An Approach to Energy Efficiency in Detroit: How DTE Energy Can Emerge as a Leader in a Unique Urban Landscape

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ABSTRACT

With the release of the ACEEE's 2013 City Energy Efficiency Scorecard, it is apparent that Detroit has a long way to go to match the efforts and results of other major American cities when it comes to energy-saving programs and policies. DTE Energy, the electricity producer and the supplier and distributor of gas and electric energy for the greater southeastern Michigan region, holds many of the keys to turning this trend around. Indeed, Detroit is the only municipality with over 500,000 people in the DTE Energy service territory. Therefore, many opportunities exist for DTE to play a larger role in energy efficiency measures at a city-wide scale, thus providing a more comprehensive and long-term impact on energy usage than focusing on reducing the consumption of buildings alone. To do so, important steps and considerations include prioritizing restorations, retrofits, and renovations over new construction; using urban planning tools such as zoning ordinances, site plan reviews, and livability metrics to set benchmarks; analyzing how other municipalities in the nation employ local government, community, utility, and transportation initiatives to shape energy programs; and recommending policies, innovations, and strategies that DTE Energy can adopt to enhance outreach to customers and improve energy efficiency on a city-wide scale. Keeping this framework in mind, Detroit has great potential to rise in the rankings for the next ACEEE Scorecard evaluation scheduled for 2015, with DTE Energy, an established corporate presence in the community, leading the way.

Overview

Purpose and Need for Energy Efficiency

In the challenge of meeting society's energy needs while mitigating climate change, "energy efficiency may be the cheapest, most abundant and most underutilized resource" (Mackres et al. 2013). The perpetual quandary is that we must at once meet energy demand, create jobs, boost the economy, maintain national security, and reduce carbon emissions. The United States uses 20% of the total primary energy supply worldwide. Within the US, 40% of the primary energy supply is consumed by commercial and residential buildings, accounting for almost 74% of national electricity sales; however, much of that energy is lost to inefficiency (DOE 2011). Indeed, "the United States currently ranks 9th in energy efficiency among the world's 12 largest economies" (Curtis 2013). New federal policies appeal to local and state governments to work in partnership with organizations to devise innovative approaches to improve energy efficiency in the built environment. With the right programs and incentives in place, the next 20 years could see an energy efficiency boom like no other (Dalrymple and Bryck 2011).

The form of the built environment is an often overlooked predictor of energy efficiency in the residential and commercial sectors. This paper serves to move beyond the utility industry's narrow focus on efficiency of individual buildings, building systems, or customers and leverage a more holistic understanding of the built environment to help DTE Energy and Detroit begin to achieve greater systemic efficiency gains on a city-wide level. Since the conservation of energy is directly tied to monetary savings, efficiency improvements to homes and high-rises satisfy res-

idents wanting cheaper utility bills and with lower energy usage, business owners are able to provide the same services to customers at a reduced cost. Beyond the end-user, saving energy is important intrinsically to environmentalists, public health advocates, and clean energy supporters because it reduces pollution and greenhouse gas emissions that contribute to increased incidences of respiratory diseases and the rate of global climate change. Decreased energy consumption also enhances energy independence, which is a matter of national security. In cities, energy efficiency goes hand in hand with improved walkability. Public transit networks that reduce the number of vehicle miles travelled relieve traffic congestion and cultivate vibrant centers of activity.

Energy Efficiency and Urban Environments

The Costs of Sprawl and Efficiencies of Density

'Sprawl' seems to be ubiquitous in conversations about the American landscape, past and present. Generally, it elicits visions of suburbia with single-family homes and single-person vehicle commutes. To narrow the scope of discussion and eliminate subjectivity, Smart Growth America defines sprawl as "the process in which the spread of development across the landscape far outpaces population growth" (Ewing, Pendall, and Chen 2002, 3). Such growth necessarily leads to inefficiencies and conditions that adversely affect infrastructure, the environment, and human health.

