



STUDENT SUSTAINABILITY COMMITTEE

Semesterly Report

Project Name: Illini EcoConcept: Designing and Fabricating a Fuel Cell-Driven Vehicle for the Shell Eco-marathon Competition

Date of Report Submission: 7/30/2018

Project Purpose:

The Illini EcoConcept team (recently renamed EV Concept) aims to design and manufacture a fuel-efficient concept vehicle to compete in the annual Shell Eco-Marathon. The team also seeks to promote the use of sustainable and innovative manufacturing methods and the use of alternate fuels. This year's car was designed to be battery powered.

Detailed Accounting of Expenditures to Date:

See attached spreadsheet file detailing expenses.

Project Progress to Date:

The target dates listed in the original application have become irrelevant as two years have passed since the application date. However, this year the team built a new carbon fiber chassis and body for the first time in multiple years which was one of the major goals listed in the original application. The car was named EV-1. Because many of the project leads graduated, the team went through drastic leadership changes and lost most of its knowledge about carbon fiber work. Tremendous efforts were made by the remaining members, which ultimately led to our team relearning how to work with carbon fiber. This allowed us to create our first new and completely customized carbon fiber chassis. This year's chassis design allowed for a decrease in weight and higher structural strength compared to prior designs. Pictures are attached.

The team also switched fuel categories to keep up with the growing focus on battery powered vehicles. Doing so entailed manufacturing a battery powerful enough to power the concept car as well as designing a safe battery management system. The battery successfully passed the official Shell Eco-Marathon safety inspection. Switching to the battery electric fuel category reduced the overall weight of the vehicle as there is no longer a bulky hydrogen fuel cell and hydrogen cylinder in the car.

The team participated in the Shell Eco-Marathon 2018 competition on the Sonoma Raceway. EV-1 passed the technical and safety inspections which are a set of rigorous tests performed to ensure the safety of the driver and other participants. Many teams do not make it past these inspections. While last minute technical difficulties disabled the team from qualifying to compete, EV-1 was featured in the front row of Shell's family portrait. A picture is attached.

Student Involvement and Outreach to Date:

All our previously listed accomplishments have been attained through the hard work of students. The team is constantly recruiting new members. The team presented our previous build in last year's Quad day event and collected over 90 emails to send info-night invitations to. The team also holds a demonstration in the annual Engineering Open House where a presentation about the cars' efficiency and the team driver does a few laps for the public.

Marketing and Promotion Efforts to Date:

