Item 7: Developing ERCOT Operations Plans in Support of the Strategic Plan

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Operation Plan Development - Status

- Operations Plans being developed for each ERCOT Division and Department

- Key elements include:
  - Core Activities
  - Operational Improvements
  - Strategic Initiatives
  - Key Performance Indicators
  - Risks
  - Staffing

- Efforts to identify Strategic Initiatives have been focused in the areas:
  - Grid Operations & Planning
  - Commercial Market Operations
  - Business Planning & Integration

Framework to Translate Strategic Plan to Divisional Goals

1. Corporate Objectives are identified to support each Strategic Pillar.

2. Each Division identifies goals to support Corporate Objectives.
   - Several goals may support a single Corporate Objective.
   - Some Corporate Objectives may not apply to every Division.

3. Departmental milestones, deliverables, and timeframes are identified.

4. Employee performance goals are identified to support the strategic initiatives.

Current Status & Next Steps

- Each Division has completed first draft of the Operations Plan template

- Internal work continues to further identify:
  - Milestones
  - Deliverables
  - Timeframes

- Operations Plan development will continue through the summer

- Full set of Operations Plans to be completed by September

- Strategic Initiatives identified by ERCOT will be used during facilitated Board discussions during the summer

APPENDIX
ERCOT Draft Corporate Strategic Initiatives
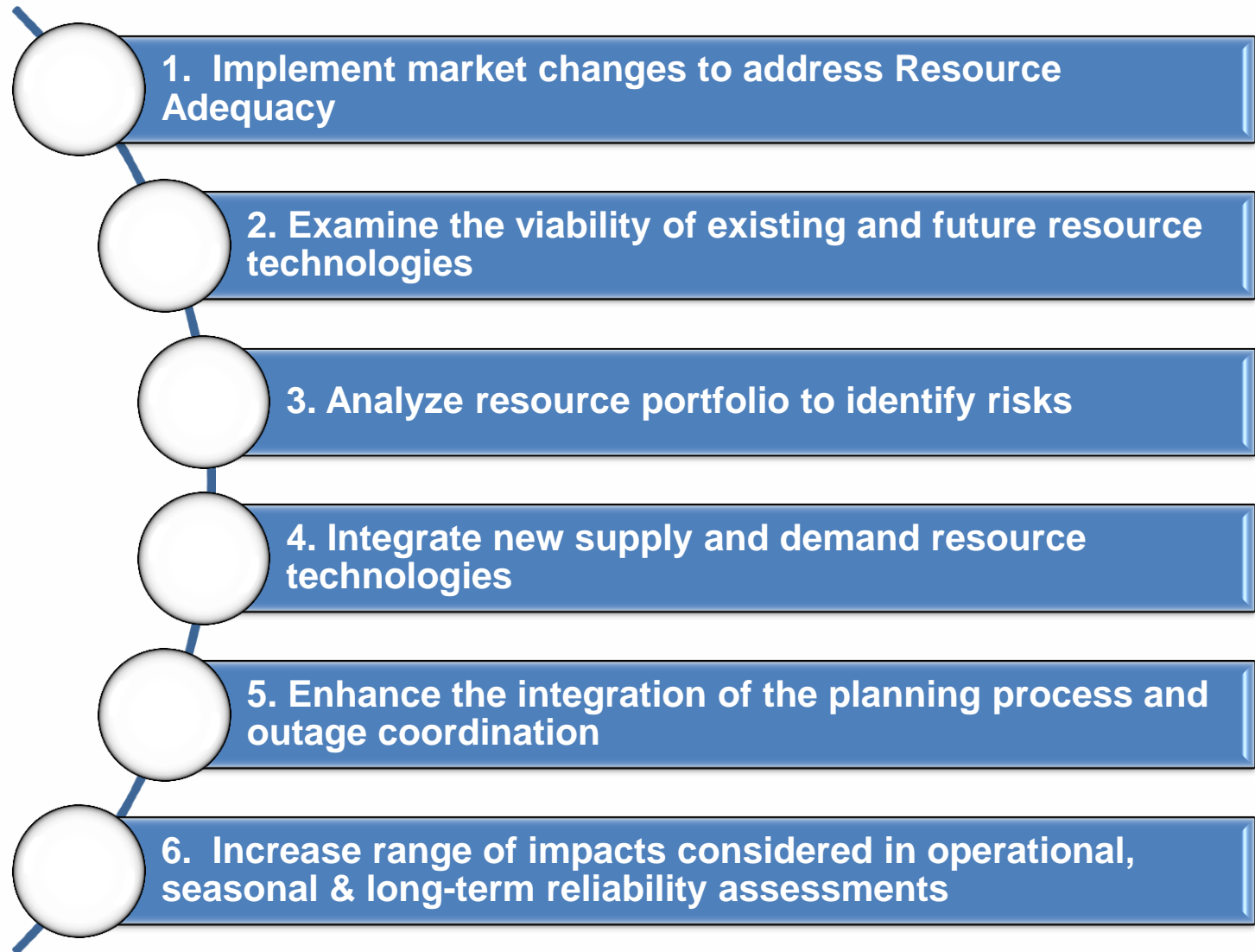
Operational Reliability

Anticipate and communicate potential reliability issues through improved enterprise-wide planning processes, probability scenario analyses and grid impact evaluations.

