

**EMBRACING INTEGRATED DEMAND SIDE MANAGEMENT:
HOW DO WE GET OUR ARMS AROUND IT?**

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Section I: Executive Summary

Clearly, pursuing an integrated DSM program approach is gaining momentum. Reflect on the following facts: 1) in their June 1st filings outlining their 2006-2008 programs, the California investor-owned utilities highlight their intention to pursue an integrated DSM (IDSMS) program delivery model; 2) at the June 21st National Town Hall Meeting on Demand Response, a common theme was maximizing energy and demand impacts by melding DR and energy efficiency program delivery; and 3) the ACEEE National Conference on Energy Efficiency as a Resource (September 26-27) highlighted a key topical area as being “Integration of Demand Response and Energy Efficiency”.

The question remains however, as to how best to actually operationalize the IDSMS concept in utility environments that remain strongly impacted by regulatory, legislative and stakeholder influences.

This paper presents a real world case study of how PG&E has rethought and repackaged its suite of DSM programs to be viewed both by regulators and customers as an Integrated Energy Management Portfolio. Learning from the financial advisor market model, we discuss how PG&E is structuring a *comprehensive* regulatory strategy and marketing plan that looks at the individual customer’s drivers and requirements (business operational needs, price, and reliability) in order to identify which combination of DSM options—DR, conservation, energy efficiency, TOU management, self-generation—best meets that customer’s needs. In addition, we highlight the critical need for an integrated, iterative, and flexible approach to DSM program design and implementation by utility program strategists and managers, with the blessing of their senior management as well as the regulators.

The paper is structured to first take a quick look at the California electricity marketplace in order to lay a bit of groundwork for the heightened emphasis on DSM as a resource, as well as IDSMS as the strategy to harvest that resource. Next, we provide some detail on the IDSMS conceptual shift from traditional DSM program design, to realignment with customer-centric solution identification as the IDSMS cornerstone. We then move onto a discussion of the pragmatic implementation model that PG&E has adopted to move IDSMS from a concept to a marketing mantra and implementation approach embraced by the utility. In Section V, we discuss some of the ongoing challenges that PG&E continues to wrestle with in terms of maximizing the benefits envisioned through rigorous IDSMS implementation, because we have yet to reach the state where IDSMS is fully integrated into all aspects of PG&E’s marketing initiatives. That said, what is certain to all concerned within PG&E is that the future holds more emphasis on IDSMS based upon the regulatory, legislative and stakeholder positions being taken on several long-term California energy policy fronts; these are discussed in Section V.

Section II: Enabling IDSMS in California

Bearing in mind that California’s electricity industry landscape has changed dramatically since the 2000-2001 Energy Crisis that so significantly impacted the state’s electric utilities and ratepayers, many of the resultant impacts have helped empower and shape the push for IDSMS at PG&E, and subsequently, the other major investor-owned utilities in the state. These key drivers include, but are not limited to, the following:

Supply and Demand of Electricity

As noted in the statewide supply vs. demand comparative table below (Figure 1 and Figure 2)^a, the state’s supply/demand balance under standard planning scenarios appears very tight over the next five years.

