

**A COUNTY PERSPECTIVE ON  
CLEAN ENERGY COMMUNITIES  
PROJECT DEVELOPMENT**

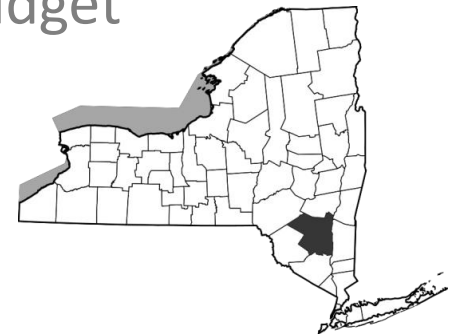
Amanda LaValle, Coordinator  
UC Department of the Environment  
November 1, 2017

# Ulster County Introduction



Ulster County Department of the Environment

- 183,000 Residents
- 1200+ Employees in County Work Force
- ~\$320 million annual budget



**SUSTAINABLE  
ULSTER COUNTY**

COUNTY EXECUTIVE MICHAEL P. HEIN

# Clean Energy Community

## First Designated CEC- October 2016



*Ulster County receives Bronze CSC  
Certification September 2016*

**SUSTAINABLE  
ULSTER COUNTY**

COUNTY EXECUTIVE MICHAEL P. HEIN

# Clean Energy Community

## 10 High Impact Actions

- Benchmarking
- Clean Energy Upgrades
- LED Street Lights
- Clean Fleets
- Solarize
- Unified Solar Permit
- Energy Code Enforcement Training
- Climate Smart Communities Cert.
- Community Choice Aggregation
- Energize NY Finance

# Clean Energy *County*

## 10 7 High Impact Actions

- Benchmarking
- Clean Energy Upgrades
- LED Street Lights
- Clean Fleets
- Solarize
- ~~Unified Solar Permit~~
- ~~Energy Code Enforcement Training~~
- Climate Smart Communities Cert.
- ~~Community Choice Aggregation~~
- Energize NY Finance

# Clean Energy *County*

## 10 7 High Impact Actions

- **Benchmarking**

- Clean Energy Upgrades

- LED Street Lights

- **Clean Fleets**

- Solarize

- ~~Unified Solar Permit~~

- ~~Energy Code Enforcement Training~~

- **Climate Smart Communities Cert.**

- ~~Community Choice Aggregation~~

- **Energize NY Finance**

# Clean Energy Community

## Project Development

- 1- Start with the basics
- 2- Do the obvious...review existing baseline information on energy use
- 3- Look at the organizational needs
- 4- Think bigger and longer term

# Clean Energy Community

## Project Development

### 1- Start with the basics

2- Do the obvious...review existing baseline information on energy use

3- Look at the organizational needs

4- Think bigger and longer term

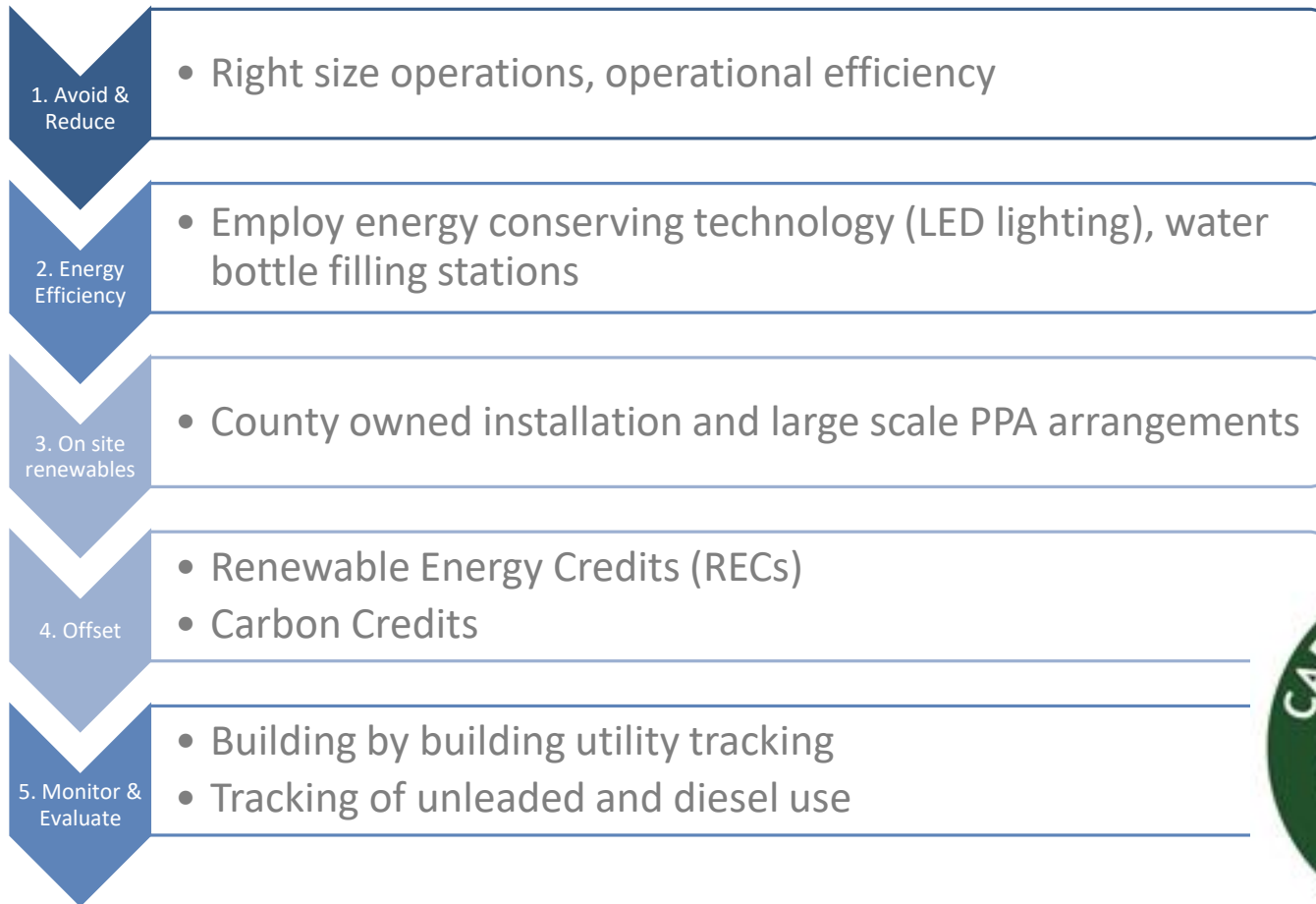
# Ulster County Carbon Footprint Reduction Program



