

# **Benchmarking California's Buildings: Lessons Learned on the Road to Energy Use Disclosure**

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## **ABSTRACT**

Benchmarking whole building energy performance continues to play an increasingly large role in California's energy efficiency strategy, most recently through the CPUC's Final Decision on the 2010-12 programs, which greatly expands the role of benchmarking in the IOUs' commercial efficiency programs. Two early requirements, one executive and one legislative, initially established benchmarking in California and remain key drivers in its progress throughout the state: 1) the Governor's Green Building Initiative, whose goal is to reduce energy consumption in all state buildings 20% by 2015, and 2) AB1103, which requires benchmarking data disclosure at the time of an entire commercial building's sale, lease, or financing.

In addition to California, individual cities, states, and green programs are embracing benchmarking. The work Californians are doing, however, remains a leading force in catalyzing these efforts - our progress is setting the stage for the future of benchmarking nationally.

In order to make widespread benchmarking possible, technical and political challenges need to be overcome, such as refining customer confidentiality requirements, defining disclosure data, and identifying disclosure triggers, amongst others. A Work Group in California has been facilitating this process, drafting enabling regulations for disclosure, and writing guidelines suggesting best practices, detailed implementation instructions, and effective methods of understanding the data for building owners, utilities, and other related parties.

This paper will report on California's progress, focusing on key issues, how they were addressed, and lessons learned for other jurisdictions looking to implement benchmarking.

## **Background**

Benchmarking is a term applied to efforts to track and compare the energy use of the similar buildings over a given period of time. It is widely recognized as an important information tool for measuring the relative efficiency of buildings, encouraging efforts to improve efficiency, tracking energy use trends over time, and helping to justify financial investments. In its most basic function, a benchmark indicates the energy use of a building for a given period of time. Typically, however, benchmarks are adjusted or 'normalized' to allow comparison with other buildings and performance tracking over time. Such adjustments usually require information about physical influences such as building size, type, and weather. More advanced benchmarking systems might include operational influences, such as occupancy and hours of operation.

Benchmarking represents a powerful mechanism for encouraging building owners to improve building energy performance. Its widespread use could lead to higher penetration of energy conservation and efficiency improvements in nonresidential buildings. It improves owner awareness of building performance by identifying poorly performing buildings, providing a

baseline for measuring performance improvement, creating competition through comparison with like buildings, and enumerating trends in building performance over time.

Utilities can use benchmarking as a way to enhance the delivery of their customer programs in ways that increase participation rates and support energy efficiency goals by accessing new sources of market intelligence for use in structuring and targeting energy efficiency programs. Delivering benchmarking is also an important customer service. When provided by utilities, it can support state and industry initiatives, assist customers who lack the knowledge and resources to establish their building's benchmark, and provide utility account representatives with an opportunity to report benchmarking results to customers and discuss energy efficiency opportunities.

In order to make widespread benchmarking possible, however, technical and political challenges need to be overcome, such as refining customer confidentiality requirements, defining disclosure requirements, and identifying disclosure triggers. A Work Group has been facilitating this process in California, drafting enabling regulations for disclosure, and writing guidelines suggesting best practices, detailed implementation instructions, and effective methods of understanding the data for building owners, utilities, and other related parties. Following is a brief discussion of California's progress, focusing on key issues, how they were addressed, and lessons learned that can be applied in other jurisdictions looking to implement benchmarking.

## **Current Status of Benchmarking**

Benchmarking continues to play an increasingly large role in California's energy efficiency strategy, most recently through the CPUC's Final Decision on the 2010-12 programs, which greatly expands the role of benchmarking in the IOUs' commercial efficiency programs. Two requirements (executive and legislative) initially established benchmarking in California, however, and remain key drivers in its progress throughout the state: 1) the Governor's Green Building Initiative (Executive Order S-20-04), whose goal is to reduce energy consumption in all state buildings 20% by 2015, and 2) AB 1103, which requires benchmarking data disclosure at the time of an entire commercial building's sale, lease, or financing.

### **Executive Order S-20-04 (EO S-20-04)**

In December of 2004, Governor Schwarzenegger signed EO S-20-04, calling for a 20% reduction in State building energy use between 2003 and 2015. The Order requires all State buildings to track energy use, enabling comparison to the 2003 baseline and other buildings.

