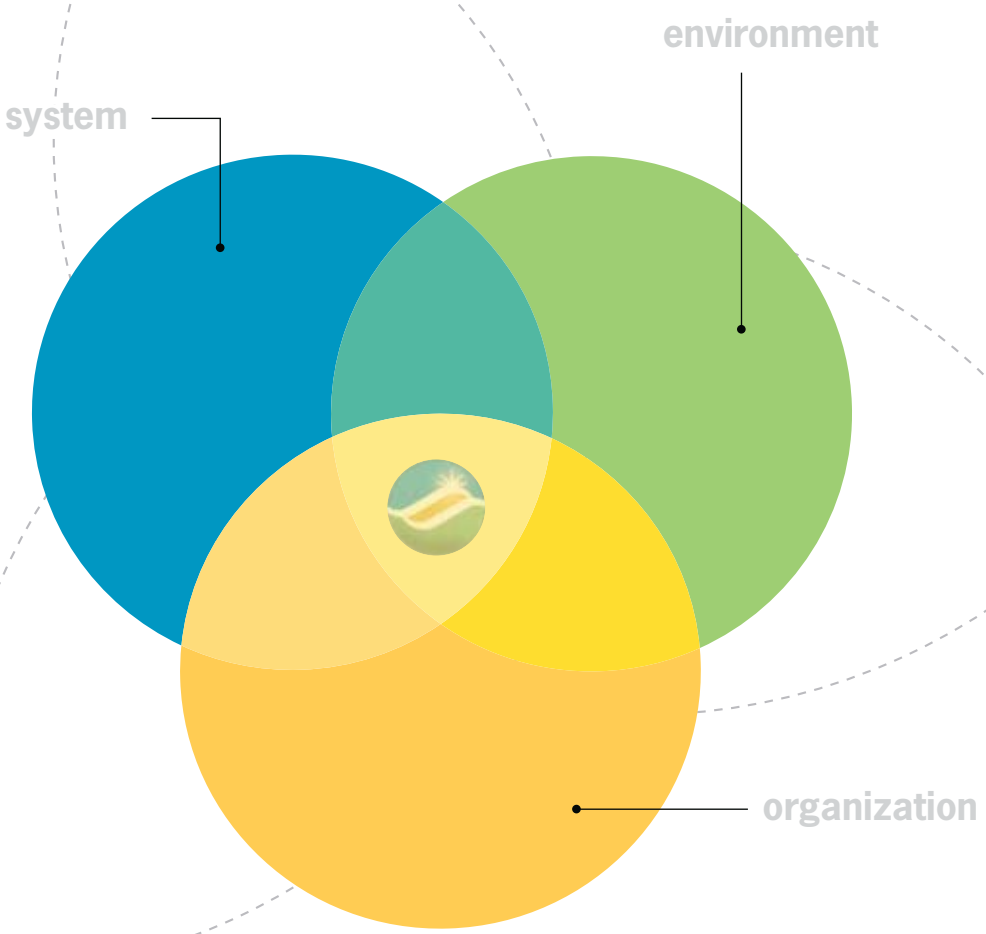
California ISO
Your Link to Power



2010-2014

Five-Year Strategic Plan

SMARTER. GREENER. BETTER.

Our Mission

For the benefit of our customers, we:

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

All through the provision of timely and accurate information.

Our Vision

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

Core Values

Integrity – We are honest, ethical and trustworthy with each other and stakeholders in all business dealings, reflecting the highest professional standards.

Teamwork – 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.

Excellence – Internal and external excellence – we earn customer trust based on our understanding of needs, implications of decisions, quality, competence, innovation and discipline in our business dealings.

People-Focus – We value diversity, promote employee development, support work/life balance and foster an invigorating and fulfilling work environment.

Open Communication – We seek diverse ideas and opinions, value transparency, promote “thought leadership” and openly share information both internally and externally.

Five-Year Strategic Plan

SMARTER. GREENER. BETTER.

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Introduction

THE ISO VISION FOR 2020 AND BEYOND DRIVES OUR STRATEGIES FOR THE NEXT FIVE YEARS. DURING THIS TIME, WE WILL WORK WITH OTHERS IN THE INDUSTRY TO DEVELOP A THRIVING ELECTRICITY SECTOR THAT IS GREENER AND SMARTER, WITH A BETTER ORGANIZATION TO MEET THE ELECTRICITY NEEDS OF CALIFORNIA – A THEME CARRIED THROUGHOUT THIS 2010–2014 FIVE-YEAR STRATEGIC PLAN.

ISO President & CEO Yakout Mansour receives an update on real-time grid conditions from Transmission Dispatcher Greg Berglund.

The New York Times described the ISO challenge of balancing supply and demand while managing unprecedented levels of intermittent resources as "a dress rehearsal for America." – *Matt Wald, November 2009*

The electric industry faces technological advances, significant renewables development, and environmental policies and regulations that trigger complex changes in the electricity sector and the consumers it serves.

Informed by discussions with market participants, stakeholders and national experts, the California ISO developed a five-year strategic plan to focus efforts on ensuring markets, operational tools and infrastructure are ready to support an industry on the verge of a new era.

Our 2010–2014 Five-Year Strategic Plan puts forth a plausible view of what we would see if we woke up tomorrow in the year 2020.

Our challenge

The changes underway in California's electric sector are transformational, though surmountable.

RENEWABLE ACCESS

The state needs 55,657 gigawatt-hours (GWh) of new renewable generation to meet the 20 percent standard and 102,000 GWh to meet the 33 percent standard. To access these clean resources and deliver the output to customers, the ISO estimates the state needs six or more major transmission lines in the next decade. According to our preliminary studies, meeting the 33 percent portfolio goal requires more than 800 circuit-miles of 500 kilovolt transmission lines planned, approved, sited and constructed by 2020.

RENEWABLE INTEGRATION

The weather-dependent, intermittent nature of many renewable resources places new demands on the electric system. Operational requirements dictate the need for back-up supply and reliability services traditionally provided by gas-fired power plants.

WATER QUALITY REGULATIONS

Implementation of once-through-cooling regulations currently under consideration may require nearly 19,000 MW of thermal plant retirements, repowerings, replacements or other mitigation by 2024. These plants, primarily located on the coast and near our load centers, served for decades as essential elements in California's resource portfolio. The grid may need replacement generation in the same areas or transmission additions to deliver new supply from elsewhere on the system to maintain reliable electric service.

AIR EMISSION STANDARDS

The lack of air emission offsets in Southern California has stalled applications to license new or repowered power plants in the region. Additionally, the California Air Resources Board, under AB 32, is setting statewide greenhouse gas limits to reduce emissions to 1990 levels by 2020, an estimated 25 percent reduction. Our challenge is understanding the uncertainty that may develop and anticipating the operational implications and how best to mitigate reliability issues while helping California succeed with its vital environmental goals. It is essential that we retain our ability to adapt to emerging environmental policies.

We need to anticipate and adapt to the uncertainties that come from shifting to a smarter, greener grid, staying one step ahead of any reliability implications as we clear the path to reaching environmental goals.

