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REVIEW 2025 & OUTLOOK 2027

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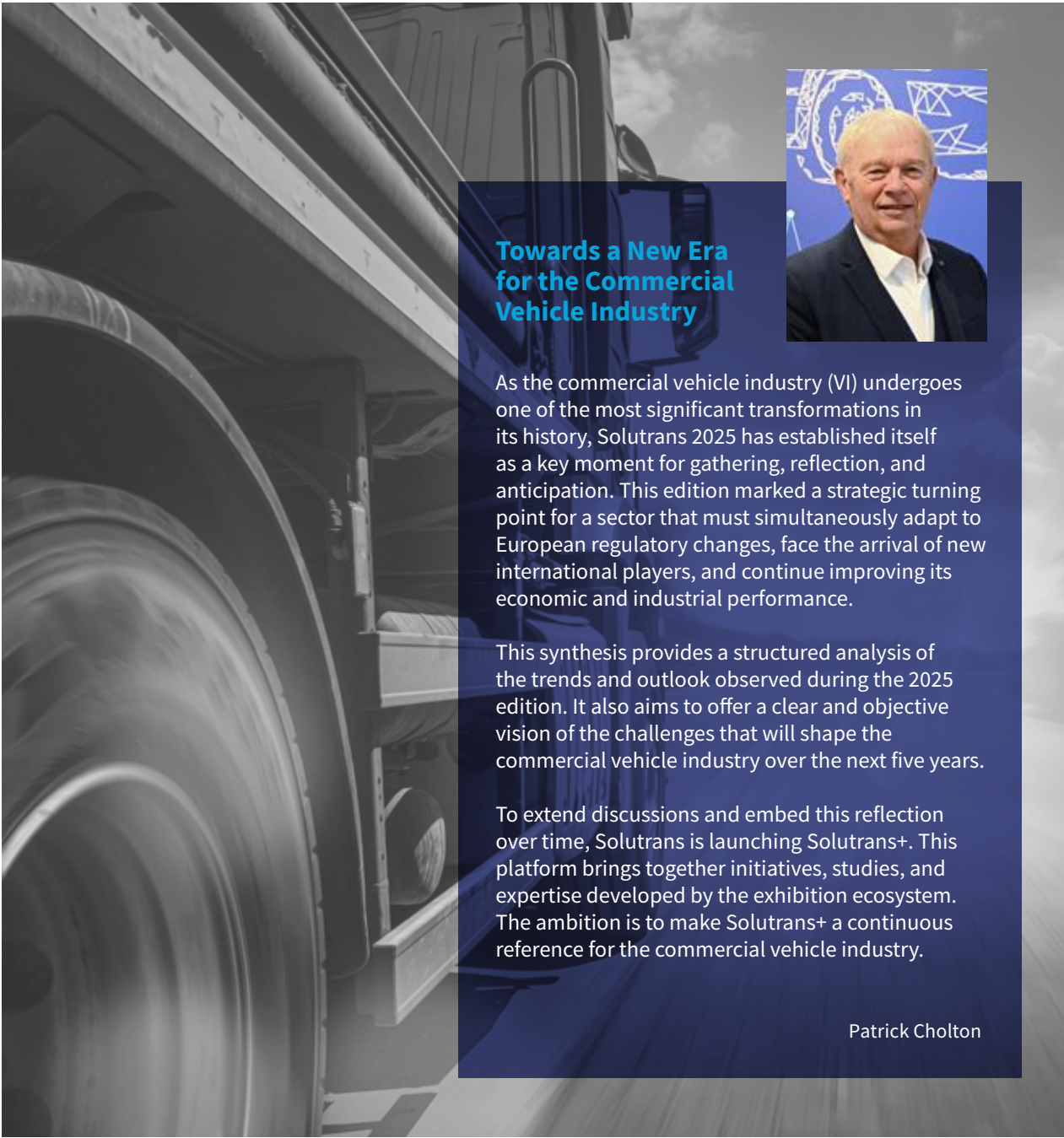
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Join us at the Commercial Vehicle Industry Meetings in 2026 and at SOLUTRANS 2027



Preface



Towards a New Era for the Commercial Vehicle Industry



As the commercial vehicle industry (VI) undergoes one of the most significant transformations in its history, Solutrans 2025 has established itself as a key moment for gathering, reflection, and anticipation. This edition marked a strategic turning point for a sector that must simultaneously adapt to European regulatory changes, face the arrival of new international players, and continue improving its economic and industrial performance.

This synthesis provides a structured analysis of the trends and outlook observed during the 2025 edition. It also aims to offer a clear and objective vision of the challenges that will shape the commercial vehicle industry over the next five years.

To extend discussions and embed this reflection over time, Solutrans is launching Solutrans+. This platform brings together initiatives, studies, and expertise developed by the exhibition ecosystem. The ambition is to make Solutrans+ a continuous reference for the commercial vehicle industry.

Patrick Cholton

Solutrans 2025: a reflection of industry trends

Solutrans 2025 confirmed the key trends already identified at the 2023 edition, notably its growing international reach and the continued rise of heavy-duty vehicle electrification, against a backdrop of increasingly diverse energy solutions.

Once again, the event reinforced its role as the leading platform for dialogue across the commercial vehicle industry, bringing together truck manufacturers, bodybuilders, engine makers, equipment suppliers, energy providers, transport operators and logistics specialists.

