

# City of Roeland Park, KS Community-wide emissions

- The City of Roeland Park, KS has committed to take the first step towards reducing emissions by engaging Dynamhex, to quantify total emissions across its borders, and identified sources throughout the community.
- The data includes emissions from the burning of fossil fuels, from generation of electricity used in residential homes, commercial offices, stores and educational institutions, as well as use of fuels, such as natural gas, motor gasoline and diesel.
- Summarized here is the City's carbon footprint and greenhouse gas emissions, which forms the basis of forward-looking reduction strategies.

#### **Emissions from the Buildings Sector**

Residential buildings account for 53% of the total community's footprint\*

The city and its residents can evaluate and help implement various interventions across both single-family and multi-family structures, that shifts buildings away from reliance on fossil-fuels (e.g., natural gas, coal, oil) while saving energy costs. Electricity usage alone accounts for 30% of the emissions from residential buildings, while natural gas accounts for the remaining 23%.

Strategies and emissions reductions in the residential sector include:

- Energy efficiency through better insulation to reduce 4,126 mt (7.5%)
- Heating, cooling and lighting upgrades for 2,134 mt (4%) reduction

Dynamhex will enable each resident within the City of Roeland Park to log in to the portal to explore their own emissions footprint, due to consumption of energy, both electricity and direct fuels, such as natural gas and others. Fuel consumption in transportation is another source of emissions. Each of the above reduction recommendations could be personalized, to evaluate building or household-level cost savings, and emissions reduction potential.

Commercial buildings and other building types can view their footprints, for more personalized ways to reduce their emissions and help city leadership in meeting community-wide goals in a transparent, accountable and equitable way.

\*Commercial (offices, schools, etc.) and industrial buildings account for 24% of emissions

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# 50% of community-wide emissions come from the power sector\*:

• Key partnerships with the local utility is critical to understand and project emission reductions, as nearly half of all emissions the city was due to the choice of fuel feedstock used in electricity generation.

### Aggregate emissions due to energy production

The power grid programs, such as more renewable energy can significantly reduce emissions for the district. Evergy plans on reducing the carbon content of its power over the next few years by increasing their mix's share of renewables. This shift in mix could lead to almost 2,000 (3.6%) metrics of reduction by 2025.

Additionally, almost 6,400 (12%) metric tons of emissions can be reduced if residential and commercial buildings adopted rooftop solar, instead of using grid-based electricity, much of which is produced from fossil-fuel generation.

\*Power sector emissions are summative with building and other sectors that consume power

## **Emissions from Transportation**

23% of the City of Roeland Park's emissions are due to the burning of motor gasoline and diesel which are used to power different vehicles within the city's borders.

Transitioning passenger and vehicles from conventional internal-combustion engines to electric models that produce zero tailpipe emissions, is a way to reduce transportation-related emissions. Another way is to encourage more biking and walking, as well as carpooling on trips with mutual destinations.

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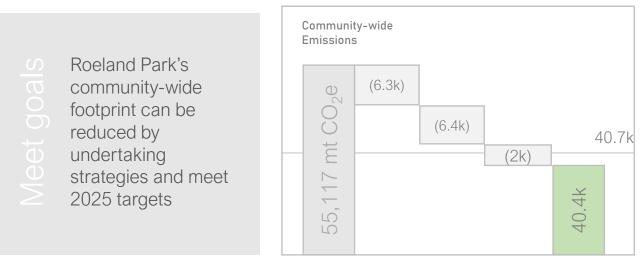


#### City of Roeland Park, KS

55,117

mt CO<sub>2</sub>e

Commercial buildings	Units	2019 GHG (mt) GHG (%)
Petroleum (fuel oil)	US gal	11,384 116 0%
Natural gas	MMCF	36,169 1,971 4% <b>22%</b>
Electricity	MWh	19,312 10,267 19%
Industrial facilities	Units	2019 GHG (mt) GHG (%)
Petroleum (fuel oil)	US gal	2,387 24 0%
Natural gas	MMCF	4,238 231 0% <b>2%</b>
Electricity	MVVh	1,651 878 2%
Residential buildings	Units	2019 GHG (mt) GHG (%)
Residential buildings Petroleum (fuel oil)	Units US gal	8,847 90 0%
Petroleum (fuel oil)	US gal	8,847 90 0%
Petroleum (fuel oil) Natural gas	US gal M MCF	8,847 90 0% 229,344 12,499 23% <b>53%</b>
Petroleum (fuel oil) Natural gas Electricity	US gal M MCF MWh	8,847 90 0%   229,344 12,499 23%   31,170 16,570 30%   2019 GHG (mt) GHG (%)   0 0 0%
Petroleum (fuel oil) Natural gas Electricity <b>Transportation</b>	US gal M MCF MWh Units	8,847 90 0% 229,344 12,499 23% 31,170 16,570 30% 2019 GHG (mt) GHG (%)
Petroleum (fuel oil) Natural gas Electricity <b>Transportation</b> Railway	US gal M MCF MWh Units US gal (diesel fuel and electricity)	8,847 90 0%   229,344 12,499 23%   31,170 16,570 30%   2019 GHG (mt) GHG (%)   0 0 0%



2019

2025

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By understanding the community's emissions in greater detail, the city and its residents can better understand where deploy above actions, reductions and solutions, and meet targets (26-28% reduction, by 2025).

The city leadership, with the partnership with Dynamhex, is opening up portals for all the residents to access and understand their footprint, and take steps to reduce it.

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