Data Visualization

Project Presentation

Visualizing the Energy Consumption and Carbon Footprints in NYC

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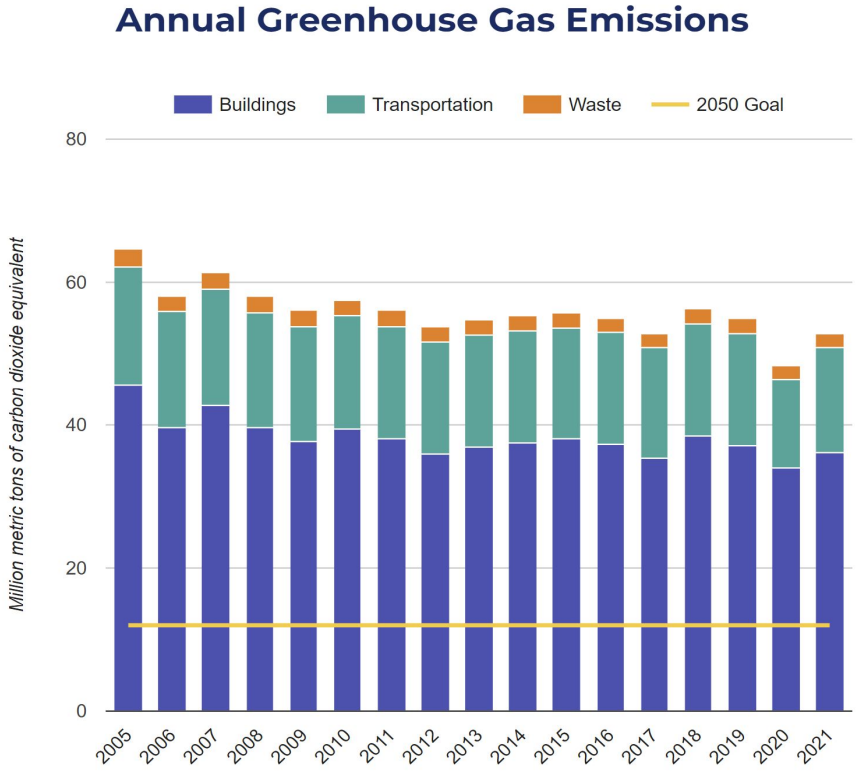
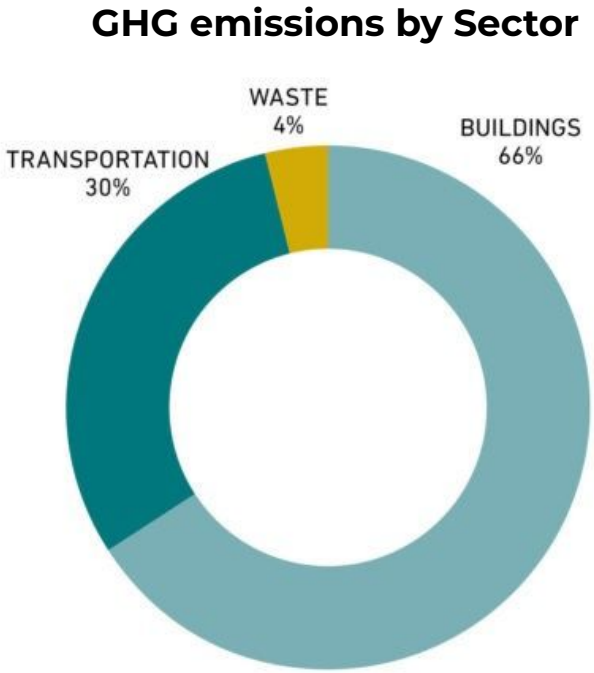
NYU Center of Urban Science and Progress