An international offensive and the crossroads of tomorrow's energy solutions

With a strong international dimension, Solutrans 2025 showcased an especially dynamic presence of foreign exhibitors. Turkish manufacturers mounted an unprecedented offensive in the heavy-duty trailer and construction tipper segments, while Italian and Spanish bodybuilders once again confirmed their loyalty to the show. Germany was also strongly represented, with its three major mainstream truck manufacturers in attendance. This growing international appeal was equally evident among visitors, particularly trade journalists from neighbouring European countries.

Like any major trade show, Solutrans also reflects the industry's priorities, and electrification is becoming increasingly prominent among the powered vehicles on display. Every truck manufacturer's stand featured at least one battery-electric model, and often several. In fact, it was easier to count the few brands that did not display an electric truck, such as BMC and Isuzu Trucks. This widespread presence highlights how battery-electric technology has become an essential showcase for manufacturers, even as alternative energy pathways continue to develop alongside it.





A telling sign of the industry's transformation, the International Truck of the Year award - presented during the Solutrans Gala Dinner - was, for the second time, awarded to an all-electric range: the DAF XD and XF Electric. Another strong symbol was Renault Trucks' world premiere - the first of its kind for the French manufacturer in many years - with the unveiling of the Renault Trucks T780 E-Tech. Its distinctive silhouette offers a glimpse of what tomorrow's battery-electric long-haul tractors are likely to look like. To preserve payload capacity, manufacturers have little choice but to fit a third axle to the tractor unit in order to avoid overloading the drive axle. A configuration long familiar in the UK is therefore making its way onto the European continent.

Some manufacturers, however, including Scania and, to a lesser extent, MAN, chose to promote a genuinely multi-energy vision of the future. Scania's comprehensive approach was particularly striking, with every alternative to diesel represented on its stand except one: hydrogen.

Hydrogen nevertheless occupied a prominent place at the exhibition, despite recent headlines highlighting the challenges facing the sector. Hyundai Hydrogen Mobility unveiled the world's first hydrogen fuel-cell refuse collection vehicle, built by Faun Environnement on a Hyundai Xcient Fuel Cell 6x2/4 chassis. MAN surprised visitors by exhibiting the production version of its hTGX, revealing that its H45 hydrogen combustion engine tractors are assem-

bled on the very same production lines as the brand's diesel and battery-electric models.

Among fuel-cell suppliers, the rivalry between Toyota Motor and Hyundai HTWO was evident from the scale of their respective exhibition stands. France's hydrogen ambitions were represented by Hyliko, which unveiled a new development for the Mauffrey Group: a retrofitted Renault Trucks C equipped with a Toyota fuel-cell system. The company also presented the second generation of its Hyliko T44 tractor, featuring an optimized driveline and improved bodybuilder integration.

For vehicles requiring large amounts of onboard energy, hydrogen could ultimately prove attractive to bodybuilders, as it frees up installation space and provides greater payload than battery-electric systems for equivalent driving range. The remaining challenges lie in workshop operations, where compliance with ATEX regulations and high-voltage certification requirements adds significant complexity.

Bodybuilders respond to the vecto trailer challenge

Among bodybuilders and trailer manufacturers, electrification is equally high on the agenda, particularly in temperature-controlled transport. Not only have refrigeration units undergone an electric transition, but refrigerated se-



mi-trailers themselves increasingly feature generator axles capable of supplying onboard electrical power.

Aerodynamics has become another major area of development. Refrigerated transport is leading the way, illustrated by the demonstrator vehicles displayed by Lamberet—through its Dolphin programme developed with Renault Trucks and Lyon's INSA engineering school—and by Chéreau, whose Concept Trailer received an I-nnovation Awards 2025 distinction. However, aerodynamic optimisation is no longer confined to refrigerated vehicles. Even tipper bodies are now benefiting from this research, with particular attention paid to reducing turbulence generated in the gap between the tractor unit and the front of the body.

Weight reduction remains a constant objective, with numerous bodybuilders highlighting significant savings achieved on their tipping semi-trailers. Rolling resistance constitutes a third major development axis, both for axle manufacturers and tyre producers. Significantly, even mixed on/off-road tyres now promote this performance criterion, as illustrated by the Michelin X Works Z2.

For bodybuilders as well as truck manufacturers, every possible lever must be used to reduce energy consumption. This explains developments such as Lamberet's new Frigoline HPI insulated panels, created in close cooperation with insulation specialists including Saitec and Kingspan. With battery-electric vehicles carrying limited onboard energy, every kilowatt-hour has become a valuable resource.

Ergonomics also remains both a priority and a key differentiator for bodybuilders. Corsin, winner of an I-nnovation Award for its A.D.A.M. system, developed an internal lifting platform designed for urban deliveries—particularly suited to laundry services and roll-container parcel distribution—which eliminates the need for a conventional tail lift. This ingenious solution is especially valuable in congested urban environments where parking space is scarce.

Ease of operation for insulated bulkheads and step-free accessibility likewise remain enduring priorities throughout the bodybuilding sector.

Strong momentum for electric light commercial vehicles

Solutrans 2025 also hosted several world premieres in the light commercial vehicle segment, most notably the spectacular arrival of Kia. The Korean manufacturer chose the Lyon exhibition to officially launch the Kia PV5, which was crowned International Van of the Year 2026 during the show.

Visitors also discovered Flexis, the joint venture between Renault S.A., Volvo Group and CMA CGM, dedicated to developing a new family of battery-electric vehicles for urban distribution. The first models were displayed on both the Flexis stand and Renault Pro+'s exhibit. For Renault, this initiative will materialise in the form of the new Renault Trafic E-Tech, scheduled to enter service by the end of 2026.