Consequently, the Benchmarking Advisory Work Group (Work Group) was formed to support this effort, provide implementation and strategy advice, and develop an Action Plan for addressing these goals. The Work Group is made up of members representing the US EPA, California state agencies, real estate professionals, and participating energy utilities: Pacific Gas and Electric (PG&E), Southern California Edison (SCE), Sempra Utilities, and Sacramento Municipal Utility District (SMUD).

### **Assembly Bill 1103 (AB 1103)**

In October 2007, the legislature enacted, and the Governor signed AB 1103. This established a requirement for the owner of a nonresidential building to disclose that building's

energy benchmarking data to the other parties in a real estate transaction at the time an entire building is sold, leased, financed, or refinanced. It also mandates that all utility companies store their data in a manner compatible with the EPA's Portfolio Manager and provide it upon request for use in the nonresidential building's disclosure requirements.

In order to better define disclosure requirements and set the enabling regulations for AB 1103, Assembly Bill 531 (AB 531) was officially enacted as of mid-October of 2009. While the primary purpose of the bill, alleviating the confidentiality constraints currently imposed on utilities, was stricken from the language late in the process of developing the bill, it does still designate the Energy Commission as the agency charged with setting the schedule for implementing AB 1103 disclosures. New regulations to fulfill the purposes of AB 1103 define the actual data that must be disclosed, the form data shall take, the process required of building owners and/or their agents, as well as the implementation schedule and other functions.

### **California Public Utilities Commission's (CPUC) Strategic Plan**

In addition to the formal benchmarking legislation, the CPUC has published an aggressive Strategic Plan, which is the guiding force behind the utilities' energy efficiency programs and energy savings goals. The plan includes a target of all commercial buildings reaching net-zero by 2030 and sets the stage for a growing number of supplementary local and regional initiatives, reach codes, and green building ordinances throughout the State.

Most recently, the CPUC has recognized the increasingly large role benchmarking whole building energy performance plays in California's energy efficiency strategy through its decision on the 2010-12 programs. Within their decision, they have greatly expanded benchmarking's role in the IOUs portfolios in that they must now integrate benchmarking into their commercial energy efficiency programs. While the specifics of how this will be accomplished are still being determined, this ruling provides reason for the IOUs to increase resources and outreach and more successfully implement widespread benchmarking.

### **Benchmarking Efforts Outside of California**

In addition to California, individual cities, other states, and green programs are embracing benchmarking. The work Californians are doing, however, remains a leading force for these efforts. Below is a brief overview of some of the more progressive benchmarking efforts that can be found throughout the country, as described by the U.S. Environmental Protection Agency (EPA)<sup>1</sup>. While all have slight variations, there are some consistencies in their requirements, such as public disclosures, phasing in mandatory benchmarking and/or exempting certain building types, the use of the Portfolio Manager tool, and acknowledging benchmarking's potential for changing the real estate valuation market:

**City of New York: Local Law 0476.** As part of the Greener, Greater Buildings Plan, this law requires public and private buildings to track energy and water consumption using Portfolio Manager and publish their performance metrics, as applicable, on a publicly available database.

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<sup>1</sup> For more complete descriptions, visit the EPA's *State and Local Governments Leveraging ENERGY STAR®* document here: [http://www.energystar.gov/ia/business/government/State\\_Local\\_Govts\\_Leveraging\\_ES.pdf](http://www.energystar.gov/ia/business/government/State_Local_Govts_Leveraging_ES.pdf)

**Washington DC: Clean & Affordable Energy Act of 2008.** This act requires that, beginning in 2010, eligible privately-owned commercial buildings be benchmarked using Portfolio Manager on an annual basis, and results published on a publicly available online database.

**Seattle: Council Bill 116731.** This bill requires commercial and multifamily building owners to benchmark energy performance in Portfolio Manager. Upon request, they must provide a copy of the most current energy benchmarking report to current tenants, prospective tenants, prospective buyers, and potential lenders.

**San Francisco: Earth Hour 24x7 Energy Challenge.** A competition open to owners and managers of office buildings, hotels, retail stores, hospitals, medical office buildings, supermarkets, and schools to track and improve their buildings' energy use in Portfolio Manager.

**Washington State: SB 5864-2009-10.** This bill requires qualifying utilities to maintain records of energy billing data in a format compatible with Portfolio Manager, the State to benchmark state-owned facilities and make energy performance metrics publicly available, and eligible privately-owned commercial buildings to benchmark their building and disclose the resulting metrics to a prospective buyer, lessee, or lender.

