

**A REVIEW OF LOW INCOME ENERGY  
ASSISTANCE MEASURES ADOPTED IN OTHER  
JURISDICTIONS**

*Prepared for:*

The Ontario Energy Board

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The views expressed in this report are those of Concentric Energy Advisors and do not necessarily represent the views of, and should not be attributed to, the Ontario Energy Board, any individual Board Member, or OEB staff.

## **I. EXECUTIVE SUMMARY**

The Ontario Energy Board retained Concentric Energy Advisors, Inc. to prepare a report that summarizes the policies, programs, and measures that have been implemented by regulators in other jurisdictions to assist low-income energy consumers. Concentric's research indicates that low-income energy assistance programs have been established and implemented in many different jurisdictions. This report examines programs that have been adopted in Canada, the United States, the United Kingdom, Australia, New Zealand, France, Spain, and Finland.

Our research indicates that a common purpose of these programs is to help make electric and natural gas service more affordable to consumers with incomes below some specified threshold or to provide assistance to consumers whose energy bills represent more than a certain percentage of their household income. This objective typically is accomplished through direct rate assistance, reductions or waivers of service charges and support for energy efficiency programs. However, Concentric has not found any evidence that a separate rate class has been implemented for the benefit of low-income energy consumers.

Low income energy assistance programs ("LIEPs") may be categorized into several distinct groups: (a) rate discounts or waivers; (b) modified rate designs; (c) alternative billing methods; (d) customer rebates; (e) conservation and demand side management programs; (f) budget or equal billing; (g) payment plans for past due accounts; (h) waivers of late payment charges; (i) waivers or reductions of customer security deposits; (j) limits on disconnections; and (k) reduced or waived fees for reconnections.

Eligibility requirements for low income energy assistance programs are typically tied to qualification for some other form of government assistance, such as: (a) payments from a government-administered retirement plan; (b) disability or veterans' benefits; (c) some form of public welfare or social assistance; and (d) donations or assistance from churches or charitable organizations.

In our view, it is important for the regulatory authority to define the term “low income energy consumer” or “fuel poverty” or “utility financial hardship” before it attempts to develop and implement a specific policy or program that addresses the issue of energy affordability. There are a number of other relevant questions that a jurisdiction must answer when it is considering how to design and implement a policy or program to address the needs of low-income energy consumers, including: (a) how is the program funded?; (b) what are the eligibility criteria?; (c) who determines customer eligibility requirements?; (d) who administers the program?; (e) how are customers notified of program availability?; (f) is there a procedure for reviewing the program?; (g) how do you measure the success of low income energy assistance programs?; and (h) what are the implementation issues?

To the extent that a low income energy program involves charging higher rates to some customers in order to subsidize low-income customers, that program is properly seen as harnessing the market power of a monopoly in order to overcharge certain customers who lack sufficient competitive alternatives to allow them to leave the system when faced with monopoly pricing. In other words, discriminatory rates that take advantage of a utility’s market power may be incompatible with the primary underlying purpose of public utility regulation which is to act as a substitute for competitive markets.

Funding for low-income energy assistance programs is derived from a variety of sources including federal government grants, provincial/state and local government dollars, surcharges and assessments on utility customer bills, and charitable donations. On occasion, budgetary constraints or different legislative priorities have resulted in the elimination of some low-income energy programs in Canada and elsewhere.

Evaluations of low-income energy programs generally have found that the programs have been cost effective and successful at reducing the number of households who cannot afford electricity and natural gas services. Several evaluations have suggested, however, that the programs fail to target the poorest of the poor. The evidence appears to suggest that many low-income energy assistance programs have provided a significant societal benefit. However, this benefit must be weighed against the cost to subsidize this customer segment,

and the regulator must consider whether it is equitable for taxpayers or utility customers to finance this subsidy.

Finally, many different organizations have a role in the design and implementation of a low-income energy assistance program, including: (a) the passage of social policy agendas by parliamentary or legislative bodies to establish such programs; (b) judicial guidance or interpretation of relevant statutes; (c) economic and financial expertise of regulatory authorities in developing a program that meets the needs of the low income consumer while balancing the need for just and reasonable rates; (d) development of tariff proposals and rate structures by utilities for the benefit of low-income energy customers; (e) and cooperation with social welfare agencies and charitable organizations in establishing eligibility requirements and assessing customer needs.

## II. INTRODUCTION

### A. Purpose of Research Report

The Ontario Energy Board (the “Board” or “OEB”) retained Concentric Energy Advisors, Inc. (“Concentric”) to prepare a report that summarizes the policies, programs, and measures that have been implemented, mandated, or allowed by regulators in other jurisdictions to assist low-income energy consumers. The Board wishes to examine and investigate the various low income energy assistance policies and programs that have been implemented in other jurisdictions for the purpose of informing the Board’s consideration of the merits of such programs and their applicability for Ontario.

The purpose of Concentric’s report is to describe and evaluate the policies, programs and measures that have been implemented in other jurisdictions to address the impact of electricity and natural gas costs on low-income energy consumers. The report categorizes the various low income policies and programs that have been implemented, and, whenever possible, examines the effectiveness of those policies and programs as measured by the costs and benefits, as well the level of customer participation. The report covers a broad spectrum of regulatory jurisdictions, including those in Canada, the United States, the United Kingdom, Australia, New Zealand, France, Spain, and Finland. Finally, the report discusses the role of regulators, utilities, charitable organizations, and other interested parties in developing and implementing low-income energy assistance programs that are cost effective and efficient.

The report does not draw any specific conclusions or offer any recommendations; rather, the purpose of the report is to summarize the current state of low income energy assistance programs in order to encourage thoughtful and informed debate of the relevant issues related to low income energy assistance programs in Ontario. The report will have achieved this purpose if it both educates and stimulates the reader to consider different perspectives before reaching any conclusions about the benefits or costs of such programs.

The research for this report is based on publicly available data, supplemented by contributions from Concentric’s in-house experts who have direct experience designing low

income energy assistance programs and who have performed academic research and made scholarly presentations concerning the costs and benefits associated with those programs.

### **B. Goals and Purposes Commonly Cited for Low Income Energy Assistance Programs**

Low-income energy assistance programs (“LIEPs”) have been established and implemented in many jurisdictions. A common purpose of these programs is to help make electric and natural gas service more affordable to consumers with incomes below some specified threshold, such as the government-defined poverty level, or to provide assistance to consumers whose monthly energy bills represent more than a certain percentage of their monthly income. Low-income programs can serve a variety of other public interest goals, including to: (a) safeguard and protect the public health and welfare of the citizens; (b) augment incomes or standards of living for the lowest income energy customers; (c) encourage conservation and more efficient use of energy resources; (d) reduce customer care costs for utilities; (e) reduce uncollectible accounts and bad debt expense for utilities, and (f) reduce carbon emissions and greenhouse gas levels.

### **C. Role of Various Entities in Providing LIEPs**

Many different entities are involved in the provision of a low-income energy program. The program is often established through some legislative or parliamentary action, such as the passage of new statutes that encourage or allow the development of programs that enhance the affordability of energy services for low-income consumers. However, some programs are initiated by the utilities in order to control costs and customer debt. Regulators are then expected to evaluate the alternative proposals and develop a policy that balances the needs of low income customers against the needs of ratepayers generally and the investor-owned or publicly owned (i.e., government-sponsored) utilities. Once the program goals and objectives have been determined, the regulators must decide who will be eligible for assistance, how the program will be funded, how the program will be implemented, and how the program will be administered. Eligibility requirements are typically tied to some specified household income threshold or qualification for some other form of government assistance, such as: (a) payments from a government-administered retirement plan; (b) disability or veterans’ benefits; (c) some form of public welfare or social assistance; and (d)

donations or assistance from churches or charitable organizations. In most instances, a low-income consumer is eligible to receive energy assistance programs if they can demonstrate eligibility for some other form of public assistance.

Low income programs are funded through a variety of sources, including federal government grants, provincial or state government programs supported by tax dollars, utility-sponsored direct rate assistance or energy efficiency rebates, utility managed surcharges or rate subsidies, and donations from churches and charitable organizations such as the Red Cross, United Way, and specific organizations that were formed for the express purpose of raising funds and distributing grants to support low-income energy consumers. Depending on the type of program, it may be administered either by a government agency, a utility, a charitable or religious organization, or some combination of the foregoing. For utility administered programs, regulators will typically establish some reporting mechanism that allows them to monitor and evaluate the success of the low-income program during the early years of implementation. Regulators may also be expected to develop and disseminate customer education materials to increase public awareness and participation in low-income programs. An effective customer education program describes the available assistance programs and the eligibility requirements.

#### **D. Brief History of LIEPs**

Low-income energy assistance programs have been adopted and implemented in numerous jurisdictions around the world. Low-income energy assistance programs receive greater attention during periods when energy prices are rising rapidly and future energy supplies are in doubt. In recent years, programs have been implemented in response to concerns that increasing costs for electricity, natural gas, and home heating oil have a more significant impact on low-income households. Elected officials, appointed regulators, and government agencies have determined that the public interest is served by providing reduced rates or subsidies to low-income energy consumers in order to enhance the affordability of residential heating and cooling; services that are often considered essential to human life. Further, low-income energy programs are often tied to energy efficiency programs, which seek to reduce consumption and therefore consumer energy costs by granting financial

incentives and tax rebates to residents to weatherize their homes and purchase more efficient heating systems and appliances.

### Canadian History

The provincial and federal governments in Canada have adopted various measures from time to time to address rising energy costs. The amounts and lengths of the programs reflect varying government budget priorities. In Canada, several low income programs were approved by the federal government in 2006, but those programs were not funded in subsequent years. Specifically, the Energy Cost Benefit was intended to provide rate assistance to residents of all ten Canadian provinces based on household income and qualification for other social assistance programs such as the National Child Benefit and the Guaranteed Income Supplement. In 2006, the Energy Cost Benefit program planned to provide a total of \$565 million to 3.1 million eligible low-income consumers.<sup>1</sup> It was funded through federal and provincial grants, and payments were made directly to eligible recipients. However, funding for the Energy Cost Benefit was discontinued in 2007. Similarly, the EnerGuide for Low-Income Households was sponsored by the Canadian Housing and Mortgage Corporation. It was intended to offer direct financial assistance of between \$3,000 and \$5,000 to low-income households to defray the cost of items such as draft-proofing, heating system upgrades, and window replacement. In 2006, the EnerGuide program was expected to distribute payments of \$500 million to eligible low-income residents in all ten Canadian provinces, including Ontario. However, funding for the EnerGuide program was not approved.

As part of its 2006 Budget, the Ontario Government initiated the Ontario Home Electricity Relief program. It provided \$100,000,000 in one-time assistance “to help low-income individual and families adjust to higher electricity costs”.<sup>2</sup> Individuals with net incomes under \$20,000 received from \$10 to \$60, depending upon income level; while families with net incomes below \$35,000 received from \$20 to \$120. The program funds were not linked to energy consumption, but only to income level.

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<sup>1</sup> Subsequent federal accounts indicated approximately \$200 million was spent on this program.

<sup>2</sup> See Ministry of Finance Press Release June 22, 2006.

### United States History

As a result of the increase in oil prices resulting from the Organization of Petroleum Exporting Countries (“OPEC”) oil embargo in 1973, the United States federal government became involved in awarding energy assistance funds to low income households, beginning in federal fiscal year 1973. The Low-Income Home Energy Assistance Program (“LIHEAP”) in the United States was established by the federal government in 1981 in response to continued concerns about the impact of rising energy prices on low-income consumers. LIHEAP distributes funds to state governments in the form of block grants, according to a formula based on each state’s weather and low income population. The states then distribute those funds to eligible low income energy consumers. Officials determined that rate assistance was appropriate for households that were spending more than a certain percentage of their annual income on home energy requirements. Energy prices stagnated between the middle 1980s and the late 1990s, and support for low-income energy assistance programs waned to some extent. However, natural gas and electricity prices have escalated substantially during the current decade.

### History in the United Kingdom

Similarly, in an effort to tackle fuel poverty in the United Kingdom, the Office of Gas and Electricity Markets (“OFGEM”) published a document in March 2000 titled “The Social Action Plan.” According to the plan, a household was considered to live in “fuel poverty” if it spent more than ten percent of its income in order to heat its home to the temperatures recommended by the World Health Organization (i.e., 21 degrees C in the living room and 18 degrees C in other occupied rooms). The document stated that approximately five million households in Great Britain spent more than ten percent of their income to heat their homes, while approximately 1 million households spent 30 percent of their income on fuel. The UK average at the time of this 2000 report was between four and five percent. The report cites a survey that found that the majority of households living in fuel poverty were pensioners, often single household pensioners, who were mainly reliant on the state pension. The 1996 English House Condition Survey showed that those aged 60 and over accounted for around half of all fuel poor households, those with young children accounted for 17 percent, and single parent households accounted for ten percent.

