Interim Guidance to Road Authorities regarding the proposed placement of Medium or High Voltage electricity assets, including ducts, cables, and associated infrastructure under public roads.

1 Introduction

This document is an interim guideline for Road Authorities where Medium or High voltage cables interact with the road network. It is developed to assist in the delivery of the grid infrastructure rollout by the energy sector while also seeking to mitigate impact and ensure the continued proper management of the road network. It is produced by the Roads and Transportation stakeholders including the Department of Transport, Transport Infrastructure Ireland and Road Authorities, with input from Eirgrid and ESB Networks, and the Department acknowledges the collaboration and input from all sectors.

The placement of ducts, cables and other items associated with Medium or High Voltage electrical assets and the roadworks required to carry this out is a complex area that is regulated under a number of pieces of legalisation (including the Planning and Development Acts & Regulations, Roads Acts and various Electricity Acts), policy (Climate Action Plan), guidelines and decisions of the Commission for Regulation of Utilities (CRU), which together provide processes to authorise road openings and placement of these assets.

Although every effort has been made to ensure the completeness and accuracy of its contents, users are advised to use the document carefully and no liability shall attach to the Minister for Transport for any errors or omissions in the document.

2 Climate Action Plan¹

The Climate Action Plan 2024, prepared under the Climate Action and Low Carbon Development Act 2015 as amended, sets a course for Ireland's emission targets by 2030 and reach net-zero no later than 2050. These national targets align with Ireland's obligations under EU and international treaties, most notably the Paris Agreement (2015) and the European Green Deal (2020). To accelerate renewable electricity generation which is to reach a target of 80% of electricity demand from renewable source by 2030, the Government has set the objective that:

"All relevant public bodies will carry out their functions in a manner which supports the achievement of the renewable electricity targets, including, but not limited to, the use of road and rail infrastructure to provide a route for grid infrastructure where this is the optimal solution."

Local Authorities, the Department of Transport (DOT) and Transport Infrastructure Ireland (TII) are committed to this objective.

3 Purpose:

The purpose of this document is to provide <u>interim guidance</u> to Road Authorities in their role licensing road openings or making submissions to Planning Authorities regarding the proposed placement of Medium or High Voltage (MV & HV) electricity assets including ducts, cables and associated infrastructure under public roads. Low Voltage Cables (less than 1,000V) forming part of a distribution network should be dealt with using normal licensing processes. The Interim Guidance will assist to provide a more efficient, consistent approach for all applications.

These interim guidelines are issued *pro tem* until the development of any procedures for the planning, regulation, construction and management of Medium, or High Voltage cables under public roads and the conclusion of any outcomes from the Private Wires Consultation undertaken by the Department of Environment Climate and Communications, DECC.

Transmission HV Cables under public roads are dealt by the HV Forum² (or any successor structures or arrangements).

This document shall be read in conjunction with the DOT's Guidelines for Managing Openings in Public Roads and TII's publication CC-PAV-04007- Requirements for the Reinstatement of Openings in National Roads.

Guidance on conditions (section 7) is to be taken as minimum requirements subject to assessment of specific site locations.

4 Scope:

- 1. This document relates to rural roads. Rural roads are defined as any public road with a speed limit greater than or equal to 60km/h. Urban Roads with a speed limit of less than 60km/h are to be addressed through existing established approaches.
- 2. For Transmission Network Projects the '*Electricity Transmission Infrastructure Development Roads Sector Engagement Framework*' will apply. It provides for the necessary consultation and agreement between EirGrid, ESBN, and Road Stakeholders, without affecting their respective statutory rights and obligations. Sections 6-9 of this document will be relevant to those consultations.
- 3. This document does not:

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¹ gov - Climate Action Plan 2024 (www.gov.ie)

² To support development of high voltage electricity networks, an HV Forum was initiated between key Partners within the electricity and road sectors to bring together stakeholders in open dialogue to establish the ways of working that will deliver on CAP23. The Partners are EirGrid, Commission for Regulation of Utilities (CRU), ESB Networks, Transport Infrastructure Ireland, Department of the Environment, Climate & Communications (DECC), CCMA – on behalf of local roads authorities, Department of Transport

- a) impose any obligation on any entity referred to in the text; or
- b) require any entity referred to in the text to act or not act in certain manner; or
- c) make any statement that gives or intends to give rise to a legitimate expectation to any party, whether referred to in the text or not, that the applicable entity referred to in the text will act or not act in a certain manner. The placement of cables in road is subject to the appropriate legislation and to the consent of, and conditions set by of the relevant authority.
- 4. This document does not apply to Distribution Cables installed by the DSO or DAO. Road licensing processes, as set out in the Guidelines for Managing Openings in Public Roads and TII CC-PAV-are applicable to those situations.

