



California ISO  
Your Link to Power

# Five-Year Business Plan 2007–2011

April 19, 2007

*Managing Our Business and  
Leading Our People  
to Deliver Results*



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## Introduction

Continuing uncertainty in the United States electricity industry makes planning essential to the success of the California Independent System Operator Corporation (California ISO). This uncertainty arises in several critical areas:

-  The Energy Policy Act of 2005, currently being implemented by the Federal Energy Regulatory Commission (FERC), significantly changes how applicable reliability policies will be developed and enforced.
-  Many states in the West have adopted policies to encourage development of renewable resources, which will increase competition to develop and deliver those resources to load centers and will create system integration challenges.
-  Environmental regulations related to river flows, greenhouse-gas emissions, and power-plant cooling technologies could significantly change the availability of existing generation facilities, especially in the West.
-  Load growth, aging infrastructure, and the location of new resources present continuing challenges to service reliability.
-  Uncertainty on the status of retail choice and efforts regarding community choice aggregation may grow in importance.

This document is the California ISO's Five-Year Business Plan taking into account the challenges these issues present. Our business planning process began with extensive consultation with policymakers and leaders of the electricity industry in California and the West. In addition, the process included extensive internal deliberations and analysis to develop consensus and plans around our key priorities.

The California ISO Five-Year Business Plan describes the planning process and the corporate objectives and initiatives covering the period 2007 to 2011. The goal of the effort is to develop corporate strategic objectives and initiatives that address the identified needs and are sufficiently robust to ensure the California ISO's success, regardless of how these structural and policy uncertainties are resolved.

## I. BACKGROUND

The California ISO is a not-for-profit public benefit corporation formed in 1998 when the state restructured its electricity industry. It is the impartial link between power plants and the utilities and load-serving entities that provide electricity to almost 80 percent of California consumers, about 30 million people. *Figure 1* shows the area under the California ISO's control, which includes the



*Figure 1: California ISO Control Area*

transmission lines owned by California's three investor-owned utilities (Pacific Gas & Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company), six publicly owned utilities in Southern California (the cities of Anaheim, Azusa, Pasadena, Riverside, Banning, and Vernon), one merchant transmission company (Atlantic Path 15, LLC), and one governmental entity transmission owner (Western Path 15).

Although others own the transmission lines, the California ISO administers impartial access to the lines pursuant to a federally

approved tariff. The FERC tariff provides for:

-  Access to and scheduling of the use of the transmission grid
-  Interconnection of new power plants to the transmission grid
-  Analysis and planning for new transmission facility additions to ensure compliance with applicable reliability standards and provide other beneficial improvements to the transmission system
-  Administration of markets to provide for efficient system operations

A five-member Board of Governors oversees the California ISO. Members are appointed by the governor, with consideration of recommendations from stakeholders, and are confirmed by the California State Senate.

The California ISO President and Chief Executive Officer (CEO) leads the corporation of more than 500 full-time employees, organized into three core divisions: Operations, Market Development and Program Management, and Planning and Infrastructure Development. Key supporting divisions include Human Resources; External Affairs; Information Technology; Financial and Corporate Services; and General Counsel, Corporate Secretary. The Market Monitoring Department monitors market performance and behavior and provides critical market design advice to management and the Board of Governors.

Enabled by its key assets of a highly skilled workforce and reliable and advanced technology, the California ISO benefits its customers through its continued commitment to its cornerstone functions:

-  Reliability
-  Effective markets
-  Infrastructure development
-  Customer care

*Figure 2* illustrates the structure and key elements of the California ISO.

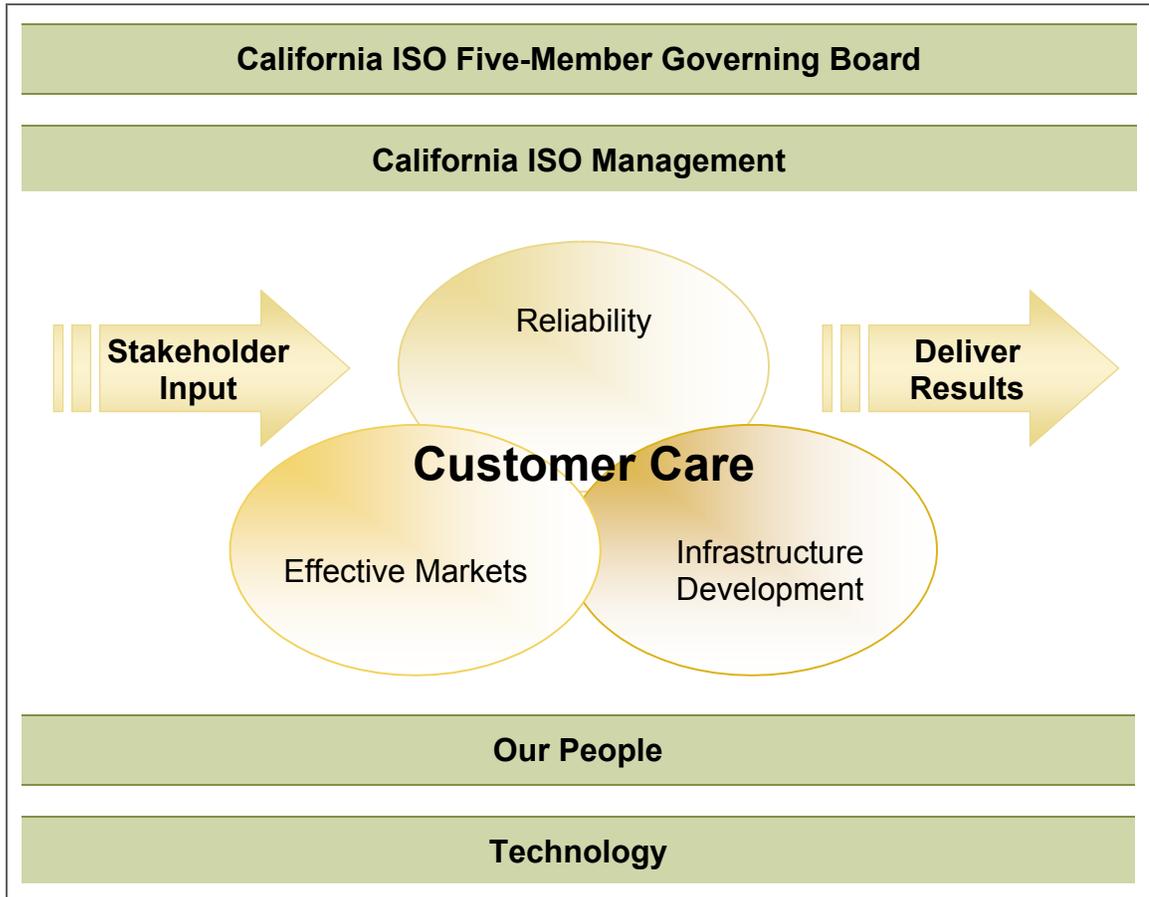


Figure 2: California ISO Structure

The Operations division manages the electricity markets and continuously balances generation and demand on the electricity system to meet applicable reliability standards and keep electricity flowing to California consumers. The Market Development and Program Management division produces the market and program enhancements to improve the efficiency and reliability of system operations and to align with federal and state public policy initiatives. The Planning and Infrastructure Development division prepares a ten-year statewide transmission plan in collaboration with transmission owners, market participants, stakeholders, state agencies and other interested parties that identifies projects that should be built for economic and/or reliability reasons.

