

Transaction Services

Project Net

*Strictly private
and confidential*

11 May 2020

pwc







Important notice

This document has been prepared only for the Commission for Communications Regulation (ComReg) on behalf of Department of Communications, Climate Action and the Environment (DCCAE) and solely for the purpose and on the terms agreed with the ComReg in our contract dated 27 May 2019. We accept no liability (including for negligence) to anyone else in connection with this document.

The scope of our work was limited to a review of documentary evidence made available to us and interviews with key stakeholders. We have taken reasonable steps to check the accuracy of information provided to us but we have not independently verified all of the information provided to us relating to the services.

We have limited our review to those documents that we consider relevant to our Contract. We cannot guarantee that we have had sight of all relevant documentation or information that may be in existence and therefore cannot comment on the completeness of the documentation or information made available to us. Any documentation or information brought to our attention subsequent to the date of this report may require us to adjust our report accordingly.

Guide to Redaction

	Customer information
 	Commercially sensitive information
  	General Data Protection Regulation



Commission for Communications Regulation
Dockland Central,
1 Guild St,
North Dock
Dublin 1

Dear Sir,

Subject: Project Net

ComReg received a request dated 13 February 2019 from the Minister for Communications, Climate Action and Environment (“the Minister”) to conduct a review of E-Nasc Eireann Teoranta (“enet”) in light of a report by Analysys Mason entitled “*Review of Pricing and Access Arrangements for the MANs*” (the “AM Report”) and published on 13 February 2019.

This report has been prepared for the purpose of determining enet progress in relation to the implementation of the recommendations as set out in the AM Report. We have also reviewed enet historical pricing policy and intercompany transfer pricing arrangement, in the context of enet’s related company enet Telecommunications Networks Ltd (“ETNL”).

Save as described in the contract or as expressly agreed by us in writing, we accept no liability (including for negligence) to anyone else or for any other purpose in connection with this report.

Yours faithfully

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PricewaterhouseCoopers is authorised by the Institute of Chartered Accountants in Ireland to carry on investment business.

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Our scope and process (1 of 2)

Our scope



The Department of Communications, Climate Action and Environment (DCCAE) commissioned a report by Analysys Mason in 2017 (the “AM Report”), to determine whether the Metropolitan Area Networks (MANs) are being operated on a transparent and non-discriminatory basis. The AM Report was published on 13 February 2019 and it made 12 recommendations to ensure enet’s compliance with the Code of Practice for the Management and allocation of access to the Metropolitan Area Networks (“Code of Practice”) and open access to all customers, meaning all similarly situated authorised telecom carriers can have access to enet’s infrastructure on the same basis.

ComReg received a request dated 13 February 2019 from the Minister for Communications, Climate Action and Environment (the “Minister”) to conduct a review in light of the AM Report. The Minister requested that ComReg review the following 4 matters. ComReg has engaged PwC to perform this review on its behalf, the results of which are contained in this report.

1. Establish whether enet complied with its obligation under the Code of Practice to offer managed services on the MAN’s in the context of national end to end services at non-discriminatory prices such that its related company, ETNL did not obtain a material unfair advantage.
2. Confirm the revised intercompany transfer pricing arrangements in place are in compliance with the Code of Practice.
3. Confirm the Analysys Mason recommendations have been implemented.
4. Based on the findings of the review, make any further recommendations to the Minister.

Our review was performed between June 2019 and September 2019.

Access to management



We met with the leadership team of the Company, which included Peter McCarthy (Group CEO), Noel Ryan (CFO), David Eyre (CCO) and Claire Murphy (General Counsel & Company Secretary). ✂ ✂ ✂

Our scope and process (2 of 2)

Access to information



We reviewed a number of key documents in the course of our review including:

- Customer database including active and inactive opportunities;
- Desk Top Survey vs Field Survey analysis report;
- Recorded discounts report;
- ETNL Financial Statements and related schedules;
- MANs Usage report;
- MANs Services Agreement;
- Code of Practice for the Management and allocation of access to the Metropolitan Area Networks; and
- Analysys Mason Report dated 16 March 2018.

We have not requested or had access to the auditors of enet.

Clarity of information



The information provided, together with our access to management, has allowed us to gain insight and understanding into some of the more significant risks and issues allowing us to assess the status of implementation of each of the individual recommendations as well as reviewing the transfer pricing policy and non-discriminatory pricing.

Important scope comments

Further important details regarding the scope and process of our work are included in Appendix 1.

Overview of the Metropolitan Area Networks and the Managed Services Entity - enet

The Metropolitan Area Networks (MANs) are State-owned telecoms networks which consist of carrier-neutral telecoms duct and fibre optic cable rings linking the main commercial and public buildings to "co-location centres". Telecommunications operators locate their equipment in these co-location centres and access the MANs network.

A total of 88 MANs covering 94 regional towns and cities were constructed under the MANs Programme. 28 MANs were completed under Phase I and 60 MANs (covering 66 towns) were completed under Phase II.

The MANs were co-financed by central Government, Local Authorities and the EU's European Regional Development Fund.

The MANs are independently managed, maintained and operated for the State by a Management Services Entity (MSE). enet were granted the rights to operate these MANs under a long-term concession agreement (in July 2004 for Phase 1 MANs and July 2009 for Phase II MANs), on behalf of the DCCA.

Subsequently, this long term concession agreement for both MSE Contracts was extended to 2030. Ownership of the 88 MANs remains with the State.

enet's sister business, ETNL, provides wholesale products and services using its own infrastructure and in some cases combining these with wholesale inputs bought from enet. ETNL was incorporated on 11 March 2014 and commenced trading on 1 May 2015, following the transfer of backhaul operations and assets from enet.

Both entities are ultimately owned by the Irish Infrastructure Fund (IIF) since December 2018.



Source: enet.ie

Overview of our Scope of Work

DCCAE commissioned the AM Report in 2017, to determine whether the MANs are being operated on a transparent and non-discriminatory basis, and whether enet is leveraging its concession-based MANs business to provide an unfair advantage to its non-MANs business (ETNL).

Analysys Mason made 12 recommendations in their report to ensure enet's compliance with the Code of Practice for the Management and Allocation of Access to the MANs. The purpose of the Code of Practice is to ensure open access to the MANs to all customers, meaning all authorised telecom carriers can have access to enet's infrastructure on the same basis.

ComReg received a request dated 13 February 2019 from the Minister to conduct a review in light of the AM Report. The scope of this review is to:

1. Establish whether enet complied with its obligation under the Code of Practice to offer managed services on the MANs in the context of national end to end services at non-discriminatory prices such that its related company, ETNL did not obtain a material unfair advantage.
2. Confirm the revised intercompany transfer pricing arrangements in place are in compliance with the Code of Practice.

3. Confirm the Analysys Mason recommendations are being implemented.
4. Based on the findings of the review, make any further recommendations to the Minister.

PwC has been engaged by ComReg to carry out a review to address the Minister's request and prepare a report setting out the findings of this review.

Issue 1 - Pricing obligation under the Code of Practice, as it relates to ETNL (1 of 4)

Background – Code of Practice

The Code of Practice for the Management and Allocation of Access to the MANs includes the core principle of ‘*open access*’ being the provision of access to the MANs infrastructure to interested parties on fair, transparent, non-discriminatory terms and on an equal basis.

The principle of non-discrimination requires that “*no party may be unfairly prejudiced because of non-objective factors or criteria*” and also requires that “*an interested party is not permitted to apply different conditions or criteria to similarly situated parties*”.

Approach to pricing

Our work relates to a review of pricing of the Metro Ethernet Product only, as the only applicable national end to end services purchased by ETNL from enet. The review covers the period 1 May 2015 (date ETNL commenced trading) until 31 December 2018.

For this product, enet sets prices for its third party customers based on their current price list, less term and volume discounts if applicable. This is documented on their website following the AM Report. However, other factors can be taken into account such as the age and condition of the relevant circuit and competitive bid tenders. There were 3 price lists applicable in each of the years in the review period.

enet’s approach to setting prices for ETNL, in the period prior to the AM Report, was based on eir’s published regulated price for a similar product less a 5% discount.

Management have advised that this approach to setting price for ETNL was taken in the following context:

- On the establishment of ETNL, having sought professional advice and in consultation with DCCAE, enet devised an intercompany transfer pricing system based on the “market pricing” (with eir pricing as the “market pricing benchmark”).

It was Analysys Mason’s view that this approach was not in compliance with the Code and this is no longer the approach used, as detailed later in this report.

We were not asked to review the appropriateness of the market pricing model approach of transfer pricing. However as described below, we were asked to review whether ETNL obtained a material unfair advantage.

eir regulated prices are set based on the following:



- The customer bandwidth requirement;
- Must be cost oriented;
- Distance from the eir exchange measured in a straight line; and
- The geographic category:
 - A. Urban and High Density (e.g. Cork)
 - B. Provincial and Medium Density (e.g. Cavan)
 - C. Rural and High Density (e.g. Gort)
 - D. Rural and Medium Density (e.g. Clones)



Issue 1 - Pricing obligation under the Code of Practice, as it relates to ETNL (2 of 4)

In calculating the appropriate transfer price, enet, using eir's pricing model (see Appendix 8) developed a pricing table that considers customer bandwidth requirements and geographic categories. It does not utilise actual distance, but makes an assumption which is weighted towards shorter distances as follows:

- < 0.5km – 70%
- < 1.0km – 25%
- < 1.5km – 5%



ETNL is enet's largest customer for MANs access only products. Therefore if it were priced on the same basis as enet's third party customers, we have assumed that it would have committed to a large volume of circuits and therefore qualified for a volume discount.