5 Terminology

The following terms are used in this document and in the industry. A brief, non-legal, explanation of these terms is set out below.

- TAO Transmission Asset Owner Electricity Supply Board (ESB)
- An Bord Pleanála, ABP, see <u>Functions of the Board | An Bord Pleanála</u>
- DAO Distribution Asset Owner (ESB)
- TSO Transmission System Operator (EirGrid).
- DSO Distribution System Operator (ESBN)
- Transmission Network the part of the electricity network used to transmit electricity from generating locations to a substation, from one generating station to another, from one substation to another or to or from any interconnector³.
- Distribution Network the part of the electricity network used to distribute electricity from substations to final consumers of electricity⁴.
- Transmission Connection Offer an offer (to a generator, storage provider or load customer) for connection to the Transmission Network in accordance with the most recent CRU Enduring Connection Policy.
- Generator A person who holds a licence to generate electricity see <u>Electricity generation | CRU.ie</u>
- Storage Provider A person who provides a service of deferring the final use of electricity to a moment later than when it was generated or converts electrical energy into a form of energy which can be stored, the storage of such energy, and the subsequent reconversion of that energy into electrical energy.
- Contestability allows a party to construct connection assets that connect them to the transmission or distribution system. ⁵
- Non-contested Connection- those aspects of a connection to the electricity network constructed by the DAO or TAO.⁶
- Direct Line Permission a permission to construct an electric line to carry electricity for the purpose of supply, not connected to the transmission system or distribution system when initially constructed⁷.
- Carriageway⁸: The area of the paved width of a public road which is trafficked by road users under normal operation.
 - This includes designated lanes such as bus lanes and cycle lanes; and
 - The carriageway excludes hard shoulders and hard strips.
- HV Forum a group of public sector stakeholders in the Electricity and Roads Transportation areas who have been tasked with developing guidance to support the accommodation of Transmission HV Underground Cables ("HV UGC") in roads for the Transmission Network. A Cooperation Agreement was signed in August 2023 by EirGrid, ESB Networks, the Commission for Regulation of Utilities, Department of Environment, Climate and Communications, Department of Transport, County and City Management Association and Transport Instructure Ireland.
- Medium (MV) or High Voltages (HV): are defined in this document as voltages greater than 1,000 V (1 kV).
- A CRU authorisation an authorisation granted to a person under S.16 of the 1999 Electricity Regulation Act to construct or reconstruct a generating station.
- Transmission Network Projects: The electricity supply network is made up of the Transmission Network and Distribution Network. The Transmission Network covers 400 kV, 275 kV, 220 kV and the majority of 110 kV lines and is operated by the TSO. The Distribution Network covers 110 kV in the Dublin area, 110 kV tail-fed stations and nationwide 38 kV, 20 kV, 10 kV and low voltage and is operated by DSO

6 Process:

6.1 Consent of the Road Authority

Applicants who wish to opening a public road must have necessary powers to place MV/HV cables in the Public Road before they obtain consent to open the road. The following persons or bodies have powers to place MV/HV cables in the Public Road:

- 1. ESBN/ESB
- 2. EirGrid

- 3. Any person or body with site specific consent from the CRU under S.48 of the 1999 Electricity Regulation Act.
- 4. Any person or body with the agreement of each and every landowner who owns the substratum of the public road.

To open the road a person or body shall have the consent of the Road Authority and (in the case of a Motorway or Protected Road) the consent of the National Roads Authority (TII) under S. 53 of the 1993 Roads Act as amended.

Where an application for consent is made by persons or bodies 1-4 above this should be accompanied by evidence of their status as appropriate.

