



Energy Poverty in Canada: a CUSP Backgrounder

October, 2019





Defining and Measuring Energy Poverty

Energy poverty is qualitatively defined as the experience of households and communities that struggle with meeting their home energy needs. Home energy needs typically include electricity and home heating fuels.

Currently, there is no formal and official definition for energy poverty in Canada. However, it is most commonly characterized in terms of high home energy cost burdens, and using concepts such as affordability. Most households in Canada spend less than 3% of their after-tax income on their energy needs. Households that spend more than twice this value (i.e. more than 6% of their income) on securing access are thought to experience disproportionately high home energy cost burdens. For purposes of policy discussion and painting an overall picture of energy poverty we use this value as our affordability threshold.

Households that spend more than 6% of their after-tax household income on home energy services (or roughly twice the national median) have high home energy cost burdens, and are said to be experiencing energy poverty.

For purposes of program design and delivery, this high home energy cost burden value can be layered with other indicators of vulnerability, such as lower or moderate incomes, lack of access to networks of energy infrastructure or energy efficiency programming, experiencing health conditions that may be exacerbated by living in cold or damp homes. It is important to recognize that energy poverty manifests itself in a multitude of ways, and energy affordability is just one commonly used indicator for identifying the problem – it is commonly used because relatively consistent data on energy expenditures is available across the country. Figure 1, below, shows some other indicators of energy poverty which in conjunction with high energy cost burden metrics can be used for program design and targeted delivery efforts.

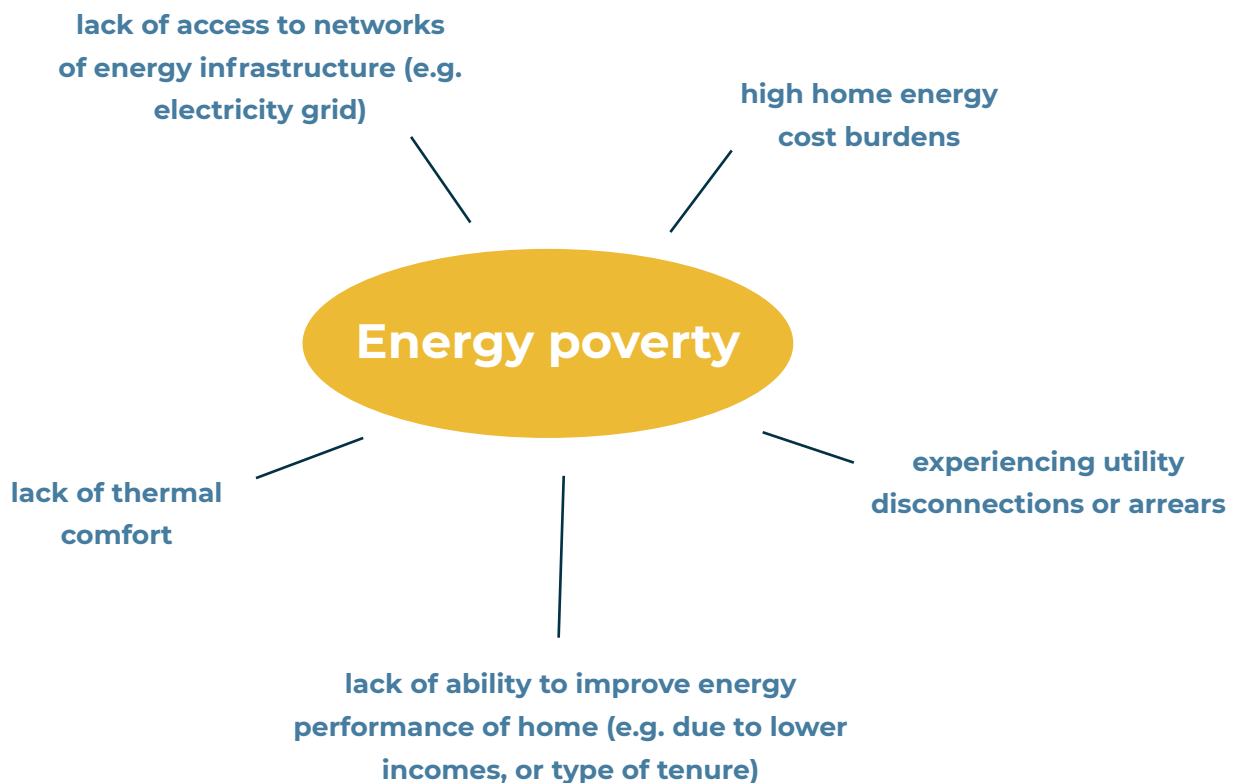


Figure 1 - Some manifestations of and possible indicators for a more comprehensive index of energy poverty in Canada