**SUSTAINABLE**  
**ULSTER COUNTY**

COUNTY EXECUTIVE MICHAEL P. HEIN

# Ulster County Carbon Footprint Reduction Program

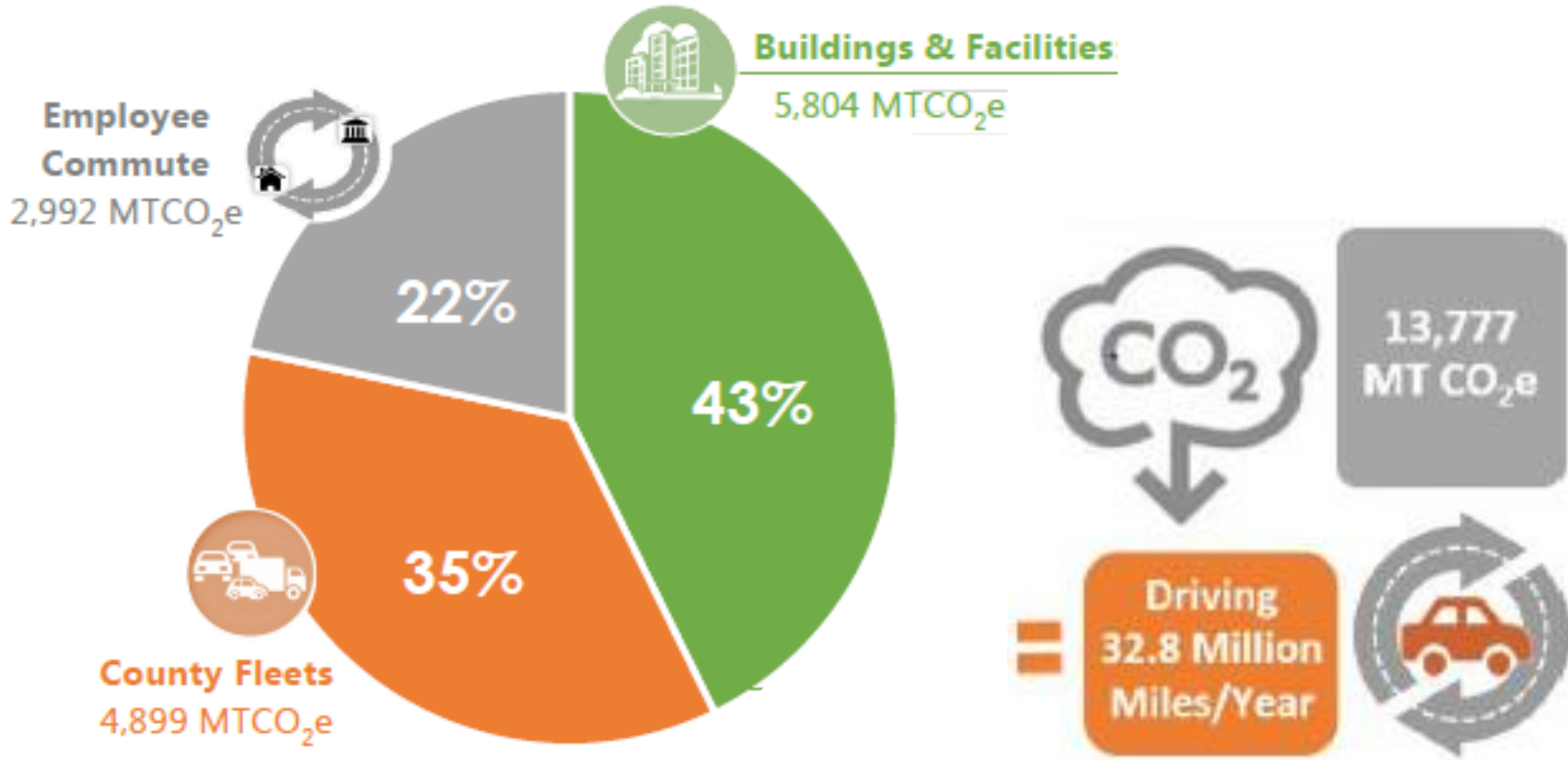


# Clean Energy Community

## Project Development

- 1- Start with the basics
- 2- Do the obvious...review existing baseline information on energy use**
- 3- Look at the organizational needs
- 4- Think bigger and longer term

# Ulster County Government Operations Greenhouse Gas Inventory (2012)



# Ulster County Fleet

- Road Maintenance (paving, plowing)
- UCAT bus service
- Social Services, visits to elderly, transport of veterans to medical appointments
- Sheriff Road Patrol



# Ulster County Green Fleet Policy



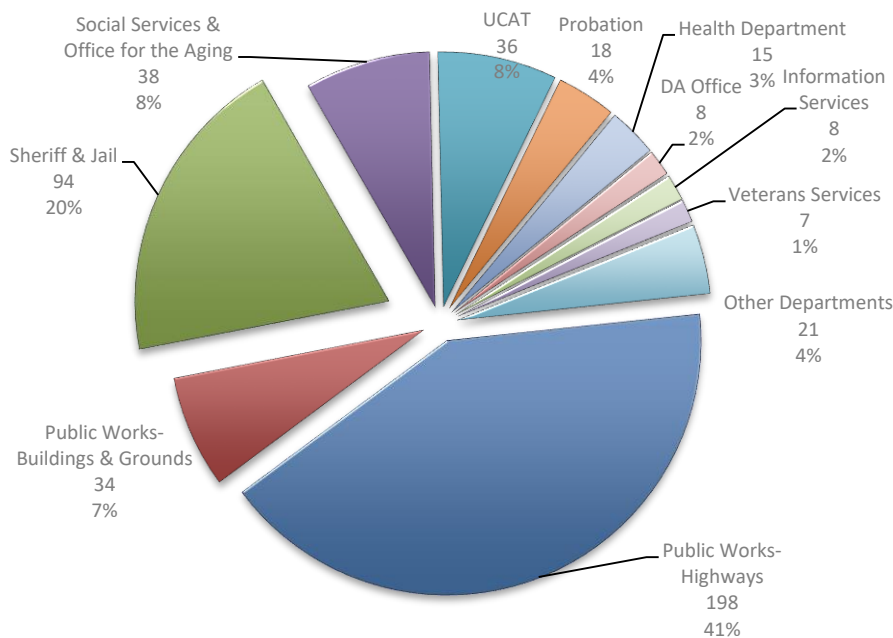
- Collaborative effort between UC Executive (Public Works Fleet Manager and Environment) and Legislature
- Supports EV deployment and EV infrastructure
- Made sure reporting and tracking was implementable
- Set aspirational but achievable goals