³ Microsoft Word - Distribution Asset Owner Licence.docx

⁴ Information about the DSO

⁵ contestability paper oct 2007 16-10-07.doc

⁶ <u>Generl-Conditions-of-Connection-and-Transmission-Use-of-System_For-Cont....pdf</u>

⁷ Licences | CRU.ie

⁸ See <u>DN-GEO-03031</u>

6.2 Planning Consent

Persons placing MV/HV cables in the Public Road must also have one the following:

- a. Consent of ABP
- b. Consent of the Planning Authority
- c. Demonstration of Exemption from planning consent

6.3 Who is the licence applicant and Licence Holder?

The asset owner unless they have an agreement to act on behalf of the asset owner⁹.

6.4 Pre-Application Engagement before T1 Notification(s) or Planning Application:

The finalised *Roads Sector Engagement Framework for Transmission Network Projects* fulfils the requirements of this section. This will be applied for *Electricity Transmission Infrastructure Development*. It is the intention of the Road's Authorities that this will also be applicable to all other HV / MV Cables at an agreed future date.

An applicant should have a level of certainty as to whether a particular licence will be granted and to what conditions could apply to it. The preferred approach as far as possible should be that the Road Authority's requirements are known in advance of any submission to An Bord Pleanála, ABP, the Planning Authority or application for a road opening licence.

Prior to submitting any application or T1 Notification, an applicant should engage with the Authority as set out in section 4.2.1 of the DoT Guidelines for managing openings in Public Roads. The engagement with the Authority should discuss and agree the route for the HV Cable(s) to identify/agree the routing 'optimal solution' along with the envisaged requirements for traffic management, times of work, reinstatement, positioning of chambers/ joint bays etc.

Wherever possible, joint bay structures are best located off the carriageway in verges, open spaces, or adjacent sites; and where they must be under carriageway, joint bay structures will be to accepted design standards, at least single lane traffic should be maintained, including provision of temporary passing bays as required. Link boxes and C2 chambers should be installed off the carriageway.

Whilst each project will be assessed on its own merits, save for exceptional circumstances, high/medium voltage transmission underground cables should not be sited on or attached to existing roads structures, masonry bridges/ culverts and the like. Such structures require more complex maintenance intervention and upgrading that would be compromised by the proximate presence of live high/ medium voltage systems.

Where a new bridge is at design stage consideration may be given by the Road Authority to incorporation of ducting for HV cabling in its design subject to ensuring the transportation function of the structure is maintained and agreement on costs.

A Road Authority should have regard to section 7 below in developing interactions & responses.

Where this engagement has occurred and there is agreement in principle, the information from this can be provided by the developer of network or generation assets to third parties (the DSO, TSO, ABP, CRU etc.) to indicate the Road Authority's requirements for a future road opening licence or planning application. It will also assist in the development of subsequent supporting activity including geotechnical investigations.

This engagement gives no authorisation to open the road, nor does it reserve a route or create an easement. The Pre-Application Engagement, including the agreement in principle, does not protect any route. The time from Pre-Application Engagement to construction may be lengthy and other licences may be applied for by other energy sector applicants or other utilities along the route during that time. Where a new Pre-Application Engagement is sought on a road that has already a Road Opening Licence or a previous Pre-Application Engagement from a different developer, the applicant is required to consult with the previous developer/licence holder as appropriate to coordinate the route and road space.

6.5.1 T1 Notification

The finalised *Roads Sector Engagement Framework for Transmission Network Projects* prepared by the HV Forum will fulfil the requirements of this section. This will be applied for *Electricity Transmission Infrastructure Development*. It is the intention of the Roads Sector that this will also be applicable to all other HV / MV Cables at an agreed future date.

In the interim the following process applies:

When the necessary powers are in place, as described at 6.1, an applicant shall issue a T1 notification for all HV / MV Cables installations in the Road.

⁹ Such application may utilise the Applicant Manager feature of MRL Road Licensing software. ¹⁰ See also 4.2.1 of the Guidelines

- a. The Road Authority should proactively engage with all electrical asset owners or developers through the T1 notification process.
- b. It should only grant a licence (T2, T2',T3) to an applicant who has the necessary powers to place MV/HV cables in a road (section 6.1).
- c. It should not grant a licence that significantly compromises the road structure, routine maintenance, or planned improvements of the road. Examples of this include obstruction of planned future drainage, creation of instability in embankments, obstructing the maintenance of bridges, restricting planned horizontal / vertical alignment of the road effecting the electrical properties of the MV/HV cable or impacting current and future planned road crossings for services.
- d. The applicant may make proposals to address items raised at c.
- e. Agreement following a T1 notification is normally valid for one year, however this can be extended by further agreement. Where necessary a second T1 may be required.