Meanwhile, following its world premiere at the 2023 edition, the Renault Master continues to expand its range, notably with versions specifically designed for finishing trades and environmental services, including double-cab and rear-wheel-drive variants.

Chinese manufacturers also made a particularly strong impression in the light commercial vehicle sector, with brands such as Maxus and iJAC. The latter unveiled the iJAC N90, a heavy-duty electric van positioned as a direct competitor to the larger Fuso eCanter models. Beyond vehicle manufacturing, Chinese companies are now establishing an increasingly significant presence among equipment suppliers and component manufacturers serving the body-builder industry.



Two-Year Projection

Discussions throughout the exhibition highlighted four key challenges that are expected to shape the industry over the next two years:

- # Anticipating forthcoming European decarbonisation regulations.
- # Accelerating the deployment and providing greater clarity around alternative energy solutions.
- # Rapidly expanding infrastructure to support the energy transition.
- # Strengthening cooperation across the commercial vehicle industry as it adapts to profound industrial transformation.

European regulations: the framework shaping heavy decarbonization

European standards continue to play a decisive role in accelerating the energy transition of the VC sector. SOLUTRANS 2025 was marked by the presentation of new requirements for CO₂ emissions (Euro VII) and safety (GSR II), deadlines for integrating low-carbon vehicles into fleets and the progressive harmonization of technical standards.

These regulations provide a structuring framework for manufacturers and bodybuilders, while also raising concerns about their applicability in certain Member States, such as France. During the conferences, and particularly during the Solutrans plenary session, European regulations were a major topic of discussion. Regarding CO₂ targets for heavy goods vehicles, Brussels decided to extend the 2025 deadline by six months (until July 2026). It remains to be seen whether the European Union will be more flexible and grant manufacturers, as it has done for the automotive sector, a flexibility mechanism that would allow them to consider emissions over three years, from 2025 to 2027, instead of just one.

Finally, the RED III Directive, adopted in 2023 (Directive (EU) 2023/2413), requires EU Member States to accelerate decarbonization across the board in sectors such as transport. It sets the objective of increasing the share of renewable energy to 29% of the sector's final consumption by 2030. It not only defines a new course but also prepares its own implementation through the IRICC (Incentive for Reducing the Carbon Intensity of Fuels) program, a credit mechanism that will replace TIRUERT (which is intended to make hydrogen solutions more accessible). Although the transposition deadline has been set for May 21, 2025, many countries are behind schedule, including France.

The revision of the Weights and Dimensions Directive was also central to the discussions. It has still not been defi-

nitively adopted. European transport ministers reached a common position on December 4. The text, which paves the way for negotiations with the European Parliament, introduces several major adjustments, including an increase in the permitted length of 0.9 meters and specific compensation for the extra weight associated with zero-emission technologies. Also in the realm of European regulations, the Commission announced an amendment to the Eurovignette Directive, which aims to extend the total exemption from road tolls for electric trucks beyond December 31, 2025. As part of the European Union's automotive package, recently adopted by the European Commission, heavy goods vehicles were ultimately excluded from the proposal to green company fleets. This represents a significant shift from Brussels' initial intentions, which included mandatory purchases of zero-emission vehicles for transport companies. However, Solutrans highlighted existing regulations such as GSR II (General Safety Regulation II). This regulation imposes new mandatory safety equipment for all new heavy goods vehicles registered since July 7, 2024. This has forced manufacturers to equip their truck ranges as original equipment with this equipment such as the driver drowsiness and inattention warning system, the lane departure warning system or the advanced emergency braking system.

Euro VII Takes Tires into Account

Another topic widely discussed at the trade show was the arrival of Euro VII on July 1, 2027. The standard will impose stricter limits on pollutant emissions (NO_x and particulate matter), now including brakes and tires. It aims for a reduction of more than 50% in NO_x and 75% in particulate matter, with real-world driving tests (RDE) and real-time monitoring.

One of the major innovations of the Euro VII standard is the inclusion of tire emissions in particulate matter calculations. The requirements of the Euro VII standard could be finalized soon, and tires will not be considered an integral part of the vehicle. Discussions between ETR-MA (which represents the rubber and tire industry) and the European Commission are ongoing. For truck tires, the Euro VII standard requirements could be set in 2028, leaving a very short timeframe before its 2031 implementation date.

One of ETRMA's concerns was that the tire would be considered an integral part of the vehicle, like its emissions control or lighting systems. This would have had considerable consequences for tire manufacturers, who would have been required to supply the same model and tread pattern throughout the vehicle's lifespan, thus increasing the number of tire models to be produced over the next 20 years to an unimaginable degree. This would have been a prohibitive constraint for tire manufacturers. It would also have been a significant burden for end users, both for scheduled maintenance and during breakdowns.

According to our information, this highly restrictive provision has been lifted. Labeling, already used to guide manufacturers' choices within the VECTO framework, could be the tool ultimately adopted by the European Commission to ensure minimum performance levels during vehicle operation. The issue of tire abrasion presents an additional challenge for tire manufacturers, as battery electrification forces them to increase axle loads. They have no choice but to push the limits permitted by the Highway Code.



Two-Year Projection: emerging challenges in transposing and effectively implementing European standards

The challenge will no longer be the development of the regulatory framework, but rather the ability of European states to transpose and implement common rules coherently. Furthermore, transport stakeholders are urging public authorities to strengthen controls, particularly regarding unfair competition.

