3 Proposed development

3.1 Description of the proposed development

3.1.1 The Welsh Government is proposing to develop a rail testing, maintenance, research, development and storage facility, known as the Global Centre of Rail Excellence (GCRE) at the site of the Onllwyn Washery and Nant Helen Open Cast mine where coaling operations are coming to an end and final site restoration by Celtic Energy is consented.

3.1.2 The site for the proposed development is approximately 475ha and includes the components listed in Table 3.1. These are represented on Figure 1.3 (site layout) and the Figure 1.6 (Illustrative Masterplan). and are described in more detail within this chapter of the ES. These components form the basis of the EIA that has been carried out for the scheme.

3.1.3 GCRE aims to meet a number of objectives which have been developed to address the issues and needs of the UK rail industry:

- To deliver a UK-based modern and comprehensive rail testing facility to provide the capacity and capabilities for rigorous testing of rolling stock, infrastructure and integrated systems from prototype to implementation.
- To act as a catalyst for the creation of a rail technology hub in Wales, providing a flexible, open-market platform for leading R&D activity that drives innovation.
- To provide opportunities to work with industry to support skills development through high-quality employment in fair, secure and sustainable jobs that contribute to reducing regional inequality and promoting regeneration in Wales.
- To develop and test rail sector principles, standards and specifications which improve the UK's competitive strengths as a world leader in achieving carbon neutrality, contributing to an overall decrease in carbon emissions across the rail industry

3.1.4 GCRE would be developed over three phases. The phase in which each element of the facility would most likely be developed is identified in Table 3.1; however, for the purpose of the EIA, the development of all phases is considered (i.e. the whole development). Where necessary, the assessments take account of any temporary development that occurs in the intermediate phases of development. More detail of the construction phasing is set out in Section 3.2.

Table 3.1 Project components

Project component [x] refers to features on Figure 1.3	Description summary	Phase of development
[1] Large railroad test track (outer track)	Electrified high speed outer rail testing track (6.9 km) which would extend around the perimeter of the site to enable the testing of moderate and higher-speed trains up to a maximum 110 mph.	Phase 2
[2] High tonnage infrastructure test track (inner track)	Electrified low speed test track (4.5km) for testing of rail infrastructure, including track systems, civil structures, ancillary lineside equipment, signalling, power and telecommunications equipment. Trains able to run up to a line speed of 40mph.	Phase 1
[3] Dual platform station environment	a dual platform station environment (typical of the UK rail network) for the testing of train – platform interfaces. The platforms will have sufficient length to serve 230m trains and will likely take the form of modular, pre-cast concrete units constructed off-site.	Phase 2
[4] Warm and Cold Storage Sidings	Sets of storage roads for the medium-long term storage of train fleets. Storage capacity for up to 400 vehicles with connections to shore supply units located incrementally along sidings	Phase 1,2 and 3
[5] Infrastructure research and development centre	The centre would provide opportunities for research, development, education and training/conference facilities including laboratory space.	Phase 3
[6] 4-road rolling stock maintenance shed	4-road rolling stock maintenance shed for trains undergoing testing at the facility. Capacity for 2no. 400m trains and 2no. 230m trains simultaneously with provision of headshunt road at shed rear for increased operational flexibility. Internal provision of light and heavy maintenance roads.	Phase 2
[7] An operations & control centre/office Plus separate staff accommodation	A multi-storey control building from which testing activities would be managed. Separate staff accommodation which would also act as a general hub for site personnel.	Phase 2 (but temporary provision in a combined building in Phase 1)
[7] Carriage wash and CET spine facility	A carriage wash facility to service trains up to 400m in length. Controlled Emission Toilet (CET) point	Phase 2

