

Kansas Energy Office

FY2016 to FY2023 Overview



Three Primary Programs

Energy Assessments and REAP Grant Assistance

- Focus is agricultural producers and rural small businesses
- Assist with USDA REAP grant applications

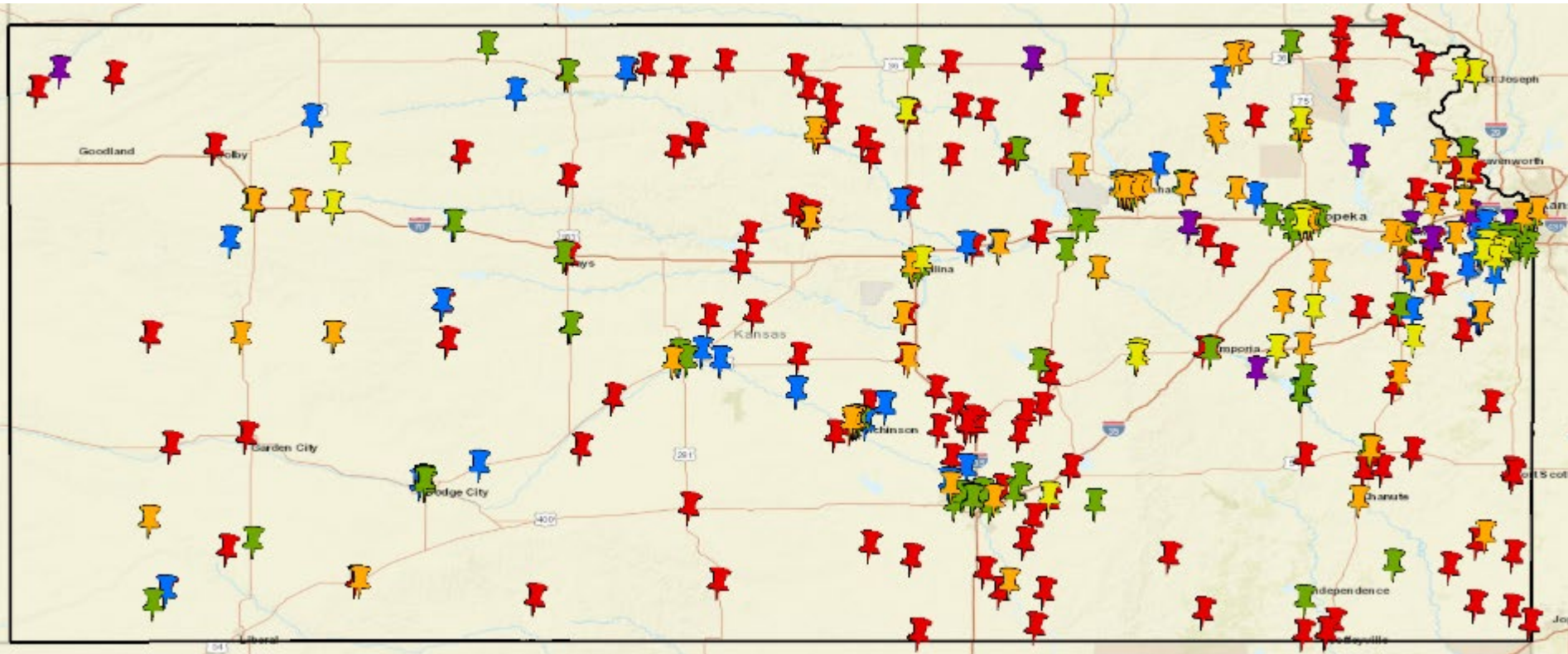
Energy Education

- Presentations, workshops, events
- STEM-focused KidWind Challenge
- K-12 energy efficiency benchmarking project
- Energy equipment library

Facility Conservation Improvement Program (FCIP)

- Program used to implement energy efficiency projects at governmental facilities
- Provide oversight and technical assistance

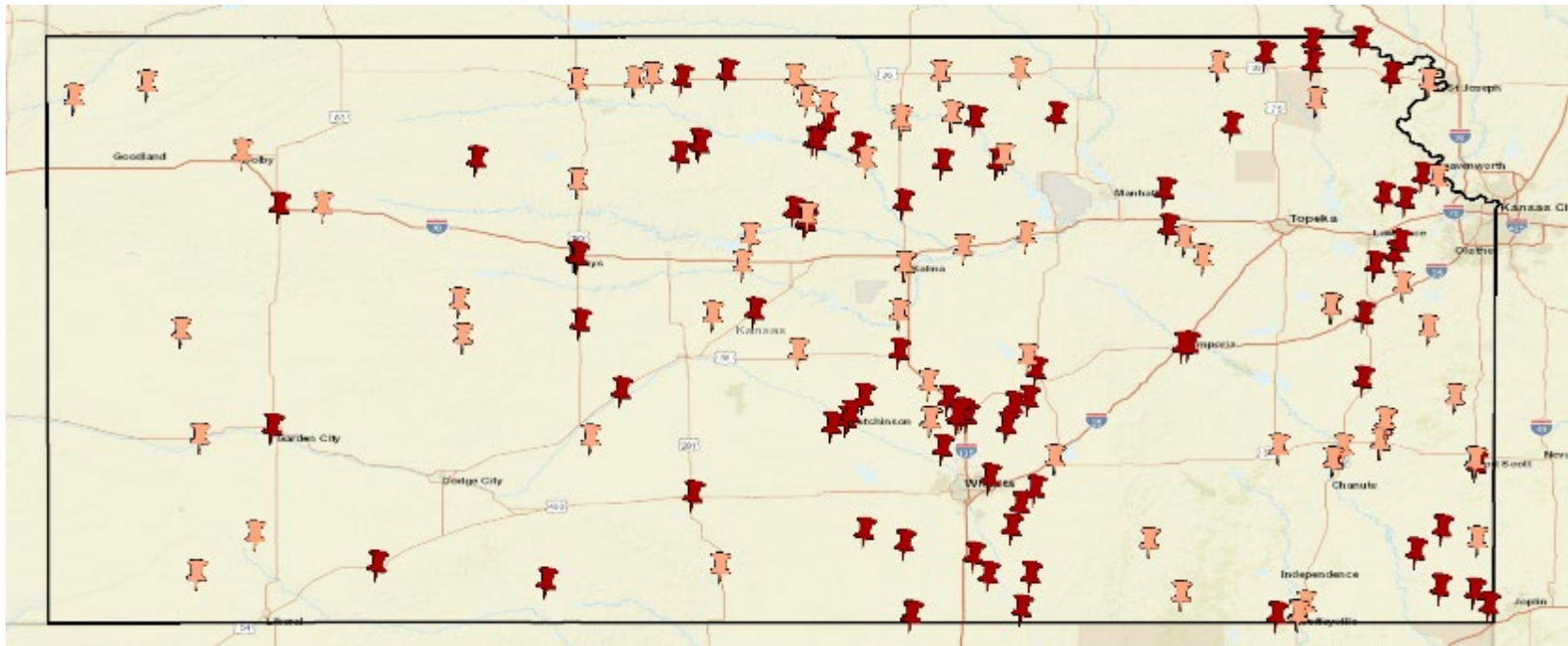
Kansas SEP Results (FY16-FY23)





- Educational Events (300)
- FCIP (14)
- K-12 Benchmarking (23)
- KidWind (88)
- Loans (129)
- Small Business Energy Assessments (175)

Energy Assessments/ REAP Grant Assistance

Energy Assessments and REAP Grant Applications



 Assessments resulting in REAP grant application (104)

 Assessments with no associated REAP grant application (71)

Energy Assessment Overview

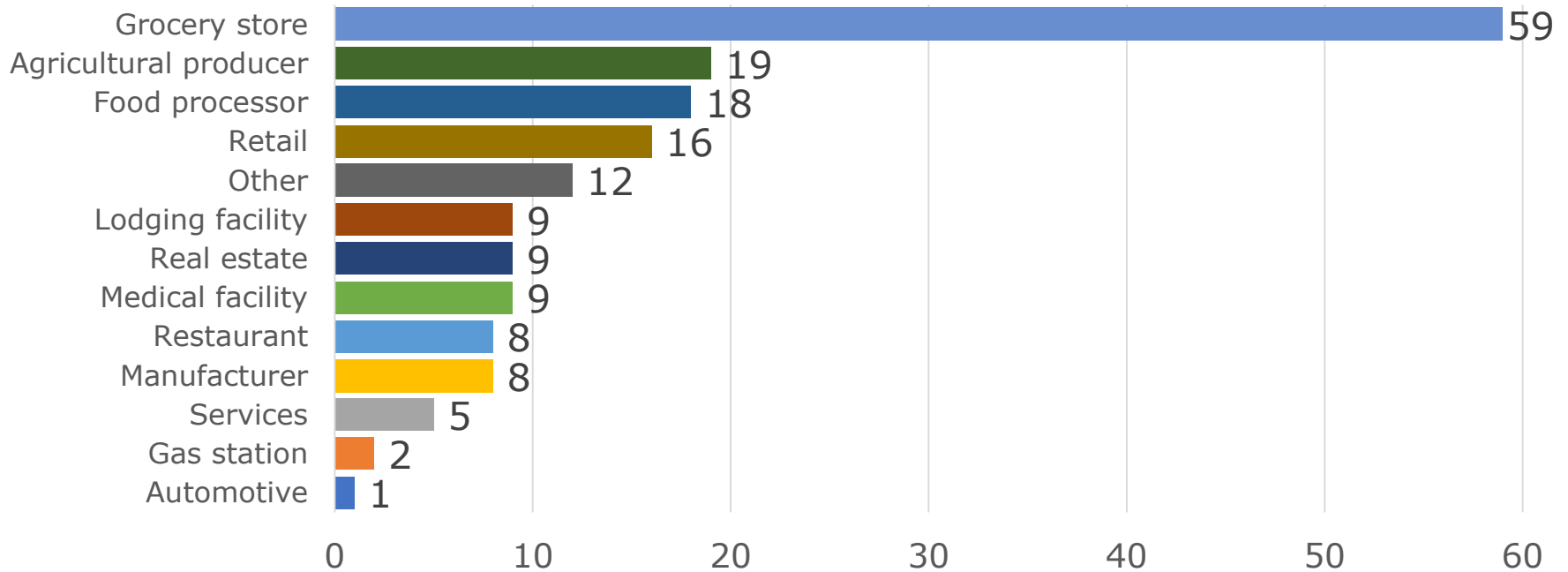
Fiscal Year	Number of Assessments/ Technical Reports Completed	Amount Awarded from Grant Funding	Annual Energy Cost Savings *	Annual Energy Savings or Production (kWh) *
FY16	12	\$91,601.00	\$77,669.60	807,525
FY17	25	\$148,542.00	\$128,604.29	1,267,424
FY18	23	\$145,984.00	\$132,983.98	1,184,860
FY19	23	\$114,714.00	\$216,353.84	2,243,632
FY20	24	\$375,816.00	\$160,544.99	1,675,528
FY21	20	\$175,196.00	\$303,853.39	3,198,401
FY22	21	\$213,859.00	\$80,413.50	862,586
FY23	27	\$2,292,585.00	\$329,435.32	2,836,135
Total	175	\$3,558,297.00	\$1,429,858.91	14,076,092