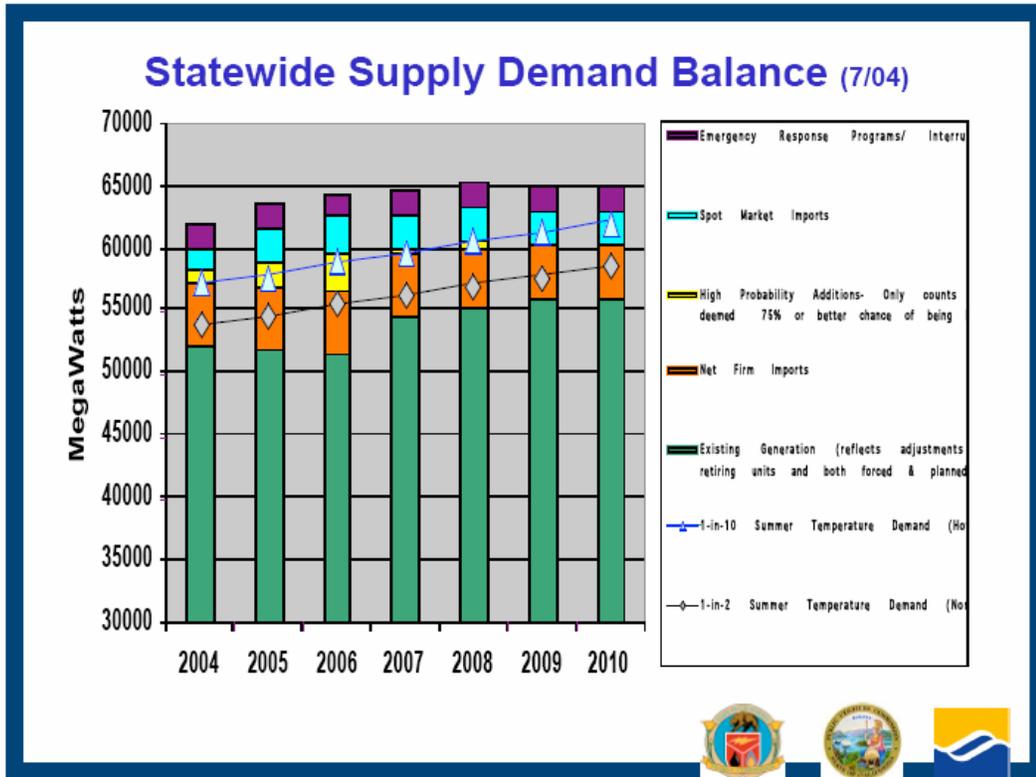
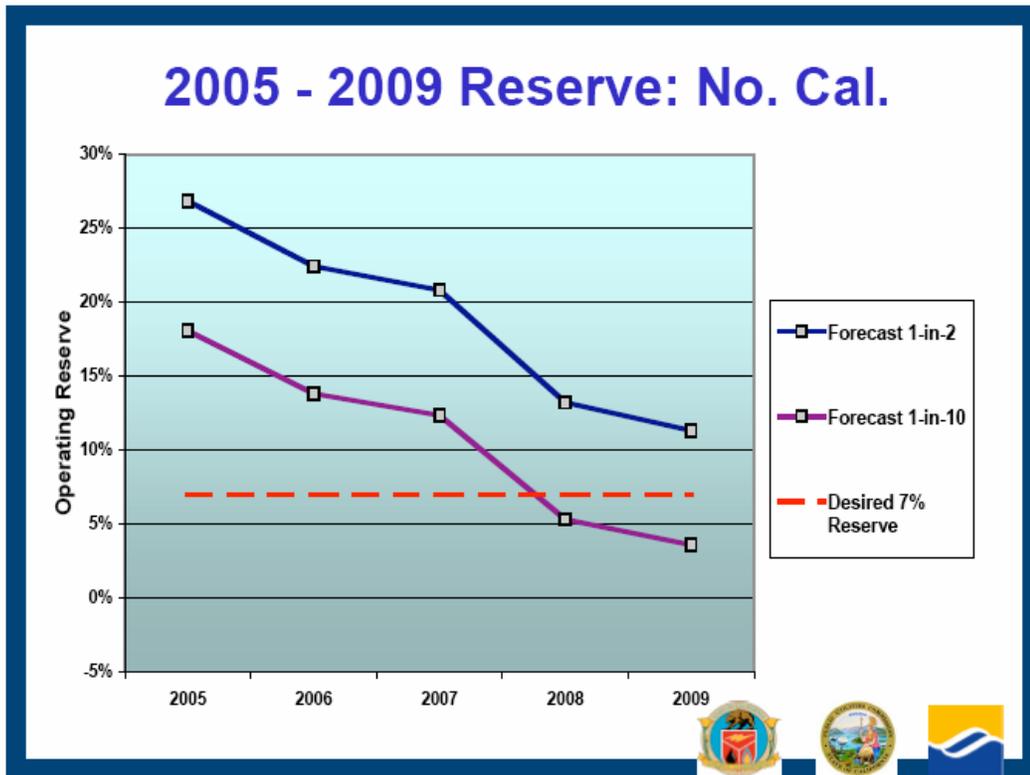


Figure 1

^a “California’s Electricity Situation: Summer 2005” prepared by the California Energy Commission, California Public Utilities Commission, and California Independent System Operator staffs. Published February 22, 2005.



These projected scenarios do not take into account several “adverse” conditions that could further compromise the utility industry’s ability to meet customer peak demands, particularly if several such conditions converge creating a scenario that might be likened to the “perfect storm”. These include^b:

- Higher than expected economic growth;
- Higher than expected forced outages;
- Lower than expected imports (similar to the anticipated shortfall in PNW imports in Spring 2005 due to the lack of hydro replenishment);
- In state hydro replenishment issues;
- Regional heat storms (with their frequent tenure over several days which only drives peak demand even higher); and
- Higher than expected transmission congestion, due to system constraints and/or issues such as the west’s not uncommon forest fires.

All of these potential conditions impact not only California, but all of the western electricity market as it remains a regional market with strong intertie linkages that allow for seasonal transfers of power between contracting entities. The supply challenges being confronted are further illuminated by the strong interest in the western market regarding new intertie transmission projects. Two examples include a) Arizona Public Service’s October 21, 2005 announcement that they intend to study building two high-voltage transmission lines (at a cost of approximately \$3 billion) to carry electricity generated at Wyoming based coal-fired plants (as well as wind power farms) to Arizona (and potentially other

^b “California’s Summer Situation: Summer 2005”. CPUC/CEC/CAISO. February 22, 2005.

western markets, and b) the Frontier Line, a new transmission system proposed by the governors of California, Nevada, Utah and Wyoming in April 2005^c.