OPERATIONS	
Peak Load	51,000 MW
Transmission Lines	25,000 miles
Generators	1,400 units
Transmission Schedules	4.2 million/month



MARKETS	
Facilitated Market	\$14 Billion/year
ISO Market	\$2.5 Billion/year
HISTORICAL INFRASTRUCTURE DEVELOPMENT (1998–2006)	
Approved Transmission Projects	363 Projects
Approved Transmission Investment	\$6 Billion
New Generation (MW)	Over 15,000 MW

Figure 3 shows the California ISO organization chart and approximate staffing levels.

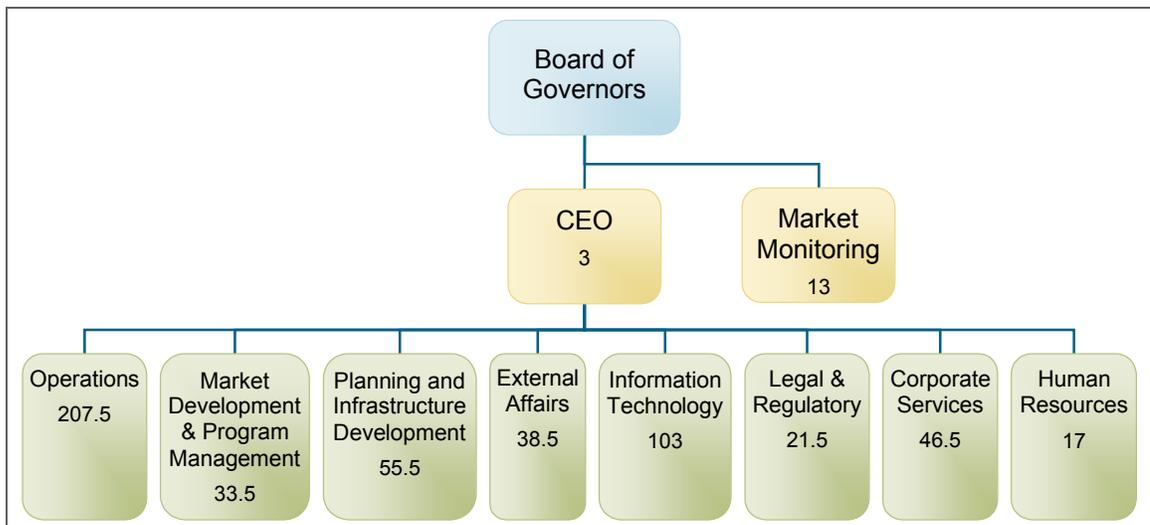


Figure 3: California ISO Organization Chart

## Key 2006 Accomplishments

2006 was marked by several key accomplishments. The California ISO maintained reliable system operations during an extraordinary heat wave that significantly exceeded even the worst-case forecasts. The California ISO also added new critical infrastructure and continued to support state policies regarding the development and reliable integration of new renewable resources.

### KEY 2006 ACCOMPLISHMENTS

-  Maintained a reliable system through all adverse conditions and achieved the “stretch” objectives on all established national and regional reliability criteria.
-  Brought into service over 1,100 MW in new transmission capacity.
-  Approved over \$1 billion in new transmission projects providing access to wind, solar, and geothermal resources.
-  Reduced reliability management costs (uplift costs) by almost \$200 million.
-  Secured FERC approval of the California ISO’s Market Redesign and Technology Upgrade (MRTU) proposal for implementation in early 2008.
-  Achieved market performance at a historic high (average annual prices less than 15 percent above market competitiveness index).
-  Achieved high ratings in the employee opinion survey in the areas of respect, job satisfaction, and communication (81 percent, 75 percent, and 73 percent favorable ratings, respectively).
-  Achieved all of the above while coming in below budget.

These accomplishments build upon the organization’s ongoing commitment to lower grid-management charges, improve compliance with applicable reliability standards, facilitate industry compliance with state policies, and lower costs to California consumers. As shown in *Figure 4*, over the past four years, the California ISO reduced its operating budget by 18 percent and lowered its

bundled pro forma Grid Management Charge (GMC) from one of the highest to the median level of its peers.

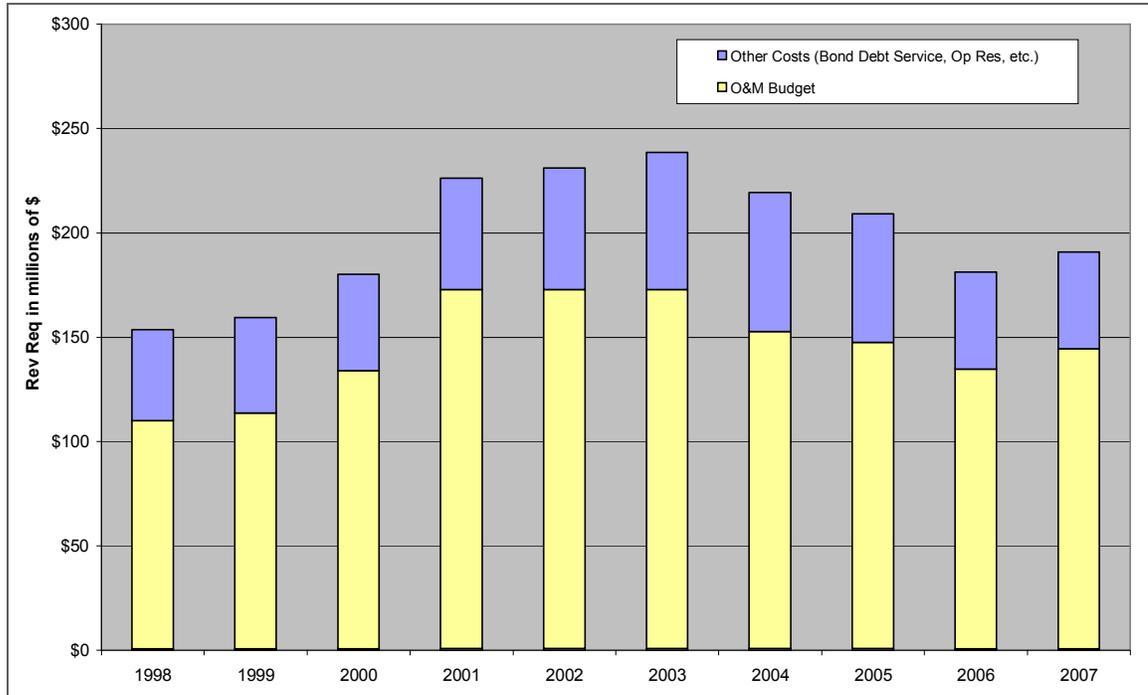


Figure 4: History of California ISO Revenue Requirement

New state policies to provide for resource adequacy, combined with new power plants, transmission investments, and improved system operations, have lowered annual reliability costs by over \$600 million since 2004. Continuing improvements in system operations are evident from 2006 performance levels where there were no violations of applicable standards. Most importantly, as shown in *Figure 5*, in 2006, estimated average wholesale energy costs<sup>1</sup> remained at the lowest levels seen since 1998, consistent with a six-year trend of lower costs. The 2006 average *normalized* cost is the lowest since 1998, while the 2006 average *nominal* cost is the lowest in four years.