Operational Reliability

Flexible Market Design

Data Transparency and Access

Committee Strategic Alignment
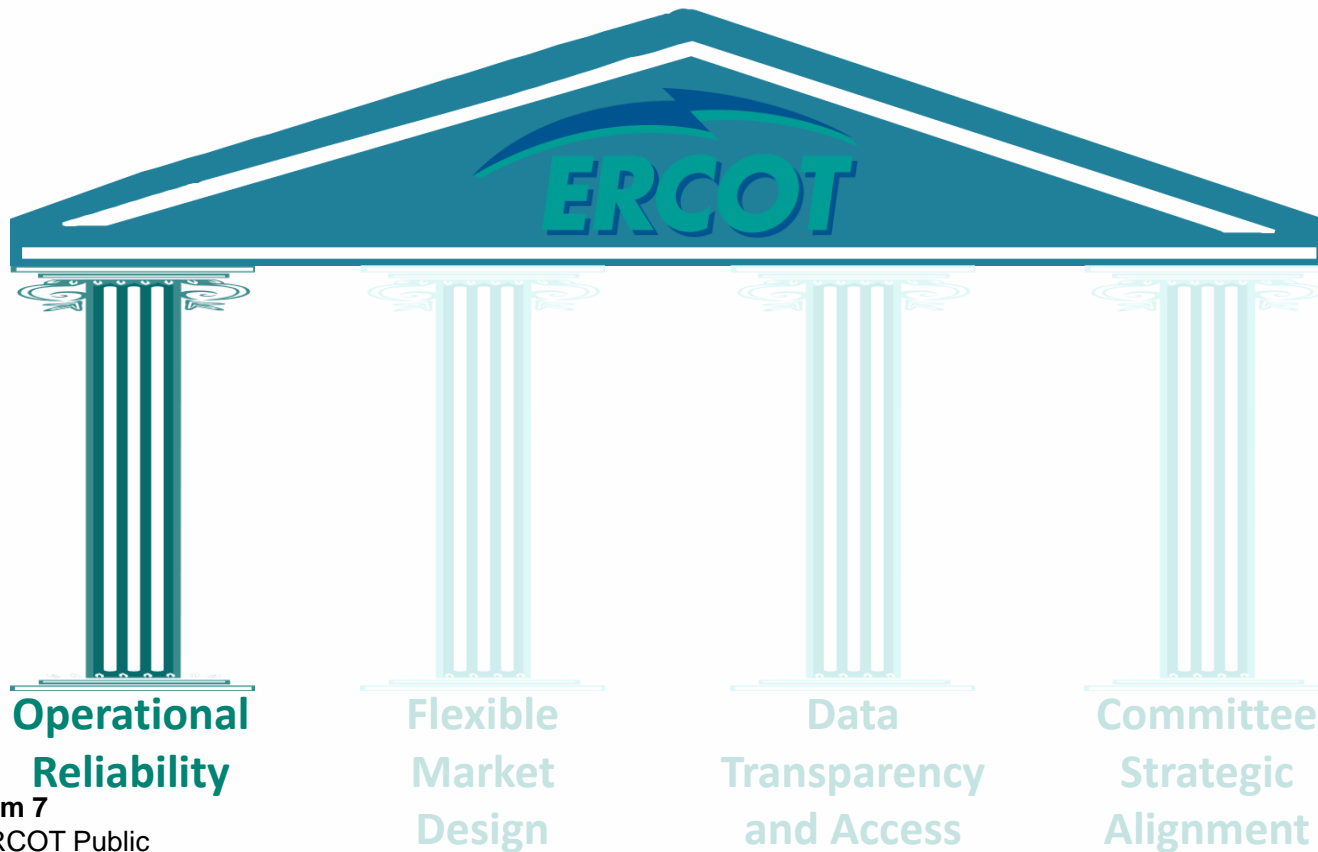
Board Identified Strategic Initiatives – Operational Reliability

- Evolve ERCOT culture to include active examination of potential future change influences and impacts, including more active scenario planning throughout the enterprise.

- Maintain reliability by examining potential impacts of changing technologies.

- Continually assess the planning processes within ERCOT to optimize efficiency and ensure a broad range of potential data sources are considered for inclusion in analysis.

- Invest in resources to enable ERCOT to provide bench strength as well as skills in emerging energy technologies, systems and market constructs.

- Continuously and dynamically adjust ERCOT's activities to anticipate trends and provide "unbiased" and "independent" advice to stakeholders regarding major trends.

- Develop strategic tracking from a variety of different sources to anticipate trends to increase reliability awareness.

- Promote the process and develop internal expertise to identify, analyze and discern the probability of occurrence of scenarios that could impact system reliability or market dynamics.

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Operational Reliability – Supporting Corporate Objectives