Low-density development has negative public health and ecological outcomes. Because walking between destinations is often an unfavorable or nonexistent option, people are less likely to benefit from this form of exercise. Less non-motorized transportation options lead to more cars on the road which means more pollution. Buildings separated by larger distances forego district heating and cooling system options available in areas of higher density, leading to a 30% increase, on average, in building climate control costs. Furthermore, "the delivery of electricity is strained by the distance that it must travel to accommodate dispersed customers" (NYSEP 2009, 14). Sprawl is therefore not only damaging to human health and the environment, but is also less energy efficient than higher-density built environments. There are significant costs that are often overlooked or unaccounted for, incurred by major utilities operating in low density communities. These include:

- Lost efficiencies when district energy systems are unfeasible or impractical
- Lost efficiencies of individual, separated household, retail, and workspace units that might otherwise share walls, floors or ceilings in a high-density environment.
- Higher initial capital costs for new electric, gas or water infrastructure on a per-customer or per-capita basis
- Higher operation and maintenance costs, including for storm response, on a per-customer or per-capita basis

Higher-density, mixed-use urban environments are increasingly viewed as more ideal for facilitating environmental and economic sustainability. This form of built environment is attractive as municipal and state budgets shrink it brings in far more tax revenue per acre and requires fewer dollars to serve than lower density development (Minicozzi 2012; Strong Towns 2013). The distances between live, work, and play destinations are greatly reduced, making alternative forms of transportation such as walking, biking, and public transit not only feasible but preferable. Household income otherwise spent on vehicle maintenance and fuel – money that floods out of the local economy – is conserved and distributed back through nearby communities (CEOs for Cities 2014). Businesses benefit from clusters of residents with easy pedestrian and bicycle ac-

cess to storefronts, creating a reinforcing multiplier effect. Decreased VMT leads to decreased greenhouse gas emissions and shorter blocks slow traffic, creating safer streets for pedestrians, cyclists, and drivers.

Opportunities for Cities

Several methods for achieving greater energy efficiency work best when applied at a city scale. One is to apply the principles of smart growth, which operates under the motto of 'fix it first.' The Sustainable Cities Collective notes that the urban population is rising in the 21st century, increasing the pressure on transportation, water supply, and utility systems that are decades old and in some cases, nearing the end of their useful life. Resources that otherwise might be diverted to expanding on the edges of cities can be used to upgrade or apply innovative technologies to existing infrastructure within the city, thereby preserving density, lowering the long-term maintenance costs, and ultimately increasing energy efficiency (Ewing, Pendall, and Chen 2002). A second option takes advantage of the dense networks of buildings that exist in metropolitan areas. Architects working in Chicago found that interconnectedness and "the broader human systems running through the buildings ha[ve] much more impact" on a building's energy behavior than "'the age or height or [any] other characteristic'" (Green 2013). Therefore, when applying engineering or equipment solutions to create energy efficiency during retrofits, renovations, or new designs, it is critical to also consider factors such as building use and transportation patterns in order to adequately achieve energy savings.

Another course of action is to commit to reducing VMT. In one estimate calculated by CEOs for Cities, the US could realize a savings of $29 billion if each person in the 51 largest metropolitan areas drove just one mile less per day. The best way to achieve this reduction is through "genuine urbanism," which is to say that the goal of land use and transportation planning in cities should be to decrease the number of trips made by car (CEOs for Cities 2014). Designing shorter, narrower blocks and concentrating interspersed residential, retail, and office space developments are ways to create desirable, walkable city centers; the easier and more enjoyable it is for people to walk, the less likely they are to drive. Fourth, electric vehicles become fiscally sensible in dense areas because minimized travel distances allow trips to be made solely on electric power. Suburban dwellers commuting significant distances daily often revert to gasoline after the electric charge has been depleted. Multiple charging stations placed at apartment or office complexes serve and incentivize a larger population of electric vehicle drivers than does a solitary station in a single-family, private garage that is powering one vehicle exclusively. Another solution is to simply perpetuate 'green' lifestyles. Green Cities believes that "there is some evidence that people with green preferences cluster near one another in places that enact green policies" (Cortright 2008, 58). With increasing energy and transportation costs and rapidly changing demographic preferences, more people are predicted to choose to live in an urban environment over the next few decades. In fact, in one study, 88% of Millennials preferred to live in a walkable urban setting (CEOs for Cities 2014). Cities promoting their sustainability can attract growth in the form of residents who care about and are willing to contribute to further green initiatives that include energy efficiency policies, thus compounding efforts with the happy side effects of improved walkability, alternative transportation, and quality of life.

