

Plasmiamo e “solidifichiamo” le competenze in pressocolata



Gli impieghi di getti pressocolati nell'industria del futuro

La pressocolata di leghe low carbon foot-print : prodotti, processi, produzione e qualità di componentistica per mezzi di trasporto del prossimo futuro

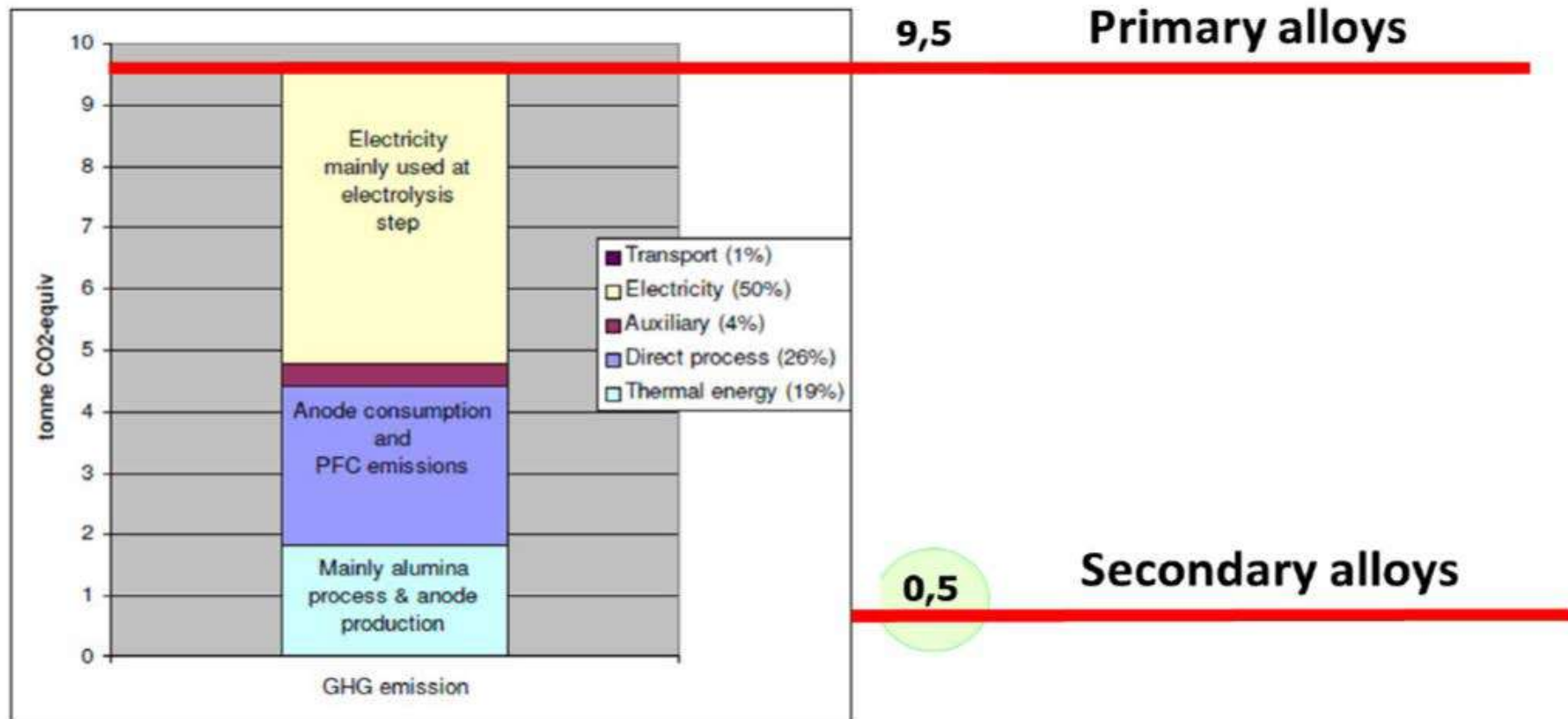
Claudio Mus , Technical - R&D Director , Endurance Overseas



CONFRONTO LEGHE PRIMARIE e SECONDARIE

Per produrre 1 kg di alluminio primario occorrono **15 kWh** di energia elettrica

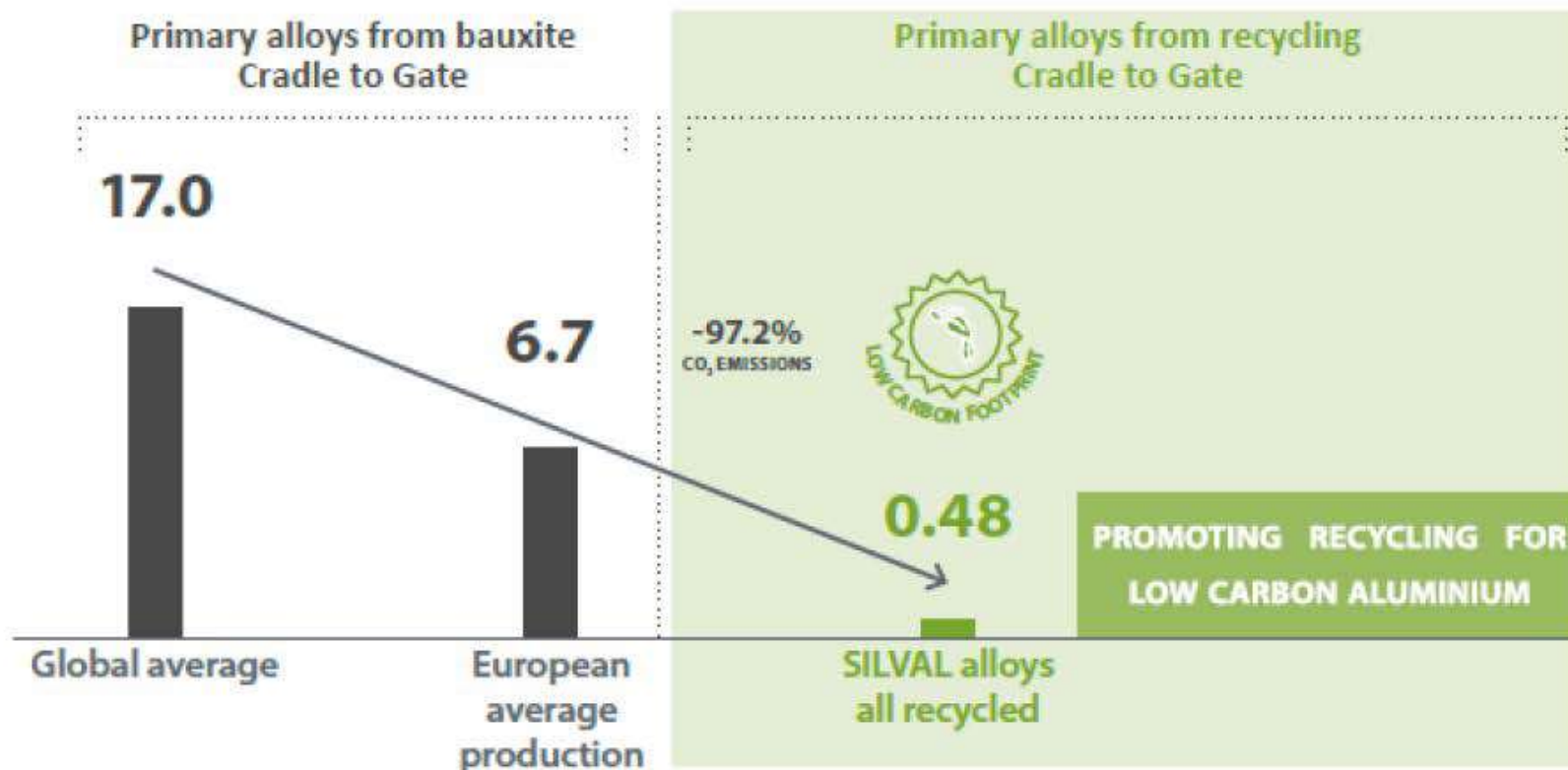
Per produrre 1 kg di alluminio secondario = riciclato **.8 kWh** (- 95% circa)



