

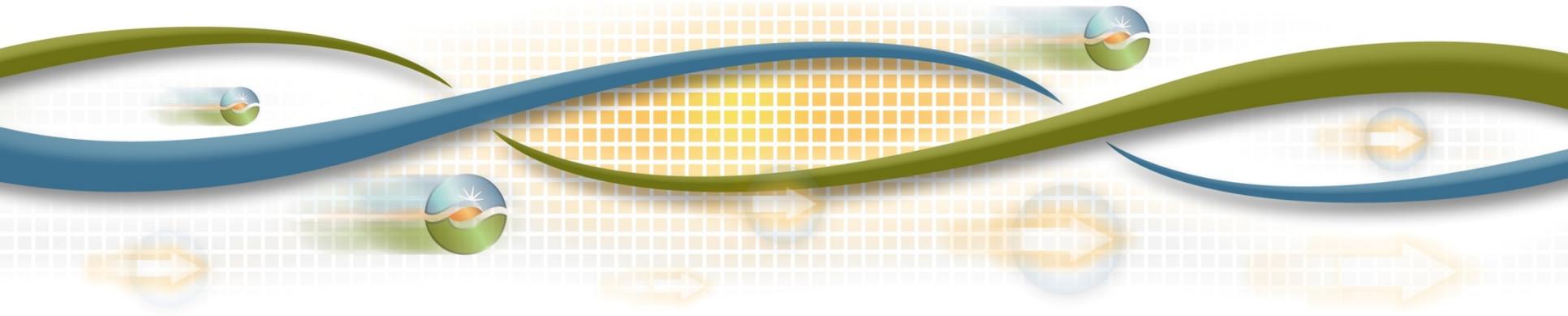


California ISO
Shaping a Renewed Future

Briefing on 2015 GMC Update

Mike Epstein
Director Financial Planning

Stakeholder meeting
April 17, 2014



Agenda

TOPIC

PRESENTER

Timeline and GMC update components

Michael Epstein

Overview of Activity Based Costing (ABC)

