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August 28, 2008

Luly Massaro, Clerk
Public Utilities Commission
89 Jefferson Blvd.
Warwick, RI 02888

Re: Docket 3943

Dear Luly:

I enclose an original and nine copies of the *Sur-Rebuttal Comments of George Wiley Center* in PUC Docket No. 3943.

I will file ten copies of the addendum requested in the Commission's first data request tomorrow (the deadline for sur-rebuttal testimony).

Thank you.

Sincerely,

B. Jean Rosiello

BJR:et
Enclosures
cc: Service list by email

PUBLIC UTLITIES COMMISSION

IN RE: REQUEST BY NATIONAL GRID :
FOR CHANGE OF GAS DISTRIBUTION : Docket No. 3943
RATES :



**SUR-REBUTTAL COMMENTS OF GEORGE WILEY CENTER**

In sur-rebuttal, George Wiley Center (the Center) offers the following documents:

1. The Center appends as *App. 1* the "2008 Monthly Utility Shut-Offs" (through the end of July) in order to up-date *App. A* of the *Pre-Filed Comments of George Wiley Center*.

2. In order to provide official, updated confirmation of the loss of jobs and the state of the economy, the Center has appended as *App. 2* and *3* respectively:

- An "Economic News Release" from the United States Department of Labor, Bureau of Labor Statistics", dated August 15, 2008;
- "Snapshot of the Rhode Island Economy, July 2008" by Labor Department Information Center.

3. In response to the Division's assertion that other customers do not benefit from a low-income discount, the Center appends as *App. 4* a study documenting the society-wide health consequences of the lack of any low-income discount: "Unhealthy Consequences: Energy Costs and Child Health" by the Child Health Impact Working Group in Boston, Massachusetts, dated November, 2006.

4. For the Commission's convenience, and in order to document the heavy burden of utility costs on low-income customers, the Center appends as *App. 5* tables submitted by National Grid to the PUC in electric Docket 3960. These tables indicate that the recent 21.7% increase for the typical residential electric customer amounted to a 28% increase for low-income customers in the A-60 class.

5. Finally, in response to proponents' evidence on decoupling, the Center offers a copy of the decision of the New York Public Service Commission (NYPSC), which concludes that all utility filings that seek decoupling "shall include proposals for limiting customer bill impacts and price volatility, to the extent practicable, …" Case 03-E-0640 and Case 06-G-0746, New York Public Service Commission, April 18, 2007, at page 15, attached as *App. 6.* The NYPSC states in Appendix B, page 10, that National Grid and KeySpan both advocated such protections for low-income customers in particular, arguing that any decoupling mechanism:

- be accompanied by protections for low-income consumers;
- be implemented gradually "to produce acceptable bill impacts for all customers";
- be accompanied by an increase in existing low-income discounts to mitigate the effects of a rate change; and
- be accompanied by expansion of low-income rate eligibility and periodic review of the parameters of the low-income program.

Respectfully submitted,
The George Wiley Center
By its attorney,

B. Jean Rosiello (#2886)
MacFadyen, Gescheidt & O'Brien
101 Dyer Street
Providence, RI 02903
401-751-5090

CERTIFICATE OF SERVICE

I certify that on August 28, 2008 I mailed two hard copies of this document, plus appendices, on Jeffrey H. Gladstone, Esq. and Robert K. Taylor, Esq., Partridge, Snow & Hahn LLP, 180 South Main Street, Providence, RI 02903 and I served one copy, plus appendices, by email to each of the parties on the service list.

# 2008 MONTHLY UTILITY SHUT-OFFS

| | NGrid Gas | | | | NGrid Electric | | | | Pascoag Utility District | | | | Totals | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | S/O | | Restored | | S/O | | Restored | | S/O | | Restored | | Total S/O | | Total Restored | |
| Month | S | P | S | P | S | P | S | P | S | P | S | P | S | P | S | P |
| JAN | 183 | 0 | 76 | 67 | 0 | 0 | 0 | 0 | 11 | 0 | 10 | 0 | 194 | 0 | 86 | 67 |
| FEB | 153 | 0 | 69 | 40 | 0 | 0 | 0 | 0 | 5 | 0 | 3 | 0 | 158 | 0 | 72 | 40 |
| MAR | 465 | 0 | 128 | 3 | 0 | 0 | 0 | 0 | 6 | 0 | 4 | 0 | 471 | 0 | 132 | 3 |
| APR | 1047 | 0 | 277 | 28 | 934 | 6 | 628 | 6 | 10 | 0 | 7 | 0 | 1991 | 6 | 912 | 34 |
| MAY | 1423 | 56 | 454 | 39 | 2920 | 34 | 2129 | 28 | 62 | 0 | 59 | 0 | 4405 | 90 | 2642 | 67 |
| JUNE | 1284 | 338 | 377 | 55 | 3145 | 37 | 2037 | 29 | 45 | 1 | 44 | 0 | 4474 | 376 | 2458 | 84 |
| JULY | 1186 | 894 | 341 | 208 | 3175 | 38 | 2516 | 34 | 46 | 0 | 40 | 0 | 4407 | 932 | 2897 | 242 |
| AUG | | | | | | | | | | | | | | | | |
| SEP | | | | | | | | | | | | | | | | |
| OCT | | | | | | | | | | | | | | | | |
| NOV | | | | | | | | | | | | | | | | |
| DEC | | | | | | | | | | | | | | | | |
| YTD TOTAL | 5741 | 1288 | 1722 | 440 | 10174 | 115 | 7310 | 97 | 185 | 1 | 167 | 0 | 16100 | 1404 | 9199 | 537 |
| YTD AGG. | 7029 | | 2162 | | 10289 | | 7407 | | 186 | | 167 | | 17504 | | 9736 | |

| | NGrid and Pascoag Utility District combined | | | |
|---|---|---|---|---|
| | Shut Off | | Restored | |
| | S | P | S | P |
| YTD TOTAL | 10359 | 116 | 7477 | 97 |

**P = Protected Customer** - A residential customer who is elderly, handicapped, seriously ill, receiving unemployment compensation, receiving federal heating assistance or qualifies as a financial hardship. Financial hardship customers have a combined income at or below 75% of the RI median income as determined by the US Department of Health and Human Services.

**S = Standard Customer** - A residential customer who does **not** qualify as a *protected customer*.

G:\SHARE\11-Consumer...\SHUTOFFS\sh\shff08.xls

# Economic News Release



## Regional and State Employment and Unemployment Summary

Technical information:
Employment: (202) 691-6559
http://www.bls.gov/sae/
Unemployment: (202) 691-6392
http://www.bls.gov/lau/
Media contact: (202) 691-5902

USDL 08-1147

For release: 10:00 A.M. (EDT)
Friday, August 15, 2008

REGIONAL AND STATE EMPLOYMENT AND UNEMPLOYMENT: JULY 2008

Regional and state unemployment rates were mostly higher in July. Overall, 43 states and the District of Columbia recorded over-the-month unemployment rate increases, 6 states registered decreases, and 1 state had no change, the Bureau of Labor Statistics of the U.S. Department of Labor reported today. Over the year, jobless rates were up in 47 states and the District of Columbia and down in 3 states. The national unemployment rate rose in July to 5.7 percent, a full percentage point higher than a year earlier.

Between June 2008 and July 2008 nonfarm payroll employment increased in 14 states and the District of Columbia, and decreased in 36 states. The largest employment increases were recorded in Texas (+17,700), Kentucky (+11,300), Kansas (+8,800), the District of Columbia (+6,700), and Tennessee (+5,700). The District of Columbia posted the largest over-the-month percentage increase in employment (+1.0 percent), followed by South Dakota (+0.9 percent), Kansas and Kentucky (+0.6 percent each), and North Dakota (+0.3 percent). The largest employment decreases occurred in Florida (-21,400), Georgia (-18,900), Indiana (-16,500), California (-14,900), and Arizona (-14,100). Alaska experienced the largest over-the-month percentage decline in employment (-0.7 percent), followed by Indiana (-0.6 percent), and Arizona, Georgia, Hawaii, and Utah (-0.5 percent each). Over the year, nonfarm employment increased in 29 states and the District of Columbia, and decreased in 21 states. The largest over-the-year percentage gains in employment were reported in Texas (+2.4 percent), the District of Columbia (+2.3 percent), and Wyoming (+2.2 percent). The largest over-the-year percentage declines in employment occurred in Rhode Island (-2.6 percent), Arizona (-1.5

App. 2

percent), Florida (-1.2 percent), and Michigan (-1.1 percent).

Regional Unemployment (Seasonally Adjusted)

In July, the Midwest and West regions again posted the highest jobless rates, 6.5 and 6.3 percent, respectively. The Northeast and South recorded the lowest unemployment rates, 5.3 and 5.5 percent, respectively. The Midwest, South, and West registered statistically significant rate changes from the previous month (+0.4 percentage point each). All four regions reported significant jobless rate increases from July 2007: the West (+1.6 percentage points), Midwest (+1.3 points), South (+1.2 points), and Northeast (+0.8 point). (See table 1.)



Among the nine geographic divisions, the East North Central continued to post the highest unemployment rate, 7.1 percent in July, followed by the Pacific, at 6.9 percent, and the East South Central, at 6.6 percent. The West South Central again recorded the lowest jobless rate, 4.6 percent. The Mountain registered the next lowest rate, 4.9 percent. Seven divisions reported statistically significant over-the-month unemployment rate changes, all increases: the East South Central, South Atlantic, and West North Central (+0.5 percentage point each); East North Central and Pacific (+0.4 point each); West South Central (+0.3 point); and Mountain (+0.2 point). Over the year, eight divisions had significant rate changes, all increases: the East South Central (+1.9 percentage points), Pacific (+1.7 points), South Atlantic (+1.6 points), East North Central (+1.5 points), Mountain (+1.3 points), New England and West North Central (+0.9 point each), and Middle Atlantic (+0.8 point).

State Unemployment (Seasonally Adjusted)

In July, Michigan continued to post the highest jobless rate, 8.5 percent. Six additional states recorded rates of 7.0 percent or higher: Mississippi (7.9 percent), Rhode Island (7.7 percent), California and Illinois (7.3 percent each), Ohio (7.2 percent), and South Carolina (7.0 percent). South Dakota again logged the lowest unemployment rate, 3.0 percent, followed by Nebraska, at 3.4 percent, and North Dakota and Utah, at 3.5 percent each. Overall, 12 states and the District of Columbia registered significantly higher jobless rates than the U.S., 22 states reported measurably lower rates, and 16 states had rates little different from that of the nation. (See tables A and 3.)

Mississippi and South Carolina posted the largest unemployment rate increases from June to July (+0.9 percentage point each). Eighteen more states and the District of Columbia also experienced statistically significant rate increases. Two states, West Virginia and Arkansas, recorded significant jobless rate decreases from the prior month (-0.8 and -0.5 percentage point, respectively). The remaining 28 states registered July unemployment rates that were not appreciably different from those of a month earlier, though some had changes that were at least as large numerically as the significant changes. (See table B.)

Forty-three states and the District of Columbia had statistically

significant jobless rate increases from July 2007. Rhode Island reported the largest rate increase (+2.7 percentage points), followed by Tennessee (+2.3 points), Illinois (+2.2 points), and Florida (+2.0 points). Twenty-four other states and the District of Columbia posted over-the-year rate increases of 1.0 percentage point or more. Fifteen additional states had smaller, but also statistically significant, rate increases from July 2007. Arkansas experienced the only statistically significant unemployment rate decrease (-1.0 percentage point). The remaining six states recorded July 2008 jobless rates that were not appreciably different from those of a year earlier. (See table C.)

Nonfarm Payroll Employment (Seasonally Adjusted)

Between June 2008 and July 2008, seven states and the District of Columbia reported statistically significant changes in employment, four of which were increases. The gains were in Kentucky (+11,300), Kansas (+8,800), the District of Columbia (+6,700), and South Dakota (+3,800). The employment losses were in Georgia (-18,900), Indiana (-16,500), Arizona (-14,100), and Utah (-6,400). (See tables D and 5.)



Over the year, seven states posted statistically significant changes in employment, three of which were job increases. The employment gains occurred in Texas (+248,700), North Carolina (+38,300), and Colorado (+30,800). The 4 statistically significant over-the-year declines were in Florida (-96,800), Michigan (-48,700), Arizona (-41,300), and Rhode Island (-13,000). (See table E.)

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The Metropolitan Area Employment and Unemployment release for July is scheduled to be issued on Wednesday, August 27. The Regional and State Employment and Unemployment release for August is scheduled to be issued on Friday, September 19.

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Hurricane Katrina

For July, BLS and its state partners continued to make modifications to the usual estimation procedures for the LAUS program to reflect the impact of Hurricane Katrina on the labor force statistics in affected areas. These modifications included: (1) modifying the state population controls to account for displacement due to Katrina; (2) developing labor force estimates for the New Orleans-Metairie-Kenner metropolitan area using an alternative to the model-based method; and (3) not publishing labor force estimates for the months immediately following the hurricane for the parishes within the New Orleans-Metairie-Kenner metropolitan area and cities within those parishes, where the quality of input data was severely compromised by the hurricane.

For more information on LAUS procedures and estimates for July 2008, see Hurricane Information: Katrina and Rita on the BLS Web site at http://www.bls.gov/Katrina/home.htm or call (202) 691-6392.



Table A. States with unemployment rates significantly different from that of the U.S., July 2008, seasonally adjusted

| State | Rate(p) |
|---|---|
| United States (1) | 5.7 |
| Alaska | 6.9 |
| Arkansas | 4.5 |
| California | 7.3 |
| Delaware | 4.4 |
| District of Columbia | 6.7 |
| Hawaii | 3.9 |
| Idaho | 4.1 |
| Illinois | 7.3 |
| Iowa | 4.3 |
| Kansas | 4.6 |
| Kentucky | 6.7 |
| Louisiana | 3.9 |
| Maryland | 4.4 |
| Michigan | 8.5 |
| Mississippi | 7.9 |
| Montana | 4.0 |
| Nebraska | 3.4 |
| Nevada | 6.6 |
| New Hampshire | 3.9 |
| New Mexico | 4.1 |
| North Carolina | 6.6 |
| North Dakota | 3.5 |
| Ohio | 7.2 |
| Oklahoma | 4.1 |
| Rhode Island | 7.7 |
| South Carolina | 7.0 |
| South Dakota | 3.0 |
| Tennessee | 6.9 |
| Texas | 4.7 |
| Utah | 3.5 |
| Vermont | 4.8 |
| Virginia | 4.4 |

| | |
|---|---|
| West Virginia | 4.5 |
| Wisconsin | 4.9 |
| Wyoming | 3.6 |

1 Data are not preliminary.
p = preliminary.



Table B. States with statistically significant unemployment rate changes from June 2008 to July 2008, seasonally adjusted

| State | Rate | | Over-the-month rate change(p) |
|---|---|---|---|
| | June 2008 | July 2008(p) | |
| Alabama | 4.7 | 5.1 | 0.4 |
| Arkansas | 5.0 | 4.5 | -.5 |
| California | 7.0 | 7.3 | .3 |
| District of Columbia | 6.3 | 6.7 | .4 |
| Florida | 5.5 | 6.1 | .6 |
| Georgia | 5.6 | 6.2 | .6 |
| Idaho | 3.8 | 4.1 | .3 |
| Iowa | 4.0 | 4.3 | .3 |
| Kansas | 4.3 | 4.6 | .3 |
| Maryland | 4.0 | 4.4 | .4 |
| Minnesota | 5.3 | 5.8 | .5 |
| Mississippi | 7.0 | 7.9 | .9 |
| Missouri | 5.7 | 6.4 | .7 |
| Nevada | 6.4 | 6.6 | .2 |
| North Carolina | 5.9 | 6.6 | .7 |
| North Dakota | 3.2 | 3.5 | .3 |
| Ohio | 6.6 | 7.2 | .6 |
| Oregon | 5.5 | 6.0 | .5 |
| South Carolina | 6.1 | 7.0 | .9 |
| Tennessee | 6.5 | 6.9 | .4 |
| Texas | 4.4 | 4.7 | .3 |
| Virginia | 4.0 | 4.4 | .4 |
| West Virginia | 5.3 | 4.5 | -.8 |

p = preliminary.

Table C. States with statistically significant unemployment rate changes from July 2007 to July 2008, seasonally adjusted

| State | Rate | | Over-the-year rate change(p) |
|---|---|---|---|
| | July 2007 | July 2008(p) | |
| Alabama | 3.6 | 5.1 | 1.5 |
| Alaska | 6.2 | 6.9 | .7 |
| Arizona | 3.7 | 5.1 | 1.4 |
| Arkansas | 5.5 | 4.5 | -1.0 |
| California | 5.4 | 7.3 | 1.9 |
| Colorado | 3.8 | 5.2 | 1.4 |
| Connecticut | 4.5 | 5.8 | 1.3 |
| Delaware | 3.3 | 4.4 | 1.1 |
| District of Columbia | 5.7 | 6.7 | 1.0 |
| Florida | 4.1 | 6.1 | 2.0 |
| Georgia | 4.4 | 6.2 | 1.8 |
| Hawaii | 2.6 | 3.9 | 1.3 |
| Idaho | 2.7 | 4.1 | 1.4 |
| Illinois | 5.1 | 7.3 | 2.2 |
| Indiana | 4.4 | 6.3 | 1.9 |
| Iowa | 3.8 | 4.3 | .5 |
| Kansas | 4.1 | 4.6 | .5 |
| Kentucky | 5.5 | 6.7 | 1.2 |
| Maine | 4.8 | 5.4 | .6 |
| Maryland | 3.6 | 4.4 | .8 |
| Massachusetts | 4.4 | 5.1 | .7 |
| Michigan | 7.1 | 8.5 | 1.4 |
| Minnesota | 4.5 | 5.8 | 1.3 |
| Mississippi | 6.4 | 7.9 | 1.5 |
| Missouri | 5.1 | 6.4 | 1.3 |
| Montana | 3.1 | 4.0 | .9 |
| Nebraska | 3.1 | 3.4 | .3 |
| Nevada | 4.8 | 6.6 | 1.8 |
| New Hampshire | 3.5 | 3.9 | .4 |
| New Jersey | 4.2 | 5.4 | 1.2 |
| New Mexico | 3.5 | 4.1 | .6 |
| New York | 4.7 | 5.2 | .5 |
| North Carolina | 4.7 | 6.6 | 1.9 |
| North Dakota | 3.2 | 3.5 | .3 |
| Ohio | 5.6 | 7.2 | 1.6 |
| Oregon | 5.3 | 6.0 | .7 |
| Pennsylvania | 4.3 | 5.4 | 1.1 |
| Rhode Island | 5.0 | 7.7 | 2.7 |
| South Carolina | 5.8 | 7.0 | 1.2 |
| Tennessee | 4.6 | 6.9 | 2.3 |
| Texas | 4.3 | 4.7 | .4 |
| Utah | 2.7 | 3.5 | .8 |
| Vermont | 3.8 | 4.8 | 1.0 |

| | | | |
|---|---|---|---|
| Virginia | 3.0 | 4.4 | 1.4 |
| Washington | 4.6 | 5.7 | 1.1 |

p = preliminary.



Table D. States with statistically significant employment changes from June 2008 to July 2008, seasonally adjusted

| State | June 2008 | July 2008(p) | Over-the-month change(p) |
|---|---|---|---|
| Arizona | 2,639,100 | 2,625,000 | -14,100 |
| District of Columbia | 704,600 | 711,300 | 6,700 |
| Georgia | 4,151,500 | 4,132,600 | -18,900 |
| Indiana | 2,986,500 | 2,970,000 | -16,500 |
| Kansas | 1,380,200 | 1,389,000 | 8,800 |
| Kentucky | 1,875,800 | 1,887,100 | 11,300 |
| South Dakota | 410,400 | 414,200 | 3,800 |
| Utah | 1,265,400 | 1,259,000 | -6,400 |

p = preliminary.

Table E. States with statistically significant employment changes from July 2007 to July 2008, seasonally adjusted

| State | July 2007 | July 2008(p) | Over-the-year change(p) |
|---|---|---|---|
| Arizona | 2,666,300 | 2,625,000 | -41,300 |
| Colorado | 2,334,900 | 2,365,700 | 30,800 |
| Florida | 8,020,800 | 7,924,000 | -96,800 |
| Michigan | 4,261,200 | 4,212,500 | -48,700 |
| North Carolina | 4,136,200 | 4,174,500 | 38,300 |
| Rhode Island | 493,600 | 480,600 | -13,000 |
| Texas | 10,381,000 | 10,629,700 | 248,700 |

p = preliminary.

**The PDF version of the news release**

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**Last Modified Date:** August 15, 2008

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**http://www.bls.gov/LAU** | Telephone: (202) 691-6392 | Fax: (202) 691-6459 Do you have an **LAUS data question**?

**U.S. Bureau of Labor Statistics Division of Current Employment Statistics** Suite 4860, Massachusetts Avenue, NE, Washington, DC 20212-0001
**http://www.bls.gov/SAE** | Telephone: (202) 691-6559 | Fax: (202) 691-6644 Do you have a **CES State and Metro Area data question**?


*News Releases*



# Snapshot of the Rhode Island Economy
## July 2008
**Download (xls) (pdf)**

*The statistical data in the Snapshot are subject to monthly and annual revisions; therefore, the figures in the current edition should not be compared to those in prior versions of this publication.*

| | July 2008 | June 2008 | July 2007 | % Change June 08 | % Change July 07 | Thru July 2008 | Thru July 2007 | % Change |
|---|---|---|---|---|---|---|---|---|
| Labor Force and Unemployment (1,000s)(Seasonally Adjusted) | | | | | | | | |
| R.I. Labor Force | 573.2 | 572.1 | 576.1 | 0.2% | -0.5% | 572.7 | 577.3 | -0.8% |
| R.I. Employed | 528.9 | 529.5 | 547.1 | -0.1% | -3.3% | 534.9 | 548.7 | -2.5% |
| R.I. Unemployed | 44.3 | 42.7 | 29.0 | 3.7% | 52.8% | 37.8 | 28.6 | 32.2% |
| R.I. Unemployment Rate | 7.7% | 7.5% | 5.0% | 2.7% | 54.0% | 6.6% | 5.0% | 33.2% |
| U.S. Unemployment Rate | 5.7% | 5.5% | 4.7% | 3.6% | 21.3% | 5.2% | 4.5% | 15.0% |
| | | | | | | | | |
| R.I. Insured Unemployment (as of week of the 12th) | | | | | | Average through week 31 | | |
| Avg. Insured Unemployed | 14,225 | 14,762 | 12,010 | -3.6% | 18.4% | 16,551 | 14,223 | 16.4% |
| Insured Unemployment Rate* | 3.02% | 3.12% | 2.55% | -3.2% | 18.4% | 3.52% | 3.02% | 16.6% |
| | | | | | | Thru July | | |
| Total Jobs at R.I. Businesses (1,000s)(Seasonally Adjusted) | | | | | | 2008 | 2007 | % Change |
| Establishment Employment (Total) | 480.6 | 482.3 | 493.6 | -0.4% | -2.6% | 484.6 | 494.6 | -2.0% |
| Natural Resources & Mining | 0.2 | 0.2 | 0.3 | 0.0% | -33.3% | 0.2 | 0.3 | -22.2% |
| Construction | 20.9 | 21.1 | 22.0 | -0.9% | -5.0% | 21.0 | 22.5 | -6.7% |
| Manufacturing | 48.0 | 48.0 | 51.1 | 0.0% | -6.1% | 48.5 | 51.3 | -5.3% |
| Wholesale Trade** | 16.8 | 16.9 | 17.1 | -0.6% | -1.8% | 16.8 | 17.1 | -1.8% |
| Retail Trade | 49.9 | 49.9 | 52.0 | 0.0% | -4.0% | 50.5 | 51.9 | -2.6% |
| Transportation & Utilities | 10.6 | 10.6 | 11.1 | 0.0% | -4.5% | 10.8 | 11.0 | -1.9% |
| Information | 10.9 | 11.0 | 10.5 | -0.9% | 3.8% | 10.9 | 10.5 | 3.8% |
| Financial Activities | 33.3 | 33.5 | 34.6 | -0.6% | -3.8% | 33.8 | 35.3 | -4.4% |
| Professional & Business Services | 54.1 | 54.3 | 56.1 | -0.4% | -3.6% | 54.4 | 56.6 | -3.9% |
| Educational Services | 23.8 | 23.7 | 23.4 | 0.4% | 1.7% | 23.9 | 23.2 | 2.8% |

App. 3

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Health Care & Social Assistance | 76.1 | 76.2 | 76.1 | -0.1% | 0.0% | 76.3 | 75.8 | 0.6% |
| Arts, Entertainment & Recreation | 7.7 | 7.7 | 8.0 | 0.0% | -3.8% | 7.7 | 8.1 | -3.9% |
| Accommodation & Food Services | 42.8 | 43.0 | 43.2 | -0.5% | -0.9% | 43.1 | 43.2 | -0.2% |
| Other Services | 22.2 | 22.2 | 23.2 | 0.0% | -4.3% | 22.6 | 23.3 | -2.6% |
| Government | 63.3 | 64.0 | 64.9 | -1.1% | -2.5% | 64.1 | 64.6 | -0.8% |
| | | | | | | | | |
| Unemployment Insurance | | | | | | Year to Date | | |
| Initial Claims | 7,529 | 8,584 | 7,323 | -12.3% | 2.8% | 56,593 | 50,240 | 12.6% |
| Number of Payments | 62,623 | 58,026 | 60,378 | 7.9% | 3.7% | 466,471 | 405,193 | 15.1% |
| Amount of Payments (gross millions) | $21.4 | $20.3 | $20.3 | 5.4% | 5.4% | $167.2 | $140.5 | 19.0% |
| Exhaustions (Final Payments) | 1,552 | 1,711 | 1,359 | -9.3% | 14.2% | 11,532 | 9,067 | 27.2% |
| | | | | | | | | |
| Temporary Disability Insurance | | | | | | Year to Date | | |
| Initial Claims | 3,794 | 3,183 | 3,754 | 19.2% | 1.1% | 27,593 | 28,191 | -2.1% |
| Number of Payments | 39,332 | 35,487 | 42,342 | 10.8% | -7.1% | 260,417 | 265,387 | -1.9% |
| Amount of Payments (gross millions) | $15.4 | $13.9 | $16.2 | 10.8% | -4.9% | $102.1 | $100.1 | 2.0% |

**State calculated estimate

**R.I. Population Trends:** The 2000 Census indicates that Rhode Island's population grew from 1,003,464 in 1990 to 1,048,319 in 2000. According to state population estimates for July 2005, Rhode Island residents numbered 1,076,189, reflecting an increase of nearly 28,000 residents from Census 2000, but a drop of about 4,500 from the July 2004 estimate.