LEGHE LCFP - Low Carbon Foot Print

CARBON FOOTPRINT OF DIFFERENT PRIMARY ALUMINIUM ALLOYS PRODUCTIONS*

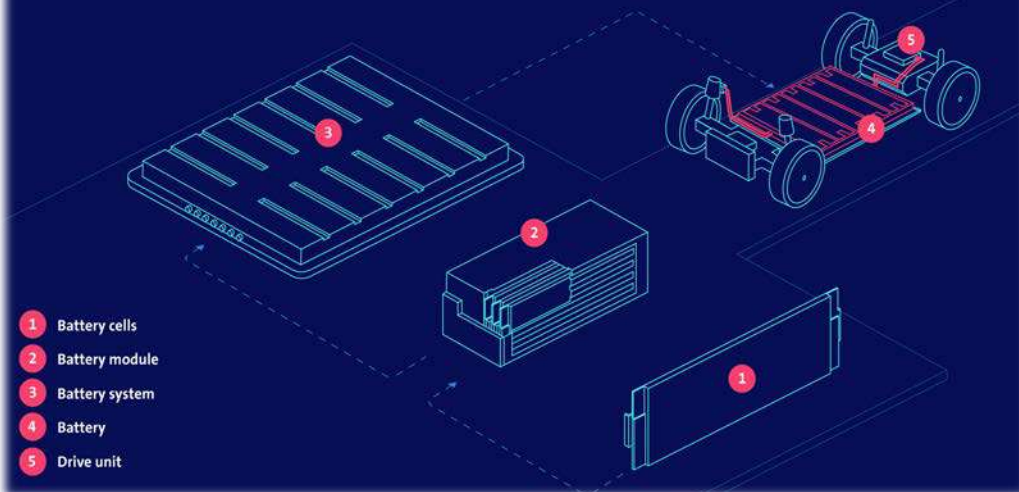
(kg CO₂eq/kg Al)



COME EVOLVE LA MOBILITA' del PROSSIMO FUTURO

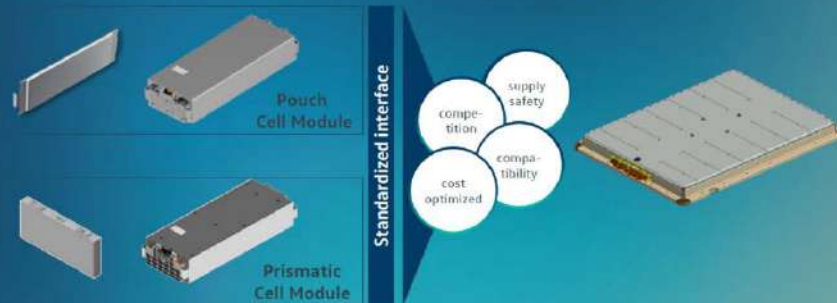
Electric-platform battery system

MEB – The modular electric drive matrix



Automotive – EV new platforms : ready for flexibility !

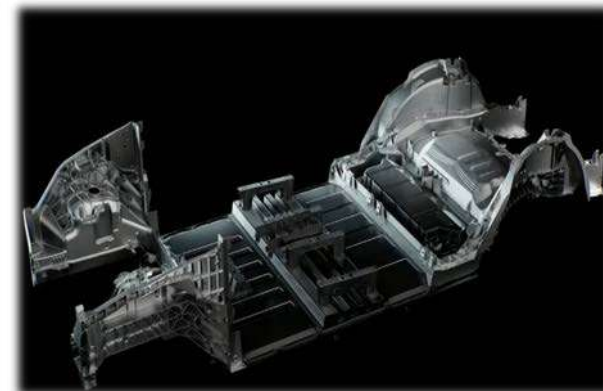
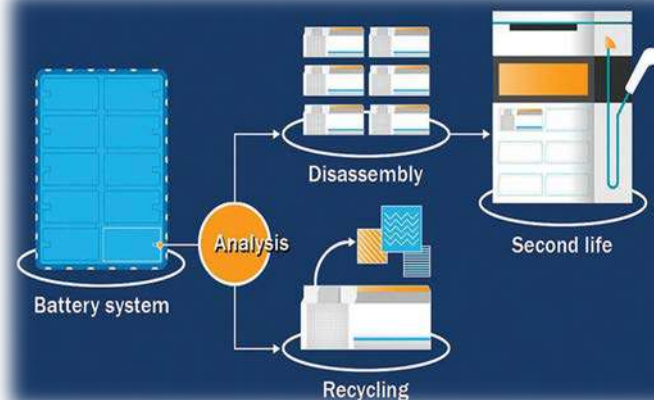
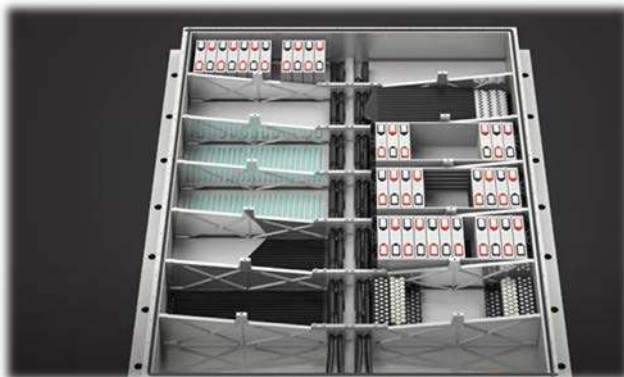
The MEB-Platform
Flexible for different cell types



The cell module is the uniform component of the battery, suitable for different cell formats

LA PRESSOCOLATA PUO' CONTRIBUIRE ALLA SOSTENIBILITA'