SMART GRID TECHNOLOGY

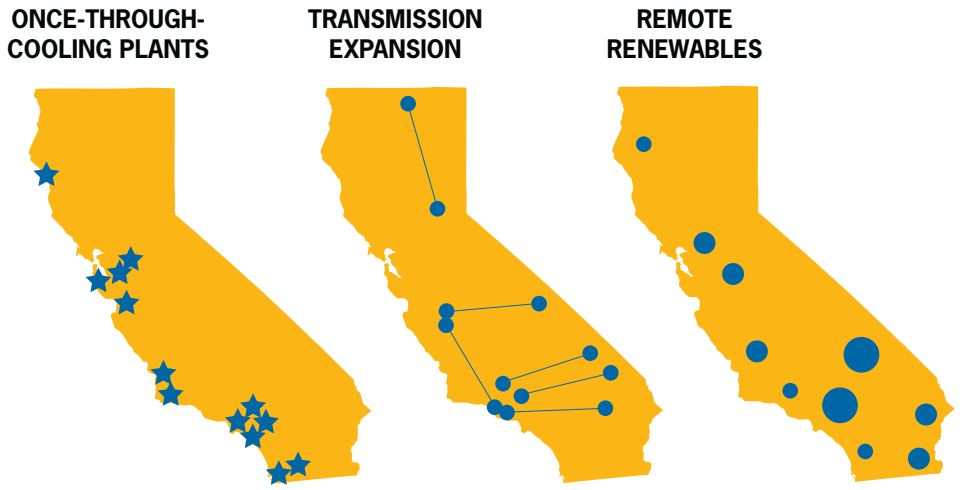
Investments in smart technologies are growing, along with the promise of greater energy savings and improved grid efficiency. In 2009, the federal government awarded California utilities $203 million for smart grid grants under the American Reinvestment and Recovery Act, with the Western Electricity Coordinating Council getting $54 million for funding its synchrophasor project. Yet with no common standards and objectives for meters or communication protocols, we may fail to capture the full potential of these innovations.

On a different development track than smart grid work, is electrifying the transportation sector. When combined with deploying millions of smart meters, this activity could provide significant system-wide savings but only if we coordinate and plan the separate rollouts properly.

ENERGY STORAGE

Storing energy for later use could play a major role in successfully using renewable resources because it helps manage the variability of their output. Storage also may help in reducing greenhouse gases. Yet we have much to learn, which is why pilot projects are currently underway to test system impacts.

> *We anticipate approximately 200 MW of storage capacity operational by 2012, with up to 1,000 MW by 2020.*



Our opportunity

The challenges facing the electricity sector also present tremendous opportunities.

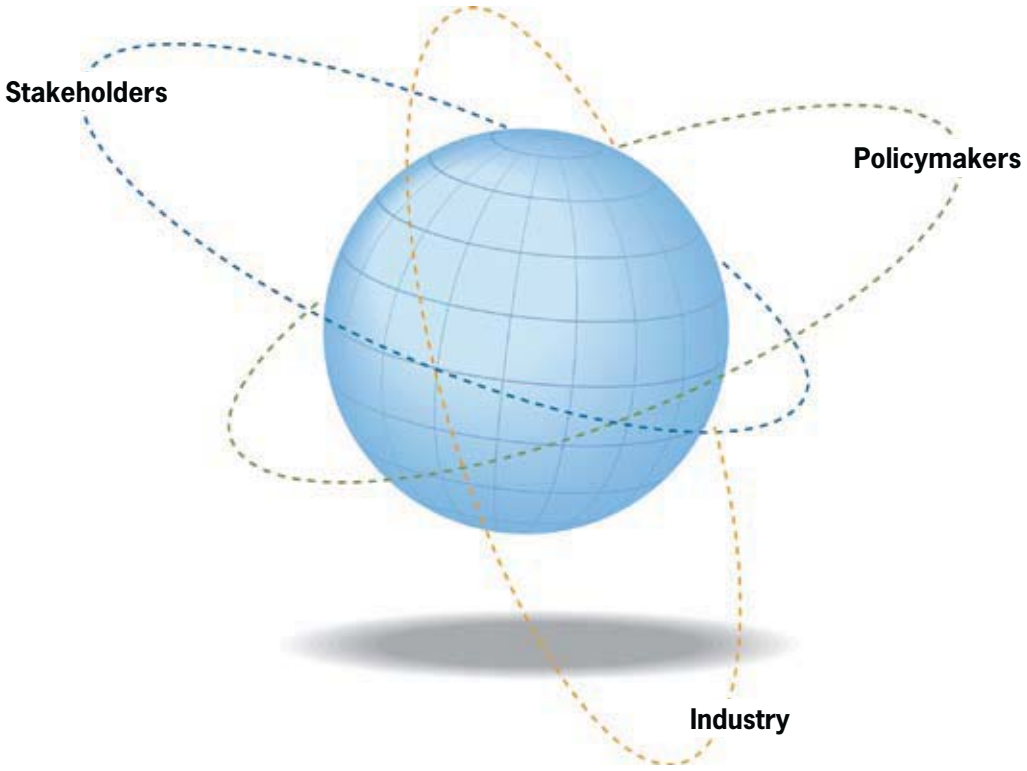
The ISO is proud of its success over the last decade in building a reliable and competitive service model that is among the best and boldest in the industry.

California's success in building a greener and smarter generation and transmission infrastructure will raise the bar for excellence as we set an example for national and international policymakers to emulate and expand upon.

To achieve the goal of global leadership we must:

- Work within the industry, as well as with regulators and policymakers to collaborate on a common energy vision for the future
- Deploy technology that optimizes system use and drives infrastructure investments
- Plan transmission upgrades and provide market mechanisms to facilitate investment decisions to achieve the state's goals
- Recognize and act on interdependencies between policies

The electricity sector overcame market and regulatory failures of the past to restore reliable, reasonably priced electric service for California consumers. This success empowers us to tackle the next challenge — charting a path forward to achieve state, national and international environmental objectives.



Our View of the Future

THE ISO ENGAGED THE ORGANIZATION AND STAKEHOLDERS TO BUILD A STRATEGIC PLAN THAT ADDRESSES THE TRANSFORMATION REQUIRED OF OUR INDUSTRY OVER THE NEXT DECADE.

Internally — A cross-functional team evaluated the state of the system, to make reasonable assumptions about future developments and to check the course of our current initiatives. The team's intensive three-month project produced a strategic framework and roadmap that includes identifying the interdependencies between our ongoing and planned activities.

Externally — A series of ISO-hosted meetings with executive-level representatives of market participants and other stakeholders created a vision of the future built on a mix of optimism and reality, and in sufficient detail to understand the path ahead.

By promoting dialogue across the industry and with regulators and policymakers, we have embarked on an ongoing collaborative effort to develop the infrastructure essential to provide reliable electric service and reduce the risk of stranded investments and wasted efforts.

Our vision for 2020 drives our strategies for the next five years. During this time we will work with others in the industry to develop an electricity sector that thrives on being greener and smarter.

We recognize this vision will evolve. Nevertheless, deciding today on a plausible future remains critical to facilitating intelligent investments and decisions about long-term infrastructure.

Here is our view of how resources, transmission and demand develops over the next decade.