**Commuting Patterns:** According to the 2000 Census, there were 32,371 more RI residents working out of state than non-residents working in RI. The number of RI residents commuting tc a job in MA reached 56,138. The represents 11.4% of RI's employed residents and is up from 9.7% in 1990. The number of Rhode Islanders commuting to a job in CT was 11,315 or 2.3%, u from 1990's figure of 1.9%. In contrast, the number of MA residents working in RI was 31,506, while the number of CT residents commuting to a job in RI was 3,998.

As of October 2005, approximately 2,210 Rhode Islanders were employed at the nearby Foxwoods casino and another 350 Rhode Island residents were employed at Mohegan Sun. (Source: RI Economic Development Corp.)

*13-week average expressed as a percentage of covered employment.

Note: Data for latest month are preliminary. Prior year reflects latest revision.

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# Unhealthy Consequences: Energy Costs and Child Health

## A Child Health Impact Assessment of Energy Costs and the Low Income Home Energy Assistance Program

Prepared by the Child Health Impact Working Group
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*Draft Report*

App. 4

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# Executive Summary

## Introduction

A growing body of medical and public health evidence indicates that non-medical factors, such as energy costs, profoundly influence child health and well-being. Concerned about the health effects of these non-medical factors, in 2005, a multidisciplinary working group of pediatricians, public health researchers, health economists, and attorneys from several universities, medical schools and hospitals in the Boston area developed a **Child Health Impact Assessment (CHIA)**. The emerging process of Child Health Impact Assessment offers an evidence- and experience-based method through which to evaluate the implications of policy, regulations, and legislation for children's health and well-being. (See a more detailed description of the Child Health Impact Assessment concept and methodology in Appendix I.)

The evaluations undertaken through CHIA are particularly focused on policy arenas outside the traditional realms concerned with health -- medicine, public health and health policy. Child health impacts are usually not considered in domains such as housing, energy or transportation, making the effects on children of policy choices in these domains invisible to policy makers. However, policies in these and other areas such as employment and income supports all affect child health and well-being.

During the aftermath of Hurricane Katrina and the ensuing dramatic increases in fuel prices, this multidisciplinary group became concerned about the potential impact of these increased fuel costs on low-income children. This report is the result of our decision to focus on the influence of high energy costs on child health in order to provide specific information to policy makers. This paper presents the findings of a Child Health Impact Assessment of energy costs and the Low Income Home Energy Assistance Program (LIHEAP), the federally funded program designed to help low-income families pay their energy bills. This analysis remains relevant since energy prices have remained high, even one year after Katrina.

## Influence of High Home Energy Costs on Child Health

Low-income families are caught in the gap between rising energy prices and available energy assistance. Energy assistance falls far short of the need, especially when there is a spike in energy prices, such as following Hurricane Katrina. In addition to the exceedingly high housing costs in Massachusetts, our climate means low-income families spend more of their income on home energy (energy burden) to keep warm than families in other regions of the U.S. A review of the available evidence finds that unaffordable home energy has a substantial potential influence on the health and well-being of the more than 400,000 Massachusetts children living in low-income households[1]:

- **Low-income families facing disproportionately high energy costs are forced to make household budget trade-offs that jeopardize child health.** Families with a high energy burden often spend less money on food and health care. Seasonal food insecurity resulting from high energy costs has a substantial impact on child health. In

addition, families may miss rent or mortgage payments to pay energy bills, resulting in housing instability.

- **Families that face high heating costs resort to alternative heat sources that jeopardize child health and safety.** In an effort to reduce home heating costs, families use alternative heat sources, such as kerosene space heaters or fireplaces. Up to 25% of families that lose their primary source of heating use space heaters or ovens and stoves, risking contact burns, carbon monoxide exposure, and especially deadly house fires.

- **High energy costs combined with unaffordable housing create important budget constraints that force low-income families to endure unhealthy housing conditions that threaten child health.** The constraints that high energy costs place on low-income families reduce their ability to afford appropriate housing, increasing the likelihood that they and their children experience unhealthy housing conditions, such as rodent infestation, water leaks, mold, and lead paint.

- **The growing gap between rising energy prices and LIHEAP benefits means more Massachusetts families accumulate substantial unpaid utility bills, leading to arrearages and disconnections that adversely affect child and family well-being.** As the gap between energy prices and LIHEAP benefits increases, Massachusetts families struggle to pay their utility bills. While utility shut-off protections in the Commonwealth are strong, the limited data available suggest that arrearages are growing dramatically for low-income families. Families eligible for shut-off protection face substantial debt and disconnections when their protections expire.

- **The negative child health impacts of unaffordable home energy extend well beyond the winter heating season.** Due to overwhelming utility arrearages, families' difficulty in paying their home energy bills becomes a year-round problem. Although families may avoid utility disconnection during the winter, they face it in the spring when the moratorium on shut-offs is lifted. Similarly, families make budget trade-offs even in warmer months, spending less on food, medical care, and housing, so they can pay down arrearages accumulated during the winter.

## Recommendations

This report documents the compelling evidence that unaffordable energy costs adversely affect the health of low-income children. The next step is for policy makers, agency officials, local service providers, and other key stakeholders to take action to protect children from these preventable unhealthy consequences. The following recommendations offer strategies to avoid the public health impact of unaffordable energy through expanding outreach and access to energy assistance programs and increasing relevant information available to policy makers and energy program directors.

### Funding Recommendations

1. **Given the continued gap between energy costs and LIHEAP funding, the federal government should fully fund LIHEAP at the maximum authorized level of $5 billion to allow an increase in both participation and benefit level.** Because energy benefits play an important role in buffering low-income children from the adverse health effects of high energy costs, we should encourage increased participation in LIHEAP, which will certainly require additional funding. Recognizing that LIHEAP is not an entitlement program, if

increased participation is not matched by a corresponding increase in funding, benefit levels would be reduced to an inadequate level.

2. **To increase LIHEAP benefit levels for vulnerable Massachusetts families, the Massachusetts state government should allocate supplementary funds for LIHEAP.** In 2005 and 2006, the Massachusetts legislature wisely decided to supplement federal funding with a state appropriation, allowing benefits to be increased to a more meaningful level. For the benefit of the Commonwealth's children, they should continue to do so.

Programmatic Changes

3. **To highlight the connection between high energy costs and child health, LIHEAP should extend outreach to clinicians and health care settings.** Currently, there is inadequate data to explain why more eligible families do not apply for important LIHEAP benefits. However, it is our clinical experience that many low-income families who face substantial energy burdens are not aware that they are eligible for LIHEAP or other energy assistance. Health care settings would be important sites to identify potentially eligible low-income families with children. As part of a complete social history designed to uncover potential risks to child health, health care providers should screen for home energy insecurity and make appropriate referrals to energy assistance programs. In addition, the programs that administer LIHEAP should enroll families at clinical sites, such as neighborhood health centers, that serve the vulnerable populations specifically targeted by LIHEAP.

4. **LIHEAP administrators should consider an initiative to provide energy and utility assistance, through LIHEAP or other energy assistance programs, to low-income families who are eligible for housing subsidies but spend years on waiting lists before they receive them.** These families are clearly economically vulnerable since they have already met eligibility standards for housing subsidies. Subsidizing their energy costs while they await housing assistance would help buffer their children from the double jeopardy of both unaffordable housing and energy costs which threatens their health and well-being.

Data Collection

5. **The state should enforce the existing requirement that utility commissions collect and report data on arrearages and utility disconnections to the Department of Telecommunications and Energy to address the important gaps in this data that undermine the state's ability to request the release of emergency LIHEAP funds.** The National Energy Assistance Directors Association together with the National Consumer Law Center have highlighted the importance of collecting these data to document the trends in arrearages and disconnections, useful in establishing an emergency situation as defined in the LIHEAP statute. [9] NEADA and NCLC have outlined a template of three tiers of data that could be obtained - some should be immediately available from utilities, whereas others may take additional resources.[i] Local service providers could use this information to assess the full impact of this problem on low-income families and their children.

6. **Energy assistance programs should explore the utility of a home energy insecurity scale, such as the one proposed by the Division of Energy Assistance, the office within the U.S. Department of Health and Human Services that administers LIHEAP.**[10] Such a scale would allow energy assistance programs to assess initial and subsequent energy self-sufficiency of households before and after receipt of energy benefits, providing a useful evaluation of the impact of these benefits.

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[i] See Appendix III.

Table 1. Pathways of the Impacts of Unaffordable Energy on Low-Income Households

| Mechanism | Short-Term Impacts | Medium & Long-Term Impacts |
|---|---|---|
| **High energy costs force budget trade-offs that jeopardize child health.**<br>Families spend less on food, medications, and housing in order to pay high energy costs.[2,3,4] | - *"Heat or eat"*- food insecurity & other nutritional risk due to trade-offs between energy and food expenditures<br>- Seasonal food insecurity | - Poor growth<br>- Malnutrition - infection cycle leading to increased illness<br>- Cognitive, developmental deficits of malnutrition affecting school performance |
| **High energy costs force the use of risky alternative sources of heat.**<br>Families use ovens, stoves, space heaters, or fireplaces to replace or augment primary heating systems.[5,6,7] | - Increased risk of contact burns<br>- Increased risk of carbon monoxide poisonings<br>- Increased risk of house fires | - Possible long-term health consequences of burns, carbon monoxide exposure<br>- Economic impact of preventable hospitalizations |
| **High energy costs combined with unaffordable housing force families to endure unhealthy housing conditions.**<br>High energy costs contribute to budget constraints limiting families' ability to afford appropriate housing, resulting in exposure to unhealthy housing conditions:<br>- Rodent & cockroach infestation<br>- Water leaks and mold<br>- Peeling paint and lead paint[8] | - Increased incidence & severity of asthma<br>- Increased incidence of lead poisoning<br>- Preventable injuries from fires, burns, falls<br>- Increased rates of infectious diseases, such as diarrhea and respiratory conditions | - Increased health care utilization, including emergency department visits and hospitalizations<br>- Missed school due to illness<br>- Cognitive and developmental deficits due to lead poisoning |
| **High energy costs result in unpaid bills, arrearages and utility disconnection.**<br>Families make partial rent or mortgage payments or miss an entire payment because of unaffordable energy bills. | - Potential cold exposure<br>- Increased use of alternative heating sources (see above)<br>- Possible loss of utilities required for basic health and safety: light, refrigeration, cooking, water heating<br>- Increased risk of housing instability due to utility disconnection | - Adverse physical health impacts, including lack of primary care, untreated or undertreated medical conditions, growth delay<br>- Adverse mental health impacts, including anxiety, depression, behavioral disorders<br>- Adverse behavioral, developmental and educational impacts, including developmental delay, grade repetition |

# Introduction

A growing body of medical and public health evidence indicates that non-medical factors, such as energy costs, profoundly influence child health and well-being. Concerned about the health effects of these non-medical factors, a multidisciplinary working group of pediatricians, public health researchers, health economists, and attorneys from several universities, medical schools and hospitals in the Boston area developed a **Child Health Impact Assessment (CHIA)**. The emerging process of Child Health Impact Assessment offers an evidence- and experience-based method through which to evaluate the implications of policy, regulations, and legislation for children's health and well-being. (See a more detailed description of the Child Health Impact Assessment concept and methodology in Appendix I.)

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During the aftermath of Hurricane Katrina and the ensuing dramatic increases in fuel prices, this multidisciplinary group became concerned about the potential impact of these increased fuel costs on low-income children. This report is the result of their decision to focus on the influence of high energy costs on child health in order to provide specific information to policy makers. This paper presents the findings of a child health impact assessment of energy costs and the Low Income Home Energy Assistance Program (LIHEAP), the federally funded program designed to help low-income families pay their energy bills. This analysis remains relevant since energy prices have remained high, even one year after Katrina. The report is comprised of 4 sections:

**Section 1** summarizes the evidence on the numerous mechanisms through which high home energy costs impact child health.

**Section 2** outlines the components of the current LIHEAP program in the context of the broader issue of affordable home energy in Massachusetts.

**Section 3** presents an analysis of the likely child health impact of unaffordable energy prices in Massachusetts, based on available data.

**Section 4** provides a summary of health impact findings and recommendations that can be used to inform public discussion of LIHEAP and other energy assistance policies.

# 1 The Impact of High Home Energy Costs on Child Health

The high costs of home energy place a substantial burden on many families, especially low-income families and the 400,000 children in Massachusetts who live in these families.[1] There is evidence supporting several important pathways through which this energy burden can have an impact on child health:

- Low-income families facing disproportionately high energy costs are forced to make **household budget trade-offs that jeopardize child health.** Families with a high energy burden spend less money on food and health care, and may miss rent or mortgage payments, resulting in housing instability.
- Families that face high heating costs resort to **alternative heat sources,** such as space heaters, ovens and stoves that jeopardize child health and safety.
- High energy costs, combined with unaffordable housing, means low-income families are forced to endure **substandard housing conditions,** including homelessness, that threaten child health.
- High energy prices means more Massachusetts families accumulate substantial unpaid utility bills, leading to **disconnections and heat shut-offs** that adversely affect child and family well-being.

It is beyond the scope of this report to describe the research literature in detail. Rather, we will summarize the overarching themes of evidence that form the basis for the premise that affordable home energy has a substantial impact on child health.

We will address the impact of the costs of both **home heating** and **total home energy** (including electricity, water heating, and cooking) for low-income families. While many studies focus primarily on home heating, it is can be difficult to uncouple the effects of high home heating costs from those of total home energy costs. For this reason, when we examine home heating, we will do so within the larger context of total home energy.

## High energy costs force budget trade-offs that put child health at risk

High energy costs place increased economic demands on low-income households with limited budgets. These demands result in trade-offs between fixed costs, such as housing and heating and other basic needs. Nationally, low-income families spend approximately 14 % of their budget on home energy compared to 3 % for more well off families.[3 11]

According to a survey performed by the National Energy Assistance Directors Association (NEADA) in 2005, a significant proportion of LIHEAP participants in the Northeast reported making precisely these kinds of budget trade-offs due to high energy costs:

- 73% reported that they reduced expenditures on household necessities because they did not have enough money to pay their energy bills;
- 20% went without food;
- 28% went without medical or dental care; and
- 23% did not make a full rent or mortgage payment at least once.[5]

These data illustrate that current LIHEAP benefits, targeted to especially vulnerable populations, are clearly helpful but not sufficient in buffering families from the impact of high heating costs. This data also suggests that their situation would be even more precarious without this important assistance.

## Food insecurity adversely affects child health

Budget trade-offs between energy costs and food expenditures result in **food insecurity**, the uncertain or limited availability of adequate supplies of nutritious food. There is substantial evidence indicating that food insecurity poses a substantial threat to child health and well-being. Food insecurity is especially harmful for young children because they are in a period of rapid growth and brain development and are sensitive to even brief periods of nutritional deprivation.[12] Among food insecure families with children, half reported that they were sometimes not able to feed their children balanced meals and 25% reported that their children did not have enough to eat because the family could not afford adequate food.[13] A quarter of Eastern Massachusetts families using food banks reported that their children had skipped meals because there was not enough money for food.[14]

A nutritionally inadequate diet makes children susceptible to an **"infection-malnutrition cycle"** by impairing children's immune function, making them more prone to infection and illness.[15] An inadequate food supply prevents children from fully recovering from weight loss or interrupted growth during illness episodes, leading to poor nutritional status that puts them at risk for a subsequent illness, creating a cycle of poor growth and increased risk of illness. In addition to poor growth[16,17,18,12], food insecure children:

- Are 2-3 times more likely to be in fair or poor health or chronically ill;[15,19,20]
- Are 30% more likely to be hospitalized by age 3 years;[15]
- Score lower on measures of physical and psychosocial functioning;[21] and
- Have deficits in cognitive and behavioral development that affect school performance.[22,23,24,25,26,27,19,28]

A five city (Baltimore, Boston, Little Rock, Minneapolis, and Washington, DC) study of predominantly low-income young children under 3 years of age seen in primary care clinics and emergency departments found significant associations between not receiving LIHEAP and important health and growth indicators:

- Young children not receiving LIHEAP were 30% more likely to be admitted to the hospital.

- Young children not receiving LIHEAP were 20% more likely to be at nutritional risk for growth problems.[2]

### High heating costs result in seasonal food insecurity

There is compelling evidence that when faced with higher energy costs in the winter, low-income families are forced to choose between paying unaffordable energy bills and purchasing food. In 2003, the U.S. Department of Agriculture's (USDA) Economic Research Service investigated this issue using recent data from USDA, the Bureau of Labor Statistics and weather data from the National Oceanic and Atmospheric Administration. These researchers merged data on heating degree-days, reflecting the energy necessary to heat a home based on the outside temperature, with data on household food insecurity, income, employment and other characteristics. They found that "households with incomes below the poverty line were substantially more vulnerable to hunger during the winter and early spring than during the summer."[29] Other reports support the conclusion that children in low-income families are nutritionally at-risk during the winter and early spring, because they take in fewer calories and other micronutrients.[4,3,2]

#### *"Heat or Eat": The stark choices of low-income families affect child growth*

Several recent studies document specific seasonal variation in nutritional status of children resulting from these trade-offs:

- A study of Boston children between 6 months and 2 years of age presenting to Boston Medical Center found that the proportion of children who were underweight increased significantly during winter months. Families without heat, or threatened with utility disconnections, were also twice as likely to have children experiencing hunger or be at-risk for hunger.[30]

- Dropping temperatures and increased winter heating costs resulted in decreased food expenditures and decreased calories consumed by low-income children, compared to increased food expenditures among richer families. These children also had diets of lower quality, with increased rates of anemia and other vitamin deficiencies. The authors state "poor parents are only imperfectly able to protect their children from cold-weather resource shocks."[3]

## High energy costs force the use of risky alternative sources of heat

Faced with high energy costs, low-income families resort to using risky alternative sources of supplemental heat to warm their homes, such as portable space heaters (often in bedrooms), kitchen stoves, or fireplaces. This is especially true when these families lose their home heating service because of an inability to pay their energy bills. The Centers for Disease Control states: "High oil and gas prices and power outages during the winter months can contribute to consumer use of improperly vented heating sources."[31] Nationally, in 2001, home heating equipment fires injured 1,120 people and caused 220 fatalities.[32] Prior data indicates that 20% of deaths are of children less than 10 years of age.[33] Those who are poor, living in substandard homes and children younger than 4 years of age are at higher risk.[34,35]

A survey of low-income service providers, including state LIHEAP directors, weatherization assistance program directors, community action administrators and public utility commissions reported that low-income families respond to unaffordable energy bills by relying on alternative heating sources.[36] The use of these alternative sources of heat is risky because they are associated with house fires, burns and carbon monoxide poisoning. The 2005 survey by the National Energy Assistance Directors Association found that 22% of LIHEAP households in the Northeast used the kitchen stove or oven to heat their homes due to not having enough money for their energy bill in the past year.[5] This is consistent with national data indicating that 14.5% of low-income households used stoves or ovens for heat, compared with 6% of higher income households.[37]

- The U.S. Fire Administration reports that 40% of residential fire injuries and 50% of residential fatalities occur during the winter months, even though these months only comprise one-third of the year. Nationally, these fires cause $3 billion in property loss, 1,900 deaths and almost 8,000 injuries.[38]

- Portable heater fires are the most deadly type of heating fires. While they cause less than 10% of residential heating fires, portable heaters are responsible for 30% of heating fire injuries and 40% of heating fires fatalities.[39]

In addition to the obvious serious health consequences of home fires, the use of these alternative heating sources is also associated with increased risks of burns and carbon monoxide poisoning. Unintentional, non-fire or automobile related carbon monoxide poisoning, which can cause seizures, coma and death, sends 15,000 people to emergency departments and results in 500 deaths annually. Not surprisingly, the incidence of both fatal and non-fatal carbon monoxide poisoning increases during the fall and winter months.[31]

- A recent California study found that number, extent and severity of heater-related burn injuries increased significantly during a power shortage that resulted in 10-17% utility price increases and rolling black outs. There was no change in mean temperature during this time to explain the increased number of burn injuries.[40] The authors conclude: "The economic stresses of the power shortage had societal costs that extended far beyond the price of electricity."[40]

- There are well described cases of surges in carbon monoxide poisoning after a major storm resulted in power outages forcing people to use alternative sources of heat.[41] However, low-income families faced with utility disconnections turn to these risky sources of heat even when there is not a major storm.