Energy solutions for heavy-duty mobility

Solutrans 2025 offered a revealing overview of the massive investments being made in the electrification of commercial vehicles and heavy goods vehicles. While this trend largely dominated the aisles of the show, other energy solutions were also present. The transition will not be monolithic: a diversified energy mix is now essential.

Electrification is becoming essential in the commercial vehicle and urban distribution sectors

There is no longer any doubt: the electrification of manufacturers' offerings, still in its infancy in 2023, is now a tangible reality. It used to be easier to count the chassis manufacturers' stands that weren't showcasing battery-powered vehicles. The European Green Deal, as defined on July 14, 2021, leaves manufacturers no choice. As a consequence, Chinese brands have entered the light commercial vehicle market. Leveraging their control of the battery supply chain (materials, processing, cells, batteries, and complete vehicles), they are making electrification their Trojan horse. This is particularly true at Solutrans for iJAC (imported by Tekauto) and Maxus (a subsidiary of SAIC, better known in France for its MG brand).





The utility sector was completely captivated by electric vehicles. This was evident in the presentations of Flexis and Renault Pro+ (the world premiere of the Renault Traffic E-Tech, the first application of vehicles developed through Flexis). The same was true for Kia, which unveiled the electric PV5, the spearhead of a major product offensive by the Korean firm.

Urban distribution rightly attracts the most interest in electrification. Limited and predictable daily mileage, abundant time spent in traffic jams, the need for quiet vehicles for nighttime deliveries – electricity ticks all the boxes of the perfect “use case”.

It's no coincidence that Renault Trucks unveiled, in the shadow of its world premiere (the renowned T780 E-Tech), the single-engine Renault D E-Tech rigid truck in its 12-tonne D version.

This version is equipped with LFP electrochemical batteries in two clusters of two packs (176 kWh gross). A 43 kW AC onboard charger is included. Compared to the internal combustion D12 model, the tires are 19.5 inches. This is due to the need for minimum ground clearance relative to the battery packs. The 12-tonne GVW version (13.3 tonnes with the bonus) offers a gross payload of 5.6 tonnes, and the 14-tonne GVW version, 6.7 tonnes. However, like other Renault Trucks D E-Tech models, these do not have a certified GCW (Gross Combination Weight Rating). Deliveries are expected during the second half of 2026. They will compete

with the DAF XB Electric, which was also on display at the show. Another argument in favor of a rapid shift into the urban distribution segment is the availability of equipment specifically designed for battery-powered vehicles. The best proof of this is the existence of entire ranges of refrigeration units (from Carrier Transi-Cold and Thermo King, for example) designed to draw energy from the chassis' ePTOs.

Estimated electric truck charging needs

In mid-December 2025, Enedis published its analysis of charging needs for electric trucks at depots and warehouses⁽¹⁾. Enedis estimates that, “*nationally, the energy required to charge electric trucks could reach 11.8 TWh in 2035,*” compared to the 505 to 580 TWh produced according to RTE's 2025 Forecast Report (note the range!). A key factor is that the power demand for truck charging could reach 2.4 GW in 2035.

Enedis has identified some sensitive areas, such as the Saint-Quentin-Fallavier (Isère) logistics platform which, on its own, could absorb 10MW by 2035, between the needs of truck recharging and the energy required for the depots. Enedis warns: “*To succeed in this transition, particularly in dense logistics areas, strong coordination is necessary between Enedis, local authorities, developers, carriers and charging operators.*”



What role for biofuels?

According to IFP Energies nouvelles, renewable and low-carbon fuels (combined with improved energy efficiency and electrification) are one of the solutions for decarbonizing the transport sector now. They will gradually replace fossil fuels for sectors that do not have alternatives to liquid fuels. In Europe, the RED III directive, successor to the Renewable Energy Directive (RED) (also known as the 2009 Renewable Energy Directive), which aims to promote energy produced from renewable resources by 2030, gives Member States a choice: either reduce the carbon intensity of energy consumed in transport by 14.5%, or incorporate at least 29% renewable energy into the final energy consumption of the transport sector. The regulation also sets a binding sub-target of 5.5% for advanced biofuels and renewable fuels of non-biological origin (mainly low-carbon hydrogen and e-fuels) in the share of renewable energy supplied to the transport sector.

As for the controversy, skillfully fueled by certain lobbyists, regarding land-use change for the production of these biofuels, it is unfounded. Indeed, the RED II directive also stipulated that the share of biofuels presenting a high risk of indirect land-use change must reach 0% by 2030. For biomethane, according to the SDES (Statistics

Service for Energy, Transport, Housing and the Environment), France had 731 installations with a total capacity of 13.9 TWh/year active in 2024. According to the same source, 972 additional projects, representing a capacity of 41.7 TWh/year, are currently under development. For biofuels (B100, ethanol, and HVO), the SDES notes that their consumption in France was 41.7 TWh in 2024. This represents slightly less than 10% of total energy consumption related to transport; the SDES estimates it at 513 TWh in 2024 (all modes combined). *"In 2024, biofuels represent 10% of primary renewable energy consumption in France. Biodiesel, which accounts for 73% of biofuel consumption, is composed mainly of fatty acid methyl esters (FAME) of vegetable, animal or used oil origin,"* it specifies.