* Calculated/identified values if projects are implemented

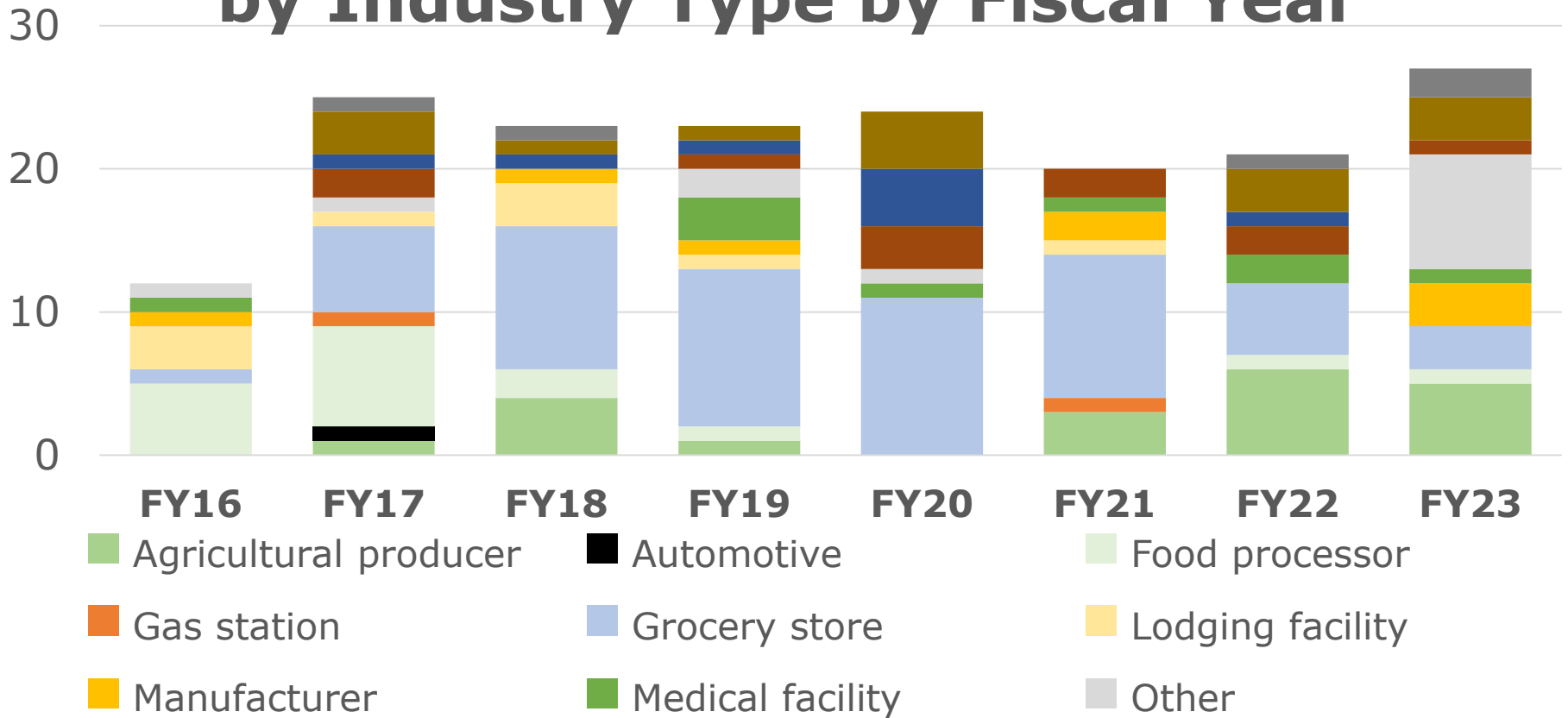
REAP Grants in Kansas

Year	Grants Submitted		Grants Approved		\$ Funding Approved		\$ Funding Returned to National
	<i>\$20K or less</i>	<i>>\$20K</i>	<i>\$20K or less</i>	<i>>\$20K</i>	<i>\$20K or less</i>	<i>>\$20K</i>	
2014	8	4	8	4	\$72,639	\$164,335	\$3,901
2015	13	7	13	7	\$171,689	\$766,001	\$279,310
2016	23	8	23	8	\$160,868	\$387,122	\$0
2017	17	6	16	3	\$168,378	\$406,000	\$0
2018	39	7	32	5	\$336,865	\$252,300	\$0

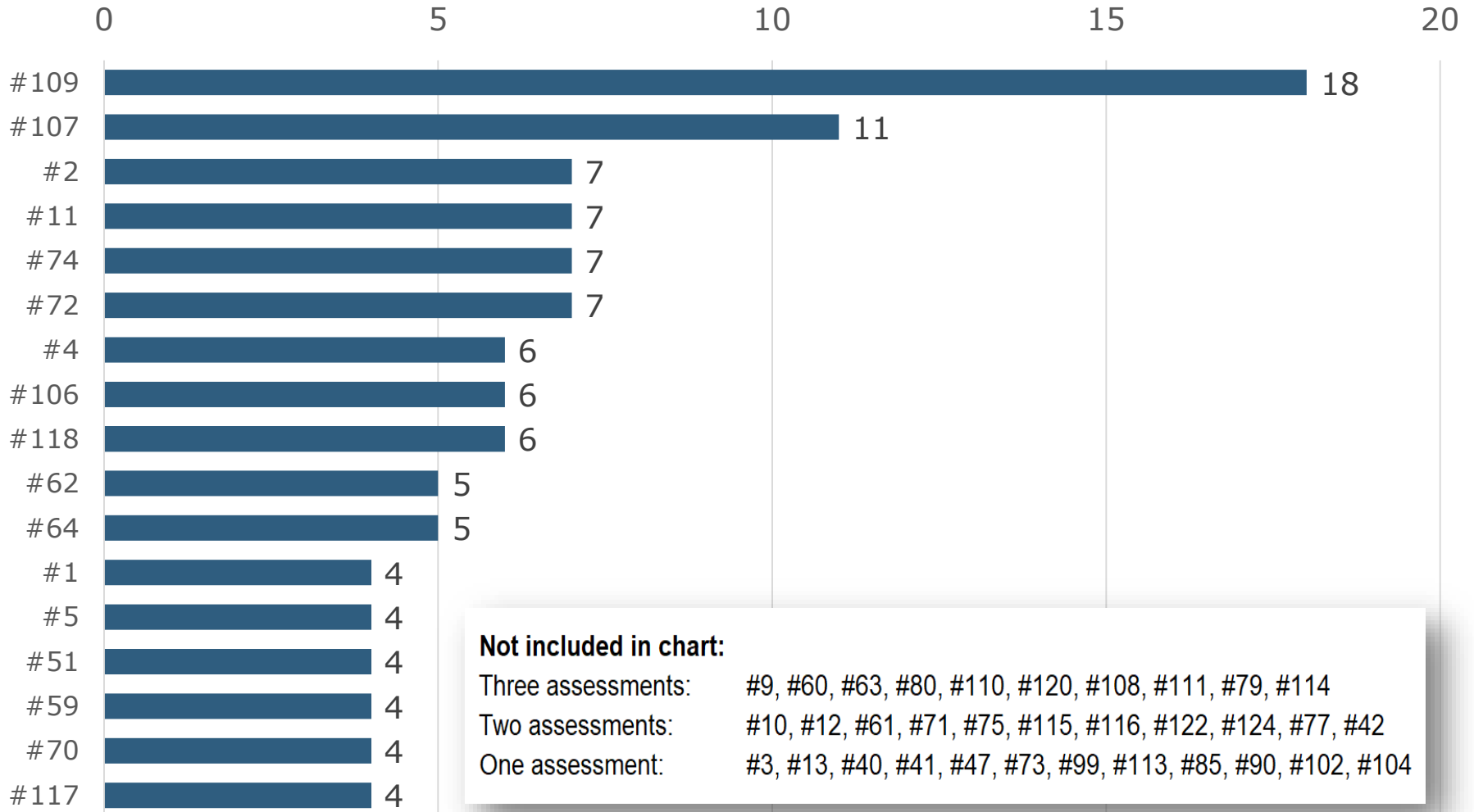
Energy Assessment by Industry



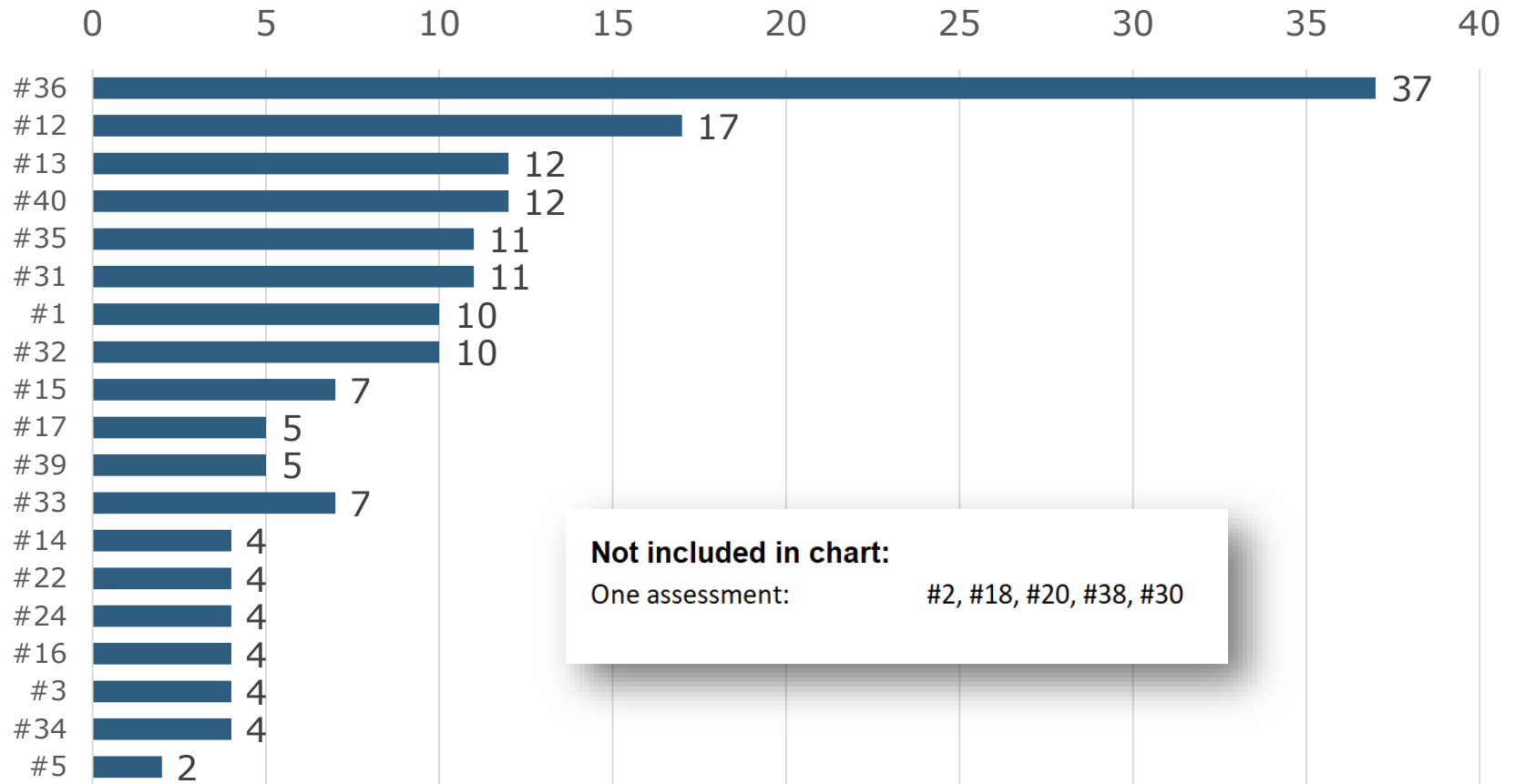
Number of Energy Assessments by Industry Type by Fiscal Year