Introduction





NYU

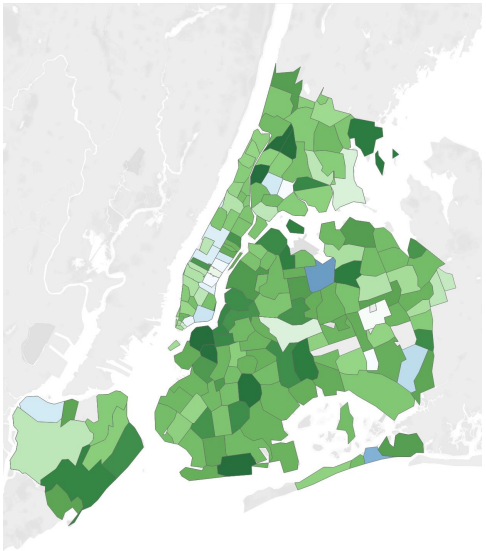
https://comptroller.nyc.gov/services/for-the-public/nyc-climate-dashboard/emissions/
https://onenyc.cityofnewyork.us/initiatives/achieve-carbon-neutrality-and-100-percent-clean-electricity/

Design and Implementation

- **Data Collection**
  - Energy Benchmarking NYC Local Law 84: Mayor's Office of Sustainability
    - Energy and Water Usage Intensity
    - Greenhouse Gas Emissions
    - Electricity and Natural Gas Use

- **Data Cleaning and Preprocessing**
  - Python - Jupyter Notebook

- **Data Visualization**
  - Tableau

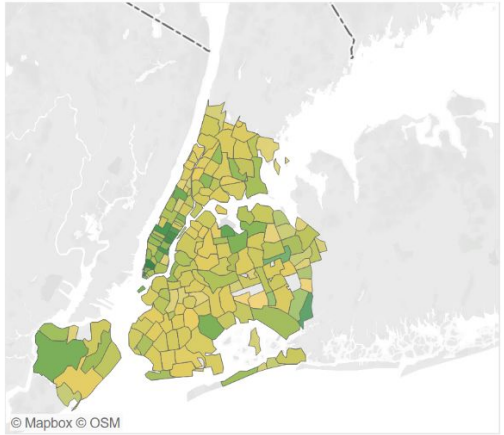


Demonstration

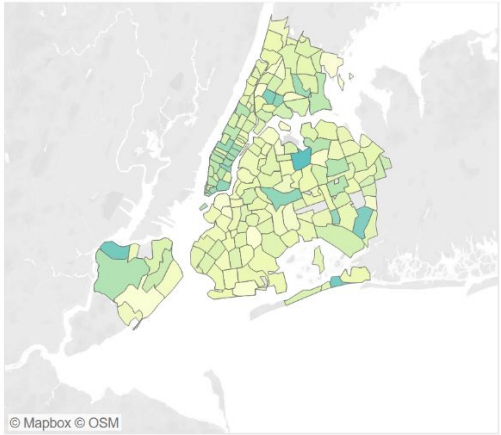
- **Parameters:**
  - zipcode
  - bldgtype - building type
  - eui - energy usage intensity
  - wui - water usage intensity
  - ghg - greenhouse gas emissions
  - ess - energy star score
  - electricity
  - natural gas
  - gfa - gross floor area
  - year
  - address

	zipcode	bldgtype	eui	wui	ghg	ess	electricity	natural_gas	gfa	year	address
0	11209	Multifamily Housing	105.2	35.16	4.76	82.0	166805.9	4833716.8	57036.0	1930	150-74th Street
2	10022	Hotel	188.2	57.84	7.49	42.0	4605159.3	13997499.9	153761.0	1963	155 East
3	10065	Hotel	239.6	81.66	8.35	45.0	16554842.3	22649785.2	320000.0	1960	540 Park Avenue
4	10037	Multifamily Housing	130.4	44.84	5.24	71.0	4222144.7	20595911.7	280358.0	1958	10 West 135th Street
5	10003	Hotel	201.5	45.12	7.88	55.0	7086038.2	3212100.4	205473.0	1901	201 Park Avenue South