Project component [x] refers to features on Figure 1.3	Description summary	Phase of development
	with canopy to control wash equipment, water and cleaning materials.	
Site Access	Access to the external highway network is proposed to be taken from existing junctions of the A4109 Wembley Avenue with Onllwyn Road, the A4221 Celtic Energy – Nant Helen access road, and the A4221 Washery and Distribution centre access which will be used by HGVs only.	Phase 1 and 2
Decommissioning facility	This is a facility which allows for the decommissioning of rolling stock.	Phase 3
Associated development	Across the site associated development would include access routes, staff car parking, drainage, lighting, mobile and land based communications 'hyper connectivity', CCTV, fencing (including acoustic mitigation as required), Neath and Brecon Branch Line connection and signalling upgrade.	Phase 1 and 2

Rolling Stock test track

3.1.5 The rolling stock test track, comprised of one loop of 6.9km length, has the primary function of performance testing of diesel, electric and hydrogen trains. There is space for a second track should there be a future market demand; however, this application does not include a second track. An overhead 25kV AC traction power system is included as part of the core scheme, with scope for additional DC 3rd / 4th rail system inclusion at later design.

3.1.6 The OLE system will likely take the form of a series of cantilever structures at approximately 40m intervals around the test track, most likely with piled or shallow pad foundations, the latter being a mitigation for the settlement expected as part of the track corridor earthworks.

3.1.7 The test track includes a dual platform station environment, typical of the UK rail network, for the testing of train – platform interfaces. The platforms will have sufficient length to serve 230m trains and will likely take the form of modular, pre-cast concrete units constructed off-site. The test track will have a vehicular access track around its entirety as a means of access for maintenance staff and will be

contained within a 2.1m paladin type fenceline along both corridor boundaries, or appropriate acoustic mitigation where required.

3.1.8 Once operational, trains will be able to travel at speeds of up to 110mph. The test track will connect to the existing branch line and washery area via a bi-directional delta junction. It is anticipated most rolling stock would access the facility via the Neath & Brecon Branch Line and Swansea Burrows Sidings beyond, although some trains may be transported to site via road.

High tonnage infrastructure test track

3.1.9 The high tonnage infrastructure test track, comprised of a single 4.5km loop, has the primary function of testing rail infrastructure under high axle loads. It is envisaged that a single heavily-loaded freight train will occupy the loop permanently. An overhead 25kV AC traction power system is included as part of the core scheme, which will likely take the form of a series of cantilever structures at approximately 40m intervals around the test track, most likely with piled or shallow pad foundations, the latter being a mitigation for the settlement expected as part of the track corridor earthworks. As per the rolling stock test track, the test track will connect to the existing branch line and washery area via a bi-directional delta junction. An infrastructure testing R&D facility will be constructed for the collation and assessment of testing results, as well as lay-down areas for equipment being tested. Once operational, the trains used for infrastructure testing will be able to travel at a line speed of 40mph.

Central control building

3.1.10 The 2-storey control building (upto (l)10m x (w)30m x (h)10m with a floorspace of 600m^2) would manage all the testing activities. A central points control system would be used for the control of the upgraded points which would allow for control via video display units. Multiple lineside cabinets would be required (assumed to be one, per set of points).

Staff facilities and overnight accommodation

3.1.11 The staff facilities building during Phase 1 would be modular style, upto 120m^2, one storey, up to (L)20m x (w)6m x (h)15m and provide male and female accessible toilets, typical mess facilities (running hot water, fridge, microwave), a fully ventilated PPE storage room, and male and female changing rooms, provided at the location shown on Figure 1.3.

3.1.12 For Phase 2 these temporary buildings would be replaced with permanent lay-down and mess facilities which would include overnight accommodation provision for ten staff (including those using the testing facilities). Accessible toilet and wash facilities would

be provided. The permanent staff facilities building would be a maximum of two storeys; 30m x 10m x 15m in size, with a floorspace of up to 900m^2.

Infrastructure testing research and development centre

3.1.13 During Phase 1, the research and development centre would be up to 480m^2, (l)20m x (w)12m x (h)10 m (2 storeys) in size and provide opportunities for research and development, conferencing, exhibition space, teaching and general staff facilities. During Phase 2 this building is to be relocated.