<http://ulstercountyny.gov/legislature/2015/9-resolution-no-296>

# Fleet – Inventory & Fuel Use

TABLE 1- Number of vehicles, distance driven, fuel used, cost and GHG emissions reported by department (2016)

Department	Number of Vehicles	Distance Driven (miles)	Fuel (gallons)	Cost (\$)	Emissions in kg CO2e
Office for the Aging/NY Connects	4	12,366	496	\$807	4,414
Dept Social Services	35	590,529	19,935	\$31,853	177,421
Central Auto	8	26,563	1,070	\$1,764	9,521
Environment	1	3,440	168	\$285	1,493
Planning	1	1,129	51	\$88	456
Health Dept	16	139,917	6,514	\$10,689	57,975
Public Defender	1	3,206	147	\$246	1,306
District Attorney	8	55,481	3,232	\$5,308	28,767
Probation	19	104,656	5,939	\$9,726	52,859
Safety	3	17,386	1,022	\$1,614	9,099
Urgent	17	104,167	7,282	\$12,829	64,805
Arson Task Force	2	17,067	1,097	\$1,817	9,763
Tourism	1	8,705	422	\$682	3,759
Fire Control	2	10,621	810	\$1,362	7,205
Jail	18	146,527	11,639	\$19,037	103,586
Sheriff's office	62	891,607	77,783	\$126,780	692,268
Purchasing	1	7,402	632	\$1,003	5,626
Weights & Measures	2	16,156	1,340	\$2,116	11,928
DPW- B&G Division	31	138,274	10,935	\$19,318	97,324
DPW- Hwy (from WexOnline)	60	670,504	71,944	\$118,495	640,302
DPW-Hwy (diesel tank deliveries and pickup)	84	UNK	119,046	\$181,333	1,216,650
Veterans Services	6	77,629	5,980	\$9,343	53,219
Info Services	7	11,274	988	\$1,538	8,796
County Clerk	2	5,075	614	\$961	5,462
UCAT (diesel)	22	869,704	144,483	\$241,287	1,432,895
UCAT (gasoline)	6	166,413	18,480	\$29,383	186,177
<b>TOTAL</b>	<b>419</b>	<b>4,095,798</b>	<b>512,049</b>	<b>\$829,664</b>	<b>4,883,076</b>



# Ulster County Buildings

- Various services & functions: social services, veterans' housing, heavy equipment, correctional facility, etc.
- Buildings date back to 1660s!
- Size varies from ~1,000- to 277,000 sq ft



# CEC Benchmarking

## Annual Summary Data

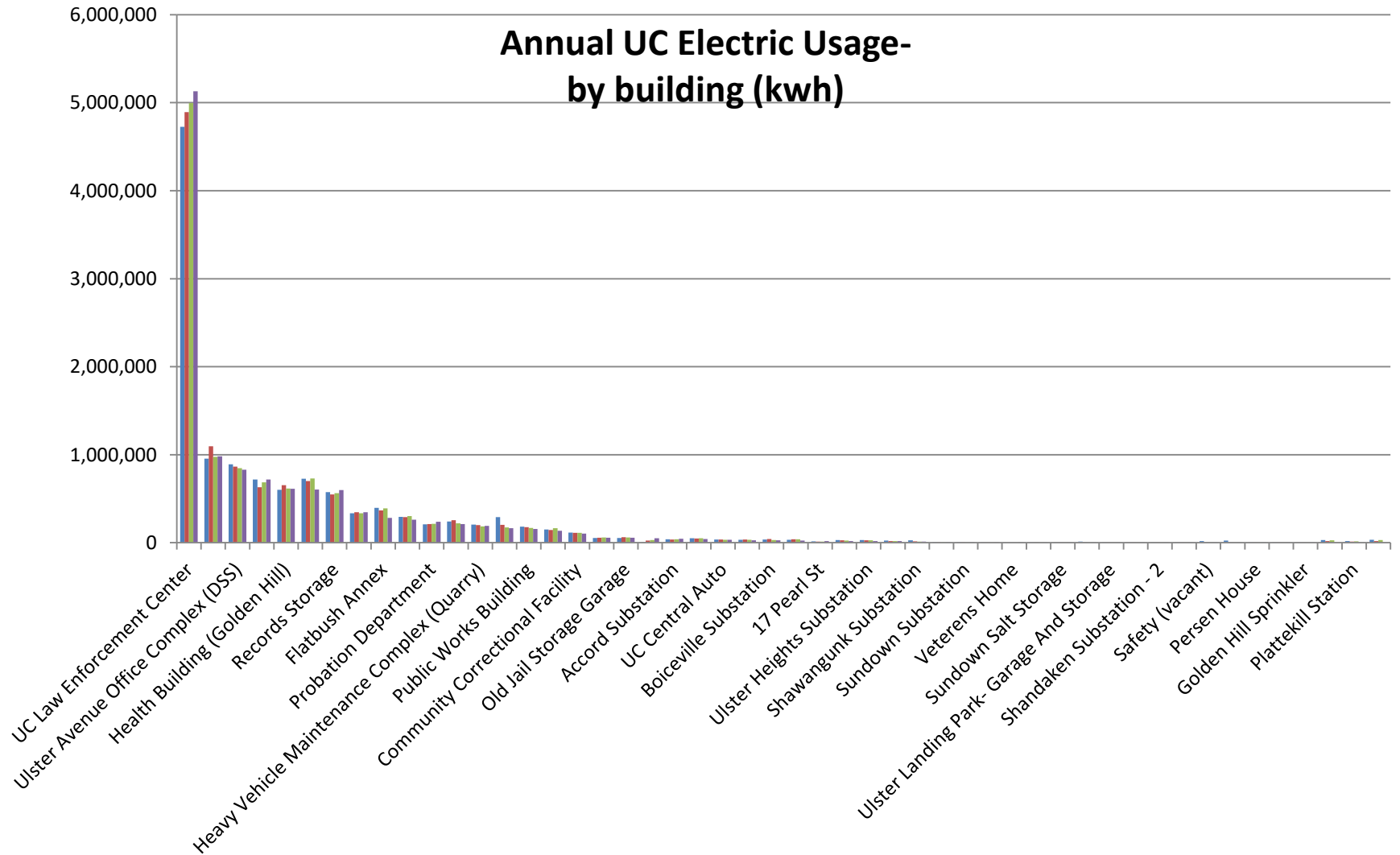
### Ulster County 2016 Climate Smart Communities Benchmarking Analysis