1. Implement market changes to address Resource Adequacy

2. Examine the viability of existing and future resource technologies

3. Analyze resource portfolio to identify risks

4. Integrate new supply and demand resource technologies

5. Enhance the integration of the planning process and outage coordination

6. Increase range of impacts considered in operational, seasonal & long-term reliability assessments

Operational Reliability – Supporting Corporate Objectives

7. Maintain appropriate ancillary services to meet system reliability needs

8. Enhance operational tools

9. Enhance Emergency Preparedness

10. Advance capabilities for Compliance Achievement

11. Enhance approaches to attract and retain talent

Divisional Goals

1. **Implement market changes to address Resource Adequacy**

2. **Examine the viability of existing and future resource technologies**

3. **Analyze resource portfolio to identify risks**

1. Implement market changes to address Resource Adequacy

- Align Operations and Operating Reserve Demand Curve (ORDC) Market implementation.
- Implement system changes for real-time reserve price adder based on ORDC to improve scarcity pricing and incent Resource Adequacy.
- Improve load forecasting processes and tools to reflect changing market conditions.
- Evaluate operational procedures to address price formation impacts.
- Develop protocols to implement a market solution in response to PUCT instruction to solve price reversal issue.
- Raise system-wide offer cap (SWOC) and define value of lost load (VOLL).
- Perform further analysis of Brattle Report as directed by PUCT or ERCOT Board.
- Support regulatory initiatives associated with resource adequacy:
  - Examine utilization of a one event in 10 years criteria to develop a target reserve margin.
  - Revisit market rules related to DC Ties, multiple Points of Interconnection (POIs), and switchable generation.
- Explore including economic impact of transmission outages in outage coordination.

3. Analyze resource portfolio to identify risks

- Work with Stakeholders to identify gaps and enhance verifiable costs calculation where appropriate.
- Evaluate spot gas market in extreme weather events.

2. Examine the viability of existing and future resource technologies

- Analyze aging resource portfolio and potential retirements.
- Continue to assess the potential impacts of environmental regulations.
- Continue to assess the impact of drought on resource availability.
- Examine generation deliverability.

Divisional Goals

4. Integrate new supply and demand resource technologies

5. Enhance the integration of the planning process and outage coordination

6. Increase the range of impacts considered in operational, seasonal and long-term reliability assessments

4. Integrate new supply and demand resource technologies

- Evaluate ability for new technologies to provide Ancillary Services.
- Increase ability for loads to participate in the Ancillary Services market.
- Implement a market solution for Fast Response Regulation as a Service.
- Gather updated distributed generation and demand response information for ERCOT.
- Develop new tools to assess reliability impacts of new technologies.
- Incorporate new technologies in Common Information Model (CIM).
- Explore additional Demand Response opportunities.
- Implement new Emergency Response Service (ERS) procurement methodology.
- Implement ERS Weather-Sensitive Loads.

5. Enhance the integration of the planning process and outage coordination

- Identification and definition of new processes for approval of Outages in the Valley.
- Develop Subsynchronous Oscillation (SSO) screening tool.
- Provide recommendations on possible gaps between Operations and Planning
  - Participate in stakeholder discussions around planning criteria and implement approved changes
  - Develop methodology for incorporating probabilistic analysis into planning studies.
  - Explore economic impact of transmission outages in the transmission planning process.
- Review planning process and assumptions; i.e.: Houston import.

6. Increase range of impacts considered in operational, seasonal & long-term reliability assessments

- Incorporate natural gas infrastructure issues into planning and operations.
  - Develop criteria for natural gas pipeline contingencies in planning studies.
  - Incorporate gas curtailment impacts into seasonal analysis.

Divisional Goals

7. Maintain appropriate ancillary services to meet system reliability needs

8. Enhance operational tools

7. Maintain appropriate ancillary services to meet system reliability needs

- Implement new Ancillary Services framework to efficiently meet ERCOT system needs with changing resources.
  - Study of system inertia.
  - Analyze primary frequency response.
  - Evaluate impact of renewable penetration.

8. Enhance operational tools

- Examine required combined cycle telemetry for operational awareness and event analysis.
- Develop consolidated approach to managing operational risks of uncertain renewable output, weather, load, etc.
  - Implement solar forecasting.
  - Develop procedures for and staff renewables/risk desk in control room.
  - Implement ERCOT Reliability Assessment Tool for assessing operational risk on holistic and dynamic basis.
- Enhance situational awareness tools and overall data visualization
- Implement coordinated voltage/reactive management.
  - Implement Voltage Support Service (VSS) tool.
  - Implement tools and procedures for management of SSO.
- Support IT evaluations of a replacement for the EDI translation and mapping system.
- Enhance EPS Meter Data management
  - Redesign EPS meter database.
  - Enable remote loading of EPS meter data to Lodestar for business continuity.
  - Evaluate mapping of each EPS meter to a defined telemetry point in support of data estimation.
- Enhance Congestion Revenue Right (CRR) auction processes.
- Identify and implement a tool while enhancing process to manage compliance to ERCOT Protocol "must," "shall," and "will."
- Proactively look at credit risk indicators.
- Complete Settlement system rewrite.
- Develop MP On-line Data Entry enhancements.
- Explore Resource Asset Registration Form (RARF) replacement.
- Incorporate phasor measurement technology
  - Develop Protocols and Operating Guides for installation and support of PMUs.
  - Use phasor data in event analysis.

Divisional Goals

9. Enhance Emergency Preparedness

10. Advance capabilities for Compliance Achievement

11. Enhance approaches to attract and retain talent

9. Enhance Emergency Preparedness

- Include gas pipeline considerations in Black Start Plan.
- Modify Black Start procurement process to provide resources that will aid in speed of recovery and include comprehensive, long-term impacts.
- Improve communications and coordination with gas pipelines serving generating plants.
- Develop capability to model critical gas network.
- Complete Nexant Black Start Improvement study and implement near-term accepted recommendations.
- Develop and implement testing procedures for constant frequency operation.
- Implement Operating Guide and procedures for operational mitigation of Geomagnetic Disturbance (GMD).

10. Advance capabilities for Compliance Achievement

- Develop processes to meet new TPL-001-4 requirements.
- Develop processes to meet new NERC GMD requirements.
- Develop processes to meet new NERC physical security planning standards.
- Implement Alert Enterprise tracking and testing of Protocol and Guide compliance.