**LEED<sup>2</sup>.** Projects applying for LEED Existing Buildings certification must demonstrate that the building has achieved an EPA-Energy Performance Rating (EPA Rating) of at least 69 using Portfolio Manager. Available building types include offices, K-12 schools, hotels and motels, medical offices, hospitals, supermarkets, residence halls, and warehouses.

## Major Challenges Overcome

In order to implement a successful benchmarking policy, jurisdictions need to overcome both technical and policy-specific challenges. The major challenges California has faced have taken the combined efforts of representatives from all key stakeholder groups, including California legislators, the CEC, utilities, commercial buildings, the California Public Utilities Commission (CPUC), and the US EPA, to overcome.

1. **Providing up-to-date billing data information for each building that is benchmarked:** The challenge here lies in successfully integrating an automated benchmarking data upload system into each California utility's IT system. Through the combined efforts of the US EPA and utility representatives, five of California's largest utilities were able to effectively integrate an automated data upload process into their technical systems.
2. **Creating the enabling regulations to accompany AB 1103:** The way in which the original legislature was written did not specify such critical compliance components as disclosure requirements, timeframes, what defines an 'entire building', amongst others. By gathering the expertise of representatives from the key stakeholder groups, California was able to pass additional legislation granting the California Energy Commission explicit authority to develop regulations for the implementation of AB 1103.

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<sup>2</sup> USGBC. *LEED-EB*. Version 2. October 2004. <http://www.usgbc.org/Docs/LEEDdocs/EB-final%20content%20version.pdf>, page 45.

3. **Working in cooperation with real estate industry:** To successfully implement benchmarking throughout the State, it was necessary to gain the support of the real estate industry, including brokers, agents, building owners, and property managers. By engaging these industry professionals throughout the legislative process and development of enabling regulations, California was able to garner the support of this crucial stakeholder group.
4. **Developing a compliance document and California-specific information:** Early in the development of the AB 1103 enabling regulations, the challenge arose of identifying and achieving consensus on the appropriate form of compliance documentation and the role of California-specific information. Because a primary intent of the legislation was to encourage the inclusion of energy use in the financial transaction process and valuation of a building, it has been the view of the CEC that the ability for building owners to compare energy use using California-specific data and information was crucial. Hence, the desire to provide California-specific information, in addition to the Portfolio Manager scores, has shaped the discussion of what benchmarking data and ratings would be disclosed and the form of the compliance document itself. Through the collaboration of the Work Group, specifically representatives from the CEC and EPA, stakeholders have been working to address these challenges and ensure the simplest compliance process for affected real estate professionals.
5. **Integration into utility programs:** AB 1103 requires California utilities to provide electronic upload of data. Obtaining the resources for developing, promoting, and integrating ABS with other utility programs, however, presents a challenge. These activities and associated costs do not translate directly into shareholder earnings for the IOUs, whose goals are based on quantifiable energy savings. By justifying the business case for benchmarking and ABS beyond simply meeting the legislative requirements, utilities were able to fund additional efforts needed to truly support successful implementation of AB 1103.

### **Automated Benchmarking System**

A critical component of a successful statewide benchmarking activity is the availability of up-to-date billing data for each building that is benchmarked. California decided early on that this must be an automated process in order to meet its statewide goals. Five of California's largest utilities, Pacific Gas and Electric Company (PG&E), Southern California Edison (SCE), San Diego Gas and Electric (SDG&E), Southern California Gas Company (SoCalGas), and the Sacramento Municipal Utility District (SMUD), together with the EPA, worked to enhance the EPA's existing automated data transfer procedures to better suit the needs of utilities

The second generation of these procedures, Automated Benchmarking System 2.0 (ABS 2.0), was released in late summer 2008 and participating utilities have updated their data transfer systems to be compatible. One of the critical enhancements that came with ABS 2.0 was the ability to have an online 'Terms and Conditions' agreement for data release authorization that eliminated the previous need for signed paper forms. This feature is crucial to enabling a scalable and fully automated process. Another key enhancement was a customizable page that allows each utility to collect specific data necessary for their ABS. As with any newly introduced program, minor problems were identified by utilities and their customers as they update their internal systems. To facilitate these updates, the utilities participated in biweekly conference

calls with representatives from the EPA, the CEC, and the State. The primary goal was to ensure the utilities were able to move forward with automating their data transfer process, and that communication was consistent and ongoing amongst all parties. Additionally, the utilities were able to share best practices amongst themselves and work to resolve problems as a group, saving them from the potential of replicating mistakes. SRA, the information technology contractor to the EPA for Portfolio Manager, also worked closely with each of the participating utilities to identify problems and ensure they were resolved in time for rollout to commercial customers.