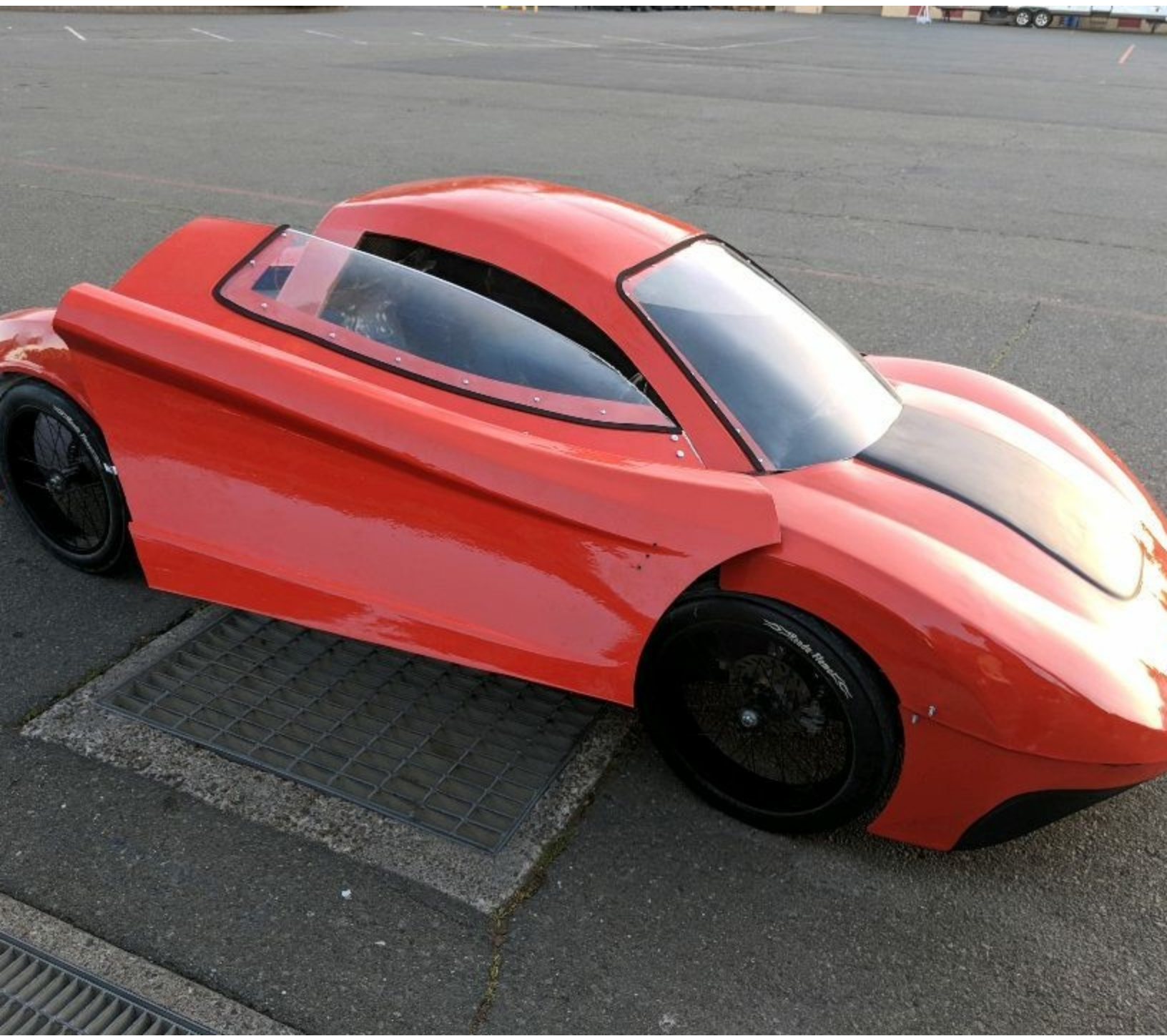
Participation in the Shell Eco-Marathon exposes the project to Shell's countless followers as well as other media outlets. The team has also kicked off efforts to revamp its social media accounts. So far, the team website has been reworked to include updated information and pictures. This past academic school year saw the team's creation of the Business sub team which is aimed at promoting the team as well as managing sponsorship packages and outreach efforts. The team hopes to better implement this sub team to both promote the project to possible sponsors and recruit new student talent.

Additional Comments:

The EV Concept team (formerly Illini EcoConcept) has been struggling with various major issues in the recent years. The team is composed entirely of students, so it is a truly crippling event when multiple sub team leaders graduate at once. This happened in the past years and it caused the team to lose a lot of knowledge. The team has also lost its shop space in the Mechanical Engineering Building due to renovations and was denied the opportunity to move its operations to the ESPL. Another major complication was the relocation of the Shell Eco-Marathon competition to the Sonoma Raceway. While the team had historically driven to Detroit, traveling to California increases travel costs greatly.

Despite facing these adversities, the team will continue with its project. The EV Concept team is organizing the lease of a rental shop space to continue its operations for the 2018-2019 academic year and sponsors have been contacted to fund the lease. The team is also working to train newer members and document all processes so that there is no loss of knowledge when team members leave the team.

The EV Concept team greatly appreciates the support granted by the Student Sustainability Committee and hope to continue to educate and inspire the future Eco-conscious automotive engineers.