3.1.14 The final building to be constructed during Phase 3 would be up to 1000m^2, (l)50m x (w)10m x (h)10m (2 storeys) and would continue to provide research and development facilities.

3.1.15 Staff parking would be provided at this location. The number of spaces will be determined on standard allowance for number of staff.

4-road rolling stock maintenance sheds

3.1.16 4-road rolling stock maintenance shed for trains undergoing testing at the facility.

3.1.17 The two storey sheds would be divided into two “roads” with mirrored facilities. Two roads would be (h)12m x (w)40m x (l) 400m and two roads would be (h)12m x (w)40m x (l)250m to allow multiple operators to use the shed simultaneously.

3.1.18 The 250m-long roads would allow for the servicing and maintenance of most rolling stock currently operating on the UK Rail Network and would include:

- Facility for changing wheelsets/underframe components;
- A single pitted road to allow underframe inspections;
- Jacking equipment on all remaining shed roads;
- CET provisions for all rolling stock - diesel, water and compressed air supplies;
- Multiple LV power supplies – 100V, 240V, etc;
- Multiple 23m raised access gantries to provide full roof access;
- 5-10 tonne crane on at least one road;
- Vehicle weighing facilities, software testing facilities, fire testing and emissions testing all within static testing area; and
- Rolling stock decommissioning siding to be accessible by a static crane, together with a 1 car shed for covered cleaning

- Maintenance facility for trains undergoing testing at the facility. Full roof and underframe access. Heavy jacks for lifting trains. See sketch for more details:

Decommissioning facility

3.1.19 A decommissioning shed of one storey (up to (l)35m x (w)10m x (h)12m) and up to 350m^2, used for contaminant and asbestos removal of old train carriages once the basic internal furniture has been removed by heavy machinery.

3.1.20 Where rolling stock needs to be maintained this would require the following steps:

- Once on site, each carriage would be stripped down to remove seats and steps and the wheelsets removed (externally). This would be done using a combination of heavy machinery and operators using hand tools. Carriage are lifted from wheelset using crane.
- Carriages would be lifted into the single-carriage-length shed for contaminants and asbestos removal within the contained shed.
- The remaining metal carriage shell would be cut up using heavy machinery, sorted, and taken to the relevant recycling locations.

Warm and cold storage sidings

3.1.21 Warm and Cold Storage Sidings – sets of storage roads for the medium-long term storage of train fleets.

3.1.22 These would be sets of uncovered storage roads for the medium-long term storage of train fleets and would have a storage capacity for approximately 400 vehicles. These would be provided with connections to shore supply units located incrementally along sidings with shore supplies supported by lineside equipment and substations.

3.1.23 2.5km of bollard lighting or floodlights and associated cabling would be provided along alternate sidings with an assumed bollard spacing of 8m (approx. 1A per bollard along 4.1km of track).

3.1.24 The development of the warm and cold storage sidings would be spread across all 3 phases of development.

Carriage wash facility and plant room

3.1.25 The carriage wash facility would be available for use for the cleaning of all rolling stock having heaving moving machinery for cleaning. It would be one storey up to (l)35m x (w)10m x (h)12m, 350m^2, and able to service trains up to 400m. It would include a CET point with canopy housing heavy, moving . The plant room would be up to 20m x 4m and water would be heated for cleaning.

3.1.26 The carriage wash would only be used during the daytime (0700-1900) in order to minimise noise breakout to local residents.

Site Access

3.1.27 Access to the external highway network is proposed to be taken from existing junctions the A4221 Celtic Energy – Nant Helen access road, and the A4221 Washery and Distribution centre access. Secondary access can also be taken from the existingjunction of the A4109 Wembley Avenue with Onllwyn Road.

3.1.28 A network of internal access roads would be provided which are shown on Figure 1.4. These include a maintenance track around the perimeter of each of the rail testing loops.

Associated infrastructure

3.1.29 Associated infrastructure would be required for GCRE and would include components listed in Table 3-2. The phase in which these would be brought forward is also indicated.

