

Table 2.11. **Mobile network interconnection**

| | |
|------------------|---|
| Australia | <p>Publication of termination rates</p> <p>Both fixed-line and mobile terminating access are declared services, and are subject to Access Determinations (ADs). ADs made by the ACCC are published on its website http://www.accc.gov.au/content/index.phtml/itemId/975757.</p> <p>Commercially-agreed termination rates are not generally made public by the parties to the agreement.</p> <p>An AD will only apply where there is no commercial agreement between an access seeker and an access provider. They create a benchmark which access seekers can fall back on while still allowing parties to negotiate different terms of access.</p> <p>Determination of fixed-to-mobile termination rates</p> <p>As described above, fixed line and mobile termination rates can be negotiated commercially, or access seekers can rely on the ACCC's publically available ADs.</p> <p>Regulation of termination rates</p> <p>As described above, fixed line and mobile termination rates are subject to regulation, although parties are free to reach commercial agreement.</p> <p>Regulation of mobile-to-mobile termination rates</p> <p>For the fixed line terminating access service, the ACCC used a cost-oriented approach based on the building block methodology. This is consistent with the approach adopted for other key fixed line services. For mobile terminating access service (MTAS), the ACCC estimated the efficient costs of supplying the service and benchmarked the estimates against international providers.</p> <p>Interconnection rates for fixed and mobile networks since January 2011</p> <p>The most recent fixed line AD establishes the average termination price for fixed line calls between 1 July 2011 and 30 June 2014 as AUD 0.95 cents per minute . Prior to 1 July 2011 the average price was AUD 1 cents per minute .</p> <p>MTAS indicative pricing for January 2011 to 31 December 2011 was AUD 9 cents per minute; MTAS pricing for 1 January 2012 to 31 December 2012 is AUD 6 cents per minute; MTAS pricing for 1 January 2013 to 31 December 2013 is AUD 4.8 cents per minute; MTAS pricing for 1 January 2014 to 30 June 2014 is AUD 3.6 cents per minute.</p> |
| Austria | <p>Publication of termination rates</p> <p>Yes. Available on the websites of the mobile network operators (reference offers), on the website of the incumbent operator (fixed and mobile) and – in summary – on NRAs website (please see for mobile termination rates: www.rtr.at/de/tk/MTREntgelte0709 and for fixed termination rates: www.rtr.at/de/tk/ICEntgelteFN2010).</p> <p>Determination of fixed-to-mobile termination rates</p> <p>Termination rates are fixed by the regulatory authority in line with the market analysis procedure set out in the legal (national and European) framework.</p> <p>Regulation of termination rates, regulation of mobile-to-mobile termination rates</p> <p>Yes. Termination rates have to be cost orientated according to the outcome of the last market analysis:</p> <ul style="list-style-type: none"> – Mobile termination rates have been fixed on the basis of the “long run incremental costs” (LRIC) of an efficient operator. – Fixed termination rates have been fixed on the basis of the “forward looking long-run average incremental cost” (FL-LRAIC). <p>Interconnection rates for fixed and for mobile networks since January 2011</p> <p>Mobile termination for all mobile network operators in Austria:</p> <p>1 January 2011 to 30 June 2011: EUR 0.0251 (per minute). Since 1 July 2011: EUR 0.0201 till the outcome of the actual (pending) market analysis.</p> |

Austria (cont.) Fixed termination into incumbents fixed network (local):
 EUR 0.0082 (peak time), EUR 0.0048 (off-peak time) till the outcome of the actual (pending) market analysis.
 Fixed termination into the networks of other fixed operators:
 EUR 0.0128 (peak time), EUR 0.0071 (off-peak time) till the outcome of the actual (pending) market analysis.

Belgium

Publication of termination rates

Termination rates are published in BIPT's (Belgian Institute for Postal services and Telecommunications, i.e. Belgian NRA) market analysis decisions, available on the BIPT's website:

Mobile termination rates: www.ibpt.be/ShowDoc.aspx?objectID=3293&lang=en.

Fixed termination rates: www.ibpt.be/ShowDoc.aspx?objectID=3727&lang=en.

Determination of fixed-to-mobile termination rates

Fixed and mobile termination rates are regulated by the BIPT.

Regulation of termination rates

Termination rates for SMP operators are set via a price cap by the BIPT and are cost oriented.

Regulation of mobile-to-mobile termination rates

Mobile termination rates currently follow a glide path from LRAIC+ down to pure LRIC of an hypothetical efficient operator (by 1 January 2013). The prices are determined by a bottom-up LRIC model.

Fixed termination rates are set according to a top-down FDC model. The BIPT decision of 2 March 2012 foresees the development of a bottom-up pure LRIC model. The model is currently under development and pure LRIC rates are expected to be in force in the course of 2013.

Interconnection rates for fixed and mobile networks since January 2011

| Fixed termination rates as of 1 April 2012 for all SMPs | | | | | Mobile termination rates (rates to be indexed) | | | | |
|---|------------------|----------|----------------------|----------|--|---------------|----------------|----------------|----------------|
| Type of call | Call setup (EUR) | | Per minute (EUR/min) | | EUR/min | 1 August 2010 | 1 January 2011 | 1 January 2012 | 1 January 2013 |
| | Peak | Off-peak | Peak | Off-peak | | | | | |
| Local termination | 0.00314 | 0.00164 | 0.00514 | 0.00270 | Proximus | 0.0452 | 0.0383 | 0.0246 | 0.0108 |
| Intra-access zone termination | 0.00443 | 0.00232 | 0.00727 | 0.00381 | Mobistar | 0.0494 | 0.0417 | 0.0262 | 0.0108 |
| Extra-access zone termination | 0.00568 | 0.00298 | 0.00932 | 0.00489 | Base | 0.0568 | 0.0476 | 0.0292 | 0.0108 |

Note: values are in EUR/minute. The same rates were applicable to Belgacom as of 1 January 2011, other SMPs could price 15% higher than Belgacom before 1 April 2012.

Canada

Publication of termination rates

Termination rates for fixed-to-mobile calls are not regulated and generally do not apply. Call termination rates for local exchange carriers (LECs, typically fixed line operators) are published in CRTC approved tariffs. The approved tariffs for the major incumbent LECs can be found at operators' websites.

Determination of fixed-to-mobile termination rates

There is no regulatory oversight of call termination rates, other than for voice calls routed to a mobile operator, who is also a LEC for termination. Note that over 90% of mobile subscribers in Canada are served by mobile operators who are **NOT** LECs. Mobile operators can constitute themselves as LECs so long as they meet the CRTC's regulatory requirements associated with providing local exchange services.

In the case of calls routed to LECs for termination, the CRTC has established the call termination rates, published in CRTC approved tariffs, based on cost plus an appropriate mark-up. In all other cases, call termination rates are negotiated. For costing, the CRTC uses a concept similar to LRIC (prospective incremental economic costs). However, the CRTC's approach has greater focus on demonstrated

Canada (cont.) cost causality than LRIC does. CRTC refers to this approach as Phase II costing.

Regulation of termination rates

See above. Typically, termination rates for fixed-to-mobile calls are not regulated.

Regulation of mobile-to-mobile termination rates

Other than for mobile carriers that are LECs, mobile-to-mobile termination rates are not regulated.

Interconnection rates for fixed and for mobile networks since January 2011

The cost of network interconnection between LECs is shared. Calls are routed for termination on the basis of a "bill-and-keep" on the assumption that the traffic exchanged is balanced. If the traffic is not balanced, then call termination rates are paid to the LEC terminating the surplus traffic. The cost of long-distance network interconnection is borne by the long-distance service providers, with call termination rates paid to the LEC. Call termination rates are adjusted annually using an (i-x) factor, where "i" is the annual rate of inflation, and "x" is a CRTC determined productivity factor.

| | Bell Canada | TELUS (Alberta) | TELUS (British Columbia) |
|---------------------------------------|--------------------|------------------------|---------------------------------|
| Local imbalance* (CAD/trunk/month) | | | |
| – 10% imbalance | CAD 3.84 | CAD 3.20 | CAD 3.20 |
| – 90% imbalance | CAD 24.35 | CAD 20.35 | CAD 20.35 |
| Long-distance termination (\$/min) | | | |
| – end-office connection | CAD 0.00100 | CAD 0.00117 | CAD 0.00120 |
| – toll switch connection | CAD 0.00225 | CAD 0.00289 | CAD 0.00296 |

* Rates are based on trunk groups of 96 circuits or more, and interconnection to local interconnection regions. A complete matrix has not been provided but can be found in the CRTC approved tariffs for each of the major incumbent LECs.