At the point of establishment of ETNL in 2015, enet performed a benchmarking exercise with regard to customers of a similar size to ETNL, i.e. Customer A and Customer B. This exercise was completed in order to support their approach to pricing of ETNL, although the weighting of the price towards lower distance was not included. Based on purchases at that time, the benchmarking suggested a discount off the maximum customer price list of   for ETNL.

Customer A's prices when benchmarked during 2015, using ETNL volume, indicated a   discount from maximum price. enet management concluded this was reasonable, as Customer A volume over 200 circuits versus >800 for ETNL. We understand this information was supplied to the DCCAE in 2015

This information is not included in the internal pricing policy. The published pricing policy states that discounts can be obtained for term and volume.

We identified only one customer, Customer A, who might be considered to be similarly situated to ETNL, on the basis that this customer committed to >80 circuit volume and term and obtained the largest volume discount allowed. Enet's management disputes strongly that the customers are similarly situated, on the basis that the ETNL's volume/circuit count is twice as large as Customer A. Whilst the volume discount scheme is capped, this scheme was not applied to ETNL in the historical period as previously noted.

Customer A's price is negotiated periodically between Customer A and enet.  

Management have indicated that the price negotiation at that time was based on a stated preference from Customer A, which was for a simple distinction on <1km and >1km from the nearest eir exchange. Enet's management have advised that Customer A was offered the pricing structure that applied to ETNL but they opted for the bespoke pricing as described above.

Issue 1 - Pricing obligation under the Code of Practice, as it relates to ETNL (3 of 4)

The following considerations were relevant to enet in its determination of Customer A pricing:

- The specific Customer A request for distance based pricing structure;
- Competitiveness with other carriers;
- Requirement for non-discriminatory pricing; and
- The likely purchase volumes from Customer A. In 2015, Customer A's volume was over 200 circuits. The actual discount received fluctuates based on actual volumes and product mix.

Approach to our review

Given that a different approach to pricing was applied to ETNL than to enet's third party customers, it is difficult to perform a price comparison between them. As Customer A are the only customer buying MANs only access who committed to >80 circuit volume and therefore obtained the largest volume discount allowed and can be considered to be similarly situated, we have used their pricing to compare to ETNL.

Limitations to our review

There are certain limitations to our review, as follows:

- Customer A did not buy every product that ETNL bought from enet. In total for the review period, c.65% of ETNL purchases from enet also were purchased by Customer A. Therefore, for c.35% of ETNL purchases, we have no third party customer price to perform a comparison against. We therefore cannot form a conclusion in relation to these transactions;
- Customer A volume of purchases are lower than ETNL.
- There are a number of exceptions which we removed from the population for testing after management provided an explanation. These exceptions included misclassifications (eg. national circuits misclassified as local), NNI products (network to network interface) which are co-located so priced differently and also companies not part of the Customer A group for the full period;
- There are other price variances which management believe may be due to factors such as the age of the relevant circuit, older contracts extended other/average prices. Primarily due to the passage of time and change of management team at enet, we were not provided with detailed explanations for these variances that would allow us to remove these from the population to be tested. Therefore these remain within our test results.

Issue 1 - Pricing obligation under the Code of Practice, as it relates to ETNL (4 of 4)

Conclusion of our review in relation to Issue 1 - enet pricing obligation

It is evident from our review that enet used a different approach to pricing of MANs only access for its related company, ETNL, than for its third party customers. This is the case even when we compare ETNL prices to the most similarly situated customer i.e. Customer A.

We appreciate that the volumes acquired by Customer A are different to ETNL, but both are >80 circuits in line with the maximum volume discount currently documented in enet's pricing policy.

We also understand that distance from the local exchange is a factor in the pricing for Customer A, but this is not documented in enet's pricing policy.







Assuming Customer A is an appropriate price comparison to ETNL, we have performed a price comparison calculation for the period.

As previously noted, there was an element of enet sales to ETNL for which there was no Customer A price to perform a comparison and we form no conclusion on these transactions.

In relation to the products that both Customer A and ETNL bought from enet in the review period (c.65% of ETNL purchases from enet), there was both positive and negative average price variances. When we calculate the net impact on ETNL purchases in the review period, excluding exceptions where explanations were provided by management, there would be an increase in ETNL's costs.

This was considered in the context of ETNL's earnings before interest, tax, depreciation and amortisation (EBITDA). **In our view, and in the context of the EBITDA of ETNL after adjustment for once-off items, the difference arising from the pricing comparison calculation does not represent a material unfair advantage to ETNL.**

Issue 2-4 - Status of Analysys Mason Recommendations (1 of 3)

Item	Analysys Mason Recommendation	Status
1	enet should update its published price lists to explain that upfront and spread-out options are available for paying the connection fee for any product.	
2	enet should update its assumptions used in preparing the desktop survey (DTS) estimate for the cost of the building 'drop connections', and ii) prepare a report showing that there is an improvement in the reliability (on average) between the DTS and corresponding field study (FS) .	
3	enet continues to publish its maximum prices, not its actual prices (due to it facing competition for its services).	
4	enet and DCCAE should discuss price changes for dark fibre, sub-duct and duct which will ensure that wholesale customers do not find it more expensive, on average, to buy passive products than comparable managed services products.	
5	enet should make single strands of dark fibre available, at a price which is lower than the price of dark fibre pairs.	
6	<p>enet should document (but not necessarily publish) all its MANs product discounting schemes, so that their application throughout the year to quotes and renegotiations starting from maximum published prices can be audited at the end of each year. This should be done for i) all MANs products, ii) recurring and one-time fees and iii) connection charges. The rationale for each discounting scheme, any changes to each, should also be documented. The documentation, including discount metrics, rationale and any changes, should be made available upon request for review by DCCAE or its nominated advisor.</p> <p>enet should publish the availability of all discounts in a qualitative sense, e.g. making public the basis of all possible discounts. enet does not need to make public the quantitative value of the discounts.</p>	









Implemented



Partially Implemented

Issue 2-3 - Status of Analysys Mason Recommendations (2 of 3)

Item	Analysys Mason Recommendation	Status
7	To ensure that other operators can purchase MANs connectivity and compete with enet in the provision of the national backhaul component, enet should not sell the total end-to-end MANs plus national connection at a price lower than that given by the MANs component (list price plus any documented discount).	
8	enet should create a transfer price for the MANs connection and rental component of national end-to-end managed services based on its published price lists, plus any documented discounts for MANs services.	
9	enet should update a number of key elements within the legal framework of the separated accounts annually. A. Schedule 2 of the Service Agreement B. Schedule 2 of the NOC Services Agreement C. Schedule 1 of the Agency Agreement	
10	enet should permit operators to “core drill” into a specified point of a MANs chamber, under supervision.	
11	enet should prepare a report on the occupancy allocation of passive equipment (dark fibre, duct, sub-duct, co-location), including that used by ETNL for national circuits. The report should compare the current occupancy to the maximum access levels set out in the Code of Practice. If ETNL or another operator is occupying more than the permitted capacities, then the report should provide justification and evidence that spare capacity is still available for new seekers, and/or that plans are in place to add additional capacity.	
12A	enet should continue to operate its brand, name or identity (e.g stylisation) without any link to any retail provider of any service. This should extend to any partner brands such as Airspeed Retail.	



 **Implemented**

 **Partially Implemented**

Issue 2-3 - Status of Analysys Mason Recommendations (3 of 3)

Issue 3 - Conclusion of our review in relation to status of the Analysys Mason Recommendations

We have outlined above our review of the 12 Recommendation as set out in the AM Report. We have confirmed in relation to these recommendations the following:

- Ten recommendations have been fully implemented; 
- Two recommendations have been partially implemented; 
- We did not identify any recommendations that have not been implemented in some form.

Within each of the 12 Recommendations, there are a number of subsets of recommendation and each of these have been outlined in Section 5 of this report.

Issue 2 - Conclusion of our review in relation to Transfer Pricing Policy

enet have updated their intercompany transfer pricing policy to reflect a price based on its documented prices. See recommendation 8 below for further information.

Issue 4 - Other Recommendations

Below we have included recommendations that relate to events that should occur annually. Due to the timing of this report, enet are currently in the process of preparing these reports for submission to the Department. We are therefore not in a position to conclude on these recommendations.

Item	Analysys Mason Recommendation	Further Recommendation
2 B & C	enet should prepare a report on an annual basis showing the DTS outputs and accuracy relative to the FS, and demonstrate an improvement in accuracy over time. The report should be made available upon request for review by DCCAE or its nominated adviser.	We recommend that the annual report in relation to DTS and FS, of which the first report is due in March 2020, is formalised. Reasons for exceptional transactions should be documented. The report should clearly set out the step by step process in arriving at the result and a clear rationale for any conclusions.
6	<p>enet should document (but not necessarily publish) all its MANs product discounting schemes, so that their application throughout the year to quotes and renegotiations starting from maximum published prices can be audited at the end of each year. This should be done for i) all MANs products, ii) recurring and one-time fees and iii) connection charges. The rationale for each discounting scheme, any changes to each, should also be documented. The documentation, including discount metrics, rationale and any changes, should be made available upon request for review by DCCAE or its nominated advisor.</p> <p>enet should publish the availability of all discounts in a qualitative sense, e.g. making public the basis of all possible discounts. enet does not need to make public the quantitative value of the discounts.</p>	<p>We recommend that the pricing policy be updated to state that discounts are not available on other products. Similarly, the basis for exceptional discounts are only documented on the customer database, although their existence is referenced in the pricing policy. In our view, the basis for exceptional discounts should be included in the internal pricing policy.</p> <p>In order to provide further transparency, enet should consider publishing further information around the volume and term discounts. It should also publish which products can avail of the volume and term discounts.</p>

Executive report

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Overview (1 of 2)

The Metropolitan Area Networks (MANs) are State-owned telecoms networks which consist of carrier-neutral telecoms duct and fibre optic cable rings linking the main commercial and public buildings to "co-location centres" in the MANs towns. Telecommunications operators locate their equipment in these co-location centres and access the MANs network.