Table 3-2 Associated infrastructure

Project component	Description summary	Phase of development introduced	Included in full facility (i.e. on completion of Phase 3)
Maintenance tracks	Gravel vehicle maintenance tracks would be provided running in parallel with each rail.	Phase 1 and 2	Yes
Substations	A total of five substations would be provided: • One primary substation; • two substations for site supplies; • two substations for shore supplies. The location of these is not yet determined, but would be within the washery site close to other buildings.	Phase 1, 2 and 3	Yes
Shunters cabin	During phase 1, all movements would be controlled remotely from shunters cabins which are likely to be a portacabin with basic amenities from which the shunter will move around the facility opening / closing hand points to enable train	Phase 1	Yes

Project component	Description summary	Phase of development introduced	Included in full facility (i.e. on completion of Phase 3)
	movements. Situated at a satellite location near sets of points to increase efficiency of train movements. Small cabins of approximately 10mx3mx 3m.		
Security measures	Security measures would include: • CCTV; • 7,200m of 2.1m paladin type fencing, approximately 2m away from track, to be located around the perimeter of the outer track and maintenance track.	Phase 1	Yes
Civils works	To include: • drainage ditches, • ponds and culverts, • retaining walls in the south of the site; • 3 No bridge crossings	Phase 1	Yes

Network Rail upgrades

3.1.30 On the rail approach to the Washery from the south west, prior to the proposed GCRE track connecting point, additional sidings are proposed. The existing rail track running from the south west through Seven Sisters terminates within the Washery site, and generally follows the line of the A4109 with the road to the south.

3.1.31 Network Rail (NR) are upgrading this existing branch line signalling for Mainline Neath and Brecon Branch. The upgrade should allow 1 train to pass at a time using an electronic token system and may involve moving the gateline (the gate between NR controlled infrastructure and third party infrastructure) to the GCRE site. This work is outside the scope of this project although the movement of the gateline that is required to facilitate this work is within the scope. This would involve the moving of the existing entry gate by a few hundred meters to the south.

3.1.32 There may be a requirement to upgrade level crossings to allow for increased branch line usage but this will only be required if more trains than existing utilise the branch line. At present it is anticapted that there would be a maximum of 1 train movement per day into the site from the branch line which is not an increase on current frequncy.

Should this increase in the future, the level crossings would need to be upgraded, in line with NR requirements.

Acoustic barriers

3.1.33 In order to minimise noise breaking out from the rolling stock testing track to nearby communitities, acousic barriers of height 2m above the test track rail level would be installed on the northern, eastern and southern sides of the track – except where the earthworks are high enough to provide equivalent noise shielding. The communities to the west are much further from the track and hence acoustic barriers are not required.

3.1.34 Acoustics barriers will also be provided along the southern perimeter of the washery, and to the south of the new railway sidings, to minimise noise from activities and train movements within the facility.

3.1.35 The acoustic barriers are marked on the Figures associated with the noise assessment (Figures 10.4)

Earthworks

3.1.36 The earthworks required for the creation of the inner and outer test track have been consented under a separate planning approval from Powys County Council (Nant Helen Complementary Restoration Earthworks (20/0738/FUL in Powys and P/2020/0362 in NPT). These constitute a combination of cuttings and embankments to create level beds for the test tracks. A landscape bund has also been included to the east of the track to provide visual and noise screening of the facility to communitities to the east of the facility. The earthworks would be programmed to align with the requirements of GCRE such that the on completion of the earthworks, work would begin on GCRE. There would be insufficient time between the earthworks and GCRE for habitats to become established.

Demolition

3.1.37 Within the washery area, existing buildings would need to be demolished along with areas of existing hardstanding which would need to be removed. Figure 1.5 identifies the approximate location of these buildings.

Landscaping

3.1.38 Planting across the site has been incorporated to function as visual screening and to integrate the proposed development into the surrounding landscape. Landscape planting is shown on Figure 9.14 and details would be developed at detailed design in agreement with the Local Authorities.