Energy Poverty in Canada

Below, we have included a series of tables providing a snapshot of what we have uncovered about energy poverty in Canada, as characterized using high home energy cost burden metrics. All data is extracted from the 2016 Census, through custom tabulations provided by Statistics Canada.

1. Across the Canadian provinces and territories, energy poverty is most prevalent in Atlantic Canada

The Maritimes have the highest rates of energy poverty in Canada, with 41% of the households in Prince Edward Island experiencing high home energy cost burdens. However, Canada's most populace province, Ontario, has the highest numbers of households struggling with energy poverty (1.1 M households). Figure 2, below, summarizes the percentage and numbers of households in each province experiencing high home energy cost burdens.

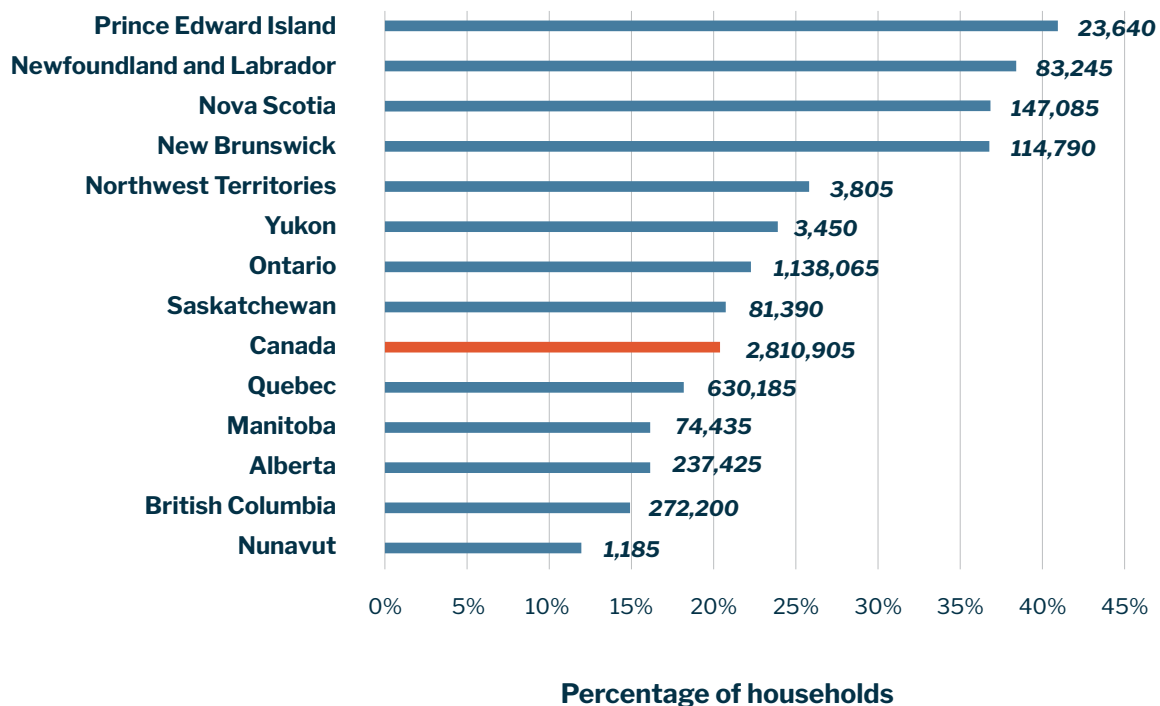


Figure 2 – Percentage and number of households in each province experiencing high home energy cost burdens (greater than 6% of after-tax income spent on home energy bills).



2. Energy poverty is both an urban and rural problem

Rural households, in Canada, are more likely to experience energy than their urban counterparts. This is typically due to a combination of factors such as the larger size of homes in non-urban settings, as well as higher transmission charges on utility bills. However, since most Canadians live in urban centres, most households who experience high home energy cost burdens live in urban centres. In Table 1, below, we use the Census Metropolitan Area (CMA) construct as a proxy for urban and non-CMA as a proxy for rural households.