6.5.2 T2 Licence Applications (following the T1 Process)

The applicant shall apply for the appropriate road opening licences to facilitate construction of the electrical cable and associated infrastructure (as "child T2s" of a T1).

- It should be expected that multiple T2s can be required to manage and sequence works, particularly where cable lengths run more than a few kms or in significantly different traffic environments.
- The extent of works carried out under a T2 should be manageable for both the licence holder and the Road Authority and should normally allow for inspection in one site visit. Typically, this will be limited to 2km lengths unless agreed otherwise by the Road Authority.
- Sectional completions for all work elements are necessary before commencing subsequent or adjacent sections.
- Licensing charges should be applied in accordance with the national process set out in the Purple Book Guidelines including invoicing and payment of:
 - Application charges at application stage
 - Reinstatement deposit prior to licence granting
 - Specific charges prior to licence granting
 - Long Term Impact Charges at T5 stage
 - Refund of deposits upon satisfactory inspection of the works at licence closeout

6.5.3 Opening the road for geotechnical/ site investigations:

A Road Authority may also grant T1 or T2 licences as appropriate to facilitate geotechnical / site investigation. The licencing consent process for excavation of the public road is sufficient for these works only. See also item 6.3.

7 The Planning Process

Certain HV cabling and associated infrastructure in the public road are required to obtain consent through the planning process. It is essential that the Road Authority makes its submission to the Planning Authority or An Bord Pleanála (ABP) as appropriate during this process. Its submission should:

- A. Be consistent with the conditions of any agreement in principle reached at Pre-Application Engagement for T1 Notification (see 6.4)
- B. Have regard to minimum requirements for a T1 (and Child T2s) (see 8 below).
- C. Require adherence to the processes set out in the Guidelines for Managing Openings in Public Roads, published by the Department of Transport and administered by the Road Authority and the Road Management Office.

8 Minimum Requirements for a T1 (and child T2s):

When permitting a road opening, a Road Authority must be able to control the following aspects of the roadworks:

- the periods during which and the times at which roadworks shall or shall not be carried out,
- the period within which roadworks shall be completed,
- the manner in which roadworks shall or shall not be carried out,
- requirements and standards in relation to the temporary or permanent reinstatement,
- requirements in relation to the control of traffic in the vicinity of roadworks.

Additionally, it should not permit anything that shall significantly compromise the road structure, routine maintenance or planned improvements of the road (see 6.5.1).

The following areas shall be considered in the T1 process / Pre-Application Engagement before T1 Notification(s) or Planning Application in order to set minimum interim requirements necessary under a T1 and any subsequent T2(s). These interim requirements will be updated through ongoing engagement with the Electrical Sector.