Legislative and Regulatory Policy Positions

In light of the above concerns and the collective desire for more reliable electricity, the State of California's two leading energy agencies, the California Public Utilities Commission, and the California Energy Commission, along with the California Power Authority, collaborated to craft and adopt in May 2003 California's Energy Action Plan (EAP). The Plan aims to reduce peak demand and increase energy efficiency in order to minimize the need for new generation, reduce emissions of toxic and criteria pollutants and greenhouse gases, avoid environmental concerns, improve energy reliability and contribute to price stability. EAP II was adopted in October 2005 and focuses on the implementation roadmap for the Plan's far-reaching policy realignments. There are several key policies articulated in the EAP that have significant implications in terms of how aggressively the utilities are to pursue energy efficiency and demand response initiatives. Among the key policies is the provision that the utilities are to place energy efficiency and demand response programs first in their supply side loading order, and that the utilities are to implement all cost effective energy efficiency programs.

In keeping with their thinking that DSM resources are an integral element in better aligning California's electricity supply and demand components, the CPUC also adopted very aggressive energy efficiency and demand response goals for the California IOUs over the 2006-2008 three-year horizon. To the Commission's credit, they went the next step in terms of clarifying the utilities' role and attainment of these goals by approving a three-year implementation cycle, along with significant funding increases (funding has been approved for energy efficiency and the funding decision is pending for demand response as of this writing) as well as budgeting flexibility within broad programmatic categories over the three-year timeline. This level of commitment and resource provisioning are a welcome shift from earlier regulatory policy and certainly is much more supportive of attainment of such aggressive goals.

However, with this strong endorsement of DSM as a resource, comes the equally strong CPUC expectation that the utilities will deliver the goods, on time and within budget. In their various orders regarding utility implementation and funding for the 2006-2008 time period, the CPUC has clearly enunciated their awareness of setting the bar high, while expecting the utilities to use the funding resources available to them to aggressively and creatively deliver the goods. If not, the CPUC has further noted their intention to rethink the current program delivery model.

Another aspect of the California regulatory arena that has contributed to the overall conducive environment to pursue IDSM is the relatively recent consensus-building that has occurred between the staffs and commissioners of the CPUC and CEC. Historically, there have been occasions when the two agencies (each charged with distinct yet overlapping electric utility regulatory responsibilities) have not seen eye to eye. However, in the current environment, and with the specific personalities in play, the two staffs and their commissioners are symbiotically cosponsoring the DSM-related initiatives being worked

^c Reuters News Service – October 21, 2005.

out with the utilities. This regulatory consensus is very supportive and constructive with respect to moving forward with DSM implementation in the state.

Customer Needs and Satisfaction

As the regulatory and legislative landscape was changing and PG&E began wrapping its arms around the challenges being faced in relation to the supply and demand of electricity over time, the Company also rethought how best to meet its customers needs while increasing their satisfaction with PG&E's offerings. This process in part reflects PG&E growing out of the Energy Crisis and the resultant bankruptcy by initiating an era of focusing even more single-mindedly on meeting customers' needs. In looking back at the Company's (as well as in many cases the utility industry's) historical modus operandi of offering utility-sponsored and/or regulatory agency-mandated DSM programs and service options, the Company noted that often their efforts were centered on designing and marketing a series of "programs du jour" that were not necessarily well coordinated in their focus, purpose, or potentially interactive nature. This resulted in part from a "siloiing" of program efforts, within the utility industry, as well as within the regulatory environment whereby certain program funding, regulatory oversight/proceedings dockets and related activities were to be kept separate and distinct from more traditional efficiency program offerings (i.e., limited budgetary/funding flexibility between line item programs; no regulatory linkage between demand response, TOU and energy efficiency dockets, etc.).

With the change in officers at the top of PG&E we have a renewed focus on customer satisfaction. This focus is reflected within the larger customer segment by PG&E's growing efforts via IDSM and changes to its service delivery model to better understand the customer's business through their eyes and provide the best mix of DSM products and services. Properly designed and implemented, these activities have an opportunity to positively influence customer satisfaction with PG&E's overall service. PG&E's commitment to customer satisfaction is also reflected in our efforts to broaden ownership of customer satisfaction throughout the organization so that causes of customer dissatisfaction are prevented from occurring in the first place through improved business practices company-wide. Going forward, this approach will allow PG&E's account managers to continue to spend time on providing business customers high quality service around their daily interactions with PG&E with less time spent on problem resolution (e.g., resolving billing problems, lead time for new service, etc.), and to focus more on a customer-centric relationship based approach built upon state of the art sales and marketing tools. Doing so will increase the account managers' skill sets in interfacing with their customers on an equal footing, having been given the resources (i.e., time and tools) necessary to become viewed as that customer's "trusted energy advisor". This will enable both parties (the customer and PG&E) to optimize the benefits derived from the IDSM portfolio.