Tricia Johnstone

Updated cost of service study

Michael Epstein

Revised cost category percentages

Michael Epstein

**Updated Energy Imbalance Market (EIM)
cost of service study**

Michael Epstein

**Revised Transmission Ownership Rights
(TOR) fee**

Michael Epstein

**Proposed revenue requirement cap and
extension**

Michael Epstein

Calendar and next steps

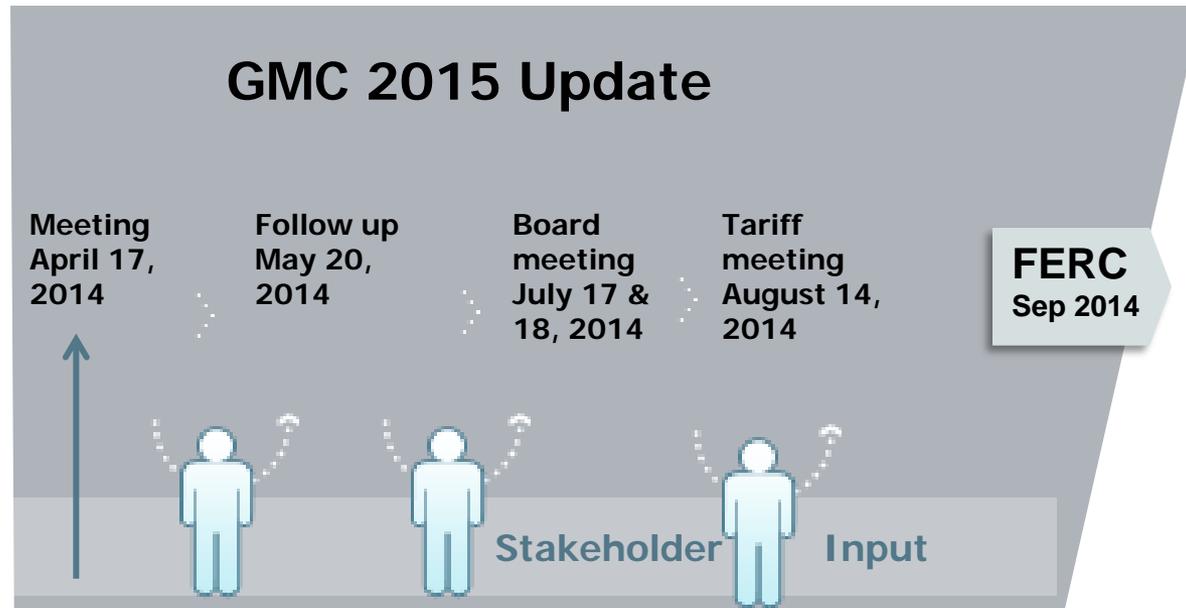
Michael Epstein

Stakeholder feedback and discussion

Group

Timeline and GMC update components

Timeline for 2015 GMC update



We are here

The 2015 GMC update process extends through September.

Current Event	Date
Discussion of proposal with stakeholders	April 17, 2014

Upcoming Events	Date
Follow up stakeholder meeting if necessary	May 20, 2014
Board meeting to consider proposal	July 17-18, 2014
Stakeholder tariff meeting	August 17, 2014
GMC tariff filing with FERC	September 2014

2015 GMC Update Components

- No change in basic structure
 - Three buckets: Market Services, System Operations and Congestion Revenue Rights (CRR) services
 - Four fixed fees: Bid segment, Inter-SC trade, SCID and CRR auction bid
 - Two charges based on updated ABC analysis: EIM and TOR
- Update cost of service percentages to apply to
 - Same process as done in 2012
 - revenue requirement allocation to three buckets
 - EIM administrative charge
 - TOR charges
- New revenue requirement cap and extension period

Updating Cost of Service Study

- Rates calculated by multiplying overall revenue requirement by percentages to allocate costs to the three buckets
 - Market Services
 - System Operations
 - CRR Services
- Rates determined by deducting fees and dividing by estimated volumes
- Cost of service study undertaken to derive the three percentages

The ISO's Revenue Requirement for 2013

Revenue requirement (\$ in millions)	2013
O&M	\$162.9
Other revenue (Includes interest, PIRP forecast fees, interconnection study fees, etc.)	(7.9)
2008 bond debt service (with 25% reserve)	24.7
2009 bond debt service (with 25% reserve)	17.8
Cash funded capital	24.0
Operating reserve credit	(25.5)
Total	\$196.0
Transmission volume TWh	244.8
Pro forma bundled GMC (\$ per MWh)	\$0.80

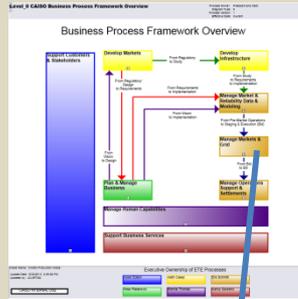
Calculation of GMC rates for 2013 (\$ in millions)

Component	Mkt Svc	Sys Ops	CRR	Total
Apply % to derive category costs	27%	69%	4%	100%
Revenue requirement	\$52.9	\$135.3	\$7.8	\$196.0
Less fees and charges: Bid segment	(0.2)			(0.2)
Inter-SC Trade	(2.8)			(2.8)
SCID	(2.1)			(2.1)
TOR charges		(1.0)		(1.0)
CRR Auction Bid			(0.2)	(0.2)
Total fees and charges	(5.1)	(1.0)	(0.2)	(6.3)
Recoverable costs	\$47.8	\$134.3	\$7.6	\$189.7
Volumes TWh	514.2	474.7	566.6	
Less grandfathered contracts	-	7.2	-	
Net volumes	514.2	467.5	566.6	
Actual Rates for 2013	\$0.093	\$0.287	\$0.013	

Overview of ABC Processes

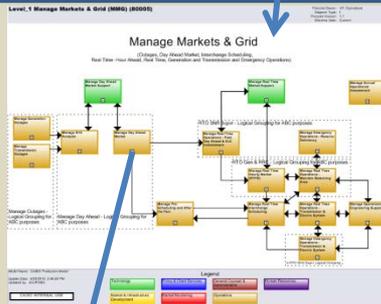
What is the Business Process Framework?