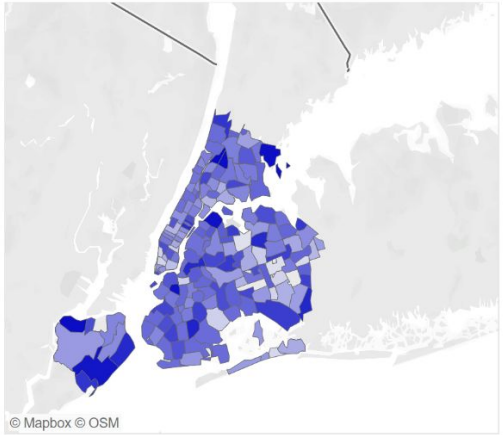
electricity



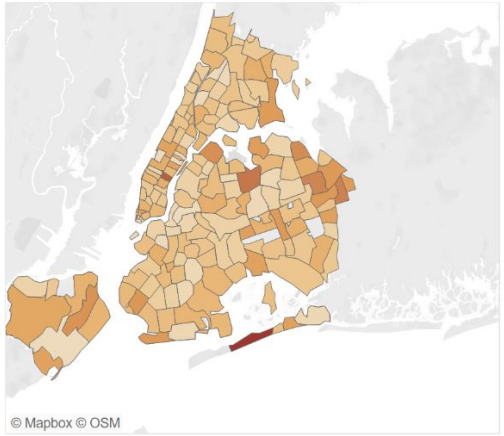
eui (energy usage intensity)



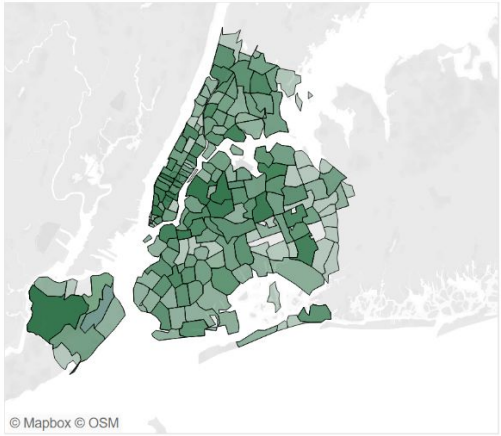
ess (energy star score)



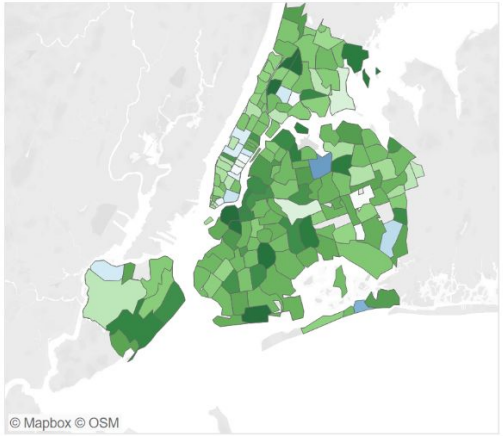
natural gas



wui (water usage intensity)



greenhouse gas emissions



Avg. Gfa
22,075 294,964

Avg. Ess
4.00 100.00

Bldgtype
(All)

