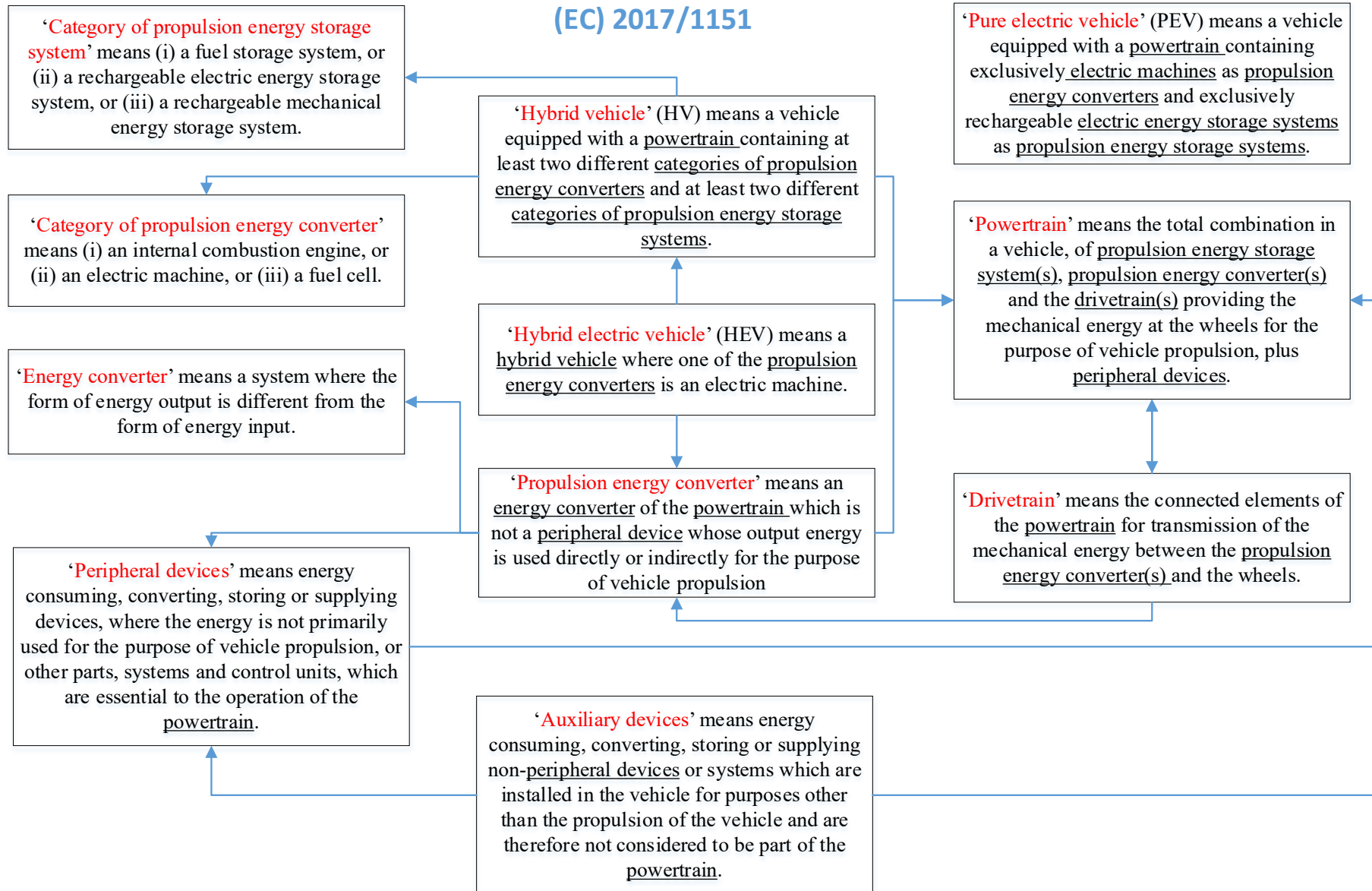


2017/1151	Gtr 15 Am. 5	MR2	ECE-TRANS-WP29-GRPE-2019-05e
‘ Category of propulsion energy storage system ’ means (i) a fuel storage system, or (ii) a rechargeable electric energy storage system, or (iii) a rechargeable mechanical energy storage system.	‘Category of propulsion energy storage system’ means (i) a fuel storage system, or (ii) a rechargeable electric energy storage system, or (iii) a rechargeable mechanical energy storage system.	‘Category of propulsion energy storage system’ means (i) a fuel storage system, or (ii) a rechargeable electric energy storage system, or (iii) a rechargeable mechanical energy storage system.	
‘ Category of propulsion energy converter ’ means (i) an internal combustion engine, or (ii) an electric machine, or (iii) a fuel cell.	‘Category of propulsion energy converter’ means (i) an internal combustion engine, or (ii) an electric machine, or (iii) a fuel cell.	‘Category of propulsion energy converter’ means (i) an internal combustion engine, or (ii) an electric machine, or (iii) a fuel cell.	
‘ Energy converter ’ means a system where the form of energy output is different from the form of energy input.	‘Energy converter’ means a system where the form of energy output is different from the form of energy input.	‘Energy converter’ means a system where the form of energy output is different from the form of energy input.	
‘ Hybrid vehicle ’ (HV) means a vehicle equipped with a <u>powertrain</u> containing at least two different <u>categories of propulsion energy converters</u> and at least two different <u>categories of propulsion energy storage systems</u> .	‘Hybrid vehicle’ (HV) means a vehicle equipped with a powertrain containing at least two different categories of propulsion energy converters and at least two different categories of propulsion energy storage systems.	‘Hybrid vehicle’ means a vehicle equipped with a powertrain containing at least two different categories of propulsion energy converters and at least two different categories of propulsion energy storage systems.	
‘ Hybrid electric vehicle ’ (HEV) means a <u>hybrid vehicle</u> where one of the <u>propulsion energy converters</u> is an electric machine.	‘Hybrid electric vehicle’ (HEV) means a hybrid vehicle where one of the propulsion energy converters is an electric machine.	‘Hybrid electric vehicle’ means a hybrid vehicle equipped with a powertrain containing at least one electric motor or electric motor-generator and at least one internal combustion engine as propulsion energy converter.	

2017/1151	Gtr 15 Am. 5	MR2	ECE-TRANS-WP29-GRPE-2019-05e
