City of Roeland Park

Climate Action Plan

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Sunny Sanwar, Ph.D.

Dynamhex™

@dynamhex | dynmhx.io

Climate change mitigation is complex

Transportation
- Traffic intensity and activity
- Fuel economy
- Alternative fuel infrastructure / EVs
- Biking and walking

Gals, therms, gge, VMT
Regional planning org.

Buildings
- Building types & codes
- Envelope design
- Occupancy levels
- End-use system & equipment, time-of-use
- On-site fuel, solar

kBTU/sq. ft.
Cities and counties

Power and utility
- Fuel mixes (purchased RE/integration)
- Capacity, Demand flexibility
- Boiler efficiencies, T&D losses

mm BTU, MW, MWh
States

Environmental scientist(s)
- Emissions factors, GWP
- Multi-GHG assessment of emissions (CH_4, N_2O, CO_2, CF_4, SF_6)
- Community resilience

MT CO_2e (Scope 1, 2 and 3)
Technical consultants

Financial analyses
- Cost-benefit analysis
- Monetary savings
- Economic damages
- Job creation
- Scenario planning

Investments, savings ($, y, r%)
Municipal advisors + vendors

Engagement & implementation
- Stakeholders involvement + targeted outreach
- Hierarchical impact assessment
- By blocks, zip-code + parcel/tax-lot
- GIS and data-specialists

Assets, entities, individuals
Community groups + data scientists

City of Roeland Park, KS

56,214 mt CO_2e

Commercial buildings		2019	
Petroleum (fuel oil)	US gal	1,232	25%
Natural gas	M MCF	32,451	
Electricity	MWh	18,934	

Industrial facilities		2019	
Petroleum (fuel oil)	US gal	2,308	3%
Natural gas	M MCF	15,182	
Electricity	MWh	1,260	

Residential buildings		2019	
Petroleum (fuel oil)	US gal	1,712	54%
Natural gas	M MCF	198,342	
Electricity	MWh	30,559	

Transportation		2019	
Aviation	US gal (jet fuel, aviation gasoline)	442,133	19%
Railway	US gal (diesel fuel and electricity)	2,314	
Waterborne	US gal (motor gasoline and diesel)	136	
On-road	US gal (motor gasoline and diesel)	992800	

Prelimenary data based on Dynamhex proprietary model on city-wide greenhouse gas emissions (as of 11/2018). For methodology, see

Renewable sources of energy, such as onsite solar or biofuels are not shown in above estimates due to negligible emissions factors.

