SCRIPT

IDEATION SESSIONS RECAP

DECISION QUALITY

CASEY CATHEY

DECISION QUALITY: SCRIPT SCOPE OF WORK

The SCRIPT will develop policy recommendations that result in utilization of processes and information needed to ensure decisions being made about future investment in transmission infrastructure are made with a high degree of confidence and quality.

DECISION QUALITY: RECAP – SUCCESSFUL DQ

Transmission investments with **high decision quality**…

- Start with good data inputs based on the best information available with a high degree of probability; received in a timely manner
- Increase credibility for study assumptions (*e.g.*, futures, inputs, needs) by having ample time and improved processes to solidify stakeholder confidence
- Select solutions with flexibility to address a broad array of needs (*e.g.*, load and generation, reliability projects with economic benefits)
- Ensure sufficient data driven analysis performed to exhaust alternatives and ensure risk profiles are as accurate as possible
- Optimize the transmission value with a strong return on investment and minimize probability of regrets (consider multiple types of return: economic, reliability)
- Obtain overall consensus and provide a high degree of confidence that resulting transmission system will be used and useful, while also being flexible enough to adapt to multiple futures

"Data, Data, Data. You cannot make bricks without clay." - Sherlock Holmes

DECISION QUALITY: RECAP – ROADBLOCKS

Items that currently **prevent** SPP from making **higher quality decisions** about transmission investments include…

- Uncertainty of future events
  - Changing energy industry and overall end goal is gray or uncertain
  - Evolving energy policy and technology also changing rapidly
  - Government and/or FERC mandates or requirements
- Complexity of the transmission system
  - Data changes sometimes faster than transmission can be built; leads to possible reluctance in decision-making
- Conflicting interests (e.g., self-interest focus vs. overall benefit)
- Various planning processes performed in "silos"
- "Not enough time" to perform
  - Sensitivities or informative exercises, including any additional analysis requested
  - Adequate problem and/or goal framing
  - Stakeholder education and back-end facilitation prior to seeking approvals
- Reluctance to embrace technology changes
- Inconsistencies/Variances between economic/reliability assessments and market and/or real-time functions
  - Least-cost solutions vs. optimal solutions

DECISION QUALITY: IDEAS TO USE

New policies or processes that could **improve** transmission investment **decision quality** include…

- Optimize different internal planning processes and identify jointly beneficial processes
  - Align timing of the different planning processes that result in transmission upgrades
  - Consider top-down planning for more net-beneficial designs
  - Enhance methodologies that lead to higher decision quality or better information to make assumptions (*e.g.*, futures, retirements, electric vehicles, siting)
  - Use a structured process to arrive at decisions
- Provide greater transparency for business case optimization (*e.g.*, GI consolidation)
- Create flexibility in the process and schedules
  - Allow sensitivities to drive project decisions, rather than informational
  - Evaluate areas where additional time may be built into the process
  - Build in re-evaluation opportunity in planning process
- Improve data quality
  - Facilitate engagement from the local planning groups, including data-sharing
- Utilize a more consistent approach to cost estimates

DECISION QUALITY: IDEAS TO USE CONT.

New policies or processes that could **improve** transmission investment **decision quality** include…

- Improve interregional coordination
- Educate and understand risk-based or probabilistic planning, and the probabilities of future scenarios
- Assess more futures
- Develop a defined decision quality process
  - Review decision quality currently in place and provide stakeholder education
  - Identify which milestones or processes need higher decision quality
- Increase benefit thresholds for what gets built
- Outreach to industry SMEs regarding variables used in data analysis

DECISION QUALITY: STRAW PROPOSAL APPROACH

Develop a DQ process

Develop and document what DQ means within SPP's planning processes and define desired outcomes

Separate yet connected study processes (ITP, GI, TS, AQ, Seams)

Identify opportunities where more / altered coordination between SPP's separate study processes can create additional DQ

Identify opportunities within each separate study process that can create additional DQ

Implementing DQ

Develop new policies or processes to be applied to SPP's planning studies that result in realizing additional DQ

DECISION QUALITY: WEBEX POLL

Q: On a scale of 1 to 5, how well do these ideas prepare the decision quality sub-team to get started in 2021?

COST-SHARING

CHARLES LOCKE

COST-SHARING: SCRIPT SCOPE OF WORK

The SCRIPT will develop policy recommendations that result in improved cost sharing among users of the transmission system that appropriately recognizes causers and beneficiaries of transmission investment decisions.

1. WHAT CURRENT PROCESSES OR POLICIES RESULT IN INAPPROPRIATE COST-SHARING AMONG THOSE ENTITIES USING THE SPP TRANSMISSION SYSTEM?

