

# Tariff Model

MK-RTÉNL-12/02/2008

# Tariff Model

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# Tariff Model

## Overview

### Model Objective

The objective of the model is to allow the user to calculate the tariff charges attributable to each RTÉ Network broadcast customer for the provision of transmission services. The model will breakdown the tariff for a given customer into:

- i) a charge based on return on capital invested to service that customer;
- ii) operating costs + a margin incurred to service that customer.

### Model Flexibility

The model allows for the following variables to be changed and calculates a new tariff charge for each broadcast customer based on these inputs.

1. Return on capital invested;
  2. Margin on Operational Expenditure;
  3. Regional Operating Expenditure;
  4. Central costs;
  5. Capital Expenditure (opening & ongoing);
- Ability to add existing Broadcast Customers to new sites;
  - Ability to add new broadcast customers;
  - Ability to add new sites.

# Tariff Model

## Structure

### Overview

**The objective of the model is to allocate Op Ex & Return on Cap Ex to each Broadcast Customer served by RTÉ Networks. In order to achieve this objective the model is broken down into two distinct sections i) Op Ex Inputs & Workings ii) Cap Ex Inputs & Workings.**

### I. Op Ex

**Where possible costs are allocated directly to the Broadcast customer, this is the case for both electricity and costs relating to the Capital Projects Team. In all other cases costs are allocated to each site based on a 3 tier weighting which is based on the Power Output of each site. In turn site costs are allocated to each Broadcast customer served on that site. These costs are split between DTT, Customers, TV customers and Radio customers on a given site in a ratio of 2:2:1.**

# Tariff Model

## Structure

### II. Cap Ex

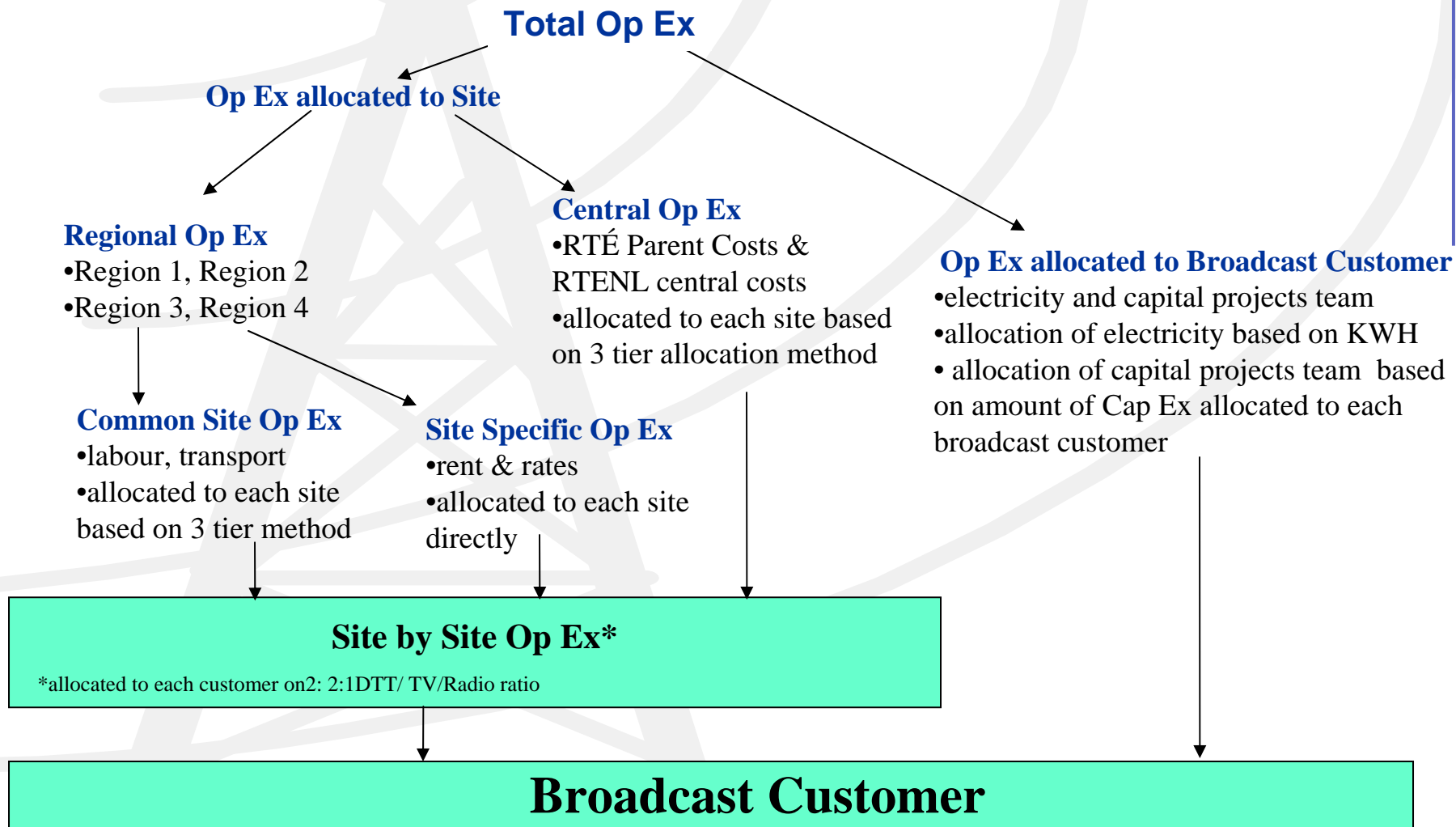
Cap Ex is divided into two main components i) Opening Capex ii) Ongoing Capex.