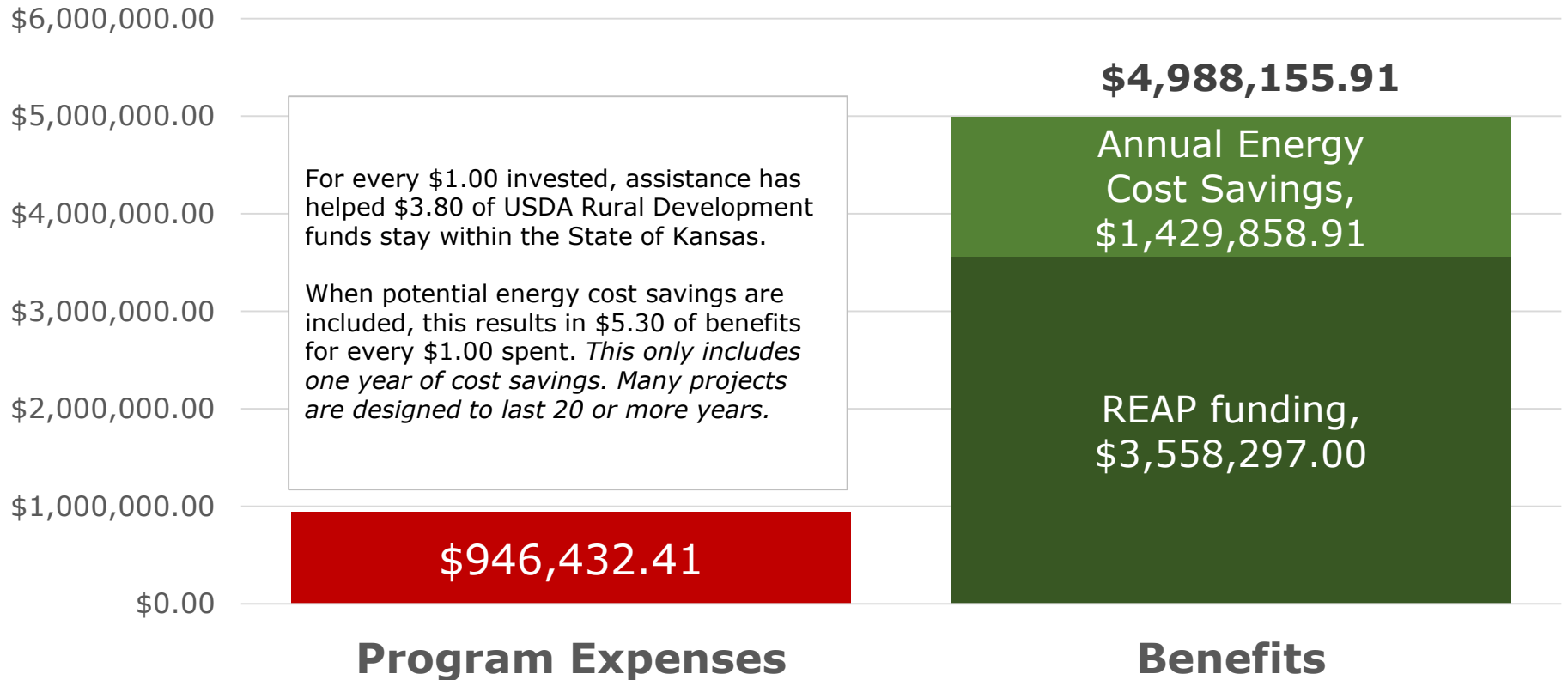
Number of Assessments by House District



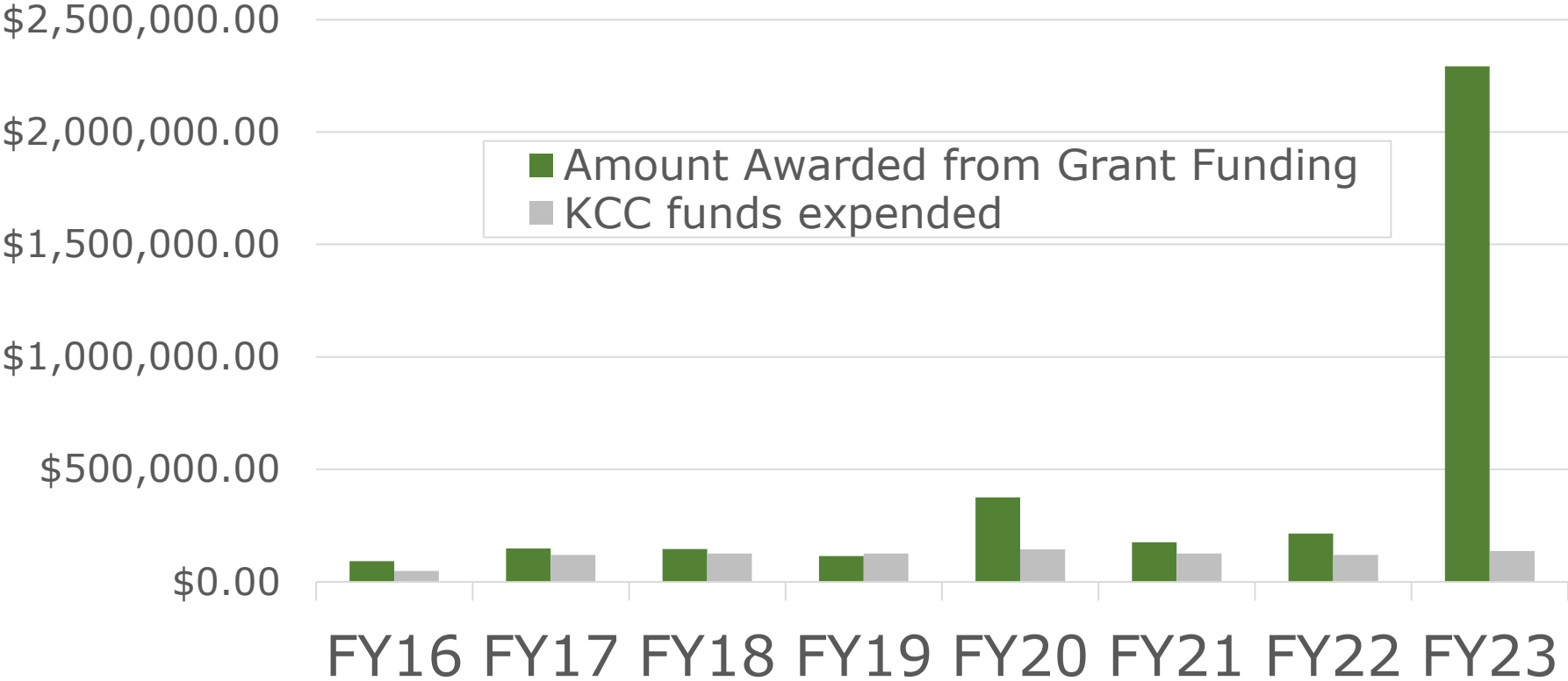
Number of Assessments by Senate District



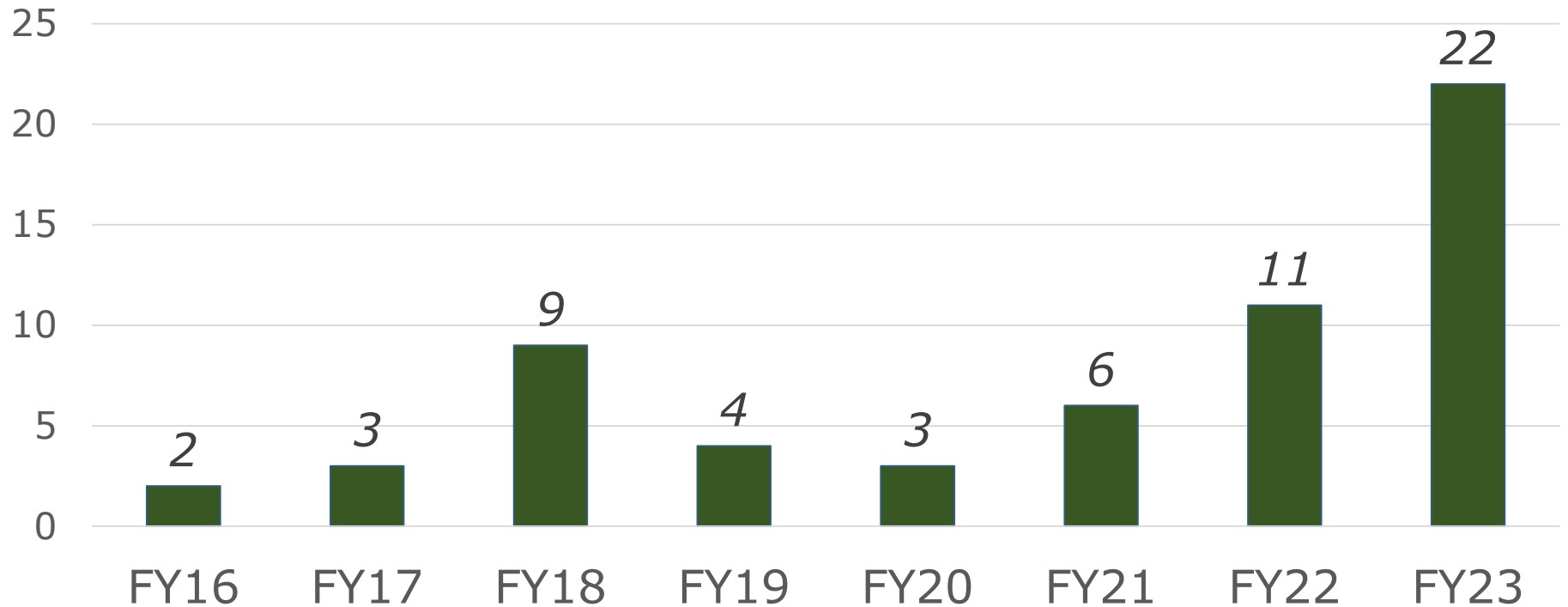
Benefits vs. Program Expenses (\$5.30 for every \$1 Spent)



Program Expense vs. USDA REAP Dollars Awarded



Number of Renewable Energy Assessments by Year



KidWind Challenge



National STEM Competition

- Six regional challenges + state challenge
- Open to all 4th-12th grade students
- Top two teams in each age division advance to state; top 2-3 teams advance to Nationals
- Students participate in four activities:
 - Turbine performance
 - In-person presentation
 - Knowledge quiz
 - “Instant” challenge