Avg. Ess
4.00 100.00

Avg. Ghg
1.58 15.28

Avg. Electricity
6,410 15,617,271

Avg. Natural Gas
0 26,501,630

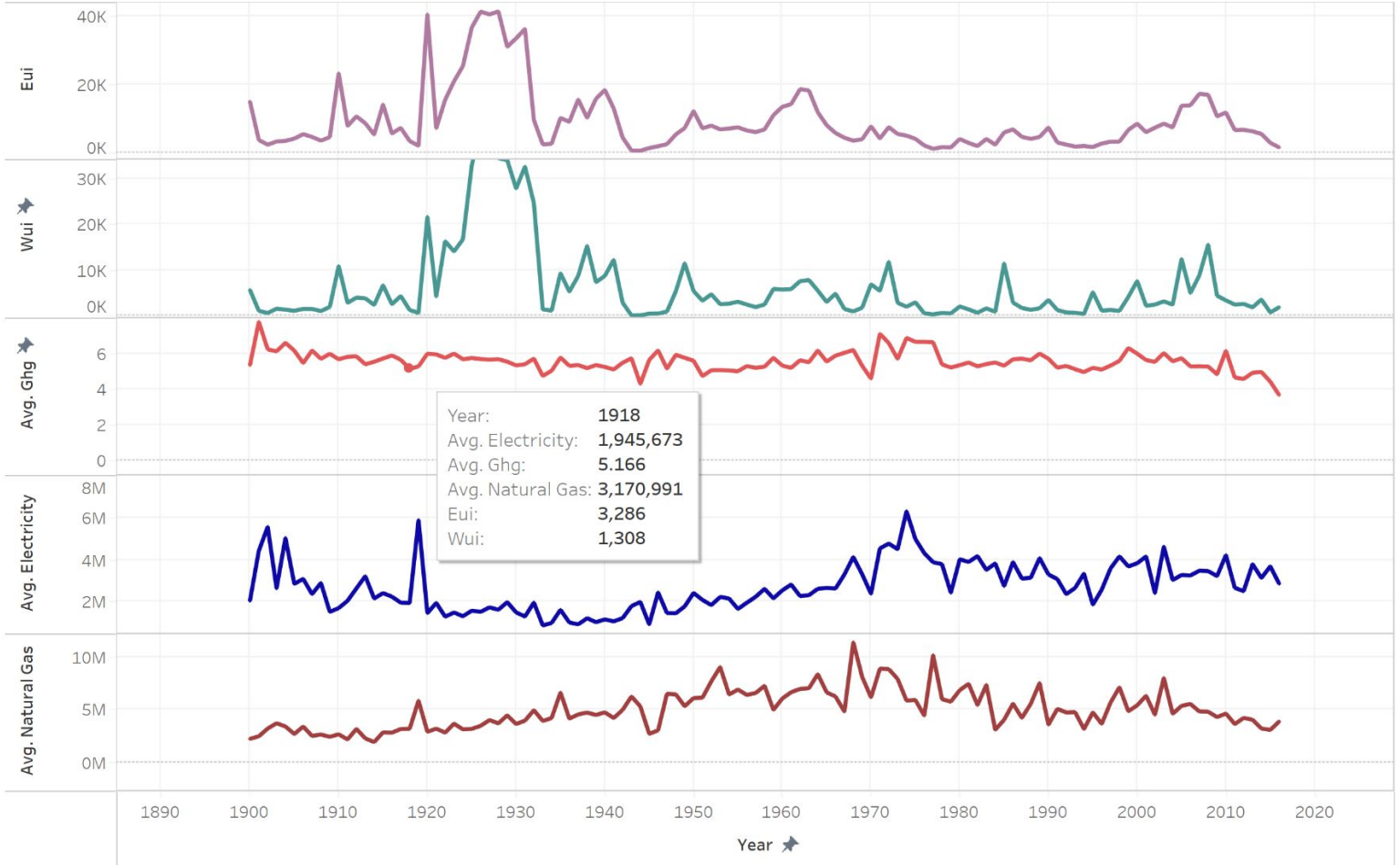
Avg. Eui
51.2 343.0

Avg. Wui
0 8,652

Highlight Zipcode
Highlight Zipcode

Highlight Bldgtype
Highlight Bldgtype

trend by year: all parameters



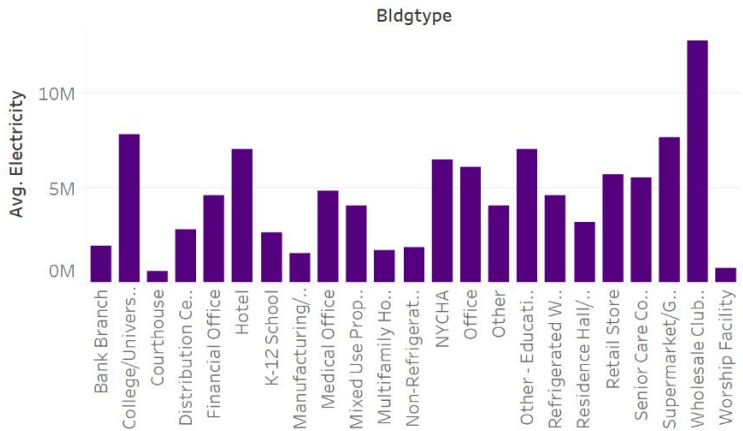
Zipcode

(All)