Precedents and Best Practices

Programs in Place

Many cities and organizations across the United States have championed energy efficiency policies and practices, motivated by technology, savings, or cross-institutional collaboration. For other parties seeking justification to adopt energy efficiency goals, these case studies provide insights into effective program implementation as well as barriers to success.

Energize Phoenix. In 2010, the City of Phoenix, Arizona State University, and Arizona Public Service, the major electric utility for the state, formed a partnership under the US Department of Energy's Better Buildings Neighborhood Program entitled Energize Phoenix. These institutions committed to work together for three years to tackle the growing energy challenge associated with climate change and fossil fuel dependence. In a 10 square mile slice of the urban core that includes 1700 residential units and 30 million square feet of commercial space, the goal was to reduce energy consumption by 30% for residential and 18% for commercial and thus eliminate 50,000 metric tons of equivalent carbon dioxide (CO_2e) emissions per year (Dalrymple and Bryck 2012). Year One entailed defining the partnership, designing the program, structuring the finances, collecting data, and marketing. Year Two implemented seven programs geared towards apartment buildings, single-family homes, low-income homeowners, small businesses, large businesses, commercial financing, and renters of single-family homes. Outreach included advertisement campaigns directing people to the website, a strategic media plan, and events within the community to showcase the program and its incentives. Now several years into the program, Energize Phoenix can begin to measure any changes as a result of programmatic efforts.

Envision Charlotte. Charlotte, North Carolina has an all-inclusive campaign to track and minimize energy and water use, improve air quality, and reroute waste otherwise destined for landfills. Founded in 2010 with goals projected over five years, Envision Charlotte has engaged large corporate partners such as Cisco, Siemens, and Verizon Wireless in funding and promotion. Of the four pillars, energy has achieved the most to date, thanks to Duke Energy's Smart Energy Now program. Behavioral changes in 21.5 million square feet of office space in the Uptown area will lead to a 5% decrease in energy consumption which is expected to translate into a 20% decrease across the city (Envision Charlotte 2012). By focusing on Uptown as an incubator for the program, the metrics and success achieved can be replicated city-wide. A key component of Smart Energy Now is measurability; savings must be quantified in order to be validated, persuasive, and replicable. Participating buildings are hooked up to a digital grid on Duke Energy's electrical infrastructure with their real-time energy usage in kilowatt hours displayed publicly on the Smart Energy Now webpage. Changes in energy use on a daily, weekly, and monthly basis are displayed and equated to a tangible impact, such as powering a certain number of schools for one day. The program’s success thus far has been achieved purely on the basis of behavioral change, with equipment upgrades or technological retrofits not promoted. In this context, real-time feedback is crucial for informing and incentivizing this type of change and providing a baseline against which Charlotte can gauge its future success.

Smart city: Hoboken. In collaboration with the City of Hoboken, New Jersey, the Stevens Institute of Technology will begin to implement smart-city technologies in phases over the next three years. Through the Institute's Smart Lab, to be built on its Hoboken campus, crowd-sourced data will be analyzed across the city. Eventually, with a smart-phone app, residents can access “real-

time information about traffic situations, parking availability, energy consumption and sustainability, air and noise pollution, and emergency response times" (Del Percio 2013). The hope is to improve the delivery, management, and utilization of city services and as Mayor Dawn Zimmer says, "…build a more informed community and responsive government" (Del Percio 2013). Such a comprehensive undertaking is possible in part by the small geographic footprint of Hoboken – it covers only one square mile. However, best practices from the research undertaken at the Stevens Institute may potentially be applied in larger cities or on the regional level.