- High level view of ISO activities
 - Groups tactical core processes into strategic groupings
 - Illustrates high-level information streams
- Diagrams provide a visual representation of the work
- Demonstrates flow of 'work' through different business processes and business units



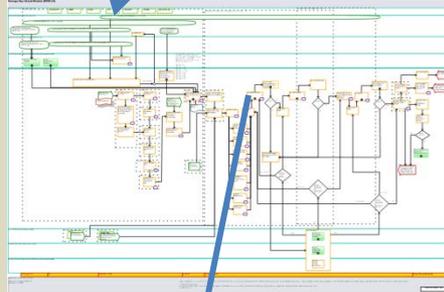
Level 0

End-to-End Business Activities View



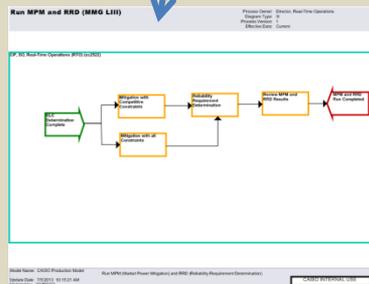
Level I

“Strategic” – Processes



Level II

“Tactical” – Core Business Processes



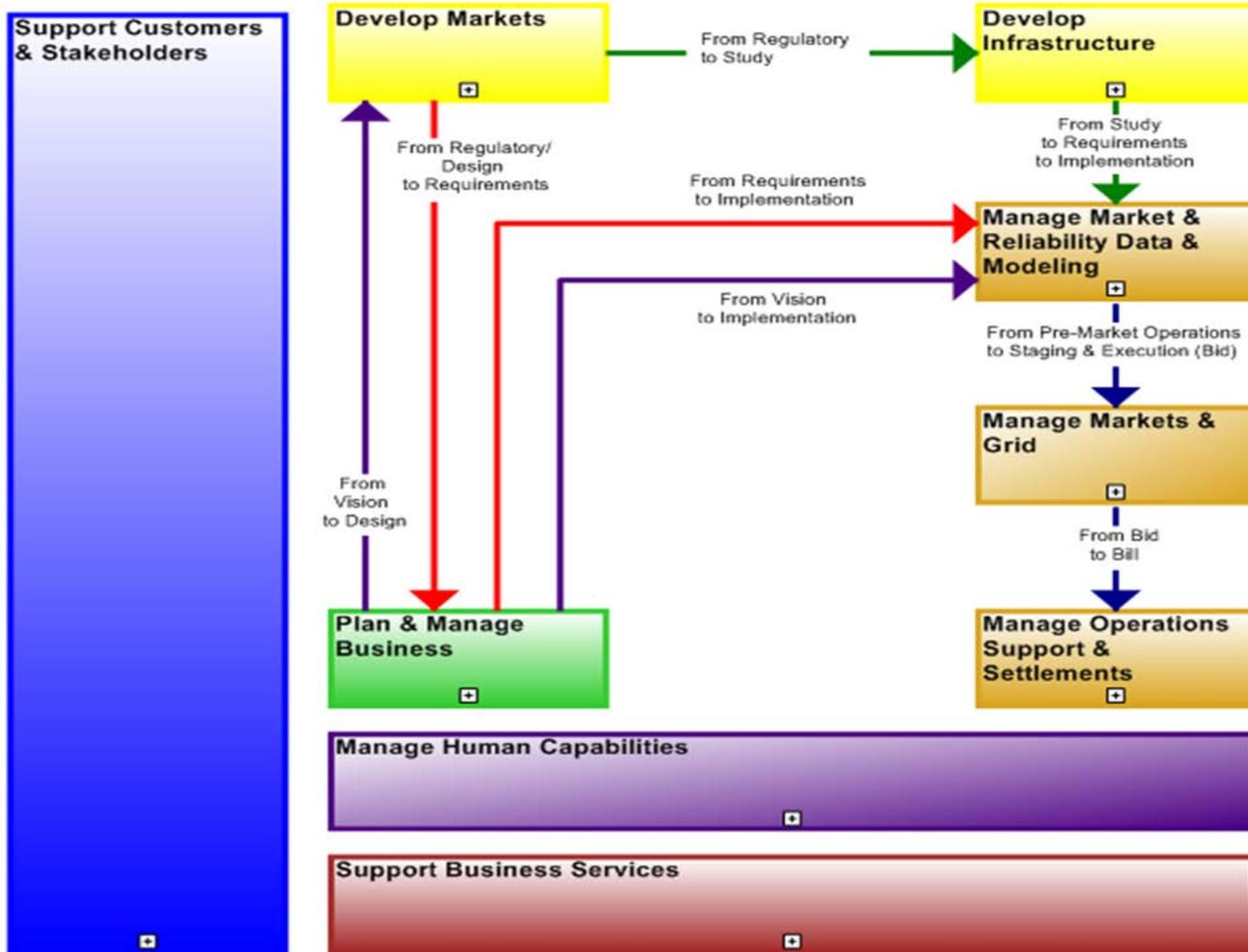
Level III

“Procedural” – Task Level Activities

ABC data is collected for Level I and II

ISO Mapping of Core Business Processes

- 9 High level activities
- 6 direct and 3 support
- Time tracked at level 2 for 154 activities
- Completed in 2011



Level 1 Direct Activities with example of major level 2 processes

(see detail in exhibit 1)

- Develop infrastructure (80001) – transmission planning - 9 level 2 activities
- Develop markets (80002) – design and implement wholesale market - 7 level 2 activities
- Manage market and reliability data and modeling (80004) - full network model – 19 level 2 activities
- Operate market and grid (80005) – system operations, scheduling and outages – 10 level 2 activities
- Manage operations support and settlements (80007) – metering, settlements and market quality – 15 level 2 activities
- Support customers and stakeholders (800010) – client and external relations – 8 level 2 activities

Level 1 Support Activities with example of major level 2 processes

(see detail in exhibit 1)

- Manage human capabilities (80003) – human resources – 8 level 2 activities
- Plan and manage business (80008) – CEO, planning and governance – 16 level 2 activities
- Support business services (80009) – IT, facilities, compliance and legal – 42 level 2 activities

Updated cost of service study