A total of 88 MANs covering 94 regional towns and cities were constructed under the MANs Programme. 28 MANs were completed under Phase I and 60 MANs (covering 66 towns) were completed under Phase II.

The MANs were co-financed by central Government, Local Authorities and the EU's European Regional Development Fund.

The MANs are independently managed, maintained and operated for the State by an MSE. enet were granted the rights to operate these MANs under a long-term concession agreement, on behalf of the Department of Communications, Climate Action and Environment (DCCAE). Following an open tender process:

- enet was appointed in July 2004 for a 15 year term to manage the 28 Phase I MANs; (see Appendix 6 list of MANs)
- In July 2009, following a further open tender process, enet was awarded a 15 year contract to manage the 60 Phase II MANs. (see Appendix 6 list of MANs)

Subsequently, this long term concession agreement for both MSE Contracts was extended to 2030. Ownership of the 88 MANs remains with the State.

Up to 31 December 2018, enet has made revenue share payments to the State in excess of €8.8 million.

enets' sister business, ETNL, provide wholesale products and services using its own infrastructure and in some cases combining these with wholesale inputs bought from enet. This business was separated from enet in 2015 when ETNL was established.

Both entities are ultimately owned by the IIF which was set up by Irish Life in 2012, and managed by Irish Life Investment Managers and Australian investment company AMP Capital. The IIF currently invests capital for 28 institutional investors, 25 of which are Irish pension funds including university trusts, union pensions, religious orders, construction worker pensions, pensions from a number of Irish companies, as well as Government bodies. Ireland Strategic Investment Fund (ISIF) is one of the investors in IIF.

IIF purchased a 78% stake in enet from Granahan McCourt (GMC), in July 2017. The IIF subsequently agreed terms to acquire the remaining 22% in September 2018. This transaction closed on 5 December 2018, and included the resignation of the GMC representative directors. The primary board of enet has three board directors nominated by the IIF.

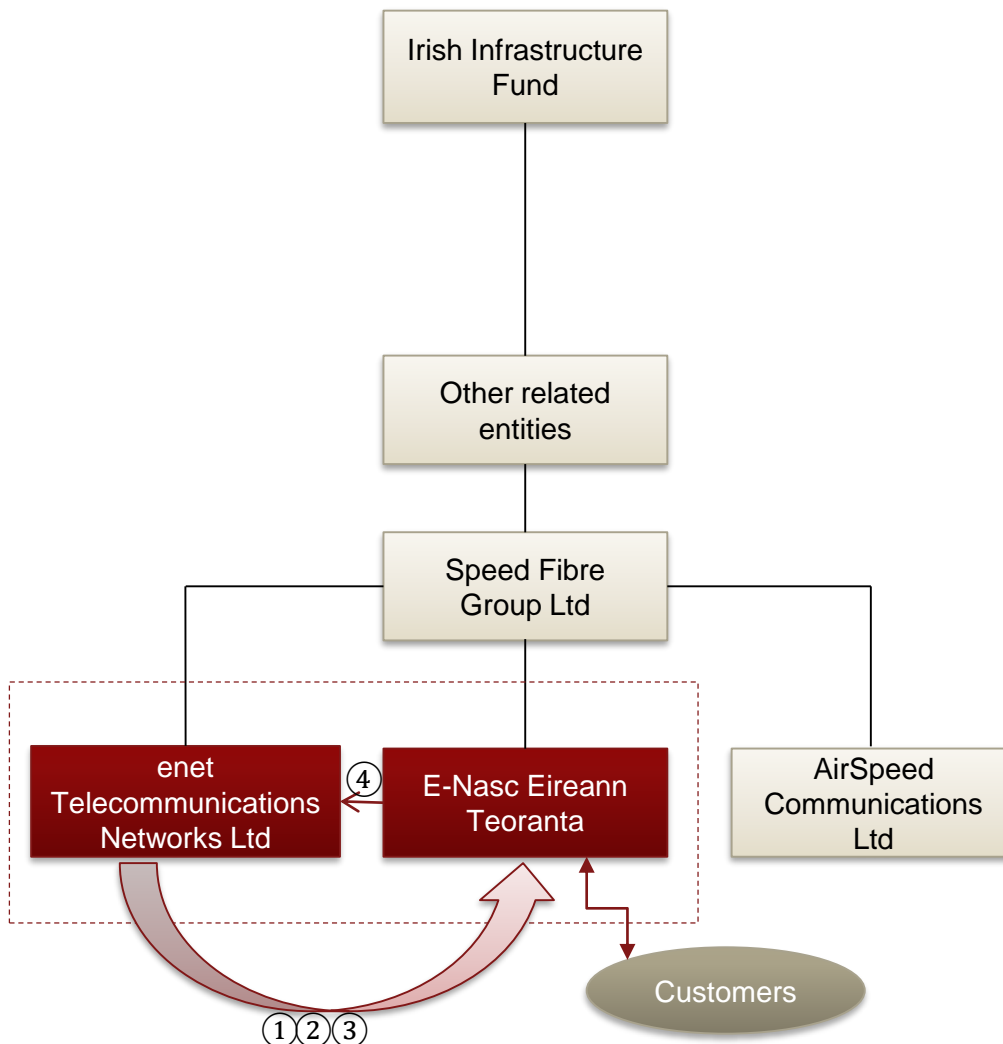
Overview (2 of 2)

enet is based in Limerick. It has staff of approximately 115 people and operates one of the largest alternative wholesale telecoms network in Ireland. It operates over 5,400 km of fibre infrastructure, including the Irish state's metropolitan area networks – known generally as the MANs - and proprietary metro networks, a unique backhaul infrastructure and one of the largest licensed wireless networks in the country.

Currently enet operates the MANs in 94 cities and towns across Ireland, operates over 3,700 km of backhaul fibre along the Irish Rail network and has access to Bord Gais and ESBT fibre, as well as access to Waterway Ireland's fibre.

enet is the sales agent for ETNL. It is ETNL which provides all the non-MANs business including national connectivity and end-to-end national circuits.

Legal Structure



enet operate and maintain the MANs infrastructure in accordance with the concession agreement with the DCCAE. enet are responsible for selling access to the MANs on an open access basis. Individually these MANs are “islands of connectivity” and therefore need backhaul services to connect the MANs nationally. ETNL provide national connection and service to 3rd parties as a bundled package while purchasing the MANs component from enet. enet also sell individual MANs connectivity.

The typical flow of transactions are outlined below:

- ① ETNL do not sell directly to customers. enet act as an agent. ETNL pay enet an agency fee for this service.
- ② ETNL purchase the MANs component for the national end to end service from enet. From the beginning of FY19 this price is based on a maximum price list less volume and term discount . It had previously been based on eir published prices for a similar product.
- ③ ETNL have no staff and enet charge ETNL for support services such as finance, IT etc.
- ④ ETNL maintain the network and customer liaisons on queries with the network under the NOC (“Network Operation Centre” agreement).

Airspeed provides fibre, copper and wireless connectivity on a national basis to commercial customers.

Issue 1 - Pricing obligation under the Code of Practice, as it relates to ETNL

	Scope Area	PwC view
1	Establish whether enet complied with its obligation under the Code of Practice to offer managed services on the MANs in the context of national end to end services at non-discriminatory prices such that its related company, enet Telecommunications Networks Ltd did not obtain a material unfair advantage.	<p>Background</p> <ul style="list-style-type: none"> • The concession agreement Code of Practice sets out the way in which enet must operate the MANs to meet the requirements of transparency, non-discrimination and equality. The Code of Practice is focused on the principles of open access. enet must ensure: <ul style="list-style-type: none"> • products are sold on a fair, transparent, non-discriminatory and equal basis to all parties (ISPs, enet and ETNL) • the same rules, criteria and guidelines are applied to all parties (ISPs, enet and ETNL) • procedures should be clear, precise and uniform, not waived in favour of any party (ISPs, enet or ETNL) • decision making should be objective and transparent; and • access to information is also available to ISPs, including routes, distances and chamber locations. • Our review of the pricing of products covered the period from 1 May 2015, the date ETNL commenced trading and 31 December 2018. • enet have advised that during the period under review the basis for the intercompany transfer price charged to ETNL was calculated on the equivalent eir price as outlined in Appendix 8. enet had determined that this was an appropriate proxy to use as the basis for the intercompany charge during that time as this was the market price. enet have advised that other ISP's could have availed of this price as it was based on the regulated price from eir (not based on any volume or term discounts) from the end customer to the local exchange. We note that Analysys Mason identified this as an issue and recommended a number of changes in relation to pricing which have been subsequently implemented by enet (see Recommendation 8).

