



Date: November 11, 2013
To: ERCOT Board of Directors and Segment Alternates
From: Paula Feuerbacher
Subject: 2014 ERCOT Strategic Plan

Attached for your review is the final version of the 2014 ERCOT Strategic Plan (Attachment A). The final version includes feedback received at the 2013 Board of Directors Annual Strategic Retreat and comments submitted by members of the Human Resource and Governance Committee. A redlined version (Attachment B) of the document has been included to assist in the communication of the transition from the document presented at the Retreat to the final version presented for your endorsement.

If you have any questions about the Plan, do not hesitate to contact Paula Feuerbacher, Strategic Projects Senior Advisor.

Thank you for your attention to this matter.



Strategic Plan

ERCOT, Incorporated

Prepared by KEMA, Inc.

November 11, 2013

As part of ERCOT Strategic Planning Initiative

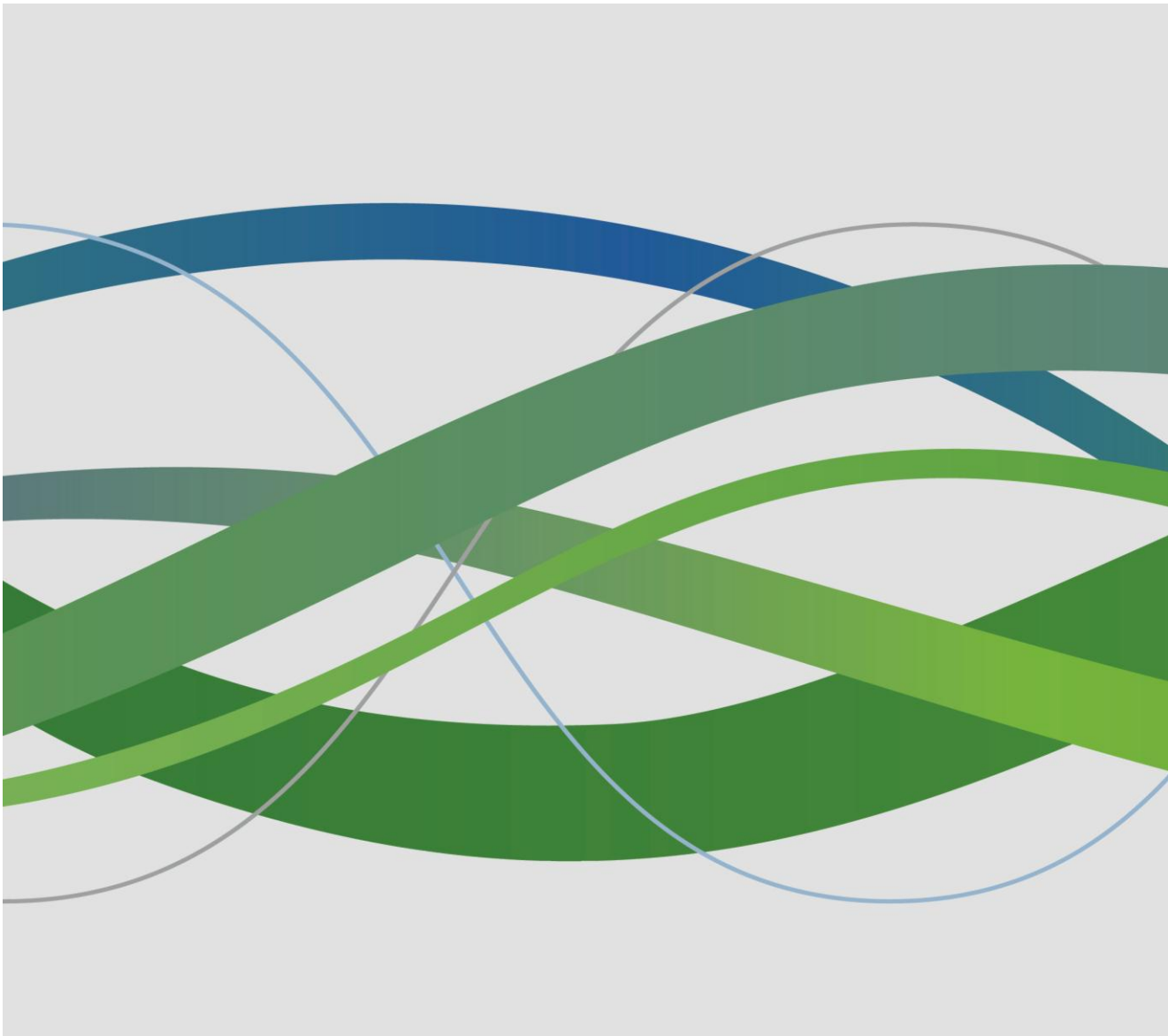




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1. Introduction & Vision

ERCOT's Vision

Lead with independent insight on the future of electricity reliability, markets and technology in Texas in order to facilitate grid and market change for the benefit of all stakeholders.