Mapping Activities and Software To Service Categories

- Mapped activities and software to four categories:
 - Market services
 - System Operations
 - CRR services
 - Indirect costs – no distinguishable attribute to either specific category
- Used following rules:
 - 100% or 0% if entirely in one category or not
 - 50% / 50% if supports both market services and system operations
 - or its split after 10% went to CRRs thus 45% / 45%
 - 80% / 20% if partially in one activity or the other

Cost of Service Update

- Same process as 2012
- Break 2013 O&M into payroll and non-payroll costs
- 2013 hours used to allocate cost center \$s to activities
 - 6 direct activities broken down into level 2 activities
 - 3 support activities remain at level 1
 - Budget allocated by multiplying % of department time in each level 1 or level 2 activity
- Resulting activity costs then mapped to 3 service categories or indirect
 - Direct level 2 activities
 - Support level 1 activities
- Mapped non-payroll costs to 3 service categories or indirect

Breakdown of O&M Costs (amounts in millions)

	Total	CEO	MID	Tech	Ops	GCAS	MQRI	PCS
Develop infrastructure	\$ 10.0		\$ 9.7			\$ 0.1	\$ 0.2	
Develop markets	5.8		3.3		\$ 0.1	0.4	2.0	
Manage market and reliability data and modeling	10.5		0.4	\$ 1.3	7.5	0.6	0.3	\$ 0.4
Manage market and grid	25.8			0.8	24.7		0.3	
Manage operations support and settlements	7.1			0.2	5.5	0.2	1.2	
Support customers and stakeholders	9.2			0.1		0.1		9.0
Total direct	68.4		13.4	2.4	37.8	1.4	4.0	9.4
Manage human capabilities	4.9					4.9		
Plan and manage business	10.0	\$ 1.9		4.9	1.1	1.9	0.2	
Support business services	49.8	2.8	0.5	31.0	3.1	11.2	0.7	0.5
Total Indirect	64.7	4.7	0.5	35.9	4.2	18.0	0.9	0.5
Total ABC activities	133.1	4.7	13.9	38.3	42.0	19.4	4.9	9.9
Total non-payroll	29.8			20.3	0.7	7.8	1.0	
Total O&M costs	\$162.9	\$ 4.7	\$13.9	\$ 58.6	\$ 42.7	\$ 27.2	\$ 5.9	\$ 9.9

