



California ISO  
Shaping a Renewed Future

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# 2014 Budget and Grid Management Charge Rates

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September 12, 2013  
**PRELIMINARY**

Prepared by Department of Financial Planning  
California Independent System Operator Corporation



# 2014 Budget and GMC Rates

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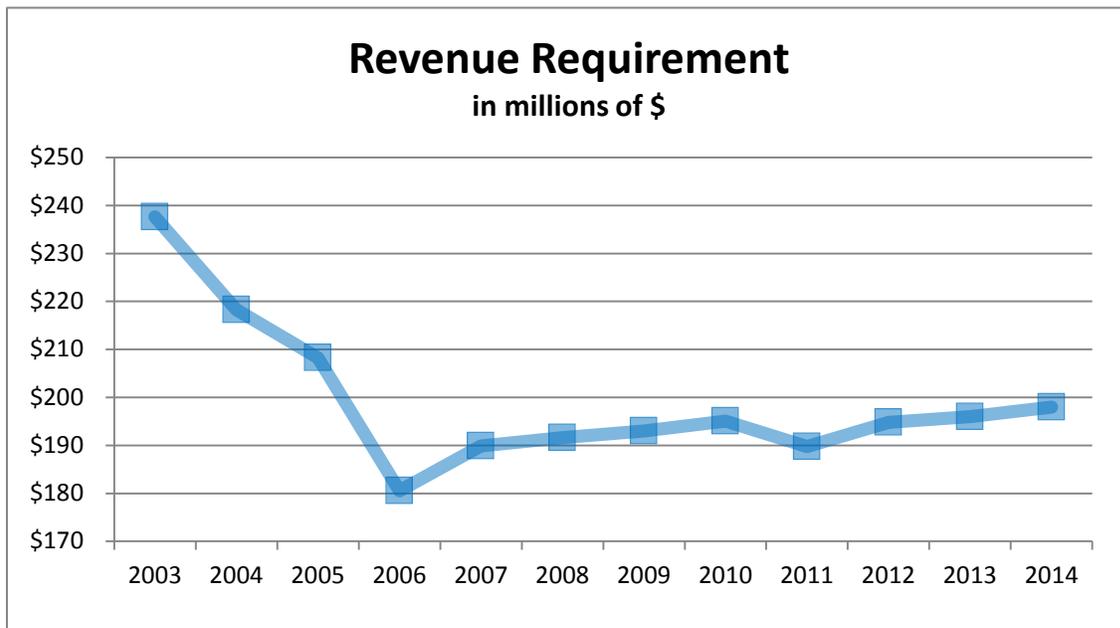
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## I. 2014 REVENUE REQUIREMENT

The 2014 proposed budget provides for a revenue requirement of \$198.0 million. Efforts underway at the California Independent System Operator Corporation include increasing service levels by effectively managing and allocating resources to support key corporate initiatives as outlined in the ISO's strategic plan.

The ISO continues to manage its revenue requirement in a very tight range. The ISO has held the growth rate of the revenue requirement over the last six years to one-half percent, despite the fact that transmission volumes have declined during the same period.



The ISO projects that transmission volume will increase 1 percent from 2013, to 247.3 terawatt hours (TWh), but it remains down 0.6 percent over the last six years. With the slight increase in transmission volume, the grid management charge will not rise in 2014 – it remains at \$0.801 per megawatt hour (MWh), the same as 2013.

## Components of 2014 Revenue Requirement

The 2014 proposed revenue requirement compared to 2013 summary is as follows:

Revenue Requirement (\$ in millions)	2014 Budget	2013 Budget	\$ Change	% Change
Operating & Maintenance (O&M) Budget	\$163.5	\$162.9	\$0.6	0.4%
Miscellaneous revenue	(7.3)	(7.9)	0.6	(8.2)%
Subtotal net O&M	156.2	155.0	1.2	0.8%
Debt Service including 25% reserve	17.8	42.5	(24.7)	(138.8)%
Cash funded capital	25.0	24.0	1.0	4.0%
Subtotal before revenue credit	199.0	221.5	(22.5)	(11.3)%
Revenue credit	(1.0)	(25.5)	24.5	(2450.0)%
<b>Total Revenue Requirement</b>	<b>\$198.0</b>	<b>\$196.0</b>	<b>\$2.0</b>	<b>1.0%</b>
<b>Transmission volume in TWh</b>	<b>247.3</b>	<b>244.8</b>	<b>2.5</b>	<b>1.0%</b>
<b>Pro-forma Bundled GMC per MWh</b>	<b>\$0.801</b>	<b>\$0.801</b>	<b>\$-</b>	<b>0%</b>

The ISO recovers its revenue requirement through the unbundled GMC. Each unbundled service has corresponding rates paid by users of that service. Determining the rates follows this formula of calculating the costs associated with each of these services and then dividing those figures by the forecasted billing determinant volume for each service. The result is a rate per unit of use. Section X of this document outlines the determination of GMC rates.

## II. BUDGET OVERVIEW

This budget package provides an overview of and detail about the 2014 cost of service that consists of the following:

- operating and maintenance (O&M) budget (sections III thru V)
- debt service costs (section VI)
- capital and project funding (section VII)
- other revenues and expense recoveries (section VIII)
- revenue credit from operating reserve account (section IX).

The O&M budget, the primary focus of this report, is the largest of these components and consists of costs incurred for ongoing operations. The 2014 O&M budget of \$163.5 million is \$585,000 more than recorded in 2013. The O&M budget presentation is in three views as noted below:

- by process — such as support customers and stakeholders (section III)
- by resource — such as salaries (section IV)
- by division — such as the Operations Division (section V).

Debt service costs are the principal and interest payments related to the 2009 bonds, and collection of a 25 percent debt service reserve. The ISO issued bonds in 2009 to build a new headquarters facility in Folsom, California, which it occupied in mid-January 2011. As the 2008 bonds have been retired, the total debt service to be collected in the 2014 revenue requirement decreased by \$24.7 million to \$17.8 million.

As of July 2013, \$193.0 million of principal remains outstanding on the 2009 bond issuance. With lower interest rates leading into 2013, the ISO Board approved a management recommendation in July 2013 to conduct an advance refunding bond issue in early August 2013 to be able to lock in savings resulting from those lower rates. However, current interest levels have made the refunding undesirable and the refunding is currently on hold.

Cash funded capital included in the revenue requirement is \$25.0 million, with any unencumbered amounts carried over to fund future years' capital requirements. Collecting capital as a component of the revenue requirement avoids additional costs of tax-exempt debt financing, including debt issuance costs, interest expense and the 25 percent debt service reserve.

Capital and project requirements for 2014 are budgeted for approximately \$24.0 million. There is significant work anticipated for 2014, as shown on the proposed project list, including new metering system, flexible ramping and the 15-minute market, in addition to the need for systems development related to expanding market capabilities and integrating renewable resources.

The ISO has entered into an implementation agreement with PacifiCorp to enable PacifiCorp to participate in the energy imbalance market under design by the ISO. The

Federal Energy Regulatory Commission (FERC) approved the agreement on July 1 and it provides that PacifiCorp will reimburse the ISO \$2.1 million for implementation costs based on achieving specified milestones. The energy imbalance market implementation date is set for October 2014.

Other revenues and expense recoveries are offsets to the revenue requirement. These transactions include interest income, billings for large generator interconnection studies, forecast fees collected from intermittent resources and path operator fees for the California-Oregon Intertie. If approved by the Board and FERC, there will be fees associated with energy imbalance market activity for the last quarter of 2014.

In any year that the ISO operating reserve account exceeds 15 percent of the prospective year's O&M budget, the excess reduces the revenue requirement for the coming year. For 2014, the ISO forecasts a credit from the operating reserve account of \$1.0 million.

The current grid management charge (GMC) rate design went into effect in 2012 and provides for three volumetric charges (and five transaction fees), as follows:

- market services charge, which makes up 27 percent of the revenue requirement;
- systems operations charge, which comprises 69 percent of the revenue requirement; and
- congestion revenue rights (CRR) services charge, which makes up 4 percent of the revenue requirement.

The market services charge applies to MWh and MW of awarded supply and demand in the ISO markets. The systems operations charge applies to MWh of metered supply and demand in the ISO controlled grid. The CRR services charge applies to MWh of congestion.

## **Budget Guidance**

The ISO held its budget kick-off meeting with stakeholders in June 2013. The ISO took input from stakeholders into account in building the 2014 budget. The ISO's commitment to fiscal responsibility called for each ISO division to develop an O&M budget consistent with the ISO's strategic plan that keeps the rate of growth to less than one percent.

The overall ISO budget results in a revenue requirement under the \$199 million threshold that triggers a review filing with federal regulators. The budget achieves the goals outlined above and funds ISO operations and initiatives as set forth in the company's strategic plan.

The ISO Board reviews the budget in September. The ISO then posts the budget to the ISO website for stakeholder review. Comments are also welcome in a workshop set for October 8, 2013 (notes of that discussion and subsequent stakeholder questions will be

available on the ISO website). The Board will consider approving the final budget in its December meeting.

## Strategic Outlook

The ISO coordinates with and advises state, regional and federal officials in shaping the policies to meet energy and environmental goals while enhancing and maintaining reliability. A particular focus is facilitating the state's success in meeting renewable energy goals. At this time, the ISO grid has nearly 12,000 MW of connected renewable resources, including over 5,800 MW of wind and nearly 3,100 MW of solar.

The ISO interconnection study queue continues to signal that solar resources growth is outpacing wind expansion, which means the ISO must increase grid flexibility and market operations to accommodate evolving infrastructure development patterns.

In the future, the ISO believes increased price transparency will enable consumers to install devices, such as programmable thermostats that will help them make smarter choices about their energy use.

In addition, demand response and energy efficiency over the next decade will be part of the flexible capacity needed to manage the variability of renewable resources. Price-driven demand response will be participating in the wholesale market that includes offering ancillary service energy products needed to support renewable integration.

## Aligning with the ISO's strategic plan

The ISO continues to contain or lower operating costs while improving services and enhancing the reliability of the ISO transmission grid in a concentrated effort that began in 2005. This includes performing the increased responsibilities and necessary planning to integrate the thousands of megawatts needed to meet the 33 percent renewables portfolio standard.

The 2014 budget aligns with the ISO's strategic plan, which is a guide to meet organizational and operational goals. The plan focuses on three strategies, as outlined below.

1. **Lead the transition to renewable energy.** Over the next three years the ISO will focus on the following initiatives, among others, to guide the evolution to a smarter, cleaner and more reliable energy future:
  - create new market opportunities for renewable resources, energy efficiency and demand response;
  - collaborate with ISO stakeholders and energy agencies to create a roadmap that can drive innovation and economic opportunity; and

- advocate for price visibility that will enable consumers to make smarter energy use decisions.
2. **Reliably manage the grid during industry transformation.** No current mechanism exists that enables the market to procure flexible resources, looking out over the next two to three years, needed by the ISO to balance supply and demand under challenging conditions, such as during times of over-generation. To address this situation, the ISO will pursue the following:
- coordinate with generators and regulatory agencies in complying with the state's once-through cooling policy and local reliability requirements,;
  - work with the California Public Utilities Commission (CPUC) to develop market-based solutions to enhance their existing long-term procurement and resource adequacy programs to procure flexible resources, provide backstop capacity for reliability and comply with the state's preferred loading order of energy resources;
  - advocate for critical policy changes that will facilitate renewable integration, such as time-of-use rates;
  - work cooperatively on efforts to streamline generation interconnections on both the distribution and transmission systems; and
  - support resiliency of the grid by protecting against known threats and preparing to recover quickly from unforeseen events that threaten the reliability of the grid.
3. **Expand regional collaboration to unlock mutual benefits:** Seeking the advice and input from our neighbors is a key component in managing resources and our infrastructure efficiently and cost effectively. This effort is underway now with the ISO offering its real-time energy imbalance market to non-ISO entities, who will not join the ISO but pay for using the market as they go. The first partner in the market is PacifiCorp, which is based in Portland, Oregon, and operating in six Western states. Meanwhile, the first non-California utility, Valley Electric Association of Pahrump, Nevada, joined the ISO in January 2013 as a full ISO participating member and transmission owner. Meanwhile, two California public owned utilities, City of Colton (December 2012) and the Merced Irrigation District (effective January 2014) moved to join the ISO to take advantage of the diverse resources found in the West. Other work underway includes the following:
- develop new market mechanisms to bring online resources offering the operational flexibility we need to orchestrate the increasingly complicated electricity network in California and the West;
  - work with interested balancing authorities on studies that uncover potential value in greater collaboration;

- explore opportunities for deeper collaboration and partnership with other regional players to improve the reliability, efficiency and security of electric service to our respective customers;
- work with others in the western region to accelerate and demonstrate potential new technologies; and
- work to stimulate higher levels of renewable power generation in the West.

The ISO's strategic plan contains the refined vision of moving the corporation forward. Initiatives to further flesh out the strategy support the plan, while the budget explains how the corporation funds and allocates its resources to support its business plans. ISO management and staff created a 2014 budget that supports the strategic plan with the right mix of talent, skills and financial resources to be effective and successful.

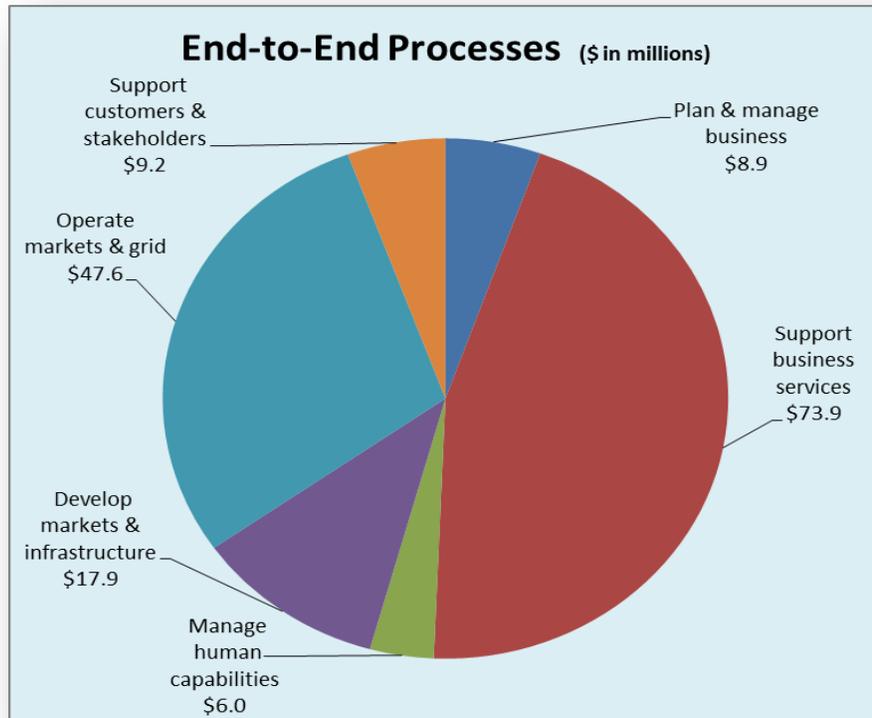
Aligning the strategic planning process more closely with budget planning reveals with greater transparency how ISO resources are used and the costs associated with business and operational activities. This in turn enables management to better assess the value of corporate projects and processes and determine whether they are under or over resourced. The ISO is also scrutinizing day-to-day expenses in an effort to ensure the most effective use of budgeted resources.

