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Utility Rate Affordability: Building a "Business Case" Analysis.

A business case can be made for low-income rate affordability programs. This business case approach is at odds with the reasoning that some utilities advance for rejecting the promulgation of a meaningful low-income program. On the one hand, the business case supports the conclusion that the utility, as a utility, should be adopting such programs. On the other hand, the business case is contrary to the conclusion that the affordability program should be pursued exclusively at public expense. No reason exists for the public, through state legislative action, to be the funder of activities that will generate real and substantial financial benefits to the utility.

Utilities miss the point when they urge, without a thorough review of the implementation of low-income programs in other jurisdictions, that utility regulation seeking to establish rates that are cost-based, and which do not discriminate between or within customer classes, is in conflict with a low-income affordability program. The discussion below will consider the elements of a "business case" for a low-income affordability program.

This business case is not presented in lieu of the social benefits that arise from low-income rate affordability programs. It is presented to show that addressing the social problems can also be good business.

ASSESSING THE BUSINESS CASE FOR AFFORDABLE LOW-INCOME RATES

Assessing the business case for a low-income affordability program involves performing the following steps:

- Articulating the outcomes the program seeks to accomplish;

- Assessing the effectiveness of the program in achieving those outcomes;
- Assessing the productivity of the program in achieving those outcomes;
- Comparing the costs of the low-income program against the costs of alternatives that would achieve the same or comparable outcomes.

Each of these steps is examined in greater detail below.

ARTICULATING THE OBJECTIVES OF A LOW-INCOME PROGRAM

Articulating the objectives of a low-income program is a necessary first step in assessing the business case for a low-income rate affordability program. Without having first identified the business objectives it seeks to accomplish, a utility cannot hope to assess whether it is spending money wisely or unwisely. Identifying the program objectives helps a utility to determine up-front the extent to which it is committing resources in furtherance of some purpose.

For purposes here, the objectives of a low-income affordability program are limited to those objectives that are exclusively related to the utility as a utility. Without endorsing the notion that any social function is beyond the purview of ratepayer dollars –utilities certainly spend money on such "social" functions as workplace safety, environmental protection (including clean air and water), and workplace diversity—for the purposes of the instant analysis, the social function of providing affordable rates because of the social benefits generated by affordability (e.g., housing, public health and safety, nutrition, business competitiveness) is set aside for the moment.

Having done that, the business objectives of a low-income rate affordability program are two-fold:

- To provide an uninterrupted supply of the products and services the utility seeks to sell; and
- To collect the revenue from those sales in a full and timely fashion.

EFFECTIVENESS OF AN AFFORDABILITY PROGRAM IN ACHIEVING BUSINESS OUTCOMES

A business case for a low-income program affordability program must consider the effectiveness of the program in accomplishing the articulated outcomes. No matter what level of cost is being incurred, by the program or by the alternatives against which the program is being compared, to the extent that the business objectives are not being accomplished, a "business case" cannot be made for that activity.[1] With this in mind, assessing the business case of a low-income program first considers whether the identified desired outcomes are being accomplished.

The Effectiveness in Maintaining Uninterrupted Service

A low-income rate affordability program can be a more effective mechanism for providing an uninterrupted supply of the products and services which the utility seeks to sell than existing alternatives. For purposes of this analysis, the "interruption of sales" is measured by the involuntary disconnection of service for nonpayment.[2] In turn, the disconnection of

[1] Consider the farmer who is assessing the "business case" for how to keep the grass in his back pasture short. He identifies three alternatives: (1) a push mower (with a low capital investment but high labor costs); (2) a power mower (with a high capital investment but low labor costs); and (3) a herd of sheep. The first question the farmer confronts is *not* "what is the cost?" The first question must be: is the grass being kept short?

[2] A second way to measure service interruptions would involve an examination of "final bills." The level of final billed accounts is a more comprehensive metric in that it picks up the voluntary disconnection of service, including the voluntary disconnection associated with frequent mo-

service is measured in two ways: (1) the frequency of disconnections; and (2) the duration of disconnections.