Chile

Publication of termination rates

Yes. URL: www.subtel.gob.cl/prontus_procesostarifarios/site/edic/base/port/p_tarifas.html.

Determination of fixed-to-mobile termination rates

This technical and public process is undertaken by two ministries: the Ministry of Transport and Telecommunications and the Ministry of the Economy, Promotion and Tourism. The termination rates are determined by the regulator through the design of a theoretical model company that provides only the regulated service (telephony) and a calculating quotient between the forecast of the total cost (include investment, CAPEX and OPEX) and the forecast of the demand for a period of 5 years.

Regulation of termination rates

Yes. Undertaken for all public telephony companies, on a cost-oriented basis. The termination rates are calculated in accordance with a method that is written in the Section Vof Chilean telecommunication law. The termination rates are fixed by Chilean law for all mobile operators.

Regulation of mobile-to-mobile termination rates

See the previous explanation; tariffs are in CLP/sec. The termination rates are determined by the regulator through the design of a theoretical model company that provides only the regulated service (telephony) and a calculating quotient between the forecast of the total cost (include investment, CAPEX and OPEX) and the forecast of demand for a period of 5 years.

Chile (cont.)

Interconnection rates for fixed and for mobile networks since January 2011

| | Jan-11 | Feb-11 | Mar-11 | Apr-11 | May-11 | Jun-11 | Jul-11 | Aug-11 | Sep-11 | Oct-11 | Nov-11 | Dec-11 | Jan-12 | Feb-12 | Mar-12 | Apr-12 | May-12 |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Movistar (fixed) | 0.10 | 0.11 | 0.10 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 | 0.13 |
| VTR Broadband (fixed) | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.17 | 0.17 | 0.17 |
| Entelphone (fixed) | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.19 | 0.19 | 0.19 |
| Mobile | 1.06 | 1.05 | 1.05 | 1.07 | 1.07 | 1.07 | 1.08 | 1.08 | 1.09 | 1.09 | 1.11 | 1.12 | 1.12 | 1.09 | 1.30 | 1.30 | 1.30 |

Notes: 1. Values are in CLP/second. 2. The interconnection charges for mobile networks are the same for all operators

Czech Republic

Publication of termination rates

Fixed termination rates are regulated only for one undertaking (Telefónica Czech Republic, a.s.). Prices are published both in the [latest price decision](#) CEN/3/04.2010-67, (*) from 2010 and in the Reference Interconnection Offer [price list](#) (**). At the end of 2012 there will be a price decision based on pure LRIC.

Mobile termination rates are regulated for three mobile operators: [Telefónica Czech Republic, a.s.](#), [T-Mobile Czech Republic a.s.](#) and [Vodafone Czech Republic a.s.](#) (***) New price decisions amending the previous ones are currently being issued and at the end of 2012 there will be additional price decisions based on pure LRIC.

Websites:

(*) www.ctu.cz/cs/download/art/cen/rozhodnuti/rozhodnuti_cen_03-04_2010-67_telefonica_o2.pdf.

(**) www.o2.cz/public_part/60/d/353977_453006_Cenik_RIO_zakladni_2012.pdf.

(***) www.ctu.cz/cs/download/art/cen/rozhodnuti/rozhodnuti_cen_07-04_2010-68_telefonica_o2.pdf.

www.ctu.cz/cs/download/art/cen/rozhodnuti/rozhodnuti_cen_07-04_2010-70_t-mobile.pdf.

www.ctu.cz/cs/download/art/cen/rozhodnuti/rozhodnuti_cen_07-04_2010-69_vodafone.pdf.

Determination of fixed-to-mobile termination rates

Both FTR and MTR are based on price regulation. Price decisions are imposed according to results of relevant market analysis. Termination rates are regulated through price caps (i.e. maximum prices).

Regulation of termination rates

Currently, the price control obligation of termination rates is based solely on the relevant market analysis results. That means that SMP position is the only fundamental prerequisite, but not sufficient per se. As stated above, termination rates are subject to price control in the form of price caps (maximum prices).

Regulation of mobile-to-mobile termination rates

Currently, mobile termination rates are calculated based on FDC HCA (fully distributed cost, historical cost accounting) with the exclusion of some costs not directly connected with wholesale termination service (with regard to EC Recommendation on termination rates).

Fixed termination rates are based on an LRIC+ cost model. However, from the beginning of the next year both fixed and mobile termination rates should be based on pure LRIC models in compliance with the EC Recommendation on termination rates.

Interconnection rates for fixed and for mobile networks since January 2011 (without VAT)

| Mobile termination rates | | | | Fixed termination rates from 1 January, 2011 (still valid) | | | |
|--------------------------|-------------|--------------|-------------------|--|-------------------------|----------------------------|--------------------------------|
| 1 January 2011 | 1 July 2011 | 15 July 2012 | Beginning of 2013 | Local switch – peak | Local switch – off-peak | Last transit switch – peak | Last transit switch – off-peak |
| CZK 1.37 | CZK 1.08 | CZK 0.55 | Pure LRIC price | CZK 0.30 | CZK 0.15 | CZK 0.34 | CZK 0.17 |

Denmark**Publication of termination rates**

Yes. On DBA's webpage.

Determination of fixed-to-mobile termination rates

Commercially negotiated – however constrained by regulated price ceiling.

Regulation of termination rates

All suppliers of fixed and mobile termination have SMP status. All suppliers of mobile termination are price regulated. As for fixed termination TDC is price regulated and a number of other operators are expected to be price regulated soon.

Regulation of mobile-to-mobile termination rates

The price ceiling for both fixed and mobile termination rates is currently determined using the LRAIC+ method. As of 1 January 2013, the pure LRIC method will be used for both fixed and mobile termination rates.

Interconnection rates for fixed and for mobile networks since January 2011

As for fixed networks, only incumbent (TDC) are currently subject to price regulation. For mobile networks, symmetric prices are used for all four MNO's since 2011. The rates are as follows:

| | Fixed | | | Mobile | | |
|-----------------------|----------------|----------------|----------------|------------|--------------|----------------|
| | 1 January 2011 | 1 January 2012 | 1 January 2013 | 1 May 2011 | 1 March 2012 | 1 January 2013 |
| Peak (per minute) | DKK 0.0140 | DKK 0.0148 | DKK 0.0045 | DKK 0.33 | DKK 0.23 | DKK 0.08 |
| Off-peak (per minute) | DKK 0.0074 | DKK 0.0079 | DKK 0.0025 | | | |
| Set-up (per set-up) | DKK 0.0107 | DKK 0.0131 | DKK 0.0045 | | | |

Estonia**Publication of termination rates**

One SMP fix operator (incumbent) and all SMP mobile operators on the call termination market have an obligation to publish their termination rates.

The incumbent (Elion Ettevõtte AS) publishes termination rates to fixed networks here: http://arikliendid.elion.ee/docs/Vorguteenuste_hinnakiri_01_07_2011_vorkude_sidumine.pdf.

The mobile operator EMT AS publishes termination rates to mobile networks here: www.emt.ee/pictures/pildid/dokumendid/sidevorkude_sidumine_hinnad_07_2011.pdf.

The mobile operator Tele2 Eesti AS publishes termination rates to mobile network here: www.tele2.ee/files/Tele2_Hinnakiri_01_07_2011.doc.

Determination of fixed-to-mobile termination rates

Termination rates are determined by regulation. Decisions regarding the regulation of call termination markets in fixed and mobile networks are published here: <http://www.konkurentsiamet.ee/?id=13968>.

Regulation of termination rates

Yes. Termination rates are subject to regulation.