Planning process may not identify all beneficiaries or cost causers

Cost allocation process may not all allocate to all beneficiaries or cost causers

- E.g., HW/BW may not be the most accurate cost allocation for all projects from the standpoint of matching costs and benefits

Cost allocation dependency on which process/plan addresses the issue first.

- E.g., GI upgrades that are later used to support transmission service, or vice versa

Lack of certainty in cost recovery for Upgrade Sponsors (Revenue credits for past projects and ILTCRs for future)

Potential over-allocation of cost to customers in cluster studies

1. WHAT CURRENT PROCESSES OR POLICIES RESULT IN INAPPROPRIATE COST-SHARING AMONG THOSE ENTITIES USING THE SPP TRANSMISSION SYSTEM?

Benefits of seams projects may not be assessed in a balanced manner due to modeling differences between the RTOs

Allocation and planning processes can result in free-ridership. Examples:

a) Generators benefiting from upgrades paid for by network loads

b) Network loads benefiting from upgrades paid for Upgrade Sponsors

c) Lumpy investment creating excess capacity used by those not bearing cost

Disconnect between the standards applied in the interconnection and service queues versus standards applied in integrated planning

2. WHAT CURRENTLY PREVENTS SPP FROM IMPROVING COST-SHARING POLICIES?

Lack of flexibility in planning processes and criteria. For example, upgrade-by-upgrade planning rather than a comprehensive approach

Planning models that may not accurately reflect the future or may give incomplete assessment of costs and benefits

Adding complications to an already complex tariff. A more "correct" outcome can be overly complex

Different allocation outcomes from different planning processes

Varying state/local policies and criteria

Lack of knowledge regarding current cost allocation tools (e.g., Balanced Portfolio)

Tension between different federal policies (e.g., "cost causer" and "beneficiary pays" do not always yield the same result)

2. WHAT CURRENTLY PREVENTS SPP FROM IMPROVING COST-SHARING POLICIES?

Uncertainty: 1) Adequacy of hedges, 2) GI network upgrade cost recovery for generators, 3) Future economic and policy environment, 4) Fear of changing from current practice, 5) Industry and SPP undergoing major changes

Questions regarding the application and effectiveness of peak load billing determinants

Tradition coupled with distrust of other stakeholder sectors.

Lack of focus on the relative benefits for each party.

Lack of coordination between different study processes (ITP, GI, ATSS, AQ) and different customer incentives in each process. Despite agreement on problems, solution selection based on who pays may result in not effective answers to the problem or not solving the problem at all.

3. WHAT NEW PROCESSES OR POLICIES COULD IMPROVE COST-SHARING AMONG THOSE USING THE SPP TRANSMISSION SYSTEM?

Focus on identifying beneficiaries and cost causers, with improvement of benefit calculations, quantifying at the zonal level and including both loads and generators

Consolidate planning processes (including model consistency) to better identify causers and beneficiaries

Combine cost sharing from the different planning processes

Ensure consistency of planning and operational models, which better ties planning to actual use of system

Expand the areas used for planning and cost allocation

Improve the MISO/SPP joint planning process

Postage stamp across multiple RTOs for seams projects

Establish a beneficiary-pays model structured similar to HW/BW

3. WHAT NEW PROCESSES OR POLICIES COULD IMPROVE COST-SHARING AMONG THOSE USING THE SPP TRANSMISSION SYSTEM?

True-up of projected costs and benefits with actual results

Encourage project sponsorship

Establish rates that include more than just peak load (e.g., generator injection rates)

4. WHAT ROAD BLOCKS COULD PREVENT US FROM SUCCESSFULLY IMPLEMENTING COST-SHARING SOLUTIONS?

Concern about zero-sum outcomes, parochial interests, and cost-shift concerns

Beneficiaries may vary depending on geographic location. Examples:

a) More active development of generation in some areas of the SPP region
b) Proximity to an RTO seam

Cost fatigue

Not recognizing all benefits

Complexity of rates and cost allocation

FERC and State regulatory challenges

Challenges in balancing costs and benefits over the entire portfolio.

5. WHAT UNINTENDED CONSEQUENCES OF ANY PROPOSED COST-SHARING SOLUTION DO WE WANT TO AVOID?

Not having beneficiaries pay commensurate with their benefit, or conversely, having some beneficiaries pay substantially more than their benefit

- E.g., Pricing some parties out of participation because the cost allocation fails to recognize the benefits received by others

Excessive complexity of cost allocation structure and rates

Cost sharing design changes may lead to costs showing up elsewhere

- E.g., Injection rates could result in future pass-through in PPAs

Creating incentives to either over-invest or under-invest in transmission

COST-SHARING STRAW PROPOSAL DEVELOPMENT

- Base on the premise that SCRIPT will achieve some degree of consolidation of the planning processes
- Start from fundamental principles. Possible examples:
  - Seek to improve the matching of costs with benefits
  - Address how to handle both quantifiable and non-quantifiable benefits
  - Keep it simple – while some degree of complexity is necessary, avoid a "Z2" solution
- Develop specific cost-sharing recommendations only after laying a foundation of working principles
- In developing cost-sharing recommendations, evaluate proposals made during the SCRIPT ideation sessions as well as current cost allocation practices of SPP and other RTOs
- Coordinate with the other SCRIPT sub-teams
- Address the timing/staging of cost-sharing implementation

COST-SHARING: WEBEX POLL

Q: On a scale of 1 to 5, how well do these ideas prepare the cost-sharing sub-team to get started in 2021?