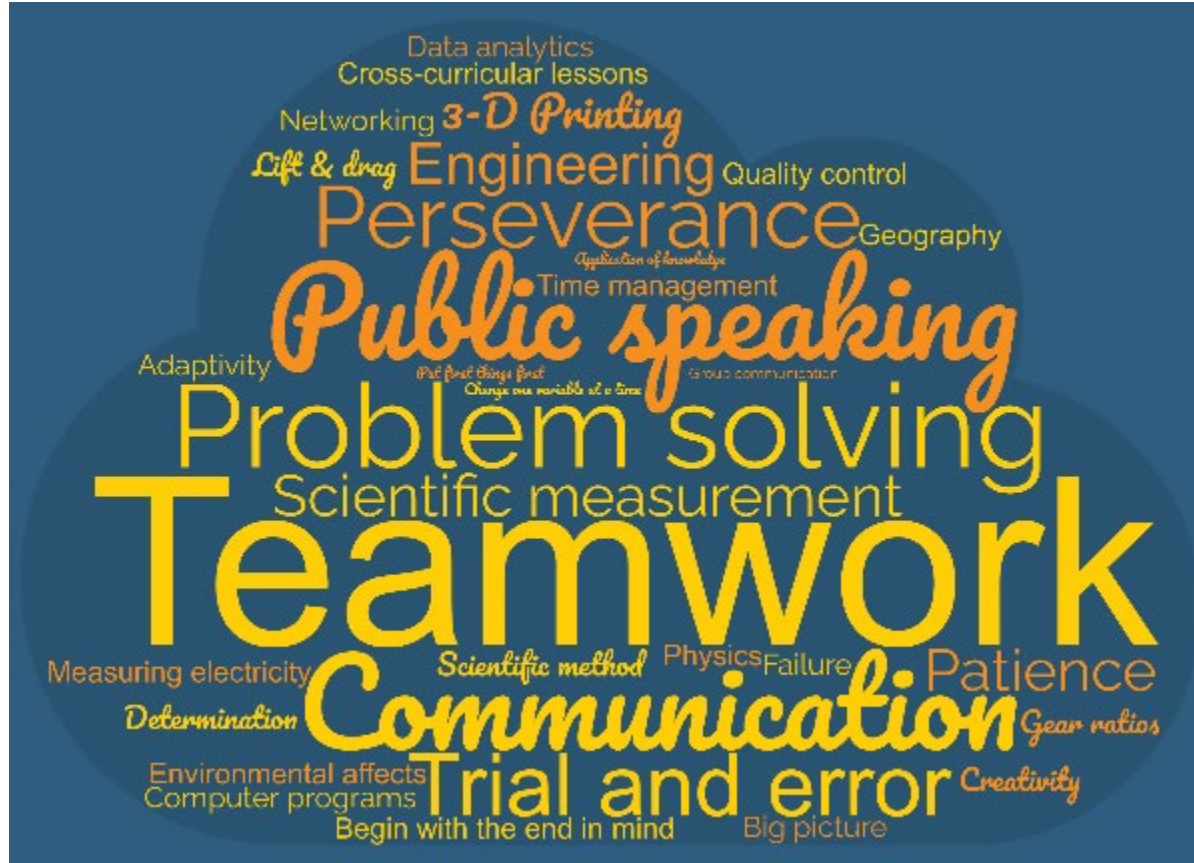




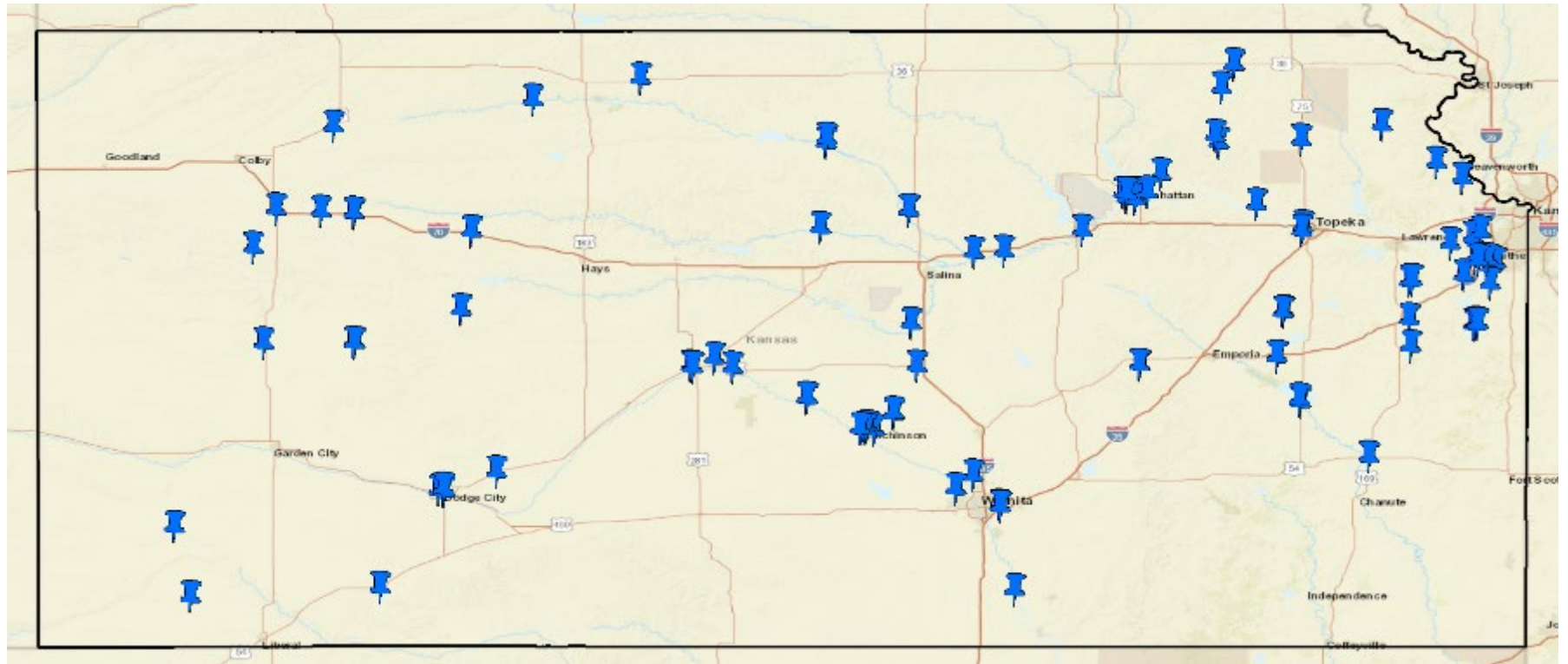


11/1/2023

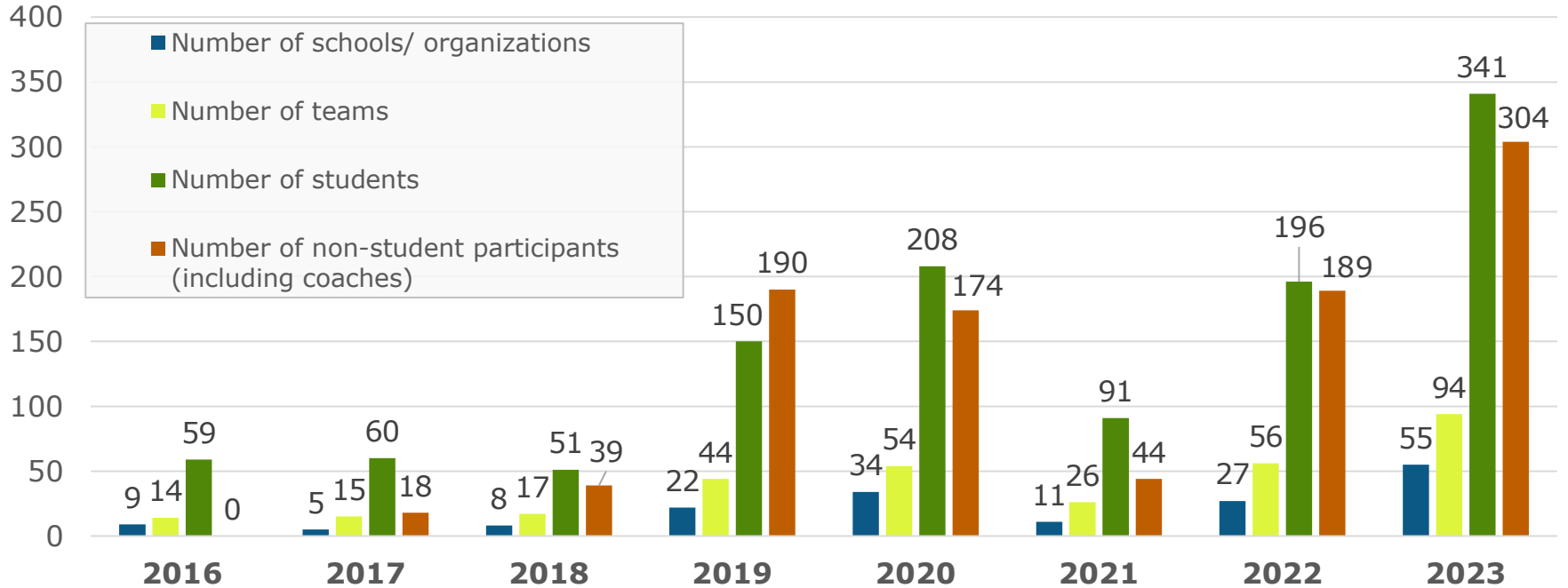
What do students learn at KidWind?



Participating Schools



Kansas KidWind Challenge - Historical Participation



2016: One Challenge in Manhattan NOT KCC/KEP

2017: One Challenge in Manhattan NOT KCC/KEP

2018: One Challenge in Manhattan; took over program

2019: Four regional Challenges + Statewide Challenge

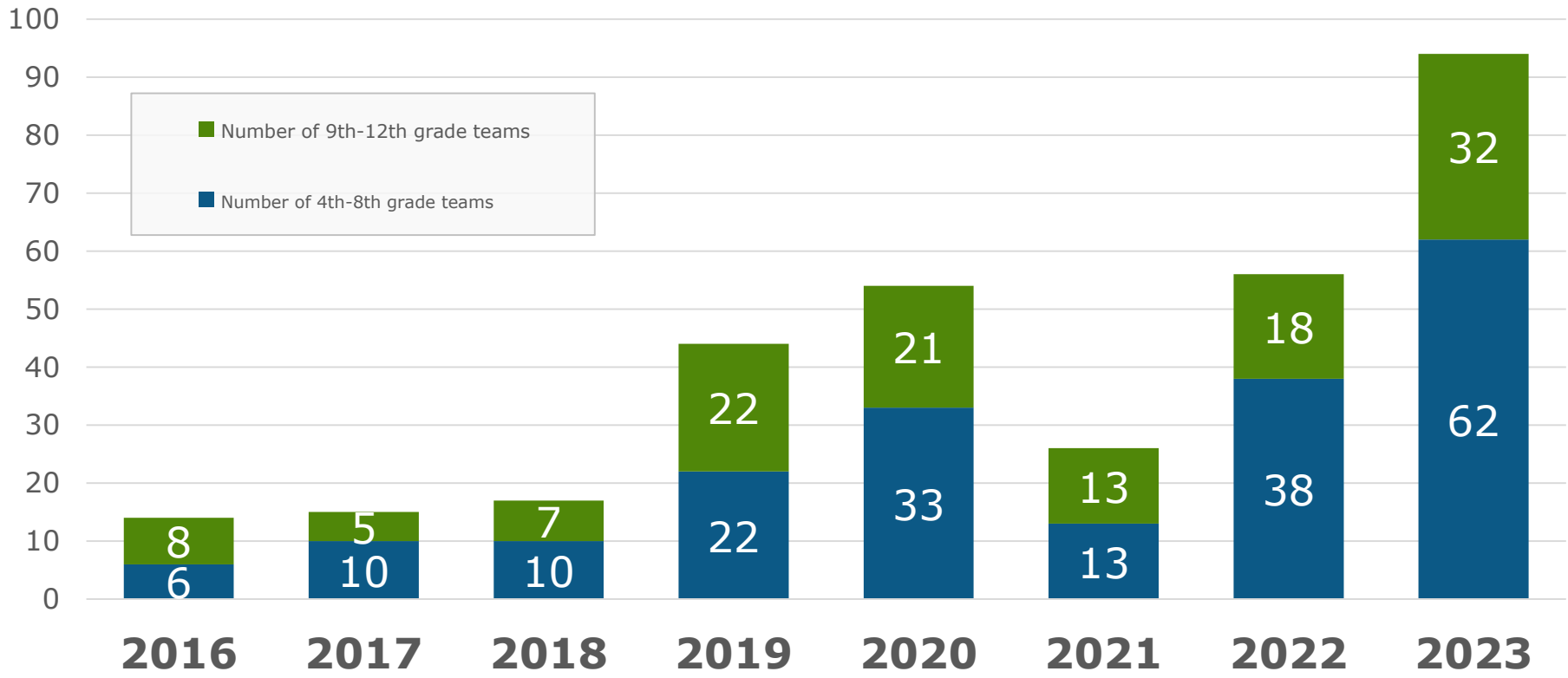
2020: Five regional Challenges (Statewide canceled due to pandemic)

2021: Due to pandemic, hosted three regional Challenges & Statewide (all virtual)

2022: Six regional challenges; Pandemic hindered some schools from participating

2023: Six regional challenges

Kansas KidWind Challenge – Number of Teams by Age Division



Past National KidWind Winners

Kansas had a top-performing team in all four of the most recent on-site National KidWind Challenges!

