1. Page CRO-6 of SCG-26 describes the forecast methodology used for the IT budget:
"The forecast methodology developed for IT costs is the base year (2016) recorded, plus adjustments. The primary reason for this approach is that history is not necessarily a good predictor of future needs. The pace of change in the technology industry continues to accelerate when compared to prior years. This is evidenced by growth in computing power at the hardware level as well as the number and diversity of applications at the software level. Factoring in emerging computing trends, such as cloud computing and the increasing commercialization of IT capabilities, required us to use current data and adjustments rather than relying on historical averages that do not include these types of trends in our computing environment."

a.   Considering the inapplicability of the historical data, does Sempra also use contemporary IT spending by comparable companies as a guide for developing its forecast? Please comment, and in particular, regarding what other companies or organizations are used for comparative purposes.

Utilities Response 1:

a. IT forecasts have been developed utilizing internal subject matter experts and professional experience. IT participates in a biennial benchmarking study sponsored by UNITE, which is a organization of electric and gas utilities. The results from the study provide IT with insights on its spending patterns in various technology towers (e.g., servers, storage, telecom) as compared to other UNITE members. These results were not directly used to develop GRC forecasts but do provide data points for IT to assess its spending levels.

2. SCG-26, page CRO-31, discusses the Software Defined Data Center Refresh 2019: "The forecast for the Software Defined Data Center Refresh 2019 project for 2017, 2018, and 2019 is $0, $0, and $10,905K, respectively. SoCalGas plans to build and place this project in-service by the test year. This project continues with the strategic approach from the SDDC project (discussed above) and will strengthen the data center foundation by integrating all of our current VMware environment with future technology investments. The integrated technologies will significantly increase efficiencies through automation of server provisioning, their network configurations, and firewall rules." Page CRO-6 describes the importance of IT Division support: "the level of support provided by the IT Division continues to grow as capital projects are implemented because projects that drive benefits and efficiencies within business units often create increased workload within the IT Division that would not have been reflected in our historical costs."

a.   Please explain how Sempra quantifies the efficiency gains associated with the Software Defined Data Center Refresh project -- or any similar IT project.

Utilities Response 2:

a. Where benefits have been identified as part of an approved business case, the IT organization looks to achieve those gains through the mechanisms noted (e.g., lower maintenance costs, efficiencies through automation) which typically result in lower operating costs.

For the Software Defined Data Center Refresh project, the following benefits are proposed and will be finalized and quantified (where applicable) as part of business case approval:
- o Virtualized IT services and automated operations management drive down capital and operational and maintenance costs
- o Policy-based configuration allows for delivery of workloads with resource levels automatically adjusted to meet continually changing business demands
- o Faster provisioning by automating business logic across compute, storage, firewall, and load-balancing components
- o Automated business continuity and virtualization-aware security combine to provide exceptional uptime and control over resource access and placement
- o Run both new and existing applications across multiple platforms including cloud, with instant delivery to any user on any desktop or mobile device
- o Faster and automated workload provisioning, including internal, external (AWS) provisioning and pre-programmed business logic across compute, storage and firewall and load-balancing services
- o Accelerates the use of pre-scripted maintenance moves to reduce planned and unplanned downtime risk
- o Improved security posture for East-West traffic via host-based security policies

3. SCG-26, page CRO-7, discusses the impacts of IT System Wide Outages, as a reason for using base year costing:
    "Another consideration for using a base year costs, plus adjustments, methodology is the fact that disruptive events have the potential to change planning assumptions dramatically. In 2017, several significant system-wide IT outages impacted business operations. The frequency and duration of these events resulted in forecasts in 2018 and 2019 to be based on the events occurring in 2017 rather than historical patterns. Table CRO-7 below includes the most significant events in 2017 to date, which resulted in widespread impacts to the business for several hours at a time, the most significant being a multiple day outage occurring on April 11, 2017. As a result of these outages, O&M and capital forecasts have taken into consideration the need to invest in infrastructure resources and equipment to provide a more reliable computing environment that our business clients have come to expect in order to meet their operational needs."

    a. Please list the top 5 outages for each of 2016 and 2013, analogous to Table CRO-7.

    b. The quoted passage uses the terms "business", "business clients," and "business operations." Please confirm that these terms refer exclusively to other business units of Sempra--rather than external business customers, or a combination of both.