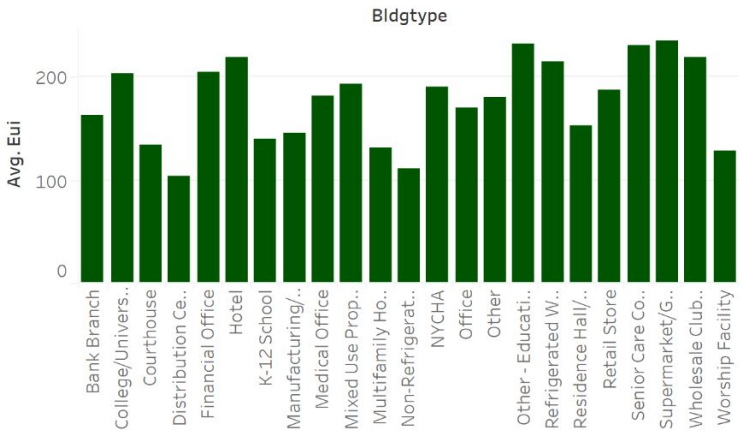
Bldgtype

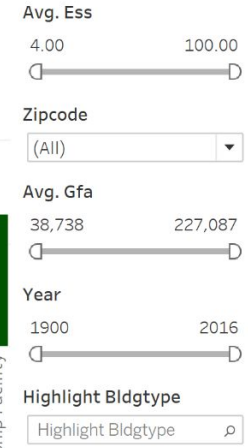
(All)

electricity

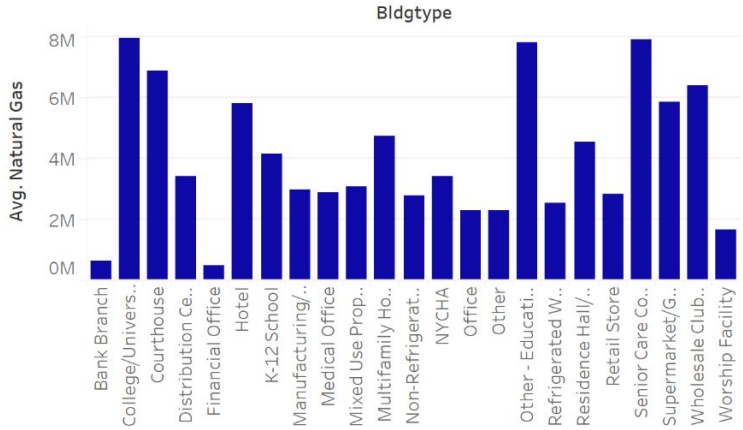


eui (energy usage intensity)