Large renewable power plants *diversify the resource mix and help balance system while containing costs.*

Renewable resources *play a large role and drive grid expansion.*

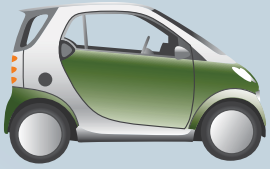
RESOURCES

2020 Foresight

DEMAND

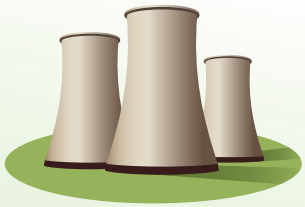
Growth in electricity usage *is tied to economic recovery, but is tempered by increased energy efficiency and use of rooftop photovoltaic.*

Consumers begin selling shaped products*, not just using electricity and collectively bid 3,000 megawatts of electrical load into the wholesale market.*

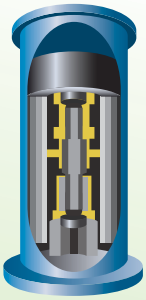


Electric vehicles *number as many as 1.5 million, reducing emissions and consuming off-peak renewable energy.*

Small scale power plants *emerge in parallel with grid expansion.*

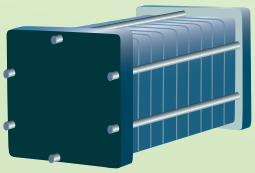


New nuclear power plants *are not permitted.*



Energy storage *and other technologies complement renewable resources and enhance reliability.*

Regional coordination *expands to help green the grid and increase sharing of resources in the West.*



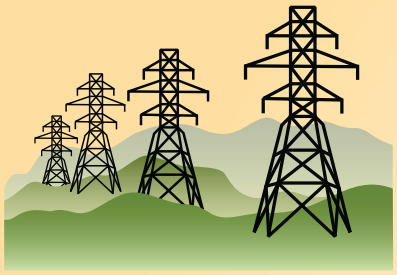
Distributed generation's *future is unclear in the short-term.*

Carbon pricing *and related policy-making create financial implications.*

TRANSMISSION

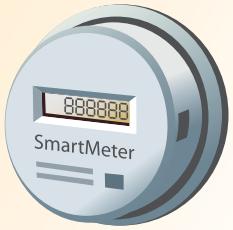
Transmission owners *remain obligated to maintain safety and reliability, and upgrade network facilities.*

Reductions in coal contracts *free up capacity for new renewable imports.*

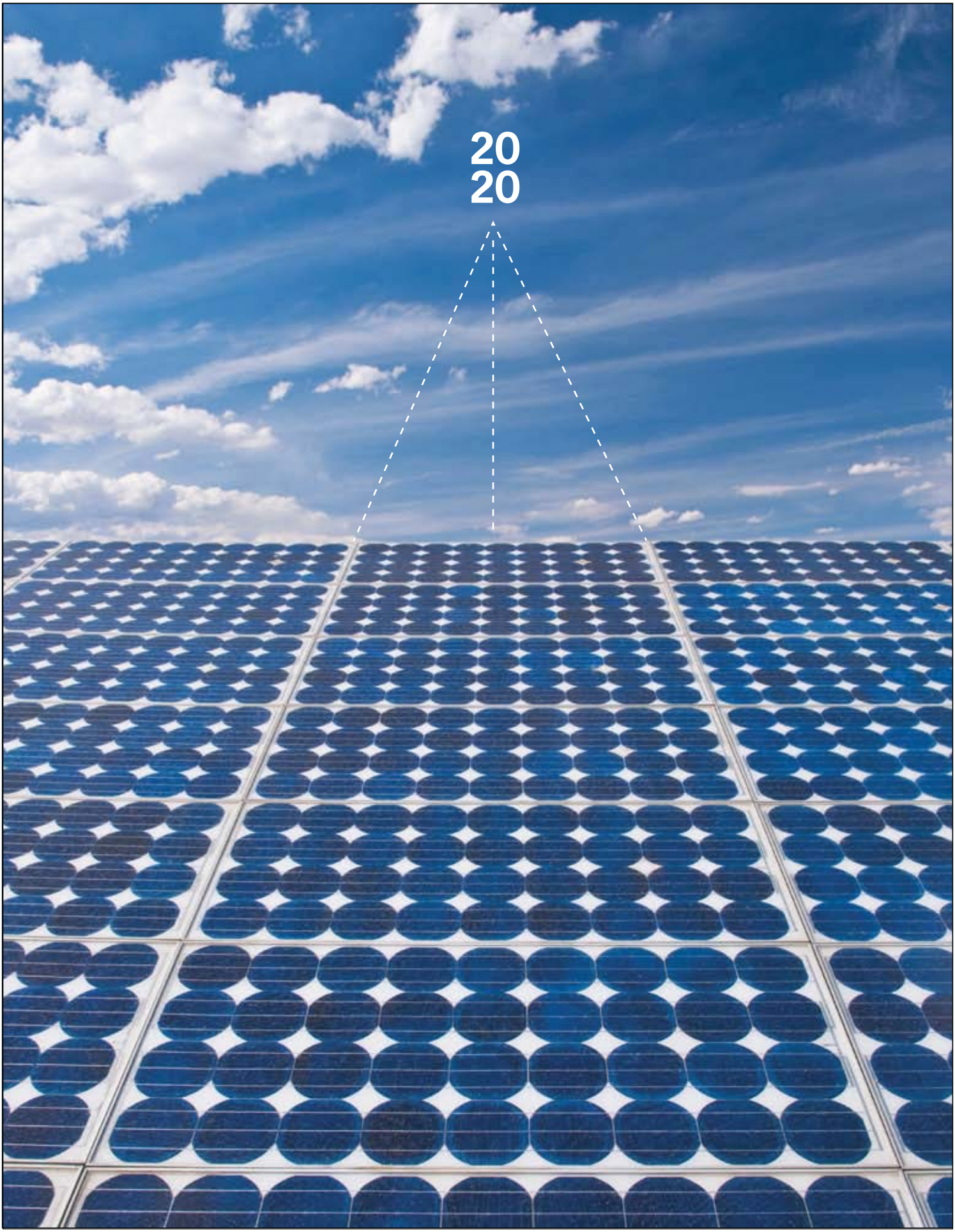


Building new transmission lines *remains challenging, but is aided by improved planning, siting and development processes.*

New generation investment *is triggered by permitting of new transmission lines.*



Smart grid *standards, specifications, measures and utilization mature.*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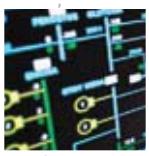
Our Strategy

system

environment

organization



THE ISO FIVE-YEAR STRATEGIC PLAN FOCUSES ON ENSURING THAT OPERATIONS, MARKET AND INFRASTRUCTURE ARE READY FOR SHIFTS IN RESOURCES, TRANSMISSION AND DEMAND.

The strategic plan focuses on three key areas:

1. **System** — Identifies the requirements to ensure a stable, reliable foundation for grid and market operations as well as infrastructure planning.

2. **Environment** — Promotes the progress necessary to fulfill important environmental policy and regulatory objectives.

3. **Organization** — Reveals the enhancements required to secure the resources and tools to manage change and ensure success.

1. System

Ensure a robust and reliable **system** as the platform for change

A robust and reliable system enables California to advance new policies and technologies.

Our near-term goal is to enhance grid and operations systems that provide a resilient and adaptable platform for achieving state policy objectives.

The strategy for achieving this goal is to:

- **Enhance operational tools**
- **Strengthen the market to bolster its efficiency and functionality**
- **Better use of the existing transmission infrastructure**

OPERATIONS

To enhance operational tools, the ISO will assess, test and deploy new technologies to provide:

- Advanced capabilities and situational awareness
- Economic dispatch optimized for more volatile grid conditions
- A secure and sophisticated new control center

Develop situational awareness and visualization tools

Grid operators can better plan for and respond to ever changing system conditions by using technology to efficiently display real-time information that is easily recognized and understood. We receive updated grid condition snapshots every four seconds from our current monitor and control system. By using technology enhancements attached to transmission lines, operators can now receive updated information every few milliseconds.