Issue 1 - Pricing obligation under the Code of Practice, as it relates to ETNL

PwC view

- 1
 - enet have stated in their published price list (See Appendix 3) that “discounts are available based on term and volumes”, although no further information is provided.
 - In summary the key discounts offered relate to the following volume commitments:
 - 40-81 circuits; and
 - 81 + circuits.
 - Post the AM report, ETNL are considered a large buyer of MANs services from enet, significant discounts are offered in relation to both term and volume. Management have confirmed that these discounts are offered externally to other large MANs services buyers.
 - Management have advised that ETNL have now committed to the purchase of circa. 500 circuits. This was formalised as part of the MSA signed in January 2019 between enet and ETNL.
 - We acknowledge that ETNL did not historically benefit from volume or term discounts – as noted in sections above, the ETNL transfer price was based on an alternative (market price) method which did not involve any such discounts.
 - In order to perform our analysis to establish whether ETNL availed of more favourable prices, we compared the price paid by ETNL to that paid by other ISP’s for managed services on the MANs for national end to end services who availed of volume and term discounts. Management have advised that the only other customer who receives discounts as a result of volume (81+ circuits) and term commitment on the MANs are Customer A and Customer A related companies. However, we note Customer A are provided with a bespoke pricing plan and products.

Work Performed

- Based on the above, we reviewed the following information in relation to enet for the period under review:
 - the average price paid by ETNL for a specific product offering, and
 - the average price paid by Customer A and Customer A related companies for same product offering.
- This involved comparing the price charged to ETNL for the local element of a national end to end service for a given product offering to the price paid by Customer A for the equivalent local only product over the relevant period from 1 May 2018 to 31 December 2018.
- enet document all sales opportunities in their CRM system. enet determines the type of data captured in its customer database. This has developed significantly over the period of the review as enet refine the data it requires to run the business as well as a result of the recommendations outlined in the AM Report. Therefore not all data is available for the full review period.

Issue 1 - Pricing obligation under the Code of Practice, as it relates to ETNL

PwC view

- 1
 - The customer database is not linked to the enet/ETNL financial system. A manual exercise is completed at the end of the financial year to split the transactions between enet and ETNL. We were provided with separate analysis from enet in order to reconcile the Salesforce data to the financial statements.
 - Management provided the data from the customer database for the entire period of the review which included all active and inactive transactions. Active transactions are those which were still active when the customer database was run and provided by Management for the purposes of our testing whereas inactive are transactions which occurred during the period which we are reviewing but are not still active at this time.
 - The total number of actual transactions over the period under review was 4,134 as extracted from customer database report. ETNL and Customer A had 1,009 transactions over that period.
 - We identified a number of issues in relation to the data extracted from customer database that was impacting the results of the testing performed as follows:
 - In many cases where the average price charged to Customer A was higher than that charged to ETNL it was identified that the Customer A average price included transactions which were not relevant as they were incorrectly classified as local when they were national services. In each case, we agreed these transactions to customer database to determine that these were in fact misclassified.
 - Some of the contracts in place pre-date acquisition and therefore did not form part of the discount arrangement in place until a new contract was entered into.
 - For certain bandwidths, the average price paid by Customer A was higher on circuits purchased historically (prior to discounted pricing in 2015)

For the purpose of our analysis and testing, we excluded all of these transactions referred to above in order to develop a comparable data set for the period under review.

This resulted in 806 transactions over the period, 572 related to ETNL and over 200 related to Customer A. A summary of the financial impact of each of the prices variances in relation to Customer A and ETNL for the period under review have been presented overleaf. Customer A did not buy every product that ETNL bought from enet. In total for the review period, c.65% of ETNL purchases from enet also were purchased by Customer A. Therefore, for c.35% of ETNL purchases, we have no third party customer price to perform a comparison against. We therefore cannot form a conclusion in relation to these transactions.

Issue 1 - Pricing obligation under the Code of Practice, as it relates to ETNL

We have included the above analysis of the ETNL and Customer A transactions for the same products from May 2015 to December 2018. We calculated the average price for each product and the variances in this pricing in each product category.



In our view, and in the context of the EBITDA of ETNL after adjustment for once-off items, the difference arising from the pricing comparison calculation does not represent a material unfair advantage to ETNL.

Issue 2-4 - Other scope areas

	Scope Area	PwC review
2	Confirm the revised intercompany transfer pricing arrangements in place are in compliance with the Code of Practice.	<p>Analysys Mason considered that the previous transfer pricing mechanism (i.e eir's price minus a further percentage) did not comply with the Code of Practice. They recommended that enet should use its documented prices, not the prices of its competitor, to create the transfer prices.</p> <p>enet have subsequently updated their transfer pricing policy to reflect a price based on its documented prices.</p> <p>Refer to recommendation 8 for further information.</p>
3	Confirm that the Analysys Mason recommendations are being implemented.	On the following pages, we have reviewed the Analysys Mason recommendations and determined in each instances if these have been implemented by enet.
4	Based on the findings of the review, make any further recommendations to the Minister.	This has been addressed in our review of each of the Analysys Mason recommendations on the following pages.

Connection Cost

1	Analysys Mason Recommendation	enet Action	PwC Review	PwC Conclusion & Recommendation
A	enet should update its published price lists to explain that upfront and spread-out options are available for paying the connection fee for any product.	enet have stated in their maximum pricing list published on their website <i>“Connection charges can take the form of a once-off connection fee or an increased annual rental charge over the period of the contract to cover the cost of connection.”</i> enet have explained this is not increased rental on an recurring basis, but an additional charge related to spreading the connection fee. There is no financing element to this.	PwC viewed a number of customer invoices which showed the rental charges and the once off connection charge as separate line items in each case.	Based on our review of the published maximum pricing list we conclude that enet are in compliance with recommendation 1.A.
B	enet should also publish the existence of any discounts that are available for connections fees.	enet advised that discounts for connection charges do not exist.	Not applicable.	Not applicable.
C	enet should document its rules for choosing the amount of connection cost that is charged for each type of product, including the way the charge is made (i.e. upfront or spread-out) and document any discounts available on connection charges (e.g. due to term and volume commitments). The documents should be made available upon request for review by DCCAE or its nominated adviser	enet have produced a pricing policy document describing the process in relation to connection charges and how they are applied to different products. For managed services, enet do not charge a connection fee as they aim to recover the cost through the associated rental of circuits, unless the cost is exceptionally high. For Dark Fibre enet have set out two potential scenarios: 1) A flat fee of €2,500 when a network connection to the building is already in place. 2) When no connection is in place, the connection charge is priced at cost, estimated on the basis of a Desk Top Survey (“DTS”) and subject to a Field Survey (“FS”).	PwC viewed the pricing policy document.	We conclude that enet are in compliance with recommendation 1.C.

Connection Cost

1 (Contd)	Analysys Mason Recommendation	enet Action	PwC Review	PwC Conclusion & Recommendation
D	enet should prepare a report on an annual basis demonstrating compliance with these recommendations. The report should be made available upon request for review by DCCAE or its nominated adviser.	The pricing list was issued on 13 th February 2019. enet have advised that the first annual report will be issued on 13 th February 2020.	Not applicable.	Not applicable.

Pricing – DTS vs FS

2	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendation
A	enet should update its assumptions used in preparing the desktop survey (DTS) estimate for the cost of building 'drop connections', and ii) prepare a report showing that there is an improvement in the reliability (on average) between the DTS and corresponding field study (FS) .	<p>In 2017 enet conducted a review of the DTS assumptions prior to it being flagged by Analysys Mason in the initial report dated 16 March 2018. The historical assumption for DTS was:</p> <p>DTS Cost = (Distance x Rate) + 90</p> <p>There were 3 bands of rates - 90 90 90</p> <p>for distances less than 70m, 90 90</p> <p>for distances greater than 70m and 90 90 in Dublin.</p> <p>Management conducted a regression analysis comparing the length against the actual cost based on data from 2016 and 2017. The resulting analysis gave a linear equation of : (Distance x 90) + 90 90 See point B below on reliability of DTS.</p>	<p>enet provided the cost report to us that was prepared in 2017 . We have re-run the regression for the 147 data points. The linear equation estimated from the regression is the same as enet with an R-Squared of 0.8774 indicating there are not large variances from the mean.</p> <p>See B & C overleaf on reliability of surveys.</p>	enet have updated their assumptions based on prior years actual costs. We conclude that enet are in compliance with recommendation 2.A

Pricing – DTS vs FS

2	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendation
B & C	<p>enet should prepare a report on an annual basis showing the DTS outputs and accuracy relative to the FS, and demonstrate an improvement in accuracy over time. The report should be made available upon request for review by DCCAE or its nominated adviser.</p> <p>FS average should fall within +/- 10% of the DTS average within 12 months, excluding connections where FS >€20,000.</p>	<p>enet prepared an excel report of all connections since Jan-17 to May 2019. They have filtered to remove all transactions that had a positive variance in DTS and FS. This resulted in 116 transactions. They then excluded all transactions where the FS was greater than €20,000 in line with the AM Report, giving 110 transactions. enet excluded a further 26 transactions that they deemed exceptional as the DTS was at least 60% greater than the FS. They then split the transactions into Pre Mar-18, Post Mar -18 until Mar -19 and than Post Mar -19. The difference between the average DTS and FS has decreased from 24% pre Mar-18 to 6% post Mar-19.</p>	<p>We investigated the “exceptional” DTS that were removed from the analysis. Upon review all 26 had a valid reason for exclusion as the DTS did not compare to the final FS request e.g. a change to a wireless solution. It appears the reliability of DTS has improved and the average is now within -/+ 10% of the FS.</p> <p>The updated report on DTS and FS is not due until March 2020.</p>	<p>We recommend that the annual report, of which the first report is due in March 2020, is formalised. Reasons for exceptional transactions should be documented. The report should clearly set out the step by step process in arriving at the result and a clear rationale for any conclusions.</p>

Publication of Maximum Pricing

3	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendation
A	enet continues to publish its maximum prices, not its actual prices (due to it facing competition for its services).	Management have uploaded “ <i>enet Permitted Maximum Pricing – Effective from 13th Feb 2019</i> ” on its website. This outlines the maximum price applicable for all enet products and services.	enet have published its maximum prices.	We conclude that enet are in compliance with this recommendation.

