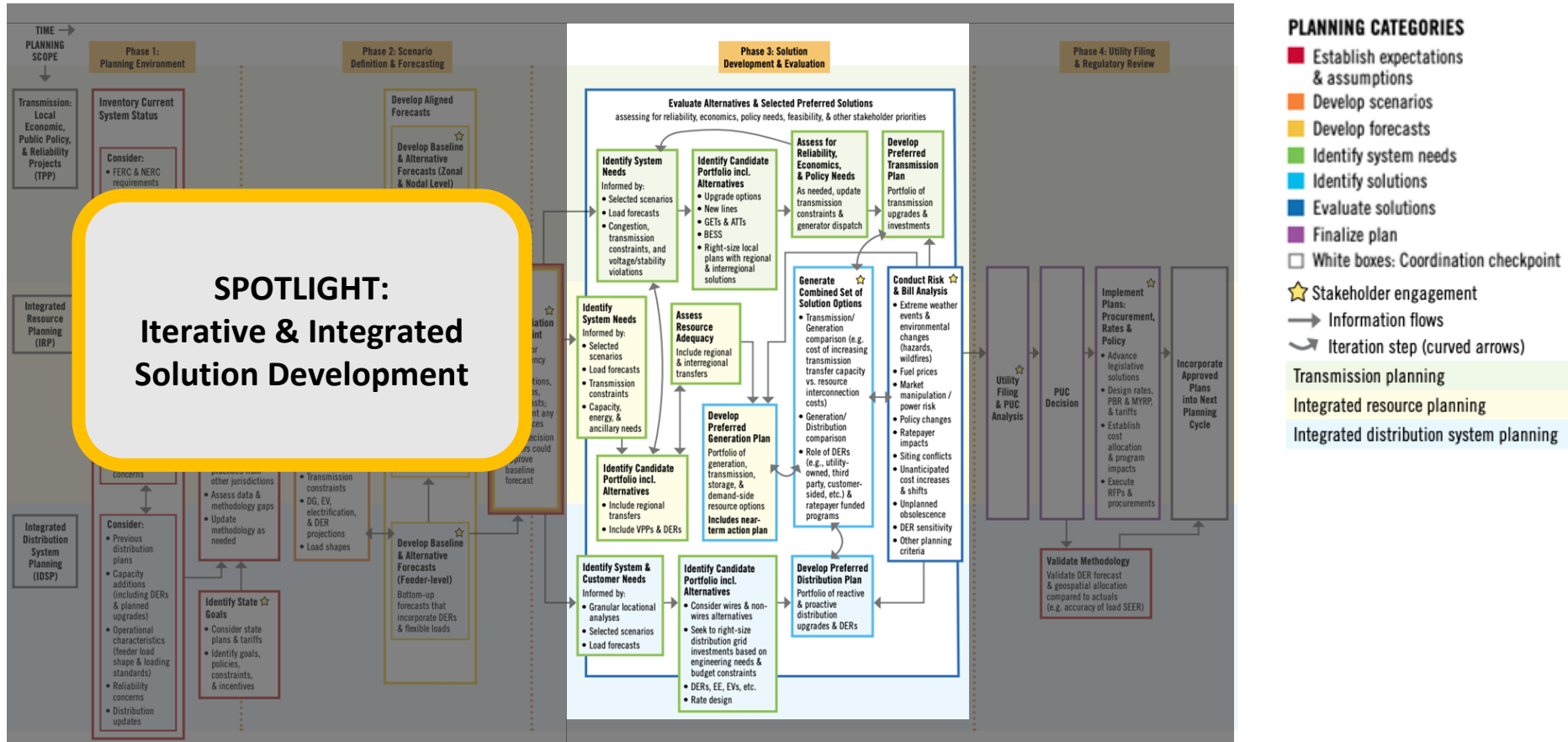
Topaz Flowchart: Vertically integrated outside of organized markets