11. Enhance approaches to attract and retain talent

- Implement development program for Operators.
  - Enhance coordination and training for Operators and Shift Engineers.
- Define and initiate the Settlement and Retail Operations employee development program to increase inter-team and inter-departmental knowledge and awareness.
  - Evaluate expanding to other areas within Commercial Operations.
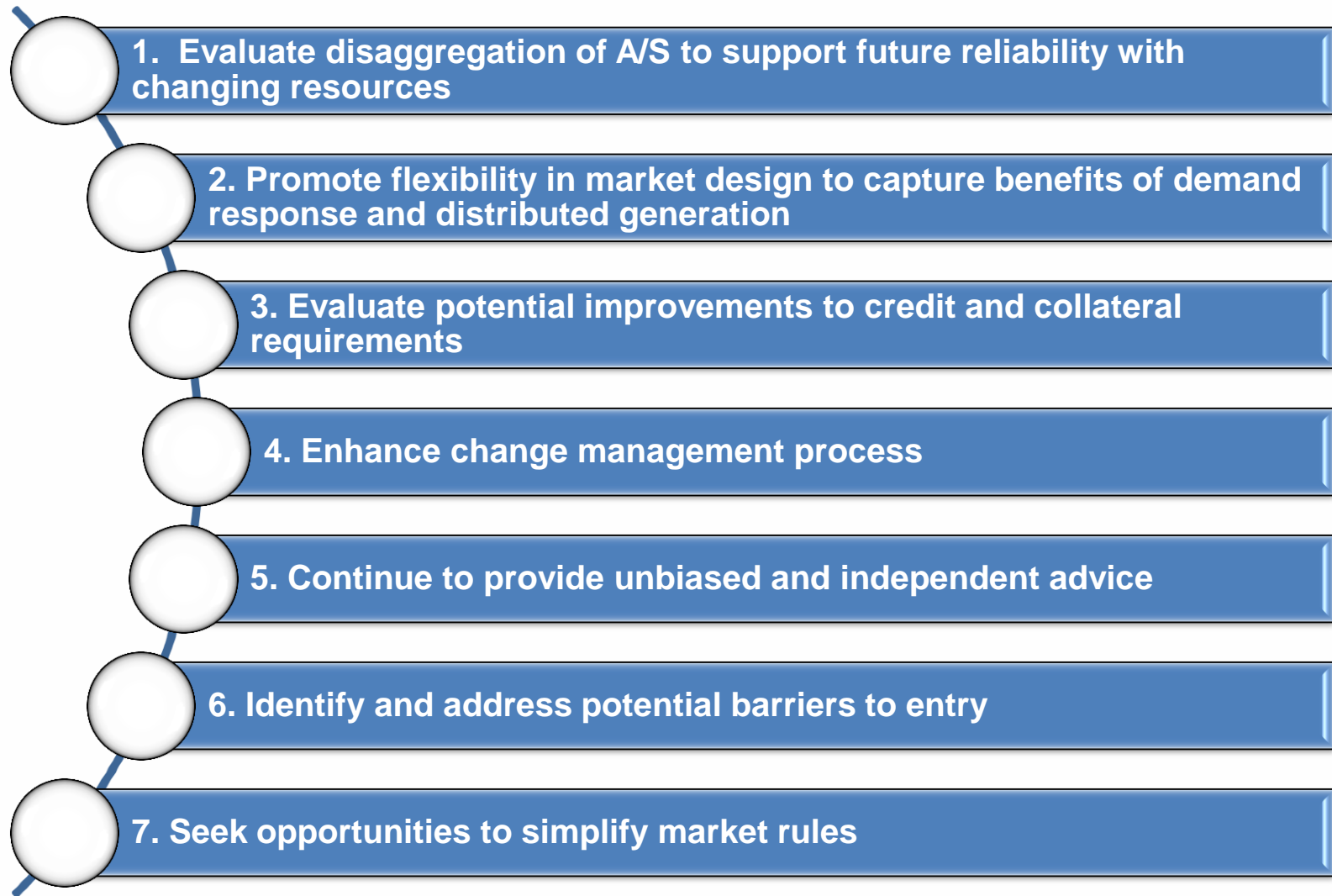
Flexible Market Design

Work to anticipate changes in market dynamics and systems and respond effectively to changes in market rules and processes that are directed toward maintaining a highly reliable grid and open access to ERCOT markets.