Regulation of mobile-to-mobile termination rates

Benchmarking: rates must not be higher than the weighted average termination rates of all EU countries, regardless of cost-accounting methodology used. Regulation was altered in 2012 and thereafter must not be higher than the weighted average of termination rates of all EU countries where a pure LRIC cost-accounting methodology is used.

Estonia (cont.) Interconnection rates for fixed and for mobile networks since January 2011 (in EUR)

| | | Fixed operators | | | | | | All mobile operators | | |
|-------------------|------------------------|--------------------------------|------------------------------|-----------------------|-----------------|---------------------------|-----------------------|----------------------|--------|--------|
| | | Elion Ettevõtte AS (incumbent) | | | Starman AS | | Elisa Eesti AS | All mobile operators | | |
| | | January 2011 | 1 July 2011 – 9 July 2012 | Since 10 July 2012 | January 2011 | Since 1 September 2011 | Since January 2011 | | | |
| Local | Peak (per min) | 0.0053 | 0.0058 | 0.0063 | 0.0083 | 0.0085 | 0.0040 | 0.0780 | 0.0702 | 0.0632 |
| | Off-peak (per min) | 0.0031 | 0.0035 | 0.0037 | | | | | | |
| | Night (per min) | 0.0029 | 0.0031 | 0.0034 | | | | | | |
| | Call set-up (per call) | 0.0031 | 0.0031 | 0.0031 | - | - | 0.013 | | | |
| Single transit | Peak (per min) | 0.0072 | 0.0074 | 0.0093 | | | | | | |
| | Off-peak (per min) | 0.0042 | 0.0045 | 0.0055 | | | | | | |
| | Night (per min) | 0.0040 | 0.0040 | 0.0050 | | | | | | |
| | Call set-up (per call) | 0.0033 | 0.0033 | 0.0033 | | | | | | |

Finland
Publication of termination rates

Yes. Mobile operators have an obligation to publish termination rates on their web pages. FICORA's price comparison of network operators termination rates can be found here:

www.ficora.fi/attachments/suomial/61Xq7TTYs/Matkaviestinverkon_laskevan_liikenteen_hinnat_2004-2014_en.pdf.

www.ficora.fi/attachments/68BltP6at/Hintavertailu_120501_laskeva_liikenne_englanti.pdf.

Determination of fixed-to-mobile termination rates

Operators set their rates themselves.

Regulation of termination rates

SMP operators' fixed and mobile termination rates must be cost orientated.

Regulation of mobile-to-mobile termination rates

Operators set their rates themselves and rates must be cost oriented. FICORA evaluates cost orientation of mobile termination rates using FICORA's fully allocated cost model (FIFAC).

Interconnection rates for fixed and for mobile networks since January 2011

www.ficora.fi/attachments/suomial/61Xq7TTYs/Matkaviestinverkon_laskevan_liikenteen_hinnat_2004-2014_en.pdf.

www.ficora.fi/attachments/68BltP6at/Hintavertailu_120501_laskeva_liikenne_englanti.pdf.

France**Publication of termination rates**

Termination rates for termination to mobile networks are published and available on the Authority's website at the following address: <http://www.arcep.fr/index.php?id=8080>.

Determination of fixed-to-mobile termination rates

Rates for call termination are set by the Authority in the context of a market analysis. As of 1 January 2013 rates will be set at long run incremental cost (determined on the basis of a pure LRIC bottom-up model), set at a level of EUR 0.08/min.

Regulation of termination rates

See below

Regulation of mobile-to-mobile termination rates

See below

Interconnection rates for fixed and mobile networks since January 2011

January 2011 = EUR 0.03/min for Orange and SFR and EUR 0.034/min for Bouygues Telecom, July 2011 = EUR 0.02/min for 3 operators, January 2012 = EUR 0.015/min for 3 operators, July 2012 = EUR 0.01/min for 3 operators, January 2013 = EUR 0.08/min for 3 operators.

Germany**Publication of termination rates**

Termination rates to fixed and mobile networks may be found here: http://www.bundesnetzagentur.de/cn_1911/EN/SingleInformationPoint/RatesRegulation/RatesregulationBasepage.html.

Determination of fixed-to-mobile termination rates

Termination rates are determined by the Bundesnetzagentur.

Regulation of termination rates

Termination rates are subject to regulation. The termination rates of Deutsche Telekom (incumbent fixed telephony) and the mobile operators are subject to cost-oriented ex-ante rate regulation. The cost orientation of (fixed) alternative operators and symmetry of termination rates was ensured by mutual agreements in the past, which linked them to the regulated rates of the incumbent, Deutsche Telekom. In the future, alternative operators will be subjected to rate approval to ensure symmetry.

Regulation of mobile-to-mobile termination rates

The application of the LRIC cost model is foreseen.

Interconnection rates for fixed and for mobile networks since January 2011 (in EUR)

| | Mobile | | | Fixed | | | |
|------------------|------------------|------------------|------------------|-------------------------------|------|------|------|
| | 30 November 2010 | 30 November 2011 | 30 November 2012 | | 2010 | 2011 | 2012 |
| Deutsche Telekom | 0.0659 | 0.0338 | 0.0338 | Local level | 0.54 | 0.45 | 0.45 |
| Telefonica | 0.0714 | 0.0339 | 0.0339 | Single transit (metropolitan) | 0.89 | 0.69 | 0.69 |
| Vodafone | 0.0659 | 0.0336 | 0.0336 | Double transit (national) | 1.34 | 1.03 | 1.03 |
| E-Plus | 0.0714 | 0.0336 | 0.0336 | | | | |

Greece

Publication of termination rates

Yes. Public Gazette

Determination of fixed-to-mobile termination rates

Regulated through market analysis of termination to mobile networks market (cost-orientated method).

Regulation of termination rates

Yes. Market analysis of termination to mobile networks market – Bottom Up model, LRIC+ (cost-orientated method).

Regulation of mobile-to-mobile termination rates

Bottom up model, LRIC+

Interconnection rates for fixed and mobile networks since January 2011

| Fixed and mobile to mobile (Cosmote, Vodafone, WIND) | Fixed and mobile to OTE (incumbent fixed) | | | Fixed and mobile to other fixed licensed operators |
|--|--|--|---|---|
| | 2011 | 2012 | 2013 | |
| 1 January 2011 – 31 July 2012: EUR 0.0495/min 1 August 2012 – 15 October 2012: EUR 0.0360/min 16 October 2012 – 31 December 2012: EUR 0.0230 /min 2013 subject to updated Pure LRIC bottom-up model | Local origination: EUR 0.00349/min Local termination: EUR 0.00366/min Single transit: EUR 0.00244/min Double transit: EUR 0.00442/min Single transit to other networks: EUR 0.00466/min Double transit to other networks: EUR 0.01690/min | Local origination: EUR 0.00298/min Local termination: EUR 0.00298/min Single transit: EUR 0.00240/min Double transit: EUR 0.00413/min Single transit to other networks: EUR 0.00218/min Double transit to other networks: EUR 0.00711/min | Subject to new pure LRIC bottom-up model | 2011: EUR 0.00669/min 2012: EUR 0.00610/min 2013: subject to new pure LRIC bottom-up model |

Hungary**Publication of termination rates**

Yes. Published on the authority's website.

Determination of fixed-to-mobile termination rates

The termination rates are determined by regulation (see below).

Regulation of termination rates

Yes. On the markets of call termination all operators have SMP, so all termination rates are regulated.

Regulation of mobile-to-mobile termination rates

The mobile termination rate is calculated by the LRIC model of the authority.

The fixed termination rates are calculated by the cost model of the largest incumbent operator (Magyar Telekom), and approved by the authority.