The impact of a low-income affordability program on the disconnection of service was directly studied for the rate affordability programs offered by two Indiana utilities. The evaluation of Indiana's disconnections for nonpayment compared the disconnections without the program to the disconnections with the program. It further compared the rate of disconnections for program participants to the rate of disconnections for the residential customer base as a whole.[3]

The Indiana "Universal Service Program" (USP) was more effective in achieving the outcome of uninterrupted service than was the status quo (i.e., delivering undiscounted bills coupled with collection activity, payment plans, and the like). The empirical evaluation found:

- The USP succeeded in reducing the low-income shutoff rate to virtually the same level as the residential population as a whole. In the "high disconnect" months of April and May, while Vectren Energy disconnected 13 accounts for each 1,000 residential accounts, the Company disconnected between nine (9) and 18 accounts within the low-income population.

- If one limits the comparison to accounts with arrears, the low-income program participants outperformed the residential population as a whole. While Vectren disconnected service for nonpayment to between 13 and 15 of each 100 residential accounts at least 60 days in arrears, the company disconnected service to between 10 and 11 accounts of each 100 low-income program participants who were at least 60 days in arrears.

The improved performance could be attributed to the rate affordability initiatives. In November 2006, the evaluation found, "it is evident that the households who would eventually become program participants were performing less well than the total population. This is true for all three metrics (DNPs[4] to total accounts; DNPs to accounts in arrears; DNPs to accounts 60+ days in arrears). It is not until after the Vectren program delivers its bill payment assistance during the winter months that the DNP performance begins to substantially improve."

Low-income customers receiving payment assistance experienced a decrease in disconnections, while low-income customers not receiving such assistance continued to see an increase in the number of disconnections they experienced.

The performance of Indiana's rate affordability participants was far superior to the performance of low-income customers statewide in Indiana. The 2006 annual "Billing and Collections Report" reported that, statewide, a low-income account in Indiana receiving a shutoff notice was more likely to move to the actual disconnection of service than was a residential account in general. The rate affordability program reversed that result for program participants.

In addition to reducing the *frequency* of involuntary disconnections for nonpayment, the Indiana USP reduced the *duration* of disconnections as well. The Indiana evaluation found that "Vectren succeeded in lessening the duration of service disconnections for nonpayment when compared to the total

bility. See generally, Colton (1996). The Road Oft Taken: Forced Mobility and Childhood Education in Missouri, 2 *Journal on Children in Poverty* 23.

[3] Colton (2007). *An Outcome Evaluation of Indiana's Low-Income Rate Affordability Programs*, Citizens Gas and Coke Utility/Vectren Energy Delivery/Northern Indiana Public Service Company. See also, *An Outcome Evaluation of Indiana's Low-Income Rate Affordability Programs: 2008 – 2009 Program Year*, Citizens Gas and Coke Utility/Vectren Energy Delivery/Northern Indiana Public Service Company.

[4] A "DNP" is "disconnect for nonpayment."

residential customer base as a whole." The evaluation reported that "low-income customers consistently outperformed the total residential customer base in having their service quickly reconnected. In no month did the reported proportion of short-term reconnections for low-income program participants fall below the proportion of residential customers generally."

The Effectiveness in Collecting Billed Revenue

In addition to the success in maintaining the uninterrupted supply of product, the Indiana rate affordability program generated positive outcomes regarding the collection of revenue as well. This positive outcome was measured in terms of whether the program generated revenue neutrality.

Revenue neutrality examines the extent to which, if at all, a low-income rate affordability program generates the same dollars of revenues to the utility despite the offer of discounted rates or bills. Revenue neutrality occurs when the discounted rates or bills improve payment patterns sufficiently to offset any reduced billings through the offer of the rate discount.

Revenue neutrality for Indiana's rate affordability program was measured by comparing low-income program participants to customers known to be low-income but not participating in the rate affordability program. One impact of the rate affordability program was to significantly increase the rate at which low-income customers paid their Vectren bills. Customers that participated in the Vectren program paid 82% of their Vectren bill, compared to a payment of 50% for Vectren low-income non-participants.