### Current Conditions

Once again, low-income energy consumers are facing difficult economic choices, and some elected officials, regulatory authorities, and utilities are considering additional programs or funding support to preserve the affordability of essential heating and cooling services. Many jurisdictions are studying this issue at present, and new proposals are being submitted to regulatory bodies for consideration by groups who represent the interests of low-income consumers and senior citizens. Although few people question the need for some form of energy assistance program for low-income households, there has been considerable debate over how these programs should be designed, implemented and funded in order to benefit those who most need assistance while maintaining social equity for the general body of ratepayers. This report examines those issues, and summarizes the policy response of regulators in different jurisdictions.

#### **E. Taxonomy of LIEPs**

Low income energy assistance programs may be classified or categorized into several distinct groups, as follows: (a) rate discounts or waivers; (b) modified rate designs, such as inverted block rate structures; (c) alternative billing methods; (d) customer rebates; (e) conservation and demand side management programs; (f) budget or equal billing; (g) payment plans for past due accounts; (h) waivers of late payment charges; (i) waivers or reductions of customer security deposits; (j) limits on disconnections; and (k) reduced or waived fees for reconnections. The actual LIEP implemented may consist of one, or some combination of two or more of these separate programs. Each of these programs is described in more detail in Section V of this report.

#### **F. Research Approach and Methods Employed to Develop the Survey**

Concentric surveyed a wide variety of primary and secondary data sources in developing this report in order to gather a set of data for each of the countries designated by the Board in its RFP. The data were then categorized and synthesized into tables and spreadsheets in an effort to identify patterns and trends. The data were filtered and arrayed for purposes of presenting information on a broad spectrum of different approaches to low-income energy assistance policies or programs across different countries, provinces, or states. Additional

details were then sought on those policies, programs, or measures that were found to be of particular interest. Concentric has attached as appendices to this report a summary of the data that were gathered for each specific jurisdiction, which will allow the Board and participating parties to review the complete compendium of available information. In this way, Concentric seeks to maintain the integrity of the research process and to enable participants to draw their own conclusions about the data. Please see the Bibliography for a complete listing of sources relied upon in conducting this survey and compiling this report.

### **G. Remainder of the Report**

The remainder of this report is comprised of seven sections. Section III summarizes current low income energy assistance programs in Canada. Section IV discusses issues and considerations in determining the need for low-income energy assistance programs. Section V summarizes and categorizes low-income energy assistance policies and programs that have been implemented in other jurisdictions. Section VI reviews funding sources and levels for low-income energy programs in various jurisdictions. Section VII offers information regarding the effectiveness of several low-income energy assistance programs. Section VIII suggests some considerations associated with designing and implementing a low-income energy assistance program. Section IX contains concluding remarks and observations. Complete research results are summarized by jurisdiction in the attached Appendices. Appendix A contains a narrative summary of selected low-income programs in the United States, the United Kingdom, Australia, New Zealand, France, Spain, and Finland. Appendix B provides detailed information on funding sources, participation levels, eligibility requirements, and types of rate assistance offered to low-income customers in the U.S. Appendix C summarizes low-income energy assistance programs in Canada, the United States, the United Kingdom, Australia and New Zealand in table format.

### III. SURVEY OF ONTARIO AND CANADIAN FEDERAL GOVERNMENT ENERGY ASSISTANCE PROGRAMS

This section provides a brief summary of currently effective Canadian programs that seek to address the issue of electricity and gas cost affordability for low-income energy consumers. Following is a brief summary of the low-income programs offered in Ontario. For a fuller overview of LIEPs available in all Canadian provinces and territories, please refer to Appendix C of this report. While Concentric attempted to include as many programs as possible, the attached appendix should be considered a representative sample rather than an exhaustive compilation of low-income programs in the provinces.

Emergency Energy Fund (“EEF”): This program provides financial assistance to low-income Ontarians, including social assistance recipients and people on fixed incomes, who are facing an energy related emergency (i.e., disconnection notice). The fund is not limited to electricity arrears; it may also cover natural gas, oil and other forms of energy. Funding is limited to assistance for payment of arrears, security deposits and reconnection fees. Funding for the program is provided by the Ministry of Community and Social Services at 100%. Municipalities are the service system managers for the EEF and are responsible for the administration of the program and for determining eligibility based on their assessment of need and long-term ability to manage energy costs.

Ontario Power Authority: In 2008, the Ontario Power Authority (“OPA”) issued a series of RFPs for program managers to deliver several additional programs intended to benefit low income energy consumers through conservation and energy efficiency initiatives. One new program targets multi-family buildings and is designed to enhance the energy efficiency of buildings with six or more residential units. A second program targets low income homeowners and residents of single family houses. The primary objectives of the two programs are: (a) to reduce the demands on the electricity system for peak summer demand; (b) to reduce the energy burden imposed on low income residents and their housing providers and/or building owners, managers, and operators; and (c) to raise awareness among low-income households and their support networks about the benefits of energy conservation.

Community Start-Up and Maintenance Benefit (“CSUMB”): The benefit is provided to social assistance recipients to assist in establishing a new principal residence (e.g., fuel and hydro deposits) to prevent eviction or the discontinuance of utilities or heating in an existing residence or to restore services if they have been disconnected. CSUMB may also be issued where there is a threat to the health or welfare of a recipient or their family (e.g., the cost to rent a generator). The amount of CSUMB payable is up to a maximum of \$1,500 for social assistance recipients with one or more dependent children, or \$799 where there are no dependent children in a 24 month time period. In addition, discretionary benefits may be available to Ontario Works/Ontario Disability Support Program (“OW/ODSP”) recipients to help with the cost of payments for continuation of hydro or heating service, low-cost energy and water conservation measures, and initial deposits required by landlords or others for rent, hydro and heating where necessary.

Share the Warmth: STW is a registered not-for-profit charity that purchases heat and energy on behalf of low-income families, senior citizens, and terminally ill and disabled persons living at or below the poverty level. The program is funded by charitable contributions. In 2007, STW increased its emergency energy assistance to low-income households to exceed \$600,000.

The Winter Warmth Fund: Eligible low-income households that have current or expected utility arrears can receive assistance from the Winter Warmth Fund to pay their energy bills. The United Way administers the program through a network of community-based agencies across the Province. Funds are credited directly to the electricity or gas account. The program is sponsored by a number of utilities including Enbridge Gas Distribution, Union Gas, Toronto Hydro, Enersource, HydroOttawa and Powerstream, and funded through charitable donations to the United Way and network agencies.

The Heat and Warmth Program: THAW provides seasonal emergency financial relief to cover the cost of utility bill arrears in order to avoid disconnection of service. The program is sponsored by London Hydro.

Fund for Utility Service Emergencies: FUSE provides emergency assistance that directly helps residents to retain electrical, water and sewage services and to avoid evictions. The program is sponsored by Peterborough Utilities Services.

Heat Bank – Waterloo Region: The Heat Bank can provide residents with one-time per year emergency assistance with heating bills when they have exhausted assistance through Regional Social Services or are not eligible for assistance through STW.

Keep the Heat – Windsor and Essex Counties: Keep the Heat provides energy assistance to eligible low-income households experiencing financial difficulties and/or in receipt of a notice of termination of utilities. The public and affected families are also educated about energy conservation and provided with tools such as window insulation kits.

Shelter Fund – Toronto: This fund is available to OW/ODSP recipients in Toronto who have one or more dependent children under the age of 18. This benefit, up to a maximum of \$1500, may be received in addition to CSUMB to assist with last month's fuel and electricity security deposits (i.e., establishing new account for services), rental, utility, or fuel arrears.

Rural or Remote Electricity Rate Protection: This long-standing program provides rate assistance to eligible electric customers in rural and remote areas of Ontario. The program is authorized under Section 79 of the Ontario Energy Board Act, 1998, S.O. 1998, c. 15 (Schedule B) and its associated Regulation, O. Reg. 442/01 as amended. The subsidy program was continued after the electric market was opened to competition in May 2002. The program serves customers of Hydro One Networks, Inc., Hydro One Remote Communities, Inc., Great Lakes Power Ltd., Attawapiskat Power Corporation, Fort Albany Power Corporation, and Kashechewan Power

Corporation. Eligibility criteria as set out in the Regulation relate to service characteristics such as customer class, location and distributor, or distributor type, service territory size, and customer density. According to information provided by OEB staff, approximately 350,000 Hydro One customers receive rate assistance of \$127 million per year, 3,500 customers of Hydro Remote receive assistance of between \$21 and \$22 million per year, and an unspecified number of customers of Great Lakes Power receive between \$2 and \$3 million per year. Program delivery is achieved through subsidy of the distribution rate, which is paid to the distributor in recognition of the high costs associated with serving customers in rural and remote areas. The program is funded through a charge of \$0.01/kWh per customer that is standard on all approved rate tariffs.

Several federal government programs provide financial assistance to improve residential energy efficiency across all provinces and territories. However, the federal government does not currently offer any direct rate assistance to low-income energy consumers. Current federal programs in Canada which are available to all consumers are summarized below:

ecoENERGY Retrofit for Homes: In January 2007, the federal government introduced the ecoENERGY initiative to help Canadians use energy more efficiently, boost renewable energy supplies and develop cleaner energy technologies. ecoENERGY Retrofit for Homes provides home and property owners with grants of up to \$5,000 to offset the cost of making energy-efficiency improvements. Only homes that have undergone a residential energy efficiency assessment by an energy advisor licensed by Natural Resources Canada will be eligible for grants. The ecoENERGY Retrofit grant is based on the type and number of energy improvements that have been made, and how much the efficiency of the home has been improved. The grant is based on how effective that upgrade is in saving energy, not on the cost of the upgrade. The maximum grant one can receive per home or multi-unit residential building is \$5,000; whereas the total grant amount available to one individual or entity for eligible properties over the life of the program is \$500,000.

Residential Rehabilitation Assistance Program (“RRAP”) for homeowners: Sponsored by the Canada Mortgage and Housing Corporation (“CMHC”), this program offers financial assistance to low-income homeowners for “mandatory” home repairs that will preserve the quality of affordable housing. The program helps people who live in substandard dwellings and cannot afford to pay for necessary repairs to their home. Homeowners may qualify for assistance if their property is eligible and if their total household income is at or below the Income Threshold set by CMHC. In general, mandatory repairs related to heating, structural, electrical, plumbing and fire safety are eligible for funding under Homeowner RRAP. Assistance is in the form of a fully forgivable loan. The loan does not have to be repaid if the homeowner agrees to continue to own and live in the same house during the earning period, which could be up to five years (the loan forgiveness period). The amount the homeowner could receive is based on the cost of mandatory repairs and the area in which the property is located.

Emergency Repair Program: Also sponsored by the CMHC, this program offers financial assistance to help low-income households in rural areas with emergency repairs required for the continued safe occupancy of their home. Only those repairs urgently required to make a house safe are eligible for assistance. Examples include: heating systems; chimneys; doors and windows; foundations; roofs, walls, floors and ceilings; vents, louvers; plumbing; and electrical systems. Assistance is in the form of a contribution which does not have to be repaid. The maximum contribution varies according to the cost of the repairs and geographic zone in which the property is located.

#### **IV. ISSUES AND CONSIDERATIONS IN DETERMINING THE NEED FOR LIEPs**

##### **A. Reasons Cited in Jurisdictions that Adopted LIEPs**

Jurisdictions that have adopted low-income energy assistance programs have cited a variety of different reasons. The majority of jurisdictions are concerned with improving the affordability of electricity, natural gas, and heating oil for low-income consumers. They recognize that low-income families spend a higher percentage of their household income on costs for heating and cooling their residence. According to a Statistics Canada custom tabulation of 2003 data requested by Green Communities Canada, the average Ontario household spent 3.9% of its pre-tax income on fuel and electricity, while the lowest income quintile spent 13.7% for this purpose.<sup>3</sup> Political leaders and regulators are cognizant of the fact that low-income consumers are more negatively impacted by price increases for basic essential services such as electricity and natural gas. For example, when British Gas announced in July 2008 that it planned to increase natural gas prices by 35% and electricity prices by 9%, government officials expressed concern that such significant price increases would cause fuel poverty to rise further.