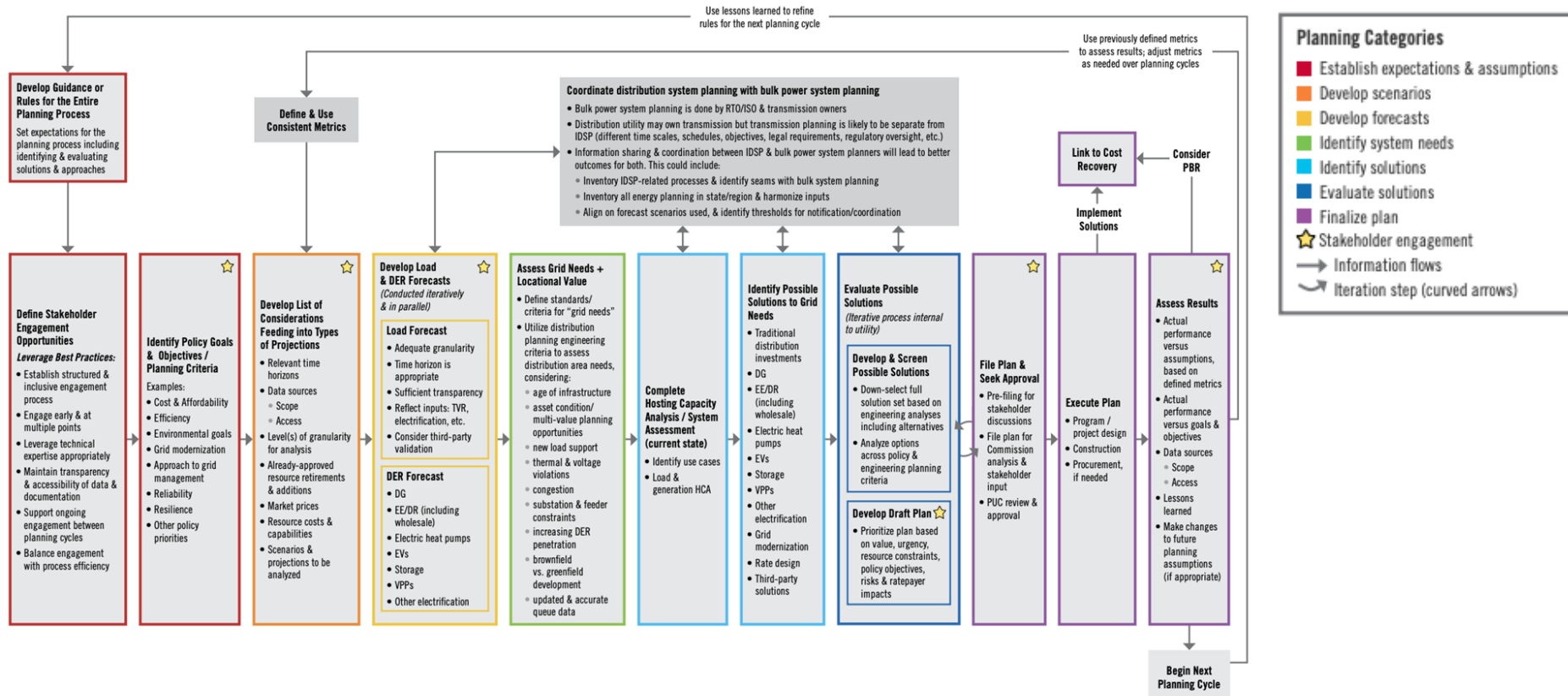
Topaz Flowchart: Vertically integrated outside of organized markets



