



**Economic Impact Report**

**REPORT BY HEESEUNG KIM**

**DESIGN BY NARCISSE ROBLES**

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# Introduction

Plant Chicago is a small nonprofit organization located in Chicago's Back of the Yards Neighborhood. With a mission to cultivate local circular economies, Plant Chicago works to educate and inspire residents, students, practitioners, and small businesses to take part in building this new economic system.

The local circular economy seeks to maintain resources in closed-loop systems, to great environmental, economic, and social impact. Collaborative in nature, a circular economy requires participation at all levels in order to be successful. While much attention has been paid to circularity at a macro level, small businesses have an important role to play in advancing the circular economy. After all, small businesses generate 44 percent of U.S. economic activity.<sup>1</sup>

Small businesses can have significant ripple effects in their communities based on how they choose to conduct business. The purpose of this report is to better understand the impacts of locally owned, independent businesses, as well as measure local circular economy practices. While this is Plant Chicago's inaugural economic impact report, subsequent reports will allow circularity to be measured over time. This report also seeks to highlight the power of consumer spending habits and decisions. When consumers choose to shop locally and independently, this report will help illuminate where their money is going.

There's a lot of discussion of what exactly constitutes "local", with no widely accepted definition. In this report, different tiers of local are examined:

- The southwest side of Chicago, where all of the businesses in the CE Leaders Network are located
- Chicago, IL
- Illinois and its surrounding states, Michigan, Indiana, and Wisconsin

This report focuses on assessing the local economic impact of the businesses in Plant Chicago's Circular Economy Leaders network. This network is the first local circular economy network for small businesses. The intent of this inaugural report is twofold: it creates a process for measuring local circular economic impact and establishes a baseline impact for our small business network members. Future reports will be completed on an annual basis and will use this baseline data to measure the progress of network members toward meeting goals.

This report, which reviews the 2019 practices of businesses in the southwest side of Chicago, was compiled in the midst of a global pandemic, the impacts of which have been felt resoundingly at the local level. It's estimated that 25 to 36 percent of small businesses could close permanently due to the pandemic.<sup>2</sup> At the same time, the COVID-19 pandemic has revealed how globalization can create vulnerabilities, preventing business from being conducted as usual. Now is an opportunity for consumers to shop local and for business owners to develop new, circular practices for a more resilient community.

# METHODOLOGY

There were 13 businesses in Plant Chicago's Circular Economy Leaders Network that were operational for at least some period in 2019. Of these, sufficient data for some level of inclusion in the report was received from 8 businesses.

- **Food Service: Back of the Yard Coffee; DeColores Ice Cream and Coffee; Monarca P.L.A.C.E. 7; Pochos Chicago**
- **Food Manufacturing: First Curve Apothecary; Just Ice, Inc.; Tuanis Chocolate**
- **Farming: Star Farm Chicago**

This report primarily covers economic activity of network businesses in 2019. Data were collected through questionnaires that were filled out by CE Leaders Network business owners and waste audits conducted by Plant Chicago. The questionnaire data were collected in July 2020 and included self-reported financial information from 2019.

For businesses that began operations in 2019, the estimated yearly economic impact was computed using the monthly average derived from the time period of collected data from 2019.

The waste audits took place July 2019 and July 2020. Due to limitations in how quickly data could be collected, 3 of the waste audits took place after Governor Pritzker's "stay at home" order was instituted and lifted in Chicago due to the coronavirus pandemic (signifying a change from business as usual). The waste audit data for each business were collected to reflect a normal production cycle. The data were then annualized based on the number of production cycles per year. A detailed explanation of the methodology for the waste analysis is included in the Waste section.

Throughout the report, information around local businesses is provided to provide context on the analysis of CE Leaders Network businesses. To determine local business baselines, information from the 60609 zip code, where the majority of businesses in the CE Leaders Network are based, was used.