The ISO leadership is actively involved with defining and nurturing a corporate culture of cost-consciousness while enhancing services. Stakeholders also participate in ISO governance by engaging in policy and tariff stakeholder processes that weigh and balance costs and reliability issues.

Not only is the ISO vigilant in containing costs, it also places a high emphasis on managing corporate resources in a smart and prudent manner that results in effective and efficient productivity.

### III. PROCESS VIEW

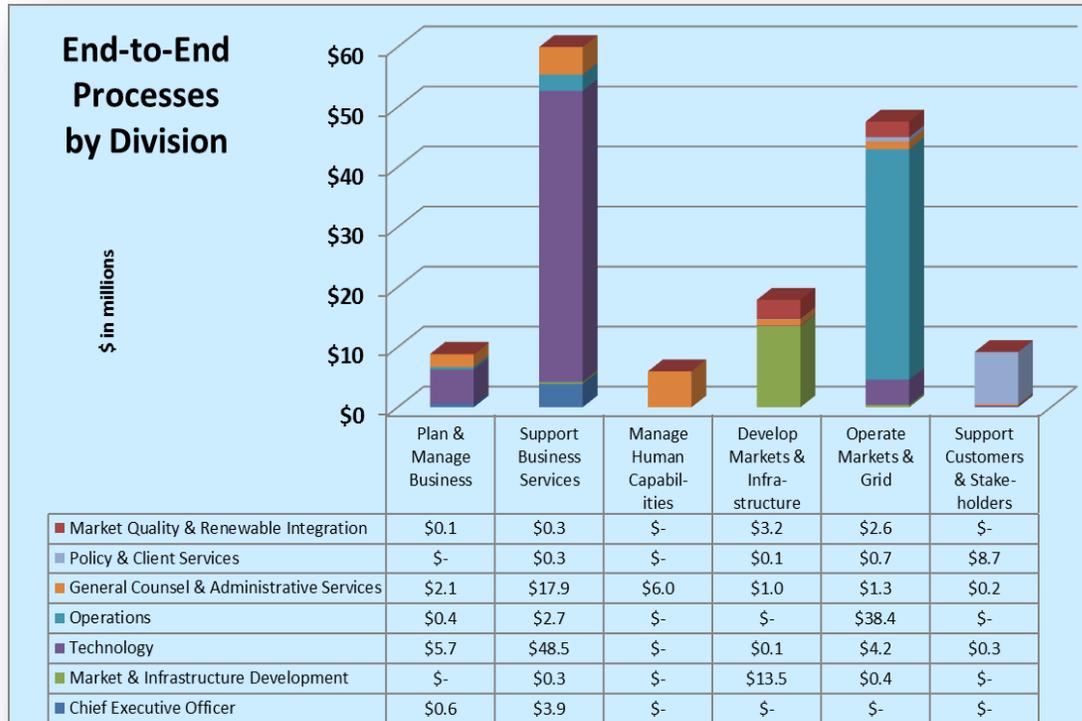
The ISO has leveraged the activity based costing system to provide greater transparency and granularity in how the budget supports corporate business plans. There are six primary processes, which are further broken down into second level activities. All employees charge time worked to second level activities. Aggregating the time reported by employees results in percentages for each of the processes (the hours used were for the first six months of 2013). Applying these to the 2014 budget results in costs for the six processes as shown below.



- Support customers and stakeholders — client, account and stakeholder processes, government affairs and communications;
- Develop markets and infrastructure — regulatory, market, policy and product design and transmission planning, grid asset reviews and interconnection studies;
- Operate markets and grid — manage and operate the markets including modeling, setup, and settlements;
- Manage human capabilities — employee lifecycle, training and organizational development;
- Support business services — general, information technology, financial, legal and compliance support services; and

- Plan and manage business — strategic planning, governance, budgeting and project management.

We allocated division costs into the end-to-end processes as follows:



The ISO Board has approved seven formal corporate goals for 2013, as follows.

**1. Sustain improved compliance levels:**

- improve compliance levels by reducing incidents that affect grid reliability and violations of reliability standards; and
- improve compliance as measured by the number of tariff violations.

**2. Improve load and renewable generation forecasting:**

- better anticipate load and renewable generation fluctuations and develop capabilities to improve forecasting.

**3. Improve real time market performance:**

- minimize the number of price corrections, exceptional dispatches and real-time congestion offset.

**4. Facilitate a cleaner grid:**

- advance state environmental and energy policy goals by providing testimony, communications and filings.

**5. Execute a proactive customer service model:**

- improve customer service as measured by response times to inquiries.

## 6. Deliver market and technology enhancements:

- complete projects to deliver enhanced functionalities.

## 7. Demonstrate fiscal responsibility:

- reduce operating and maintenance expenses compared to the previous year's budget.

Working to achieve these goals in a cross-functional and multi-disciplinary manner will allow the ISO to optimize results.

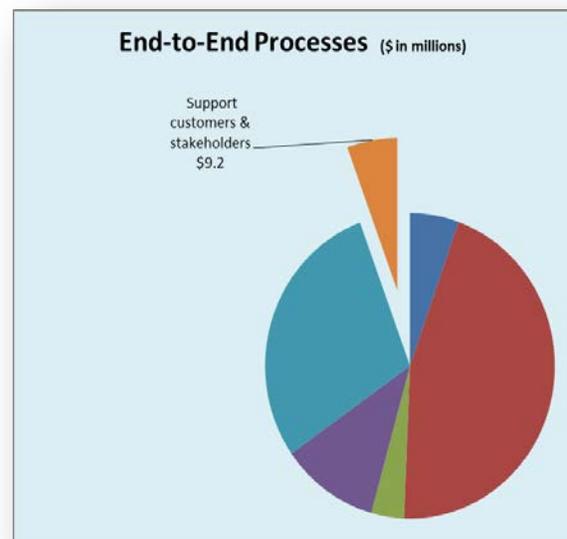
## Support Customers and Stakeholders

Support Customers and Stakeholders, amounting to \$9.2 million and 35 staff, consists primarily of the efforts of the Policy and Client Services Division and elements of the Technology and General Counsel and Administrative Services Divisions. The ISO remains firm in its commitment to provide the highest quality of service to its customers, market participants and stakeholders. This includes resolving customer issues in a timely manner and streamlining access to market information when possible.

### Primary Activities

This process improves the overall business experience stakeholders and market participants have with the ISO, as well as sharing clear and consistent corporate information. Besides surpassing previous goals to resolve inquiries quickly and encouraging quality dialogue between the ISO and its key customers, this activity provides the framework to make improvements in the stakeholder processes as well as build proactive outreach to new market participants that in turns encourages their active participation in the ISO market.

Another effort includes improving government affairs activities to more effectively share ISO technical expertise and communicate advice to government and regulatory bodies to advance policies and mandates that also protect grid reliability.



## Develop Markets and Develop Infrastructure

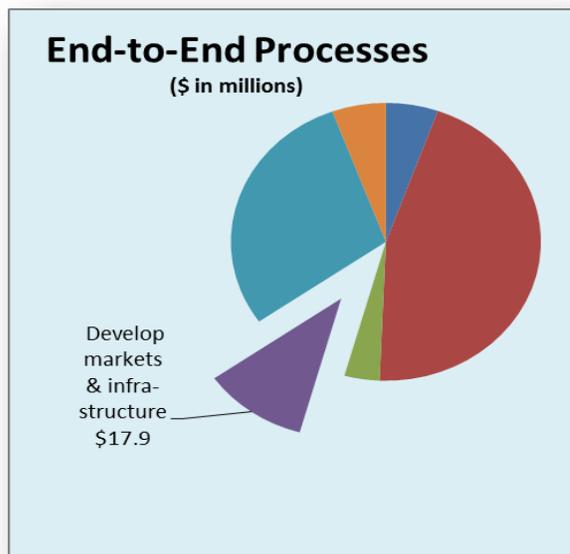
Develop Markets and Develop Infrastructure are two separate processes that cover ISO activities that create value-added enhancements to the market design as well as

proactively plan and facilitate grid upgrades, such as those needed to reliably integrate renewable resources.

### Develop Markets

Develop markets, amounting to \$6.7 million and 26 staff, is primarily comprised of the Market Infrastructure and Development and Market Quality and Renewable Integration Divisions with elements from the Operations, General Counsel and Administrative Services and Policy and Client Services Divisions. This activity includes improving our abilities to review and analyze the efficiency and quality of market results, as well as identifying needed market design enhancements that increase efficiencies and transparency.

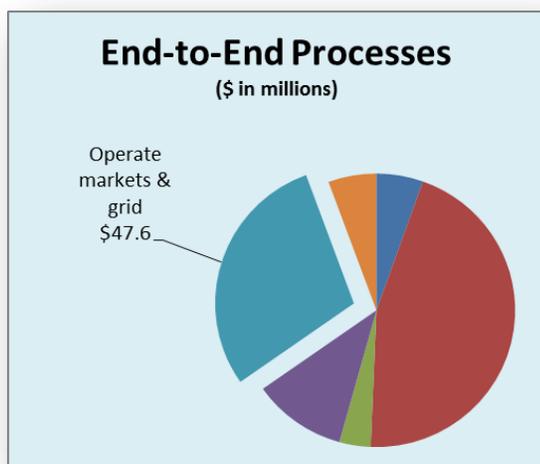
Among the initiatives under this banner are ones that are building the business and operational framework that accommodates demand response and renewable resources in the ISO market, and includes distributed generation, energy efficiency and storage technologies participation.



### Develop Infrastructure

Develop infrastructure, amounting to \$11.2 million and 47 staff, is comprised primarily of the Market Infrastructure and Development Division and elements of Market Quality and Renewable Integration, Technology, Operations and General Counsel and Administrative Services Divisions. The budget supports a comprehensive approach to transmission and generation interconnection planning that considers reliability and public policy needs.

## Operate Markets and Grid



There are three end-to-end processes that make up Operate Markets and Grid: Manage Market and Reliability Data and Modeling, Manage Markets and Grid, and Manage Operations Support and Settlements.

### Manage Market and Reliability Data and Modeling

Manage Market and Reliability Data and Modeling, amounting to \$13.5 million and 59 staff, is primarily comprised of the

Technology, Operations and General Counsel and Administrative Services Divisions with elements of Market and Infrastructure Development, Market Quality and Renewable Resources and Policy and Client Services Divisions.

The ISO diligently rechecks its network modeling policies and protocols to reduce as much as possible out-of-market energy dispatches, assure models reflect all grid constraints and produce timely and accurate prices.

### **Manage Markets and Grid**

Manage Markets and Grid, amounting to \$23.4 million and 108 staff, is primarily comprised of the Operations and Technology Divisions with elements of the Market Quality and Renewable Integration Division. A challenging ISO responsibility is to manage transmission and generation outages, especially those that are unplanned, as it takes well-honed expertise to ensure continuous flow of power to all customers. Managing the market includes executing the day-ahead market and interchange scheduling that meets all local energy needs and delivers the power at the most reasonable cost possible.

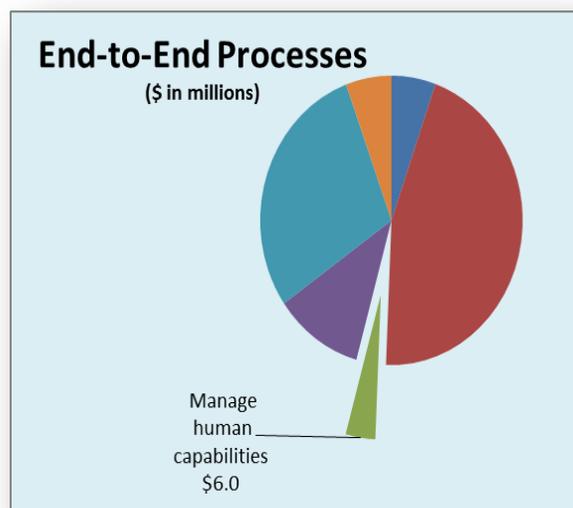
### **Manage Operations Support and Settlements**

Manage Operations Support and Settlements, amounting to \$10.7 million and 48 staff, is mostly comprised of the Operations and Market Quality and Renewable Integration Divisions along with elements of Market Infrastructure and Development, Technology, General Counsel and Administrative Services and Policy and Client Services Divisions. The budget provides the resources that result in creating new market efficiencies. This effort includes lowering the financial risk of participating in the wholesale market that in turn lowers the cost of doing business with the ISO. The lower cost translates into less overhead for ISO customers who can pass the savings to ratepayers.

## **Manage Human Capabilities**

Manage Human Capabilities, amounting to \$6.0 million and 14 staff, is comprised primarily of the General Counsel and Administrative Services Division with an element of the Policy and Client Services Division. It consists of five primary end-to-end processes that combine to ensure the ISO attracts and retains the skills and talent necessary to achieve business objectives. The processes are compensation, benefits, recruitment, training and development, and employee relations.

The budget provides resources to support the Company's ability to attract and retain uniquely skilled and highly sought-after professionals by continually assessing the



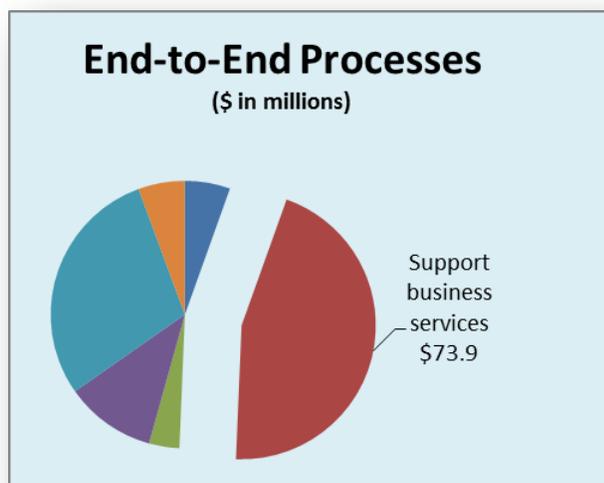
quality of compensation and benefit packages. The benefits menu reflects cost containment measures while at the same time preserving the competitive options needed to meet the needs of a diverse employee population.

Developing the next ISO generation of equipped with the knowledge, skills and expertise to meet the increasingly complex challenges of today and the future remains a top corporate priority. The budget provides resources to ensure employees not only grow in their jobs but also increase their value to the corporation.

In addition, the budget provides resources to support management and employees in maintaining a high-performance and respectful workplace environment where employees are highly engaged in pursuing their highest potential as well as contributing to the success of the corporation.