Operational Reliability

Flexible Market Design

Data Transparency and Access

Committee Strategic Alignment
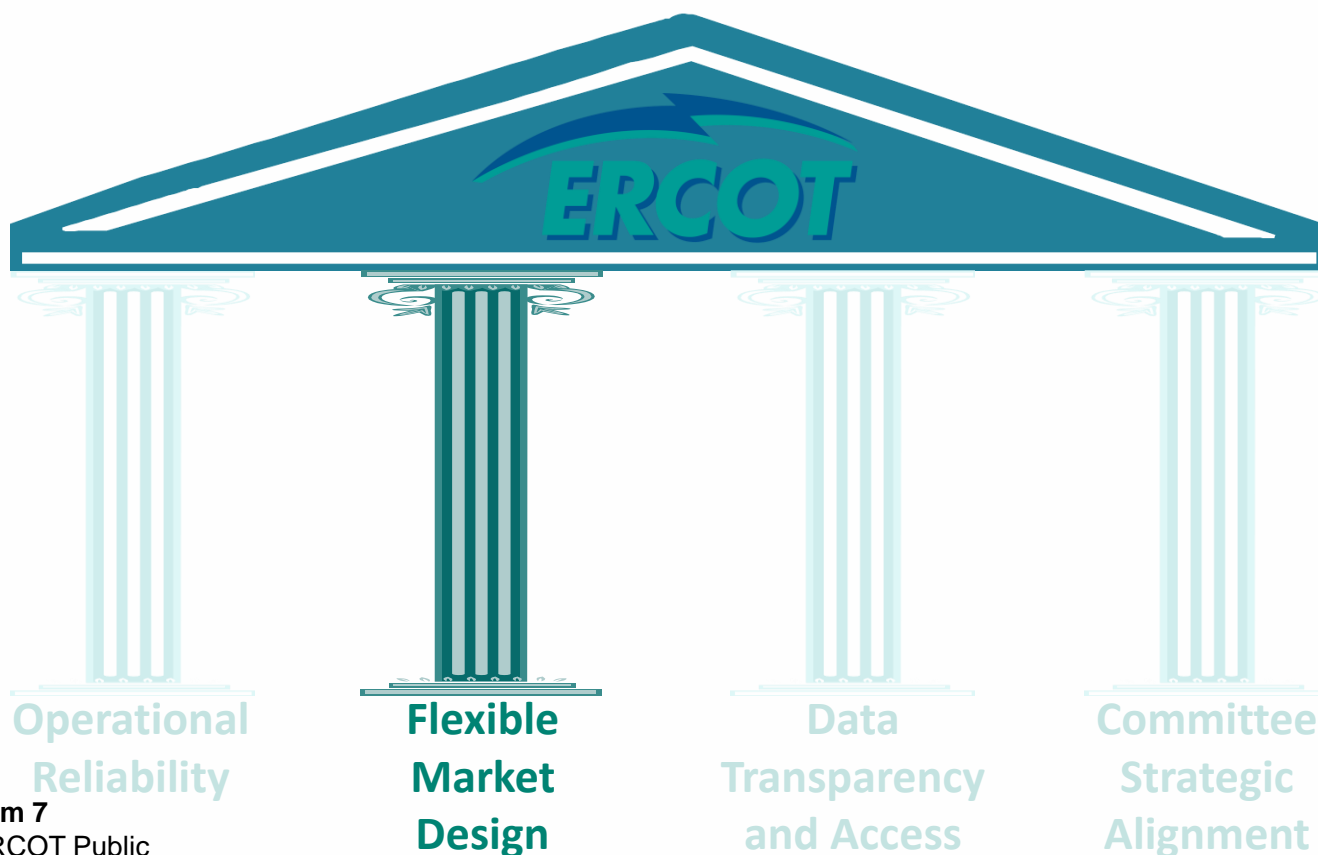
Board Identified Strategic Initiatives – Flexible Market Design

- As a means to ensure flexibility in approach to key structural changes issues, continue to forge stronger coordination among markets, operations and planning groups.

- Promote culture that fosters innovation, flexibility and collaboration with stakeholders and across business divisions while enhancing existing change management processes to more fully integrate with market operations and planning.

- Explore the capabilities and behaviors of various emerging technologies to inform policymakers and stakeholders to ensure appropriate integration and utilization of resources available to the market.

- Enhance the IT Roadmap to anticipate change, map current and future projects, and create more flexible, efficient and effective system changes.

- Recognize the need to remain cost effective in time of change while still seeking to create a more flexible, efficient and effective system environment.

Flexible Market Design – Supporting Corporate Objectives

1. Evaluate disaggregation of A/S to support future reliability with changing resources

2. Promote flexibility in market design to capture benefits of demand response and distributed generation

3. Evaluate potential improvements to credit and collateral requirements

4. Enhance change management process

5. Continue to provide unbiased and independent advice

6. Identify and address potential barriers to entry

7. Seek opportunities to simplify market rules

Divisional Goals

1. Evaluate disaggregation of A/S to support future reliability with changing resources

2. Promote flexibility in market design to capture benefits of demand response and distributed generation

3. Evaluate potential improvements to credit and collateral requirements

4. Enhance change management process

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1. Evaluate disaggregation of A/S to support future reliability with changing resources

- Design and implement new Ancillary Services framework.
- Lead future Ancillary Services team and manage stakeholder involvement.
  - Ancillary Services Disaggregation project.
- Evaluate ERS as currently implemented to determine necessity and appropriateness of future changes.
- Evaluate scarcity pricing during Energy Emergency Alert (EEA) ERS/Load Resource Deployment.

2. Promote flexibility in market design to capture benefits of demand response and distributed generation.

- Lead internal effort to analyze and quantify retail demand response and price responsive load.
- Implement system changes for Load Resource participation in Security Constrained Economic Dispatch (SCED).
- Evaluate Multi-interval SCED.

3. Evaluate potential improvements to credit and collateral requirements

- Revise collateral requirements concerning CRR auctions.
- Evaluate potential Day Ahead Market (DAM) credit exposure framework modification.
- Evaluate impact of higher system wide offer caps on credit & collateral requirements and make changes where appropriate.
- Evaluate credit insurance.
- Refine credit exposure methodology.

4. Enhance change management process

- Evaluate & Implement capability for IT system automated deployments.
- Mature release management processes.
- Develop an organizational strategy for integrated testing that provides processes, environments, and data for more effective and reliable integrated testing of ERCOT's systems.