SPNO (SPP North) aggregates used for regional power and heat footprinting

Transportation intensity is shown in aggregates for on-road vehicles

Non-energy based emissions (steam, waste, etc.) not shown

Simplify sustainability

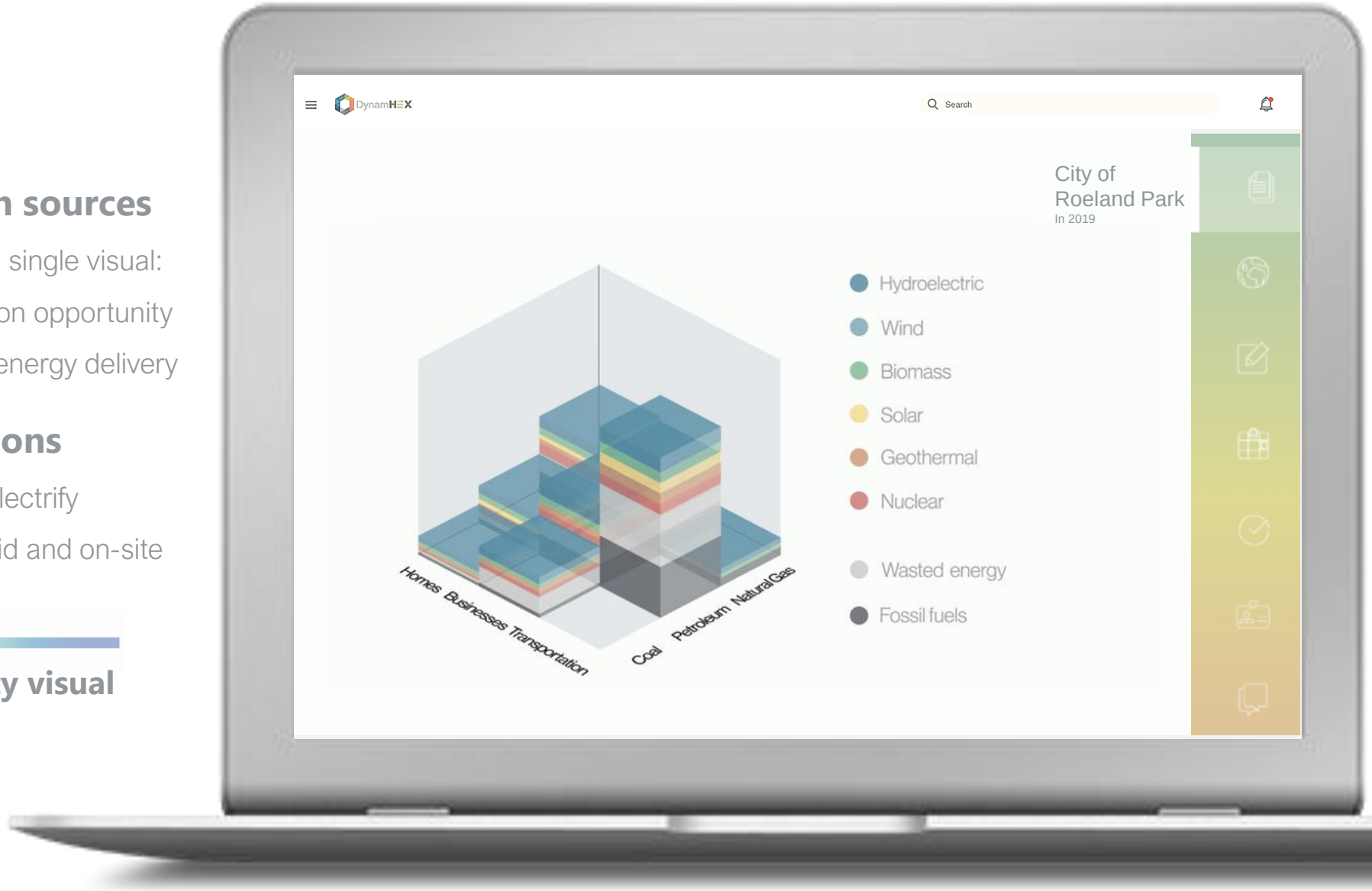
Visualize complex emission sources

- Boils down RP footprint into a single visual:
  - Fossil fuels use mitigation opportunity
  - Improve efficiencies in energy delivery