Biodiversity

3.1.39 The project offers significant opportunities to provide further ecological enhancements within the scheme design post construction, for operation, and in doing so meet the requirements of Planning Policy Wales and the Environment Act (Wales) 2016, for biodiversity enhancement and the promotion of ecosystem resilience. This will also support the resilience of ecosystems to likely future threats of climate change.

3.1.40 Retained and newly created habitats within the Washery would be enhanced through long-term management. In addition, track embankments within the Nant Helen part of the site, would allow acid grassland to establish. This would also provide a pioneering habitat for fungi, lichen and heathland. More details are set out in Chapter 8, Biodiversity.

Overhead Line Equipment (OLE)

3.1.41 OLE structures would be single-track cantilevers around the high tonnage test track and twin-track cantilevers around the railroad test track to future proof for a potential second track. There would be approximately 200 structures in total, each of which would be c. 9m tall.

Site Drainage

Foul water

3.1.42 The existing Washery site is served by foul drainage and the proposed depot that would be at this location would require foul drainage provision as detailed in the following sections.

3.1.43 Foul drainage would be generated from the site from staff facilities such as canteens, toilets and welfare facilities. Based on a staff population of up to 118, the proposed peak flow is estimated to be 1.87 l/s.

3.1.44 A pre planning application was made to DCWW to ascertain if sufficient capacity exists within the local network to facilitate the proposed development based on the above peak flow. DCWW have subsequently advised that sufficient capacity exists within the combined sewer to cater for the development. Therefore, it is proposed to convey the foul drainage from the development to the existing connection to the DCWW combined sewer.

Trade effluent

3.1.45 It is anticipated that the depot works would produce trade effluent from train carriage washing facilities. The quantity and flow rates for

such facilities are currently unknown at this stage of the scheme. As part of the pre planning application to DCWW, it was highlighted that discharge of pre-treated carriage wash may require a connection to the DCWW network. DCWW have advised in the pre planning response that a discharge consent would be required.

Storm water drainage

3.1.46 The rail track would primarily be drained by filter drains within the ballast. Elsewhere, the stormwater runoff would be captured and conveyed within the catchments utilising Sustainable Draiainge Systems (SuDS). This includes engineered cut-off ditches, swales, culverts, cascades and attenuation ponds. The sequential drainage elements would provide treatment of the storm water prior to discharging to existing watercourses. SuDS Approving Body (SAB) approval is required before construction of drainage systems can commence on new and redeveloped sites.

Lighting

3.1.47 The test tracks would not require lighting, except potentially at the test station platforms. A variety of lighting will be proposed as necessary to aid site safety and security and orientation and facilitate winter and any working outside of daylight hours. Given the proximity to the National Park and its International Dark Skies Reserve accreditation, it will be important to restrict external lighting to the minimum necessary and use directional low lux lighting. Lighting would be required at the depot site for safety as this is where the staff personnel would be based.

Construction access

3.1.48 The existing access into the washery site from the A4221 would be the main access into/out of the site during construction with additional access from Onllywn Road (which runs north into the site from A4109).

Construction traffic

3.1.49 Deliveries to the site are likely to be made via a mix of road and rail vehicle movements. Whilst the exact split of deliveries is not known at this stage, a logical approach has been taken to generate assumptions around the split of vehicles. It has been assumed that equipment associated with the track works (formation, ballast, sleepers, rails, clips etc.) and other rail infrastructure (overhead line equipment, switches and crossings etc.) will primarily be delivered by rail.

3.1.50 Table 3.3 sets out the estimated one-way road and rail deliveries to site along with the estimated numbers of workforce for each stage of the development.