Interconnection rates for fixed and mobile networks since January 2011

MTR

| All three mobile operators | | | |
|----------------------------|-----------------------------------|----------------------------------|-----------------|
| Period | 1 December 2010 to 1 January 2012 | 1 January 2012 to 1 January 2013 | 1 January 20123 |
| MTR | 11.86 | 9.46 | 7.06 |

FTR

| Period | | Magyar Telekom | | | Invitel | | | UPC | |
|----------|----------|--------------------------------|----------------------------------|------------------|--------------------------------|----------------------------------|------------------|-----------------------------------|------------------|
| | | 26 April 2008 to 31 March 2009 | 1 April 2009 to 21 December 2011 | 22 December 2011 | 26 April 2008 to 31 March 2009 | 1 April 2009 to 21 December 2011 | 22 December 2011 | 26 April 2008 to 21 December 2011 | 22 December 2011 |
| Local | Peak | 1.38 | 1.39 | 1.12 | 2.25 | 1.87 | 1.35 | 2.04 | 1.4 |
| | Off-peak | 0.81 | 0.82 | 0.66 | 1.17 | 1.03 | 0.77 | 1.09 | 0.79 |
| Regional | Peak | 1.84 | 1.75 | 1.5 | 2.53 | 2.22 | 1.81 | | |
| | Off-peak | 1.08 | 1.03 | 0.88 | 1.31 | 1.22 | 1.03 | | |
| Country | Peak | 1.97 | 1.9 | 1.91 | | | 2.3 | | |
| | Off-peak | 1.16 | 1.11 | 1.12 | | | 1.31 | | |

Iceland**Publication of termination rates**

Yes, at the website of the concerned companies.

Determination of fixed-to-mobile termination rates

Wholesale prices caps are determined by the PTA in Iceland. Operators may charge lower prices than the price caps

Regulation of termination rates

Operators have significant market power in termination in their own network. Prices are set by cost analysis.

Regulation of mobile-to-mobile termination rates

FTR: Cost analysis, HC FAC until 1 January 2013. Benchmarking from 1 January 2013

MTR: Cost analysis, TD LRAIC+ until 4 December 2012. Benchmarking from 1 January 2013

Interconnection rates for fixed and for mobile networks since January 2011

| Mobile operator | Old price | Price from 1 January 2012 | Price from 1 March 2012 | Price from 1 January 2013 | |
|-----------------|-------------------------|---|----------------------------|----------------------------|----------------------------|
| Siminn | 5.5 | 4.5 | 4.5 | 4.0 | |
| Vodafone | 5.5 | 4.5 | 4.5 | 4.0 | |
| Nova | 8.3 | 6.3 | 6.3 | 4.0 | |
| IMC/Alterna | 8.3 | 6.3 | 6.3 | 4.0 | |
| Tal | 12.7 | 12.7 | 5.5 | 4.0 | |
| Fixed operator | Old price peak/off-peak | Price from 4 December /2010 peak/off-peak | Price** from 1 August 2011 | Price from 4 December 2012 | Price from 4 December 2012 |
| Siminn | 50.44/0.26 | 0.44/0.26 | 0.63 | 0.63 | 0.63 |
| Vodafone | 0.61/0.40 | 0.55/0.35 | 0.81 | 0.73 | 0.63 |

Note: values are in ISK per minute.

Ireland**Publication of termination rates**

Yes. See: Eircom Wholesale STRPL Issue 105Unmarked: www.eircomwholesale.ie/Reference-Offers/Documents/STRPL-Issue-105Unmarked/.

For mobile termination rates see: Table 101; for fixed termination rates (other fixed operators) see: Table 103

Eircom Wholesale RIO Version 3.23 Unmarked 29_06_2012: www.eircomwholesale.ie/Reference-Offers/Documents/RIO-Version-3-23-Unmarked-29_06_2012/.

For fixed national termination rates (Eircom) see: service schedule 102.

Determination of fixed-to-mobile termination rates

SMP operators are subject to obligations. See below.

Regulation of termination rates

Mobile operators with SMP are subject to price control, namely cost orientation. ComReg is currently consulting with respect to the mobile voice call termination market. See: www.comreg.ie/fileupload/publications/ComReg1246.pdf.

Of the fixed operators with SMP, only Eircom has a cost-orientation obligation. See: www.comreg.ie/fileupload/publications/ComReg1246.pdf.

ComReg is in the process of consulting further on the price control obligation with respect to both mobile and fixed termination rates. See: www.comreg.ie/fileupload/publications/ComReg1267.pdf

Regulation of mobile-to-mobile termination rates

Mobile termination rates for SMP operators are subject to cost orientation. Cost orientation is determined based on benchmarking (See: www.comreg.ie/fileupload/publications/ComReg1082.pdf), as a proxy for cost-oriented rates.

Fixed termination rates for SMP fixed operators are based on FL-LRIC.

Interconnection rates for fixed and for mobile networks since January 2011

| Fixed termination rates (EUR per minute) | | | | Mobile termination rates (EUR per minute) | | | | | |
|--|------------|-------------|--------------|---|--------------|-----------|--------------|-----------|--------------|
| | 1 Jan 2011 | 1 July 2012 | 2013 onwards | | 1 January 11 | 1 July 11 | 1 January 12 | 1 July 12 | 2013 onwards |
| Eircom – Primary | 0.00365 | 0.00346 | TBD | Vodafone | 0.0536 | 0.0452 | 0.0402 | 0.0368 | TBD |
| Eircom – Tandem | 0.00469 | 0.00444 | TBD | O2 | 0.0536 | 0.0452 | 0.0402 | 0.0368 | TBD |
| Eircom – Double Tandem | 0.00542 | 0.00513 | TBD | Meteor | 0.0536 | 0.0452 | 0.0402 | 0.0368 | TBD |
| BT | 0.00660 | 0.00660 | TBD | | | | | | |
| NTL | 0.00488 | 0.00488 | TBD | | | | | | |

Fixed: rates are differentiated per minute (peak/off-peak/weekend) and per call (peak/off-peak/weekend set-up). The figure above is the average call per minute.

Mobile: rates are differentiated per minute (peak/off-peak/weekend). The figure above is the average call per minute.

As above, ComReg is in the process of further consulting on the price control obligation with respect to both mobile and fixed termination rates. See: www.comreg.ie/fileupload/publications/ComReg1267.pdf.

| | | |
|---------------|---|---|
| Israel | <p>Publication of termination rates Yes. All termination rates are set by the Minister of Finance and published in the official gazette.</p> <p>Determination of fixed-to-mobile termination rates A TS-LRIC model is used.</p> <p>Regulation of mobile-to-mobile termination rates</p> <p>Interconnection rates for fixed and mobile networks since January 2011 Fixed: approx. NIS 0.03/min. Mobile: approx. NIS 0.073/min. Mobile rates are set to decrease but are subject to inflation indexing.</p> | |
| Italy | <p>Publication of termination rates Fixed: delibera no. 229/11/CONS. Mobile: delibera no. 621/11/CONS.</p> <p>Determination of fixed-to-mobile termination rates Mobile termination rates are set by the NRA.</p> <p>Regulation of termination rates Yes</p> <p>Regulation of mobile-to-mobile termination rates Mobile termination rates have been determined by the NRA through a BU pure LRIC model. Fixed termination rates so far are cost oriented. During 2012, the NRA developed a BU LRIC model for IP interconnection in order to set IP interconnection tariffs from 2012 onwards. The draft decision has been forwarded to the European Commission.</p> <p>Interconnection rates for fixed and mobile networks since January 2011</p> | |
| | <p>Fixed: Telecom Italia: Single local switch: EUR 0.00302 per minute. Double local switch: EUR 0.00500 per minute. Tandem switch: EUR 0.00570 per minute. OAOs: EUR 0.00570 per minute</p> | <p>Mobile: From 1 July 2012 – EUR 0.0250 per minute. From 1 January 2013 – EUR 0.0150 per minute. From 1 July 2013 – EUR 0.0098 per minute.</p> |

Japan**Publication of termination rates**

Pursuant to the provision of Paragraph 11 of Article 33 of the Telecommunications Business Act, telecommunications carriers with Category I designated telecommunications facilities are obliged to announce the authorised interconnection tariffs including termination rates. So far, NTT East and NTT West are the only carriers to install the Category I designated telecommunications facilities.

NTT East: www.ntt-east.co.jp/info-st/constip/cons1/index.html (Japanese). NTT West: www.ntt-west.co.jp/open/sougo_yakkan/yakkan/site_index.html (Japanese).