### **AB 1103 Enabling Regulations**

An AB 1103 Work Group was formed in early 2009 to develop its enabling regulations made up of members representing such key stakeholders as the US EPA, the CEC, California utilities, and commercial building owners and managers. The Work Group has made significant progress in resolving many of the key questions and challenges raised by the lack of specificity in the original legislation. It created a phased implementation schedule, agreed upon by all stakeholders, which gave the group and the utilities additional time to resolve the confidentiality issues mentioned in the following section. It also identified the necessary information to be included in the rating and disclosure, as well as the actual process parties must follow to comply with AB 1103. While the Work Group has come to a consensus as to the building types required for inclusion in the AB 1103 disclosure process, it is currently still working out details for some of the definitions and for how nonresidential buildings containing small residential portions or residential meters will fit in to the regulations, amongst others details.

The Work Group is additionally authoring an AB 1103 Guideline document, which is essentially the users' manual for all parties affected by AB 1103. It details the process building owners must follow, how they can know if they are subject to the requirements, what their responsibilities are, and how they can use the data provided to gain insight into their building's efficiency and to make necessary and appropriate adjustments. It also describes the process utilities must follow to facilitate benchmarking by their customers, largely based on the experiences thus far with California's IOUs and SMUD, by thinking about their end goals, their constraints of staff and budgets, the long-term vs. short-term gains of investing in data procedures like the ABS, as well as their role in the AB 1103 process and what is required of them. Finally, it provides a section explaining the disclosure forms, what the various parts mean, and how they can be of value. This effort is a critical task necessary for the successful implementation of AB 1103 and its ability to generate accurate disclosures and support by the public. We expect these Guidelines will also be quite useful to IOU commercial efficiency program managers who must now incorporate benchmarking into their program processes.

### **Working in Cooperation with Real Estate Industry**

One of California's primary objectives is to extend benchmarking to all commercial buildings in the State. Private industry groups have already started benchmarking commercial buildings, but the data process is still largely manual, and is primarily being adopted by companies with interested energy managers in place. In order to make benchmarking truly widespread, the active involvement and promotional efforts of all the utilities, trade associations, and commercial building owner and property manager organizations is necessary. To do so, California has been coordinating the efforts of the utilities and industry groups to promote

benchmarking and to coordinate the process so as to enable statewide reporting of progress toward long-term reductions of energy use throughout the state.

California's Benchmarking Work Group met with representatives of California's commercial buildings, specifically the California Business Properties Association (CBPA) and the California Association of Realtors (CAR), but outreach to commercial building owners on a widespread scale was delayed. The Work Group chose to wait until the major utilities had their data systems working well enough to accommodate thousands of new benchmarking users. With the required inclusion of benchmarking in all commercial utility programs, as specified in the California Public Utility Commission's 2010 decision, however, program managers are required to focus a significant portion of their efforts on outreach to commercial customers. As with other energy efficiency programs, coordination across disciplines and amongst all affected industry players will best serve to promote the benefits of benchmarking.

### **Compliance Document & California-Specific Rating**

Currently, as specified in the legislation, the AB 1103 disclosure document will take the form of the existing Energy Performance Rating provided by Portfolio Manager. For more than a decade, the EPA has worked with businesses and organizations to reduce energy use and greenhouse gas emissions through strategic energy management practices. The tool allows a building's energy use to be compared to other, similar types of facilities using the energy performance scale of 1-100 to determine the performance of a facility. The scale accounts for differences in operating conditions, regional weather data, and other important parameters. Buildings that achieve a score of 75 or higher may be eligible to earn the ENERGY STAR.

To advance its efforts, Portfolio Manager provides energy use reporting capabilities, from which users can generate reports for an individual building in a process that is simple, straightforward, and immediately available to any user. The CEC intends to leverage this capability as it develops the AB 1103 compliance requirements. As a first step in this direction, the CEC is exploring the development of a California-specific disclosure report, which users could easily generate once all required information has been entered into Portfolio Manager.

