



A CONSTANTLY EVOLVING E-MOBILITY SOLUTION

# NEW ENERGY FOR SUSTAINABLE TRANSPORT



**SCANIA**

# THE COMPLETE E-MOBILITY SOLUTION

A holistic e-mobility solution that is tailored to your specific needs delivers much more than just new vehicle types. It creates opportunity and momentum to not only address transport sustainability, but can also be the key for new business opportunities, new collaborations and partnerships – and new ways to change the transport industry for the better.

As you know, e-mobility is about a lot more than capable vehicles. It's as important to ensure they can be charged and ready to perform their transport duties, to utilise smart digital services to optimise their operation both in productivity and energy efficiency, to keep them well maintained and on the road, as well as finding the right way to finance not only the vehicles – but all of it.

#### Analysing your data

The foundation for the right solution, is always knowledge. Knowledge about what the technology is capable of, but

also about what you need out of it – and where and when that can be made possible. That's why we always build our solutions on data – your data, from your vehicles – allowing us to tailor a solution not only according to your wants and wishes, but adapted to and optimised for your real-world operation.

#### A solution you can trust

When it comes to the robustness and reliability of our vehicles, they're both well-established norm. Scania quality standards means something. And this is a mentality we apply not only in terms of vehicles, but every part of the solution.

## SBTi

Scania was the first manufacturer of heavy commercial vehicles that committed to the Science Based Targets initiative (SBTi) – a joint initiative between global corporate actors to ensure progress towards the Paris agreement goals of limiting global warming to 2°C above pre-industrial levels. In fact, we're pushing even further towards a goal of 1.5°C.



SCIENCE  
BASED  
TARGETS



## THE COMPONENTS OF THE SOLUTION

Although the exact nature of each solution is dictated by the specific needs, we like to say that our truck e-mobility solutions are most commonly built on four major components.

### TRUCKS

The vehicles themselves, available with a selection of e-machines, in multiple chassis and wheel configurations with a variety of cab options.



### CHARGING

Analysis of charging needs and prerequisites resulting in a suggested charging solution – including infrastructure planning, building and implementation, charging hardware and software, and their long-term maintenance and support.



### DIGITAL SERVICES AND REPAIR AND MAINTENANCE

A tailored services package as well as a Repair and Maintenance contract that minimises your costs and maximises your productivity.



### FINANCING & INSURANCE

Financing coverage of not only vehicles and auxiliary equipment, but the complete solution – including charging infrastructure, your services package as well as Repair and Maintenance.



# OUR URBAN ELECTRIC TRUCKS

## FAST CONTINUOUS EVOLUTION

With a mentality of continuous improvement of our products and services – we seldom think in product generations. And thanks to our modular system, this means we can continuously expand our truck offering – approaching new applications and transport needs.

Our ongoing progress means we can now offer more axle distances, wheel configurations, cab options, as well as multiple e-machine choices – optimised for weight and energy efficiency or for torque and power. Our new in-house assembled battery packs are not only the world's greenest, but also offer both increased capacity and faster charging, with updated management systems and software for both the e-machine and batteries.

**The application perspective**  
Although our electric trucks for regional and urban operation share many components, they are tailored for different applications. Balancing vehicle size and weight, payload, power and battery capacity as examples of major factors. This means our urban electric trucks are especially good at for example refuse collection, hooklift and tipper operations as well as last mile temperature controlled and general cargo applications.

**A new operating experience**  
With an electric machine, the operating experience will be different in all the right ways. A more nuanced drive with faster and more direct response, better acceleration and at the same time a smoother feel. All with zero emissions and lower sound levels, and with a choice of both purely electric and electromechanical PTO.