Table 1 – Percentage and number of households in urban and rural settings experiencing high home energy cost burdens (greater than 6% of after-tax income spent on home energy bills).

	Percentage of households	Number of households
Non-CMA households (rural)	29.3%	1,175,260
CMA households (urban)	16.7%	1,635,645

3. Both owner and renter households experience high home energy cost burdens

A higher percentage of owner households experience high home energy cost burdens. However, ‘renters’ in the Census includes both those that pay for all their own utility bills, and those whose utility bills are, at least in part, included in their rent. Because this latter group will report lower energy costs, it would appear that the whole renter group have lower incidences of high home energy cost burdens. Analyses that disaggregate renters who pay for all their own utility bills and those who have a part of their utility bills included in their rent suggest that renters whose rent does not include energy costs have the highest likelihood of experiencing energy poverty, followed by homeowners and then renters whose rent includes some portion of their energy bills¹. Table 3, below, summarizes the percentage and number of households experiencing high home energy cost burdens among renter and owner households.

Table 2 – Percentage and number of households experiencing high home energy cost burdens by housing tenure (greater than 6% of after-tax income spent on home energy bills).

	Percentage of households	Number of households
Owner households	22.4%	2,095,540
Renter households	16.1%	715,365

¹See Rezaei, Maryam (2017). Power to the People: thinking (and rethinking) energy poverty in British Columbia, Canada, PhD Dissertation, University of British Columbia, Vancouver, pp. 53-55.

4. Households with a range of incomes experience high home energy cost burdens

While there is an obvious relationship between low income and energy poverty, experiencing energy poverty is somewhat distinct from having a low income. In fact, many households with moderate incomes also experience high home energy cost burdens. This is primarily due to the fact that energy poverty comes about through the interaction of several variables: household incomes, home energy performance, access to networks of affordable energy, and energy prices. As a result, a moderate-income household, who owns their larger home in the suburbs may well experience high energy burdens, while a lower income household living in a smaller and more efficient apartment building may not. Table 3 and Figure 3, demonstrate the relationship between low income (as measured using the After-tax Low Income Measure (LIM-AT)) and energy poverty. As the values suggest, half of low-income people in Canada are not experiencing high home energy cost burdens, while conversely, the majority of those who are experiencing high home energy cost burdens are not low income.

Table 3 - Number of households in Canada according to low-income and high energy cost burden status

	Households with high home energy cost burdens	Households with low to moderate home energy cost burdens	Total
Low-income households (by LIM-AT)	1,143,275	1,257,470	2,400,745
Not low-income households	1,667,630	9,716,765	11,384,395
Total	2,810,905	10,974,235	13,785,140

All households

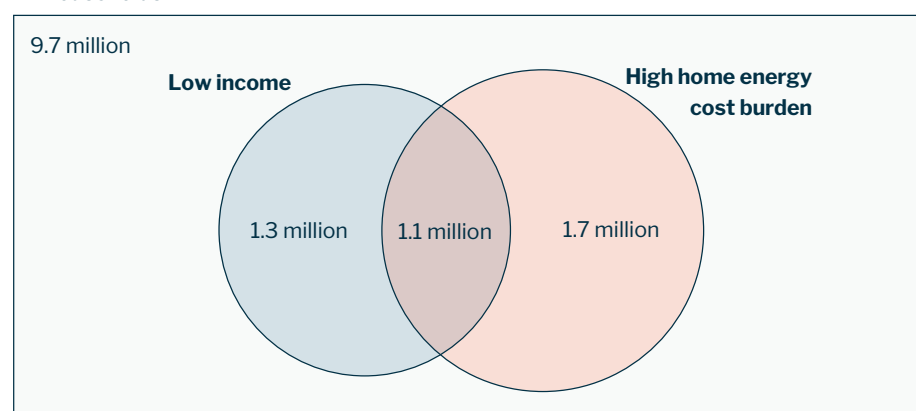


Figure 3 - Households in Canada, categorized by low-income (LIM-AT) and high home energy cost burden (6%+ of after-tax income spent on home energy) status

5. Housing characteristics are important factors in shaping home energy cost burdens

Home energy performance (the air tightness and insulation of a building and the efficiency of the systems that use energy at home) affect energy consumption and comfort in the home. For this reason, households who live in less efficient homes will typically have higher energy costs than their counterparts in more efficient homes. As figures 4 and 5 below demonstrate, both age and type of housing affect the likelihood of households experiencing high home energy cost burdens. Households living in homes built before 1960, and those living in mobile homes are highlighted as having the highest likelihood of experiencing energy poverty. However, in terms of number of households experiencing high home energy cost burdens, those living in single family homes (single detached housing) are the most numerous (1.8 M households in Canada).