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Divisional Goals

5. Continue to provide unbiased and independent advice

6. Identify and address potential barriers to entry

7. Seek opportunities to simplify market rules

5. Continue to provide unbiased and independent advice

- Develop new resource adequacy reports and tools that provide information regarding viability of existing and future resource technologies.
  - Enhance CDR report to include scenario analysis with possible impacts of market conditions and regulatory changes.
- Engage bilaterally on a regular basis with Market Participants on strategic market issues.
- Monitor parallel activities at other ISOs and engage with their staff on a regular basis.
- Evaluate real-time co-optimization which may include multi-interval SCED.

6. Identify and address potential barriers to entry

- Evaluate the process to incorporate new resource types into ERCOT systems.
  - Consider in MP On-line Data Entry development
  - Consider in RARF replacement
- Develop expertise in costs for new and emerging technologies.
  - Identify new technologies.
  - Define characteristics.
  - Model in Network Model Management System (NMMS).
  - Integrate with downstream systems.
- Implement ERCOT system change allowing Independent Master QSE to represent split generation resources.

7. Seek opportunities to simplify market rules

- Be mindful of opportunities to simplify rules when appropriate

Data Transparency and Access

Continue to evolve ERCOT's role as a data and information gateway for electricity markets in Texas, recognizing its unique role and the value created for consumers and stakeholders of relevant, quality and timely market and technical intelligence.

Operational Reliability

Flexible Market Design

Data Transparency and Access

Committee Strategic Alignment
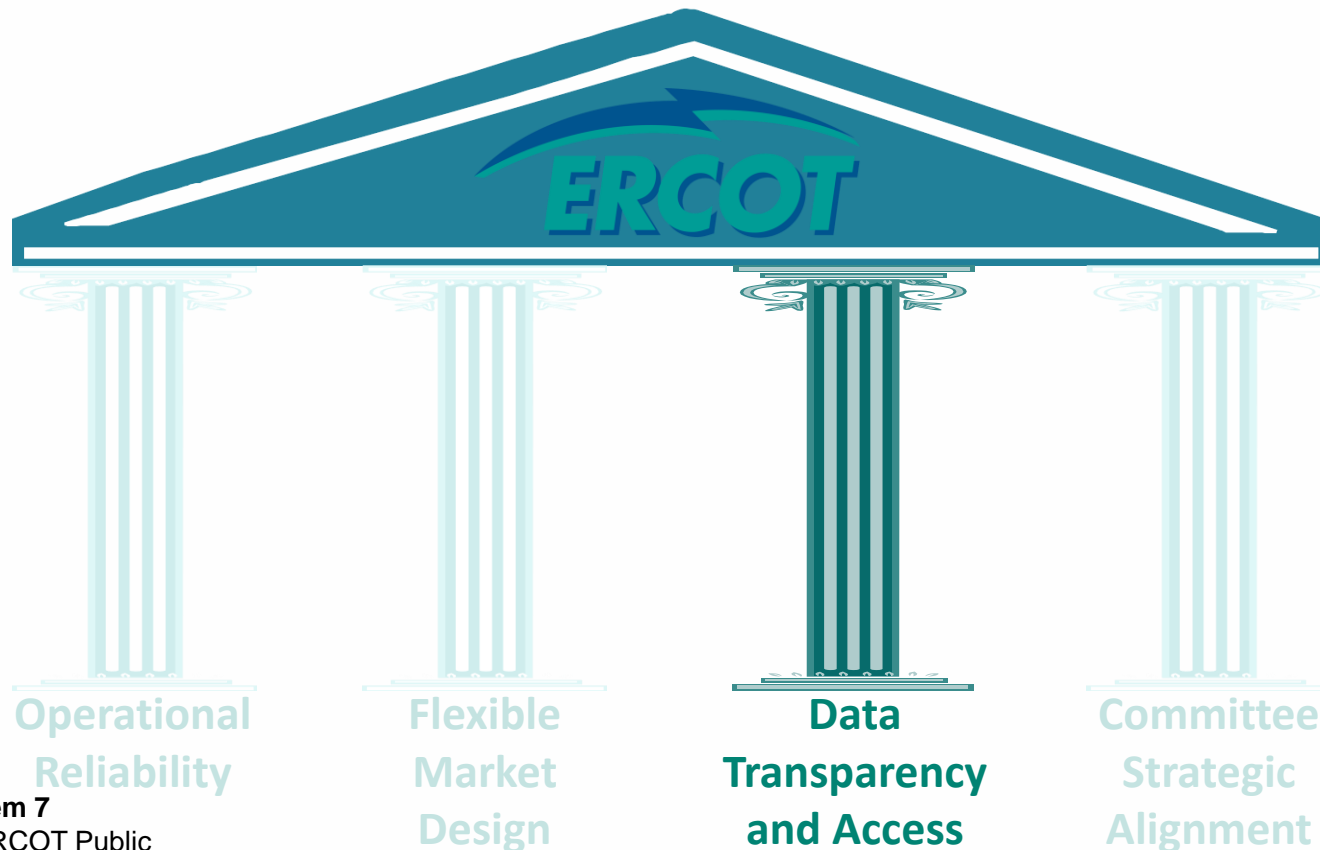
Board Identified Strategic Initiatives – Data Transparency & Access

- Proactively serve as a catalyst and venue for Market Participants to gain enhanced access to available information.