<sup>1</sup> Cost data shown in *Figure 5* is based on estimated annual all-in cost of wholesale energy reported in the California ISO Market Monitoring department's annual report on market issues and performance. Estimated costs are comprised of estimated forward-scheduled energy costs, real-time market energy costs, congestion costs, ancillary service costs, reliability must run (RMR), market uplifts, and California ISO GMC. Estimated forward-scheduled energy costs include estimated production costs of utility-owned generation, costs of California Energy Resource Scheduling (CERS), long-term energy contracts, reported short-term Investor-Owned Utility (IOU) bilateral energy transactions, and any residual forward-scheduled load valued at daily spot-market prices. Cost estimates do not include the any costs of newer IOU long-medium term energy contracts or the capacity costs to meet the California Public Utilities Commission (CPUC) Resource Adequacy obligations.

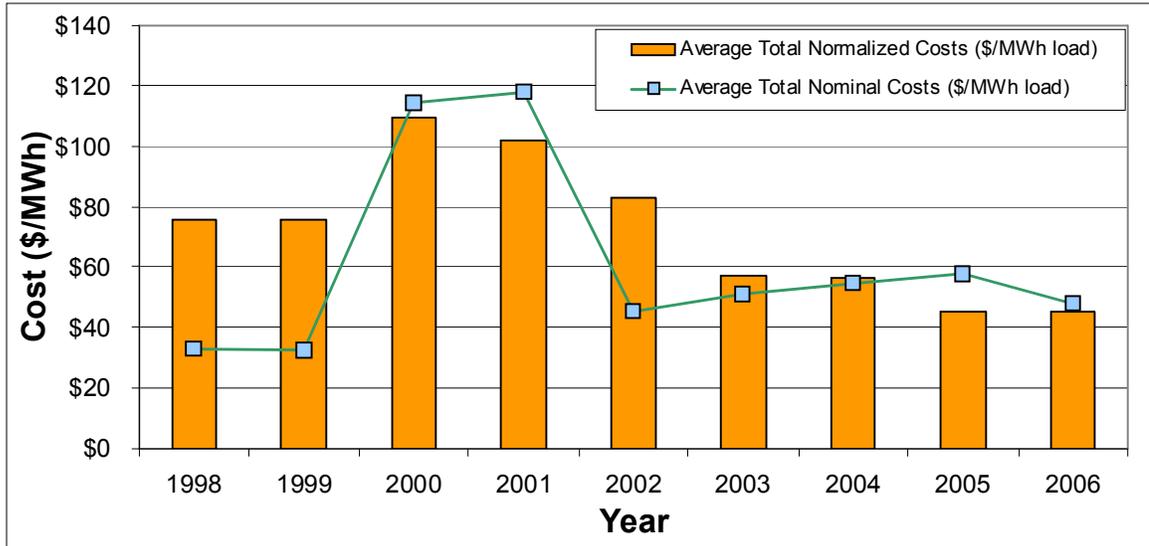


Figure 5: Historical Cost Data

## II. THE BUSINESS PLANNING PROCESS

The California ISO’s six-step business planning process is illustrated in Figure 6. In addition, for each step, we summarize the actions taken and results. The culmination of the process is the identification of the key initiatives required to satisfy our strategic objectives. Execution of the plan requires that objectives and initiatives be appropriately incorporated into each division’s and individual employee’s pay-for-performance plan and that measures of success (metrics) are monitored and reported monthly and quarterly.



*Figure 6: California ISO Business Planning Process*

The six-step process is described below.



<b>BUSINESS PLANNING PROCESS</b>	
<b>STEP 0: BASELINE BUSINESS PLAN</b>	<ul style="list-style-type: none"><li>▪ Initially, the planning process produced a Three-Year Plan.</li><li>▪ This process produces a Five-Year Plan, revisited on an annual basis.</li></ul>
<b>STEP 1: CONDUCT OUTREACH</b>	<ul style="list-style-type: none"><li>▪ Conduct broad outreach with industry leaders to gather input, identify priority needs, and set priorities with:<ul style="list-style-type: none"><li>- Policymakers</li><li>- Investor-owned utilities</li><li>- Municipal utilities</li><li>- Generators</li><li>- Marketers</li><li>- Financiers</li><li>- Regional interests</li></ul></li><li>▪ Analyze findings to determine common themes, key assumptions, and challenges.</li></ul>



<b>BUSINESS PLANNING PROCESS</b>	
<p><b>STEP 2: IDENTIFY DRIVERS AND ASSESS MARKET NEEDS</b></p>	<ul style="list-style-type: none"> <li>▪ Assess the external and internal environment.</li> <li>▪ Review external drivers.               <ul style="list-style-type: none"> <li>- Energy Policy Act of 2005</li> <li>- Renewable resource policies</li> <li>- Environmental regulation</li> <li>- Support for long-term bilateral arrangements, including long-term transmission rights</li> <li>- Increased reliance on imports and need for regional coordination</li> <li>- Support for the reliable integration of renewable resources</li> <li>- Desire for market enhancements, including a capacity pricing mechanism and demand response</li> <li>- Aging national workforce and fewer entrants into national labor pool with requisite skill and experience</li> <li>- Aging infrastructure</li> </ul> </li> <li>▪ Review internal drivers.               <ul style="list-style-type: none"> <li>- Aging workforce and the need for additional bench strength and skills in key areas</li> <li>- Fierce competition for talent</li> <li>- Aging and outdated facilities that fail to support the critical purpose of the California ISO and its employees</li> <li>- Technology strategy</li> <li>- Cost-containment pressure with increased demand for services</li> </ul> </li> </ul>
<p><b>STEP 3: DEFINE STRATEGIC OBJECTIVES</b></p>	<ul style="list-style-type: none"> <li>▪ Create a list of key assumptions based on the data gathered through the broad outreach to industry leaders and the assessment of the external and internal environment.</li> <li>▪ Identify strategic objectives that are framed to address the fundamental drivers, challenges, and issues facing the California ISO over the next five years.</li> </ul>
<p><b>STEP 4: DEVELOP KEY CORPORATE INITIATIVES</b></p>	<ul style="list-style-type: none"> <li>▪ Formulate key corporate initiatives to address the strategic objectives over the next five years.</li> </ul>
<p><b>STEP 5: EXECUTE THE BUSINESS PLAN THROUGH THE DIVISIONS</b></p>	<ul style="list-style-type: none"> <li>▪ Establish division objectives and initiatives, based on and supporting the corporate strategic objectives.</li> <li>▪ Establish specific division initiatives.</li> </ul>



<b>BUSINESS PLANNING PROCESS</b>	
<b>STEP 6: PERFORMANCE MANAGEMENT</b>	<ul style="list-style-type: none"><li>▪ Define corporate measures of success (metrics) for 2007–2011.</li><li>▪ Align division and individual performance plans with corporate strategic objectives and initiatives.</li><li>▪ Monitor, assess, and report performance on a monthly and quarterly basis, using a scorecard.</li></ul>

The results of the six-step business planning process are summarized below.