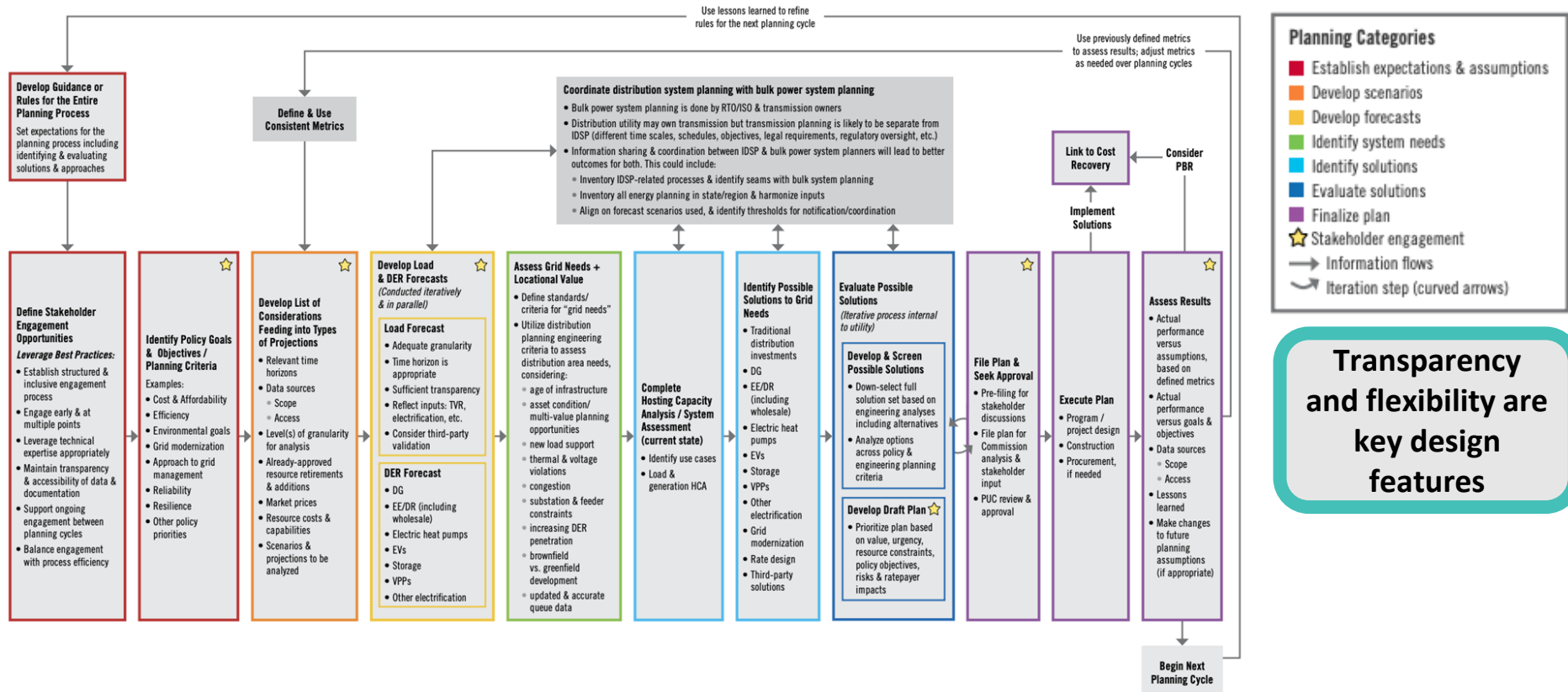
Topaz Flowchart: Vertically integrated outside of organized markets