All data compiled by the Ulster County Department of the Environment in conjunction with UC Department of Public Works (8/2017)

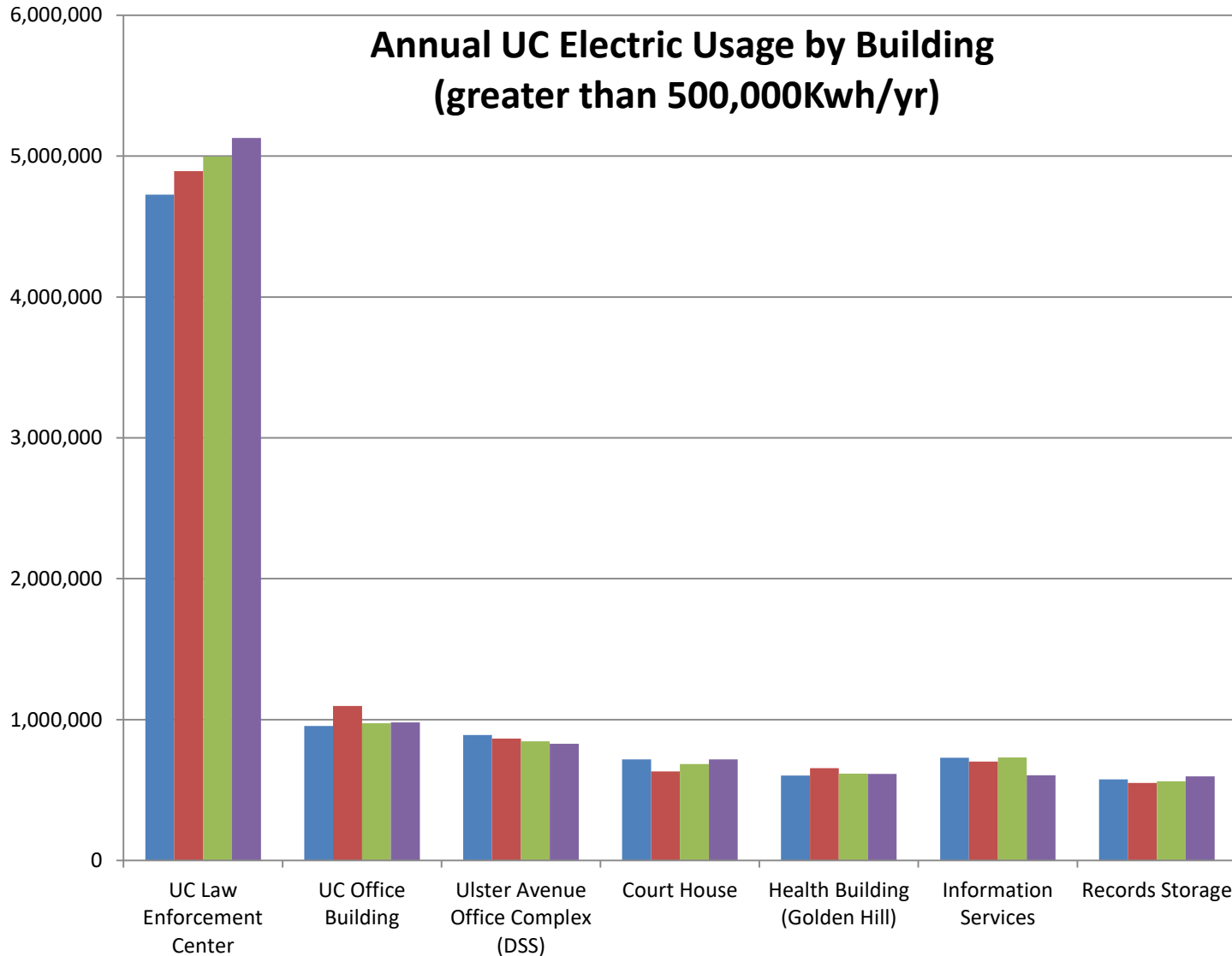
See accompanying reference document Ulster County Benchmarking Analysis and Data Compilation Factors and Conversions for details and further information

