

RTÉ Transmission Network DAC (2rn)

2rn Tariff Model

Specification Document

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1 Introduction

This Specification Document describes the structure, data inputs, calculation logic and outputs of the 2rn Tariff Model (the “Model”). The Model is used to calculate regulated charges by allocating 2rn’s costs and asset base to regulated markets, services and customers in accordance with the applicable regulatory accounting principles and cost-orientation obligations.

The document is intended to be read in conjunction with the Illustrative Tariff excel model and the Primary Accounting Documentation.

The specification is written as a practical guide to understand (a) how data flows through the workbook, (b) where key assumptions are applied, and (c) how the final tariff outputs are produced.

The specification covers the Model workbook structure, including all input tabs, calculation tabs, control tabs and output tabs.

1.1 Specification structure

This section 1 describes the objective and context for the Model. Section 2 of this specification provides a general overview of the Model. Section 3 details the workings of each tab of the Model and section 4 contain a glossary of terms.

1.2 Model outputs

At a high level the Model produces: (i) an annual regulated asset base and allowed return, (ii) annual regulatory depreciation, (iii) annual allowable operating expenditure by cost pool and customer group, (iv) access charges for customers that self-supply certain elements of service, and (v) a summary of total cost allocation and resulting tariffs for the tariff year.

1.3 Regulatory and operational context

RTÉ Transmission Network DAC trading as 2rn is an RTÉ subsidiary company which provides terrestrial broadcast transmission and distribution services on an arm’s length basis to Irish national television and radio broadcasters, including RTÉ. 2rn also provides antenna and equipment hosting facilities to various telecommunications and local and regional broadcast operators.

In previous Market Reviews and associated decisions and again in its latest Market Review and Decision Document ¹, D02/26 Comreg has designated 2rn as having as having Significant Market Power in the wholesale market for the provision of access to national terrestrial broadcasting transmission services in Ireland (“Market A”). Market A consists of the provision of terrestrial broadcast transmission and broadcast distribution services (National Terrestrial BTS) via towers and masts on a managed and unmanaged basis to national and quasi-national broadcast operators enabling the delivery of broadcasting services to the general public.

In its decision Comreg has imposed obligations of access, non-discrimination, transparency, accounting separation, and price control & cost accounting, on 2rn in respect of Market A.

The Model supports cost orientation by: (i) deriving costs and asset values from audited statutory information, (ii) excluding unregulated costs and assets, and (iii) allocating shared costs and assets to regulated services using cost causality drivers such as mast occupancy, capacity usage and personnel activity reports.

2rn is organised on a regional basis and is structured to operate a single national transmission network which supports all customers, who in turn operate in a variety of markets:

RTÉ:

Purchases National Terrestrial BTS for:

- 1 the purpose of delivering its downstream National Terrestrial Radio services (e.g. radio stations such as RTÉ Radio 1 and RTÉ 2FM etc.); and
- 2 use as an input into the delivery of DTT Multiplexing Services (designated as Market B in ComReg Decision Document D02/26) and thereby facilitating the delivery via this service of their own, and others, retail TV services.

Bauer Media Audio Ireland (BMAI):

BMAI, the owner of Today FM and Newstalk, purchases National Terrestrial BTS for the delivery of downstream national/quasi-national terrestrial radio services.

Other (Unregulated Customers):

Outside of Market A, a range telecommunication service providers and operators purchase mast and tower rental services from 2rn.

¹ ComReg has carried out three market reviews of the broadcast transmission market in Ireland since 2013. The associated Decision Documents can be found at [https://www.comreg.ie/publications Broadcast Market reviews since 2013](https://www.comreg.ie/publications/Broadcast%20Market%20reviews%20since%202013)

1.4 Definitions

Reference is made to the 'Cover' tab of the Model.

Access Customers: Those National Broadcast Operators who do not avail of a fully managed Market A service from 2rn and may self-supply some elements of a fully managed service. 2rn is obliged to meet all reasonable requests from Broadcast Operators for Access on an unbundled/unmanaged basis whereby access to any element of a fully managed Broadcast Transmission Service (including Broadcast Distribution Service) that falls within the scope of Regulation may be sought by Broadcast Operators on a disaggregated basis.

Big Site: Main Transmitter sites used to provide Market A services. **Common Infrastructure:** All non-service specific infrastructure e.g. buildings, towers and masts, roads, fencing, electrical installations etc.

Distribution Network: The system of wireless microwave links and fibre optic cables and associated sites, structures, antenna and other associated apparatus used by 2rn to transport(distribute) the signals of National Broadcast operators to main transmission sites for onward broadcast.