### *Winter Fire Danger*

Unaffordable utilities are a major risk factor for fires. Every year, there are tragic cases of deadly fires and carbon monoxide poisonings, often killing children, related to use of alternative sources of heat and loss of utility service:

- In 2000, two young boys were killed in a house fire in Mattapan started by a space heater.[42]
- In 2005, a first grader whose family's electricity was disconnected due to outstanding bills was killed in a fire started by candles.[43]

Low-income families facing high energy costs, utility arrearages and the loss of heating service are at particular risk when they resort to alternative heating sources because they:

- May not be able to afford smoke detectors;
- Live in less fire resistant housing and do not have the resources to invest in fire safety; and
- Are less likely to have telephone service to report a fire.[44]

## The combination of high energy costs and unaffordable housing forces families to endure unhealthy housing conditions

The constraints that high energy costs place on low-income families reduce their ability to afford appropriate housing, increasing the likelihood that they and their children experience unhealthy housing conditions, such as rodent infestation, water leaks, mold, and lead paint.[45] Children in families reporting two or more housing hazards were 2.5 times more likely to be in fair or poor health compared to children in families reporting fewer hazards. Almost half of parents in the study reported that their children had suffered health consequences due to these housing conditions.[45]

It is well documented these conditions are associated with many common chronic diseases of childhood. The most common of these are ***asthma, lead poisoning, unintentional injuries*** and ***infectious diseases.***

- There is substantial evidence linking childhood **asthma** to conditions such as infestations of cockroaches, rats and mice, poor ventilation, and excess moisture and mold.[46,47,48,49,50] Children exposed to these conditions experience more symptoms, miss more school, and have more frequent emergency room visits and hospital admissions due to asthma.[51,52] If these conditions were eliminated, an estimated 800,000 cases of childhood asthma and an estimated $800 million could be saved in asthma health care costs of children under 16 years of age.[49,48]

- **Lead poisoning** has been associated with cognitive deficits, aggressive behavior, hearing dysfunction, tooth decay, delinquency, attentional problems, and low birth weight.[53] On average, studies show persistent effects of lead exposure, with an estimated 2.5 point drop in IQ for an increase from 10 μg/dl in blood lead to 20 μg/dl in blood lead.[54] This resulted in a loss of an estimated 2.5 million IQ points in children between the ages of 1 and 5 in the United States.[55]

- The leading cause of morbidity and mortality for US children less than 20 years of age is **unintentional injuries.**[56,57] Injuries accounted for 37% of all childhood mortality in 2002 and 4,995 deaths in US children ages 1 to 15 years.[58] The majority of injuries among US children occur in and around the home.[59,60] Leading residential mechanisms of injury in children are falls, injury from fires related to improper wiring or lack of smoke detectors, burns from uncovered radiators, inappropriately high hot water heater temperatures.[61]

- Homeless and poorly housed children experience significantly higher rates of **infections**, such as upper respiratory infections, diarrhea, ear infections and skin infestations, such as lice and scabies.[62,63,64,55,51,65]

## High energy costs result in unpaid energy bills, arrearages and utility disconnections that can lead to eviction and homelessness

It is well documented that high energy costs can result in unpaid bills, leading to substantial arrearages and subsequent utility disconnections. These high energy costs can lead to eviction and homeless in two major ways. First, families may not be able to pay both their energy bills and their entire rent or mortgage. The 2005 survey by NEADA reported that 25% of the LIHEAP-recipient households surveyed had made a partial rent or mortgage payment or missed the entire payment altogether because of unaffordable energy bills.[5] This situation is even more dire among respondents in the Northeast:

- 42% reported not paying or paying less than their entire home energy bill because of not having enough money; and

- One in four reported receiving a notice of disconnection of electricity or heating fuel in the past year.[5]

Second, families who have unpaid energy bills develop substantial arrearages that can result in utility service disconnection. Once this occurs, a family whose utility service is disconnected may be evicted for failure to maintain the habitability of their home.[66,67] Although many states, including Massachusetts, prohibit winter utility disconnection for households experiencing financial hardship, these shut-off protections usually end in the spring, resulting in disconnections in late spring.[68] During the shut-off moratorium period, families continue to accrue debt for their utility bills.

In addition to imposing general hardship, disconnected utilities make it difficult to manage chronic conditions such as asthma or diabetes, which require electricity to operate medical equipment or to provide refrigeration for medications, such as insulin.

**Children experiencing homelessness and housing instability related to unaffordable energy bills suffer specific consequences in their physical health, mental health and development**

Housing instability refers to *involuntary* moves that result from inability to pay rent or other circumstances. Homelessness is the extreme end of housing instability, since those in unstable housing situations are never far away from being homeless. The evidence indicates that the children in these families experience substantial adverse outcomes in many domains of health - physical health, mental health and behavioral development and education.

- Housing instability and homelessness pose well-documented **threats to child physical health.** These children are more likely to: be rated as having poor health;[55,51,63] lack regular primary care, such as immunizations and tuberculosis screening;[51,69,70,63] have untreated or undertreated conditions like asthma[71,51]; be seen in the emergency room and be hospitalized[63]; and 10 times more dental caries than housed children.[72,63]

- There is substantial evidence that children experiencing housing instability or homelessness suffer substantial **adverse mental health consequences.** These children are more likely to experience anxiety, depression and alcohol dependency.[73,74,72,75,76,77] For example, half of all children in shelters show signs of anxiety and depression.[73]

- The majority of the evidence suggests that homeless children experience adverse **developmental and behavioral effects.**[78] These children are also at risk for adverse **educational consequences** of their frequent moves and household disruptions. They show increased rates of missed school[62,55,65,74], and poor academic performance;[62,73,63,74,79] They are more likely to need to repeat a grade;[73,79,65,80,81,74] and demonstrate an increased need for special education.[73,65,82]

A study from Worcester, Massachusetts compared 293 homeless children with 223 low-income, housed children (who had never been homeless). The researchers found the homeless children suffered:[51]

- Double the risk of having two or more emergency room visits in a year;
- Twice as many hospitalizations; and
- Significantly worse overall health status.

## Health impacts of high energy costs have significant economic implications

The adverse impacts of unaffordable energy described in this section can have potentially devastating and preventable health consequences for children and their families. These health consequences can also create substantial economic costs for society at large through lost productivity and increased education and health care spending. Although these costs are often difficult to measure, one example is the substantial cost of preventable hospitalizations, borne by low-income families, payers and health care providers. At a time of rising health care costs, these hospitalizations have significant economic implications. Table 1 gives one set of examples of these costs. As shown, the cost of a pediatric burn hospitalization in Massachusetts is approximately $7,500, and a hospitalization for carbon monoxide poisoning averages almost $11,000. These economic costs are 5 to 8 times the average cost of heating a home in the Northeast, and 7 to 10 times the maximum home heating benefit from the LIHEAP program in 2006.[83,84]

**Table 1. Average Pediatric Hospitalization Costs for Burns, Carbon Monoxide Poisoning, and Bronchitis & Asthma**

| | Massachusetts | | Nationwide | |
|---|---|---|---|---|
| | Average length of stay | Average hospitalization charges | Average length of stay | Average hospitalization charges |
| General pediatric hospitalization | 4.2 days | $9,989 | 3.6 days | $9,945 |
| Burns | 3 days * | $7,505 * | 6.6 days | $28,235 |
| Carbon monoxide poisoning | ** | ** | 1.8 days | $10,728 |
| Bronchitis & Asthma | 2.4 days | $5,272 | 2.6 days | $7,386 |

*Numbers do not include hospitalization for patients less than one year of age.

** No data available.

Source: Healthcare Cost and Utilization Project. Agency for Healthcare Research and Quality, Rockville, MD. Available at http://www.ahrq.gov/HCUPnet/

## Summary

The evidence summarized in this section makes a strong case that unaffordable energy has significant consequences for child health and well-being through four primary pathways: household budget trade-offs between energy bills and other necessities, such as food; the use of risky alternative sources of heat, such as stoves or space heaters; enduring unhealthy housing conditions because of budget constraints; and finally, utility arrearages and disconnections that can result in housing instability and homelessness.

Given this connection between high energy costs and child health established, the next section focuses on the Low Income Home Energy Assistance Program (LIHEAP) and the status of affordable energy, particularly in Massachusetts.

# 2 The Low Income Home Energy Assistance Program (LIHEAP) and Affordable Energy in Massachusetts

The importance of affordable energy for child health and well-being outlined in the previous section highlights the need for a consideration of the health effects of policies made outside the medical and public health realms. Because key policy makers do not always recognize the impact of such policies on children, they miss the opportunity to protect children's health and well-being. The new approach of a Child Health Impact Assessment provides a framework for such a consideration.

Current volatility in energy prices offers an opportunity to evaluate these child health impacts using this new approach. The Low Income Home Energy Assistance Program (LIHEAP) is the main federal program designed to provide home heating assistance for low-income Americans. There are additional heating assistance programs in Massachusetts, including the Salvation Army Good Neighbor Fund and Citizens Energy Oil, and other programs that address overall energy costs. This analysis focuses on LIHEAP, but the other energy assistance programs will be briefly reviewed to place LIHEAP within the overall context of such programs.

## An overview of the Low Income Home Energy Assistance (LIHEAP) Program

In 1981, Congress created the Low Income Home Energy Assistance Program (LIHEAP), by consolidating a number of programs created to address increased energy prices resulting from the 1973 Organization of the Petroleum Exporting Countries (OPEC) oil embargo. Administered by the Division of Energy Assistance within the U.S. Department of Health and Human Services (HHS) Administration for Children and Families, LIHEAP is a block grant program that gives states annual funding to provide home heating, cooling, and weatherization assistance to low-income households.[85]

Eligibility for LIHEAP is based on household income and size. Under federal rules, the maximum eligible income is 200% of the federal poverty level and/or not to exceed 60% of median state income. Each state sets its own income eligibility requirements within these guidelines, and most set limits as a certain percentage of federal poverty level. In states with relatively high incomes and high costs of living, the median state income is much higher than 200% federal poverty level, which does not vary by geographic location (except for Alaska and Hawaii).

LIHEAP is not an entitlement program; there is no legal mandate to provide benefits to all eligible households. Federal funding fluctuates from year to year, resulting in changes in benefit levels and numbers of households served. Nationwide, 13% of income-eligible

households received LIHEAP benefits in fiscal year 2002, the latest year for which HHS has published data.[11] In 2003 the average home heating benefit was $258.[86]

In 1994 LIHEAP legislation, Congress created permanent authorization for the release of up to $600 million in contingency funds in addition to the main annual LIHEAP appropriation, "to meet the additional home energy assistance needs of one or more States arising from a natural disaster or other emergency."[87] Subsequent legislation expanded the definition of "emergency" to include a significant increase in:

- Home energy supply shortages or disruptions,
- The cost of home energy,
- Home energy disconnections,
- Participation in a public benefit program such as the food stamp program, or
- Unemployment or layoffs.[88]

In addition, the 1994 legislation amended LIHEAP to specifically target vulnerable households, defined as those with at least one member who is either:

- A child under age five,
- An individual with disabilities, or
- An adult over age 65.[89]

Notably, the legislation also requires that states "give priority to those households with the highest home energy costs or needs in relation to household income."[90] This means that states can target families with the highest energy burden.

## *LIHEAP is targeted to families with highest energy burden*

**Energy burden** is defined as the percentage of income a household spends on total energy costs. For example, if a family has an income of $30,000, and spends $3,000 a year on energy costs, the household's energy burden is 10%.

- Low-income families in the U.S. have an average energy burden of 13.6%
- Families that receive LIHEAP have an average energy burden of 18.9% [11]

## LIHEAP in Massachusetts

In Massachusetts, the Department of Housing and Community Development (DHCD) oversees LIHEAP, often referred to as Fuel Assistance (see Table 1). DHCD awards sub-grants to 21 local agencies that administer the program at the community level. Most of these grantees are community action agencies – non-profit organizations that provide both referrals and direct services to low-income individuals to help meet their immediate needs and increase their long-term self-sufficiency.[ii]

Massachusetts LIHEAP provides funds for: home heating assistance, year-round energy crisis assistance, and weatherization assistance.

**Table 1. An Overview of LIHEAP in Massachusetts**

| Program Component | Description |
|---|---|
| Heating Assistance | -Payments made directly to utility vendors, based on household benefit level and program fund availability. |
| | -Covers partial cost of oil, electricity, natural gas, propane, kerosene, wood, coal. |
| Weatherization Assistance (Home Emergency Assistance Retrofit Task Weatherization Assistance Project) | -Grants averaging $1,600 are awarded to households to repair or replace broken or inefficient heating systems. |
| | -Priority funding given to households with elderly, disabled, children, or high-energy users. |
| | -Designed to serve mainly homeowners. |
| Crisis Assistance | Fast-track assistance for households experiencing heating emergencies (no heat, imminent loss of heat due to less than 3-day supply of fuel, final notice of utility termination, threatened eviction within 72 hours for renter whose rent includes heat). |
| Eligibility | -Income must not exceed 200% of federal poverty level. |
| | -Renters in non-subsidized housing whose rent includes heat are eligible to receive 30% of monthly rent. |
| | -Renters in public housing/subsidized housing who pay directly for heat AND receive heat allowance from their subsidy source are eligible for 50% of benefit level for income range. |
| Benefit Level Determination | -Baseline benefit determined by income and household size. |
| | -High energy benefit determined by household vulnerability to high energy costs. LIHEAP creates expenditure thresholds for each type of fuel based on annual reporting of LIHEAP household energy consumption. Households above the threshold receive an additional high energy benefit. |
| Application Process | -New applicants must apply in-person at their local administering agency (21 around the state, some with satellite offices). Returning applicants receive re-certification letter in the mail. |
| | -Applicants must document previous four weeks of income of all household members over the age of 18. Must also provide latest heating bill. |
| Program Dates | -The program year runs from October 1st to September 30th. |
| | -Applications for heating and crisis assistance are accepted from November 1st through April 30th. |
| | -Applications for weatherization assistance are accepted year round. |

Sources: Department of Housing and Community Development; LIHEAP Detailed Model Plan, Public Law 97-35, As Amended; Interviews with energy directors at community action agencies, conducted from March to August 2006.

[ii] See Appendix V for a list of agencies that administer LIHEAP and other energy assistance programs in Massachusetts.

First-time applicants must apply in person at their local community action agency, and prior recipients are automatically mailed re-certification forms in the fall. Eligibility is based on household size and income, which cannot exceed 200% of federal poverty level. While some states issue benefit checks to participants, in Massachusetts the local community action agency administering the program makes payments directly to the recipient's utility or fuel vendor.

### Setting the LIHEAP benefit level

The annual process of determining the LIHEAP benefit is characterized by substantial uncertainty, as noted by both energy advocates and utility companies.[91] Each fall, DHCD sets the LIHEAP benefit levels for the coming program year based on the projected federal LIHEAP appropriation (see Table 2). In addition to regular federal funding, the program may receive federal contingency funds or supplemental state funds during the program year. Massachusetts received federal contingency funds in 1994, 1995, 1997, and 2001-2004. In addition, the state added supplementary LIHEAP funds in 2005 and 2006.

**Table 2. Massachusetts Final LIHEAP Benefit Levels (by Income) for 2006**

| Household income (% of federal poverty level) | Household income for family of four | Baseline benefit: Non-subsidized housing tenants | Baseline benefit: Subsidized housing tenants | High energy use benefit | Maximum benefit |
|---|---|---|---|---|---|
| At or below 100% | $18,850 | $1,049 | $625 | $75 | $1,124 |
| At or below 125% | $23,563 | $945 | $575 | $65 | $1,010 |
| At or below 150% | $28,275 | $855 | $530 | $55 | $910 |
| At or below 175% | $32,988 | $775 | $490 | $50 | $825 |
| Up to 200% | $37,700 | $775 | $490 | $50 | $825 |

Source: FY 2006 Low Income Home Energy Assistance Program Maximum Income and Benefit Levels, Massachusetts Department of Housing and Community Development. Available online at http://www.mass.gov/dhcd/components/cs/1PrgApps/LIHEAP/chart.pdf

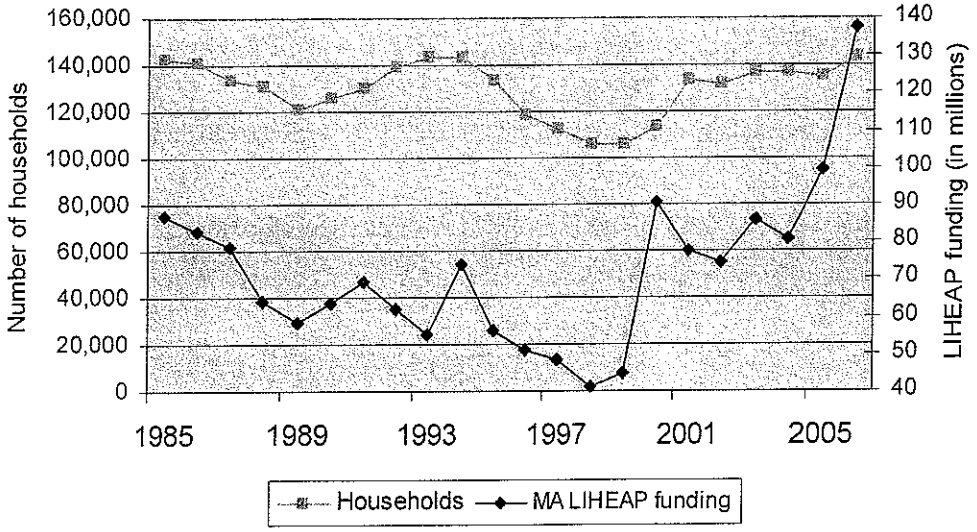
The benefit level often changes throughout the program year because when DHCD initially sets the benefit level, it must do so without knowing the actual federal funding amount, if the state will contribute funds, or if the federal government will release contingency funds. For example, DHCD initially set the maximum benefit level at $684 for fiscal year 2006, based on the projected federal appropriation. When the Massachusetts legislature passed the 2005 Energy Bill, providing an additional $20 million in LIHEAP funding, DHCD was able to increase the maximum benefit to $840. Finally, when the federal government released contingency funds to Massachusetts in March of 2006, the maximum benefit increased to $1,124.[84]

### LIHEAP funding and benefit level determine the maximum number of recipients

Because LIHEAP is not an entitlement program, the amount of total program funding combined with the benefit amount determines how many people the program can serve. Setting a high benefit amount means that the program can serve fewer households, but those who participate will receive more assistance in paying their energy bills. If the benefit level is low, the program can serve more people, but each participating household receives less substantial assistance. DHCD and its LIHEAP advisory group aim to strike a balance between these two objectives–serving a large number of households, and giving households a significant amount of assistance–when they set the LIHEAP benefit level.

Figure 1 shows the trends of LIHEAP participation and combined federal and state funding in Massachusetts. Participation roughly follows program funding, with the exception of a sharp increase in funding in 2004 that was not accompanied by an increase in participation. Clearly, factors in addition to funding levels must contribute to participation rates. However, throughout this period, only a proportion of eligible families actually seek this benefit.[11]

Figure 1. LIHEAP Funding and Number of Participating Households in Massachusetts, 1985-2006




Note: Funding includes federal funds, both regular and contingency, as well as state funds.
Source: Massachusetts Department of Housing and Community and Development.

## Who receives LIHEAP benefits in Massachusetts?

In the 2006 program year, 143,309 Massachusetts households received heating, weatherization, or crisis assistance from LIHEAP (see Table 3). The majority are deemed vulnerable by one or more of the federal program criteria. More than one third have an elderly member, more than 20% have a disabled member, and a significant number have young children. Over two-thirds, or 106,049, are female-headed households.

In Massachusetts there are also many vulnerable families with children who do not receive LIHEAP. There are approximately 189,600 low-income households with children in Massachusetts who are likely LIHEAP eligible. Similarly, there are almost 401,000 children in low-income families, 173,099 of whom live below the poverty line, and 56,715 who are five years old and younger.[1]

Table 3. Characteristics of Massachusetts LIHEAP Participants, 2006

| Household Characteristics | Number of Households |
|---|---|
| Total households served | 143,309 |
| Household Types | |
| - Headed by a female | 106.049 |
| - With at least one elderly member | 49,551 |
| - With at least one disabled member | 32,749 |
| - With at least one child 2 or under | 16,627 * |
| - With at least one child 3 to 5 | 17,996 * |
| Household Income levels | |
| - 0 - 100% of federal poverty level | 57,302 |
| - 101 - 125% of federal poverty level | 26,105 |
| - 126 - 150% of federal poverty level | 23,995 |
| - 151 - 200% of federal poverty level | 35,907 |
| Household Income | |
| - Social Security (SS, SSI, EADC) | 97.426 |
| - Wages | 48,041 |
| - Pension | 15,050 |
| - TANF | 14,390 |
| - No income | 1,057 |
| Housing Type | |
| - Renters | 92,661 |
| - Homeowners | 50,648 |
| - Subsidized housing tenants | 32,588 |

* Households that include both children under 2 and between 3 and 5 may be counted in both categories.

Source: Year-to-date numbers from Massachusetts Department of Housing and Community Development, 9/8/06.

## Other energy assistance programs in Massachusetts

Massachusetts families seeking home heating assistance who do not meet the income criteria for LIHEAP, or have exhausted their LIHEAP benefits, have several other energy assistance options. Some, like LIHEAP, address only home heating, while others address total energy needs.

### Non-profit home heating assistance

The primary non-profit organizations that provide heating assistance in Massachusetts are the Salvation Army Good Neighbor Fund and Citizens for Energy. Table 4 provides an overview of these programs, both of which provide a one-time benefit per heating season.

Table 4. Private Heating Assistance Programs

| Program Component | Salvation Army Massachusetts Good Neighbor Fund | Citizens Energy Oil |
|---|---|---|
| Description of Benefit (Winter 2005-2006) | -$275 maximum benefit per winter.<br>-Benefit level fluctuates year to year depending on program funds. | -One delivery of up to 200 gallons of home heating oil at 40% discount per winter.<br>-Customer must pay cash on delivery.<br>-Benefit fluctuates year to year based on negotiated discount with vendors. |
| Eligibility | Household income between 200-250% federal poverty level. | No strict income limits. Households must be facing financial hardship, and either not be eligible for LIHEAP or have used up all LIHEAP benefits. |
| Enrollment | Usually via referral from community action agency. | -LIHEAP households that have exhausted their LIHEAP benefit are automatically sent a letter authorizing delivery of discounted oil.<br>-Non-LIHEAP households usually referred via community action agencies. |
| Number of households served | Disbursed $12.6 million to 62,500 households over last 11 years, or approximately 3,125 households per year (no annual data available). | In 2006, about 8 million gallons available at discount, enough to supply 40,000 families with one 200-gallon delivery. |

Sources: http://http://www.magoodneighbor.org, http://www.http://www.citizensenergy.com.

Some community action agencies also disburse small grants from the Federal Emergency Management Agency (FEMA) for home heating assistance. These grants provide one-time payments to households that are facing heat or utility shut-offs and have exhausted all other types of assistance. In addition, community action agencies may have access to other small grants or funds provided by private, municipal, or other local programs funded by private citizens.

### Utility discounts

Any Massachusetts resident who is eligible for LIHEAP is also eligible for discounted electricity, gas, and telephone rates from investor-owned utilities. (Municipal-owned utilities do not offer low-income discounts.) These discounts vary among the utility companies, but are generally between 20 and 35% of a household's bill. The discount applies to distribution or transition charges, and not to the actual cost of the fuel. Thus, these discounts are eroded by rising energy prices. Usually, those who receive LIHEAP are automatically enrolled in discount programs by the community action agency administering their LIHEAP benefits. Also, some public assistance programs such as TANF and Food Stamps allow participants to enroll simultaneously for discounted utility rates.

### Weatherization assistance program

There is also a state-run program, the Low Income Weatherization Assistance Program, which provides households with comprehensive energy conservation services. These may include air sealing to reduce infiltration, insulation, and limited energy-related repairs. Families also receive an evaluation of the heating system in their homes, as well as health and safety testing of all combustion appliances. All services are delivered at no cost to participants. Homeowners and renters with their landlord's permission are eligible to participate in the program. Priority is given to those households whose members are elderly, disabled, young (6 years and under), LIHEAP high-energy users, and Native Americans.

### Arrearage management programs

Though not a cash benefit, another strategy to assist low-income families is an arrearage management program. An arrearage is an unpaid utility debt, often accumulated over a series of months or even years.[iii] The 2005 Massachusetts Energy Bill required all investor-owned utilities to design and implement arrearage management programs.[92] Energy advocates and many utility companies have worked together to develop these programs, which vary considerable among the utility companies. An important feature of each of these plans is arrearage forgiveness, in which a family pays a specified amount of their bill on a regular basis, and eventually part of the debt is forgiven by the utility company.

Energy directors at community action agencies assist families with arrearages in setting up arrearage management plans. Appropriate guidance about what the plans entail and the importance of making steady payments is crucial because if families default on their plan, it is very difficult to obtain one in the future.

## Summary

LIHEAP and other energy assistance programs provide valuable home heating and energy assistance to low-income families in Massachusetts. Because LIHEAP program funding fluctuates from year to year, so do the benefits available to families. Many Massachusetts families who receive LIHEAP have young children, elderly, or disabled members, and many are female-headed households. The next section describes the growing gap between energy prices and LIHEAP benefits, and the impact of high energy costs on vulnerable, low-income families.