Building	Sq. Ft.	Electricity (kWh)	kWh/Sq. Ft.	Natural Gas (CCF)	CCF/Sq. Ft.	Oil (gal.)	Oil gal./Sq. Ft.	Propane (gal.)	Propane gal./Sq. Ft.	Annual Site Energy, Secondary (kBtu)	Annual Site Energy, Primary (kBtu)	Annual Source Energy, Secondary (kBtu)	Annual Source Energy, Primary (kBtu)	Site EUI (kBtu/Sq. Ft.)	Source EUI (kBtu/Sq. Ft.)
UC Law Enforcement Center	277,000	4,939,461	17.83			118,014	0.43			16,853,442	16,285,932	52,919,809	16,448,791	119.64	250.43
Ulster Ave. Office Complex (DSS)	68,667	811,674	11.82	26,078	0.38					2,769,432	2,675,609	8,696,016	2,809,390	79.30	167.55
UC Office Building	62,396	924,992	14.82	25,491	0.41					3,156,071	2,615,375	9,910,063	2,746,144	92.50	202.84
Old UC Jail	53,391	178,316	3.34							608,415		1,910,423		11.40	35.78
Business Resource Center	49,310	488,616	9.91	13,016	0.26					1,667,158	1,335,411	5,234,875	1,402,181	60.89	134.60
Courthouse	43,360	665,333	15.34	12,060	0.28					2,270,115	1,237,400	7,128,160	1,299,270	80.89	194.36
Mental Health Building	39,600	567,489	14.33	7,683	0.19					1,936,272	788,316	6,079,893	827,731	68.80	174.43
Heavy Vehicle Maintenance Complex	35,000	136,725	3.91	23,631	0.68	2,704	0.08	2095	0.06	466,507	2,991,846,000†	1,464,833	3,118,803,540†	97.16	125.79
SUNY Ulster Kingston Center	29,900	328,080	10.97	19,140	0.64					1,119,409	1,963,764	3,514,944	2,061,952	103.12	186.52
Flatbush Annex	24,836	221,135	8.90	7,227	0.29					754,512	741,540	2,369,168	778,617	60.24	126.74
UCAT	23,413	354,154	15.13	11,494	0.49					1,208,373	1,179,287	3,794,291	1,238,251	101.98	214.95
UC Record Storage	22,550	537,506	23.84	12,684	0.56					1,833,970	1,301,361	5,758,666	1,366,429	139.04	315.97
Family Court	22,282	223,190	10.02			7,047	0.32			761,526	972,527	2,391,191	982,253	77.82	151.40
Trudy Resnick Farber Building	20,732	210,988	10.18			11,390	0.54			719,892	1,571,765	2,260,460	1,587,482	110.54	185.60
Probation Department	17,594	176,682	10.04	7,795	0.44					602,839	799,754	1,892,915	839,742	79.72	155.32
West Hurley Substation	15,146	44,202	2.92			2,853	0.19			150,818	393,714	473,568	397,651	35.95	57.52
New Paltz Sub-station & Salt Storage	13,697	33,323	2.43							113,699		357,015		8.30	26.07
Boiceville Substation	13,690	25,964	1.90					2480	0.18	88,588	228,151	278,165	230,432	23.14	37.15
Information Services	13,174	677,944	51.46	4,532	0.34					2,313,144	464,951	7,263,271	488,198	210.88	588.39
Public Works Building	8,925	140,299	15.72	2,612	0.29	262	0.03			478,699	292,176,600*	1,503,115	305,341,950*	68.68	199.30
Community Correctional Facility	7,200	89,911	12.49					2849	0.40	306,775	262,099	963,274	264,720	79.01	170.55
Ulster County Pool	6,922	62,208	8.99			1,463	0.21			212,254	201,922	666,477	203,941	59.83	125.75
Veterans' Home	6,656	16,106	2.42	2,768	0.42					54,954	284,039	172,554	298,241	50.93	70.73
Persen House	6,405	1,740	0.27							5,936		18,638		0.93	2.91
Saugerties Substation	5,223	21,961	4.20					2113	0.40	74,929	194,433	235,278	196,377	51.57	82.65
Old Jail Storage Garage	5,000	81,543	16.31							278,225		873,628		55.65	174.73
Central Auto	5,000	31,831	6.37			2,174	0.44			108,608	300,040	341,028	303,040	81.73	128.81
Shawangunk Substation	4,433	14,564	3.29							49,693		156,035		11.21	35.20
17 Pearl St.	4,229	12,875	3.04	1,913	0.45					43,930	196,270	137,941	206,084	56.80	81.35
Board of Elections 284 Wall	3,566	57,787	16.20	779	0.22					197,169	79,925	619,111	83,922	77.70	197.15
Carr Building	3,560	43,934	12.34	3,851	1.08					149,901	395,128	470,691	414,885	153.10	248.76
Ulster Heights Substation & salt shed	3,545	14,769	4.17					2739	0.77	50,391	251,951	158,228	254,471	85.29	116.42
Safety Hutton Building (vacant)	3,386	929	0.27							3,168		9,948		0.94	2.94
Sundown Substation	3,040	8,645	2.84					2934	0.97	29,497	269,956	92,622	272,655	98.50	120.16
Shandaken Substation (39461533)	3,020	12,833	4.25					2778	0.92	43,785	255,558	137,484	258,113	99.12	130.99
21 O'Neill St	2,400	31,405	13.09	784	0.33					107,154	80,438	336,463	84,460	78.16	175.38
Shandaken Substation salt storage (9994066)	2,344	2,656	1.13							9,061		28,451		3.87	12.14
Accord Substation	2,324	39,598	17.04							135,110		424,245		58.14	182.55
Plattekill Station	2,265	20,236	8.93					1220	0.54	69,046	112,258	216,804	113,381	80.05	145.78
Emergency Management E-911	2,130	150,818	70.81	836	0.39			130	0.06	514,591	87,669,600†	1,615,817	91,575,048†	272.73	772.86
Tourism 20 Broadway	2,087	19,748	9.46	1,249	0.60					67,380	128,147	211,574	134,555	93.69	165.85
Sundown Salt Storage	1,944	2,882	1.48							9,832		30,874		5.06	15.88
Sheriff's Substation Ellenville	1,534	11,580	7.55					893	0.58	39,511	82,147	124,064	82,968	79.31	134.96
Ulster Landing Park Caretaker House	1,218	250	0.21							853		2,678		0.70	2.20
280 Rt 299	1,100	4,258	3.87	486	0.44					14,528	49,864	45,619	52,357	58.54	89.07
Ulster Landing Park Garage and Storage	1,080	2,341	2.17							7,988		25,081		7.40	23.22

