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Green • Clean • Sustainable

ESPC Phase II Preliminary Analysis | New Mexico State University • April 3, 2018

Topics for Discussion

- Introductions
- Review data request, and data provided for ESPC Phase II Preliminary Analysis
- Review findings of ESPC Phase II Preliminary Analysis
- Discuss next steps

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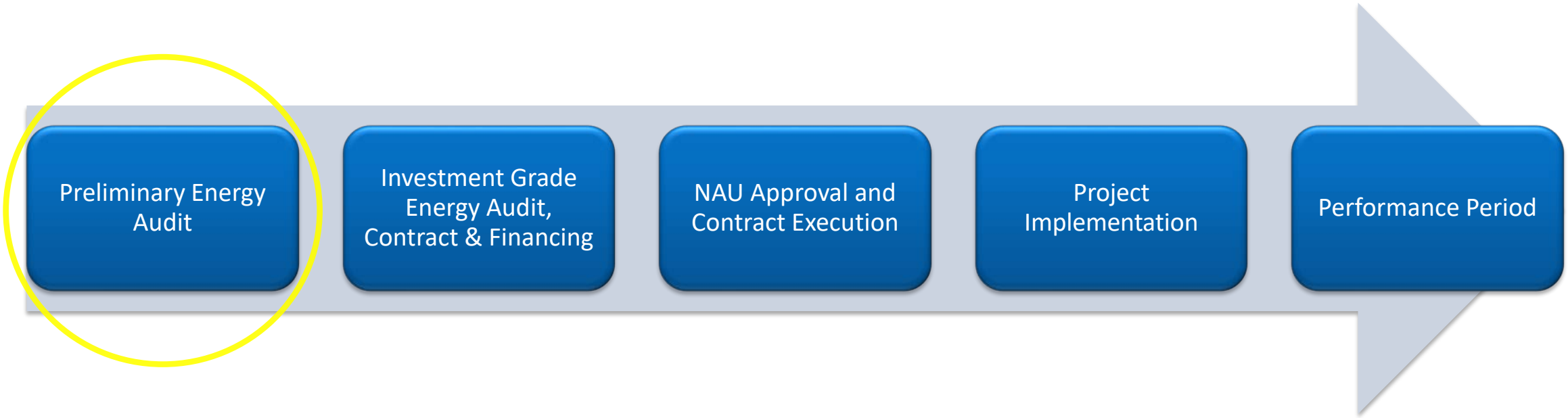
Ameresco's Energy Savings Performance Contract (ESPC) Process



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Data Request List Summary (thanks Dale!)

Campus	Carlsbad	Grants	Alamogordo
Name, address, and square footage of NMSU facilities located at each campus.	Received - total GSF is 187,969	Received - total GSF is 121,455	Received - total GSF is 222,712
1-2 years (minimum of 12 months) of monthly utility (electricity, natural gas, water, etc.) usage and cost data for the Carlsbad, Grants, and Alamogordo Campuses. Also, a digital copy of the most recent month's actual utility bill(s) for each of the Carlsbad, Grants, and Alamogordo Campuses.	Electricity - 2017 - Feb, Mar, Apr 2016 - Jan - Aug 2015 - Jan - Dec Natural Gas - 2017 - Apr, May 2016 - Jan - Aug 2015 - Jan - Dec Water - Lacking 2016 & 2017 data Electricity Sep'15-Aug'16 - 2,224,560 kWh $177,098.01 Natural Gas Sep'15-Aug'16 - 39,743 therms $18,040.94	Electricity - 2017 - Jan - May 2016 - Jun - Dec Natural Gas - 2017 - Jan - May 2016 - Jun - Dec Water - 2017 - Jan - Jun 2016 - Jun - Dec Electricity Jun'16-May'17 - 1,163,929 kWh $130,250.94 Natural Gas Jun'16-May-17 - 35,184 therms $20,496.56 Water Jun'16-May'17 - 26,575 gal $16,531.75	Electricity - 2017 - Jan - Oct 2016 - Jun - Dec Natural Gas - 2017 - Jan - Oct 2016 - Jun - Dec Water - 2017 - Jan - Oct 2016 - Jun - Dec Electricity Sep'16-Aug'17 - 2,649,477 kWh $297,761.25 Natural Gas Sep'16-Aug'17 - 73,785.72 therms $41,034.65 Water Sep'16-Aug'17 - 381,330 cubic feet $21,345.80
What BAS (Building Automation System) is used?		The BAS system we have in place only covers the main building Martinez Hall. It currently is INET for the HVAC.	Computrols
What CMMS (Computerized Maintenance Management System) is used?		We use SchoolDude for all PM's, work orders, assigning vehicles and service maintenance contract scheduling (fire suppression systems and elevators).	David Sanders is our IT guy, 3790
Summary of energy efficiency and/or renewable energy projects planned at the Carlsbad, Grants, and Alamogordo Campuses?	To save money, for years Carlsbad has shut down boilers in the summer months and chillers in the winter months. As of the last trip over in October the boilers were still shut off.	We have just went to bid to upgrade our existing HVAC system and controls in Martinez Hall. The HVAC BAS will be changed to BAC-net, giving us better real time control and efficiency in the building. The new CDC-THEC building being built will also have a BAC-net BAS for the HVAC. The new building will also be 100% LED lighting wit occupancy sensors in the rooms. Martinez Hall is only about 10% LED lighting at the moment - we are hoping to up that percentage every year. We currently do not have any renewable energy projects planed.	Over the next couple years, our major focus will be on replacing roofs, parking lot lights, and finishing up the replacement of the T12 fluorescents and the T8s to LED in the buildings. We have a few buildings left.

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Summary of NMSU ESPC II Preliminary Analysis

- 532,136 square feet on three campuses
- An estimated $131,658 in energy and water savings
- Approximately $15,799 in maintenance savings
- Energy savings estimated based on the difference between the baseline Energy Use Index (EUI) and the benchmark
- Savings would fund a $1.8M project over a 15 year term assuming a 3.9% interest rate
- Total savings over the term would be approximately $2.8M

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Alamogordo Campus

UNIVERSITY	CAMPUS	BLDG #	DESCRIPTION	ADDRESS	CITY	STATE	GSF
NMSU	ALAMOGORDO	292C	ALAMOGORDO TAYS SPECIAL EVENTS CENTER	2400 N. SCENIC DR.	ALAMOGORDO	NM	47,471
NMSU	ALAMOGORDO	292D	ALAMOGORDO PLANETARIUM	2400 N. SCENIC DR.	ALAMOGORDO	NM	13,936
NMSU	ALAMOGORDO	292G	ALAMOGORDO CLASSROOM BUILDING	2400 N. SCENIC DR.	ALAMOGORDO	NM	19,190
NMSU	ALAMOGORDO	292H	ALAMOGORDO GEORGE FETTINGER STUDENT SERVICES BLDG.	2400 N. SCENIC DR.	ALAMOGORDO	NM	17,505
NMSU	ALAMOGORDO	292J	ALAMOGORDO STUDENT UNION BUILDING	2400 N. SCENIC DR.	ALAMOGORDO	NM	9,595
NMSU	ALAMOGORDO	292L	ALAMOGORDO FACULTY OFFICE BUILDING	2400 N. SCENIC DR.	ALAMOGORDO	NM	5,417
NMSU	ALAMOGORDO	292M	ALAMOGORDO ROHOVEC FINE ARTS THEATRE	2400 N. SCENIC DR.	ALAMOGORDO	NM	9,321
NMSU	ALAMOGORDO	292N	ALAMOGORDO PROFESSIONAL TECHNICAL EDUCATION BLDG	2400 N. SCENIC DR.	ALAMOGORDO	NM	30,354
NMSU	ALAMOGORDO	292Q	ALAMOGORDO TOWNSEND LIBRARY	2400 N. SCENIC DR.	ALAMOGORDO	NM	15,395
NMSU	ALAMOGORDO	292S	ALAMOGORDO HENRY CAMPBELL ART CENTER	2400 N. SCENIC DR.	ALAMOGORDO	NM	6,609
NMSU	ALAMOGORDO	292T	ALAMOGORDO PHYSICAL PLANT	2400 N. SCENIC DR.	ALAMOGORDO	NM	3,999
NMSU	ALAMOGORDO	292U	ALAMOGORDO REIDLINGER SCIENCE CENTER	2400 N. SCENIC DR.	ALAMOGORDO	NM	39,593
NMSU	ALAMOGORDO	292V	ALAMOGORDO ACADEMIC SUPPORT	2400 N. SCENIC DR.	ALAMOGORDO	NM	4,327
						TOTAL:	222,712