In addition to defining the compliance document, the CEC continues to develop California-specific benchmarking information. California is in a unique position because of the large amount of state-specific data available on the types and energy consumption of its buildings to consider creating its own state-specific benchmarking system. The CEC intends to include, as it becomes available, California-specific benchmarking information in the AB 1103 compliance document and is exploring how it could do so in a way that would also generate a more accurate and comprehensive database of California's commercial building stock.

The goal for the California rating would be to provide benchmarking information comparing a building against other similar buildings in California. This differs from the Portfolio Manager system, which provides benchmark scores comparing buildings throughout the country. Additionally the California rating would strive to apply to a broader range of building types than the EPA's Portfolio Manager to the extent this is supported by the underlying data base. This rating would augment the national scores Portfolio Manager provides, producing a more specific depiction of how a building compares to other buildings in the California market that are dealing with the same energy codes, legal regulations, and climatic conditions.

## **Integration into Utility Programs**

AB 1103 requires electric and gas utilities to a) keep electronic records of the most recent twelve months of energy consumption data for nonresidential buildings in a format compatible with Portfolio Manager, and b) upload the energy consumption data to Portfolio Manager at the customer's request. This legal obligation does not address the full potential of utilities to make AB 1103 successful by maximizing the ease of use and functionality of the electronic upload, promoting the use of the electronic upload system, and supporting the ultimate goal of using benchmarking to transform the market for energy efficiency in commercial buildings. Even for utilities that manage energy efficiency programs, it can be a challenge to justify the costs associated with a robust benchmarking program because they cannot contribute directly to energy savings goals. For the utilities that worked to overcome this challenge, it was critical that the business case demonstrated value independent of legislative compliance.

The obvious justification for setting up ABS is the practical matter of transferring the energy usage data in the most cost-effective way. Developing a fully automated system that is customer-friendly, provides monthly updates, and makes available more than just the most recent twelve months of data are not required by AB 1103. These items do, however make the service much more valuable and provides the utility with the ability to use Portfolio Manager as a channel to fulfill the increasing customer demand for energy information as it relates to broadening new public expectations of environmental stewardship. Utilities with ABS are able to offer the existing Portfolio Manager tool as a valuable energy management service to their customers with only the incremental cost of providing the energy upload. In exchange, the utility is also able to get valuable information about the building entered by the owner or operator.

Promoting the use of ABS through marketing, education, and outreach is another important, but voluntary, element of the role some utilities have taken. Building owners and operators still have the option of entering data manually, and therefore need to know that the electronic upload option exists and how to use it in order for it to make an impact. For example, PG&E has developed a website, fact sheet, and instructional guide, as well as free hands-on workshops and technical support, to encourage and assist with use of ABS. PG&E and other utilities have recognized that instead of a regulatory burden, AB 1103 can be viewed as a unique marketing opportunity. Benchmarking provides a platform for engaging and communicating with customers about building performance, motivating them to participate in programs, cost-effectively identifying and targeting buildings for projects, and verifying energy savings.

Benchmarking has also been shown to be a valuable component of taking a fleet-wide approach to energy efficiency for utility customers with large portfolios of buildings. PG&E piloted this approach with its More than a Million offering and was able to use benchmarking to demonstrate a significant upward trend in whole building performance across a fleet of dozens of buildings occupied by a single customer in the banking industry. ABS is a critical enabling tool for fleet-wide benchmarking, as the task of manually entering data continuously for large numbers of buildings and meters is impractical. Utilities and their customers are recognizing the important role of strategic, integrated energy management in generating and maintaining energy savings, and benchmarking is a fundamental and ongoing component of that process.



## **Outstanding Issues**

### **Authorization/Confidentiality Issues**

AB 1103 requires that all nonresidential building owners benchmark their buildings, including buildings where tenants pay their own utility bills. Ideally, utilities would provide energy use data electronically and automatically to Portfolio Manager on behalf of the building owner, because this would significantly reduce the difficulty of benchmarking while increasing the accuracy of the energy data inputs. Utilities have been concerned about how to keep tenant customer data confidential, as required by law, while providing the data necessary for benchmarking to owners. In general, CPUC regulations require that account holders must agree to their utility disclosing energy use data to any third party. For a single building with a single billing account controlled by the owner, this is not a problem, but it is proving to be a significant problem with multiple tenants. In a multi-tenant building, a single tenant who is either unavailable (e.g. having vacated the building) or uncooperative can prevent the entire building from being benchmarked. Even with cooperative tenants, this would likely be a significant challenge for large buildings with many tenants.