Utilities Response 3:

    a. There were no outages in 2016. We are in the process of looking into the availability of outage data for 2013 and will supplement this response as necessary.

    b. The terms "business", "business clients," and "business operations" are primarily used to depict impacts to SoCalGas and SDG&E business units, but where outages impact external facing services (e.g., web portals, interactive voice response), external customers also could be impacted.

4. SCG-26, Table CRO-10, lists cost drivers for Non-Shared O&M:

TABLE CRO-10

Non-Shared O&M Cost Drivers – Infrastructure (000's)

Cost Driver Descriptions	TY 2019 Estimated
A. Operational Data Center/Infrastructure enhancements	2,700
B. Office 365 annual subscription	1,937
C. Incremental resources to support new functions/features implemented by capital projects	1,672
Total	**6,309**

a. For line B, Office 365 annual subscription, what is the base figure onto which the $1.937 million is incremental?

b. Is the $1.937 million a net figure, after adjustment(s) for any subscriptions discontinued as the result of moving to Office 365? Please explain.

Utilities Response 4:

a. This is a new expense for IT in 2019. Costs for Office 365 were funded by a capital project in prior years.

b. Yes, the $1.937 million is a net figure. The negotiation for Office 365 pricing took into account any licensing commitments of products covered by the Office 365 suite of tools. There are additional contracts with Microsoft for products outside of the Office 365 suite (e.g., servers, SQL Server, Sharepoint, security products).

5. Table CRO-15 lists Capital Expenditures Summary of Costs for IT.

TABLE CRO-15

Capital Expenditures Summary of Costs

INFORMATION TECHNOLOGY (In 2016 $)			
Categories of Management	Estimated 2017 (000s)	Estimated 2018 (000s)	Estimated 2019 (000s)
A. Controller, Reg Affrs, Legal	847	1,192	1,123
B. CS – Field	6,838	5,040	3,472
C. CS – Information	4,464	6,510	12,483
D. CS - Office Operations	13,190	12,412	23,663
E. Gas System Operations	3,401	3,806	4,771
F. Fleet Services	502	2,387	7,601
G. IT	50,879	73,648	81,227
H. Procurement	2,201	270	0
I. Gas System Integrity	34,970	38,000	36,223
J. HR	300	491	791
K. Supply Management	2,657	2,547	0
L. AM Infrastructure	0	1,768	4,815
M. Corporate	2,404	427	0
Total	**122,653**	**148,498**	**176,169**

a. Please provide a version of the table, with the same rows, but with figures for the years 2014 through 2016

Utilities Response 5:

a. Please see table below, which was taken from SoCalGas' 2016 GRC IT testimony (Ex. SCG-18-R, page CRO-20).

Utilities Response 5 Continued:

INFORMATION TECHNOLOGY			
Shown in Thousands of 2013 Dollars			
Categories of Management	Estimated 2014	Estimated 2015	Estimated 2016
A. Customer Services - Field & SoCalGas Meter Reading	3,096	437	7,217
B. Customer Services - Office Operations	17,610	14,645	6,967
D. Customer Services- Information	5,069	12,717	2,478
E. Gas Engineering	2,231	4,639	8,893
F. Environmental	524	259	0
G. Gas Distribution	23,446	16,052	11,868
H. Information Technology	48,697	68,673	67,103
J. Supply Management	3,724	2,493	269
Total	**104,397**	**119,915**	**104,795**