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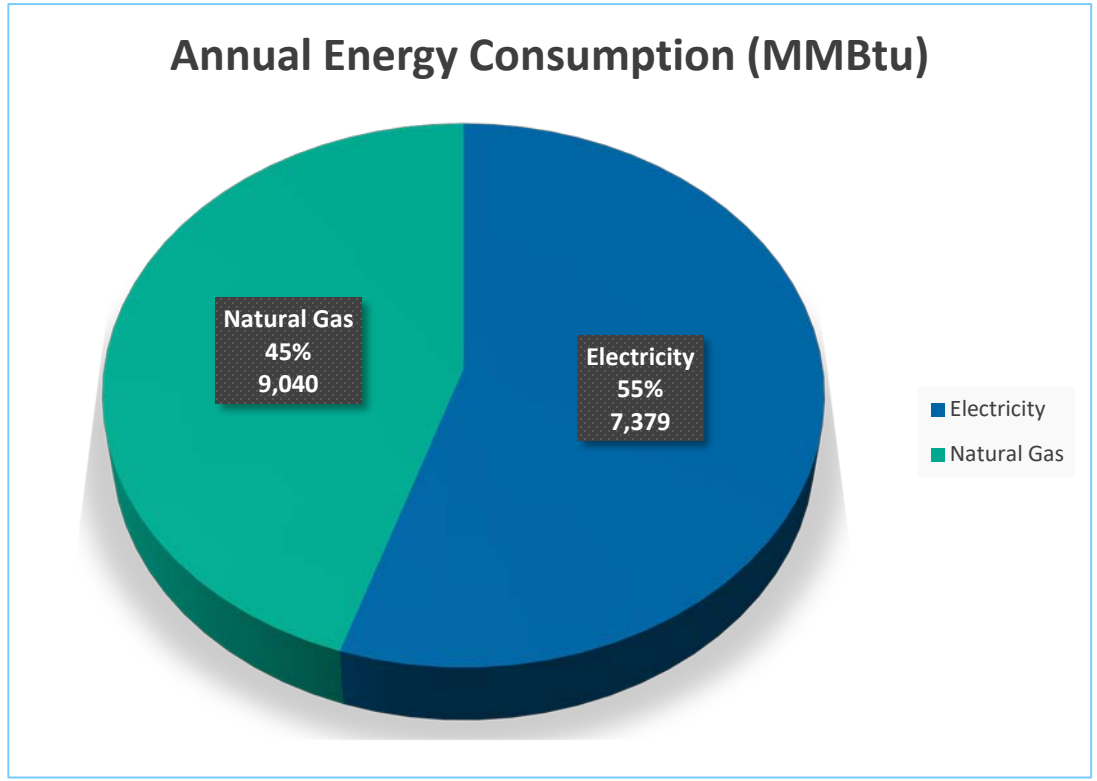
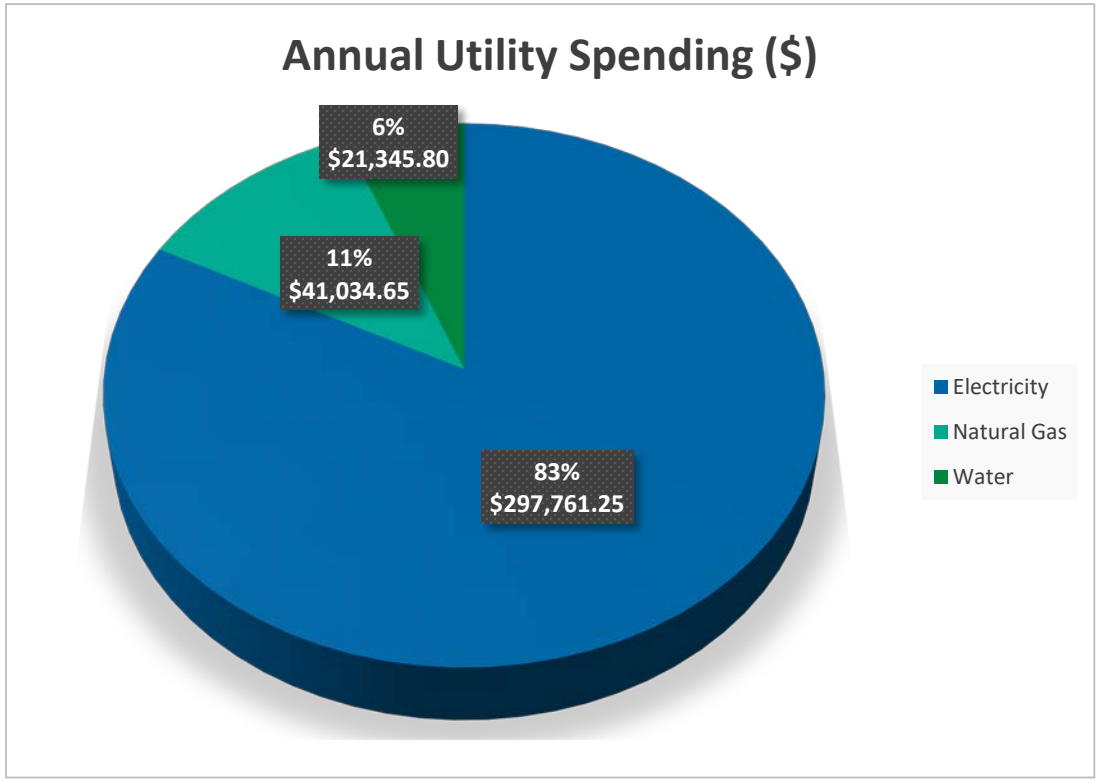
Alamogordo Campus

Total 16,419 MMBtu



Total $360,141.70



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Alamogordo Campus

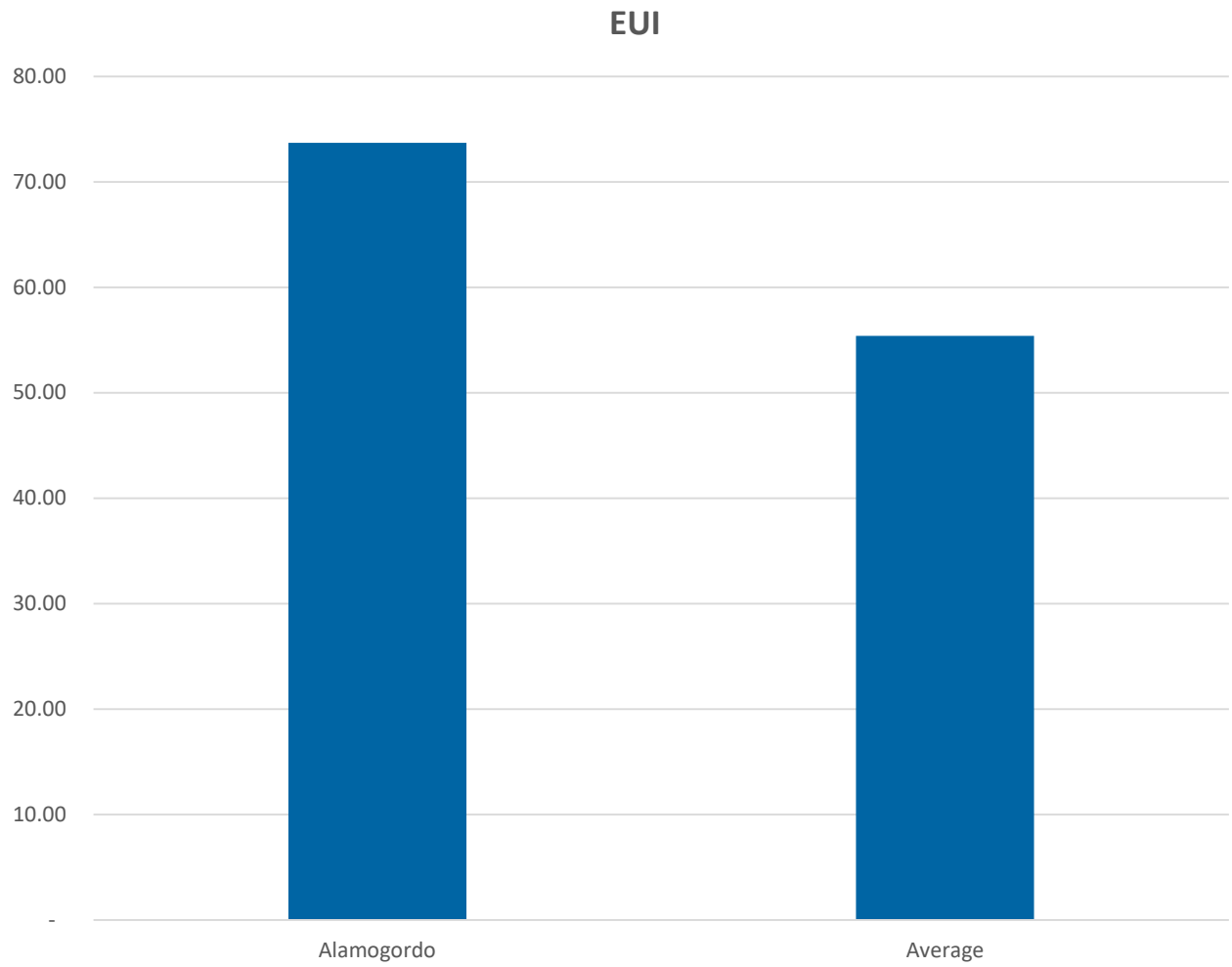
Energy Utilization Index (EUI) is a measure of energy per square foot per year.

EUI for Alamogordo is **73.7** kBtu/sq ft.

Average EUI for an Education Facility in a hot-dry climate is **55.4** kBtu/sq ft

This value is determined from the Commercial Building Energy Consumption Survey (CBECS).

CBECS is conducted by the U.S. Energy Information Administration (EIA).



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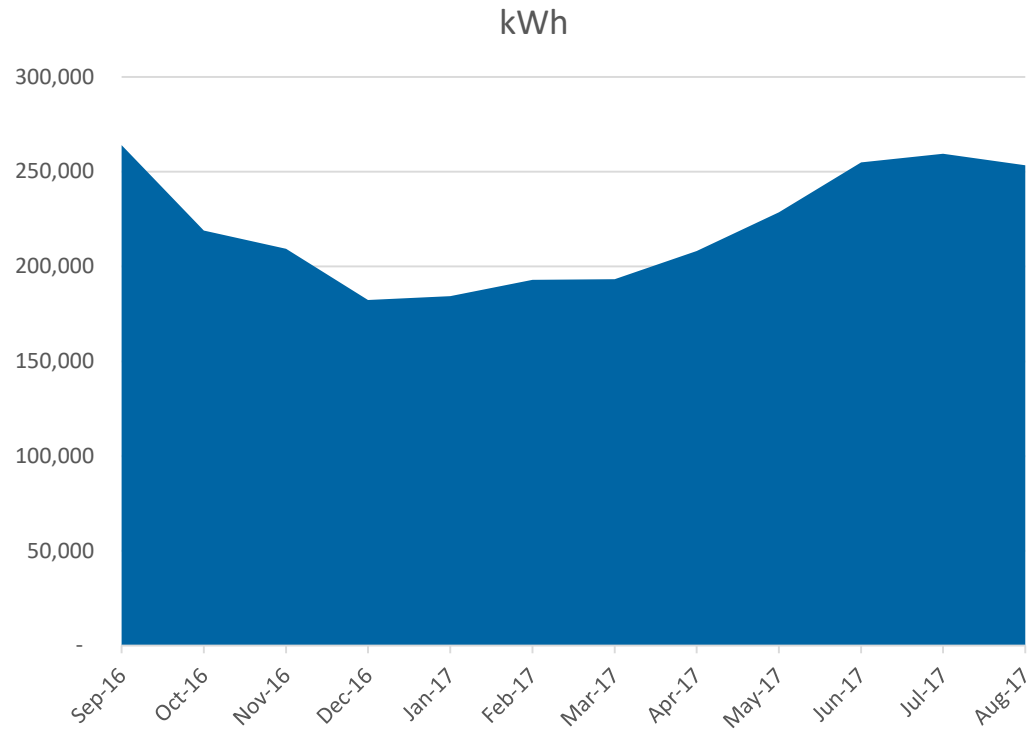
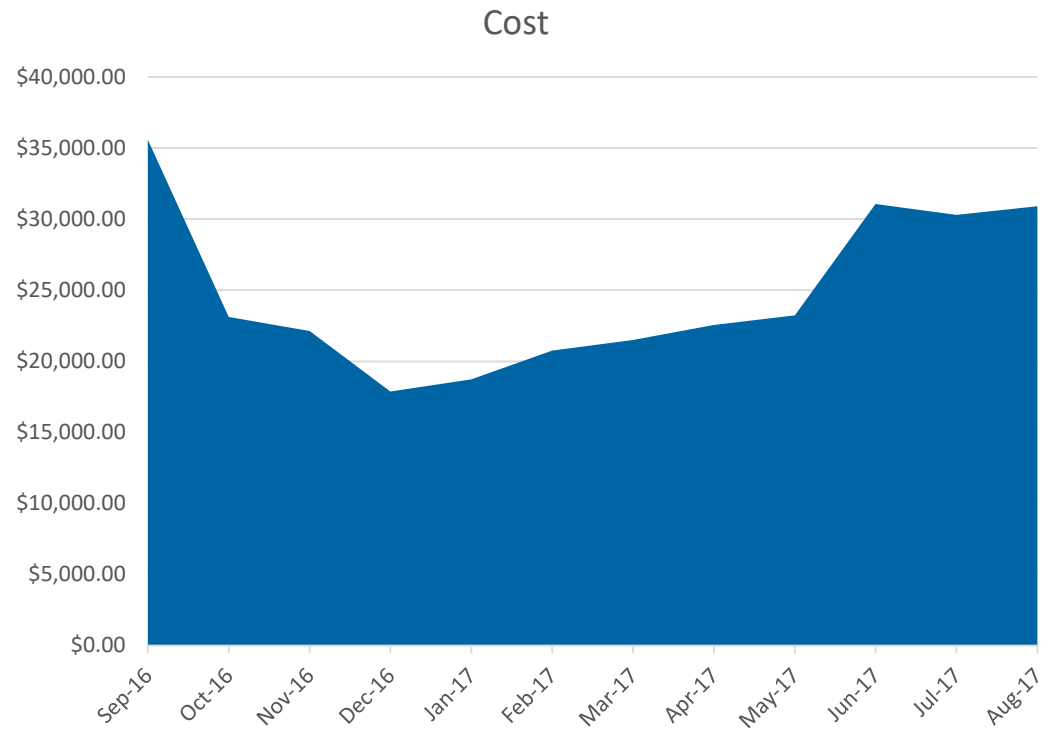
Alamogordo – Electricity