## Support Business Services

Support Business Services, amounting to \$73.9 million and 228 staff, is comprised of primarily of the Department of Market Monitoring of the Chief Executive Officer, Technology, Operations and General Counsel and Administrative Services Divisions and elements of the Market and Infrastructure Development, Market Quality and Renewable Integration, and Policy and Client Relations Divisions.



This process provides the resources to improve the ISO's ability to carry out its business duties by developing well defined, measured and controlled processes (workflow and information technology), as well as nurturing disciplined business decision making, maintaining quality assurance and efficiently implementing enhancements.

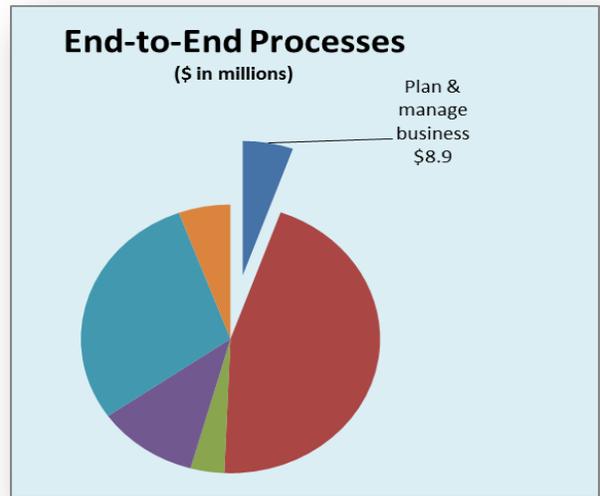
In addition, this process supports the initiatives that improve and maintain a responsive and effective compliance culture.

## Plan and Manage Business

The Plan and Manage Business process, amounting to \$8.9 million and 28 staff, is comprised of primarily of the Technology and General Counsel and Administrative Services Divisions and elements of the Chief Executive Officer, Market Quality and Renewable Integration, Operations and Policy and Client Services Divisions.

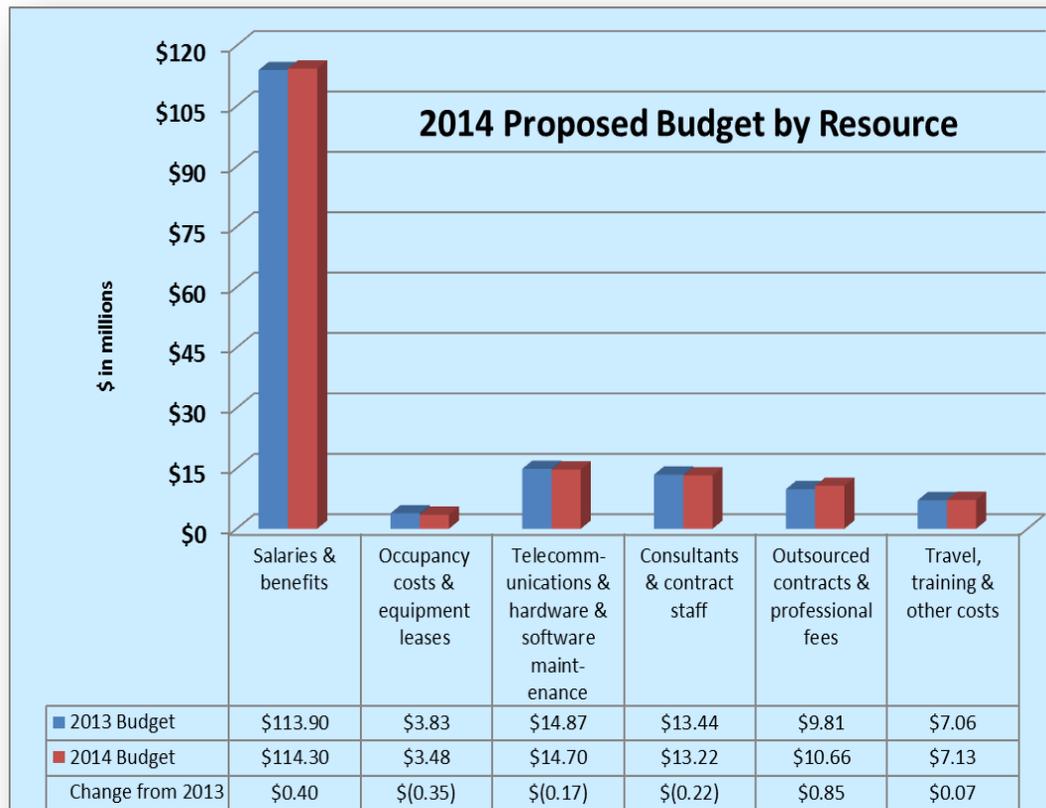
The ISO measures every process, project or policy against identified benefits. This activity finds support in part by aligning the strategic planning process with budget planning, as outlined in Section II: Aligning with the ISO's strategic plan.

It is the budget process that drives revenue requirement needs, which then translates into the rates charged to scheduling coordinators and other market participants.



## IV. ISO RESOURCE UTILIZATION

This section deals with the resources used in the O&M budget to accomplish strategic objectives and goals. The 2013 budget reflects reclassifications in order for it to be comparable to the 2014 budget presentation. The chart below shows the major resource components.



### Staffing

To operate the grid, the ISO depends on its highly educated employees, which makes staff a critically important resource with salaries and benefits comprising 70 percent of the 2014 O&M budget and 71 percent of the 2013 O&M budget.

The staffing plan concentrates on attracting and retaining the best and brightest individuals in the industry. At times, the ISO revises the organizational structure to help the ISO keep pace with changing resource needs. The ISO also makes periodic organizational changes to align resources to focus on the important matters identified in the ISO's strategic plan, and better reflect end-to-end business processes.

The staffing level for 2014 is 593 employees (which include eight operators in training); which reflects a reduction in staff of eight positions from 2013. The reduction follows the ISOs continuing efforts to manage the long-term growth rate of costs.

As of the end of July 2013, there are 573 full time employees. As that equals 97 percent of the budgeted staffing level, the 2014 budget makes no provision for vacancies. A summary of the budgeted headcount for 2014 and 2013 is as follows:

<b>Projected Staffing Levels</b>	<b>2014 Budget</b>	<b>2013 Budget</b>	<b>Change</b>
Chief Executive Officer	17	17	-
Market and Infrastructure Development	60	60	-
Technology	189	189	-
Operations	197	202	(5)
Market Quality and Renewable Integration	23	23	-
General Counsel and Administration	68	71	(3)
Policy and Client Services	39	39	-
<b>Gross headcount</b>	<b>593</b>	<b>601</b>	<b>(8)</b>
Less Program Office staff included in capital	(5)	(5)	-
<b>Net headcount</b>	<b>588</b>	<b>596</b>	<b>(8)</b>

Staffing costs remained are projected to be \$114.3 million in 2014 an increase of \$409,000 or a less than a 0.4% increase from \$113.9 million in 2013.

### **Staffing Related to Capital**

As in past years, the O&M budget does not include the costs of ISO staff dedicated full-time to capital projects. The costs of which are components of a separate capital budget. The capitalized staff amounted to five full-time staff in the Program Management Office of the Technology Division. The cost of other staff engaged in capital projects is budgeted in their respective cost centers; however, the financial statements that are prepared in accordance with generally accepted accounting principles include the capitalization of this labor.

### **Compensation Structure**

The 2014 compensation budget includes funding for employee base salaries, benefits and payroll taxes, as well as other compensation elements, such as overtime and performance compensation, and related costs such as relocation and tuition reimbursement. The budget also includes funds for 2014 salary adjustments for merit, equity and market adjustments, as well as for increased healthcare costs. These costs have been budgeted for each position.

In setting the annual merit, equity and market adjustments budget, the Human Resources Department participates in salary surveys that qualified third party vendors confidentially administer to gather information on competitive market pay rates. The ISO ability to attract and retain talent with the necessary skills and knowledge links directly to our ability to maintain competitive pay practices.

The total compensation packages provided to employees include performance compensation with payouts in the subsequent year based on individual and corporate performance. A summary of the components of compensation is as follows (\$ in millions).

<b>Compensation Components With Benefit Burden</b>	<b>2014 Budget</b>	<b>2013 Budget</b>	<b>Change</b>
Base compensation	\$94.7	\$92.5	\$2.2
Overtime (includes structured overtime for grid operators)	6.7	7.3	(0.6)
Performance compensation	11.7	12.4	(0.7)
Other	1.2	1.7	(0.5)
<b>Total</b>	<b>\$114.3</b>	<b>\$113.9</b>	<b>\$0.4</b>

To fund the benefits, employee benefits are budgeted at 35 percent of salary costs as summarized in the table below, which is a one percent reduction from the 36 percent in 2013. The reduction arose from a modification to the retiree medical plan, which now includes a ceiling on the level of retiree medical insurance premiums the ISO will cover. Management will enter into contracts with selected vendors to ensure these benefits are available to eligible employees with the costs primarily depending on employee population levels and participation. The benefits burden is broken down as follows.

<b>Benefit Obligation</b>	<b>ISO Cost Components</b>	<b>Rate</b>
Health and Welfare plans Medical, Dental and Vision	Medical, dental and vision; life, accidental death and long-term disability insurance; state unemployment insurance; and worker's compensation	13%
Retirement Benefit Plans	Retirement Savings Benefit Plan 401(k); Federal social security and Medicare; executive retirement plans; and Retiree Medical Benefit Plan	21%
Other obligations	Administration related costs	1%
<b>Total Burden</b>		<b>35%</b>

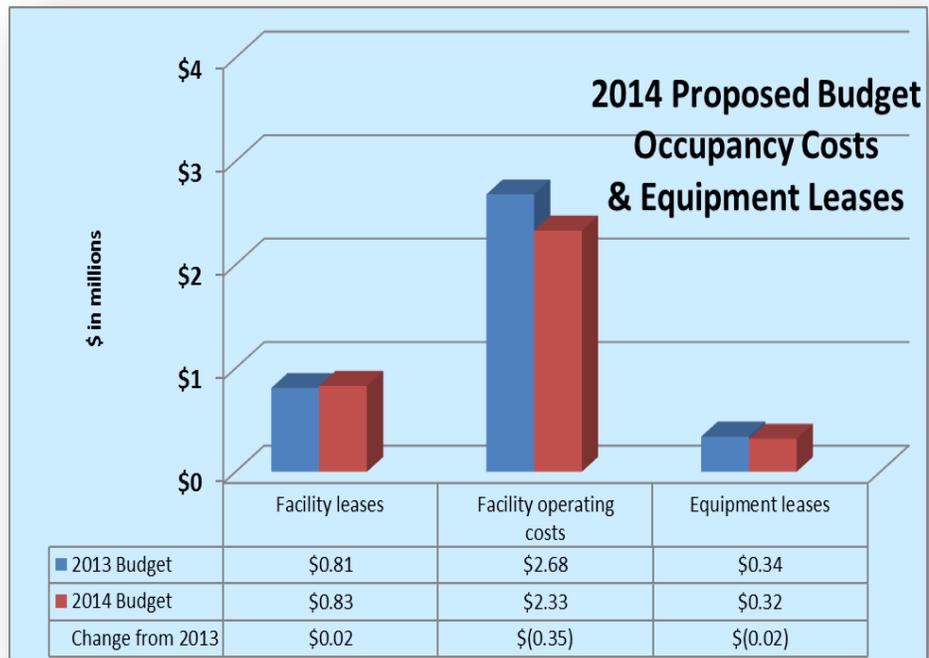
## Occupancy and Equipment Leases

Occupancy and equipment lease costs decreased by \$351,000, or 9%, to \$3.5 million in 2014 from \$3.8 million in 2013. These costs make up approximately 2 percent of the 2014 and 2013 budget.

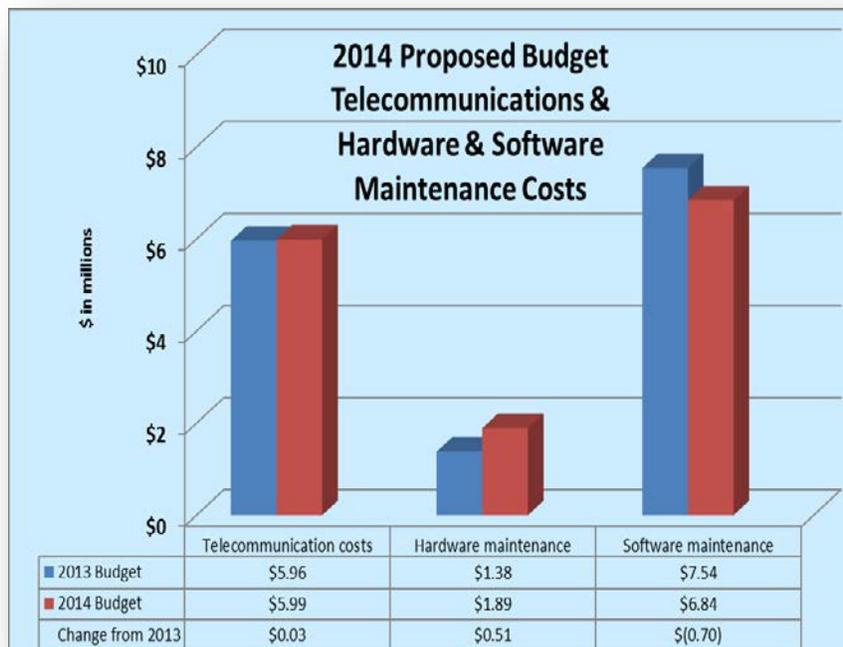
Facility leases increased by \$36,000, or 6 percent, to \$609,000 reflecting rent increases at the Alhambra backup facility.

Facility operating costs decreased by \$354,000, or 13 percent, to \$2.3 million in 2014 from \$2.7 million in 2013. Operating the new headquarters facility is more efficient.

Equipment and equipment leases decreased by \$34,000, or 6 percent, as planned purchases are lower for 2014.



## Telecommunications and Hardware and Software Maintenance Costs



Telecommunications, hardware and software maintenance costs decreased \$165,000, or 1 percent, to \$14.7 million compared to \$14.9 million in 2013. These costs make up approximately 9 percent of the 2014 and 2013 budgets.

Telecommunication costs remained virtually the same at \$6.0 million in 2014 from 2013.

Hardware and software maintenance costs decreased by \$188,000, or 2 percent, to \$8.7 million in 2014 compared to \$8.9 million in 2013. The reduction resulted from consolidating maintenance around core systems.

## Consultants and Contract Staff

Consulting and contract staff costs decreased \$212,000, or 2%, to \$13.2 million in 2014 compared to \$13.4 million in 2013. The consulting and contract staff budgets make up 8 percent of the 2014 and 2013 budgets.

