

IN THIS ISSUE

**Multi-Family Energy Efficiency
Expanding, but does not yet Fully
Address Environmental Justice Concerns**

NOTE TO READERS

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**Environmental Justice Principles Justify
Expanded Energy Efficiency Investments
in Multi-Family Housing**

Utility investment in energy usage reduction¹ programs today is viewed as a wise investment. Years of experience document that utility dollars directed toward helping consumers reduce their consumption serves multiple purposes. Usage reduction reduces the long-term cost of providing utility service. Usage reduction is an effective mechanism by which to control greenhouse gas ("GHG") emissions. Usage reduction can improve affordability to low-income customers and help utilities reduce the costs of nonpayment. It can serve as a driver of economic development, increasing economic activity and creating jobs.

Despite its many benefits, there is an ongoing debate regarding the equities of utility investments in usage reduction programs. The debate questions whether all customer sectors receive their fair share of utility investment dollars. FSC recently authored a white paper taking a closer look at those questions involving "fairness," particularly as they relate to the distribution of utility usage reduction investments in affordable multi-family housing. For purposes of this discussion, usage reduction investments were viewed primarily as an environmental strategy.

Beginning Assumptions

Any discussion of the equity of the distribution of utility investments in multi-family housing

¹ Throughout this discussion, no distinction will be made between efforts to reduce demand and efforts to reduce consumption (kW vs. kWh and its natural gas equivalent). All such efforts are subsumed under the term "usage reduction."

has, at its core, certain fundamental assumptions. The discussion below seeks to make those assumptions explicit and to introduce an empirical basis for those assumptions. The purpose here, however, is *not* to empirically establish the validity of these assumptions; other researchers have addressed those topics (and each one might well deserve a paper unto itself). The data, however, quite clearly establishes that there is a sound empirical basis for asserting that:

- Multi-family housing makes a substantial contribution to the housing stock of the United States;
- Multi-family housing overwhelmingly tends to be rental housing;
- Multi-family rental housing has a close association to low-income status; and
- Multi-family housing tends to be more energy intensive, and less energy efficient, than single-family housing.

Multi-Family Housing and Income: Treating multi-family housing with energy efficiency is particularly important when one seeks to reach a lower income recipient population. Multi-family housing (defined as buildings with five or more units), one researcher notes, comprises 17% of all housing units in the United States. It makes up at least 20 percent of the total housing stock in nine states (and the District of Columbia).²

Multi-family housing overwhelmingly is rental housing. Nationwide, 83 percent of multi-family housing units are rental buildings, while only 17 percent are owner-occupied. Multi-family housing comprises more than 40% of the entire rental stock in the United States.³

² FSC's white paper provided references for factual statements and quotations. Due to space limitations, those references are omitted herein.

³ Multi-family housing, however, is highly concentrated. Ten states account for almost 64 percent of all multi-family housing; the top five states account for

In the United States, lower incomes are closely related with residence in multi-family housing. One author reports that multi-family housing shelters one quarter (27%) of the nation's very low-income renters. Nearly all (93%) of very low-income households living in multi-family housing are renters.

Recent Census data confirms that renters in multi-family buildings have substantially lower incomes than owners of single-family homes (and even owners of two-family homes). For the nation as a whole, as well as for each Census district, average renter income is roughly half the income of homeowners.

Energy Efficiency In Multi-Family Buildings:

It is well-established today that there is a significant potential for energy efficiency savings in the multi-family housing sector. "The potential for energy savings in this sector," one study found, "is huge and largely untapped." Energy efficiency in multi-family housing could be improved by about 30 percent.⁴ One reason for this can be attributed to the relatively older age of multi-family housing relative to single-family housing. Most multi-family housing was constructed before 1978, the year the nation's first building energy code was enacted (in California).

Multi-family housing is substantially less efficient than other housing types. One study, for example, examined the prevalence of Energy Efficiency Features ("EEFs"), defined to be "physical attributes that reduce the amount or cost of energy required for a given level of energy service." The study concluded that "multifamily rentals were less energy efficient than other housing in 2005 and . . .the gap persisted into

49 percent.

⁴ As Benningfield notes, "this is the 'achievable' energy efficiency potential, which means it is both economically reasonable and within normal budget constraints. The economic energy efficiency potential is estimated to be 59% of multifamily energy use. The technical potential is even larger: over 80%."

2009.” Some improvement occurred from 2005 to 2009 “but it was modest.”

