



June 1, 2009

Mr. Bruce Evans
Director, Customer Solutions & Delivery
CPS Energy
7000 San Pedro Ave.
San Antonio, TX 78216

Re: Jobs Creation Effects of Save for Tomorrow Energy Plan (STEP)

Dear Bruce:

This letter presents findings of an analysis of the likely job creation impacts associated with CPS Energy's Save for Tomorrow Energy Plan (STEP) program initiatives. As described more fully below, the STEP program can be expected to create and sustain from approximately 1200 to 2000 new jobs by 2020.

Methodology

To calculate the number of jobs created by the STEP program, Nexant examined expected program spending levels as estimated in the recently completed forecast of demand-side management (DSM) potential, with consideration of forecast expenditures for demand response resources.^{1,2} Our analysis considered two distinctly different methods for forecasting job creation:

- A macroeconomic analysis that derives employment effects from an input-output analysis using Bexar County economic parameters, and
- A bottoms-up analysis that derives employment effects from estimated direct job creation benefits specific to DSM program types.

Region-Specific Economic Analysis and Results

The macroeconomic analysis was conducted using Bexar County input data from IMPLAN, which is a widely used economic forecasting model that is based on input-output analysis (I-O) techniques.³ This approach uses applied economic analysis to track

¹ *Demand Side Management Potential Study*, final report prepared for CPS Energy by Nexant, November 2008

² Demand response resource acquisition is expected to achieve 100 MW of peak capacity avoidance at a cost of approximately \$65/kW-yr. (Telephone communication with Bruce Evans, May 5, 2009.)

³ For example, the US Department of Agriculture selected IMPLAN as its analytical framework for monitoring job creation associated with the American Recovery and Reinvestment Act of 2009.

Nexant, Inc.

101 Second St., 10th Floor
San Francisco, CA 94105 USA

tel +1 415 369-1100
fax +1 415 369-9700

www.nexant.com

the interdependence among various producing and consuming sectors of an economy.⁴ More particularly, I-O analyses measure the relationship between a given set of demands for final goods and services and the inputs required to satisfy those demands.

The results of the I-O analysis indicate a net employment increase of about 800 jobs by 2020. For reason explained more fully below, we believe this estimate to be well below the likely range of jobs created, though it serves as a useful reference point. Attachment 1 provides summary tables of the model inputs.

DSM Program-Specific Analysis

In recognition of the non-DSM specific nature of the I-O analysis, we also estimated employment effects using data from Rapid Deployment Energy Efficiency (RDEE) documentation.⁵ Table 1, drawn from the RDEE resources, provides range estimates of job creation associated with specific types of DSM program activity.

Table 1: Economic and Employment Effects by Program Type

Program	Mbtu per \$1,000 Range	Jobs per \$M Range	Applicability	Simplicity & Lack of Risk	Sustainability	Leverage
RESIDENTIAL						
Home Performance with ENERGY STAR	5-15	18-25	High	Moderate	High	Moderate
Residential Energy Audit and Direct Installation	5-12	18-25	High	Moderate	High	Moderate
Residential Efficient Air-Conditioning	10-20	11-20	High	High	Moderate	High
ENERGY STAR Labeled Products	80-100	8-10	High	High	Moderate	High
NON-RESIDENTIAL						
Non-Residential Custom Incentives	50-150	15-18	Moderate	Moderate	Moderate	Moderate
Non-Residential Retro-commissioning	80-120	11-15	Moderate	Moderate	Moderate	Moderate
Non-Residential Benchmarking & PCx	20-40	11-15	Moderate	Moderate	High	Moderate
Non-Residential Prescriptive Rebates	80-130	8-11	Moderate	High	Moderate	High
Commercial Food Service Efficiency	25-40	6-8	Moderate	Moderate	Moderate	Moderate
Non-Residential On-Site Energy Manager	80-120	5-11	Low	Moderate	High	Moderate

Our analysis mapped the RDEE employment estimates by program types to projected STEP initiatives and budgets. The results of the program-specific analysis indicate a net employment increase of about 2000 jobs by 2020. Attachment 2 provides summary tables of the input data and results.

Interpretation of Results

The wide range of results—from 800 jobs in the I-O analysis to 2000 in the program-specific analysis—point to inherent uncertainties in predicting employment effects of any economic stimulus or policy intervention. We therefore recommend that discussions of

⁴ The particular analytical framework and use of Bexar County data was suggested by Skip Laitner of the American Council for an Energy-Efficient Economy, which uses a similar tool to score job creation potential of proposals submitted to the US DOE under provisions of ARRA. (Telephone and email conversation with Skip Laitner, April 10, 2009)

⁵ The RDEE *Planning Guide* was issued by the USEPA and USDOE on May 1, 2009 to assist potential recipients of ARRA energy grant funds. The planning and implementation guides comprise a toolkit including DSM program templates suitable for previously inexperienced entities to rapidly initiate programmatic activities.

job creation always include a reminder of the uncertainties. The I-O model inputs, for example, are not specific to DSM programs, as the granularity of data does not support macroeconomic analyses at that level of detail. The closest category of inputs is in the “power generation and supply” sector, and as a consequence the primary job creation is characterized accordingly. Typical investments in power generation and supply are often capital-intensive and the I-O data for this sector are therefore likely to underestimate job creation from less capital-intensive investments by CPS Energy. Specifically, DSM programs are quite *labor*-intensive and known to directly create employment opportunities for program implementation staff, contractors and others involved in equipment sales and implementation, and other service providers.⁶ Based on this reasoning and with the additional information from the RDEE data, we conclude that application of the I-O approach and general macroeconomic data produces a significant underestimation of STEP’s employment effects, which we project to be *at least* 1200 jobs created.