The results of the Citizens Gas and Coke Utility (CGCU) rate affordability program, while not as substantial, nonetheless demonstrated the same outcome. While CGCU participants paid 79% of their current utility bill, non-participants paid only 64%. The Indiana evaluation found: "As can be seen, the [rate affordability program] was better than revenue neutral to Citizens Gas. While [program] participants were billed 90% of what nonparticipants were billed, they paid 111% of what nonparticipants paid."[5]

As the Indiana evaluation found, had the low-income non-participants paid at the same rate as program participants did, they would have paid nearly $46,000 more than they actually paid (on a base billing of $304,000).

Similar results were found in the recent evaluation of the Xcel Pilot Energy Assistance Program (PEAP) operated by Xcel Energy in Colorado. The PEAP evaluation found that program participants paid 67% of their current bills, compared to PEAP non-participant payments of 51%. According to the PEAP evaluation, rather than collecting $533,684 from customers if they had not participated in PEAP, Xcel Energy collected $701,278 from customers enrolled in PEAP, a gain of $167,469 attributable to the program.[6]

PRODUCTIVITY OF AN AFFORDABILITY PROGRAM IN ACHIEVING BUSINESS OUTCOMES

In addition to assessing the effectiveness of a low-income program in accomplishing desired business outcomes (relative to the alternatives), it is necessary to judge the productivity of the program (i.e., the efficient use of company resources) in accomplishing the desired outcomes. Assessing productivity supplements the assessment of "effectiveness" from two different perspectives.

Addressing the productivity of utility efforts helps the utility assess whether there is a proper match between the tool being employed and the type of payment problem that is sought to be remedied. On the one hand, evaluating the productivity of the program (relative to its alternatives) helps to identify when

[5] 2007 Indiana Outcome Evaluation.
[6] Colton (2010). *Interim Report on Xcel Energy's Pilot Energy Assistance Program (PEAP): 2010 Interim Evaluation*, Xcel Energy: Denver (CO).

inappropriately extensive tools are being employed by the utility. An involuntary disconnection of service, for example, is not a collection tool that addresses temporary inability-to-pay. The bill would be paid whether or not the disconnection was employed. In these circumstances, the disconnection serves no business purpose. It is not "productive," in that it generates no additional revenue.

On the other hand, evaluating productivity will help the company evaluate whether it is using a tool that is insufficient given the types of problems extent on the utility's system. Considering productivity, in other words, helps identify when tools are being employed that have no hope for success. A deferred payment plan, for example, is not a tool that addresses chronic inability-to-pay. If a customer could not pay his or her full bill in the past because of a lack of money, it lacks good sense to use a tool that would require that customer to pay the full bill *plus* some increment to retire arrears in the future. In these circumstances, the tool is likely to be unsuccessful. It is not "productive," in that it generates no additional revenue.

Productivity implies not only some absolute level of output (i.e., "effectiveness") but some level of output given a designated level of input as well.[7] In order to evaluate productivity, both the input and the output data are needed.

[7] If one were to compare the effectiveness of two district offices in collecting bills, the absolute amount of revenue collected would not be the exclusive performance factor to use in the comparison. Even assuming that both offices faced identical numbers of payment-troubled customers with identical payment problems, it would be invalid to say *ipso facto* that one office was more "productive" if it collected 10% more revenue. If the office which collects more had twice the staff, but collected only 10% more revenue, the revenue collection per staff member would be much lower. If the office that collected more had a substantially greater investment in equipment (e.g., auto-dialers), but collected only 10% more revenue, the revenue collection per dollar of capital investment would be much lower.

Enhanced Productivity of Individual Collection Activities

The use of a rate affordability program helped the Indiana utilities discussed above to enhance the productivity of their collection efforts. Vectren Energy's rate affordability program, for example, allowed that company to move to an increased reliance on payment plans as a collection device for its low-income program participants rather than relying on the disconnection of service for nonpayment when low-income customers falls into arrears. While the payment plan-to-disconnect ratios were similar for all Vectren customers and for low-income customers in the early study months, as the company implemented its rate affordability program, it consistently moved to a greater reliance on payment plans rather than on service disconnections to respond to low-income arrears. In the pre-winter month of November, the ratios of payment plans to service disconnections for nonpayment were virtually identical. The data is disaggregated by the three "tiers" of the rate affordability program (called USP, "Universal Service Program").[8]

- In April, while USP3 customers had 11.1 payment plans for each disconnection for nonpayment, the residential customer base as a whole had only 2.7 payment plans;

- In May, while USP1 customers had 6.9 payment plans for each disconnection, the residential customer base as a whole had only 1.6 payment plans.