## Steps 1 & 2: Conduct Outreach, Identify Drivers, and Assess Market Needs

### Step 1: Conduct Outreach

- Sought input from almost forty key industry leaders (IOUs, municipals, generators, marketers, financiers) to identify priority needs
- Surveyed policymakers and assessed critical legislative and regulatory policies and initiatives
- Conducted internal deliberation and analysis to develop the common themes and priorities

The California ISO held sector meetings with California and regional industry leaders. These included meetings with leaders of California's investor-owned utilities, select municipal utilities, California generation owners and developers, including renewable generators, power marketers and investment houses active in the California market, and key market participants from elsewhere in the West. The

sessions were structured to solicit the views of the industry leaders regarding market scenarios, challenges, trends, and drivers affecting the corporation's business plan.

Trends were identified that could have a significant impact on the electricity industry and the California ISO priorities. This was not an effort to define what should happen, rather what could happen, or what is happening.

### Step 2: Identify Drivers and Assess Market Needs

#### *Drivers*

- EPACT 2005
- Critical infrastructure development
- Renewable resource development
- Environmental regulation
- Regional market
- Retail market structure



The common themes from all of our external meetings and internal deliberations included:

- Implementation of the Energy Policy Act of 2005, including reconfiguration of how reliability is regulated at the federal and regional levels.
- Need for critical infrastructure development, with an emphasis on addressing issues associated with aging infrastructure, including transmission necessary to eliminate, when economic, major bottlenecks and to facilitate inter-regional trading.
- Renewable resource development policies in place in California and other states in the Western Interconnection, requiring integration of significant amounts of intermittent generation into the electric power system and developing new transmission to access generally remote resource areas.
- Increased environmental regulation, including those involving greenhouse gas emissions, power plant cooling technologies, and fisheries management policies.
- A continuing and growing reliance on imports to serve California load, driven by both new resource development (including renewable resources) in areas outside of California, the difficulty of building new power plants within California, and the focus on new transmission that can support interregional transfers.
- The structure of the retail electric market, including the status of retail access and interest in community choice aggregation.



## Step 2: Identify Drivers and Assess Market Needs

### Market Needs

- Market enhancements providing transparent and accurate price signals
- Reliable integration and operation of renewable resources
- Need for new transmission and collaborative transmission planning
- Increased reliance on imports and need for regional collaboration
- Development of demand response products that can participate in the ISO's markets
- Need for capacity pricing mechanism to mitigate development uncertainty and create a level playing field among load-serving entities
- Need for long-term transmission rights and other features supporting long-term supply arrangements

Industry leaders acknowledged these drivers and identified a number of market needs. For example, every sector identified the reliable integration of intermittent renewable resources into the power system as a major operational challenge and one that may have a significant impact on costs. In addition, every sector identified the need to understand the system impacts of increased environmental regulation, especially greenhouse gas regulation, and advocated a proactive role for the California ISO in communicating to policy makers on environmental and renewable integration issues.

Most sectors also suggested that California was likely to rely more on out-of-state generation to meet increasing amounts of its generation

needs and acknowledged this suggested increased reliance on transmission to deliver power to load centers. Consistent with the West's historic liquid electricity market, these comments supported the general sense that the California ISO should increase its consultation and collaboration with others in the West.

In addition, each sector discussed the need for additional functionality in the California ISO's markets.

-  **Long-Term Transmission Rights**—all sectors supported a functioning long-term transmission market, implemented coincident with the MRTU project. Such a market supports bilateral transactions and allows the terms of power purchase contracts to be aligned with associated transmission rights.
-  **Transmission Expansion and Planning**—all parties emphasized the need for new transmission infrastructure and supported a collaborative and regional transmission planning process. Most of the load-serving entities identified a need for new transmission to support increased levels of imports and exports and regional trading in general.



- **Demand Response**—most parties also identified demand response as an essential component of a functioning wholesale electricity market. Although such a market competes with generation resources, a functioning mechanism to price capacity is seen to be good for all. In addition, demand response is second only to energy conservation in the State of California’s loading order. The California ISO recognizes that demand participation in the wholesale market must be coordinated with state-run programs and must satisfy operating requirements.
- **Collaboration with Stakeholders**—most parties identified the need for greater transparency in market operations and policy development as critical to their interests. This need included operational transparency under specific market conditions, transparency regarding future market plans, and greater transparency and access to the corporation’s tariff development and governing board approval processes.
- **Capacity Pricing Mechanism**—many entities identified the need for a centralized mechanism to price capacity. Such a mechanism allows small entities to meet their reliability obligations with financial commitments that match their needs and gives investor-owned utilities comfort that reliability obligations can move with customers in the event that direct access is reinstated in the California market or community aggregation efforts increase.
- **Other Market Enhancements**—lastly, all sectors supported the need to reduce the California ISO’s settlement timeline in order to reduce credit requirements and risk in the marketplace. In addition, generators and marketers also supported the development of specific market functionality, such as convergence bidding and scarcity pricing, in order to improve price transparency and accuracy and to increase market liquidity.

## Steps 3 & 4: Define Strategic Objectives and Key Corporate Initiatives

Through our outreach efforts and analyses of the market, the California ISO formulated overarching strategic objectives for the organization—strategic objectives to best align with stakeholder needs. These strategic objectives shape our strategies, initiatives, and resource allocations over the five-year time period, 2007–2011. The strategic objectives will be achieved through the actions and



initiatives carried out through the individual and collective effort of the divisions within the California ISO.

The Strategic Objectives are organized into three tiers that define our business priorities.

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### ***Deliverables***

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-  Excellence in grid and market operations with a diverse resource mix and through automation, advanced technologies, and tools.
-  Robust, competitive markets for energy and ancillary services.

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### ***Enablers***

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-  Energy infrastructure supporting a diverse resource mix, including new renewable resources, aging infrastructure, greater imports/exports, and reliable operations.
-  Affirm people are our greatest asset by promoting professional/skill development of critical skills and professional/career growth.

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### ***Satisfiers***

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-  Provide information to support public policymaker decisions and enhance customer service.
-  Align with state and federal environmental, renewable, and demand response priorities.

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## Strategic Objective 1

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### Deliverables

#### *Achieve Excellence in Grid and Market Operations*

- Reliable operations with a diverse resource mix (e.g., renewable resources, demand response, in/out-of-state resources)
- Transparent, automated, and streamlined operations using advanced tools
- Forward analysis capability
- Expedited settlements

The California ISO operating environment is likely to become increasingly complex over the planning horizon. The increasing amount of renewable resources, including intermittent and other non-dispatchable resources, will present the California ISO with new challenges in reliably operating the grid. Moreover, managing an increased level of inter-regional transfers will require advanced planning and close coordination.