2018 (Chicago)

- **Top Performer (4th-8th): Oxford Airsharks**

2019 (Houston)

- **Top Performer (9th-12th): Oxford Airsharks**

2020 (Cancelled)

- Nationals cancelled due to pandemic

2021 (Virtual)

- Spirit of KidWind: BTU Crew (Dighton)
- Rookie Award: Hawkmores (Wheatland High School)

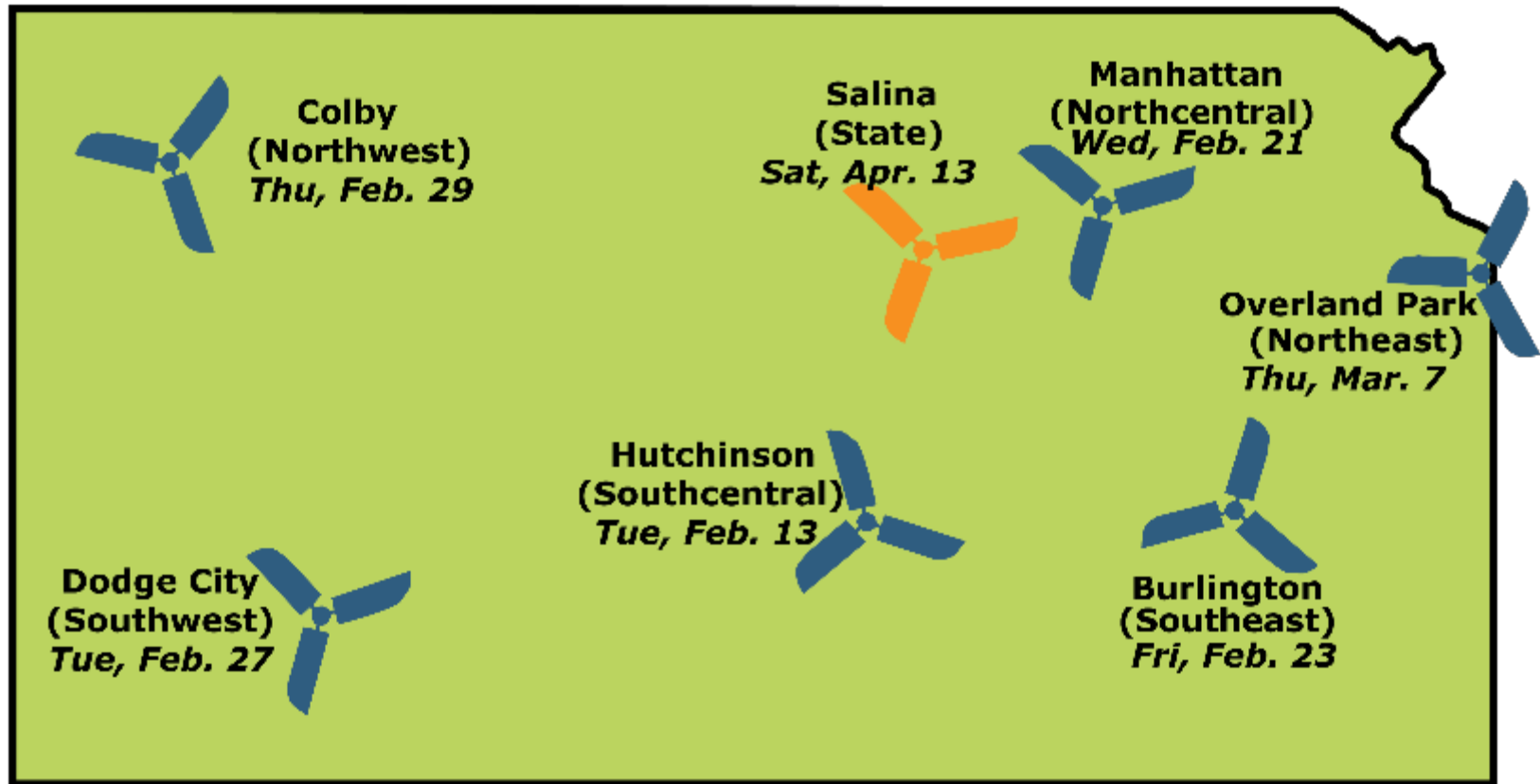
2022 (San Antonio)

- **Top Performer (3rd-5th): Hutch Stem Blue**
- Innovation Award (6th-8th): Wind Chill (Dighton)
- Judges Award (6th-8th): Gerald La Turbina (Beloit)

2023 (Boulder)

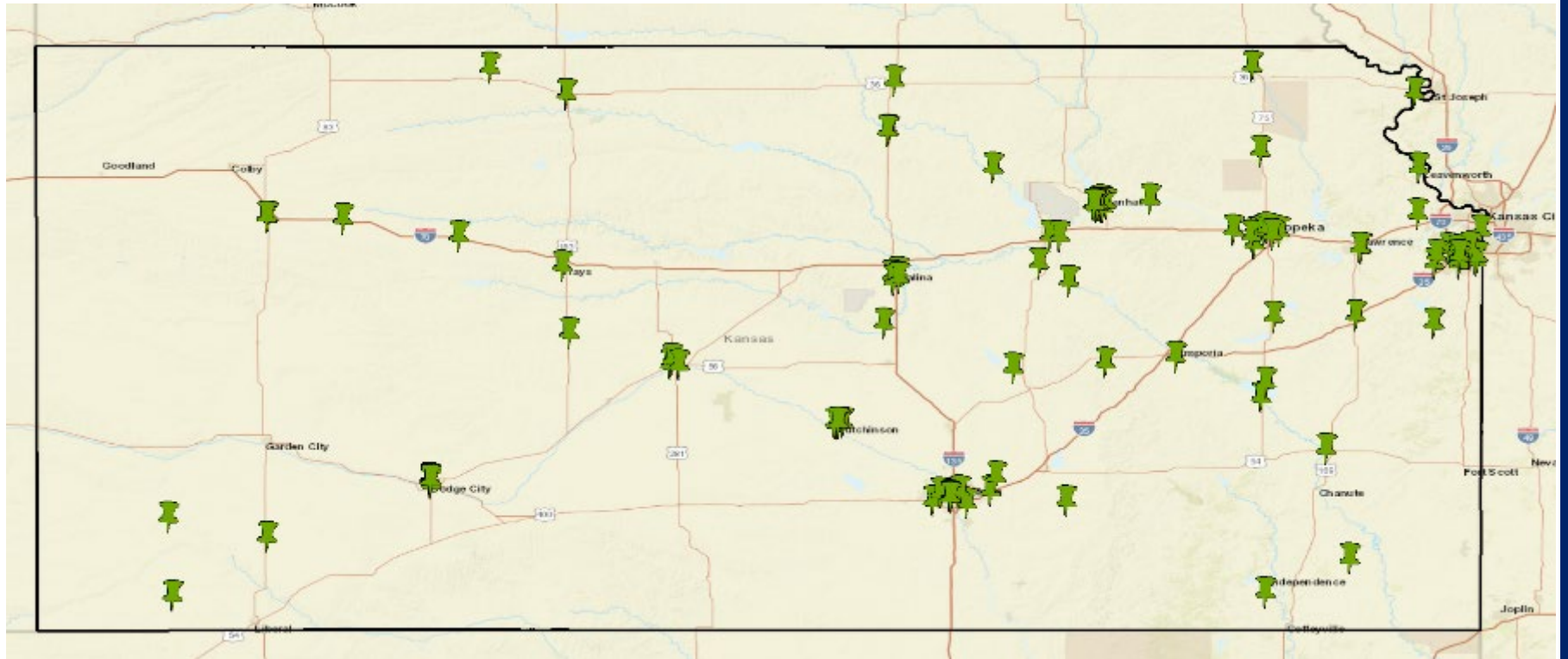
- **Top Performer (3rd-5th): Hutch Stem Blue**
- **Top Performer (6th-8th): W² (Oakley)**

2024 Kansas KidWind Challenge

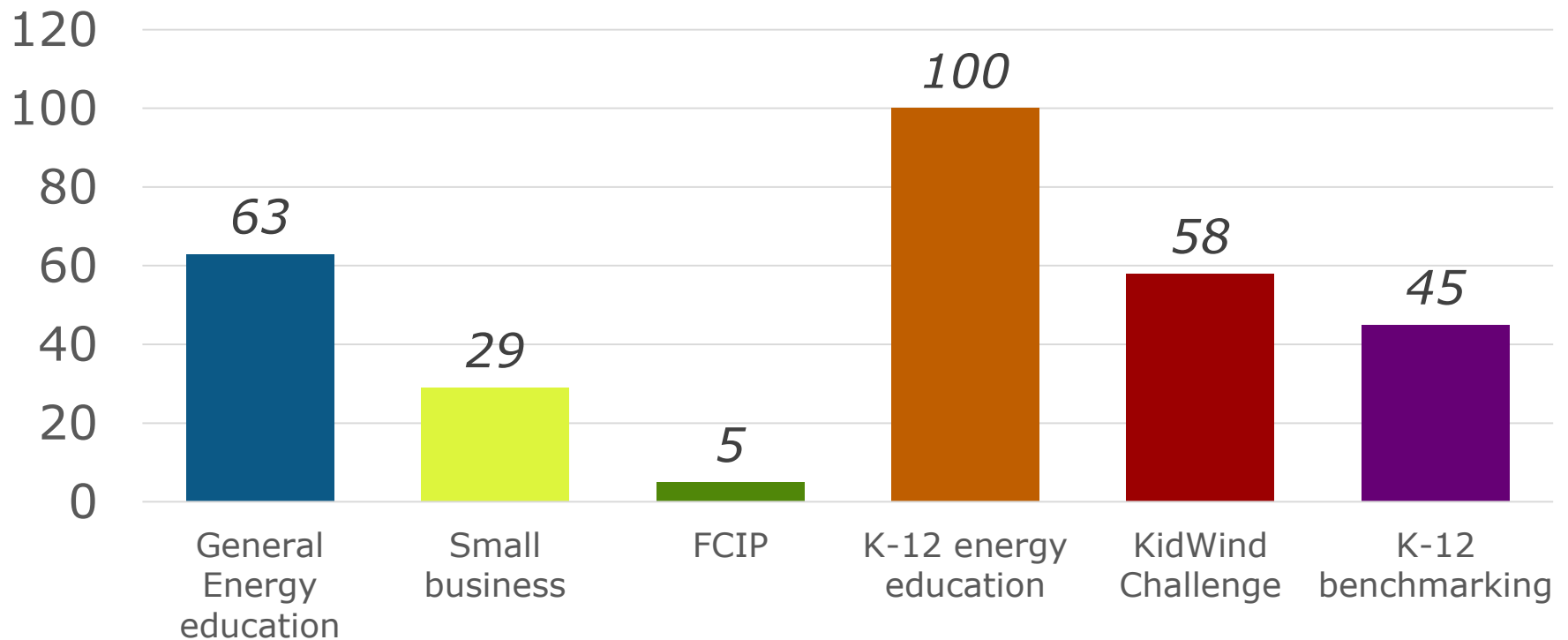


Energy Education Events

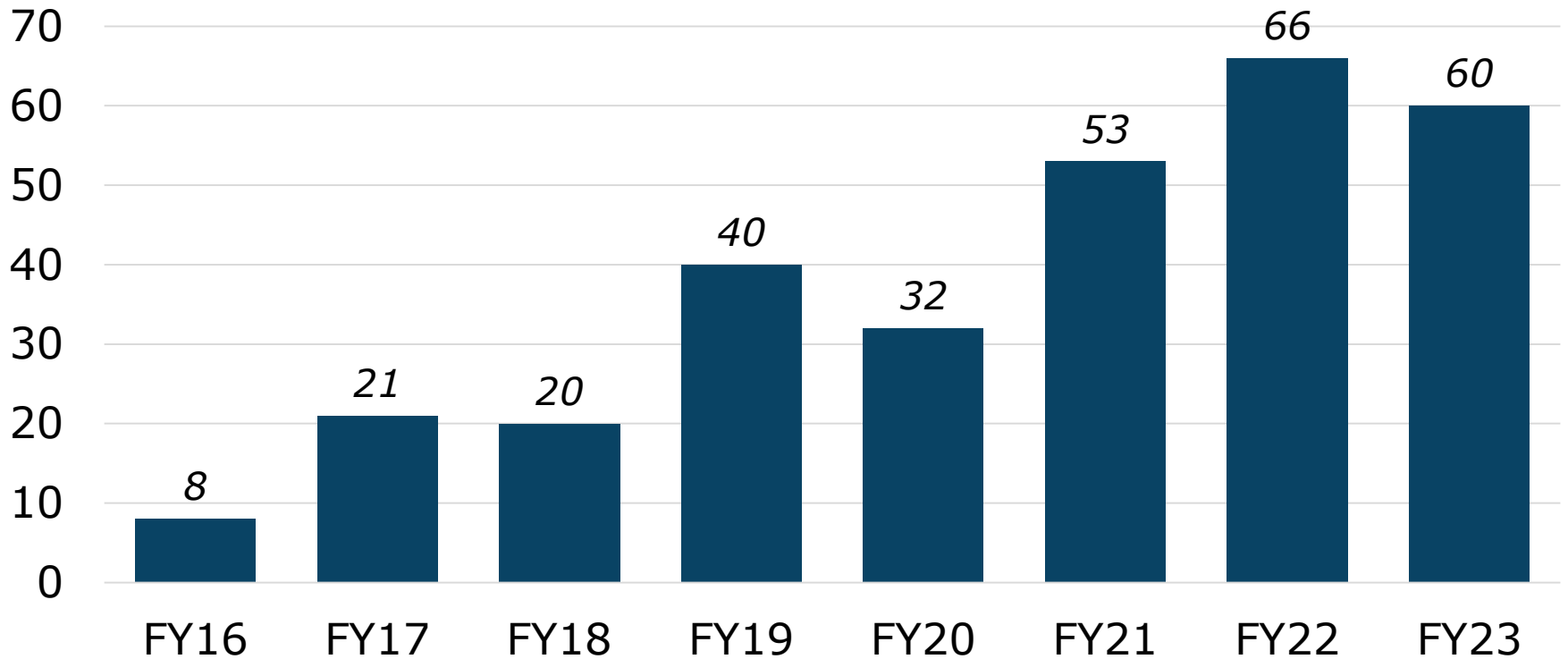
Energy Education Events



Number of Energy Education Events by Program Area



Number of Energy Education Events by Fiscal Year









11/1/2023

K-12 Energy Benchmarking Project

K-12 Benchmarking



Overview

6th-12th grade students take on the role of energy auditors at their school to identify potential energy and cost savings.