<p>‘Propulsion energy converter’ means an <u>energy converter</u> of the <u>powertrain</u> which is not a peripheral device whose output energy is used directly or indirectly for the purpose of vehicle propulsion</p>	<p>‘Propulsion energy converter’ means an energy converter of the powertrain which is not a peripheral device whose output energy is used directly or indirectly for the purpose of vehicle propulsion.</p>	<p>‘Propulsion energy converter’ means an energy converter of the powertrain, whose output energy is used directly or indirectly for the purpose of vehicle propulsion.</p>	
<p>‘Peripheral devices’ means energy consuming, converting, storing or supplying devices, where the energy is not primarily used for the purpose of vehicle propulsion, or other parts, systems and control units, which are essential to the operation of the <u>powertrain</u>.</p>	<p>‘Peripheral devices’ means any energy consuming, converting, storing or supplying devices, where the energy is not directly or indirectly used for the purpose of vehicle propulsion but which are essential to the operation of the powertrain and are therefore considered to be part of the powertrain.</p>	<p>‘Peripheral devices’ means energy consuming, converting, storing or supplying devices, where the energy is not primarily used for the purpose of vehicle propulsion, or other parts, systems and control units, which are essential to the operation of the powertrain.</p>	<p>‘Peripheral devices’ means any energy consuming, converting, storing or supplying devices, where the energy is not primarily directly or indirectly used for the purpose of vehicle propulsion, or other parts, systems and control units, but which are essential to the operation of the powertrain and are therefore considered to be part of the powertrain.</p>
<p>‘Drivetrain’ means the connected elements of the <u>powertrain</u> for transmission of the mechanical energy between the <u>propulsion energy converter(s)</u> and the wheels.</p>	<p>‘Drivetrain’ means the connected elements of the powertrain for transmission of the mechanical energy between the propulsion energy converter(s) and the wheels.</p>	<p>‘Drivetrain’ means the connected elements of the powertrain for transmission of the mechanical energy between the propulsion energy converter(s) and the wheels.</p>	
<p>‘Powertrain’ means the total combination in a vehicle, of <u>propulsion energy storage system(s)</u>, <u>propulsion energy converter(s)</u> and the <u>drivetrain(s)</u> providing the mechanical energy at the wheels for the purpose of vehicle propulsion, plus <u>peripheral devices</u>.</p>	<p>‘Powertrain’ means the total combination in a vehicle of propulsion energy storage system(s), propulsion energy converter(s) and the drivetrain(s) providing the mechanical energy at the wheels for the purpose of vehicle propulsion, plus peripheral devices.</p>	<p>‘Powertrain’ means the total combination in a vehicle, of propulsion energy storage system(s), propulsion energy converter(s), the drivetrain(s), providing the mechanical energy at the wheels for the purpose of vehicle propulsion, plus peripheral devices.</p>	

