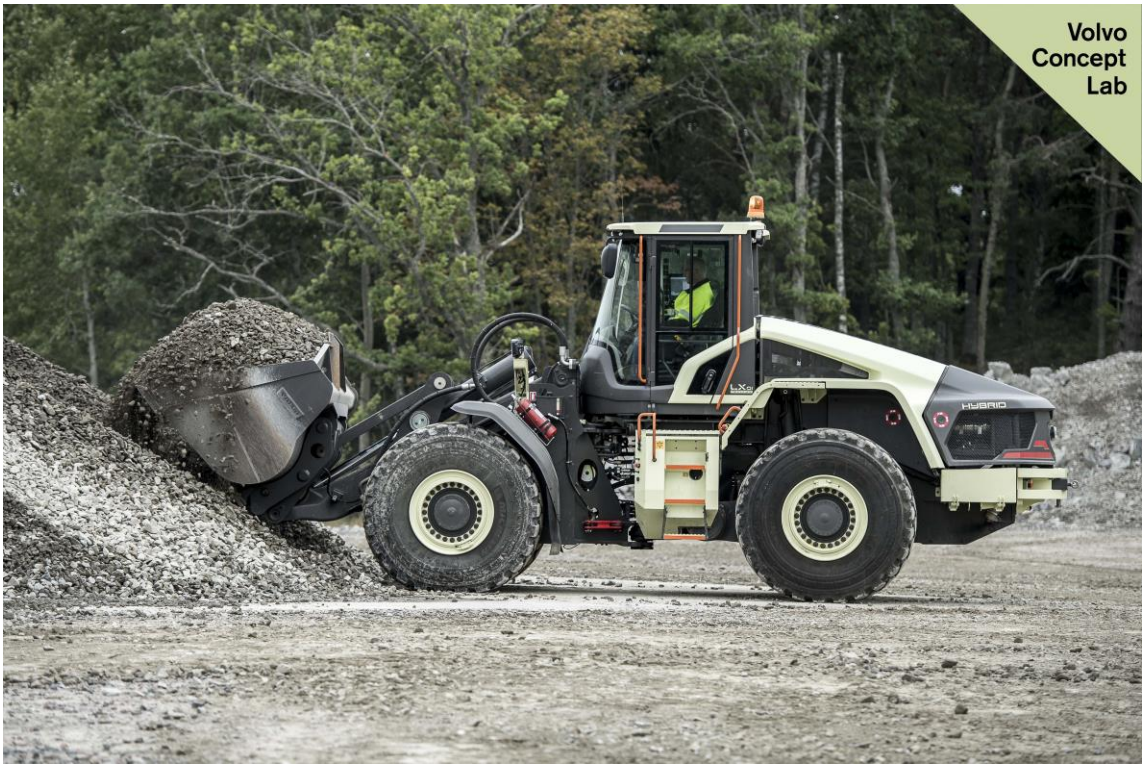
PRESS INFORMATION

The electrification of construction equipment represents ‘future of industry’, says Volvo Construction Equipment

Volvo Construction Equipment wowed customers, the international press, government representatives and academics when it presented the company’s prototype electric hybrid wheel loader – a machine that can deliver up to a 50% improvement in fuel efficiency.



Volvo Construction Equipment (Volvo CE) reinforced the fact that energy efficiency is at the top of the company’s agenda when it unveiled its prototype hybrid wheel loader – known as the LX1 – at the Xploration Forum in Eskilstuna, Sweden, on September 9th-14th. The company gave customers, the international press, government representatives

Volvo Construction Equipment S.A.
Avenue du Hunderenveld 10
BE-1082 Brussels
Belgium

Telephone
switchboard
+32 2 482 51 11

Telefax
see above

RPM
Bruxelles
VAT
BE 0436.180.690

ING
310-0813608-58

and academics an exclusive look at the electric hybrid machine, which can deliver up to a 50% improvement in fuel efficiency. On top of this, the LX1 also offers a significant reduction in emissions and noise pollution compared to its conventional counterparts.

The LX1 is a series hybrid that incorporates a driveline that consists of electric drive motors mounted at the wheels, electric hydraulics, an energy storage system, a significantly smaller diesel engine and new machine architecture. It's this combination that enables the substantial gain in fuel efficiency. The prototype – which has 98% new parts and a fundamentally new machine design – is capable of doing the work of a wheel loader that's one size larger. At this stage, the LX1 is part of a research project and it is not commercially available.

Short and long-term outlook

The Volvo Group defines electromobility as 'commercial vehicles and machines that can utilize an electrical motor to propel or to perform the main purpose of the machine'. A hybrid is classified as a machine that uses more than one power source and captures and reuses energy that would otherwise be wasted. It is a prerequisite that the machine has the capability for energy storage to count as a true hybrid.

Volvo CE started its journey with electromobility and hybrid technology in 1998. The company has long-term plans to develop products and services for electromobility, including electric hybrids and electric sites. "Although we believe that there will be a major shift towards electric hybrid technology in the future, our customers, quite rightly, want improved efficiency now. We are delivering this through more conventional technologies and soft offers," says Scott Young, electromobility program manager at Volvo CE. "This is because we need to meet customers' immediate expectations in terms of total cost of ownership (TCO). A large part of TCO is energy cost, but other significant expenses include purchase price and maintenance. These aspects help drive our hybrid development plans. Therefore, before we launch a machine like the LX1, you can expect to see elements of this design incorporated into our products. This supports short and mid-term developments and requirements while the market continues to accept the technology, technology improves and the cost of new technologies decreases."