2,649,477 Annual kWh Consumption



$297,761 Annual Spend



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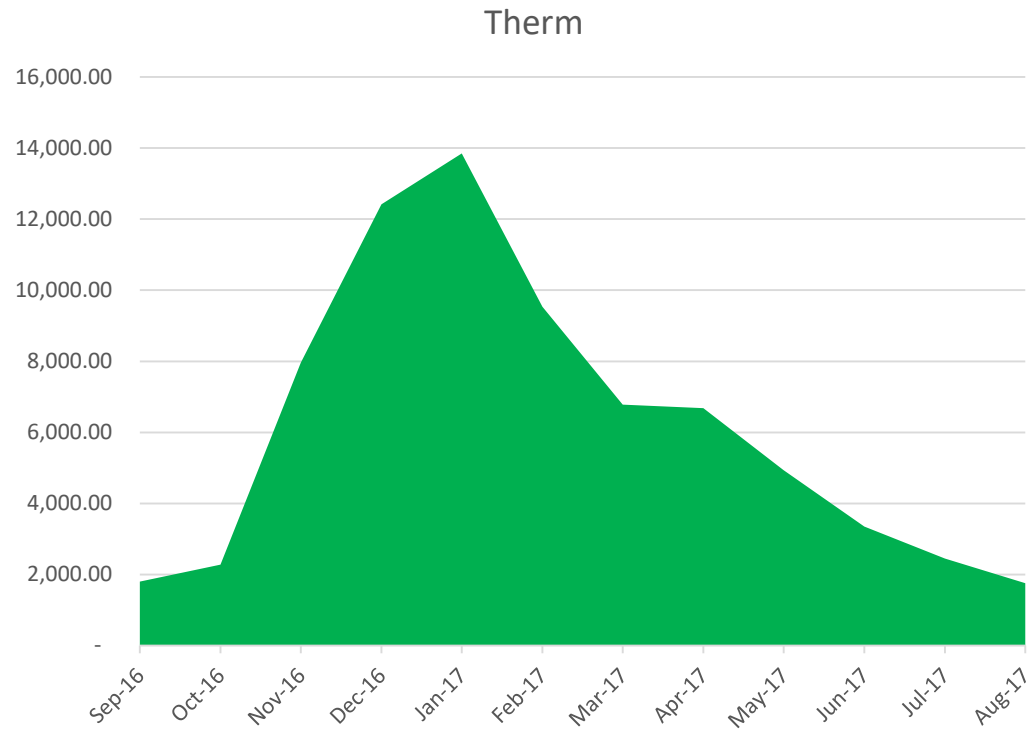
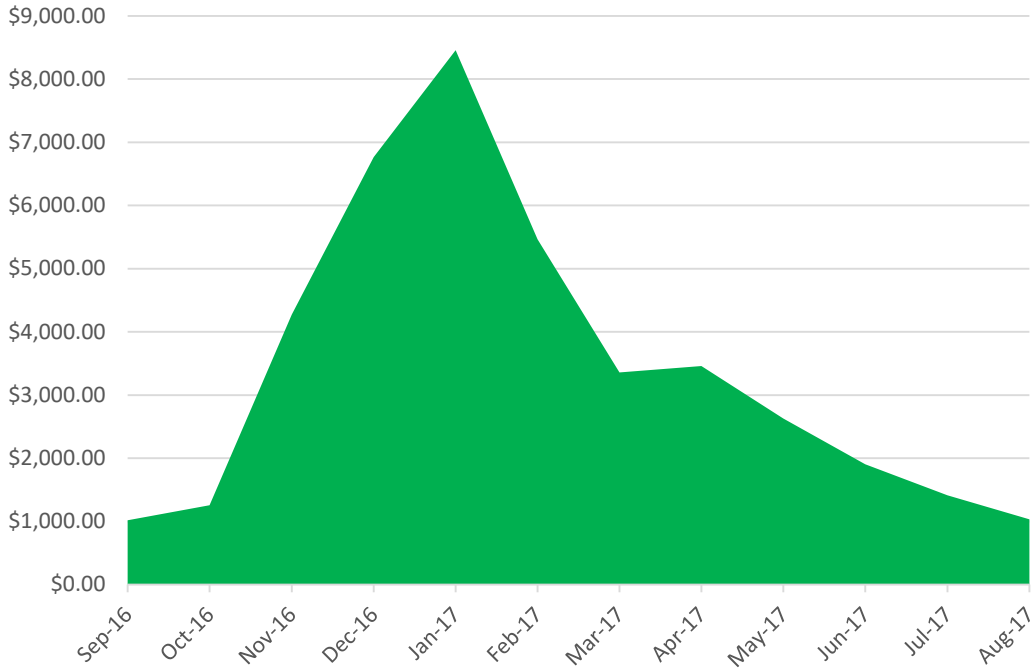
Alamogordo – Natural Gas

73,786 Annual Therms Consumption



$41,035 Annual Spend



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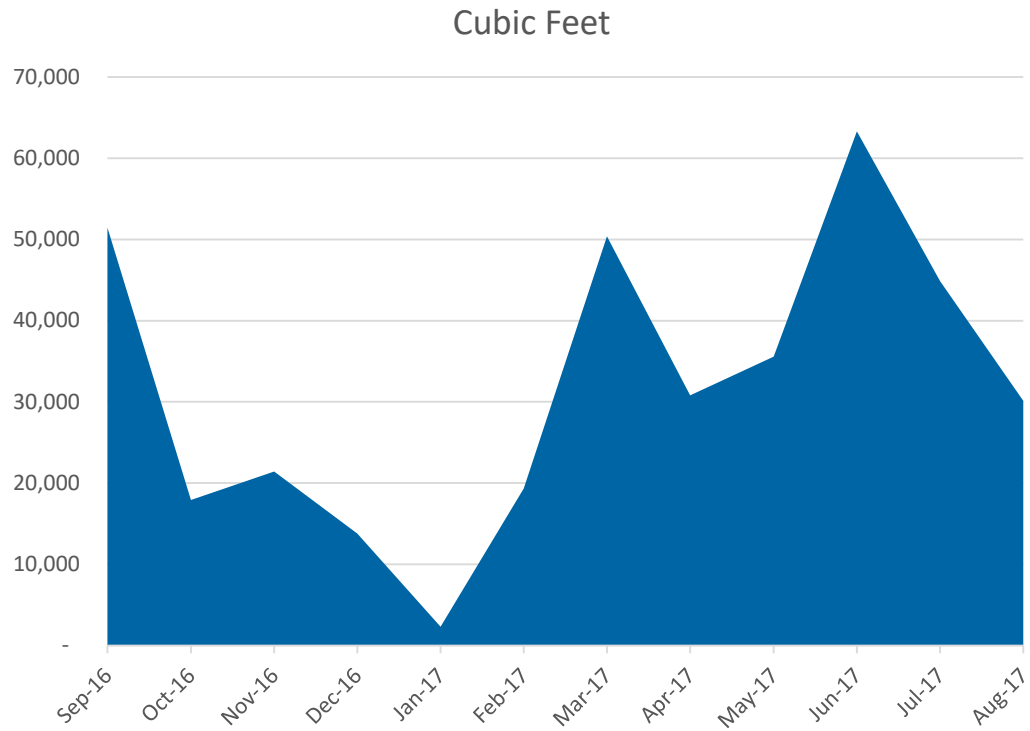
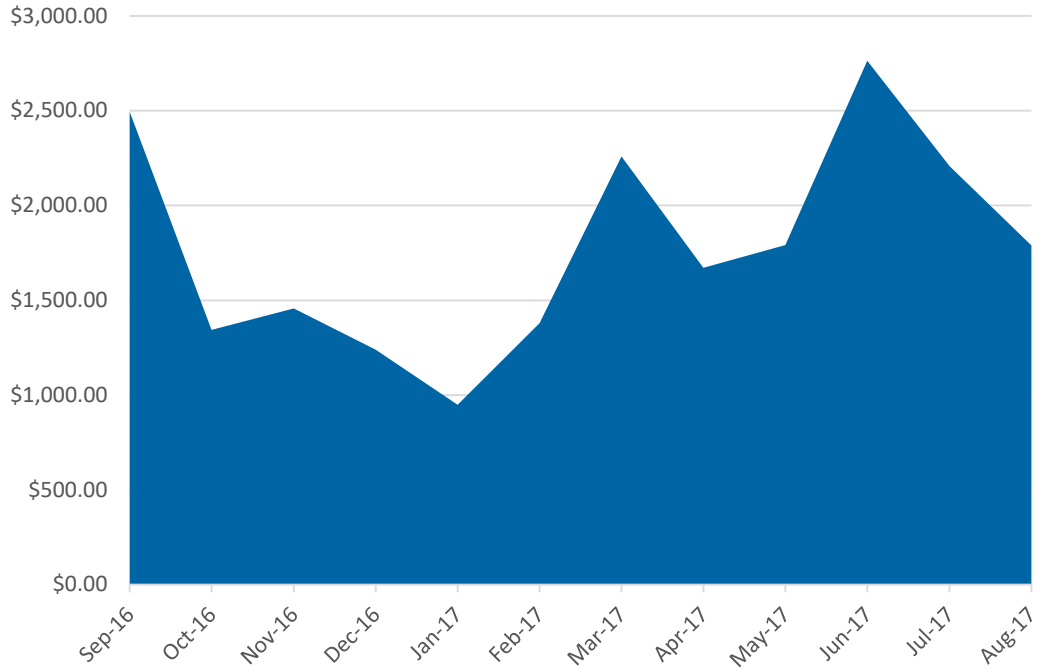
Alamogordo – Water/Wastewater

