

# Athletics – Electricity Use and Carbon Emissions KPIs

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## Overview

This report analyzes electricity use and associated carbon emissions within the University of Arkansas Athletics Department. The analysis used 2013 utility data from Baum Stadium, the Indoor Track, Women’s Soccer, Athletic Hangar, Broyles Complex, Barnhill Arena, Bud Walton Arena, Donald W. Reynolds Razorback Stadium, Bev Lewis Center, the John McDonald Outdoor Track, and Bogle Park Softball Complex. Collectively, Athletics contributed approximately 14,000 MTCDE, or almost 10 percent of total campus emissions. Total electricity costs were estimated at almost \$1.5 million; reducing electricity use by 10 percent could save approximately \$150,000 annually.

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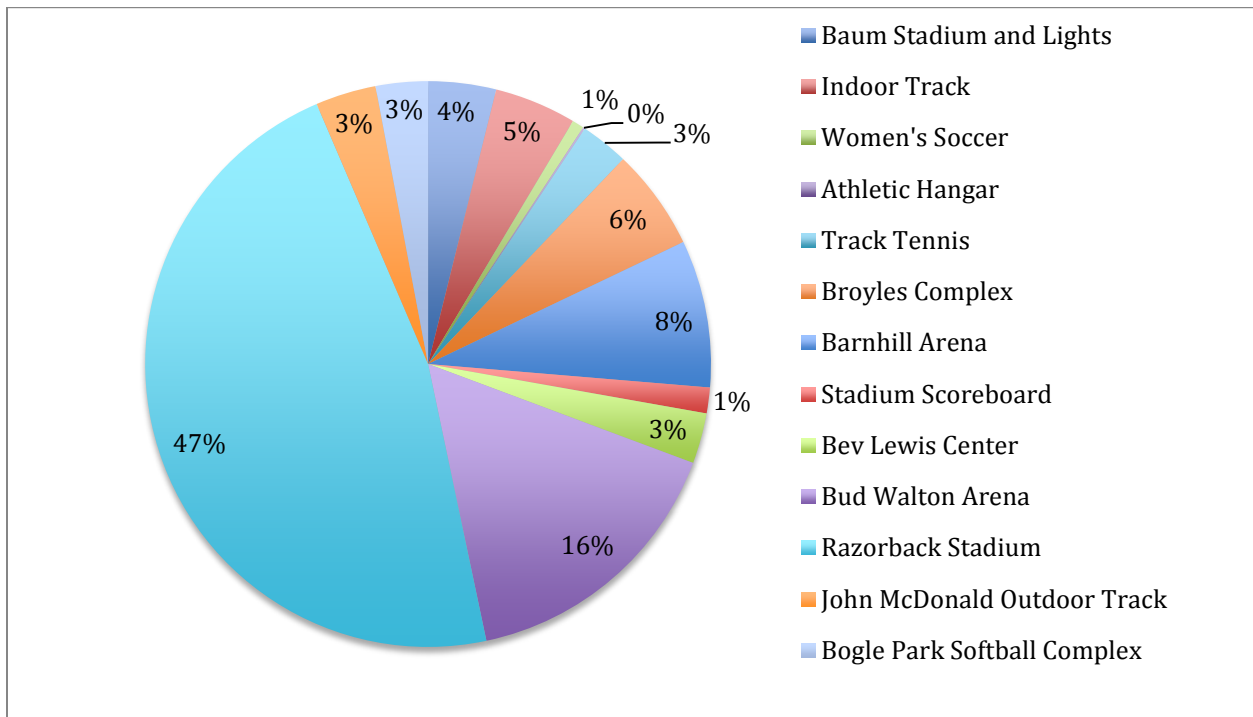
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## Analysis

The purpose of this analysis is to estimate the relative impact electricity use by the University of Arkansas Athletics Program has on overall UA greenhouse gas emissions. The approach is an inventory assessment of electricity use, converted to greenhouse gas emissions using the EPA eGRID SPP South sub-region annual total output emission rate to convert megawatt-hours into carbon dioxide equivalencies (1580.60 lb/MWh). Data for this analysis was obtained from annual electricity billing and usage records through Facilities Management in fiscal year 2013.

The total electricity usage by the Athletics Department in 2013 was almost 20 million kWh (19.99 GWh) (Table 1). The estimated cost of this electricity was almost \$1.5 million. The associated greenhouse gas emissions were 14,334 metric tons of carbon dioxide equivalent (MTCDE), nearly 10% of total campus emissions. In 2013, Razorback Stadium used 9,369,374 kWh, which represents 47% of Athletics Department energy consumption. The cost to operate Razorback Stadium was \$686,000, with emissions of 6,717 MTCDE, nearly three times the amount of any other venue. The second largest consumer of electricity was Bud Walton Arena, with 3,200,194 kWh or 16% of the total Athletics Department energy consumption. The Athletic Hangar and Women’s Soccer were the lowest consumers of electricity within the Athletic Department (Figure 1). A reduction of electricity by 10 percent could save the Athletics Department nearly \$150,000 annually. Further, reducing electricity at Razorback Stadium alone by 10% could save the department almost \$69,000 annually.

**Figure 1. Electricity Usage (kWh) for Athletics by Building, 2013**



**Table 1. Electricity Usage and Associated Costs for Athletics, 2013**

Meter Name	Usage (kWh)	Cost	Emissions (MTCDE)
Baum Stadium and Lights	775,120	\$70,146.22	555.73
Indoor Track	936,200	\$80,565.09	671.21
Women's Soccer	135,020	\$9,947.94	96.80
Athletic Hangar	22,863	\$2,118.62	16.39
Track Tennis	551,200	\$42,879.09	395.19
Broyles Complex	1,158,771	\$86,602.54	830.79
Barnhill Arena	1,684,038	\$126,005.82	1,207.38
Stadium Scoreboard	294,205	\$21,810.92	210.93
Bev Lewis Center	577,475	\$43,098.76	414.02
Bud Walton Arena	3,200,194	\$237,038.36	2,294.40
Razorback Stadium	9,369,374	\$685,916.17	6,717.42
John McDonald Outdoor Track	692,389	\$50,509.73	496.41
Bogle Park Softball Complex	595,709	\$42,411.27	427.10
<b>Total</b>	<b>19,992,558</b>	<b>\$1,499,051.53</b>	<b>14,333.77</b>