Table 3.3 Road and rail deliveries to site during construction

Phase	Workforce	One-way deliveries by road	One-way deliveries by rail
Phase 1	152	258	34
Phase 2	175	437	16
Phase 3	225	640	27

Construction Environmental Management

3.1.51 Construction activities would be managed through the implementation of a Construction Environmental Management Plan (CEMP) which sets out what environmental protection measures need to be put in place and monitored by the contractor/s. An outline CEMP has been prepared for the construction of GCRE (Appendix 3A) which would be developed with more detail by the contractor/s and approved by NPTCBC/PCC prior to the commencement of works.

3.1.52 For the purpose of the EIA, it has been assumed that the measures set out in the outline CEMP would be followed. These mitigation measures have therefore been considered 'assumed construction practices' and accounted for within the assessment of environmental effects.

Construction working hours

3.1.53 Working hours would be 8am-6pm Monday to Fridays and 8am-1pm Saturdays. These are standard construction working hours.

3.2 Construction phases

3.2.1 It is likely that the delivery of the project will be phased with development being dependent upon the requirements of the industry and the market demand. However, it is likely that the following phasing set out in Table 3.4 would be followed.

Table 3.4 Proposed construction phasing

Phase	Components included	Construction duration
Phase 1 – High tonnage	High tonnage infrastructure 4.5km test track with 25kV overhead line electrification. Bi-directional rail access from N&B branch line.	12 months

Phase	Components included	Construction duration
infrastructure testing (operational 2023):	12 full-length stabling roads. 1 shunters cabin (probably a portacabin with basic amenities) from which the shunter will move around the facility opening / closing hand points to enable train movements. Staff facilities – modular site cabin buildings with mess facilities, changing rooms, storage, IT. Infrastructure testing R&D facility – modular site cabin buildings with advanced IT for monitoring of infrastructure tests. External storage space – concrete hardstanding area with vehicle access for storage of materials & equipment for testing.	
Phase 2 – Rolling Stock Testing (operational 2024)	6.9km rolling stock test track with 25kV overhead line (and potential 3rd rail DC) electrification. Bi-directional rail access from N&B branch line. 12 full-length stabling roads. Rolling stock maintenance shed. 2 roads at 400m length, 2 roads at 250m length. Internal and external storage spaces. Carriagewash. Improved (permanent) staff facilities. Those introduced in phase 1 will be removed. Provision of overnight accommodation, in addition to all previous functions. Upgrade of all points to electric points. Central control centre – panel from which all train movements are controlled. Points are changed electronically. Infrastructure testing R&D facility – relocated to location shown on Figure 1.3	12 months
Phase 3 – Aspirational inclusions (operational 2025)	Rolling stock R&D / education facility. Stationary testing facilities and associated laboratories. Rolling stock maintenance facility. 10 ‘through’ sidings, south of the N&B branch line	18 months

3.3 Operational details

3.3.1 The majority of the rolling stock & infrastructure testing at GCRE would be underataken during the daytime (defined as 0700-1900). However, to provide the flexibility necessary to enable the facility to attract clients and ensure the viability of the business, planning permission is also being sought for some evening (1900-2300) and night-time (2300-0700) operation. Evening and/or night-time testing would be offered to clients only when necessary to meet tight testing deadlines.

3.3.2 In order to reflect a *reasonable worst-case* scenario for assessment in this environemtnal impact assessment as part of the planning application, it has been assumed that both test tracks would be

operational during the daytime for seven days per week, for four evenings each week and for two nights per week. The facility operator will, however, make reasonable efforts to minimise evening and especially night-time testing where possible.

3.3.3 The facility could, subject to demand, be operational 24/7 with personnel on site at all times. Table 3.5 sets out the potential maximum frequency of train movements and operations on the site.