Pricing – Dark Fibre, Duct and Sub-duct.

4	Analysys Mason Recommendation	enet Action (1 of 2)	PwC review	PwC Conclusion & Recommendations
A	enet and DCCAE should discuss price changes for dark fibre, sub-duct and duct which will ensure that wholesale customers do not find it more expensive, on average, to buy passive products than comparable managed services products.	<p>In order to assess whether wholesale customers would find it more expensive on average to buy passive products than comparable managed services products, the AM Report used the comparative product pricing method and offered the following opinion:</p> <ul style="list-style-type: none"> “<i>enet faces direct competition from eir for this product, and therefore the market should ensure that prices for managed services are set at about the right level.</i>” They observed that in principle, it should not be more expensive, on average, to buy dark fibre than managed services. Having made a comparison to 1Gbit/s Ethernet, Analysys Mason were of the opinion that dark fibre should not exceed €2.60/m per annum. The maximum price published by enet for a fibre pair and a point to point fibre is €2.60/m. Regarding sub-duct based on the Code of Practice, no one operator can rent more than 20% of total dark fibre strands in the original infrastructure. If an operator needs more capacity, they should be able to rent a full sub-duct and deploy its own fibre cable. Therefore it should not be more expensive to rent the sub-duct than the bundle of cables. Based on this, the cost of sub-duct should be, on average, no more than the cost of renting 20% of the fibres plus one pair in a cable, in complete rings. 	<p>Based on review of the correspondence between enet and the DCCAE and review of minutes provided by enet it appears that discussions have taken place between enet and the DCCAE on pricing for passive products.</p> <p>We also note the new sub-duct product and pricing (of €8/m) included in the most recent price list published by enet in February 2020.</p>	We conclude that enet are in compliance with this recommendation.

Pricing – Dark Fibre, Duct and Sub-duct.

4 (contd)	Analysys Mason Recommendation	enet Action (2 of 2)	PwC review	PwC Conclusion & Recommendations
A	enet and DCCAE should discuss price changes for dark fibre, sub-duct and duct which will ensure that wholesale customers do not find it more expensive, on average, to buy passive products than comparable managed services products.	<ul style="list-style-type: none"> The Code of Practice states that no more than two sub-ducts can be rented by one operator. If an operator needs added capacity, it should be able to rent a full duct and therefore the price of a duct should not exceed two plus one sub-ducts. The max price currently stated for sub-ducts is €25/m. The maximum price stated for ducts is €100/m. <p>We reviewed numerous documents (i.e. correspondences, minutes of meeting etc) between enet and DDCAE on this issue since the completion of the AM report.</p>		

Availability of single strand fibre

5	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
A	enet should make single strands of dark fibre available, at a price which is lower than the price of dark fibre pairs.	enet have made single fibre available at a maximum price lower than the maximum price of dark fibre pairs. Per the enet permitted maximum pricing, the maximum price for a dark fibre pair/ring is €2.60/m. The price for a dark fibre single strand is €2.34/m. Dark fibre single strand is therefore available at a price 10% below that of a pair.		enet is in compliance with the recommendation in terms of maximum prices.

Application of Discounts

6 Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
<p>A enet should document (but not necessarily publish) all its MANs product discounting schemes, so that their application throughout the year to quotes and renegotiations starting from maximum published prices can be audited at the end of each year. This should be done for i) all MANs products, ii) recurring and one-time fees and iii) connection charges. The rationale for each discounting scheme, any changes to each, should also be documented. The documentation, including discount metrics, rationale and any changes, should be made available upon request for review by DCCAE or its nominated advisor.</p> <p>enet should publish the availability of all discounts in a qualitative sense, e.g. making public the basis of all possible discounts. enet does not need to make public the quantitative value of the discounts.</p>	<p>enet have produced a pricing policy document. The document sets out the pricing and discounts applicable to Dark Fibre Rental and Managed Services. The document specifically sets out the basis for discounts being volume and term for dark fibre rentals and managed services.</p> <p>With regard to publishing the basis of all possible discounts on a qualitative basis enet states in the maximum pricing list published on line: <i>“Discounts are available based on term and volume.”</i></p>	<p>enet have produced a document that formally documents the discounting schemes available for Dark Fibre Rental and Managed Services. However, it should be noted that there is no mention of MAF/SDH Metro/Co-Location/Duct/Sub-Duct products. Management noted discounts are not available for any other MANs products other than the products documented. While enet have covered their two main categories of products they have not captured all MANs products.</p> <p>The Pricing Policy specifically calls out the availability of discounts for special / exceptional projects (otherwise known as competitive bid processes). However, it does not provide any discount metrics for these. The Pricing Policy does not provide details of the bespoke pricing provided to Customer A.</p> <p>With regard to publishing the basis of all possible discounts, enet have stated on the maximum pricing list that discounts are available based on term and volume. However we have found from testing performed that a range of other discounts were given. Examples of these mainly relate to competitive bid tenders where a discounted price is offered in order to win or keep existing business. We note that instances of these undocumented discounts are not frequent and are the exception when it makes commercial sense to retain an existing customer for example.</p>	<p>We recommend that the pricing policy be updated to state that discounts are not available on other products. Similarly special/exceptional discounts are only documented on the customer database. In our view, the basis for special/exceptional discounts should be included in the internal pricing policy.</p> <p>In order to provide further transparency, enet should consider publishing further information around the pricing and discounts available. It should also publish which products can avail of the volume and term discounts.</p>

Application of Discounts

6	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
B	enet should update its published documentation immediately if new products are offered.	No new products have been offered since the creation of the pricing policy document. This is therefore not applicable to the current review.	Not applicable	Not applicable
C	enet should update its published documentation immediately if new discounts are offered.	No new general discounts have been offered since the creation of the pricing policy. However, it has been noted exceptional discounts have been made to several customers. These are documented on the order in the customer database including the reason for the discount and require internal approval. These are discussed further in 6E and 6F.	enet are documenting all discounts either via the general pricing policy or through Salesforce if there are exceptional discounts granted when tendering for specific contracts. In our view, the basis for exceptional discounts should also be included in the pricing policy document. This is discussed further in 6E and 6F below.	In our view, the basis for exceptional discounts should also be included in the internal pricing policy document. This is discussed further in 6E and 6F below.
D	enet's discounts should be progressive and reasonably smooth, i.e. without obvious discontinuities in the discounting.	enet have documented the relevant discounts in the pricing policy. They are set out in 3 categories being term discounts for Managed Services Products, volume discounts for Managed Services and term and volume discounts for Dark Fibre. This presentation allows the reader assess the incremental increases for each bracket.	We have presented these discounts in a graph in Appendix 5. From viewing the documented discounts in this way we are of the opinion that the discounts are progressive and reasonably smooth.	We conclude that enet are in compliance with this recommendation.

Application of Discounts

6	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
E	enet should not offer any MANs product discounts which are not documented.	enet have documented the general discounts on volume and term in their pricing policy. The discounts provided should be based on these guidelines. Exceptional discounts are not documented in the pricing policy. Another step taken by management is that all exceptional discounts are now documented in the customer database order when they are provided. These are discounts that are granted to certain buyers in order to win competitive tenders. Since the beginning of FY19 these have to be documented in customer database with the reason for the discount. The discount then has to be reviewed and approved. The issue of “exceptional” discounts is discussed in 6F.	In our opinion this recommendation suggests that no discount should be offered that is not documented in the pricing policy or in other formal documentation on discounts within the organisation. It appears however based on the recorded discounts report that in several instances in FY19 exceptional discounts have been offered in order to win competitive tenders. This has always been the case, but in order to comply with this recommendation enet now officially record the exceptional discount on customer database as part of the offer and, as stated earlier the pricing policy includes the existences of discounts for competitive bid tenders. We have also analysed the average charge for a sample of products for a period from February 2019 to May 2019 (field work date). We found several instances where discounts were offered. enet provided clarification on a number of these discounts offered and in all but one of the transactions had a rationale for the price offered. The relevant contracts preceded the date of the publication of the AM report.	As we found in several instances where the discount was not documented appropriately, our conclusion is this recommendation has not been fully implemented. In our view a more structured and defined approach in this area would provide greater adherence to this recommendation.