TRANSFERS

DAVID KELLEY

TRANSFERS: RECAP – POTENTIAL VALUE

Increased interregional **transfers** have the potential to…

- Reduce regional and/or zonal costs by increasing load (and/or other beneficiaries) considered for cost allocation
  - Additional point-to-point revenues for exports decrease transmission costs for network loads
- Expand market access for and utilization of cost-efficient resources, especially renewable resources
- Improve optimization of assets
  - Co-optimize dispatch across multiple regions
  - Fuel diversity
  - Geographic diversity
- Improve access to energy storage during times of excess generation

TRANSFERS: RECAP - ROADBLOCKS

Some of the limitations or issues that prevent an increase in **transfers** are…

- Differing utility/state/political interests
  - Lack of market of entities that desire wind (primarily) and solar from outside their footprint
- Cost of building up the transmission system to facilitate transfers and allocation of those costs
  - Load generally bears these costs, but may not receive proportional benefit from interregional transfers
- Seams issues
  - Rate pancaking
  - Different modeling assumptions, benefit metrics, and cost allocation methods used for seams needs in interregional planning

TRANSFERS: RECAP – ROADBLOCKS CONT.

- Physical facility limitations (DC ties limit transfers to the Western Interconnection or ERCOT)
- Regulatory hurdles - Modification of multiple tariffs
- Technical capabilities (software)
- Inability to receive adequate congestion hedges
- Requires cooperation from non-SPP parties

TRANSFERS: IDEAS TO USE

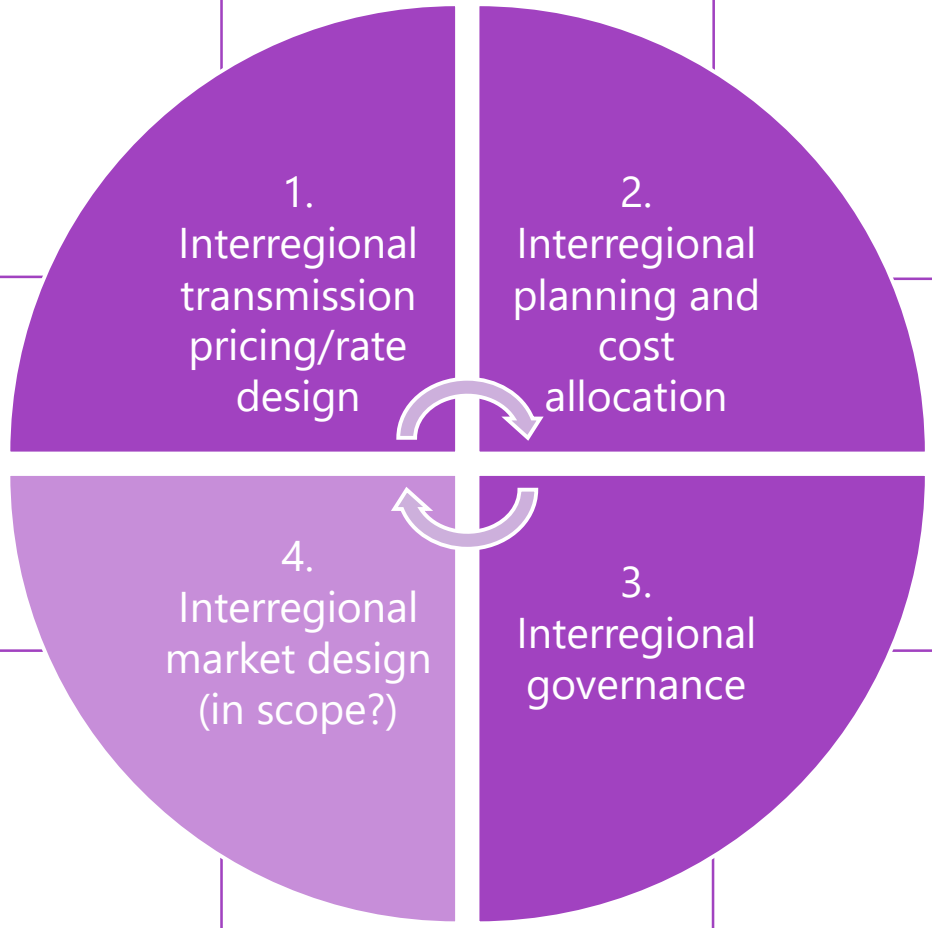
- Enhance coordination between the markets to co-optimize the market dispatches and more optimally use the transmission system
- Consider alternative cost allocation methodologies for future inter-zonal transmission projects that closely align zonal costs with zonal benefits
  - Zones who benefit ensure those zones who have negative benefits are made whole
- Eliminate rate pancaking or other administrative hurdles preventing transfers across multiple RTOs
- Facilitate the marketing of excess renewable generation to where it is needed most

TRANSFERS: IDEAS TO USE CONT.