PG&E DSM Performance Goals

As intimated above, the goals for DSM accomplishments are both more substantial and more substantive relative to their importance in the loading order of resources.

- Energy Efficiency Impacts – PG&E's best year ever for garnering energy efficiency impacts came in 2001 on the heels of the West Coast Energy Crisis. The impacts that year were substantively higher than prior years (or subsequent ones for that matter). In comparison, PG&E's goal for 2006 as approved by the CPUC on September 22, 2005 is **double** the 2001

accomplishments...and continues to increase in 2007 and 2008^d. The magnitude of this increase in performance requirements is further underscored with the realization that past energy efficiency program accomplishments as reported would be significantly derated if subsequent, current increased energy efficiency code requirements and measurement and evaluation results were applied.

- Demand Response Impacts -- for 2005, PG&E's demand response program goal (separate and distinct from the energy efficiency goals discussed above) as approved by the CPUC equates to 3% of the forecasted system peak demand. This goal is measured not at year's end, but rather mid-summer when the system peaking conditions are most relevant. This goal ratchets up to 4% in 2006 and 5% in 2007^e. In 2005, PG&E was successful in addressing its 2005 goal, garnering slightly more than 500 MW of contracted peak demand reductions. For each 1% increase required, that translates to an approximate incremental increase of 200+ MW.

In order to meet these challenging goals, PG&E realized that the traditional program-centric model would be hard-pressed to deliver the requisite impacts. In addition, the customer-centric marketing and sales model being considered lent itself well to the invigorated approach of working closely with individual customers to best understand their energy needs, not monitoring their level of efficiency or demand response program interest. So in this way, the Integrated DSM Portfolio model grew from the intersection of numerous drivers, including renewed interest in maximizing customer satisfaction, ensuring the greatest opportunity to meet the DSM goals through 2008 and beyond, and empowering California's energy industry in terms of better balancing the supply and demand for electricity.

Section III: Achieving the Full Potential of IDSM: Optimizing Customers' Energy Management Opportunities

As has been noted repeatedly above, the key to PG&E's IDSM model is viewing the energy landscape through the eyes of the customer, not from the perspective of a utility manager. The goal of this model is to promote having the customers view energy management as an integral part of their business model, and *own* it. By owning the decision-making criteria used to determine which investments to pursue (risk/reward comfort level, relative importance of energy in the scheme of their business, profit/loss implications, power reliability versus cost savings trade-offs, etc.), then the IDSM Portfolio presented to them can be customized to reflect their needs and wants. So that, in effect, the IDSM Portfolio becomes theirs. This theme is carried all the way through to the IDSM marketing materials in that they refer to the portfolio as belonging to the customer.

By tailoring the IDSM Portfolio to reflect the interests of the individual customer, the account manager is working to maximize the applicability of the offerings, thereby working to optimize the customer

^d For 2006-2008 statewide annual energy efficiency savings goals of 2032, 2275 and 2505 GWH/yr and peak reduction goals of 1199, 1677, 2205 MW respectively, were established by the CPUC in Ruling 01-08-028.

^eFor 2005-2007 statewide goals for demand response, CPUC Decision 03-06-032 requires 5% dispatchable peak demand of the forecasted system maximum summer peak demand by 2007 with interim goals of 3% and, 4% for 2005 and 2006. The CAISO's 1 in 2 year base outlook forecast for 2005 was 49,426 MW. The actual summer peak adjusted for change in CAISO footprint was 45, 431 MW on July 20, 2005 (ISO Market Monitoring Report for June and July 2005). As of this writing, the CPUC has not adopted a specific 2008 goal relative to DR impacts.

uptake of energy management opportunities. This is a clear example of a win/win/win situation in that the customer obtains the savings associated with more efficient and demand responsive use of energy, PG&E benefits by garnering the load impacts that contribute to their goals while also providing impetus to better customer satisfaction, and society (e.g., the regulators) win in that additional cost effective DSM measures are being integrated into the marketplace.

In order to operationalize the optimization of energy management opportunities model presented above, PG&E has focused on several pragmatic initiatives to put more flesh on the concept's bones. Among them are:

Apply a Portfolio Approach to Marketing the IDSM Components – we all learn well from effective analogies that bring lessons learned to bear from scenarios familiar to us. In this case, PG&E sold the IDSM concept internally (as well as with stakeholders and the regulators) by referencing the “independent financial planner” business model. Before presenting a client with investment options, the financial planner talks with the client to better understand their desired outcome and risk/reward thresholds, as well as any other investment “hot buttons” that may be important to the client. For example, is the client's investment plan driven by a desire for a traditional retirement, college education for their children, or a second home? Are they comfortable with higher risk/reward investments, or are mutual funds and municipal bonds more to their liking? Do they want to maximize their return regardless of the business being invested in, or do they wish to apply some screens favoring certain types of companies while ruling out others?