Regulatory authorities in some jurisdictions have expressed particular concern about the potential detrimental effect of service disconnections on customers who have medical conditions, or young children, or who are elderly. Those customers are viewed as more susceptible to rising energy prices, and regulatory bodies have sought to protect the public safety and welfare of those customer groups by placing restrictions on disconnections during certain times of year or when the temperatures are forecasted to reach extreme levels. Many low-income programs were implemented in conjunction with restructuring of the electric utility industry. Consumer advocates successfully argued that competitive choice would reduce the number of electric companies that were willing to serve poor customers because those companies could be expected to pursue more affluent customers in order to maximize their profits. Therefore, regulators adopted policies and programs to make certain that low-income customers would continue to receive electric service at affordable rates.

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<sup>3</sup> “A Low-income Energy Efficiency Program: Mapping the Sector and Program Design Principles,” prepared by the Toronto Environmental Alliance for the Ontario Power Authority’s Conservation Bureau, May 2006, at 4.

Regulatory authorities in many jurisdictions have also implemented energy efficiency programs as an important component of low-income programs. The most commonly cited reasons for these programs include: (a) the need to reduce energy consumption through conservation; (b) the desire to upgrade and modernize the housing stock for low-income residents; and (c) the desire to reduce carbon emissions or greenhouse gases.

#### **B. Reasons Cited in Jurisdictions that Rejected or Discontinued LIEPs**

Concentric's research did not reveal any instances when jurisdictions had outright rejected low-income energy assistance programs. However, there does appear to be considerable debate among interested parties concerning how the program is funded and whether a rate subsidy program may be considered discriminatory. In terms of program funding, Colorado voters were asked to consider a ballot proposal that would have made mandatory an assessment on customer's monthly bills to support programs for low-income energy customers. The proposal was soundly rejected by voters. Most opposition to the ballot initiative came from those who believed that such support should be voluntary rather than mandatory. Occasionally budget constraints or alternative priorities have caused governments to eliminate funding for low-income programs. This occurred in Canada in 2007, when the federal government declined to proceed with \$500 million in funding for a proposed program that would have granted financial assistance to low-income households for energy efficiency measures. Similarly, in response to severe budget problems, the Texas legislature eliminated that state's funding for low-income energy programs and re-directed the money to the General Fund. Finally, several state governments, including Florida, do not offer any state funding to supplement federal LIHEAP grants.

Some jurisdictions have been reluctant to implement programs that offer rate reductions to low-income energy consumers because they are concerned that such programs might be viewed as discriminatory pricing. In Great Britain, for example, utilities in 2004 requested guidance from OFGEM regarding whether social tariffs that charged a lower rate to low-income consumers would be considered discriminatory pricing. OFGEM responded that utilities were encouraged to offer low-income energy assistance programs to their customers, but were warned against proposing rates that might be perceived as anti-competitive or as an

attempt to abuse their dominant market position. In 2008, many utilities in the UK have introduced social tariffs that provide rate discounts for low income customers. On July 25, 2008, OFGEM adopted new guidelines regarding the types of initiatives that energy suppliers can include toward their social spending commitments. Please see Section V.C for a more thorough discussion concerning social tariffs in the UK.

### **C. General Principles to Consider in Respect to LIEPs**

From the standpoint of both efficiency and equity, a low-income energy assistance program presents tradeoffs between various goals of regulation. Consequently, in designing a regulatory program to provide discounts or subsidies for low-income customers of utilities there are certain broad, general principles that ought to be considered.

#### **i. Intent and Scope of Regulatory Mandate**

The Court has ruled that the Ontario Energy Board Act charges the OEB with setting “just and reasonable rates” within the context of the objectives of the Act, and that one objective is to protect “the interests of consumers with respect to prices.” Further, the Court ruled that the Board may take into account the differing income levels of customers when setting rates. However, the Court’s decision does not require the Board to do so, and the decision discusses the fundamental tension between income-based rates and cost-based ratemaking, which is the most widely-used standard for evaluating whether rates are “just and reasonable.”

The single most important reason for regulating utilities is that they tend to have little competition and that they might abuse their market power by charging excessive rates overall or by using price discrimination to maximize profits by charging discriminatory rates that depend upon the relative demand elasticities (i.e., willingness to pay) of different customers. Regulation is generally thought of as a substitute for competition in terms of holding rates to the level of costs and thereby preventing utilities from exercising market power over consumers. In highly-competitive markets it is generally difficult for competing service providers to discriminate between customers on the basis of income because an attempt to levy greater charges on high-income customers will tend to drive such customers to a competitor that does not engage in such discrimination. Thus, to the extent that a LIEP

involves charging higher rates to some customers in order to subsidize low-income customers, that program is properly seen as harnessing the market power of a monopoly in order to overcharge certain customers who lack sufficient competitive alternatives to allow them to leave the system when faced with monopoly pricing. In other words, discriminatory rates that take advantage of a utility's market power may be incompatible with the primary underlying purpose of public utility regulation, which is to act as a substitute for competitive markets.

ii. Possible Redundancy or Overlap With Other Social Welfare Programs

There are a variety of programs designed to supplement the income of low-income individuals. In many cases the income assistance available to individuals is calculated in a way that incorporates energy costs into the level of the payments, or the index of price changes that cause assistance payments to increase. When the amount of public assistance or charity already incorporates an allowance for energy costs, it would be redundant to establish a LIEP. Thus, before implementing or designing a LIEP the Board and stakeholders should understand how the level of income assistance is calculated in the various programs available to customers.

In addition, poverty guidelines and low-income measures generally consider only current cash income, and therefore do not consider the full range of resources and options available to customers. For example, many people who are counted as being below the U.S. Federal poverty level have significant assets, such as homes or savings. For this reason, many economists have criticized the U.S. Federal poverty guidelines for overstating the true poverty levels and have recommended that the full resources and needs of the individuals (i.e., "material well-being") also be considered in determining poverty levels. The overstatement problem tends to be much greater for elderly Americans since 80 percent of householders over age 65 own their own homes, and 80 percent of these homeowners own their homes free and clear. Thus, to the extent that eligibility levels ignore the wealth of an individual, or non-cash social benefits such as food, fuel or housing assistance, the need for a LIEP may be substantially reduced. Consequently, the fact that someone has a low amount of earned cash income often does not mean that they must sacrifice basic food, housing or

medical care in order to pay their utility bills. Thus, in order to design an appropriate LIEP the Board should understand the extent to which low-income means lack of wealth, as well as the extent to which existing social programs already include a provision for fuel costs.

iii. Compatibility With Public Utility Pricing Principles of Cost-Based, Non-Discriminatory Rates

Traditionally, utility regulation has sought to establish rates that are cost-based, and which do not discriminate between or within customer classes. However, low-income programs tend to distort this regulatory principle by introducing rates that result in cross-subsidization of one specific group of customers by the general body of ratepayers. The concept of just and reasonable rates can be challenged by proposals that seek to establish a separate rate class for one particular group of utility customers. In its survey, Concentric has not found any evidence that a separate rate class has been implemented for the benefit of low-income energy consumers. However, several utilities in the United Kingdom inquired about whether it was acceptable to propose social tariffs that charged different rates to low-income customers. OFGEM responded that such rate proposals might not be considered discriminatory pricing, if the utility was not attempting to use its market dominant position to distort the competitive market. Those UK utilities have subsequently implemented social tariffs which offer comparable (or lower) tariff rates to customers regardless of whether they are billed according to standard payment terms or use prepayment meters.

iv. Relationship Between Usage and Income

The design of some LIEPs may depend upon an assumption that low income implies that a customer uses a small amount of energy. However, studies in a number of jurisdictions indicate that this assumption is often incorrect. To the extent that this assumption underlies the design of a proposed LIEP, supporting evidence to confirm the validity of the assumption would be required. In Ontario, for example, many rental units have electric heat, but the monthly utility bill is paid by the landlord and included in the tenant's rent. According to information reported in 2004 by Low Income Energy Network ("LIEN") and Advocacy Centre for Tenants Ontario ("ACTO") based on earlier studies, the lowest household income quintile in Ontario has a far greater proportion of households that use electric as their primary heating equipment (24.5%), use electricity as their primary heating

fuel (27%), use electricity as their primary heating fuel for hot water (36.3%), and have primary heating equipment more than ten years old (64.5%).

v. Impacts on Efficient Usage of Services and Resources

For a portion of the population, low income levels may require difficult tradeoffs between consumption of non-food items and payment of utility bills. Programs that are targeted specifically at energy assistance are likely to discourage efficient use of energy by reducing the cost of energy relative to other items in the customer's budget. Thus, some program designs might actually increase the amount of energy used by low-income customers, and might even cause energy use to become a larger part of the overall household budget. In contrast, cash assistance that is not tied to the use of any particular product might cause customers to reduce energy use, while using the cash assistance to consume more of other products.

vi. Impacts on Efficient Operations of Utilities

Because dealing with late payments, service cutoffs, and uncollectible accounts is very costly relative to the amount of money involved, a low-income assistance program can provide significant savings to the utility by reducing those costs. Consequently, all customers may benefit from improved efficiencies. The extent of such benefits should be a consideration in any deliberation on LIEPs.

On the other hand, for a variety of reasons public utility ratemaking may not be equipped to deal with this social problem efficiently. These reasons include: (a) the inefficient distortions in consumption decisions by both low-income and non-low-income customers that can occur when rates do not properly reflect costs; (b) the lack of knowledge concerning the resources and options that are available to each individual; and (c) the inability of ratemaking to accurately target low-income individuals.

## Definition of Low Income Consumers or Fuel Poverty

### How Jurisdictions Have Defined the Terms

In designing and implementing an effective program to assist low-income energy consumers, the regulatory agency must determine how it wishes to define the term “low income energy consumer.” For example, the regulatory agency in Great Britain defines “fuel poverty” as applying to households who spend more than 10 percent of their income in order to maintain a satisfactory heating regime. Similarly, when the LIHEAP was implemented in the United States, there was discussion about the percentage of income spent by low-income consumers on energy and heating costs. Ultimately, the block grants were allocated to states based on a formula that takes into account weather and the size of the low-income population. Eligibility criteria most commonly depend on household income and the number of persons in the household. Some jurisdictions tie eligibility to some established benchmark, such as a percentage of the federal poverty guidelines, while other jurisdictions determine eligibility according to qualification for other social assistance, such as government pensions. Some programs are designed to provide benefits to the lowest income consumers, while others do not attempt to make such granular distinctions. The New Zealand Electric Commission defines “low income consumers” as those consumers whose low income, whether temporary or permanent, makes it genuinely difficult for them to pay their electricity bills. Western Australia defines “utility financial hardship” as those persons having the intention but not the financial ability to pay their utility bills, without affecting their ability to meet their individual or families’ basic living needs.

However, according to a recent survey of European Union countries, energy poverty is not currently recognized in most countries in the EU. The report states:

The absence of a definition even at the Member State level often leads to a lack of recognition of the problem, very little data collection, and a paucity of discussion on the subject. Policy measures to deal with the problems are often non-existent in Member States. Without political support and recognition and without the consequent funding to address the issue, research is dependent on the work of charities and non-governmental organizations. The concept of energy poverty needs to have its own status.<sup>4</sup>

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<sup>4</sup> “Energy Poverty in the EU,” Socialist Group in the European Parliament, by Eluned Morgan MEP, June 2008, at 4.

In an effort to gather relevant survey data, this report provides a summary of low-income energy programs in 27 EU member countries, including the percentage of households that indicated that electricity costs were not affordable in their country. This attempt to quantify the problem of energy poverty in European countries could lead to more attention being given to the issue. However, without a definition of fuel poverty or what constitutes a low-income energy consumer, it will be difficult to draw any meaningful conclusions about the scope of the problem and how governments might address it.

In conclusion, it is important for the regulatory agency to define what it means by “low income energy consumer” before it attempts to develop and implement a specific policy or program that addresses the issue of energy affordability. This definition appears to be the starting point in most discussions with stakeholders, including utilities, consumer advocates, community-based charities, and consumers.

#### How Many Energy Consumers Need Assistance

Although Canada does not have an official definition of poverty, Statistics Canada has established a threshold known as “Low Income Cut-Offs,” against which it derives energy poverty estimates. A recent study prepared for the government of British Columbia addresses the question of fuel poverty in that province.<sup>5</sup> The report indicates that as many as 270,000 households (or 18%) in British Columbia could be faced with a disproportionate energy burden. The report states:

If the UK definition of energy poverty, spending 10% or more of after-tax income on energy, is applied to BC the data reveals that most of the lowest income quintile within BC is faced with an unreasonable energy burden. In this group, an average of 17.6% of income is needed to cover the costs of electricity, gas, and other fuels, which is almost 6.5 times more than the highest income quintile, where average energy costs represent only 2.7% of after-tax income.