Bad news: *"France is a net importer of fatty acid methyl esters (FAME) of vegetable, animal, or used oil origin, which represent 88% of French biodiesel consumption and 65% of biofuel consumption."* This imbalance should be put into perspective when considering France's dependence on other countries: *"In 2024, FAME imports came from Belgium (45%), the Netherlands (32%), and Spain (17%) for 94% of their imports. Exports, on the other hand, were directed to these same three countries for 90%: Belgium (64%), the Netherlands (22%), and Spain (4%),"* explains the SDES.

What role for e-fuels?

The CEA and IFP Energies nouvelles have studied the challenges and opportunities of e-fuels.

According to their document ⁽²⁾, *“the IPCC and the conclusions of COP 28 have confirmed the need for CO₂ capture and utilization (CCU) to produce e-fuels by 2030. E-fuels have been integrated into the latest versions of all scenarios produced by government bodies, agencies, associations, and stakeholder groups.”*

In its World Energy Outlook 2023 report, the IEA estimates the need for low-carbon hydrogen-based fuels at 416 TWh (36 Mtoe) in 2030 and 3,566 TWh (307 Mtoe) in 2050, compared to a total demand for liquid fuels of 50,000 TWh (4,300 Mtoe) in 2030 and 21,200 TWh (1,800 Mtoe) in 2050 (Near Zero Emission scenario).

Several factors appear to justify the use of e-fuels: the contribution of carbon capture and storage (CCS) to emissions reduction, the need for liquid fuels, the consideration or exclusion of electron molecules in chemical processes, etc. However, the products and assumptions considered vary, sometimes significantly, making it difficult to compare scenarios.

An alternative rejected by road transport

More surprisingly, given the turn of events since July 14, 2021, and the publication of the European Green Deal: “The European Commission took into account, as early as 2018-2019, the use of e-fuels to achieve carbon neutrality by 2050.” But this mainly concerns air and maritime transport. The United States, India, Japan, and Canada have integrated e-fuels into their roadmaps to encourage research, industrialization, and related investments. All emphasize the need to develop e-fuels at the appropriate level, not as a substitute for other measures, but as a complementary means of moving away from fossil fuels. The limitations to their development are well-known: potential competition with other products, dependence on resources (CO₂ and low-carbon electricity), their price, and the necessary implementation of regulations to support deployment. In order to achieve the ambitious objectives set, the IEA highlights in its December 2023 report, *The role of e-fuels in decarbonising transport*, the need to strengthen synergies between the e-fuels, bio-fuels (bioCNG, B100 and HVO) and CCS (carbon capture) sectors.



26-ton and larger trucks open to a range of energy options

While battery-powered long-haul trucks are appearing (such as the Scania 40R or the imposing 3-axle Renault Trucks T780 E-Tech) and regional trucks also seem to be converting (see MAN eTGS and other DAF XD and XF Electric models), the choice of energy sources remains broader in these applications. Diesel options are still available, but manufacturers like MAN, Renault Trucks, and Scania are highlighting alternatives such as B100 (flexible or exclusive) or HVO at their respective stands. Interestingly, the only Mercedes-Benz Actros L ProCabin with a diesel engine was on display at the Aramco stand, which was showcasing its HVO and e-fuel production. Scania distinguished itself by presenting CNG vehicles, including for long-haul trucks. The introduction in 2025 of the 460 hp, 2,300 Nm Scania OC13 spark-ignition engine makes this powertrain particularly versatile. A unique feature on the BMC stand was a propane-powered spark-ignition vehicle: the Nexio EU 4x2 chassis cab, closely derived from the BMC Tuğra range. It differs from the Tuğra with its supercharged 7.2-liter V8 spark-ignition engine, developing 330 hp and 1,050 Nm of torque. Nexio is an American company, but its potential compatibility with spark-ignition LPG would qualify it for the Crit'Air 1 sticker in France. It's up to BMC to seize this opportunity. Solutrans 2025 was also marked by record participation from energy companies and distributors across all energy sectors.

Hydrogen Despite Everything

While “hydrogen-bashing” seems to be all the rage in France lately, a visit to Solutrans 2025 paints a different picture. Giants like Toyota Motors and Hyundai HTWO

came with their latest generations of fuel cells. Hyundai HM unveiled a French first: the Faun Vario refuse collection body for the Hyundai XCient 6x2/4 Fuel Cell chassis. The French company Hyliko (which uses a Toyota Motors fuel cell) presented the latest developments in engine retrofitting with the Hy T44, based on Renault Trucks T and C chassis. But hydrogen was also present with internal combustion engines. A visit to the MAN stand was a must to discover the hTGX. The model on display corresponds to the first units delivered to Södertälje, Sweden. Among the announced markets, aside from Scandinavia, was the Netherlands, where hydrogen would have a place “due to difficulties with the local electricity grid” (sic). Production ramp-up will begin in early 2026 with the introduction of 4x2 variants for other European countries. Despite the hTGX's unique features, such as its MAN H45 engine and hydrogen tanks, the model will be assembled on the same production lines as the diesel and electric versions. From refuse collection vehicles to heavy haulage and logging tractors, it's clear that hydrogen is of interest for applications where batteries don't provide enough energy for the task at hand.

While hydrogen and battery-electric vehicles are favored by European plans linked to the Green Deal, the same cannot be said for other fuels that power internal combustion engines (bio-CNG, HVO, B100). The threat of their disappearance from manufacturers' catalogs by the time of Euro VII (around 2029) is not unfounded if the European Commission maintains its current policy. Only long-haul trucks, for which the diesel engine remains essential due to payload, range and size considerations, could survive this deadline.