Pursuant to the provision of Paragraph 5 of Article 34 of the Telecommunications Business Act, telecommunications carriers with Category II designated telecommunications facilities are obliged to announce their interconnection tariffs including termination rates. Four mobile operators (NTT docomo, KDDI, Okinawa Cellular and Softbank Mobile) are the only carriers to install the Category II designated telecommunications facilities.

Determination of fixed-to-mobile termination rates

In principle, the termination rates are commercially determined through negotiations between carriers.

On the other hand, termination rates which are established by telecommunications carriers with Category I designated telecommunication facilities or Category II designated telecommunication facilities are required to be calculated under the regulations below.

Regulation of termination rates

Pursuant to the provision of Paragraph 4 of Article 33 of Telecommunications Business Act, the interconnection charges of carriers with Category I designated telecommunications facilities shall be fair and appropriate in light of the costs calculated with the methods specified by an Ordinance of the Ministry of Internal Affairs and Communications as methods to calculate reasonable cost under efficient management. The termination rates of carriers with Category I designated telecommunications facilities are required to be calculated with the LRIC method. Pursuant to the provision of Paragraph 3 of Article 34 of Telecommunications Business Act, the termination rates of carriers with Category II designated telecommunications facilities are required not to exceed the sum of reasonable costs under efficient management and reasonable profit.

Regulation of mobile-to-mobile termination rates

As mentioned above, the termination rates of carriers with Category II-designated telecommunications facilities are required not to exceed the sum of reasonable costs under efficient management and reasonable profit.

Interconnection rates for fixed and mobile networks since January 2011

| Fixed networks (NTT East and NTT West) | Mobile networks (for within area, for 3 minutes) |
|--|---|
| As of April 2012 (for FY 2012) GC: JPY 5.26, IC: JPY 6.79 per three minutes | As of April 2011 (for FY 2011) NTT Docomo: JPY 12.24 |
| As of April 2011 (for FY 2011) GC: JPY 5.08, IC: JPY 6.57 per three minutes | KDDI: JPY 16.74 Softbank Mobile: JPY 17.82 |
| As of April 2010 (for FY 2011) GC: JPY 5.21, IC: JPY 6.96 per three minutes | As of April 2010 (for FY 2010) NTT Docomo: JPY 15.66 |
| * NTT East and NTT West establish uniform nationwide interconnection rates. | KDDI: JPY 18.72 Softbank Mobile: JPY 22.86 |

| | |
|-------------------|--|
| Korea | <p>Publication of termination rates Yes. Published by KCC</p> <p>Determination of fixed-to-mobile termination rates Government sets the conditions for rate determination and publishes the conditions. The termination rates for fixed network (KT) and mobile network (SKT, KT, LGT) are determined according to the criteria for interconnection.</p> <p>Regulation of termination rates Government revises and publishes the criteria for calculating the interconnection fee every two years and calculates the mobile termination rate accordingly. SMP providers must obtain approval for their interconnection agreements.</p> <p>Regulation of mobile-to-mobile termination rates LRIC</p> <p>Interconnection rates for fixed and mobile networks since January 2011 Fixed networks interconnection rates as of 2011 (KRW/min) KT: 18.6 Mobile networks interconnection rates as of 2011 (KRW/min) SKT: 30.5, KT: 31.7, LGU+: 31.9 Fixed networks interconnection rates as of 2012 (KRW/min) KT: 17.45 Mobile networks interconnection rates as of 2012 (KRW/min) SKT: 27.05, KT: 28.03, LGU+: 28.15 Fixed networks interconnection rates as of 2013 (KRW/min) KT: 16.74 Mobile networks interconnection rates as of 2013 (KRW/min) SKT: 26.26, KT: 26.97, LGU+: 27.04</p> |
| Luxembourg | <p>Publication of termination rates 06/92/ILR Decision of 2 May 2006 on the wholesale market for voice call termination on individual mobile networks (market 16) sets ceilings for mobile termination rates and their entry into force, derived from related international comparisons.</p> <p>Determination of fixed-to-mobile termination rates An international comparison established by the regulator.</p> <p>Regulation of termination rates All termination rates are regulated.</p> <p>Regulation of mobile-to-mobile termination rates N/A</p> <p>Interconnection rates for fixed and mobile networks since January 2011 N/A</p> |

Mexico**Publication of termination rates**

Fixed and mobile network termination rates are public information contained in the interconnection agreements subscribed to between operators. These interconnection agreements are registered in the Telecommunications Public Register.

Determination of fixed-to-mobile termination rates

Termination rates are commercially negotiated between operators. Article 42 of the Federal Telecommunications Act establishes that concessionaries of public telecommunications networks must interconnect their networks, and to that end will subscribe to an agreement in no longer than 60 calendar days, upon request from any of the parties. After this period, if parties have not agreed (or even before, upon mutual request), Cofetel will set the conditions within the following 60 calendar days.

Regulation of termination rates

The termination rates are subject to regulation established in Article 42 of the Federal Telecommunications Act. When two parties decide not to sign an interconnection agreement within a 60 calendar day period or sooner, if requested by both parties, Cofetel will set the conditions within the following 60 calendar days.

Under current legislation, specifically Article 31 of the Fundamental Technical Plan of Interconnection and Interoperability, when Cofetel resolves disagreements on interconnection fees, it will do so based on a cost model.

The cost model used to determine termination rates will be considered public. The unit of measurement for calculating termination rates will be, if any, determined by the Regulatory Entity, according to the principles and objectives set out in the Fundamental Technical Plan of Interconnection and Interoperability, as well as the market trends and international best practices. The "Guidelines for Developing Cost Models" set out the principles for building cost models to be used to determine termination rates in both fixed and mobile networks:

Principles used in the cost models:

1. Use total incremental cost methodology for long-term cost allocation, as well as the addition of a margin for recovery of common and shared costs;
2. Use the equip proportional range methodology to allocate common costs;
3. Unit of measure: seconds or capacity, currency: MXN;
4. Bottom-up approach, scorched earth approach calibrated with current network elements;
5. Cost models use economic depreciation methodology for the depreciation of assets;
6. Consider the most efficient technologies available;
7. Use a dealer representative;
8. Use the weighted average cost of capital methodology to calculate the cost of capital, the cost of equity is calculated using form financial asset pricing (Modelo de Valuación de Activos Financieros, CAPM);
9. Cost models will not consider additional margins such as network externalities.

Regulation of mobile-to-mobile termination rates

Interconnection rates recover the long-run incremental cost plus a markup for common and shared costs, which is calculated using the Equipropionate Markup methodology.

No additional surcharge may be added in the form of a network externality surcharge.

Interconnection rates for fixed and mobile networks since January 2011

Cofetel determined the fixed interconnection rate for 2011 as MXN 0.03951 per minute. There is no rate determined for subsequent years.

In 2011, Cofetel set the mobile interconnection rate as MXN 0.3912 per minute. Afterwards, an agreement was signed between the main mobile operator and several fixed and mobile operators (including Telmex), which resulted in 2012 in a rate of MXN 0.3618, in 2013 of MXN 0.3305, and in 2014 of MXN 0.3094 per minute.

Netherlands**Publication of termination rates**

Yes. Regulated tariffs are published in OPTA's decisions and on the websites of operators.

Determination of fixed-to-mobile termination rates

These are determined by OPTA.

Regulation of termination rates

Cost oriented for operators with significant market power.

Regulation of mobile-to-mobile termination rates

BULRIC+ is used.

Interconnection rates for fixed and mobile networks since January 2011

The MTR changed in September 2012 to EUR 0.024. Prior to that the MTR was EUR 0.027. The FTR changed in August 2012 to EUR 0.37. Prior to that the FTR was EUR 0.72. All FTR rates are based on regional tariffs.

Norway**Publication of termination rates**

Yes. NPT's decisions regarding fixed and mobile termination, including termination rates, are published on their website: <http://www.npt.no>.

Determination of fixed-to-mobile termination rates

Termination rates are determined by the telecom authorities (NPT and the Ministry of Transport and Communications).

Regulation of termination rates

All operators are designated as undertakings with SMP in the markets for voice call termination on fixed and mobile networks. Termination rates should be cost oriented, however, new entrants are allowed a transitional period with more lenient regulation.

