POWER SOLUTIONS

POWER INTEGRATION SERVICES

SCANIA

POWERED FOR SUCCESS

Scania power systems can be found in a wide variety of contexts. For them to function to the best of their ability, they need to be specified according to the intended usage and installed and adjusted optimally.

A solid foundation
Based on the latest technology for our on-road vehicles, Scania develops power systems widely regarded as the most efficient and reliable on the market.
And through decades of close customer collaboration, we understand the challenges facing manufacturers of vehicles, vessels, and equipment. All in all, this provides the foundation for our power solutions.

Services improving hardware
Creating the best possible power solution for manufacturers and users comes down to more than hardware. Scania's Power Integration Services – consisting of Installation Support and Power Optimisation – facilitate the industrial process and adapt the power system according to its intended usage. This safeguards that all demands are met, further enhances reliability, and optimises performance in terms of handling, fuel consumption and emissions minimisation. In short, our expert support gives you peace of mind and an even better product.

Power Integration Services – customer value

- Compliance with regulatory demands
- Warranty demand fulfillment
- Enhanced product reliability
- Improved product performance
- Increased operational productivity

INSTALLATION SUPPORT

With Installation Support from Scania, you receive expert advice, guidance, and hands-on help in the early phases. This safeguards a smooth industrial process, that demands are met and ensures that you get the best possible product in terms of reliability, efficiency, and emissions reduction.

Our experience – your peace of mind
With Scania, you can be sure the power system is specified right and that the installation is handled correctly. This means full integration between various software and hardware components. Utilising our experience, we help specify according to your needs in terms of output, displacement, cooling system, flywheel interface, transmission connection and power take-out, among other things.

With you all the way
Scania's expert engineers are then involved throughout the project, providing information, advice, guidance and practical support with design and implementation. Our goal is to ensure perfection in every phase. To do so, we utilise technical data, 3D drawings, installation guidelines, calculations etc.

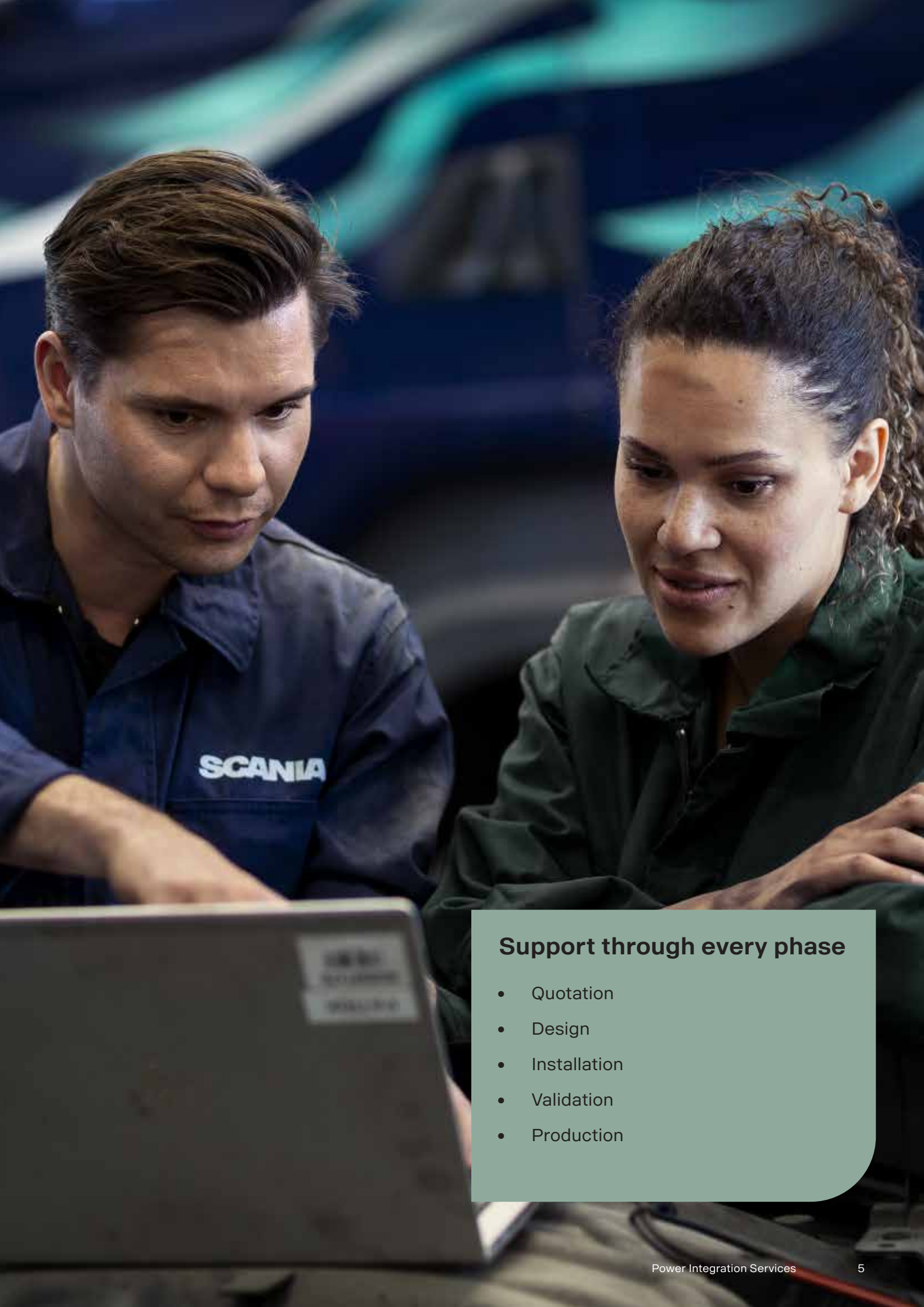
The support covers that which is required for warranty and regulations as well as aspects that can affect performance or reliability. This includes load capacity at rated speed, dimensions and distances between engine and aftertreatment system, interfaces to other components, piping, maintenance access and more.