Two-Year Projection

What Medium-Term Energy Production?

According to the IEA, global energy demand will continue to rise due to population growth and rising living standards. Electricity demand is growing twice as fast as overall energy demand and is expected to reach 37,800 TWh in 2035 (+40%), with peak consumption increasing by 40%, posing major challenges to grid stability.

Despite climate concerns, demand for coal and oil is expected to continue growing until 2030, exacerbating CO₂ emissions. Investments in oil and gas will primarily serve to compensate for the decline in existing deposits, leading to higher oil prices (+10%) and natural gas prices (+30% to 40%) by 2035.

1) <https://www.enedis.fr/presse/la-decarbonation-du-transport-routier-de-marchandises-trm-quels-besoins-de-recharge-au-depot>
2) <https://www.ifpenergiesnouvelles.fr/article/focus-ndeg2-place-des-e-carburants-les-scenarios-transition-energetique>

The energy transition

goes hand in hand with infrastructure



Manufacturers keep saying it: they've done their part by developing electric vehicle ranges. The remaining question is that of distribution networks for these unconventional energy sources. A topic extensively discussed at the Solutrans conferences.

Electric vehicles: depots, roaming, and areas of friction

Electric vehicle charging is monopolizing attention due to the (still limited) ranges of electric vehicles. Within the framework of the European AFIF (Alternative Fuels Infrastructure Facility) programs, 61 heavy-duty vehicle charging sites were selected in early 2025 to benefit from funding linked to the TEN-T corridors. Alexandre Hélibert, spokesperson for Milence, reveals a difference in treatment between Northern and Southern Europe, with the former being ahead in the deployment of MCS (megawatt charging) points.

The divide lies in fleet size, the use of battery-powered vehicles (much more intensive in Northern Europe), and the availability of aid and subsidies. Alexandre Hélibert revealed that these are much more complex to obtain in Southern Europe (despite the relative simplification implemented in France through Energy Savings Certificates

(CEE)). Eiririon France (a Scania subsidiary) estimates that 70% of charging will take place at depots or at charging stations, while TotalEnergies estimates this figure to be between 70 and 80%. Some charging point operators, such as Mobilize, offer site construction through lease-to-own agreements or leasing to limit the impact on companies' cash flow. Manufacturers, along with energy providers and brokers, offer prepaid cards for roaming charging at negotiated rates.

For carriers under professional contracts, one of the challenges is protecting themselves from the volatility of the electricity kWh market and the additional costs of roaming. "We are severely lacking in roaming charging stations," says Ludovic Lavarde, Director of Network Development for Heavy Goods Vehicles at [Company Name]. Izivia, an EDF subsidiary. To mitigate this problem, players in the electric vehicle market are promoting semi-public charging. TotalEnergies has announced it is working with Prologis on the construction of logistics hubs, with such

facilities, for trucks and vans dedicated to the distribution and concentration of goods flows. A first site in Moissy-Cramayel is planned for 2026. These semi-public stations raise questions regarding certain regulatory aspects, as the Regional Directorates for the Environment, Planning and Housing (DREAL) and drivers' unions will be very vigilant about the conditions for drivers to be accommodated and to rest in these areas. Because, to put a tachograph selector on "pause," it is required that the driver be able to attend to other matters (meaning: outside the truck). This implies a minimum of amenities and facilities for drivers at charging areas.

The distribution of low-noise hydrogen and CNG

But we must not forget the infrastructure related to gases applied to Transportation. We are thinking, of course, of hydrogen, the cost of which remains prohibitive for end users. The network is still embryonic, with only 39 stations delivering 350 bar open in France⁽¹⁾. This contrasts unfavorably with the 100 existing stations in West Germany. We are far from the European AFIR target of one hydrogen station every 200 km. As with infrastructure dedicated to

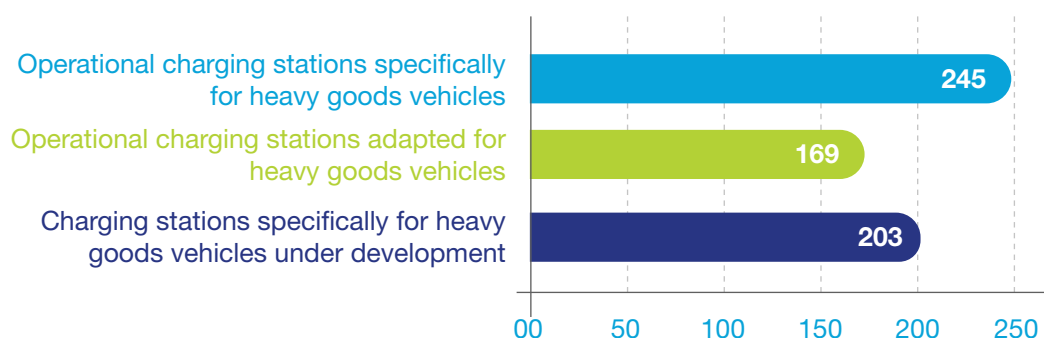
heavy electric vehicles, French administrative constraints add bureaucratic hurdles and delays. Some specialized operators, such as Engie and TEAL, were present at the trade show. We must also not forget CNG, which remains one of the major alternatives in France to liquid fuels or battery-powered electric vehicles. According to the census of December 4, 2025, 373 CNG stations were expected to be open in France. Several exhibitors, from Altens to TotalEnergies, not forgetting Enerjump, Engie, and GRDF, were present at Solutrans. But the growth of LNG stations is struggling to keep pace with that of electric vehicles, with There are barely a hundred LNG stations in France and only one more planned. By comparison, CNG appears much more dynamic, with eleven stations scheduled to open in 2026.