Distribution Weighting: Distribution network costs are allocated to National Broadcast Operators proportional to capacity usage of the Distribution System. A single DTT mux currently consumes 25 time more capacity than a single radio channel therefore current Distribution Weighting is 25:1 for allocation of costs.

EPMU: Equi-Proportional Mark-Up. Common operating costs for which no direct or indirect apportionment bases can be readily identified is apportioned to regions using the EPMU (Equi-Proportional Mark-Up) method.

Fully managed service (FMS): full service is provided to the customer including design build, own, operate and maintain all elements of customers Broadcast Transmission Service.

Headend (Engineering): The term "Headend" or "DTT Headend" refers to the central process location where the various multiple signals from different broadcasters, are received, processed and combined into a single output, which is then delivered to the Distribution System. Headend is an element of Market B carried out on behalf of the DTT Multiplex Operator.

Market A: the most upstream wholesale Broadcasting Transmission Services (BTS) market, consists of transmission and distribution services provided via tower/mast infrastructure and relevant associated facilities (including transmission and distribution equipment) ('National Terrestrial BTS') used for: 1. Free to Air (FTA) national/quasi national radio ('National Terrestrial Radio') and 2. the provision of DTT Multiplexing Services

Market B: This is a wholesale market, downstream of Market A, but upstream from retail TV and radio markets.

Mast Occupancy: The proportion per service of antenna loading for DTT, Radio, Distribution and Unregulated services on masts and towers, taking into account the relative areas occupied by each antenna, and their relative stresses on the structure. Mast Occupancy is re-measured annually.

Small Site: All sites, other than main transmitter sites, used to provide Market A services.

Unregulated Services: mast and tower rental services provided to telecommunication service providers and operators (e.g. mobile broadband providers) and local and regional radio operators.

WACC: The allowed Weighted Average Cost of Capital is updated and published annually by ComReg².

² The ComReg Decision D10/20, issued on 14 October 2020, outlines the methodology for calculating the WACC for fixed line telecommunications, mobile telecommunications, and broadcasting sectors in Ireland. The decision mandates that the WACC be recalculated annually and published by ComReg on or before 30 June each year.

2 General Overview

2.1 Methodology framework

The Model implements a top-down cost-based approach, starting from audited statutory accounts and the fixed asset register maintained in 2rn's accounting system. Costs are attributed to markets, services and customers using the regulatory accounting principles of causality, objectivity, transparency and consistency.

The core regulatory accounting principles applied are:

- **Causality:** items are attributed to the activities that cause revenues, costs, assets and liabilities to arise; where no direct relationship exists, attributions should present fairly the regulated accounts.
- **Objectivity:** attribution must not benefit 2rn, any access seeker, service or business; attribution is based on verifiable information with management estimates used only where necessary.
- **Transparency:** attributed items are traceable to source records, and the drivers and allocation steps are visible.
- **Consistency:** the regulated accounts and attribution methods are applied consistently year-on-year; material changes are identified and prior-year figures restated where required.

The Model distinguishes between operating costs and capital costs. Capital costs are recovered through (i) a return on the regulated asset base (RAB) using a ComReg-determined WACC, and (ii) regulatory depreciation calculated using regulatory asset lives/rates.

2.1.1 Cost categories and allocation approach

Operating costs are categorised as (a) directly attributable, (b) indirectly attributable and (c) common costs. Directly attributable costs are assigned to the relevant market/service without apportionment. Indirectly attributable and common costs are apportioned using allocation triggers (e.g., headcount, number of sites, asset base, capacity usage) and/or activity timesheet information. Where no clear driver exists, the EPMU method is applied.

Capital values (net book values) and accounting depreciation are sourced from the Fixed Asset Register. Regulatory depreciation is calculated using regulatory depreciation rates. Capital costs and regulatory depreciation are allocated to services and customers using a combination of (i) mast occupancy, and (ii) direct weighting principles.

2.1.2 Long Life Asset smoothing and T2 adjustment.

Certain long-life asset categories, assets with 40 year lives (such as large masts, significant DTT equipment or buildings) are subject to a smoothing mechanism such that the allowed revenue recovery is less volatile over time. The Model implements an annuity approach to smooth LLA recovery while tracking over- or under-recovery for subsequent reconciliation. Key LLA parameters are controlled from I01_Central.

A 'T-2' adjustment mechanism is applied such that differences between actual versus budgeted costs are adjusted with a two-year lag (i.e., differences arising in year t are applied to tariffs in year t+2). T-2 adjustment inputs are maintained on I01_Central and flow into opex outputs via C06_Opex.