# Building Electricity Data

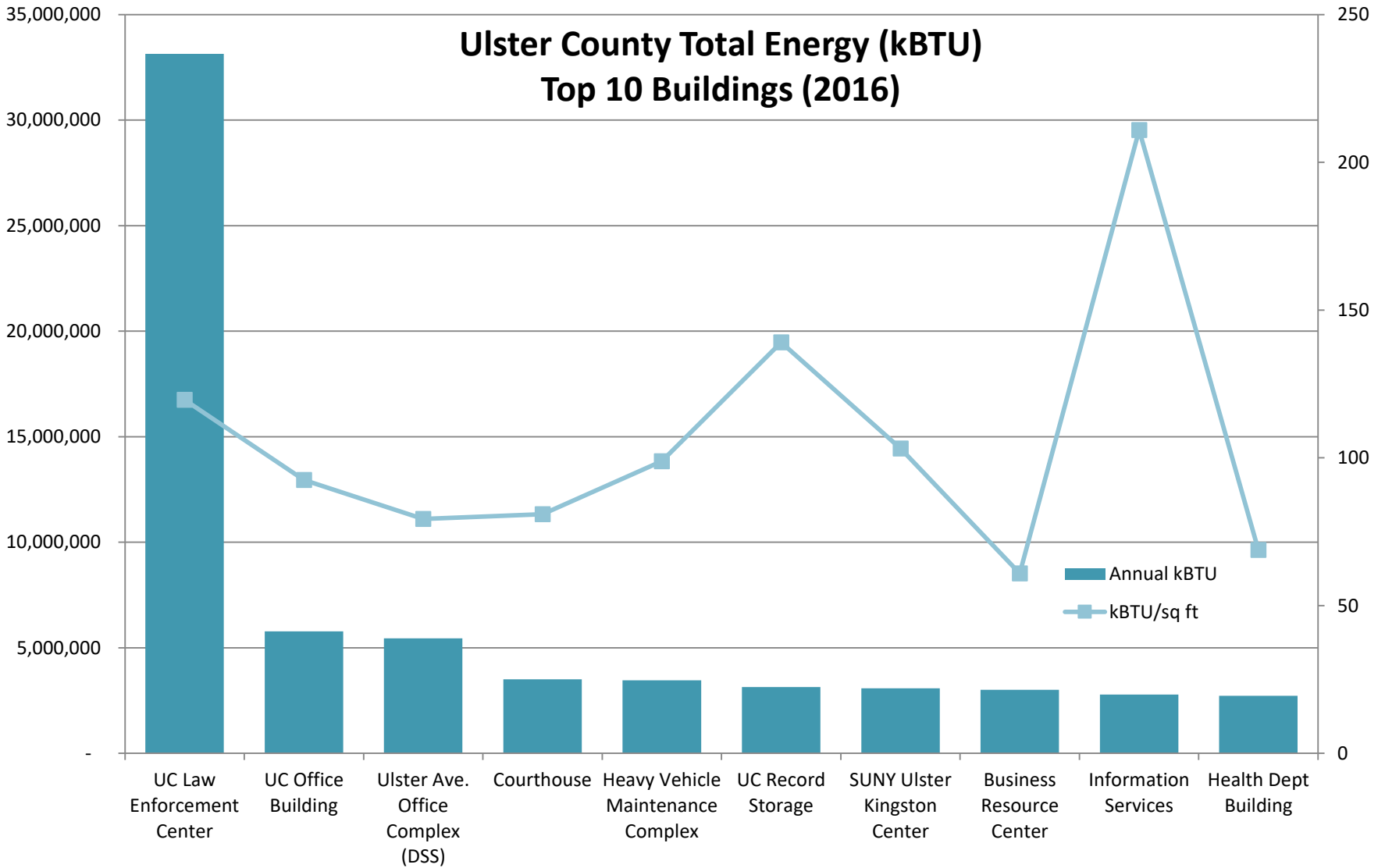


# Building Electricity Data

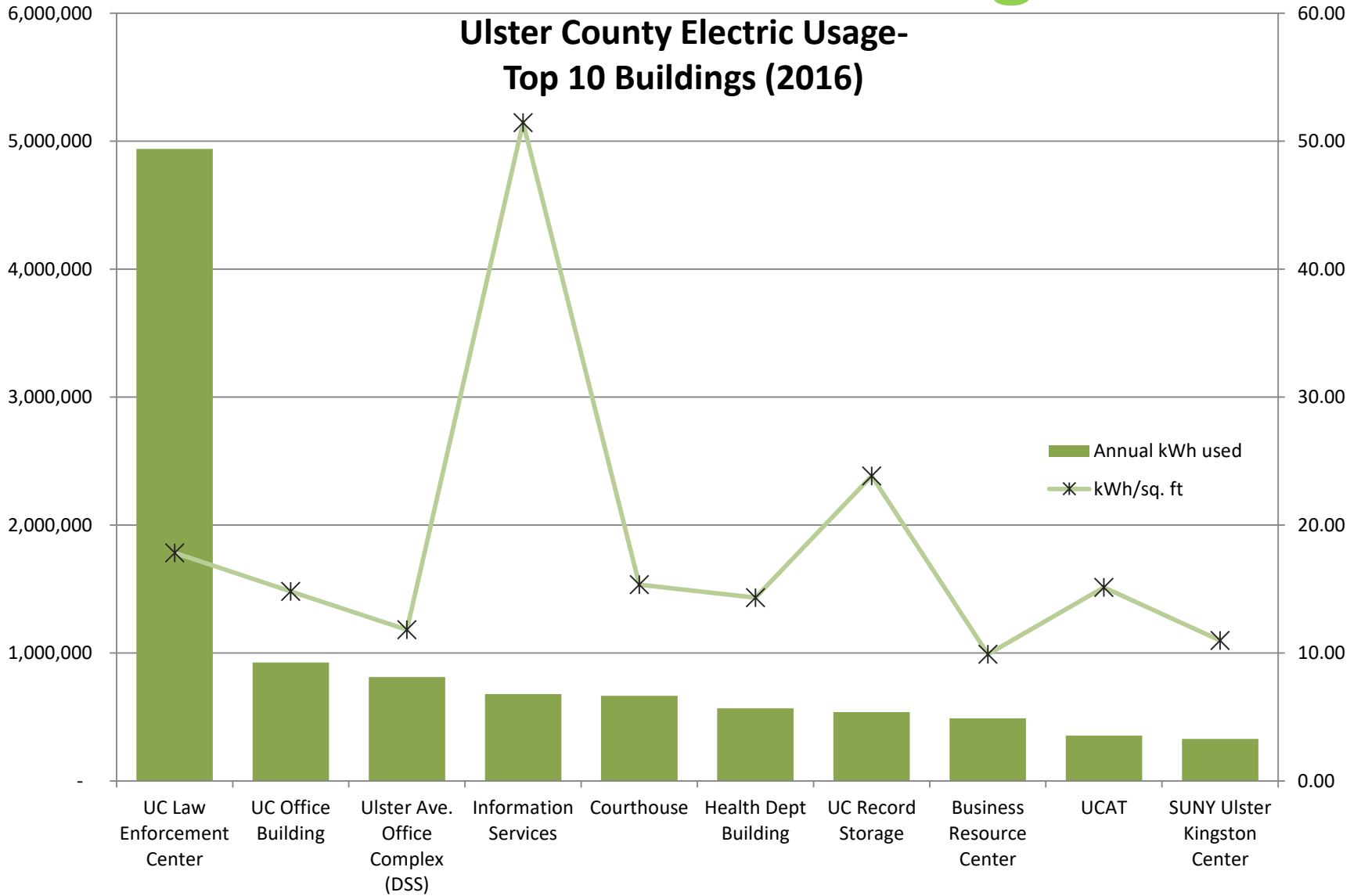


# CEC Benchmarking

**Ulster County Total Energy (kBTU)  
Top 10 Buildings (2016)**

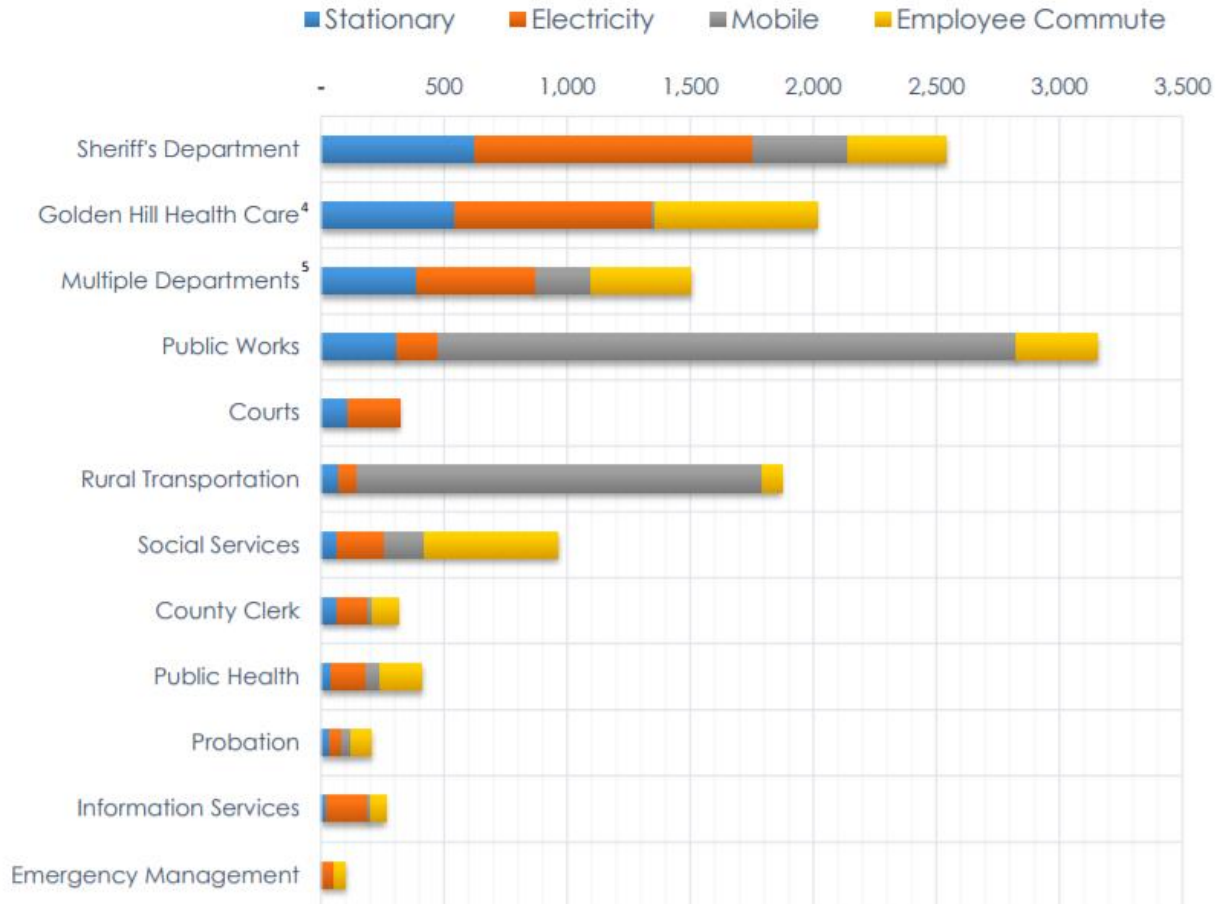


# CEC Benchmarking



# Energy Use by Department

GHG Emission Sources by Department (MTCO<sub>2e</sub>)



# Clean Energy Community

## Project Development

- 1- Start with the basics
- 2- Do the obvious...review existing baseline information on energy use
- 3- Look at the organizational needs**
- 4- Think bigger and longer term

# UC Capital Planning Process



Investing In Our **Future**



**Michael P. Hein**  
Ulster County Executive

**2018 Ulster County Executive Budget**  
**2018-2023 Capital Improvement Plan**

## 2018 - 2023 CAPITAL IMPROVEMENT PROGRAM



Project Name:  
Project Type:  
Project Purpose:  
New (Y/N):  
Routine (Y/N):  
Estimated Start Date:  
Estimated Completion Date:  
Estimated Total Cost:

Department of Public Works -  
Buildings & Grounds  
**UCLEC Boilers**

Facilities  
Program/Policy  
N  
Y  
03/2018  
10/2019  
\$563,860

### Project Description

Replace boilers with new energy efficient dual fuel capable burners and install natural gas main to building.