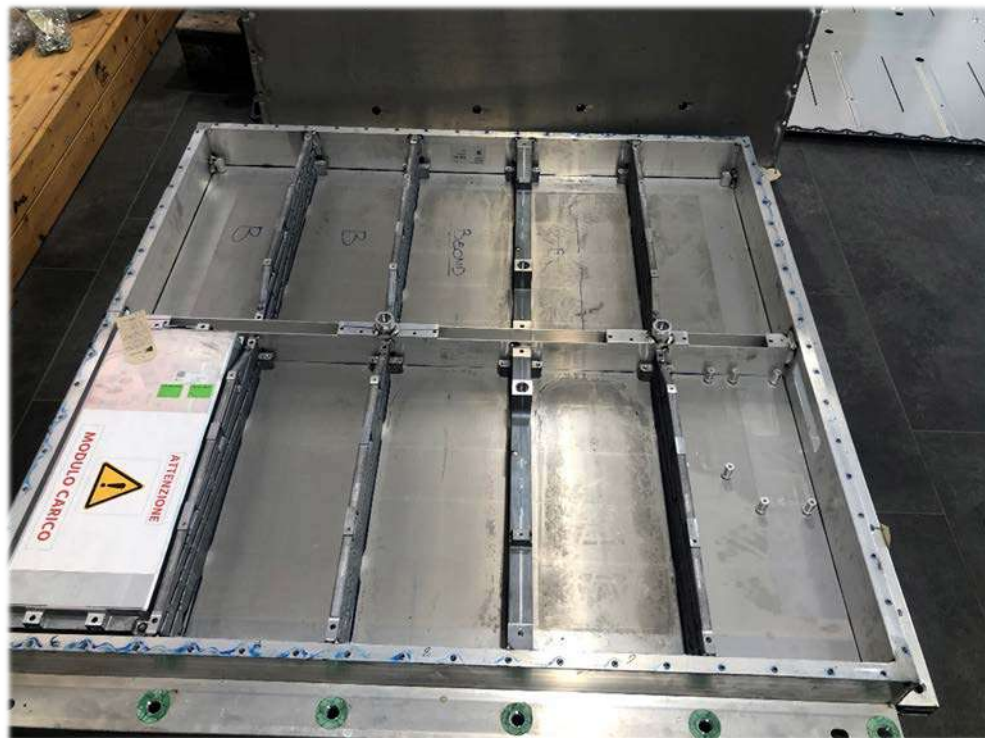
Aluminum HPDC for an easy assembling / dis-assembling / repurposing & recycling process



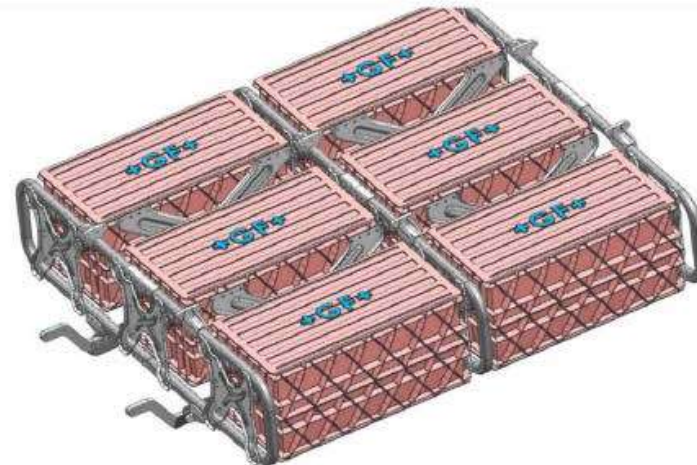
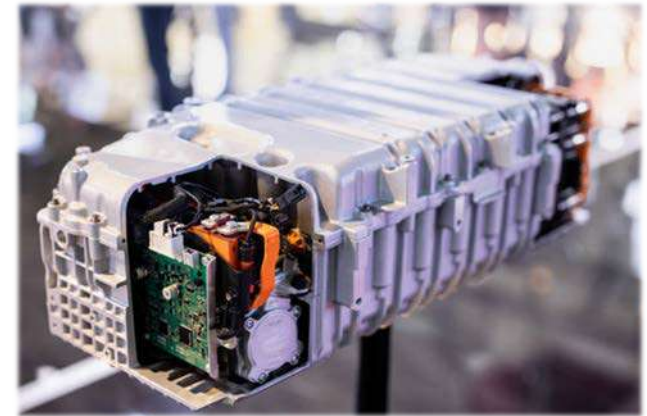
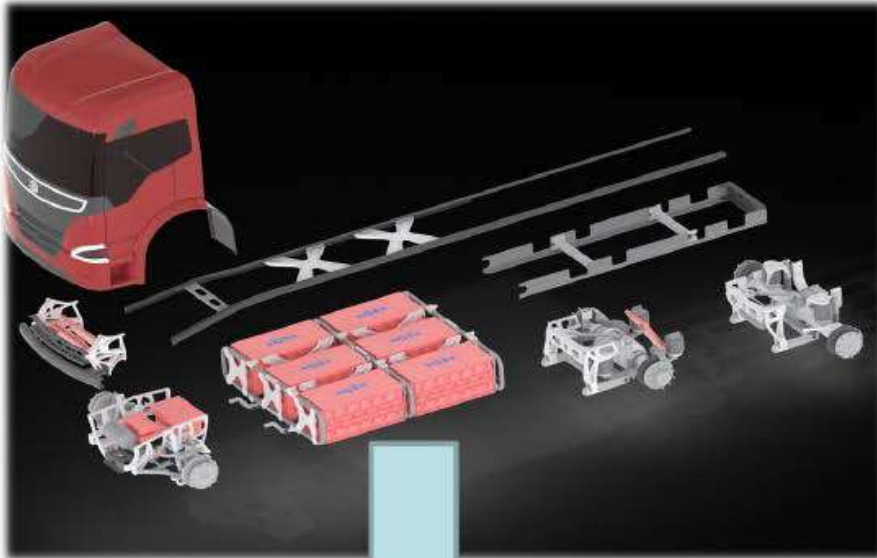
**Secondary Aluminum
battery housing
recovery**



APPLICAZIONI DELLA PRESSOCOLATA : SISTEMI BATTERIE EV



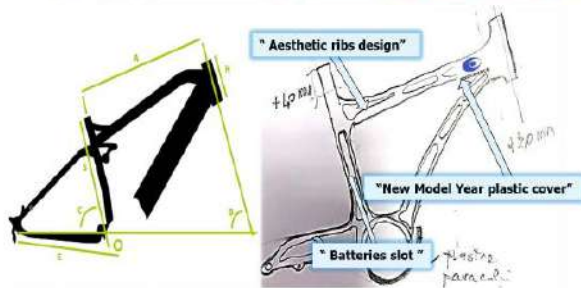
Trucks – Batteries can find more room : modularity