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Timestamp	Your Name	Your Net#	SubItem	Name of Company Suppl	Catalog Part Number	Part Description	Quantity	Unit Cost	URL Link to the Product	Unit Sub-total	Non POs	Non PO Unit Cost	Total	Date	Sponsor	Cash	In-kind	Donation Amount	Cash Donation Total	Annual Total (July-June)	Theoretical Account Balance		
8/1/2017 16:37:17	Logan Rosenmayer	mau2	Electronics	Spark Fun	SEN-10916	Hydrogen Sensor	1	7.95	https://www.sparkfun.com/products/12444	7.95			7.95		9/27/17	Data Group Foam			\$6,482.70	\$13,000.00	\$23,490.00	\$11,733.83	
8/1/2017 16:38:16	Logan Rosenmayer	mau2	Electronics	Spark Fun	WFL-02775	SparkFun RF766 Breako	2	9.95	https://www.sparkfun.com/products/12444	19.90			19.90		9/11/17	SSF	X		\$2,000.00		\$2,000.00		
8/1/2017 19:39:28	Logan Rosenmayer	mau2	Electronics	Spark Fun	GFS-00484	Antenna GPS V3 Magnet	1	12.95	https://www.sparkfun.com/products/12444	12.95			12.95		11/8/17	Maxon Motors Service	X	X	\$1,940.30		\$1,940.30		
8/1/2017 19:40:55	Logan Rosenmayer	mau2	Electronics	Spark Fun	GFS-11068	SparkFun Venus GPS wit	1	49.95	https://www.sparkfun.com/products/12444	49.95			49.95		11/20/17	EDC	X		\$9,000.00		\$9,000.00		
8/1/2017 20:36:32	Logan Rosenmayer	mau2	Electronics	SparkFun	CSI-13282	CAN-BUS Shield	1	24.95	https://www.sparkfun.com/products/12444	24.95			24.95		4/19/17	Travel Splendid	X		\$2,000.00		\$2,000.00		
9/6/2017 21:44:58	Richard Mauge	mau2	Body/Chassis	McMaster Carr	28B3A35	1/2" 4 Male coated steel sq	2	60.98	https://www.mcmaster.com/28b3a35	121.96			121.96										
9/6/2017 21:49:13	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	580-A	Yellow sealant tape for se	10	7.95	http://www.fibre-glast.com	79.50			79.50										
9/6/2017 21:51:34	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	893	Vacuum tubing for carbon	20	1.45	http://www.fibre-glast.com	29.00			29.00										
9/6/2017 21:52:41	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	789-A	Hose clamps for sealing p	17	1.75	http://www.fibre-glast.com	29.75			29.75										
9/6/2017 21:54:45	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	1404-A	Spray adhesive for sealing	4	29.95	http://www.fibre-glast.com	119.80			119.80										
9/6/2017 21:55:15	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	891-A	Plastic Thru-hub vacou	4	4.95	http://www.fibre-glast.com	19.80			19.80										
9/6/2017 21:58:15	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	2218-A	Vacuum pump 1/2" filter	1	4.95	http://www.fibre-glast.com	4.95			4.95										
9/6/2017 22:00:21	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	1148-A	Vacuum generator to com	1	119.95	http://www.fibre-glast.com	119.95			119.95										
9/6/2017 22:02:04	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	1403-A	10" spool spiral tubing re	2	19.95	http://www.fibre-glast.com	39.90			39.90										
9/6/2017 22:08:29	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	1582	Peel pvac vacuum bagging	30	5.95	http://www.fibre-glast.com	178.50			178.50										
9/6/2017 22:09:39	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	1409-D	Infusion flow media for ve	1	69.95	http://www.fibre-glast.com	69.95			69.95										
9/6/2017 22:10:33	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	1406-E	20 yd roll infusion flow me	1	129.95	http://www.fibre-glast.com	129.95			129.95										
9/6/2017 22:12:34	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	1678	Vacuum bag	30	3.55	http://www.fibre-glast.com	106.50			106.50										
9/12/2017 22:41:41	Mark Galant	mgalt2	Powertrain	US Sola	B00760NDQ3	Solenoid valve	2	11.77	http://www.us-sola.com	23.54			23.54										
9/12/2017 16:54:56	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	1500-A	Resin pan cap for VARTM	1	299.95	http://www.fibre-glast.com	299.95			299.95										
9/17/2017 21:35:14	Richard Mauge	mau2	Body/Chassis	Amazon	B00CLY8AYW	500w transformer for Z2D	1	49.99	https://www.amazon.com/B00CLY8AYW	49.99			49.99										
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9/21/2017 23:06:57	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	909-A	Plastic two-way shutoff fo	2	16.95	http://www.fibre-glast.com	33.90			33.90										
9/22/2017 16:36:57	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	212A	212A System 2000 Eps	1	21.99	http://www.fibre-glast.com	21.99			21.99										