Application of Discounts

6	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
F	enet should not offer different MANs product discounts which are based on different conditions or criteria to similarly situated operators.	enet have provided us with their entire sales listing for 1 May 2015 to 31 December 2018. enet have also provided us with their discount report for FY19. This report documents the “exceptional” discounts that vary from the pricing policy. These are documented on customer database at the time of the offer.	During our review, we tested a number of transactions post the AM Report date of February 2019 to May 2019 to establish enet’s discount methodology to ensure similarly situated operators are not paying different prices for the same products and terms. We found instances during our review of an ISP buying the same product for the same term as other ISPs but appearing to be paying a different price. In all but one instance enet provided a rationale for the discount applied. In the one instance enet advised this service seemed to be a mistake and believe this to be an example of human error.	Focusing on a period of review post publication of AM Report to May 2019, we have found one unexplained instance of an ISP buying the same product as other ISPs for the same term but paying a different price that was unexplainable. This would appear to indicate that enet are not fully in compliant with recommendation 6F, although the time period for testing is limited to a short period. In our view, further testing would not be appropriate until enet addresses our recommendation regarding 6E.
	enet’s view	enet are of the view that the one situation identified does not evidence non-compliance as they believe you need more than one situation identified to be in a position to compare transactions and determine if relevant operators are similarly situated.		

Pricing of MANs in the provision of national end to end

7	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
	To ensure that other operators can purchase MANs connectivity and compete with enet in the provision of the national backhaul component, enet should not sell the total end-to-end MANs plus national connection at a price lower than that given by the MANs component (list price plus any documented discount).	<p>enet have incorporated the following key control into the “Separation of Accounting and Controls” document: <i>“If product is a managed services product, check that the price is not lower than given for the MANs component plus any documented discount”</i>. If a proposed sale includes an offer which does not meet this requirement, finance will reject the proposed sale. In addition per enet, finance will only approve discounts that are in line with the documented discount approach described in the Pricing Policy.</p> <p>Management have created a report with all managed service sales from FY15-18.</p>	<p>PwC obtained the managed service sales report and reviewed to identify where the sales price was lower than the maximum MANs price less applicable discounts. A large number of exceptions were noted. The vast majority of these were explained by Management due to the following: a large number of exceptions were incorrectly included in the population due to misclassification e.g Metro only services, contended services or backhaul only and therefore were not true exceptions. Furthermore, there were a number of exceptions related to competitive bids /special projects ✂ Management's explanation was that these were large volume projects and they ensured a consistent discount was applied to different tenders by documenting the discount within the customer database.</p> <p>The remaining small number of exceptions were explained by a range of miscellaneous reasons, such as incorrect quotes given to customers in error for metro only. enet stood over the original quote even though it was a national rather than a local service.</p>	<p>We therefore conclude that enet are not fully in compliance with this recommendation.</p> <p>As per recommendation 6A, the documentation of enet’s internal pricing policy and available discounts should be improved.</p>

Transfer Price

8	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
A	enet should create a transfer price for the MANs connection and rental component of national end-to-end managed services based on its published price lists, plus any documented discounts for MANs services.	Management produced a supplementary intercompany agreement on 4 th January 2019. Section 2.1 of this agreement states that enet should charge fees as outlined in schedule 1 of the agreement to ETNL for the services in accordance with the terms of the agreement on the basis that the customer utilises a minimum of five hundred circuits using the MANs with enet. Schedule 1 outlines the followings rates:	A. We have reviewed the supplemental intercompany pricing agreement and compared the prices within the document to the prices outlined in the pricing policy. From our analysis it is clear that for all products except 600MB, that the intercompany price is based on maximum price less discount for 81+ circuits. The discount for 81+ circuits allows for a maximum discount and the discount for 40-81 also allows for a maximum discount. We ensured that the discount being offered was less than or equal to the maximum discount allowed for 81+ but greater than the 40-81 discount.	We conclude that enet are in compliance with this recommendation.
B	enet may consider ETNL to be a large buyer of MANs services, and therefore the transfer prices may include documented MANs service discounts offered externally to other large MANs service buyers. enet should not base its transfer price discounts on externally offered MANs discount schemes which require advanced payment or honoured commitment to enet.	 enet have stated that these prices are based on the volume discounts outlined in the pricing policy for 81+ circuits.	B. We also analysed the discounts given to  for the FY19 period on these same products as this is part of the Customer A group who are the only other company who avail of volume discounts above 81+ circuits. The discounts are in line with the discounts offered to ETNL for these products.	We conclude that enet are in compliance with this recommendation.

Transfer Price

8	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
C	enet should make the details of its calculation of transfer prices available upon request for review by DCCAE or its nominated advisor.	ETNL have not purchased any other MANs components from enet since the publication of the new price list.	Not applicable	Not applicable

Intercompany Agreements

9	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
	enet should update a number of key elements within the legal framework of the separated accounts annually.	enet provided us with each of these 3 intercompany agreements as well as the intercompany adjustment working file for FY18. The figures for the agency fee, service fee and NOC fee were agreed to the management accounts for FY18.	A clear working file has been provided with the workings and calculations for the intercompany charges and the review of key components such as the percentage proportion of cost allocation.	We conclude that enet are reviewing Schedule 2 of the Service Agreement annually and therefore are compliant with this recommendation.
	A. Schedule 2 of the Service Agreement	A. Management provided us with the service agreement dated 20th October 2015. The services provided by enet to ETNL cover finance and accounting functions, management support services, technical services and provision of HR services. All headcount within the two organisations sit in enet. Cost allocation is based on “Allocation Percentage”. enet cost allocation is based on a activity based costing exercise that is completed annually. The allocation basis is applied to each cost code and reviewed annually to confirm the appropriateness of allocation. A mark-up of 1% is then applied.	A. We have reviewed the cost allocation file associated with the service agreement for 2018. It contains each employee and the department in which they work. This department is associated with an allocation category such as Franchise/Non-Franchise/MANs/NON-MANs etc. These each have an allocation percentage associated with them and the cost of the employee is allocated on that basis.	

Intercompany Agreements

9	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
	enet should update a number of key elements within the legal framework of the separated accounts annually.	enet provided us with each of these 3 intercompany agreements as well as the intercompany adjustment working file for FY18. The figures for the agency fee, service fee and NOC fee were agreed to the management accounts for FY18.	A clear working file has been provided with the workings and calculations for the intercompany charges and the review of key components such as the percentage proportion of cost allocation.	We conclude that enet are in compliance with this recommendation
	B. Schedule 1 of the Agency Agreement	B. NOC services relate to 24x7x365 monitoring and maintenance of the network, customer liaison in relation to outages, planned maintenance and emergency works and engineering support services provided by ETNL to enet. Management provided us with the intercompany agreement which states how costs will be allocated. It states that 75% of NOC costs will be allocated to enet initially and reviewed annually and the reviewed allocation will be based on enet's volume of recurring revenue expressed as a percentage of total book of service revenue. In FY18 this was estimated as 75% . A 75% mark-up is then applied. We have agreed the estimated amount to the statutory accounts with no material difference noted. Management have provided us with the annual workings and review.	B. We have reviewed the NOC service agreement and the working file on cost calculation. We have re-estimated the percentage allocation and conclude that the file has been correctly reviewed and updated annually. No material difference was noted between the calculated charge and the statutory accounts.	

Intercompany Agreements (Ctd.)

9	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
	<p>enet should update a number of key elements within the legal framework of the separated accounts annually.</p> <p>C. Schedule 1 of the Agency Agreement</p>	<p>C. The schedule in the Agency agreement states that “the fee percentage is based on a cost allocation for the various services being performed by the Agent with costs being expressed as a percentage of the “relevant turnover”. The relevant amount was thus >8>8 with it being determined that >8>8 should be allocated. The initial agreement in 2015 allocated >8>8 to ETNL An additional >8>8 has been allocated for one staff member dealing with payments/collections and invoicing. The total cost >8>8 of includes the agreed >8>8 mark-up.</p>	<p>C. It is clear from the workings provided that schedule 1 of the Agency Agreement is reviewed annually and the cost allocation adapted based on the current year. We agreed the calculated amount to the statutory accounts with no difference noted. >8>8 of the relevant costs were allocated in FY18 based on a review of key drivers. The initial agreement reallocated >8>8 of costs.</p>	<p>As enet are updating the relevant key elements annually, we conclude that enet are in compliance with this recommendation.</p>

Core Drilling


10	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
A	enet should permit operators to “core drill” into a specified point of a MANs chamber, under supervision.	Management noted that they do permit this and have during our review they updated their website to reflect this.	The website now states the following in relating to the physical network interconnection “ <i>With the written agreement of enet (the MSE), carriers who wish to connect their network to the MANs, may install or arrange the installation of connections at its own cost and shall retain ownership of same. This product includes, where required, supervised access to core drill the carrier’s network to interconnect with existing MANs chambers - subject to the availability of space to do so in a safe manner.</i> ”	We conclude that enet are in compliance with this recommendation as it is clearly stated on enet’s website under the infrastructure access section.