Regulation of mobile-to-mobile termination rates

Rates are based on LRIC for fixed and mobile termination.

Interconnection rates for fixed and mobile networks since January 2011

| Fixed termination rates | | | | | Mobile termination rates | | | | | |
|--|---|-----------------------------|-----------------------------|--------------------|--------------------------|------------------------------|-------------------------------|------------------------------|------------------------------|-----------------------------|
| | 1 January 2011 – 31 December 2011 | 1 Jan 2012 – 31 Dec 2012 | 1 Jan 2013 – 31 Dec 2013 | From 1 Jan 2014 | | 1 Jan 2011 – 30 June 2011 | 1 July 2011 – 31 Dec. 2011 | 1 Jan 2012 – 30 June 2012 | 1 July 2012 – 31 Dec 2012 | 1 Jan 2013 – 31 Dec 2013 |
| Maximum price for termination per minute | Per call 0.054 Per min., normal rate 0.038 Per min., reduced rate 0.026 | 0.039 | 0.032 | 0.026 | NetCom, Telenor | 0.3 | 0.3 | 0.3 | 0.2 | 0.15 |
| | | | | | Tele2 | 0.65 | 0.50 | 0.4 | 0.25 | 0.15 |

Mobile termination rates are for the 3 largest operators, quoted in NOK . Fixed termination rates within interconnection area, quoted NOK

Maximum price per terminated minute within interconnection area, quoted in øre excl. VAT

| | |
|--------------------|---|
| New Zealand | <p>Publication of termination rates Yes. Published in the Commerce Commission's determinations.</p> <p>Determination of fixed-to-mobile termination rates They can be determined by the regulator for regulated services (including PSTN, mobile and fixed-to-mobile services). For unregulated services (e.g. IP interconnection) they are commercially negotiated.</p> <p>Regulation of termination rates Yes</p> <p>Regulation of mobile-to-mobile termination rates Benchmarking or, if a review of prices based on benchmarking is sought, TSLRIC.</p> <p>Interconnection rates for fixed and mobile networks since January 2011 ComCom</p> |
| Poland | <p>Publication of termination rates The FTR are published in a reference offer at the incumbent operator's website www.orange.pl and the President's of UKE website: www.uke.gov.pl/_gAllery/40/23/40238/Oferta_SOR_05_04_2011.pdf. Current MTR for infrastructure operators are set in administrative decisions published on the President's of UKE website. Those decisions are available at: www.uke.gov.pl/_gAllery/41/44/41449/Decyzja_PTK_30_11.pdf. www.uke.gov.pl/_gAllery/43/07/43075/Decyzja_Polkomtel_28_11.pdf. www.uke.gov.pl/_gAllery/44/18/44181/Decyzja_PTC_29_11.pdf. www.uke.gov.pl/_gAllery/44/19/44196/Decyzja_P4_31_11.pdf. MTR for alternative operators have been published in a position of the President of UKE: www.uke.gov.pl/_gAllery/35/45/35456/Stanowisko_MTR_dla_nowych_MNO.pdf.</p> <p>Determination of fixed-to-mobile termination rates FTR are determined in a reference offer accepted by the President of UKE. MTR as a principle are calculated by the operators and are subsequently subject to approval or modification by the President of UKE in an administrative act.</p> <p>Regulation of termination rates Yes. The FTR are subject to regulation. Telekomunikacja Polska S.A (TP) as the SMP operator is regulated on Market 3. For example, TP has a reference offer obligation and a calculation incurred cost obligation. MTRs have to be cost oriented. Non-incumbent infrastructural operators have asymmetric rates to those of the incumbents.</p> <p>Regulation of mobile-to-mobile termination rates FTR are determined with a full distributed cost (FDC) methodology. MTR are also calculated on the basis of the FDC model, but with an alteration for investment in infrastructure. In regard to both FTR and MTR implementation of a BU pure LRIC cost model is underway.</p> |

Poland (cont.)

Interconnection rates for fixed and mobile networks since January 2011

| FTR in Telekomunikacja Polska S.A. fixed network (incumbent) (PLN/min) | | | | | | | | | | FTR in alternative operators (fixed networks) (PLN/min)(O1) | |
|--|--------|--------|--------|----------------|--------|--------|----------------|--------|--------|---|---------------------|
| | Local | | | Single transit | | | Double transit | | | | |
| Tariff period | O1 | O2 | O3 | O1 | O2 | O3 | O1 | O2 | O3 | Local rate | Single transit rate |
| | 0.0273 | 0.0205 | 0.0137 | 0.0325 | 0.0243 | 0.0162 | 0.0478 | 0.0368 | 0.0239 | 0.03467 | 0.03467 |

MTR (PLN/min)

| | 1 January 2011– 31 June 2011 | 1 July 2011 – 31 June 2012 | 1 July 2012 |
|---|------------------------------|----------------------------|-------------|
| Polkomtel sp. z o.o. | 0.1677 | 0.1520 | 0.1223 |
| Polska Telefonia Cyfrowa S.A. | 0.1677 | 0.1520 | 0.1223 |
| Polska Telefonia Komórkowa Centertel sp. z o.o. | 0.1677 | 0.1520 | 0.1223 |

FTR and MTR charges are currently under analysis due to the process of implementation of the European Commission Recommendation on FTR and MTR. New FTR and MTR are expected to be imposed by 1 January 2013

Portugal

Publication of termination rates

Fixed termination rates:

The incumbent operator (PTC) publishes the termination rates in the reference interconnection offer (available at: <http://ptwholesale.telecom.pt/GSW/PT/Canais/ProdutosServicos/OfertasReferencia/ORI/Ori.htm>).

These rates are available at the ICP-ANACOM site, namely in the decisions that establish the maximum termination rates to be applied by PTC.

Concerning the termination rates of the other fixed operators, there is no obligation to publish them, but they shall yield an average revenue per minute of up to EUR 0.009.

Mobile termination rates:

Maximum mobile termination rates, decided by ICP-ANACOM on 30 April 2012, are available at www.anacom.pt/render.jsp?contentId=1125696. These rates are currently in place and apply to all three mobile network operators in Portugal.

Determination of fixed-to-mobile termination rates, regulation of termination rates, regulation of mobile-to-mobile termination rates

The fixed and mobile termination rates are determined through regulation.

Fixed termination rates

Through its decision of 17 December 2004, ICP-ANACOM decided on the obligations to impose upon designated SMP operators (all operators in activity in the call termination market) in the wholesale markets for call termination. Termination prices of the incumbent have been determined by specific ICP-ANACOM decisions that take into account a cost-orientation principle based on the results of that operator's cost-accounting system (an FDC costing methodology based on historical costs) and EU practices. Other operators are subject to a different obligation of price controls that consist of prices that are, at most, 20% higher than those applicable by the PT Group. By its decision of 26 October 2005, ICP-ANACOM determined that the termination prices to be charged by the other operators shall yield an average revenue per minute of up to EUR 0.009.

Mobile termination rates

Maximum mobile termination rates in Portugal are regulated and set by ICP-ANACOM, and apply to all three mobile network operators in Portugal (TMN, Vodafone and Optimus), each of which has significant market power (SMP) in voice call termination in their individual networks. The latest mobile termination rate updated on 30 April 2012 is based on the cost methodology of Recommendation 2009/396/EC of the European Commission, based on the application of a pure long-run incremental cost (LRIC) model.

Portugal (cont.)