While new market features such as demand response may provide needed additional tools to help manage these complexities, the introduction and integration of these products themselves creates challenges. Meanwhile, the market will continue to expect the California ISO to operate the grid and its markets in a reliable, transparent, and efficient manner.

In order to achieve excellence in grid and market operations, the California ISO will address the aging and outdated infrastructure at its Folsom facility. In addition, the California ISO will develop the advanced tools and resources necessary to support forward-looking and transparent operation of the grid. Advanced tools relying on new technology and appropriate automation will deliver more reliable and consistent grid operations and will support the integration of new renewable and demand response resources. In addition, the California ISO will support the successful implementation of reliability standards that work with organized markets.

The California ISO will also achieve excellence in market operations. Key drivers raised by stakeholders include market transparency, certainty, and stability. Reduced settlement timelines and additional visualization capabilities will address the market's need for transparency, certainty, and reduced risk.



<b>KEY INITIATIVES—ACHIEVE EXCELLENCE IN GRID AND MARKET OPERATIONS</b>	
<b>INITIATIVE</b>	<b>IMPLEMENTATION TIMELINE</b>
<b>National Reliability Standards</b>	<b>2007–2011</b>
Support the effective implementation of national reliability standards through the dedication of time and resources to actively engage in FERC, North American Electric Reliability Council (NERC), and Western Electricity Coordinating Council (WECC) forums.	
<b>Reduce Timeframe Between Trade Day and Posting of Initial Settlements from 38 Business Days to 9 Business Days</b>	<b>2008</b>
Reduce credit risk to market participants and the barriers to entry for small players by expediting the provision of ISO initial settlement statements.	
<b>Design and Build a New Control Center to Improve Security and Support Reliable Operations and Transparent Market Outcomes</b>	<b>2007–2011</b>
Support the reliable operation of the grid in a complex operating environment by working with both the IT and Corporate Services Divisions, creating a world-class, state-of-the-art control room with advanced technology and tools by 2011. Short-term efforts in 2007 will include targeted upgrades to the Folsom Control Room. Long-term (2007–2011) efforts include a new control center as the centerpiece of a new reliable ISO campus.	
<b>Implement Advanced Tools to Support Reliable Operations</b>	<b>2007–2011</b>
Implement advanced tools—such as voltage stability analysis, generation outage and reliability tracking, Remedial Action Scheme (RAS), modeling associated with contingencies, forward analysis capability, and online restoration tool—to support the reliable operation of the grid from 2007 to 2011.	
<b>Expand Operator Training on New Advanced Tools</b>	<b>2007–2011</b>
Develop and expand operator training to ensure the skilled use of advanced tools and to build California ISO bench strength.	

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## Strategic Objective 2

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### Deliverables

*Achieve Robust, Competitive Markets for Energy and Ancillary Services*

Establish and promote:

- Efficient allocation and use of the transmission system
- Long-term transmission rights
- Effective means to price the value of capacity
- Renewable resources and demand response products
- Regional coordination

The California ISO strives to align financial incentives with the physical operation of the grid and provide information that informs short and long-term infrastructure investment decisions. In 2002, the California ISO embarked on a comprehensive market redesign initiative to correct known flaws in the existing market design, while incorporating industry proven “best practices” into its market platform. In parallel with this effort, the California Public Utilities Commission (CPUC) set out to

strengthen the “obligation to serve” through a comprehensive and aggressive Resource Adequacy (RA) program. The ISO expects to continue to work closely with the CPUC as these two efforts evolve over the next five years.

The future-state vision for the California electricity market has these attributes:

-  Transparent, stable, pricing mechanism for generating capacity
-  Robust, competitive, multi-settlement structure for energy and ancillary services
-  Financial incentives and price transparency mechanisms supporting long-term bilateral energy contracts
-  Demand response participation in full competition with conventional generation resources
-  Long-term capacity procurement arrangements acknowledging the inherent “obligation to serve” native load while encouraging the expansion of a diverse, reliable generation fleet

The MRTU project will provide the foundation for achieving the vision for the California energy and ancillary service markets. MRTU project features include:

- A day-ahead market that improves reliability and provides real-time price transparency
- Mechanisms to minimize the costs associated with reliably serving California's electric energy needs
- Greater operating and price transparency that provides valuable information to inform short- and long-term business decisions
- Technology and business systems enabling the California ISO to quickly integrate newer generation/supply technologies, including improved combined cycle models and demand response resources into the ISO supply portfolio

Over the next five years, the California ISO envisions a continuous array of enhancements to sharpen price signals and lower ISO costs. For example, the ability to support demand response resources will encourage discipline to the market and place downward pressure on prices during shortage conditions. Other new tools will provide incentives for increased output above normal levels during shortage conditions and enhance overall market competitiveness. Through its Market Initiatives Roadmap, the California ISO will partner with stakeholders to evaluate and prioritize all identified market enhancements, ensuring that future market enhancements are cost effective and add value to the greater stakeholder community while aligning with state and federal policy initiatives.

California recognizes the reliance on, and the importance of, the greater Western market. The California ISO is firmly committed to working with all neighboring systems to insure energy can flow efficiently across and among all areas in the West. The California ISO will continue to reach out to its neighbors both individually and through the Western Electric Coordinating Council (WECC) to identify and mitigate barriers to west area trade. Though advanced technology and industry "best practices," the California ISO will seek to share pertinent data, transaction schedules, and forecasts to improve and expand Western area coordination with the objective of more fully utilizing scarce transmission resources throughout the entire region.



<b>KEY INITIATIVES—ACHIEVE ROBUST, COMPETITIVE MARKETS FOR ENERGY AND ANCILLARY SERVICES</b>	
<b>INITIATIVE</b>	<b>IMPLEMENTATION TIMELINE</b>
<b>Implement Market Redesign &amp; Technology Upgrade</b>	<b>February 1, 2008</b>
Implement the MRTU project on schedule (February 1, 2008) and within budget.	
<b>Implement Long-Term Transmission Rights</b>	<b>2007–2008</b>
Implement new long-term transmission rights as part of MRTU (2008).	
<b>Implement Value-Added Market Enhancements</b>	<b>2009–2011</b>
Finalize the design of and implement enhancements to the market design, including convergence bidding and scarcity pricing (2009).	
<b>Assess Capacity Pricing Mechanisms</b>	<b>2007–2008</b>
In cooperation and coordination with the CPUC and stakeholders, identify capacity market options and develop a conceptual design for a capacity pricing mechanism (2007). (Note: further development beyond 2007 will be tied to the regulatory gateway decision in early 2008).	
<b>Increase Demand Participation in the ISO's Markets</b>	<b>2007–2011</b>
Develop and publish the functional requirements for demand response resources in 2007 and incrementally incorporate existing and/or implement new demand response products through 2008–2011 (concurrent with other enhancements to the market design).	
<b>Increase Regional Outreach and Coordination</b>	<b>2007–2011</b>
Develop a strategy and commit the resources necessary to actively manage and address regional market and coordination issues.	
<b>Market Simplification</b>	<b>2007–2011</b>
Continually assess the market design and products to identify opportunities for simplification.	

