Solar Powered Charge Stations: Kansas State University Survey Results

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Duration: June 26-July 7 (closed at 9:30am) Responses: 759 total
Students: 98 or 13% # Staff: 451 or 59% # Faculty: 192 or 25%
Students & Staff: 11 or 1% # Students & Faculty: 5 or .7% # Staff & Faculty: 2 or .3%
Total KSU: Faculty and Staff= 6,600 Students= 24,000 (including graduate students)

Results found for KSU faculty, staff, and student respondents:

-83% most frequently drive to campus

-According to the US Department of Energy, the battery range for a plug-in Prius is 11 miles, for a Chevrolet Volt is 38 miles, for a Ford Focus Electric is 76 miles, and for a Nissan Leaf is 84 miles.

-44% travel 2-5 miles to campus. Thus all these electric cars listed would be sufficient for the commute to work

-1% currently own an electric vehicle

-93% park a vehicle on campus or plan to in the next 9 months. 78% have a permit to park in open parking lots

-Solar powered charging stations provide shaded parking and generate solar power for the university

-When asked how much the respondent wanted shaded parking, where 1 is not at all and 9 is very much, the mean response was 6.37

-Participants would spend a mean of $25 extra for an annual parking permit that provides shade

-31% would be more willing to invest in an electric vehicle if K-state has sufficient charging infrastructure

-64% would like to save money on their commute driving an electric vehicle.

-When simply asked if they would like to own an electric vehicle, 40% responded 'yes'

-66% are in favor of K-state installing some solar powered charging stations for electric cars in campus parking lots

Table 1. Reasons in favor of SPCS in campus parking lots

Reasons	Percentage
It would be good for people with electric vehicles to charge their car	86%
It would be good for air quality and reducing air pollution	75%
It would encourage more electric vehicles	65%
It would fit with the 2025 KSU Sustainability Plan	64%
It would help the image of K-State	60%
It would provide more shaded parking	40%

- 40% believe SPCS on campus will encourage more people to purchase an electric vehicle and 31% are willing to invest in an electric vehicle if K-state has sufficient charging infrastructure

-Possible locations for SPCS were rated by participants from 1 (not at all a good location) to 9 (an excellent location). The average scores for the locations are as follows:

Table 2. Preferred Locations for SPCS

Location	Mean Score	Standard Deviation
Large lot, often with available spots for parking, but quite far from main buildings	5.48	2.57
Federal building on campus. SPCS would mainly be for federal employees but would support Obama's New Rule*	4.75	2.68
A certain lot with a central location on campus, but not many buildings relatively close to the lot	4.62	2.49
Location near building respondent frequents most	4.54	2.77
Football Stadium at far end of campus	4.12	2.73
Central location on campus in general	3.97	2.46

-There are multiple ways to finance SPCS:

Table 3. Finance Options for Solar Powered Charging Stations

Finance option	Percentage
Federal grant	73%
Partnership with electric charging station company	57%
Income from user permits	55%
Power Purchase Agreement	51%
Partnership with Westar Energy Utility	51%
Donations to KSU Foundation	50%
Tax incentives	31%
University funds	22%

Price Structure

-Open lot annual parking permits will be staggered pricing where it is least expensive to park in an open spot without shade or using the SPCS, it is more expensive to park in a shaded spot, and it is most expensive to park in a shaded parking spot and use the SPCS.

-77% of participants were in favor of this price structure instead of everyone paying the same but slightly higher prices

Table 4. Comparison of survey results for KSU students, faculty, and staff respondents

Survey Questions	Students	Faculty	Staff
Most frequently drive to campus	43%	85%	90%
Travel 2-5 miles to campus	52%	51%	43%
Own electric cars	0%	3.60%	0.20%
Would like to reduce the cost of commute by using electric vehicles	73%	69%	58%
Are in favor of K-State installing SPCS	53%	82%	75%
Would like to own an electric vehicle	36%	52%	34%
Are more willing to invest in an electric vehicle if KSU has the infrastructure	26%	44%	26%
Believe SPCS on campus will encourage more people to purchase an electric vehicle	37%	47%	36%