Last mile mobility : E - fast evolution



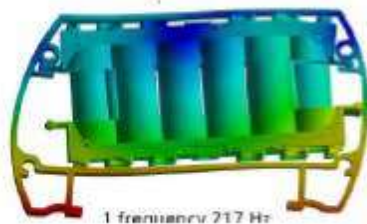
ENDURANCE
Complete Solutions



INCLUDES FUNCTIONAL & AESTHETIC FEATURES



Last mile mobility : innovative designs are possible



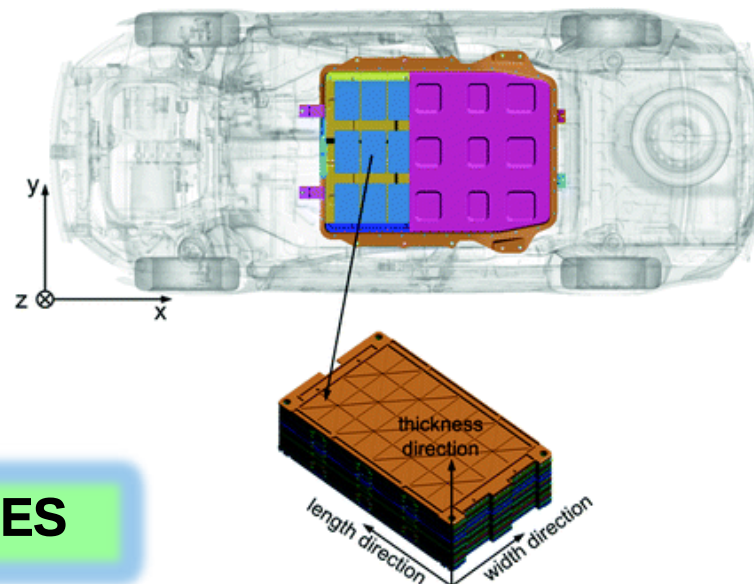
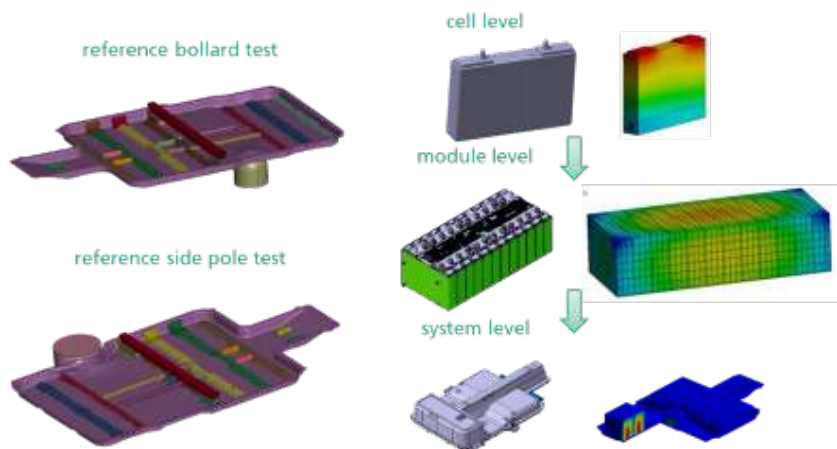
Last mile mobility : innovative designs are reality



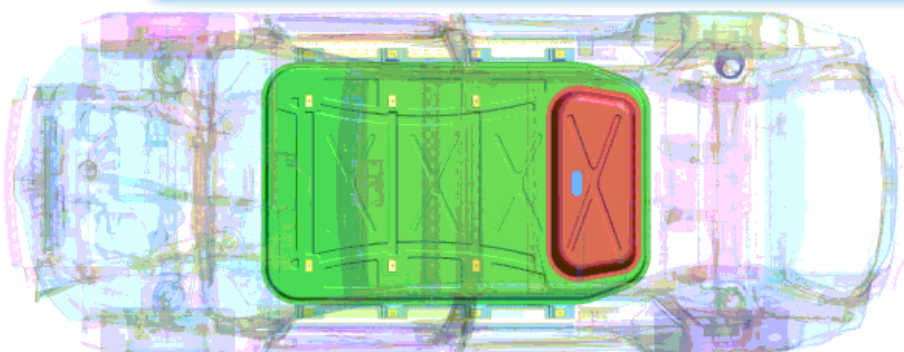
Sports & leisure : innovative products will come !



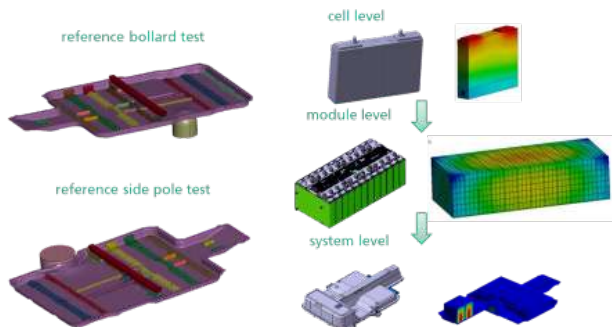
CRITERI DI PROGETTAZIONE MODULI e SISTEMI BATTERIE