[iii] For a detailed discussion of arrearages, see Section 3.

# The Impact of High Energy Costs on Low-Income Families in Massachusetts

## Low-income families face substantial energy burdens

In the northeastern U.S., home heating makes up about 44% of a household's total energy expenditures, which includes space and water heating, space cooling, refrigeration, and other electric appliances.[11]

Table 1 illustrates that the heating expenditures for low-income families are proportionally much higher than those of higher income households. Of note, families in the Northeast have substantially higher energy burdens compared to the rest of the country. Low-income families in the Northeast receiving LIHEAP, who are even more vulnerable than their other low-income peers, spend an average of 11.6% of their income on heating their homes.

**Table 1. Total Energy and Home Heating Burden and Expenditures by Income Level, 2003**

| | NORTHEAST | | | | NATIONWIDE | | | |
|---|---|---|---|---|---|---|---|---|
| | Average total energy burden | Average total energy expenditure | Average home heating burden | Average heating expenditure | Average total energy burden | Average total energy expenditure | Average home heating burden | Average heating expenditure |
| LIHEAP households | 22.9% | $1,816 | 11.6% | $869 | 18.9% | $1,515 | 8.6% | $646 |
| Low-income households | 17.2% | $1,543 | 8.2% | $685 | 13.6% | $1,304 | 5.1% | $463 |
| Higher income households | 8.1% | $1,999 | 1.5% | $867 | 3.0% | $1,631 | 1.0% | $533 |

Source: LIHEAP Home Energy Notebook for Fiscal Year 2003.

### Making Ends Meet?

Four out of 10 Massachusetts households that receive LIHEAP live below the poverty line, meaning they live on less than $20,000 for a family of four per year. To put these numbers in context, Table 2 shows estimated basic living expenses for a family of four in three

Massachusetts cities. [iv] They show that a Massachusetts family of four with an income of 200% poverty level has between a $345 and $1,326 monthly deficit in meeting basic needs. Using similar methods, the Economic Policy Institute, estimated monthly deficits to be between $1,400 and $2,100 for families living in the same three Massachusetts cities in 2004.[93]

Table 2. Basic Living Expenses vs. Income in Three Massachusetts Cities

| | Boston | Worcester | Springfield |
|---|---|---|---|
| 2-bedroom apartment (including utility costs) | $1,343 | $ 785 | $ 674 |
| Food | $ 554 | $ 554 | $ 554 |
| Child Care | $ 1,226 | $ 1058 | $ 942 |
| Transportation | $ 114 | $ 433 | $ 444 |
| Health Care | $ 267 | $ 244 | $ 248 |
| Other necessities | $ 350 | $ 307 | $ 286 |
| Taxes | $ 876 | $ 692 | $ 602 |
| Tax Credits | - $180 | - $180 | - $180 |
| Monthly total | $ 4,551 | $ 3,893 | $ 3,570 |
| Monthly income for family of four at 200% of poverty level | $ 3,225 | $ 3,225 | $ 3,225 |
| Deficit | - $ 1,326 | -$ 668 | - $ 345 |

Sources: Pearce, D. and Brooks, J. The Self-Sufficiency Standard Report for Massachusetts. The Women's Educational and Industrial Union, 2003.

Substantial energy burdens add to the gap between income and basic needs, placing families in the precarious position of having to make budget trade-offs that affect child health.

## Low-income families caught in the gap between rising energy prices and lagging LIHEAP benefits

Low-income families in Massachusetts and around the country are in critical need of assistance to pay their continually increasing energy bills. Since LIHEAP began in 1981, energy prices have risen steadily, with more substantial increases from 2002-2006.[83] Yet, when adjusted for inflation, LIHEAP funding has decreased 47% from 1981 to 2005 (Figure 1). While Congress authorized $5.1 billion in federal LIHEAP spending for each fiscal year from 2005-2007, it appropriated less than half that amount in 2005 and 2006.[94] In Massachusetts, the price of heating oil in June 2006 was twice what it was 3 years ago.[95] Although heating oil prices have decreased somewhat since June, the projected energy costs for low-income families are still substantial. As calculated by the Energy Information Administration within the U.S. Department of Energy, the average projected cost of heating a home with oil in the Northeast for winter 2006-2007 is $1,559, up $105 from the previous winter.[83]

[iv] These figures are based on 2003 Fair Market Rents, USDA guidelines for a low-cost food plan, the National Travel Household Survey (transportation costs), child care costs reported by the 2000 Child Care Market Rate Survey, estimated insurance costs, Medical Expenditure Panel Survey, the Consumer Expenditures Survey (for transportation, and for other necessities like clothing), and tax rates and credits for 2003.[93]

### The need for a home energy insecurity scale to measure the complete picture of energy burden

There is a need for a reliable, easy to use measure of the impact of energy costs on family well being. One example of such a measure has been proposed by the Division of Energy Assistance, the office within the U.S. Department of Health and Human Services that administers LIHEAP. Their Home Energy Insecurity Scale would "allow the [energy assistance] program manager to capture all aspects of low-income affordability.[10] This scale would enable energy assistance programs to assess initial and subsequent energy self-sufficiency of households before and after receipt of energy benefits, providing a quantitative evaluation of the impact of these benefits. The proposed scale is comprised of 11 questions that have been adapted from the measures of "food insecurity" developed by the U.S. Department of Agriculture.[v] The questions are organized into 5 basic categories that contribute energy insecurity:

- Receipt of outside assistance, including from friends and family, to pay energy bill.
- Constraints on energy usage, such as whether families turn off hot water or heat to certain rooms because of high energy bills.
- Constraints on household necessities, including involuntary disruption of energy service or reduction in expenditures on basic needs like food or medicine.
- Nonpayment of energy bills, including whether a family has received disconnection notices or experienced discontinuation of fuel deliveries.
- Financial strain, including families' worry and concern regarding not being able to pay their bills.[10]

Information obtained in these 5 categories would be combined to assess families along a continuum of home energy self-sufficiency that includes the following 5 statuses - **thriving, capable, stable, vulnerable, in-crisis.** Energy assistance programs can then monitor how families change their status, depending on whether energy benefits were received. This scale may not be the one ultimately utilized by all key stakeholders, but it illustrates the feasibility of such a measure.

## The impact of rising energy prices & increasing energy burden on Massachusetts families

The growing gap between energy costs and LIHEAP benefits has a significant negative impact on Massachusetts families and their children. As outlined in Section 1 of this report, the substantial energy burden experienced by many low-income families has impacts on child health in several important ways, even after the winter heating season is over. Table 3 summarizes these effects:

[v] See Appendix II for a list of individual items that comprise the Home Energy Insecurity Scale.

Table 3: Pathways of the Impacts of Unaffordable Energy on Low-Income Households

| Mechanism | Short-Term Impacts | Medium & Long-Term Impacts |
|---|---|---|
| **High energy costs force budget trade-offs that jeopardize child health.**<br>Families spend less on food, medications, and housing in order to pay high energy costs.[2,3,4] | - *"Heat or eat"*- food insecurity & other nutritional risk due to trade-offs between energy and food expenditures<br>- Seasonal food insecurity | - Poor growth<br>- Malnutrition - infection cycle leading to increased illness<br>- Cognitive, developmental deficits of malnutrition affecting school performance |
| **High energy costs force the use of risky alternative sources of heat.**<br>Families use ovens, stoves, space heaters, or fireplaces to replace or augment primary heating systems.[5,6,7] | - Increased risk of contact burns<br>- Increased risk of carbon monoxide poisonings<br>- Increased risk of house fires | - Possible long-term health consequences of burns, carbon monoxide exposure<br>- Economic impact of preventable hospitalizations |
| **High energy costs combined with unaffordable housing force families to endure unhealthy housing conditions.**<br>High energy costs contribute to budget constraints limiting families' ability to afford appropriate housing, resulting in exposure to unhealthy housing conditions:<br>- Rodent & cockroach infestation<br>- Water leaks and mold<br>- Peeling paint and lead paint[8] | - Increased incidence & severity of asthma<br>- Increased incidence of lead poisoning<br>- Preventable injuries from fires, burns, falls<br>- Increased rates of infectious diseases, such as diarrhea and respiratory conditions | - Increased health care utilization, including emergency department visits and hospitalizations<br>- Missed school due to illness<br>- Cognitive and developmental deficits due to lead poisoning |
| **High energy costs result in unpaid bills, arrearages and utility disconnection.**<br>Families make partial rent or mortgage payments or miss an entire payment because of unaffordable energy bills. | - Potential cold exposure<br>- Increased use of alternative heating sources (see above)<br>- Possible loss of utilities required for basic health and safety: light, refrigeration, cooking, water heating<br>- Increased risk of housing instability due to utility disconnection | - Adverse physical health impacts, including lack of primary care, untreated or undertreated medical conditions, growth delay<br>- Adverse mental health impacts, including anxiety, depression, behavioral disorders<br>- Adverse behavioral, developmental and educational impacts, including developmental delay, grade repetition |

## Decreasing energy affordability means more utility arrearages and disconnections

Low-income families' struggles to pay high energy bills do not end when the warm weather returns. The arrearages low-income families face at the end of the heating season mean that the health impacts of high energy costs will continue throughout the year. With the decreasing buying power of the LIHEAP benefit, even Massachusetts families who receive LIHEAP are facing increasingly large arrearages. Many of the community action agencies that administer LIHEAP report that a growing number of clients are in arrears, and these arrearages are increasing in amount up to $5000 in some cases.

### *A Massachusetts family faces growing arrearages*

A single mother of four children, Ms. T transitioned from public assistance to a job as a hair-dresser, earning $960 a month. Frequent doctor appointments and emergency room visits for her two children with asthma prevent her from working more than 20 hours a week. Her income, along with food stamps and supplemental security income for one of her sons, is insufficient to cover her rent, child care costs, car insurance, and energy bills. She pays some part of her utility bills every month, even if she cannot pay the entire bill, but has accrued a $6,000 arrearage for her gas service. LIHEAP benefits together with utility shut-off protection, which she must keep current by submitting appropriate documentation every 90 days, prevent her from losing her gas service. LIHEAP benefits are crucial in allowing her to make payments against her arrearages and keep the gas service on for her vulnerable family.

### Shut-off protections

As described in Section 1, households that accumulate large arrearages are in danger of having their utilities disconnected. Energy advocates and fuel directors work with their clients to prevent these disconnections, which can have devastating effects on health and safety of the household. Massachusetts has some of the most comprehensive shut-off protection statutes in the country. These include:

- Protection from disconnection any time of year for households that demonstrate "financial hardship" and have a member who is seriously ill or under 12 months old (provided that service has not been shut-off for non-payment before the birth of the child). A family seeking protection due to illness must obtain documentation from their physician.

- Protection from disconnection from November 15$^{th}$ to March 15$^{th}$, regardless of payment status. (This shut-off "moratorium" is often extended to April 1$^{st}$.) This protection also requires proof of financial hardship.

- Protection from disconnection any time of year for households in which all members are over the age of 65, regardless of financial status.[96,97]

Of note, families that are able to secure shut-off protection continue to accrue unpaid bills during the protection period. When the protection period ends, they are left with significant debt and face almost certain utility disconnection.[vi]

Energy directors at the community action agencies that administer LIHEAP describe a vicious cycle of arrearages. Families who experience arrearages and subsequent utility disconnections in the prior winter often use their entire LIHEAP benefit for the current winter to pay down the arrearage in order to have their service restored. This leaves them without assistance for the remainder of the heating season, setting them up to accrue more arrearages. When the shut-off moratorium ends in the spring, their utilities are disconnected again, leaving them without gas for cooking, hot water, or heat.

### *No shut-off protection for oil heat*

The comprehensive shut off protections in Massachusetts do not apply to oil companies and therefore, they are not required to deliver fuel to a household that has unpaid arrearages.

Almost 30% of Massachusetts LIHEAP recipients heat their homes with oil.[98] These families are at risk of going without any heat if their LIHEAP benefits are depleted and they cannot afford more oil.

## Lack of data on arrearages and shut-offs prevents tracking their impact

There are no reliable data on the number or size of arrearages experienced by Massachusetts households, making it difficult to assess fully the impact of this growing problem. The Massachusetts Department of Telecommunications and Energy (DTE), which regulates the investor-owned utilities, does not require the companies to report these data. Some utilities report arrearage and disconnection data, but none report them consistently.

In its report "Tracking the Home Energy Needs of Low-Income Households Through Trend Data on Arrearages and Disconnections," the National Energy Assistance Directors Association together with the National Consumer Law Center recommend collecting the following data:

- Number of residential customers, and number who are low-income;
- Number of residential customers in arrears, and total dollar amount of arrears;
- Number of low-income customers in arrears, and total dollar amount; and
- Number of residential disconnections and low-income disconnections.[9]

If these data were reported to DTE, then aggregated and made publicly available, public officials would be better able to estimate how many families in Massachusetts were facing potential negative health impacts resulting from unaffordable energy. The state might use these data to lobby for the release of Federal LIHEAP contingency funds, designed to

[vi] This type of energy assistance is unique among benefit programs because it creates a "safety-net debt." Families are left with a substantial unpaid bill after receiving assistance to paying for a basic need—home energy.

address increases in utility shut-offs. Also, service providers, such as community action agencies and doctors, could anticipate better the needs of their clients and patients. For these reasons, it is critical that DTE require reporting of arrearage and shut-off data from the utilities.

## Summary

Low-income families face a substantial home energy burden, which puts their children's health and well-being at risk. These families are caught in the gap between sharply rising energy prices which are outstripping LIHEAP benefits. The child health impact of this increasing energy burden occurs through four primary pathways: 1) shifts in family budget from basic needs like food and medicine toward energy costs; 2) the use of risky, alternative heat sources to offset high energy bills; 3) the combined strain of high housing and energy costs limiting choices for acceptable housing conditions, and 4) the accumulation of large unpaid energy bills that result in utility disconnections. A lack of sufficient data on utility arrearages and disconnections makes it difficult to track the risks we know families face. The next section summarizes our findings and offers recommendations for changes in energy assistance that might help protect low-income families and their children.

# 4 Summary & Recommendations

Low-income families are caught in the gap between rising energy prices and available energy assistance. Energy assistance falls far short of the need, especially when there is a spike in energy prices, such as following Hurricane Katrina. In addition to the exceedingly high housing costs in Massachusetts, our climate means low-income families spend more of their income on home energy (energy burden) to keep warm than families in other regions of the U.S. A review of the available evidence finds that unaffordable home energy has a substantial potential influence on the health and well-being of the more than 400,000 Massachusetts children living in low-income households:[1]

- **Low-income families facing disproportionately high energy costs are forced to make household budget trade-offs that jeopardize child health.** Families with a high energy burden often spend less money on food and health care. Seasonal food insecurity resulting from high energy costs has a substantial impact on child health. In addition, families may miss rent or mortgage payments to pay energy bills, resulting in housing instability.

- **Families that face high heating costs resort to alternative heat sources that jeopardize child health and safety.** In an effort to reduce home heating costs, families use alternative heat sources, such as kerosene space heaters or fireplaces. Up to 25% of families that lose their primary source of heating use space heaters or ovens and stoves, risking contact burns, carbon monoxide exposure, and especially deadly house fires.

- **High energy costs combined with unaffordable housing create important budget constraints that force low-income families to endure unhealthy housing conditions that threaten child health.** The constraints that high energy costs place on low-income families reduce their ability to afford appropriate housing, increasing the likelihood that they and their children experience unhealthy housing conditions, such as rodent infestation, water leaks, mold, and lead paint.

- **The growing gap between rising energy prices and LIHEAP benefits means more Massachusetts families accumulate substantial unpaid utility bills, leading to arrearages and disconnections that adversely affect child and family well-being.** As the gap between energy prices and LIHEAP benefits increases, Massachusetts families struggle to pay their utility bills. While utility shut-off protections in the Commonwealth are strong, the limited data available suggest that arrearages are growing dramatically for low-income families. Families eligible for shut-off protection face substantial debt and disconnections when their protections expire.

- **The negative child health impacts of unaffordable home energy extend well beyond the winter heating season.** Due to overwhelming utility arrearages, families' difficulty in paying their home energy bills becomes a year-round problem. Although families may avoid utility disconnection during the winter, they

face it in the spring when the moratorium on shut-offs is lifted. Similarly, families make budget trade-offs even in warmer months, spending less on food, medical care, and housing, so they can pay down arrearages accumulated during the winter.

## Recommendations

This report documents the compelling evidence that unaffordable energy costs adversely affect the health of low-income children. The next step is for policy makers, agency officials, local service providers, and other key stakeholders to take action to protect children from these preventable unhealthy consequences. The following recommendations offer strategies to avoid the public health impact of unaffordable energy through expanding outreach and access to energy assistance programs and increasing relevant information available to policy makers and energy program directors.

### Funding Recommendations

1. **Given the continued gap between energy costs and LIHEAP funding, the federal government should fully fund LIHEAP at the maximum authorized level of $5 billion to allow an increase in both participation and benefit level.** Because energy benefits play an important role in buffering low-income children from the adverse health effects of high energy costs, we should encourage increased participation in LIHEAP, which will certainly require additional funding. Recognizing that LIHEAP is not an entitlement program, if increased participation is not matched by a corresponding increase in funding, benefit levels would be reduced to an inadequate level.

2. **To increase LIHEAP benefit levels for vulnerable Massachusetts families, the Massachusetts state government should allocate supplementary funds for LIHEAP.** In 2005 and 2006, the Massachusetts legislature wisely decided to supplement federal funding with a state appropriation, allowing benefits to be increased to a more meaningful level. For the benefit of the Commonwealth's children, they should continue to do so.

### Programmatic Changes

3. **To highlight the connection between high energy costs and child health, LIHEAP should extend outreach to clinicians and health care settings.** Currently, there is inadequate data to explain why more eligible families do not apply for important LIHEAP benefits. However, it is our clinical experience that many low-income families who face substantial energy burdens are not aware that they are eligible for LIHEAP or other energy assistance. Health care settings would be important sites to identify potentially eligible low-income families with children. As part of a complete social history designed to uncover potential risks to child health, health care providers should screen for home energy insecurity and make appropriate referrals to energy assistance programs. In addition, the programs that administer LIHEAP should enroll families at clinical sites, such as neighborhood health centers, that serve the vulnerable populations specifically targeted by LIHEAP.

4. **LIHEAP administrators should consider an initiative to provide energy and utility assistance, through LIHEAP or other energy assistance programs, to low-income families who are eligible for housing subsidies but spend years on waiting lists before they receive them.** These families are clearly economically vulnerable since they have already met eligibility standards for housing subsidies. Subsidizing their energy costs while they await

housing assistance would help buffer their children from the double jeopardy of both unaffordable housing and energy costs which threatens their health and well-being.

Data Collection

5. **The state should enforce the existing requirement that utility commissions collect and report data on arrearages and utility disconnections to the Department of Telecommunications and Energy to address the important gaps in this data that undermine the state's ability to request the release of emergency LIHEAP funds.** The National Energy Assistance Directors Association together with the National Consumer Law Center have highlighted the importance of collecting these data to document trends in arrearages and disconnections, useful in establishing an emergency situation as defined in the LIHEAP statute. [9] NEADA and NCLC have outlined a template of three tiers of data that could be obtained - some should be immediately available from utilities, whereas others may take additional resources.[vii] Local service providers could use this information to assess the full impact of this problem on low-income families and their children.

6. **Energy assistance programs should explore the utility of a home energy insecurity scale, such as the one proposed by the Division of Energy Assistance, the office within the U.S. Department of Health and Human Services that administers LIHEAP.**[10] Such a scale would allow energy assistance programs to assess initial and subsequent energy self-sufficiency of households before and after receipt of energy benefits, providing a useful evaluation of the impact of these benefits.

[vii] See Appendix III.

# Appendices

## I. Child Health Impact Assessment: Rationale and Methodology

Child health is inherently dependent on the social well-being of the family. Social or non-medical factors influence both the development of childhood disease and the severity of disease once it develops. Public health and health care are crucial vehicles for promoting child health and well-being. However, many of the social determinants of child health are not under the explicit purview of pediatricians or public health officials. Rather, there are many local, state and national agencies and departments that exert regulatory and programmatic control over these social determinants, and thus have a significant impact on child health. It is unclear to what extent these non-health related agencies consider the implications of their policies and regulations for child health and well-being.

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In order to make the relationship of public policy to child health, especially socially or economically vulnerable children, more comprehensible to policy makers, and the public, in the fall of 2004, the Department of Pediatrics at Boston Medical Center, Boston University School of Medicine convened an interdisciplinary, inter-institutional working group to develop a Child Health Impact Assessment strategy (CHIA). This working group, which includes representatives from Boston University School of Medicine, Boston University School of Public Health, Brandeis University, Children's Hospital, Boston, Harvard Medical School, Harvard School of Public Health and University of Massachusetts, Boston, discussed the need to provide a formal Child Health Impact Assessment on various policies being proposed in the Commonwealth of Massachusetts. A CHIA is conceptualized as analogous to an environmental impact assessment, which is a required step in any project that might have a direct or indirect impact on the environment. The goal of a CHIA is to provide a mechanism to evaluate the impacts and implications of policy, regulations and laws on children's health and well-being, with a particular focus on policy arenas outside the traditional realm of public health and health policy, including: education, housing and landlord/tenant laws, immigration and naturalization, criminal justice, and employment and income supports.

Drawing on the expertise of a wide range of stakeholders in the university as well as the public and private sectors of the Commonwealth, The CHIA Working Group is committed to carrying out health impact assessments on public policies that impact children's health and exacerbate health inequalities. The CHIA process involves a practical, inexpensive, timely review of research evidence, a policy appraisal with participation of key stakeholders, and a report to the Commonwealth on the findings of the research and analysis, with recommendations. After reviewing many health impact assessment models previously developed in Canada and Europe, the CHIA Working Group decided to modify the European policy Health Impact Assessment for its purpose.[99,100,101] Although the health impact assessment concept has been implemented abroad, it has only been used sporadically in the United States.[102,103]

## Child Health Impact Assessment - Pilot Analysis of the Massachusetts Rental Voucher Program

The CHIA Working Group recognized the need to demonstrate the utility and feasibility of the CHIA concept and therefore initiated a pilot analysis process. The criteria for the issue to be analyzed included: potential impact on children, availability of rigorous research and clinical data, saliency for policy makers and relevance to the Commonwealth. After careful review of potential topics, the CHIA Working Group chose as its first topic, affordable housing for the pilot analysis. The Working Group determined that highlighting the connections between affordable housing and child health and well-being would illustrate the function of a child health impact assessment. The CHIA Working Group's report, *Affordable Housing and Child Health: A Child Health Impact Assessment of the Massachusetts Rental Voucher Program*, was released in June 2005.

## Child Health Impact Assessment Methods

The goal of CHIA is to provide compelling, quantifiable, objective evidence to policymakers about the potential child health and well-being impacts of a policy, to influence the consideration of child health impacts in general, and to reduce negative impacts on child health in the Commonwealth. The CHIA analysis is based on previously collected data and best available scientific evidence. The type of data collected includes: academic and other research, government databases, advocacy websites, as well as interviews with key stakeholders.

During data collection, the CHIA working group collected evidence on LIHEAP, home energy costs and their effects on a child's basic needs including education, housing, food, access to health care, safety and stability, and the physical environment. A thorough literature search for appropriate evidence was conducted through Medline, PubMed, Web of Science, First Search, and Science Direct. The literature review was followed by extensive key stakeholder interviews to gather evidence from the experience, knowledge, opinions and perceptions of people with expert knowledge in the energy assistance area, including representatives of relevant national, state, and community government and non-profit agencies and advocacy groups. These interviews provided a broader picture of health determinants affected by energy assistance, including how stakeholders and experts think energy assistance impacts children's health outcomes and why. For an overview of themes from stakeholder interviews, see Appendix IV.