Energy Efficiency Strategy Project (EESP). The EESP, launched at MIT, uses geospatial mapping to inform and enable the implementation of energy efficiency programs. By mounting infrared cameras to a vehicle, researchers at MIT were able to capture thermal imagery and detect heat loss from doors, windows, and roofs of houses and buildings. In this way, an entire city's heat loss data can be amassed to provide a quantitative picture, allowing targeted solutions and ensuring effective spending of efficiency improvement funds (Chandler 2011). This particular project imparts the importance of gathering and mapping energy-related data. If citizens and government officials can visualize it in juxtaposition with geographic, demographic, and other data, they can understand of the impact of energy consumption. This in turn can influence consumer behavior by holding all users accountable for energy management and reduction (Reul and Michaels 2012). Currently, barriers to such data access and dissemination include the privacy policies between utility companies and their customers. However, the availability and exchange of real-time energy use data is vital to making an impact on energy efficiency on a city-wide scale. Indeed, "the longer the lag in time between using [energy] and being informed of the energy use, the less likely a consumer is to take action in response" (Reul and Michaels 2012, 4).

PlaNYC. In 2007, New York City mayor Michael Bloomberg announced a comprehensive plan to address population growth, climate change, energy, and quality of life for city residents. Projecting over a quarter century, municipal, state, and federal government officials were called on to make financial commitments to the 127 projects, regulations, and innovations laid out by PlaNYC. Initiatives to accommodate an expected population increase of one million people include building platforms over highways and railways to create new residential space and rezoning existing neighborhoods to heighten access to public transportation and allow denser housing developments. To mitigate climate change, several mechanisms would be employed, such as incentivizing hybrid vehicles, phasing out diesel trucks, planting over one million trees, adding bike paths, and creating green roofs and larger sidewalk tree pits to alleviate stormwater runoff. The energy policy involves buying power from efficient generation plants and conducting energy audits. A surcharge on electric customers would go towards retrofitting and other energy efficiency improvements to bring "aging buildings into the 21st century" (Lueck 2007). Significantly, the city requires the disclosure of energy usage data. Measures geared toward improving what it means to live in New York City include converting 290 schoolyards into playgrounds, using municipal monies to clean up brownfields, and abolishing zoning that hinders green construction. The beauty of all of these policies and projects is that their effects will greatly enhance the quality of life for New Yorkers and define the city as a progressive model for others around the globe.

Best Practices

Each of these five programs highlights a best practice in the realm of energy efficiency in cities. This information provides important takeaways for other cities looking to adopt comprehensive energy efficiency policies.

- Energize Phoenix: The partnership between the city, the utility, and a research university is crucial to a highly effective, well-understood, and scalable program.
- Envision Charlotte: It is clear that a strong utility commitment is key to progress and participation.
- Smart City: Hoboken: Technology furthers sustainability and efficiency goals.
- Energy Efficiency Strategy Project: Publicly available energy data is necessary to inform citizens, government officials, and utilities.
- PlaNYC: Efficiency initiatives are not only relevant to saving money and energy but also to improving the quality of life for urban residents.

Place-Based Considerations for Detroit

Current Conditions

Taking stock of the current state of the situation provides a baseline against which to measure progress. The challenge is that Detroit ranked second to last of 34 cities on the American Council for an Energy-Efficient Economy's 2013 City Scorecard. Cities were rated in five policy categories: local government, community, buildings, utilities, and transportation and of the 100 possible points, Detroit received 19. The Scorecard further breaks down each of the five categories. Within the local government, Detroit earned credit for lifecycle cost considerations in materials procurement for new construction, having a plan for street lighting upgrades, and energy-saving policies for city fleet vehicles. Detroit also allocates investments for efficiency retrofits to replace equipment or improve building envelopes for a category score of 1.5 out of 15. In the community, Detroit scored 3/10 for having combined heat and power facilities that link up with a district energy system. Municipal solid waste is collected and delivered to an incinerator facility, which captures energy from combustion and delivers it as steam to heat buildings and water supplies throughout downtown and midtown Detroit. For building codes, the city defers to state authority for stringency and dedicates monies to enforce compliance, with grants to finance any incentives for efficient commercial or public sector buildings. The city also has ENERGY STAR home performance services, bringing the category score to 5.5/29. In the realm of energy and water, Detroit received 4.5/18 points because investor-owned utility DTE Energy and the Detroit Water and Sewerage Department apply a portion of their revenues towards energy efficiency. Finally, in the area of transportation, Detroit scored 4.5/28 for having bike sharing programs in development, an adequate ratio of transit to road development funding, efficient intermodal facilities for freight, and 20,000-50,000 rides available on public transit each week (Mackres et al. 2013).