CRASH PERFORMANCES

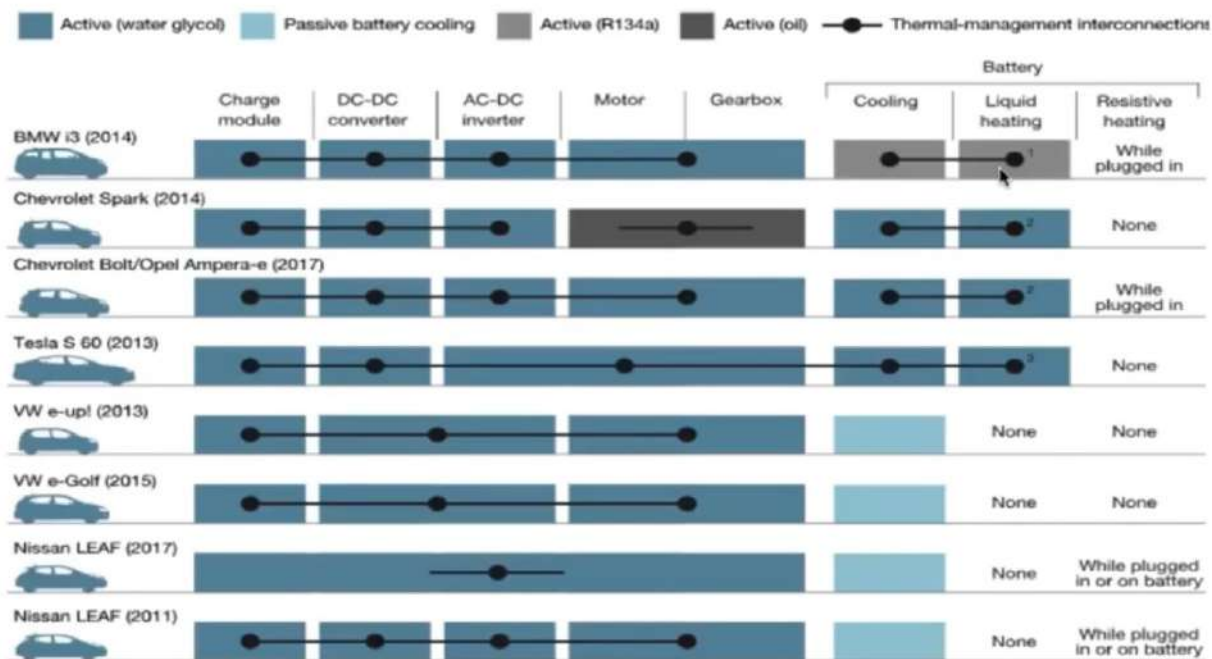


CRITERI DI PROGETTAZIONE SISTEMI e MODULI BATTERIE



GESTIONE TERMICA

Electric-vehicle manufacturers' powertrain and battery thermal management

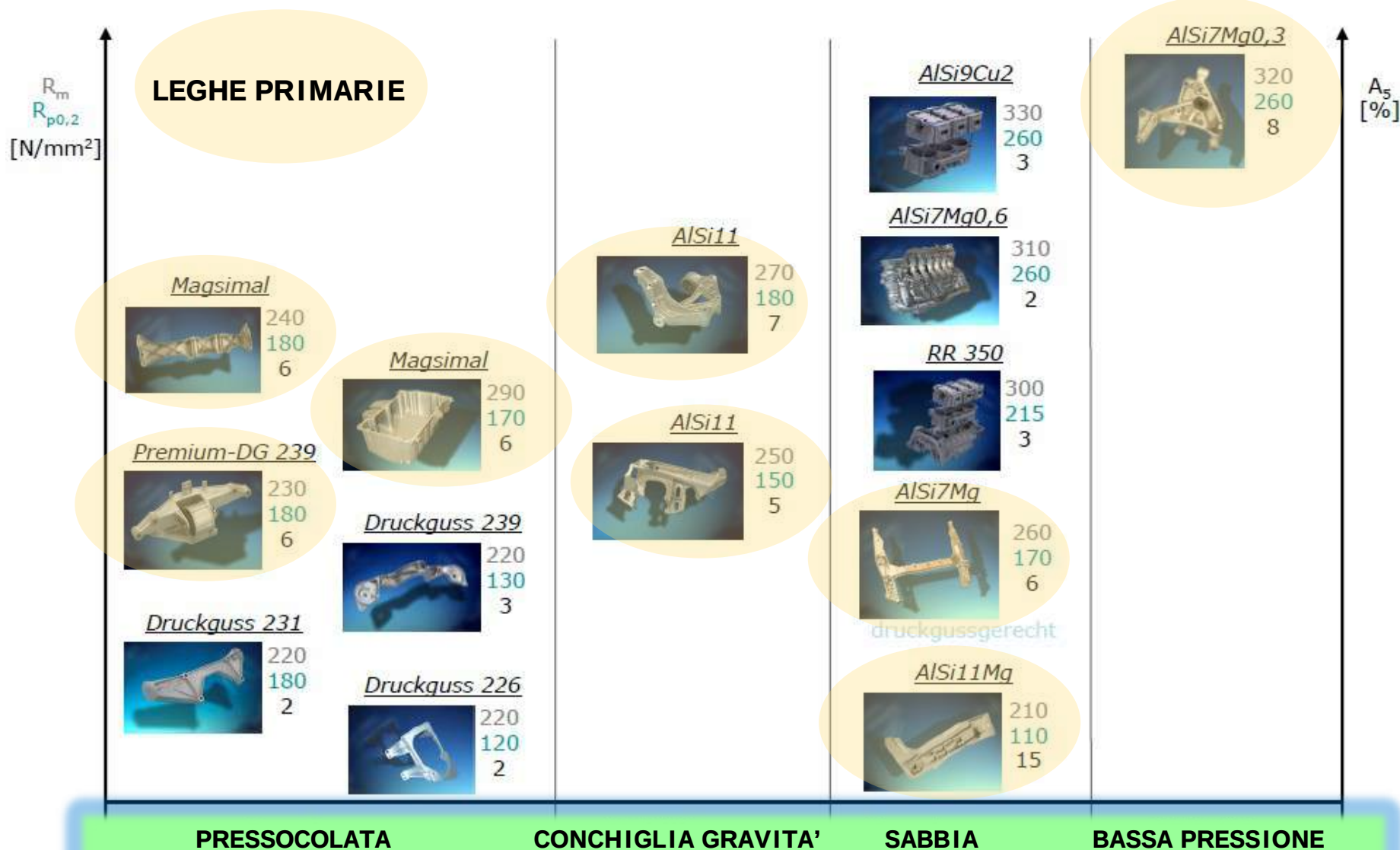


¹ Combined heating/cooling with AC.

² Stand-alone battery heating/cooling.

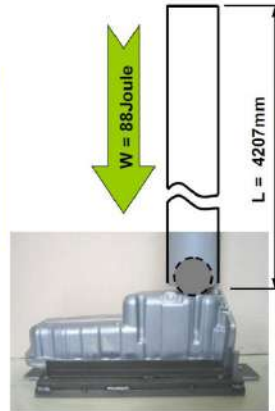
³ Combined heating/cooling with powertrain.

TECNOLOGIE & LEGHE DI FONDERIA A CONFRONTO



Steinschlagfestigkeit : 88J R40

- Stahlkugel: D80
- Fallhöhe: 4,2m
- Aufprallarbeit: 88J



CRASH PERFORMANCES

Legierung AlSi9Cu3 (DIN 226)



LEGHE SECONDARIE

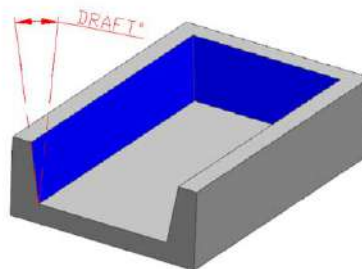
Legierung Aural-5® (AlSi8Mg0,35)