- Collect and analyze utility bills
- Determine school's efficiency "score"
- Work as a team to collect and analyze data
- Present findings and propose recommendations



Learn & Analyze: Cross-Curricular Lessons

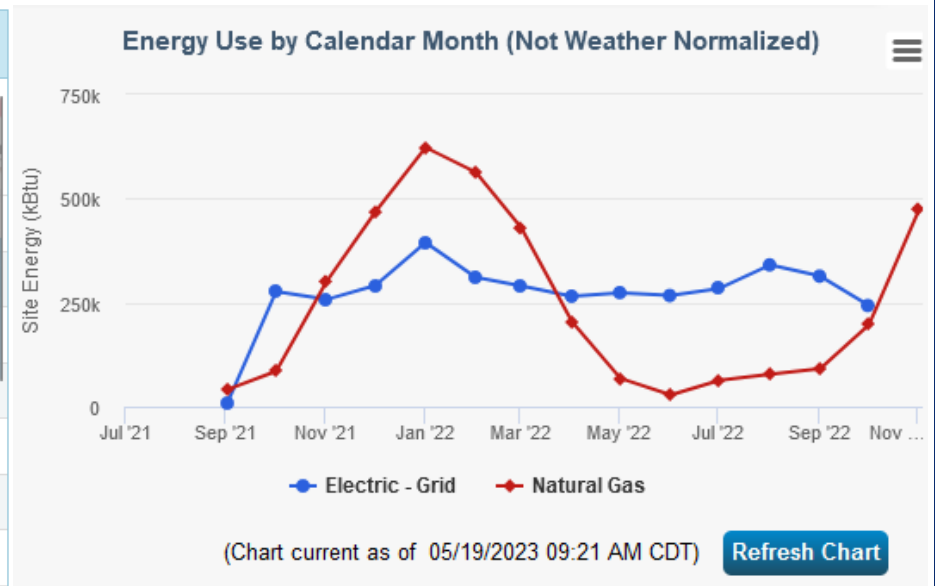
- Math: calculate project costs and energy savings
- Business: simple payback, cost-benefit analysis, return on investment, net present value
- Art: Graphic design, infrared camera photos, energy efficient colored lighting
- Real-life experiences: understanding codes on equipment (lighting, HVAC, motors)
- Public Speaking: school announcements, present in front of administration and community

Portfolio Manager Example

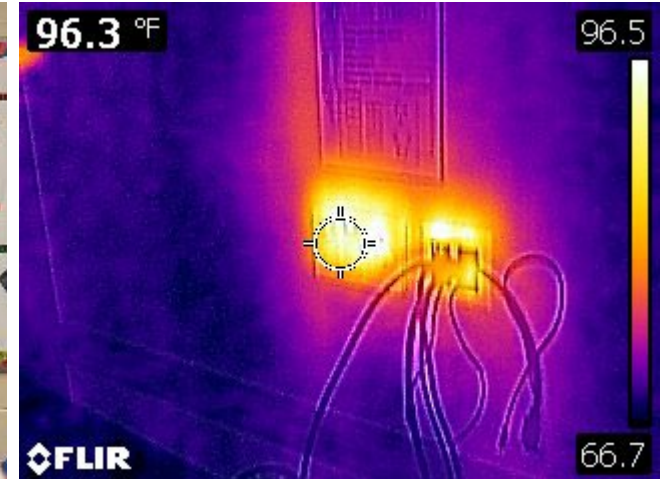
Metrics Summary			
Metric 	Aug 2022 (Energy Baseline) 	Oct 2022 (Energy Current) 	Change 
ENERGY STAR Score (1-100)	66	59	-7.00 (-10.60%)
Source EUI (kBtu/ft ²)	109.9	118.5	8.60 (7.80%)
Site EUI (kBtu/ft ²)	55.9	59.8	3.90 (7.00%)
Energy Cost (\$)	168,360.28	181,972.58	13612.30 (8.10%)
Total (Location-Based) GHG Emissions Intensity (kgCO ₂ e/ft ²)	5.3	5.7	0.40 (7.50%)
Water Use (All Water Sources) (kgal)	Not Available	Not Available	N/A
Total Waste (Disposed and Diverted) (Tons)	Not Available	Not Available	N/A

Portfolio Manager Example (cont)

Name	Property Use Type	Gross Floor Area	Action	
▼ Building Use	K-12 School	111,223 ft ²	I want to... ▼	
	Value	Current As Of	Temporary Value?	
★ Gross Floor Area	111223 ft ²	01/01/1961	No	
★ High School	Yes	01/01/1961	No	
★ Number of Workers on Main Shift	76	01/01/1961	No	
★ Weekend Operation	No	01/01/1961	No	
★ Cooking Facilities	Yes	01/01/1961	No	
★ Percent That Can Be Heated	All of it - 100%	01/01/1961	No	
★ Percent That Can Be Cooled	All of it - 100%	01/01/1961	No	



Use of Energy Auditing Equipment



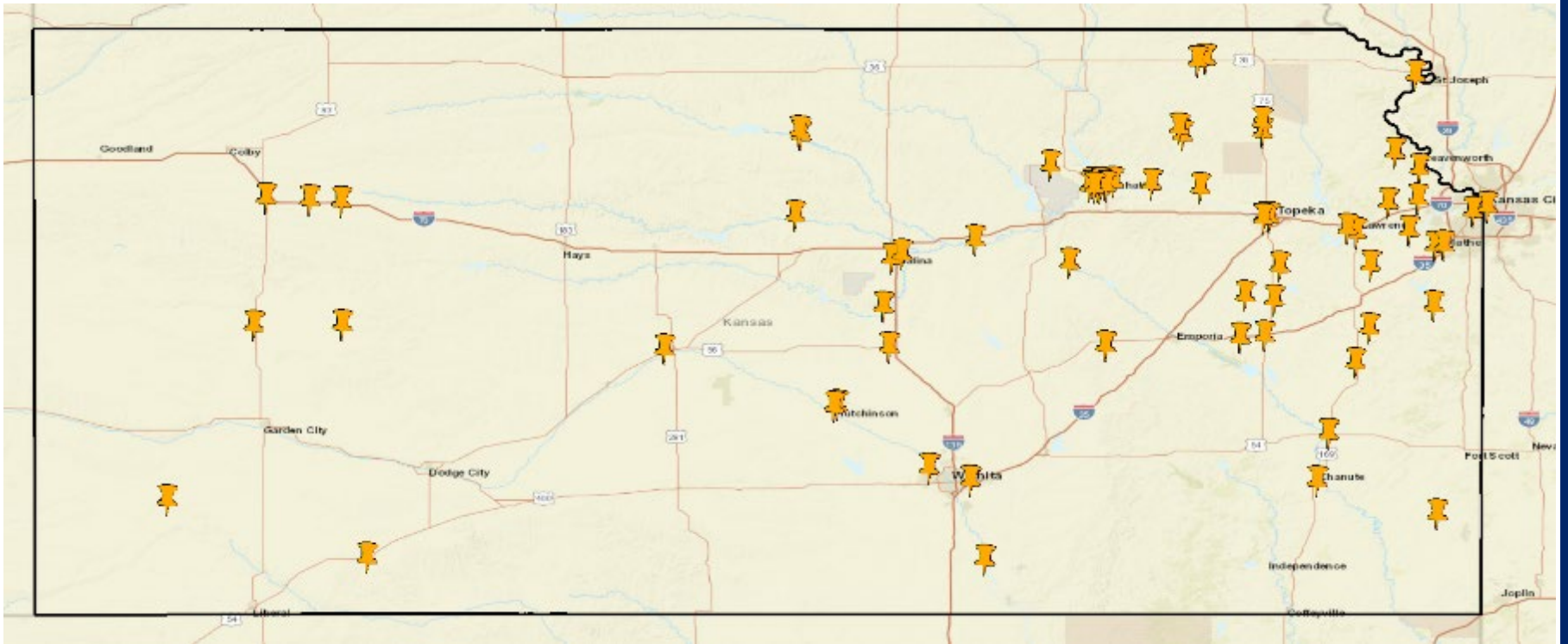
Equipment Library

Examples of Equipment in Library

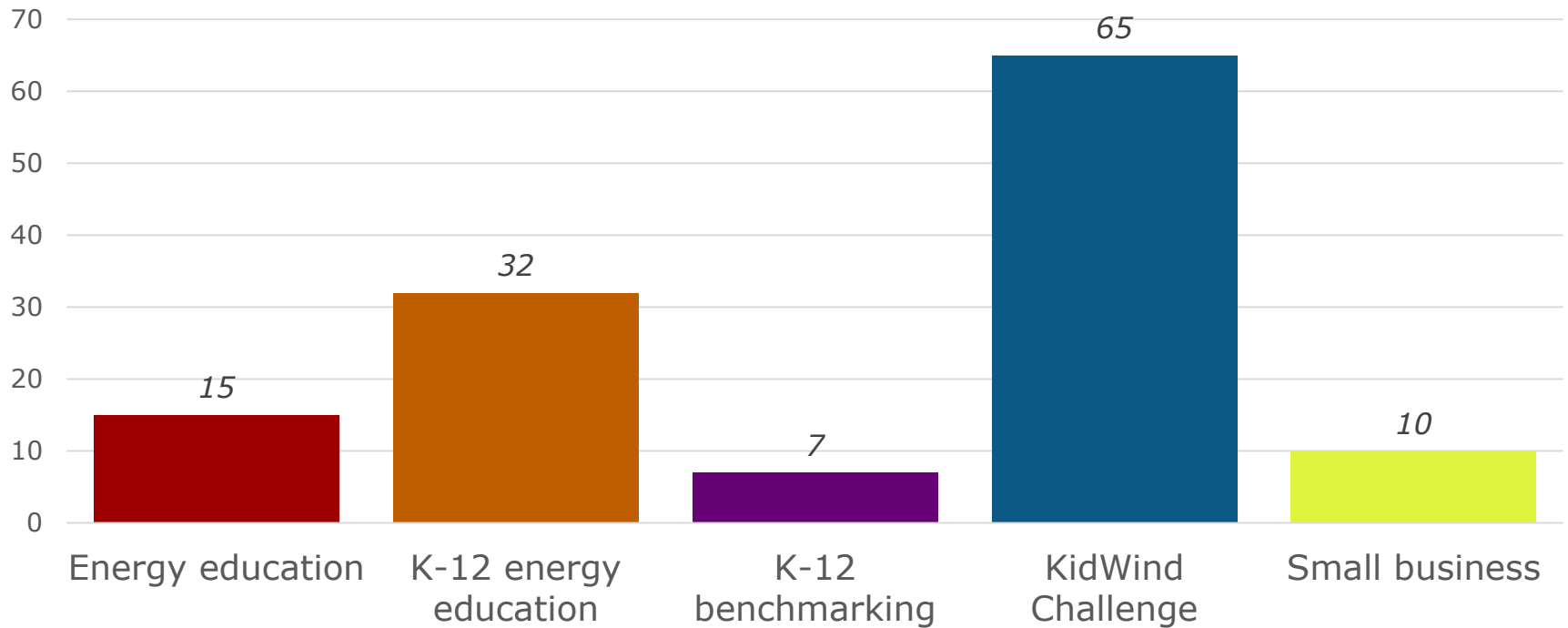
Equipment is delivered or shipped to teachers at no cost