### Project Detail and Status

Replace two existing units with new energy efficient boilers with dual fuel capable burners to allow units to operate on either natural gas or fuel oil. Replace existing header valves, modify breeching and piping and install natural gas trains. Upgrade existing energy management systems to accommodate new heating system. Include boiler piping chemical treatment. Central Hudson may provide natural gas service to site at no cost to the County. Anticipated annual energy/maintenance costs savings (using current energy cost data and annual repair costs) of approximately \$100,000 per year. Potential access to grant funding for energy efficiency improvements and replacement of boilers.

Phase Description	Start Date	Completion Date	Cost
Design	3/2018	10/2019	\$ 51,260
Construction	5/2019	10/2019	\$ 512,600
Acquisition			
<b>Total Cost</b>			<b>\$ 563,860</b>
<b>Summary</b>			
Prior Years			
2018			\$ 100,000
2019			\$ 463,860
2020			
2021			
2022			
2023			
After 2023			
<b>Total Cost (must be the same as total of phases above)</b>			<b>\$ 563,860</b>

Costs	
Capital Fund	\$ 563,860
Operating Budget	
Other	
<b>Total</b>	<b>\$ 563,860</b>

Funding	
Federal	
State	
Operating Budget	
Other	
Serial Bonds Authorized	
<b>Total Funded</b>	<b>-</b>
Unfunded County Share	563,860
<b>Total</b>	<b>\$ 563,860</b>