This privacy constraint is one that faces all utilities. The Work Group has been trying to facilitate a resolution without finding a solid and universal solution, primarily due to differences in confidentiality policy implementation, variation in internal utility databases, and limitations imposed by those internal utility databases. As a worst case, some utility data systems are not set up to identify all meters in an individual building, requiring a manual process to collect the pertinent meter/account numbers. To address those concerns, but also ensure compliance with AB 1103, CEC regulations allow IOUs to have building owners sign a non-disclosure agreement (which may be electronically authorized) before tenant data is released for benchmarking, aggregate data from two or more tenants into a 'virtual meter', or require the owner of a single-tenant building to manually get the meter/account number and a signed release of energy use information from the tenant. While these options allow utilities to move forward and provide data to multi-tenanted buildings, they still require individual authorization from each tenant, which is likely to hinder the effectiveness of statewide benchmarking. A possible solution may be to keep the responsibility of meter identification on the building owner by using a meter identifier that is not confidential, which would resolve the technical issue of determining which meters to aggregate while providing an alternative to obtaining individual tenant authorizations.

An additional privacy constraint is the ability to provide continuous historical data when the account holder of a meter has changed, either due to a change of tenant or ownership of the entire building. Obtaining authorization from a previous tenant or building owner may create an even more significant obstacle than obtaining authorization from current tenants. The solution offered by a non-disclosure agreement would resolve this issue, create a much smoother ABS process, and allow for a continuous picture of the building performance over longer periods of time. The CEC, in consultation with the IOUs, will need to seek approval from the CPUC to clarify and obtain approval for implementing their desired solution once the final implementation regulations, and in particular the exact nature of the disclosure document, have been finalized.

## **Challenges with Smaller Utilities**

In order to make benchmarking truly widespread, California needs the active involvement of all utilities throughout the State. A major challenge the Work Group has been unable to overcome to date, however, is acquiring the full support from every utility in the State. California is served by a handful of large utilities, including the five that have thus far been participating in these benchmarking efforts. In addition, there are about forty other utilities, most of which are small city-run utility districts or associations. Many of these smaller utilities may have difficulty implementing the data solutions automated benchmarking requires because their resources are limited. As such, building owners conducting financial transactions that trigger AB 1103 in these service territories might find it more difficult to comply with the disclosure requirements. Additionally, these smaller utilities could find they are faced with a considerable amount of work to provide the energy use data to the buildings owners and maintain their compliance.

## **Best Practices for Other Utilities Responding to Benchmarking Requirements**

Before starting, it is important for utilities to review their data systems, organizational goals, and available resources to determine the most appropriate disclosure method.

### **Number of Nonresidential Customers in Service Territory**

The potential number of nonresidential buildings and/or meters that a utility might need to accommodate is useful information. Utilities can use this information to estimate needed resource capacity, including staff hours, server capacity, and troubleshooting requirements, and so gauge their ability to successfully serve all potential customers. Not only is it important to know the number of actual nonresidential buildings and meters served, but expected turnover of these buildings is a key metric that should be considered. This information can help determine how frequently the data will be requested by customers and can help in deciding if adequate resources are available and which methods for releasing data would be most economical for the service territory and customer mix.

### **Resource Availability**

Utilities can supply electronic energy use data to Portfolio Manager either through the automated approach, ABS, or via the Excel spreadsheet template the EPA has created. When deciding which method to use, utilities should weigh the pros and cons of both strategies – the ABS approach has added upfront costs, but once successfully established, should take little upkeep and maintenance, while the more manual, Excel-based method will require frequent and regular maintenance. From the Work Group's experience, the ABS method is preferable, not only for ease of use for customers, but also for the long-term benefits it provides to each utility in terms of customer data availability. Additionally, the Excel spreadsheet approach requires access to the building owner's Portfolio Manager account in order to upload the required data, increasing the time and effort necessary for successful compliance by the utility.