Texas is a unique energy marketplace and electricity grid that requires unique solutions to meet the challenges faced from a regulatory, stakeholder and technical perspective. In developing this strategic plan, ERCOT considered three key requirements. First, the plan must fully assimilate the best knowledge and experience of those that lead and advise ERCOT today with best practices that have been used outside Texas. This assimilation of Texas concepts and needs with externally tested concepts will lead to the uniquely Texan approach to key challenges faced in the coming five years. Second, the plan must be anchored in achievable goals that will garner stakeholder and regulatory acceptance. Third, the plan must recognize that while the future is uncertain, there are trends and forecasts that must be examined and leveraged to guide the process. Further, future conditions must be viewed in combination with deep industry knowledge of the technologies that may be brought to bear to in Texas in response to conditions as they emerge. ERCOT faces unique issues over the coming years. From addressing resource adequacy to fully developing and integrating demand response potential, the next chapter for ERCOT represents a significant step forward in the development of the market and fulfillment of its obligations as the Independent System Operator.

Within this framework, ERCOT has enhanced its process for strategic planning to include active facilitation of input from the Board of Directors and the stakeholder community in the early stages of the process. This enhanced approach recognizes that ERCOT and the strategy set by the Board covers not just the goals and activities of the ERCOT staff, but also the activities of the stakeholder committees that are so important to the entity's effectiveness. In the course of this process a number of overarching themes emerged to guide the development of this next strategic plan. These themes led to the development of four strategic "pillars" that represent the central strategic direction called for in this plan. The first theme is that ERCOT has and must remain focused on its core mission of transmission network reliability in operations and planning and the operation of open access and efficient electricity markets. While for some this has come to be an assumed state of affairs, it is clear that this remains THE key mission of the organization that should be recognized in the forward looking strategy of the organization.



The next theme that emerged is the value of ERCOT serving as a conduit for actionable information today and even more so into the future. As the world moves toward digitization of the electricity grid and new capabilities and services emerge, ERCOT’s role facilitating efficient markets and grid reliability will rely far more on understanding data and information with respect to emerging trends’ potential impacts. Finally, as is the case with the staff of ERCOT, the need for an efficient and strategically aligned stakeholder committee community and process represents a lynchpin for ERCOT’s ability to effectively serve its role as an RTO. As a key contributor to the development of ERCOT, the stakeholder committees represent a core organizational resource that must work in lockstep with the ERCOT staff in order to achieve the Board’s vision for ERCOT in this time of limited resources and profound industry changes. All of these themes represent a recognition that changes will come more quickly in the future and the ability to nimbly adapt and respond to that change represents the necessary attributes ERCOT must embed in its strategic approach to all its duties.

In this context, the process has led to the development of a plan that rests on the already noted four main strategic “pillars” representing the major areas of focus guiding the organization into the future. **These pillars are Operational Reliability, Flexible Market Design, Data Transparency & Access, and Committee Strategic Alignment.** Each pillar gives direction for cross-organizational focus that shapes how each part of the enterprise should approach its own core responsibilities and how those responsibilities tie to the broader goals. This strategic plan describes key organizational initiatives developed to pursue the overall strategic themes. Through a holistic approach to pursuing the organizational strategy, ERCOT will be better positioned to meet the key imperatives in the future.

ERCOT’s strategic plan establishes a framework to create and maintain value for its employees, members, stakeholders and the Texas electric industry as a whole. This approach is flexible enough to adapt to the shifting nature of the public environment where ERCOT must operate, yet sets a path with specific actions ERCOT will pursue over the next few years. These actions will not only prepare ERCOT to handle the extreme scenarios that may occur in the future, but will keep ERCOT firmly focused on reliably and efficiently providing for the electricity needs of most of Texas. In this spirit, ERCOT commits to the following key strategies over the planning period:



- **Operational Reliability** - Anticipate and communicate potential reliability issues through improved enterprise wide planning processes, probability scenario analyses and grid impact evaluations.
- **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.
- **Data Transparency & 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.
- **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.