The ability to treat the arrears of its low-income customers in a less intensive fashion is also evident from an examination of the ratio of field collections to the number of other collection activities in the Vectren analysis. The Vectren evaluation, for example, examined data on the ratio of field collection activities to mail collection

[8] The Tiered Rate Discount had three tiers to the Discount. "USP1" includes the low-income program participants in the highest income tier; "USP3" includes the low-income customers in the lowest income tier. "USP" represents Universal Service Program, the name of the Tiered Rate Discount.

activities. If the ratio is 1.0, there is one field collection activity for every 100 mail collection activities. If the ratio is 3.0, there are three field collection activities for every 100 mail collection activities. A higher ratio evidences a greater reliance on the more intensive (and more expensive) field collection activities.

The Vectren rate affordability program allowed it to move to a less intensive collection activity directed toward its low-income customers when compared to its residential customer base as a whole. In the pre-winter/pre-program month of November, the ratio of field collection activities per 100 mail collection activities was similar between the low-income population and the residential population as a whole. If anything, the intensity of collection effort was greater for a significant portion of the low-income population (USP2 and USP3), with noticeably more field collection activities per 100 mail collection activities than for the residential customer base as a whole.

After operating its rate affordability program, however, Vectren could collect its low-income revenue with less intensive collection activities. Contrary to the pre-program results, after the company implemented its rate affordability program for low-income customers, the company was exerting between two and three times more field collection activities (per 100 mail collection activities) for its residential customer base as a whole than it was for its low-income population.[9]

Enhanced Productivity of Aggregate Collection Activities

In addition to considering the impact of a low-income affordability program on individual collection activities, a productivity analysis should look at the overall collection effort as well. The level of collection effort is an important constraint on any evaluation of revenue collection. Two groups of customers, each of which have paid 80% of their bills for current usage, present substantially different pictures of cost and risk to the utility if one group makes payments with little or no collection effort while the other makes the same dollar payment, but only after the utility exerts considerable collection interventions directed toward the customers.

Improvements in the productivity of collection activities can occur in either of two ways:

- The need for collection interventions can be reduced thus allowing an increased payment per each collection intervention performed; in the first instance, improvement can be seen even if total dollars collected remains the same (but the interventions needed to generate those dollars decreases); or

- The customer response to the collection activity can improve thus allowing an increased payment per each collection intervention performed. In this second instance, improvement can be seen if the total number of collections activities remains the same but the dollars generated by those activities increase.[10]

In essence, this evaluation process considers the effectiveness and efficiency of collection activities from two different but related perspectives. On the one hand, it examines how much revenue is generated by each collection intervention. On

[9] These results are consistent with the "theory" of a low-income program. A low-income program will not likely result in an absolute decrease in the number of collection activities. Instead, a low-income program allows a utility to switch its commitment of collection resources away from low-income customers, where the collection activity is not likely to be effective, to non-low-income customers where the activity is more likely to have a positive effect on revenue collection.

[10] Productivity is measured by the ratio: DC / CE, where "DC" = dollars collected; and "CE" = collection effort. In the first illustration, "CE" (the denominator) is reduced. In the second illustration, "DC" (the numerator) is increased.

the other hand, it examines how many collection activities are associated with the generation of the revenue.

Overall, the productivity of collection activities directed toward participants in the Indiana rate affordability program was measured by reference to the average payment per collection activity month.[11]

The Indiana utilities exhibited the ability to generate greater payment advantage for its longer-term USP participants. In eleven of the seventeen study months, customers who had participated in USP for both 2007 and 2008 paid more per collection activity month than did customers who began their USP participation in 2008. This payment productivity increased as the length of participation in the rate affordability program increased.