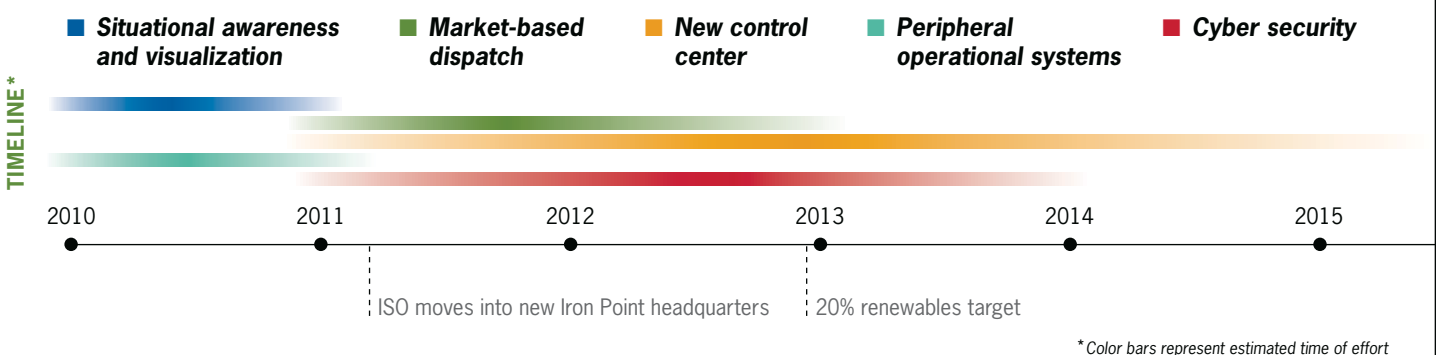
These clearer views of the grid mean operators can more quickly see and resolve problems. Using other advanced technologies, such as those that improve weather forecasting for renewable generators, will give operators another tool to gauge current grid conditions and better anticipate generation levels 15 to 30 minutes into the future and set resources to respond appropriately.

In late 2010, the ISO moves into its new headquarters with control center technologies designed to manage the grid under more complex operating conditions.

Increase market-based dispatch

Market-based dispatch continues to be a cornerstone of the efficient and economical utilization of the system.

More economic grid dispatch is possible despite increasingly complex operating conditions by supplementing current system management with advanced forecasting and grid analysis tools.



*Color bars represent estimated time of effort

Operate modernized control center within new LEED-certified headquarters

The control room in our new headquarters features a high tech video wall pre-programmed to display critical information of operating conditions and emergencies. New workstations will enhance operator communications and deploy an upgraded energy management system.

Replace peripheral operational systems

The ISO will reduce the complexity of its technology platform and improve process efficiencies by consolidating the number of peripheral systems that use a shared data structure.

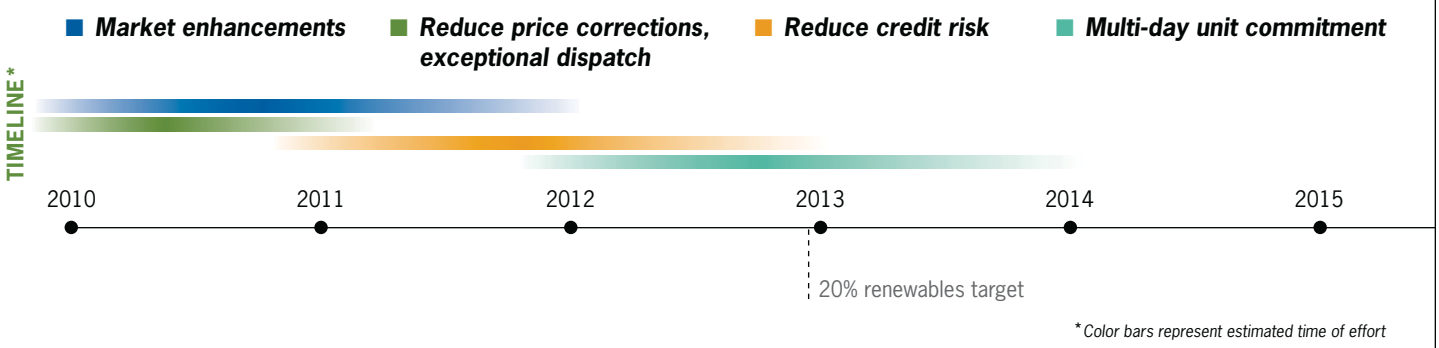
Ensure latest advancements in cyber security

As grid components become more interconnected through advances in telecommunication, cyber protection becomes more essential. The ISO closely collaborates across the West, helping to strengthen compliance with national standards that ensure the highest protection of critical cyber assets.

MARKET

The ISO strengthens market functionality and efficiency through:

- Increasing alignment between market results and operating conditions
- Reducing price corrections and exceptional dispatch
- Improving quality of operational decisions
- Minimizing credit risk
- Creating higher market participant confidence



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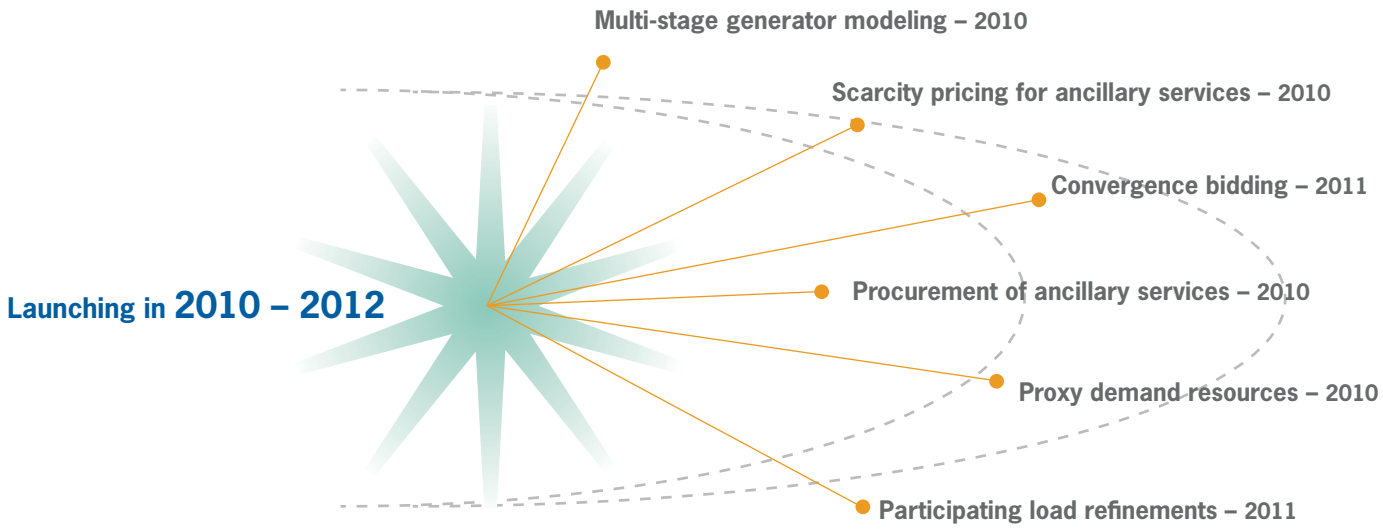


To carry out this strategy, the ISO launches market enhancements, modifications and improvements to increase the overall efficiency of the market.