Interconnection rates for fixed and mobile networks since January 2011

| | |
|--|---|
| <p>Fixed origination and termination rates (Incumbent operator - PTC):</p> <ul style="list-style-type: none"> - The origination and termination prices are the same. - Call activation: EUR 0.0048 - Price per minute at peak period: local EUR 0.0038; simple tandem: EUR 0.0051; double tandem: – EUR 0.0062. Price per minute at off-peak period: local EUR 0.0019; simple tandem: EUR 0.0026; double tandem: EUR 0.0033 <p>Note: VAT excluded; per second charging from the first second; peak period tariff applies from 9 a.m. to 7 p.m during work days; off-peak period tariff applies otherwise.</p> <p>Fixed origination and termination rates (other fixed operators):</p> <ul style="list-style-type: none"> - Termination prices are around EUR 0.0090 (the specific tariffs are not publicly available). - Origination prices are not regulated and are not publicly available. | <p>Mobile origination and termination rates:</p> <ul style="list-style-type: none"> - Maximum mobile termination rates from January 2011 on, applicable to all three SMP operators in Portugal, are the following: - EUR 0.05 per minute from 24 November 2010 - EUR 0.045 per minute from 24 February 2011 - EUR 0.04 per minute from 24 May 2011 - EUR 0.035 per minute from 24 August 2011 - EUR 0.0277 per minute from 07 May 2012 - EUR 0.0227 per minute from 30 June 2012 - EUR 0.0177 per minute from 30 September 2012 - EUR 0.0127 per minute from 31 December 2012. <p>Mobile origination is not regulated and its prices are not publicly available.</p> |
|--|---|

Slovak Republic

Publication of termination rates

All termination rates are published on the NRA's website. F-F (www.teleoff.gov.sk/data/files/27491.xls); F-M (www.teleoff.gov.sk/data/files/21481.xls); and M-M (www.teleoff.gov.sk/data/files/26811.xls).

Determination of fixed-to-mobile termination rates

Termination rates are determined by the regulator.

Regulation of termination rates

Termination rates of SMP operators are subject to regulation.

Regulation of termination rates

The incumbent's fixed termination rates (FTRs) have been set based on a bottom-up LRAIC model. The FTRs of other fixed operators have been set based on the incumbent's FTRs level.

Mobile termination rates (MTRs) have been set on the benchmarking basis using a simple arithmetic average of MTRs in EU countries applying the LRIC methodology.

Interconnection rates for fixed and mobile networks since January 2011

| FTR (EUR/min) | | 1 January 2011 | | | 1 March 2012 | MTRs (€/min) | 1 January 2011 | 1 February 2011 | 1 July 2012 |
|---------------------------|----------------|----------------|----------|--------|--------------|---------------------------|----------------|-----------------|-------------|
| | | Peak | Off-peak | Medium | | | | | |
| Slovak Telekom | Local | 0.0077 | 0.0015 | 0.0034 | 0.005 | Orange | 0.0635 | 0.0551 | 0.0318 |
| Slovak Telekom, GTS, S an | Single transit | 0.0 15 | 0.00 2 | 0.0052 | 0.0072 | Slovak Telekom (T-Mobile) | 0.0635 | 0.0551 | 0.0318 |
| | | | | | | Telefonica | 0.0768 | 0.0551 | 0.0318 |

Slovenia**Publication of termination rates**

Yes. Termination rates to fixed and mobile networks are published on the websites of incumbent and alternative operators.

Determination of fixed-to-mobile termination rates

Termination rates for mobile calls are regulated by the national authority.

Regulation of termination rates

Yes. Mobile call termination rates are subject to regulation:

- Incumbent Telekom Slovenije and Si.mobil: Price ceiling (glide-path from LRIC (plus) in 2009 to LRIC (pure) in 2013);
- Incumbent operators Tušmobil and T-2: Price ceiling (glide-path from asymmetric prices in 2009 to symmetric prices in 2013).

Regulation of mobile-to-mobile termination rates

Yes. They are regulated and derminated (price per minute) using a LRIC methodology.

Interconnection rates for fixed and mobile networks since January 2011

| Termination rates for mobile incumbents | | Termination rates for fixed incumbents | | |
|---|----------------------------|--|---------------------------------|---------------------------------|
| Slovenije and Si.mobil | Tušmobil | Telekom Slovenije | Telemach | T-2 |
| 1 January 2011: EUR 0.0438 | 1 January 2011: EUR 0.0613 | 1 January 2011: | 1 January 2011: EUR 0.0095 (IX) | 1 January 2011: EUR 0.0095 (IX) |
| 1 July 2011: EUR 0.0409 | 1 July 2011: EUR 0.0532 | EUR 0.0095 (IX) | | |
| 1 January 2012: EUR 0.0381 | 1 January 2012: EUR 0.0457 | EUR 0.0068 (SX) | | |
| 1 July 201: EUR 0.0352 | 1 July 2012: EUR 0.0388 | EUR 0.0039 (PX) | | |

Spain**Publication of termination rates**

National available information: www.cmt.es. Benchmark EU information: www.erg.eu.int/

Determination of fixed-to-mobile termination rates

Fixed termination rates: rates fixed by CMT for the incumbent operator (RIO 2010). Among the remaining operators, free negotiation and prices can go up to +30% VS RIO 2005 or RIO 2010 prices.

Regulation of termination rates

Fixed termination rates: rates fixed by CMT for the incumbent operator (RIO 2010). Among the remaining operators, free negotiation and prices can go up to +30% VS RIO 2005 or RIO 2010 prices.

Regulation of mobile-to-mobile termination rates

Fixed termination rates: two ways of interconnection – time and capacity.

Time-based rates: FDC top-down model based on current cost (CC) accounting. This started with market analysis that led to regulated prices in Spanish OIR 2005. Capacity-based rates: bottom-up model based on CC Accounting, not yet pure LRIC.

Interconnection rates for fixed and for mobile networks since January 2011

Fixed termination rates, according to RIO 2010 (November 2010 and effectively implemented from 2011 onwards):

- Time based (EUR/min): EUR 0.56/min (local level), EUR 0.67/min (single transit level), EUR 0.95/min (double transit level)
- Capacity (based on 2 Mbps circuit): EUR 1 363.46 (local level), EUR 2 013.63 (single transit), EUR 2 372.89 (double transit)

Sweden**Publication of termination rates**

Termination rates to fixed and mobile networks are regulated. The regulated rates are published at: www.pts.se.

Determination of fixed-to-mobile termination rates

Both fixed and mobile termination rates are regulated according to the cost method LRIC.

Regulation of termination rates

Fixed and mobile termination rates are subject to cost orientation, see above. All operators offering termination are deemed to have significant market power, thus subject to regulation.

Regulation of mobile-to-mobile termination rates

The rates are regulated according to LRIC plus common cost. Common costs are to be excluded in the near future according to the European Commission's recommendation on termination rates in fixed and mobile networks.

Interconnection rates for fixed and mobile networks since January 2011 (in SEK)

| | FTR in January 2011 | FTR from June 2011 | FTR from January 2012 | MTR |
|---------------|---------------------|--------------------|-----------------------|----------------------|
| Local | 0.0299 | 0.0275 | 0.0233 | 0.26 in January 2011 |
| Metro | 0.0324 | 0.0299 | 0.0254 | 0.21 from July 2011 |
| Single | 0.0321 | 0.0297 | 0.0253 | 0.15 from July 2012 |
| Double | 0.0368 | 0.0336 | 0.0284 | |

Switzerland**Publication of termination rates**

Yes. The dominant service provider is required every year to publish prices for a reference offer. The resources and services included in this offer are listed in the Ordinance of Telecommunication Services. Swisscom publishes its tariffs for mobile termination in its standard interconnection offer: www.swisscom.ch/fr/wholesale/produits/voice-services.html.

Determination of fixed-to-mobile termination rates

Negotiations between operators on a single price (no peak or off-peak prices). Prices are set per minute.

Regulation of termination rates

Legislation requires that prices of operators having a dominant position in the market are transparent, non-discriminatory and cost-oriented. The NRA (Communications Commission or ComCom) cannot take decisions on prices except when it is required to arbitrate, and in this case consults the Competition Commission to determine whether there is dominance. Comcom may only make a decision if there is a dispute between operators. So far, all disputes concerning mobile termination rates have been closed by an agreement between operators. Therefore, ComCom has not had an opportunity to issue a decision on MTRs, nor has it been able to undertake a cost analysis.

Regulation of mobile-to-mobile termination rates

In Switzerland, regulation of prices under the cost-orientation principle imposes the use of LRIC for all kind of interconnection services. To the long-term incremental cost, a constant mark-up corresponding to common and joint costs is added. Modern equivalent assets (MEA) are taken into account to evaluate network costs, and this has been an object of disputes in courts by the operators. Benchmarking can be used by the regulator, but it is extremely rare.