Final implementation
Integration of a power system should always include an installation review. In that, an analysis is conducted and the outcome is compared to the installation manual, and live measurements are compared to calculated estimates. This is done to ensure product quality on an overall level. The review covers everything from fuel-, exhaust-, and cooling systems to intake and ventilation, pressure control, temperature & cooling performance and control, CAN verification and pedal calibration. The review is then summarised and documented in a report – to be used as a reference.

Possible deviations are resolved via a solution-oriented workflow, before moving into series production, while non-critical findings instead result in recommendations for how to move forward.

Ensuring long-term progress
In the early stages of product usage, extra attention is paid to operational functionality – and any new insights are applied to the solution.

In parallel, Scania trains your engineers to understand the details needed.



Support through every phase

- Quotation
- Design
- Installation
- Validation
- Production

TORSIONAL VIBRATION CALCULATIONS

Vibrations are the enemy of longevity in any mechanical system. All rotating masses contribute to torsional vibration frequency and magnitude – and calculating the vibrations present in the overall system is dependent on the specific installation and components connected to the engine.

Through vibrations in the powertrain, the crankshaft and vibrational damper risk overheating and breaking. A professionally performed and approved TVC is not only required for Scania warranty coverage – it also minimises the risk for a breakdown. By ensuring vibrational levels stay within permissible limits, the crankshaft can be protected from damage. This in turn safeguards product reliability, uptime and, in the end, productivity.

TVC by Scania
Scania has long experience of torsional vibration calculations for a variety of applications, on-road and non-road. Having Scania perform the TVC means you have a single point of contact, and ensures that responsibilities surrounding product performance and warranties are clear.

More than pass or fail
TVCs are about more than just a stamp of approval. It is a process where a number of components can affect the overall calculation and it is therefore important to perform calculations at an early stage. If calculation results are outside of admissible limits, we provide a deviation report explaining the issue and suggesting concrete actions. This can for instance be about recommending a new crankshaft with other characteristics.
The quality of the overall solution is always the priority – and we will help you reach that.