This same model is the cornerstone for the PG&E account managers honing their working knowledge of an individual customer's business model and energy budget, with attendant implications on profitability, appetite for risk, relative importance of electric reliability, capital investment decision-making parameters, and other important considerations. Doing so allows the account manager to tailor the full menu of DSM options (from PG&E's perspective this includes customer analysis, conservation, energy efficiency, time of use, distributed generation, as well as demand response and reliability focused programs) to better reflect those options which the customer may value. By focusing on the customer-centric perspective and this more holistic approach to energy management, the intention is to provide more meaningful and interrelated offerings to the customer, thereby increasing their satisfaction with PG&E service.

Incorporate the Interaction of Program Elements when Designing or Updating Program Offerings – by taking the holistic approach described above, PG&E's program managers and market planners gain significant insight in terms of how the individual components or programs interact in the marketplace. The classic example is how a new energy management system can provide energy efficiency benefits while also empowering the customer to be much more effective in complying with demand response program operations. These types of interactions also come into play in relation to time of use pricing options and efficient equipment investments.

Equally important as a benefit is the feedback from the customers and account managers in terms of the pieces of the portfolio that are in need of improvement or are lacking. The financial planner model allows the account manager to gather very valuable market intelligence about what the customers would like to see available. This information can then be incorporated into the program design efforts at PG&E, which then may lead to regulatory filings regarding new offerings to fill the identified customer-

centric void. The additional benefit of this approach is that PG&E filings can clearly reference the marketplace feedback that led to the new offering, thereby strengthening the case for approval of the initiative.

Providing these real world customer feedback loops in terms of customer-centric options also allows PG&E to pursue a more flexible and “nimble” approach to offering IDSM opportunities to customers.

Achieve Regulatory Buy-In regarding the Integration Model – in order to gain the flexible and “nimble” benefits desired, PG&E identified the need to gain regulatory approval. The historic emphasis on program-centric offerings was in part due to the way California’s regulators viewed customer programs. Through 2005, energy efficiency proceedings on funding, staffing, marketing et al were held separate and distinct from the Company’s demand response initiatives, as well as TOU offerings. In addition, funding could not be shifted among programs within these broader offerings and there were limited windows of time where programs were available. This led to a sense that customers were displeased with the “on again/off again” program offerings that were tied to annual regulatory review and revision. In order to move forward with implementation of the Integrated DSM model, PG&E identified the need to convince the CPUC/CEC regulators and their staffs of the benefits associated with IDSM, as well as the need to incorporate some flexibility across program budgets and goal setting to allow PG&E to be more responsive to its customers’ energy management needs.

Clearly, PG&E’s success in pursuing the regulatory buy-in was enhanced by the level of CPUC and CEC consensus-building that had been in play since 2004. In addition, the concept of Integrated DSM fit well with the regulatory perspective and policy to harvest all cost effective DSM as first order loading contributions to the supply curve. It also helped significantly that in 2004 the three major California IOUs made great strides, working with the CPUC and CEC, to ensure a significant level of program consistency across the utilities (e.g., the Demand Response Programs being offered by PG&E, Southern California Edison and San Diego Gas and Electric were for the most part the same and the utilities jointly developed marketing materials had the same look and feel). This cooperative effort eased the way towards all three utilities embracing the idea of retooling their program offerings to reflect a more IDSM perspective.

The result of the regulatory approval initiative is that the CPUC approved the integration model as well as provided program implementation continuity by approving a full three-year funding cycle for PG&E and the other utilities for both energy efficiency and demand response. In addition, the CPUC granted a level of budgetary flexibility that allows the utilities to shift funding (within certain constraints) between programs (within energy efficiency and within demand response) to augment those which are being well received in the market.

It is important to recall however, that these regulatory policy enhancements are not being taken lightly by the CPUC and CEC. To reiterate, they have made it clear that with the increased assurance of three-year funding as well as some flexibility in program budgeting, that they expect in no uncertain terms the DSM goals to be met.

Mutually Beneficial Result of Flexible and “Nimble” Approach to Managing and Implementing the IDSM Portfolio over Time – with the model in place and the regulatory approvals garnered, PG&E is

well positioned to implement the IDSM Portfolio approach which will provide the mutually beneficial “flexible and nimble” tools and results. The benefits will be harvested by:

- The customers in that they will be able to take advantage of integrated DSM offerings from PG&E that better reflect their business model thereby allowing them to optimize their energy management benefits,
- PG&E in that the utility will have better tools, market research, and integrated customer-centric offerings to allow for a maximization of DSM impacts, thereby enhancing the ability to meet both the short-term and longer-term DSM goals established by the CPUC, and
- The regulators in that they will have empowered the utilities (including PG&E) to meet the DSM goals set before them, which are clearly a critical element in meeting California’s energy needs, and fueling the state’s economic engine.