Emerald Flowchart: Restructured States

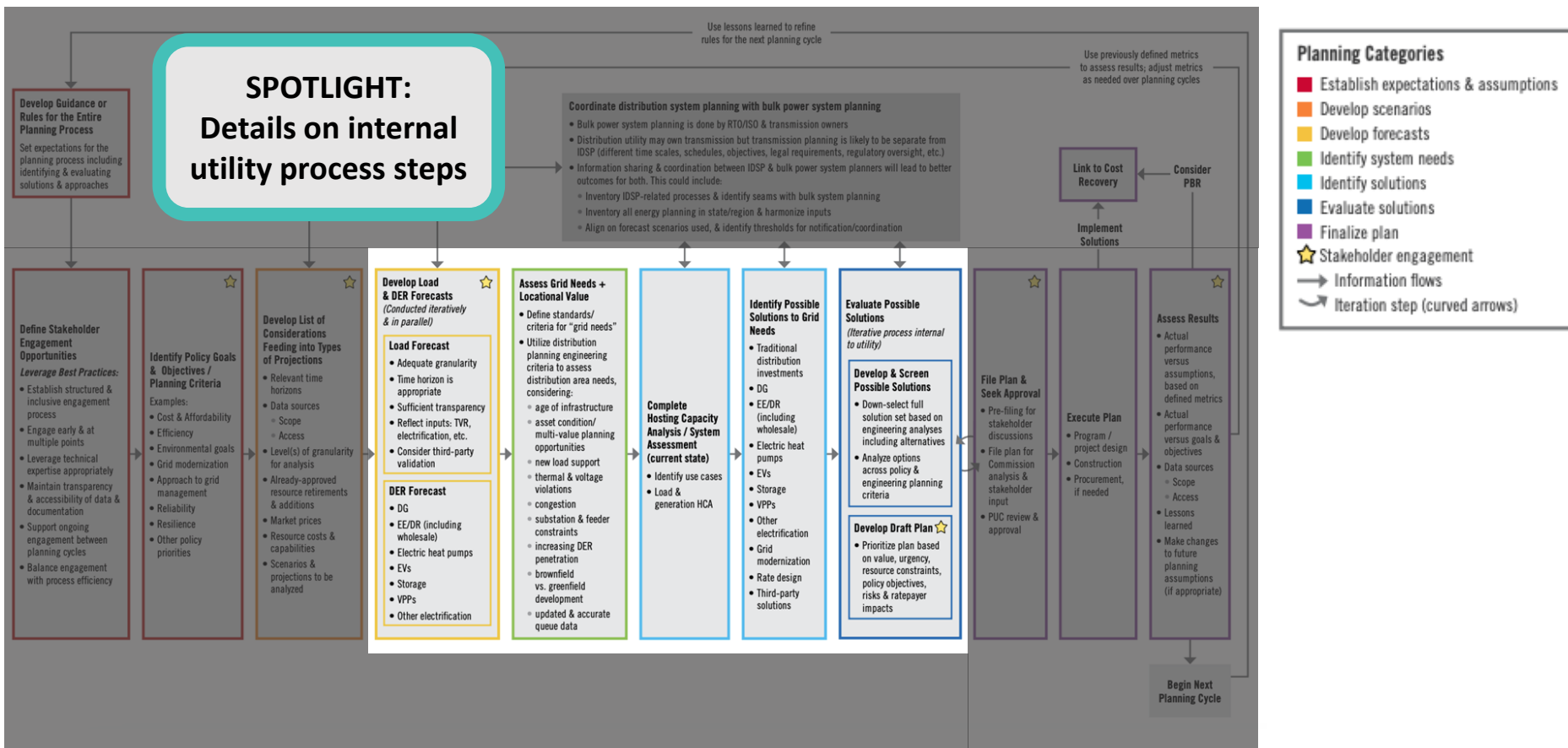


Emerald Flowchart: Restructured States

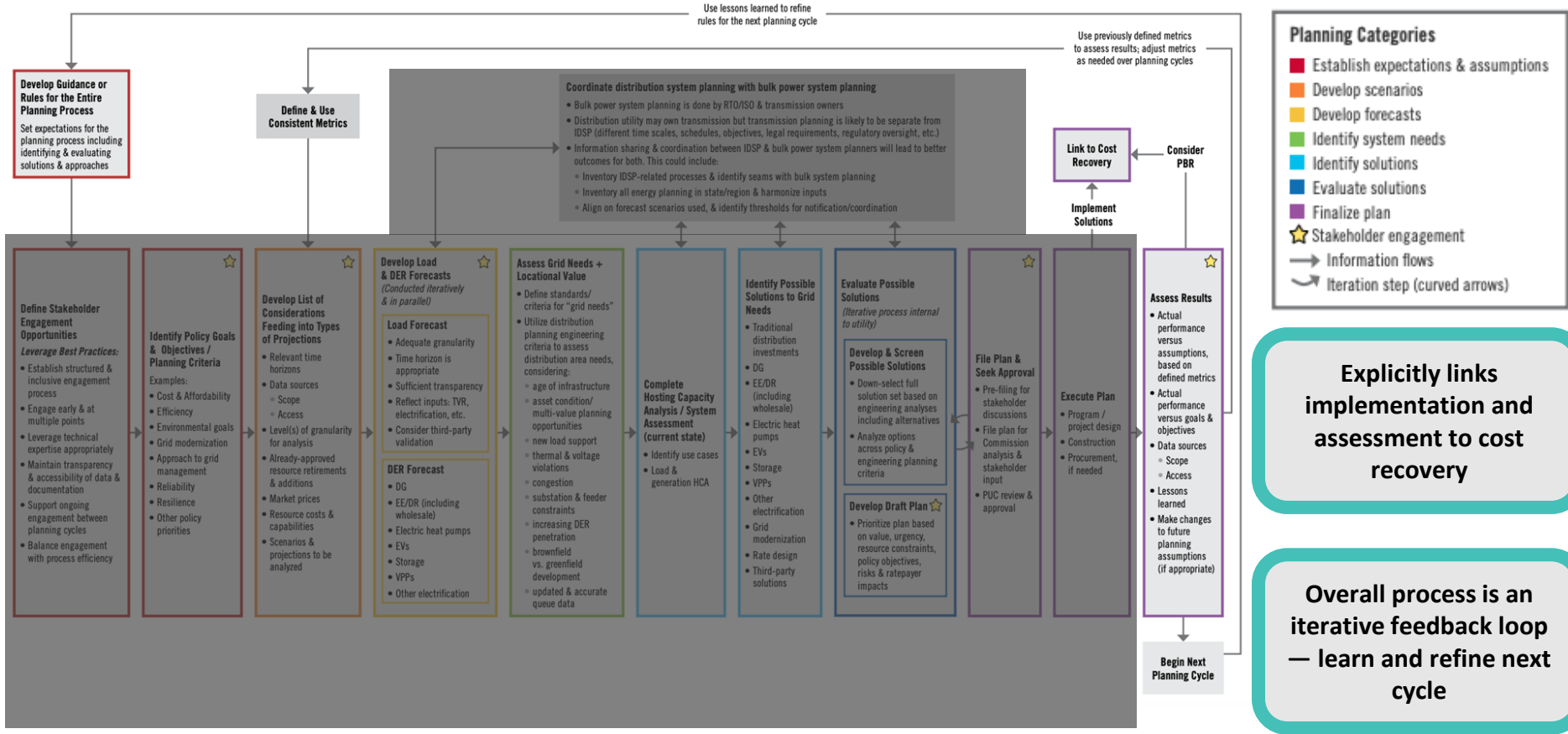


Emerald Flowchart: Restructured States

SPOTLIGHT: Details on internal utility process steps



Emerald Flowchart: Restructured States



Resource Library Demo

*Imagine you are looking for **examples** of how to **evaluate DERs** across **distribution, resource, and transmission plans**...*

Search Filters

Planning Category:
--- SELECT ---

Resource Type:
--- SELECT ---

Topic:
--- SELECT ---

Planning Scope:
--- SELECT ---

Search

View definitions of the filter topics

PLANNING CATEGORIES

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91 resources found:

Title	Details
[Forthcoming] Effectively Considering the Distribution System in Integrated Resource Planning	▼
[Forthcoming] Unlocking Reliability and Affordability Benefits of Grid-Enhancing Technologies (GETs)	▼
A Framework for Integrated Analysis of Distributed Energy Resources	▼
A Framework for Integrated Distribution System Planning	▼

Poll: How could you use the roadmaps and resource library to strengthen current planning processes in your jurisdiction?

- **Write or update planning** legislation, rules, and/or guidelines
- **Cite roadmaps or resources from library in testimony**
- **Share with utilities & stakeholders** to establish common language & foundation
- **Identify opportunities to make planning more flexible** under uncertain futures
- **Identify opportunities to increase transparency** in planning processes
- **Internal tool** for onboarding new staff and mapping internal responsibilities

Comprehensive Planning Poll#2

Webinar poll | 1 question | 15 of 37 (40%) participated