- Improve interregional planning
  - Improve alignment of future assumptions between regions
- Provide a mechanism such that transfer purchasers are guaranteed a congestion hedge
- Federally subsidize interregional transmission expansion
  - Merchant lines paid by federal government or a different set of customers
- Develop forums for customers across regions, with RTO facilitation/presence

TRANSFERS: STRAW PROPOSAL APPROACH

- Interregional transmission pricing agreement
- Complete de-pancake of rates
- New interregional rate schedule



- Persistent operational issues
- Reliability planning differences
- Tariff mechanism for cost allocation of "Seams Projects"
- Hurdle rates
- Congestion hedging

- Capacity portability – a resource is able to participate in multiple markets
- Single, co-optimized SPP+MISO Day-Ahead Market
- Co-optimize Real-time dispatch

- Interregional consortium of RTOs and/or Customers/Market Participants
- Support consistent rules across different regions

TRANSFERS: WEBEX POLL

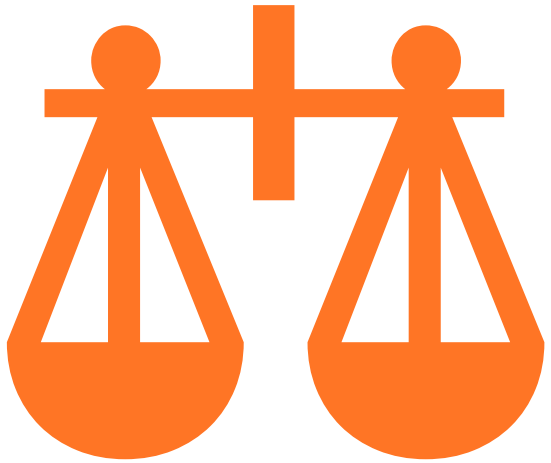
Q: On a scale of 1 to 5, how well do these ideas prepare the transfers sub-team to get started in 2021?

OPTIMIZATION

ANTOINE LUCAS

OPTIMIZATION: SCRIPT SCOPE OF WORK

The SCRIPT will develop policy recommendations that result in optimization of the existing and planned transmission network to most cost effectively meet future needs while providing maximum value to the region



OPTIMIZATION: WHAT DOES IT MEAN?

- Maximizing use/benefit of existing and planned transmission system

General

  - Considers all system needs in aggregate and identify the best solutions for the region
  - (Survey) To optimize across least system cost, highest profits, best technology fit, consideration of emission standards, non-power alternatives, and factor in gas and water commodity.
  - Finding transmission solutions that address needs across economic, reliability, policy, local, regional