<p>interviewed 8 small businesses within Chicago's food industry</p>	<p>collected businesses' financial &amp; operations data from questionnaires</p>	<p>waste audits were conducted by Plant Chicago</p>	<p>data annualized based on the number of production cycles per year</p>
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# SUMMARY OF KEY FINDINGS

30 net jobs were generated across network businesses.

35.7% of every dollar spent by businesses stayed on the southwest side of Chicago.\*

Network businesses generated 16.7% less waste per \$100 revenue than the average business in Back of the Yards.

Waste diversion practices helped CE network businesses avoid 0.86 metric tons of CO<sub>2</sub>e emissions, the equivalent of taking a passenger vehicle off the road for over 2,000 miles.

With 100% participation in recycling and composting programs, the CE Leaders Network businesses as a whole could avoid 16.03 metric tons of CO<sub>2</sub>e emissions.

\*Three businesses of 13 submitted full data for this metric.



# Your People

Among the eight surveyed businesses, three were nonemployer businesses (37.5 percent of the surveyed network members). According to the U.S. Census Bureau, 35.2 percent of businesses in the accommodation and food sector are nonemployer establishments.<sup>3</sup> Among the CE Leaders Network businesses with employees, a net 30 jobs were generated in 2019. Two of the five employer establishments reported offering benefits including health insurance and paid time off for full-time employees; however, the full extent of benefits offered to employees in the CE Leaders Network could not be determined.

Similarly, two businesses reported the minimum wages they offered for non-tipped employees as an average of \$15 per hour, although conclusions could not be made regarding the pay practices across the network. In Chicago, the minimum wage for non-tipped workers was \$12 per hour from January to June and \$13 per hour from July to December, and the median earnings for workers in 60609 is \$23,637.<sup>4</sup>





### *Local impact per \$100 revenue:*

**\$35.73** was retained in the southwest side of Chicago

**\$86.51** was retained in Chicago

**\$90.10** was retained in Illinois and its surrounding states (Michigan, Indiana, and Wisconsin)

## Your Networks

Three CE Leaders Network businesses reported their local expenditures over the course of 2019, which includes categories such as employee wages, operating expenses, and profits to local owners. Between these businesses, for every \$100 of consumer spending, \$35.73 was retained in the southwest side of Chicago, \$86.51 was retained in Chicago, and \$90.10 was retained in Illinois and its surrounding states (Michigan, Indiana, and Wisconsin). These are the initial level of spending by the CE Leaders Network businesses and demonstrate the businesses' direct effects on the local economy. Indirect and induced effects were beyond the scope of this report.

Beyond putting money back into the neighborhood through their everyday operations, CE Leaders Network businesses place a heavy emphasis on community giving, providing products, gift cards, venues, services, volunteer hours, and more. Organizations that have benefited from these actions include:

CHICAGO	NATIONALLY/INTERNATIONALLY
<p>CASA CATALINA CHICAGO PUBLIC SCHOOLS LATINOS JUNTOS MEXICAN MUSEUM OF FINE ARTS ONE SUMMER CHICAGO PEACE AND EDUCATION COALITION</p>	<p>FEMME EMPOWERMENT PROJECT HERBAL MUTUAL AID NETWORK RAINFOREST ALLIANCE</p>

An important aspect of the local circular economy is resource-sharing. For small businesses, this represents an opportunity for greater efficiencies. Within the CE Leaders Network, resource-sharing took many forms, including cohabiting production space; sharing knowledge around operational processes, professional networks, and product development; and collaborating to create products with other businesses, within the network and beyond. Additionally, three businesses reported experiences sharing equipment and materials. However, the logistics of sharing equipment can be complicated for reasons such as overlapping times of need and the time and effort required to develop a sustainable sharing process.