An increase in the average payment per collection activity month occurs for one or both of two reasons: (1) the payments made in response to collection activity increases; and/or (2) the number of payments made without need of any collection activity increases. The cumulative average payment per collection activity month of the Citizens Gas universal service program participant by the end of the study period was $366, compared to $291 for the nonparticipant.[12]

PUTTING IT TOGETHER: THE COST-EFFECTIVENESS OF ACHIEVING BUSINESS OUTCOMES

It is finally possible to dollarize the increase in collections efficiency for purposes of assessing whether the utility delivers benefits to its ratepayers through a low-income program. While such an analysis is not required to build a business case based on the increased effectiveness and productivity of a utility in achieving its business objectives,[13] some decisionmakers expect to see such an approach.

The analysis of benefits should take the following form. The analysis considers the costs of collecting the revenue deficit occurring with and without the rate affordability program. The analysis thus takes into account both of the factors that have been considered above: (1) the effectiveness of the programs in generating payments; and (2) the impact of the programs on the productivity of the collection effort needed. If the rate affordability program is less effective at collecting revenue, the "revenue deficit" increases as does the total cost.[14] In addition, if the rate affordability program is less productive at collecting revenue, the number of "needed collection activity months" will increase as does the total cost.

The Indiana evaluation found positive financial benefits generated by the low-income program in two ways. On the one hand, Citizens Gas and Coke Utility experienced positive financial benefits attributed to the increased collection

[11] A "collection activity month" is a month in which any level of collection activity occurs.

[12] Vectren experienced a similar improvement.

[13] ". . .many opponents of [cost-benefit analysis], defined as a procedure that seeks to monetize benefits, do not oppose cost effectiveness analysis. . .Cost effectiveness analysis evaluates the costs of different means of achieving a pre-determined goal." Driesen (2005). *Is Cost-Benefit Analysis Neutral*, Syracuse University College of Law. A significant body of literature exists distinguishing a "cost-effectiveness" analysis from a cost-benefit analysis. See generally, Stewart, A New Generation of Environmental Regulation, 29 *Cap.U.L.Rev.* 21, 41 (contrasting cost effectiveness analysis with cost-benefit analysis); Hahn et al., Empirical Analysis: Assessing Regulatory Impact Analysis: The Failure of Agencies to Comply with Executive Order 12866, 23 *Harv.J.L. & Pub.Pol'y* 859, 872-74 (2000) (cost effectiveness analysis does not involve monetization of benefits); Anderson et al, Regulatory Improvement Legislation: Risk Assessment, Cost-Benefit Analysis, and Judicial Review, 11 *Duke Ent'l L. & Pol.* 89, 93 (2000 – 2001) (cost effectiveness analysis is used instead of cost-benefit analysis for many applications in public health and medicine); Posner, Transfer Regulations and Cost-Effectiveness Analysis, 53 *Duke L.J.* 1067, 1069 (2003) (cost effectiveness analysis compares different means of achieving the same regulatory end).

[14] Presumably, if the rate affordability program is less effective at collecting revenue, the productivity (i.e., payment per collection activity) will also decrease.

productivity. The company spent $3,447 less to collect the $215,897 from program participants than it did to collect the $194,577 from program nonparticipants.

The total benefit was thus the sum of the increased revenue collection ($215,897 - $194,577 = $21,320) and the decreased collection costs $3,447) ($24,797 total).

Clearly, the rate affordability program presented the more productive and lesser cost approach to collecting low-income revenue. The benefits to Vectren were even greater.

SUMMARY AND CONCLUSIONS

Overall, the utility offering a rate affordability program can be expected to collect both a higher proportion and a higher absolute dollar amount, while spending fewer dollars on the process of collection.[15]

The ultimate conclusion is that a low-income program can be justified through a business case analysis. The low-income programs that have been implemented in other jurisdictions have found that the result is both an improved effectiveness in collecting revenue, and an improved productivity in collecting revenue (both on an individual collection activity basis and an aggregate collection activity basis). In addition, the low-income programs help utilities to achieve their objective of providing an uninterrupted supply of the product that they seek to sell.

For more information on building a business case analysis for a low-income rate affordability program, contact:

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Readers may also obtain copies of the Indiana and Colorado program evaluations by writing the above e-mail.

[15] The utility receives further benefit through the collection of additional revenue from nonprogram participants because of the ability of the utility to deploy the resources freed-up by the increased productivity of low-income collections.