Occupancy Allocation

11	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
	<p>enet should prepare a report on the occupancy allocation of passive equipment (dark fibre, duct, sub-duct, co-location), including that used by ETNL for national circuits. The report should compare the current occupancy to the maximum access levels set out in the Code of Practice.</p> <p>If ETNL or another operator is occupying more than the permitted capacities, then the report should provide justification and evidence that spare capacity is still available for new seekers, and/or that plans are in place to add additional capacity.</p>	<p>The MANs were constructed by the Irish State with the aim “to promote the development of the information society and e-commerce in Ireland through the widespread availability of open access, affordable broadband infrastructure and services.” *In order to do this, the MSE (enet) “shall administer access to the networks on a carrier neutral and open access basis.” Section 5 of the Code of Practice sets out minimum and maximum occupancies operators can have with regards all passive equipment, to ensure the MANs remain marketable and that the principles of open access are applied. The levels are the following:</p> <ul style="list-style-type: none"> • Dark Fibre – Minimum access is one pair in any sub-ring. Maximum access is 20% of the original number of fibre strands infrastructure in any Network ring. • Sub-Duct – Minimum access is one sub-duct in any ring. Maximum access is two sub-ducts in any Network ring. No duct should hold more than 8 sub-ducts. • Ducting – If made available as a product, minimum access should be one duct in any ring. Maximum should also be one duct. • Co-Location – One shelf space of 3.5 inches in height. Maximum is 20% of available rack space in that facility. <p>Management prepared a report for 2018 which outlined the usage by MANs by carrier also identifying that which was unoccupied. A check was then performed to ensure that no one carrier exceeded the max occupancy of 20%. None were found to be in breach. The highest usage was noted in >8 occupancy of that MANs. Management also prepared a separate report which calculated the occupancy of each MANs by ETNL. Occupancy allocation of sub-duct and co-location was also included. Management have provided documentation to confirm this exercise is performed on a quarterly basis.</p>	<p>enet prepare an specified occupancy allocation report and take corrective action where required.</p>	<p>We conclude that enet are in compliance with this recommendation.</p>

*Source: DCCAE

External Communications

12	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
A	enet should continue to operate its brand, name or identity (e.g stylisation) without any link to any retail provider of any service. This should extend to any partner brands such as Airspeed Retail.	<p>As per the AM Report, we understand enet already meet recommendation 12A. For example,</p> <ul style="list-style-type: none"> • The www.enet.ie website contains the enet brand only, aside from at the following link where all retail providers are listed and none are prioritised over others: https://www.enet.ie/carriers.html. • There is no version of the enet logo which reference any other service providers • enet also do not describe the business in the context of any retail service providers • enet do engage in publicity or PR with carrier customers to highlight successful projects. In the past, enet have worked with  		We conclude that enet are in compliance with recommendation 12A.

External Communications

12	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
B	enet should be prohibited from sharing resources or a common board (i.e enet economies of scale or scope) with any retail provider of any service.	<p>enet no longer have any common directors with the Airspeed board, and therefore meet the requirement to not share a common board as outlined in recommendation 12B.</p> <p>Some team resources are shared between enet and Airspeed. No action has been taken to date to prohibit enet from sharing resources with related entities and therefore enet believes this recommendation is not applicable.</p>	Not applicable.	Not applicable.

External Communications

12	Analysys Mason Recommendation	enet Action	PwC review	PwC Conclusion & Recommendations
C	enet should implement a documented process for responding to enquiries from end users received via website or telephone, and this should include recording the list of retail ISPs recommended by enet in response to each query. The list of recommendations should be made available upon request for review by DCCAE or its nominated advisor.	enet have developed a retail referral policy and a new procedure for responding to enquiries from end users. PwC obtained a file from Management entitled “End Customer Connection Requests handling Process” which outlines a step by step process for sales support team members to adhere to when dealing with end customer connection queries.		We conclude that enet are in compliance with recommendation 12 C, D & E.
D	enet should make up-to-date digital maps of routes and chambers available to all licenced operators, independent of any specific quotation request. This could be provided via enet’s sales portal to maintain security. enet should make it known on its website that the data is accessible for any licenced operator.	enet make routes available online at www.enet.ie/coverage.html and share maps with operators via the ‘Click before you dig’ portal on request. Operators use these maps to update the data in their own GIS systems.		
E	enet should make clear on its website which MANs (or which specific parts of MANs) are privately owned, and therefore do not feature the full range of open-access products.	enet make clear on its website at www.enet.ie/coverage.html which MANs (or specific parts of MANs) are privately owned, and therefore do not receive the full range of open-access products (see sample coverage map for Limerick City in Appendix 7 for confirmation that there is a distinction online between State owned MANs and Private MANs).		

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Scope & process: supplementary information

Scope

Process

Our Scope

We have not carried out anything in the nature of an audit nor, except where otherwise stated, have we subjected the financial or other information contained in this report to checking or verification procedures. Accordingly, we assume no responsibility and make no representations with respect to the accuracy or completeness of the information in this report, except where otherwise stated.

The scope of our work was limited to a review of documentary evidence made available to us and interviews with selected stakeholders. We have taken reasonable steps to check the accuracy of information provided to us but we have not independently verified all of the information provided to us relating to the services.

We have limited our review to those documents that we consider relevant to our Terms of Reference. We cannot guarantee that we have had sight of all relevant documentation or information that may be in existence and therefore cannot comment on the completeness of the documentation or information made available to us. Any documentation or information brought to our attention subsequent to the date of this report may require us to adjust our report accordingly.

Pricing obligation under the Code of Practice, as it relates to ETNL



Enet Published Price List

enet Permitted Maximum Pricing – Effective from 13th Feb 2019

1. Dark Fibre Products

Product Code	Product Category	Product Set	Non Recurring Setup	Annual Recurring Rental
DF-R	Dark fibre	Dark Fibre Ring	Cost of works (A)	€2.60/m
DF-PTP	Dark fibre	Dark Fibre PTP	Cost of works (A)	€2.60/m
DF - SS	Dark Fibre	Dark Fibre Single Strand	Cost of Works (A)	€2.34/m
DF-DROP	Dark fibre	Dark Fibre Access	N/A	€500/per drop

2. Duct Products

Product Code	Product Category	Product Set	Non Recurring Setup	Annual Recurring Rental
DU-R	Duct	Duct Ring	Cost of works (A)	€100/m
DU-S	Duct	Duct Spur	Cost of works (A)	€100/m
SD-R	Sub Duct	Sub Duct Ring	Cost of works (A)	€25/m
SD-PTP	Sub Duct	Sub Duct Spur	Cost of works (A)	€25/m

3. Managed Bandwidth Setup costs (A)

Managed Bandwidth Products have a standard set up charge of €0 per connection, which is subject to survey. This charge applies to both Ethernet and SDH products.

4. Ethernet Metro Product Suite

Product Code	Product Category	Product Set	Annual Recurring Rental 2 Year Term
ME-2	Metro Ethernet	Ethernet 2M/bits	€4,500
ME-4	Metro Ethernet	Ethernet 4M/bits	€4,500
ME-6	Metro Ethernet	Ethernet 6M/bits	€4,500
ME-8	Metro Ethernet	Ethernet 8M/bits	€4,500
ME-10	Metro Ethernet	Ethernet 10M/bits	€5,000
ME-20	Metro Ethernet	Ethernet 20M/bits	€6,000
ME-30	Metro Ethernet	Ethernet 30M/bits	€6,000
ME-40	Metro Ethernet	Ethernet 40M/bits	€6,000
ME-50	Metro Ethernet	Ethernet 50M/bits	€6,000
ME-100	Metro Ethernet	Ethernet 100M/bits	€6,000
ME-200	Metro Ethernet	Ethernet 200M/bits	€7,000
ME-300	Metro Ethernet	Ethernet 300M/bits	€7,000
ME-400	Metro Ethernet	Ethernet 400M/bits	€7,000
ME-500	Metro Ethernet	Ethernet 500M/bits	€8,000
ME-600	Metro Ethernet	Ethernet 600M/bits	€8,000
ME-700	Metro Ethernet	Ethernet 700M/bits	€9,000
ME-800	Metro Ethernet	Ethernet 800M/bits	€9,000
ME-900	Metro Ethernet	Ethernet 900M/bits	€9,000
ME-GE	Metro Ethernet	GigE	€10,000
ME -10G	Metro Ethernet	10Gige	€20,000
ME-Pt-Pt	Metro Ethernet	Point to Point on metro SDH service into PoPed site or where existing interconnect is in place	standard metro for first site + 50% of metro price for second site
ME-PoP	Metro Ethernet		20%

5. MAF product (Product to support Fibre deployments)

Product Code	Product Category	Product Set	Annual Recurring Rental (G)
MAF	Metro	Facilitate deployments for FTTB/FTTH	€7,500 (up to 250 premises)

6. SDH Metro Product Suite

Product Code	Product Category	Product Set	Annual Recurring Rental 2 Year Term
MSDH-E1	Metro SDH	E1	€4,500
MSDH-EI-PLUS	Metro SDH	Additional E 1	€1,500
MSDH-EI-Voice	Metro SDH	E1 (voice only)	€3,000
MSDH-E3	Metro SDH	E3	€11,500
MSDH-DS3	Metro SDH	DS3	€11,500
MSDH-STM1	Metro SDH	STM 1	€18,000
MSDH-STM4	Metro SDH	STM 4	€48,000
MSDH-STM16	Metro SDH	STM 16	€120,000
MSDH-Pt-Pt	Metro SDH	Point to Point on metro SDH service into PoPed site or where existing interconnect is in place	standard metro for first site + 50% of metro price for second site
MSDH-PoP	Metro SDH		20%

7. Co-Location Products

Product Code	Product Category	Product Set	Non Recurring Setup	Annual Recurring Rental
CO-2U	Co-Location	Co-Lo 2U	€750	€750
CO-HALF	Co-Location	Co-Lo Half rack	€5,000	€5,000
CO-RACK	Co-Location	Co-Lo Rack	€7,500	€7,500
CO-AS	Antenna	Antenna Space	€5,000	€5,000
CO-WISP	Antenna + colo U space + Backhaul	Colo	Price on request	Price on request