Opening Cap Ex is allocated to the sites and then onto each Broadcast customer served on that site. In turn Cap Ex at the site level is allocated to each Broadcast customer based on Mast Occupancy data where available. Where not available Cap Ex is allocated on same split as Op Ex using the 2:2:1, DTT;TV:Radio ratio.

Ongoing Capex is split between Customer Specific Cap Ex and Common Cap Ex. The Customer Specific Cap Ex is allocated directly to the Broadcast customer. In the case of Ongoing Cap Ex this is allocated to each Broadcast customer based on the allocation of Opening Cap Ex.

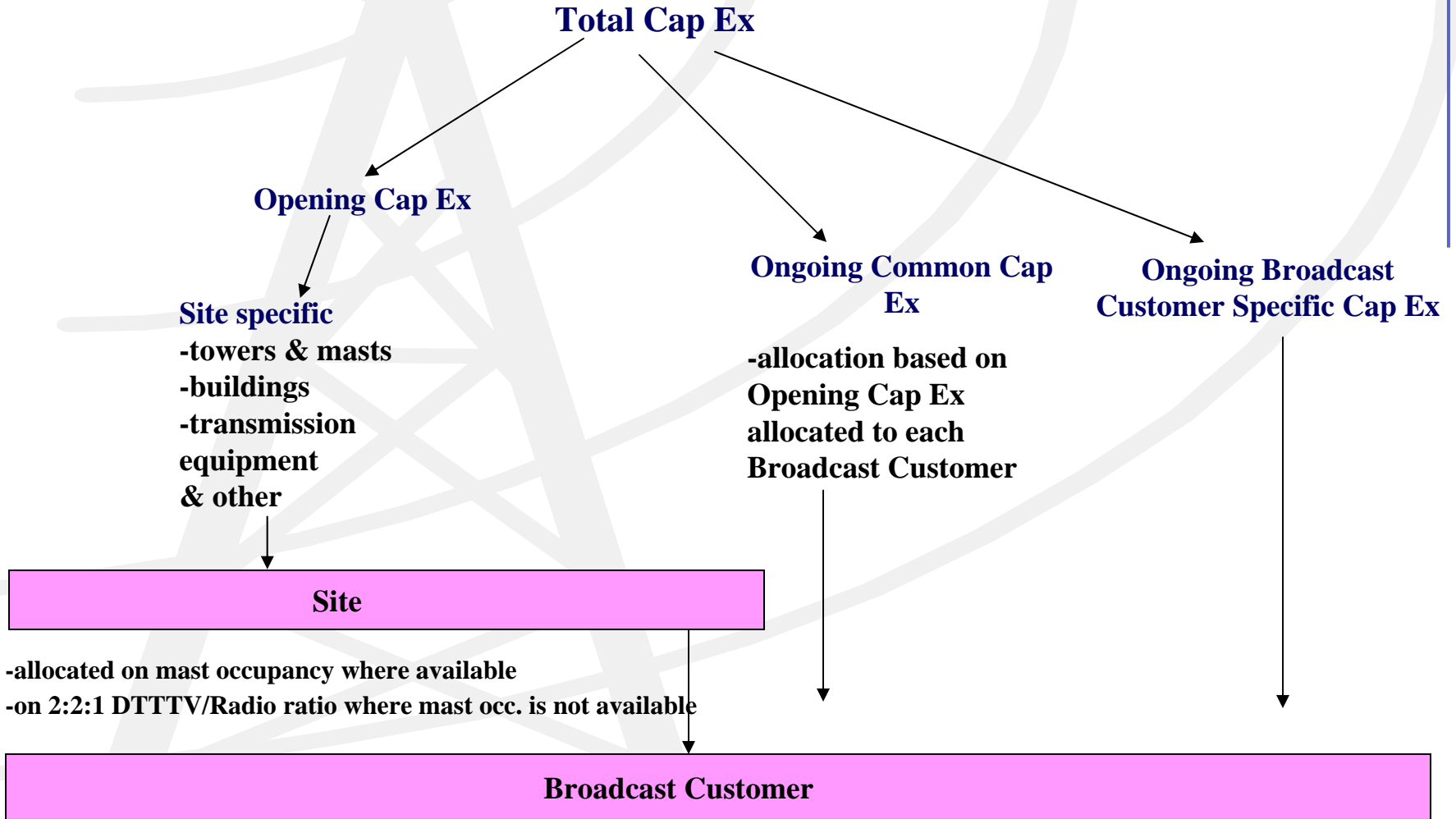
# Tariff Model

## Operating Expenditure Allocation



# Tariff Model

## Capital Expenditure Allocation



# Tariff Model

## Overall Inputs I.

The macro variables that drive the model are located in this section. These variables have the greatest impact on the model's outcome and hence a lot of focus and attention should be placed on them. They are broken down as follows:

- **Margin charged on Op Ex** – this is the margin RTÉ Network charges its Broadcast Customers on top of the the costs incurred to service those same customers.
- **Return on Cap Ex** – this is used to calculate the return RTÉ Networks charges for the capital it has spent on the towers, masts and transmission equipment. This charge is allocated to each Broadcast Customer based on the number of sites on which their signal is transmitted.
- **Site Tier weightings** – Each site is allocated a Tier rating between 1-3 based on the Power Output\* of that site. Common Site Op Ex and Central Op Ex are allocated to each site based on the Op Ex Tier weightings. In terms of thinking about the weightings the Model User should assume there are only 3 sites in the Network. These include a Tier 1, Tier 2 and a Tier 3 site. The Model User should then think about how he/she would allocate 1 Euro of common costs/cap ex between these 3 sites. This split should be used for the weightings.
- **Operating Escalation Costs** – these are required to calculate the Op Ex charge for yrs 2-10. This information is used as an indication of future likely charges only. Actual charges are calculated annually