Cost of Service Update

Divisional abbreviations used in chart on preceding page

- CEO – Chief executive officer
- MID – Market and infrastructure development
- Tech – Technology
- Ops – Operations
- GCAS – General counsel and administrative services
- MQRI – Market quality and renewable integration
- PCS – Policy and client services

Summary of Direct Activities (amounts in thousands)

components	%	Total budget	Market Services	System operations	CRR services	Indirect
Develop infrastructure	15%	\$ 9,993		\$ 9,615		\$ 378
Develop markets	8%	5,799	\$ 3,846	829		1,124
Manage market and reliability data and modeling	15%	10,476	2,229	7,161	\$ 633	453
Manage market and grid	39%	25,777	4,473	21,304		
Manage operations support and settlements	10%	7,133	2,315	3,595	212	1,011
Support customers and stakeholders	13%	9,186		8		9,178
Total direct	100%	\$ 68,364	\$ 12,863	\$ 42,512	\$ 845	\$ 12,144

Cost of Service Update

- Mapped software to 3 service categories or indirect
 - Allocated 2008 debt service based on mapping
- Mapped remaining revenue requirement components to 3 service categories or indirect
 - 2009 bond debt service and cash funded capital
 - Other revenue and
 - Operating reserve credit
- Aggregated amounts in 3 service categories and indirect
- Allocated Indirect costs based on %s of direct costs

Summary of Cost of Service Study (amounts in thousands)

Components	Total budget	Market Services	System operations	CRR services	Indirect
Direct O&M	\$ 68,364	\$ 12,863	\$ 42,512	\$ 845	\$ 12,144
Support O&M	64,686				64,686
Non-payroll O&M	29,857	614	1,759	53	27,431
2008 bonds	24,666	7,263	12,481	1,196	3,726
2009 bonds	17,847				17,847
Cash funded capital	24,000				24,000
Other income	(7,900)	(660)	(4,940)		(2,300)
Operating reserve credit	(25,492)	(1,647)	(2,897)	(284)	(20,664)
Total before indirect	196,028	18,433	48,915	1,810	126,870
Allocate indirect		34,255	88,809	3,806	(126,870)
Total	\$ 196,028	\$ 52,688	\$ 137,724	\$ 5,616	\$ -
Percentage		27%	70%	3%	

Proposed cost category percentages

Service Category	Current %'s (from 2010 study)	Proposed 2015 %'s (using 2013 study)	Change
Market Services	27%	27%	-
System Operations	69%	70%	1%
CRR Services	4%	3%	(1%)

Updated Energy Imbalance Market (EIM) cost of service study

Determine rates for calculation of EIM administrative Charge

- Started with 2013 revenue requirement broken down into 3 services using cost of service study %s of 27% for market services, 70% for system operations and 3% for CRR services.
- Applied fees to 3 service categories
 - Market Services - Bid segment, Inter-SC trades and SCID fees
 - System Operations – TORs fees
 - CRR services - CRR auction bid fees
- Divided resulting costs by estimated 2013 volumes to derive rates:
 - Market services = \$0.09;
 - System operations = \$0.29;
 - CRR services = \$0.001

Calculation of Rates Using Cost of Service Study

(\$ amounts in thousands)

components	Total budget	Market Services	System operations	CRR services
Apply updated % allocation		27%	70%	3%
Revenue requirement	\$196,028	\$ 52,688	\$ 137,724	\$ 5,616
Less: Bid segment fees	(203)	(203)		
Inter-SC trade fees	(2,781)	(2,781)		
SCID monthly fees	(2,079)	(2,079)		
TOR charges	(993)		(993)	
CRR auction bid fees	(186)			(186)
Total fees	(6,242)	(5,063)	(993)	(186)
Total	\$189,786	\$ 47,625	\$ 136,731	\$ 5,430
Estimated volumes in MW or MWh		514,168	467,533	566,649
Rate per MW or MWh rounded		\$0.09	\$0.29	\$0.01

EIM administrative charge rate (EIM rate)