6. Pages CRO-19 and CRO-20 of SCG-26 describe the IT Division Capital Plan Development process:

"The IT Division first prepares a capital plan, which is the sum of proposed plans of IT and business sponsored projects that utilize the overall IT capital budget. The capital plan includes both ongoing projects and anticipated needs, and is usually developed in the fourth quarter of a fiscal year in preparation for upcoming years. At this stage, the composite capital plan consists of a long list of viable capital projects, each with the potential to beneficially impact IT capability and services. Supporting documentation is developed by way of concept documents and business cases to be utilized as part of the prioritization and approval process"... [Project] "Rankings are determined based on various factors including, but not limited to, regulatory requirements, critical service maintenance needs, and/or cost benefit analyses. The projects in the narrowed capital plan list are then prioritized by likely impact on IT capability and services. The annual capital budget allocation processes for SoCalGas is administered by the Central Business Planning group on behalf of the Executive Finance Committee (EFC)."

    a. Does the Central Business Planning Group establish any limit applicable to the IT capital budget? If so, how is the limit determined?
    b. If not, why is having an open-ended IT capital budget appropriate for SCG? Please explain.

Utilities Response 6:

    a. The Central Business Planning group establishes the limit for capital based on the authorized spending determined during the GRC process.

7. SCG-26, page CRO-7, discusses system IT outages as a factor considered in IT O&M and capital forecasts:
    "O&M and capital forecasts have taken into consideration the need to invest in infrastructure resources and equipment to provide a more reliable computing environment that our business clients have come to expect in order to meet their operational needs."

    a. Please explain how reductions in IT outages are quantified for the purpose of IT capital business cases.

    b. Please describe the network outage that occurred May 9, 2017, and its impacts on the company.

Utilities Response 7:

a. Although reductions in IT outages are not being quantified in the various IT capital projects/business cases, there are funds being requested to ensure SoCalGas is adequately addressing IT outages. One of the projects SoCalGas is proposing to help reduce IT outages is the Business Continuity Enhancement project. The following can be found in SCG-26, page CRO-35:

    The forecast for the Business Continuity Enhancement project for 2017, 2018, and 2019 are $6,828K, $23,795K, and $33,609K, respectively. SoCalGas plans to build and place this project in-service by the test year. The project will enhance the business continuity capabilities of the data center infrastructure services by implementing high-availability (HA) computer, storage, and network services. The project will migrate the Company's most critical applications to the new HA services, providing the ability for select applications to remain operational during planned and unplanned outages (failover to be measured in minutes, not multi-hours or days). The project will implement automation services to facilitate the provisioning, decommissioning, and typical day-to-day operations in the HA environment simplifying common tasks and reducing mean-time-to-restore (MTTR). The specific details regarding this project are found in my capital workpapers (Ex. SCG-26-CWP, p. 479).

b. File system corruption took place on a Virtual Chassis (stack of switches connected to each other). This impacted network traffic running through the switches resulting in service interruptions to a large number of services including, but not limited to, e-mail, instant messaging, interactive voice response in the contact centers, work management for field employees, gas scheduling, web access to customer portals (My Account, socalgas.com), finance/accounting and advanced meter data collection.

8.   Page 317 of SCG-26-CWP describes the proposed upgrade for the GEARS application:
"The GEARS application consists of three primary components; a GIS based data processing tool, map services, and an environmental reporting application. Environmental Services spends significant time gathering information from disparate sources to produce annual reports. Improved data accuracies will save Environmental Services significant labor hours for annual reporting. This project will expand functionality, improve efficiency for the users and refine the work hierarchy which will enable more accurate and timely reporting. Updating the data processing models will improve system maintenance and improves environmental and compliance reporting. The upgrade to GEARS is required and must align with the Enterprise GIS 10.x Upgrade project in order to keep the versioning of the 2 applications in synch." In terms of project justification, the exhibit states that "By completing the upgrade project, the clients in the environmental department will be able to depend on the accuracy of the data and performance of the system. GEARS will be in synch with the versioning of the enterprise GIS and will eleimnate the risk of utilizing the WEB GIS as the Silverlight web viewer is targeted to be depracated by Microsoft."

a.   In what year was GEARS originally deployed, and what was its original cost?

b.   What accuracy improvement is anticipated, as the result of the upgrade? Please explain, and include any estimated dollar value for the improvement, and how that value is calculated.