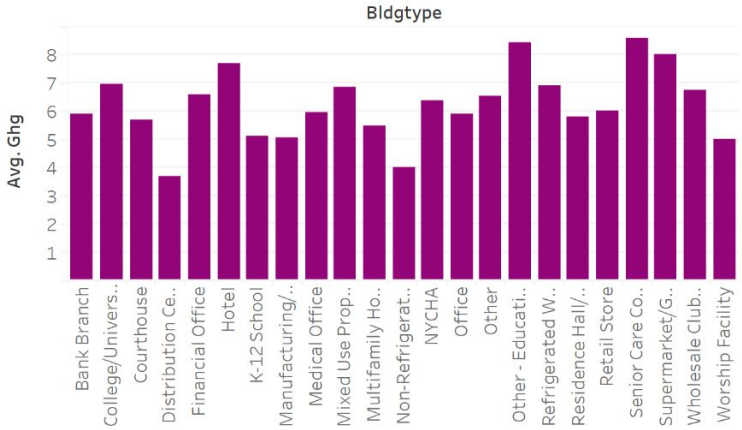




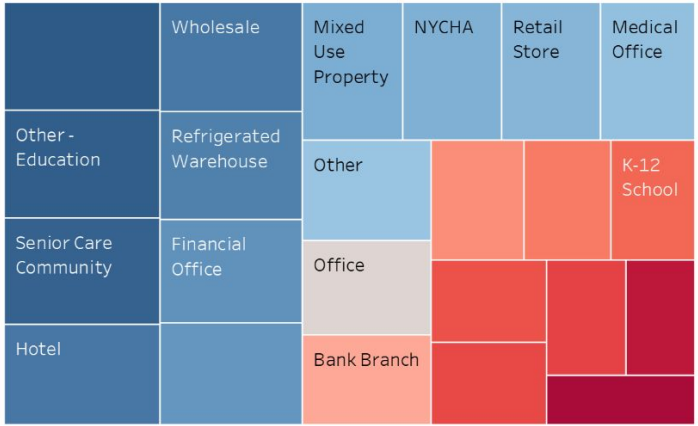
natural gas



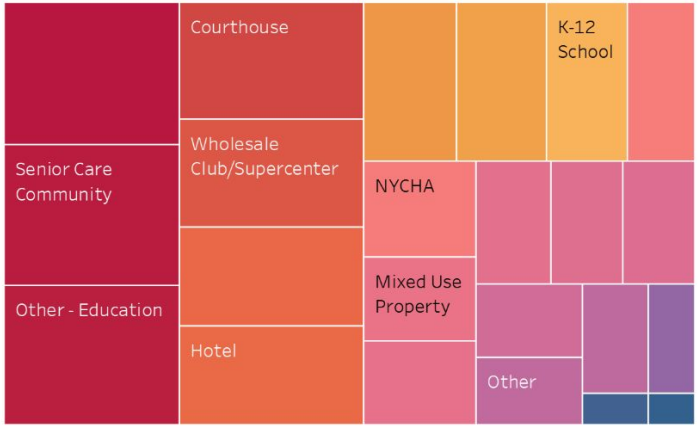
greenhouse gas emissions



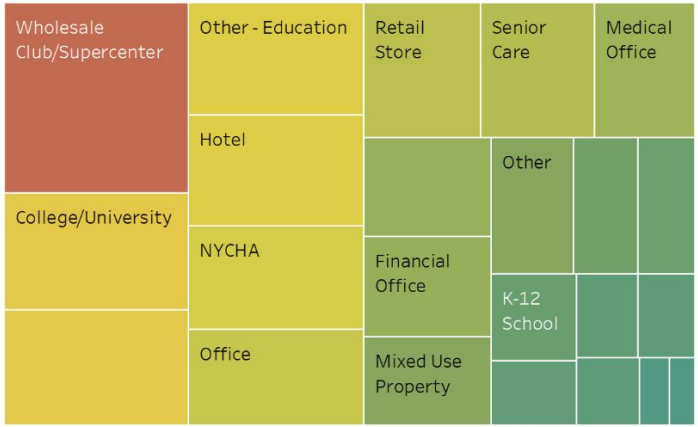
eui (energy usage intensity)



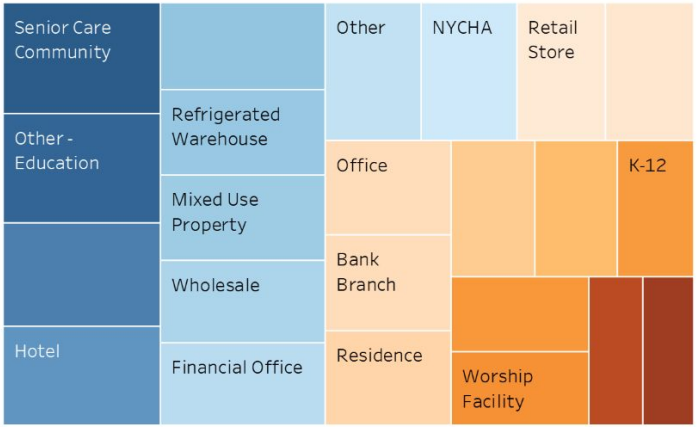
natural gas



electricity



greenhouse gas emissions



Avg. Gfa
38,738 227,087

Zipcode
(All)

Avg. Ess
4.00 100.00

Year
1900 2016

Highlight Bldgty..
Highlight Bl...

Avg. Eui
104.3 235.1

Avg. Electricity
619,700 13M

Avg. Natural Gas
466,724 8M

Avg. Ghg
3.681 8.575