In sum, the data and discussion presented in FSC’s white paper supports several conclusions. First, multi-family housing status and rental status are closely aligned. Not simply the majority, but the overwhelming majority, of multi-family units are renter-occupied rather than owner-occupied. Second, these renters tend to be substantially lower income. Indeed, on average, renters living in multi-family housing live with incomes at or about 200% of the Federal Poverty Level.

These incomes are sufficiently low to qualify households for federal energy assistance in many states. The multi-family units present a significant potential for energy usage reduction. Not only is multi-family housing less energy efficient per square foot of conditioned area, but multi-family housing units have experienced significantly fewer energy efficiency investments.

Basic Precepts of Environmental Justice

A principled basis in law and economics for explicitly considering the equity of utility investments in multi-family energy efficiency can be found in “environmental justice” doctrine. Broadly speaking, “environmental justice” refers to ensuring a proportionate distribution of environmental benefits and environmental burdens amongst low-income and minority populations when compared to the benefits and burdens distributed to non-disadvantaged populations. Environmental justice has been described as:

The right to a safe, healthy, productive, and sustainable environment, where “environment” is considered in its totality to include the ecological, physical, social, political, aesthetic, and economic environment. Environmental justice addresses the disproportionate environmental risks borne by low-income communities and communities of color resulting from poor housing stock, poor nutrition, lack of access to healthcare,

unemployment, underemployment, and employment in the most hazardous of jobs.

Environmental justice, however, involves more than preventing the disproportionate imposition of environmental risks, harms and burdens. It requires, also, a proportionate distribution of environmental benefits and amenities. Environmental benefits cannot be “reserved for the privileged few.” With particular relevance from the perspective of implementing energy efficiency programs, one commentator states, “green investment policy decisions cannot be solely synonymous with the adoption of green lifestyles by those who can afford them.”

With utility-funded usage-reduction programs, however, the line between avoiding the disproportionate imposition of adverse consequences and ensuring the proportionate distribution of environmental amenities often becomes blurred. In many instances, the “amenity” to be distributed is the avoidance of the harms generated by the consumption of home energy. Even while acknowledging this ambiguity, the two different aspects of environmental justice –(1) avoiding the disproportionate imposition of burdens; and (2) ensuring the proportionate sharing of amenities—are considered separately below.

Environmental Justice and Environmental Burdens

The impact of environmental pollution unquestionably falls disproportionately on disadvantaged communities. There is, for example, a disproportionate impact of hot weather on disadvantaged communities. As early as 1971, the U.S. Council on Environmental Quality (“CEQ”) found not only that a correlation existed between income and the risk of toxic exposure, but also that the lack of income impeded the ability of the urban poor to improve their environment. These populations, CEQ found, were “too poor to move.”

Poor and disadvantaged communities also have a higher risk of heat-related illness, asthma, and

other respiratory diseases that are exacerbated by climate change and degraded air quality. Indeed, environmental justice communities have been shown to suffer the *most* harm from climate change.

Innumerable studies have found that low-income households, along with persons of color, are disproportionately exposed to pollution. One of every four American children lives in an area that regularly exceeds federal ozone standards. Half the pediatric asthma population --two million children-- live in these areas. African American and Latino children, however, are three to five times more likely than White children to die from asthma. While nearly 70 percent of Hispanic, and more than 60 percent of African American children live in areas that exceed the federal ozone standard, only 50 percent of White children do. Moreover:

- The relationship of these adverse health outcomes to energy consumption and its related pollution seems quite unmistakable. “In a study done in the Bronx by researchers at the New York University School of Medicine, it was found that on days when air pollution, particulate matter levels, nitrogen oxide levels, and sulfur dioxide levels were at their highest, the severity of asthma symptoms doubled among the studied individuals.”
- Minorities disproportionately live in areas subjected to air pollution. More than 80 percent of Hispanics and 65 percent of African Americans live in 437 counties with substandard air quality, yet only 57 percent of Whites do. More than 68 percent of Blacks live within 30 miles of a coal-fired power plant --the distance within which the maximum effects of the smokestack plume are expected to occur-- while only 56 percent of Whites do.
- Climate change threatens minorities with greater health risks attributable to heat waves. By the Year 2100, extreme

heat waves that historically occurred once every 20 years are predicted to occur every other year. Blacks are twice as likely as Whites to die from a heat wave.

Even this discussion understates the exposure of disadvantaged communities to the harms associated with environmental pollution. It is not merely “outdoor” climate-induced health effects that represent the harms to be avoided through usage reduction programs. Because Americans spend 67% of their time in their homes,⁵ indoor air quality also affects health. Indoor air pollutants have been ranked as among the top five environmental risks to public health. Poor indoor air quality in the home has been linked to cancer, to asthma, and to carbon monoxide poisoning.⁶ And, while outdoor air quality is subject to regulation under the Clean Air Act, indoor air quality is not.

