

CALIFORNIA
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**AB29x and SB5x Program Evaluation
First Quarter Report**
(January 1 to March 1, 2002)
Executive Summary

CONSULTANT REPORT

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Gray Davis, Governor

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Submitted to:

California Energy Commission

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Executive Summary

This report presents the results of Nexant's ongoing evaluation of the California Energy Commission's (CEC) Peak Load Reduction Programs (PLRP) for the first quarter of 2002. The total expenditures and savings presented in this document are current as of March 1, 2002.

The five program elements that are the subject of this report are funded by California Senate Bill 5X (SB 5X) and California Assembly Bill 29X (AB 29X). The elements (and respective funding sources) are as follows:

- Agriculture Peak Load Reduction (SB 5X), which provides incentives for installation of more efficient processing operations and alternative fuel projects
- Cool Savings (SB 5X), which provides incentives to increase reflectivity of roofs and other surfaces thereby reducing cooling (air conditioning) loads
- Demand Responsive Building Systems (SB 5X), which funds the installation of real-time metering and communications systems as well as tests for the level of emergency curtailable load reduction.
- Innovative Peak Load Reduction Proposals (SB 5X), which provides cash for innovative methods of reducing peak demand not provided for by any other program element (includes renewable energy development)
- Energy Conservation Assistance Act (ECAA) Loan (AB 29X), which provides 3% interest loans to local governments and schools.

This report discusses, for each program element, the major accomplishments for the measurement, verification, and evaluation (MV&E) effort:

- Completion of each individual program element's general M&V plan (and in several cases, site-specific M&V plans)
- Completion of the sampling plans for a program element that is fully, or close to fully, populated
- Where applicable, submission to the CEC of the preliminary forms for both the program participant audits and program administrator audits
- Development of inspection protocols for use by program administrators, defining necessary data collection and suggestions for keeping within budget. These protocols, apply to both pre- and post-installation inspections, and define inspection needs.

- Weekly status updates to the CEC charting sites inspections and overall progress.

The majority of the SB 5X and AB 29X projects have not yet been implemented; therefore, Nexant has no verified savings to report for these programs at this time. Instead, Nexant presents *reported* savings and cost-effectiveness indicators, as available, for the SB 5X and AB 29X programs.

Table 1 summarizes the activity of the program elements in terms of the estimated number of participants, reported peak demand savings (and potential load curtailments, for demand response projects), the CEC's total savings goals, and the preliminary cost per kilowatt of demand savings (which are likely to change significantly as savings are verified).

Participation in these program elements will likely grow until June 1, 2002, the PLRP deadline. Nexant is in the process of developing sampling plans to verify the savings (and potential load curtailments) attained by the program elements.

Table 1: PLRP Program Activity as of March 1, 2002

Program element	Estimated participation	Reported savings (MW)	CEC savings goal (MW)	Cost/kW of savings
Agriculture Peak Load Reduction	335 projects approved; 93 verified complete	66.2	105	\$134
Cool Savings	n/a	n/a	32	n/a
Demand Responsive Building Systems	TBA	n/a	164	\$81.3
Innovative Peak Load Reduction Proposals	38,000 sites		120	n/a
Energy Conservation Assistance Act (ECAA) Loans	69 loans approved		50	\$94

Table 2 shows the modes of program implementation in use for each element. In designing these programs, the CEC divided the participants into three categories: grantees, loans, and third-party administrators or contractors. Some of the program designs involve both grantees and contractors. Nexant will be evaluating each program element by matching the appropriate methodology for a particular program element.

Table 2: SB 5X/AB 29X Program Designs

Program element	Grantees	Loans	Third-Party
Agriculture	X		X
Cool Savings			X
Demand Response	X		X
Innovative	X		X
ECAA loans		X	

Program Element Highlights

The following sections present overviews of each of the five program elements.

Agricultural Peak Load Reduction

As of March 1, the Agriculture Peak Load Reduction Program approved 107 projects. Nexant has verified that 38 of these projects are complete with a reported demand reduction of 30 MW. The complete list of approved projects represent potential demand savings of 66.2 MW; Nexant approved 62 percent since the 2001 December Report.

As noted in Nexant's 2001 December Report, the challenges faced by the agriculture program have been its June 2001 start date that conflicted with the peak agricultural production season. This timing was a barrier to early participation, which resulted in slower than expected savings and delayed completion of some projects.

Recruiting and maintaining participants remains a challenge. Eight projects converting natural gas to alternative fuel have dropped out since December 2001. This occurred partly because of the expected elevated natural gas prices. None of the program elements efficiency projects have dropped out, however.

Cool Savings

Nexant and the CEC anticipate that the Cool Savings program element will achieve a peak savings of approximately 3 to 5 MW from the over 500 participants.

The general M&V plan has been developed based on the experience in the AB 970 program. Nexant will calculate the peak demand savings using the same savings estimation methodology developed by researchers at Lawrence Berkeley National Laboratory including

verifying as clearly as possible the coefficient of performance (COP), thermal resistance (R-value), and reflectivity averages used in estimating savings.

Demand Response Building Peak Load Reduction

In the demand responsive program element, grantees and contractors have fully subscribed the program's funding resources. Nexant has developed two M&V plans: one for small, medium, and large commercial and industrial projects and one for residential projects.

Innovative

The three segments of this program element (large grants, small grants, and third party administrated) continue to attract participants. However, because of a low level of current participants, the selection of the sample population has not yet occurred. Measurement of demand savings should be complete by the summer of 2002.

The generation projects in the innovative program element are projected to produce 33.3 MW of power; however, due to the significant changes in the California power market, many of these participants will likely lower their savings projects or dropout of the program.

ECAA

Nexant has selected 13 projects, and will conduct site visits in the coming weeks. In addition to the general M&V plan, two project specific M&V plans have been completed and submitted to the CEC for review.

Next Steps

The second quarter report, due in June, will continue to update the CEC on the progress of each of the current program elements described herein with the addition of a new program element, Water Agency Generation Retrofit, which is an extension of the water/wastewater program element that was implemented under AB 970.

In the second quarter report, focus will be on the increased amount of reported demand savings and on how savings compare to the goals of the program elements. At that time, more pre- and post- installation inspections will have been completed, and Nexant will be able to report verified demand savings and preliminary cost-effectiveness indicators.