Cost

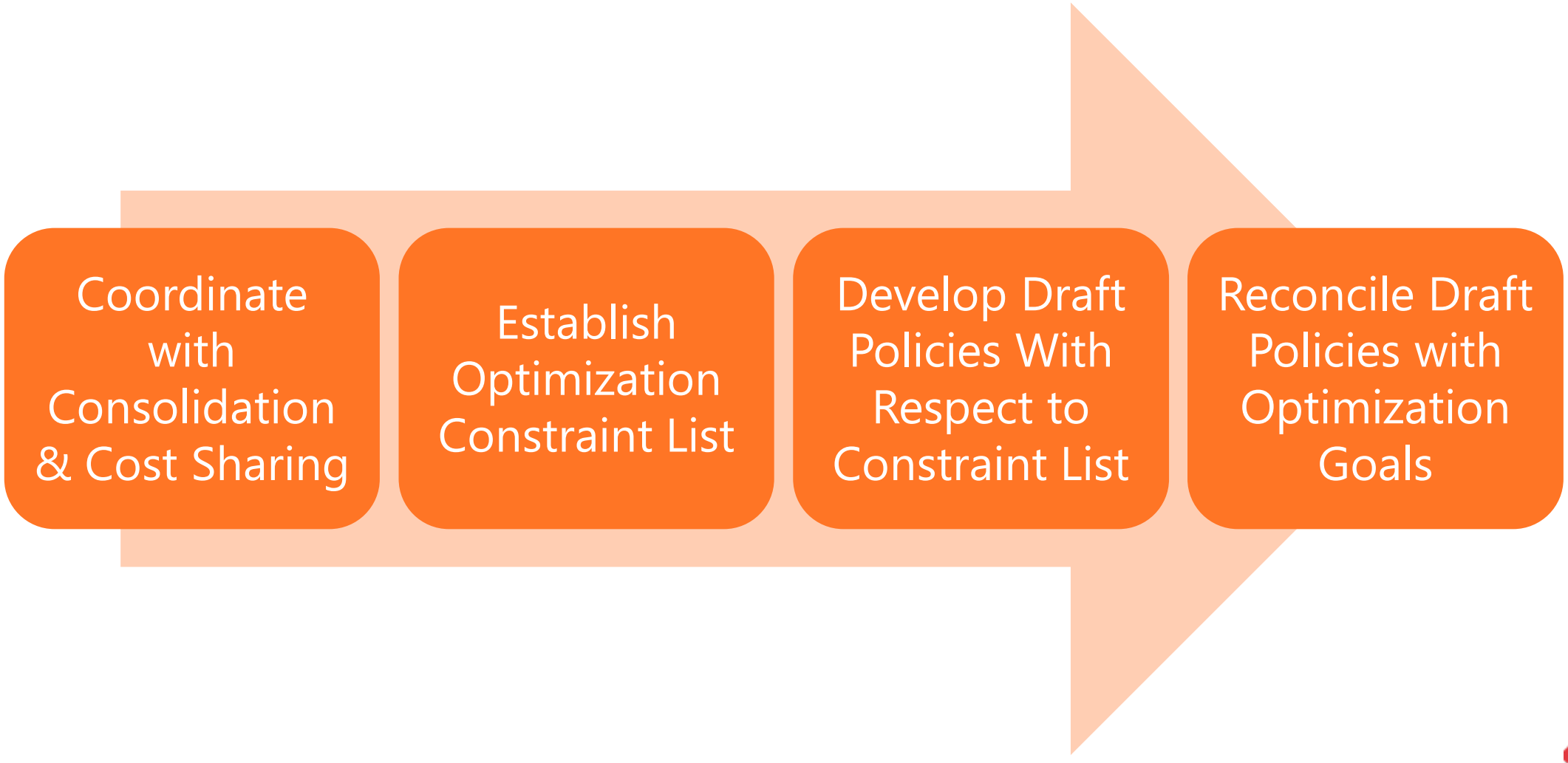
  - Consideration of capital budget constraints and prioritize based on value
  - Balanced portfolio (zonal approach)

- Providing incentives
  - Provide better signals that incentivize behavior that leads to better optimization
  - (Survey) Transmission that incents load to locate in SPP
- Process/Consolidation
  - Modeling, staff time, admin cost

OPTIMIZATION: IDEAS TO USE

- Better usage of existing system
  - Modify processes to incent optimal siting of generation and/or load
  - Adopt DLR and economic outage policies
  - Capture more details of how the system is actually used in the operational horizon within the planning process
  - More consideration of aging infrastructure and targeted planning
  - Consider alternative methods to limit impact of outages / economic coordination of outages
- Cost effective and holistic evaluation of future transmission expansion needs
  - Consider projects that could be modified to significantly provide benefits in the future and enable greater optimization
  - Evaluate all transmission system issues concurrently for comprehensive solutions
  - Take into account all benefits from all planning and service processes when selecting solutions
  - Improve coordination between local and regional planning processes
  - Perform interregional planning under the same futures used in regional analysis

OPTIMIZATION: STRAW PROPOSAL APPROACH



OPTIMIZATION: WEBEX POLL

Q: On a scale of 1 to 5, how well do these ideas prepare the optimization sub-team to get started in 2021?

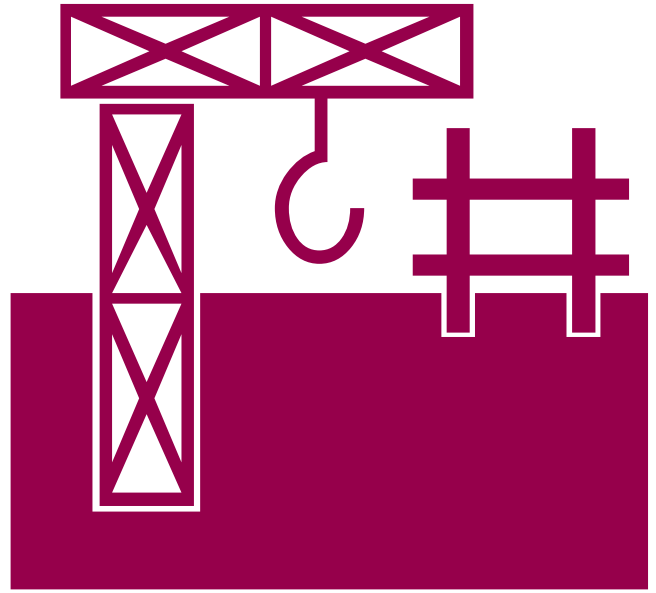
SERVICES

STEVE PURDY

SERVICES: SCRIPT SCOPE OF WORK

The SCRIPT will develop policy recommendations that:

- Improve responsiveness and outcome certainty of studies needed to provide customer-requested service
- Reduce dependence on queue-driven studies, with consideration given to development of proactive processes that identify and make transparent underutilized transmission capacity



SERVICES: MOST CRITICAL CHALLENGE

- Service and GI upgrades are not optimized for the benefit of all users of the Transmission System
  - Least-cost vs cost-effective
  - Designing for specific use cases vs system-wide benefit
  - Cost allocation doesn't recognize benefits to others
- Generation and load development are inhibited by inefficiencies in current processes
  - GI
  - AQ
- Current processes are perceived as not being equitable
  - Costs
  - Access
  - Congestion

SERVICES: IDEAS TO USE

Ideas that could be targeted for implementation in the near-term (next 6-12 months) in red.

Consolidate GI and TS with ITP [Overlaps with consolidation sub-group]

- Simplify and align processes
  - Reduce complexity and data
    - Timely data gathering (models, assumptions, scope complexity, too many moving parts)
    - Model Reduction
  - Combined Study
    - Combine Transmission Services (TS) processes (includes ATSS, AQ) with GI
    - Understand the economics of upgrades coming out of GI and ITP and impact on each study
    - Incentivize service customers to participate in regional planning rather than iterative queue.
      - SPP must provide a queue driven process, but what are the incentives to get out
      - Cost-certainty could be an incentive to developers, customers, load-serving entities.
- Cost causation/Cost allocation
  - Improve analysis and cost sharing for ITP, GI and TS upgrade
- Optimization
  - Coordinate upgrades between ITP, GI and TS
- [Survey] An auction process to fast-track queued projects that could satisfy shortfall or Resource Plan needs identified during the ITP process
- [Survey] Require GI and TS initial iterative runs before entering into the consolidated study to bring a level of certainty similar to that seen in the ITP

SERVICES: IDEAS TO USE CONT.

Ideas that could be targeted for implementation in the near-term (next 6-12 months) in red.

Provide additional information and transparency

- Identify existing points that can accommodate new load and gen
- Pre-identify interconnection costs

Modify cost allocation methods [overlap with Cost Sharing subgroup]

- Adopt MISO method of cost-sharing between queues
- Address O&M recovery
- Simplify funding and cost-allocation rules
- Base cost allocation on capacity and energy components
- Improve iLTCR cost recovery
- Apply economic analysis to determine beneficiaries