Area	Condition	Reason
Depth and Alignment	The depth of cover to the Transmission HV cable duct(s) should be no less than 950mm to top of cable ¹¹ unless agreed otherwise in specific circumstances. The alignment of the HV cable must be agreed with the Road Authority at the earliest possible opportunity.	To ensure adequate depth of compacted suitable backfill material above the cable along its entire length and to provide due consideration to road drainage, other utilities, and future pavement maintenance.
Ground Conditions	Ground conditions along the route of the cable to be comprehensively assessed through detailed site investigations. This should occur pre-licence application and may be the subject of a separate licence application.	To verify that the identified reinstatements are fit for purpose and ensure integrity of road base.
Reinstatement	Backfilling and reinstatement of excavations to be in accordance with the DOT's Guidelines for Managing Openings in Public Roads and in the case of National Roads, TII's publication CC-PAV-04007 ''Requirements for the reinstatement of Openings in National Roads". Additional ground improvement measures may be required, derived from the site investigations carried out. Where a regional or local road width is 6m or less, a full width of pavement reinstatement is required. This may include reconstruction of the binder base and subbase on roads significantly impacted. In addition, certain roads may require additional strengthening in the form of geotextiles.	To minimise future interventions of the road and maintain structural integrity of the host road.
Transmission HV Electrical Assets on or under Road Surface (jointing bays, chamber lids etc) ¹²	 Where joint bays are proposed to be constructed in carriageways it shall be demonstrated that no off-carriageway alternative is practical. Link boxes and C2 chambers should be installed off the carriageway. The following are applicable unless alternative options are agreed based on particular needs and conditions: Depth of cover to the any joint bay structures or jointing bays should be no less than 600mm unless agreed otherwise. For joint bay structures that interface with national roads, Technical Acceptance shall be carried out in accordance with the requirements of DN-STR-03001 – Technical Acceptance of Road Structures on Motorways and other National Roads. In this case, contact must be made with the TII Structures Section in the early phases of the project. Technical Acceptance of joint bay structures beneath regional and/or local roads and which do not interface with national roads should be carried out in accordance with DOT Circular RW 10/2021. Integral to the Technical Acceptance procedure is the: Technical Acceptance procedure is the: Technical Acceptance Report (TAR) which records the agreed basis and criteria for the detailed design of the joint bay structure; and Certification by the Design/Assessor/Checker confirming that the design, assessment, specification or construction works complies with the TAR. Joint Bays within the carriageway shall conform to standards required by the Roads Authorities, and shall have a concrete lid unless exceptional circumstances and agreed otherwise. Construction shall be in accordance with relevant TII publications. All backfill around these structures to be placed and compacted in accordance with the Guidelines for Managing Openings in Public Roads and/or the TII document "Requirements for the Reinstatement of Openings in National Roads CC-PAV-04007" as a minimum. Responsibility for the maintenance of Link Box / chamber lids remains with	To ensure the structural integrity and durability of structures and to mitigate the risk of reflective cracking to road surface.

¹¹ See also Microsoft Word - EirGrid UGC Functional Specification - 110 kV 220 kV 400 kV table 2

Area	Condition	Reason		
Roads Structures	Whilst each project will be assessed on its own merits, save for exceptional circumstances, high/medium voltage transmission underground cables should not be sited on or attached to existing roads structures, masonry bridges / culverts and the like. Such structures require more complex maintenance intervention and upgrading that would be compromised by the proximate presence of live high/ medium voltage systems.	To preserve the structural integrity and durability of existing road structures.		
	Where the Licence Holder discovers or damages uncharted services or drainage infrastructure including culverts, the Road Authority must be consulted, and agreement reached in advance of proceeding.			
Roads Drainage	Roads DrainageCable location and alignment should be designed/installed/constructed in such a manner to not obstruct or interfere with road drainage systems and road existing drainage pathways. Consideration to be given to future necessary expansion for climate adaptation where envisaged as necessary by the Road Authority.			
Records & Safety File	The licence holder shall provide as built details of all electrical infrastructure constructed in a format agreed with the Road Authority. Consideration should be given to ISO 19650 The Licence Holder shall provide a copy of the Safety File for the project.	To ensure the Road Authority can carry out its functions under the 1993 Roads Act.		
Management procedures	Prior to licence issuing, the licence holder shall agree procedures for the construction, operation and maintenance of the electrical infrastructure including emergency procedures (including contacts) during the operational lifetime of the asset.	In the interest of health and safety and in the interest of protecting the road and the electrical infrastructure.		
Restrictions	Prior to issuing of a licence the applicant shall declare and agree with the In the interest of h Road's Authority any restrictions of future construction work in the vicinity of safety and in the i the electrical infrastructure. the protecting the			
Existing Services	Cable location and alignment to be designed in such a manner to not obstruct or interfere with existing utilities, without prior agreement from the existing utility owners. The Applicant shall consult with each utility with existing services in the road prior to the submission of a T2 licence application.	To ensure that the utilities in the host road are not compromised.		
Abnormal Load Requirements	A detailed submission of loads and proposed routes to be used for transportation of abnormal loads along with details of the load is to be submitted to Road Authority for agreement in advance of planning consent or granting of a licence. The applicant may be required to undertake an assessment to determine the loading that a given structure can carry using standards including AM-STR-06048 and AM-STR-06026 See Circular RW18 / 2024 & S.I. No 366 of 2008 & S.I. No 5 of 2003.	To preserve the structural integrity and durability of pre- existing road structures.		
Construction Programme	 A draft construction programme setting out timelines for: construction of the ducting construction of joint chambers transport of cabling pulling of cabling jointing of cabling Should be submitted for the approval of the Road Authority. 	To minimise disruption to road users. To coordinate other roadworks		
Traffic Management	All traffic management to be in accordance with the Chapter 8 of the Traffic To m			
Communications	To minimise disruption to road users. To coordinate other roadworks			