photo by Leah Kuhn



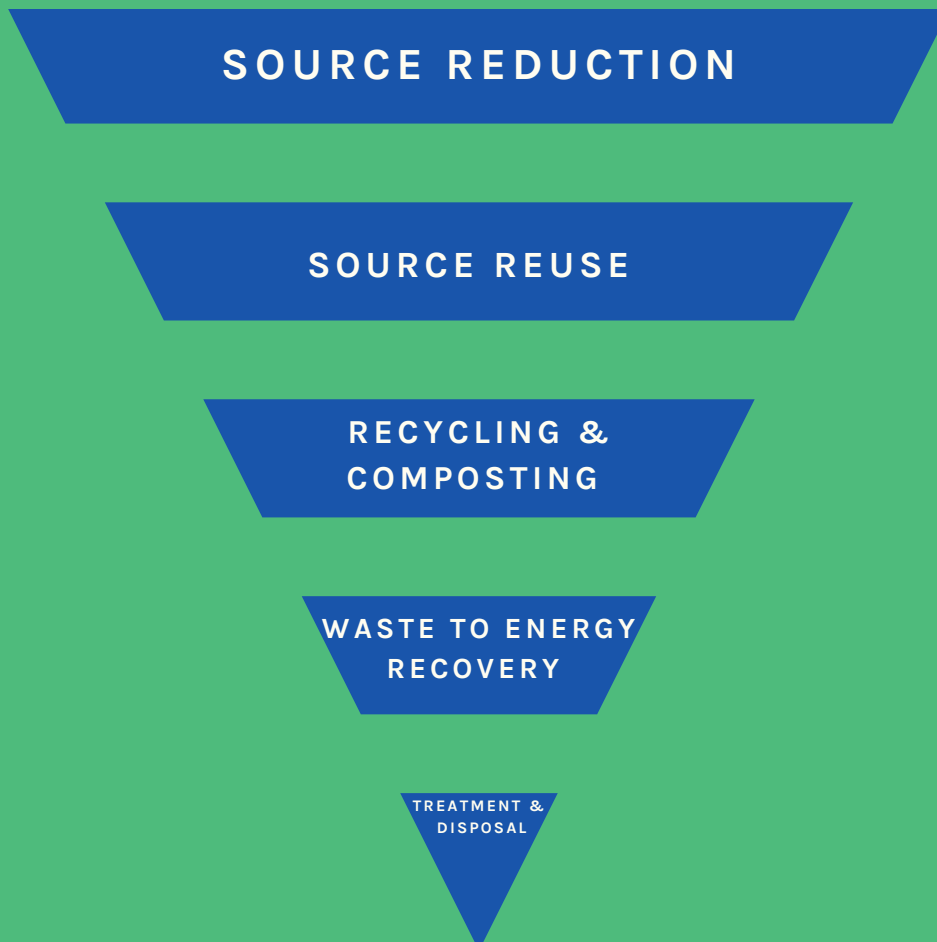
# Your Stuff

## WASTE

Waste is a valuable resource, and proper waste management can have substantial impacts, particularly for small businesses. Keeping materials at their highest utility means small businesses can operate more efficiently and extract the most value from their resources. It also creates less dependency on raw materials that are subject to price volatility as they become more scarce. More broadly, cycling materials means conserving natural resources, reducing greenhouse gas emissions and pollutants, and diminishing waste sent to landfills.