- EIM rate is the aggregate of real time (RT) share of
 - Market Services: \$0.09 and System Operations: \$0.29
- Break down Market Services and System Operations into their RT components: RT market and RT dispatch
- RT % equals % of RT \$'s over total category \$s:
 - Market services RT market: $\$28.9\text{M} / \$47.6\text{M} = 61\%$
 - System operations RT dispatch: $\$60.9\text{M} / \$136.7\text{M} = 45\%$
- RT rates equal RT %'s times category rates
 - RT market (market services): $61\% \times \$0.09 = \0.06
 - RT dispatch (system operations): $45\% \times \$0.29 = \0.13
- Aggregate RT rates to derive EIM rate
 - \$0.06 RT market + \$0.13 RT dispatch
 - Equals EIM rate of \$0.19

Breakdown of Market Services

(\$ amount in thousands)

components	Market Services	Real Time Market	Day Ahead Market
Direct O&M	\$12,863	\$8,075	\$4,788
Non-payroll O&M	614	553	61
Debt service 2008 bonds	7,263	3,152	4,111
Other income	(660)	(544)	(116)
Operating reserve credit	(1,647)	(708)	(939)
Allocate indirect	34,255	19,525	14,730
Total before fees	52,688	30,053	22,635
Less Fees and charges (bid segment, Inter-SC trade and SCID)	(5,063)	(1,142)	(3,921)
Net revenue requirement	\$47,625	\$28,911	\$18,714
Percentage	100%	61%	39%
Rate	\$0.09	\$0.06	

Breakdown of System Operations

(\$ amount in thousands)

components	System Operations	Real Time Dispatch	Balancing Area Services
Direct O&M	\$42,512	\$14,093	\$28,419
Non-payroll O&M	1,759	1,653	106
Debt service 2008 bonds	12,481	10,555	1,926
Other income	(4,940)	(1,878)	(3,062)
Operating reserve credit	(2,897)	(2,462)	(435)
Allocate indirect	88,809	39,964	48,845
Total before fees	137,724	61,925	75,799
Less fees and charges (TORs)	(993)	(993)	
Net revenue requirement	\$136,731	\$60,932	\$75,799
Percentage	100%	45%	55%
Rate	\$0.29	\$0.13	

Proposed EIM Administrative Charge – based on updated cost of service analysis

EIM Administrative Charge	Total	Real time market component	Real Time Dispatch component
Proposed EIM administrative charge from 2013 study	\$0.19	\$0.06	\$0.13
Current EIM administrative charge from 2010 study	\$0.19	\$0.06	\$0.13

Updated Transmission Ownership Rights (TOR) charge

TOR charge rate

- TOR involves 9 direct level 2 activities in system operations
- Aggregate direct system operations level 2 \$'s and allocate system operations indirect \$'s by share of direct \$s
 - $\$16\text{M} / \$49\text{M} = 32\% \times \$89\text{M} = \$28\text{M}$ indirect + 16M direct = $\$44\text{M}$ total
- Determine TOR flows as % of total flows =
 - $8\text{M TWh} / 481\text{TWh} = 1.7\%$
- Multiply TOR % of flow times TOR related costs
 - $1.7\% \times \$44\text{M} = \0.7M = amount to collect
- Divide by 2013 budgeted flows to derive rate of \$0.24
 - $\$0.7\text{M} / 3.2 \text{ MWh} = \0.24 per MWh

	Current rate	Proposed rate	Change
TOR charge	\$0.27	\$0.24	(\$0.03)