## II. Home Energy Insecurity Scale

The following questions were developed by the Division of Energy Assistance within the Administration for Children and Families, U.S. Department of Health and Human Services, to gauge energy self-sufficiency. [10] The responses to these questions are used to place families within the scale of energy self-sufficiency: **thriving, capable, stable, vulnerable, in-crisis.** The questions are meant to refer to the prior 12 months and have 3 possible responses: "often true", "sometimes true" and "never true."

1. I/We worried whether my/our home energy bill would become overdue before I/we could get money to pay it.

2. Our home energy bill became due, and I/we didn't have the money to pay it without somebody's help.

3. I/We couldn't afford to heat or cool our home to the temperature we wanted it to be, or to use our water or appliances to the extent we wanted to use them.

4. I/We reduced our energy consumption to uncomfortable or inconvenient levels because I was/we were running out of money to pay our home energy bill.

5. I/We could not use our entire home because we could not afford to heat or cool it.

6. In the last 12 months, did you ever leave your home for all or part of the day because there wasn't enough money for the home energy bill, or, did you ever turn off your hot water because there wasn't enough money for the home energy bill?

   6a. If Yes above - How often did one or the other of these happen -- almost every month, some months, but not every month, or only in 1 or 2 months?

7. In the last 12 months, did you ever not pay your home energy supplier because there wasn't enough money for the home energy bill?

   7a. If Yes above, How often did this happen -- almost every month, some months, but not every month, or only in 1 or 2 months?

8. In the last 12 months, did you ever use your kitchen stove or oven to provide heat because there wasn't enough money to pay your home heating bills?

   8a. If Yes above, How often did this happen -- almost every month, some months, but not every month, or only in 1 or 2 months?

9. In the last 12 months, did you ever reduce your expenses for what you consider to be basic household necessities because there was not enough money to pay for these and to pay your home energy bill?

   9a. If Yes above, How often did this happen -- almost every month, some months, but not every month, or only in 1 or 2 months?

10. In the last 12 months, did you have a supplier of your electric or home heating service threaten to disconnect your electricity or home heating fuel service, or discontinue making fuel deliveries because you could not afford to pay a past-due home energy bill?

    10a. If Yes above, How often did this happen -- almost every month, some months, but not every month, or only in 1 or 2 months?

11. In the past 12 months, did you have a supplier of your electricity or home heating fuel disconnect or discontinue your energy supply because you were unable to pay for a past - due home energy bill?

    11a. If Yes above, How often did this happen -- almost every month, some months, but not every month, or only in 1 or 2 months?

For additional information on how to use and score this scale, see the full report, *Measuring the Outcomes of Low-Income Energy Assistance Programs Through a Home Energy Insecurity Scale.*[10]

## III. National Energy Assistance Directors Association (NEADA) Template for Arrearage & Disconnection Data Collection

In a 2004 report, *Tracking the Home Energy Needs of Low-Income Households Through Trend Data on Arrearages and Disconnections* NEADA proposed the following 3 tiers of data collection that would allow states to make the case for emergency situations when they arise, enabling the release of additional LIHEAP funds.[9] Each of the higher tiers requires utility commissions commit progressively more resources.

| Tier | Availability | Data to be collected |
|---|---|---|
| 1 | Immediate with no additional resources | ▪ Total number of residential accounts<br>▪ Total number of residential accounts in arrears<br>▪ Total dollar amount of accounts in arrears<br>▪ Total number of residential disconnections |
| 2 | Available, but requires some additional time and resources | ▪ Total number of low-income residential accounts<br>▪ Total number of low-income residential accounts in arrears<br>▪ Total dollar amount of low-income accounts in arrears<br>▪ Total number of low-income residential disconnections |
| 3 | Helpful, but not essential to arguing for additional LIHEAP funds | ▪ Total number of residential accounts written off as uncollectible<br>▪ Total number of low-income residential accounts written off as uncollectible<br>▪ Total number of residential accounts having service restored<br>▪ Total number of low-income residential accounts having service restored<br>▪ Total number of residential accounts sent notice of disconnection<br>▪ Total number of low-income residential accounts sent notice of disconnection<br>▪ Total number of low-income customer deferred payment agreements |

Source: Tracking the Home Energy needs of Low-Income Households Through Trend Data on Arrearages and Disconnections, May 2004, NEADA.

## IV. Themes from Energy Assistance Stakeholder Interviews

From March to August 2006, the CHIA Energy Assistance Subcommittee interviewed a number of key stakeholders in the energy assistance field, including state and federal LIHEAP program officers, energy assistance program directors at Massachusetts community action agencies, and numerous energy advocates and researchers at the local, state, and federal levels. Below is a summary of central themes from these interviews.

### Federal LIHEAP Funding Level

There was general consensus that federal LIHEAP appropriations have not kept pace with rising energy prices. Energy directors at local community action agencies reported that most families receiving LIHEAP use up their benefits by January, two to three months before the winter heating season ends. Similarly, in the past, Massachusetts LIHEAP benefits were sufficient to buy three tanks of oil but now cover only one. To address these problems, some suggested that federal LIHEAP appropriations be tied directly to regional prices for fuel. Others noted that Congress has authorized up to $5.1 billion for LIHEAP, but only appropriated about $ 2 billion for FY2005 and FY2006.[94]

### Timing of Releasing Program Funds

Many remarked on the challenges posed by the annual fluctuation of program funding, and the delay of federal LIHEAP appropriations until late in the program year. Often the main federal LIHEAP appropriation is not finalized until January or much later, making it difficult for state LIHEAP officers to set benefit levels on October 1, the beginning of program year.

The delay in federal appropriations also poses a challenge to low-income families and the community action agencies that serve them. Staff from community action agencies provide families a number of services with the aim of increasing overall self-sufficiency, including job training and financial counseling. They emphasize the importance of budgeting year round for seasonal expenses, like home heating. Without knowing the LIHEAP benefit level, however, they are unable to provide concrete information to families on how much assistance they will receive, which makes it difficult for already struggling households to budget their expenses.

The release of federal contingency funds later in the program year, while a welcome boost in funding, also poses a challenge for the agencies that administer LIHEAP. Agency staff have to be aggressive in spending down these funds, tracking down LIHEAP recipients and vendors to pay down outstanding utility balances. If the state has contributed funds to LIHEAP, these funds are not spent until the federal dollars are expended. So the agencies are under pressure to spend down these contingency funds, which often come late in the program year, to make sure they can utilize state funds to obtain the maximum assistance for their clients.

### LIHEAP Eligibility and Certification

Energy directors reported that many families in need of energy assistance do not qualify for LIHEAP because of the income cut-offs for eligibility, which some stakeholders consider to be too low. Because the cost of living in Massachusetts is high relative to the rest of the country, some argue for basing eligibility on 60% of median state income, rather than federal poverty guidelines.

For those families who do qualify, certifying a household's application for LIHEAP can be a lengthy process, taking six weeks on average. The application requires documentation of four week's of income along with a utility bill. First time applicants must apply in-person at a community action agency or one of its designated satellite offices. To simplify this process,

some energy advocates support moving toward categorical eligibility, a system by which households eligible for public assistance programs such as Food Stamps for Temporary Assistance for Needy Families (TANF) would be automatically eligible for LIHEAP.

### Utility Arrearages

Many of those interviewed provided compelling evidence that low-income families' arrearages have increased dramatically over the past few years. There was consensus that an unprecedented number of families were facing unpaid utility bills, and that these arrearages were growing unmanageably large. One energy director reported that between 90 and 100% of her clients are in arrears, many owing $1,500 or more. There are a significant number of households who have large unpaid utility bills at the beginning of the heating season and use their entire LIHEAP benefit to pay down their arrearages and have their utility service reinstated. This leaves them with no LIHEAP assistance to pay the coming year's heating bills, ensuring that their arrearages will continue to grow.

While many stakeholders praised the creation of arrearage management programs, they also highlighted the limitations of these programs. Currently, the maximum amount that can be forgiven under an arrearage management program is $599; larger amounts would be considered income for the customer and would require tax documentation. Also, arrearage management requires budgeting and planning, and works best for households with variable incomes and some flexibility in how they spend their earnings. A family with a fixed income well below what they need to meet their basic needs will be unable to make sufficient adjustments in their household budget to meet the terms of the arrearage management plan.

In creating arrearage management programs, stakeholders emphasized that many of the Massachusetts utility companies have become crucial partners in addressing the challenges facing low-income households. The utilities have worked with energy advocates to create arrearage management programs. An additional suggestion for how utility companies can play an important role would be to make sure each utility has a designated, trained contact person who community action agencies and energy advocates can contact on behalf of their clients who are need of arrearage management.

### Overcoming Barriers to LIHEAP Participation

According to recent estimates, only 25% of eligible households receive LIHEAP benefits in Massachusetts.[1,98] Many stakeholders we interviewed believe that the actual proportion is higher because the number of eligible households is inflated by including households for whom energy assistance is unnecessary, such as those living in subsidized housing units where utilities are included in the rent, those living in nursing homes and similar institutions, and college students with little or no income.

Many stakeholders we interviewed reported that efforts to study barriers to LIHEAP participation in Massachusetts have been extensive, as have outreach efforts. However, there is still not a complete understanding of what prevents more eligible families from participating in LIHEAP. Some stakeholders cited a lack of awareness of the different types of energy assistance in Massachusetts as a potential barrier. A significant effort to change this is the Energy Bucks program, a collaboration between local utilities and energy and community advocates to raise awareness about energy assistance, utility discounts, and weatherization programs available to low-income Massachusetts families. Likewise, individual community action agencies reported considerable outreach efforts to increase LIHEAP participation, including distributing informational materials at schools, parent-teacher organizations, and local health fairs.

Despite these efforts, some acknowledged there are significant barriers to participation, especially for working families who are not accustomed to receiving assistance and who

may not realize they are eligible for the benefit. For working families with limited work flexibility, such as vacation leave, going to the office to apply may be difficult. Also, they may worry about the stigma of receiving assistance and are reluctant to ask for help.

Some stakeholders acknowledged the potential implications of increasing participation rates in a program that is not an entitlement program, and in which an increased number of participants would likely reduce the overall benefit level that could be offered to each household.

### Redefining the Purpose of LIHEAP

Stakeholders agreed that LIHEAP is a great program for those who need temporary assistance in paying for home heating due to unemployment or other financial difficulty. However, many noted that that it might be insufficient for those who are truly unable to pay even a portion of their energy bills. It is very difficult for low-income families on fixed incomes to absorb higher costs of home heating, even with the modest assistance provided by LIHEAP. Many stakeholders noted that home energy is a basic need, like food and shelter, and should be subsidized for very needy families. Because home energy is a basic need, many stakeholders also believe that LIHEAP should be an entitlement program, and not one that depends on annual appropriations.

## V. Local Agencies that Administer LIHEAP in Massachusetts

Action for Boston Community Development, Inc. (ABCD)
178 Tremont Street, Boston, MA 02111
(617) 357-6012

Action, Inc.
47 Washington Street, Gloucester, MA 01930
(978) 281-3900
1-800-696-9276 - Toll Free

Berkshire Community Action Council, Inc. (BCAC)
1531 East St., Pittsfield, MA 02101
(413) 445-4503 - Pittsfield
(413) 663-3014 - North Adams
(413) 528-1947 - Great Barrington

Citizens for Citizens (CFC)
264 Griffin St., Fall River, MA 02724
(508) 679-0041 - Fall River
(508) 823-6346 - Taunton
(508) 676-7397 Information

City of Cambridge, Department of Human Services
51 Inman St., Cambridge, MA 02139
(617) 349-6252

Community Action, Inc. (CAI)
25 Locust St., Haverhill, MA 01832
(978) 373-1971 - Haverhill
1-800-332-9004 - Toll Free

Community Action Program Intercity, Inc. (CAPIC)
100 Everett St., Unit 14, Chelsea, MA 02150
(617) 884-6130

Community Teamwork, Inc. (CTI)
517 Moody St., Lowell, MA 01854
(978) 459-6161 - Lowell
(781) 643-2358 - Arlington
1-877-451-1082 - Toll Free

Franklin Community Action Corporation (FCAC)
393 Main St., Greenfield, MA 01301
(413) 774-2310
1-800-370-0940 - Toll Free - Hampshire County

Greater Lawrence Community Action Council, Inc. (GLCAC)
350 Essex St., Lawrence, MA 01840
(978) 681-4950 - Lawrence
(781) 942-9061 - Reading
(978) 664-6011 - North Reading

Lynn Economic Opportunity, Inc. (LEO)
156 Broad St., Lynn, MA 01901
(781) 581-7220, ext. 283

New England Farm Workers Council (NEFWC)
435 Main Street, Suite 3040, Fitchburg, MA 01420
(978) 342-4520

North Shore Community Action Programs, Inc. (NSCAP)
98 Main St., Peabody, MA 01960
(978) 531-8810 Information only
(978) 531-0767, ext. 136

People Action in Community Endeavors Inc. (PACE)
166 Williams St., New Bedford, MA 02740
(508) 999-9920

Quincy Community Action Programs, Inc. (QCAP)
1509 Hancock Street, 3rdFloor, Quincy, MA 02169
(617) 479-8181 x101

Self Help, Inc. (SHI)
Fagan Drive, Avon, MA 02322
(508) 588-5440 - Avon
(508) 584-1414 - Brockton
(508) 226-4192 - Attleboro
1-800-255-0875 - Toll Free

South Middlesex Opportunity Council, Inc. (SMOC)
300 Howard St., Framingham, MA 01701
(508) 620-1230 - Framingham
1-800-286-6776 - Toll Free outside Framingham

So. Shore Community Action Council, Inc. (SSCAC)
265 So. Meadow Road, Plymouth, MA 02360
(508) 747-7575 x210 - Plymouth
(508) 778-0870 - Hyannis (Nov - April)
(508) 746-6707 Information only

Tri-City Community Action Programs, Inc. (TRICAP)
341A Forest Street, Malden, MA 02148
(781) 322-6284

Valley Opportunity Council (VOC)
300 High St., Holyoke, MA 01040
(413) 552-1548

Worcester Community Action Council, Inc. (WCAC)
484 Main St., 2nd Floor, Worcester, MA 01608
(508) 754-1176 x110 - Worcester
1-800-545-4577 - Toll Free

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Date: 02-Jul-08
Time: 03:14 PM

Calculation of Monthly Typical Bill
Comparison of Present and Proposed Rates
Impact on A-16 Rate Customers

| Monthly kWh | Present Rates Total | Present Rates Standard Offer | Present Rates Delivery | Proposed Rates Total | Proposed Rates Standard Offer | Proposed Rates Delivery | Increase/(Decrease) Amount | Increase/(Decrease) % of Total | Percentage of Custs |
|---|---|---|---|---|---|---|---|---|---|
| 120 | $20.61 | $11.61 | $9.00 | $24.61 | $15.61 | $9.00 | $4.00 | 19.4% | 9.0% |
| 240 | $38.34 | $23.21 | $15.13 | $46.34 | $31.21 | $15.13 | $8.00 | 20.9% | 15.7% |
| 500 | $76.77 | $48.35 | $28.42 | $93.44 | $65.02 | $28.42 | $16.67 | 21.7% | 38.2% |
| 700 | $106.34 | $67.70 | $38.64 | $129.67 | $91.03 | $38.64 | $23.33 | 21.9% | 20.2% |
| 950 | $143.28 | $91.87 | $51.41 | $174.95 | $123.54 | $51.41 | $31.67 | 22.1% | 14.6% |
| 1,000 | $150.68 | $96.71 | $53.97 | $184.01 | $130.04 | $53.97 | $33.33 | 22.1% | 2.3% |

| Present Rates: A-16 | | |
|---|---|---|
| Customer Charge | | $2.75 |
| Transmission Energy Charge | kWh x | $0.00977 |
| Distribution Energy Charge | kWh x | $0.03377 |
| Transition Energy Charge | kWh x | $0.00322 |
| C&LM Adjustment | kWh x | $0.00230 |
| Gross Earnings Tax | | 4.00% |
| Standard Offer Charge (1) | kWh x | $0.09284 |

| Proposed Rates: A-16 | | |
|---|---|---|
| Customer Charge | | $2.75 |
| Transmission Energy Charge | kWh x | $0.00977 |
| Distribution Energy Charge | kWh x | $0.03377 |
| Transition Energy Charge | kWh x | $0.00322 |
| C&LM Adjustment | kWh x | $0.00230 |
| Gross Earnings Tax | | 4.00% |
| Standard Offer Charge (2) | kWh x | $0.12484 |

Note (1): Includes Standard Offer of $0.092/kWh and Renewable Energy Standard Charge of $0.00084/kWh
Note (2): Includes Standard Offer of $0.124/kWh and Renewable Energy Standard Charge of $0.00084/kWh

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Date: 02-Jul-08
Time: 03:14 PM

Calculation of Monthly Typical Bill
Comparison of Present and Proposed Rates
Impact on A-60 Rate Customers - Winter (December through March)
Without Control Credit for Water Heater

| Monthly kWh | Present Rates Total | Present Rates Standard Offer | Present Rates Delivery | Proposed Rates Total | Proposed Rates Standard Offer | Proposed Rates Delivery | Increase/(Decrease) Amount | Increase/(Decrease) % of Total |
|---|---|---|---|---|---|---|---|---|
| 100 | $11.56 | $9.67 | $1.89 | $14.89 | $13.00 | $1.89 | $3.33 | 28.8% |
| 200 | $23.12 | $19.34 | $3.78 | $29.79 | $26.01 | $3.78 | $6.67 | 28.8% |
| 300 | $34.68 | $29.01 | $5.67 | $44.68 | $39.01 | $5.67 | $10.00 | 28.8% |
| 500 | $59.18 | $48.35 | $10.83 | $75.85 | $65.02 | $10.83 | $16.67 | 28.2% |
| 750 | $95.05 | $72.53 | $22.52 | $120.05 | $97.53 | $22.52 | $25.00 | 26.3% |
| 1250 | $166.51 | $120.89 | $45.62 | $208.17 | $162.55 | $45.62 | $41.66 | 25.0% |

| Present Rates: A-60 | | | Proposed Rates: A-60 | | |
|---|---|---|---|---|---|
| Customer Charge | | $0.00 | Customer Charge | | $0.00 |
| Transmission Energy Charge | kWh x | $0.00879 | Transmission Energy Charge | kWh x | $0.00879 |
| Initial Block Energy Charge (1st 450 kWh) | kWh x | $0.00382 | Initial Block Energy Charge (1st 450 kWh) | kWh x | $0.00382 |
| Second Block Energy Charge (next 750 kWl | kWh x | $0.03055 | Second Block Energy Charge (next 750 kWl | kWh x | $0.03055 |
| Tail Block Energy Charge | kWh x | $0.02548 | Tail Block Energy Charge | kWh x | $0.02548 |
| Transition Energy Charge | kWh x | $0.00322 | Transition Energy Charge | kWh x | $0.00322 |
| C&LM Adjustment | kWh x | $0.00230 | C&LM Adjustment | kWh x | $0.00230 |
| Gross Earnings Tax | | 4.00% | Gross Earnings Tax | | 4.00% |
| Standard Offer Charge (1) | kWh x | $0.09284 | Standard Offer Charge (2) | kWh x | $0.12484 |

Note (1): Includes Standard Offer of $0.092/kWh and Renewable Energy Standard Charge of $0.00084/kWh
Note (2): Includes Standard Offer of $0.124/kWh and Renewable Energy Standard Charge of $0.00084/kWh

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Date: 02-Jul-08
Time: 03:14 PM

Calculation of Monthly Typical Bill
Comparison of Present and Proposed Rates
Impact on A-60 Rate Customers - Winter (December through March)
With Control Credit for Water Heater

| Monthly kWh | Present Rates Total | Present Rates Standard Offer | Present Rates Delivery | Proposed Rates Total | Proposed Rates Standard Offer | Proposed Rates Delivery | Increase/(Decrease) Amount | Increase/(Decrease) % of Total |
|---|---|---|---|---|---|---|---|---|
| 100 | $11.42 | $9.67 | $1.75 | $14.75 | $13.00 | $1.75 | $3.33 | 29.2% |
| 200 | $22.84 | $19.34 | $3.50 | $29.51 | $26.01 | $3.50 | $6.67 | 29.2% |
| 300 | $34.26 | $29.01 | $5.25 | $44.26 | $39.01 | $5.25 | $10.00 | 29.2% |
| 500 | $58.50 | $48.35 | $10.15 | $75.17 | $65.02 | $10.15 | $16.67 | 28.5% |
| 750 | $94.02 | $72.53 | $21.49 | $119.02 | $97.53 | $21.49 | $25.00 | 26.6% |
| 1250 | $165.48 | $120.89 | $44.59 | $207.14 | $162.55 | $44.59 | $41.66 | 25.2% |

| Present Rates: A-60 | | |
|---|---|---|
| Customer Charge | | $0.00 |
| Transmission Energy Charge | kWh x | $0.00879 |
| Initial Block Energy Charge (1st 450 kWh) | kWh x | $0.00382 |
| Second Block Energy Charge (next 750 kWl | kWh x | $0.03055 |
| Tail Block Energy Charge | kWh x | $0.02548 |
| Transition Energy Charge | kWh x | $0.00322 |
| C&LM Adjustment | kWh x | $0.00230 |
| Water Heating Credit (1st 750 kWhs) | kWh x | -$0.00132 |
| Gross Earnings Tax | | 4.00% |
| Standard Offer Charge (1) | kWh x | $0.09284 |

| Proposed Rates: A-60 | | |
|---|---|---|
| Customer Charge | | $0.00 |
| Transmission Energy Charge | kWh x | $0.00879 |
| Initial Block Energy Charge (1st 450 kWh) | kWh x | $0.00382 |
| Second Block Energy Charge (next 750 kWl | kWh x | $0.03055 |
| Tail Block Energy Charge | kWh x | $0.02548 |
| Transition Energy Charge | kWh x | $0.00322 |
| C&LM Adjustment | kWh x | $0.00230 |
| Water Heating Credit (1st 750 kWhs) | kWh x | -$0.00132 |
| Gross Earnings Tax | | 4.00% |
| Standard Offer Charge (2) | kWh x | $0.12484 |

Note (1): Includes Standard Offer of $0.092/kWh and Renewable Energy Standard Charge of $0.00084/kWh
Note (2): Includes Standard Offer of $0.124/kWh and Renewable Energy Standard Charge of $0.00084/kWh

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Date: 02-Jul-08
Time: 03:14 PM

Calculation of Monthly Typical Bill
Comparison of Present and Proposed Rates
Impact on A-60 Rate Customers - Non-Winter (April through November)
Without Control Credit for Water Heater

| Monthly kWh | Present Rates Total | Present Rates Standard Offer | Present Rates Delivery | Proposed Rates Total | Proposed Rates Standard Offer | Proposed Rates Delivery | Increase/(Decrease) Amount | Increase/(Decrease) % of Total |
|---|---|---|---|---|---|---|---|---|
| 100 | $11.56 | $9.67 | $1.89 | $14.89 | $13.00 | $1.89 | $3.33 | 28.8% |
| 200 | $23.12 | $19.34 | $3.78 | $29.79 | $26.01 | $3.78 | $6.67 | 28.8% |
| 300 | $34.68 | $29.01 | $5.67 | $44.68 | $39.01 | $5.67 | $10.00 | 28.8% |
| 500 | $59.18 | $48.35 | $10.83 | $75.85 | $65.02 | $10.83 | $16.67 | 28.2% |
| 750 | $95.05 | $72.53 | $22.52 | $120.05 | $97.53 | $22.52 | $25.00 | 26.3% |
| 1250 | $166.77 | $120.89 | $45.88 | $208.43 | $162.55 | $45.88 | $41.66 | 25.0% |

| Present Rates: A-60 | | |
|---|---|---|
| Customer Charge | | $0.00 |
| Transmission Energy Charge | kWh x | $0.00879 |
| Initial Block Energy Charge (1st 450 kWh) | kWh x | $0.00382 |
| Tail Block Energy Charge | kWh x | $0.03055 |
| Transition Energy Charge | kWh x | $0.00322 |
| C&LM Adjustment | kWh x | $0.00230 |
| Gross Earnings Tax | | 4.0% |
| Standard Offer Charge (1) | kWh x | $0.09284 |

| Proposed Rates: A-60 | | |
|---|---|---|
| Customer Charge | | $0.00 |
| Transmission Energy Charge | kWh x | $0.00879 |
| Initial Block Energy Charge (1st 450 kWh) | kWh x | $0.00382 |
| Tail Block Energy Charge | kWh x | $0.03055 |
| Transition Energy Charge | kWh x | $0.00322 |
| C&LM Adjustment | kWh x | $0.00230 |
| Gross Earnings Tax | | 4.0% |
| Standard Offer Charge (2) | kWh x | $0.12484 |