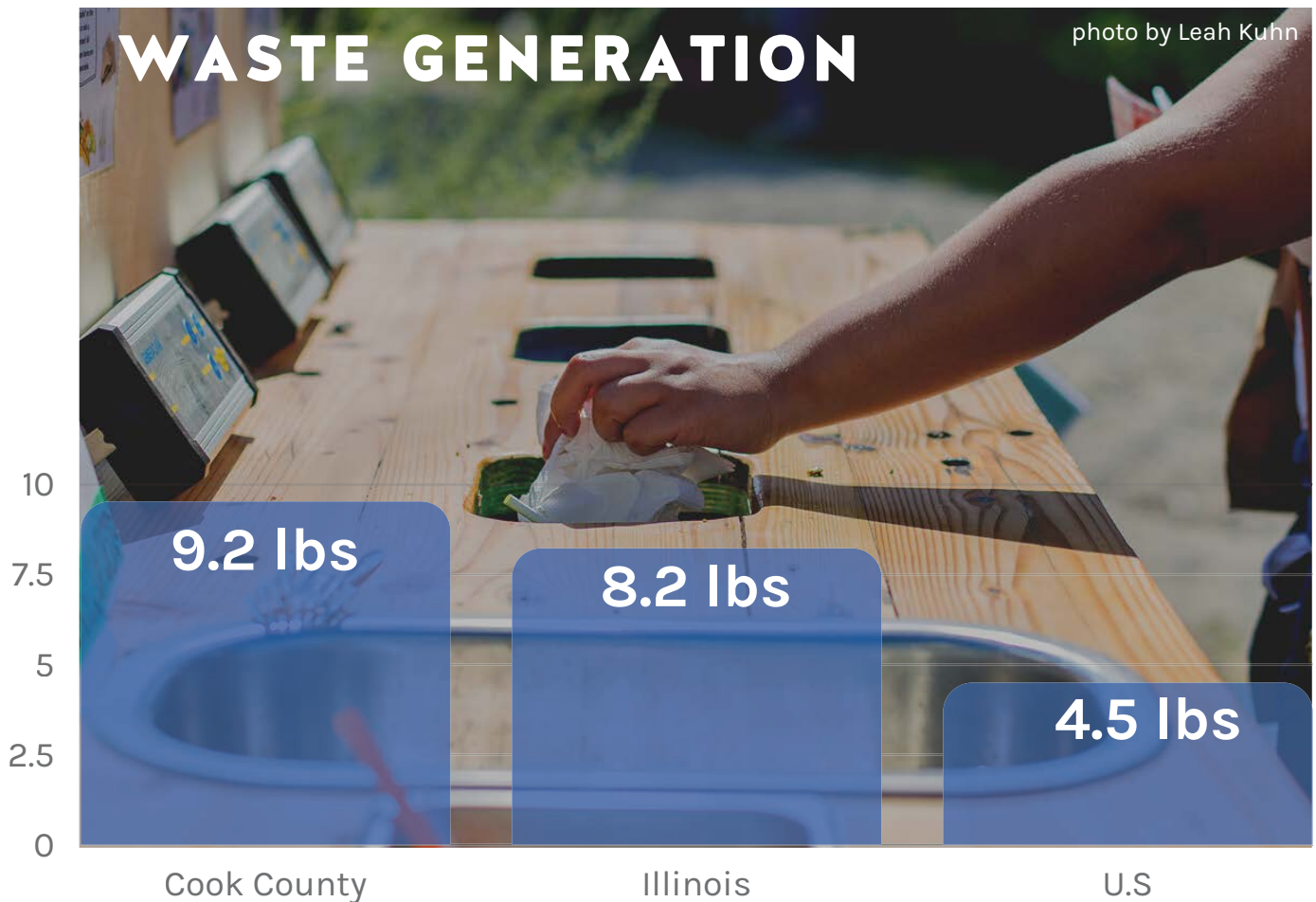
### WASTE MANAGEMENT HIERARCHY

MOST PREFERRED



LEAST PREFERRED

Graphic adapted from the EPA



**Figure 1: Waste Generation by Region (lbs generated per capita per day).**

Chicago businesses and residents have a significant impact on the state's waste generation: In Cook County specifically, 9.15 pounds of municipal solid waste (MSW) are generated per person per day.<sup>5</sup> In comparison, 8.20 pounds of MSW are generated daily per capita in Illinois, while nationally, 4.47 pounds of MSW are generated per person per day. These figures take into account what enters the waste system across all sources, including residential, commercial, industrial, institutional, and construction and demolition.