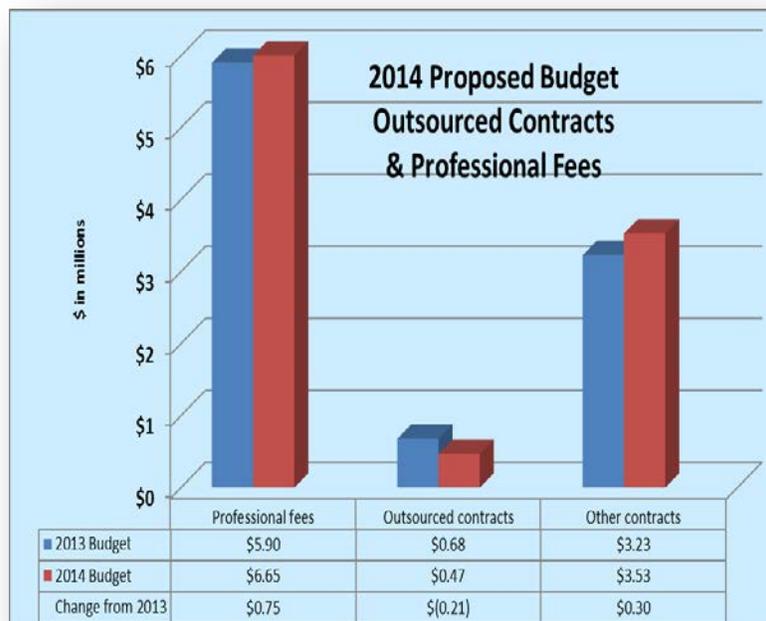
A number of efforts now underway require using outside resources. These include renewable integration, compliance, project development, facilities and physical security assistance, grid operations, and process documentation.

The ISO regularly evaluates how to meet its responsibilities while remaining cost effective and providing the highest service quality whether through hiring full-time employees or using outside resources (contractors, consultants or temporary staff). At times, the Company may bring contractor work in-house when it is of an ongoing nature and lowers overall cost with the same or better service quality. See additional discussion under Section VII.

## Outsourced Contracts and Professional Fees

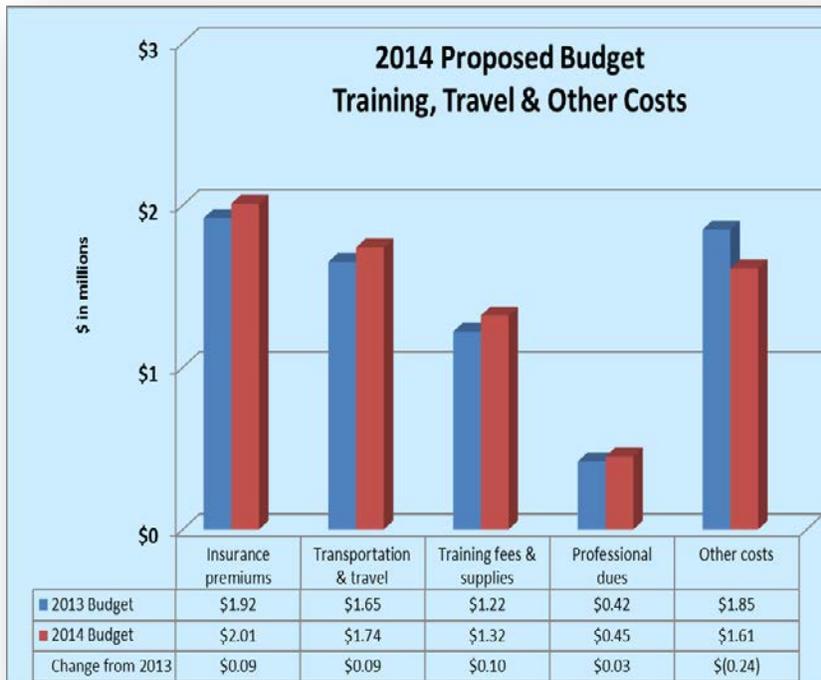
Outsourced contracts and professional fees increased by \$840,000, or 9 percent, to \$10.7 million in 2014. The budget category makes up 7 percent of the 2014 budget and 6 percent of the 2013 budget.

Professional fees increased \$745,000, or 13 percent, to \$6.6 million in 2014 from \$5.9 million in 2013. The increase is in support of outside legal counsel costs. The primary driver is additional litigation at FERC.



Outsourced and other contracts combined increased \$95,000, or 2 percent, to \$4.0 million in 2014 from \$3.9 million in 2013. Major outsourced contracts include locational marginal price validation, weather and wind forecasting, and credit rating services. Variable resources pay forecasting fees to the ISO, which are budgeted for a total of \$1.2 million in 2014 and \$1.6 million in 2013. These fees received from the variable resources are included in miscellaneous revenues to offset the related forecasting costs.

## Training, Travel and Other Costs



Training, travel and other costs remained close to the same level as 2013 at \$7.1 million. These costs make up approximately 4 percent of the 2014 and 2013 budgets.

Insurance premiums increased \$90,000, or 5 percent, to \$2.0 million in 2014.

Transportation and travel increased \$85,000, or 5 percent, to \$1.7 million in 2014.

Training fees and supplies increased \$101,000, or 8 percent, to \$1.3 million in 2014 reflecting the increasing knowledge requirements of operating the ISO.

Professional dues and other costs (primarily bank fees, office supplies and meeting costs) decreased \$212,000, or 9 percent, to \$2.1 million in 2014. The decreased was primarily attributable to lower expected printing costs and reducing conference attendance versus specific training opportunities.

## Reconciliation with 2013 O&M Budget

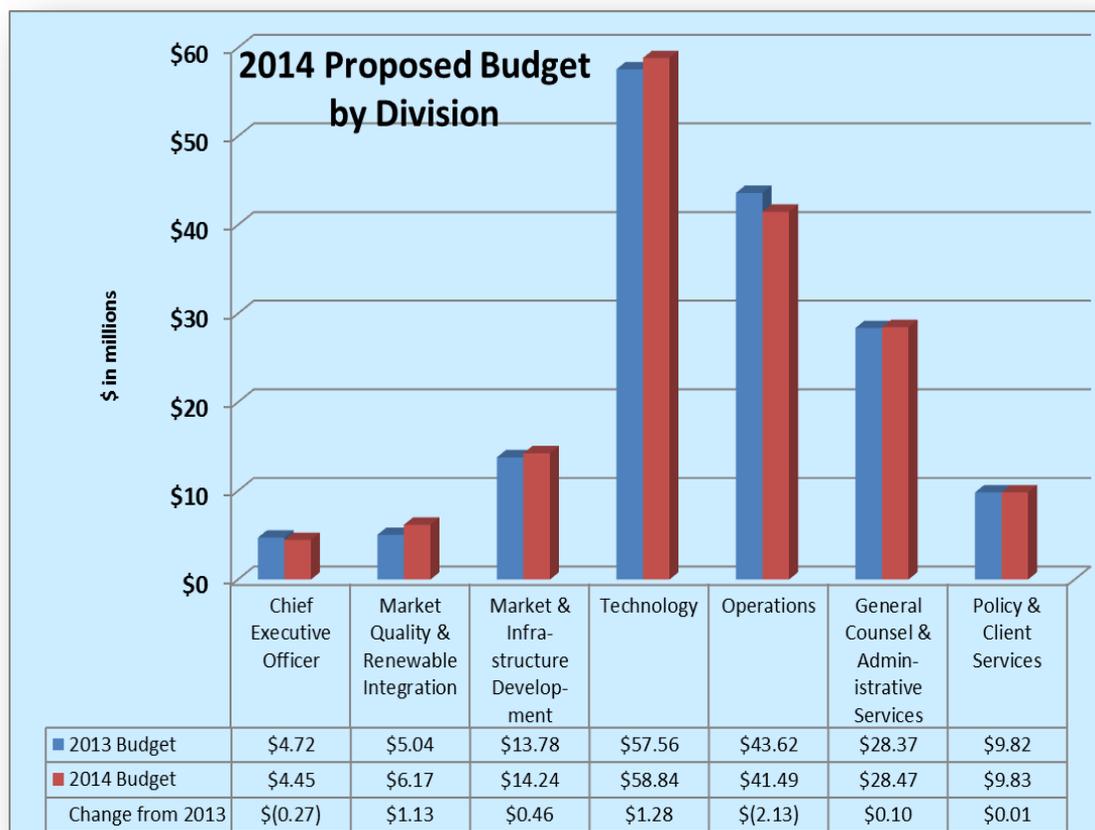
The 2014 proposed O&M budget increased by \$585,000, or less than 0.4 percent, to \$163.5 million compared to \$162.9 million in 2013. A reconciliation of the change follows (\$ in millions):

<b>2013 O&amp;M Budget</b>	<b>\$162.9</b>
<b>Increases in the budget</b>	
Merit and other compensation increases	2.6
Increase in professional fees (primarily legal)	0.7
Increase in training fees and supplies	0.1
Other	0.1
<b>Net increases in the budget</b>	<b>3.5</b>
<b>Decreases in the budget</b>	
Staff reduction	1.7
Projected decrease in overtime	0.5
Reduction in facility operating expenses	0.3
Reduction in consultants and contract staff	0.2
Reduction in hardware and software maintenance contracts	0.2
<b>Net decreases in the budget</b>	<b>2.9</b>
<b>Proposed 2014 O&amp;M Budget</b>	<b>\$163.5</b>

## V. ISO DIVISIONAL BUDGET OVERVIEWS

Each corporate division provides a description of their department, functions, staffing and proposed budget. The divisions appear in the following order:

- Chief Executive Officer
- Market Quality and Renewable Integration
- Market and Infrastructure Planning
- Technology
- Operations
- General Counsel and Administrative Services
- Policy and Client Services



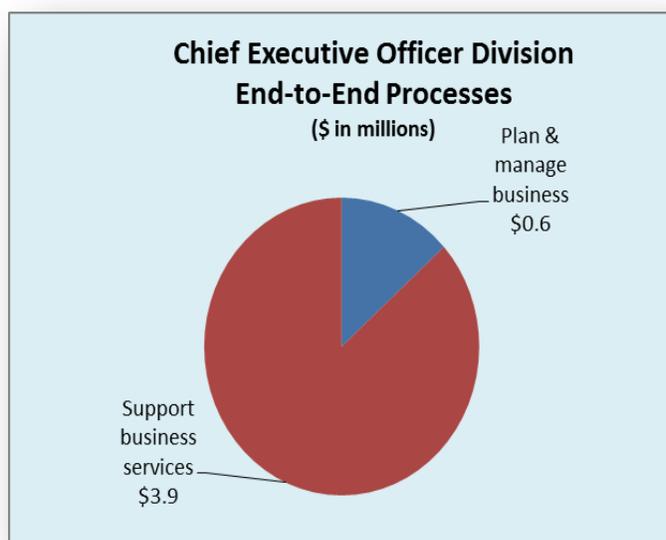
The 2014 proposed budget of \$163.5 million is \$585,000, or less than 0.4 percent, more than the 2013 budget of \$162.9 million. The Technology and Operations Divisions account for 36 percent and 25 percent, respectively, of the 2014 O&M budget while the General Counsel and Administrative Services Division comprises 17 percent. The Market and Infrastructure Development Division accounts for 9 percent of the 2014 O&M budget, while the Policy and Client Services Division accounts for 6 percent. The Market Quality and Renewable Integration Division accounts for 4 percent of the 2014 O&M budget and the Chief Executive Officer Division makes up 3 percent. Staffing is now 593 FTEs after a reduction of eight from the 2013 level of 601.

There were various organizational changes made during 2013 with the creation of the new business units and the general ISO goal to optimize efforts, resulting in staff transfers among and within the divisions. For comparability purposes, the 2013 budget reflects reclassifications to align with the 2014 budget presentation.

## Chief Executive Officer Division (including the Department of Market Monitoring)

The division comprises of the office of the Chief Executive Officer and the Department of Market Monitoring.

The Department of Market Monitoring provides independent oversight and analysis of the ISO markets by identifying design flaws, potential rule violations and market power abuses.



The department staff is highly skilled analysts with advanced degrees in economics and engineering who publish quarterly and annual reports on market issues and performance as well as periodic special reports and recommendations.

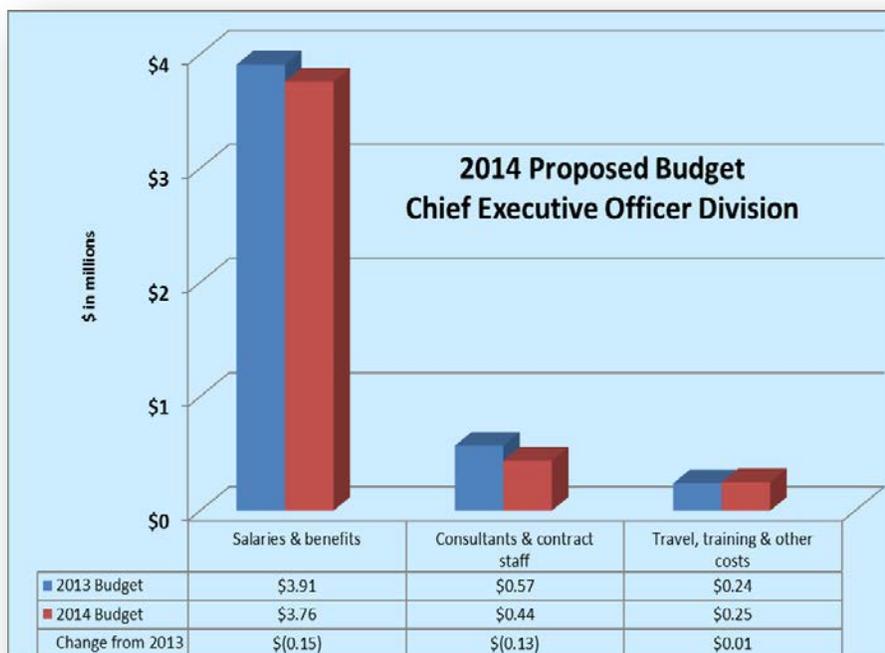
The Market Monitoring group is active in shaping policies to help establish provisions to ensure market efficiency and mitigate the exercise of market power, especially with new market features and services that facilitate the integration of renewable resources.

In 2014, the Department of Market Monitoring will continue to focus closely on the monitor market performances and behaviors, and continue to provide input and review on major design initiatives. The department is particularly active in the energy imbalance market efforts as well as several products and requirements the ISO is developing to ensure sufficient flexible capacity is available to integrate increased amounts of variable renewable energy. DMM also plans on working extensively with the ISO and CPUC in 2014 to address market power issues related to establishing a forward capacity auction.

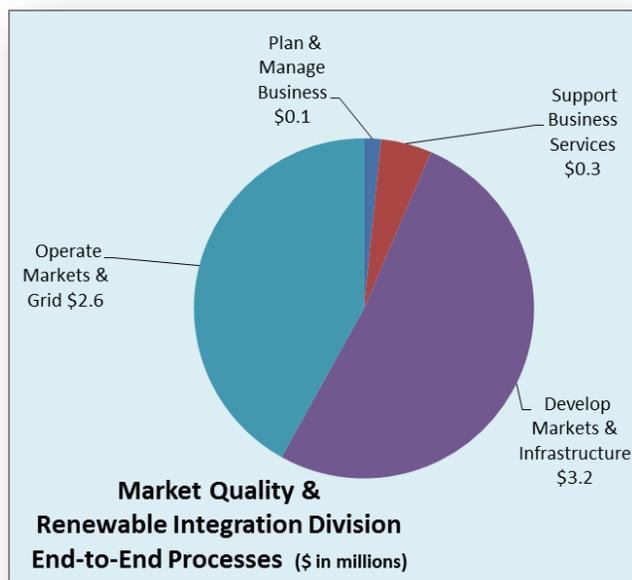
## Discussion of Proposed Budget

The 2014 proposed budget of \$4.4 million decreased by \$268,000, or 6 percent, from the 2013 budget. Staffing remained the same in 2014 at 17.