Section IV: PG&E’S IDSM Strategy: A Case Study

Faced with the very aggressive escalating demand response and energy efficiency goals, and increased emphasis on customer satisfaction, we clearly realized at PG&E that success demanded a new and very different approach to the marketing and sales of our DSM products and services. Transitioning to an integrated approach is no small matter, both from a cultural and a resource perspective. To make this shift PG&E has developed an IDSM implementation strategy that consists of four key components.

IDSM Marketing Plan

Historically, PG&E’s DSM marketing and promotion activities were for the most part separate efforts within major categories such as energy efficiency and demand response. And this marketing effort has been fragmented and eclectic without a common look and feel, focused on products and services rather market segmentation and has lacked an overall strategy or message. With the realization that a more customer centric, integrated approach would align better with customer needs, produce higher levels of DSM participation and result in greater energy savings and demand reductions to everyone’s benefit, PG&E began the process to integrate its marketing efforts with the 2005 program offerings. Customer and energy industry reactions to this initial effort have been encouraging and it is being expanded significantly. PG&E is in the process of revamping its marketing effort for 2006 forward with the IDSM as the cornerstone. This effort will include a high-level overarching plan and style guide to provide a consistent strategy, look and feel, and messaging, as well as provide more detailed and targeted planning and implementation of strategies and tactics by market segment to better position PG&E to attract customers to its DSM products and services.

Portfolio-Based Sales Training

Another key element in PG&E’s IDSM strategy is portfolio-based sales training. PG&E’s account managers are well recognized for providing outstanding service to our larger customers using a service-based relationship management model. Under this approach, significant DSM program accomplishments have been achieved over the years. However, the benefits of IDSM for customers, PG&E and California as a whole can only be realized if our account managers change how they work with our customers, acquiring and using the skills associated with a portfolio-based sales approach. PG&E has retained the services of a nationally recognized sales training firm with a proven track record

that specializes in delivering this type of training. All of PG&E's account managers will receive customized sales training and its managers will receive sales coaching training in 2005-2006. This training will center on PG&E's portfolio of DSM products and services.

Technical Training

A third aspect of PG&E's strategy is technical training. In the world of IDSM, PG&E's account managers operate much like sales engineers. In order for PG&E to do the best possible job of implementing IDSM, especially the analysis phase, its team--account managers, our energy efficiency engineers and market segment leads and consultants--must have up-to-date, high quality technical skills—not only energy end use-related technical skills, but those of a financial and business operations nature as well. Over the last decade, in part as a result of industry restructuring in California, the utility industry has been more focused on service than on sales. As a result, technical skills have not had the emphasis that they need today which are more on a par with the early days of energy efficiency. IDSM increases the importance of strong technical skills, particularly given we need to intensify our understanding of the customer to better position ourselves to help them understand their DSM opportunities and participate more fully in the overlapping and interactive DSM program offerings. The technical skills issue gains even more importance when considering the baby boomer demographics that foreshadow increasing rates of staff attrition that will likely impact the whole utility industry within California.

In the second quarter of 2005, PG&E completed an assessment of technical skills, both energy and business-based, for its Account Services organization. An unprecedented 100% of the target population of account managers and support staff completed the assessment which averaged about three hours to complete. Not surprisingly, skills were relatively stronger in the areas of energy conservation, energy efficiency and time-of-use management while distributed generation and demand response and business operations were less so. The aggregate results of this assessment are being used as a basis for establishing a formal technical training curriculum that is specific to IDSM and the needs of Account Services personnel. Confidentiality of an individual's results is critical to ensure validity of the data whose overriding purpose is to guide curriculum development. Individual assessment results are confidential and only available to the participant to assist in helping them to prioritize their training activities and to help self-guide their development plans. PG&E is also working to ensure technical skills of the rest of the team--our energy efficiency engineers and market segment leads and consultants-- are keeping up with our changing needs.

IDSM Sales Support

Every sales and service organization requires efficient, high-quality and timely staff support of its customer facing team members in order for them to spend their time where they should—with the customer—and to be able to effectively present information and offerings to customers. PG&E has made important organizational changes to improve this support function through its Support Consolidation Initiative. Implementation of Support Consolidation began in the last quarter of 2005 and works to eliminate independent, uncoordinated efforts across PG&E's Account Services field organizations, bring greater consistency and availability of sales support services and tools and allow better coordination between sales, marketing and support functions. By consolidating sales support, PG&E will be able to provide account managers with more and better tools and customers with better information upon which to make their energy decisions.

The four strategy elements above, combined with strong regulatory support pave the way for PG&E to successfully accomplish its IDSM and customer satisfaction goals. In the end it all comes down to the

market—understanding what a customer wants and then being able to effectively deliver solutions that satisfy, make that delight, the customer.

