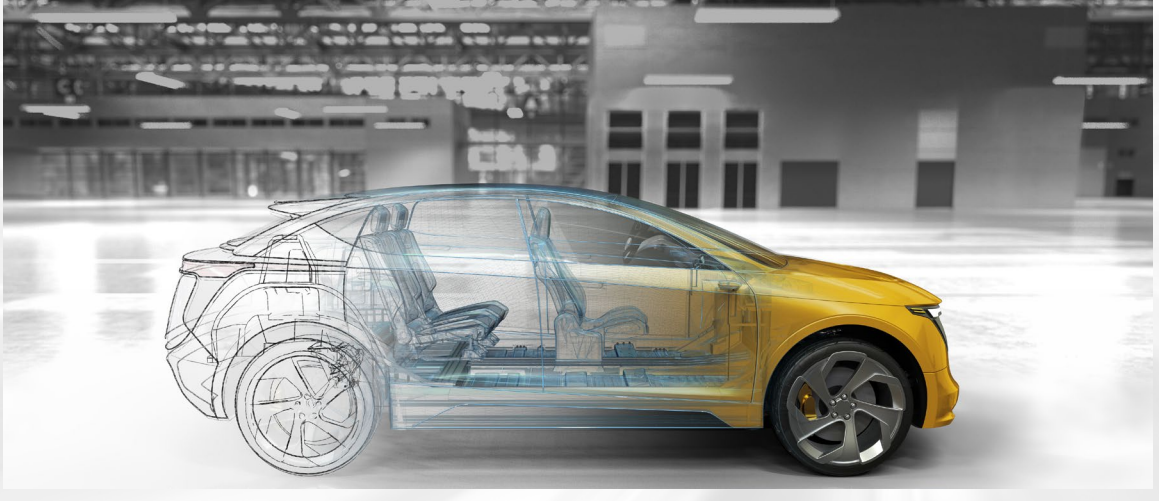


Magna @ Renault 2023

Complete Vehicle

One-Stop Shop: From ideas to reality

With the passion of our employees and our extensive automotive know-how, we enable our customers to successfully bring their vision of mobility to the road.



Magna Exclusive



Co-Development
Opportunity

Competitive advantage/differentiators

- We are an experienced & flexible partner from the first sketch to the start of production and beyond
- We transform our customers' ideas into automotive reality and offer highly flexible business models each tailor-made to the customers needs.
- Use of proven virtual development methods and highly efficient processes enable significant savings in time and cost
- Engineers work simultaneously with our manufacturing and ensure design to manufacturing
- In complete vehicle manufacturing we offer tailor-made solutions through a highly flexible body shop, a multi-OEM paint shop and extensive product options for vehicle assembly

Applications

- Tailor-made turnkey solutions for your vehicle
- Consulting for feasibility check of first concept, definition of vehicle targets, supplier sourcing
- Engineering services from concept development to serial development to production launch
- Complete vehicle manufacturing on a premium level
- Platform management by usage of customer platform, integration of additional customers to share platforms, up to providing our Magna EV platform

18 engineering centers with around 4,000 high-skilled engineers guarantee world-class engineering solutions



Complete Vehicle Engineering

Magna Steyr is the engineering partner for turnkey development from concept phase to product launch for traditional OEMs as well as new entrants.

Our broad range of technical know-how in complete vehicle development and integration is based on our long-standing history of successfully delivered projects.



Smarter



Safer



Cleaner



Lighter



Electrification



Autonomy



Design



Co-Development
Opportunity

Competitive advantage/differentiators

- A global partner along the whole product development process: from target definition up to product release
- Innovative and validated virtual development methods and an efficient development process ensure high quality results plus savings in costs and timing
- In collaboration with our Manufacturing division, we are a one-stop shop from the first concept idea to the produced vehicle

Features/Specifications

- Complete vehicle engineering and integration
- Development of modules and systems
- Platform development
- Integration of alternative drive systems (EV, H2, CNG)
- ADAS integration and validation
- Electrics/Electronics
- HV Battery development and testing
- Prototype shop: from show-car up to small series
- Testing and validation on complete vehicle and component level

Complete Vehicle Manufacturing

Tailor-made solutions covering the whole portfolio from body-in-white to paint to assembly.