Despite this disproportionate exposure to harms, the cure can be as harmful as the disease when viewed through an environmental justice perspective. Existing economic responses to climate change impose a disproportionate cost on environmental justice communities. Every mechanism that internalizes the cost of climate

⁵ Indeed, estimates are that Americans spend 90% of their time indoors (not necessarily in their own homes).

⁶ The purpose of FSC’s white paper is not to document the relationship between housing quality and adverse health outcomes. Those interested in the topic should explore the literature of “ecosocial epidemiology.” See generally, Fatemeh Shafiei, “Reducing Health Disparity through Healthy Housing,” in *Healthy and Safe Homes: Research, Practice and Policy*, (Rebecca Morley, et. al, eds. 2011). See also, Nancy Krieger, “Theories for Social Epidemiology in the 21st Century: An Ecosocial Perspective,” *30 International J. Epidemiology* 673 (2001). For a discussion of the positive health impacts flowing from an improvement in housing quality, see generally, Thompson, Hilary, et al. (2009). “The Health Impacts of Housing Improvement: A Systematic Review of Intervention Studies from 1887 to 2007,” *American Journal of Public Health* 99(53): S681.

change will impose a disproportionate economic impact on disadvantaged populations. According to the Congressional Budget Office:

[A] cap-and-trade policy that achieved a 15 percent reduction in carbon dioxide emissions would raise the costs of energy and energy-related products annually by an average of \$680 (in 2006 dollars) for the 20 percent of households with the lowest incomes. . . According to Congressional Budget Office estimates, the impact of those cost increases is the equivalent of a 3.3 percent reduction in the real (inflation-adjusted) after-tax income of the 20 percent of households with the lowest incomes. In contrast, the richest 20 percent of households. . . would experience the equivalent of a 1.8 percent reduction in real after-tax income, or about half as much.

A failure to incorporate equity into multi-family energy usage reduction compounds these harms.

Environmental Justice and Environmental Amenities

Energy usage reduction programs can and should be viewed as an environmental amenity that should be equitably distributed, not merely as a response to environmental burdens. Usage reduction programs, in other words, are not merely a climate change mitigation strategy designed to reduce greenhouse gas (“GHG”) emissions. They are a climate change adaptation strategy as well.

The Intergovernmental Panel on Climate Change (“IPCC”), the leading international body established for the assessment of climate change, defines climate change “adaptation strategies” as initiatives designed to “enhance resilience or reduce vulnerability to observed or expected changes in climate.” Created by the United Nations Environmental Program (“UNEP”) and the World Meteorological Organization (“WMO”), IPCC states that adaptation involves “reducing risk and vulnerability, seeking opportunities and building the capacity,” of among other things,

“communities [and] individuals. . . to cope with climate impacts, as well as mobilizing that capacity by implementing decisions and actions.”

The environmental justice movement has long been concerned with the disproportionate lack of access to environmental amenities. One group, for example, references “outdoor apartheid and green access” in describing the unequal access to “high quality recreational opportunities.” In 2009, Seattle University law professor Clifford Rechtschaffen documented the disparate lack of access to transportation funding, as well as to parks and open space, by race and income.⁷

The distributional impacts arising from the access to, and pricing of, urban mass transit on disadvantaged communities is another example of environmental justice taking account of the distributional impacts of services viewed as environmental amenities. As with energy usage reduction, mass transit is not only a pollution control mechanism, but is also a strategy that is inextricably tied to the socio-economic quality of life of low-income and minority communities.

Climate change adaptation strategies present a particularly difficult problem for disadvantaged

⁷ “[I]n the United States, there is less empirical work documenting disparities in environmental benefits than there is empirical study documenting the inequitable distribution and cumulative impact of multiple environmental burdens. The fact that much less has been done with respect to environmental benefits is, perhaps, unsurprising. The distribution of parks, green space provision, and walkable sidewalks, along with access to coastal and water resources, to cite just four examples, are generally conceived of more as ‘land use’ than ‘environmental’ matters.” Nonetheless, it is established jurisprudence that all communities have a right to equal municipal services, including parks and recreation lands. See generally, Paul Stanton Kibel, “The People Down the Hill: Parks Equity in San Francisco’s East Bay,” 1 Golden Gate U. Environmental L.J. 331 (2007); see also, National Acad. of Pub. Admin. (2003). “Addressing Community Concerns: How Environmental Justice Relates to Land Use Planning and Zoning.” U.S. Environmental Protection Agency: Washington D.C.

communities lacking sufficient financial and social resources to pursue such strategies. These resources are encapsulated into the community's "capacity to cope."