381,330 Annual Gallons Consumption



$21,346 Annual Spend



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Grants Campus

UNIVERSITY	CAMPUS	BLDG #	DESCRIPTION	ADDRESS	CITY	STATE	GSF
NMSU	GRANTS	537	GRANTS CHILD CARE TRAINING FACILITY 100% I&G ELIGIBLE	1500 THIRD ST.	GRANTS	NM	3,200
NMSU	GRANTS	557	GRANTS SECURITY HOUSE A 100% I&G ELIGIBLE	1500 THIRD ST.	GRANTS	NM	1,187
NMSU	GRANTS	558	GRANTS SECURITY HOUSE B 100% I&G ELIGIBLE	1500 THIRD ST.	GRANTS	NM	1,187
NMSU	GRANTS	559	GRANTS VEHICLE MAINTENANCE 100% I&G ELIGIBLE	1500 THIRD ST.	GRANTS	NM	3,359
NMSU	GRANTS	613	GRANTS ROOSEVELT BUILDING 100% I&G ELIGIBLE	701 EAST ROOSEVELT AVE.	GRANTS	NM	2,591
NMSU	GRANTS	315M	GRANTS, JOSEPH FIDEL GYMNASIUM	1500 THIRD ST.	GRANTS	NM	16,008
NMSU	GRANTS	315N	GRANTS, MCCLURE EDUCATIONAL CENTER	1500 THIRD ST.	GRANTS	NM	14,072
NMSU	GRANTS	315P	GRANTS, MAINTENANCE BUILDING	1500 THIRD ST.	GRANTS	NM	473
NMSU	GRANTS	315Q	GRANTS, WALTER MARTINEZ BUILDING	1500 THIRD ST.	GRANTS	NM	79,378
						TOTAL:	121,455

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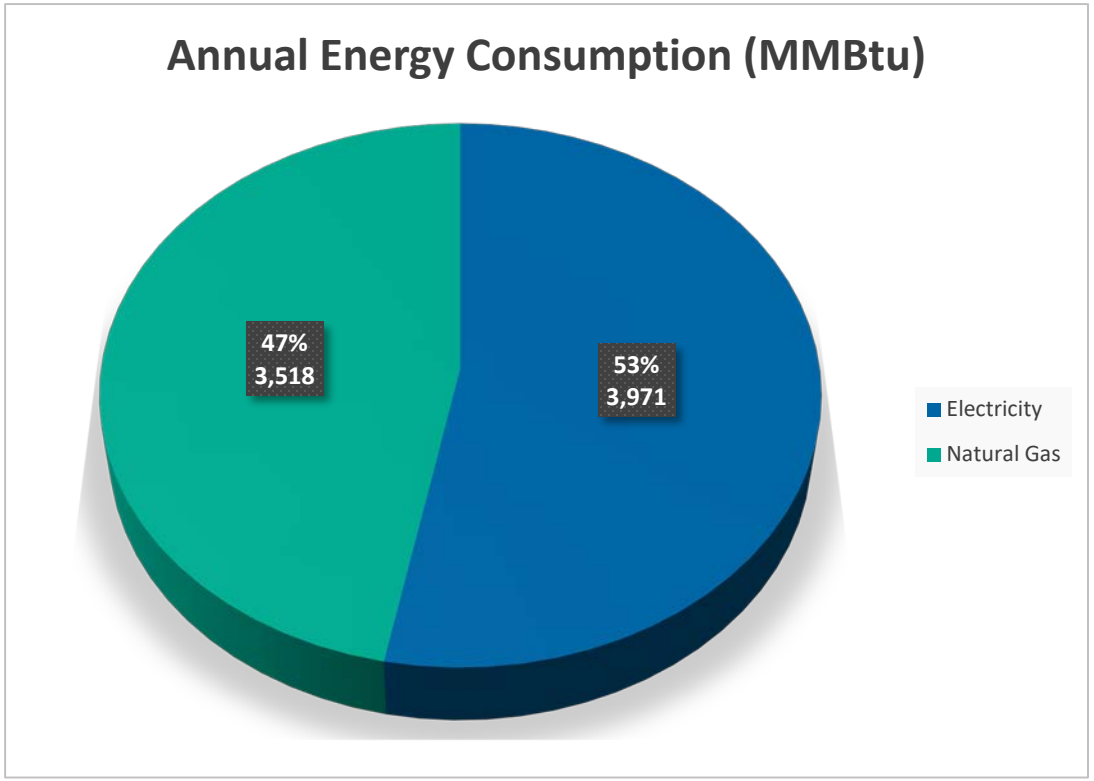
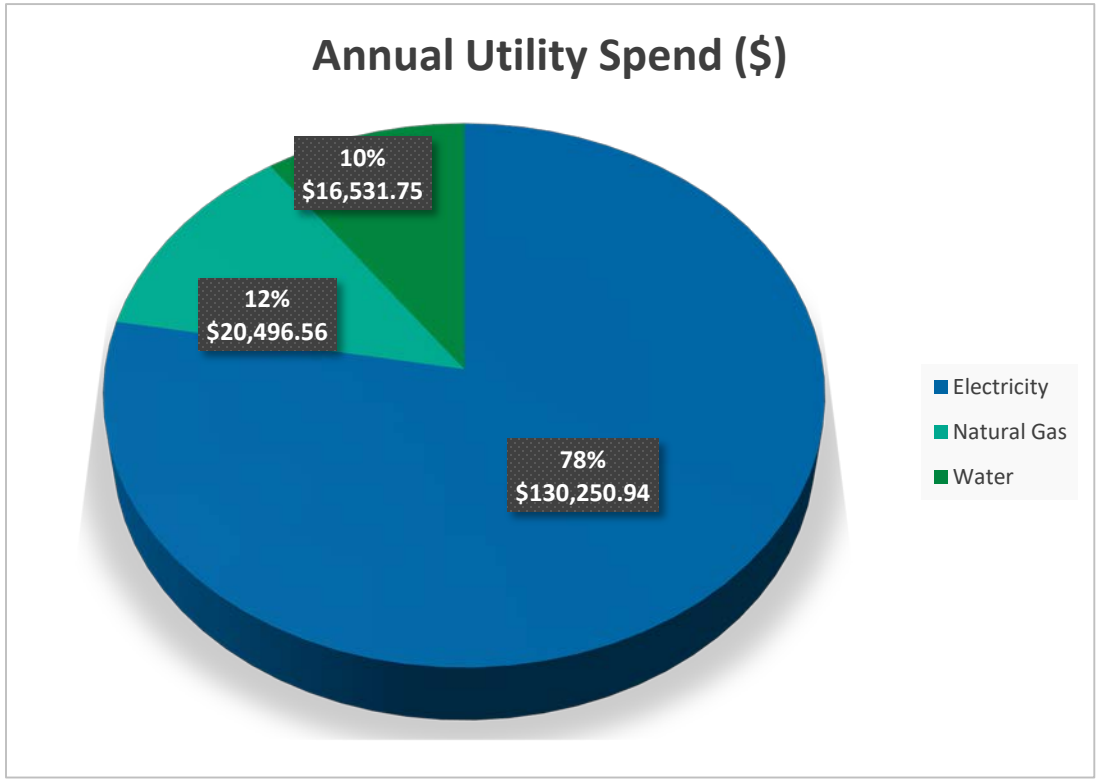
Grants Campus

Total 7,490 MMBtu



Total $167,279.25



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Grants Campus

Energy Utilization Index (EUI) is a measure of energy per square foot per year.

EUI for Grants is **61.7** kBtu/sq ft.

Average EUI for an Education Facility in a hot-dry climate is **55.4** kBtu/sq ft

This value is determined from the Commercial Building Energy Consumption Survey (CBECS).

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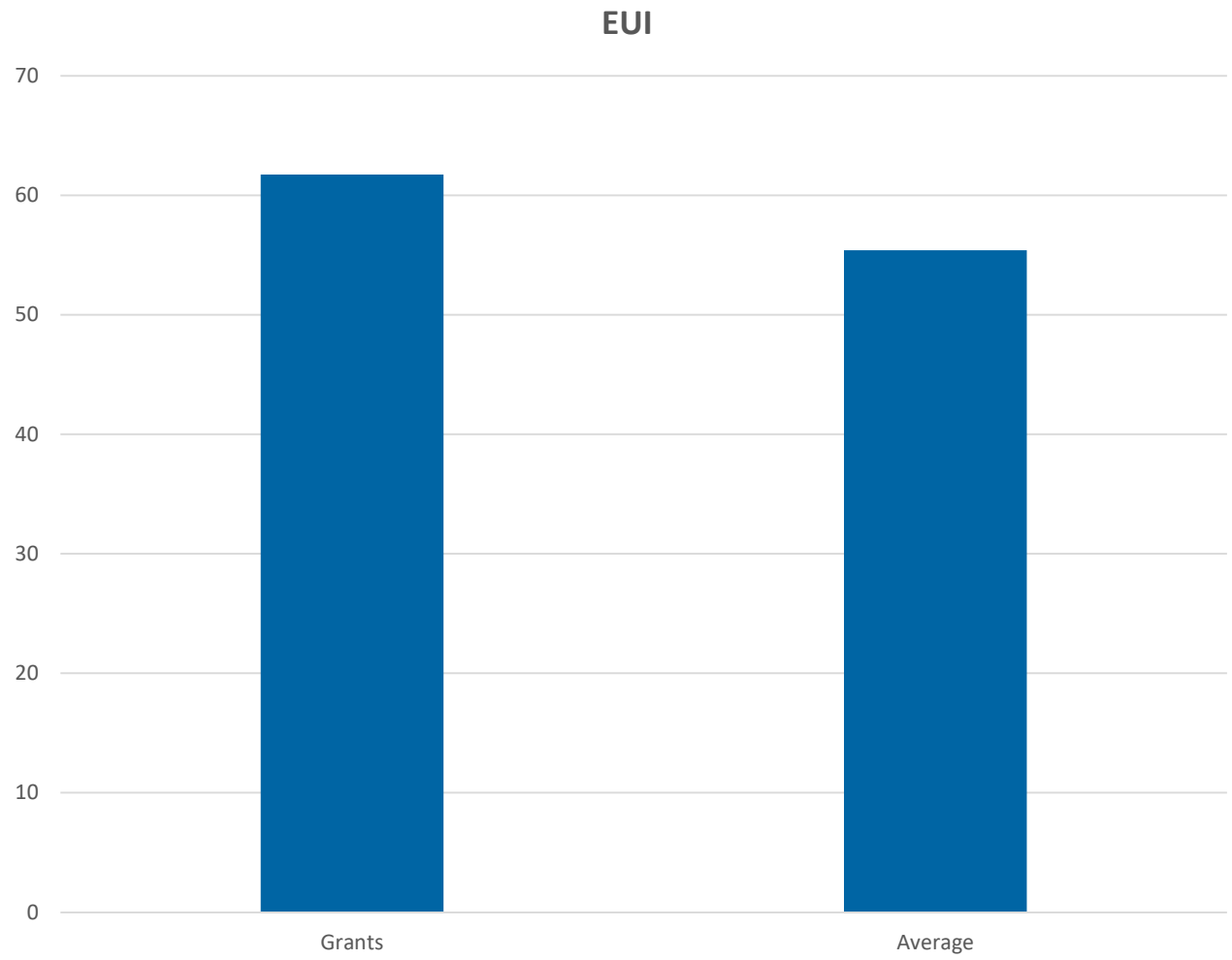