- Portable breakout rooms (energy efficiency/auditing)
- Wind tunnels, turbine kits, generators, parts
- Interactive kits and activities
- Energy benchmarking kits
- Infrared cameras
- Data loggers to measure energy use, temperature, light levels, CO₂, etc.
- Bike- and hand-powered lighting displays

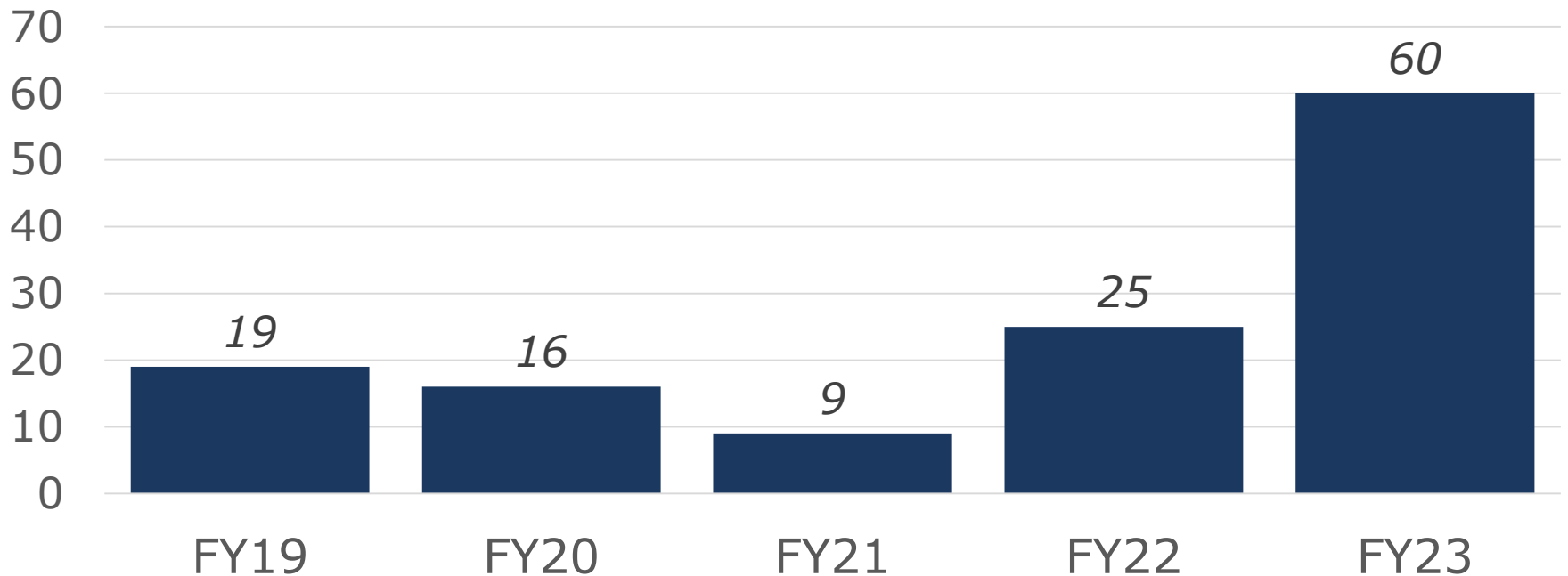
Energy Equipment Loans



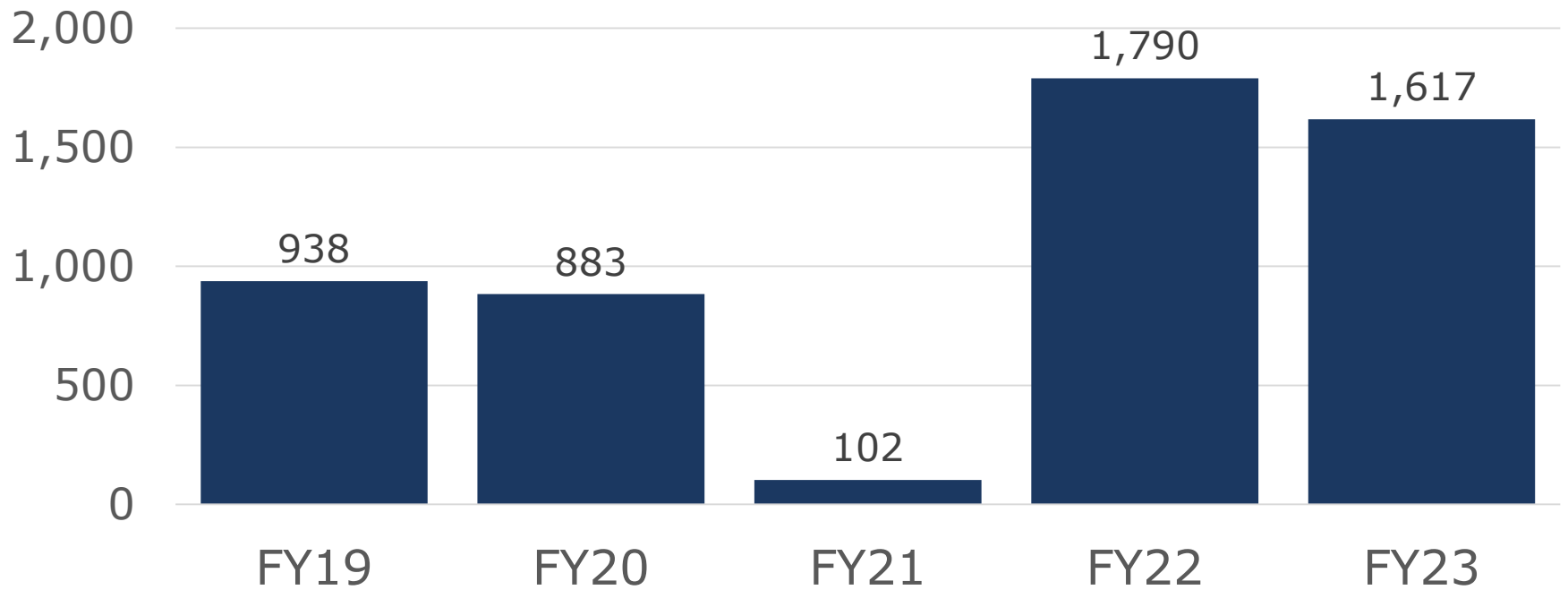
Number of Loans by Program Area



Number of Loans by Program Year



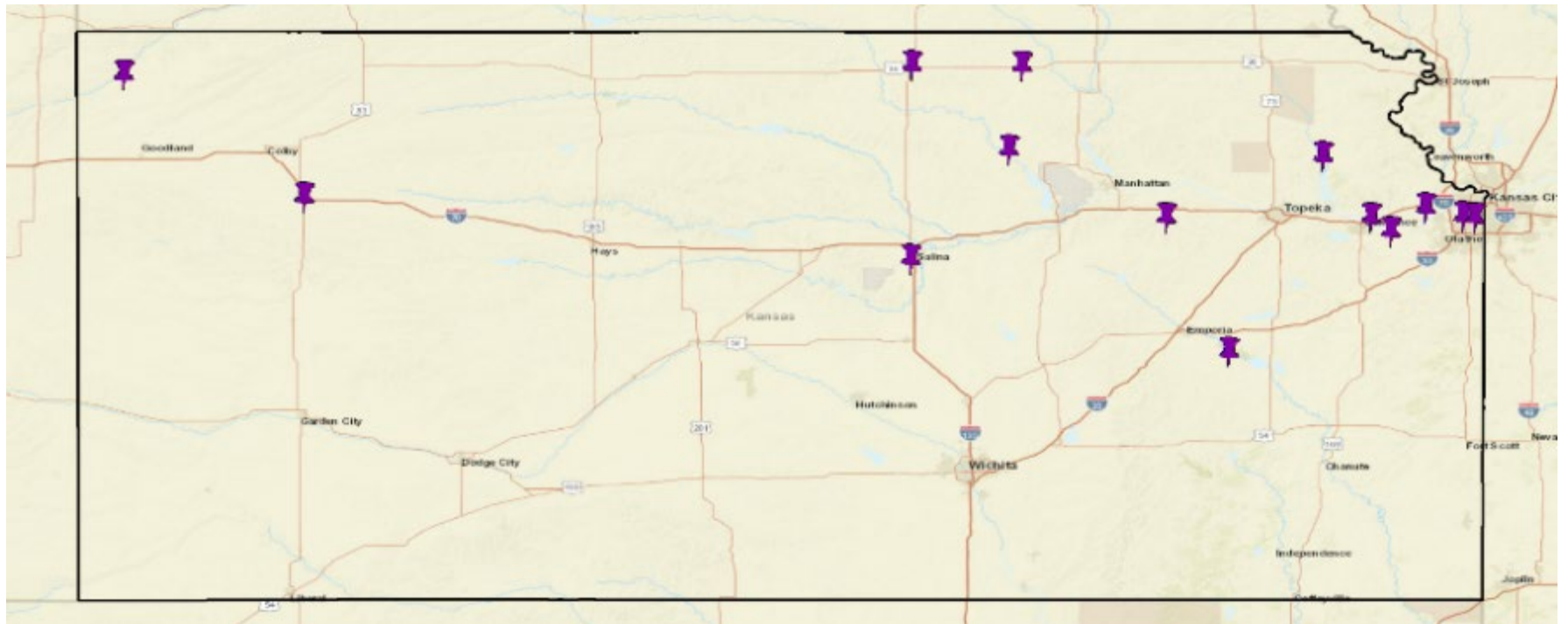
Number of Users by Program Year



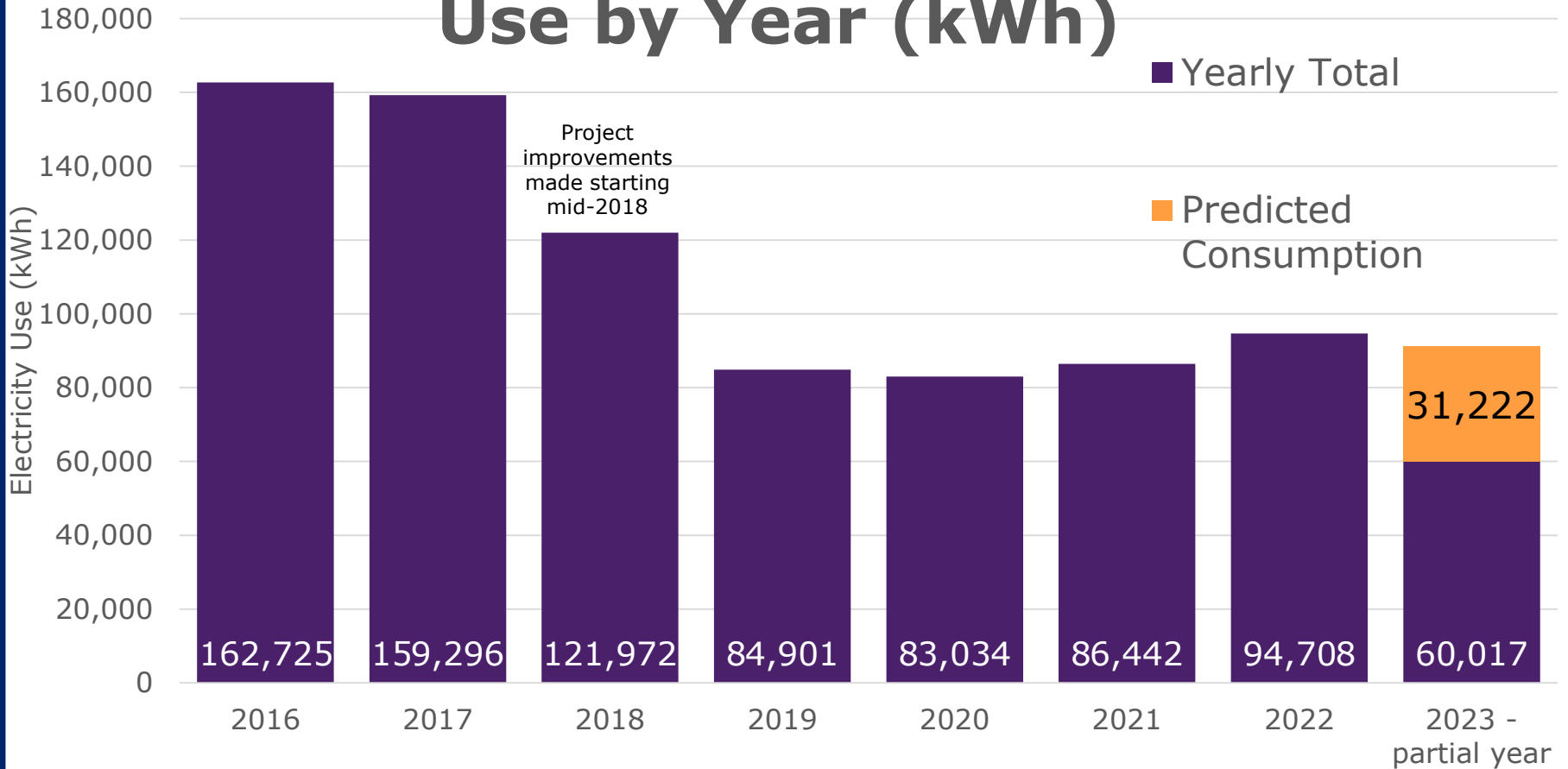
FCIP

Facility Conservation Improvement Program

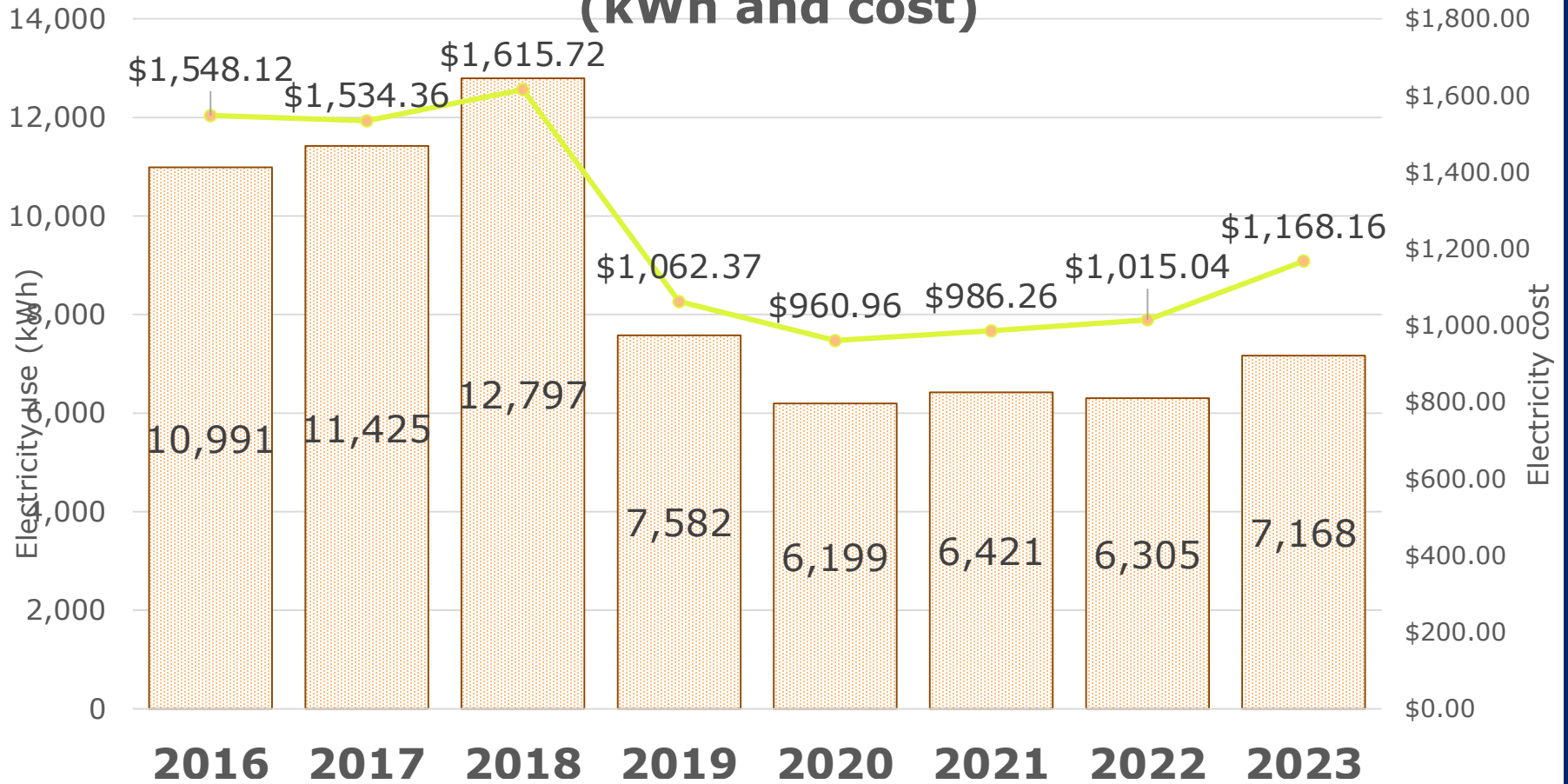
FCIP Projects



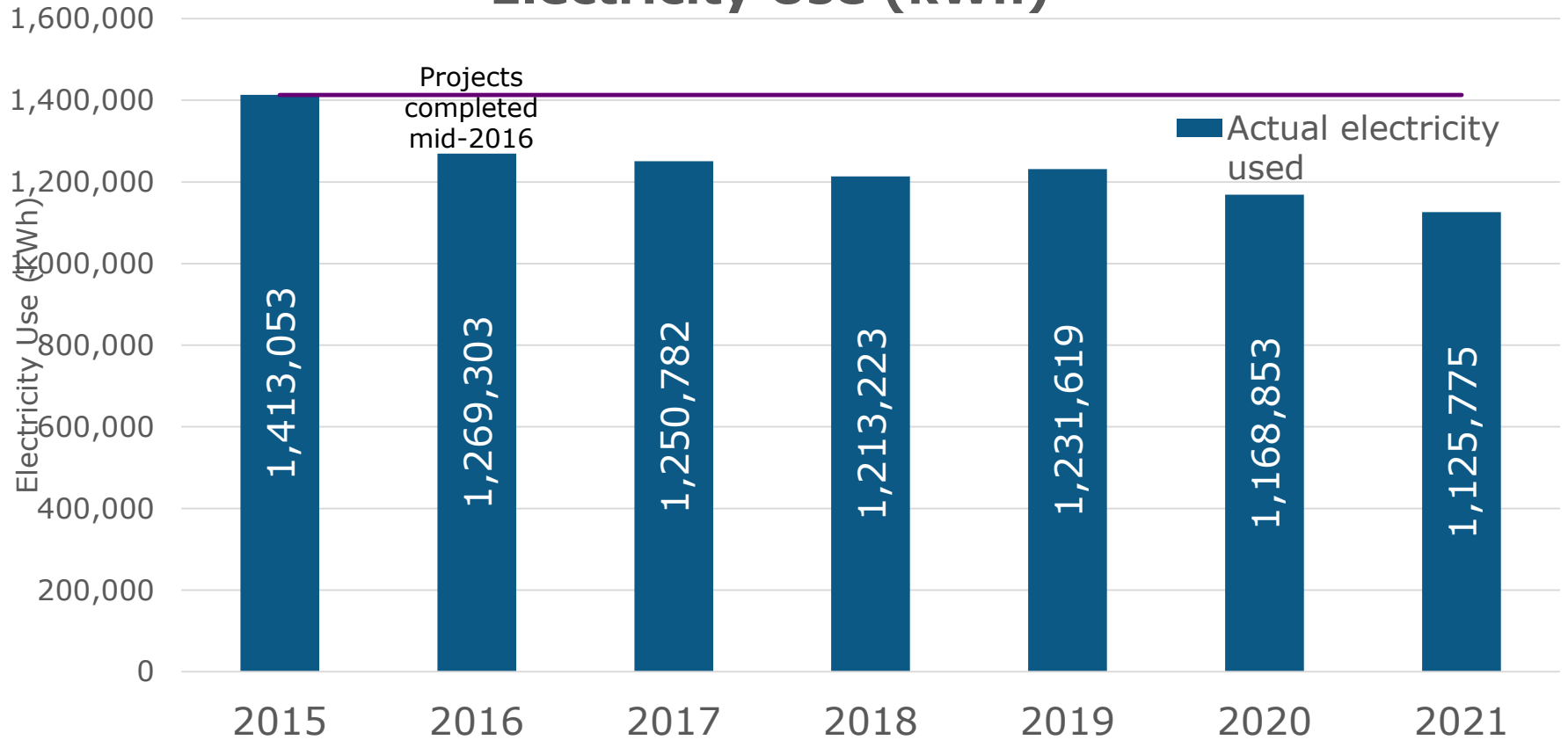
One Facility's Results - Electricity Use by Year (kWh)



One Facility's Results: January Electricity Use (kWh and cost)



Example Facility: All buildings - Annual Electricity Use (kWh)



Kansas State Energy Office - Overview

Kansas Energy Office - History

- 1973 The State Energy Coordinator - a governor-created position was replaced by the Energy Office.
- 1975 - Kansas energy office created, appointed by the Governor with the advice and consent of the senate. Established the governor's energy advisory council. (SB 13)
- 1978 - Kansas energy office transferred out of the Governor's office and established as an independent agency within the executive branch. The energy council was composed of ten (10) members. (Senate Sub for HB 2973)
- 1983 - Kansas energy office abolished and all duties transferred to the state corporation commission. (Sub HB 2434)