Evaluate low-carbon solutions

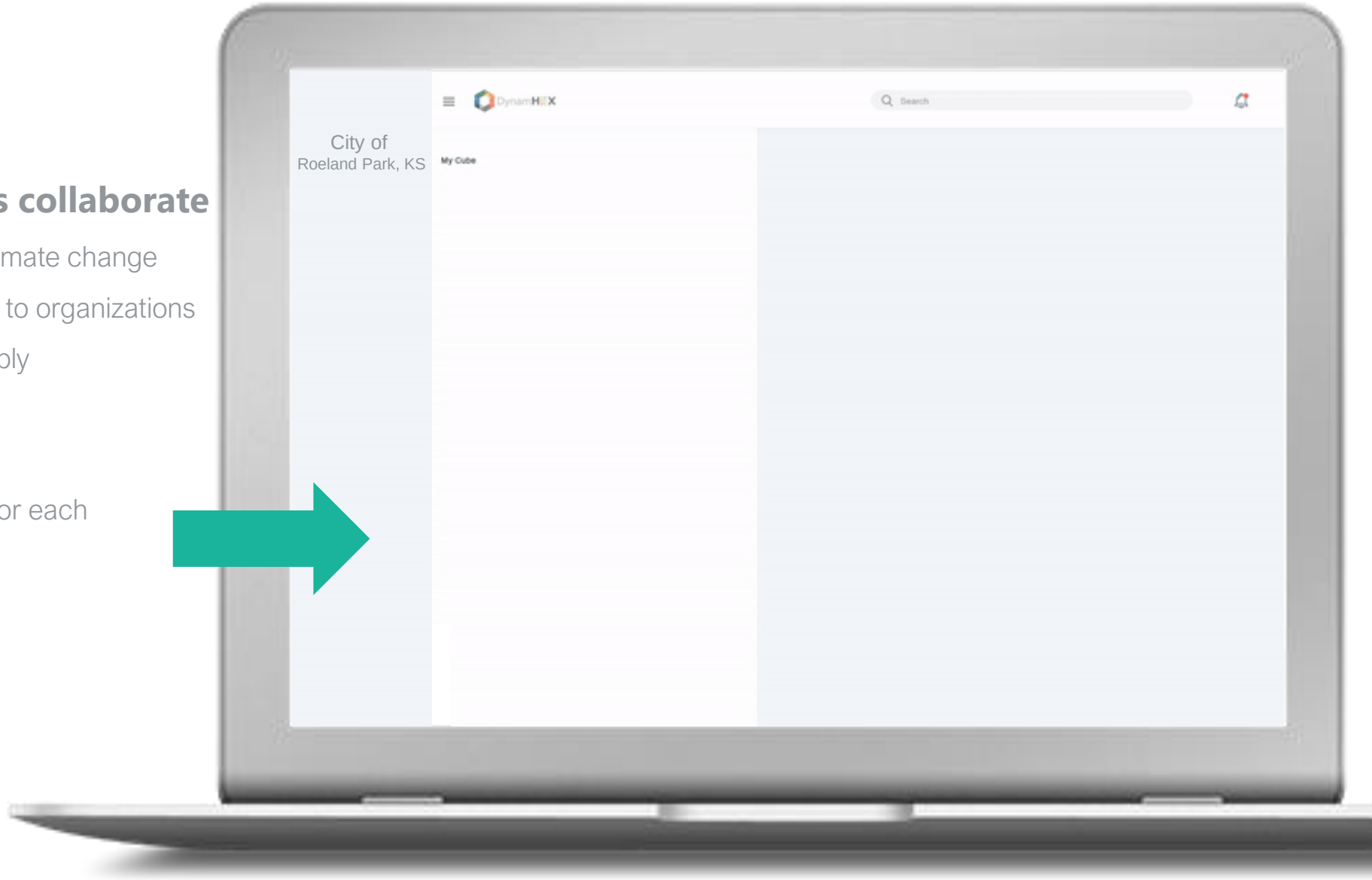
- Switch from fossil-fuels and electrify
- Adopt more renewables at grid and on-site