Another practical factor in considering waste reduction is that landfill capacity is finite, limited by factors such as geographic limitations, population density, and opposition from residents.<sup>6</sup> In the Chicago metropolitan area, there are four active landfills, down from eight in 2004.<sup>7</sup> These four landfills are expected to reach capacity on average in 10.2 years. However, one of the four landfills has a life expectancy of 17.2 years, while the other three landfills are expected to reach capacity in under a decade.<sup>8</sup> (It should be noted that waste generated in Chicago goes to landfills outside the metropolitan region, too, such as in Indiana, which received more than 2 million tons of Cook County's MSW in 2016.<sup>9</sup>)

**In this section of the report, the waste generation, disposal, and diversion by the businesses in the CE Leaders Network are examined.**

## Waste Analysis

# METHODOLOGY

To calculate waste generation within the CE Leaders Network, a series of waste audits was conducted between 2019 and 2020; ultimately, the waste audits for seven businesses were included for analysis, including 4 food services businesses and 3 food manufacturing/retail businesses. Each audit took place between 1 and 14 days, depending on the production cycle of each business, and measured the waste generated within the facility. The waste audits are not inclusive of waste that originates from the business and is sent home with consumers (e.g., packaging, disposable service items). The amount of waste generated by the business at its facility was annualized based on the number of production cycles per year. For businesses that opened in 2019, the amount of waste was still annualized to produce a hypothetical understanding of how much waste would have been produced over 2019 given their business practices for the year. In future years, waste audit data will align better with economic impact questionnaire data.

To calculate waste disposal, data were again utilized from the waste audits and business surveys. From the data audits, waste to landfill, as well as contaminants found in recycling and compost, were summed to determine facility waste disposal.

Similarly, to calculate waste diversion, the recycling and compost from the waste audits were summed, minus the weight of contaminants, which were assumed ultimately to be landfilled.

It's possible the amount of waste diverted is lower than estimated because some waste haulers may landfill entire batches of recycling due to contamination rather than only landfilling the contaminants; however, the threshold of contamination is unknown and can vary per hauler.<sup>10</sup> Additionally, since 2018, China has ceased to accept imported recyclables that exceed a contamination rate of 0.5 percent.<sup>11</sup> China had been taking about 40 percent of U.S. recyclables.<sup>12</sup> Without a market for recyclables and limited domestic infrastructure to process recyclables, these products may end up in the landfill despite being properly sorted.<sup>13</sup>