Smarter



Safer



Cleaner



Lighter



New Mobility



Electrification



Autonomy



Co-Development
Opportunity

Features/Specifications

- Flexible solutions from niche to volume vehicle production
- Complete body manufacturing, from steel constructions to material-optimized structural bodies
- Multi-OEM paint shop offers maximum flexibility, multi-material capability and highest quality
- Extensive product options for vehicle assembly, including integration of different products from one or more OEMs
- Smart factory applications enabling versatility, resource efficiency and shorter time-to-market for increased competitiveness

Competitive advantage/differentiators

- First contract manufacturer to produce vehicles with different powertrains (ICE, Plug-in hybrid, purely electric) on one production line
- Number one in multi-OEM vehicle contract manufacturing
- More than 4 million vehicles – of 32 different models for 11 different OEMs – produced to date
- One-stop shop: From Virtual Engineering to Vehicle Production

Vehicle Safety Testing

From HV Batteries to Components and Complete Vehicles



Magna is your partner for vehicle testing with long-standing complete vehicle expertise. From safety testing to ADAS testing right through to comprehensive high-voltage battery testing, we offer flexible and tailor-made services. In addition to custom-made test benches for specialized requirements, we also certify and test dummies.

Competitive advantage/differentiators

- Independent and impartial test laboratory, accredited according to DIN ISO 17025, TISAX certification
- Highest level of information and prototype security
- 25 years of experience with vehicle safety testing

Applications

- All relevant crash scenarios (front, rear, side, pole, rollover etc.)
- Sled crash-testing
- Pedestrian and interior safety
- HV battery testing
- Component testing
- Dummy certification and calibration

Development

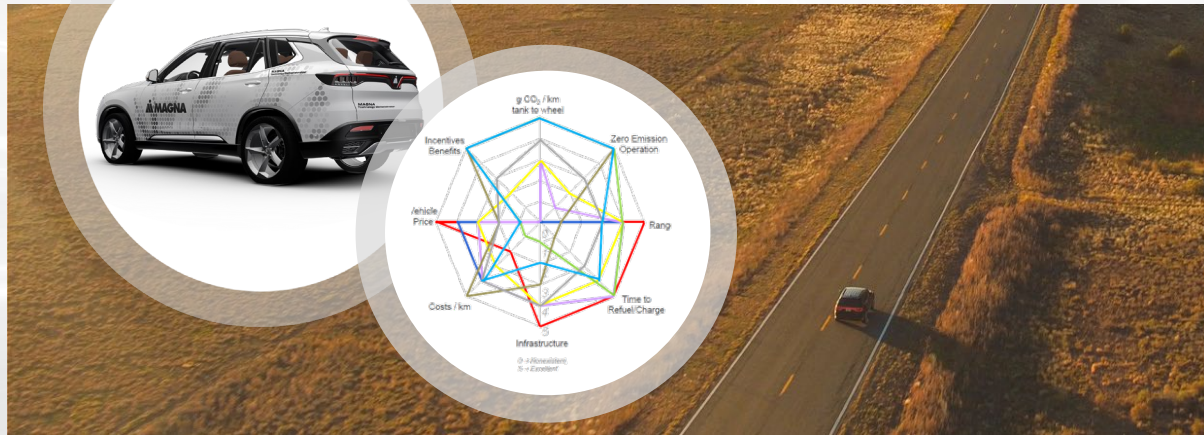
Serial Preparation

in Production

Complete Vehicle Integration of Alternative Propulsion Systems

Changing legal requirements require an increased use of alternative propulsion systems. Pure electric vehicles or hybrids - all kind of propulsion systems have a significant impact on the overall design of the complete vehicle.