According to this British Columbia report, 88% of these households have no full-time wage earner, 44% are age 65 or over, and 63% are living in rented property. The same report

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<sup>5</sup> “Affordable Energy: Diversifying DSM Programs in BC: A Discussion Paper,” May 27, 2008, at 16-19.

indicates that the average Canadian household in the lowest income quintile spends even a higher percentage of after-tax household income on energy costs. Statistics Canada reports that those with after-tax incomes of less than \$15,476 spent 20.4% of their disposable income on home energy needs.

Expert evidence submitted in Manitoba Hydro's 2006 rate proceeding suggested distinguishing between consumers with a "high energy burden" (using 11% of income as the threshold) and "severe" fuel poverty (using a 15% of income threshold).

In addressing fuel poverty in the United Kingdom, studies have shown that about 20% of households in Great Britain spend more than 10% of their household income on home energy requirements. While the UK has been successful in reducing the number of households living in fuel poverty, rising fuel costs are making this challenge more difficult. In 2005, the UK experienced the first increase in the number of those living in fuel poverty since 1996, and the government attributed this increase to rising fuel costs.

Based on the most common definitions of low-income energy consumer or fuel poverty, it appears that a significant percentage of households might be eligible for program assistance in Canada and elsewhere. Eligibility is likely highest among those households headed by senior citizens, disabled or terminally ill persons, and single-parent households with children. According to income guidelines, renters are more likely to qualify for assistance than are those persons who own their residence, but heating/cooling costs frequently are included in lease agreements. Senior citizens who own their residence free and clear might require energy assistance based on their annual household income, but might not qualify if the value of their assets is considered in determining their eligibility.

## V. DESIGN AND RESULTS OF VARIOUS LIEPS

This section of the report categorizes and briefly describes the most common types of low-income programs that were identified by our research. Relevant examples from various jurisdictions are provided to illustrate how the policy or program has been implemented in a specific jurisdiction. Generally, the policies and programs provide assistance to low income energy customers through one or more of the following mechanisms.

### A. Rate Discounts

#### Description and Policy Considerations

Customers may receive a rate discount to enhance the affordability of electric or natural gas service. This can take the following forms: (a) reduction or waiver of the fixed monthly charge that covers the cost of operating and maintaining the distribution system; (b) waiver or reduction of the commodity charge; and (c) waiver of service charges such as initial charges for connection to the system, customer security deposits, late payment fees, disconnection charges, and reconnection charges. From a policy perspective, rate discounts that waive or reduce the fixed monthly charge usually are perceived as more equitable because they improve the affordability of electric and natural gas service for low-income customers without regard to energy consumption levels. A waiver of the commodity charge portion of the customer bill might be very beneficial to the low-income customer, but the policy has been criticized as not providing the appropriate incentive for low-income customers to reduce their energy consumption. The regulatory authority should consider whether the waiver or reduction of the commodity component of the customer bill sends the correct price signal to the low-income customer regarding conservation. Waivers of security deposits and late payment charges are discussed in more detail later in this section.

#### Example – Waiver of fixed monthly charge

The Georgia Public Service Commission mandates that major gas and electric utilities waive their monthly service charge for customers age 65 or over who own their homes and who have household income of less than \$14,355 per year. Utilities such as Atlanta Gas Light and Georgia Power waive the monthly service charge for eligible customers as follows:

\$10.50 per month for gas service and \$14.00 per month for electric service. At least 55,000 senior citizens receive the electric discount each year, and about 35,000 seniors receive the natural gas discount. Total rate assistance provided by utilities under this waiver program was \$15 million in 2006. This program is funded through an assessment on other ratepayers of Georgia utilities.

#### Example – Reduction in rates based on commodity usage

Arizona requires utilities to offer rate assistance to low income customers in the form of a variable discount based on the amount of electricity used each month. Specifically, low-income consumers are eligible to receive a 30 percent discount on the first 400 kWh of electricity they use, 20 percent off usage between 401 and 800 kWh, 10 percent off usage between 801 and 1200 kWh, and a \$10 credit for any usage above this amount. Arizona's largest utility, Arizona Public Service, offers a discount of up to 40 percent off the cost of electricity through its Energy Support Program. Additionally, through the Energy Support Program, customers may also be exempt from paying Power Supply Adjustor surcharges, which accounts for the company's purchased power costs. Eligibility for these low-income assistance programs is based on the federal poverty guidelines; generally, customers at or below 150% of the federal poverty guidelines will be eligible to participate in the programs.

### **B. Rate Design**

#### Description and Policy Considerations

Rather than offering a waiver or reduction of the fixed monthly charge or the commodity charge, some low-income energy assistance programs address the issue through rate design. That is, low-income energy customers are charged a different rate for electricity or natural gas service based on assumptions regarding the correlation between income and usage levels. This rate design approach is distinguished from the establishment of a separate rate class for low-income energy consumers. Rate design involves some rate structure that is charged to everyone but is designed in a way that is intended to produce lower average rates for lower income people. The rate design approach depends on a high correlation between income and usage levels, but does not require anyone to prove that they are poor. Rate discounts also involve a rate structure that is available to everyone, but are not necessarily designed

using any assumptions about a relationship between income and usage. Rate discounts then provide exceptions to the posted rate that is available to everyone. To get a discount, a person would need to show they are poor. Alternatively, rate discounts can involve a separate rate class that offers lower rates for eligible low-income people. The design of that rate, however, does not necessarily make assumptions about a relationship between income and usage level. To summarize the difference between the rate design approach and rate discounts: rate design places all customers in the same rate class based on differences in the cost to serve those customers, while rate discounts specifically introduce price discrimination that is unrelated to the cost of service, but instead is based explicitly on the income levels of customers. As stated previously, Concentric has found no evidence that any jurisdiction has approved a separate rate class for low-income energy consumers.

While the rate design approach may be successful at addressing the needs of low-income consumers, it violates the rate making principle of cost causation. The customer who causes the cost is generally expected to pay for that portion of the cost. However, by charging a different rate to low-income energy customers, the program shifts costs onto the general body of ratepayers, thereby creating an implicit subsidy. Some regulators have questioned whether this subsidization is consistent with the concept of “just and reasonable rates” or whether it represents discriminatory pricing. The problem is exacerbated during times when energy prices are increasing rapidly, because residential customers are feeling squeezed by higher costs at the same time they are expected to subsidize their fellow low-income consumer who is less able to absorb the impact of higher energy costs. The primary counter argument is that electric and natural gas services are considered by many regulatory authorities to be essential for the public convenience and necessity. In other words, the public interest is served by providing access to affordable electric and natural gas service. Considerations include public safety, public health, and service to customers with young children, or those who are elderly, disabled, or have a medical condition.

In some instances, an “inverted” block rate structure has been adopted as a low-income assistance measure. This rate design provides a low rate for the first units, or first block, of consumption and higher rates for units of consumption that go beyond a threshold level. Under the assumption that low-income customers are likely to also be the customers who do

not consume much energy, an inverted-block rate structure would reduce the monthly bills of low-income customers because most of their consumption would fall in the less-expensive first block. If higher income customers generally consume more energy, they would pay the low, first-block rate for some of their energy, but generally they would pay the higher, second-block rate per unit for the majority of the energy units that they consume.

The inverted-block rate structure tends to be an imperfect method for delivering energy assistance to low-income customers because income often has only a weak correlation with consumption, and in some instances a negative correlation between income and energy use has been found. For example, some low-income consumers live in older, poorly-insulated houses that consume more gas for heating than the homes of higher income consumers. In addition, in comparison with working people, older people living on retirement incomes, or the unemployed, often spend more hours in their homes with lighting and appliances running. Vacation homes owned by high-income people also can reduce the correlation between income and usage to the extent that the second homes generally have low energy usage most of the time when they are unoccupied. Consumption levels also can depend on the type of energy used for heating and cooking in a home. Whether electricity or gas is used for cooking and water heating, and sometimes even for space heating, often depends on the vintage of the housing. If there is no correlation, or even a negative correlation, between income and gas usage, a significant number of poor people will be worse off under inverted-block rates.

Several variations on the inverted block rate concept have been proposed or adopted in various jurisdictions in the past. As a class these proposals are often referred to as “lifeline” rates. Some of the most common lifeline rate proposals include: a) inverted block rates, b) freezing the first block against future rate increases, or c) elimination of the customer charge. In many cases, elimination of the customer charge will provide something close to free connection and billing services for wealthy customers with second homes. One further problem with trying to achieve low-income assistance goals through rates is that there is no way to ensure that benefits will be passed through to needy customers whose utility bills are covered in their monthly rental payments. Proponents of inverted lifeline rates rarely know how these rates will actually affect the poor.

One of the tradeoffs that occurs with a lifeline rate is that it results in improper price signals and discourages efficient uses of electricity or gas by both those customers who are receiving a discount and those customers who are providing a subsidy. There is a great deal of confusion about which rate designs promote overall economic efficiency, and inverted rates are frequently proposed as both lifeline rates and conservation rates. The conservation argument presumes that customers with above-average levels of use will respond to higher rates by reducing their consumption more than customers with below-average use will increase their consumption in response to reduced rates. The conservation argument also implies, for example, that a customer who uses gas for cooking and space heating is more wasteful than a customer who just uses gas for cooking.

A lifeline rate which is properly designed must be targeted to ensure that the poor are receiving the intended benefits. This requires defining and identifying the poor. Some of the more difficult questions which might arise in deciding who should be eligible for a lifeline rate include what is the minimum amount of utility service required to maintain a decent standard of living, and do sources of supplemental income assistance count in the determination. Usually a targeted lifeline proposal will adopt an existing governmental definition of poverty and avoid these questions altogether. Identifying who is eligible for the rate can also be a difficult aspect of a targeted lifeline rate. Utilities and regulatory commissions are not equipped with the administrative apparatus required to run a targeted program. One successful approach to targeting lifeline rates was tried by Duke Power Company which offered a reduced rate for customers receiving Supplemental Security Income. This was a well-defined, easily identifiable group. Most lifeline rate proposals are not targeted, however. Instead, they involve “scattershot” rate designs which only hope that more poor people are helped by the proposal than are harmed by it.

Determining what constitutes essential service is another relevant question for any lifeline proposal. If some utility services are not “essential,” then there is weak justification for lifeline rates. Although there are substitutes for almost every economic good, lifeline rates, if they are at all successful, reduce the need or incentive to do things like wear sweaters, weather-strip windows, or take shorter showers.

### Example – BC Hydro

In February 2008, BC Hydro filed an application with the British Columbia Utilities Commission (“BCUC”) seeking authority to implement a Residential Inclining Block (“RIB”) rate structure for its residential electric customers. Under the two-step RIB proposal, customers pay a lower per-unit rate for electricity consumption below a certain kWh threshold, and a higher per unit rate for consumption above the kWh threshold. The proposed threshold is 1600 kWh on a bi-monthly basis, meaning that usage below 1600 kWh would be billed at \$0.0628 per kWh and consumption above 1600 kWh would be billed at \$0.0698 per kWh. The currently effective flat rate is \$0.0655 per kWh. In the application, BC Hydro states that its proposed rate structure performs well against industry standard rate design criteria, improves on the efficiency of the rate’s price signal, and results in acceptable bill impacts for customers. BC Hydro expects that its proposed RIB rate structure will achieve more conservation than the flat rate structure. Appendix F to the application refers to BC Hydro’s interaction with the Rates Working Group (“RWG”), which is a subcommittee of the Electricity Conservation and Efficiency Advisory Committee. In meetings with RWG, it was suggested that although BC Hydro needs to be sensitive to the needs of low-income customers, the role of providing financial assistance, if any, lies with government rather than the utility. There were no other references to the impact of this proposal on low-income customers in the BC Hydro application. This application was approved by the BCUC in August 2008, and the new inverted block rate structure will take effect in April 2009.

### Example – Inverted Block Rates in California

California defined essential levels of service for various uses and established 26 therms per month as the minimum amount of gas needed for residential cooking and water heating. It also established different minimum levels of usage for heating during the winter months, depending on which climate zone the customer lives within the state. For example, Pacific Gas and Electric Company provided two rate schedules: one which applied to customers without gas space heating and one which applied to customers with gas space heating. Both rate schedules involved steeply inverted rates which the CPUC hoped would provide a conservation incentive. It is interesting to note that the California plan did not attempt to identify the poor or target its “lifeline” rates solely for poor users.

### C. Alternative Billing Methods

#### Description and Policy Considerations

Many public utilities in the United Kingdom offer customers an alternative payment option known as prepayment meters. A prepayment meter is a device that allows customers to pay for their energy upfront. Customers credit their prepayment meters via a top-up card or token to receive energy into their homes. These meters have been well-received among students and low-income customers because they allow customers with past due accounts to avoid disconnection and customers with poor credit histories to access an essential service. However, prepayment meters have been criticized by consumer advocates because they frequently require the customer to pay a premium rate, which ranges between three percent and seven percent above the standard rate offered to customers who pay for their energy after they have received a bill.<sup>6</sup>

OFGEM, which regulates gas and electric suppliers in the UK, has acknowledged that prepayment meters are not the best alternative for many low-income customers because of the rate premium and because the customer does not have the market information necessary to switch suppliers. Utilities have responded to this criticism by proposing social tariffs that charge the same rate for customers using prepayment meters as for customers billed under standard billing arrangements.