G  
E  
N  
E  
R  
A  
L  
  
G  
O  
V  
E  
R  
N  
M  
E  
N  
T

G  
E  
N  
E  
R  
A  
L  
  
G  
O  
V  
E  
R  
N  
M  
E  
N  
T

*All Roads Lead To...*

## The Ulster County Law Enforcement Center



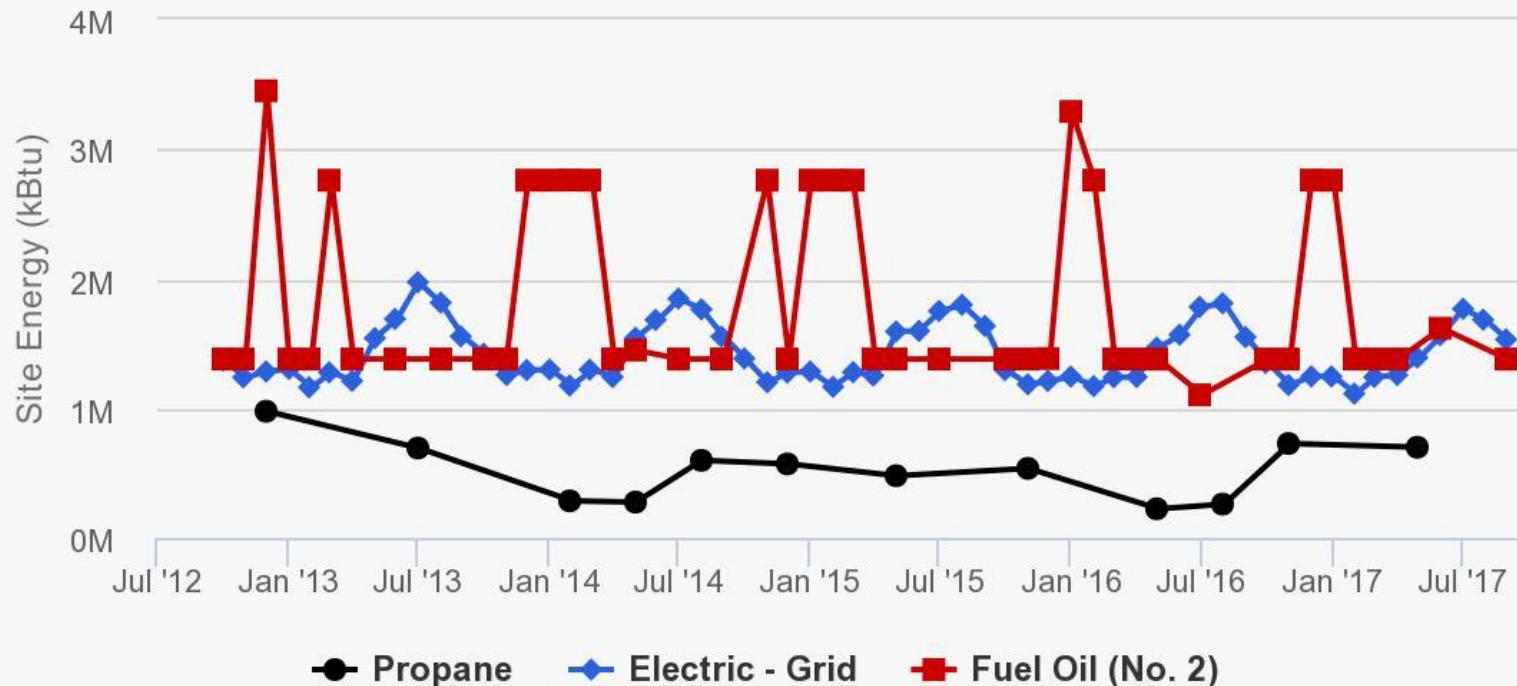
**SUSTAINABLE  
ULSTER COUNTY**

COUNTY EXECUTIVE MICHAEL P. HEIN

# All Roads Lead To...

## The Ulster County Law Enforcement Center

Energy Use by Calendar Month



*All Roads Lead To...*

## The Ulster County Law Enforcement Center



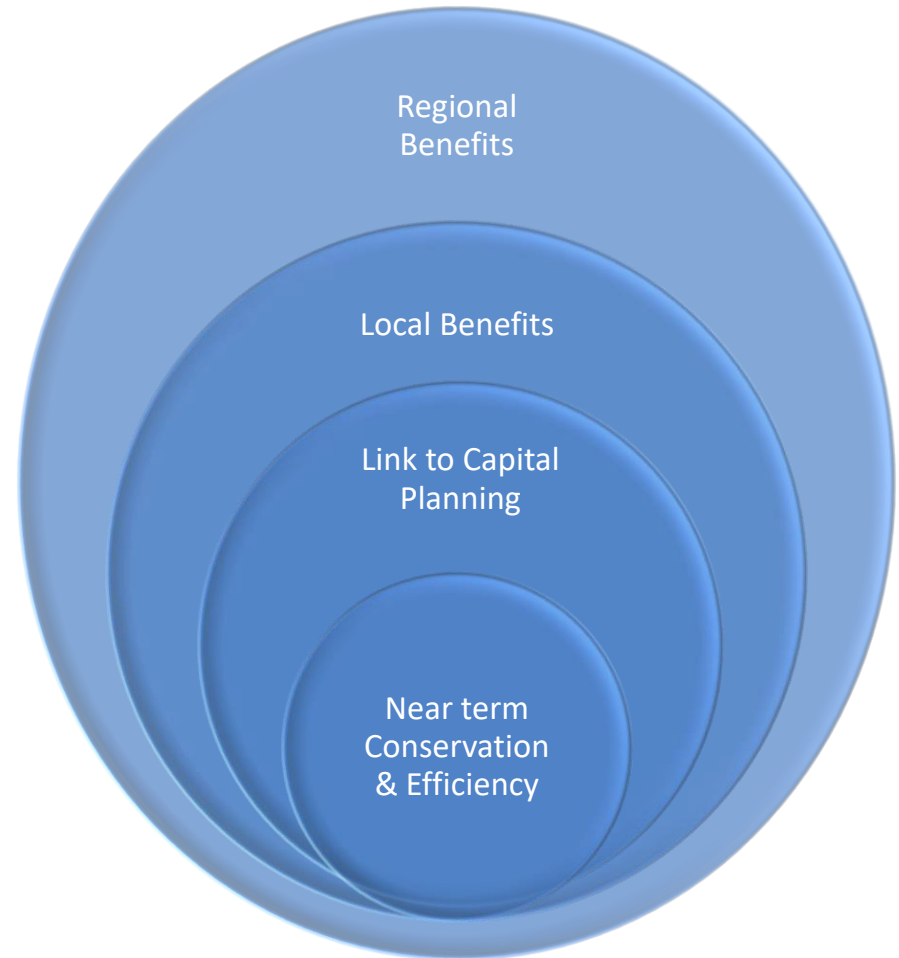
# Clean Energy Community

## Project Development

- 1- Start with the basics
- 2- Do the obvious...review existing baseline information on energy use
- 3- Look at the organizational needs
- 4- Think bigger and longer term**

# Clean Energy Community- Leveraging the CEC Program

- Evaluation of conservation, efficiency, and renewable energy project for the law enforcement center
- Incorporating fleet element through EVs
- Model for other correctional facilities



# Thank You

Amanda LaValle

Coordinator, Ulster County Department of the Environment

[alav@co.ulster.ny.us](mailto:alav@co.ulster.ny.us)

845-338-7455



COUNTY EXECUTIVE MICHAEL P. HEIN