# FINDINGS

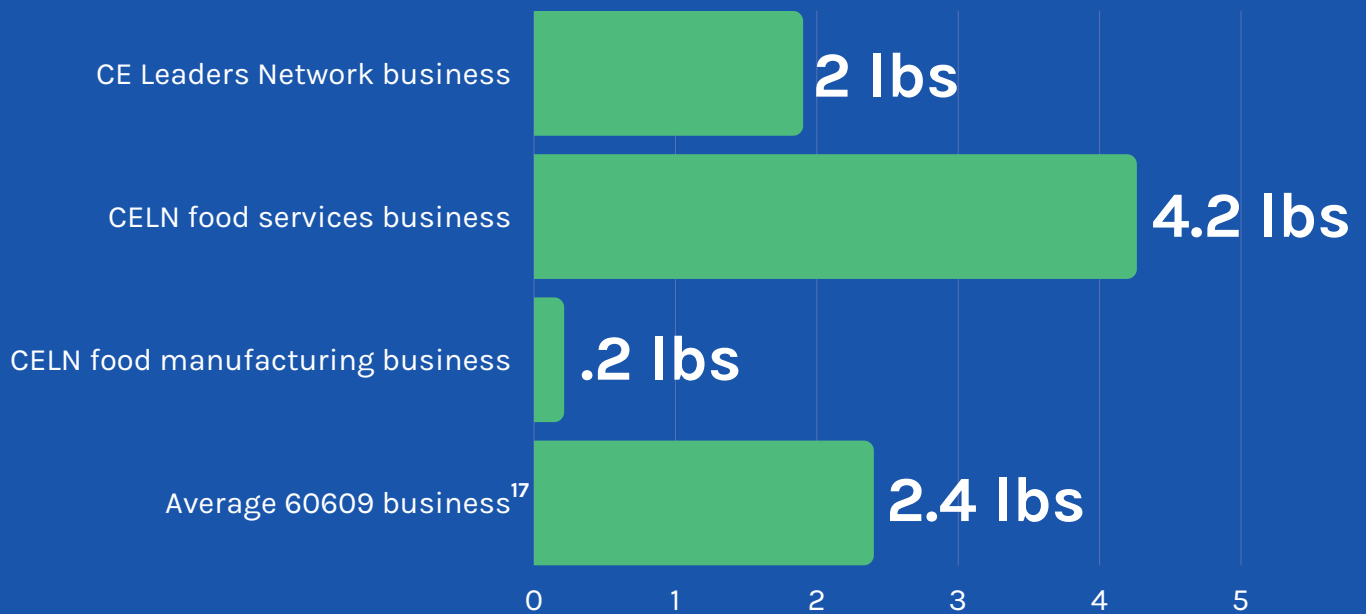
## Waste Generation & Diversion Capture

According to the Illinois Recycling Association’s solid waste model, businesses in Back of the Yards are estimated to generate 54,920 tons of waste per year.<sup>14</sup> This number is based on the waste generation rate of Cook County, applying the employment rate of the 60609 zip code.

There are an estimated 3,175 businesses based in the 60609 zip code, generating \$4.6 billion revenue annually.<sup>15</sup> Businesses in Back of the Yards generate an average of 2.4 pounds of waste per \$100 revenue.

Within the CE Leaders Network, seven businesses generated an estimated 15 tons of waste in their facilities in 2019. Per \$100 revenue, the CE Leaders Network businesses generated 2.0 pounds of waste.<sup>16</sup>


FIGURE 2: WASTE GENERATED PER \$100 OF REVENUE





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*When materials cannot be reduced or reused, they enter the waste stream, where efforts should be made to divert them through recycling and composting to utilize that waste as a resource.*



## WASTE GENERATION & DIVERSION RATES

Of the seven surveyed CE Leaders Network businesses, four had infrastructure in place to divert waste. The businesses that did not recycle or compost were also responsible for 86 percent of the network's overall waste generation, leading to an overall low capture rate across the network.

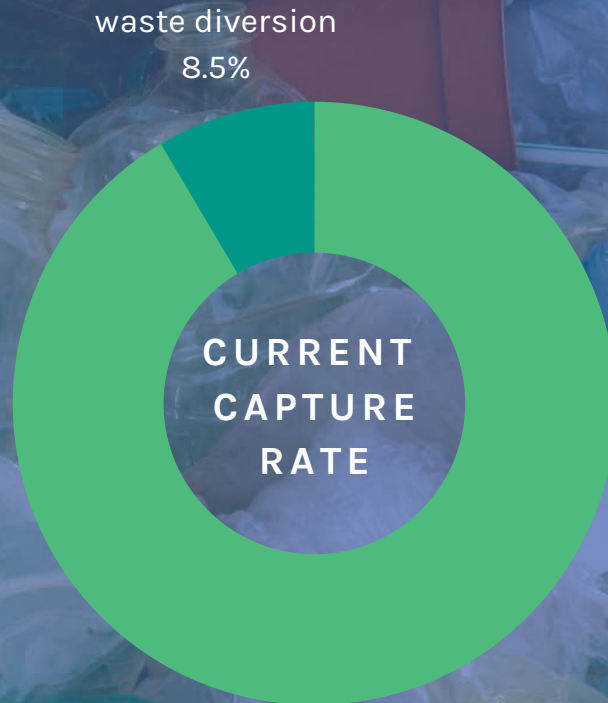
Given the 2019 diversion rates, CE Leaders Network ultimately prevented 1.3 tons of waste from entering landfills, or approximately 4.3 cubic yards.<sup>18</sup> If all seven businesses in the CE Leaders Network recycled and composted, an additional 11.4 tons or 37.7 cubic yards of waste could be diverted from the four landfills in the Chicago metropolitan area.