ICF International put together a survey based on those California utilities that have implemented ABS.<sup>3</sup> The study results can be a valuable resource for those utilities not sure which method to adopt. It successfully brings to light not only the monetary implications of implementing these benchmarking services, but also the staff time, technical, and policy-wide hurdles that can affect execution. Utilities weighing the potential cost impacts of setting up an automated approach should also consider that utilities in California needed to develop and implement two generations of ABS as the US EPA system was updated and improved, which added to overall costs. In addition, there is now a greater wealth of support resources available on the EPA's ABS website ([www.energystar.gov/istar/has](http://www.energystar.gov/istar/has)). Overall, implementation today should be more straightforward; California utilities faced a greater challenge in that they were truly pioneering the approach to utility-provided ABS. A final factor that should ease future implementation is that vendors, familiar with the US EPA system, intend to offer solutions that will require less customization and will be more 'off-the-shelf.'

### **Staff Availability**

Staff availability is a crucial component to successfully implementing a benchmarking program. Staff resources can play largely into which method a utility chooses to undertake. If technical staff are available to invest upfront time in the development of ABS, a utility can save substantial staff time and costs in the future; they will not be obligated to manually provide energy use data to the customer's account every time a nonresidential building in the service territory triggers the disclosure requirement. If, however, the utility has gone through the process of estimating the number of nonresidential buildings in their service territory and believes that it is more cost-effective to consistently have staff go through their data system, then those staff resources should be accounted for. Either way, it is important to decide which is the better investment for the utility as an organization: the one-time upfront costs of ABS or the ongoing process of regularly providing data to any nonresidential customer who requests it.

### **Technical Experience**

Related to staff resources are the utility's internal technical abilities. ABS requires programmers competent in XML and other IT architecture schemas. If there are capable employees on staff, implementing ABS could be a very beneficial route for a utility to take. If not, however, it could potentially cause more problems than it attempts to resolve. One alternative for utilities not employing technically experienced staff is to hire an outside consultant to perform and automate ABS procedures. There are organizations that have gone through this process and are experts in the language required by the EPA for successful program performance. They know the system requirements and the best course to effectively implement ABS. Additionally, setting up these systems requires forethought into such issues as: what the utility plans on doing with customer data, how best to integrate the utility's current system with that of the EPA, and how to ensure future Portfolio Manager changes are compatible with the utility's system. As such, it is worthwhile to consider using such a company, even if there are

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<sup>3</sup> Study results can be found on the Hescong Mahone Group's *Energy Benchmarking Website* and accessed via the following link: <http://www.h-m-g.com/downloads/EnergyBenchmarking/For%20Utilities/CA%20ABS%20Cost%20Summary%207-09.pdf>

experienced IT architects on staff, in order to prevent problems. This is a strategy most of the large California utilities employed, as is often more cost-effective in the long-term.

### **Disclosure Timeframe**

It is critical to keep the required timeframe in mind when first getting started. AB 1103 enabling regulations, for example, specify that a utility must provide and upload the required billing data within fifteen calendar days of the complete and accurate request. In determining the most cost-effective method, utilities should keep this timeframe in mind and consider the availability of their staff to meet this deadline, taking into account their data system and their other responsibilities. This can be an especially important decision for those utilities choosing to use the Excel method, as it will be the responsibility of their staff to adhere to that deadline. The ABS approach, however, being automated, requires less time and less manual effort.

### **Organizational Goals**

A utility's organizational goals should be a key component of its decision to use ABS or the Excel method. Those utilities looking to maximize their ability to provide customers with the best services possible should strongly consider ABS. Not only will it provide a valuable service to nonresidential customers, but it also supplies the utility with previously unavailable information through full access to the customers' benchmarking data. This includes data that utilities typically do not have about their customers' facilities, such as building occupancy type, vintage, and square footage. From the data gathered about customers, utilities can better target those most eligible for energy efficiency upgrades, assist customer representatives in identifying new program participants, and conduct market segment research to better understand their customers. Utilities should also consider that benchmarking legislation is only one driver among many that will motivate their customers to use Portfolio Manager, and ABS may be able to provide a least-cost strategy for fulfilling the full breadth of these related data requests.

### **Conclusion**

Significant progress toward the vision of universal benchmarking continues to be made in California, and the key stakeholders are fully engaged in addressing the remaining substantive obstacles. Those successes and challenges listed above are the key elements California has struggled with. These are not unique to California, however, and will need to be addressed by any jurisdiction seeking to make benchmarking universal. By continuing to share best practices amongst groups working towards the same goals, all parties can get that much closer to increasing building owner awareness of energy use, integrating energy use into the real estate transaction process, and assisting in the transformation of the nonresidential market.

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