Note (1): Includes Standard Offer of $0.092/kWh and Renewable Energy Standard Charge of $0.00084/kWh
Note (2): Includes Standard Offer of $0.124/kWh and Renewable Energy Standard Charge of $0.00084/kWh

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Date: 02-Jul-08
Time: 03:14 PM

Calculation of Monthly Typical Bill
Comparison of Present and Proposed Rates
Impact on A-60 Rate Customers - Non-Winter (April through November)
With Control Credit for Water Heater

| Monthly kWh | Present Rates Total | Present Rates Standard Offer | Present Rates Delivery | Proposed Rates Total | Proposed Rates Standard Offer | Proposed Rates Delivery | Increase/(Decrease) Amount | Increase/(Decrease) % of Total |
|---|---|---|---|---|---|---|---|---|
| 100 | $11.42 | $9.67 | $1.75 | $14.75 | $13.00 | $1.75 | $3.33 | 29.2% |
| 200 | $22.84 | $19.34 | $3.50 | $29.51 | $26.01 | $3.50 | $6.67 | 29.2% |
| 300 | $34.26 | $29.01 | $5.25 | $44.26 | $39.01 | $5.25 | $10.00 | 29.2% |
| 500 | $58.50 | $48.35 | $10.15 | $75.17 | $65.02 | $10.15 | $16.67 | 28.5% |
| 750 | $94.02 | $72.53 | $21.49 | $119.02 | $97.53 | $21.49 | $25.00 | 26.6% |
| 1250 | $165.74 | $120.89 | $44.85 | $207.40 | $162.55 | $44.85 | $41.66 | 25.1% |

Present Rates: A-60

| | | |
|---|---|---|
| Customer Charge | | $0.00 |
| Transmission Energy Charge | kWh x | $0.00879 |
| Initial Block Energy Charge (1st 450 kWh) | kWh x | $0.00382 |
| Tail Block Energy Charge | kWh x | $0.03055 |
| Transition Energy Charge | kWh x | $0.00322 |
| C&LM Adjustment | kWh x | $0.00230 |
| Water Heating Credit (1st 750 kWhs) | kWh x | -$0.00132 |
| Gross Earnings Tax | | 4.0% |
| Standard Offer Charge (1) | kWh x | $0.09284 |

Proposed Rates: A-60

| | | |
|---|---|---|
| Customer Charge | | $0.00 |
| Transmission Energy Charge | kWh x | $0.00879 |
| Initial Block Energy Charge (1st 450 kWh) | kWh x | $0.00382 |
| Tail Block Energy Charge | kWh x | $0.03055 |
| Transition Energy Charge | kWh x | $0.00322 |
| C&LM Adjustment | kWh x | $0.00230 |
| Water Heating Credit (1st 750 kWhs) | kWh x | -$0.00132 |
| Gross Earnings Tax | | 4.0% |
| Standard Offer Charge (2) | kWh x | $0.12484 |

Note (1): Includes Standard Offer of $0.092/kWh and Renewable Energy Standard Charge of $0.00084/kWh
Note (2): Includes Standard Offer of $0.124/kWh and Renewable Energy Standard Charge of $0.00084/kWh

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

At a session of the Public Service Commission held in the City of Albany on April 18, 2007

COMMISSIONERS PRESENT:

Patricia L. Acampora, Chairwoman
Maureen F. Harris
Robert E. Curry, Jr.
Cheryl A. Buley

CASE 03-E-0640 - Proceeding on Motion of the Commission to Investigate Potential Electric Delivery Rate Disincentives Against the Promotion of Energy Efficiency, Renewable Technologies and Distributed Generation.

CASE 06-G-0746 - In the Matter of the Investigation of Potential Gas Delivery Rate Disincentives Against the Promotion of Energy Efficiency, Renewable Technologies and Distributed Generation.

# ORDER REQUIRING PROPOSALS FOR REVENUE DECOUPLING MECHANISMS

(Issued and Effective April 20, 2007)

BY THE COMMISSION:

## SUMMARY

Programs that promote cost-effective energy conservation, increase the use of renewable resources and otherwise reduce or eliminate barriers to the installation of distributed generation can reduce pollution, conserve natural resources, decrease dependence on foreign sources of fossil-fuels, promote price stability, improve fuel diversity, and create significant cost savings opportunities for customers. Energy efficiency improvements, in particular, limit unnecessary

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load growth and can avoid or delay installation of costly, new distribution, transmission or generation facilities.

These proceedings were instituted to examine potential delivery rate disincentives against the utilities' promotion of energy efficiency, renewable technologies and distributed generation. They are undertaken as part of an overall State program to facilitate customer access to existing and developing technologies for the clean production and/or conservation of energy. In addition to this proceeding, this Commission is engaged in a comprehensive program for enabling efficiency and alternative resources, including adopting mandatory hourly pricing for the State's largest customers; directing utilities to consider and implement advanced metering for customer classes as appropriate; implementing renewable energy, efficiency and energy research and development programs; encouraging the cost effective use of customer-owned electric generation, and providing more accurate price signals to customers.

While significant progress has been made by the utilities in shifting recoveries of utility fixed delivery costs from volumetric rates or marginal consumption blocks to fixed charges or initial consumption blocks, concerns remain that, for at least some classes of customers, existing rate designs still may discourage utilities from actively promoting energy efficiency, renewable technologies and distributed generation. To the degree that utility fixed delivery costs are recovered from customers on a volumetric or marginal consumption basis, there remains a net lost revenue and profit effect that could act as a disincentive. In furtherance of the State's energy policy objectives, there is a need to identify the degree to which this may be the case at each of the utilities and to identify appropriate remedies.

In this Order, we require utilities to develop and implement mechanisms that true-up forecast and actual delivery service revenues and, as a result, significantly reduce or

eliminate any disincentives caused by the recovery of utility fixed delivery costs via volumetric rates or marginal consumption blocks. These revenue decoupling proposals should be filed in ongoing and new rate cases, whereby the utilities, Department of Public Service staff (Staff) and interested parties can address specific design details.

## PROCEDURAL BACKGROUND

Case 03-E-0640 was instituted by an Order[1] issued on May 2, 2003. An all-party technical conference was held in that proceeding on June 16, 2003. Thereafter, on September 22, 2003, the electric utilities submitted "typical bill" analyses highlighting the relationship between fixed charges and the potential for lost revenues. Comments were received on October 10, 2003, and reply comments were received on November 7, 2003. On July 9, 2004, Staff submitted a Staff Report. Comments on the Staff Report were received on July 29, 2004. On June 26, 2006, a Notice[2] was issued that the Commission was expanding the inquiry to gas utilities, in Case 06-G-0746, and soliciting additional comments. A Notice of Proposed Rulemaking concerning each of the two proceedings was published in the State Register on July 12, 2006 in accordance with the State Administrative Procedure Act. The minimum period for the receipt of public comments expired on August 28, 2006. Initial comments were received on August 28, 2006 from Brooklyn Union Gas Company d/b/a KeySpan Energy Delivery New York and KeySpan Gas East Corporation d/b/a KeySpan Energy Delivery Long Island (KeySpan), Central Hudson Gas & Electric Corporation (Central Hudson), the City of New York (NYC), Consolidated Edison Company of New York,

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[1] Case 03-E-0640, supra, Order Instituting Proceeding (issued May 2, 2003).

[2] Case 06-G-0746, supra, Notice Soliciting Comments (issued June 26, 2006).

Inc. and Orange and Rockland Utilities (Con Edison/O&R), Consolidated Edison Solutions (Con Ed Solutions), Multiple Intervenors (MI), National Fuel Gas Distribution Corporation (NFG), Natural Resources Defense Council and Pace Energy Project (NRDC/Pace), New York Energy Consumers Council, Inc. (NYECC), New York Municipal Power Agency (NYMPA), New York Power Authority (NYPA), New York State Consumer Protection Board (CPB), New York State Department of Environmental Conservation (DEC), New York State Electric & Gas Corporation and Rochester Gas and Electric (NYSEG/RG&E), New York State Energy Research and Development Authority (NYSERDA), Niagara Mohawk Power Corporation d/b/a National Grid (National Grid), Nucor Steel Auburn, Inc. (Nucor), Office of the New York State Attorney General (AG), and Public Utility Law Project (PULP). Reply comments were received on September 11, 2006 from Con Edison/O&R, MI, National Grid, NFG, NRDC/Pace, and NYSEG/RG&E. The most recent set of comments is summarized in Appendices A and B attached to this Order.

## DISCUSSION

As the Commission noted in the Order Instituting Proceeding in Case 03-E-0640:

> In an effort to reverse a growing dependence on foreign oil in the 1970s and the ineffectual supply side planning strategies in the 1970s and 1980s preferring development of large-scale power production facilities that were subject to protracted construction schedules and significant uncontrolled cost escalations, the Commission instituted "integrated resource planning" policies. These policies required utilities to integrate consideration of demand side options on an equal footing with supply side options to arrive at "least cost" planning solutions. To that end, the electric utilities were directed[3] to encourage their retail customers' to participate in utility-sponsored end-use energy efficiency and peak-load

[3] Case 29409, Plans for Meeting Future Electricity Needs in New York State, Opinion No. 88-20 (issued July 26, 1988).

reduction demand side management programs.

> The implementation of load reduction initiatives meant a corresponding reduction in electric sales revenues and profits for utilities, putting the financial interests of electric utility shareholders at odds with their customers' interests. In order to re-align those interests, the Commission adopted various alternative ratemaking models, combining sales revenue adjustments with outright financial incentive payments to utilities, in essence giving utilities a share of the savings resulting from demand reductions to offset lost revenues and profits.
>
> When the Commission decided to restructure the electric market to wholesale and retail competition, utility-sponsored demand side management programs were largely discontinued, along with the alternative ratemaking models. In their place, demand side and renewable energy projects are now implemented through NYSERDA programs funded by a System Benefits Charge collected from delivery utility customers. The electric delivery function remains a regulated monopoly service.

Although energy markets have been restructured, the Commission has continued to support energy efficiency and peak demand reduction programs, renewable technologies and distributed generation options, and provide to utilities and end-users incentives to pursue such opportunities. For example, the electric System Benefits Charge (SBC) provides funding, currently $175 million per year, and a framework for the delivery of energy efficiency and other public benefit programs. Administration of customer end-use energy efficiency programs is delegated to the New York State Energy Research and Development Authority (NYSERDA), in effect, reducing the utilities' potential internal conflict between sales growth and the promotion of programs or technologies that reduce sales. A second major initiative, the Renewable Portfolio Standard (RPS), was established by the Commission in 2004 and is an aggressive long-term procurement program for acquiring electricity from renewable resources.

Other initiatives undertaken by the Commission in its efforts to remove hurdles to the adoption of energy efficiency,

renewable energy and distributed generation include: promulgation of streamlined interconnection rules for distributed generation; establishment of special natural gas delivery rates to encourage development of distributed generation; institution of a proceeding to promote distributed generation options; establishment of the Environmental Disclosure program upon which "green" marketing is based; support for the New York State Independent System Operator (NYISO) demand reduction initiatives; and several utility-specific energy efficiency programs. Also, the establishment of electric standby delivery rate structures for customers pursuing their own distributed generation installations has done much to encourage utility support for cost effective behind-the-meter electricity production by such facilities.

To the extent the current design of delivery service rates continues to link the recovery of utility fixed costs, including profits, to the volume of actual sales, utility disincentives remain. Energy efficiency programs designed to conserve energy reduce electric utility sales and corresponding delivery revenues relative to what they would have otherwise been.[4] Similarly, customer-sited renewable resource technologies[5] and the installation of distributed generation technologies reduce electric utility sales and corresponding revenues, by replacing utility sales with customer-generated power.

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[4] Delivery rate designs do not generally provide a significant financial disincentive to the promotion of load-shifting type energy efficiency programs which can be distinguished from energy conservation type energy efficiency programs.

[5] Delivery rate designs do not generally provide a significant financial disincentive to the promotion of wholesale purchases of power from renewable resources which can be distinguished from customer-sited PV, wind and biogas technologies.

Mechanisms have been established and implemented that attempt to break the link between utility sales and revenues. These include incorporating anticipated energy efficiency and price elasticity effects into rate case forecasts, excluding profits from dual-fueled load in gas utility revenue requirements, and employing weather normalization clauses that decouple the effects of weather on firm gas sales load.

Utilities can also petition for recovery of verified net lost revenues resulting from participation in demand response and energy efficiency programs. However, program-specific lost revenue mechanisms can be complex and challenging, both in design and implementation, as well as verification of actual net lost revenues associated with specific energy efficiency or demand response programs. The more programs a utility offers, the more complex and potentially inaccurate the mechanism could become. Further, lost revenue mechanisms may not address lost revenues attributable to policies and technologies not associated with specific utility-supported efficiency programs.

The implementation of fully cost-based rates is another means of eliminating utility disincentives. However, the rapid effectuation of such rate design approaches, especially for mass market customers, could result in significant bill impacts and potential customer harm. Additionally, in the short-term, the immediate reduction of current energy charges could diminish the incentive for certain higher use customers to conserve energy, since the potential bill savings would be reduced.

A revenue decoupling mechanism (RDM) is a ratemaking approach designed to eliminate or substantially reduce the linkage between sales and utility revenues and/or profits. An RDM is used because existing utilities' delivery rate designs are, in most cases, not "optimal" in that they do not always

collect fixed costs through fixed charges and variable costs through variable charges. RDMs remove the disincentive a utility has to promote energy conservation by removing the link between sales and profits. Mechanically, RDMs function by comparing actual versus authorized revenues or revenues per customer and either crediting or collecting any differences from customers in a subsequent period. This true-up would include, among other things, any net lost revenues attributable to the implementation of energy efficiency programs. The true-up should occur no less frequently than once per year.

New York has experience using revenue decoupling mechanisms to achieve two primary objectives: to remove utility opposition to customer investments and efforts to reduce energy consumption; and to reduce the risk to utilities of lost fixed cost revenue recoveries, such as during multi-year rate plans, or for utilities facing significant financial challenges. While such measures alone may not produce demonstrable increases in the utilities' promotion of energy efficiency, they can be an effective tool in reducing utilities' resistance to the implementation and promotion of such programs.

There are a number of design and implementation issues that would need to be considered in the development of an effective revenue decoupling mechanism. These include: whether the mechanism is applied to all or only some customer classes; whether allowed revenues are calculated on a per customer basis (i.e., encourage economic development by allowing utilities to collect revenues for new customers); which indices (e.g., inflation, productivity), if any, are incorporated in the mechanism; and whether to include or exclude weather related sales fluctuations. The frequency and allowed level of true-up would also need to be considered to avoid amassing significant revenue deferrals. The intent should be to avoid the

accumulation of large liabilities and the ensuing bill impacts and general price instability for ratepayers.

Disincentives Due to Delivery Rate Designs

A number of parties, including Keyspan, NFG, AG and NRDC/Pace, claim that existing gas and electric utility delivery rates do, in some cases, result in the recovery of a portion of the utilities' fixed costs through volumetric charges, thereby linking utility profits to volumetric sales. National Grid specifically notes that a ten percent reduction in gas sales correlates to a loss of delivery revenues of approximately three percent for residential classes and approximately six and a half percent for small commercial classes. Accordingly, many parties believe that since energy efficiency programs and the installation of customer sited renewable technologies or distributed generation will ultimately reduce sales, the inherent link between sales and revenues could provide a disincentive for utilities to actively promote such programs. Some parties claim that this has been evidenced by various utility behaviors including opposition to net metering, appliance energy efficiency standards, the system benefits charge program, and distributed generation.

Existing utilities' delivery rate designs are, in most cases, not theoretically optimal, in that they do not generally fully collect fixed costs through fixed charges or initial consumption blocks, and variable costs through variable charges. The parties' arguments are convincing that these suboptimal rate designs may provide utilities with a disincentive to promote programs that would result in lower sales and, therefore, lower revenues. MI argues that the disincentive toward the utilities' promotion of energy efficiency, renewable generation resources and distributed generation has been diminished as a result of restructuring - including the adoption of rate unbundling, the

establishment of the System Benefits Charge, the Renewable Portfolio Standard, and the New York Independent System Operator demand response programs. However, the distribution rate disincentive remains. This remaining disincentive can be addressed in a number of ways, including the implementation of cost-based rates, but there is no perfect solution. Some parties, including CPB and NRDC/Pace, argue that moving more fixed costs into fixed charges could increase bills for low income and low usage customers, and reduce the appropriate response to prices by others. MI argues, on the other hand, that fully cost-based, time-differentiated rates, provide the most accurate price signals and will ultimately provide the greatest benefits to New York consumers. Given the potential harm to certain customers resulting from too rapid an implementation of more cost-based rate designs, and recognizing the time required for their development and implementation, we believe it is now more appropriate to implement a true-up based revenue decoupling mechanism which would establish certainty with respect to utility revenues regardless of the level of commodity sales realized. It is still a worthy long-term objective to continue moving towards more cost-based rates, where appropriate, to provide customers with appropriate price signals. But such long-term rate redesign objectives do not obviate the current need for a more broad-based revenue decoupling approach.

With respect to the different customer classes and whether the rate design impacts are more prominent for certain classes than others, we recognize that more movement toward fully cost-based rates has been or can more easily be accommodated within the larger commercial and industrial classes, thereby largely breaking the link between utility sales and profits attributable to these customers. On the other hand, lost revenue and profits due to reduced sales can be significant

for residential and small commercial classes. On the electric side, in large part due to the absence of demand meters for these smaller customers, a much more substantial portion of "fixed" distribution delivery costs, in general, continue to be recovered in volumetric charges. On the gas side, delivery rates continue to be predominantly volumetric. KeySpan notes that between 50 percent and 75 percent of its margin is recovered through the tail block rate and penultimate block and less than 50 percent of its minimum cost to serve is recovered through its minimum charge.

Delivery Rate Redesign

National Grid and Con Edison/O&R support the application of standby rate design principles set forth by the Commission in designing cost-based rates for all customer classes in general. The utilities, along with other parties, recommend that interested parties be afforded the opportunity to consider specific rate design proposals and bill impacts on customers within service classifications before the implementation of revised rate structures. Other parties assert that standby ratemaking principles should not be applied generally to all utility rate classes. Central Hudson claims that the standby rate design principles are not generally applicable to other service classifications since standby service customers have different load shapes and impose costs on the utility in a different manner. NRDC/Pace claims that the implementation of standby rates does not address utility lost revenues and disincentives since customers would have an incentive to reduce their contract and as-used demands. KeySpan claims that the standby rate principles do not resolve the issues for gas utilities since most gas utilities do not use demand meters. However, Keyspan states that cost-based rate designs that collect more fixed costs through the minimum charge and head block would minimize lost revenues attributable to

energy efficiency measures.

Regarding the timing of rate redesign changes and interim steps, National Grid, Con Edison/O&R, Central Hudson and NYSEG/RG&E generally suggest that rate changes, including the implementation of a revenue decoupling mechanism, be addressed in a rate case, and that such changes not be made in the interim. KeySpan and National Fuel claim that a revenue decoupling mechanism, once designed, could be implemented in a relatively short time period and without a major rate change. NRDC/Pace suggests that each electric and gas utility be required to include a revenue decoupling mechanism in its next rate case but also be allowed to request implementation sooner. MI indicates that, if a revenue decoupling mechanism is adopted, all industrial and large commercial customers should be exempt. Several parties recommend a collaborative process for addressing either or both utility delivery rate redesign as well as revenue decoupling mechanism design and implementation.

With respect to various delivery rate design initiatives already underway, some parties support the continued movement toward time-differentiated rates and interval metering. As stated previously, we agree that these initiatives have merit. A number of parties further suggested that a true-up based delivery service revenue decoupling mechanism, alone or in conjunction with rate design changes, would realign utility incentives to support energy efficiency, renewable technologies and distributed generation. We agree, and find that the development of a delivery service revenue decoupling mechanism

beyond the adoption of more cost-based rates to address existing delivery rate disincentives is appropriate.

We believe that the proper forum for designing an appropriate delivery service revenue decoupling mechanism is in utility rate cases. Various parties have had experience with revenue decoupling mechanisms, and have presented some suggested design criteria and principles in this proceeding. Sharing this and other information with all interested parties in the context of a utility rate case would be beneficial and most expedient.

With respect to utility delivery rate redesign, we believe that the utilities are best suited, at this time, to examine existing rate designs and propose necessary changes as appropriate. We remain committed, however, to the continued implementation of cost-based hourly pricing tariffs for commodity service where appropriate, especially for larger commercial and industrial energy users.

Low Usage/Low Income

NRDC/Pace and CPB state that rate redesign that shifts fixed costs into fixed charges could be harmful to low usage or low income customers. NYSEG/RG&E point out that there is not a clear link between low income and low usage and that no special treatment is necessary, given that low income programs are already in place. National Grid, Con Edison/O&R, Keyspan, NFG, AG and other parties support targeted approaches to addressing the impacts of rate redesign or the implementation of a revenue decoupling mechanism on low income customers. They cite low income programs, including targeted energy efficiency and weatherization programs. Some parties also note that, to the extent that the implementation of a revenue decoupling mechanism results in the expansion of energy efficiency programs, low income customers may benefit in the long run.

We agree that a rapid shift of fixed costs from volumetric to fixed customer charges could especially harm low

usage and low income customers. While a targeted approach to addressing potential bill impacts on low income customers would help mitigate those impacts, our preference at this time is not to pursue such a rapid shift of fixed costs from volumetric to customer charges. We do recognize, however, that low income programs may need to be expanded and energy efficiency programs further targeted, in any case, regardless of the decoupling approach adopted.

Revenue Decoupling Mechanism Design

The parties suggest very divergent approaches to the development of a revenue decoupling mechanism. Some propose targeted mechanisms that account for lost revenues attributable to only specific energy efficiency or demand management programs while other parties propose more comprehensive mechanisms. Consequently, parties have suggested a number of design variables that should be considered. With respect to implementation of a revenue decoupling mechanism, some parties recommend that both the design and implementation occur in the context of individual utility rate cases. NRDC/PACE recommend that generic guidelines be established through a collaborative process.

Given the need to move expeditiously in addressing remaining disincentives to the implementation of energy efficiency and public benefit programs, we support the proposal of the parties recommending that both the design and implementation takes place in the context of individual utility rate cases.

Allowed Rate-of-Return Changes

The commenting parties generally agree that the extent to which the implementation of a revenue decoupling mechanism should affect a utility's allowed rate of return is better addressed in individual rate proceedings. Parties point out that while decoupling of utility sales and delivery revenues

shifts some business risk from the utility to customers, without examining the specific delivery revenue design mechanism in conjunction with other factors and terms of a given rate plan, it is unclear to what extent, if any, utility risk is affected.

We agree that the effect of a delivery service revenue decoupling mechanism on utility rate of return should be considered, to the extent appropriate, along with other factors, in the context of individual rate proceedings.

Conclusion

The public benefits resulting from energy efficiency programs, renewable technologies and distributed generation could be substantial. Nevertheless, a link continues to exist between utility sales and delivery service revenues, due to the current design of utility delivery rates, which could influence utility behavior by providing disincentives that impede their promotion of these initiatives. Rate design changes can significantly reduce such utility disincentives, but are often effectuated gradually due to customer bill impact concerns. While the eventual implementation of more cost-based rate designs remains an important long-term objective, especially for larger more price responsive customers, it appears that properly designed revenue decoupling mechanisms are needed at this time to address disincentives that may still exist, given present delivery service rate designs.