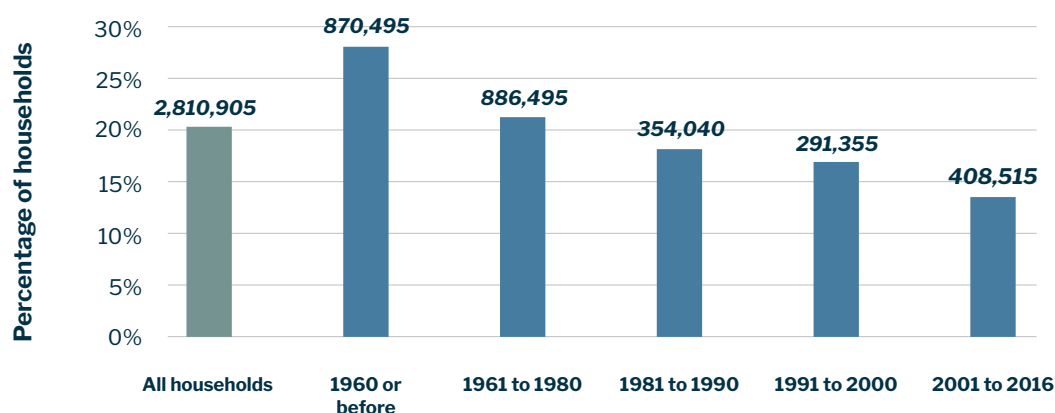


Figure 4 – Percentage and numbers of households experiencing high home energy cost burdens by period of construction of their home

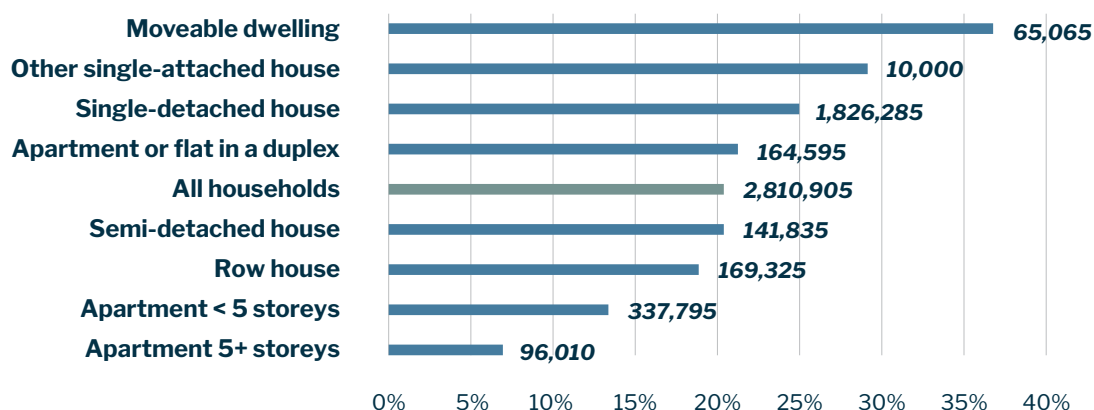


Figure 5 – Percentage and numbers of households experiencing high home energy cost burdens by type of housing

Advancing the conversation on energy poverty in Canada

These five points highlight large trends in geography, income characteristics, housing tenure, and housing types affecting incidences of energy poverty in Canada. They inherently lack local specificity and have limitations around the inclusion of indigenous communities, absence of transportation data, and aggregation of certain household types such as different type of renters (see the limitations section of energypoverty.ca for more discussion). This backgrounder and the data snapshots provided here are meant to guide the conversation on energy poverty towards a shared understanding of the issue and trends influencing energy poverty in Canada.