Table 3.5: Operational details for GCRE

Operation	Details
Train movements on rolling stock track (outer loop)	When trains are being tested a train would be running continuously around the rolling stock testing track at speeds up to 110mph, albeit with speeds being restricted on the tighter (eastern) curve to 85mph. Typically this would mean that 20 laps of the track would be completed each hour. Factoring this number of 20 up by the assumed operating hours of five days, three evenings and two nights per week, this results in the following assumed maximum train laps per time period as follows: **Day - 175 | Evening – 35 | Night – 50** The test track itself will be single-train working, meaning that in the occurrence of 2 users at the facility at once, while one customer's train is on the loop, the other will likely be in the maintenance shed. This will ultimately increase the overall test track usage since there are two parties alternating. An assumption has been made that, on average over a year, the rolling stock test track would be in use for five days per week during the daytime (7am to 7pm). For evenings (7pm to 11pm) and night-times (11pm to 7am), it has been assumed that it would operate on average over a year for three evenings and two night-times per week. **Likely train types**: Likely to mostly be powered electrically (25kV OLE) but potentially could be some diesel / bi-mode stock and potentially some hydrogen trains in the future. If electric, trains will require hauling up N&B branch line using diesel locomotive but will be able to move between sidings and test facilities (as these will be electrified). Alternatively, electric trains could be transported to site by road
Train movements on inner track (infrastructure testing)	A train would be running continuously at linespeed (40mph) between 07:00 – 19:00 / Evening 19:00-23:00 / 23:00-0700. This result in 14 completed laps/hour with a maximum number of journeys being: **Day – 170 | Evening – 25 | Night – 35** At night time only trains with electric traction would be used as standard, with any diesel traction being used only in exceptional circumstances. More likely to be used on an ad-hoc basis, with frequency of users less than for the rolling stock testing. An assumption has been made that the track would be in use seven days out of seven during the daytime. For evenings (7pm to 11pm) and night-times (11pm to 7am), it has been

Operation	Details
	assumed that the track would operate on average over a year for three evenings and two night-times per week. **Likely train types**: initially diesel locomotives hauling wagons carrying old ballast (up to 500m with locomotive at both ends which produces vehicle of approximately 2000t). In the future trains are likely to be electric and hydrogen locomotives. An assumption has been made that in the first 2 years of the testing the train types would be approximately 70% electric, 20% hydrogen, 10% diesel. It is assumed that once on the test track, the vehicle will remain and not be required to move around the sidings area.
Train movements on sidings in the washery area	A maximum of 1 train per day transported from outside of the facility, up the branch line (assumed as diesel-hauled, as the branch line is not electrified) onto the sidings to the north of the maintenance sheds for storage. Likely to be 10-12 cars long (250m-300m long) travelling 15-30mph along the branch line. 10-16 movements per day within the facility from one siding to another at speeds of max. 5mph. Train movements would not take place in evenings or night-time, bar those trains which would be starting or finishing a test run on the rolling stock test track and therefore going from the sidings to the test . For the purposes of the noise assessment: **Likely train types**: As above, it is likely the mix of trains would be approximately 70% electric, 20% hydrogen, 10% diesel in the first 2 years oftesting.
Stabled trains on warm storage sidings	The sidings would be used for longer-term train storage, rather than overnight stabling for next-day service (such as a typical depot).). Train movements onto and off of these sidings would therefore be very infrequent.
Rolling stock dismantling/ decommissioning	If decommissioning of trains is carried out on site then this would consist of the dismantling of trains to retain components which could then be re-used. These dismantling works would be carried out on the apron to the north of the maintenance sheds and/or inside the maintenance sheds themselves, and would be no more noisy than routine maintenance works. Outdoor decommissioning/train dismantling activities would not take place during evening or night-time. During night-time, maintenance would be carried out with the shed doors closed.
Maintenance works	The maintenance facility would be able to host multiple train operators / manufacturers simultaneously, meaning the likelihood of continuous

Operation	Details
	maintenance is increased. It is possible that maintenance would be carried out 24/7.
Carriage wash facility	It has been assumed that the wash will be in use for 10% of the time during the daytime; for 3% of the time during the evening and 1% of the time during the night-time.
Staff car park	The staff car park would be located north of the staff facilities building
Lighting on trains	In order to minimise disturbance from light, any test trains running after dusk would have their train interior lights switched off.