Implement planned market enhancements
The ISO is developing several important market enhancements and continues to seek stakeholder input through implementation phases. We are strengthening the system for analyzing customer issues in order to drive market quality and process improvements, and faster issue solutions.

Reduce price corrections and exceptional dispatch
The ISO is improving its processes so that market results and operating conditions more closely align, reducing the need for price corrections and exceptional dispatches. This builds greater confidence in the market and improves the quality of operational decisions.

Our efforts build on the initial success of the new market implemented in 2009 and continue as a regular course of business to assure continuous day-to-day improvement of our market, operations and associated services.

Reduce credit risk
Our new centralized credit management system effectively manages the estimated aggregate liability components for the market, determines positions immediately to reduce credit default risks, and provides credit calculation transparency to ISO internal users and market participants.

Consumers of electricity become sellers of shaped electricity services.

Implement multi-day unit commitment in the forward market

Currently, the forward-looking time horizon in the market is one day, taking into account the impact of prior commitment of units with very long start-up times. The ISO plans to make commitment decisions in the forward market that anticipates conditions two to three days ahead for increased efficiencies.

Expand demand resources

No longer is demand response a resource only available during emergencies. Price-responsive demand response holds the promise of becoming a valuable fulltime participant in our new market through enhanced dispatchability that makes it integral to offsetting the intermittent nature of renewables. Developing a mechanism to value capacity is essential to successful implementation of demand response and lower forward capacity prices.

INFRASTRUCTURE

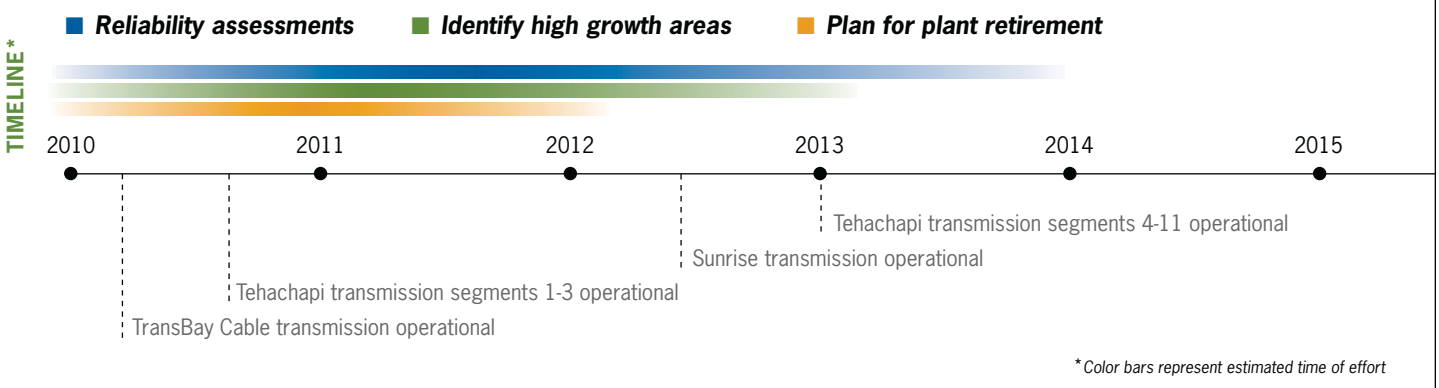
The ISO is optimizing use of the existing infrastructure, collaborating with participating planning authorities, transmission owners and state regulatory agencies to:

- Comprehensively assess system needs
- Ensure enhancements identified by our planning studies are completed on a timely basis
- Meet renewable delivery targets

Complete reliability assessments to foster investments in transmission upgrades

Approximately 100 reliability transmission projects are slated over the next five years.

ISO reliability assessments evaluate regional load growth, incorporate characteristics of renewable resources and factor in any operational constraints—all of which aids in the planning for plant retirements.



*Color bars represent estimated time of effort

An important component of the annual planning cycle is to track the status of reliability projects approved from prior annual plans and make sure they stay on track to meet identified needs. The ISO works with participating transmission owners to develop mitigating interim upgrades or other solutions as necessary.

Evaluate regional growth to identify high-growth areas

The ISO watches load growth patterns. Based on the Integrated Energy Policy Report forecast, electricity load growth will rise 1.2 percent per year through 2018. ISO planning efforts will focus on high-growth areas such as southern California to ensure:

- Sufficient infrastructure to serve future electricity needs
- Consideration of economic tradeoffs between generation, demand response and transmission

Review plans for plant retirements and provide for contingencies

A number of large power plants within the ISO footprint are at the end of their economic and physical life with many facing repowering or retirement. In some cases, strong local community opposition to their continued operation exists. ISO planning process will identify:

- Required upgrades to satisfy reliability standards
- Viable infrastructure alternatives

While transmission upgrades can facilitate plant retirements, our focus is on the longer-term outlook to ensure regulators, developers and policymakers understand the implications of resource tradeoffs.

2. Environment

Facilitate implementation of **environmental** policy initiatives

The ISO must plan for and operate the system in a reliable, cost-effective manner that considers greater intermittent resources use and less access to traditional resources that are subject to greenhouse gas regulations, water quality regulations and plant retirements.

Our strategy for supporting environmental policies is to collaborate with policymakers and provide new operational capabilities, enhanced market products, a comprehensive transmission planning process and the means to integrate renewable generation, storage capability and demand response.

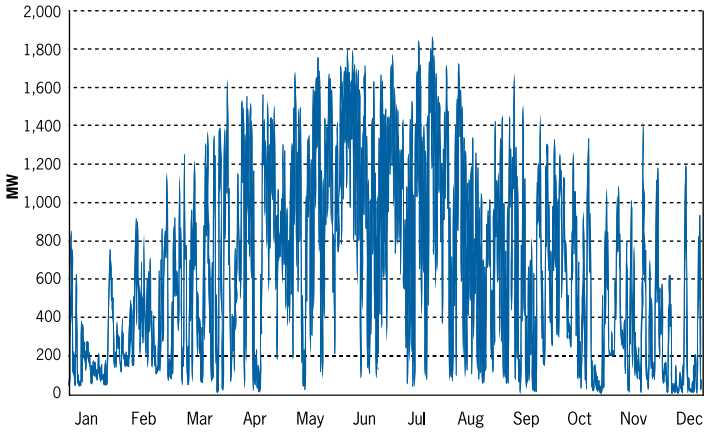
Because renewable resources are weather dependent, available supply will swing 30 percent, depending on location, resource type (e.g., wind or solar) and specific technology, which makes system balancing more challenging. The ISO is working with forecast vendors to improve the use of weather forecasts.

Wind and solar renewable generators have highly variable energy production as they depend on the wind blowing and the sun shining. As the amount of renewable generation in California increases, our existing fleet of traditional generators will be called upon more than ever before to ramp up and ramp down their production to compensate for the variability of renewable power production. In addition, our existing fleet will need to provide more regulation energy to maintain grid stability within the parameters set by North American Electric Reliability Corporation reliability standards. To adapt to this new operating reality, the ISO is creating procedures and modifying existing ones to create more sophisticated forecasting and dispatch tools to manage grid voltages and transmission line loadings as more renewable generation comes online. An area needing more sophisticated management is congestion, especially in the south where 80 percent or more of the renewable resources are concentrated.