Following the 2008 budget, energy suppliers in the U.K. agreed to increase their collective expenditure on social programs by £225 million between 2008 and 2011. OFGEM's new guidelines provide more clarity and certainty on what will be counted toward this increased social expenditure and set a tighter definition for social tariffs. The regulator has specified that for a supplier's social tariff to count as such against their spending commitments it must be as good as the lowest tariff rate the supplier offers to customers in that area, including online deals. This means that vulnerable and fuel poor customers will be assured of being offered the best energy rates their supplier offers in their geographic territory. However, some low-income consumers might still be able to obtain a less expensive rate by switching to a different energy supplier. The new social tariff guidelines do not appear to establish a

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<sup>6</sup> Based on Energywatch figures as of August 5, 2008.

separate rate class for low-income customers; rather, the guidelines simply require that all low-income customers, including those on alternative billing arrangements such as prepayment meters, receive the same rates as those available to other customers on traditional standard billing terms.

#### Example – Social Tariffs

As of December 2007, four of six major utilities in the UK had social tariffs that provided eligible consumers a discount from offers available to the broader market. British Gas has historically charged its prepayment meter customers approximately 5 percent more for gas and electricity.<sup>7</sup> In February 2007 British Gas introduced its Essentials Tariff, which is the U.K.'s largest social energy tariff, aimed at reducing gas and electricity bills for 750,000 of the company's most vulnerable low-income customers. The Essentials Tariff offers British Gas's lowest standard gas and electricity prices to eligible consumers regardless of whether they are supplied on standard credit and billing terms or prepayment terms. EDF Energy's Energy Assist arrangement offers 15 percent off the applicable rates to eligible consumers based on their existing payment terms. Scottish and Southern Energy's EnergyPlusCare tariff offers 20 percent off applicable rates to eligible consumers based on their existing payment terms.

### **D. Customer Rebates – Conservation and Energy Efficiency**

#### Description

Many utilities offer customer rebates for programs that are designed to enhance energy efficiency or reduce energy consumption. Although these rebate programs might benefit low-income energy customers, they are not intended exclusively for that purpose. Rather, the genesis of rebate programs was the desire to reduce energy consumption, not necessarily to make prices more affordable for low-income consumers. Examples include customer rebates for: (a) purchasing appliances that use less electricity or natural gas, such as refrigerators, hot water heaters, and furnaces; (b) insulating or weatherizing homes to

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<sup>7</sup> British Gas addressed this disparate rate treatment through the introduction of the "Essentials Tariff" in February 2007, which standardized the rates charged to customers on prepayment meters and those on standard rate tariffs based on monthly usage.

improve energy efficiency; (c) installing a programmable thermostat to reduce energy consumption by controlling the temperature at different levels throughout the day; and (d) installing low-flow toilets and front loading washers that reduce consumption of both energy and water. These programs are funded through grants from federal and state agencies that wish to encourage energy consumers to conserve energy and use it more efficiently, or by charitable organizations that wish to help low-income elderly or disabled customers survive through extreme weather conditions either during winter or summer, or through rates in the case of some programs (e.g., Ontario gas distribution rates). The success of these programs depends on the funding available, but most indications are that the programs have been successful in terms of reducing consumption of electricity and natural gas by raising public awareness of ways in which to use energy more efficiently and responsibly.

Concentric's research indicates that many European countries place greater emphasis on the importance of energy efficiency programs in combating fuel poverty. This policy appears to be influenced by two primary factors: 1) energy conservation objectives are a higher priority for some European governments; and 2) the housing stock in European countries is older and less energy efficient than in North America, so more benefit is derived from spending to modernize, insulate and weatherize residential dwellings.

#### Example – Enbridge Gas Energy Efficiency Programs

Enbridge Gas Distribution offers two energy efficiency programs designed to benefit low-income customers and encourage conservation. The first program, known as Enbridge Home Weatherization Retrofit, provides income eligible participants with a free home energy assessment and weatherization upgrades at no cost to improve the energy efficiency of their homes. Approximately 300 Enbridge Gas customers will benefit from this pilot program, which runs through December 31, 2008. The second program, known as Enhanced Thermostat, Aerator, Pipewrap, and Showerhead is available at no cost to qualifying low-income families and individuals through December 31, 2008. The following energy efficiency measures are supplied and installed: programmable thermostat, low-flow showerhead, and hot and cold water pipe wraps. Kitchen and bathroom aerators are provided for recipients to install themselves. To ensure the program targets low-income

consumers, applications are available through United Way agencies participating in the Winter Warmth program.

#### Example – Ontario Power Authority

In 2008, the OPA issued a series of RFPs for program managers to deliver several additional new programs intended to benefit low income energy consumers through conservation and energy efficiency initiatives. One program will target multi-family buildings and is designed to enhance the energy efficiency of buildings with six or more residential units. The MFBP is a single program but because of market segment variations, it is anticipated that the Program will be delivered by three program managers: Assisted Social Housing Sector outside of Toronto; Private Buildings Sector outside of Toronto; City of Toronto; Overall MFBP Targets. Objectives of the new Multi-Family Building Program include:

- Reduce summer peak demand by 100 MW and overall electricity consumption by 385 GWh/yr in the Multifamily Buildings Sector.
- Reduce the energy burden imposed notably on low income residents and their housing providers and/or building owners, managers, and operators.
- Integrate multi-family building conservation projects with other OPA initiatives such as OPA demand response, distributed generation, and renewable energy.

A second program will target low income homeowners and residents of single family houses.

Objectives of the new Energy Efficiency Program for Houses include:

- Achieve energy consumption and demand savings in low-income single family homes to support the 100 MW Low Income and Social Housing Directive.
- Create awareness among low-income households and their support networks about the benefits of energy conservation.
- Establish effective channels for the delivery and implementation of Conservation Demand Management programs sensitive to the needs of the low-income community.

#### Example – Saskatchewan Initiative

In Saskatchewan, the Provincial government is offering the Saskatchewan EnerGuide for Houses program, which provides households with financial incentives to retrofit their dwellings with certain energy efficient improvements including heating and ventilation

system upgrades, insulation, draft protection, and upgrading water heaters. The Government of Saskatchewan is matching the financial incentive offered the Canadian federal government. That is, customers are eligible to receive up to \$10,000 in total rebates for participating in this program, which remains in effect through March 31, 2011.

#### Example – United Kingdom

In the UK, for example, the Warm Front Scheme provides grants to improve heating and energy efficiency of private sector housing in England. The grant provides energy-efficiency advice, energy-efficient light bulbs, and insulation measures such as cavity wall insulation, loft insulation, hot water thermal jackets, and heating improvements. The scheme is aimed at vulnerable households in receipt of eligible benefits. Warm Front also provides a Benefit Entitlement Check to maximize income. The Warm Front Grant provides a package of insulation and heating improvements up to the value of £2,700 (or £4,000 if oil central heating is recommended). Funding for Warm Front, which is provided through government grants, is currently authorized at £800 million between 2008 and 2011.

#### Example – U.S. Weatherization Assistance Program

Established in 1976, the U.S. Department of Energy Weatherization Assistance Program (“WAP”) is a formula grant program designed to improve energy efficiency in the homes of eligible low-income consumers thereby reducing their energy consumption lowering their heating and cooling costs, and ensuring their health and safety. Through WAP, the federal government distributes funds to states, which then allocates these funds through state weatherization agencies, to training community action agencies, other non-profit organizations, and tribal organizations to install weatherization measures. The U.S. Congress appropriated \$242.5 million for WAP in fiscal year 2006. A state could spend an average of \$2,826 per DOE unit in 2006. Since inception, the Department of Energy estimates that it has weatherized approximately 5.6 million homes.

#### Example - California

In 2006, the State of California spent more than \$115 million to support energy efficiency programs. In the past ten years, the Low Income Energy Efficiency (LIEE) program has provided about 1.6 million low income customers a varying array of energy related services

including home weatherization, refrigerator replacement, repair and replacement of heating and air conditioning equipment, and CFL distribution. Operating under a legislative mandate these programs seek to provide the benefits of energy efficiency at no cost to qualified low-income customers who otherwise would be unable to obtain these benefits. Approximately 3.8 million households, or 30% of the residential customers served by California's investor-owned utilities, are qualified to receive assistance.<sup>8</sup>

California has recently announced its further commitment to energy efficiency programs. In October 2007, the Commission initiated a rulemaking proceeding in which it directed investor-owned utilities and interested stakeholders to draft a strategic plan that would advance the State's ambitious energy efficiency goals. That strategic plan was released on June 2, 2008. It outlines California's ongoing statewide planning effort that it hopes will define visions, goals, and strategies for aggressively delivering energy efficiency to homes, offices, factories, and farms and to significantly contribute to the state's goal of having a reasonably priced, stable, reliable and clean portfolio of energy resources. The plan was prepared by California's four investor-owned utilities (i.e., Pacific Gas and Electric; San Diego Gas and Electric Company; Southern California Edison; and Southern California Gas Company) under the direction and guidance of the Commission. The strategic plan establishes three program initiatives: 1) all new residential construction will be zero net energy by 2020; 2) all new commercial construction will be zero net energy by 2030; and 3) heating, ventilation and air conditioning will be transformed to ensure that its energy performance is optimal for California's climate. The Commission added a fourth program initiative intended to benefit low-income consumers: "to provide all eligible consumers the opportunity to participate in the Low Income Energy Efficiency programs and to offer those who wish to participate all cost effective energy efficiency measures in their residences by 2020."

#### **E. Demand Side Management Programs**

##### Description

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<sup>8</sup> "California Energy Efficiency Strategic Plan", California Public Utilities Commission, Rulemaking 06-04-010, June 2, 2008, at Section 2.4.

Demand Side Management (“DSM”) Programs are similar in many respects to the customer rebate programs discussed above. However, many DSM programs are made possible by sophisticated advances in information technology. Unlike customer rebate programs, which are primarily targeted at the residential class of customers, DSM programs also benefit the commercial and industrial customer class. For example, a steel factory can receive reduced electricity rates by agreeing to temporary service interruptions during times when customer demand exceeds system peak capacity. Similarly, commercial customers can receive low electric rates by shifting their demand to periods during the night when overall demand is lower. Time of use pricing and seasonal pricing provide customers with an opportunity to reduce their total electric bill by following price signals from the market. If customers have the flexibility to consume electricity or natural gas during off-peak times, then the DSM programs help to alleviate the strains on system capacity and reliability. This benefits not only the customer, but the utility as well, because it forestalls the need to invest significant amounts of capital to build facilities for the production or transportation of energy. Some have criticized DSM programs as ineffective because there is little evidence of an appreciable reduction in energy demand, partially because the financial incentives have not been sufficient to cause customers to alter their established usage patterns.

#### Example – Toronto Hydro-Electric peaksaver

Toronto Hydro-Electric offers a DSM program known as peaksaver, which offers residential and business customers the ability to reduce their electricity bill by agreeing to have a peaksaver switch installed on their air conditioner. During critical times (typically on hot summer days when the electricity system is under significant stress), a signal will be sent to cycle down the air conditioning system in order to reduce the amount of electricity it uses. The activation period will not exceed four hours and the customer will not notice any change in temperature. Participating customers will receive a \$50 bill credit within two billing cycles after installation of the peaksaver switch.

### **F. Coordinating Payment Assistance with Public Assistance Agencies and Charities**

#### Description and Policy Considerations

Coordination with public assistance agencies and charitable organizations is important to the success of low-income energy assistance programs for two primary reasons. First, public assistance agencies and charitable organizations frequently are involved in setting eligibility requirements upon which utilities and regulatory agencies might rely for purposes of determining whether a customer qualifies for low-income energy assistance. Second, many customers who require assistance with their energy bills are in contact with social service agencies and charities to receive other forms of public assistance, such as housing services, health care services, and employment services. The utility can benefit by establishing a coordinated working relationship with social service agencies and charitable organizations because those caseworkers are better able to identify clients who might become unable to meet their financial obligations for energy services. If the utility is aware of this information in advance, it can better work with the vulnerable client to establish a reasonable payment arrangement before the customer incurs significant past due balances that cannot be paid.