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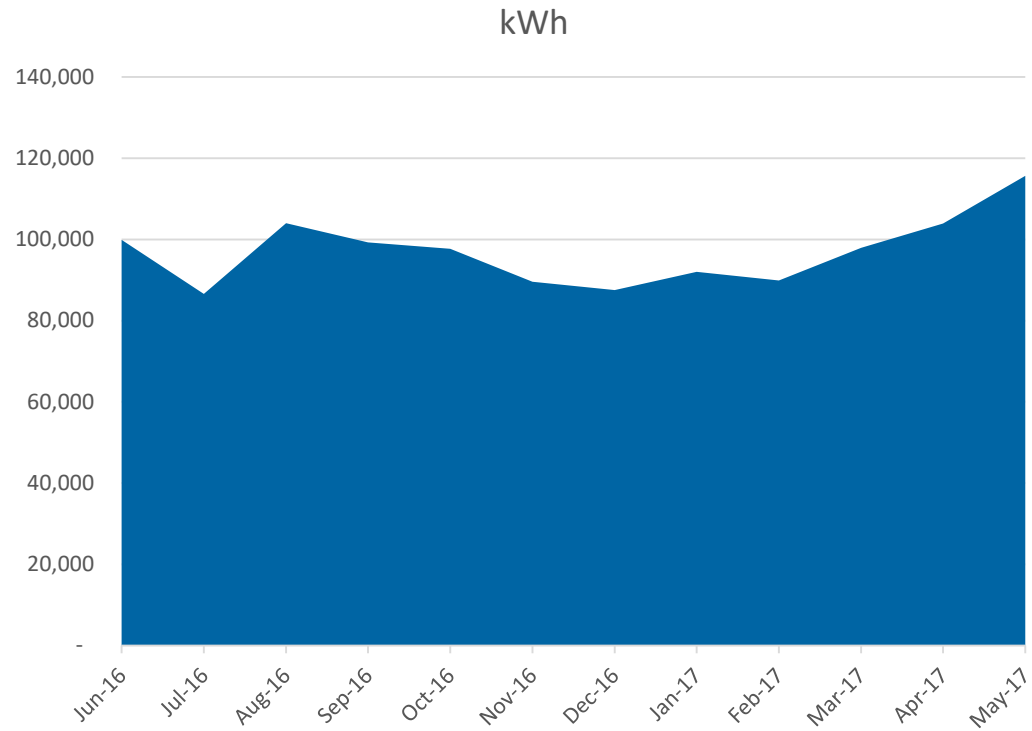
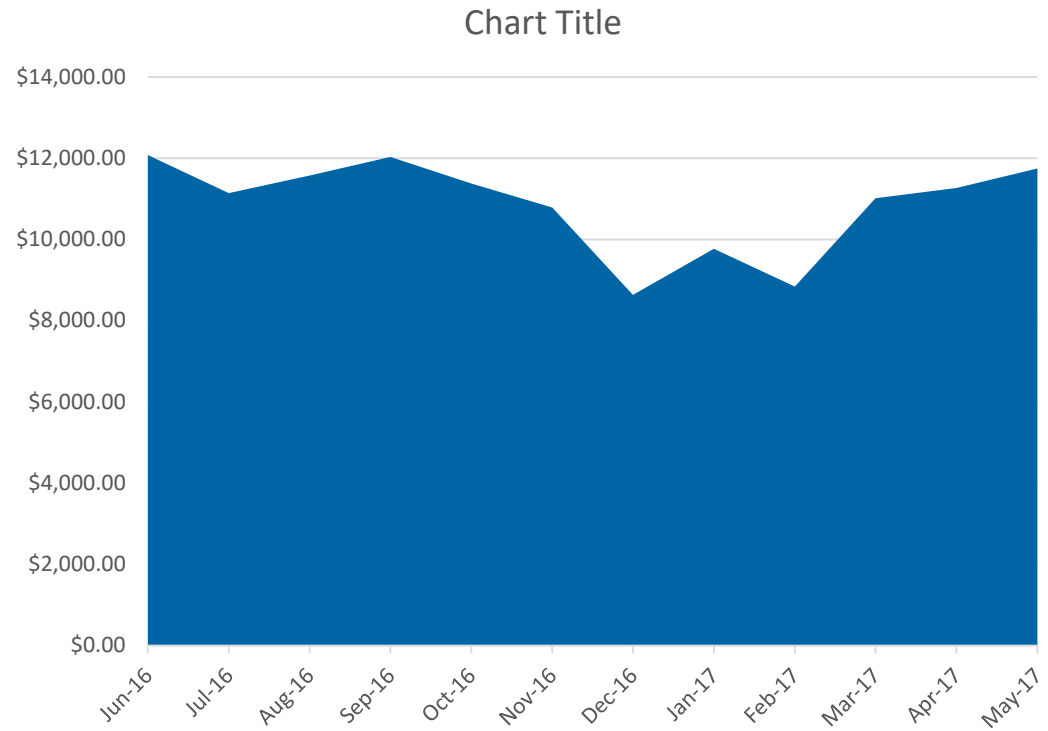
Grants – Electricity

1,163,929 Annual kWh Consumption



$130,251 Annual Spend



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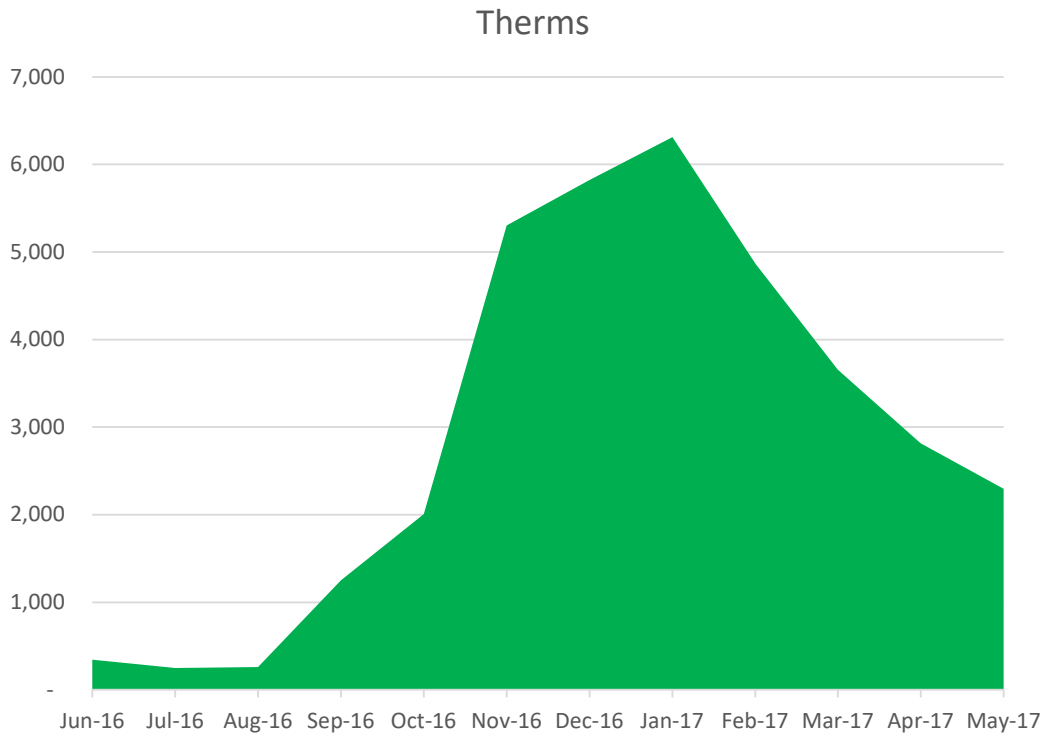
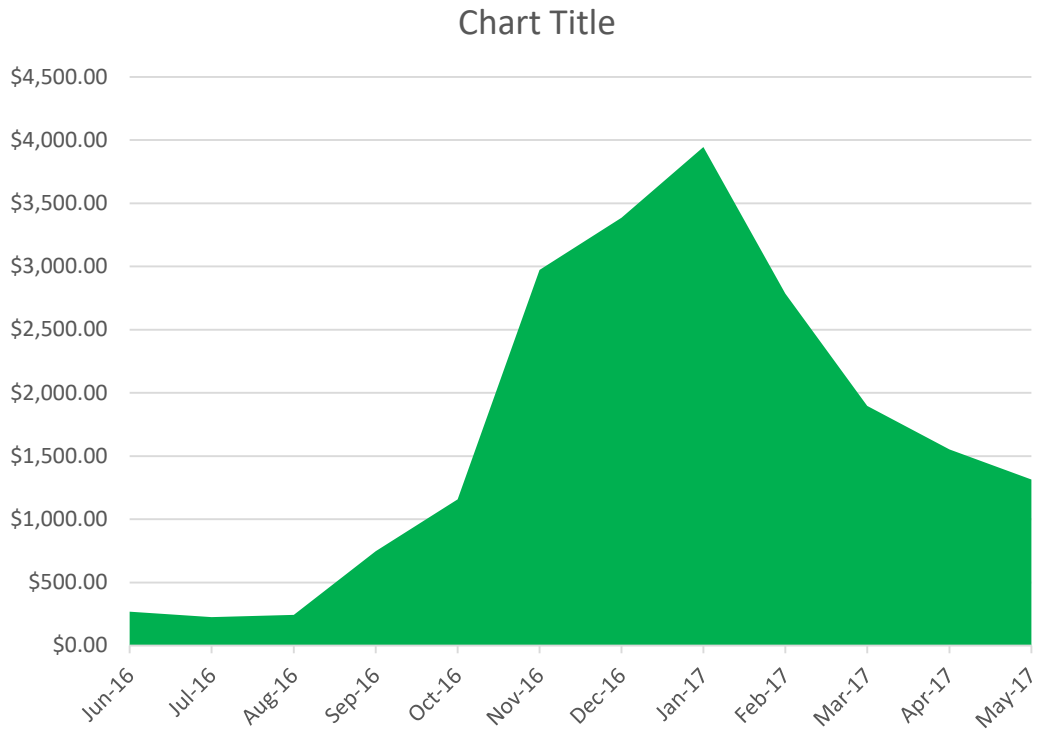
Grants – Natural Gas