Multiple factors drive our strategy for the next five years to facilitate the development of renewables, while accounting for the uncertainty they bring to the system.

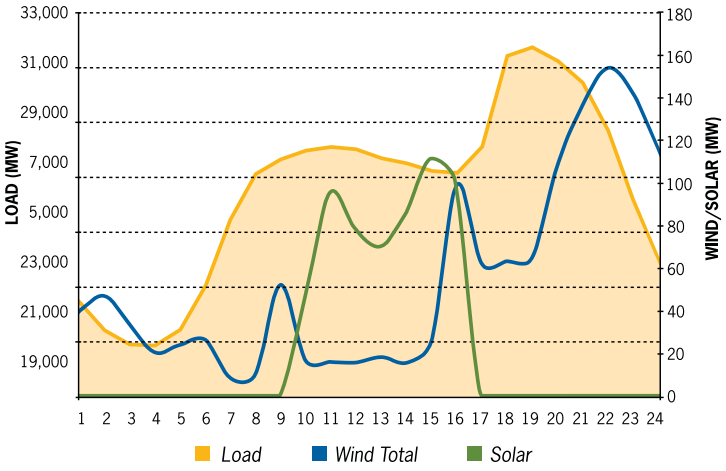
With increased wind and solar generation, energy production is predicted to increase up to 6,000 MW in just one hour and decrease just as quickly. Today, we manage renewable ramps of only 500 MW in an hour and total load ramps of less than 2,000 MW per hour.

2009 DAILY WIND PRODUCTION



The variability and unpredictability of wind production challenges reliable system operation.

WIND AND SOLAR PRODUCTION VS. LOAD
December 16, 2009



Steep ramp rates are presented when the sun raises and sets and when the wind blows or subsides.

OPERATIONS

Our strategy for developing the tools, technology and protocols needed to support implementation of environmental initiatives is to:

- Define operational impacts and requirements
- Pilot new technology
- Create advanced forecasting tools
- Develop new operational tools

The ISO forecasts the operating characteristics of wind and solar resources and incorporates the new modeling data into our grid and market operations and planning tools. We also share information to foster industry collaboration and assist with California's integration of renewable power.

Define operational impacts and requirements

The ISO conducts or partners with others to produce highly technical studies regarding the existing fleet and the requirements for integrating 33% renewables. These studies play a critical role specifying the operational requirements and protocols for increasing renewable resource participation in meeting our control area load while maintaining reliability.

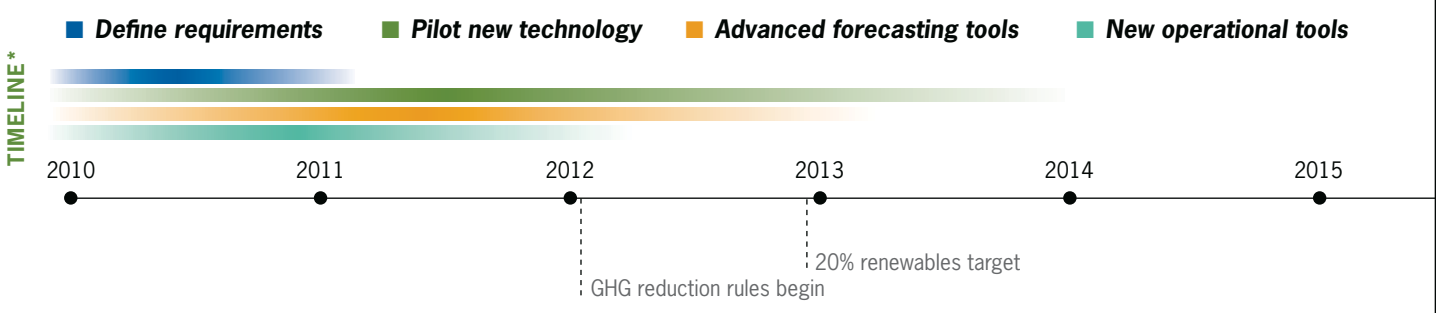
Pilot new technology

The ISO is evaluating new emerging technologies to determine how to include them in our markets and in real-time operations. New technologies such as batteries, flywheels and compressed air energy storage can serve to smooth out the variable generation of renewable resources. Our pilot projects and the related assessments in turn feed into the analysis we conduct in planning for future grid and operations development.

Create advanced forecasting tools

Increasing amounts of weather-dependent renewable resources drive the need for major improvements in our forecasting capabilities in order to "see" what conditions will be minutes and hours ahead and respond appropriately.

Cloud cover, moisture or dust in the air, and wind conditions impact solar and wind generation output. Improved forecasting tools will help to identify transmission facilities that may overload. Promising tools include short-term event predictor and ramp-forecasting tools that would allow grid operators to anticipate major events by recognizing correlated meteorological and system events.



*Color bars represent estimated time of effort

Develop new operational tools

The ISO is focusing on solving the challenge of maintaining frequency while meeting ramping needs. Understanding the ability of committed resources to arrest frequency deviations when renewable production levels are off-schedule requires information supported by new tools and modifications to the unit commitment mechanism.

MARKET

The ISO strategy for market development needed to facilitate the successful implementation of environmental initiatives is to:

- Improve accuracy and transparency of pricing
- Provide incentives for:
  - » Market and operating behavior that supports reliability
  - » Technological innovation to meet current and future needs
  - » Timely infrastructure development in areas essential for the integration of renewable resources

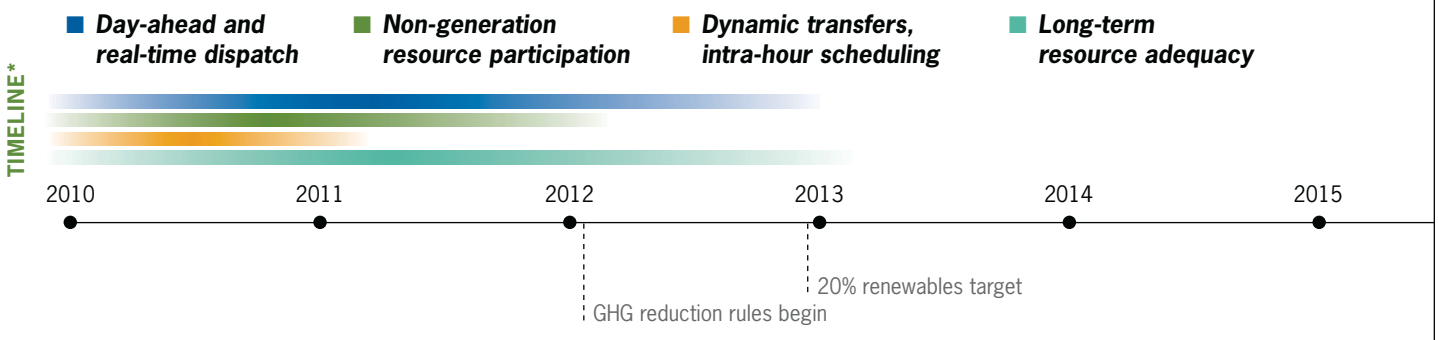
To carry out this strategy, the ISO taps results from ongoing operational studies to inform the design of new market products.