- Evaluate overall organizational, business and technical capabilities to position ERCOT to be even more flexible and responsive to market conditions.

- Proactively assess and understand the evolving Market Participant needs, operations and capabilities to exchange and act on ERCOT-provided data.

Data Transparency & Access – Supporting Corporate Objectives

1. Engage stakeholders to develop a long-term data, information and access strategy

2. Further develop a data management support organization

Divisional Goals

1. Engage stakeholders to develop a long-term data, information and access strategy

2. Further develop a data management support organization

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1. Engage stakeholders to develop a long-term data, information and access strategy

- Complete Planning site transition to Market Information System (MIS).
- Develop new database load report.
- Implement SCR774, Enhancement to Outage Scheduler and Reports.
- Design & develop transmission access contour map.
- Evaluate information provided to Market Participants for relevancy and continued improvement.
- Post aggregate generation that is off but available in market facing displays (the dotted line).
- Revisit requirements and delivery mechanism(s) of Daily Grid Operations Report.
- Provide topology data necessary to support market activities.
    - Provide models that can import to common applications
- Facilitate discussions of data needs for improved support of retail market business processes.
- Work with Stakeholders to develop principles for new report development.
- Improve market communication/notice system.

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2. Further develop a data management support organization

- Develop data services to support long-term needs of Market Participants.
    - Evaluate alternatives for the provision of data services.
    - Explore self-serve data-mining for Market Participants.
- Provide reports that meet the needs of Market Participants.
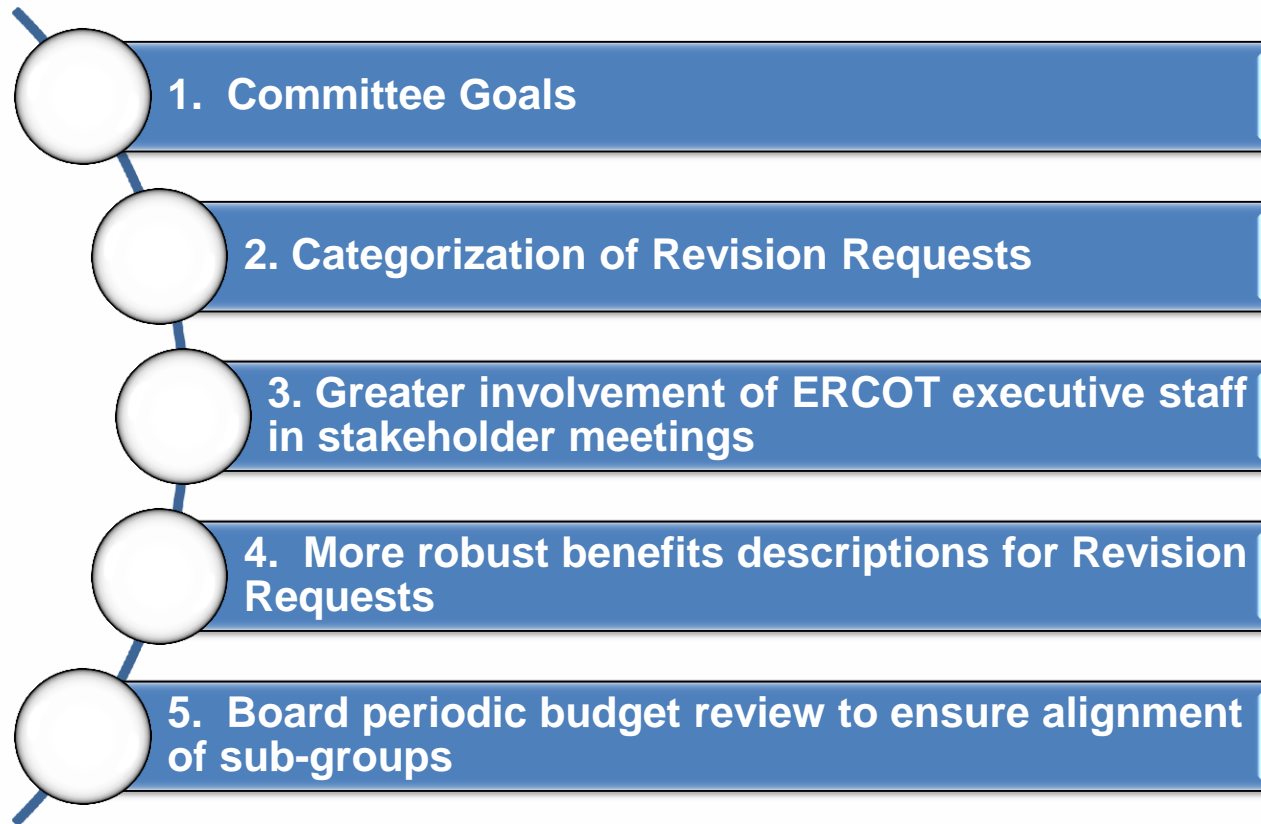
Committee Strategic Alignment

Further evolve the stakeholder committee process to improve strategic alignment of processes and outcomes including the use of strategic alignment and efficiency goals and measures.