### Technical specifications

|                            |   |
|----------------------------|---|
| <b>Wheel configuration</b> | A/B 4x2, A/B 6x2, B 6x2*4   |
| <b>Axle distance</b>       | 3950 – 5550 mm  |
| <b>Cab options</b>         | L, P, G   |
| <b>Electric propulsion</b> | EM C1-2 – Two-speed, continuous 230 kW (310 hp), peak 295 kW (400 hp)               |
| <b>PTO</b>                 | Electrical and electromechanical interfaces   |
| <b>Battery capacity</b>    | 624 kWh (Installed), 468 kWh (usable) with 75% SOC – Up to 400 km range at 29 t GTW |
| <b>Charging</b>            | CCS2 375 kW / 500 A DC, Fully charged in less than 85 min at 375 kW                 |
| <b>GTW</b>                 | Max 29 t  |

### EM C1-2

Two-speed e-machine, with a continuous power output of 230 kW (310 hp), and a peak power output of 295 kW (400 hp).

### High-capacity fast-charging green battery packs

Reach farther than ever before with the world's greenest battery pack for heavy commercial vehicles – providing a large installed battery capacity (416 or 624 kWh) and powerful charging capability at 375 kW. These state-of-the-art in-house assembled battery packs also allow you to fast-charge from empty to almost full, with very minor impact on battery life.

### Smart Dash

Our in-cab ecosystem works together with My Scania and Scania Driver app to provide a seamless flow of smart insights. The new Scania Navigation app analyses traffic information to keep the driver and fleet manager informed in real time for improved navigation, and the connected map supports Cruise Control with Active Prediction and Speed Sign Information. The integration of our Advanced Driver Assistance Systems also enhances

vehicle safety, protecting pedestrians, cyclists and others on the road. And in terms of connectivity, with Over the Air software updates your vehicle's software stays up to date and allows you to activate new services without visiting a workshop – while the Smart Dash also enables Wi-Fi and Bluetooth servicing capabilities for easier and faster diagnostics at our workshops.



### Wheel configurations

|  |  |
|--|--|
| <b>A/B 4x2</b><br>Chassis height:<br>low/normal/high |  |
| <b>A/B 6x2</b><br>Chassis height:<br>low/normal      |  |
| <b>B 6x2*4</b><br>Chassis height:<br>normal/high     |  |

### Cab options

| Cabs     | Normal |
|----------|--------|
| <b>L</b> |        |
| <b>P</b> |        |
| <b>G</b> |        |

# OUR CHARGING OFFER

NEW ENERGY EVERY DAY

Charging is a key part of a complete e-mobility solution, and it's about a lot more than plugging and waiting. Since we understand both your operational needs and your business perspective – when partnering up with us we will always help you get the best charging solution from both a technical, financial and scalability perspective.

This means that from day one, we see it as our mission to ensure you get the charging solution needed both now, and in the future. With a suite of in-house developed analytics tools we can run simulations to help understand your needs, establish or further elaborate on your electrification plans, and put them into action. With solutions covering depot charging, destination-charging, en-route charging, and even charging at Scania Service centers – we will help you finance, plan and build, as well as provide you with long-term support and maintenance. It's all part of the Scania charging offer.

## Analysis at the core

With more than 130 years of transport industry experience, we know that no two businesses are exactly alike, and that every aspect of the right solution for your operation needs to be anchored in thorough knowledge about your needs and prerequisites. Our analysis leverages the data from not only your vehicles – but literally hundreds of thousands of connected vehicles worldwide – to ensure we fully understand each individual transport situation.

## How we create your charging solution

We always work from a customer first perspective. The six steps below explain how we approach creating a tailored charging solution with your operation in the spotlight, addressing every need and prerequisite of the operation, such as: Energy needs and power availability, suitable hardware and software, best lay-out placements as well as preparations for future scale-up.

### STEP 1 Operational analysis

By analysing operational factors regarding vehicles, routes, shifts and payloads – we identify which operations/flows can be electrified and what their energy needs will be, as well as define your electrification roll-out to realistically meet the goals of your business.