Implement specific GI process improvements

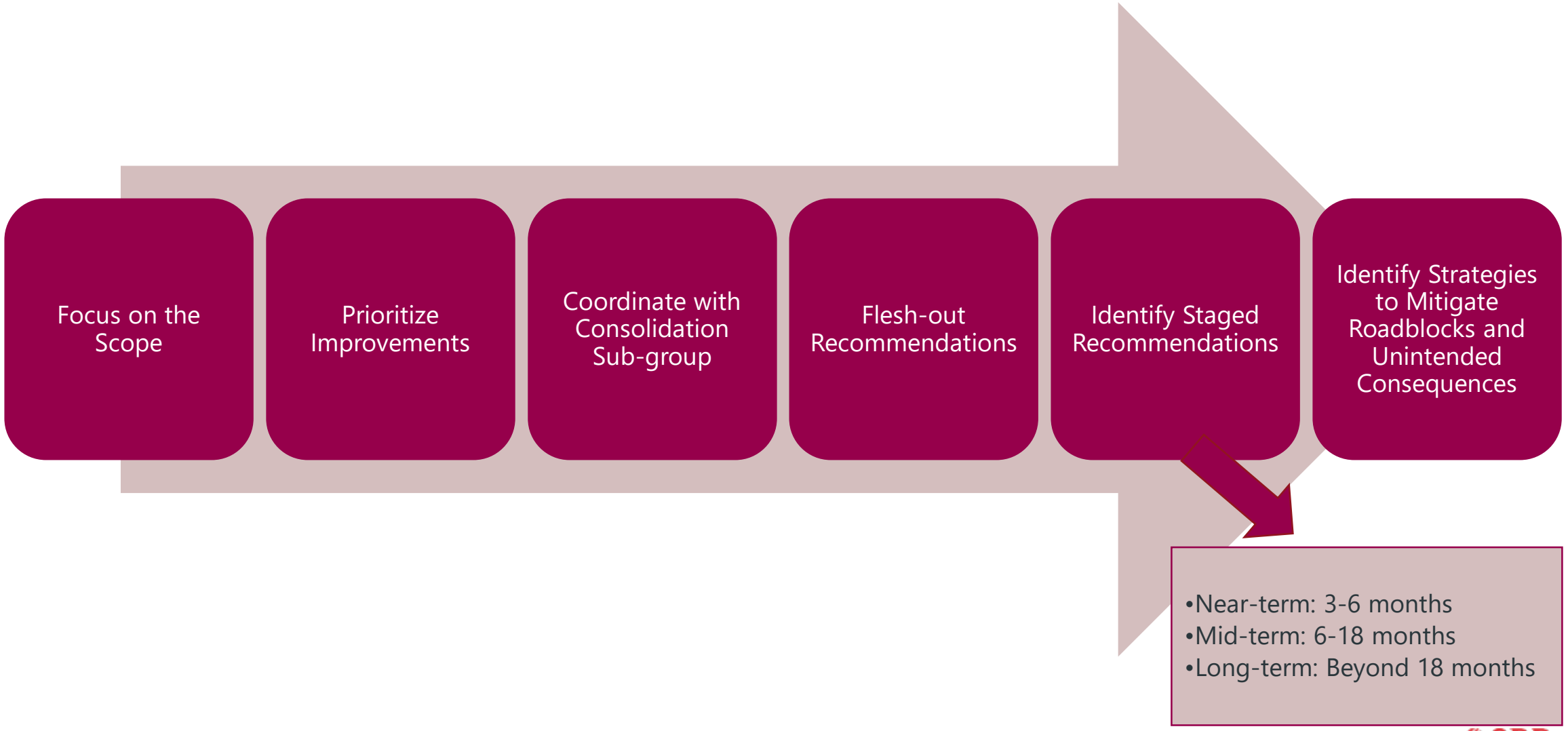
- Streamline models, scenarios, assumptions
- [Staff] Add internal or external resources
- [Staff] Implement a backlog clearing plan for the current request backlog.
- Let GI customers define cost thresholds like ATSS study
- Set min/max costs that GI customers would be exposed to
- Improve speed and quality of inputs from T.O.s and 3rd parties
- Prioritize requests that can demonstrate pre-approval or contracts
- Reduce restudy triggers
- Implement fast-track process for customers willing to bear risk
- [Survey] Review all processes to root out inefficiencies

SERVICES: IDEAS TO USE CONT.

Other/Miscellaneous

- Reduce the number of TS products and align with market operations
- Use deliverability zones recommended by NEDTF
- Improve congestion hedging opportunities/results
- [Survey] Provide incentives for co-located and/or flexible generation and load.

SERVICES: STRAW PROPOSAL APPROACH



SERVICES: WEBEX POLL

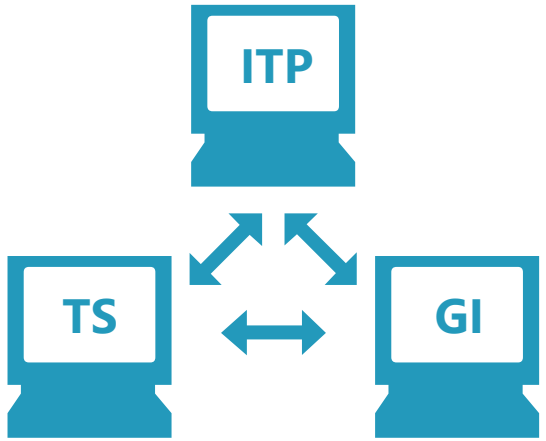
Q: On a scale of 1 to 5, how well do these ideas prepare the services sub-team to get started in 2021?

CONSOLIDATION

LANNY NICKELL

CONSOLIDATION: SCRIPT SCOPE OF WORK

- Appropriate consolidation of SPP's transmission planning and study processes, including ITP, GI, and Transmission Service studies to:
  - Develop more optimal solutions that meet a broader set of customer needs
  - Synergize analysis so that beneficiaries and cost-causers can be identified in a holistic, uniform fashion
  - Improve planning efficiency, effectiveness and timeliness
  - Reduce the number of model sets needed
  - Reduce reliance on customer-requested, queue-driven studies



CONSOLIDATION: IDEAS TO USE

Reduce Complexity and Data Requirements

- **Timely data gathering**
  - Models, assumptions, and scopes
  - Consistent and collaborative data sources
- **More simple, efficient and timely processes**
- **Incorporate infrequently used processes into others**
- **Model Reduction**
  - Reduce number of models to focus on ones we really need for transmission planning
  - Risk-based planning approaches