9/22/2017 16:37:31	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	200A	System 2000 Resin for V	1	44.95	http://www.fibre-glast.com	44.95			44.95										
9/26/2017 15:36:06	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	893	Vacuum Tubing	20	1.45	http://www.fibre-glast.com	29.00			29.00										
9/26/2017 18:40:16	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	4021-A	Composite Core Sample I	1	19.95	http://www.fibre-glast.com	19.95			19.95										
10/18/2017 21:37:35	Richard Mauge	mau2	Body/Chassis	Amazon	B00200CAR9	Wet Heat Gun for Fibre	1	21.98	https://www.amazon.com/B00200CAR9	21.98			21.98										
10/18/2017 21:40:57	Richard Mauge	mau2	Body/Chassis	Ulitie	S-9643	Large Erim Thick Powder	2	15	http://www.ulitie.com/ulitie	30.00			30.00										
10/18/2017 21:52:47	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	1403-A	Laminar Ionic VARTM Cor	1	21.95	http://www.fibre-glast.com	21.95			21.95										
10/18/2017 21:58:16	Richard Mauge	mau2	Body/Chassis	Amazon	51616-EL-365-SPK	Motorize ramp for waving	1	12.95	https://www.amazon.com/51616-EL-365-SPK	12.95			12.95										
10/20/2017 16:46:13	Zachary Konecki	zkoneck2	Powertrain	Sarnagega		Easy Turn Gear With Cal	2	Unknown		0.00			0.00										
11/10/2017 11:24:54	Logan Rosenmayer	mau2	Electronics	Amazon	B07LGTTRN	12A DC-DC Buck Convett	2	29.99	https://www.amazon.com/B07LGTTRN	59.97			59.97										
11/10/2017 11:26:50	Logan Rosenmayer	mau2	Electronics	Amazon	B00K7P7PY4	PWM Fan	6	13.95	https://www.amazon.com/B00K7P7PY4	83.70			83.70										
11/10/2017 11:29:46	Logan Rosenmayer	mau2	Electronics	Amazon	B01DQ2G4B8	30A Solid State Relay	1	65.99	https://www.amazon.com/B01DQ2G4B8	65.99			65.99										
11/10/2017 16:29:23	Logan Rosenmayer	mau2	Electronics	Amazon	B01MYMYVJY	30A Solid State Relay	1	13.99	https://www.amazon.com/B01MYMYVJY	13.99			13.99										
11/11/2017 13:52:10	Logan Rosenmayer	mau2	Electronics	Amazon	B00XTPK8M	Current Meter	1	17.68	https://www.amazon.com/B00XTPK8M	17.68			17.68										
11/11/2017 16:28:29	Richard Mauge	mau2	Body/Chassis	McMaster Carr	8889A72	5/16" Uncoated Cobalt Bl	1	102.84	https://www.mcmaster.com/8889a72	102.84			102.84										
11/12/2017 16:34:38	Mark Galant	mgalt2	Powertrain	Amazon	B09Y4G8FM	Lezer polycarbonate	1	32.82	https://www.amazon.com/B09Y4G8FM	32.82			32.82										
11/12/2017 16:38:19	Mark Galant	mgalt2	Powertrain	PneumaticPlus	POC 5/16-ND (1/4 NPT)	Round Male Push fitting	1	1.88	http://www.pneumaticplus.com	1.88			1.88										
11/12/2017 17:32:37	Mark Galant	mgalt2	Powertrain	Amazon	B00KJDD9YC	5/8" PTFE Ball 1/4" ID 5/16	1	23.66	https://www.amazon.com/B00KJDD9YC	23.66			23.66										
11/16/2017 11:31:43	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	168-A	8 Gallon Hardware for Dur	1	57.98	http://www.fibre-glast.com	57.98			57.98										
11/16/2017 11:32:02	Richard Mauge	mau2	Body/Chassis	Fibre-Glast	168-A	MEK Hardener Dispense	1	85.65	http://www.fibre-glast.com	85.65			85.65										
11/18/2017 19:09:11	Logan Rosenmayer	mau2	Electronics	Amazon	B00D00MOE	4 Pin PWM Fan Splitter	1	11.95	https://www.amazon.com/B00D00MOE	11.95			11.95										
11/24/2017 12:22:14	Zachary Konecki	zkoneck2	Powertrain	Phidgets	TRM4119_0	#02 Chain Sprocket, 12m	3	2.45	https://www.phidgets.com/	7.35			7.35										
11/24/2017 12:23:20	Zachary Konecki	zkoneck2	Powertrain	Phidgets	TRM4119_0	#03 Chain Sprocket, 12m	2	2.8	https://www.phidgets.com/	5.60			5.60										
12/4/2017 1:05:52	Logan Rosenmayer	mau2	Electronics	Amazon	B01EC8TK8S	4mm Banana Connector f	1	16.81	https://www.amazon.com/B01EC8TK8S	16.81			16.81										
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12/4/2017 1:10:09	Logan Rosenmayer	mau2	Electronics	Digkey	W3L0266L00F0EA	0.007ohm resistor	0	27.73	https://www.digkey.com/	0.00			0.00										
12/4/2017 23:21:50	Logan Rosenmayer	mau2	Electronics	Digkey	169-1456-1-ND	Surface mount led	0	13.09	https://www.digkey.com/	0.00			0.00										
12/4/2017 23:27:59	Logan Rosenmayer	mau2	Electronics	Digkey	RH41 89KCTR-ND	1.69K resistor	0	0.0041	https://www.digkey.com/	0.00			0.00										
12/4/2017 23:38:57	Logan Rosenmayer	mau2	Electronics	Digkey	131-100ERTN-ND	Resistor 100 ohm	0	0.0032	https://www.digkey.com/	0.00			0.00										