Personnel costs decreased \$160,000 and consultants and contract staff decreased \$112,000, while training, travel, and other costs increased \$1,000.



## Market Quality and Renewable Integration Division



The Market Quality and Renewable Integration Division consolidates market performance review functions previously handled by other units in the organization and sharpens the ISO's focus on price analysis while increasing transparency and confidence in market results.

The division is responsible for conducting generation fleet studies that test whether there is adequate "flexible capacity" installed to meet future electricity needs. Along with performing and reporting in-depth market analysis, the division employs advanced short-term

demand and supply forecasting

technology to give the Company an edge when maximizing the needs of the grid through the competitive energy market we run. In 2014, the focus for the division will be

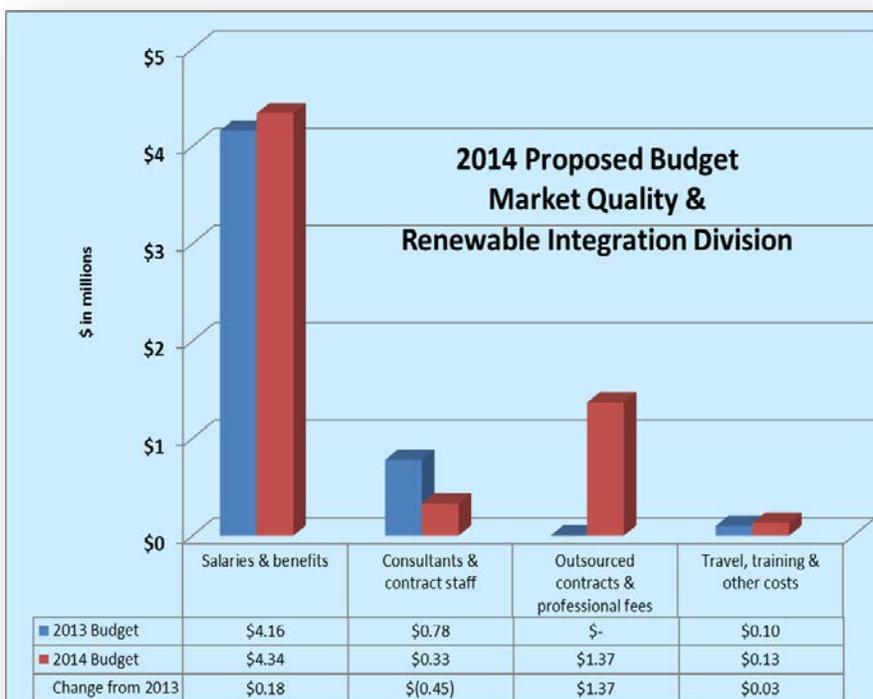
to enhance the consistency of modeled conditions between the day-ahead and real-time market increasing the efficiency of the market.

The Market Analysis and Development Department monitors the market, identifies systemic issues, and develops conceptual solutions to address them. In addition, the Market Performance and Planning Forum web conference, which the department holds about every six weeks, provides updates and observations on market performance with an emphasis on coordinating plans with stakeholders to implement market enhancements, services and features. The outreach reflects ISO efforts to improve its communications with stakeholders and encourage feedback.

### Discussion of Proposed Budget

The 2014 proposed budget of \$6.2 million increased by \$1.2 million (or 24 percent) from the 2013 budget of \$5.0 million. Staffing remained the same at 23.

Personnel costs increased in 2014 by \$186,000 to \$4.3 million primarily due to merit increases. Consulting and contract staff costs decreased by \$448,000 in 2014 to \$334,000 due to planned lower utilization of outside resources on known projects. Outsourced and other contracts increased by \$1.4 million primarily due to the transfer of forecasting fees from the Operations division. The intermittent resources pay forecasting fees to the ISO, which are included in miscellaneous revenues to offset the related forecasting costs. Transportation, training and other costs increased by \$28,000 from 2013.



### Market and Infrastructure Development Division

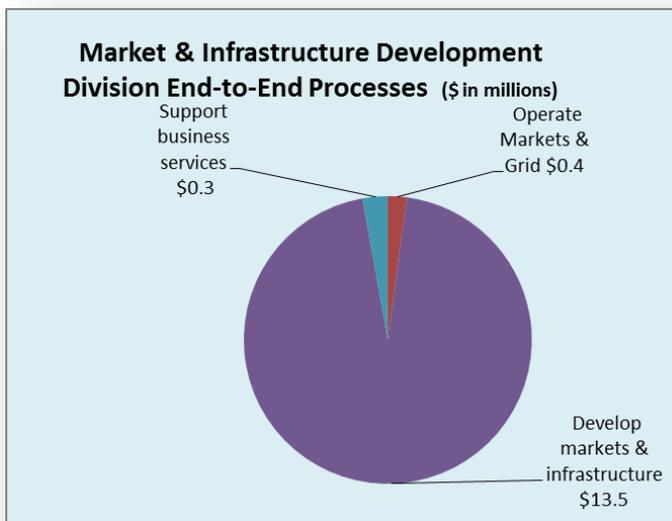
The Market and Infrastructure Development Division develops a forward-looking, comprehensive and fully compliant transmission plan in addition to activities that creates policies and rules that facilitate a robust market, support the state’s resource adequacy program, provide for generator interconnection studies and ensure contractual

compliance with the ISO tariff. Other responsibilities include performing seasonal operating studies, maintaining operating procedures, supporting real-time operations, and coordinating with neighboring balancing authorities on engineering operational issues.

Ongoing duties include developing policy positions on regulatory issues and responsibility for over 2,700 ISO regulatory contracts, including their negotiation, drafting and administration.

This division provides subject expertise and regulatory support to state regulators implementing legislative mandates such as reducing greenhouse gases, increasing demand response participation in the wholesale market and setting capacity requirements. It also provides technical support to the Market

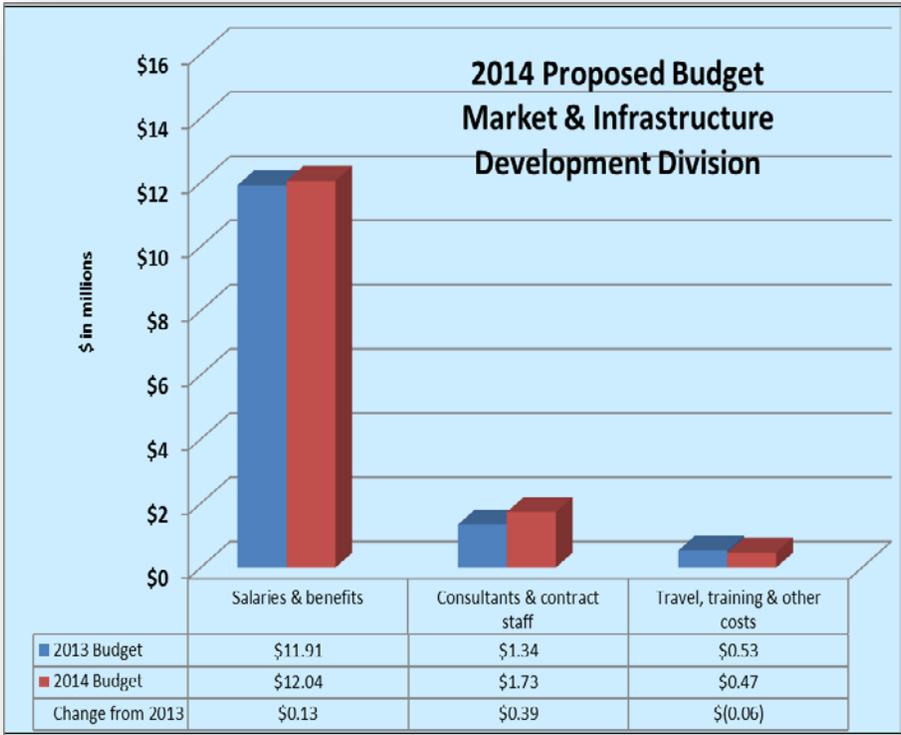
Services group on congestion revenue rights and to the Market Operations group, both of which are in the Operations Division, on full network modeling capabilities.



The Market and Infrastructure Policy Department is responsible for designing market rules and mechanisms, including those mandated for enhancement by federal regulators, expanding opportunities for demand response resources to participate in the wholesale markets, real-time dispatch and pricing rules for constrained generation.

The Infrastructure Contracts and Management Department is responsible for developing and managing contractual arrangements that support the efficient functioning of ISO markets. This includes generator interconnection and the reliable operation of the grid to facilitate industry changes due to state and federal policies, technological advances, and to respond to identified market inefficiencies and stakeholder issues. For 2014, the department will focus on facilitating greater flexibility in contractual arrangements for ISO customers consistent with the ISO tariff, information transparency and automation of manual processes.

The division as a whole is focusing a substantial amount of resources in developing the rules and mechanisms to integrate renewable resources. Related initiatives are moving forward that include meeting goals to advance smart grid technology, distributed resources and greater implementation flexibility for renewable resource integration. In addition, the division's work on transforming the transmission planning and generator interconnection processes has resulted in a new process that substantially helps meeting state renewable portfolio standard targets as well as maintaining reliability during the major shift of diversifying the state's generation fleet with green fuels such as wind and solar.



### Discussion of Proposed Budget

The 2014 proposed budget of \$14.2 million is \$454,000 (or 3 percent) higher than the 2013 budget of \$13.8 million. Staffing remained the same from 2013 at 60.

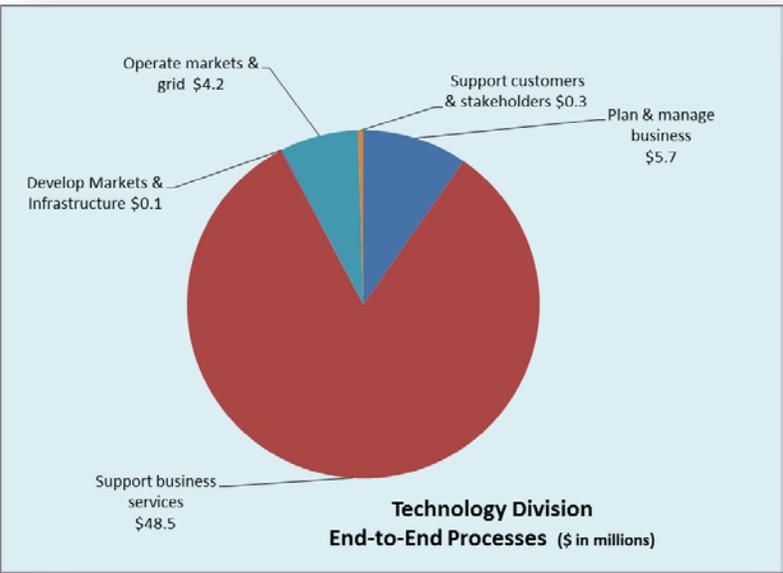
Salaries increased by \$151,000 due to merit increases while overtime decreased by \$17,000.

Consulting and contract staff costs

increased by \$393,000 primarily because of additional support for renewable integration. Travel, training, and other costs decreased by \$32,000 while all other costs decreased by \$28,000.

### Technology Division

The Technology Division encompasses information technology, campus operations, and the Program Management Office. The division provides reliable, cost efficient and world-class services that deliver exceptional system performance and new functionalities that support corporate goals and objectives.



The division's priorities in 2014 are as follows:

- to make incremental technology improvements, especially for market and reliability operations;
- to proactively identify system problems and to fix them; and
- to predict system vulnerabilities and strengthen them before they become problems.

The Technology Division is the ISO foundation that supports the many changes needed to integrate renewable resources and has key initiatives directly related to facilitating new generation and transmission construction in California.

In the mid- to long-term future, the division is developing plans to make network architectural changes so that ISO systems are easier to maintain, reduce maintenance costs and leverage technologies to improve cost effectiveness.

The Program Management Office leads and manages key initiatives and projects that focus on enhancing customer service and processes. Core functions include release planning, program management for the strategic plan and the market initiatives roadmap. All Program Office efforts have a strong process and quality focus based on Project Management Institute and Capability Maturity Model Integration standards.

The Power Systems Smart Grid Technology Development Department leads the ISO effort to identify emerging technologies, which also includes better leveraging mature technologies that enhance grid efficiencies and monitoring capabilities. These technologies are critical in enabling the ISO to interconnect and manage the variability of renewable resources. It is also responsible for reviewing and approving technical requirements, software design, and tests the scheduling infrastructure business rules, integrated forward market, real-time markets, and market quality service applications.

The Enterprise Support and Campus Operations Department manages ISO buildings and infrastructure that supports a safe, efficient and comfortable work environment. Campus Operation minimized costs in 2013 while it learned to better operate and maintain the ISO's 277,000 square foot LEED certified building that sits on 27 acres. The Infrastructure Engineering and Network Operations Department responsibilities go to systems engineering and administration, database engineering and storage administration and data center operations including the help desk and asset management

The Security, Architecture and Model Management and Quality Department is involved in enterprise model management, information security, software quality and information technology architecture.

The Business Solutions Department is responsible for delivery of software solutions in the Technology Division. Key functions include product management, software development, customer relationship management, vendor management, and production

support for corporate and enterprise applications. The scope includes software applications supporting internal customers from every division of the ISO, all enterprise applications and most applications supporting external customer interactions with the ISO. The scope does not include those applications provided by the Power Systems organizations. In 2014, Business Solutions will contribute to most of the efforts on the ISO's capital project list.

The Power System Technology Operations Department is responsible for providing information technology support for Operations. In addition, it develops and supports critical cyber assets and real-time systems required to keep operations going. Key functions include product management, software design, and production support for real-time and operations applications. The department will maintain high availability, robustness, reliability, and resilience to all Operation needs from the division while making sure all releases, patching, upgrade enhancements smoothly transition to production without disrupting operations.