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FIGURE 3: CE LEADERS NETWORK WASTE GENERATION & DIVERSION

The businesses that did not recycle or compost were also responsible for 86 percent of the network's overall waste generation, leading to an overall low capture rate across the network.



If all seven of CE Leaders Network businesses that participated in this study recycled and composted, an additional 11.4 tons or 37.7 cubic yards of waste could be diverted from the four landfills in the Chicago metropolitan area.



## Greenhouse Gas Emissions

Waste management decisions also affect greenhouse gas emissions. Organic materials sent to landfills produce carbon dioxide and methane as they decompose. These gases trap heat in the atmosphere (methane in particular traps 28-36 times more heat than carbon dioxide),<sup>19</sup> with serious and harmful environmental and social effects. Additionally, when resources aren't recycled, the processes occurring over the life cycles of the new materials that replace the landfilled resources require significant energy and result in additional greenhouse gas emissions.<sup>20</sup> The city of Chicago has a goal to reduce greenhouse gas emissions by 26-28 percent below 2005 levels by 2025.<sup>21</sup>

The CE Leaders Network's greenhouse gas emissions were calculated based on their annualized waste production using the EPA's Waste Reduction Model (WARM). To understand the effects of the businesses' diversion practices, baseline emissions were established for each business by calculating the greenhouse gas emissions that would have resulted from disposing of all generated waste. It was assumed that waste would go to a landfill practicing gas recovery to produce energy for a best-case scenario for disposal emissions. This was compared against an analysis that took into account existing waste diversion practices to understand how many greenhouse gas emissions were avoided through recycling and composting. While waste reduction is an important waste management strategy, it was not included in the scope of this report due to limitations in what could be measured.