Operational
Reliability

Flexible
Market
Design

Data
Transparency
and Access

**Committee
Strategic
Alignment**
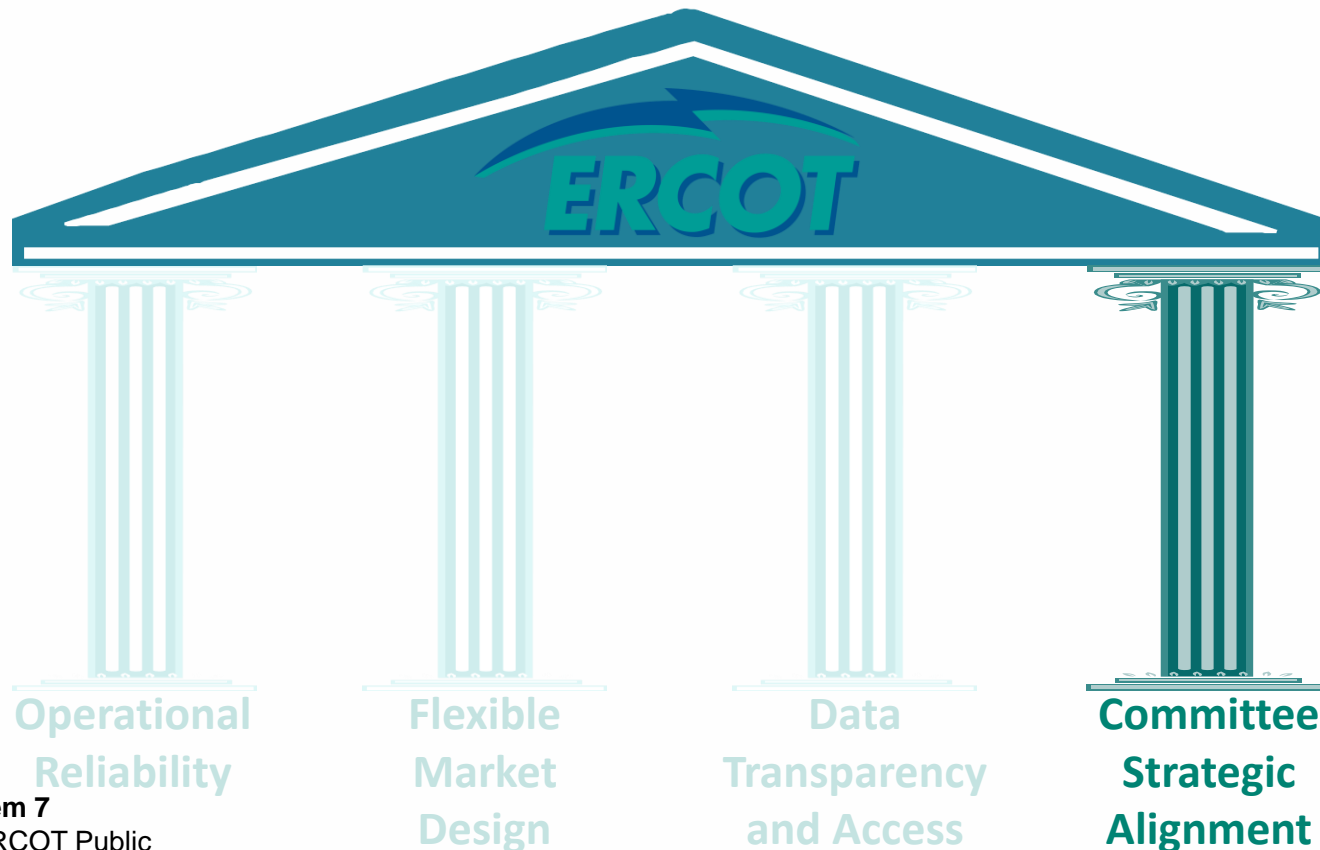
Board Identified Strategic Initiatives – Committee Strategic Alignment

- In light of limited resources available to manage market evolution, ensure strategic alignment of processes within and outcomes from the committees through clearly defined goals and metrics for committees ensuring linkages to the strategic plan.

- Establish clear linkages between the ERCOT staff and committee process, including formalizing roles for the ERCOT staff in the committee process.

- Establish Board-level mechanisms for reviewing process effectiveness at achieving strategic goals throughout the enterprise, including in the stakeholder committees.
  - Enhanced cost-benefit analysis process
  - Clear budgeting alignment and linkages to strategic plan
  - Effective categorization of rule change requests to identify strategic importance
    - Addressing current operational issues
    - Meeting strategic goals (tied to the plan or as directed by the Board of Directors)
    - Market efficiencies
    - Administrative
    - Regulatory requirements

Committee Strategic Alignment – Supporting Corporate Objectives

1. **Committee Goals**

2. **Categorization of Revision Requests**

3. **Greater involvement of ERCOT executive staff in stakeholder meetings**

4. **More robust benefits descriptions for Revision Requests**

5. **Board periodic budget review to ensure alignment of sub-groups**

Divisional Goals

1. **Committee Goals**

2. **Categorization of Revision Requests**

3. **Greater involvement of ERCOT executive staff in stakeholder meetings**

4. **More robust benefits descriptions for Revision Requests**

5. **Board periodic budget review to ensure alignment of sub-groups**

1. **Committee Goals**
   - Work with subcommittees to assist them in submitting goals to Board for review and consideration each year.

2. **Categorization of Revision Requests**
   - Update all Revision Request forms to reflect categories.

3. **Greater involvement of ERCOT executive staff in stakeholder meetings**
   - Assign Executive support to TAC
   - Assign Director and Manager level support to subcommittees.

4. **More robust benefit descriptions for Revision Requests**
   - Increase staff capability to drive discussions of Protocol improvements in stakeholder meetings.

5. **Board periodic budget review to ensure alignment of sub-groups**