2. **ERCOT’s Mission**

Serve the public by ensuring a reliable grid, efficient electricity markets, open access and retail choice.

ERCOT manages the flow of electric power to approximately 23 million Texas customers – representing 85 percent of the state’s electric load and 75 percent of the Texas land area. As the Independent System Operator for the region, ERCOT schedules power on an electric grid that connects 40,500 miles of transmission line and more than 550 generation units. ERCOT also manages financial settlement for the competitive wholesale bulk-power market and administers customer switching for 6.6 million premises in competitive choice areas. As the Independent System Operator for the region, ERCOT will continue to succeed in its mission to:

ERCOT will fulfill its mission by continuing to:

- Manage the grid in a manner that maintains a high level of reliability
- Manage the wholesale and retail electric markets effectively.
- Meet the requirements for compliance with risk based reliability standards, cyber security requirements, and Protocol and Operating Guides.
- Develop and maintain productive external relationships through proactive, effective and comprehensive communications.
- Attract, develop and retain a highly skilled workforce.

3. Strategic Planning Process

The enhanced strategic planning process utilized for this plan is built upon prior efforts. Among the more substantial changes are the uses of external consulting facilitation, earlier inclusion of Board and stakeholder input as well as tighter alignment with implementation business plans. As shown in the Figure 1, the major steps provide additional mechanisms for exploring the potential influence and impacts that must be addressed in the plan.

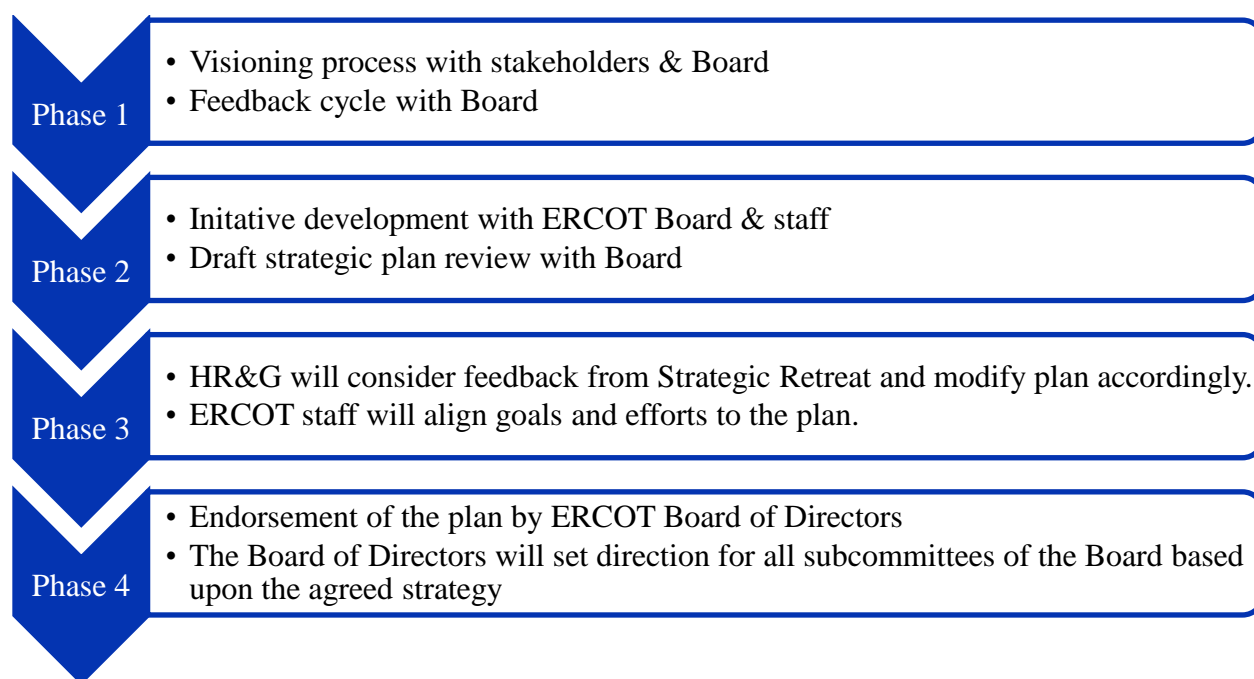


Figure 1: Strategic Planning Process



4. Strategic Drivers

The strategic planning process began with development of key trends and questions for use in a stakeholder and Board facilitation process. The purpose of this process was to ensure the diversity of stakeholder views was utilized in the development of the strategic plan. Those Key Trends facing ERCOT:

- Resource Adequacy
 - ERCOT plays a key role by providing assessments of future peak demand and commensurate peak available resource volume needed to maintain long-term reliability of the electric grid. Further, ERCOT markets are viewed as a key source of price signals for the value of energy and ancillary services during peak periods. Given its mandate and responsibility, ERCOT must work to anticipate and respond rapidly to changes in market dynamics, rules and processes that are directed toward ensuring resource adequacy with commensurate increased capacity and/or flexible demand resources.
- Trends / Changes in Fuel Prices and Installed Resource Costs
 - Both the cost to operate and reliability of the ERCOT managed grid will be greatly affected by the cost of fuels such as natural gas (used by most power generators in the state of Texas). The ability to understand the potential impact of price shifts and major disruptions on both the future cost and reliability can greatly enhance ERCOT's ability to raise awareness and prepare to respond when called upon to address such impacts.
- Single Fuel Dependency
 - With a high dependency on natural gas, the risk of curtailments or reductions in pipeline capacity present potential impacts to the continued reliability of the grid. In addition, technological advances in alternate resources and the speed of their adoption and integration will continue to impact ERCOT's fuel mix diversity.
- Gas / Electric market coordination issues
 - Increased coordination between natural gas and power industry short and medium term planning, with regard to data and information sharing, can improve ERCOT's position to better anticipate potential gas curtailments during extreme load conditions. It may also allow for more economically efficient choices by market participants about the use of resources that are exposed to prices across both natural gas and electricity markets.
- Increased Need for Flexible Resources
 - The electric industry is experiencing a shift toward a greater reliance on intermittent supply resources. In addition, consumers are moving toward less predictable load patterns resulting from their own adoption of intermittent technology such as solar. To continue to maintain a high level of reliability, ERCOT recognizes the need to analyse



the potential positive impacts of further integration flexible resources into the ERCOT region to provide system operators the necessary tools to manage the balance between supply and demand in a cost effective and reliable manner.

- Regulatory Impacts
 - Proposed regulatory standards and their implementation timelines can impact resource adequacy and reserve margins. Potential changes to market rules, changes to NERC event analysis requirements, new NERC requirements, and support of PUCT, Protocol and Operating Guide enforcement all require close coordination between ERCOT and state and national regulators.
- “Downstream” Distribution Technology Change
 - ERCOT’s focus on Smart Grid initiatives such as advanced metering and increased Demand Response technology will benefit Texas consumers by giving them increased control over their electric usage and boost overall reliability. Understanding and integrating emerging broad categories of distributed energy resource technologies also represents a potentially significant shift in how the grid must be managed and planned.
- “Upstream” Transmission and Generation Technology Change
 - Technological change in wholesale supply and transmission systems represents potential paradigm shifts regarding how networks are managed. These shifts may include cost effective system storage, greater use of synchrophasor measurement of real time grid status and even advanced topology control (Line Switching). ERCOT will need the ability to manage a grid while taking advantage of such technological advances where cost effective.
- Impact of water on resource adequacy
 - Drought is not an uncommon climate characteristic for the state of Texas. The drought that Texas is currently facing is affecting power generators in the ERCOT power region, as decreasing water levels continue to put generation availability at risk.
- Continuing growth of renewables penetration
 - With the growth of renewables in the ERCOT Interconnection comes the challenge of maintaining frequency control within acceptable limits. As a Balancing Authority (BA), ERCOT has a primary role to continuously balance demand and supply to maintain scheduled frequency. Currently, the ERCOT Interconnection is not synchronously connected with any of its neighboring Interconnections and any required Frequency Response has to come from available resources within the Interconnection. Greater penetration of intermittent resources can potentially displace conventional generation from an economic perspective, and grid operators may face more challenges in real-time operations with the increased integration of intermittent renewable resources. This issue is intrinsically linked with potential advances in the use/need for flexible resources.



