

# Savings along the line

## DIWA.6 Stop-Start Technology







# Birmingham buses raise the bar for environmental friendliness

The bus route 37 in Birmingham has been a showcase project since the summer of 2015. The reason: National Express buses are the first in the world to make use of Voith's DIWA.6 Stop-Start Technology on regular services. The engine shutdown system reduces not only noise, CO<sub>2</sub>, NO<sub>x</sub> and dust emissions, it also generates fuel savings of up to 12 percent. More than 1 500 buses have already been equipped with this technology.

"We deliberately chose the Voith technology," said Thomas Flaherty, Engineering Manager for National Express at the Acocks Green depot. "As a large public transportation company, we do not want to simply promote technical progress, we want to actively advance the sector with new technologies such as the DIWA.6 Stop-Start system."

The largest bus operator in Birmingham has set itself clear environmental goals and wants to take the lead in the area in terms of technology. "Clean air is becoming an increasingly important consideration, particularly in downtown areas. By cooperating with Voith, we are showing that: The bus industry and local passenger transport are adjusting to new developments. And our approach is to promote these positive technologies accordingly."

## Up to 12 percent fuel savings with Stop-Start Technology

Developed specifically for urban mass transit, the driveline can be switched off during regular services without having a negative impact on the start-up behavior of the bus.

The result: Fuel savings of up to 12 percent depending on the duty cycle.





- 1 Less fuel, less CO<sub>2</sub>, less NO<sub>x</sub>, less dust emissions – the operator National Express experiences a lot of benefits with the DIWA.6 Stop-Start Technology.
- 2 Thomas Flaherty, Engineering Manager at National Express, views the Voith Stop-Start Technology as trendsetting and is willing to promote it within his company.

National Express buses with DIWA.6 Stop-Start Technology are used on the 37 route between Birmingham and the suburb of Solihull. The route is 15.5 kilometers (9.6 miles) long and has 42 stops. Apart from the short distances between stops, there are also many sets of traffic lights and junctions where buses without this technology have, until now, consumed unnecessary amounts of fuel and polluted the environment in terms of both noise and contaminants.

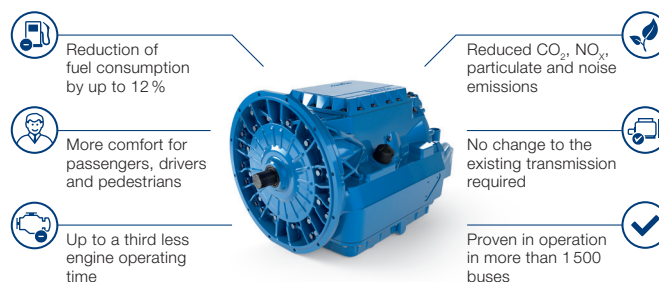
#### Detailed data analysis on request

Upon request of the operator, Voith will provide, as an addition to DIWA.6 Stop-Start Technology, detailed analyses of the operating data, such as the number and duration of stop-start cycles. This allows an individual adaptation of the transmission control system and maximizes the benefit of the technology against the background of the particular route. Besides the reduced operational expenses, the DIWA.6 Stop-Start Technology also attaches greater importance to the bus sector as an essential part of public transport networks.

#### National Express – Facts

- **Location:** Birmingham, UK
- **Employees:** 45 000 (5 500 in Great Britain)
- **Fleet:** 29 000 (>1 900 vehicles in Great Britain)
- **Markets:** Great Britain, Central Europe, North Africa, North America, and the Middle East
- **Position:** One of the world's leading public transportation companies
- **Great Britain:** One of the leading bus operators outside London, carries over 1 million passengers daily and provides up to 90 % of all regional public transport
- **Recertified in 2015 as "Carbon Saver – Gold Standard"**

#### Voith DIWA.6 automatic transmission with Stop-Start Technology



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