Interconnection rates for fixed and mobile networks since January 2011

Fixed networks (01 January 2012/01 January 2013) (*Note: values are in CHF/minute. These prices, officially requested by Swisscom, are currently being evaluated by ComCom*).

| | National services | | | | Regional services | | | |
|---|----------------------------|----------------------------------|-----------------------------|----------------------------------|-----------------------------|----------------------------------|-----------------------------|----------------------------------|
| | Peak period rate | | Off-peak period rate | | Peak period rate | | Off-peak period rate | |
| | Calls set up charge in CHF | Charge for 60 time units in CHF. | Calls set up charge in CHF. | Charge for 60 time units in CHF. | Calls set up charge in CHF. | Charge for 60 time units in CHF. | Calls set up charge in CHF. | Charge for 60 time units in CHF. |
| <i>Terminating services</i> | | | | | | | | |
| Swisscom Fix Terminating Service | 0.0094 | 0.0101 | 0.0047 | 0.0051 | 0.0078 | 0.0082 | 0.0039 | 0.0041 |
| | 0.0094 | 0.0100 | 0.0047 | 0.0050 | 0.0077 | 0.0080 | 0.0038 | 0.0040 |
| <i>Access services</i> | | | | | | | | |
| Swisscom Fix to Selected Carrier (PTS) Access Service | 0.0100 | 0.0102 | 0.0050 | 0.0051 | 0.0081 | 0.0082 | 0.0040 | 0.0041 |
| | 0.0102 | 0.0102 | 0.0050 | 0.0051 | 0.0080 | 0.0081 | 0.0040 | 0.0040 |

Mobile Networks (01 January 2011):

Termination to Swisscom Mobile: CHF 0.07, termination to Sunrise Mobile: CHF 0.0875), termination to Orange Mobile: 8.75 ctsCHF 0.0875)

These prices have not changed since January 2011. It is noteworthy that ComCom has no competence to regulate the price of mobile termination rates ex-ante.

Turkey**Publication of termination rates**

Yes. They are published both on NRA's and operators' websites.

NRA site: http://btk.gov.tr/elektronik_haberlesme_sektoru/tarifeler_ve_erisim/arabaglanti_ucretleri/2010_arabaglanti_ucretleri.pdf.

Determination of fixed-to-mobile termination rates

In principle, operators may freely determine the terms and conditions of access agreements to be applied by negotiating commercially among themselves, provided that they are not contrary to the relevant legislation, the conditions stated in their authorisation documents, and the Authority's regulations.

As a result of the market analysis procedure, fixed incumbent Turk Telekom and three mobile operators have been designated as having SMP in the termination market and are also obliged to set their termination rates as cost based. The above-mentioned operators offer their termination rates proposal to the authority, which then determines the termination rate for each operator considering both the proposal of the operators and the provisions of relevant legislation on regulation of access tariffs. Furthermore, the authority applies asymmetric regulation in determining prices between mobile operators. Alternative fixed network operators have been designated as having SMP, but are not obliged to set a cost-based tariff. The authority has also set the upper limit to be applied for the termination rates of alternative fixed network operators in the case that parties cannot agree among themselves.

Regulation of termination rates

The fixed incumbent (Turk Telekom) and three mobile operators (Avea, Vodafone and Turkcell) have been designated as having SMP in the termination market and are also obliged to set their termination rates as cost based. Alternative fixed network operators have also been designated as SMP on the termination market, but are not obliged to set cost-based tariffs. They are subject to transparency and non-discrimination obligations.

Regulation of mobile-to-mobile termination rates

In line with the relevant legislation on the regulation of access tariffs, a bottom-up long-run incremental cost (LRIC) model, developed with the assistance of the European Union, is used to determine the mobile and fixed termination rates.

Interconnection rates for fixed and mobile networks since January 2011

Interconnection rates for operators having significant market power (SMP) were published on 11 February 2010 to be effective from 1 April 2010, as given in the table below.

| | | Avea | Turkcell | Vodafone | |
|--|--|--------------|-----------------|-----------------|------|
| Implementation Date: 01 April 2010 | Rates for call termination on 2G (GSM) networks (Kr/mn)* | 3.70 | 3.13 | 3.23 | |
| | Rates for call termination on 3G networks (Kr/mn)* | Voice calls | 3.70 | 3.13 | 3.23 |
| | | Video calls | 7.75 | 7.75 | 7.75 |
| | Rates for call origination/termination on Turk Telekom's networks (Kr/mn) | Local | In Zone | Out Zone | |
| | 1.39 | 1.71 | 2.24 | | |

(*) Rates indicate net values (excluding taxes).

United Kingdom**Publication of termination rates**

No. Termination rates are commercially negotiated between terminating parties, subject to a maximum charge control cap that is applied to the 4 national MNOs and a separate average charge control cap for BT. Charge control prices can be found at: <http://media.ofcom.org.uk/analysts/regulated-prices/>.

Determination of fixed-to-mobile termination rates, regulation of termination rates

The UK regulator (Ofcom) sets the maximum levels on the termination rate charges for the 4 national MNOs and BT. All terminating CPs are required to provide network access on fair and reasonable terms. In March 2011, Ofcom set the maximum charge for mobile termination rate for the 4 national MNOs for the period April 2011 – April 2015

(<http://stakeholders.ofcom.org.uk/consultations/mtr/statement>). The reason for setting charge controls is because Ofcom has determined that there are separate markets for the provision of wholesale mobile voice call termination in the UK to other Communications Providers, by each of the mobile number range holder and fixed terminating CP. Each mobile number range holder and each fixed terminating CP has significant market power in the market for termination of voice calls on its number range/network(s).

Regulation of mobile-to-mobile termination rates

Fixed termination rates are calculated using a top-down model allocating costs on a fully allocated cost (FAC) basis. Mobile termination rates are calculated using a bottom-up modelling pure long-run incremental costs (LRIC) approach.

Interconnection rates for fixed and mobile networks since January 2011

Note: Future rates are dependent on the level of inflation. For below an inflation rate of 2.5% is assumed. All prices are nominal.

| MTRs (maximum cap) based on 2011 MCT decision (revised on appeal) | FTRs (average cap) based on BT's 2009 Network Charge Control |
|--|---|
| January 2011 – 31 March 2011 = GBP 0.04430 per minute | January 2011 – 30 September 2011 = GBP 0.00189 per minute |
| 1 April 2011 – 30 October 2011 = GBP 0.02984 per minute | 1 October 2011 – 30 September 2012 = GBP 0.00206 per minute |
| 31 October 2011 – 31 March 2012 = GBP 0.03015 per minute | 1 October 2012 – 30 September 2013 = GBP 0.00219 per minute |
| 1 April 2012 – 10 May 2012 = GBP 0.02053 per minute | |
| 11 May 2012 – 31 March 2013 = GBP 0.01500 per minute | |
| 1 April 2013 – 31 March 2014 = GBP 0.00839 per minute | |
| 1 April 2014 – 31 March 2015 = GBP 0.00835 per minute | |

United States**Publication of termination rates**

In the United States, termination rates typically refer to carrier-to-carrier charges for local traffic (other interconnection charges apply to long distance traffic). Termination rates to mobile networks are not generally published. Termination rates to fixed networks are generally voluntarily negotiated between carriers, subject to approval by state commissions applying FCC standards, or are published in tariffs subject to review and approval by state commissions and the FCC. Interconnection agreements and tariffs are generally available to the public at the appropriate regulatory agency.

Determination of fixed-to-mobile termination rates

Interconnection agreements – including rates for interconnection services – may be voluntarily negotiated between carriers, subject to approval by state commissions applying FCC standards.

Regulation of termination rates

Interconnection agreements – including rates for interconnection services – may be voluntarily negotiated between carriers, subject to approval by state commissions applying FCC standards.

Regulation of mobile-to-mobile termination rates

Wholesale rates for mobile-to-mobile termination are unregulated. Most mobile networks operate under a mobile-party-pays regime (charging their own subscribers for incoming calls), although other settlement arrangements are permitted. Retail termination is not charged.

Interconnection rates for fixed and mobile networks since January 2011

This information is not available, as interconnection rates vary by carrier and by area served.