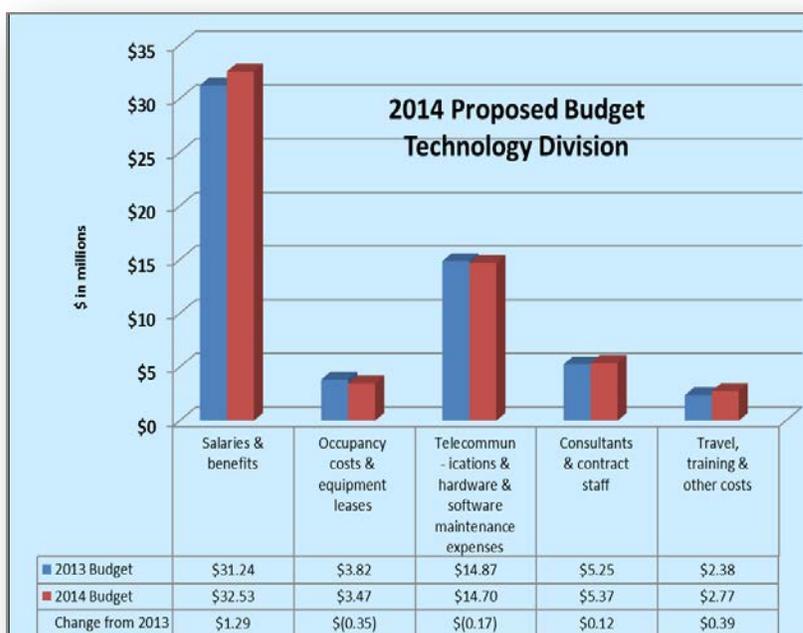
In 2014, the department will focus on implementation initiatives, including but not limited to the energy imbalance market and replacing the outage management system, as well as modifications required from policy initiatives such as resource adequacy and demand response programs. In addition, we will be making enhancement to the forecasting system.

### Discussion of Proposed Budget

The 2014 proposed budget of \$58.8 million is an increase of \$1.3 million (or 2 percent) over the 2013 budget of \$57.5 million. Staffing remained the same in 2014 at 189.

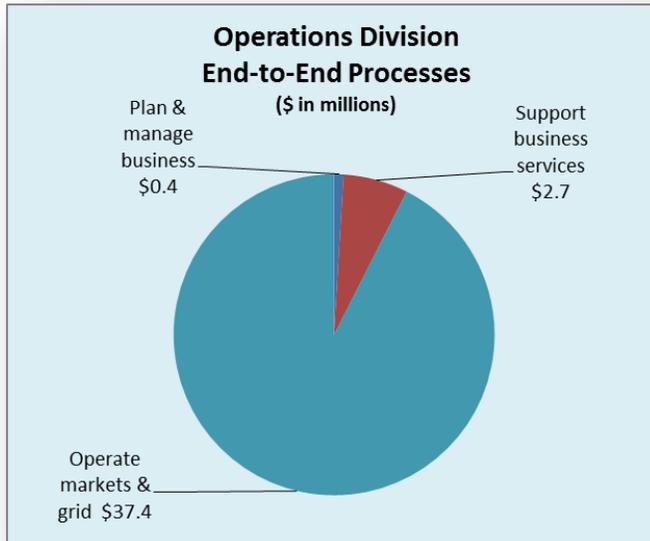
Personnel costs increased \$1.3 million, which reflects merit and other increases of \$1.6 million offset by decreased overtime of \$281,000. Because of operating efficiencies at the new headquarters building, facility operating costs were reduced by \$354,000 to \$2.2

million in 2014 from \$2.6 million in 2013. Telecommunication costs remained the same whereas hardware and software maintenance costs decreased by \$188,000, or 2 percent, to \$8.7 million in 2014 compared to \$8.9 million in 2013. The reduction resulted from consolidating maintenance around core systems. Consulting and contract staff costs increased by \$120,000 to support project development. Travel, training, and other costs increased by \$39,000.



## Operations Division

The Operations Division's main mission is the reliable operation of the power grid, markets and operations support. It is comprised of Systems Operations, Operations Engineering Services, Market Services, Operations Compliance and Control and Operational Readiness.



The power system is undergoing a dramatic evolution to accommodate an increasing amount of renewable and distributed resources connecting to the grid, as well as having to manage rising levels of imports and exports and the participation of demand resources in the wholesale market.

In addition, new reliability standards affect how the ISO reliably operates the grid. With advanced tools, the division will proactively manage the changing profile and characteristics of the

power system and generation fleet changes, which includes managing the variability of renewable resources. The major vehicle for this activity is the ISO control center that boasts awarding winning geospatial technology and advanced visualization capabilities. The center's pioneering technologies provide grid operators a more granular view of grid conditions and the ability to identify potential problems with the capability to solve them in advance of real time. The Systems Operations Department operates the forward and real-time markets in a manner that delivers the most cost effective energy to California consumers while maintaining grid reliability.

The professionals staffing the Systems Operations and Operations Engineering Services Departments are highly skilled in using the advanced technologies and tools necessary to reliably operate the grid and facilitate efficient markets in complex environments while evolving the grid to meet policy goals.

The System Operations Department also includes the newly formed Operational Readiness sub-department. The department, formed this year, meets the demands of new company initiatives and strives for continuous improvement in the areas of change management, procedure development and training. The department includes the following functional areas: simulation program, operations change initiatives and training, systematic approach to training development and administration, and strategic information development program.

The Market Services Department performs the market settlement function as well as metering. It implements market enhancements that produce transparent, consistent

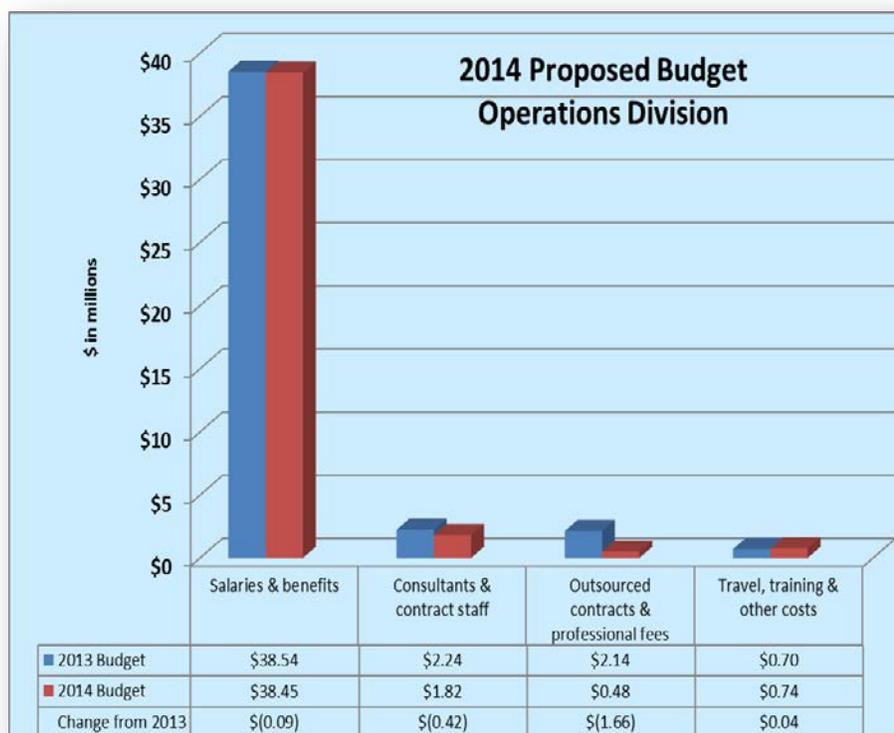
and efficient operations as well as ones that reduce the settlement timeline that achieve greater market efficiencies.

The Market Services Quality and Control group performs several functions including administering the rules of conduct, acting as a liaison between the business units and auditors, managing process documentation and tariff initiative work for the department.

### Discussion of Proposed Budget

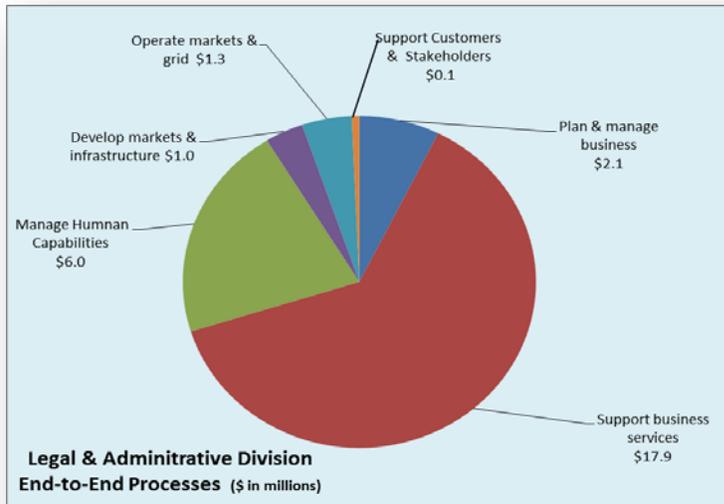
The 2014 proposed budget of \$41.5 million decreased by \$2.1 million (or 5 percent) from the 2013 budget of \$43.6 million. Staffing decreased by five FTE to 197 from 202 in 2013.

Personnel costs decreased by \$84,000 to \$38.5 million in 2014, which reflects reductions in staff of \$954,000 and in overtime of \$149,000 offset by merit increases of \$1.0 million. Consulting and contract staff costs decreased by \$423,000 in 2014 to \$1.8 million primarily due to planned lower utilization of outside resources on known projects. Outsourced and other contracts decreased by \$1.7 million due to the transfer of forecasting fees to the Market Quality and Renewable Integration Division. Transportation, training and other costs increased \$40,000.



### General Counsel and Administrative Services Division

The General Counsel and Administrative Services Division encompasses legal support, corporate compliance, corporate secretary, internal audit, business planning and operations, procurement, records management, finance and human resources.



This division strives to provide high quality counsel and administrative services throughout the organization, as well as ensure compliance with rules and regulations that govern the ISO. The division's expertise is integral in resolving complex matters found in all areas of the company's business. It represents the organization in regulatory and legal proceedings to protect the ISO interests and to ensure that the tariff and other legal

requirements allow the company to meet its objectives.

The Assistant General Counsel - Corporate is responsible for managing key vendor contracts and other agreements, as well as providing advice and counsel on corporate, employment, intellectual property, finance, tax, governance and other general legal matters including conflicts and ethics advice.

The Assistant Corporate Secretary coordinates Board-related matters that include communications, setting meeting agendas and reviewing Board-specific documents. This department is also responsible for maintaining the official corporate record.

The Paralegal and Office Administration Department provides paralegal, administrative and technical assistance to the legal departments and assists the Human Resources Department with immigration matters.

The Assistant General Counsel for Tariff and Tariff Compliance is primarily responsible for all tariff related activities including stakeholder processes and drafting amendments, interpretations, and compliance advice and investigations.

The Assistant General Counsel for Litigation and Mandatory Standards oversees all state and federal court litigation, appellate work, adversarial proceedings, dispute resolution, including the pending crisis-era proceedings and advises the corporate compliance team regarding mandatory standards, investigations and regulatory audits.

The Assistant General Counsel - Regulatory oversees legal and regulatory functions (including tariff amendments), state and federal regulatory matters and litigation. The lawyers in this area work closely with policy development teams to create market, transmission and operations services and features that conform to existing tariffs, or work in parallel to draft, stakeholder and file tariff additions and modifications.

The Corporate Compliance Department assesses and ensures business units implement new and revised reliability standards that ensure tariff compliance. It diligently promotes a corporate culture of compliance with all laws and corporate policies.

The Internal Audit Department is responsible for developing and implementing the annual internal audit plan and conducting audits to evaluate the effectiveness of management practices and controls. The department also has the responsibility for facilitating the ISO's enterprise risk activities and provides briefings to management and the Board on the ISO's enterprise risks, risk response and status of mitigation plans.

The Business Planning and Operations Department is responsible for developing the strategic plan, developing and monitoring the yearly corporate goals, and oversight for all corporate policies and procedures. This department is also responsible for the management and maintenance of the corporate business process architecture (end-to-end business processes) and works across the organization on process improvement projects, instilling a culture of continuous improvement and quality throughout the organization.

The Procurement and Vendor Management Department is the focal point for commercial contracting. It procures goods and services for the corporation by efficiently selecting vendors and managing costs.

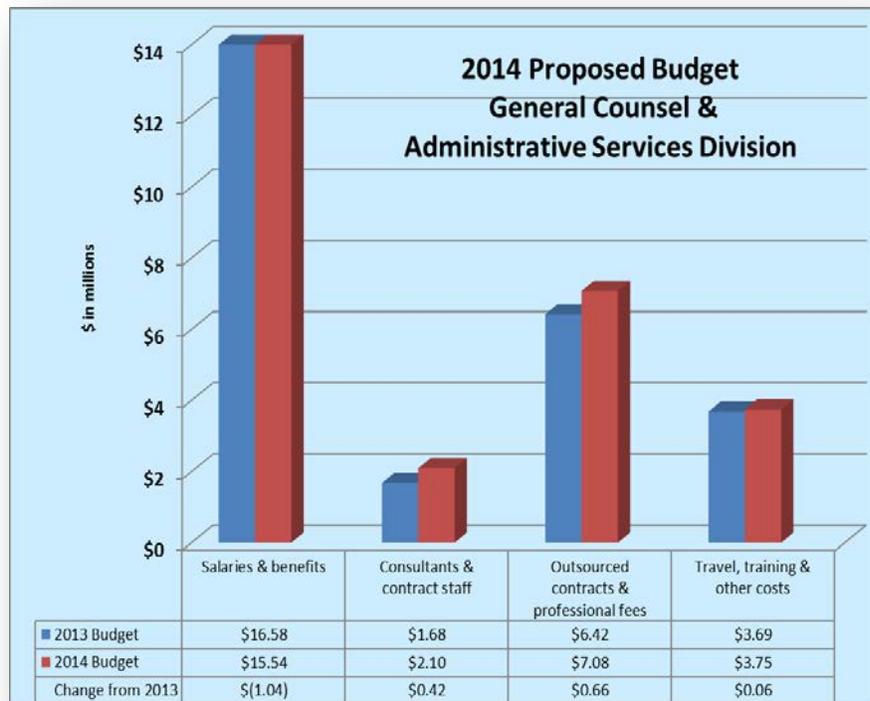
The Finance Department consists of CFO, treasury, credit, accounting and financial planning. It is responsible for cash and investment management of ISO resources, insurance, credit and collateral management and clearing of the ISO markets, general accounting and external financial reporting, payables processing, financial planning and forecasting, budgeting, and administering the GMC.

The Human Resources Department joined the division in 2013. It establishes the policies, programs and "people" strategies that enable the Corporation to attract and retain the uniquely talented professionals needed to reliably operate the electric grid and meet ISO strategic objectives and goals. Developing the next generation of ISO people includes dedicated focus on enhancing the knowledge and skills of existing staff; continuing to develop technical experts; strengthening leadership and managerial capabilities; retaining and recruiting targeted skills for critical areas; and sustaining an engaging workplace environment.