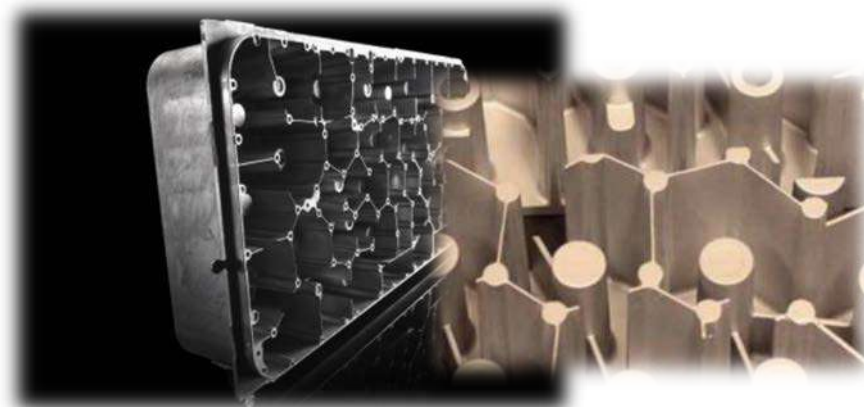
LEGHE PRIMARIE

LA SFIDA NEI DETTAGLI PER COMPETERE NELLA E-MOBILITY

SPOGLIE MINIME

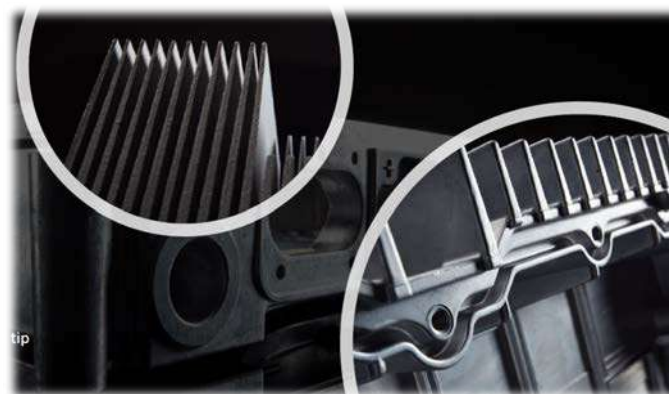
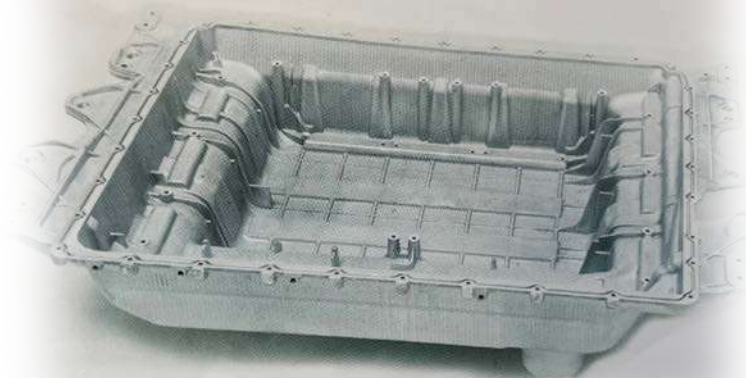


SPESSORI RIDOTTI

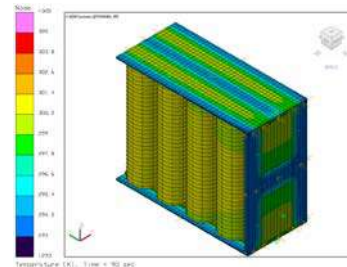
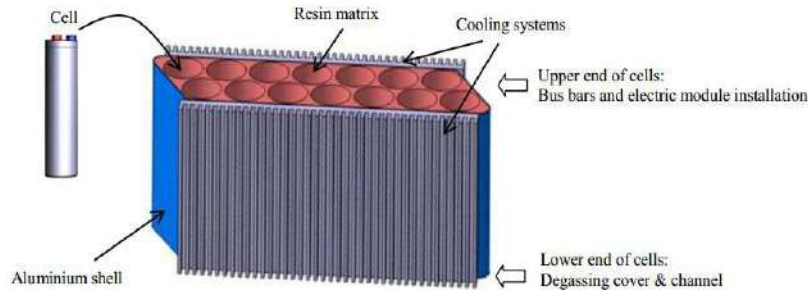


DISTANCE mm	1/2°	1°	2°	3°	4°	5°	6°
1.00	0.009	0.017	0.035	0.052	0.070	0.087	0.105

24.00	0.209	0.419	0.838	1.258	1.678	2.100	2.523
25.40	0.222	0.443	0.887	1.331	1.776	2.222	2.670



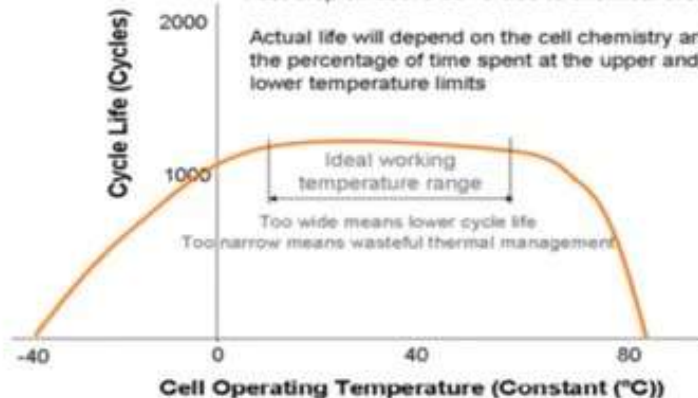
LA SFIDA NEI DETTAGLI PER COMPETERE NELLA E-MOBILITY



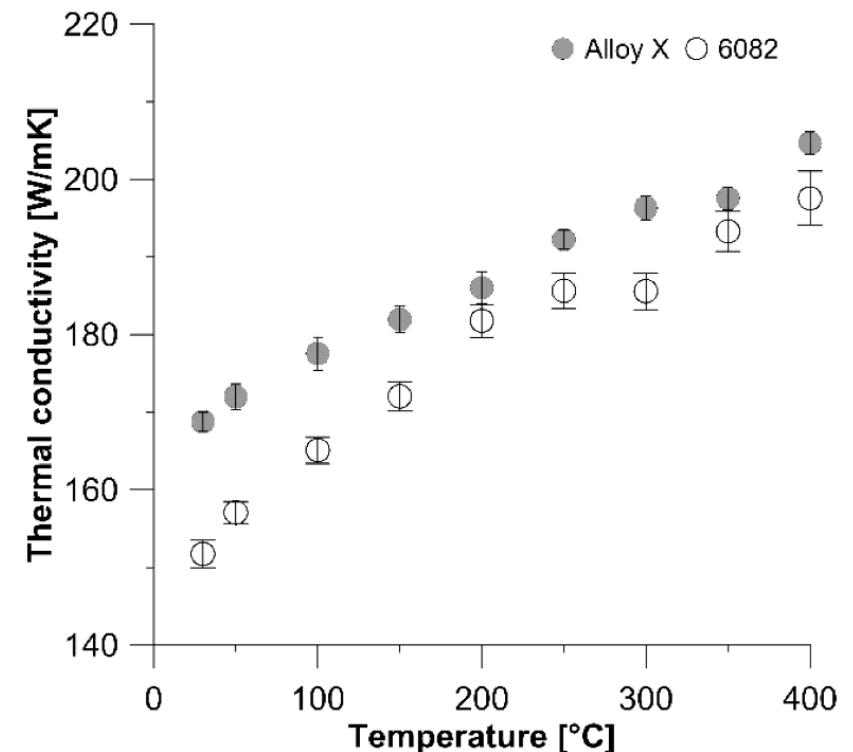
Cycle Life and Temperature

Slow drop off below +10 °C due to anode plating
Fast drop off above 60 °C due to chemical breakdown