We attempted to find documentation of the RDEE range estimates for job creation by program type, but were unable to obtain citations to empirical data. The RDEE planning guide makes a general reference to the experiences of programs implemented throughout North America and to professional judgment regarding the magnitude of jobs created per million dollars on investment. Based on our own experience planning, implementing, and evaluating programs, we accept the validity of the range estimate for each program type, noting the wide range associated with each program type. We are uncertain whether the RDEE estimates include consideration of indirect and induced job creation, so we believe that the estimate of 2000 jobs created is likely to result in a conservatively low estimate. For these reasons, we conclude that the employment effects of STEP program investments will create at least 1200 to 2000 new jobs by 2020.

As always, if you have any questions or concerns regarding this analysis, please do not hesitate to contact me at 415-359-1021 or at tmfy@nexant.com.

Sincerely,



Terry M. Fry
Senior Vice President

⁶ Other employment effects are associated with (1) the indirect economic effects of program participants whose bill reductions enable them to increase discretionary spending on other activities, and (2) induced effects associated with the stimulus effects of increased economic activity due to direct and indirect effects. Results from the I-O modeling indicate indirect and induced job creation in food services, general merchandise stores, retailers, food and beverage stores, real estate, legal services, architectural and engineering firms, health care services, and others.

ATTACHMENT 1: I-O Analysis Inputs and Results

Estimating the Macroeconomic Impacts of STEP investments (in Bexar County, TX)

Spending Patterns (in Millions of 2007 dollars)	2009	2010	2011	2012	2013	2014	2015	2016
Program Cost (Other than Incentives)	16.0	18.1	23.4	31.0	32.1	38.8	42.5	46.9
Incentives to Stimulate Overall Productive Investment (N/A)								
Productive Investment from Private Sector and/or Households (includes incentives)	21.3	23.2	29.4	36.7	27.8	36.3	38.4	45.2
Total Productive Investment	21.3	23.2	29.4	36.7	27.8	36.3	38.4	45.2
Change in Electricity Demand	-5.3	-5.8	-7.4	-9.2	-7.0	-9.1	-9.6	-11.3
Change in Natural Gas Demand								

Bexar Key Impact Coefficients (Total Jobs/\$MM; Value-added/\$)	Dir Job	Tot Jobs	Dir GDP	Tot GDP
Construction	7.25	12.35	0.411	0.80
Elec	2.71	5.82	0.723	0.98
Nat Gas	0.21	3.28	0.568	0.89
Other	7.76	12.33	0.587	0.94

Annual Rate of Labor Productivity	1.90%
TRC B/C Ratio	1.5

Implied Change in Final Demand (Millions of 2007 Dollars)	2009	2010	2011	2012	2013	2014	2015	2016
Construction	21	23	29	37	28	36	38	45
Elec	-5	-6	-7	-9	-7	-9	-10	-11
Nat Gas	0	0	0	0	0	0	0	0
Other (TRC net benefits)	13	15	19	25	23	28	31	35

Suggested Macroeconomic Impacts	2009	2010	2011	2012	2013	2014	2015	2016
Jobs (actual)	400	400	500	600	500	600	700	800
GDP (Million 2007 Dollars)	24	27	34	43	37	47	50	57

Notes:

- (1) This analytical framework is intended only to provide a working estimate of first order impacts likely to result from a productive investment in energy-efficient technologies.
- (2) This working model does not imply a valid set of input assumptions; and a change in spending patterns may require additional changes in rows and/or impact coefficients than what are presented here.
- (3) The impact coefficients are drawn from the 2007 IMPLAN economic accounts for the United States. See, <http://www.implan.com>. Accessed March 2009.
- (4) This framework does not include positive impacts likely to result from stabilized or reduced energy prices and from other, non-energy productivity benefits likely to emerge from such investments.
- (5) The change in final demand is a sum of the program spending and the reduced demand for energy. The category of "other" in final demand includes a credit for the avoided utility costs (approximately 1.5 productive investments).

ATTACHMENT 2: DSM Program-Specific Analysis Inputs and Results

Estimating the DSM Program-Specific Employment Effects of STEP Investments

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential Program Expenditures (\$M)	\$7.2	\$10.9	\$19.8	\$35.1	\$50.2	\$63.4	\$74.5	\$82.8	\$88.9	\$93.9	\$94.7	\$95.2
Subtotal Jobs (residential)	115	174	317	562	804	1,014	1,192	1,325	1,422	1,503	1,515	1,524
Commercial/Industrial Expenditures (\$M)	\$25.5	\$27.0	\$31.6	\$34.5	\$12.1	\$18.5	\$16.5	\$24.6	\$18.8	\$35.3	\$21.4	\$35.5
Subtotal Jobs (C&I)	314	333	390	425	149	228	204	303	232	435	264	438
Total Jobs (all programs)	400	500	700	1,000	1,000	1,200	1,400	1,600	1,700	1,900	1,800	2,000

Residential	Jobs/\$M	CPS prog?
ENERGY STAR Products	9	1
Easy Audit and Direct Install	21	1
Home Performance with ENERGY STAR	20	1
Efficient Heating and Cooling	14	1
Simple Average (Residential)	16.0	
Weighted for CPS Programs (Residential)	16.0	

Commercial	Jobs/\$M	CPS prog?
C&I Prescriptive	9	1
C&I Custom	16	1
Retrocommissioning	12	1
Commercial Benchmarking and Performance	12	
On Site Energy Manager	8	
Commercial Food Service	7	
Simple Average (C&I)	10.7	
Weighted for CPS Programs (Commercial)	12.3	