

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 4 PART 3

ROADSIDE ELECTRICAL ASSETS AND POWER SUPPLIES

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ROADSIDE ELECTRICAL ASSETS AND POWER SUPPLIES

1. ROADSIDE ELECTRICAL ASSETS AND POWER SUPPLIES

1.1 Introduction

- 1.1.1 This Part gives information relating to the roadside electrical assets which includes electrical equipment, lighting, luminaires and associated control apparatus, power supplies, associated infrastructure, structures and other supporting arrangements to be managed and maintained by the Operating Company, either as a whole or in joint responsibility with others as detailed in this Part. Paragraphs 1.1.3, 1.1.4 and 1.1.5 of this Part, together with LDS8023 - *Electrical Maintenance Guidelines for Roadside Electrical Assets, Lighting and Power Supplies* provide the scope of the roadside electrical assets to be managed and maintained.
- 1.1.2 Associated infrastructure includes as a minimum power supply cabinets, distribution enclosures, protection devices, cabling, associated ducting and chambers.
- 1.1.3 The roadside electrical assets to be managed and maintained solely by the Operating Company in accordance with Schedule 7 Part 1 include as a minimum:
- (i) road lighting, flood lighting, underpass lighting, architectural lighting, power supply arrangements for festive lighting, road side services lighting, bus shelter lighting and maintenance lighting within Structures,
 - (ii) illuminated traffic signs,
 - (iii) illuminated bollards,
 - (iv) power supply and downstream distribution network cabinets for roadside electrical assets,
 - (v) power, communication and signal cabling,
 - (vi) electrically operated apparatus for maintenance access to Structures,
 - (vii) electrical ancillary drainage items,
 - (viii) swing bridge, raising bridge and other moveable bridge equipment,
 - (ix) electrically operated traffic and emergency vehicle control barriers,
 - (x) inclement weather signs and snow gates,
 - (xi) public conveniences and other roadside services,
 - (xii) school crossing signs,
 - (xiii) marine and air navigation lights,
 - (xiv) marine navigational aids,
 - (xv) wildlife counters,
 - (xvi) cathodic protection equipment,

- (xvii) power supply arrangements to roadside electrical assets for third party use that is accessible from the Unit,
- (xviii) remotely controlled 20mph zone warning signs,
- (xix) weather stations, road sensors, weather station CCTV cameras, and other weather station sensors forming part of the apparatus for weather monitoring,
- (xx) vehicle activated signs,
- (xxi) gantry mounted illuminated signs without Traffic Scotland Equipment,
- (xxii) traffic signals,
- (xxiii) electrical installations within and related to the administration and control buildings associated with Structures,
- (xxiv) where fitted, any control and or communications devices relating to or forming part of a lighting central management system as typically mounted on roadside illuminated assets or within associated enclosures, and
- (xxv) any other roadside electrical assets installed on the Unit excluding the Traffic Scotland active maintained equipment detailed in paragraph 1.1.4 of this Part.

1.1.4 Transport Scotland's roadside electrical assets which are to be maintained by the Operating Company with others as set out in paragraph 1.1.5 of this Part include Traffic Scotland Equipment complete with electrical, electronic and communications systems and include as a minimum:

- (i) gantry mounted illuminated signs with Traffic Scotland Equipment,
- (ii) hazard warning signals,
- (iii) variable message signs,
- (iv) closed circuit television,
- (v) automatic number plate recognition cameras,
- (vi) emergency telephones,
- (vii) matrix signals,
- (viii) detector loops and road sensors for vehicle detection,
- (ix) communications cabinets, and
- (x) any other roadside infrastructure associated with the provision of the Traffic Scotland Service.

1.1.5 The Traffic Scotland Equipment necessary to facilitate provision of the Traffic Scotland Service is split into two discrete components; Traffic Scotland passive maintained and Traffic Scotland active maintained equipment. The Operating Company shall manage and maintain the infrastructure elements (which include as a minimum poles, foundations, masts, cladding and gantries) of the Traffic Scotland active maintained equipment detailed in paragraph 1.1.4 of this Part in accordance with Schedule 7 Part 1, and all Traffic Scotland passive maintained equipment detailed in paragraph 1.1.3 of this Part. The Traffic Scotland active maintained equipment and the cabling, wiring and ducting arrangements for this equipment shall be managed and maintained by the Traffic Scotland Operations and Infrastructure Services Contractor.