35,185 Annual Therms Consumption



$20,497 Annual Spend



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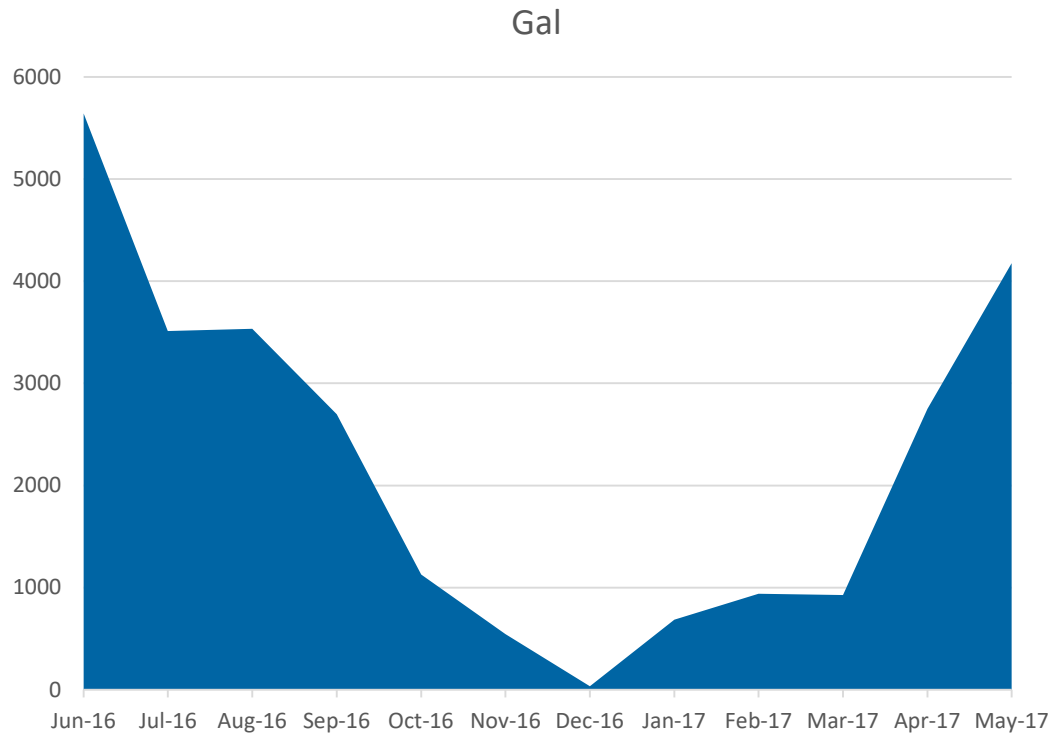
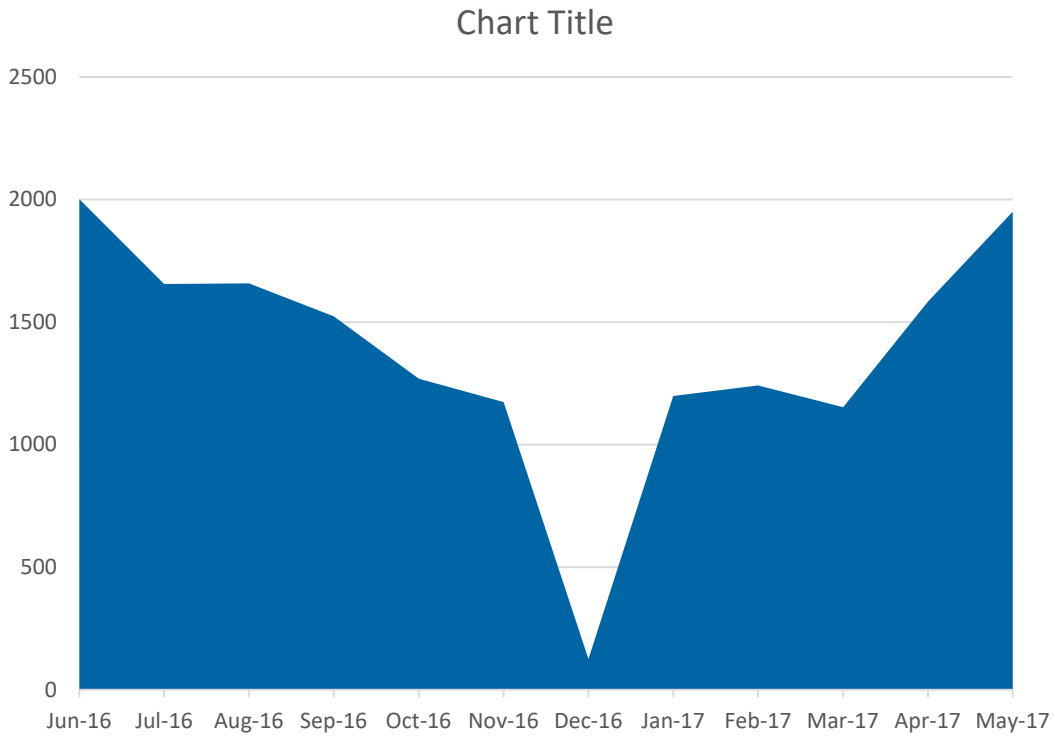
Grants – Water/Wastewater

26,575 Annual Gallons Consumption



$16,532 Annual Spend



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Carlsbad Campus

UNIVERSITY	CAMPUS	BLDG #	DESCRIPTION	ADDRESS	CITY	COUNTY	STATE	ZIP	GSF
NMSU	CARLSBAD	548	LIGHT HALL (CEMRC)	1400 UNIVERSITY DR.	CARLSBAD		NM		24,712
NMSU	CARLSBAD	630	CARLSBAD ALLIED HEALTH	1500 UNIVERSITY DR.	CARLSBAD	EDDY	NM	88220	17,609
NMSU	CARLSBAD	293A	CARLSBAD MAIN	1500 UNIVERSITY DR.	CARLSBAD	EDDY	NM	88220	111,818
NMSU	CARLSBAD	293B	CARLSBAD INSTRUCTIONAL BUILDING	1500 UNIVERSITY DR.	CARLSBAD	EDDY	NM	88220	19,027
NMSU	CARLSBAD	293C	CARLSBAD COMPUTER SCIENCE BUILDING	1500 UNIVERSITY DR.	CARLSBAD	EDDY	NM	88220	14,803
								TOTAL:	187,969

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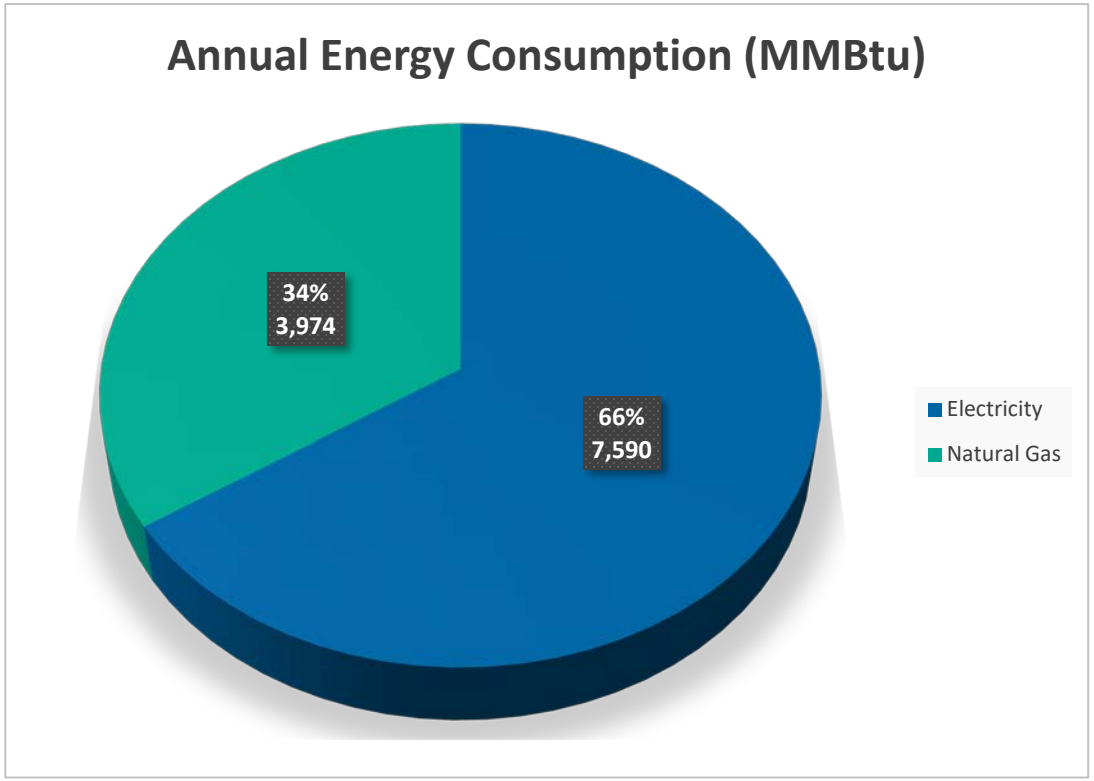
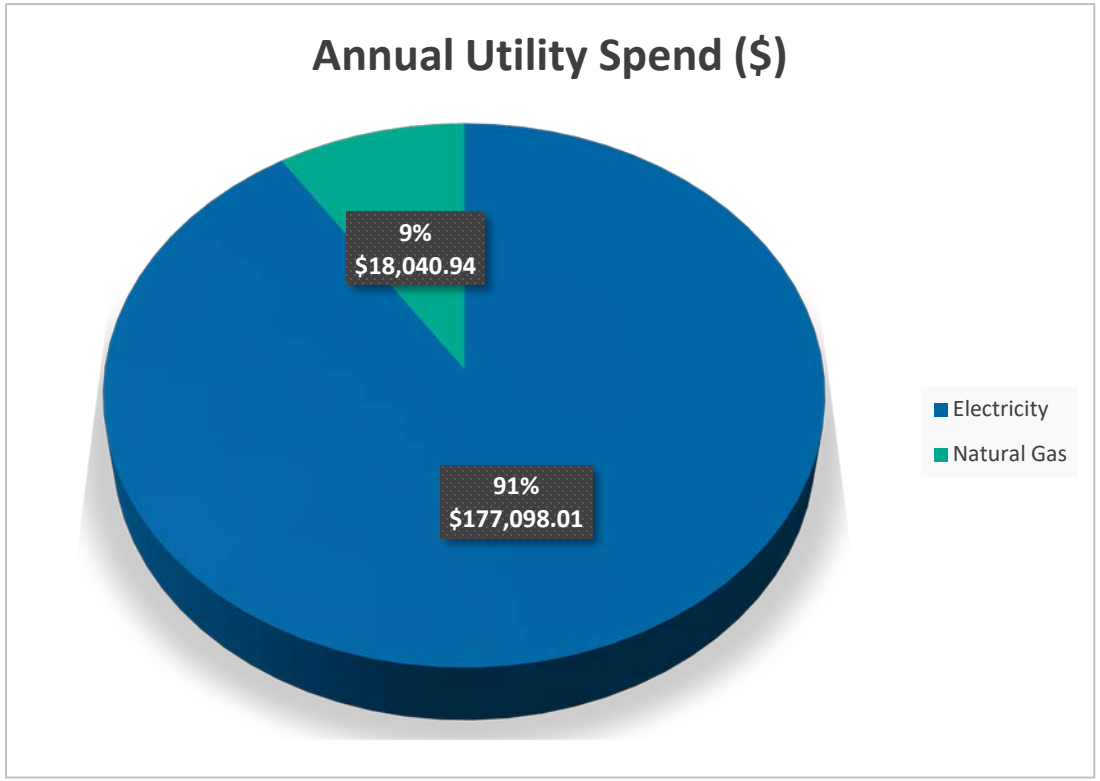
Carlsbad Campus