What does clean RP mean? **Colored city visual**



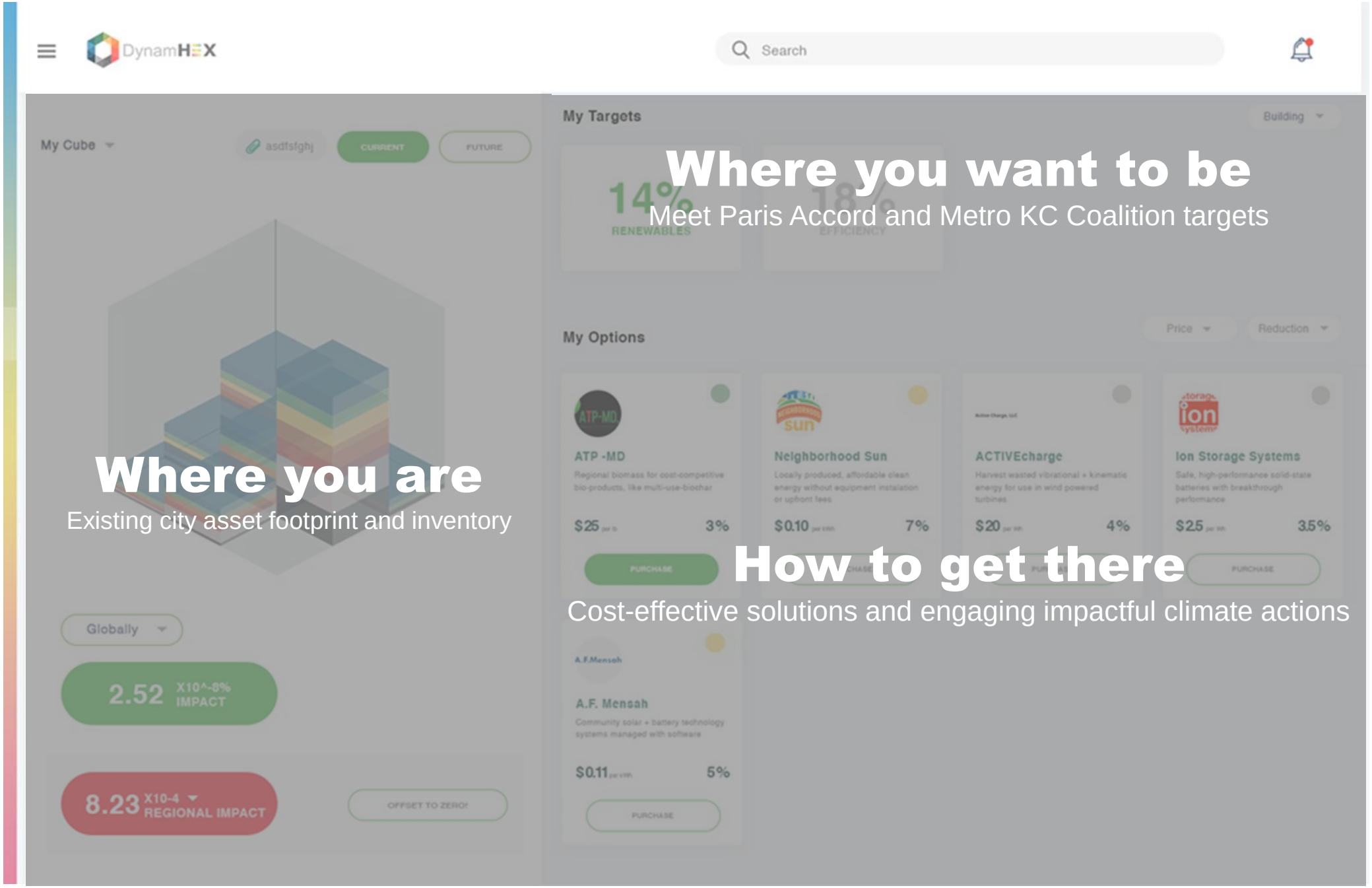
Engage sustainably

- **City and her stakeholders collaborate**
  - Help communities mitigate climate change
    - From individual citizens to organizations
    - Work with utilities tangibly
  - Show and measure impacts for each action or strategy