Enhance day-ahead and real-time dispatchability

Given the intermittent nature of renewable resources, having a deep and liquid supply of market bids in both the day-ahead and real-time market is critical to keeping the system in balance. The ISO will conduct a comprehensive evaluation of market mechanisms to encourage all resources that can respond to dispatches, including renewables, to submit day-ahead and real-time economic bids.

Establish standards for non-generation resource participation

Non-generation resources (e.g., storage and demand response) are unable to participate in our ancillary service market on the same level as generation. To foster development of these resource technologies, we will develop standards to enable energy storage and other non-generation resources to participate fully in the ISO market.



*Color bars represent estimated time of effort

Facilitate dynamic transfers and intra-hour scheduling

Dynamic scheduling practices can enhance imports of renewable resources. First, we must determine the level of dynamic scheduling support that does not compromise reliability. We will then consider solutions to:

- Increase intertie dynamic scheduling capability
- Quantify the impacts of dynamically scheduled variable generation
- Identify operational characteristics that limit dynamic scheduling capability
- Create a list of reinforcements that have the potential to increase intertie dynamic scheduling capability

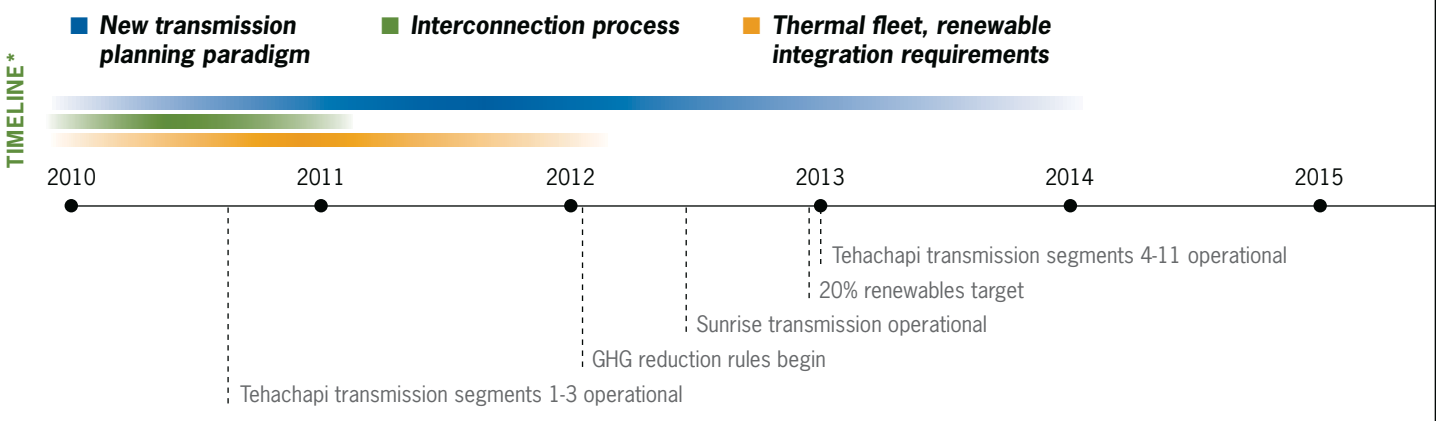
Engage with the CPUC to enhance a long-term resource adequacy framework

We continue to engage with the California Public Utilities Commission to develop a long-term resource adequacy framework and evaluate a structure for a long-term centralized capacity market. Both actions help to ensure timely infrastructure development and facilitate demand response as a means to meet the future needs of the system.

INFRASTRUCTURE

The ISO strategy for infrastructure development needed to facilitate the implementation of environmental initiatives is to:

- Improve transmission planning and interconnection processes and standards
- Develop a conceptual statewide transmission plan identifying all needed system upgrades to accommodate 33 percent renewable integration
- Identify cost-effective alternatives to transmission upgrades
- Facilitate statewide and regional collaborative planning
- Encourage technological innovation
- Develop realistic cost estimates for renewable integration



*Color bars represent estimated time of effort

Develop a new transmission planning paradigm to support renewable deployment

The ISO is developing a new approach to transmission planning. It requires creating infrastructure plans to identify potential transmission projects and moving them through all study processes in a streamlined manner.

The objective is to facilitate:

- Inclusion in an approved statewide plan by early 2011
- Permitting and siting by 2014
- Start construction no later than 2017

This initiative builds on the foundational work by the Renewable Energy Transmission Initiative to create and rank renewable energy zones and develop conceptual infrastructure plans. The effort also involves extensive collaboration with other state balancing authorities as well as with California regulators and stakeholders. Engaging with western region entities to streamline interstate transmission and optimize the use of diverse resources is also part of this initiative.

Review interconnection process effectiveness

The ISO already revised its generation interconnection process to streamline and reduce the queue backlog. These successful modifications continue to aid in refining the generation interconnection process, which leads to expediting the build-out of new generation resources, particularly renewable resources.

Review thermal fleet and operational characteristics needed to support renewable integration

The ISO will complete studies to assess:

- Resource requirements of the existing thermal fleet
- Additional resources needed to maintain compliant and reliable system operation as renewable generation comes on line

We will incorporate study results into our operational tool requirements, transmission planning process and market product design as well as use the information to engage with policymakers and regulatory agencies on options for meeting environmental policies.

3. Organization

Continue to develop the **organization** to enhance its effectiveness

ISO people, processes and technologies must keep pace with increasingly complex market systems, demanding operational requirements and evolving compliance standards. In concert with stakeholders, the ISO ensures it effectively manages the interdependencies and individual needs of the grid and industry.

We will maintain our focus on excellence through an overarching perspective to:

- **Advance the organization's capabilities**
- **Achieve shared objectives**
- **Realize an interconnected vision for the electric power industry**

PEOPLE

Enhance staff and management competencies, and develop new skills within the organization, which will grow its people and prepare the ISO as it heads into the future.

We strive for organizational effectiveness through internal development of critical skills to ensure effective knowledge transfer and to increase the number of subject matter experts.

Our integrated approach addresses three key areas:

- Work environment
- Professional development
- Leadership

Supportive workplace environment

We are committed to maintaining a supportive workplace environment that engages and inspires all employees to achieve their highest potential and distinguishes the ISO as a great place to work.

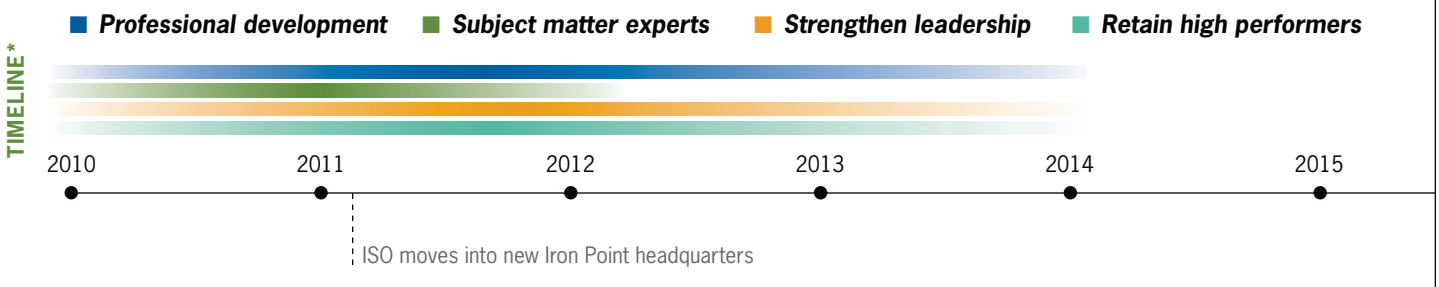
Inspire employee engagement

The ISO is committed to retaining its highly specialized workforce—considered top talent within the power sector. We invest in the ongoing growth of all our employees as our business needs demand expansion of skills, knowledge and capabilities required of a world-class organization. By partnering with our employees, we empower them to take control of their careers so they grow with their jobs. This focus helps us maintain a motivating workplace environment. We also ensure our compensation and benefits programs remain competitive in the local, national and global labor markets.