### STEP 2 Site energy analysis

How and when do you charge? The energy analysis looks at the options and feasibility of different charging strategies. Solutions built on thorough analysis has shown to substantially lower the infrastructure investment costs.

### STEP 3 Charging hardware

The right solution for any specific operation depends on the right combination of charger types and charging hardware. All of the hardware in our broad portfolio is thoroughly tested to make sure that they can handle heavy duty vehicle charging and rough operations.

### STEP 4 Charging software

Smart charging using a Charging Management System (CMS) is a key component to getting the most out of your charging hardware and power grid – without paying for overcapacity. With features such as monitoring, managing/restricting chargers, intelligent scheduling, vehicle pre-conditioning – and even allowing you to sell unused energy capacity to other fleets.

### STEP 5 Installation and commissioning

The physical deployment of chargers should be a smooth and easy process – which is why we coordinate the process for you. We bring the process all the way from breaking ground to when the chargers are fully operational, including certifications and training of local staff.

### STEP 6 Support, Repair and Maintenance

And as a final step, we set up an appropriate support and Repair and Maintenance contract for your operation – with multiple levels of support and availability, both remote and on-site. Fully tailored to your needs, optimised for quickly and seamlessly resolving any issues and to minimise any disruptions, and ensuring your electrification journey continues smoothly towards the future.

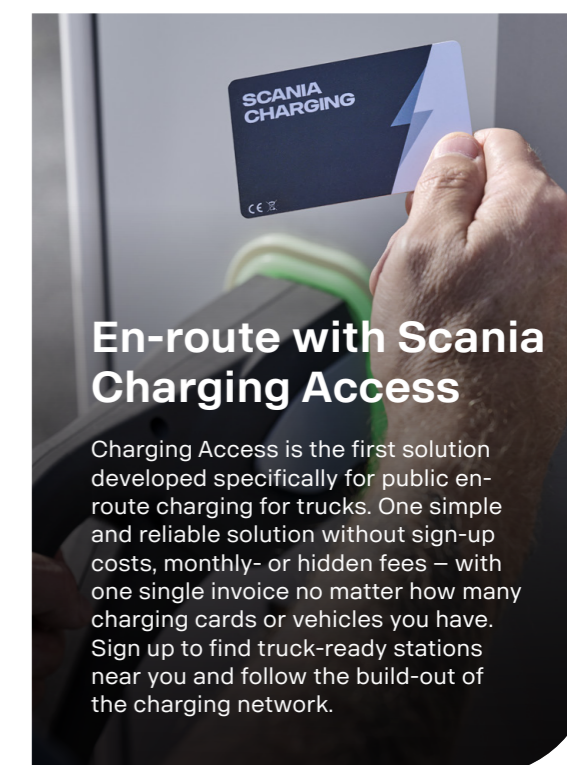
## High-quality charging hardware

We use different types of charging hardware from multiple high-quality manufacturers – all to find the right charging solution for you. Stations, satellite chargers, wall boxes and even portable chargers could all be part of the solution that best fulfils your operational needs and prerequisites.

## Smart charging software

Working smarter is more efficient than working harder, and a Charging Management System (CMS) adds that smartness to improve your business efficiency. A CMS can address both your vehicles operational preparedness, maximise your grid capacity usage, minimise power infrastructure investments, and day-to-day energy costs.

- Scheduled charging to avoid peak energy prices and minimise your energy costs.
- Staggered charging to maximise existing grid capacity, allowing you to electrify further without upgrading your grid connection.
- Load balancing to allow multiple vehicles to charge at the same time, prioritised for their upcoming transport assignment.



## En-route with Scania Charging Access

Charging Access is the first solution developed specifically for public en-route charging for trucks. One simple and reliable solution without sign-up costs, monthly- or hidden fees – with one single invoice no matter how many charging cards or vehicles you have. Sign up to find truck-ready stations near you and follow the build-out of the charging network.