More locally-grounded analysis will help to develop a more nuanced understanding beyond what is highlighted here. Exploring the local level data presented in the Energy Poverty and Equity Explorer is a key part of advancing this conversation and developing these more nuanced analyses for Canada. It is also important to note that while this data is now available for the first time at the neighbourhood level in Canadian cities, it is not meant to be used in isolation for purposes of program design and delivery. Rather, it is our hope that it will be used to bring together working groups from multiple sectors, particularly those with lived experiences of energy poverty, to validate the stories that the data appears to be telling, and to devise strategies and actions that address energy poverty and inequities across different localities in Canada: Enjoy Exploring!





About the Local Energy Access Programs (LEAP) project

The Local Energy Access Programs (LEAP) project is a multi-city and multi-sector initiative led by the Canadian Urban Sustainability Practitioners (CUSP) network and funded by the Federation of Canadian Municipalities (FCM).

LEAP aims to achieve deep emissions and energy poverty reductions through equitable clean energy program design and delivery.

Equitable clean energy program design and delivery

First generation clean energy programs targeted early adopters and saw uptake from higher income households. Programs at this time weren't necessarily designed (or resourced) for widespread uptake, and the market maturity and cost of these product technologies made them inaccessible to the majority of Canadian households.

"Next gen" clean energy programs in cities seeking to achieve the deep emissions reductions matching their climate emergency declarations and 100% low carbon transition targets, must plan and resource these programs for broad adoption, thus must be designed to address the barriers many households have in gaining access to these technologies. Without addressing these constraints and increasing broad participation in these programs, Canada will not achieve the necessary GHG emissions reductions nor realize a just transition.

A Priority for CUSP Member Cities

Working at the nexus of Climate Action and Energy Poverty - The 2017-2019 strategic plan of CUSP includes, as one of its three priorities, advancing equity and affordability.

CUSP member cities agree:

- Growing income and wealth disparities and pressures on affordability are prevailing issues for urban Canada.
- Housing and transportation costs are the top two costs for Canadian households. Energy costs are a significant component of each.
- Energy poverty is likely to be prevalent in all their communities, but specific details of which households are impacted is largely unknown and the extent of which unmeasured.
- Collaborating on the design of next gen clean energy programs to reduce energy poverty in tandem with GHG emissions reductions has broad applicability across the entire membership.

CUSP's Energy Poverty and Equity Explorer

CUSP's Energy Poverty and Equity Explorer is a mapping tool from which to gain insights into community disparities related to energy costs and access, and other inequities at as granular a level as neighbourhoods. The Explorer tool has been developed, as part of the LEAP project, along with other resources, to help cities and their partners advance equity in clean energy program design by providing shared metrics and measurements that help guide the following:

1. How and what community data is analyzed and applied to climate action planning, policies and programming.
2. How and who is engaged in the community for co-design and implementation of clean energy programs.
3. How programs are designed, structured, resourced, and evaluated with a priority to achieve social and economic outcomes while pursuing deep emissions reductions.



About CUSP

Launched in the spring of 2015, the CUSP network connects sustainability practitioners from Canada's large and leading cities and provides added capacity to support their collective efforts and expand their reach and impact.

Vision

CUSP connects member cities, affiliate networks, and key partners to overcome shared challenges and advance individual, yet common goals. By cooperating on Canadian-specific issues, Canada's large and leading cities are able to leverage opportunity with partners, attract funders, and collectively inform FCM efforts to shape federal policy and programs and operationalize those efforts locally.

Connecting Canada

Our collective voice has the ability to inspire, inform, and influence; our collective efforts, the ability to accelerate and disseminate effective urban sustainability outcomes at scale. When connected and aligned, the CUSP network and its partners can produce meaningful impact at the community scale, and can help shape the policy, programs, projects, and pursuits of senior government and others in a way that will be most effective when executed.

CUSP's Member Cities

Combined, CUSP's members represent a population of 18 million, or one half of the country's population and generate \$1 trillion, or 55% of the country's GDP.



CUSP's Guiding Principles

The Network, its staff and members direct our efforts in a way that

- a) adds **value** for member cities;
- b) **cooperates**, rather than competes, with USDN, FCM, and existing Canadian networks; and
- c) **optimizes** resources of staff, members and partners, by seeking opportunities to align with others, to augment and enhance the work of others, to fill gaps not served by others, and to avoid duplication.