2.1.3 Weighted Average Cost of Capital

The return on the regulated asset base is calculated using the WACC as determined by ComReg. The Model includes a single input parameter for WACC which is applied consistently across the calculation of the allowed return and (where applicable) long-life asset smoothing.

2.2 Model structure

The Model is an Excel workbook with a defined structure to separate inputs, calculations, outputs and controls. The workbook contains: (i) grouped tabs for Inputs (I-series), (ii) Calculation tabs (C-series), (iii) Output summaries (O-series) and (iv) Controls including change logs.

The Model architecture is shown in the following illustration.

I Outputs

O01_Summary

Summarising tariffs for full service customers and for access-only customers. Summarising main cost and value drivers

O02_Cost Alloc

Breakdown of the main cost drivers and how they are allocated by customer per annum

II Inputs

Central inputs for the tariff model

I01_Central	Central inputs for WACC, mast occupancy, operating costs costpool triggers, depreciation rates, etc
I05_Index	Indices for various lists including locations, asset categories, customers, etc

Define the fixed assets of 2m

I02_FAR 2012	Fixed asset register from 2012 at the time of switching the tariff model
I03_FAR	Fixed asset register from 2m at the end of the reference calendar year as an extract out of 2m's accounting system
I06_Sites	List of all location (or site) codes at 2m with the designation to specific tariff model locations as defined in the Index worksheet
I07_Asset types	List of all asset codes as per 2m's accounting system with the designation to specific asset groups that define a) the applicable depreciation rate and b) the allocation key to customers

Define 2m's operating costs budget

I04_Opex Budget	Updated operating costs budget for the tariff charging year (reference year + 1)
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III Calculations

Allocation principles of asset groups to locations

C01_Transfer FAR	Transferring the fixed asset register of 2m's accounting system by location and by asset group
C02_Alloc	Allocation tab detailing how costs linked to fixed assets will be proportioned across locations, etc

Identify capital costs attributed to customers

C03_AB	Allowed return on asset base calculated and spread across location and to customers driven by mast occupancy
C04_Depr	Allowed depreciation calculated and spread across location and to customers driven by mast occupancy
C05_LLA	Detailing the mechanics of a smoothed tariff for investments into long life assets including reconciliation tracker over time
C06_Opex	Computation of operating costs allocated to customers
C07_Access	Computing tariffs for customers with access to sites only

IV Control

L01_Change Log

Figure 1: Model architecture overview

3 Model specification

3.1 Inputs

This section describes each input tab, the data it contains, its source, and how it is used in downstream calculations. Unless stated otherwise, input data is updated annually for the reference year (year t) to calculate tariffs for year t+1.

Table: Input tabs overview

Sheet	Purpose
I01_Central	<ul style="list-style-type: none">• Central control panel with main parameters to be updated during the annual Model update process.• Switches and drivers for allocation principles
I02_FAR 2012	<ul style="list-style-type: none">• Static Fixed Asset Register as at 31 Dec 2012 to support the baseline / legacy depreciation interpretation
I03_FAR	<ul style="list-style-type: none">• Current Fixed Asset Register used for mapping the regulatory asset base relevant for the depreciation and return on asset calculations
I04_Opex Budget	<ul style="list-style-type: none">• Annual operating cost budget and mapping to cost pools
I05_Index	<ul style="list-style-type: none">• Reference tables (customers, services, TS groups, categories) and lookup keys used across the workbook
I06_Sites	<ul style="list-style-type: none">• Site master (location index to identify 'big/small' sites, and region, connectivity)
I07_Asset types	<ul style="list-style-type: none">• Mapping of FAR asset codes into Model Asset Groups B

3.1.1 Central

I01_Central is the primary user interface for controlling the Model. It consolidates key parameters and drivers that are used in multiple calculations. The sheet is structured into themed sections (timing & control, customer/service switches, allocation drivers, opex triggers, capex allocation settings, LLA and T-2 adjustments, and reconciliation checks).

Key parameters include:

- Reference year (t) and tariff year (t+1) settings. Tariff year represents the period the tariff pricing model is applicable for. Eg where (t+1) is 2026 it is the pricing applicable from 1 July 2026 to 30 June 2027.

