**Why, when launched by an electric aid,
a class 2 hang glider
should administratively remain classified
as a hang glider**

Class 2 hang gliders

Beside the Paragliders (FAI class 3), and Hang gliders (FAI class 1 & 5),
The FAI class 2 hang gliders are another category in the Free Flight world.

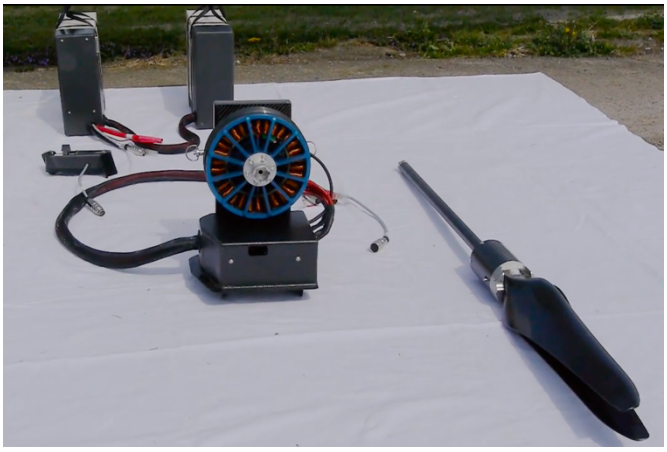
The more widely flying class 2 hang gliders in the world are the Swiftlight:

and the Archeopteryx:

Since recently, their use is increasing, thanks to electric launch aids.

This equipment, that can be installed or removed, is made of a battery, an engine, a power controller, and a folding propeller.

Here is a video showing how it is operated: https://vimeo.com/92601221



The electric launch aid has only a few minutes endurance, which is enough to reach the first thermal or ridge ;
it replaces aero-towing, or winch launch, which are not easy to operate,
or foot launch where safety margins are not as high as for paraglider or hang glider pilots.

Take off mode	required external resources	Safety margin
Electric	Nothing	Very high
Bungee	Bungee + ground staff	high
Aero-tow	UL trike + tow pilot	medium
winch	Winch + ground staff	Medium low
foot	take off reachable with trailer + driver	low

Once the electric launch aid is switched off, the propeller folds back, generating almost no more drag, and the class 2 glider then behaves as if the pilot had taken off running downhill, or aero-towed by an ultra-light, or launched by a winch.

There are many benefits generated by the electric launch aid:

- Easy to use
- Reliable
- Almost no maintenance
- It improves the already very high safety level of 3-axis hang gliders (take-off, landing out)
- Perfectly ecological (zero CO_2)
- Free of take-off constraints
- No help needed

Consequently, pilots no longer want to buy Class 2 hang gliders without an electric launch aid

Class 2 pilots training

A pilot who knows how to fly a class 2 hang glider, will immediately know how to take off with the same aircraft equipped with an electric launch aid:
he just needs to read the user manual.

With the exception of the take-off, and the short trip to the first thermal, a class 2 hang glider equipped with an electric launch aid is flying engine off;
the pilot **must be proficient** in flying a **3 axes controlled hang glider**.

A motorized ultralight training course, does not prepare him for that.

But in some countries a motorized ultralight pilot license is required to fly an electric launched Class 2 hang glider

On behalf it has an engine,

- despite it is an **extreme low power engine**,
- despite the small battery provides only **a few minutes endurance**,

the **administrations** of those countries, did classified it, in the same category as any much more powerfull, heavier, and faster flying motorized ultralight aircraft.
Consequently, the Class 2 hang glider equipped with an electric launch aid **must** comply with many rules: registration, registration marks, airworthiness, etc,
and the pilot **must** have the national motorized ultralight pilot license.

To fly an electric launched Class 2 hang glider in such a country, a pilot must:

1) follow a motorized ultralight training course,
2) pass the examination to get the motorized ultralight pilot license,

which will **cost** him a lot of **time**, and **money**, but will absolutely **not help him to correctly fly** his glider.

And a foreign pilot, cannot not fly in such a country, as his electric launched Class 2 hang glider is not registered there, and he doesn't have the national pilot license.

The free travel of the pilots flying an electric launched Class 2 hang glider in Europe is therefore not possible.

