

# ADU Future Mobility Challenge

18 March 2023 in UAE

*In partnership with*



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# About Global EEE

- US-based 501(c)(3) **nonprofit** that organizes student competitions **worldwide**
- Mission to develop **better engineers** with expertise in EVs by creating opportunities for engineering students to work on hands-on projects and develop out-of-class skills
- Encourage children to pursue careers in **STEM** fields
- Promote the **3 Es** (education, energy, environment) while emphasizing:
  - **Educational excellence** in science, technology, engineering and mathematics
  - **Science** across a wide-range of disciplines
  - Creative integration of technology and **Hands-on experience** to develop and demonstrate technical and creative abilities
  - Understanding of marketing, **business** and management skills needed to execute large and complex projects
  - **Renewable energy** technologies (electric drive based projects and photovoltaics)
  - **Environmental** consciousness
  - **Safety** in all aspects of the development, testing and racing
  - **Sportsmanship**, friendship and cooperation



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# Prior Competitions by Global EEE in the UAE

7 University competitions in UAE since 2014



Abu Dhabi Solar Challenge  
*Part of United Solar Challenge series*



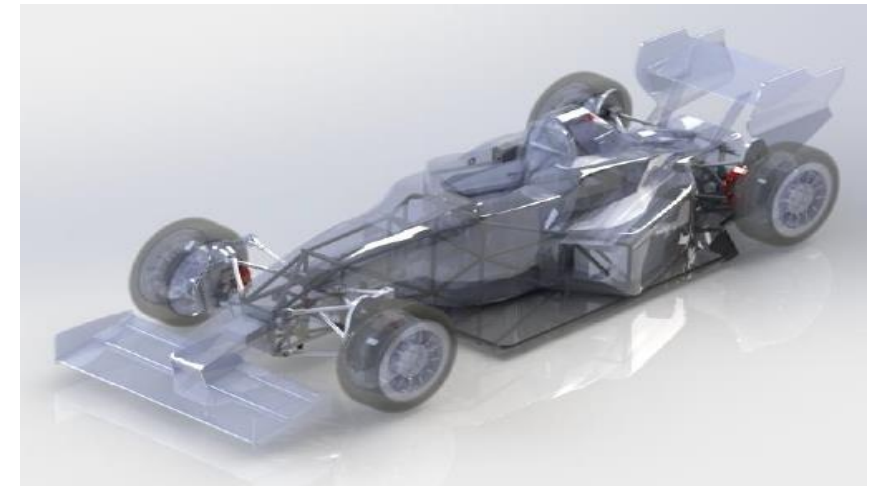
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# Two Competitions on March 18

## Electric Vehicle Grand Prix *High Schools*



## Global Electric Vehicle Challenge *Universities*



# Electric Vehicle Grand Prix

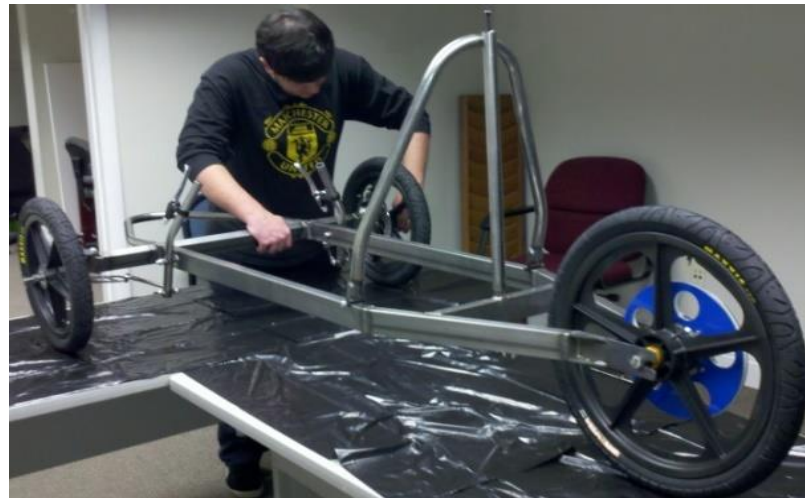


- Competition for high school teams held annually since **2013** in DC, MD, VA and OH
- Students **build** and **race** a single person 3-wheel electric vehicle
- New teams provided a **free kit** that contains all the parts needed to build the car
- **Online instructions** portal and **technical support** by Global EEE staff and volunteers
- Kits can be **modified** within rules and regulations to encourage innovation/learning
- Multiple **awards** given in various categories
- During the race - **reliability**/strategy/understanding batteries/driver behavior are key
- Project has several out-of-class learning elements
  - ✓ Strong emphasis on **STEM** principals
  - ✓ **Soft skills**: team work, critical thinking, leadership, innovation, communication
  - ✓ Great topic for **university application essays**
  - ✓ Learn to use **tools** (basic tools, drilling, measuring, cutting, multimeter)