- WACC input (single percentage value) used in the allowed return calculations and for the LLA annuity calculations.
- Customer/service switches identifying active customers, access customers, and inclusion/exclusion of specific services.
- Mast occupancy inputs by site/service category, including defaults where site-specific values are unavailable.
- Common operating cost allocation triggers by cost pool to allocate respective cost pools to regions (e.g., headcount, number of sites, asset base, capacity usage, EPMU).
- Activity sheets recording hours spent per customer segment by site/region.
- Identifiable operating costs that can be allocated directly to Broadcast customers
- LLA parameters including the respective investment programme and reconciliation of comparing historically charged tariffs for LLA capital costs vs actuals.
- Investment cost allocation principles of how costs of allowed return and depreciation is passed on to customers.
- T-2 adjustment inputs by year (differences between actual and budgeted costs applied with a two-year lag).

The sheet includes diagnostic checks (e.g., that allocation shares sum to 100%) and will be updated with the annual Model update process.

3.1.2 FAR 2012

The current Tariff pricing model was introduced in 2013 as there was a requirement from the Decision Notice D11/13 published to have separated Regulated accounts for Markets A and B.

I02_FAR 2012 contains a static snapshot of accumulated depreciation and net book value for assets on the balance sheet at 31 December 2012. The sheet is not expected to be updated in future cycles.

The sheet supports legacy asset treatments and avoids overcompensation of capital costs (ensures that a return is not provided on the assets for the years up to the model switch in 2013).

3.1.3 FAR

I03_FAR contains the year end Fixed Asset Register extract for the reference year and associated mapping and inclusion controls. Each asset record is mapped to an Asset Group and a site/location (columns Z:AB). Validation checks offer control to avoid charging customers for assets used only in the unregulated market, to ensure data consistency (columns P:X). The validation tests include checks to see if the following statements are

TRUE/FALSE for regulatory purposes: if assets have expired or been deactivated, if the Asset code is not deactivated, if the Asset Group A Code is activated, if the Asset location is activated, if the Asset was acquired before end of reference year, if Asset Group B is activated and if the Cost Pool is activated. If any one of these statements is FALSE the asset will not be included for Regulatory pricing purposes. As mentioned in 3.1.2 above columns AD:AO avoid the over-compensation for assets that were active already before 2013 when the new Model was introduced.

3.1.4 Opex Budget

I04_Opex Budget contains an extract of the operating cost Budget for the reference year. The sheet maps operating costs to standardised cost pools and enforces exclusions consistent with the accounting documentation.

Typical exclusions include:

- Finance costs (since recovery of finance costs are structured through the WACC and the return on asset calculations).
- Statutory depreciation (replaced by regulatory depreciation calculated in C04_Depr).
- Operating costs attributed to unregulated activities (deducted before allocation to regulated services).
- Electricity costs, which are allocated separately using the procedures described in the Primary accounting documentation.

3.1.5 Index

I05_Index contains lookup tables used throughout the workbook, including lists of customers, service categories, TS groups, cost pool definitions and mapping keys. These tables reduce hard-coding and help ensure consistent classification year-on-year.

3.1.6 Sites

I06_Sites provides the site master used for site-based allocations, including site classification (active/inactive), region, and attributes such as 'big' versus 'small' site. The sheet also records which customers are connected to which sites, supporting final allocation steps.

3.1.7 Asset Types

I07_Asset types define and assigns the asset group codes used in the FAR (= Asset Group A codes) and maps them each to model categories. More specifically, Asset Group A codes are

assigned i) to Asset Group B categories (used for identifying the applicable regulatory depreciation class), and ii) into Asset Group C (used to identifying the allocation principles to passing on allowed depreciation and allowed return on RAB to customers).

3.2 Calculations

Calculation tabs are modularised into C-series tabs. Each tab takes standardised inputs and driver matrices and produces intermediate allocation results that feed into the tariff outputs.

Sheet	Purpose	Key linkages
C01_Transfer FAR	Transfers and aggregates FAR data; applies inclusion rules; prepares capital values for allocating to customers.	<ul style="list-style-type: none"> Inputs from I02/I03/I07; Outputs to C02–C05
C02_Alloc	Computes intermediate allocation drivers (customer activity by site, mast occupancy by customer segment, and distribution weighting per site).	<ul style="list-style-type: none"> Inputs from I01/I05/I06; Outputs to C03–C07
C03_AB	Calculates RAB and allowed return and allocates to services/customers.	<ul style="list-style-type: none"> Inputs from C01/C02 and WACC from I01; Outputs to C07 and O01/O02
C04_Depr	Calculates regulatory depreciation and allocates those to services/customers.	<ul style="list-style-type: none"> Inputs from C01/C02 and lives from I07; Outputs to C07 and O01/O02
C05_LLA	Calculates the smoothed capital charges for long-life assets and tracks the recovery status since 2013 comparing budgeted charges to actuals.	<ul style="list-style-type: none"> Inputs from C03/C04 and LLA parameters from I01/I07; Outputs to O01/O02
C06_Opex	Allocates common operating costs, and direct attributable operating costs	<ul style="list-style-type: none"> Inputs from I04/I01/I06 and C02; Outputs to C07 and O01/O02
C07_Access	Calculates access charges and deducts access revenues to avoid over-recovery.	<ul style="list-style-type: none"> Inputs from C03–C06 and access switches in I01; Outputs to O01/O02.