# DIGITAL SERVICES AND REPAIR AND MAINTENANCE

## WORK SMART AND CONNECTED

The goal of our services offer is to ensure that you feel not only confident and well-supported in your electrification journey – but that the services enable you to work in smart, modern and accessible ways. Empowered by insights and interconnected features from our digital services – in the driver’s seat, in the office – and in your phone for everywhere in between.

### Smart Trucks and data sharing

As your doorway to the digital world of Scania, **My Scania** is a personalised web-platform that presents our unified ecosystem for digital services and products such as our fleet management features – accessible anywhere and anytime. And for drivers, we also offer both the **Smart Dash** and the **Scania Driver** app – with features such as driver grading and tips on how to improve further, as well as simplifying workflows like checklists and defect report handling.

### It’s not about changing your business – it’s about electrifying it

Although we are all going through a major shift – our key focus is to make that shift a positive one for you. Our digital ecosystem and the services within it, are there to make every part of your operation smarter. More insightful, transparent, flexible and responsive. Simultaneously more proactive as well as reactive – based on well-informed decision making. More productive and efficient. And most importantly; more sustainable.

### Supporting you based on your priorities

We approach the fully tailored solution from a business priority perspective to efficiently figure out a services setup that delivers on your business needs. Is your main priority uptime? Or would you rather say it’s energy efficiency or information flow that takes priority? We’ll make sure you get the services offer to match.

**UPTIME SERVICES**

**ENERGY EFFICIENCY SERVICES**

**DATA INTEGRATION SERVICES**

## CONNECTIVITY THROUGH THE BEV CONTROL PACKAGE

A digital services package that empowers your electric operation with multiple services for smart and efficient insight and data sharing.

### Departure Scheduling

Ensure that your vehicles are always ready when they need to be, with the battery charged and pre-conditioned for its upcoming assignment, and with the cabin climatized according to the driver’s personal preferences.

### Range Support

With battery-electric vehicles, range is always an important factor. The Range Support service helps you understand each truck’s range in real-time, based on factors such as current battery level, cargo and the surrounding topography – and helps you plan your trip and charging stops accordingly.

### Driver Evaluation

Operating a battery-electric truck in an energy efficient way requires drivers to adapt their driving style. Driver Evaluation helps fleet managers to monitor and improve the performance of their drivers through grading and ranking them in three disciplines that are suited to the particularities of electric vehicles.

### Scania Charging Access

When depot and destination charging simply isn’t enough to cover the transport needs, Scania Charging Access provides easy and convenient access to a wide network of truck-capable public chargers.

# CONNECTED REPAIR AND MAINTENANCE

In our overall Repair and Maintenance offering, we naturally include everything from vehicle service and needs-based workshop repairs to full coverage of a fleet repair and maintenance needs. But the connectivity in all our vehicles have allowed us to evolve our offering further to ensure both maximised productivity through maintenance and minimised downtime when the unplannable occurs.



- Flexible Maintenance uses intelligent data analysis to base your service intervals on your specific routes, road conditions and operational constraints, addressing maintenance needs before they become an issue – but never prematurely.
- Easy and accessible driver defect reporting with direct integration to the service planning tool.
- Remote diagnostics can identify problems early and prepare the workshop or service technician to arrive on site with the right spare parts already in hand.
- All with our world-class global service network as a backbone.



# FINANCING AND INSURANCE

NOT ONLY FOR VEHICLES

When it comes to e-mobility, “unknowns” is a commonly mentioned word. And it’s a term many people associate with risks. However, the simple fact is that we have more than 130 years of transport industry experience – which means that we have far more known than unknown factors when examining the big picture.

For us, mitigating your risks is quite simply an integral part of our full solution offer. We cover everything from how to finance it, to ensuring you’re adequately insured – all through one party, eliminating those “unknowns”. We also have a very flexible approach to tailor our services to your specific needs, from the contract signing to continuously adapting to the evolving requirements.