Therefore, we are directing the major electric and gas utilities to file proposals, in ongoing and new rate cases, for true-up based revenue decoupling mechanisms, in the manner contemplated in the body of this Order. The filings shall include proposals for limiting customer bill impacts and price volatility, to the extent practical, and address other implementation issues raised during the course of this proceeding. In addition, parties should consider, propose and develop new approaches that encourage utility and energy service

company promotion of, and customer participation in, energy efficiency programs, and also address the issues raised herein.

The revenue decoupling mechanism design should incorporate the following factors:

- The mechanism should be designed to true-up forecast and actual utility delivery service revenues for a given time period.

- The mechanism should be designed to prevent gaming by the utility (e.g., shifting customers to different classes).

- The recovery of any net lost revenues component of the mechanism should not, in and of itself, produce inter-class revenue re-allocations between customer classes (such re-allocations should only be made purposefully after considering a current fully-allocated cost of service study).

- All remaining design and implementation issues should be addressed in individual rate proceedings

In addition to the implementation of broad-based revenue decoupling mechanisms that incorporate appropriate true-ups, the promotion of customer-sited renewable resources and distributed generation technologies should be addressed through greater vigilance on the part of the utilities regarding the proper application and supervision of utility interconnection rules and procedures, and the expanded application of existing electric and gas standby delivery rate structures.

The Commission orders:

1. At the time of their next rate case, or in an on-going rate case if one exists, the Brooklyn Union Gas Company d/b/a KeySpan Energy Delivery New York, Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., Corning Natural Gas Corporation, KeySpan Gas East Corporation d/b/a KeySpan Energy Delivery Long Island, National Fuel Gas Distribution Corporation, New York State Electric & Gas

Corporation, Niagara Mohawk Power Corporation d/b/a National Grid, Orange and Rockland Utilities, Inc., Rochester Gas and Electric Corporation and St. Lawrence Gas Company, Inc. shall develop proposals for true-up based delivery service revenue decoupling mechanisms for consideration in individual utility rate cases as discussed in the body of this Order.

2. In existing rate cases, where there may be insufficient time to develop and incorporate revenue decoupling proposals, the rate cases should provide for supplemental procedural phases to address and develop revenue decoupling mechanisms.

3. This proceeding is continued.

By the Commission,

(SIGNED) JACLYN A. BRILLING
Secretary

## Summary of Responses to Notice Soliciting Comments

### Background

Comments were received from various utilities, government agencies, energy retailers and end-use customers, and customer groups. Below are summaries of the initial comments received on August 28, 2006 and the reply comments received on September 11, 2006.

### Initial Comments: Statements in Opposition

1. Central Hudson Gas & Electric Corporation (Central Hudson)

Central Hudson does not believe the Commission should focus its attention on developing new revenue decoupling mechanisms (RDMs); it suggests a focus on methods of providing customers contemporaneous commodity cost price signals.

Central Hudson states that the delivery portion is less than the commodity cost portion of customers' energy bills. Thus, customers already have incentive to conserve energy. Central Hudson believes recognition of full price elasticity coupled with advanced metering technologies will bring about desired customer conservation.

Central Hudson does not categorically preclude utility specific RDM development but states that there is no evidence that development of a generic RDM would be a wise use of pubic resources.

2. Consolidated Edison (Con Edison) and Orange and Rockland Utilities (O&R)

Con Edison/O&R declares:

Utilities do not have material disincentives to promote energy efficiency (EE) or distributed generation (DG) for either gas or electric service.

There are mechanisms that can more effectively achieve the Commission's energy efficiency goals.

If deemed appropriate RDM development and design should be resolved in utility specific rate proceedings.

3. Consolidated Edison Solutions

Con Edison Solutions emphasizes the importance of designing incentive programs (including any lost revenue mechanisms) in a competitively neutral fashion.

4. New York Municipal Power Agency (NYMPA)

While NYMPA does not oppose the use of RDMs in principal, it does not believe it is necessary for municipal systems at this time, stating that municipal systems have a long history of promoting energy efficiency.

5. New York State Electric & Gas Corporation (NYSEG) and Rochester Gas and Electric (RG&E)

NYSEG/RG&E states the Commission should refrain from making any generic determinations in these proceedings. According to the companies, the Commission should find that a variety of programs and rate options to support energy efficiency and conservation is more desirable. NYSEG and RG&E comment that utilities do not have a material disincentive associated with promoting EE, DG, or renewable initiatives. The companies support rate changes designed to recover fixed costs in the fixed component of rates.

With respect to gas service, NYSEG and RG&E state the consideration of a more broad-based approach may be warranted as gas rates are predominantly volumetric. However, any broad-based mechanism (including a gas RDM) should be tailored to each company's circumstances.

6. Niagara Mohawk Power Corporation d/b/a National Grid (National Grid)

National Grid states the best approach to balance benefits and incentives associated with implementation of various energy efficiency and distributed generation programs is to maintain flexibility to tailor specific policy solutions which address associated revenue losses.

National Grid emphasized that addressing energy efficiency should be done in individual rate proceedings, not generically.

7. Nucor Steel Auburn, Inc (Nucor)

Nucor urges the Commission to reject revenue decoupling as a viable mechanism for promoting energy efficiency. Nucor stated, historically, RDMs have produced significant weather-related accruals creating rate instability. Nucor stated further that utility "throughput disincentives" are exaggerated and that greater recovery of fixed costs in fixed charges will minimize lost revenue due to energy consumption. Nucor supports the use of advanced metering and rate design improvements to send price signals to customers.

8. Multiple Intervenors (MI)

MI states there is no evidence justifying the need for dramatic changes to utilities' existing rate structures and financial disincentives are inconsequential; thus, RDMs should not be required. MI also explains that rate disincentives are further diminished due to NYSERDA's administration of the System Benefits Charge (SBC) and Renewable Portfolio Standards (RPS) programs and the New York Independent System Operator operates customer demand reduction programs. Like Nucor, MI voices concern over potential weather related accruals produced by RDMs.

Specific to gas LDCs, MI states fluctuations in weather related usage far outweigh energy efficiency opportunities, and instituting a gas RDM would be inconsistent with efforts to promote certain types of gas consumption. MI would exempt industrial and large customers from revenue impacts if RDM is imposed.

**Initial Comments: Statements in Support**

1. NYS Attorney General

The Attorney General's office supports a revenue decoupling mechanism and prefers the use of a revenue target based on the utilities cost of service and profit.

2. Brooklyn Union Gas Company d/b/a KeySpan Energy Delivery New York and KeySpan Gas East Corporation d/b/a KeySpan Energy Delivery Long Island (KeySpan)

KeySpan supports implementing energy efficiency initiatives, including a revenue decoupling mechanism that will align the interests of utilities and customers while benefiting customers and society. KeySpan supports moving toward cost-based rate design in coordination with the establishment of a mechanism that allows for recovery shortfalls resulting from lower use per customer. KeySpan advocates recovery of lost revenue if customers' use declines more than is assumed in its rate plans.

3. The City of New York (City)

The City supports development of revenue decoupling mechanisms in individual rate case proceedings. The City concludes that revenue decoupling development should begin with gas distribution utilities, and electric distribution utilities should draw from their experience.

4. Department of Environmental Conservation (DEC)

DEC supports removing delivery rate structures that may discourage utilities from investing in cost-effective EE, renewable energy, and clean DG.

5. National Fuel Gas Distribution Corporation (NFG)

NFG states that current LDC programs that promote energy conservation penalize gas LDCs by reducing LDC revenues; and, there is ample support for adopting appropriate incentives for LDCs to promote energy efficiency. NFG advocates using an annual reconciliation charge mechanism which would recover lost revenues associated with declines in customers' use.

6. Consumer Protection Board (CPB)

CPB supports a well designed revenue decoupling mechanism. CPB states the RDM should recognize true lost revenue due to EE, not losses due to a faltering economy. CPB notes that, if the RDM is limited to EE measures, common equity rates of return would not need to be reduced due to decreased company risks. CBP would like staff to form a straw man proposal in a generic proceeding.

7. Natural Resources Defense Council (NRDC) and Pace Energy Project (Pace)

NRDC/Pace states the Commission should require New York gas and electric utilities to adopt revenue decoupling mechanisms as the only full and comprehensive method to align the economic interests of utility and shareholders with the interests of New York State and its citizens to invest in energy efficiency and distributed generation.

NRDC and Pace state the Commission should convene a collaborative process to design electric and gas RDMs. NRDC and PACE state further the Commission should direct each gas and

electric utility to propose a revenue adjustment mechanism in its next rate case.

NRDC also filed a statement of agreement in support of RDMs that would align interests of shareholders and customers that was signed by 67 parties.

8. New York Energy Consumers Council, Inc. (NYECC)

NYECC claims utility companies should be encouraged to support investments related to EE, DG, and renewable energy sources, while aligning shareholder and customer interest. NYECC supports the Total Resource Cost Test established by the Commission in Case No. 29409 in 1988. The Total Resource Cost Test measures the net costs of a demand-side management program as a resource option based on the total costs of the program, including both the participants' and the utilities' costs. established by the Commission in Case No. 29409 in 1988.

9. New York Power Authority (NYPA)

NYPA urges the Commission to encourage energy efficiency and distributed generation, and claims RD is necessary if EE and DG are to be further encouraged in NY.

**Initial Comments: General Statements**

1. New York State Energy Research and Development Authority (NYSERDA)

NYSERDA acknowledges the merits of any strategy to allowing a utility to earn its return without discouraging investments in energy efficiency. However, it maintains that measures that may alleviate disincentives but, at the same time dampen customers' incentives may be counter productive to energy system efficiency and reliability.

2. Public Utility Law Project (PULP)

PULP was not a participant in the original proceeding. It, petitioned to intervene at a later stage of the proceeding.

**Reply Comments**

Reply comments were received on September 11, 2006 from Con Edison/O&R, National Grid, NFG, NRDC/PACE, NYSEG/RG&E, and MI. Some parties offered additional information beyond their original comments; and, it is summarized below.

1. National Grid

The rate of return on equity should not be modified should an RDM be implemented.

2. NFG

Supports MIs' exclusion of large-volume industrial and commercial classes from RDM impacts.

3. NRDC/Pace

NRDC/Pace re-files their statement of agreement in support of RDMs with additional signatures. It has now been signed by 89 parties, rather than 67.

4. NYSEG/RG&E

NYSEG/RG&E states NFG and KeySpan may have poor rate designs that are impediments to promotion of EE, Renewables, and DG; however, these material disincentives may not exist for all companies. NYSEG and RG&E also state delivery utilities have a financial incentive to consider EE, Renewables and DG, especially if they present a cost-effective supply alternative.

# Responses to Revenue Decoupling Questions

**Questions Contained in Notice Soliciting Comments Issued June 26, 2006**

Question No. 1.

**Do the current delivery rate structures of the electric and/or gas delivery utilities still contain a net lost revenue and profit effect that is significant enough to discourage some or all electric and/or gas delivery utilities from promoting energy efficiency, renewable technologies and distributed generation? Or, conversely do the current rate structures in effect encourage the utilities to promote the incremental use of electricity?**

**National Grid:**

- National Grid has, over several years, implemented cost-based rate designs for its delivery service that reflect most costs in the initial blocks of the company's rates, and lower the loss of margin in tail block rates, thereby reflecting the high proportion of fixed costs associated with delivery service.
- National Grid recovers commodity revenues for its sales of both electricity and natural gas as a supply charge through separate reconciling mechanisms.
- The SC-7 Standby Electric Service rate design and the deferral of lost revenues also initially addressed the disincentives associated with renewable energy and distributed generation.
- National Grid's main points in its earlier comments (2004) were (1) industry restructuring and competitive commodity markets have eliminated the disincentive to National Grid from reduced commodity sales; and (2) rate design can mitigate lost revenues as fixed costs can be recovered through greater reliance on fixed components of a customer's bill.
- For gas, National Grid implemented a declining block rate structure as a way of setting rates more closely to the way costs are incurred on the system. This approach has been implemented with usage blocks because certain customer charges (i.e., service charges) are not allowed for gas customers under Public Service Law.
- For gas, a ten percent reduction in gas deliveries correlates to a loss of delivery revenues of approximately three percent for residential classes and approximately six and a half percent for small commercial classes.

**Con Edison/O&R:**

- The delivery rates do not result in significant or material disincentives to promoting EE/DG.
- General rate design changes or different revenue recovery methods should be considered in individual rate cases because utility rates are designed to balance a broad range of differing objectives, such as providing proper price signals, avoiding subsidies to certain groups of customers, enabling utility investors to earn a fair return, and achieving environmental goals.
- Whether a particular utility has a significant disincentive can and should be adjudicated in a utility rate case, and not merely adopted as a general statement of policy.

**KeySpan Energy Delivery New York and Long Island:**

- KeySpan's current gas delivery rate structures still contain large net lost revenue and profit effects that are significant enough to discourage it from promoting energy efficiency, and encourage it to promote the incremental use of gas.
- 50% - 75% of the companies' margin (revenue less gas costs) is recovered through the tail block and penultimate block.
- The companies' minimum charges do not recover even half of their minimum costs to serve.

**New York Power Authority:**

- NYPA is unable to assess the degree to which electric delivery utilities in New York are encouraged or discouraged in promoting energy efficiency and related practices as a result of current delivery rate structures.

**National Fuel:**

- Its current delivery rate structure contains a net lost revenue profit effect that is significant enough to discourage the company from promoting energy efficiency.
- The company also has a significant incentive under current rate structures to increase the usage per account of its customers.

**NYS Attorney General:**

- The current delivery rate structures of the electric and gas delivery utilities still contain a net lost revenue and profit effect that is significant enough to discourage electric and gas delivery utilities from promoting energy efficiency and distributed generation.

**Central Hudson:**

- There are neither material disincentives to conservation and energy efficiency, nor incentives to promote the incremental use of energy.
- Notable rate design changes include: movement of gas revenue recovery into fixed rate components; rate unbundling, including separation of merchant function charges into sales and non-sales customer groupings; no volumetric component for SC Nos. 3 and 13; 90% of SC No. 2 load is on demand rates, and the usage rates reflect unbundled usage-related costs and flow through of variable energy supply costs.
- An advanced metering pilot program would allow use of time differentiated, demand-based rates in the SC Nos. 1 and 2 classes that currently do not have demand meters.

**NRDC/Pace:**

- The current delivery rate structures continue to link distribution utilities' revenues and their profits to sales.
- Fixed charges send the wrong price signals to customers, eliminating a large portion of their incentive to use electricity efficiently or invest in technologies even when these investments would reduce the long-term costs of the distribution system.
- High fixed charges are inequitable for low or fixed-income customers and customers that use less than the average amount of energy.
- The Commission's movement toward shifting costs from volumetric to fixed charges for residential customers has been relatively limited and still leaves substantial volumetric recoveries.

**Nucor Steel Auburn, Inc.:**

- In NYSEG's rate case, the Commission approved rate design changes that will recover most revenues from NYSEG's larger customers through fixed charges. Consequently, there should be no appreciable net lost revenue issue to address and an RDM-type vehicle cannot be justified in that context.

**Question No. 2.**

**To the extent that the current delivery rate structures of the electric and/or gas delivery utilities still contain a net lost revenue and profit effect that is significant enough to create these impacts, is the effect more predominant or more of a concern for particular types of customers (i.e., industrial and commercial general service versus smaller commercial and**

**residential)?**

**National Grid:**

- For the electric non-demand-metered service classes, the distribution delivery charges are in customer and energy charges.
- For gas, the net lost revenue from energy efficiency and conservation efforts is most apparent in the residential natural gas market.

**Con Edison/O&R:**

- The companies do not believe that their current rate structure provides a material disincentive.

**KeySpan Energy Delivery New York and Long Island:**

- KeySpan's primary concern is the effect on the residential heating class, as these customers account for approximately 60% of KeySpan's total firm throughput and margin.

**New York Power Authority:**

- NYPA is unable to assess the degree to which electric delivery utilities in New York are encouraged or discouraged in promoting energy efficiency and related practices as a result of current delivery rate structures.

**National Fuel:**

- The lost revenue and profit effect is the most significant for residential and small volume non-residential customers.

**NYS Attorney General:**

- While not uniform, the current delivery rate structures across all rate classes contain a net lost revenue and profit effect.

**Central Hudson:**

- The current impracticability of demand meters in residential and small commercial (non-demand) classes has led to those classes having recovery of both fixed and variable costs in "volumetric" rates. This is because of a limitation of pre-existing technologies.

**NRDC/Pace:**

- Utilities' incentive to sell more energy and to discourage investment in energy efficiency continues to be a major concern for all types of customers, since all classes of customers pay at least a portion of their bills based upon volumetric charges.

**Nucor Steel Auburn, Inc.:**

- In NYSEG's rate case, the Commission approved rate design changes that will recover most revenues from NYSEG's larger customers through fixed charges. Consequently, there should be no appreciable net lost revenue issue to address and a RDM-type vehicle cannot be justified in that context.

Question No. 3.

**In October 2001 the Commission issued an Opinion and Order in Case 99-E-1470 approving Guidelines for the Design of Electric Standby Service Rates. As stated on page five of that Order, "The Guidelines recommend fundamental cost-based rate design principles that in most cases avoid reliance on measurements of energy consumed (kWh) for charges for delivery service." In compliance with this Order, all major New York State regulated electric utilities filed class-revenue-neutral Electric Standby Delivery Service tariffs that were subsequently approved by the Commission and remain in effect today. Could the ratemaking principles reflected in the utilities' redesigned cost-based electric standby delivery rates be applied to standard delivery rates to address any existing disincentives, or be used as a target in setting future delivery rates, so as to eventually eliminate the net lost revenue and profit effect of current delivery rates? What would be the barriers to implementing such a methodology for setting future delivery rates?**

**National Grid:**

- The standby rate design principles can be used as guidance for rate design, generally. However, immediate movement for all customer classes requires a balance of competing cost and non-cost objectives, including the attributes of simplicity, understandability, customer acceptability, and administrative feasibility.
- Their implementation will require considerations of rate impacts on specific customers within the service classes.

**Con Edison/O&R:**

- The companies favor cost-based rates.
- It is vitally important that interested parties have an opportunity to consider specific proposals (as opposed to general proposals or concepts) so that the potential impacts of specific proposals on the customers within a specific utility's service territory can be vetted and studied before they are implemented.

**KeySpan Energy Delivery New York and Long Island:**

- These principles do not resolve the issue for gas utilities.
- KeySpan and most other gas utilities do not use demand meters, as gas service is not priced on an hourly or daily basis.
- Another potential barrier centers on the bill impacts for certain classes of customers, or certain groups of customers within a class.
- A revenue-neutral, cost-based rate redesign that brings class returns closer to the average return and collects fixed costs in the minimum charge and head block would allow the companies to minimize lost margin and to maintain recovery of the costs to serve each rate class within the rate class.
- The potential bill impacts on customers within the class experiencing rate redesign may pose a barrier to implementation.

**New York Power Authority:**

- NYPA has not done an analysis of the delivery service tariffs of most of the electric delivery utilities.
- NYPA has done a substantial number of energy efficiency projects in the Con Edison service area with no objections and the full cooperation of Con Edison.
- It is not clear that comparable tariff provisions would work for other kinds of load reduction efforts - or even other distributed generation projects if the load profiles are substantially different, and the imposition of this tariff design might even be counter productive to the institution of some other energy efficiency programs.

**National Fuel:**

- Rate design changes could be implemented to mitigate the negative consequences of energy efficiency promotion on utility earnings.
- The complexity of explaining such rate changes as well as the billing system upgrade would need to be considered.
- A more practical approach would be to include an annual reconciliation charge mechanism similar to the current gas costs reconciliation mechanism.

**NYS Attorney General:**

- While severing the link between utility profits and throughput, standby rates still link utility revenues and profits to a volumetric measure - the total load.

- While diminished, the disincentive for utilities to encourage standby customers to reduce power use continues to exist.

**Central Hudson:**

- This issue is logically flawed in suggesting that the special case of standby customers be generalized. The cost-based rate design principles applied to the special case of standby rates are not generally applicable to "regular" delivery service.
- Standby customers, by definition, do not impose the same relationship between fixed and variable costs on the utility as "regular" customers. Standby customers do not share the same load shapes as "regular" customers and the costing and rate design principles applicable to standby customers differ from those applicable to "regular" customers.

**NRDC/Pace:**

- The standby ratemaking principles should not be applied to standard delivery rates.
- Application of the standby rates would have the counter productive effect of decreasing investment in energy efficiency and load management by many customers, since the rates superficially appear to be "fixed" and unavoidable.
- Unless the Commission implements a revenue decoupling mechanism to fix this disincentive, the utility incentives to oppose permanent efficiency improvements will remain.
- The standby rate model does not sever the link between customer efficiency investments and behavior and utility revenue.

**Nucor Steel Auburn, Inc.:**

- Opinion No. 01-4, Standby Rate Guidelines, took pains to make clear that "consideration of changes in delivery service rate design for full-service delivery customers was not the subject of this proceeding and it would, therefore, be inappropriate to conclude that these principles should be applied to delivery service other than standby service at this time."
- The Commission should consider whether all loads that have monthly demands of 50 kW or more, not only those receiving standby service, should be interval metered so that they may take service under more appropriate time based rates.

**Question No. 4.**

**Are there other approaches to redesigning delivery rates that should be considered to further these goals?**

**National Grid:**

- National Grid believes its recommendation for targeted approaches, including revenue reconciliation and its rate designs provide the appropriate platform to achieve the Commission's goals in these policy areas.

**Con Edison/O&R:**

- While the companies are not aware of any other approaches at this time, it is willing to consider approaches that satisfy the Commission's goal of promoting EE and DG and are consistent with the general principles of rate design.

**KeySpan Energy Delivery New York and Long Island:**

- Two approaches to redesigning delivery rates that should be considered, preferably in combination, to further these goals are a move toward cost-based rate design, and the establishment of a tracking mechanism that would recover the margin shortfall resulting from lower use per customer.
- A move toward cost-based rate design would shift the fixed costs of providing service out of the tail and penultimate blocks and into the minimum charge or initial rate blocks.
- A mechanism that allows utilities to recover margin lost as a result of energy efficiency programs would remove the utilities' disincentive in the interim.

**New York Power Authority:**

- Revenue decoupling is an approach whose time has come if energy efficiency and distributed generation is to be further encouraged in New York State.
- There may be other approaches used in other states to further the goal of encouraging greater energy efficiency and the Commission should carefully study these.

**National Fuel:**

- A combination of greater minimum charge increases and a lost revenue recovery mechanism as mentioned in the previous response, would be a reasonable approach consistent with the gradualism principle of designing utility rates.

**NYS Attorney General:**

- The goal to remove disincentives can be done through a fixed charge approach or an adjusted rate approach, or some combination of the two.

- The detail of the rate system would be established in a Commission proceeding.

**Central Hudson:**

- The most appropriate approach is to properly design programs for energy efficiency, renewable technologies, and distributed generation based on correct economic principles, and to provide improved time-of-use price signals to consumers.

**NRDC/Pace:**

- A revenue decoupling mechanism is the best and only comprehensive approach to realigning utility incentives to support energy efficiency and distributed generation.
- Lost-revenue recovery mechanisms are open to gaming and do not address the revenues lost from policies and technologies that are not part of specific efficiency programs.
- There is no way under a lost-revenue recovery mechanism to recover revenues lost due to drivers of energy efficiency that are external to the utility.

**Nucor Steel Auburn, Inc.:**

- The Commission should consider whether all loads that have monthly demands of 50 kW or more, not only those receiving standby service, should be interval metered so that they may take service under more appropriate time-based rates.

The following parties did not specifically address Question Nos. 1-4 contained in the Commission's June 26, 2006 Notice Soliciting Comments:

New York State Energy Research and Development Authority
Con Edison Solutions Joint Petition of Various Stake Holders
New York Energy Consumer's Council, Inc.
Multiple Intervenors
New York State Electric & Gas Corporation/Rochester Gas and Electric Corporation
NYS Department of Environmental Conservation
NYS Consumer Protection Board
Public Utility Law Project, and
City of New York and New York Municipal Power Agency

**Question No. 5.**

**What changes, if any, in programs and rate provisions to protect low-usage and low-income customers should be considered in conjunction with any of these proposed changes in rate design?**

**National Grid:**

- The company supports targeted approaches to address the effects of implementing new rate designs or revenue decoupling mechanisms on low-income customers.
- It points out that in its experience, low-income customers are not always low-usage customers.
- It recommends implementation of rate design changes or RDMs gradually to produce acceptable bill impacts for all customers.
- Commission could encourage the utilities or NYSERDA to expand participation in existing low-income efficiency programs, similar to programs recently expanded for National Grid's low-income customers.
- It recommends increasing discounts to low-income customers to mitigate the effects of a rate design change, as National Grid recently expanded a discount from the customer charge for certain of its low-income electric customers.