3.2.1 Transfer FAR

C01_Transfer FAR imports and standardises FAR data (historic FAR 2012 and current FAR) into the Model's calculation structure, applying inclusion rules (see section 3.1.3 above for reference) and mapping to model categories and sites. It is simply a supporting tab to transfer the data transparently into C03_AB and C04_Depr.

3.2.2 Allocation

C02_Alloc calculates intermediate drivers used by multiple downstream sheets, including customer/service status matrices, mast occupancy shares, distribution weighting factors, site counts and connectivity matrices.

3.2.3 Asset Base

C03_AB calculates the RAB and allowed return for each service/customer group. Allocation of capital values uses mast occupancy for mast/tower structures and other common infrastructure and distribution weighting for distribution system assets.

Computes the allowed return on the RAB based on the allowed WACC, and the fixed asset register. The RAB also reflects the netting of the regulated depreciation rates as well as new investments planned. Allocation to customers is based on allocation keys per asset group as defined in I01_Central!C593:E605. Mast occupancy is used to allocate those capital values (i.e. return on asset and depreciation) that are for shared infrastructure assets and common to more than one service (such as buildings or towers and masts). Those shares of mast occupancy attributed to 'Distribution' are allocated to customers via capacity usage.

For assets that are used for a clearly identifiable service, allocation to customer is based on i.e. capacity usage, or radio or DTT only as applicable (such as DTT equipment or radio equipment).

3.2.4 Depreciation

C04_Depr computes the allowed and chargeable depreciation cost. The allowed regulatory depreciation is based on the fixed asset register, and the regulated depreciation rates as defined in the Central tab for the respective asset groups.

It uses the same allocation logic as the regulated return on the RAB.

3.2.5 Long Life Assets

C05_LLA computes an annuity-based smoothed tariff to compensate for volatile and large investments into long-life asset groups (such as large masts, significant DTT equipment or buildings). The LLA tariff is based on a 20 year annuity calculation. It incorporates the long life investment plan, the WACC and a projection of the theoretical allowed returns and allowed depreciation over the next 20 years. The annuity of this projection represents the smoothed tariff. The charge is then held fixed over the next 20 years.

The tab also incorporates a reconciliation analysis to enable monitoring of expected charges to actual costs to avoid over- or undercharging.

3.2.6 Opex

C06_Opex allocates allowable operating costs (excluding finance costs and depreciation) (see section 3.1.4 for reference) through a staged approach designed to reflect cost causality.

Firstly, common operating cost pools are assigned to regions by selected triggers that are identified per cost pool in I01_Central!241:337. Those regional costs are then pro-rated to sites reflective of the asset base size.

Secondly, based on time sheet recordings per site, common costs are split into the below categories:

- 1) DTT,
- 2) Radio,
- 3) Headend Engineering,
- 4) Distribution / Links
- 5) Common infrastructure, and
- 6) unregulated business,

Common costs allocated to DTT and head end engineering are directly attributed to DTT. Common costs attributed to Radio assigned to Radio. Cost attributed to Distribution/Links are spread across customers based on capacity usage, and costs linked to common infrastructure are spread across customers based on mast occupancy. Naturally, costs attributed to unregulated services are deducted from the charges.

3.2.7 Access

C07_Access calculates charges for customers that opt for access-only arrangements. Access revenues are then deducted from the remaining cost base to avoid double recovery.

3.3 Outputs

The objective of this sub-section would be to present and explain the results of the tariff model. There are two output tabs:

- O01_Summary provides the principal tariff outputs for the tariff year, including breakdowns of allowed return, regulatory depreciation, operating costs and access charge deductions.
- O02_Cost Alloc provides a consolidated cost allocation statement showing the distribution of costs and revenues across markets and services.

4 Glossary

Abbreviation	Definition
BTS	Broadcasting Transmission Services
DAB	Digital Audio Broadcasting
DTT	Digital Terrestrial Television
EPMU	Equi-Proportional Mark-up
FAR	Fixed Asset Register
FTA	Free to Air
LLA	Long-life assets
MUX	Multiplexer
Opex	Operating expenditure
RAB	Regulated Asset Base
WACC	Weighted Average Cost of Capital