Except in some countries

In the national rules of **Switzerland** and **Austria**, an electric launched Class 2 hang glider is considered as a hang glider.

Here the swiss rule :

*3. Abschnitt: **Hängegleiter***
Art. 6Begriff
Hängegleiter sind:
a. alle zum Fussstart geeigneten Fluggeräte, namentlich Deltas und Gleitschirme, soweit sie unmittelbar nach dem Start zur Ausführung von Gleit- oder Segelflügen eingesetzt werden;
*b. zum Fussstart geeignete oder mit einem Fahrgestell ausgerüstete Deltas und Gleitschirme **mit elektrischem Antrieb**, soweit sie nach dem Start und einer nachfolgenden Flugphase zur Ausführung von Gleit- oder Segelflügen eingesetzt werden können.*

*Section 3 **Planeurs de pente***
Art. 6 Définition
On entend par planeurs de pente:
a. tous les appareils volants qui se prêtent au départ au pas de course, notamment les ailes delta et les parapentes, dans la mesure où, immédiatement après le départ, ils sont utilisés pour effectuer des vols de pente ou des vols planés;
*b. les ailes delta et les parapentes **à propulsion électrique** qui se prêtent au départ au pas de course ou qui sont dotés d'un train d'atterrissage, dans la mesure où, après le départ et une phase de vol consécutive à celui-ci, ils peuvent être utilisés pour effectuer des vols de pente ou des vols planés.*

And in the **USA**, the Federal Aviation Rules **FAR103** provides a completely **deregulated** status to the hang gliders weather they are equipped with an electric launch aid or not:
No national pilot license,
No registration,
No registration marks,
Airworthiness not controlled by the state

As a result, the major part of the Class 2 hang glider production goes to these countries, where the use of the electric take-off device does not exclude them from the hang glider status

International Aeronautical Federation

At the **FAI**, it has been well understood that Class 2 would die out, if the rules were not adapted to the irresistible tendency to equip them with an electric launch aid.
The FAI Hang gliding and Paragliding Commission (**CIVL**) recently modified the sporting code for this purpose:
FAI Sporting Code, Common Section 7
*1.4.2. Wheels and other **Launch Aids***
***Class 2** hang gliders fitted with an **electrical auxiliary motor** may be permitted by the organisers of Second Category events, provided it shall be used solely for launching the hang glider, in order to reach the height and vicinity that an aerotow aircraft would typically release the pilot. Pilots must carry equipment that accurately verifies on the tracklog any usage of the motor.*

Ultralight Motorized Aircraft: the wrong status

Electric launched Hang gliders are technically very different from the Ultralight Motorized Aircrafts:

Technical data	Electric Class 2 HG	3 axes controlled UL		
		Single seat	Twin seat	
Max mass incl. parachute	200	345	525	Kg
Stall speed	39	70	70	Km/h
Min. kinetic energy	**12**	**65**	**99**	kJoules
Never exceed speed	130	*+/- 300*	*+/- 300*	Km/h
Max. kinetic energy	**130**	**+/- 1 198**	**+/- 1 823**	kJoules
Engine power	**12**	**65**	**80**	Kw
Endurance max cont. power	**A few min**	**hours**		

Half mass, half stall speed, less than half max speed, one fifth power, one fifth minimum kinetic energy, one tenth of maximum kinetic energy:
An electric launched class 2 hang glider definitely cannot be set in the same category as the 3 axes controlled motorized ultralights.

And about the endurance:
1 Litre of gazoline is equivalent to 9.4 kWh energy; the battery of the electric launch aid (60Ah) represents 3.1 kWh, equivalent to 0.33 litres of gazoline.

We are in another world than that of the motorized aircrafts; ours is the **Free Flight** world.

Electric bicycles are not considered as **motorcycles**.

Electric launched Class 2 Hang gliders should not be considered as **ultralight motorized aircrafts**.

The use of **Class 2 hang gliders** **may** increase, thanks to the advent of **electric launch aids** that
- **simplify** the access to its practice,
- and improve the level of **safety**;

but,

as long as the use of an electric launch aid makes them being considered by the **national Administrations** as **motorized ultralights**,

this discipline of aerial sports, *however the most* ***ecological***,

will not develop significantly.