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**Strategic Objective 3**

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**Enablers***Develop the Energy Infrastructure*

- Expand and reinforce the transmission system to eliminate uneconomic bottlenecks, maintain or improve reliability, and support long-term power supply arrangements and the provision of long-term transmission rights
- Provide information to inform regulatory and investment deliberations regarding the development and reliable integration of new renewable, direct access, and demand response resources through the development of transparent standards and requirements
- Facilitate a streamlined and efficient generation and transmission interconnection process

The timely development of critical infrastructure is necessary to support reliable operation of the grid, provide access to the grid, interconnect new resources, and facilitate competitive markets. The California ISO is uniquely situated to provide the leadership and information necessary to inform both investment and regulatory decisions.

Over the next five years, California's infrastructure needs will be many and varied. The reliable interconnection of intermittent renewable resources will require careful study and innovative rate treatment. The California ISO will provide the technical analyses

necessary to fully understand the ramifications on system operations associated with various policy choices such as those related to the development of renewable resources and increased demand response programs and participation in the ISO markets.

The California ISO must also address fundamental needs for information by developing a comprehensive transmission plan that identifies transmission bottlenecks and provides information on where to interconnect new resources. Perhaps more importantly, the objective is focused on expanding the transmission system to support long-term power supply arrangements, long-term transmission rights, and the larger regional bilateral market. The provision of long-term transmission rights will require the development of a robust transmission planning process that ensures the transmission grid is built in a manner to support both those rights, as well as load growth on the system. Moreover, such a transmission process can also identify opportunities for partnerships between the California ISO, its Participating Transmission Owners, and other public and private entities to sponsor needed transmission lines.



<b>KEY INITIATIVES—DEVELOP THE ENERGY INFRASTRUCTURE</b>	
<b>INITIATIVE</b>	<b>IMPLEMENTATION TIMELINE</b>
<b>Establish a “Third Category” of Transmission</b>	<b>2007–2011</b>
File a petition for a declaratory order at FERC seeking policy approval of the ISO’s new “third category” of transmission. If approved by FERC, identify opportunities to apply such treatment to facilitate the development and interconnection of new renewable resources to the grid.	
<b>Complete the Reliable Integration of Renewable Resources</b>	<b>2007–2010</b>
In support of state public policy, complete a detailed technical study to identify the operating and infrastructure requirements to support the reliable and effective integration of renewable and intermittent resources into the system by the summer of 2007 and complete the reliable integration of new renewable resources by 2010.	
<b>Establish California Planning Group</b>	<b>2007</b>
Establish a new California Sub-Regional Planning Group (CSPG) by the end of 2007 and complete and publish the first bi-annual CSPG plan by the end of 2007.	
<b>File ISO Tariff Amendment on Transmission Planning</b>	<b>2007</b>
File California ISO Tariff changes that are consistent with the new ISO transmission planning process, and develop a Business Practice Manual that details the process necessary to qualify for a “rebuttable presumption” in the CPUC transmission permitting process by the end of 2007.	
<b>High-Priority Transmission Projects—Congestion</b>	<b>2007–2011</b>
Based on the results of the ISO’s Long Term Transmission Plan, identify high-priority congestion relief transmission projects (2007–2011). All uneconomic bottleneck congestion will be addressed by 2011, beginning in 2007.	
<b>Complete Southern California Backbone Upgrades</b>	<b>2010</b>
Complete, subject to CPUC approval, the Southern California area backbone upgrades, including the Sunrise project by 2010.	
<b>Partner with Federal, State, and Public Entities on Infrastructure Projects</b>	<b>2007–2011</b>
Achieve the development of critical energy infrastructure and enhance grid reliability and transparency through the active partnerships with Federal, State and public entities.	



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## Strategic Objective 4

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### Enablers

*Affirm that Our People Are Our Greatest Asset by Developing People, Skills, and Environment*

- Create a world class organization: “Employer of Choice”
- Design and build a new “ISO Campus” providing a secure, healthy, and positive work environment
- Develop an informed, inspired, and diverse workforce dedicated to meeting the challenges of today and tomorrow with vigor, technical excellence, and team spirit
- Equip employees with critical knowledge and skills to achieve the California ISO Objectives
- Commit to achieve the California ISO’s strategic objectives

The California ISO is committed to performance excellence. Through the objectives and initiatives outlined below, the California ISO reaffirms its commitment to equip our employees with the critical knowledge and skills required to achieve performance excellence. By creating a culture of commitment and a workplace environment where each employee is motivated to excel, the California ISO can better serve its customers and the public interest at large.



<b>KEY INITIATIVES—AFFIRM THAT OUR PEOPLE ARE OUR GREATEST ASSET</b>	
<b>INITIATIVE</b>	<b>IMPLEMENTATION TIMELINE</b>
<b>Design and Build a New California ISO Campus</b>	<b>2007–2011</b>
Design and build a new California ISO Campus satisfy the needs of the corporation for the next twenty years—a secure campus providing a good work environment, and satisfying the California ISO operational requirements.	
<b>Establish and Expand the “ISO Academy”</b>	<b>2007–2011</b>
Establish the California “ISO Academy” to train, prepare, and support existing staff in obtaining skills and knowledge required to utilize new technically advanced applications, to build bench strength, and to ensure greater reliability and economy in grid management.	
<b>Create and Implement a Career Management Program</b>	<b>2007–2011</b>
Develop a comprehensive career management model aligned with business needs, reflective of employee aspirations, integrated with performance planning and promoting the California ISO ability to attract and retain skilled workers.	
<b>Build Out the ISO’s Internship Programs</b>	<b>2007–2011</b>
Build out the California ISO Internship Programs to produce a robust resource pipeline enabling the ongoing availability, recruitment, and retention of highly skilled and experienced operators and engineers.	
<b>Develop and Launch Talent Management Program</b>	<b>2007–2011</b>
Establish long-term workforce planning model aligned with business needs to manage the ongoing identification and development of key talent for critical jobs.	

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## Strategic Objective 5

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### Satisfiers

#### *Enhance Customer Service*

- Integrate customer care into the corporate culture
- Provide tools and information products increasing the transparency of operations
- Focus corporate effort on customer-driven initiatives and related measures of success

The success of the California ISO in achieving the strategic objectives of the Five-Year Business Plan will ultimately be judged by whether the ISO has satisfied the expectations and needs of its stakeholders including policy makers, regulators, and market participants. Key to the California ISO's success is the transformation of its culture improving responsiveness to customers and achieving stakeholder satisfaction.

This effort began in 2006 with the creation of a new customer survey targeting key functions of the ISO and those stakeholders most involved in each function. This plan builds upon that effort by developing initiatives addressing the concerns the survey uncovered and incorporating implementation of related initiatives into employees' work plans. In addition, the plan includes implementation of an internal issue-tracking tool that will enable the California ISO to measure responsiveness to customer inquiries, analyze the issues that arise, and begin to address the underlying causes. The initiatives also address improvements to the stakeholder process, including but not limited to, providing mechanisms for stakeholders to initiate the review of business practices and to have greater functionality in their access to market information.