Collaborating with customers

Volvo CE has teamed up with its customer Waste Management – the largest environmental services and recycling company in North America – to field test the LX1. Waste Management, which owns one of the largest fleets of Volvo CE equipment in the world, is currently running a conventional machine to gather baseline data at two of its facilities in California. After the Xploration Forum, the LX1 will be shipped to the company so that it can carry out fuel efficiency and emission reduction tests at these sites.

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switchboard
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see above

RPM
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BE 0436.180.690

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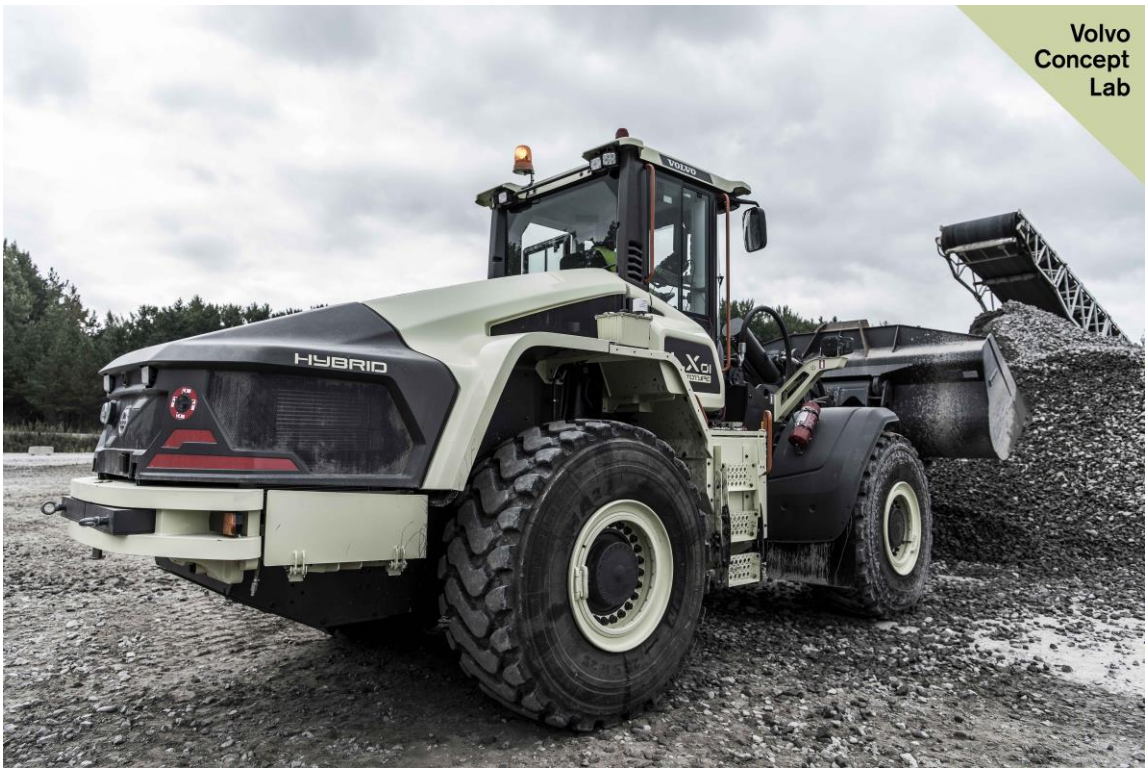
"We see Volvo CE as a strategic partner," says John Meese, senior director of heavy equipment at Waste Management. "We have one of the largest fleets of construction equipment in North America and want to use the best available technology to improve our operations and the service we deliver to customers. From the minute we were introduced to the LX1 we knew we wanted to work with Volvo CE to prove the concept in the real-world environments we operate in. We are anticipating excellent results when it comes to reducing the use of fossil fuels and lowering exhaust emissions. An additional benefit is the dramatic reduction in noise pollution."

Return on investment (ROI)



"Although it may be possible to realize fairly high levels of fuel savings and productivity gains in prototype form, when it comes to serial production you have to consider cost and ROI," concludes Young. "Hybrid technologies are still a relatively expensive solution and adoption has been slow. This is because the benefit of current hybrid machines on the market isn't significantly higher than conventional technologies, so it takes longer to achieve payback on your investment. However, the cost of energy storage systems like lithium ion batteries is steadily decreasing, along with other technology, so that's starting to make hybrids more attractive financially. There are still opportunities to further optimize conventional technology – and these developments will compete with hybrid technology for some years. Although having said that, we are

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Telephone
switchboard
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BE 0436.180.690

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currently in a period of exponential technology growth and I believe this industry shift will move at a faster pace than others have in the past."

Ends.

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For further information, please visit: www.volvoce.com/press
Or contact:

Elisabet Altin
Director, Communication Technology
Volvo Construction Equipment
Tel: int +46 470 387809
Email: elisabet.altin@volvo.com

Brian O'Sullivan
SE10
London
Tel: int +44 77 333 50307
Email: brian.osullivan@se10.com

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