Did you know?

Vibrations in the powertrain can cause the crankshaft and vibrational damper to break, resulting in costly downtime.

Did you know?

Torsional vibration calculations by Scania take a wide approach to safeguard equipment, vehicle, or vessel uptime – contributing to increased productivity.

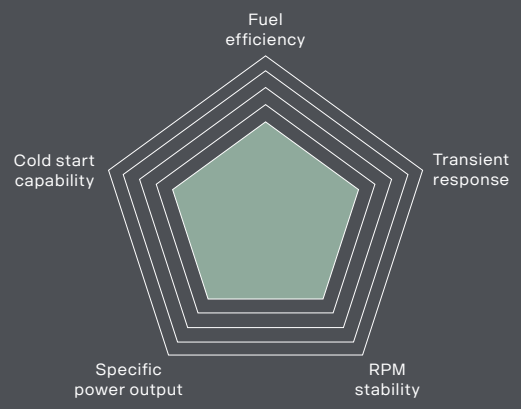
POWER OPTIMISATION

These days, a power system is so much more than meets the eye. Besides the visible hardware, the software and calibration play a hugely important part in engine functionality and behaviour. With Power Optimisation by Scania, the system and the power it provides is fully adapted and suited for its specific purpose – with major positive implications and wide benefits to the operation.

Is RPM stability a priority? Is optimised fuel consumption imperative for your operation? What about cold starts? While, for instance, the transient response is pivotal for an operator of excavators, it is of less importance for dump truck operators, who are instead in need of immaculate performance between gear shifts. Power Optimisation by Scania, where our expert engineers leverage their ability to have granular control over power system characteristics, ensures that the system performs at its best for its intended usage.

From specification, to optimisation
Scania power systems are designed with an even balance between a number of factors. This provides a well-rounded profile that is partly optimised for a specific segment, but can manage most usage scenarios in a good way. However, adapting its characteristics through Power Optimisation takes performance to an entirely new level. Our expert adjustment of the calibration also considers adapting interfaces and adjacent components. The result is a completely altered power system that is perfectly suited to the particular vehicle, vessel or piece of equipment. All according to the needs of the specific application or even operation, focusing on reliability, performance, or emissions minimisation.

Standard power system characteristics

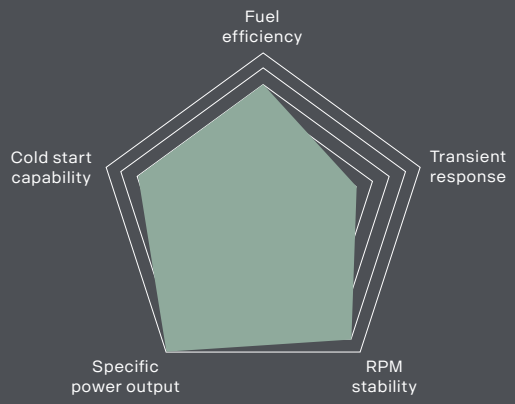


The diagram is a standardised visualisation used to showcase different optimisation priorities in terms of five common power system characteristics. It does not represent exact scale or proportions.

POWER SYSTEM ADAPTATION EXAMPLES

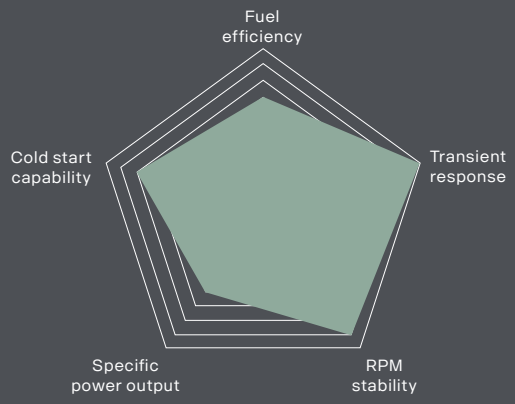
Dump truck

When carrying heavy and potentially unsecured loads in less than perfect road conditions, having the right power output when needed as well as RPM stability is critical. In addition, minimised fuel consumption and excellent cold start capability help improve operating economy and safeguard uptime.