Increase the number of subject matter experts

Increasing the number of experts with the requisite knowledge and skills offsets critical resource shortfalls.

Recruiting externally for expertise in emerging areas and filling skill and knowledge gaps supplements our internal mentoring efforts. In addition, we promote continuous learning, professional development and growth among existing employees.



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Strengthen our leadership and managerial capabilities

Our work to build strong leaders and managers accelerates as a result of the President's Leadership Academy and other programs.

Our priority emphasis on leadership development recognizes that insightful and influential leaders are required at every level of the organization. Participants are assessed and immersed in an intense 18-month leadership simulation program that allows them to see and understand the outcomes of their business decisions. They practice their new skills on the job, participate in additional course work, complete required readings and receive coaching and feedback, all of which is integral to leadership performance.

PROCESS

The ISO strategy is to establish a sustainable, integrated and continuous improvement cycle that:

- Aligns performance with business objectives
- Achieves repeatable and sustainable processes
- Informs decision making with quality and timely intelligence

To carry out this strategy, we train and develop individuals in process leadership. These individuals model, measure and manage ISO processes that result in a cycle of continuous improvement.

Process performance can then better inform compliance, risk and performance management-related decisions at the business unit and enterprise levels.

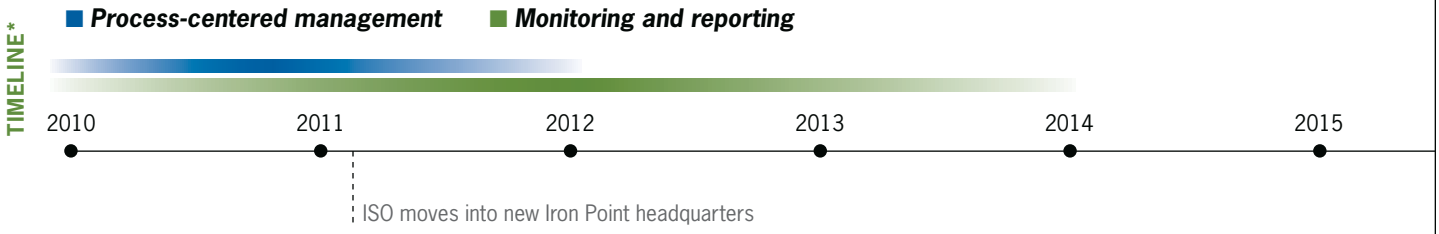
Process-centered management includes focused improvement activities, process and quality training and a comprehensive assessment of end-to-end and core business processes.

Accelerate process-centered management activities

We will update the business process framework to achieve a sustainable level of process maturity, as measured by established models. The ISO is already improving its efforts to model, measure and manage core processes in order to drive success.

Enhance enterprise-wide monitoring and reporting mechanisms

Monitoring and reporting against meaningful performance measures informs our decision-making process. The ISO is constantly focused on improving core processes, establishing high priority annual goals and aligning long-term strategic objectives to align key performance indicators with identified goals and objectives.



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TECHNOLOGY

Our strategy is first to understand the capabilities of evolving technologies and the timing of realistic deployment. Next, we develop a flexible system that integrates new features and adapts to a changing environment. While doing this, we continue to strengthen our computing environments to make them more secure and reliable while maintaining strict fiscal discipline to shift resources from maintenance to value-added capabilities.

Our technology is a complex intersection of economics, engineering and computing capabilities that are integral to all aspects of our business.

Update an end-to-end technology architecture that aligns with business process structure

Corporate, market and grid systems are evaluated on their effectiveness. We engage in pilots and demonstrations, working with market participants as well as organizations such as the Electric Power Research Institute. We also establish a common vision for the system architecture by engaging in a collaborative effort with stakeholders.

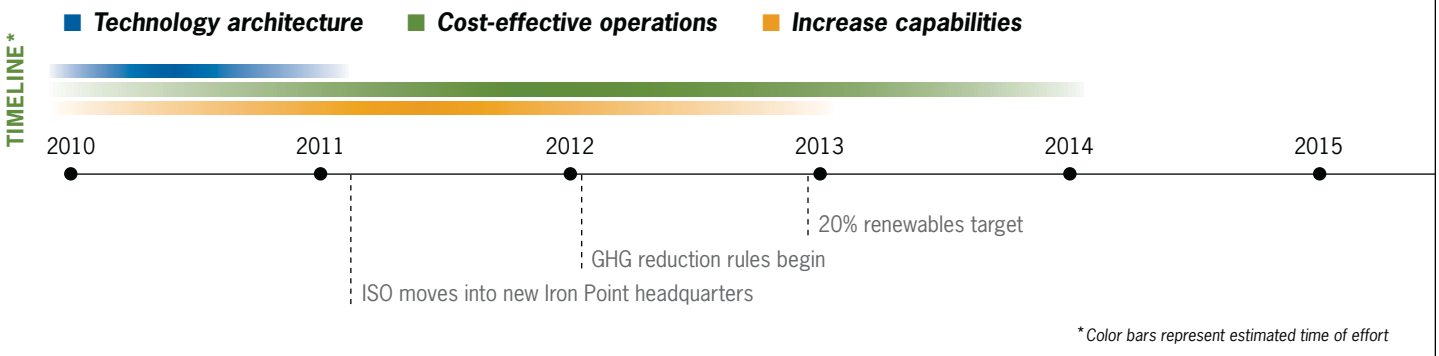
Manage operations to be more cost effective

Since ISO operations require extensive computing infrastructures with extreme reliability, technology is a large component of the ISO operating budget.

We explore options to increase reliability while reducing costs by consolidating servers and data centers and automating support.

Increase technological capabilities

The ISO is heavily dependent on technology to carry out its mission. We will continue to recruit specialized resources that can help create advanced capabilities needed in the coming years.



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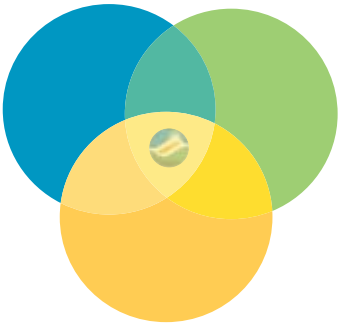
Conclusion



TRANSFORMING OUR INDUSTRY

The ISO recognizes that the electric industry in California and around the world faces unprecedented change in the next decade. Multifaceted shifts in demand, resources and infrastructure present complex challenges. They also create opportunities.

In response, the ISO outlines a plausible and desirable vision of our industry in 2020 and the strategy to get there. A high degree of collaboration is essential in effectively managing change and creating this new paradigm. By working together, a smarter, greener, better ISO organization serves and nurtures a thriving electricity sector.

Successfully transforming California's electricity sector raises the bar for the entire industry. It cements California's position as a global leader and sets a new standard for national and international policymakers. This is an exhilarating vision and we invite others to join us for this rewarding journey.

The future begins now.

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