## FINANCING

When we say that we provide tailored financing of the full solution, we truly mean it. In addition to the vehicles themselves, the tailored package of services as well as the Repair and Maintenance contract, we can also

cover the charging component of the solution. This includes both charging hardware and charging management software.

We also offer multiple financing models, to ensure your options align not only with your operation, but also your business goals. Do you want to own your equipment outright, or do you want to mitigate risks related to factors like residual value through a lease? We understand your perspective and operational needs, and we understand how the numbers impact them. So, let us work together to determine the right solution.

For a truly green investment – green financing is also available for for electric trucks.

All fully electric vehicles can be funded with “green bonds”, which means Scania uses funding exclusively available for “green investments”.

### Financing coverage

- Vehicles – both new and second-hand
- Body building / customisation
- Trailers and auxiliary equipment
- Chargers & Charging infrastructure
- Repair and Maintenance contracts
- Digital services package

### Financing models

- Loan / Hire Purchase
- Financial lease
- Operational lease

## INSURANCE

The truth is that many traditional insurance companies are uncertain about how to cover electric vehicles, and these uncertainties are likely to be reflected in your premium. On the other hand, we have an in-depth understanding of our vehicles, right down to the last nut and bolt – and that goes for our electric vehicles as well.

What we can offer you is complete accountability, without any blame shifting or finger pointing. We focus on providing the fastest possible claims handling, while also ensuring your repairs are done at our world-class network of Scania workshops with only original Scania parts. All to make sure you get the maximum sense of safety and security for your operation, and that you get back on the road as fast as possible.

## Insurance offers

- Scania Casco Insurance**  
Scania Casco Insurance offers physical damage and collision coverage, with various options for deductible and premium balances.
- Motor Third Party Liability**  
Meets legally mandated requirements, and offers protection against legal liability claims.
- Scania Guaranteed Asset Protection & Return-To-Invoice**  
Provides coverage up to the full vehicle price in cases of theft or total loss of a vehicle, ensuring that you can cover any outstanding debt or fully replace your vehicle.
- Scania Credit Life**  
Offers coverage for any outstanding debt in the case of death or disability, allowing you to recover any outstanding deposits paid on the vehicle.

# RESPONSIBLE BUSINESS DEMANDS ACCOUNTABILITY

Sustainable transport is a journey of many steps. Steps that we need to take together. Not just vehicle manufacturers, transport providers and transport buyers – but also every party involved, down to the individual component suppliers.



## Responsible batteries

Battery discussions are always relevant both in terms of range, capacity, battery management and charging speed – but also in terms of how they're made, how the raw materials are sourced, and what happens to them after they're no longer fit for the vehicle. And that's why we are creating an ecosystem that supports circularity, with strategically located hubs and partners.

## Re-use

Reuse is the first option in circular economy. A good example is mid-life renovation, where instead of mounting brand-new batteries that would outlast the vehicles, reused batteries whose lifetime matches the remaining vehicle lifespan can be installed.

## Re-purpose

Even after reaching the end of their life in the vehicle, batteries can be used for applications such as Battery Energy Storage Systems (BESS). These systems can provide frequency balancing services to grid operators as more renewable energy sources are introduced, or to boost underpowered local electric grids.

## Re-cycle

When the battery has reached a stage where it cannot be reused or repurposed, Scania has partnerships and infrastructure in place where precious raw materials such as cobalt are recycled to reduce the need for virgin material in the production of new batteries.

## A sustainable supply chain

Our battery cell supplier Northvolt has the vision to build the greenest battery in the world, with a minimal environmental footprint. Already today, Northvolt manufactures cells with lower CO<sub>2</sub> emissions than the industry average – and are constantly reducing their emissions to meet their 2030 target of 90% reduced emissions compared to the 2021 industry standard.