Areas for Improvement

In addition to the best practices exemplified by the programs discussed earlier, the ACEEE makes recommendations in each of the five categories considered in the Scorecard on components of successful energy efficiency policies at the city scale. (Mackres et al. 2013).

- Within the local government, changes in employee behavior towards energy use, applying efficiency programs to municipal facilities and fleets, and increasing investments in infrastructure empower the city to lead by example and make a case for more widespread applications of similar policies.
- The community can set energy efficiency goals and actively track, manage, and communicate any progress made towards achieving these goals, which includes making energy use information broadly available.
- Building energy codes should be up-to-date and stringently enforced. Existing buildings should be subject to benchmarking, rating, and disclosure of their efficiency status, with incentives offered to high performers.
- Cities that partner with energy and water utilities are in a better position to expand efficiency programs, funded in part by the utility, and promoted in both sectors.
- Transportation modes should be diversified and integrated into land use planning. Cities can reduce parking requirements and ensure non-motorized and mass transit options, such as biking and light rail, are safe and accessible. Neighborhoods should be attractive to all forms of transportation and electric vehicle infrastructure should be incentivized.

The ACEEE makes several recommendations for Detroit that could help boost the city's position for the next survey in 2015. These include a focus on goal setting, funding, tracking, and reporting for both the government and the community; strategizing public building energy ratings and retrofits; and improving the overall condition and planning of alternative transportation to create pedestrian-friendly corridors and complement land use objectives. Further implementable strategies include providing training to city officials to equip them with knowledge and tools for incorporating energy considerations into large scale and regional planning efforts (NYSEP 2009) and facilitating "public discourse…to propel the collective momentum towards a cultural efficiency value" (Reul and Michaels 2012, 5).

Uniquely Detroit

It is important to keep in mind that though what the ACEEE and SGA recommend are useful strategies that have worked in numerous places, they will not be successful everywhere. Indeed, many are not possible in Detroit due to several constraints. Most notoriously, the City lacks the monetary resources available to other cities with substantial residential tax bases. Therefore, energy efficiency programs that rely on dedicated funding from the municipality are not feasible. In 2002, Detroit's population was 928,870. In the last national census in 2012, that number had fallen to 701,475 with an especially sharp drop following the 2008 recession (US CB 2014). This steady decline in the number of residents has left the city with inadequate densities to justify investments in things like complete streets or alternative transportation. Furthermore, the median income for Detroit households from 2008-2012 was $26,955, compared to Michiganders as a whole, who earned $48,471 (US CB 2014). For people struggling with poverty, poor education, or high insurance rates, programs touting energy efficiency are not on the radar.

A notable barrier to walkability and public transportation is the history of Detroit as the Motor City, where cars have reigned for the last century. Because of the prevalence of single-family homes, dispersed retail corridors, and the presence of four major highways dividing the urban core, car travel is inevitable. Another setback for smart growth in Detroit is the current development climate. In cities with established, thriving downtowns and high densities, land is a valuable commodity and therefore developments must follow strict regulations to ensure any available space is used to the fullest. In a city desperate for progress however, the attitude is that any development is better than stagnation, which often results in minimal follow-through on strategic land-use planning. This could be troublesome in the future when land has been inappropriately used or inadequate densities remain after blight removal.