Product Code	Product Category	Product Set	Non Recurring Setup	Annual Recurring Rental (H)
CO-PO-AC	Co-Location power	AC Per Amp		€800
CO-PO-DC	Co-Location power	DC Per Amp		€200

Product Code	Product Category	Product Set	Notice (C)	Hours	Charge (D)
CO-AA	Co-Location	Co-Lo Access Accreditation	5 working days' notice	normal working hours	€750 per group of 6
CO-SA-EN	Co-Location	Supervised Co-Lo Access	Emergency Notice	Emergency notice	€120 per hour (E)
CO-SA-PN	Co-Location	Supervised Co-Lo Access	5 working days' notice	normal working hours	€60 per hour (F)

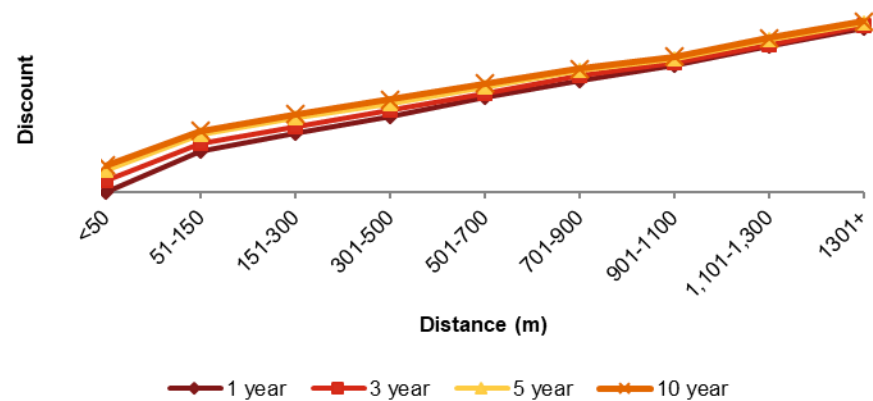


Product Offerings included in Testing

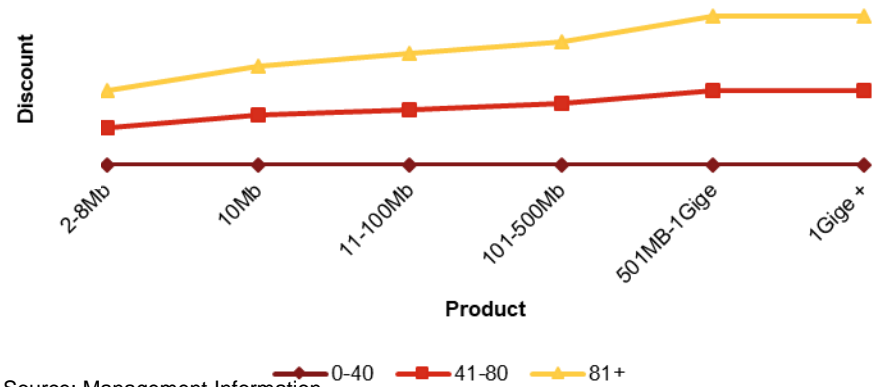
No.	Product Offering	No.	Product Offering
1	1000Mb Local Price List 1 Term 1	26	10Mb Local Price List 2 Term 1
2	1000Mb Local Price List 1 Term 2	27	10Mb Local Price List 2 Term 2
3	100Mb Local Price List 1 Term 1	28	10Mb Local Price List 2 Term 3
4	100Mb Local Price List 1 Term 2	29	150Mb Local Price List 2 Term 1
5	100Mb Local Price List 1 Term 3	30	150Mb Local Price List 2 Term 3
6	10Gb Local Price List 1 Term 2	31	200Mb Local Price List 2 Term 1
7	10Mb Local Price List 1 Term 1	32	200Mb Local Price List 2 Term 2
8	10Mb Local Price List 1 Term 2	33	200Mb Local Price List 2 Term 5
9	10Mb Local Price List 1 Term 3	34	20Mb Local Price List 2 Term 3
10	200Mb Local Price List 1 Term 2	35	2Mb Local Price List 2 Term 1
11	20Mb Local Price List 1 Term 2	36	2Mb Local Price List 2 Term 3
12	2Mb Local Price List 1 Term 1	37	30Mb Local Price List 2 Term 1
13	300Mb Local Price List 1 Term 2	38	400Mb Local Price List 2 Term 1
14	50Mb Local Price List 1 Term 1	39	400Mb Local Price List 2 Term 3
15	50Mb Local Price List 1 Term 2	40	450Mb Local Price List 2 Term 1
16	1000Mb Local Price List 2 Term 1	41	500Mb Local Price List 2 Term 3
17	1000Mb Local Price List 2 Term 2	42	50Mb Local Price List 2 Term 1
18	1000Mb Local Price List 2 Term 3	43	50Mb Local Price List 2 Term 2
19	1000Mb Local Price List 2 Term 5	44	50Mb Local Price List 2 Term 3
20	100Mb Local Price List 2 Term 1	45	70Mb Local Price List 2 Term 3
21	100Mb Local Price List 2 Term 2	46	E1 Local Price List 2 Term 1
22	100Mb Local Price List 2 Term 3	47	E1 Local Price List 2 Term 2
23	100Mb Local Price List 2 Term 5	48	E1 Local Price List 2 Term 3
24	10Gb Local Price List 2 Term 3	49	100Mb Local Price List 3 Term 1
25	10Gb Local Price List 2 Term 5	50	50Mb Local Price List 3 Term 3

Discount Smoothing (Recommendation 6)

Dark Fibre Term and Volume Discounts



Managed Services Volume Discounts



Source: Management Information

Phase 1 and 2 MANs Locations

Phase 1 Locations

To view Phase 1 MANs locations, click the relevant area map.

MAN Location area Maps			
Athlone MAN	Clonmel MAN	Gweedore MAN	Monaghan Town MAN
Ballina MAN	Cork City MAN	Kilkenny City MAN	Mullingar MAN
Belmullet MAN	Dundalk MAN	Kiltimagh MAN	Portlaoise MAN
Carlow MAN	Dungarvan MAN	Kingscourt MAN	Roscommon Town MAN
Carrickmacross MAN	Drogheda MAN	Letterkenny MAN	Tullamore MAN
Carrick-on-Shannon MAN	Galway City MAN	Limerick City MAN	Waterford City MAN
Cavan Town MAN	Wexford Town MAN	Manorhamilton MAN	Sligo Town MAN

Phase 2 Locations

To view Phase 2 MANs location, click the relevant area map.

MAN Location area Maps				
Abbeyfeale MAN	Buncrana MAN	Clones MAN	Kilrush MAN	Roscrea MAN
Ardee MAN	Bundoran MAN	Cootehill MAN	Knock (Airport) MAN	Skerries MAN
Athenry MAN	Cahir MAN	Donabate/Portrane MAN	Listowel MAN	Skibbereen MAN
Baillieborough MAN	Carndonagh MAN	Donegal Town MAN	Longford Town MAN	Templemore MAN
Ballinasloe MAN	Carrick-on-Suir MAN	Dunmayway MAN	Loughrea MAN	Thomastown MAN
Ballinrobe MAN	Carrigaline MAN	Dunshaughlin MAN	Lusk MAN	Tipperary Town MAN
Ballybofey/Stranorlar MAN	Cashel MAN	Edenderry MAN	Midleton MAN	Tralee MAN
Ballyshannon MAN	Castleblaney MAN	Fermoy MAN	Mitchelstown MAN	Trim MAN
Banagher MAN	Castleisland MAN	Gort MAN	Navan MAN	Youghal MAN
Bantry MAN	Charleville MAN	Kanturk MAN	Nenagh MAN	
Birr MAN	Claremorris MAN	Kells MAN	Newcastle West MAN	
Blarney MAN	Clifden MAN	Kilcoole/Newtownmountkennedy MAN	Passage West MAN	
Blessington MAN	Clonee/Dunboyne MAN	Kilarny MAN	Ringaskiddy MAN	

Source: <https://www.dccae.gov.ie/en-ie/communications/topics/Broadband/metropolitan-area-networks/Pages/Phase-1-MANs-Locations.aspx>

Support for Recommendation 12E

Limerick City



Source: enet

Intercompany transfer price calculator (based on eir price list)



Source: Management Information

enet & ETNL Trading Relations – Intercompany Agreements



Glossary (1 of 2)

Term	Definition/Meaning
ISPs	Internet Service Providers
ComReg	Commission for Communications Regulation
CRM	Client Relationship Management
DCCAE	The Department of Communications, Climate Action and Environment
enet	E-Nasc Eireann Teoranta
ETNL	enet Telecommunications Networks Ltd, sister business of enet
The Minister	The Minister for Communications, Climate Action and Environment
GIS	Geographic Information System
GMC	Granahan McCourt

Glossary (2 of 2)

Term	Definition/Meaning
IIF	Irish Infrastructure Fund
ISIF	Ireland Strategic Investment Fund
DTS	Desktop Survey
FS	Field Study
MAF	Mass Access Facilitator
MANs	Metropolitan Area Networks
MSE	Management Services Entity
NOC services agreement	Network Operation Centre
PTP	Point To Point
SDH	Synchronous Digital Hierarchy and refers to a multiplex technology used in telecommunications.
The Minister	The Minister for Communications, Climate Action and Environment