FIGURE 4: CE LEADERS NETWORK GREENHOUSE GAS EMISSIONS

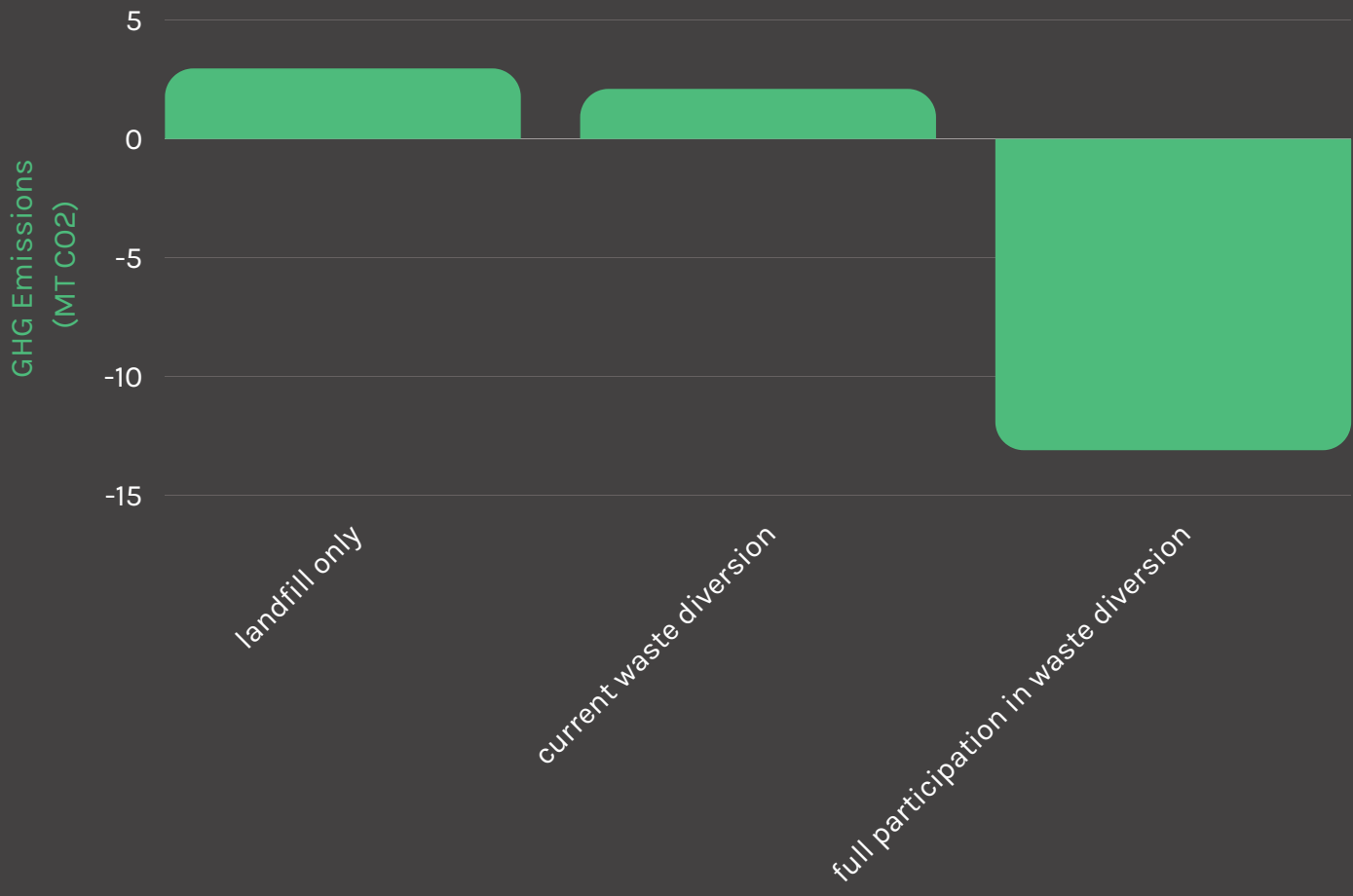


Figure 4 shows the baseline emissions that would result if the CE Leaders Network businesses only disposed of waste, which would have resulted in 2.95 metric tons of CO2e over the course of 2019. Due to the waste diversion practices of the businesses, 0.86 metric tons of CO2e emissions were avoided, the equivalent of taking a passenger vehicle off the road for over 2,000 miles.<sup>22</sup>

However, if the three businesses that do not currently recycle or compost were to implement waste diversion practices, 16.03 metric tons of CO2e could be avoided, the equivalent of taking 3.5 cars off the road altogether for one year. The high impact of diverting waste in the theoretical scenario is likely due to large quantities of methane-releasing food waste that are currently being landfilled.





## Energy

In 2019, Chicago committed to a transition to 100 percent clean, renewable energy in buildings by 2035 as a part of the Ready for 100 campaign. This builds on the 2016 Future Energy Jobs Act, which mandated that ComEd provide 25 percent of power from renewable sources by 2025 and set the stage for community solar. However, although ComEd had the goal of achieving a portfolio of 16% of renewable energy in 2019, it is unlikely that ComEd achieved this goal,<sup>23</sup> although more detailed information regarding the percentage of renewables in ComEd's portfolio was not available. Policies like the Clean Energy Jobs Act, which is currently before the Illinois General Assembly and seeks to provide funding so Illinois can achieve 100 percent renewables by 2030, provide pathways for clean energy use.

In the meantime, it's up to businesses to seek out greener energy options, such as community solar. And the cleanest kilowatt hour is the one that's never used. The businesses in the CE Leaders Network took steps toward greater energy efficiency, including installing LED lights, which use 75-80 percent less energy than traditional incandescents;<sup>24</sup> using blackout blinds to cool spaces in the summer; and installing foam insulation to keep heat in during the winter. Businesses across the network expressed a desire to implement more comprehensive energy efficiency projects; however, upfront costs and the need for landlord support and approval were barriers.

Similarly, a barrier to fully understanding the effects of energy efficiency projects was the fact that many of the businesses did not have access to their energy use, often because they paid a utilities fee to their landlord and/or because they operated in a shared space. Without tracking utility usage, businesses were and will continue to be unable to track their usage of utilities.

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