- New and uncertain resource technologies
 - A variety of new resource types are entering the market place. To ensure appropriate integration of these new resources, ERCOT, in cooperation with the Public Utility Commission of Texas and Market Participants, may design and execute clearly defined pilot programs to explore the capabilities and behaviors of various emerging technologies. Utilizing the data collected through pilot programs, stakeholders in the ERCOT region will be better positioned to develop market rules to integrate new technology.
- Cyber Security
 - The ongoing evaluation of cyber threats requires ERCOT to continually reassess and upgrade its cyber security defenses and risk management capabilities. Potential national cyber security legislation and the determination of which federal agency ultimately has jurisdiction regarding the development and implementation of new security standards will impact ERCOT.

5. Strategy and Supporting Initiatives

5.1 Operational Reliability

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

It has become increasingly clear that the rate of change and the volatility and diversity of market factors driving ERCOT operations has increased substantially and is expected to continue to grow in unexpected ways. Recognizing this trend and the potential implications that new resource technologies, business models and cost structures could have on Market Participants and ERCOT operations, combined with the interactional effects of multiple drivers simultaneously occurring makes advance planning and anticipation more critical than ever to ensure ERCOT provides the market stability and surety sought. To this end, ERCOT will pursue the following key strategic initiatives:

- 1) Evolve ERCOT culture to include active examination of potential future change influences and impacts including more active scenario planning throughout the enterprise.
- 2) Maintain reliability by examining potential impacts of changing technologies.
- 3) 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.
- 4) Invest in resources to enable ERCOT to both provide bench strength as well as skills in emerging energy technologies, systems and market constructs.



- 5) Continuously and dynamically adjust ERCOT's activities to anticipate trends and provide "unbiased" and "independent" advice to stakeholders regarding major trends
- 6) Develop strategic tracking from a variety of different sources to anticipate trends to increase reliability awareness
- 7) 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.

5.2 **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.

ERCOT has demonstrated tremendous strength in establishing its current reliable market operations, effective commercial operations and transmission network and planning functions. However, it is clear that continued external developments and the desire to develop a highly flexible and responsive infrastructure at ERCOT requires a reassessment of current capabilities, processes and underlying capabilities in order to remain effective in the face of this changing environment. Additionally, ERCOT continues to be committed to a highly cost conscious business environment capable of consistently delivering required reliability. Therefore, ERCOT will pursue the following key initiatives:

- 1) As a means to ensure flexibility in approach to key structural change issues, ERCOT will continue to forge stronger coordination between markets, operations and planning groups.
- 2) 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.
- 3) Explore the capabilities and behaviors of various emerging technologies to inform policy makers and stakeholders and ensure appropriate integration and utilization of resources available to the market.
- 4) Enhance the IT Roadmap to anticipate change, map current and future projects, and create more flexible, efficient and effective system changes.
- 5) Recognize need to remain cost effective in time of change while still seeking to create a more flexible, efficient and effective system environment consistent.



5.3 Data Transparency & 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.

As a highly trusted market operator, ERCOT has a unique role in providing market information in a timely and readily accessible manner. Additionally, ERCOT has an important role in providing appropriate access to market participants across all stakeholder segments, with a particular focus on providing information in relevant and actionable formats. To this end, ERCOT will pursue the following initiatives:

- 1) ERCOT will proactively serve as a catalyst and venue for market participants to gain enhanced access to available information
- 2) Evaluate overall organizational, business and technical capabilities to position ERCOT to be even more flexible and responsive to market conditions
- 3) Proactively assess and understand the evolving market participant needs, operations and capabilities to exchange and act on ERCOT-provided data

5.4 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.

ERCOT as an enterprise encompasses not just bricks, mortar, computer systems, supporting infrastructure and ERCOT staff, but also a robust and crucial stakeholder committee process that functions as an integral part of the enterprise operations. With both limited resources and substantial industry change in the offing, ensuring organizational and strategic alignment of this resource represents a key requirement for ERCOT's ability to serve its role as the Independent System Operator. Solidifying and effectively leveraging the stakeholder committees represents a key strategic opportunity for the organization to improve its effectiveness. As changes will come more quickly in the future, the ability to nimbly adapt and respond to that change in a cost effective manner represents the necessary attributes ERCOT must embed in its strategic approach to all its duties. Full strategic alignment of the stakeholder committee processes and outcomes is crucial to successfully navigating an uncertain future. To this end, ERCOT will pursue the following initiatives:



- 1) 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.
- 2) Establish clear linkages between the ERCOT staff and the committee process including formalizing roles for the ERCOT staff in the committee process.
- 3) Establish Board level mechanisms for reviewing process effectiveness at achieving strategic goals throughout the enterprise including in the stakeholder committees.
 - a. Enhanced Cost Benefit Analysis process
 - b. Clear budgeting alignment and linkages to strategic plan
 - c. Effective categorization of rule change requests to identify strategic importance.
 - i. Addressing Current Operational Issues
 - ii. Meeting strategic goals (tied to the Plan or as directed by the Board of Directors)
 - iii. Market Efficiencies
 - iv. Administrative
 - v. Regulatory requirements



Strategic Plan (*Draft*)

ERCOT, Incorporated

Prepared by KEMA, Inc.

~~September 16~~ November 11, 2013

As part of ERCOT Strategic Planning Initiative

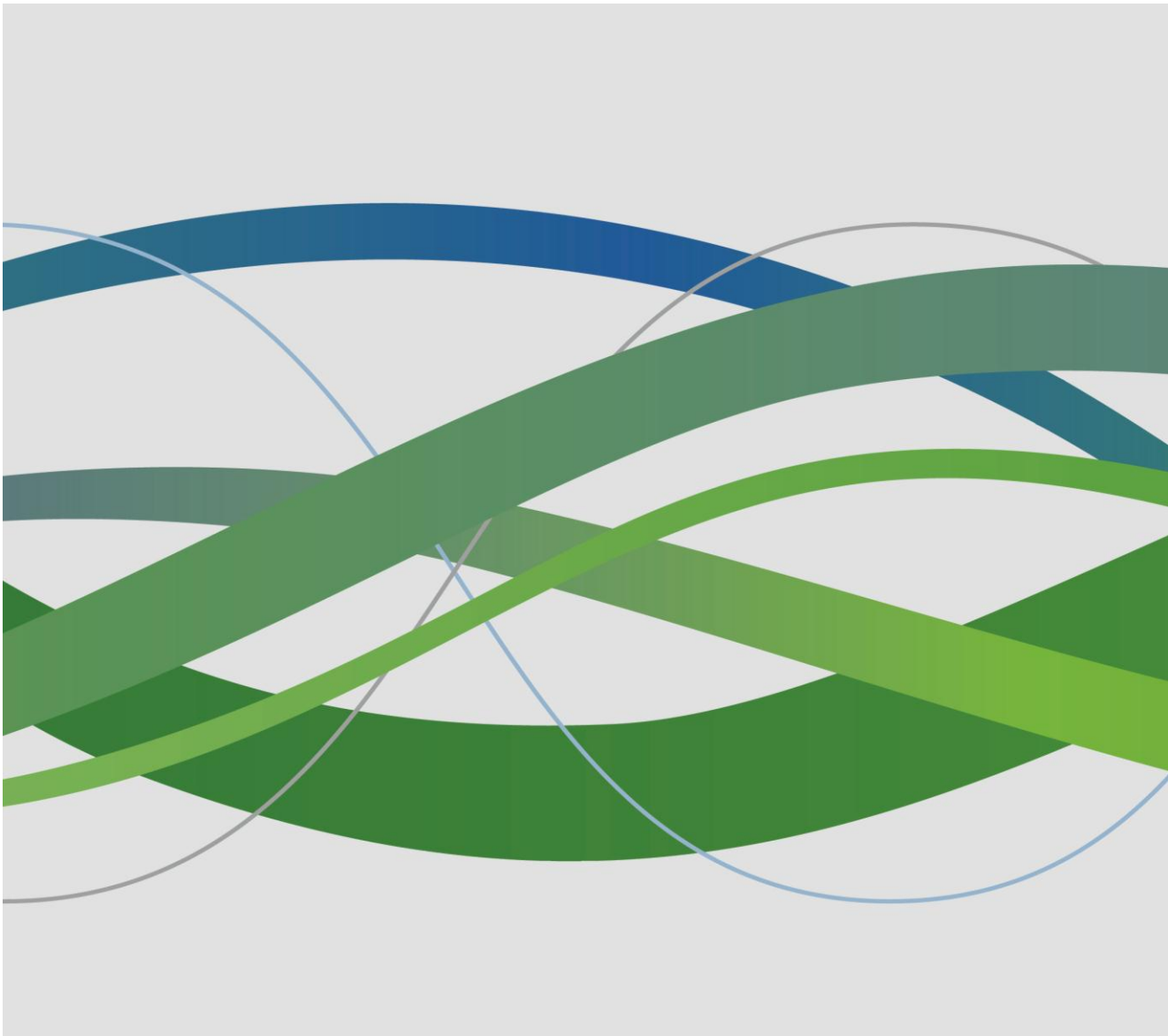




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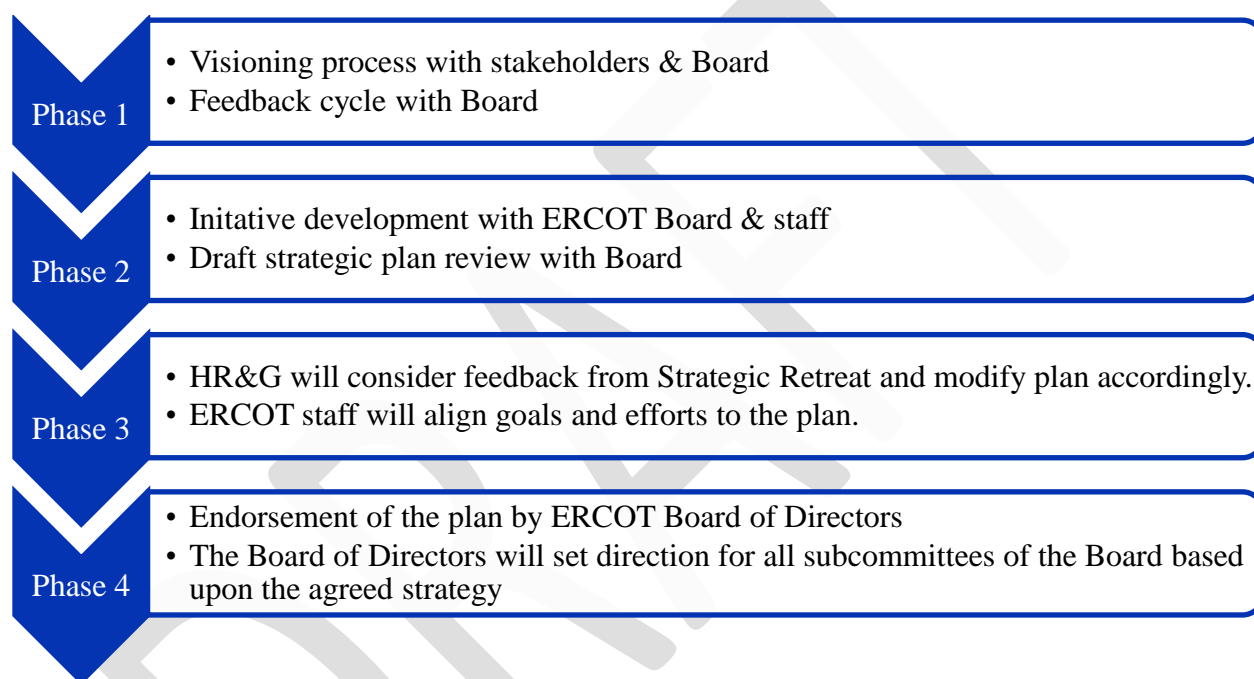


Figure 1: Strategic Planning Process

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the potential positive impacts of further integration flexible resources into the ERCOT region to provide system operators the necessary tools to manage the balance between supply and demand in a cost effective and reliable manner.

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- ~~Environmental~~

- “Downstream” Distribution Technology Change

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- ~~Water resource management~~ Impact of water on resource adequacy

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- Continuing growth of renewables penetration

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operations with the increased integration of intermittent renewable resources. This issue is intrinsically linked with potential advances in the use/need for flexible resources.

- New and uncertain resource technologies
 - A variety of new resource types are entering the market place. To ensure appropriate integration of these new resources, ERCOT, in cooperation with the Public Utility Commission of Texas and Market Participants, may design and execute clearly defined pilot programs to explore the capabilities and behaviors of various emerging technologies. Utilizing the data collected through pilot programs, stakeholders in the ERCOT region will be better positioned to develop market rules to integrate new technology.
- Environmental pressures on Transmission and Generation facilities
- Cyber Security
 - The ongoing evaluation of cyber threats requires ERCOT to continually reassess and upgrade its cyber security defenses and risk management capabilities. Potential national cyber security legislation and the determination of which federal agency ultimately has jurisdiction regarding the development and implementation of new security standards will impact ERCOT.