At Scania, we put strict requirements on our suppliers regarding fulfilment of the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, and demand transparency in the supply chain. We also perform third-party audits on the suppliers in the

supply chain, and we're proud to say that we thoroughly vet both our direct suppliers, but also their suppliers going down the chain – five layers deep.

## Life cycle analysis

Preliminary analyses show that with an energy mix at 47 g CO<sub>2</sub>e/kWh, the lifetime CO<sub>2</sub> reduction is 85% – achieving break-even\* at approx. 40 000 km for a truck in regional operations. For an energy mix with higher CO<sub>2</sub> emissions, break-even\* will take longer – but even at 300-400g CO<sub>2</sub>e/kWh, it is achieved within 100,000 km.

## The first step to operating responsibly, is buying responsibly

So, our call to you – our challenge even – is to keep us accountable. To follow our lead and demand sustainability in more ways than just looking at energy efficiency and emissions per transport. We know we are up to the task. And if you have any questions regarding our responsible sourcing, our batteries, or our Life Cycle Analyses – don't hesitate to contact us.

\* LCA (Life Cycle Analysis) break-even is defined as when the lower emissions from electric vehicle operation will have fully offset the higher emissions from production of a battery electric vehicle.



# EXAMPLE E-MOBILITY SOLUTIONS

With solutions built around brand new and sometimes even future technology, every solution is unique. At the same time we want to show you examples of the full scope of an electric solution – down to the details.

developed using our consultative sales process. Two examples of these cases are described below at a very high level – but in our future conversations you can expect to be able to review them in quite a detailed fashion.

As such, we have created what we call customer archetypes built around real-world business scenarios, defined and



## ARCHETYPE CASE 1

### TRANSPORT OF SECOND PARTY BULK GOODS

This company transports chemicals for manufacturing, to be delivered to the direct production flow and with an average contract length of 5 years. The company owns and operates a 50-truck fleet of 6x2 tractors and trailers with bulk chemical tanks at 64t GTW. They load the chemicals before their 95 km route to their destination. At the destination the unloading process provides the perfect opportunity for destination charging before their 95 km return trip. The transports are sensitive in terms of just-in-time delivery and the roundtrip should be covered in one day. They have a firm demand from their transport buyer: only zero emission transports for one of their production flows.

Electrification plans: Acquire ten electric vehicles initially, with the ambition to have full fleet electrified by 2027.

Priorities: Sustainability first, productivity second, with payload and safety as remaining priorities.

#### Solution

##### VEHICLES

Ten Scania 6x2 tractors and trailers with R cab, 375 kW CCS2 charging, EM C1-4 400 kW e-machine, and 416 kWh battery capacity – operating at max 64t GTW.

##### CHARGING

Scalable charger and management system that will enable depot and destination charging.

Overnight depot charging with station or wall box chargers.

Destination charging during loading and unloading with a power unit and a charging satellite per vehicle, providing enough charging in 40 minutes for the return trip.

Charging Management System (CMS) that covers both the depot charging, and the destination chargers with charging notifications and monitoring through My Scania.

Full Scania responsibility for installation of hardware, on-site training of staff, and solution maintenance.

##### SERVICES

With sustainability as the top priority and productivity second, the services recommendation enhances the Core Services offering with Energy Efficiency Services and Uptime Services. With features such as charging monitoring, Departure Scheduling as well as Range Support and Fleet Position.

## ARCHETYPE CASE 2

### TEMPERATURE CONTROLLED GOODS

This company runs a fleet of 10 trucks, and transport dairy products from factories to central warehouses and large retailers. Starting each morning at their depot, their average daily transport distance is about 330 km, going between urban areas on mostly flat roads – with an overall average speed of 60km/h. Each trip starts fully loaded, and the return trips at the end of each day are done completely empty. This increases the possible range – and makes overnight depot charging a quick and easy implementation that is fully capable for their transports needs. The company is being paid per cubic metre per kilometre, with perishable goods and penalties for late deliveries.