- 1.1.6 The Operating Company shall ensure that all new and replacement road lighting equipment is fully compatible with Transport Scotland's lighting central management system. The installation of such road lighting equipment shall include configuration, integration, and commissioning onto the lighting central management system. When de-energising and re-energising any element of a road lighting asset already on the lighting central management system for any purpose, the Operating Company shall ensure the road lighting asset remains compatible and fully operational with the lighting central management system.
- 1.1.7 The lighting central management system will be used to control and manage lighting assets on the Trunk Road network. The inventory created within the lighting central management system will automatically update the inventory held within the lighting management function of the Integrated Roads Information System.

2. ROADSIDE ELECTRICAL ASSETS INVENTORY

2.1 The Inventory, Energy Inventory and Lighting Management Function of the Integrated Roads Information System

- 2.1.1 The Integrated Roads Information System made available for the Operating Company will include a facility to access the following:
- (i) an historic inventory of the roadside electrical assets listed in paragraph 1.1.3. using attributes as described in the *Transport Scotland Trunk Road Inventory Manual*,
 - (ii) an historic energy inventory which is a sub-set of the inventory as described in paragraph 2.1.1 (i) of this Part. This subset has attributes that relate to the energy consumption aspects of the inventory – these attributes are listed in paragraph 2.3.2 of this Part,
 - (iii) a lighting management function which forms an integral part of the routine maintenance and management function of the Integrated Roads Information System, and
 - (iv) an intelligent transport systems management function which forms an integral part of the routine maintenance and management function of the Integrated Roads Information System.
- 2.1.2 The Operating Company shall comply with the requirements of the *Transport Scotland Trunk Road Inventory Manual*.
- 2.1.3 The Operating Company shall provide such assistance as is required by the Director in order to develop the maintenance and management arrangements for roadside electrical assets on the lighting management function of the Integrated Roads Information System.
- ### **2.2 Updating and Maintenance of Inventory and Lighting Management Function of the Integrated Roads Information System**
- 2.2.1 During the period of 26 weeks after Commencement of Service Date 1, the Operating Company shall review and update the historic inventory referred to in paragraph 2.1.1 of this Part, and shall thereafter continuously review, maintain and update the same. Such inventory shall:
- (i) be, at all times, in accordance with the *Transport Scotland Trunk Road Inventory Manual*,

- (ii) include the energy consumption aspects listed in paragraph 2.3.2 of this Part,
 - (iii) meet the requirements of the Integrated Roads Information System, and
 - (iv) meet the requirements of the Director.
- 2.2.2 An energy inventory shall be submitted to the Director on a monthly basis in accordance with the provisions of paragraph 2.4.1 of this Part. The Operating Company shall notify the Director of any differences found during any updates.
- 2.2.3 The Operating Company shall ensure that at all times the inventory of roadside electrical assets is updated with all newly installed additional, decommissioned, modified and replaced roadside electrical assets on the Unit. Any such updates shall be introduced into the inventory within seven Working Days after the introduction of the change.
- 2.2.4 The Operating Company shall, within seven Working Days of notification, amend or update the inventory of roadside electrical assets in the event of any anomalies, inaccuracies or recommendations identified by the Director or any meter administrator appointed by the Director.

2.3 Attributes for Energy Inventory

- 2.3.1 The Operating Company shall produce an energy inventory of un-metered roadside electrical supply equipment to comply with the requirements of the *Balancing and Settlement Code of Practice 520* issued by ELEXON within the timescales and in accordance with the procedures detailed in paragraph 2.4.1 of this Part.
- 2.3.2 For Trunk Road un-metered roadside electrical assets, the Operating Company shall populate the inventory with the following attributes:
- (i) National Street Gazetteer road reference, Trunk Road number or other agreed unique road reference,
 - (ii) name of town or the district,
 - (iii) name of the road,
 - (iv) Ordnance Survey grid reference,
 - (v) unit type, model and control gear type,
 - (vi) identity code shown on unit,
 - (vii) *Balancing and Settlement Code of Practice 520* charge code,
 - (viii) rated wattage,
 - (ix) circuit wattage,
 - (x) burning hours per annum,
 - (xi) number of items of this charge code at this location,
 - (xii) switching regime with appropriate *Balancing and Settlement Code of Practice 520* code,
 - (xiii) number of photo electric control units or time switches on the item,
 - (xiv) control charge code with appropriate *Balancing and Settlement Code of Practice 520* code for the control device,
 - (xv) exit point – Y if yes, N if no, U if unknown, and

(xvi) annual energy usage in kWh.