Welcome back

City of Roeland Park, KS



Where you are

Existing city asset footprint and inventory

Where you want to be

Meet Paris Accord and Metro KC Coalition targets

How to get there

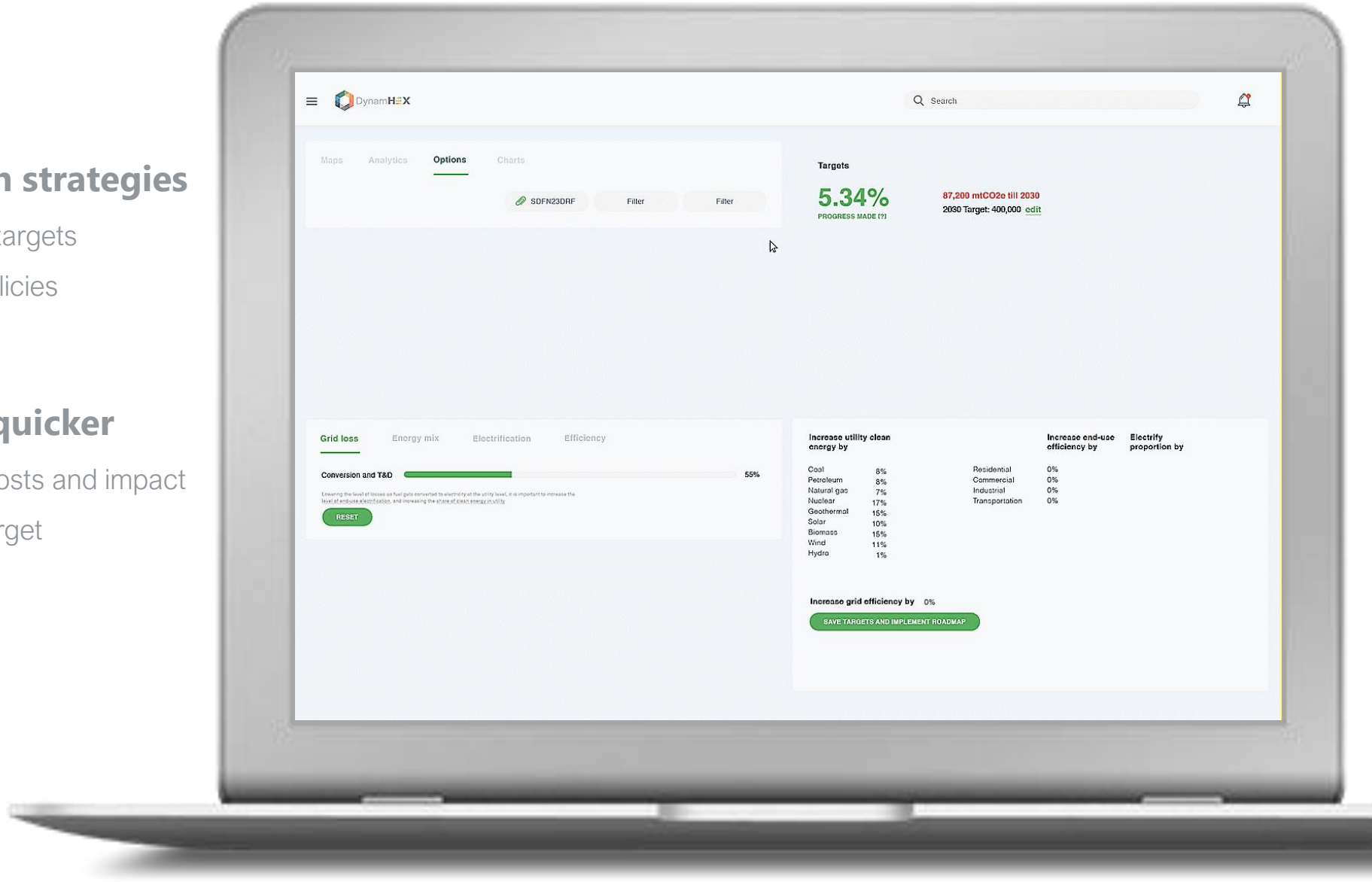
Cost-effective solutions and engaging impactful climate actions

* Visual representation for example purposes only

Meet targets

Plan actions

- **Personalized decarbonization strategies**
  - Set and meet city and community targets
  - Plan infrastructure projects and policies
- **Plan city-targets better and quicker**
  - Maintain projects visual KPIs like costs and impact
  - Engage stakeholders and be on target