Electrification plans: Start with three vehicles, as a pilot to evaluate further electrification at a later time.

Priorities: Uptime is the top priority, and energy efficiency second.

#### Solution

##### VEHICLES

Three Scania 4x2 tractors with R-cab and 375 kW CCS2 charging

Three-axle box trailer with refrigeration. 40t GTW (tractor + trailer)

##### CHARGING

Charging solution based around overnight depot charging without quick-charging needs.

Three standard wall boxes

Connected to existing grid capacity with no immediate need for upgrade

Basic Charging Management System (CMS)

Installation by third party with Scania oversight

The site is prepared for further in-ground cabling to support future wall boxes.

Scalability for the future through upgrading the charging management system to a more advanced version with load balancing and charge scheduling – utilising existing capacity to the maximum.

##### SERVICES

With uptime as the top priority, the services recommendation is primarily based around Uptime Services as an addition to Core Services. This allows the customer to stay ahead of issues, preventing them from impacting their transports, but also providing deep insights into vehicle status and maintenance needs, proactively solving potential problems and ensuring maximum uptime and productivity.



## ARCHETYPE CASE 3

# HOOKLIFT TRANSPORTS

This company operates a majority Scania mixed fleet of 20 vehicles, of which 10 are hooklifts with trailer. They transport their own containers which they set up at building sites to collect waste, then transports further to waste sorting facilities and on to recycling plants. At night, the trucks are parked at the depot, which has enough available electrical power to electrify a few of their trucks – but more power can be achieved with some construction work. The fleet operates three days per week in urban contexts without trailers, a total weight of between 15 and 27 tonnes for their ten 25 km round-trips at 40 km/h average speed with 5 minutes of hook lift usage. Two days per week they perform regional transports at a total weight of between 20 and 44 tonnes, for two daily 220 km round-trips on mostly flat roads with average total speed of 60 km/h and 5 minutes of hook lift usage per trip. The company is paid per tonne per km, and since waste handling is a business with a high sustainability focus, there's high pressure to have and implement sustainability plans.

Electrification plans: Start with three vehicles, scaling up to 10 vehicles within five years.

Priorities: Payload is the top priority, and energy efficiency second.

## Solution

### VEHICLES

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Ten Scania 6x2\*4 trucks with R cab, 375 kW CCS2 charging and hooklift

Two-axle glider trailer. 40t GTW (tractor + trailer).

Three delivered for the first year, all ten delivered within five years.

### CHARGING

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To allow the customer to start electrifying immediately, despite lacking sufficient power grid infrastructure, the implementation is done in two stages.

Stage 1 – Year 1: Three trucks in urban operation with temporary overnight depot charging solution.

- 3 portable chargers, rented to the customer
- Basic Charging Management System (CMS). It's simple, plug-and-play and requires no training – but provides follow-up power consumption reports and some other basic functionalities at low cost
- Grid capacity upgrade planned and implemented during year one

Stage 2 – Year 2+: Adding three trucks for regional operation, with top-up charging at depot – and implementing long-term charging solution.

- One power unit, with six charging satellites
- Additional power units are installed as the fleet grows, allowing capacity for both top-up charging and overnight charging of BEVs, with all the groundwork prepared at the start for easy future installations.
- The site is prepared for further in-ground cabling to support future charging satellites
- Advanced CMS is installed which features functionality for scheduling, power optimisation and notifications – as well as dynamic power routing between satellites to enable high power top-up charging. The customer staff is trained on-site by Scania

All installations done by Scania in cooperation with certified suppliers.

### SERVICES

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With payload as the top priority, the services recommendation is primarily based around Core Services, facilitating smooth day-to-day operation, ensuring that vehicle administration or needs never get in the way of the transport operation, and providing peace of mind related to entering new technology. The solution is also complemented with a few of the Energy efficiency services, and Uptime services.