Utilities Response 8:

a.   The project was originally deployed in October 2010, and the original cost estimate was $1,443,502 fully loaded and in 2010 dollars.

b.   The project will develop and implement GIS technical tools to streamline data maintenance, while also improving data accuracy and reducing the risk of violations due to outdated data. The value of the improved accuracy was not quantified by the project team.

9. Page 434 of SCG-26-CWP describes the project justification for proposed Environmental Tracking System Enhancements, listing 10 impacts:
"1) Promotes and enhances the efficient reporting of Environmental data clean-up. 2) Ensures the capture and maintenance of more accurate Environmental data. 3) Provides enhanced emergency response visualization options. 4) Makes sure that Environmental GEARS (GIS) continues to support evolving/essential business needs. 5) Ensures Environmental upgrade alignment with current Environmental platforms. 6) Affords enhancement consideration for Web upgrade. 7) Reduces as-built, reconciliation and Environmental posting costs. 8) Promotes increased work-flow efficiencies. 9) Improves interface/data use/understanding for SDG&E project leads, designers, and construction. 10) Decreases non-compliance risks for key environmental permits."

    a. During the GRC term (i.e., 2019 through 2021) what are the estimated expected benefits of the upgrade, where posting costs and work-flow efficiencies are concerned? Please explain.

Utilities Response 9:

    a. The upgrade will reduce as-built, reconciliation, and environmental posting costs by automating:
- Modification tracking of as-built projects, ensuring more accurate impact accounting resulting in conservation of permit use space/cost recovery
- Year-end project reconciliation to ensure that environmental data is accurately accounted, assessed, and reported to appropriate parties including federal and state agencies
- Company environmental posting costs, resulting in faster cost posting/cost recovery
- Permit reporting requirements

    The upgrade will also promote increased work-flow efficiencies via:
- Modernized interfaces, entry, search and other user functionalities
- Removal of manual data entry into two separate interfaces for work communication
- Integration with other systems, reducing the number of redundant process flows that must be open, manually entered/updated
- Improved internal performance metrics, allowing for tracking of individual work assignments, overall project load, number of clients, and other metrics
- Incorporation of post construction, project specific environmental data-tracking systems for agency mandated reporting

10. Page 193 of SCG-26-CWP describes the project justification for Integrated Customer Data and Analytics:

"Upon implementation of this integrated data solution business units in scope will have the following opportunities to realize the following benefits:

•Improved analytics around inaccurate bills, process billing, exceptions/resolutions (failed edits) with the opportunity to reduce the number of monthly billing exceptions

•Increase in paperless billing rate

•Provide segmentation analysis on propensity to pay, method of payment, channel preference, behavior score, number of collection notices; improve uncollectable rate and collection agency annual referral amounts

•Improve target marketing effectiveness using customer segmentation

•Ability to reduce analytics time to insights (and time to business value) by investing in Information Governance and Data Management, Analytics Governance and Advanced Analytics capabilities. Current estimates are 80% of super-user time spent integrating data because of lack of foundational capabilities."

a. Please explain whether, and, if so, how, the ICDA will be used in support of ME&O efforts associated with the launch of mandatory TOU pricing.

Utilities Response 10:

a. TOU pricing is not applicable to gas.

11. Page 334 of SCG-26-CWP describes SCG Self Support Small Cap 2017-2019 (Routine) expenditures. The associated table indicates this as a new program, as there are no Adjusted Recorded figures for historical years:

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00770B - 19081 SCG Self Support Small Cap 2017-2019 (Routine)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	0	0
Non-Labor	Zero-Based	0	0	0	0	0	944	944	944
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	944	944	944
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

a.   Please explain why this program has emerged, for 2019.

Utilities Response 11:

a. This is not a new project. Every year a Small Cap project is funded to allow purchases of hardware that meet the capitalization rules at the Sempra Energy Utilities. There is no Adjusted Recorded figures due to the fact that all IT capital forecasts utilize the Zero-Based methodology.

For your reference, a similar annual capital project also was included in the 2016 GRC workpapers (Ex. SCG-18-CWP_IT, page 513).