



TÜBİTAK

TÜBİTAK EFFICIENCY CHALLENGE ELECTRIC VEHICLE 2017
PENALTY LIST

	VIOLATION	ELECTROMOBILE	HYDROMOBILE
Technical Design Report	Getting less than 100 points from the technical design report	1 lap	1 lap
Being Domestic	For every missing /not applied mandatory domestic sub-part	2 laps	2 laps
Vehicle Measurements	Do not comply with measurements specified in the rules	violated cm x 10 Wh	violated cm x 10 Wh
	The height of the vehicle from the ground must be a minimum of 10 cm.	violated cm x 100 Wh	violated cm x 100 Wh
	The height of the vehicle longer than 1.25 times the length of the vehicle	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	The distance between wheels in the same axle less than half the width of the vehicle	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Cockpit	Not enough space for driver, not safe	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Vehicle Body	From the top view of the car, there are open regions (holes) on the vehicle body and/or the wheels are totally outside of the vehicle body.	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Fragile windows / sharp ends / protruding edges etc.	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Door	50 cm x 80 cm frame can't pass through the door	1 lap	1 lap
	Doors cannot open in case of turnover (driver cannot evacuate)	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Door Mechanism	Does not comply with the rules	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Cannot be opened from outside/unintended opening of the doors during the race	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Wheel width	Less than 70 mm	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Brake system	Not dual-circuit or hydraulic	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Safety Belts	Not fixed at four or five points or not compatible with FIA standards	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Passenger seat belt missing or not compatible with FIA standards	1 lap	1 lap
Driver outfit and equipment	Not compatible with the rules	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Safe, but not compatible with FIA standards	1 lap	1 lap
Fire extinguishers	Less than 2 kg	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Roll bars Roll cages	Missing any roll bars	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Yield strength lower than 200 Mpa	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Roll bar not perpendicular to bottom of the vehicle	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	The front roll bar doesn't start at least 3 cm above the steering wheel	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	The rear roll bar doesn't start at least 5 cm above the helmet	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Profiles do not comply with the rules	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Roll cage not independent from the chassis, and the vehicle is not safe.	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Roll cage not independent from the chassis, but the vehicle is safe.	1 lap	1 lap
Rearview mirrors	Welding/bolts not used according to specified rules.	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Do not exist / Only one rearview mirror	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Reflection area less than 50 cm ²	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Driver cannot see the text shown	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Tow bar	No towing rings	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Internal diameter less than 20 mm/not made of steel	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Windscreen	Material does not comply with the rules, not transparent	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Wiper	Does not exist	2 laps	2 laps
	Exists but not working properly	1 lap	1 lap
Seat	Makes an angle greater than 30 degrees with the normal axis of the chassis	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Only one seat, passenger seat missing	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Does not comply with FIA standards and not safe for racing	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Does not comply with FIA standards BUT safe for racing	1 lap per seat	1 lap per seat
Steering Wheel	Not closed form	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Horn	Doesn't sound 3 second continuously	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Speedometer	Does not exist/not functional	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
	Phone or smart devices used	2 laps	2 laps
Break lights	Do not exist/not seen from a distance of 25 m	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Headlights	Do not exist	2 laps	2 laps
	Exist but not seen from a distance of 25 m	1 lap	1 lap
Flag	Smaller than 20 cm x 30 cm/can't be attached to the vehicle properly	DISQUALIFICATION DUE TO VIOLATION OF RULE	DISQUALIFICATION DUE TO VIOLATION OF RULE
Electrical cable connections	Bare conductors, no proper insulation	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Emergency stop button	Does not exist/ not functional	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Overcurrent breaker	Does not exist / design does not comply with the rules	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Motor nameplate	Does not exist	1 lap	1 lap
Battery	Missing	DISQUALIFICATION DUE TO VIOLATION OF RULE	No Penalty
Battery management system	Missing	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Battery temperature measurement	No flasher, buzzer and temperature indicator (except lead-acid batteries)	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Battery datasheet	Not presented during technical inspections / not suitable	1 lap	1 lap
Battery box	Missing, material and/or design is not comply with the rules	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Fixing battery box	Not fixed, diameter of bolts smaller than 8 mm	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Safety wall	Protective shield not exist between driver seat and battery pack	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Joule meter connection	Extra battery apart from the main battery package	(Battery energy capacity) Wh	(Battery energy capacity) Wh
Joule meter	Voltage levels of the battery are out of joulemeter specifications	DISQUALIFICATION DUE TO VIOLATION OF RULE	DISQUALIFICATION DUE TO VIOLATION OF RULE
Embedded recharging unit	No electrical isolation between grid and battery group	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Fuel cell	Missing/not functional/higher than 3 kW		DISQUALIFICATION DUE TO VIOLATION OF RULE
Super capacitor	Higher than 110 kJ		DISQUALIFICATION DUE TO VIOLATION OF RULE
Pressure safety valve	Missing/does not comply with the rules		DISQUALIFICATION DUE TO VIOLATION OF RULE
Gas flow safety valve	Missing/does not comply with the rules		DISQUALIFICATION DUE TO VIOLATION OF RULE
Thermocouple	Missing/does not comply with the rules		DISQUALIFICATION DUE TO VIOLATION OF RULE
Flasher	Missing/does not comply with the rules		DISQUALIFICATION DUE TO VIOLATION OF RULE
Temperature indicator	Not connected to flasher		DISQUALIFICATION DUE TO VIOLATION OF RULE
	Not functional /sound level low		DISQUALIFICATION DUE TO VIOLATION OF RULE
Metal hydride cylinders	In the cockpit /does not comply with the rules		DISQUALIFICATION DUE TO VIOLATION OF RULE
	Protective shield does not exist		DISQUALIFICATION DUE TO VIOLATION OF RULE
Hydrogen line	Not placed properly		DISQUALIFICATION DUE TO VIOLATION OF RULE
	In the cockpit /does not comply with the rules		DISQUALIFICATION DUE TO VIOLATION OF RULE
Globe valve	Design does not comply with the rules		DISQUALIFICATION DUE TO VIOLATION OF RULE
	Does not exist / does not comply with the rules		DISQUALIFICATION DUE TO VIOLATION OF RULE
Hydrogen sensor	Material does not comply with the rules		DISQUALIFICATION DUE TO VIOLATION OF RULE
Emergency Evacuation (driver and reserve driver)	Longer than 20 seconds/help required	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY
Brake test	Not functional	DISQUALIFICATION DUE TO SAFETY	DISQUALIFICATION DUE TO SAFETY