The capacity to cope is a function of such factors as a community's financial and social resources, access to health care, and geographic mobility. In other words, the extent of adverse consequences is not only a function of geographic location and physical attributes, but of socioeconomic conditions. . . Vulnerable populations will be at much greater risk from climate change unless climate change adaptation policies grapple with the underlying socioeconomic inequities that exacerbate their vulnerability. Decreasing social vulnerability requires adaptation measures that both reduce the underlying sensitivity to harm and enhance the impacted communities resilience to harm after it has occurred.

In this context, green affordable housing should be viewed as an environmental amenity. The largest carbon emissions reductions accrue from efficiency enhancements, not curtailment activities. Low-income households may well be able to participate in some curtailment activities – turning off lights is the classic example—but lack the ability to upgrade to more fuel-efficient cars, purchase newer (and more efficient) home appliances, or rent better quality (and more efficient) housing.

Disadvantaged and minority communities have the least ability to engage in usage reduction strategies in the absence of external assistance. These communities can only pursue strategies to reduce energy consumption through sacrifice. To gain something, members of a disadvantaged community must give up something, and that "something" is generally an essential life-requirement (e.g., food, housing, medicine). Utility investments in energy usage reduction measures increase the ability of these communities to respond to climate change, whether through mitigation or adaptation.

Energy efficiency improves the resilience of environmental justice communities. These communities have the least ability to respond to climate change, to protect themselves, and/or to avoid the consequences of climate change. In a related fashion, environmental justice communities have the least resilience – a term often used in the literature— to reduce their vulnerability. There is "no place to hide." For example, as discussed above, indoor air quality can be as dangerous as outdoor air quality. For example, indoor housing temperatures (without air-conditioning) can be as deadly as extreme heat outdoors.

In sum, taking equity into consideration in the pursuit of utility investments in multi-family energy efficiency is needed whether such investments are viewed as a mitigation strategy or viewed as an adaptation strategy. Whether usage reduction is viewed as a means of *preventing* the inequitable distribution of environmental burdens, or as a means of *ensuring* the equitable distribution of environmental amenities, environmental justice principles support an explicit consideration of the equities of utility investment in usage reduction programs.

Unequal Cause and Effect

An unequal "cause and effect" exists regarding climate change and its distributional impacts. Environmental justice communities make the least contribution toward climate change and yet are harmed the most. Despite the disproportionate adverse impacts on environmental justice communities resulting from pollution, low-income people, and persons of color, contribute disproportionately less to the prevalence of that air pollution. For example, the average African-American household emits 20 percent fewer greenhouse gases than its White counterpart.

Despite their unequal contribution toward environmental despoliation, more wealthy households tend to demand a cleaner place to live and have the resources and political influence to pursue a clean environment. As a result, the com-

munities contributing the least end-up living in the most polluted areas.

Not only is wealth implicated in consumption of resources, which is usually directly linked to environmental degradation like pollution, but also the wealthier the people the more they demand a clean environment in which to live.

[Moreover], [t]he richer a cohort is in society, the more it is able to insulate itself from being affected by or observing environmental degradation. A corollary to insulation from adverse environmental effect is the ability of richer people to create healthier environments in which to live, including healthier homes. The perverse consequence is that, on a per capita basis, the people who cause the least amount of pollution experience the worst environment in which to live.

Summary

Based on this information, an integration of the burden and benefit analysis provides a strong environmental justice foundation for ensuring the equitable distribution of usage reduction investments to low- and moderate-income communities. These communities are likely to suffer the most, but contribute the least, to the creation of global warming. Their disproportionate exposure to harm, frequently referred to as “social vulnerability” in the literature, arises because of factors such as where these vulnerable populations live and what limits exist on their income.

The need to equitably distribute multi-family energy usage reduction investments can be soundly grounded in environmental justice principles. There is a clear mismatch between the cause and effect of environmental harms. While disadvantaged communities contribute the least to air pollution emissions, they are disproportionately burdened by the harms of those emissions. Moreover, a failure to equitably distribute energy efficiency investments disproportionately denies disadvantaged communities access to the ability to cope with these harms. Without equi-

ty in investment, the ability to adapt is limited to those who can afford to do so.

For more information regarding the environmental justice implications of energy efficiency investments in multi-family housing, or for a copy of FSC’s white paper (“The Equities of Efficiency”), please write:

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