## **Discussion of Proposed Budget**

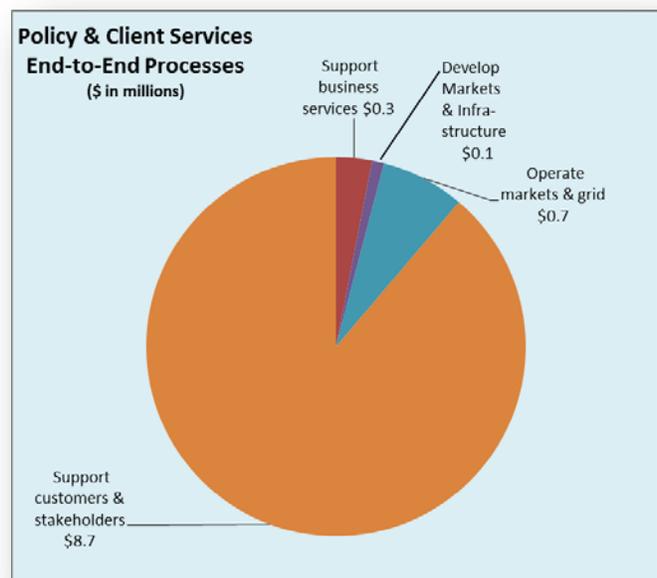
The 2014 proposed budget of \$28.5 million increased by \$98,000, or 0.4 percent, over the 2013 budget of \$28.4 million. Staffing decreased by three positions in 2014 to 68.

Personnel costs decreased \$1.0 million primarily due to staff and overtime reductions. Consultants and contract staff increased \$416,000 in support of infrastructure improvement projects. Professional fees increased \$695,000 primarily due to the need for additional outside legal counsel services to support additional litigation at FERC. Travel, training and other costs increased \$63,000.



## Policy and Client Services Division

The Policy and Client Services Division builds high quality collaborative relationships with a wide variety of stakeholders, regulators and consumer groups. It strives for excellence by providing timely and accurate information for public dissemination, fostering value added customer service, anticipating and addressing issues in a timely manner, and advancing objectives that benefit retail consumers and the electric industry. The division works toward these goals by collaborating across the corporation to quickly resolve wholesale market customer issues, improve communications with stakeholders and effectively represent the ISO before state agencies, regional organizations and federal energy regulators.



The division is also responsible for key aspects in facilitating the integration of renewable resources by clearly presenting ISO advice, analyses and grid needs to

technical and non-technical audiences. This has included such things as producing fact sheets, corporate brochure and info graphics that transform highly technical grid terms and concepts into more readable language that facilitates better comprehension and retention. Other activity includes coordinating and consulting with state and federal agencies and the Governor's office to help shape regulatory policies that preserve or enhance grid reliability. One example is the ISO working with state energy agencies on the Governor's joint taskforce to plan for grid upgrades needed because of the San Onofre Nuclear Generation Station retirement.

The division also updates and manages the ISO Business Practice Manuals, which contain the information that explains underlying tariffs and are critical in providing stakeholders and customers the information they need to interconnect and operate renewable facilities, among other things.

The Communications and Public Relations Department manages internal and external communications, including printed, digital, social media and video materials, all Web communications and website management, and employee and media relations. The department also issues stakeholder communications and develops new information products and services that add value to customer and stakeholder businesses.

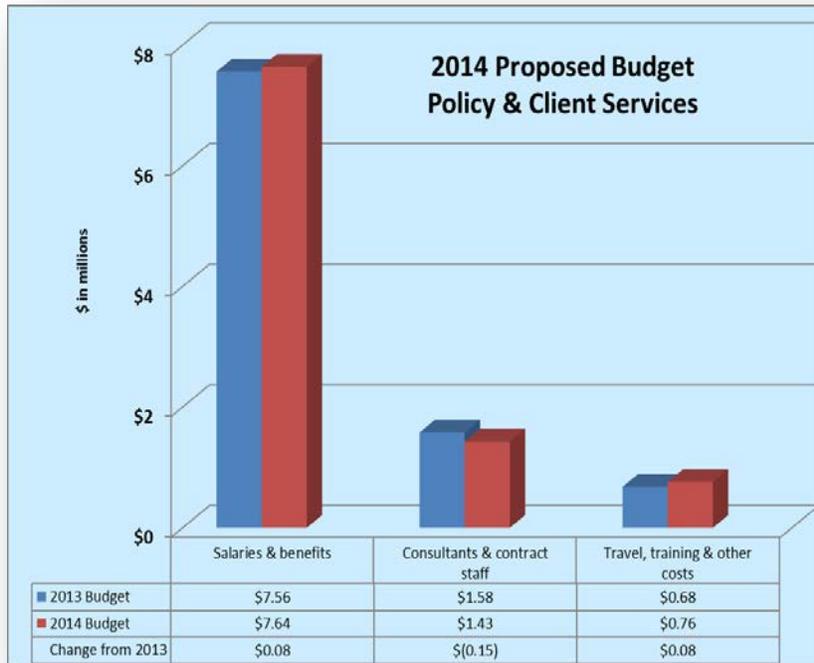
The Strategic Alliance Department focuses on support for the corporate initiative promoting regional coordination and cooperation across the West. Western entities are at a crossroads and face new needs caused by renewable development and various initiatives promoting regional transmission planning. This department leads activities aimed at meeting these needs while maintaining and increasing value to all affected parties, including existing entities served by ISO.

The 2014 regional initiatives build on efforts from 2013 to further the development of the energy imbalance market that will serve utilities in the West beginning as early as fall 2014. Strategic Alliances lends assistance to entities seeking increased participation with the ISO.

The external affairs departments (federal, state, regional and regulatory) oversee interactions with state and federal legislators, the governor's office, and federal and state agencies regarding matters that could affect the reliability or economics of the ISO controlled electric system. The departments' activities include building and maintaining relationships with regulatory agencies such as the CPUC, the California Energy Commission, and the California Air Resources Board, as well as monitoring and managing federal legislative and regulatory matters that could influence ISO practices and policies. The departments also work with legislatures to advise and educate lawmakers on policies that could affect the power system.

The Customer Service and Stakeholder Affairs Department is the primary business interface between the ISO and its clients and stakeholders, which includes a program to support newcomers. Web-based resources, linkages to trade associations and personal support for incoming newcomer issues is making it easier for market entrants to navigate the ISO. The department will refine its newcomer programs in 2014 to help make the transition to active participation in the ISO markets as seamless as possible.

## Discussion of Proposed Budget



The 2014 proposed budget of \$9.8 million remains virtually unchanged from the 2013 budget. Staffing remained at 39.

Personnel costs increased \$81,000, primarily because of merit increases of \$163,000 offset by overtime reduction of \$82,000. Consultants and contract staff decreased \$153,000. Travel, training, and other costs increased \$87,000.

## VI. DEBT SERVICE

Debt service budgeted for inclusion in the 2014 revenue requirement includes principal and interest on the ISO outstanding Series 2009 bonds.

In 2009, the ISO issued debt to finance its new headquarters facility in Folsom, California. The 2009 fixed rate bonds have coupons ranging from 4.5 percent to 6.25 percent with a final term of 30 years. The table bellows shows the amortization of the 2009 bonds.

<b>Amortization schedule for 2009 bonds (\$ in millions)</b>	<b>Principle</b>	<b>Interest</b>	<b>Proceeds from debt service fund</b>	<b>Total</b>
2013	\$3.6	\$11.1	\$(0.5)	\$14.2
2014	3.7	11.0	(0.5)	14.2
2015	3.8	10.9	(0.5)	14.2
2016	4.0	10.7	(0.5)	14.2
Thereafter	181.5	153.0	(25.9)	308.6
<b>Total</b>	<b>\$196.6</b>	<b>\$196.7</b>	<b>\$(27.9)</b>	<b>\$365.4</b>

Collecting for bonds in the revenue requirement occurs the year before making the payments. Principle payments occur in February and semiannual interest payments occur in February and August.

As of July 2013, \$193 million of principal remains outstanding on the 2009 bond issuance. With lower interest rates leading into 2013, the ISO Board approved a management recommendation in July 2013 to conduct an advance refunding bond issue in early August 2013. The goal is to lock in lower interest rate levels that would provide a savings of a minimum of \$1 million savings over the remaining 26 years of the bonds. However, current interest levels have made the refunding undesirable and the refunding is currently on hold.

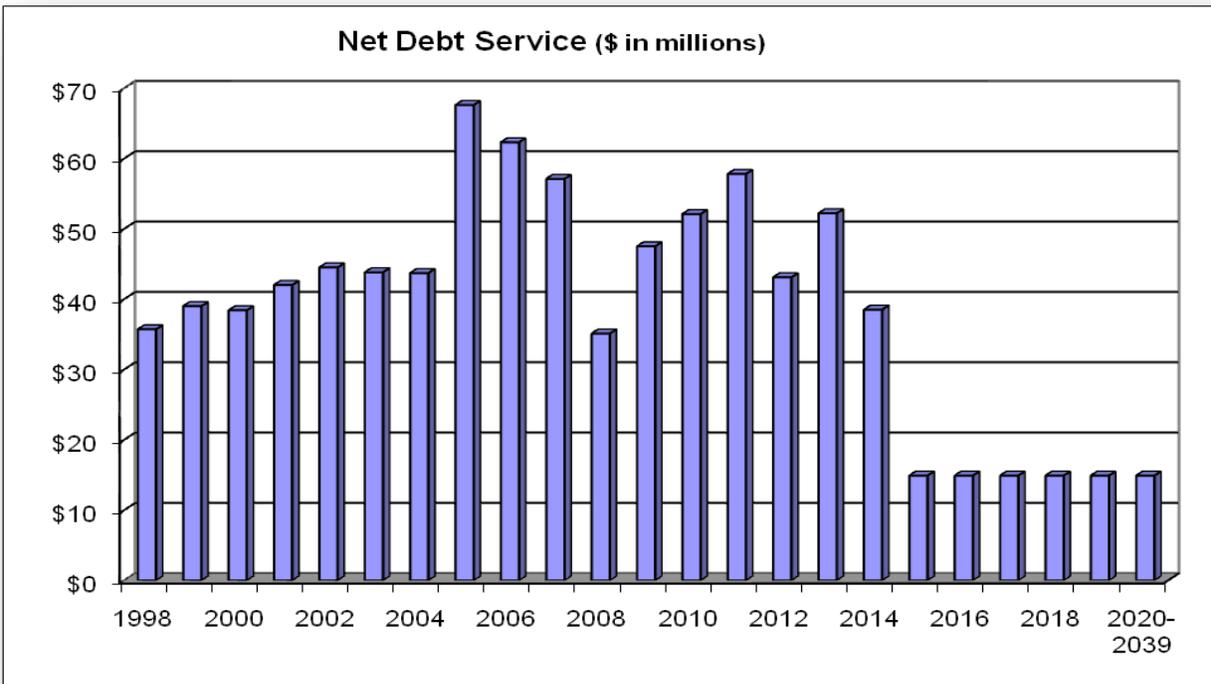
The 2008 bonds, which bear interest at 5 percent, will be retired in full by February 2014, as summarized below. The final payment was included in the 2013 revenue requirement.

<b>Amortization schedule for 2008 bonds (\$ in millions)</b>	<b>Principle</b>	<b>Interest</b>	<b>Proceeds from debt service fund</b>	<b>Total</b>
2013	\$36.0	\$3.0	\$(0.7)	\$38.3
2014	23.5	1.2	(20.4)	4.3
<b>Total</b>	<b>\$59.5</b>	<b>\$4.2</b>	<b>\$(21.1)</b>	<b>\$42.6</b>

A summary of the debt service components contained in the revenue requirement is as follows.

<b>Debt Service (\$ in millions)</b>	<b>2014 Budget</b>	<b>2013 Budget</b>	<b>Change</b>
Principle payments on 2008A (2013 only) and 2009A bonds	\$3.8	\$27.0	(\$23.2)
Interest payments	10.9	12.3	(1.4)
Less amounts from debt service and capital interest reserve	(0.5)	(20.9)	20.4
Debt service collection leveling adjustment	-	15.6	(15.6)
<b>Subtotal</b>	<b>14.2</b>	<b>34.0</b>	<b>(19.8)</b>
25% Debt Service Reserve	3.6	8.5	(4.9)
<b>Total</b>	<b>\$17.8</b>	<b>\$42.5</b>	<b>\$(24.7)</b>

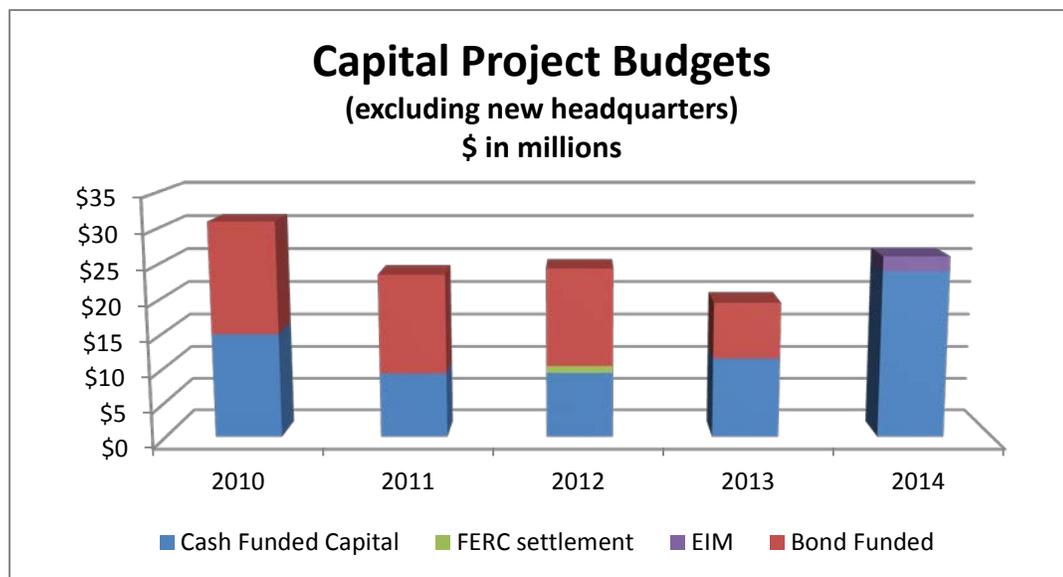
The chart below shows net debt service from ISO inception.



## VII. CAPITAL / PROJECT BUDGET

The 2014 capital and project budget of up to \$24.0 million will fund projects as detailed on the following pages. The cash funded capital collected via the revenue requirement is \$25.0 million with the excess after utilization of the remaining bond proceeds will be used to fund future projects. The ISO will continue assessing its capital spending needs over the coming months.

The ISO has entered into an implementation agreement with PacifiCorp to enable PacifiCorp to participate in the energy imbalance market. FERC approved the agreement on July 1 and it provides that PacifiCorp will reimburse the ISO \$2.1 million for implementation costs based on achieving specified milestones. The energy imbalance market go live is set for October 2014.



The 2013 budget of \$23.1 million included an increase approved by the Board of \$3.6 million to cover \$2.6 million of hardware costs and \$1.0 million for improvements to the market surveillance systems. FERC required the improvements to market surveillance systems in conjunction with the receipt of \$1.0 million from a FERC settlement with a market participant.

### Capital / Project Budget Development Process

The 2014 project prioritization process runs from August through November 2013. The program office collaborates with the internal business units and maintains a list of projects throughout the year. The list aligns with the three-year strategic plan, the information technology roadmap, and the ISO market initiatives roadmap. On a periodic basis, strategic initiative owners and managers review the progress of active projects, identify issues and risks, and propose changes to the master project listing.