That being said, there are many aspects of the city of Detroit that make smart growth, energy efficiency, and transit-oriented development desirable and effective. For example, there is a strong propensity for grassroots or community-level organizing, with community centers and faith-based institutions as anchors in the neighborhoods. A generously supportive environment for entrepreneurs allows anyone with the inclination to start a business and be successful. As such, community-wide energy efficiency initiatives with citizen champions could be very effective in Detroit. Throughout the city and especially in the central business district, buildings, sometimes with high architectural value, lie vacant and ripe for rehabilitation. Therefore, retrofitting buildings with energy efficient systems and equipment is an obvious opportunity, one that could be even more impactful if benchmarking and commissioning were enforced. Investments in public transportation options such as light rail and bus systems would have a major effect, given the number of low-income residents for which mass transit is an affordable alternative to owning a car. Businesses all over the city would benefit, since their storefronts would be more easily accessible, and housing opportunities would increase due to improved commutes from home to work.

Public-private partnership is another solution that has arisen in response to limited city funds. One example is the Eastern Market Corporation (EMC), a nonprofit organization established in 2006, which manages the farmers' market located in the Eastern Market district just northeast of downtown Detroit. In operation since 1891, it is the largest historic public market district in the country (Brennecke 2014), with as many as 250 vendors and 45,000 visitors each Saturday (Deeb 2014). Eastern Market remains a city asset and this arrangement lessens the burden on strained city resources, placing authority in the dedicated hands of the EMC. Over the last eight years, significant investments and renovations have been made and attendance has increased. Using the success of the public-private partnership between the City of Detroit and EMC as a model, similar arrangements could be made to enhance other undertakings within the city, including energy efficiency programs.

The Energy Utility

A best practice highlighted by the ACEEE involves cities working together with their utility providers to enhance energy services, leverage utility funding, and better communicate and promote efficiency initiatives offered. Therefore, it is important to consider the role that utilities play in the communities they supply. In particular, the electric and gas utility in the southeast Michigan region, is investor-owned DTE Energy. DTE offers many programs tailored to both business and residential customers that promote saving energy because it in turn saves money. From exploring the DTE Energy website, it is possible to see just how many resources are available for customers looking to save energy, of which a handful are discussed here.

Residential customers may obtain rebates for upgraded lighting and ENERGY STAR products, elect to have their home audited for energy waste, and peruse energy use calculators and savings guides. Low-income customers are eligible for the Energy Efficiency Assistance Program, which functions as a partnership with local community action agencies. The GreenCurrents[SM] program applies a surcharge to a participant's monthly bill for a set amount of their power to be generated using alternative energy sources. SmartCurrents[SM] explores the impacts of empowering customers to exercise greater control over their energy usage with various web-based platforms. SolarCurrents[SM] encourages customers to install solar panels by providing incentives and assistance to help make the process worthwhile (DTE Energy 2014b). Another major offering is a monetary incentive for the purchase of a plug-in electric vehicle (PEV) and the installation of a charging station in the participant's home. During these nighttime or off-peak hours, electric rates are less expensive, thus PEV customers are encouraged to charge their vehicles during times of off-peak demand to maximize savings (DTE Energy 2014b).

Business owners can peruse a guide to choosing appropriate lighting upgrades; read about energy efficiency programs implemented at other companies; and learn about financing and the discounts available for implementing energy efficiency improvements. The GreenCurrents[SM] and SolarCurrents[SM] programs are also available to business customers. Another useful self-service tool that was recently released is the Business Energy Analyzer. Business customers view how they are using energy and receive an action plan for how to reduce usage and save money (DTE Energy 2014a). As with the current conditions in the city of Detroit, it is important to understand the present situation of DTE Energy's energy efficiency programs in order to set a baseline and gauge progress in the future. A comprehensive overview is available on the DTE Energy website.