Proposed revenue requirement cap and extension

Revenue Requirement Cap

Current revenue requirement cap is \$199M

- Expires at end of 2014

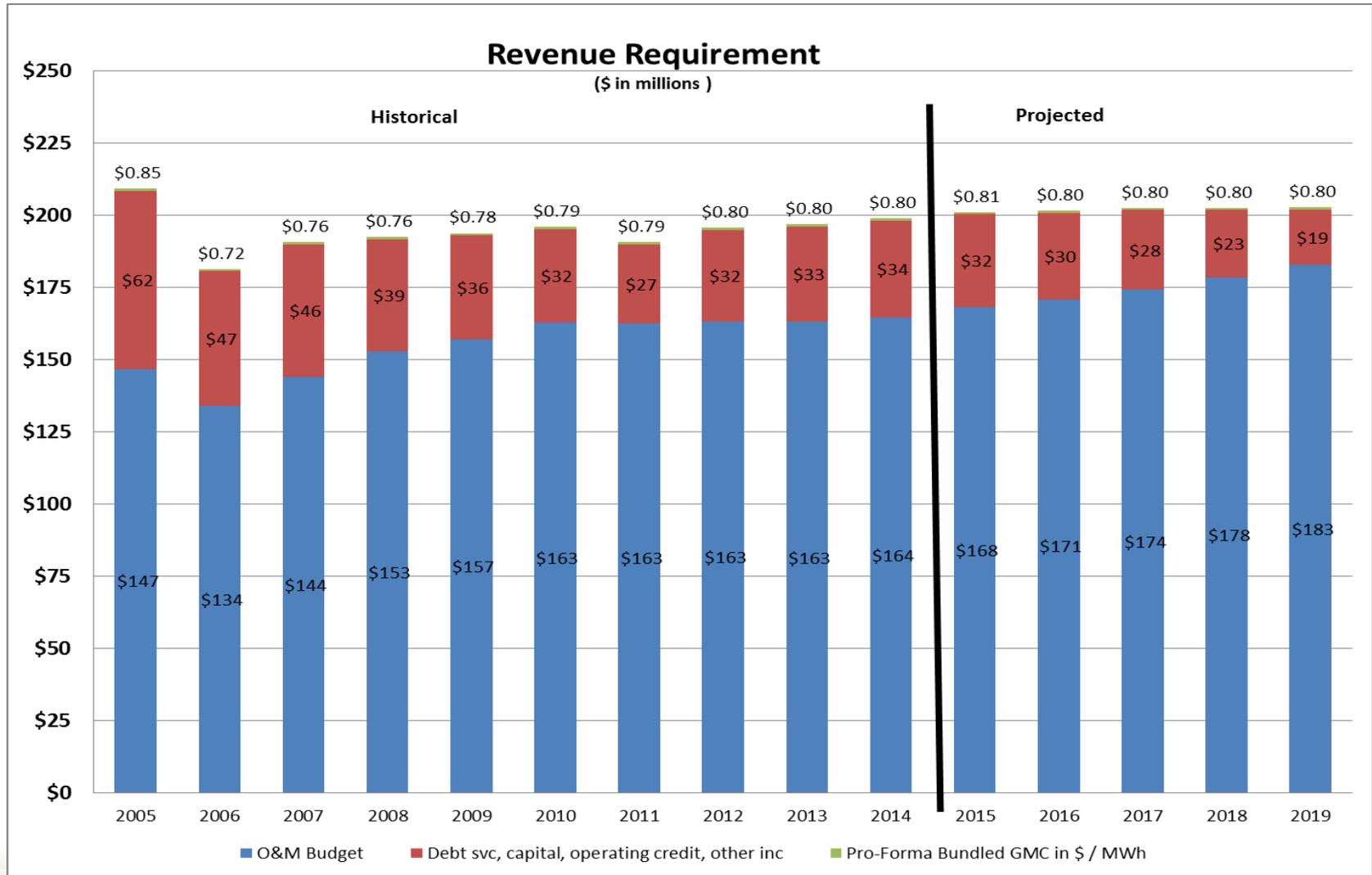
Propose increase in cap to \$202M with no expiration

- Only a 1% increase
- Less than a 0.6% annual increase since 2007 (7 years)

Update cost of service study on a 3 year cycle

- Change service category percentages, EIM rate and TOR rate as needed

Historical and Projected Revenue requirement



Calendar and next steps

Calendar of Events in 2014

Month	Upcoming Events
April 17	2015 GMC Update stakeholder meeting
May 20	2015 GMC Update stakeholder meeting if necessary
May 28-29	May Board meeting
June 17	2015 ISO budget stakeholder kickoff meeting
July 17-18	2015 GMC Update to Board for approval
August 14	2015 GMC Update stakeholder meeting on tariff language
September	2015 GMC Update filed with FERC
September 18-19	2015 ISO budget to Board for review and posting
October 17	2015 ISO budget stakeholder meeting
November 6-7	November board meeting
December 18-19	2015 ISO budget to Board for approval

Next Steps

Written stakeholder comments due to ISO	April 24
• Send to GMC@caiso.com	
ISO posts comments	April 25
ISO posts response to comments	May 1

Stakeholder feedback and discussion