

## Porterbrook Leasing

# Shunting locomotive market analysis

### Overview

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The UK currently has a large number of diesel shunting locomotives ('shunters') used both on the mainline railway and on industrial sites. Many of these shunters, C1.08 and 09 locomotives built in the 1950s, date from before emissions legislation was introduced and many are also economically life expired. The emissions regulations currently enforceable for Non-road Mobile Machinery (of which self-propelled railway vehicles are a part) is EC Directive 97/68/EC. This directive sets out the current diesel emissions category for "railcars" (i.e. diesel multiple units) and locomotives as Stage IIIB. Stage V for railways will be mandatory for new build railcars and locomotives from 2021. However further improvements could be implemented on rail vehicles through the use of alternative fuels or alternative propulsion sources such as on-board energy storage devices. In February 2018, then Rail Minister Jo Johnson stated that he would like "to see us take all diesel-only trains off the track by 2040". This commitment will require a total change in the considerations for power sources for the British railway industry both for train power and also for supporting fixed infrastructure. This includes shunters and contributes to the thinking that investment in sustainable shunters will be required.

### Our client's challenge

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Porterbrook Leasing ('Porterbrook') identified potential for an opportunity to procure a number of shunters to replace these life expired diesel shunters with the case being assisted by the development of battery traction power and its growing application to rail traction. Porterbrook required analysis to determine whether a build of new shunters could be justified for its investment, in sufficient quantity, and with sufficient certainty of a demand for the asset life, potentially as a result of life expiry, aided by sustainability objectives (credentials) sought by shunter owners and operators, and required by future emissions legislation. Porterbrook engaged IPEX Consulting ('IPEX') to carry out a market analysis to determine: types of shunter market; route requirements (mainline or industrial); haulage capacity required of shunters; potential segmentation of the market emerging from cogent shunter functional groupings; key customers for each market; likely size of these markets; competition from existing shunter options and shunter owners; resultant size and level of certainty around the market opportunity, for potential investment; price of new shunter products; and high level shunter manufacturer review including production / delivery capacity.

### Our response

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IPEX studied the history of shunters and the shunter market to better understand the environment, before examining the changes in the market up to present day. Estimations on future trends were made from the more recent changes, and wider industry trends. A list was developed of current shunter attributes and, based on operator, use, and location, it was possible to segment the market into six environments consisting of passenger, freight, industrial, spot-hire, infrastructure, and heritage. This initial list was refined with observations and intelligence on shunters which had been withdrawn, put in storage, preserved, or designated out of use and withdrawn for spares. IPEX also investigated predicted operational requirements and anticipated haulage capacity requirements. To further verify and validate the initial research, IPEX reviewed recent UK passenger rolling stock orders to determine the impact that each order would have on shunter demand. This assessment shaped a demand forecast for shunters on the UK rail network, focusing on the likelihood and volume of replacement, likely customers, and whether there was a potential investment opportunity. Additionally, a list of shunter manufacturers was developed using the findings of the market research, combined with known industry intelligence in the public domain. The suitability, capability, and capacity of each manufacturer and their product ranges was assessed to develop a list of likely manufacturers and detailing a brief summary of the company and their products.

### The value to the client

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Through the comprehensive research and market analysis IPEX was able to answer the critical question for Porterbrook and determine the size of the potential opportunity. By drawing conclusions from the work and drawing on the IPEX team's combined industry wisdom and insights, IPEX was able to offer a considered opinion on whether the opportunity was worthwhile pursuing. Additionally, IPEX highlighted the most suitable products available in today's market, should Porterbrook proceed. Along with a recommended course of action, IPEX was able to provide Porterbrook with all of the information and insight needed to take, or not, the next step with the opportunity.