The Multi-Dimensional PG&E IDSM Model

It is clear that moving away from a primarily ala carte approach to one where all of PG&E’s DSM offerings are presented to customers as part of an integrated package is the key to both meeting DSM goals while raising overall customer satisfaction. PG&E has developed the IDSM Model to deliver integrated DSM products and services to customers using the portfolio-based sales approach similar to the model applied by independent financial planners described above. Below in Figure 3 is a representation of PG&E’s IDSM Model. What follows is a discussion of the model and some of the key implications it holds.

IDSM Model Construct

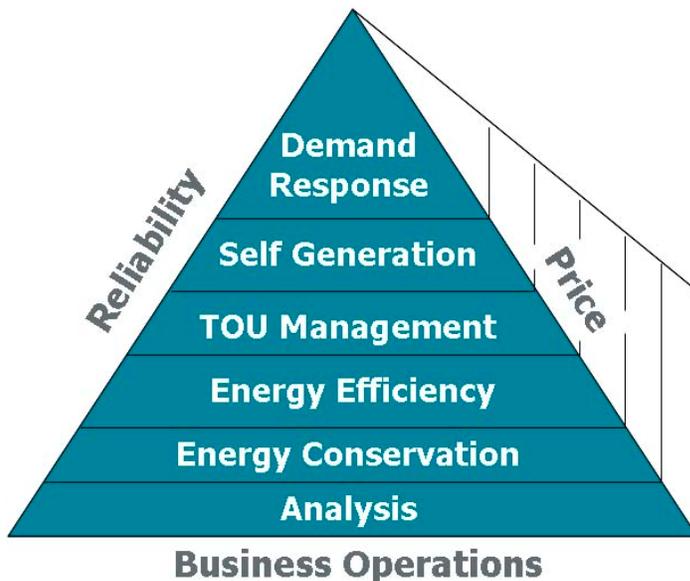


Figure 3

Understanding the Customer: The Critical Foundation

Foundations are essential for any structure to stand with integrity. For IDSM, this is a thorough understanding of the customer’s business in every aspect that has an impact on energy decision making. Technical understanding of energy end use at the customer’s facility and the attendant DSM opportunities is not enough. Analysis of the customer must also include an integrated analysis of how energy fits in from an overall business perspective, operational considerations, all things financial including the customer’s decision making process, the investment criteria in general and specifically for energy if it differs. This in-depth analysis is essential in order for energy investments to fairly compete with other endeavors for the customer’s time, attention and resources. From a customer perspective,

energy investment alternatives need to take their appropriate place alongside every other aspect of business. PG&E's intent is that we present IDSM opportunities in the context of the customer's broader business picture so that neither energy nor alternative investments are short changed.

PG&E offers a fully integrated energy analysis that addresses all elements of the customer's DSM opportunities. Heavy emphasis continues to be placed on energy conservation and energy efficiency with increasing focus on demand response and time-of-use management which are evolving from broader recommendations to more in-depth technical analysis. Distributed generation is addressed primarily from an educational and informational approach highlighting PG&E's support of customer's interests and understanding of their energy options. Clearly, our historical long suit has been the energy conservation and efficiency aspects but significant resources are being applied to bring the rest of the portfolio into balance. These efforts, along with our evolving technical training curriculum that will address business and financial decision making, will position PG&E's account managers to lay a solid foundation for partnering with customers on understanding and addressing their increasingly important energy management needs.

Sequencing and DSM Products and Services

Understanding the customer's needs is not enough. To understand the best strategies and mix of opportunities for optimizing the customer's energy management portfolio, consideration must also be given to how opportunities sequence and relate to one another.

Conservation is first on the list. Before anything else, it is important that a customer eliminate unproductive energy use. This can most often be accomplished through no cost, low cost energy management strategies.

Once the customer has eliminated energy use that isn't doing productive work, the next step is to make useful energy requirements as efficient as possible following the customer's investment criteria. Customers can do this more effectively if they take advantage of PG&E's energy efficiency incentive offerings.

Next up is to schedule this efficient use of energy on a routine basis to avoid higher price periods and achieve the lowest sustainable average cost per kWh. The key here is strategies that are workable with the customer's day-to-day business operational needs. One of the tools PG&E has to offer customers to help evaluate this aspect of the IDSM model is InterAct -- an online energy management information service.

Distributed Generation also can play an important role in the customer's strategy. Customers may have an interest in considering distributed generation as part of their portfolio if it cost effectively helps meet their energy management objectives. Therefore, PG&E needs to be in a position to provide informed counsel as well as where appropriate and available, distributed generation rebates.^f While incentives are available for certain applications of distributed generation, PG&E's primary focus is on providing customers with education and information. Examples of where distributed generation might come into

^f PG&E as well as the other California IOUs are offering the CPUC-approved Self Generation Incentive Program. It is this program that is being woven into the IDSM interactions with the appropriate and eligible customer base.

play are addressing environmental concerns through renewable generation and leveraging waste heat through co-generation.