<b>KEY INITIATIVES—ENHANCE CUSTOMER SERVICE</b>	
<b>INITIATIVE</b>	<b>IMPLEMENTATION TIMELINE</b>
<b>Establish Division-by-Division Initiatives Targeting Issues Raised in the Customer Survey</b>	<b>2007–2011</b>
Act on survey results by developing initiatives that respond to identified concerns and implementing the initiatives through corporate, division and individual performance plans.	
<b>Enhance MRTU Communication and Readiness Efforts</b>	<b>2007–2008</b>
Survey market participants to assess MRTU communication and readiness efforts and implement new initiatives targeted to the identified concerns.	
<b>Stakeholder Process Improvement</b>	<b>2007–2009</b>
Develop and implement a process for considering and making customer identified changes to business practice manuals, improve meeting notice and document availability, and develop new mechanisms to enhance the stakeholder process.	
<b>Enterprise-Wide Issue Tracking</b>	<b>2007-2008</b>
Implement use of an issue-tracking tool enterprise-wide to enable measurement of the timeliness of issue resolution and analysis and mitigation of recurring customer issues.	
<b>Provide Customer Portal to Access Market Information and Issue Resolution Data</b>	<b>2007–2009</b>
Develop a web-based portal that allows customers to access their own information and to tailor reports to meet their needs.	

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**Strategic Objective 6**

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**Satisfiers**

*Align with State and Federal Environmental, Renewable, and Demand Response Priorities*

- Inform policy deliberations by providing timely, accurate information for policymakers' consideration
- Actively facilitate discussions with policymakers and regulators and provide information for the deliberations and decisions
- Provide tools and information products increasing the transparency of operations
- Focus corporate effort on customer-driven initiatives and related measures of success

The success of the California ISO is dependent upon building high-quality collaborative relationships, providing timely and accurate information, and advancing objectives that benefit consumers and enable high performance by the electricity industry. Achieving these objectives requires collaboration across the California ISO to improve communication with stakeholders, and communicate effectively with elected officials, state agencies, regional organizations, and federal energy regulators.

Meeting this challenge is especially important in today's environment when key public policy initiatives impact electric system operations in California and throughout the West. The California ISO is committed to assisting implementation of state and federal policy priorities by identifying solutions to the technical and infrastructure challenges they pose. For example, California renewable resource policies in combination with those of other western states require focused attention to ensure that transmission is available to reach key renewable resource areas throughout the region. In addition, technical studies are necessary to support the reliable integration of new intermittent renewable resources and to have a complete understanding of the operating and cost consequences of such integration. In the case of greenhouse gas policies, the California ISO needs to understand proposed mechanisms for regulating greenhouse gas emissions in order to assess the implications for system operations and the continuing availability of out-of-state resources. These issues require an informed and cooperative dialogue with regulators, policy makers, and stakeholders to ensure everyone has the information they need to understand the electric system implications of related policy choices. The California ISO is committed to facilitating such communication.



<b>KEY INITIATIVES—ACHIEVE OUTSTANDING CUSTOMER CARE AND STAKEHOLDER SATISFACTION</b>	
<b>INITIATIVE</b>	<b>IMPLEMENTATION TIMELINE</b>
<b>Inform Policy Makers About the Infrastructure and Market Mechanisms Needed to Integrate Renewable Resources Into the Grid</b>	<b>2007-2011</b>
Support the reliable and effective integration of renewable resources into the system by communicating the results of California ISO studies to policy makers and industry leaders.	
<b>Facilitate Information Exchange for Implementing Greenhouse Gas Reduction Policies</b>	<b>2007-2011</b>
Form internal environmental working group to assess the role of the California ISO in greenhouse gas regulation and collaborate with regulators to inform their decision-making about the impact of proposed regulatory mechanisms on system operations.	
<b>Integrate State Demand Response Programs Into Grid Operations and Build New, Enhanced Demand Response Products</b>	<b>2007-2011</b>
Work with state agencies and stakeholders to integrate state demand response programs into ISO operations and align new ISO demand response products with the State's preferred resource loading order.	

### **Step 5: Execute the Business Plan through the Divisions**

The California ISO will implement the Five-Year Business Plan assuming the corporate strategic objectives and key initiatives outlined in this document through a traceable path of the division objectives and initiatives that are translated into each employee's individual performance plans.



## Step 6: Performance Management

In order to measure the California ISO's success in achieving the identified corporate strategic objectives, the California ISO will produce a set of metrics. The Board of Governors will review and approve the set of metrics. The metrics form the basis of the California ISO's annual corporate goals, as well as, the longer-term goals that will guide and measure management and employee performance. As a result, similar to 2006, the level of satisfaction of the strategic objectives—as measured by the metrics—will guide the California ISO's incentive compensation program.

### III. CHALLENGES

#### External Challenges

Achieving all of the strategic objectives outlined in this business plan invariably includes challenges as noted below:

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##### ***Alignment with Public Policies***

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First, the priorities of the California ISO must remain aligned with the California state energy agencies and those of its federal regulator, FERC. State priorities include implementation of renewable portfolio standards and mitigation of greenhouse gas emissions and other environmental impacts. The federal government is also focused on the development of alternative and environmentally friendly resources. Other federal and state priorities include the continuing provision of non-discriminatory transmission access, reliability, and infrastructure development. The corporation is committed to succeed in this regard and will continue its efforts to collaborate proactively at both the state and federal levels.

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##### ***MRTU***

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The successful implementation of the MRTU project is critical. MRTU is the necessary foundation to a sound electricity market. California ISO will continue to focus on the implementation and readiness activities so essential to the project's success, including continued consultation with other control areas to ensure that reliability concerns are fully mitigated and implementation will be successful.

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##### ***Operational Challenges and Regional Coordination***

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Increasing levels of environmental regulation and prescriptive resource acquisition policies create difficult operational challenges and could require increased reliance on imports from others in the West. Of course, with this need comes the need for the additional transmission infrastructure necessary to support inter-regional trades and transfers and the difficulty of building and siting



such facilities. This creates regional challenges requiring high-level and high-priority attention from all involved. Perhaps most importantly, successful regional collaboration will require all parties to set aside their differences regarding market structure and focus on maintaining efficient, reliable operations consistent with consumer and policy maker priorities.

Finally, while different philosophies exist, our consultation in the course of this planning process supports the view that our commonalities far exceed our differences. Moreover, our common views are with regard to the issues of greatest importance to us all—efficient, reliable service for electricity consumers.

## Internal Challenges

The California ISO's primary assets are its People and Technology. Securing effective utilization of both will remain an ongoing challenge to the California ISO over the next five years and beyond, as the California ISO continues to operate under financial and budget constraints and faces a continuing need to attract, retain, and develop people with highly specialized skills.

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### *Our People*

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The 2005 Corporate Realignment resulted in a 16 percent reduction in staff and a redeployment of resources around the California ISO. One assumption made during the realignment was the realignment would not have an appreciable impact on productivity because activities would be more focused on core functions and processes and the organization would rely on well-constructed and defined business processes to optimize available resources. While progress has been made on that front, business process design is continuing and will remain a key focus of divisions over the next several years.

It is essential for the California ISO to attract, retain, and develop high-quality employees capable of performing detailed technical analyses and using advanced technologies. Currently, the California ISO's bench strength is thin in critical areas.