All definitions taken from (EC) 2017/1151



Starting point for further discussion:

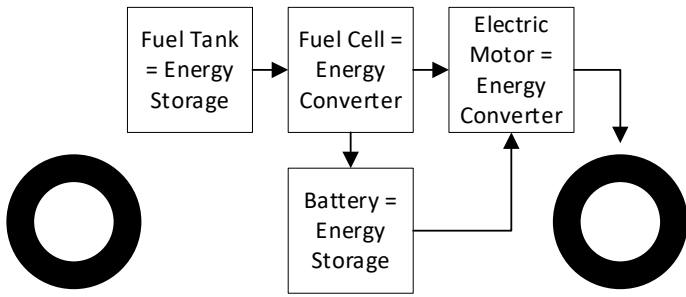
'Peripheral devices' means any energy consuming, converting, storing or supplying devices, ~~where the energy is not primarily~~ which do not directly or indirectly **apply torque to the drivetrain** ~~used for the purpose of vehicle propulsion, or other parts, systems and control units,~~ but which are essential to the operation of the powertrain and are therefore considered to be part of the powertrain.

Or

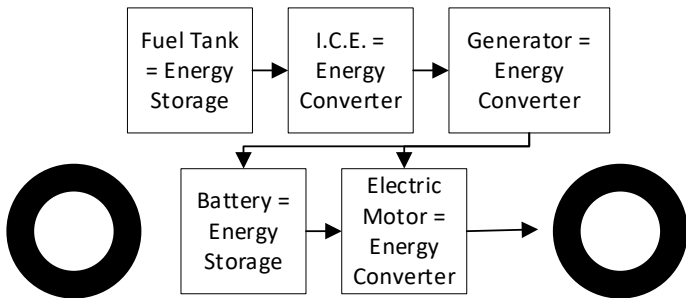
'Propulsion energy converter' means an energy converter of the powertrain, whose output energy is ~~used~~ **applies torque** directly or indirectly **to the drivetrain** for the purpose of vehicle propulsion.

Or

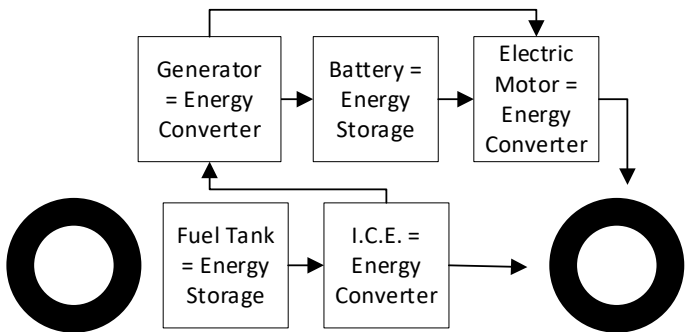
'Propulsion energy converter' means an energy converter of the powertrain, whose output energy is used by another energy converter for the purpose of vehicle propulsion or which **applies torque** directly ~~or indirectly~~ **to the drivetrain** for the purpose of vehicle propulsion.



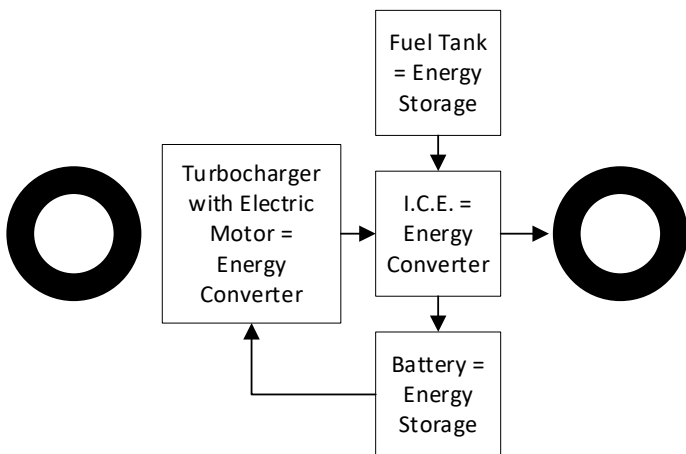
Fuel Cell Hybrid
Electric Vehicle



Serial Hybrid
Electric Vehicle



Parallel Hybrid
Electric Vehicle



Internal Combustion
Engined Vehicle with
electrically assisted
Turbo