Align Processes

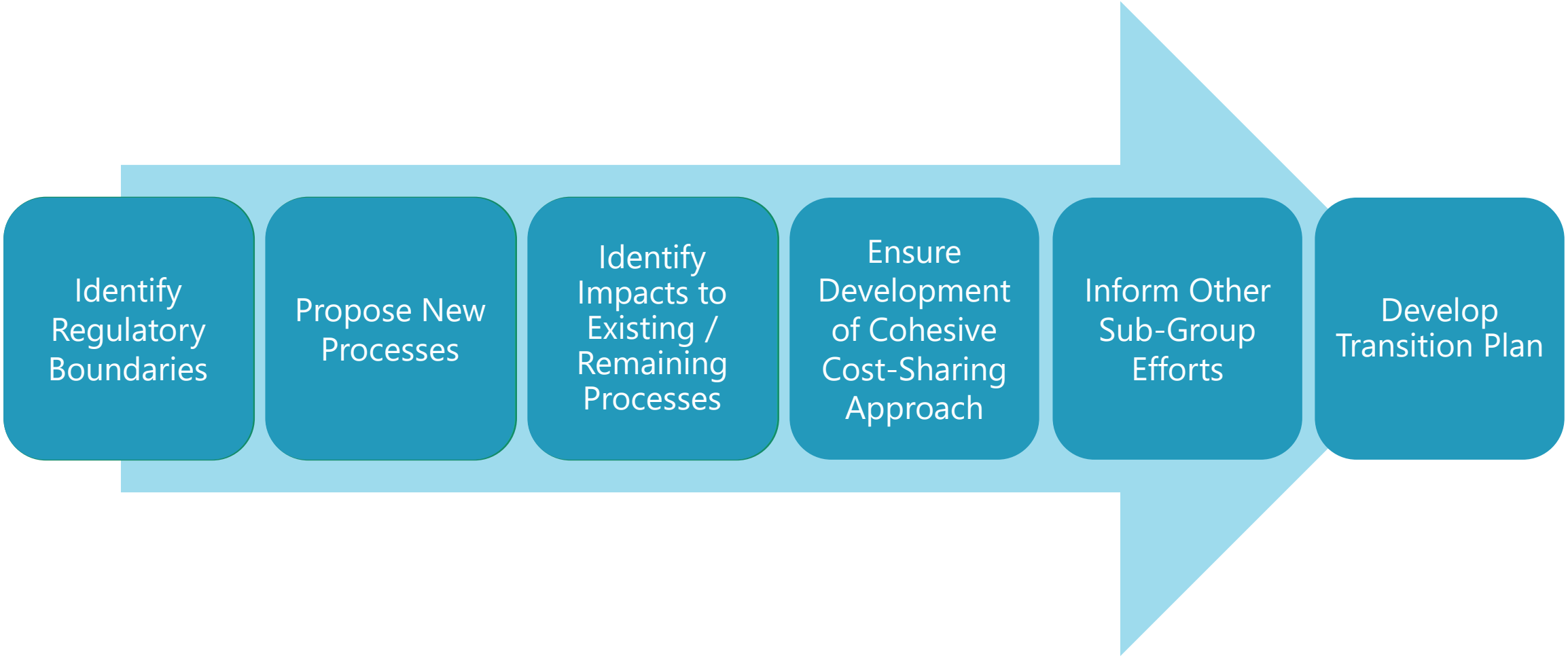
- **Create a single study used to provide multiple services**
  - Improve analysis to identify drivers of upgrades for cost sharing purposes across planning
  - Combine GI / transmission services (TS) processes
  - Understand the economics of upgrades coming out of service processes
- **Incentivize service customers to participate in regional planning rather than iterative queue**
  - SPP must continue to provide a queue driven process
  - Increased cost-certainty
  - Reduced direct cost-assignment
  - Reduced timeline for service customer answers
- **Assess whether SPP's planning model practices align with market practices/rules**
  - Improved operational models/analysis as potential use in planning model

CONSOLIDATION: SOLUTIONS

Develop Comprehensive Annual Study Under Attachment O

- **Goals**:
  - Develop a single comprehensive study to meet baseline regional planning, transmission service, and generator interconnection service needs
  - Develop process for service customers to "opt-in" to regional planning studies
  - Keep existing service study assessment processes for limited number of service customers
  - Remove outdated or unneeded study processes (fold ideas into comprehensive study)
- **Opportunities:**
  - Reduce models sets to meet multiple studies and compliance reporting needs
  - Increase cohesiveness between NERC and SPP Tariff regional reliability planning studies
  - Develop more efficient timelines for data collection, model development, and assessments
  - Bring more "real-world", market based, assumptions to service customers
  - Enhance cost-sharing opportunities between load-serving entities and service customers

CONSOLIDATION: STRAW PROPOSAL APPROACH



CONSOLIDATION: WEBEX POLL

Q: On a scale of 1 to 5, how well do these ideas prepare the consolidation sub-team to get started in 2021?