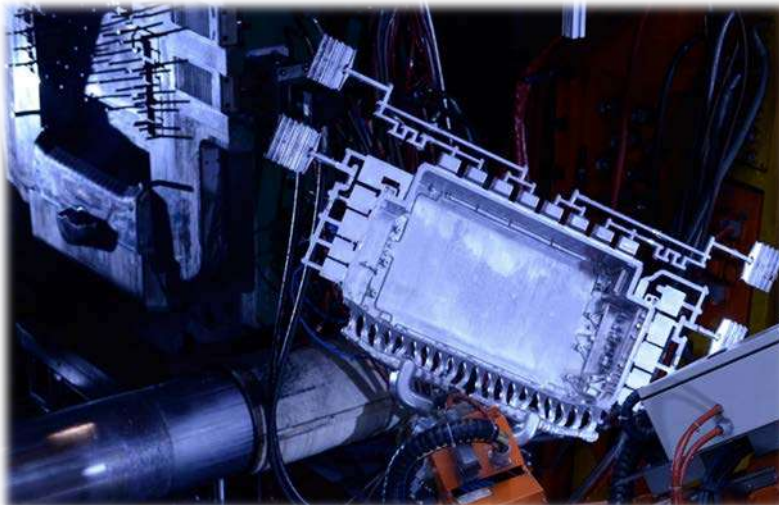
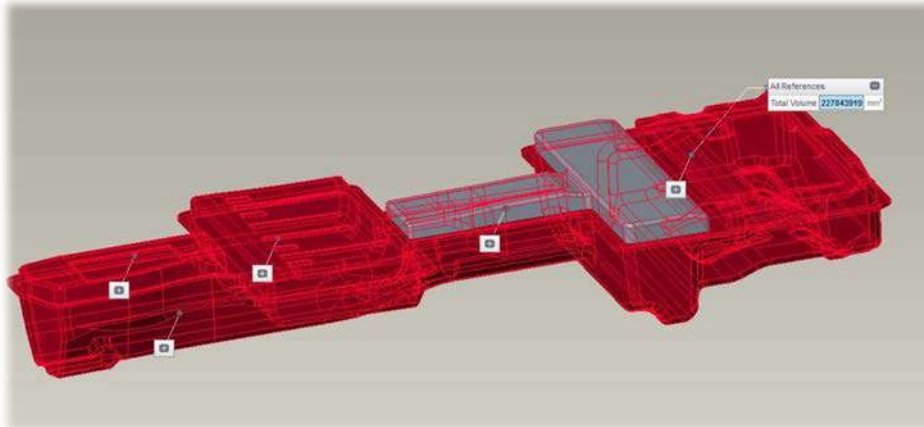
Actual life will depend on the cell chemistry and the percentage of time spent at the upper and lower temperature limits



CONDUCIBILITA' TERMICA



ESEMPI DI CONTENITORI BATTERIE HPDC «OLD FASHION»