Many European countries, such as France and Finland, discuss programs to address fuel poverty as part of a more comprehensive effort to improve living standards, income and employment levels, education levels, and the quality of housing. Fuel poverty, in those instances, is viewed as a symptom of some deeper social problem that has contributed to the impoverishment of an entire segment of the population. Those countries have designed low-income energy assistance programs that are coordinated with other social welfare activities, including programs that attempt to address chronic unemployment, homelessness, inadequate housing conditions, and insufficient household income levels. In contrast, North American countries are more concerned with designing programs that specifically target the needs of low-income energy consumers through direct rate assistance or rebates for energy efficiency efforts. There has been ongoing debate concerning whether those who receive assistance from other social welfare programs should also be eligible for low-income energy programs, and whether those living in subsidized housing should be eligible for low-income energy programs. In the U.S., many state and local governments supplement LIHEAP support through programs that offer additional benefits to those who may not qualify for assistance under that federal government initiative. Non-profit organizations and charities typically administer the LIHEAP block grant program, directing funds to eligible customers according to some established criteria.

### Example - Michigan

PeopleCare is a partnership between Consumers Energy and the Salvation Army to help Michigan households who may not qualify for other assistance yet are struggling to make ends meet. Charitable donations from Consumers Energy customers and employees allow the Salvation Army to extend material assistance to families, ranging from food to transportation to medical needs. Consumers Energy also donates PeopleCare bill credits for its low-income gas and electric customers, which are applied directly to a customer's bill based on the Salvation Army caseworker assessment and authorization. Since 1983, PeopleCare has helped over 300,000 Michigan households. Consumers Energy employees and customers have donated nearly \$12.4 million to support PeopleCare, and the utility has contributed \$25.3 million in energy bill credits.

## **G. Budget / Equal Billing**

### Description

Budget or equal billing programs allow residential customers the opportunity to pay the same amount for utility service each month, while their actual cost is managed through some type of tracking mechanism. This program might be attractive to low-income customers or senior citizens who are on fixed incomes because it grants them some degree of certainty about budgeting for their energy bills. The monthly bill normally is divided into twelve equal payments based on the customer's historical energy usage patterns for electric and natural gas service. Although budget or equal billing programs are useful for purposes of smoothing out energy costs, they do not fully address the needs of low-income energy consumers because the programs do not make utility service more affordable, per se. There are no fee reductions or waivers associated with budget billing programs, and customer participation rates generally do not exceed 20 percent.

### Example – Hydro One Networks, Inc.

Hydro One Networks (“Hydro One”) offers a budget billing program as an alternative to the standard billing option, under which a customer pays for energy service based on their actual

usage during the prior month. Hydro One's budget billing option is based on the customer's established usage patterns or consumption history. Payments are spread equally throughout the year, which allows the customer to avoid the monthly fluctuations that occur with standard billing. For those customers billed monthly, the customer will receive eleven monthly bills from Hydro One based on the monthly service charge plus 1/12 of the estimated annual energy use. The twelfth bill reconciles the customer's actual and estimated electricity usage and the customer is either credited for any overpayment or charged for the balance owed.

#### Example – Dominion Virginia Power

Dominion Virginia Power offers essentially the same budget billing program. However, its program description provides some additional information about the utility's billing practices and notes several restrictions on the availability of the program. Dominion continues to read meters for customers who are enrolled in budget billing. The customer's monthly bill will show actual usage, what it costs, and the actual account balance along with the budget amount due. Dominion periodically reviews customer usage and may adjust the budget amount if the customer's usage deviates significantly from historical patterns. To be eligible for budget billing, customers cannot owe more than the amount charged on their most recent monthly bill. If they are current in their payments, they may sign up for budget billing immediately. No extensions or payment arrangements are granted for customers on budget billing. Customers can receive budget bills online and can use Dominion's automated payment plan system.

### **H. Plans for Payment of Past Due Accounts**

#### Description

Many utilities offer payment plans for past due accounts. These payment plans allow customers to avoid service disconnection, while working out a reasonable plan to pay their past due accounts over some agreed upon period of time. The payment plans also allow the utility to avoid writing off the customer account as uncollectible bad debt expense. Based on our experience, low-income programs can reduce the operating costs of the utility for customer care. It can be very costly and time consuming for a utility to provide customer

service for customers who do not pay their bills on a timely basis. By negotiating a payment plan with the customer, the utility can avoid or reduce certain costs associated with mailing customer bills, initiating collection efforts, disconnecting and re-connecting service, and writing off accounts as bad debt expense. For more information on the potential cost savings for utilities, please refer to a discussion of the Oregon Energy Assistance Program which is contained in Section VII of this report.

#### Example – Nova Scotia Power

In September 2007, the Nova Scotia Utility and Review Board issued an Order approving the application of Nova Scotia Power Incorporated (“NSPI”) to modify its credit and collections policies. Specifically, the regulator granted NSPI’s request to implement a pilot budget billing program that allowed customers the option to choose a preferred due date to assist them in meeting their payment obligations in a timely manner and to allow customers with outstanding balances to participate in the Automatic Payment Plan, under which the utility electronically withdraws funds from the customer’s designated account based on the due date to cover the billed amount. NSPI reported that the pilot program was successful in reducing arrears. Previously, customer with past due accounts could not apply for a budget billing plan. Namely, 88% of the participating customers kept their payment commitments and past due amounts were reduced by 25%. The customer participation rate for this program was 15% during the pilot period.

### **I. Late Payment Charges**

#### Description and Policy Considerations

Many utilities impose late payment charges on customers who pay their bills more than a certain number of days after the due date. These late payment charges typically represent some percentage of the customer bill, such as 1% of the total energy bill for every 30 days past due. Some U.S. utilities waive the late payment charge for low-income energy consumers, especially in conjunction with the customer arranging a payment plan for past due amounts. However, late payment charge waivers do not appear to be common in Canada. Since late payment charges were intended to allow the utility to recover costs associated with customers who have poor credit histories or slow payment histories, it could

be viewed as counter-productive to waive such charges for low income customers, many of whom have trouble paying their bill in a timely manner.

#### Example – New Brunswick Power

Intervenors in a recent New Brunswick Power proceeding requested a reduction in late interest charges applicable upon certain economically vulnerable customers. In its January 2007 decision, the provincial regulator ruled: “The Board is an economic regulator and its role is to establish classes of service and rates for each class that are appropriate having regard to the costs that each classes imposes on DISCO . . . The Board is aware of jurisdictions where the relevant legislation establishes policies that are clearly designed to assist certain customers. The Board considers this is the appropriate way for such policies to be established.”

#### Example – Empire District Electric

Although not explicitly related to low-income eligibility, Empire District Electric waives the late payment charge for customers in Missouri and Arkansas who are over age 60 or disabled. Several investor-owned and municipally-owned utilities in the State of Washington, including Seattle City Light, also waive late payment charges for low-income customers.

## **J. Customer Deposit Requirements**

### Description and Policy Considerations

Utilities normally impose customer deposit requirements, equal to one or two months expected utility bills, on new customers without established credit histories or on existing customers with poor payment histories. However, utilities frequently waive those deposit requirements for low-income customers in order to improve affordability. The OEB recently addressed the security deposit question in Regulatory Proceeding RP-2002-0146, when it adopted new rules for customer deposits.<sup>9</sup> Although waiving the security deposit is beneficial for low-income customers, it goes against the intended purpose of imposing customer deposit requirements. Namely, these security deposits are designed to protect the

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<sup>9</sup> The OEB later adopted rules concerning customer deposit requirements for bulk-metered residential condominiums in docket EB-2006-0030.

utility in case customers default on their monthly bill. By definition, low-income customers are more likely to have trouble paying their utility bill, especially during extreme weather conditions or when energy costs are rapidly increasing. By waiving the customer deposit requirement, the utility is foregoing the ability to recover revenue for service provided in the event the customer defaults. This is another example of a program that shifts the cost burden or payment risk from low-income energy customers to the general body of ratepayers. Therefore, the social benefits derived from waiving customer deposit requirements should be weighed against the equity of asking customers to subsidize the low-income energy consumer. The question of how to balance the needs of low-income energy consumers for affordable service against the regulatory principle (or statutory mandate) for just and reasonable rates will be integral to every regulatory authority's decision when it is considering whether to implement programs that benefit a relatively small segment of customers.

#### Example – Waiver of security deposit

Utilities in 11 U.S. states waive or reduce security deposits. Empire District Electric waives the security deposit and late payment charge for customers in Missouri and Arkansas who are over age 60 or disabled. Four major utilities in Virginia waive security deposits for LIHEAP eligible customers. Consolidated Edison exempts New York customers from paying a security deposit if they are 62 or over, unless their service was turned off for non-payment in the past six months.

### **K. Disconnection Rules and Charges**

#### Description and Policy Considerations

Many U.S. states have adopted rules that prohibit utilities from disconnecting customers under certain circumstances: (a) at certain times of year such as November 1 through March 31; (b) when temperatures reach certain extreme levels; (c) before the weekend when the utility's customer service office will not be open; and (d) before recognized holidays such as Christmas. Utilities have contended that both disconnection and reconnection rules require the utilities to determine whether customers are not paying for service because they cannot afford to pay or because they do not wish to pay. This issue highlights the importance of

communication between utilities and social service agencies or charitable organizations, which can provide some information regarding the customer’s ability to pay. A disconnection policy is necessary because the utility needs the ability to remove a customer from its system for non-payment. However, some discretion is necessary when the utility determines that a customer cannot pay the bill, but may wish to establish a reasonable payment plan for past due amounts.

Concentric reviewed the disconnection policies of all 50 states and the District of Columbia, which are summarized on the LIHEAP web site. Based on that review, it appears that 48 jurisdictions have implemented policies or adopted rules to protect consumers from disconnections during extreme weather conditions or when the disconnection would be detrimental to the medical condition of the individual customer or a member of the household. Most weather related policies involve temperatures dropping below a specified level during the next 24 hours, although several states (including Minnesota) have policies against disconnection when temperatures or heat indices rise above certain thresholds. Three states, however, do not have any stated policies or rules regarding prohibitions on disconnections. These are: Florida, Hawaii, and Virginia. Table 1 summarizes Concentric’s general findings concerning disconnection policies in the United States:

**Table 1  
Disconnection Policies in the U.S.**

Description of Policy or Rule	# of States
Date based prohibition on disconnection	38
Temperature based prohibition on disconnection	20
Seasonal policy	42
Deferred Payment (customer has entered payment plan)	35
Other (primarily related to medical condition)	44

In Ontario, the ability of a utility to disconnect service is governed by the *Electricity Act*. Specifically, Section 31 of the *Electricity Act* grants an electricity distributor the power to disconnect service for non-payment of a customer account. Section 4.2.5.1 of the Board's Distribution System Code provides that "the physical process by which a distributor disconnects or reconnects shall reflect good utility practice and consider safety as a primary requirement." Section 50 of the *Public Utilities Act* allows Ontario gas utilities to disconnect for non-payment after providing a minimum of 48 hours notice.

As an alternative to disconnection, some jurisdictions have approved installation of load limiters, which restrict the amount of electricity that may be used. The load limiter policy allows customers to avoid absolute service disconnection, while they establish a payment plan with the utility for past due amounts or resolve disputed amounts. The load limiter policy represents an attempt to find some middle ground between jurisdictions that have prohibited electric disconnection during certain times of year and those that have no such restrictions in place.

#### Example – Centra Gas Manitoba Inc.

The Manitoba Public Utilities Board ("PUB") recently approved the request of Centra Gas Manitoba Inc. to revise its disconnection and reconnection policies and procedures which apply to both gas and electric customers.<sup>10</sup> According to the Commission-approved policy, disconnection for non-payment can only occur from May 15 to September 30 on gas and combined gas/electric services in arrears, unless the premises is confirmed as vacant. The company may install a load limiter at any time except where there is no access or for safety or technical reasons. By September 30, where gas is the heat source, gas and combined gas/electric service that had been disconnected for non-payment will be re-connected and the electric service shall be load limited. The policy applies to arrears in both the gas and electric accounts as reflected in a single bill. Customers have the right to appeal to the PUB the disconnection and reconnection of service, including installation of the load limiter.

#### Example – Fortis Alberta Inc.

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<sup>10</sup> *Centra Gas Manitoba Inc – An Order Approving Gas and Combined Gas/Electric Disconnection and Reconnection Policies and Procedures*", Manitoba Public Utilities Board, Order No. 14/08, issued February 29, 2008.

According to Fortis Alberta Inc.'s electric distribution tariff effective January 1, 2008, the company may disconnect a customer after providing 48 hours advance notice except under the following circumstances: the company will not disconnect a residential or farm service customer at any time between October 15 and April 15 or at any other time when the temperature is forecast to be below 0 degrees Celsius in the 24-hour period immediately following the disconnection. Fortis Alberta also declines to disconnect customers on weekends. This example is generally consistent with the terms and conditions of many U.S. utilities, which are prohibited by state commissions from disconnecting service during specified periods of time or during times of severe weather when the temperature drops below a certain threshold.