Modules allow users to upload/down spreadsheets

Engagement

Households

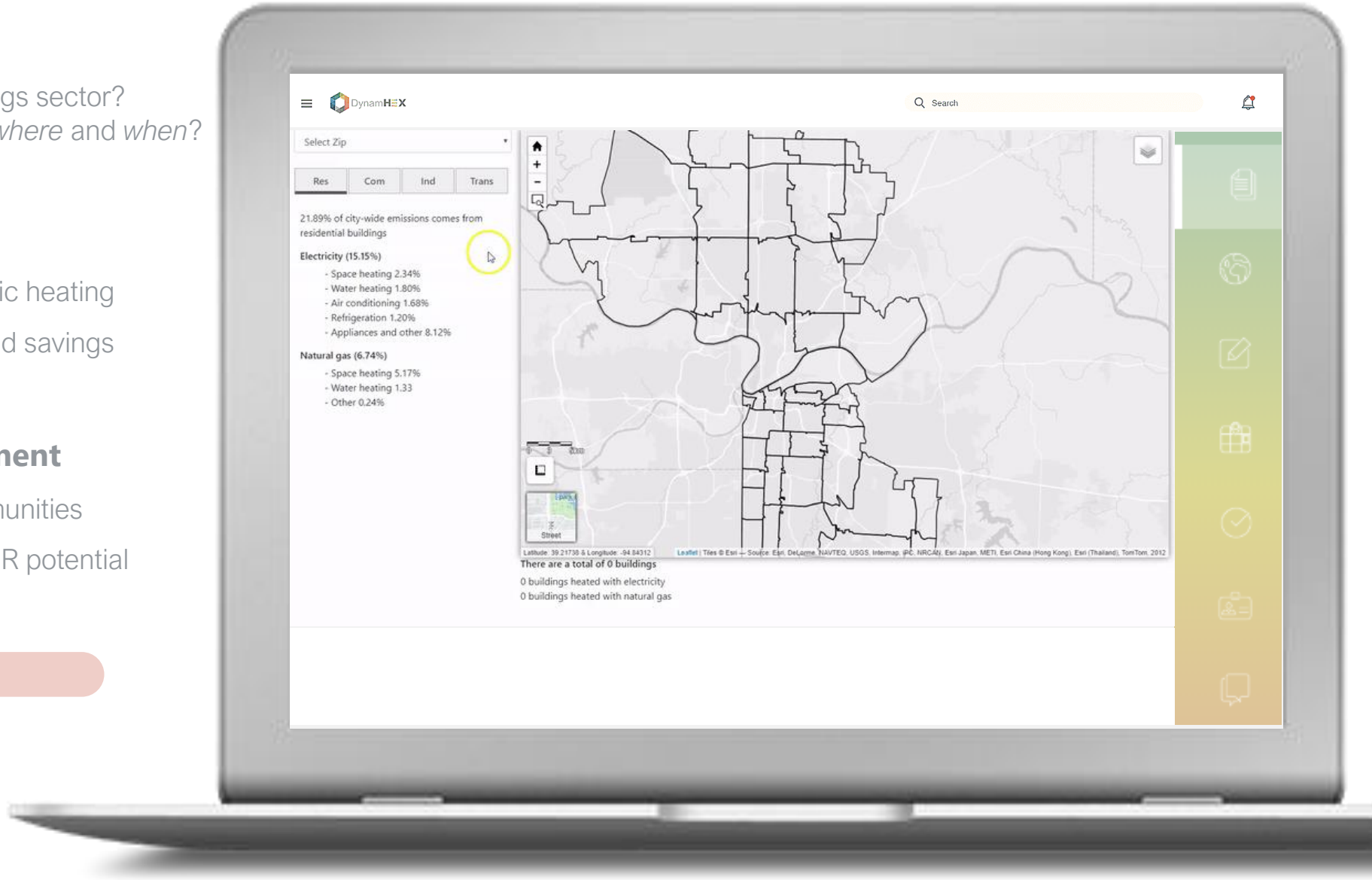
City goals

- How to decarbonize residential buildings sector?
- *How much* emissions to be reduced, *where* and *when*?

- **Residential buildings (54%)**
  - Distribution of fuel-based vs. electric heating
  - Target energy efficiency retrofits and savings

- **Community impact and engagement**
  - Climate risks in underserved communities
  - Housing stock by block, on-site DER potential