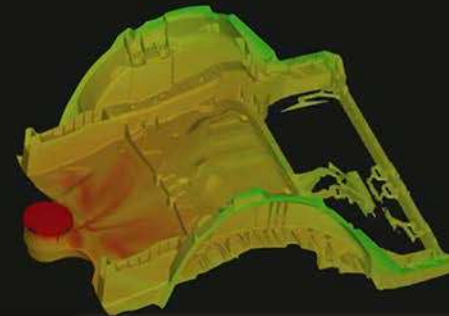


GIGA CASTING : INNOVAZIONE NEL MANUFACTURING

Giga Casting Innovations

SHOT SIZE $\propto$ VELOCITY $\propto$ PRESSURE $\propto$ TONNAGE

NEW ALLOY, NO HEAT TREATING OR COATINGS

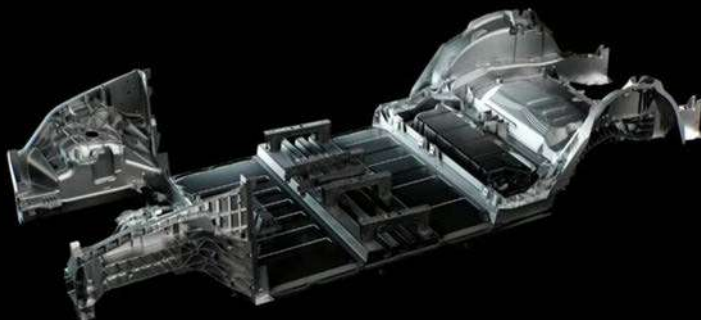


Revolution In Body + Battery Engineering

10% MASS REDUCTION

14% RANGE INCREASE OPPORTUNITY

370 FEWER PARTS



TESLA LIVE

GIGA CASTING : INNOVAZIONE NEL MANUFACTURING

40%

REAR UNDERBODY COST SAVINGS

-79

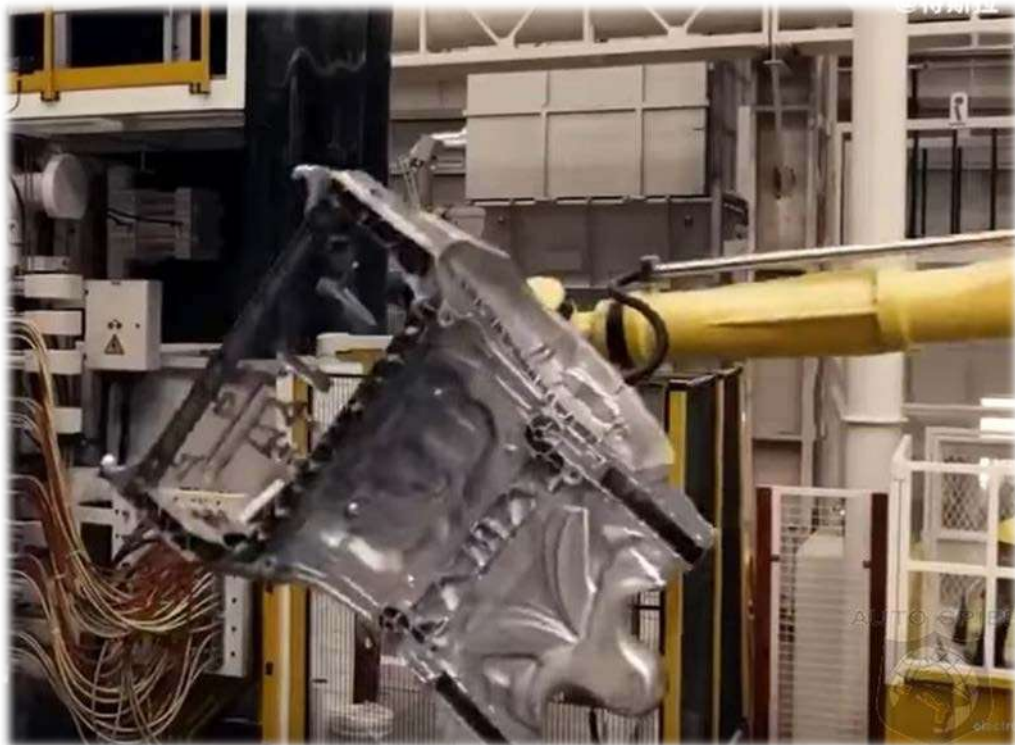
PARTS PER CAR



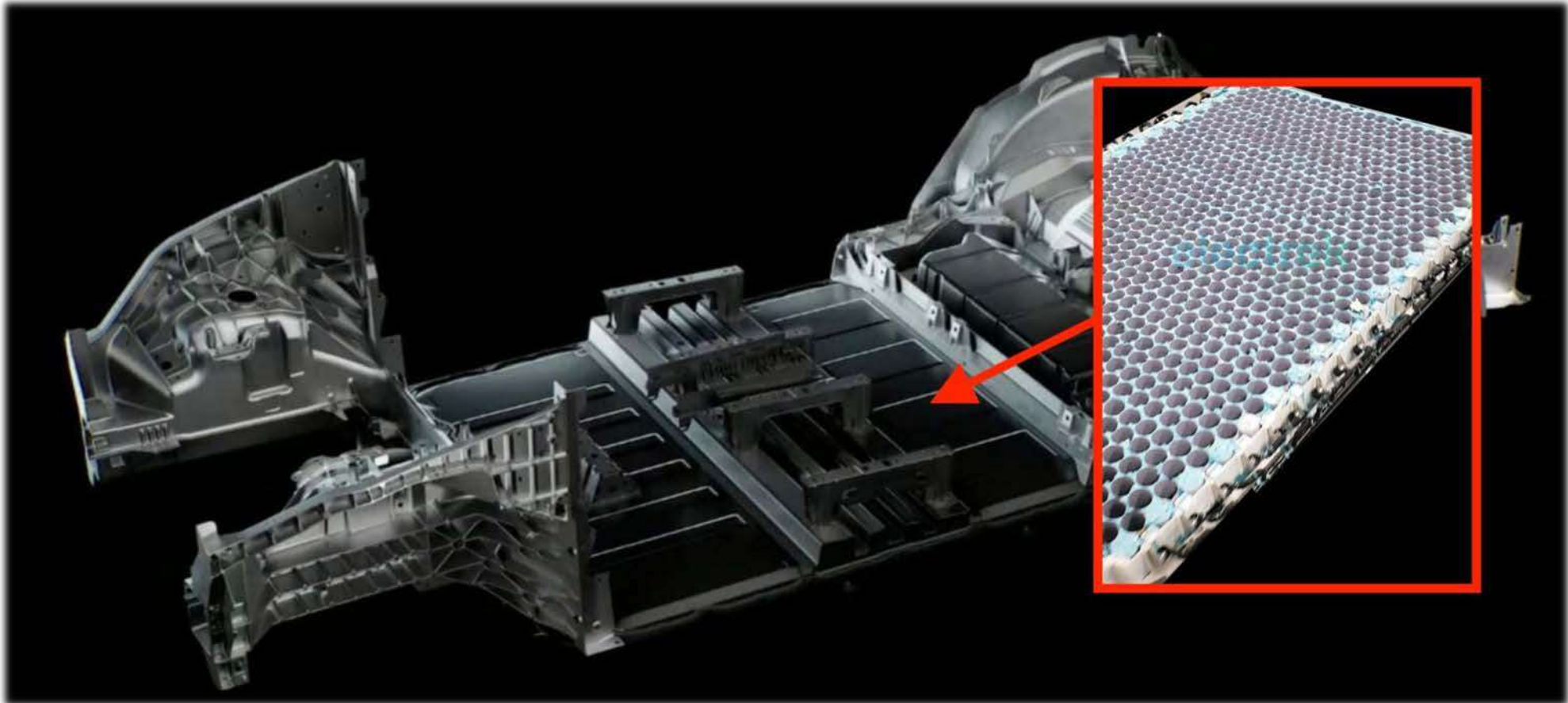
MODEL Y GIGA CASTING

TESLA

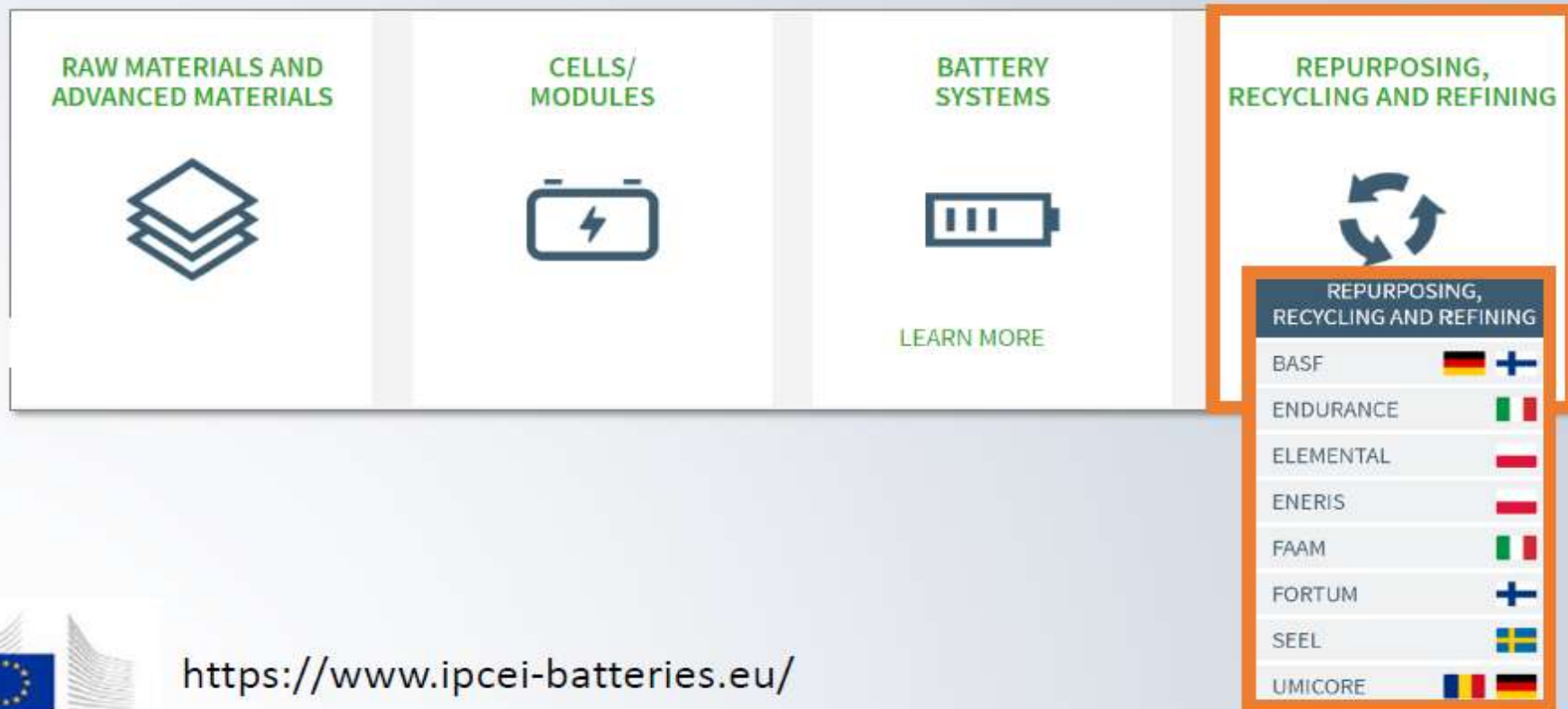
GIGA CASTING : 150 Kg di INNOVAZIONE



IL PROSSIMO STEP : CELL TO PACK



IPCEI Batteries – Repurposing, recycling and refining



<https://www.ipcei-batteries.eu/>