#### Example – UK Retail Association

In 2004, the Energy Retail Association (“ERA”) set up the Safety Net for Vulnerable Customers, which ensures that no vulnerable customer is disconnected from its energy supply. Since 2004, no vulnerable customer has been knowingly disconnected. ERA has defined a vulnerable customer as follows: “A customer is vulnerable, if for reasons of age, health, disability, or severe financial insecurity, they are unable to safeguard their personal welfare or the personal welfare of other members of their household.” ERA indicates that all suppliers offer a wide range of payment options (including prepayment meters) to enable customers to budget for energy costs. Disconnection is aimed at people who will not pay – not those struggling to pay their energy bills.

### **L. Re-connection Rules and Charges**

#### Description

Many utilities waive the reconnection fee for low-income customers who enter into an installment payment arrangement. The incentive for the utility to waive this charge is to reduce uncollectible accounts and bad debt expense and to maximize the number of customers who are paying for energy service. Where applicable, this policy is presented in the “terms and conditions of service” section of the utility’s tariff for regulated services.

#### Example – Consolidated Edison

According to Consolidated Edison's electric tariff effective December 1, 2003, the company waives the reconnection fee for customers who demonstrate that they were a recipient of Supplemental Security Income at the time of the reconnection, or received benefits under the Home Energy Assistance Program in the twelve month period prior to the reconnection request, or for whom the Social Services Department agrees to pay electric bills in full directly to the company subsequent to the service discontinuance but prior to the reconnection.

#### **M. Low-Income Energy Programs Offered by Gas Utilities**

During the spring of 2006, the American Gas Association ("AGA") surveyed its membership regarding its programs to assist low-income customers. Responses were received from utilities in more than 100 jurisdictions. The AGA survey generated the following results:<sup>11</sup>

- 45% offer rate discounts
- 35% forgive all or part of past arrearages
- 38% participate in fuel funds
- 50% have shareholder contributions to assist low income customers
- 10% offer a discount on the re-connection fee
- 35% have other programs

The AGA report also found that in 2006 utility programs generated \$1.8 billion in low-income customer assistance. Based on 2004 information, the AGA reports that utility assistance programs offered the following types of support to low-income customers:

- 78% Rate Discounts
- 11% Weatherization Programs
- 8% Waiver of Customer Charges, Disconnection Fees, Late Payment Charges, Reconnection Fees, etc.
- 3% Arrearage Forgiveness

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<sup>11</sup> "The Increasing Burden of Energy Costs on Low-Income Consumers," American Gas Association, Policy Analysis Group, September 26, 2007, at 5-6.

## VI. FUNDING LOW INCOME ENERGY PROGRAMS

One of the most important considerations of any low-income energy assistance program is how the program or measure is funded. Unfortunately, detailed funding information regarding specific LIEP programs is not easily accessible. However, Concentric’s research has shown that there are five primary sources of funding for low-income energy assistance programs:

- Federal government grants;
- Provincial or state grants or program funding;
- System Benefit Charge (i.e., dedicated state fund)
- Utility surcharges or assessments on customer bills; and
- Charitable or religious donations.

This section of the report summarizes the funding sources and levels in the United States, the United Kingdom, and Australia. Table 2 summarizes the total funding for low-income energy assistance programs in the aforementioned countries. These are approximate figures, based on what Concentric believes are reliable sources.<sup>12</sup> However, these figures should not be construed as definitive funding levels for the given country.

**Table 2**  
**Funding Sources and Levels for LIEPs<sup>13</sup>**

Country	Total Funding	Govt Funding	Utility Funding	Charity/Other Funding
United States	\$5.2 billion	\$3.2 billion (61.5%)	\$1.8 billion (34.6%)	\$180 million (3.8%)
United Kingdom	£3.7 billion	£2.3 billion (62.2%)	£1.4 billion (37.8%)	N/A
Australia	\$817.2 million	\$812.3 million (99.4%)	N/A	\$4.9 million (0.6%)

<sup>12</sup> Sources include the LIHEAP Clearinghouse web site, the annual report for the UK fuel poverty program, and Concentric’s research of individual low-income programs in the UK and Australia.

<sup>13</sup> Percentages have been rounded.

Table 3 summarizes how funds are allocated between rate assistance programs and energy efficiency programs in these same countries. Once again, these are approximate figures, based on what Concentric believes are reliable sources. However, these figures should not be construed as definitive figures for rate assistance or energy efficiency programs for the given country.

**Table 3**  
**Rate Assistance vs. Energy Efficiency**

Country	Total Funding	Rate Assistance	Energy Efficiency
United States	\$5.2 billion	\$4.12 billion (79.2%)	\$321 million (6.2%)
United Kingdom	£3.7 billion	£2.3 billion (62.2%)	£1.4 billion (37.8%)
Australia	\$817.2 million	\$812.3 million (99.4%)	\$4.9 million (0.6%)

Table 4 summarizes customer participation in low-income energy assistance programs in the referenced countries. Once again, these figures are approximate, based on what Concentric believes are reliable sources. However, these figures should not be construed as definitive participation levels for the given country.

**Table 4**  
**Customer Participation**

Country	Total Funding	Participant Households	Funding/Participant
United States	\$5.2 billion	5.7 million	\$912
United Kingdom	£3.7 billion	4.5 million	£822
Australia	\$817.2 million	N/A	N/A

As previously discussed in Section IV of this report, funding support for low-income energy programs and measures has been inconsistent at times. Several LIEPs have been discontinued or eliminated because the parliament or legislature allocated money to different priorities. Specifically, the Canadian federal government elected not to provide

\$1.065 billion in funding for two newly created programs that would have provided \$565 million in direct rate assistance and \$500 million in energy efficiency programs. Similarly, the Texas legislature eliminated funding for its low-income program because of severe budget constraints. Finally, the New Jersey Universal Service Fund was historically funded through casino tax revenues. However, in 2004, the Governor's budget shifted funding for these low-income programs to a surcharge on utility customer's bills.

As electricity and natural gas costs continue to increase, Concentric anticipates the demand for low-income energy assistance programs will also rise. There is evidence that public utilities and charities have stepped forward with their own low-income proposals to assist customers when government funding has not been adequate. For example, utilities in Great Britain recently agreed to increase funding for low-income energy programs through social tariffs, which are subsidized through slightly higher rates on the general body of ratepayers. In February 2007 British Gas introduced its Essentials Tariff, which is the U.K.'s largest social energy tariff, aimed at reducing gas and electricity bills for 750,000 of the company's most vulnerable low-income customers. The Essentials Tariff offers British Gas's lowest standard gas and electricity prices, which have been otherwise inaccessible to customers who don't have a bank account. National Energy Association ("NEA"), which is the leading fuel poverty charity in the U.K., has applauded the introduction of this new social tariff. William Gillis, NEA chief executive, is quoted as saying: "A new social tariff aimed at cutting gas and electricity bills for up to 750,000 of British Gas's most vulnerable customers will see their energy bills drop by around 30% per annum."<sup>14</sup>

Likewise, shortly after the \$200 million rate discount program in Texas was eliminated in September 2005, TXU Energy and CenterPoint Energy Houston Electric announced new low-income discount programs totaling \$35 million. The TXU Energy program offers automatic summer rate discounts (i.e., June through October) to electric customers currently receiving Food Stamps or Medicaid, while those households whose income is

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<sup>14</sup> See [www.britishgas.co.uk/about-british-gas/what's-important-to-us/customer-commitment/essential](http://www.britishgas.co.uk/about-british-gas/what's-important-to-us/customer-commitment/essential)

less than 125% of federal poverty guidelines may apply for rate assistance. These utility initiated programs in Texas are funded through a combination of shareholder money and a surcharge or assessment on customer bills.

## **VII. MEASURING THE EFFECTIVENESS OF LOW INCOME ENERGY PROGRAMS**

The following section of the report summarizes four independent program audits that evaluated the effectiveness of four low income energy assistance programs in the United States, as well as an annual report that reviews the accomplishments achieved in Great Britain. In general, the low-income programs were found to be effective in terms of making energy costs more affordable for low-income energy consumers and reducing the number of households considered to be living in fuel poverty or for whom energy service was unaffordable. However, many of the programs were criticized for not targeting the poorest of the poor, so that those customers who most needed assistance would receive benefits.

### **A. LIHEAP Energy Burden Evaluation Study**

LIHEAP is a mandatory block grant program whose mission is to assist low-income households, particularly those with the lowest incomes that pay a high proportion of household income for home energy, primarily in meeting their immediate home energy needs. States, territories, and Indian tribes that wish to assist low-income households in meeting the costs of home energy may apply for a LIHEAP block grant.

The first study, entitled “LIHEAP Energy Burden Evaluation Study,” was performed in July 2005 by the Applied Public Policy Research Institute for Study and Evaluation (“APPRISE”). The purpose of this evaluation study was to assess to what extent the LIHEAP program was serving the lowest income households that have the highest energy burdens. The study used data from the 2001 Residential Energy Consumption Survey (RECS) to examine the distribution of income and energy burden for low income households and to identify those that have the lowest incomes and highest energy burdens (i.e., high burden households). The study uses the 2001 RECS LIHEAP Supplement to measure the effectiveness of the FY 2001 LIHEAP program in serving high burden households. The study quantifies program effectiveness using targeting performance measures, and identifies procedures for updating energy burden targeting performance statistics in the future.

The findings from this study show that grantees target LIHEAP benefits, but that targeting could be further improved. However, such improvements would require changes in LIHEAP intake and benefit determination procedures.

Reciprocity Targeting: The program has successfully targeted the two groups that have been identified as having the highest home energy needs. However, the program could attempt to increase targeting so that a greater percentage of recipients are both vulnerable and have high energy burden by placing a greater emphasis on identifying and serving high burden households. However, many grantees do not have procedures in place that allow them to measure energy burden for LIHEAP recipients.

Benefit Targeting: The program does not give significantly higher benefits to high burden households. The best way to increase targeting would be to measure energy burden for LIHEAP recipients and give higher benefits to households that have higher energy burden. However, many grantees do not have procedures in place that allow them to measure energy burden for LIHEAP recipients.

Burden Reduction Targeting: The program does not target the highest burden households with the greatest level of burden reduction. The best way to increase targeting would be to measure energy burden for LIHEAP recipients and give higher benefits to households that have higher energy burden. However, many grantees do not have procedures in place that allow them to measure energy burden for LIHEAP recipients.

With limits on LIHEAP administrative funds, it is not clear that grantees have the resources to make the changes that are required to improve recipient and benefit targeting.

## **B. Evaluation of NJ USF Program**

New Jersey's low income energy assistance program, which began in October 2003, is a fixed credit percentage of income payment plan ("PIPP") under which participants are required to pay no more than six percent of their annual income toward electric and gas bill. In 2006, the New Jersey program was evaluated to analyze the operations and results from October 2003 through FY 2005. The independent research institute, APPRISE, reported the following information concerning the success of the New Jersey program. First, the impact of the USF program is significant for those who receive it – it covers about 40 percent of the total energy bill for eligible clients. Second, the program's standard of energy affordability (i.e., six percent of income) is one of the most aggressive in the country. Similar programs in Ohio and Pennsylvania require low income customers to pay up to 17 percent of their

income on energy bills. Third, about 41 percent of participants had incomes at or below \$10,000, and 37 percent of households had an elderly member. Fourth, the majority of USF customers, 67 percent, were able to pay 100 percent of their annual utility bills. Fifth, the USF program eliminated about 90 percent of pre-program arrears for USF customers. Sixth, compared to LIHEAP recipients in other northeastern states, USF participants had a lower rate of utility shutoffs. Seventh, although the program targets the lowest-income households, it does not necessarily reach the most vulnerable groups such as the young, the elderly, groups with language barriers, or those households with the highest energy burden.