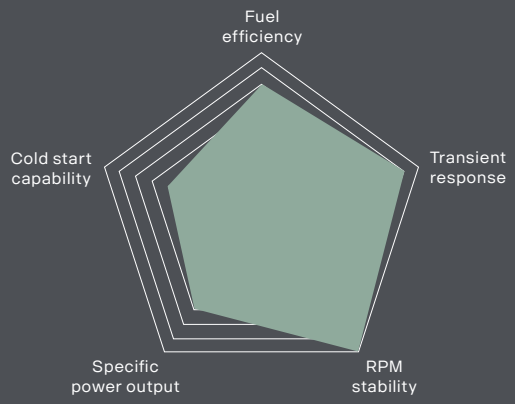
Excavator

Excavator operators should always be able to rely on having the needed power response at their fingertips. This can be ensured by optimising the power system to have excellent transient response and RPM stability. Reliability and efficient operations also require good cold start capability and fuel efficiency.



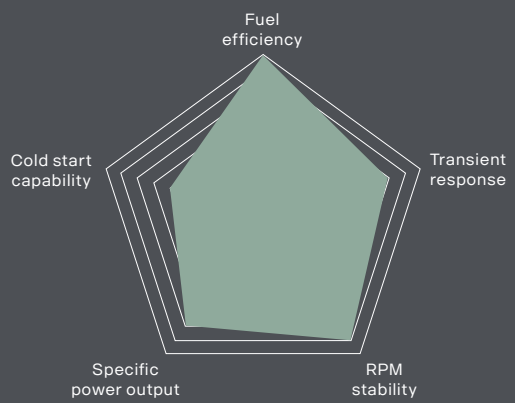
Power generator

Depending on usage area, a power generator has different needs. In most cases, RPM stability and transient response is vital for handling step loads and grid demands, and to thereby maximise power reliability. Low fuel consumption can also be a requirement for cost- and environmental purposes.

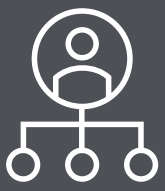


Patrol boat

Planing vessels need throttle effect to ensure quick acceleration to cruising speed speed. This requires a high level of transient response, specific power output, and good RPM stability from the power system. At the same time, next level fuel efficiency is needed to reduce cost and emissions.



SERVICE OFFERING



INSTALLATION SUPPORT

- **Specification guidance**
- **Design guidance**
- **Installation information and guidance**
- **Torsional vibration calculation (TVC)**
- **Installation review**
- **Start-up validation**
- **Warranty approval**
- **Installation report**
- **Training**
- **Operational follow-up**

POWER OPTIMISATION

- **Power system calibration of:**
  - Fuel efficiency
  - Cold start capability
  - Transient response
  - RPM stability
  - Specific power output


SCANIA

SCANIA POWER SOLUTIONS

Power Systems
Highest quality 9-, 13-, and 16-litre engines for primary and auxiliary purposes as well as aftertreatment systems and a wide variety of adjacent components. Choose between a range of power ratings.

Industrial
Output options: 202 – 566 kW

Marine
Output options:
- Propulsion: 162 – 882 kW
- Auxiliary: 199 – 640 kW

Power generation
Output options: 250 – 800 kVA (50 Hz / 60 Hz)

Power Integration Services
Specification guidance and installation support services from the design phase to full-scale production as well as power optimisation services. Our expert engineers ensure optimal component and system integration and thereby the best possible product for your needs.

Maintenance and Repair Services
Top-quality parts as well as professional maintenance and repair services through a worldwide network and proactive on-site support with remote diagnostic capabilities – providing cost control and maximised uptime.

Fleet Management Services
Monitor and manage your fleet and gain operational insight through real-time data. Users choose between the Monitoring-, Control-, or Data Access Package, while OEMs/builders have access to a separate adapted package.

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