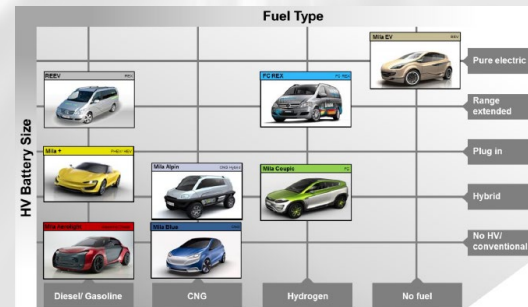
Magna is a turnkey supplier with more than 30 years of experience in the integration of alternative propulsion systems.



Competitive advantage/differentiators

- Turnkey engineering service provider covering the entire development process from product vision to SOP
- System supplier management, evaluation, technical specifications, integration, testing & validation
- Based on comprehensive expertise, independent processes, performance specifications and focus on complete vehicle goals
- Thanks to our long-term experience, we develop an optimized complete vehicle considering drivability, NVH, energy/thermal management, crash & HV Safety, Structural Durability, ...

Applications / References



Thermal Management

Smart thermal management combines a maximum of passenger comfort with the best possible driving range – even in extreme weather conditions.



Smarter



Cleaner



Co-Development
Opportunity



Driving Dynamics



Electrification

Competitive advantage/differentiators

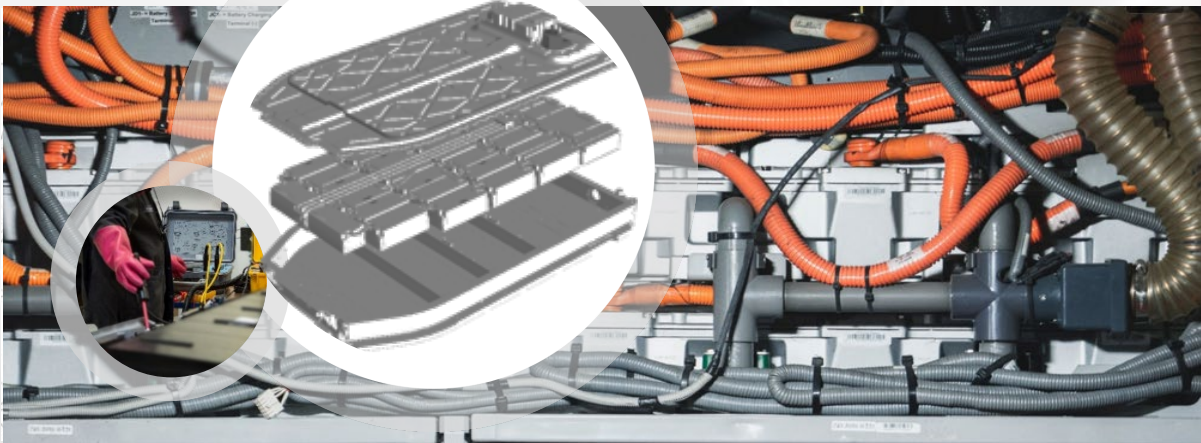
- Virtual and physical development from the initial phase to SOP
- Integration of the thermal management system in the complete vehicle
- Measurement equipment implementation on component and system level
- Vehicle and system testing (test bench & on-road)

Features / Specifications

- Heat pump development
- Fuel cell thermal management system development
- Alternative refrigerants
- Customized software solutions
- Virtual development (1D & 3D CFD simulation)
- Thermal test bench testing
- Subjective and objective benchmarking of competitive thermal systems

HV Battery Development and Testing

Everything from a single source – we develop, integrate and validate high-voltage batteries from feasibility to SOP.



Smarter



Cleaner



Co-Development
Opportunity



Driving Dynamics



Electrification

Competitive advantage/differentiators

- Development and Integration from feasibility to SOP
- Cell/module definition based on envelopment and performance requirements
- 2D/3D electric, cooling and housing design
- Thermal, stiffness, durability and crash/crash simulation
- Prototype shop and EOL testing in-house
- DV/PV testing facilities at Magna's Engineering Center ACTS
- Housing production at Magna Cosma

Applications / References

- EV and PHEV, 400V and 800V applications
- Pack development and integration with cylindric, pouch and prismatic cells and cell modules
- Platform development for Chinese and Japanese OEMs



Forward. For all.