1. Which of the following use cases could strengthen current planning processes in your jurisdiction? (Multiple choice)

15/15 (100%) answered

Write or update planning legislation, rules, and/or guidelines (6/15) 40%

Cite roadmaps or resources from library in testimony (2/15) 13%

Share with utilities & stakeholders to establish common language & foundation (10/15) 67%

Identify opportunities to make planning more flexible under uncertain futures (8/15) 53%

Identify opportunities to increase transparency in planning processes (9/15) 60%

Internal tool for onboarding new staff and mapping internal responsibilities (5/15) 33%

Questions?

This webinar is being recorded and will be available with the PPT slides at: [www.naruc.org/core-sectors/electricity-energy/ comprehensive-electricity-planning1](http://www.naruc.org/core-sectors/electricity-energy/comprehensive-electricity-planning1)

You might also be interested in:

Upcoming events:

- [NASEO Powering Up Data Centers Webinar: Energy Performance and Standards for Data Centers](#) | Sept. 15, 2pm ET
- [NARUC Data Center Primer webinar](#) | Sept 17, 3pm ET
- [NARUC Load Growth Resources Webinar](#) | Oct. 23, 2pm ET
- [NASEO 2026 Annual Meeting](#) | Oct. 27-30 in Boulder, CO
- [NARUC 2026 Annual Meeting & Education Conference](#) | Nov. 8-11 in San Juan, Puerto Rico

Related resources:

- [National Council on Electricity Framework for State Collaboration on Load Growth](#)
- [Load Growth Resources for Utility Regulators](#) (webpage)
- [Essential Guide to NARUC Load Growth and Large Loads Resources](#)
- [National Standard Practice Manual](#)
- [Open BCA Tool](#)



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THANK YOU!

To follow up, contact:

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