The infrastructure conference reiterated the importance of station maintenance to avoid any downtime, which would be particularly problematic for energy sources with sparsely distributed stations. AVERE France's 2025 barometer data is worrying⁽²⁾: the proportion of charging points available 99% of the time is capped at 65%, and downtime exceeding 7 consecutive days accounts for 6% of installations! Higher-power installations fare better than DC stations delivering up to 150 kW.



1) Data collected at the end of November 2025 on the H2-mobile website, based on the criterion of open charging stations.
2) Measurements taken at all types of EV charging stations (passenger cars and heavy vehicles).

Number of charging stations in Europe in 2025



Two-Year Projection:

What evolution of batteries and energy storage can we expect in the next five years?

Technological developments in batteries seem to be focusing on so-called solid-state batteries (SSDs). Manufacturers are seeking to eliminate liquid electrolytes, which are based on organic or fluorinated solvents that are sources of pollution (especially in the event of a fire) and contribute to the thermal instability of lithium-ion batteries. Another advantage of eliminating liquid electrolytes is consistent ion exchange performance regardless of ambient temperature. These new generations would also offer a major geostrategic benefit: they can do without graphite for the anode. While the entire world is working on this, there is one obstacle: lithium-ion battery specialists (CATL, BYD, CALB, LG, Panasonic, Microvast, Forsee Power, etc.) have already invested in gigantic production facilities and may not be quick to decommission them, which could delay the transition to this technological breakthrough. The stated objective is to reach 750 to 900 Wh/kg within 5 years. This represents a tripling of energy density compared to current batteries! However, BlueSolutions' experience with LMP (lithium metal polymer) batteries reveals that batteries without electrolytes are susceptible to the dreaded phenomenon of dendrites, which generate internal electrical short circuits. CEA-Liten is conducting fundamental research on this subject and has scheduled the continuation of

this research for 2026. As for energy storage, it is seen as the Holy Grail for battery manufacturers and suppliers, who see it as the realization of the "second life" so long promised for the past 5 years. Why? Because it adds value (financially) to the battery packs after their life in transportation. The development of photovoltaic systems on transport companies' fleets (due to the French Climate and Resilience Law of August 22, 2021, and the APER Law of March 10, 2023) is a driver of the development of on-premises electrical storage for recharging. Transport and warehousing companies still need the financial resources to make these investments. Regarding the assessment of end-of-life batteries, the CEA (ITE INES.2S laboratory) announced in early December 2025 a rapid and accurate diagnostic method for assessing battery health without disassembly. The test duration would be less than an hour, with an accuracy characterized by an average error rate of less than 0.5%. These values were validated using different first-life battery stocks. This CEA development is part of the European Circusol and Battereverse projects, which aim to define the remaining lifespan prognosis. This would complement the existing "battery passport" system for identifying cell components to facilitate future recycling.

The arrival of asian manufacturers: a strategic turning point

The arrival of Chinese brands is now a reality in the automotive market. Nothing of the sort is apparent at Solutrans. Is this the calm before the storm? Yet, registrations of commercial vehicles show a significant number of Asian vehicles.

What is the current situation of Asian, and more specifically Chinese, brands in France? It all depends on the sector considered. Looking at the automotive market, a simple glance at the street reveals that Chinese brands (MG, BYD, Leapmotor, X-Peng, Maxus, Lynk & Co) have reached the

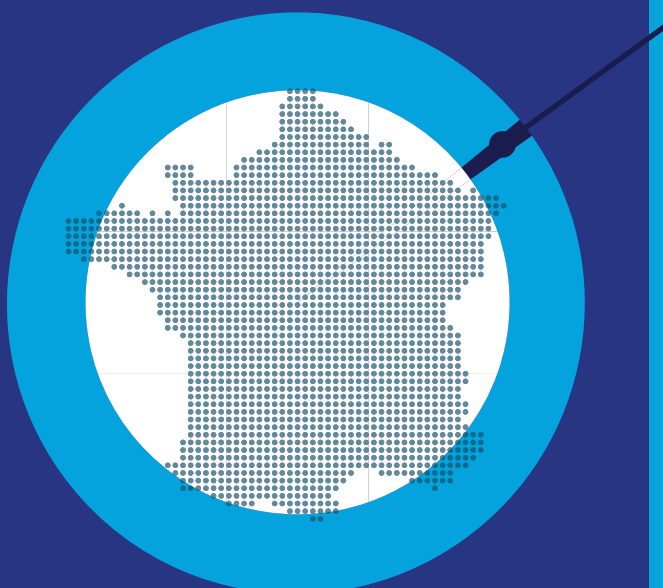
“critical mass” to be visible. According to AAA Data, they represent 2.5% of the French market for all new car brands (6 months 2025). Arval Mobility Observatory published its analysis of the fleet market at the end of October 2025. Compared to the first six months of 2024, they recorded a 113% increase in the first half of 2025. They already account for 1.2% of fleet registrations. The institute notes that “their development, which some brands had hoped would be faster, is hampered by various regulations (European customs duties, European purchase preference with the eco-score, etc.).” This period of latency is likely temporary, as several industrial projects are set to emerge in Europe. This is particularly true in Hungary and, more recently, in Spain, with the takeover of the former Nissan plants in Barcelona. In the commercial vehicle sector, Maxus (SAIC Group) has made a notable entry into France, ranking 3rd in the overall “companies” category of the Arval Mobility Observatory.