State Energy Office - Locations

State Energy Office Locations As of 2023

State Energy Office Location States/Territories	Number of
Stand-alone energy and natural resources agency or within Governor's Office	26
Within Economic Development or Commerce	9
Combined Agency with Distinct Energy and Environment Divisions and Directors	6
Within an Environmental Agency	4
Within Public Utilities Commission	4
Other	7

National Association of State Energy Officials

11/1/2023

Kansas Energy Office – DOE Grants

Grant	Federal Allocation	State Match	Total Funds	Type	Date Applied	Application Status	Notes
SEP Annual	\$821,143	-	\$821,143.00	Direct – program	May 2023	Approved July 2023	
SEP-IIJA	5,410,310	-	\$5,410,310.00	Direct-program	December 2022	Approved May 2023	Five years
40101(d)	\$13,313,126	\$1,996,968.90	\$15,310,094,0	Pass through	March 2023	Approved July 2023	First two years funding
EERLF	\$6,706,230.00	-	\$6,706,230.00	Pass through	May 2023	Pending	180 days for 1 st loan
EECBG	\$1,914,100.00	-	\$1,914,100.00	Pass through	July 2023	Pending	180 days for 1 st award
IRA Rebate- High Efficiency Electric Home	\$52,663,910.00	-	\$52,663,910	Pass through	In process – January 2025 deadline		
IRA Rebate – Whole-House Energy Performance	\$52,971,870.00	-	\$52,971,870.00	Pass through	In process – January 2025 deadline		
IRA – Contractor Training	\$1,908,060.00	-	\$1,908,060.00		In process – January 2024 deadline		
IRA Building Code	\$5,944,454.85	-	\$5,944,454.85	Reimbursable	In review – ltr of intent 11/21/23		*Kansas currently at 2006 IECC *Requires funding upfront

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