**Con Edison/O&R:**

- The companies are not aware of any rate design changes that would be necessary to protect low-income customers. They suggest that targeted programs, like weatherization, are the best ways to promote energy efficiency for low-income customers.

**KeySpan Energy Delivery New York and Long Island:**

- The companies recommend protections for low-income customers from unacceptable bill impacts.
- They suggest expansion of low-income rate eligibility and periodic review of the parameters of the low-income program, as the company proposed in National Grid/KeySpan merger case, and targeting energy efficiency programs to low-income customers, as KeySpan has done in New England.

**New York Power Authority:**

- The Commission should be cautious with regard to the impacts of any procedures implemented such that a disproportionate burden is not shifted to low-income customers.

- Mechanisms which include higher minimum charges have a disproportionate effect on low-income customers and discourage individual conservation.
- Although decoupling may have an impact on low-income customers unwilling or unable to participate in energy efficiency programs, it will incent utilities to undertake more low-income energy efficiency programs.

**National Fuel:**

- The Commission recognized the concerns of low-income customers with implementation of specific rates for NFG.
- Low-income rate concerns are best addressed through rate programs designed specifically for this class of customers.
- In National Fuel territory, low-income customers tend to use more gas for heating than higher income customers because they typically live in older housing stock and are less able to afford energy efficiency improvements.
- Less costly conservation measures already available and low-income energy efficiency education should be incorporated in any outreach plan.

**NYS Attorney General:**

- Although delivery rates would be adjusted upward should demand be reduced as a result of energy efficiency and distributed generation improvements, bills would tend to stabilize long-term as a result of these efficiencies and improvements.
- Delivery portion of the bill is less than half of the total bill. The supply portion of the bill is subject to most volatility. Reducing the demand for electricity will put downward pressure on wholesale prices and moderate volatility. The resulting effect of reduced consumption on supply price can offset increases in the delivery rate.
- The Commission should continue and expand efforts to provide energy efficiency savings to low-income customers using the Systems Benefits Charge, weatherization, and other energy efficiency upgrades in low-income housing.

**NYS CPB:**

- Although the NYS CPB does not specifically address Question No. 5 its general comments indicate that a shift from volumetric to fixed delivery rates may not be warranted for public policy reasons since it would result in higher unavoidable charges for low-energy use customers, particularly low-income consumers.

**Central Hudson:**

- Most rate plans already include extensive low-income programs.
- It is preferable to design energy efficiency, renewable technologies, and DG programs correctly, independent of low-income customer programs.

**NRDC/Pace Energy Project:**

- Low-income customers benefit most from energy efficiency because their utility bills are disproportionately high.
- Decoupling will assist in further development of energy efficiency programs for low-income customers by facilitating greater utility support for and investment in, energy efficiency.
- Low-usage and low-income customers are harmed by rate design shifts of cost recovery to fixed charges. Higher fixed charges are counter productive since they remove the incentive to conserve. A decoupling mechanism is consistent with current low-income provisions, which include lower fixed charges.

**NYSEG/RG&E:**

- Although NYSEG/RG&E does not specifically address Question No. 5, they indicate in reply comments that:
  - The link between low-income customers and low usage is incorrect.
  - No special treatment for either low-income or low-usage customers is warranted.
  - Programs to assist low-income are already in place and modification of those initiatives are most appropriately considered in the context of an individual utility rate proceeding.

The City of New York, Con Edison Solutions, Joint Petition of Various Stake Holders, Multiple Intervenors, New York Energy Consumer's Council, Inc., New York Municipal Power Agency, New York State Department of Environmental Conservation, New York State Energy Research Authority, Nucor Steel Auburn, Inc., and Public Utility Law Project did not specifically address Question No. 5.

**Question No. 6.**

**If a utility revenue mechanism is necessary to offset a residual net lost revenue and profit effect that is still significant enough to discourage some electric and/or gas delivery utilities from promoting energy efficiency, renewable technologies and distributed generation, how might such a mechanism be designed to focus better on the desired objectives**

**and minimize past flaws with general mechanisms of that type? What specific components are necessary to ensure that the mechanism only affects the efficiency disincentives, accounts for larger factors like weather and economic development/load growth, minimizes rate volatility, and minimizes or eliminates longer-term deferrals and true-ups? Are there models in place in other jurisdictions that have addressed these issues?**

**National Grid:**

- In the past, decoupling mechanisms were broadly applied without appropriate rate design to mitigate the level of deferrals. Future decoupling mechanisms should take a focused approach to revenue reconciliation.
- Improved rate designs have mitigated lost revenues.
- Similar to the weather normalization adjustment for gas, decoupling mechanisms should be implemented for costs that are (1) uncontrollable by the utility, (2) variable and unpredictable, and (3) material and of a recurring nature.
- The company believes the Commission can design rates and RDMs that normalize for declining use per customer and facilitate the implementation of policies to promote efficient and environmentally sound energy usage by customers.

**Con Edison/O&R:**

- The State has already implemented different kinds of decoupling mechanisms, such as decoupling through the use of revenue per customer incentives. The current Con Edison rate plan has lost revenue recovery for specific programs that can be considered a form of "decoupling" that, combined with incentives, provide an appropriate incentive to aggressively implement demand management programs.

**KeySpan Energy Delivery New York and Long Island:**

- The companies describe two approaches: rate redesign and a revenue recovery mechanism.
- A cost-based rate design effort with customer related costs captured in minimum charge and demand related costs in the initial block would minimize the revenue shortfalls when consumption declines.
- Revenue recovery mechanisms should be designed to recover only the margin lost as a result of energy efficiency programs. Companies could monitor the impact of utility sponsored energy efficiency measures on average customer consumption (margin shortfall from lower use per customer) and calculate the margin reduction associated with those specific measures. Any deficiencies could be recovered in rates in subsequent periods.

- RDM should be designed to retain incentives to add new customers. Absent these incentives, the environmental benefits of promoting energy efficiency may be negated. Growth related margin allows utilities to stay out of rate cases for longer periods of time and lowers rates to all customers in the long term.
- Phase in rate redesign would minimize bill impacts and apply margin adjustment over a past one-year period so deferrals would only extend fifteen months beyond the time of the margin impact.

**National Fuel:**

- A unit rate annual reconciliation mechanism based on usage per account maintains a utility's incentive to expand customer base while also providing an incentive to promote energy efficiency. Annual variance from usage per account imputed in a rate case would be multiplied by the average margin per account to determine average change in margin per account. The decline in margin per account is multiplied by total accounts to determine total annual margin to be reconciled. Total margin to be recovered would be divided by normalized volumes to determine an annual reconciliation unit charge to be added to the delivery charge.
- It is important to maintain the incentive to connect natural gas customers to the system. Natural gas continues to be the lowest cost, cleanest burning fuel for heating homes and small businesses. The existing earnings sharing mechanisms protect customers from any earnings growth related to economic development/load growth.

**NYS Attorney General:**

- Revenue decoupling of delivery charges would have little effect on bill volatility because delivery charges represent only a small portion of the bill. Most of the bill volatility continues to be in supply portion.
- Under a fixed delivery rate approach, there will be less volatility in the bills. Under a volume based adjusted rate approach, volatility would not be expected to increase.
- A weather normalization adjustment is an example of an adjustment directly related to power and natural gas use that can be tied to objective records. The Commission already has existing experience in designing and implementing weather normalization clauses. The Commission could tie power and natural gas deliveries to cooling degree days and heating degree days.

**Nucor Steel Auburn, Inc.:**

- Significant and varied problems in past RDM efforts point to basic error of a blanket approach.
- Any effort to accommodate sales variability factors in order to isolate efficiency effects requires acceptance of a series of forecasts, estimates, and adjustments that are themselves targets of controversy and gaming.
- RDM would be an overly complicated response to an exaggerated problem.

**Central Hudson:**

- No empirical evidence shows that a "utility revenue mechanism" is necessary on a generic basis.
- Difficulties in designing a generic approach outweigh any potential benefits.
- It is more appropriate to address potential use of a RDM in individual rate proceedings.

**NRDC/Pace:**

- A significant historical record and large number of examples can be reviewed to develop a RDM that works for NY. Concerns relate to the effects of weather, economic development, volatility, and the resulting long-term deferrals can be addressed.
- Appendix A of the National Action Plan is helpful guidance to designing an RDM and the different options that can be used.
- Lost revenue mechanisms are open to gaming; they also do not address revenues lost from policies and technologies not part of specific efficiency programs. In reply to Con Edison criticism, NRDC/Pace notes that lost revenue mechanism are likely more complex than RDMs, citing recent Con Edison experience with its own highly complex electric lost revenue mechanism which continues to be in dispute.
- NRDC/Pace outlines key design variable alternatives to aid in design of an effective revenue true up mechanism, depending on the goals of the designers:
  - Mechanism
    - Allowed revenues calculated on per customer basis.
    - All classes, or just some, can be included or a different approach for each.
    - Adjustments for changes in number of customers can be incorporated.
  - Indices
    - Allowed revenues generally indexed for predictable changes in cost.

- Include inflation index (national, local, or specific market sectors) that captures the change in cost of utility programs.
- Include productivity index with a fixed level of productivity gains that are expected of the utility, i.e., few tenths of a percent to over one percent annually.
- Allowed revenues can also be adjusted to reflect existing incentives and penalties.

o Weather
- Include or exclude weather related sales fluctuations.
- In its simplest form, RDM shifts all the risk of weather related revenue fluctuations to the customer. The utility always recovers same amount of revenue after true-up and customers face larger true-ups with longer periods between true-ups. This can result in larger swings in bills. However, in the long run customer bills even out just as utilities revenues even out.
- Shifting weather risk back on utilities protects customer in the long term from fluctuations, but does not necessarily minimize bill swings if true-up is still annual or longer.

o Economic Development
- Revenue adjustments can be designed to encourage economic development, i.e., revenue per customer approach.
- Most adjustment mechanisms recouple revenues to some partially, or largely, exogenous measure of growth. This should be done carefully, since the goal of a decoupling mechanism is to encourage the utility to invest in the least cost way of meeting increasing demands for energy services.
- Regional job growth measurement could be incorporated with the utility as an agent for economic development, or conversely, preventing high utility rates from further slowing job growth in recessionary periods.
- RDM should preserve utility incentive to invest in the broad economic health of the service territory.
- RDM should not protect the utility from bearing any of the burdens in an economic downturn.
-

o True-ups
- The more frequent the true-up, the smaller the size. True-up limits can also be set on the size

in any given period so as to provide sensitivity to local economic conditions.
    - True-ups should be done as frequently as necessary to minimize bill fluctuations.
  - Periodic Review
    - Should include a provision that allows for periodic modification, if necessary. However, any party calling for modification bears burden of proof that rates are not just and reasonable.
    - The alternative is periodic Commission reviews of the mechanism.

- In reply to several of the opponents, NRDC/Pace indicates that adoption of an RDM in individual rate cases is an unacceptable option. The Commission should adopt a revenue decoupling mechanism policy due to the disincentive created by existing rate structures, task a working group to develop generic design principles, and then work out details of implementation for each utility as soon as possible.
- In reply to Multiple Intervenors argument that industrial and large commercial users should be exempt from RDM because they are already incented to invest in energy efficiency measures, NRDC/Pace indicate that an RDM is not intended to encourage customers to do energy efficiency, but intended to remove the utilities' incentive to block or hinder anything that will reduce energy use. NRDC and Pace acknowledge that decoupling through increased reliance on fixed charges will reduce customer incentive to invest in energy efficiency, but prefer approach of collecting a true-up through volumetric rates which would increase the incentive.
- In reply to Multiple Intervenors' concern about the rate impacts and rate uncertainty associated with RDM, NRDC and Pace argue that truing up utilities actual revenue recovery to their allowed revenue should on average have no impact on rates and should provide business customers with greater certainty regarding annual bills.

**New York Power Authority:**

- Indicates it has not studied the issue sufficiently to adequately address Question No. 6.

The City of New York, Con Edison Solutions, Joint Petition of Various Stake Holders, Multiple Intervenors, New York Energy Consumer's Council, Inc., New York Municipal Power Agency, NYS Consumer Protection Board, New York State Department of Environmental Conservation, New York State Electric & Gas Corporation/Rochester Gas & Electric Utility, New York State Energy Research and Development Authority, and Public Utility Law Project did not specifically address Question No. 6.

Question No. 7.

**What changes, if any, to the rate of return for the utilities would be appropriate in connection with the implementation of such a mechanism?**

**National Grid:**

- The effect of a change in Commission policy on a utility's return is generally a matter of substantial debate in the context of a rate filing. A rate filing is the time the experts would evaluate the impacts of the changes on the risks and required returns. The resulting terms of a rate plan and the rate order also have significant impact on investors.
- RDMs may lower return requirements by reducing the risk of revenue erosion or increase return requirements by reducing expected revenue growth of the company. However, until the program is finally designed, it is difficult to determine the impact on the utility's return.
- Analyses used to assess utility returns include many risks other than revenue volatility. The effect of an RDM may not be significant to the investment community compared to other business risks, including market/competitive position, fuel/power supply, operating efficiency, regulatory treatment, construction risk/asset concentration, non-utility activities, management, other financial risks including earnings protection, capital structure, cash flow adequacy, and financial flexibility/capital attraction.
- RDM simply changes the method of revenue recovery and does not guarantee a specific revenue stream. The risks to utility revenues will remain, but slightly different than before, i.e., movement to fixed charges may increase regulatory risks due to more frequent revenue requests to offset forgone revenue growth, or increase investment risk associated with adding new customers or with investing in infrastructure to address load increases to existing customers.
- In reply to various parties, NRDC/Pace reiterates that rate of return on equity should not be modified if a revenue

decoupling mechanism is implemented and should be reviewed after thorough consideration of all risks to the utility.

**Con Edison/O&R:**

- The particular design of a RDM significantly impacts cost recovery, utility investment programs, reliability, economic development, and investor confidence.
- A RDM could increase cost of capital, i.e., increased sales increase utility revenues, but also increase utility expenses. A RDM could eliminate ability to retain increased revenues necessary to meet increased expenses resulting from increased sales or meet costs of load or reliability driven capital investment programs.
- A RDM could protect against revenue loss, but eliminate the ability to increase earnings. That loss of increased earnings opportunity should be taken into account in determining an appropriate return.
- These return issues should be addressed in utility rate cases.

**KeySpan Energy Delivery New York and Long Island:**

- No adjustment to allowed rate of return should be made with the implementation of a RDM.
- A RDM would not materially change the risk profile of the utility.
- For example, because credit rating agencies assign bond ratings to utilities based on many factors including both business and financial risks, a RDM in and of itself would not be significant enough to cause an upgrade in bond ratings. The impact would actually offset downward pressure on existing ratings by the negative cash flow and earnings impacts of the recent volatility of gas prices. A recent statement from Moody's: "LDCs that have, or soon expect to have, RD (revenue decoupling) stand a better chance than others in being able to maintain their credit ratings or stabilize their credit outlook in the face of adversity."

**National Fuel:**

- A RDM based on usage per account in the base rate proceeding recognizes the level of usage used in a base rate proceeding where a reasonable rate of return was established.
- Utility still bears all the other financial risks, i.e., general economic conditions, demographic trends in the service territory, connecting accounts, efficient management of the operation of the system, and failure to achieve the imputed level of accounts in a rate case, among others.

- Reductions in return would discourage expansion of the delivery system in the long run and have negative consequences for the competitiveness of the region.

**NYS Attorney General:**

- Revenue decoupling would shift risk from utilities to customers by unlinking cost recovery and profit from consumption.
- Unclear whether a RDM would make such a difference that there should be a different rate of return.
- Commission should monitor the effects of decoupling and take appropriate action if warranted.

**Nucor Steel Auburn, Inc.:**

- By design, a RDM transfers the business risk of sales variations from the utility to the customers and, since risk is a significant element in the earnings of a utility, transferring that risk to ratepayers should be reflected in a comparable reduction in the utility's cost of capital and rate of return.
- Exact nature of the risk shift should be a function of the RDM actually proposed.

**Central Hudson:**

- More appropriate to address potential use of a RDM in individual rate proceedings than to attempt to design a generic solution for the concern that has been hypothesized in the Commission Notice.

**NRDC/Pace:**

- Due to the limited RDM experience with New York electric and gas utilities, a material change in risk profile cannot be determined without company specific experience.
- RDMs create both upside and downside exposure for shareholders. The utility no longer under-recovers authorized fixed costs if sales fall below expectations, but also loses the opportunity for gains from sales increases.
- Goal of decoupling is to encourage the utility to devote resources to energy efficiency. The imposition of a shareholder return reduction would be counterproductive.
- The only instance of a lowered rate of return as a result of the establishment of a RDM: Maryland Commission imposed a reduction in return linked to adoption of a decoupling mechanism (Baltimore Gas & Electric - 50 basis points) and, in a recent case, overturned the return reduction even though the Commission acknowledged that the RDM insulated

the utility from revenue recovery risks associated with abnormal weather.

- Commission here should not reduce returns due to decoupling. If over time and experience with RDMs, the utilities are better able to manage their assets and risks, the Commission could reconsider the issue.

**NYS CPB:**

- If well designed, so that ratepayers fund lost profit attributable to utility energy efficiency and load reduction programs, no adjustment to the utility's rate of return is necessary.
- If the mechanism is designed such that it shifts the risks of sales variations due to other factors from the utilities to rate payers, then an adjustment for rate of return is required.

**Multiple Intervenors:**

- Although Multiple Intervenors does not specifically address this question, in general reply comments, they argue that an RDM should not result in a transfer of business risk from utility shareholders to customers.

**New York Power Authority:**

- Indicates it has no opinion on Question No. 7.

The City of New York, Con Edison Solutions, Joint Petition of Various Stake Holders, New York Energy Consumer's Council, Inc., New York Municipal Power Agency, New York State Department of Environmental Conservation, New York State Electric & Gas Corporation/Rochester Gas & Electric Corporation, New York State Energy Research and Development Authority, and Public Utility Law Project, did not specifically address Question No. 7.

**Question No. 8.**

**For each rate class, how quickly could the necessary changes in rate design be put into place? Would interim steps in rate design change be necessary or desirable?**

**National Grid:**

- Electric service - The company has no plans to modify current rate designs, which remain in effect through 2011 under the current Merger Rate Plan. Merger Rate Plan does allow certain rate design modifications, generally revenue neutral, but, at this time, the company has no plan to use this provision during the term of the Plan.
- Gas service - Any new mechanism would require negotiation in an individual rate proceeding. The company has no plan

to propose any new rate redesign until next gas rate filing. It is not opposed to considering targeted approaches or limited rate design under current gas rate plan.

- In general reply comments, the company notes that each utility and each industry face differing circumstances. Natural gas service is experiencing declining use per customer due to more efficient appliances and the rise in prices, while electric residential use has increased. Therefore, implementation of an RDM or other rate design changes should be undertaken on an individual company basis in the context of a utility-specific rate proceeding. The company urges that the Commission maintain flexibility in its approach to these policy issues.
- Also in general reply comments, the company indicates it believes that a collaborative process may provide a better understanding of the divergent views and could be used to help develop guiding principles for future rate proceedings that may consider a RDM.

**Con Edison/O&R:**

- It is inappropriate to make interim changes in the existing rate plans because of the unexpected rate impacts which would be viewed by customers as changing existing rate plan.
- It is difficult to demonstrate the need for a RDM outside of a rate case.

**KeySpan Energy Delivery New York and Long Island:**

- Once any necessary rate design changes are identified, a RDM mechanism could be put in place in a relatively short time.
- There are no mechanical or logistical barriers.
- Interim steps may be necessary to minimize bill impacts on certain customer classes, or spread the bill impacts over a period to reduce rate shock.

**National Fuel:**

- Using the approach of a true-up to use per customer, a major rate change would not be required for implementing a RDM (e.g., could be implemented outside of a rate proceeding). It could be implemented on relatively short notice and the company recommends such an approach be implemented as soon as reasonably possible.
- In reply to Multiple Intervenors, the company supports exclusion of large volume commercial and industrial classes.

- In a general reply comment, the company indicates that a gas RDM should be implemented either generically or on an individual utility basis.

**NYS Attorney General:**

- Commission should institute a proceeding to formulate guiding principles and policies for developing a RDM, which can be implemented at the time a utility applies for a new rate plan. Most of the NY utilities are in existing rate plans through 2007, or later, allowing ample time for the Commission to develop a well-designed RDM.

**Central Hudson:**

- Central Hudson fundamentally believes that a material disincentive to conservation has not been established (and does not exist), that aside:
  - Changes in rate design should be made consistent with the principle of "gradualism" as part of a case-by-case approach.
  - A RDM is inappropriate in the context of utilities with existing approved rate plans. These plans should not be disturbed during their terms by attempting to overlay a generic RDM.

**NRDC/Pace:**

- The Commission should require each electric and gas utility to include a RDM in its next rate case and also provide the opportunity to request a mechanism sooner.
- The National Grid/KeySpan merger, and the current Con Ed electric and gas rate plans expiring in 2008 are opportunities for adoption of a RDM.
- The Commission's authority to set just and reasonable rates allows for the ability to impose an alternative rate design mechanism even during the term of existing rate plans.

**NYS CPB:**

- Although the NYS CPB does not specifically address this question, as next steps they advocate initiating a generic proceeding to establish a general frame work for RDMs in NY.
- Staff of the DPS should develop a "straw man" proposal to present to interested parties as a prelude to development of a proposed framework to be submitted for Commission decision.
- Specific details and utility-specific circumstances would be addressed in rate cases for individual utilities.

**Multiple Intervenors:**

- Although Multiple Intervenors does not specifically address this question, and they are opposed to the implementation of a RDM, they do indicate in their general comments that if, *arguendo,* RDMs are implemented, industrial and large commercial customers should be exempted from the RDM.
- In general reply to proponents of a generically imposed RDM, they urge the Commission not to require revenue decoupling or any other particular rate design incentives in this proceeding, but if the Commission decides to pursue decoupling, any proposed changes should be addressed in separate utility-specific proceedings where the results of cost of service studies can be evaluated and customer impacts can be considered.

**NYSEG/RG&E:**

- Although NYSEG/RG&E does not specifically address this question, they indicate delivery utilities do not have a material disincentive against promotion of energy efficiency and, therefore, additional immediate or accelerated action or rate design changes outside the context of an individual utility's rate proceeding are not warranted.
- Examination of additional mechanisms or rate design modifications, including quantitative costs and benefits, should be undertaken on an individual company basis in the context of a utility-specific rate cases. The assessment of comprehensive rate plans appropriately takes into account the impact of any initiative or rate design options on specific customers affected.
- The NYS Attorney General and NRDC/Pace calls for implementation of a RDM in the company's next rate proceeding and the NYS CPB suggestion for institution of a generic proceeding to establish an RDM framework lack merit, since a generic mandate is not likely to achieve the Commission's goals to promote energy efficiency, renewables, and distributed generation.

**The City of New York:**

- Although The City of New York does not specifically address this question, they recommend in their comments that any RDM program should be fully examined in the context of utility-specific rate cases to begin with rate cases involving natural gas distribution. A second phase should then be established examining electric decoupling measures, and be informed by the gas RDM experience.

**New York Power Authority:**

- Indicates it has no opinion on Question No. 8.

Con Edison Solutions, Joint Petition of Various Stake Holders, New York Energy Consumer's Council, Inc., New York Municipal Power Agency, Nucor Steel Auburn, Inc., New York State Department of Environmental Conservation, New York State Energy and Research Development Authority, and PULP did not specifically address Question No. 8.