5. Strategy and Supporting Initiatives

5.1 Operational Reliability

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

It has become increasingly clear that the rate of change and the volatility and diversity of market factors driving ERCOT operations has increased substantially and is expected to continue to grow in unexpected ways. Recognizing this trend and the potential implications that new resource technologies, business models and cost structures could have on Market Participants and ERCOT operations, combined with the interactional effects of multiple drivers simultaneously occurring makes advance planning and anticipation more critical than ever to ensure ERCOT provides the market stability and surety sought. To this end, ERCOT will pursue the following key strategic initiatives:

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- 7) 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.

5.2 Flexible Market Design

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

ERCOT has demonstrated tremendous strength in establishing its current reliable market operations, effective commercial operations and transmission network and planning functions. However, it is clear that continued external developments and the desire to develop a highly flexible and responsive infrastructure at ERCOT requires a reassessment of current capabilities, processes and underlying capabilities in order to remain effective in the face of this changing environment. Additionally, ERCOT continues to be committed to a highly cost conscious business environment capable of consistently delivering required reliability. Therefore, ERCOT will pursue the following key initiatives:

- 1) As a means to ensure flexibility in approach to key structural change issues, ERCOT will continue to forge stronger coordination between markets, operations and planning groups.
- 2) 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.
- 3) ~~To ensure appropriate integration and utilization of resources available to the market explore~~ Explore the capabilities and behaviors of various emerging technologies to inform policy makers and stakeholders and ensure appropriate integration and utilization of resources available to the market.
- 4) Enhance the IT Roadmap to anticipate change, map current and future projects, and create more flexible, efficient and effective system changes.



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

5.3 Data Transparency & Access

Continue to evolve ERCOT's role as a data and ~~an~~ 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 ~~information~~ intelligence.

As a highly trusted market operator, ERCOT has a unique role in providing market information in a timely and readily accessible manner. Additionally, ERCOT has an important role in providing appropriate access to market participants across all stakeholder segments, with a particular focus on providing information in relevant and actionable formats. To this end, ERCOT will pursue the following initiatives:

- 1) ERCOT will proactively serve as a catalyst and venue for market participants to gain enhanced access to available information
- 2) Evaluate overall organizational, business and technical capabilities to position ERCOT to be even more flexible and responsive to market conditions
- 3) Proactively assess and understand the evolving market participant needs, operations and capabilities to exchange and act on ERCOT-provided data

5.4 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.

ERCOT as an enterprise encompasses not just bricks, mortar, computer systems, supporting infrastructure and ERCOT staff, but also a robust and crucial stakeholder committee process that functions as an integral part of the enterprise operations. With both limited resources and substantial industry change in the offing, ensuring organizational and strategic alignment of this resource represents a key requirement for ERCOT's ability to serve its role as ~~an RTO~~ the Independent System Operator. Solidifying and effectively leveraging the stakeholder committees represents a key strategic opportunity for the organization to improve its effectiveness. As changes will come more quickly in the future, the ability to nimbly adapt and respond to that change in a cost effective manner represents the necessary attributes



ERCOT must embed in its strategic approach to all its duties. Full strategic alignment of the stakeholder committee processes and outcomes is crucial to successfully navigating an uncertain future. To this end, ERCOT will pursue the following initiatives:

- 1) 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.
- 2) Establish clear linkages between the ERCOT staff and the committee process including formalizing roles for the ERCOT staff in the committee process.
- 3) Establish Board level mechanisms for reviewing process effectiveness at achieving strategic goals throughout the enterprise including in the stakeholder committees.
 - a. Enhanced Cost Benefit Analysis process
 - b. Clear budgeting alignment and linkages to strategic plan
 - c. Effective categorization of rule change requests to identify strategic importance.
 - i. Addressing Current Operational Issues
 - ii. Meeting strategic goals (tied to the Plan or as directed by the Board of Directors)
 - iii. Market Efficiencies
 - iv. Administrative
 - v. Regulatory requirements

~~6. Enterprise Wide Goals to be determined~~

~~In order to effectively drive performance against the broad strategic initiatives outlined in this plan, the ERCOT Board has set out goals for the enterprise as a whole (ERCOT staff & Committees) that will provide a means to effectively measure performance of the entity at achieving this strategy. These goals represent the highest level measures of success of the organization and are expected to feed reporting level goals within the committees and the ERCOT staff organization.~~