2.4 Arrangement and Reporting of the Energy Inventory

- 2.4.1 The Operating Company shall prepare and submit an energy inventory in a format and having the content as consented to by the Director. The bulk of energy to operate roadside electrical assets is purchased through an unmetered arrangement with the distribution network operators in Scotland. Transport Scotland procures energy on a half-hourly basis and is required to submit monthly updates to the distribution network operators. The Operating Company shall prepare and submit the energy inventory by the 21st day of each calendar month, or the first Working Day after the 21st day of each calendar month, to the Director.
- 2.4.2 The items of roadside electrical assets in the energy inventory shall be grouped by route and shall be listed by starting at the beginning of a route and moving sequentially to the end. Any significant groups of items such as lighting through a built-up area shall be sub-groups of the route.
- 2.4.3 The energy inventory shall include the information itemised in paragraph 2.3 of this Part within which shall be identified clearly and separately the energy consumption per annum for un-metered supplies, in accordance with the requirements of *Balancing and Settlement Code of Practice 520* issued by ELEXON, for each sub-group within a route, each route within the Unit, the whole Unit, each item code within each route and each item code for the whole Unit.

2.5 Lighting Central Management System

- 2.5.1 The lighting central management system will be delivered to the Director and the Operating Company by Commencement of Service Date 2. The Operating Company when consented by the Director shall deploy the lighting central management system on an incremental basis to operate the illuminated assets on the Trunk Road network.
- 2.5.2 The infrastructure for the lighting central management system will include roadside and illuminated asset mounted communications devices which interface with the lighting central management system host via the general packet radio service communications network. Such infrastructure where provided by the Operating Company as part of the Operations, including compatible electronic lamp control gear, shall comply with the requirements of the Specification.
- 2.5.3 Subject to an Order, the Operating Company shall provide such assistance as may be required by the Director in order to develop the lighting central management system for the maintenance and management of illuminated assets. This shall include the integration and development of the lighting central management system with the lighting management function of the Integrated Roads Information System but shall exclude all work relevant to the collection of inventory information, asset condition and similar as required with paragraph 2.2, paragraph 2.3 and paragraph 2.4 of this Part.

2.6 Intelligent Transport Systems Management Function of the Integrated Roads Information System

- 2.6.1 The Operating Company shall provide such assistance to the Traffic Scotland Operations and Infrastructure Services Contractor as required by the Director in the management and maintenance of the inventory for Traffic Scotland Equipment held in the intelligent transport systems management function of the Integrated Roads Information System.

3. ELECTRICAL SUPPLIES TO ROADSIDE ELECTRICAL ASSETS

3.1 Requirements

- 3.1.1 The Operating Company shall ensure that the provision of power supplies to the roadside electrical assets, through appropriate distribution network operators, are safe and remain safe at all times. Such supplies shall be provided in accordance with Transport Scotland's guidance document LDS8006 - *Electricity Supplies to Roadside Electrical Assets and Lighting*.
- 3.1.2 The Operating Company shall manage and ensure safe operation of all electrical supplies to roadside electrical assets. This shall include the following:
- (i) reporting to the appropriate distribution network operator any loss of supply, managing any consequences arising and ensuring restoration of supply,
 - (ii) repairing any Defect in the downstream distribution network,
 - (iii) all required inspections, testing, and maintenance of downstream distribution network in accordance with Schedule 7 Part 1,
 - (iv) notifying any third party of loss of supply to its assets supplied from the Trunk Road distribution network,
 - (v) record all power supply defects and failures, and
 - (vi) record in a suitable tabulated form the distribution network operator supply system type and the measured value of the distribution network operator's external earth fault loop impedance i.e. Z_e , in ohms, at the point of interface between the distribution network operator and the roadside electrical assets. Both of these parameters shall be those entered in the most up to date applicable British Standard 7671 Certificate for each point of interface. This requirement applies to all distribution network operator supplies that energise roadside electrical assets whether directly or as part of a shared supply installation. The resulting table shall be submitted along with the energy inventory, as required by the Director.

4. PAYMENT FOR ELECTRICAL ENERGY

4.1 Un-metered Supplies

- 4.1.1 The Operating Company shall provide such assistance as the Director may require in resolving any matter relating to the roadside electrical assets inventory necessary to enable the Director to obtain the un-metered supply certificate.
- 4.1.2 The Director will make arrangements for the direct payment of un-metered roadside electrical energy used within the Unit.

4.2 Metered Supplies

- 4.2.1 The Operating Company shall obtain electricity meter readings for supplies to roadside electrical assets within the Unit on a monthly basis and shall provide the information to the Director in the format and detail agreed.
- 4.2.2 The Director will make arrangements for the direct payment of any metered roadside electrical energy used within the Unit.