As further detailed in this Five-Year Business Plan, the California ISO has identified key initiatives to address these gaps. The ISO will focus and promote good business process development so as to better and more optimally utilize existing resources. In addition, the California ISO will dedicate its resources to a



number of employee development initiatives designed to attract, retain, and develop the technical resources necessary to perform our core processes.

Finally, while there is an expectation that, as the new market design is deployed, the California ISO dependence on consultants and external contractors will diminish significantly; will this trend extend to the core California ISO staff itself? Already, we have identified several functional areas that do not exist today, or that will require more staff in the future. These include the running of the Congestion Revenue Rights (CRR) allocations and auctions and the daily task of validating all of the LMPs. In addition, new initiatives, such as new demand response programs and the implementation of a centralized capacity market will likely require new staff to operate these new capabilities. As we move forward, it will be important to weigh these resource needs and costs against the potential benefits of any proposed market design.

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## ***Technology***

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The California ISO's existing technology infrastructure is aging and becoming less reliable. The application inventory is characterized by a number of custom point solutions. The previous Three-Year Business Plan established a number of initiatives aimed at increasing the reliability of certain core systems and functions (for example, improving operations at the Alhambra Center; and utilizing fewer, purchased applications by eliminating "one off" applications). In addition, through the MRTU project, the majority of the market systems and supporting technical architecture will receive a significant refreshing and upgrade.

Consistent with the technology architecture vision established in the Three-Year Business Plan, this Five-Year Business Plan focuses on adding significant new capabilities to the systems supporting grid operations, automating many corporate functions, and providing additional data transparency to the markets. These improvements will commit the California ISO to support and report on grid status, as well as provide the tools needed to plan, forecast, and execute grid operations.



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### ***Fiscal Assumptions of the Business Plan***

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The stated goal of the California ISO during the planning horizon is to maintain the “bundled” GMC at or below its current level while enhancing the provision of current services. Further, we will try to reduce the GMC over the period without compromise to our stakeholders. However, to gain many of the benefits identified by the initiatives included in this plan, an increase in the GMC may be necessary and warranted if it reduces the overall cost of energy or provides additional benefits or services to customers. Therefore, the challenge will be to satisfy stakeholder expectations while staying within stakeholders’ ideas of acceptable overhead costs.



## IV. CALIFORNIA ISO CORPORATE MISSION, VISION AND CORE VALUES

During our business planning process, we re-examined the current corporate mission, vision, and core values to determine whether refinements were required as a result of the newly defined strategic objectives outlined above. After careful consideration of the strategic objectives and related initiatives, we reaffirm that the existing corporate mission, vision, and core values are appropriate.

### Our Mission

For the benefit of our customers, we:

-  Operate the grid reliably and efficiently,
-  Provide fair and open transmission access, and
-  Facilitate effective markets and promote infrastructure development,

All through the provision of timely and accurate information.

### Our Vision

California ISO strives to be a world-class electric transmission organization built around a globally recognized and inspired team providing cost-effective and reliable service, well-balanced energy market mechanisms, and high-quality information for the benefit of our customers.

## Our Core Values

CORE VALUES	DEFINITIONS
<b>1. Integrity</b> <ul style="list-style-type: none"> <li>▪ Honest</li> <li>▪ Ethical</li> <li>▪ Trustworthy</li> </ul>	We are honest, ethical, and trustworthy with each other and stakeholders in all business dealings, reflecting the highest professional standards.
<b>2. Teamwork</b> <ul style="list-style-type: none"> <li>▪ Visionary</li> <li>▪ Inspiring</li> <li>▪ Accountable</li> <li>▪ Recognized in the Industry</li> </ul>	We strive for one common vision and are inspired by working together, with clear points of accountability, to be a world-class organization in meeting corporate objectives and serving our customers.
<b>3. Excellence</b> <ul style="list-style-type: none"> <li>▪ Competence</li> <li>▪ Quality Focused</li> <li>▪ Disciplined</li> </ul>	We earn customer trust based on our quality, competence, and discipline in our business dealings.
<b>4. People Focused</b> <ul style="list-style-type: none"> <li>▪ Employee Development</li> <li>▪ Work/Life Balance</li> <li>▪ Diversity</li> </ul>	We value diversity, promote employee development, support work/life balance, and foster an invigorating and fulfilling work environment.
<b>5. Open Communications</b> <ul style="list-style-type: none"> <li>▪ Learning Focused</li> <li>▪ Transparency in Sharing Information</li> <li>▪ Valuing Ideas/Opinions</li> </ul>	We seek out diverse ideas and opinions, value transparency, promote “thought leadership,” and openly share information both internally and externally.



## V. BENEFITS OF THE FIVE-YEAR BUSINESS PLAN

This Five-Year Business Plan offers benefits that build upon and expand those included in last year's Three-Year Business Plan. Last year's plan focused on internal process improvements and forward-looking strategic initiatives. In contrast, this year's Five-Year Business Plan looks forward to consider and reflect critical priorities of state and federal policy makers and the California ISO market participants. Critical benefits that will flow from the successful implementation of this plan include:

-  **Maintain reliability and enhance system utilization**—California and the West will benefit from reliable and more efficient system utilization with successful implementation of MRTU and a platform that will enable the implementation of future market enhancements to address stakeholder needs. In addition, a well-functioning capacity pricing mechanism will enable all load-serving entities to satisfy their reliability requirements in the most efficient way possible.
-  **Support for bilateral transactions**—implementation of long-term transmission rights coincident with implementation of MRTU will facilitate bilateral transactions, essential to the interests of most market participants and the foundation of state resource adequacy policies.
-  **Support for California renewable and demand response priorities**—California will continue as a leader in renewable resource development by addressing the challenges associated with integrating intermittent renewable generation into the grid. In addition, the California ISO operations will be better aligned with state policies resulting in the addition of demand response options consistent with state-run programs and state loading order priorities.
-  **Greater transparency in system operations, market outcomes, and policy priorities**—future policy priorities will be more transparent by the publication and communication of this Five-Year Business Plan. In addition, implementation of new visualization mechanisms will make day-to-day system operations and market outcomes more transparent to market participants and policy makers.
-  **Greater development of needed new transmission**—through a more collaborative transmission planning with market participants and policy makers, the California ISO will address the long-term issues critical to the



transmission planning and development process and will develop the new infrastructure needed to support reliability, regional trades, and the integration of new resources, including renewable resources.

-  **Improved regional collaboration and a more liquid regional market**—greater consultation and collaboration with others in the West will improve and facilitate new, mutually beneficial electricity trades and provide the opportunity to identify and address common challenges to reliable system operations.
-  **Improved customer service**—customer service will improve with faster and more satisfactory issue resolution and tailored customer access to California ISO market information.
-  **Greater stakeholder access to California ISO decision makers**—stakeholders will gain access to Board decision-making and management deliberations through creation of a Board Advisory Committee.

These benefits will occur with the active cooperation of all involved—policy makers, market participants, and stakeholders. The California ISO is committed to developing the working relationships necessary to success, and looks forward to helping achieve these critical benefits for California and the West.