Finally, and certainly not least, demand response comes into play where customers change their routine energy management practices to further reduce their peak use below routine time-of-use driven levels during the few critical days of the year. Through PG&E's demand response programs, customers are rewarded for their reductions.

It should be noted that in addition to free audit services PG&E, along with the other California IOUs, offers substantial financial incentives to customer to help elevate DSM opportunities in the customer's investment strategy. In addition to the more familiar energy efficiency incentives, we now offer customers a very substantial \$100 per kW toward their investment in demand response enabling technology.

Single Investments with Multiple Benefit Streams

Integration facilitates customer consideration of all opportunities for better energy management when making investment and operational decisions. And the power of integration really comes to the forefront when customers realize that only through integration do certain investment opportunities bear fruit. Such opportunities emerge, particularly in the area of controls, where a single investment yields multiple DSM benefits. Herein lays one of the unique and compelling attributes of IDSM.

For example, let's say that a customer has a multi-building campus-like facility with a series of older independent analog energy management systems with no network and precious little programming capability. Let's also assume that the customer has implemented all reasonable energy efficiency options save those that are associated with a new direct digital control, highly programmable, network capable energy management system which is deemed not to be cost effective. The customer has significant potential for demand response participation but implementation is impractical due to the inability to dispatch load by any other means than sending maintenance personnel building by building to throw breakers—a strategy both risky and expensive.

Enter PG&E with IDSM. By taking an integrated approach the investment in a new energy management system can be successfully supported by combining the remaining energy efficiency gains and the benefits associated with enabling automation of and participation in demand response. Both risk and prohibitive costs are eliminated. Everyone wins. The customer benefits both operationally and financially, PG&E sees greater participation in both its energy efficiency and demand response program offerings, and California has a little less to worry about with respect to energy supply issues.

Customer, Not Utility, Driven

Clearly, the IDSM approach is customer-centric. It is all about helping the customer discover, articulate and fill needs optimally based on their priorities with respect to their business operations and their sensitivity to price and reliability. What is so attractive about this approach is that not only does it yield results optimized from the customer's point of view, it maximizes DSM accomplishments for the utility and raises levels of customer satisfaction. It's all about the customer.

IDSMS as the Basis for a Customer's Strategic Energy Management Plan

One of the most attractive aspects of PG&E's IDSMS model is the fact that it serves equally well as a sales tool and a framework for the customer's own energy management strategy. Clearly, what is good for the goose is good for the gander with IDSMS. Not only can PG&E use the model to bring the right products and services to each customer, the customer can optimize their own plans using the same approach.

Section V: What the Future Holds

California is headed toward increasing reliance on DSM to manage the supply and demand equation. Fundamental changes are in the wind with the Advanced Metering Infrastructure (AMI) project that will bring interval electric metering to all of PG&E's customers. AMI will bring many benefits for customers, including the ability to participate in price-based demand response program offerings. IDSMS will position PG&E well to respond to its changing environment. The exciting challenge for us is taking the IDSMS concept that works so well delivered through a one on one relationship and applying it to a wider market in a cost effective way that delivers both energy and demand savings along with greater customer satisfaction. PG&E's Account Services organization has in the past been responsible for managing relationships with PG&E's largest customers. Today, we are working to move beyond traditional approaches to account management in order to meet the needs of more business customers, and we are looking for opportunities to reach more customers. We are looking at alternatives to service delivery models and channels that involve changes to our culture, paradigms and organizational structure. IDSMS will be a part of the future in some form for more and more customers going forward--eventually touching mass market of smallest commercial and residential customers.

Section VI: Summary and Conclusion

For Integrated DSM to achieve its true potential, program integration must be embraced in five different arenas: 1) helping customers view energy management as an integral part of their business model, 2) applying a portfolio approach to marketing the IDSMS components, 3) considering the interaction of program elements when designing or updating program offerings, 4) achieving regulatory buy-in regarding the integration model in order to 5) utilize a flexible and "nimble" approach to managing and implementing the IDSMS portfolio over time. This approach is especially important to PG&E in the near term in that it empowers maximizing the harvesting of "negawatts" which is critical in order to meet the substantial impact goals agreed to for 2006-2008 while also contributing to an optimization of customers' energy management opportunities, and subsequently their improved level of satisfaction with PG&E as their energy partner.

As with most innovative undertakings a higher probability of success exists if senior management champions the effort, and takes an active interest. Often, new ideas and delivery models cause organizations to chafe and grind leading all too frequently to following the path less contested. In PG&E's case this is not an issue and we are very fortunate to have active support for IDSMS throughout the organization from our officers, directors, managers, supervisors and individual contributors, particularly given the collective impacts that must be harvested. Coupled with PG&E's transformation

effort, IDSM will help transport PG&E into a very successful, rewarding future filled with challenge, excitement and change.