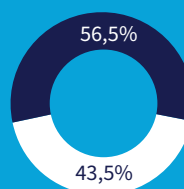
Share of Asian registrations in France (commercial vehicles > 3.5t)



Commercial vehicle
registrations in France in
2025: **44,119**

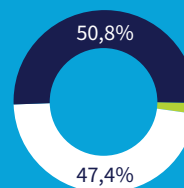


Asia
381 registrations



Japan
322 units

- Fuso: 182 units
- Isuzu Trucks: 140 units



China
59 units

- Sany: 30 units
- JAC: 28 units
- Foton: 1 unit

Commercial vehicles to start with

The Asian offensive in the commercial vehicle sector is nothing new. It all began, unsurprisingly, with Japanese brands. Subject to quotas as early as 1983, they established assembly plants in Europe, paving the way for the Nissan Cabstar (built in Spain), Mitsubishi Canter (manufactured in Portugal), and Isuzu Trucks (assembled in Italy). A common characteristic among these pioneers: the forward-control cab, a requirement for the Asian market. It is therefore no surprise to see this design adopted by Chinese brands like iJAC. While only 8 Maxus vehicles were registered in the first 11 months of 2025, the Maxus's sales volume is significantly higher with 537 units, closely following the Japanese Isuzu Trucks (526 registrations) and its compatriot Fuso (885 units). More anecdotal at this stage is the Foton brand with 3 registrations, but note that it has already begun its establishment in West Germany and is entering the French market through converted vehicles (particularly street sweepers). South Korea made a notable return to Solutrans 2025 with the high-profile launch of the Kia PV5, the first link in a product offensive in the light commercial vehicle segment. Kia France aims for 2,000 annual PV5 registrations as soon as the product range is complete. Its compatriot (and part of the same group), Hyundai, has signed an agreement to market its light commercial vehicle models under the Iveco brand. For these brands, the key to market penetration is electrification. Given that the urban bus segment is particularly

subject to regulatory and political pressure in favor of battery-electric vehicles, it seems logical that the Chinese offensive is focused on this market. A Free Field for Industrial Vehicles

Open field for industrial vehicles

For the moment, industrial vehicles from China are keeping a low profile in France in terms of registrations. Leaving aside "media phenomena" like Windrose, let's focus on registration figures: according to AAA Data France data for the first 11 months of 2025, there were 28 Sany and 1 XCMG. Sany's arrival, very methodical, should be taken seriously, as the company makes no secret of its intention to expand its sales beyond construction trucks to include long-haul tractor units. The agreement for the maintenance and after-sales service of Sany trucks through the Alltrucks network is a sign of this imminent offensive. Other brands, supposedly European, are acting as "fronts": there's Quantron or Ebusco for buses, Altas Auto for minibuses, and the Turkish company BMC, whose new Pro L tractor unit, unveiled at Solutrans, is nothing more than a rebadged JAC K7. What is certain is that, faced with a depressed domestic market, Chinese brands need to rapidly develop their export sales. With the US having imposed heavy tariffs, Europe is the obvious target.

Two-year projection

Should we limit them or work with them ?

To establish themselves in Europe, Chinese brands are replicating the Japanese strategy: local industrial presence and partnerships. BYD and CRRC, for example, have invested in Hungary and rely on European bodybuilders to penetrate the market.

Some attempts have failed, such as Yutong in France, while others have succeeded in the long term, like Sany with Putzmeister or AVIC with Lamberet, preserving equipment and jobs.

Conversely, several announced factory projects (BYD, Ebusco, Windrose) have proven disappointing despite public subsidies. Finally, market penetration also depends on components, raising the question of maintaining European expertise.

Conclusion

Solutrans 2025: at the Heart of Tomorrow's Transport Challenges

The Solutrans 2025 trade show highlighted the major challenges facing road transport and energy, at the intersection of regulation, innovation, and industrial strategy. The focus was on the current phase of the transition: the European framework is defined, but success now depends on the ability of member states to apply the rules consistently.

Energy Demand Growth and Grid Challenges

In terms of energy, the International Energy Agency forecasts continued growth in global demand, driven by population growth and rising living standards. Electricity demand is increasing twice as fast as overall demand. Despite the climate transition, coal and oil consumption is expected to continue to grow, and investments in fossil fuels will primarily aim to compensate for the decline of existing deposits, leading to higher oil and gas prices. Industrial Geopolitics and European Sovereignty

Industrial geopolitics and European sovereignty

Industrial geopolitics was addressed: Chinese brands are adopting a strategy of local establishment and industrial partnerships to penetrate the European market. BYD and CRRC are investing in Hungary and collaborating with European bodybuilders, while Sany with Putzmeister and AVIC with Lamberet are consolidating their presence. Some initiatives fail, others struggle despite public subsidies, and control of components remains crucial to preserving European expertise. Solutrans 2025 thus illustrated that the transition of road transport is now taking place at the intersection of regulation, energy, technological innovation, and industrial sovereignty, requiring strategic and coordinated responses to meet the environmental and economic challenges of tomorrow. See you in 2027 for the next edition of Solutrans, during which all these topics will be addressed.

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