54% of city's footprint



Engagement

Local businesses

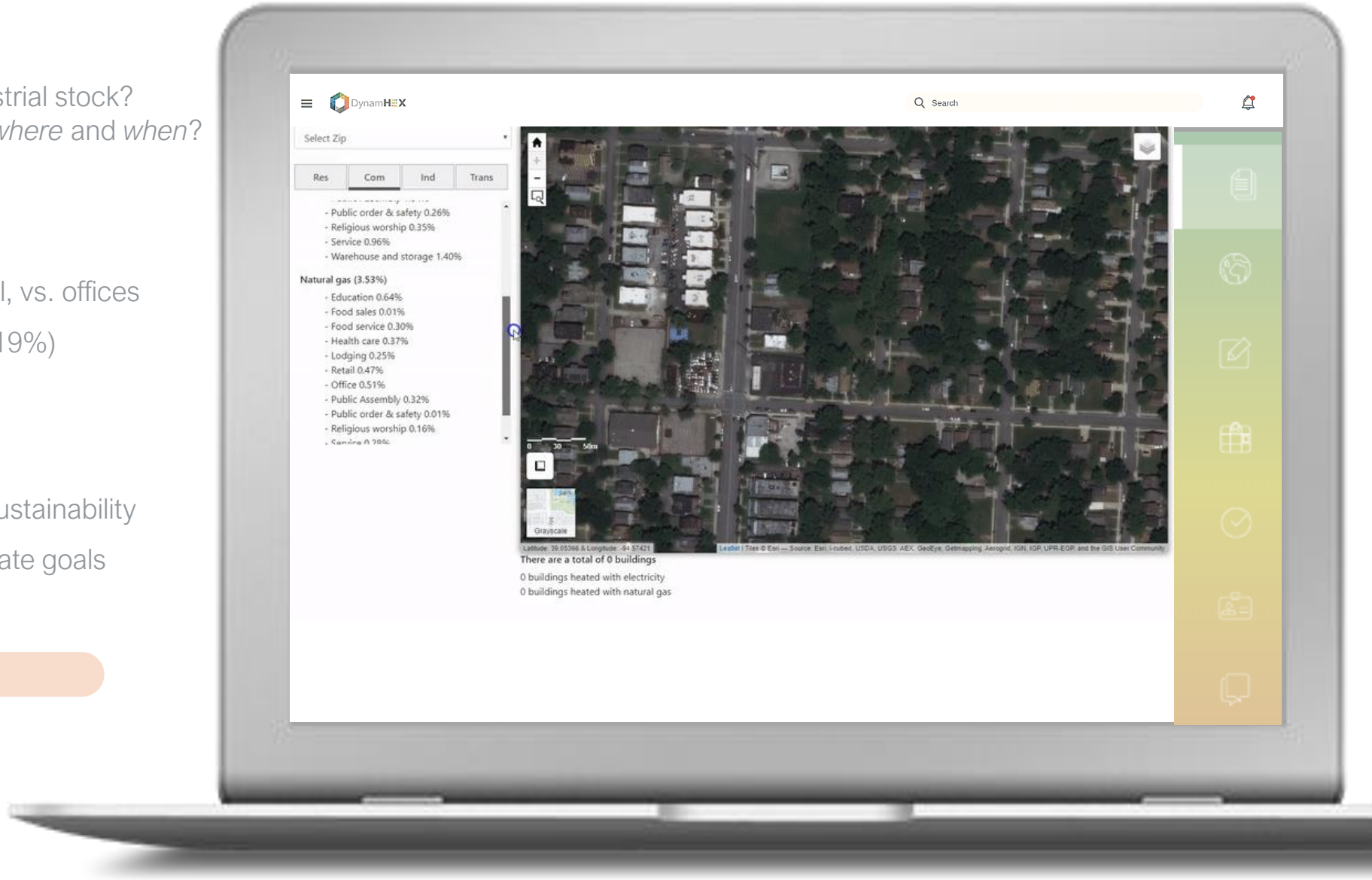
City goals

- How to decarbonize commercial/industrial stock?
- *How much* emissions to be reduced, *where* and *when*?

- **Commercial buildings (25.31%)**
  - Building types - University, vs. retail, vs. offices
  - Industrial processes + systems (3.19%)

- **Engagement**
  - Corporate emissions targets and sustainability
  - Each business can help reach climate goals