During the budgeting process, combining the information technology roadmap items with the strategic projects scheduled for the following year result in an initial master listing. A prioritization and ranking process determines preliminary project cut off when the project list exceeds the available budget. The following chart shows the criteria for ranking projects. The ISO website contains the full ranking criteria schedule.

Ranking Criteria		
Strategy	Strategic Initiative	Weight
Ensure continued reliability during grid transformation (capacity on the system)	Evolve the market Markets and performance (MAP) Develop infrastructure and tools	10%
Strengthen California’s global leadership commitment to renewable, responsible and reliable energy (regulatory coordination)	Advance state energy and environmental initiatives	10%
Explore opportunities for regional collaboration and technological innovation	Incorporate renewable resources Improve forecasting capabilities MAP	10%
Grid reliability	Enhances reliability of the grid by addressing and existing or potential operational issue	15%
Market Efficiency	Addresses a current or potential market inefficiency	10%
Contributes to increased customer service		10%
Compliance	Establish a culture of compliance	15%
Development of staff / talent pipeline	People strategies	5%
ISO process improvement	Process and quality	10%
Information Technology system qualities	System and tools	5%

The following are the business and financial case criteria:

- Does the project require market participant development efforts?
- Does the project deliver cost savings?
- How much are the project implementation costs?
- Does the project reduce operations and maintenance costs?
- Does the project mitigate any corporate risk?
- A factor for executive discretion is included.

## Proposed Project List

The current project list now exceeds the proposed funding level but will be prioritized and brought within the proposed budget level. The following listing provides an indication of the projects proposed for initiation during 2014. The final prioritized listing will be in the final budget presentation. This year’s list includes the following five areas and initiatives:

- enhancement of markets and performance
- enhancement of the technology foundation
- evolve the market and infrastructure
- grid evolution readiness
- operational excellence

- information technology
- other costs.

Before funding approval, a review is made of all projects on the final 2014, including further consideration of project need, a cost-benefit analysis and completion of a project plan. Specifically, the Corporate Management Committee, made up of the Chief Executive Officer, Chief Financial Officer and General Counsel, reviews and approves all projects considered for funding in 2014. The 2014 priorities may change depending on developments during the remainder of 2013.

<b>Proposed Projects for 2014</b>	<b>Amount</b>
<b>Enhancement of Markets and Performance</b>	
FERC Order 764 – 15 minute market	large
Operations enhancements 2014	large
Baseline energy imbalance market	large
Ex-Post pricing	medium
Market design comprehensive review	medium
Full network model	medium
Market validation tools (Phase 2 and 3) and data mart	medium
Market services enhancements 2014	medium
Enhanced generation contingency model for markets	medium
Behind-the-meter model enhancements	medium
Integrated optimal outage coordination	small
Decoupling of short term unit commitment extended to 9 to 10 hours	small
Enhance multi-stage generation (MSG) to accommodate lack of bids on actual output configuration	small
Market enhancements to eliminate exceptional dispatches operations situational awareness tools	small
Black start phase 2	small
Remedial action schemas (RAS) special protection system (SPS) modeling in market applications	small
Advanced hot-start per iteration within the same run	small
Mitigate pricing impact of multiple overloaded transmission constraints	small
Constraint parameter enhancement	small
<b>Total</b>	<b>\$11,150,000</b>
<b>Enhancement of the Technology Foundation</b>	
Operational meter analysis and reporting new features, corrections, and automation	large
Integration layer and improvements	medium
SharePoint records lifecycle software phase 2	medium
Framework implementations, for various systems	small
Replacing and/or consolidating database software	small
CAISO.COM mobile & web improvements	small

<b>Proposed Projects for 2014</b>	<b>Amount</b>
Service request management replacement	small
Alerts, warnings, and emergencies (AWE) messaging refresh	small
Market participant portal (MPP) redesign	small
Logging system replacement	small
Corporate systems enhancements project	small
Corporate & operations training improvements	small
<b>Total</b>	<b>\$4,775,000</b>
<b>Evolve the Market and Infrastructure</b>	
Flexible ramping (market product) / simultaneous residual unit commitment and integrated forward market	large
Flexible resource adequacy criteria (Flexible resource adequacy criteria (FRAC) Must offer obligation (MOO)	medium
Reliability services auction	medium
Subset of hours for all resources (includes updates to exceptional dispatch)	small
Standard capacity product phase 3	small
Marginal loss surplus allocation	small
Reliability demand response product (RDRP) FERC Oder 745 Compliance	small
Six smart grid projects at \$100,000 each	small
<b>Total</b>	<b>\$5,100,000</b>
<b>Grid Evolution Readiness</b>	
Technology pilots and demonstrations and pilot process website	small
Synchrophasor	small
Expand metering and telemetry options	small
Flexible ramp forecasting tools	small
<b>Total</b>	<b>\$900,000</b>
<b>Operational Excellence</b>	
Enterprise model management systems (EMMS) Phase 3	large
Energy management system (EMS) automatic generation Control (AGC) state estimator enhancements	medium
Expose commitment reason to market participant	medium
Market tools enhancements phase 2	small
Exceptional dispatch 3.0 phase 2	small
Real time contingency analysis (RTCA) in the market & energy management system (EMS) & system operating limits phase 2	small
Compensating injections enhancement	small
Voltage stability analysis (VSA) to generate alerts to identify potential angle violation following a contingency	small
Load distribution factor (LDF) enhancement	small
Forecast optimizer Phase 1	small

<b>Proposed Projects for 2014</b>	<b>Amount</b>
Incorporate the market services work a rounds, to become part of Siemens final design to improve performance and support.	small
Qualifying facility load following initiative	small
Upgrade Web-SDK along with save sets feature	small
Compare and validate projected market results to state estimator results	small
Renewable tools for renewables desk	small
Three operational enhancements at \$100,000 each	small
<b>Total</b>	<b>\$6,650,000</b>
<b>Information Technology</b>	
2014 hardware & software purchases	large
Network and security improvements	large
Upgrades to Oracle business suite software – human resources, finance, procurement and market clearing	large
2 information technology projects at \$100,000 each	200,000
<b>Total</b>	<b>\$6,500,000</b>
<b>Other Costs</b>	
Program Office project management costs	large
Voice of the customer – 2 pilot projects	small
Renewable integration study work and annual flexibility assessment	small
Annual request for facilities costs	small
<b>Total</b>	<b>\$1,400,000</b>
<b>Total Proposed Projects for 2014</b>	<b>\$36,475,000</b>

Note: The costs of the individual projects are not shown, but are categorized by size as follows: small projects under \$500,000, medium projects from \$500,000 to \$1 million, and large projects over \$1 million. The actual projects completed during 2014 will vary, including the potential addition of projects not on this list, the deferral of projects on this list to future years, or the elimination of projects on this list if no longer necessary.

## VIII. MISCELLANEOUS REVENUE

Miscellaneous revenue for 2014 is budgeted at \$7.3 million, \$600,000 lower than 2013 primarily due to lower intermittent resource forecasting fees, lower billings for interconnection studies and a drop in miscellaneous fees. Activity in the energy imbalance market could generate fees of \$350,000. The details of this category are as follows:

Miscellaneous Revenue (\$ in millions)	2013 Budget	2013 Budget	Change
Interest earnings	\$1.8	\$1.8	\$ -
California-Oregon intertie path operator fees	2.0	2.0	-
Large generation interconnection fees	1.8	2.0	(0.2)
Intermittent resource (wind and solar) forecasting fees	1.2	1.6	(0.4)
Energy imbalance market fees	0.3	-	0.3
Scheduling Coordinator application and training fees, summer reliability program fees and other fees	0.2	0.5	(0.3)
<b>Total</b>	<b>\$7.3</b>	<b>\$7.9</b>	<b>\$(0.6)</b>

## IX. RESERVE CREDIT FROM 2013

The operating reserve credit is a reduction or offset to the ISO revenue requirement for 2014. In any year that the ISO operating reserve account exceeds 15 percent of the prospective year's O&M budget, the excess goes toward reducing the revenue requirement for the coming year. For 2014, the ISO forecasts a credit from the operating reserve account of \$1.0 million. A summary is below.

Reserve Credit from prior year (\$ in millions)	2014 Budget	2013 Budget	Change
Increase (decrease) in 15% reserve for O&M budget	\$(0.1)	\$ -	\$(0.1)
25% debt service collection from prior year	8.5	9.2	(0.7)
Collection of additional two weeks of GMC revenues from implementation of weekly market clearing	-	9.8	(9.8)
Reverse credit taken in prior years (2010 to 2013) for amortization of bond premium	(7.1)	-	(7.1)
Accrual of interest expense on generator fine refund liability	(2.2)	-	(2.2)
True-up of actual to forecast revenues and expenses	1.9	6.5	(4.6)
<b>Total</b>	<b>\$1.0</b>	<b>\$25.5</b>	<b>\$(24.5)</b>

## X. UNBUNDLED GRID MANAGEMENT CHARGE CALCULATIONS

The ISO recovers its costs through separate grid management charges to market participants. The ISO and stakeholders developed a new rate design for 2012, which the Board and FERC approved in 2011. The new design provides for three service categories and five associated fees and charges. The ISO derives the rate by dividing the recoverable costs for the category by the estimated billing determinants.

### Components of GMC and billing determinants

The three service categories, five associated fees and charges, and their billing determinants are as follows:

Type	Bill Determinant	Charge Code
<b>Service Categories</b>		
Market Service Charge	Awards in MWh or MW of supply and demand excluding Transmission Ownership Rights (TORs)	4560
Systems Operations Charge	Metered flows in MWh of supply and demand in the ISO balancing authority with the following two exceptions, TORs and qualifying grandfathered supply contracts	4561
CRR Service Charge	MWh of congestion	4562
<b>Fees</b>		
Bid segment fees	Number of bid segments in the ISO market for supply or demand	4515
Inter-SC Trades fee	Number of trades by scheduling coordinator (SC)	4512
SCID fee	Monthly charge if statement produced for an SC	4575
TOR fee	Minimum of metered supply or demand in MWh on TORs	4560
CRR auction bid fees	Number of accepted bids in CRR auctions	4516

### Rate Calculation

There are seven steps to calculate rates, as noted below:

1. estimate billing determinant volumes for fees and charges;
2. multiply volumes by rates to derive revenues for individual fees and charges;
3. allocate over or under collection of GMC revenue to the three service categories
4. allocate remaining revenue requirement into three service categories;
5. deduct fee and charge revenue from associated service category costs;
6. estimate billing determinant volumes for three service categories;
7. deduct grandfathered supply volumes from system operations charge; and
8. divide residual revenue requirement from Step 4 by adjusted billing determinant volumes from Step 6 to derive individual service category rates.

### Calculation of Fee Revenue

Fee or Charge	Rate	Estimated Volumes	Estimated 2014 Revenue
Bid segment fee	\$0.005	43,611,306	\$218,057
Inter-SC trade fee	1.00	2,763,220	2,763,220
SCID fee (monthly)	1,000	193	2,317,849
TOR fee	0.27	3,561,848	961,699
CRR auction bid fee	1.00	272,591	272,591
<b>Total</b>			<b>\$6,533,416</b>

### Calculation of Service Category Rates

Component	Market Services	System Operations	CRR Services	Total
<b>Allocation of revenue requirement</b>				
Total revenue requirement				\$197,989,189
Adjust for over/under collection of 2012 rates	\$756,736	\$(101,903)	\$(43,670)	611,163
Remaining to allocate				197,378,027
Percentages	27%	69%	4%	100%
% allocation of costs	53,292,067	13,190,838	7,895,121	197,378,027
Combined costs	\$54,048,803	\$136,088,935	\$7,851,451	\$197,989,189
<b>Deduct fee revenue</b>				
Bid segment fees	218,057	-	-	218,057
Inter-SC trade fees	2,763,220	-	-	2,763,220
SCID fees	2,317,849	-	-	2,317,849
TOR fees	-	961,699	-	961,699
CRR auction bid fees	-	-	272,591	272,591
<b>Total fees</b>	<b>5,299,126</b>	<b>961,699</b>	<b>272,591</b>	<b>6,533,416</b>
<b>Calculation of recoverable costs</b>				
<b>Costs less fees</b>	<b>\$48,749,677</b>	<b>\$135,127,236</b>	<b>\$7,578,860</b>	<b>\$191,455,773</b>
<b>Estimated volumes</b>				
Volumes	561,964,892	481,469,081	664,206,307	
<b>Deduct exceptions</b>				
Less grandfathered supply	-	7,227,000	-	
<b>Adjusted volumes</b>	<b>561,961,892</b>	<b>474,242,081</b>	<b>664,206,307</b>	
<b>Resulting rates</b>	<b>\$0.0867</b>	<b>\$0.2849</b>	<b>\$0.0114</b>	

## Summary of GMC Costs, Volumes and Rates for 2014

### Net Revenue Requirement, Volume Forecast and Rate by Service Category (\$ in millions, volumes in thousands and rates in \$ per unit)

Charge Code	Service Category or Fee	2014 Budget	2014 volumes	2014 rates
4560	Market Service Charge	\$48.75	561,965	\$0.867
4561	Systems Operations Charge	135.13	474,272	0.2849
4562	CRR Services Charge	7.58	664,206	0.0114
4515	Bid segment fees	0.22	43,611	0.005
4512	Inter-SC trades fees	2.76	2,763	1.00
4575	SCID fees	2.32	193	1,000
4560	TOR fees	0.96	3,562	0.27
4516	CRR auction bid fees	0.27	273	1.00
<b>Total</b>		<b>\$198.0</b>		

### Comparison of Net Revenue Requirements by Service Category (\$ in millions)

Charge Code	Service Category or Fee	2014 Budget	2013 Budget	\$ Variance	% change
4560	Market Service Charge	\$48375	\$47.89	\$0.89	1.9%
4561	Systems Operations Charge	135.13	134.27	0.86	0.6%
4562	CRR Services Charge	7.58	7.65	(0.07)	(0.9)%
4515	Bid segment fees	0.22	0.21	0.01	4.8%
4512	Inter-SC trades fees	2.76	2.78	(0.02)	(0.7)%
4575	SCID fees	2.32	2.08	0.24	11.5%
4560	TOR fees	0.96	0.99	(0.03)	(3.0)%
4516	CRR auction bid fees	0.27	0.19	0.08	42.1%
<b>Total</b>		<b>\$197.99</b>	<b>\$196.03</b>	<b>\$1.96</b>	<b>1.0%</b>

### Comparison of rates (\$ per unit)

Charge Code	Service Category or Fee	2014 Rate	2013 Rate	\$ Variance	comments
4560	Market Service Charge	\$0.867	\$0.0931	\$(0.0064)	9% higher volumes projected for 2014
4561	Systems Operations Charge	0.2849	0.2872	(0.0023)	Decrease less than 1%
4562	CRR Services Charge	0.0114	0.0135	(0.0021)	17% higher volumes projected for 2014

The rates for bid segment fees, inter-SC trade fees, SCID fees, TOR fees and CRR auction bid fees are fixed.