# Kit components

- Teams are provided **complete starter kits** that include all parts
  - Ease of entry for new teams
  - Balanced competition
- Recommended **2-3 months** to build cars
- Global EEE provides detailed **instructions** and **mentorship** support
- Cars go through **safety** and **technical** inspection at competition
- Regulations are **very strict** with strong emphasis on safety

- All mechanical parts
- All electrical parts
- Steel Chassis
- FRP outer body
- Acrylic canopy
- Wheels, brakes, steering



Regulations encourage innovation, 3D printing, and changes to the basic kit design.



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# Car Design Safety

MINIMUM Car Design Safety Requirements must be met

- Race rules specific about safety requirements
  - Chassis, roll bar, bumper
  - Outer body protection
  - Five-point seat belt
  - Stopping distance
  - Head behind knees seating
  - Rearview mirror
  - Electrical disconnect and labeling
  - Driver egress
- *Cars are inspected prior to, and during the race*
- Any changes made to the kits need to be reported and inspected



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# Take-aways & Awards

- Event is **free** to attend and **open to the public**
- **Wide media coverage** before and during the event
- Challenges and excitement
- Competition against their peers
- Learn to think on their feet and **react** quickly
- **Active** participation in a competitive situation
- Opportunity to develop their **soft skills** including:
  - Team work
  - Time management
  - Leadership
  - Innovation
  - Self-confidence
  - Critical thinking
  - Marketing
  - Fundraising



## Top three finishers in addition to the following awards:

- Fastest qualifying time
- Technical innovation
- Women in science and engineering (WISE) award (individual or to team)
- Best team and event promotion (website, social media, etc)
- Best use of 3D printing
- Safety
- Car Graphics
- Workmanship
- Sportsmanship
- Best photo
- Best video



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# Electric Vehicle Grand Prix Abu Dhabi: Location & Schedule

Al Hudayriyat Island, Abu Dhabi, UAE

<https://goo.gl/maps/2zLZWZaJz42v9n9VA>



## Schedule of the Event

Teams check in	8:30 a.m.
Technical Inspection of cars/drivers	9:00 AM - 11:30 AM
Track open for practice and qualifying	9:30 AM - 11:30 PM
Lunch and EVGP battery charging	11:30 PM - 1:15 PM
Teams and Officials line up for photo	1:15 PM - 1:45 PM
EVGP Heat 1 (30 minutes)	2:00 PM
EVGP Heat 2 (30 minutes)	3:00 PM
Awards Ceremony	5:00 PM - 7:00 PM

# Participating High Schools in the UAE EVGP

## UAE Electric Vehicle Grand Prix Final Team Registration

### Abu Dhabi

1. ABC Private School
2. Al Yasat Private School
3. Emirates National School - Boys
4. Emirates National School - Girls
5. ADVETI - Voc. Education Dev. Centre
6. Al Basma British School

### Al Ain

7. International School Of Choueifat

### Al Ruwais

8. SABIS International School

### Dubai

9. GEMS Winchester School
10. Al Ittihad Private School Jumeira
11. Ambassador School Dubai

### USA

12. Team Maryland
13. Team Virginia
14. Team Washington DC

### Italy

15. Istituto Di Istruzione  
Superiore "Luigi Di  
Savoia" Chiete

# Additional Information

- Videos of previous Global EEE events in UAE:  
<https://www.youtube.com/watch?v=fDvhRptsjPw>  
<https://www.youtube.com/watch?v=CBlc70HXN5s>  
<https://www.youtube.com/watch?v=e2XM5-Gd5bw&t=3s>
- Video of previous US DCEVGP event: <https://www.youtube.com/watch?v=YTIUX7JTKqg>
- Email [competitions@GlobalEEE.org](mailto:competitions@GlobalEEE.org) for additional information