Area	Condition	Reason	
Ownership	The applicant shall provide the Road Authority with contact details of the owner of the infrastructure annually throughout its life or when any changes in ownership occur.	In the interest of health and safety and in the interest of protecting the road and the electrical infrastructure.	
Future	a. The applicant shall not install infrastructure (including structures, cables, or	To minimise economic cost	
infrastructure development	wires) along an existing Public Road where it is known that this Public Road is to be abandoned.	and to the exchequer.	
	 b. The provision of infrastructure (including structures, cables, or wires) along the alignment of a future Public Road shall be coordinated with the construction of that road. 		
Security	The applicant shall provide the Road Authority with a cash security to ensure the satisfactory reinstatement of the public road.	To ensure the satisfactory reinstatement of the public road and that the works do not create a hazard or potential hazard or interfere with the maintenance of the public road.	
Certification,	The applicant shall agree arrangements with the Road Authority for certification	To ensure the satisfactory	
coordination and	and inspection of the works that may include direct inspection / coordination	reinstatement of the public	
Inspection	by the Road Authority. The Road Authority may include specific charges for same.	road and that the works do not create a hazard or potential hazard or interfere with the maintenance of the public road.	

9 Checklist

No.	Item	Section	Note
1.	Ensure that the Applicant Organisation is correct	6.1	 Where electric cables are planned in the public road, the Applicant for Planning Permission or a Road Opening licence shall be: ESBN/ESB EirGrid Any person or body with site specific consent from the CRU under S.48 of the 1999 Electricity Regulation Act. Any person or body with the agreement of each and every landowner who owns the substratum of the public road. Engagement with contractors is not recommended unless they have an agreement to
			act on behalf of the cable owner
2.	Requirement for Planning Permission	6.2 & 7.	 The applicant should be required to provide evidence that either: Planning permission exists for the development <i>or</i> The development is exempted from planning
3.	Ensure Pre-Planning / Pre- Licensing Engagement has occurred	6.4	The applicant should engage with the Road Authority in advance of submission of a planning application or T1 notification.
4.	Ensure that certain minimum information is provided by the applicant.	6.2 & 7.0	 At T1 stage and Planning permission stage the following information is typically required from the applicant Summary of scope of the project Applicant point of contact Summary and mapping of the works to be included in each T2' Report on current condition of the road Report on Geotechnical/ site Investigation highlighting any challenging conditions. Details of Bridges, culverts, watercourses, bog rampart roads and Special Engineering Difficulties¹³ affected and proposed design in those areas. Reinstatement details including clear communication of full bay/ lane/ road reinstatement. Details of any locations where roadworks (or temporary traffic management) are proposed outside normal working hours. Details of any alternative techniques including directional drilling.
5.	Consider the effect of the proposed works on existing assets and future development	6.5, 8.0	 Primary items for consideration: the sterilisation effect of cables on the road restrictions on future horizontal / vertical alignment of the road due to separation distances Current and future drainage (including climate adaptation) Current and future road crossings for services or drainage

¹³ See Guidelines for Managing Openings in Public Roads for definition

No.	Item	Section	Note
6.	Consider the effect of ancillary activities.	8.0	Consideration at planning and road licensing stage requires the applicant to provide details of:
			- Site Compounds and storage areas
			- Transport routes for excavation import/export
			- Transport routes and weights for abnormal loads including cable reels.
			 Draft programme and temporary traffic management for cable pulling and cable jointing works.
7.	Point of contact	8.0	At every stage of the process, apply conditions to Planning Permissions and Road Opening
			Licences to ensure that the Road Authority has construction and out of hours / emergency
			contact details and knows the owner(s) of the cable/duct asset for:
			- Pre-Construction Stage
			- Construction Stage
			- Post construction for the life of the assets.
8.	Road Authority	8.0	Ensure that appropriate Road Authority resources are assigned to:
	Resources & charges		 consideration of planning and road opening applications
			- inspection and co-ordination of works
			Where dedicated staff resources are required for the construction phase, appropriate
			specific charges should be applied to licences.

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