### **C. Evaluation of Cost Effectiveness of Oregon Energy Assistance Program**

The Oregon Energy Assistance Program is designed to provide cash-assistance to low-income households to offset the cost of electric energy. The program is funded through a meter charge<sup>15</sup> to PacifiCorp and Portland General Electric customers in Oregon and is administered by Oregon Housing and Community Services. On January 10, 2003, a study was published by Quantec LLC for purposes of evaluating the cost effectiveness of the program. Quantec performed a cost/benefit analysis to measure whether the Oregon program provided societal benefits that exceeded program costs, and whether the utilities realized cost savings as a direct result of the program. Quantec's study found that the societal benefits derived from the program slightly exceeded the costs, while the benefits to the utilities as measured through cost savings were slightly less than the program costs. Specifically, the study indicated that utility costs were reduced as follows: 1) reductions in past due amounts of \$340 per customer; 2) savings of \$11 per participant due to the time value of money and reduced need to acquire capital; 3) reduction of \$190,000 in costs related to efforts to collect bad debt (including phone calls, letters, customer visits, and collection agency costs); 4) reduction in customer mobility caused by need to move due to high energy costs resulted in estimated cost savings to utility of \$22,000 related to reading meter prior to assigning new account; and 5) possible increase in federal assistance from LIHEAP attributable to state-sponsored program. Finally, Quantec observes that certain benefits of the Oregon program could not be quantified, and

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<sup>15</sup> The meter charge is currently set at \$0.35 per month for residential customers and \$0.035 per kWh for commercial customers and capped by the legislature at \$500 per month.

concludes that if those factors were taken into consideration, the program's cost effectiveness would have increased significantly.

#### **D. Evaluation of Program's Effectiveness in Great Britain**

In 2007, the Department for Business Enterprise and Regulatory Reform and the Department for Environment, Food and Rural Affairs jointly published their fifth annual progress report concerning the United Kingdom's efforts to tackle fuel poverty. According to the report, in November 2001, the Government published an ambitious UK Fuel Poverty Strategy with the goal of eradicating fuel poverty by 2016 in England, Northern Ireland, and Scotland, and by 2018 in Wales. However, during 2005, the UK-wide figures rose by around 500,000 households, with around 2.5 million households in fuel poverty overall, of which two million of those are vulnerable. This is down from 6.5 million and 5 million in 1996 respectively, across the UK.

Fuel poverty remains a priority for the Government. However, according to the report, fuel poverty is not something that the UK Government can tackle alone. It depends upon close cooperation with energy suppliers, local authorities, social landlords, delivery bodies, and third sector organizations. The report notes the following program achievements to date:

- UK is the first country in the world to recognize the issue of fuel poverty and to put in place measures to tackle the issue, including spending £20 billion on benefits and programs since 2000;
- Substantial reductions in fuel poverty since 1996 with over four million households removed from fuel poverty in the UK;
- Assisted over two million households in the UK through Fuel Poverty Schemes. The range of schemes offered are now far more flexible, so that those receiving help can get the full benefit whatever their circumstances;
- Initiatives across the UK to improve the quality of social housing have resulted in substantial investment. In England, for example, the Decent Homes Standard has halved the number of homes in social housing that provide inadequate thermal comfort;
- The Energy Efficiency Commission has enabled a large number of low income households to benefit from a range of energy efficiency measures

delivering cost effective carbon savings and reducing their costs to keep warm; and

- Winter Fuel Payment helped keep 11.7 million people warm in the winter of 2006/2007. If counted against fuel bills this is estimated to have removed around a further one million households from fuel poverty in the UK.

The annual report indicates that the government's framework provides a strong safety net for vulnerable people, and was successful in reducing fuel poverty between 1996 and 2005 by three million households across the UK in this vulnerable category. But they admit that new challenges from rising energy prices since 2003 have inevitably had an impact, and 2005 was the first year in which the number of households in the UK in fuel poverty actually rose. They estimate that there may still be 1.2 million vulnerable households in fuel poverty in England by 2010.

The annual report states that the U.K.'s commitment to fuel poverty has seen investment of over £2 billion on Fuel Poverty Schemes, and £2 billion on Winter Fuel Payments. Local Authorities in England have also invested £5 billion on the Decent Homes Standard, and social landlords across the rest of the UK have invested huge sums to improve the standard of social housing. Energy suppliers have continued their significant activity through the Energy Efficiency Commitment 1 and Energy Efficiency Commitment 2 which is expected to have generated £1.6 billion in energy efficiency measures, and all suppliers now provide significant social programs to their vulnerable customers.

Finally, the report discusses the U.K.'s ongoing commitment to eradicate fuel poverty, while simultaneously reducing carbon emissions. The 2007 Comprehensive Spending Review has allocated resources to continue the Warm Front Scheme in England. The combination of Warm Front funding of just over £800 million over the period and the focus on low-income and elderly customers through the priority group obligation in the Carbon Emissions Reduction Target mean that spending on energy efficiency and other measures in low income, elderly and disabled households is expected to rise, by £680 million to around £2.3 billion compared to the previous spending level.

## VIII. ISSUES TO CONSIDER IN DESIGNING AND IMPLEMENTING LOW-INCOME ENERGY PROGRAMS

There are a number of relevant questions that a jurisdiction must answer when it is considering how to design and implement a policy or program to address the needs of low-income energy consumers. This section of the report is intended to raise awareness of the important issues that should be addressed in a low-income energy assistance program, based on the experience of jurisdictions that have adopted a formal policy or program. These questions include, but are not limited to, the following:

### A. How is low income defined?

Regulatory authorities have established various definitions of low-income energy customers, including those who are considered to be in fuel poverty, those considered as vulnerable, those who spend a certain percentage of income on home energy needs, those whose income represents a certain percentage of some benchmark level, and those who indicate that electricity service is not affordable for their household. Regardless of what definition the regulator adopts, it is important to develop some common definition of the term low-income energy customer before designing and implementing a policy or program to address the needs of that group.

### B. How is the program funded?

Based on Concentric's research in preparing this report, the most common forms of funding for low-income energy programs include: federal government grants; state or provincial government grants; system benefit charges; voluntary or mandatory customer charges assessed on utility customers; and charitable contributions.

### C. What are the eligibility criteria?

Some jurisdictions link eligibility to income levels (e.g., percent of federal poverty guidelines or state median income), while other jurisdictions consider the percentage of household income spent on expenses for purchasing energy used for heating and cooling purposes, while still others determine eligibility based on qualifying for another social assistance program (e.g., government pension plans or child welfare support.)

D. Who determines customer eligibility requirements?

Most jurisdictions in North America leave this determination to a social service agency, who has established income and household size guidelines for the purposes of its own public assistance programs. Customer eligibility requirements in many European countries appear to be dependent more on the percentage of household income spent on energy than on absolute income levels. For energy efficiency programs, there appears to be less emphasis placed on the customer's income level, and more emphasis on offering financial incentives to all customers to weatherize their dwellings and purchase appliances that consume less energy. Most jurisdictions attempt to avoid assuming the role of determining which customers are eligible for energy assistance because this is the purview of social service agencies, not of public utilities, consumer advocates, or utility commissions. An alternative approach would result in significant commitments of staff resources in terms of developing, administering, and monitoring customer eligibility requirements.

E. Who administers the logistical aspects of the program?

There is little information concerning who administers the logistical aspects of the various programs that have been implemented by the regulatory jurisdictions that were reviewed for this research report. Questions to be answered include the following: (a) how is the level of rate assistance determined; (b) how frequently is the level of rate assistance modified; (c) how do eligible recipients receive the financial benefits to which they are entitled; (d) how is the program monitored or audited to ensure compliance with all applicable statutes, rules, and directives from the regulatory authority; (e) who arbitrates any disputes between low-income customers and the utility regarding disconnection policies, reconnection fees, late payment charges, etc.; and (f) is the regulatory authority actively involved in the day-to-day operation of the program, or does it serve as a conduit between the utility and the low-income consumer?

F. How are customers notified of program availability?

Enhancing customer awareness through education is one of the more important aspects of any program that is designed to provide benefits to a targeted group. The OFGEM identified this critical aspect of its low-income policy when it observed that many low-

income customers were not benefiting from electric competition because they were not aware of their supplier alternatives, and did not recognize that they could reduce their rates for electric service by moving away from prepayment meters to an alternative payment method. Similarly, some jurisdictions have found that eligible customers do not request any form of rate assistance or do not apply for energy efficiency rebates or tax credits because they feel that such programs have a social stigma. It appears that the regulatory authority must be prepared to offer a customer education program to eligible recipients in order to increase public awareness of the low-income energy assistance programs that are available, and to explain the potential benefits that can be obtained through participation in such programs.

G. Is there a procedure for reviewing the programs after some period of time?

As discussed in Section VII of this report, several jurisdictions have retained an independent auditor to evaluate the successes and shortcomings of their low-income energy assistance program. It is unclear whether this monitoring activity occurs on a routine and established schedule, or whether the regulatory jurisdiction requests an audit only when it wishes to be apprised of the effectiveness of the program it has implemented. In the case of the United Kingdom, it appears that an annual report provides detailed information concerning whether the programs are successful in combating and eradicating fuel poverty. The UK approach is clearly targeted at meeting specific objectives by a certain date, while other jurisdictions do not have such an aggressive goal, or have not made low-income assistance a major priority. Frequently, a LIEP is approved as a pilot program, and is evaluated by the regulatory authority after two or three years to determine whether it has been effective.

H. How do you measure the success of LIEPs?

It is important for the regulatory authority to consider how it will measure the effectiveness of any policy, program, or measure. This measurement normally involves an assessment of whether the policy or program has fulfilled its intended purpose. Therefore, in order to measure program success, it is imperative for the regulators to have a benchmark against which must they can measure the results of the policy or program. This requires industry information to be provided to the regulatory authority

through some type of report, survey, or independent audit or research study. For example, the United Kingdom prepares an annual report that explains the program objectives and whether the current low-income energy programs are helping the nation achieve its goal of eradicating fuel poverty. The UK measures the number of customers who have been removed from the ranks of those considered to be fuel poor, and it monitors the amount spent by utilities on social tariffs designed to reduce or eliminate fuel poverty through reduced rates or energy efficiency programs. Similarly, the Pennsylvania Public Utility Commission prepares an annual report to review the effectiveness of low-income programs in that state. In particular, it appears that successful low-income regimes measure whether the program has been successful in assisting those who are most at risk of detrimental consequences from the lack of adequate heating and cooling, such as families with young children, and vulnerable groups such as the elderly, disabled, and terminally ill. Concentric's research and experience indicate that it is beneficial for the regulatory authority to identify the type of information it wishes to collect and analyze at the time the LIEP is implemented. This approach will help to ensure that utilities are tracking the requisite information, and it provides the regulators with an opportunity to discuss with stakeholders the costs and benefits of providing reports concerning relevant measures such as customer participation levels, program costs, and the effectiveness of customer education materials.

#### I. Implementation issues

There are many implementation issues related to low-income energy assistance programs. Some of those are logistical to be addressed by the regulatory authority and were covered earlier in this section. However, the process of implementing low-impact programs also impacts the utility in certain ways. For example, the utility may need to dedicate employees and other resources to administering the program. The utility may need to coordinate with social service agencies or charitable organizations in order to determine which customers are eligible for assistance and what to do when a vulnerable customer faces disconnection. The utility may need to make changes to its customer accounting system for purposes of tracking low-income energy customers. The utility may need to collect confidential information from government agencies regarding customers who

apply for assistance under the program. Finally, the utility may need to submit additional reports to the regulatory authority concerning customer participation, so that the regulator can evaluate the effectiveness of the program.

## **IX. CONCLUDING OBSERVATIONS AND SUMMARY**

Based on Concentric's research, it appears that low-income energy programs have been implemented in a number of different jurisdictions around the globe. As energy costs have continued to escalate during this decade, there has been renewed interest in addressing energy affordability, especially for low-income customers who are most vulnerable to price increases. Regulatory authorities are placed in the difficult position of trying to balance the mandate for just and reasonable rates with the social pressure to help those in need of rate assistance. Many jurisdictions have implemented policies that prohibit disconnection during certain times of the year or when the temperature falls below a specified level. Many have also implemented policies to protect senior citizens and those with medical conditions from disconnection, especially during extreme weather conditions.

In addition to rate discounts or waivers of the fixed monthly service charge, many jurisdictions have placed renewed emphasis on financial incentives for energy efficiency programs. These programs accomplish the dual purpose of encouraging conservation, while reducing carbon emissions and greenhouse gases. European countries have placed particular emphasis on designing comprehensive low-income energy programs that encourage upgrading the quality of the housing stock.

Electricity, natural gas, and heating oil are considered essential services in most jurisdictions. Concentric has found almost universal support for the concept of low-income energy programs. However, there is substantial debate concerning how the policy or program should be structured and the extent to which these programs should be funded, and by whom. Should the Board determine that it wishes to adopt low-income energy programs in Ontario, it will face the issue of how those programs should be funded.

Finally, it appears that the most effective low-income programs are the result of collaboration between the regulatory authority, regulated utilities, social service agencies, charitable organizations, and utility customers. The problem of energy affordability cannot be addressed without the cooperation and commitment of all interested parties.

## **LIST OF APPENDICES**

- Appendix A: Country specific summaries of low income energy programs
- Appendix B: Eligibility requirements, funding levels, and customer participation levels for U.S. low income programs
- Appendix C: Table of low income programs in selected countries

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