Recommendations for Action

Solutions

Recommendations for moving forward should be based on references that include successful programs and industry best practices, current energy efficiency policies in Detroit, and improvements corresponding to the ACEEE City Energy Efficiency Scorecard. The unique place-based constraints and opportunities for Detroit and the present position of the energy utility are also highly important factors. As Detroit makes a comeback and reasserts its relevance, planning is crucial so that Detroit may be a model for advanced applications of smart growth, green infrastructure and energy efficiency, each of which inform and perpetuate the others.

City of Detroit

For Detroit, several solutions emerge to address not only energy efficiency opportunities but also quality of life improvements. The City should identify nonprofit and community organizations and establish partnerships to drive progress towards programs such as curbside recycling and green roofs or provide technical assistance for implementation. In particular, NextEnergy, a Detroit-based nonprofit, supports investments and the technologies surrounding advanced energy storage (batteries), renewable energy, and energy efficiency. One key initiative emerging in downtown Detroit is the establishment of a Business Improvement Zone (BIZ). Within the central business district, property owners and business leaders would make financial commitments based on property value to fund programs such as litter cleanup, landscaping, safety, and marketing. This collaboration of downtown businesses is an excellent platform on which to introduce

energy efficiency goals. The community of leaders that the BIZ creates could be a powerful vehicle for effectively implementing efficiency programs on a city-wide scale. Another key strategy would be to have a elected official, supported by city council, take a public stance as an energy efficiency champion. This might encourage city staff members working in municipal buildings to adjust energy use behaviors as well as motivate other community-based initiatives.

Detroit Future City (DFC), a development framework released by a nonprofit organization of the same name, provides many recommendations for future development in Detroit and includes such strategies as fostering multiple centers of activity across the city, introducing green and blue infrastructure systems, and encouraging increased bike paths and greenways. DFC takes into account the M-1 rail, a streetcar system that will travel up and down Woodward Avenue or Michigan Highway 1. The project is still in the planning stages, with initial utility preparation currently underway, and is expected to be complete within the next few years. This major installation of public transportation will allow many residents to travel without the use of a vehicle, thereby reducing emissions, pollution, congestion, health hazards, and other costs associated with automobile transportation. Overall, perhaps the biggest impact on city-wide energy efficiency could be gained by conducting an energy analysis to gauge the current state of building inefficiencies. Obtaining and communicating such data could greatly influence policy and investment decisions by business and city leaders and facilitate progress toward future goals.

DTE Energy

While it can be said that DTE Energy offers a wide array of energy efficiency programs for both residential and business customers, these programs are voluntary and conventional among other utilities in the United States. For DTE to emerge as a champion for energy efficiency in Detroit, there are several recommendations to consider. In an effort to better support the cities, downtowns, and town centers in their service territory, DTE could perform a top-to-bottom analysis of current residential and commercial programs to evaluate how well each serves existing areas of higher density. This would involve working with all stakeholders and customers to identify related policy, ownership and technological barriers preventing DTE's customer energy efficiency programs from being utilized by urban customers.

Moving forward, the company headquarters building cluster could benchmark its own energy use with the US Environmental Protection Agency (EPA) ENERGY STAR Portfolio Manager. This tool has already been implemented in 40% of US commercial buildings and could help set reduction goals for the company to work towards and provide a model for other large businesses in the area to do the same (US EPA 2014). Another straightforward step would be to set an incrementally rising goal for the level of customer awareness of energy efficiency programs offered by the utility. This would allow DTE to gauge and actively work to increase the number of people who know about their programs and make targeted marketing decisions to help underserved groups within the customer base. DTE could provide funding to establish the position of a full-time energy manager in the City staff that would help coordinate the utility and other efficiency stakeholders. The initiative with the most potential significance would be to release energy usage data, a best practice identified in the ACEEE Scorecard. Currently, DTE can distribute some information in aggregate, but each customer's data is protected by privacy measures. Changing this system to share and make publicly accessible energy usage data for DTE customers in the Detroit community could expeditiously shift the way energy efficiency is viewed in the city, provide compelling reasons for new programs, and allow all citizens and business owners a stake in improving energy efficiency and the quality of life for Detroit residents and visitors.

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