Total 11,564 MMBtu



Total $195,138.95



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Carlsbad Campus

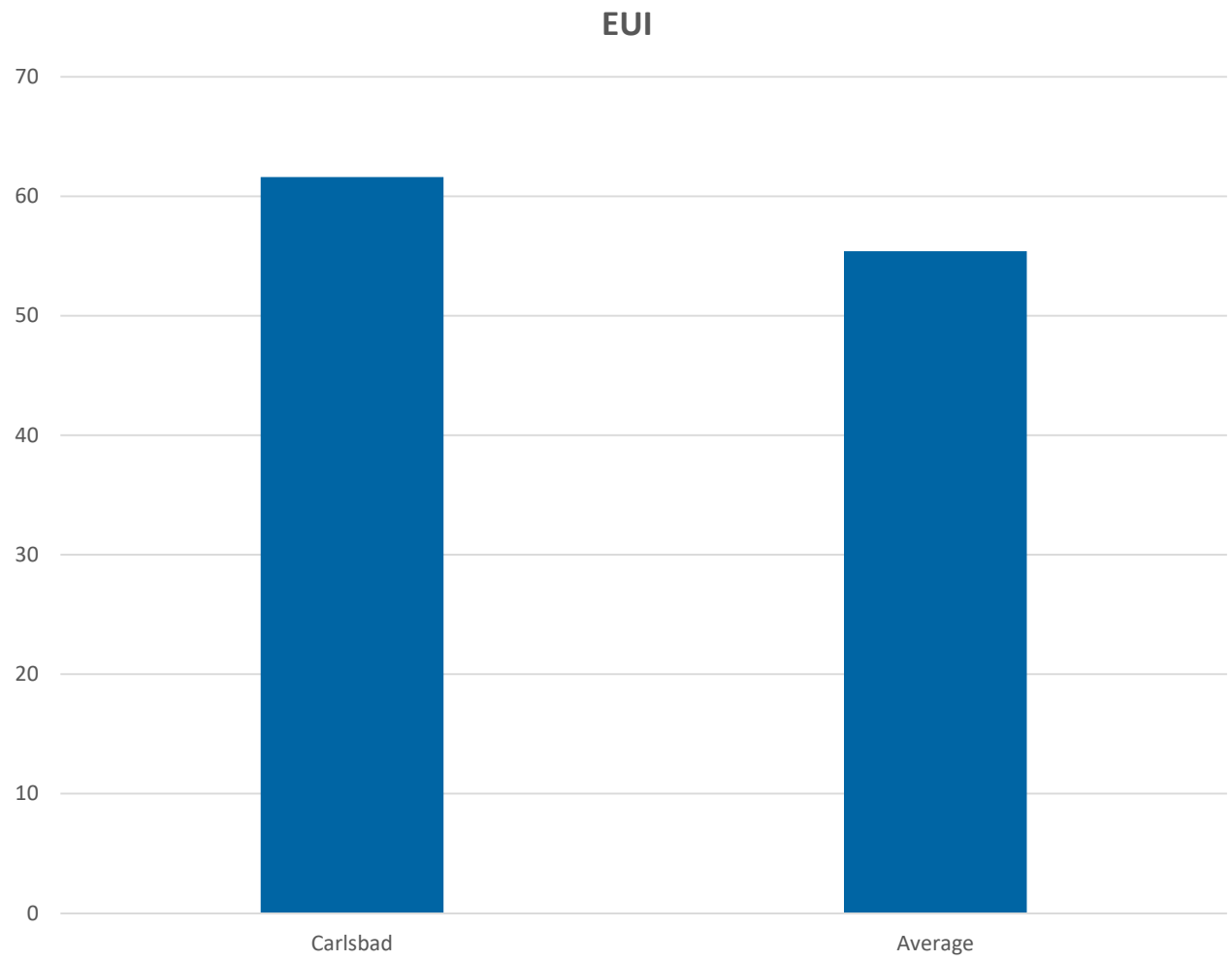
Energy Utilization Index (EUI) is a measure of energy per square foot per year.

EUI for Carlsbad is **61.6** kBtu/sq ft.

Average EUI for an Education Facility in a hot-dry climate is **55.4** kBtu/sq ft

This value is determined from the Commercial Building Energy Consumption Survey (CBECS).

CBECS is conducted by the U.S. Energy Information Administration (EIA).



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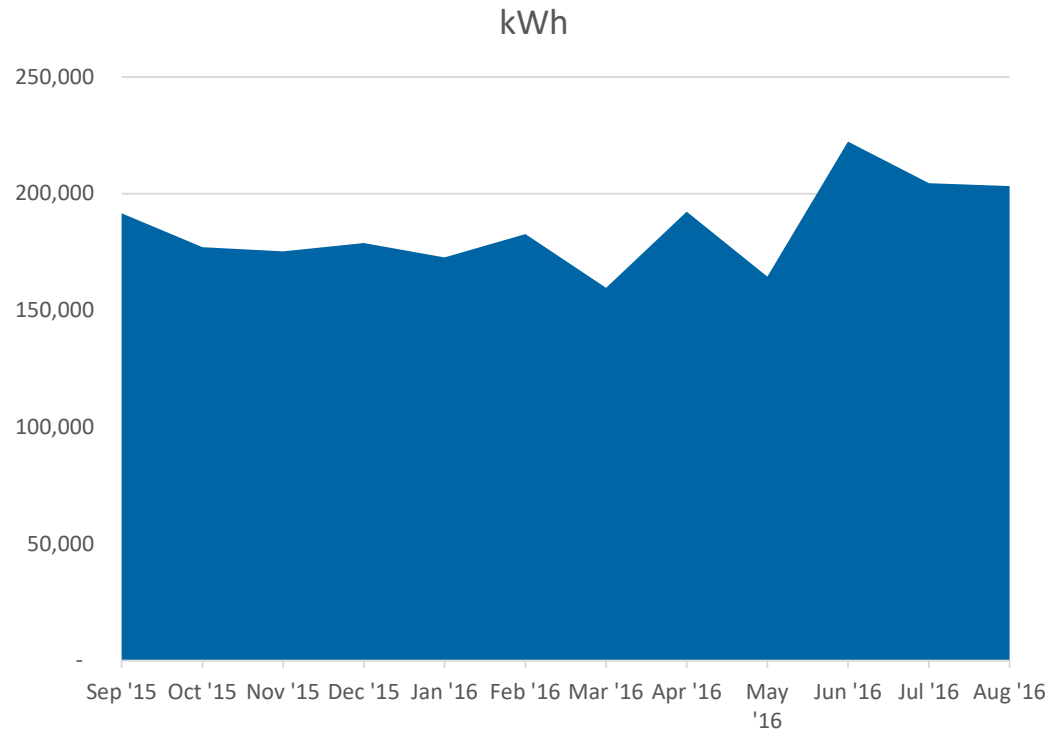
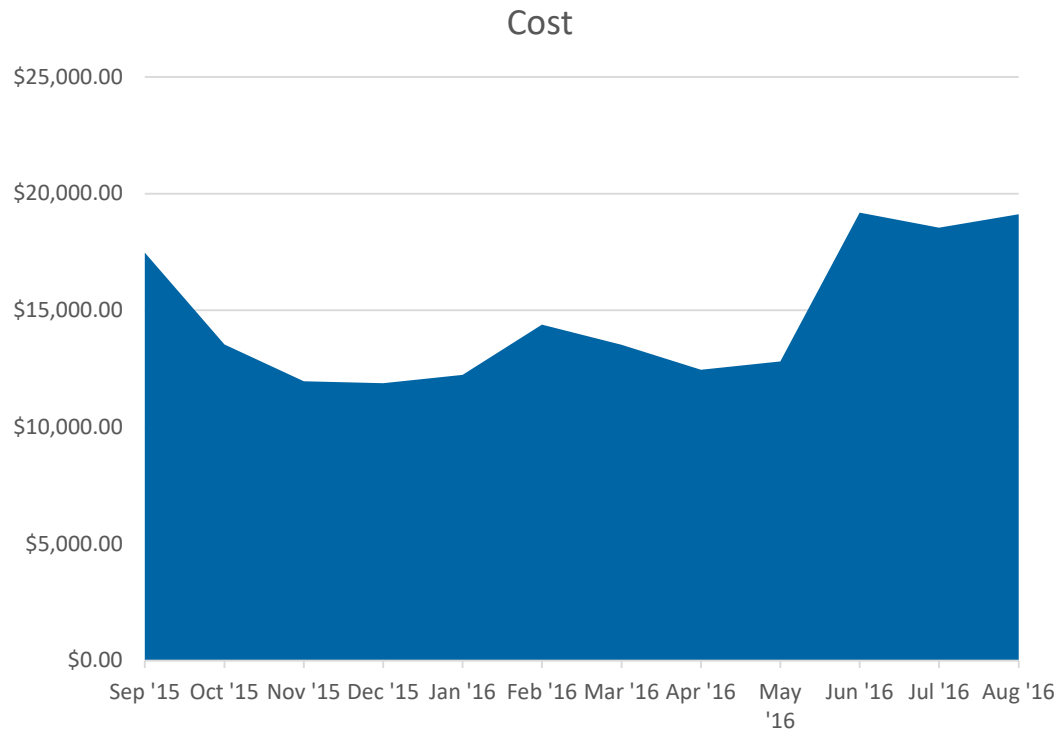
Carlsbad – Electricity