82% of city's footprint



Engagement

Both

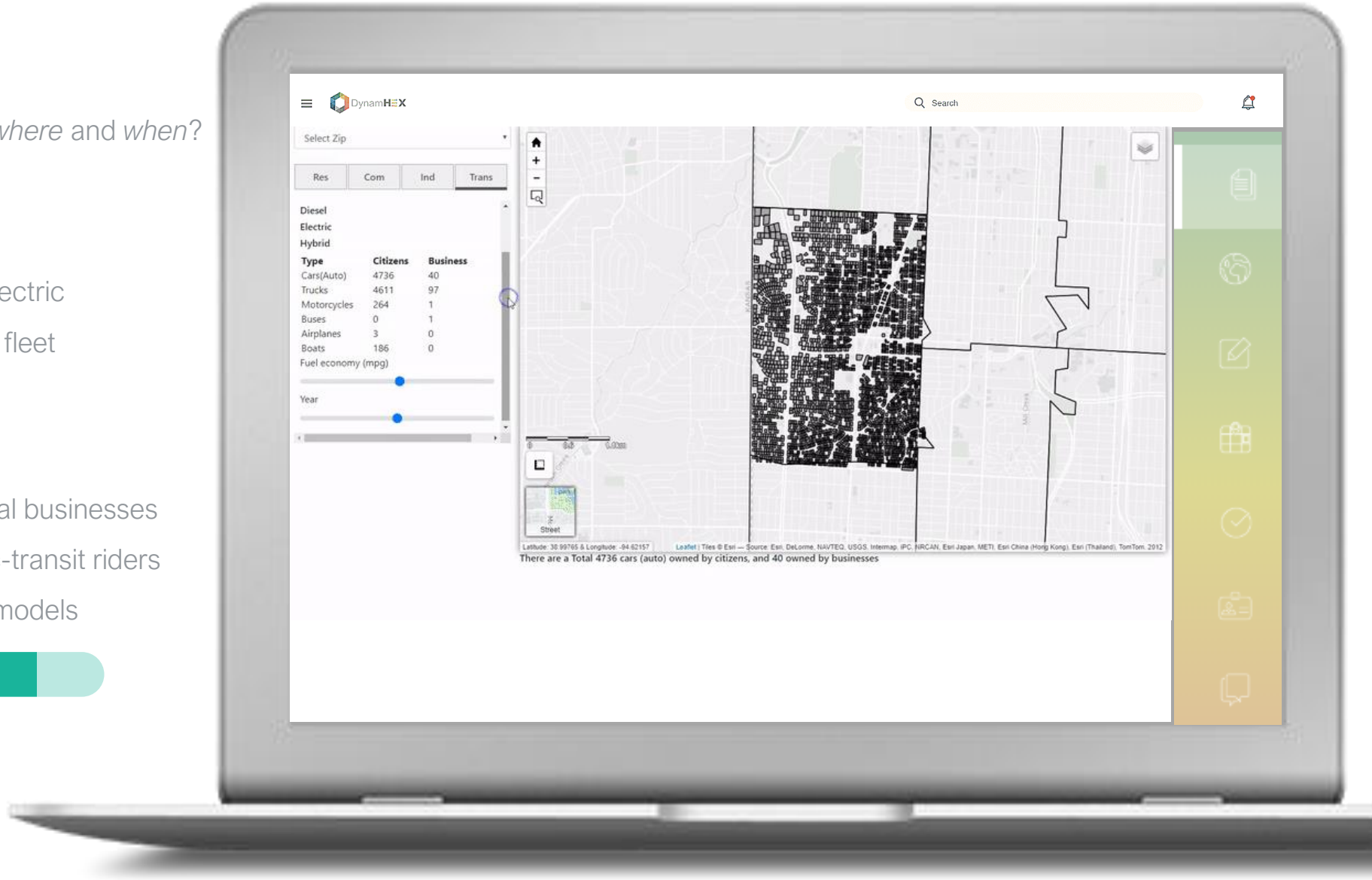
City goals

- How to decarbonize transportation?
- *How much* emissions to be reduced, *where* and *when*?

- **Transportation (17.69%)**
  - Gasoline and diesel vehicles, vs. electric
  - Passenger vehicles and trucks, vs. fleet

- **Engagement**
  - Vehicles owned by citizens and local businesses
    - Commuters, bicyclists, pubic-transit riders
  - Corporate fleets and new mobility models

98% of city's footprint



How does it work?

Roeland Park meets Paris Climate Targets

1

City departments sets staged targets from climate action plan

2

Residents and local organizations in city-boundary sees these targets personalized to their data, and related initiatives, on their dashboards

3

Local power providers and utilities understands the action plan and helps implement programs to residents + customers

4

Clean energy service providers such as energy efficiency and on-site solar companies can help cost-effectively scale impact

Start now

Claim City of Roeland Park today