2,224,560 Annual kWh Consumption



$177,098 Annual Spend



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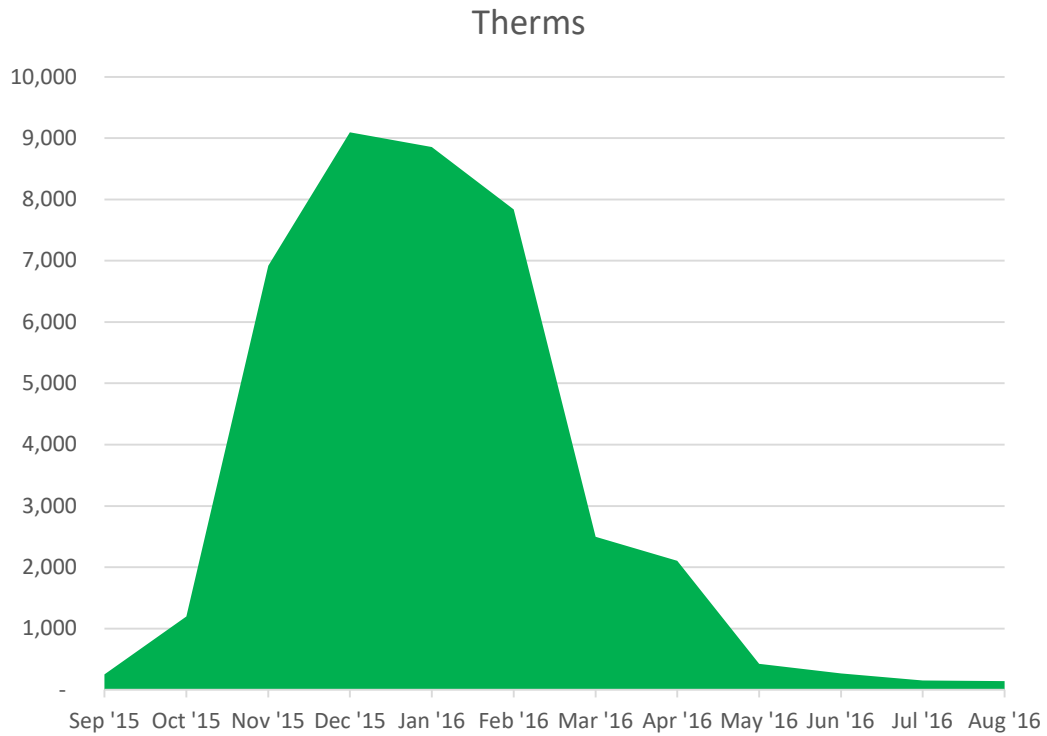
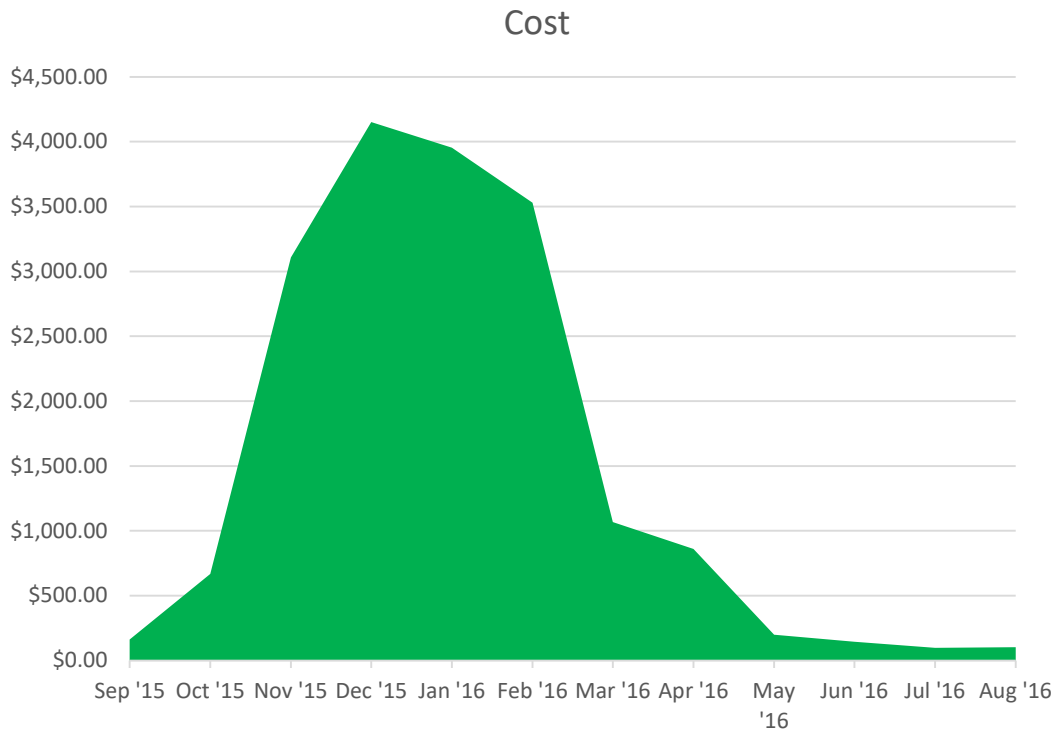
Carlsbad – Natural Gas

39,743 Annual Therms Consumption



$18,041 Annual Spend



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NMSU ESPC II Preliminary Proforma

Preliminary Project Proforma
New Mexico State University - Remote Campuses

Initial Project Costs:		
Investment Grade Audit	$	74,499
Performance and Payment Bond (if applicable), Permits	$	23,125
Implementation Costs	$	1,575,000
Taxes (8.5% Assumed)	$	142,173
Total Ameresco Contract Amount	**$**	**1,814,797**
Financing Origination Cost	$	-
EMNRD / 3rd Party Engineering Review	$	9,074
Bond Counsel Cost	$	15,000
Hazardous Material Abatement	$	-
Customer Contribution		
Net Project Costs	**$**	**1,838,871**
Construction Period Interest	**$**	**36,151**
Total Amount Financed	**$**	**1,875,022**

Financial Assumptions	
Term of Project (years)	15.0 yrs
Term of Financing (years)	15.0 yrs
Estimated Financing Rate	3.90%
Payments per Year (frequency)	2
Discount Rate	3.90%
Energy Escalation Rates (annual)	Electricity 3%, Natural Gas 3%, Water and Sewer 3%
O&M Savings Escalation rate (annual)	3.00%
M&V Cost Escalation Rate (annual)	4.00%
O&M Cost Escalation Rate (annual)	4.00%
Project Simple Payback	12.31

Proforma		Year									
	Initial Values	1	2	3	4	5	6	7	8	9	10
1 Projected Annual Energy Cost Savings	$ 131,658	$ 135,608	$ 139,676	$ 143,866	$ 148,182	$ 152,628	$ 157,207	$ 161,923	$ 166,780	$ 171,784	$ 176,937
2 O&M Savings	$ 15,799	$ 16,273	$ 16,761	$ 17,264	$ 17,782	$ 18,315	$ 18,865	$ 19,431	$ 20,014	$ 20,614	$ 21,233
3 Utility Rebates (Note 4)		$ -									
4 Total Project Savings (Line 1 + Line 2 + Line 3)	**$ 147,457**	**$ 151,881**	**$ 156,437**	**$ 161,130**	**$ 165,964**	**$ 170,943**	**$ 176,072**	**$ 181,354**	**$ 186,794**	**$ 192,398**	**$ 198,170**
5 Payments for Financing Equipment		$ 137,383	$ 141,459	$ 145,654	$ 149,968	$ 154,407	$ 158,975	$ 163,673	$ 168,506	$ 173,479	$ 178,595
6 Payments for Measurement and Verification Services	$ 11,529	$ 11,990	$ 12,470	$ 12,969	$ 13,488	$ 14,028	$ 14,589	$ 15,173	$ 15,780	$ 16,411	$ 17,067
7 Payments for Operation and Maintenance Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
8 Total Payments		**$ 149,373**	**$ 153,929**	**$ 158,623**	**$ 163,456**	**$ 168,435**	**$ 173,564**	**$ 178,846**	**$ 184,286**	**$ 189,890**	**$ 195,662**
9 Net Annual Benefit		**$ 2,508**	**$ 2,508**	**$ 2,507**	**$ 2,507**	**$ 2,508**	**$ 2,508**	**$ 2,508**	**$ 2,507**	**$ 2,508**	**$ 2,507**
10 Cumulative Cash Flow	**$ 37,616**	$ 2,508	$ 5,016	$ 7,523	$ 10,031	$ 12,539	$ 15,047	$ 17,555	$ 20,062	$ 22,570	$ 25,077
11 Net Present Value of Cash Flow	**$ 28,078**										
12 Interest Rate	3.90%										
13 Discount Rate	3.90%										

Line #	Year 11	12	13	14	15	Totals
1 Projected Annual Energy Cost Savings	$ 182,245	$ 187,713	$ 193,344	$ 199,145	$ 205,119	$ 2,522,157
2 O&M Savings	$ 21,870	$ 22,526	$ 23,201	$ 23,897	$ 24,614	$ 302,660
3 Utility Rebates (Note 4)						$ -
4 Total Project Savings (Line 1 + Line 2 + Line 3)	**$ 204,115**	**$ 210,239**	**$ 216,545**	**$ 223,042**	**$ 229,733**	**$ 2,824,817**
5 Payments for Financing Equipment	$ 183,857	$ 189,271	$ 194,840	$ 200,568	$ 206,460	$ 2,547,096
6 Payments for Measurement and Verification Services	$ 17,750	$ 18,460	$ 19,198	$ 19,966	$ 20,765	$ 240,104
7 Payments for Operation and Maintenance Services	$ -	$ -	$ -	$ -	$ -	$ -
8 Total Payments	**$ 201,607**	**$ 207,731**	**$ 214,038**	**$ 220,534**	**$ 227,225**	**$ 2,787,200**
9 Net Annual Benefit	**$ 2,507**	**$ 2,508**	**$ 2,508**	**$ 2,508**	**$ 2,508**	**$ 37,616**
10 Cumulative Cash Flow	$ 27,585	$ 30,093	$ 32,600	$ 35,108	$ 37,616	

Notes:

1. *This cash flow reflects an estimated tax exempt lease rate of 3.9%. The actual rate will increase or decrease based on market conditions and customer credit rating at the time of lease funding.*
2. *Energy Savings or revenues are based on current utility rate structures and usage information provided for purposes of this project.*
3. *The performance and payment bonds apply only to the installation portion of the contract and do not apply in any way to energy savings guarantees, payments or maintenance provisions, except that the performance bond shall guarantee that the installation will be free of defective materials and workmanship for a period of 12 months following completion and acceptance of the work*
4. *The amount of the utility rebate(s) are not guaranteed. The final rebate amount will be determined by the utility company.*

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Proforma Assumptions

- This project combines multiple campuses together into one project. We are assuming that energy savings from various, internal NMSU operating budgets can be leveraged together into a single ESPC project.

- The cash flow includes a 3% energy escalation rate

- The project will be financed over a 15 year term

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Additional Questions

- Are there any additional buildings, facilities, or meters on any of these campuses?

- Has NMSU completed any projects (or will NMSU be completing any projects in the near term) which we can leverage energy savings from?

- Are there any other capital, infrastructure renewal, and/or deferred maintenance projects that NMSU would want to combine with an ESPC Phase II project?
  - $25 million Agriculture Center on West side of Las Cruces Campus. Potential to engineering/procure/install a steam generator to run a 5MW turbine (powered from natural gas or animal waste).

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Next Steps

- What is NMSU's decision-making process and criteria with regards to evaluating and moving forward with an ESPC Phase II project? What does "good" look like?

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Thank you!