- **Broadcast Customer Op Ex and Cap Ex weighting** – this ratio is used to allocate Op Ex and Cap Ex that has been allocated to a particular site to a Broadcast Customer. The rule of thumb in the industry assumes that the ratio of costs and cap ex between TV and radio is 2:1. Using this ratio if a given site has only one TV customer and one radio customer the total costs of that site would be divided in 3, 2/3 would be allocated to the TV customer and 1/3 would be allocated to the radio customer.

\*All sites > 10,000 W are classed Tier 1, all sites less than 1,000W are classed Tier 3, all in between are classed Tier 2

# Tariff Model – Sample Screenshot

## Overall Inputs II.

### I. Overall Assumptions

Margin charged on Op Ex  
Return on Cap Ex

15%  
7%

Margin on Op Ex  
Return on Cap Ex

Tier 1-3 weightings  
Tier 1  
Tier 2  
Tier 3

Op Ex  
60%  
16%  
24%  
100%

Operating Expenditure Escalation Costs

Year 2  
2.0%

Year 3  
3.2%

Expected cost increases from years 2-10, input as a %.

Broadcast Customer

Op Ex & Cap Ex  
Broadcast Customer  
Weighting

RTÉ 1	2
Network 2	2
TG4	2
TV3	2
Radio 1 FM	1
2FM	1
RnaG	1
Lyric FM	1
Today FM	1
Radio 1 AM	1
2FM AM	1
Radio 1 LW	1
Mux 1	2
Mux 2	2
Mux 3	2
Mux 4	2
Mux 5	2
Total	

Used for the allocation of Common Op Ex and Cap Ex from Site to Broadcast Customer.  
Rule of thumb in the industry TV:Radio ratio = 2:1. Split ratio updated when DTT services are installed.

# Tariff Model

## Op Ex Inputs I.

The Op Ex variables that can not be directly allocated to the sites in the Network are located in this section of the Input Sheet. Given that we are only modelling Tariffs for the Transmission Business all Op Ex relating to 3<sup>rd</sup> party should be excluded from the following cost inputs:

- **Regional Costs** – for the purposes of the model the county has been split into 4 regions. The regional input costs should exclude any costs relating to electricity, Rent & Rates as these are inputted else where in the model. It should not include any costs relating to 3<sup>rd</sup> party services.
- **Network Central Costs** – these relate to costs for RTÉNL Donnybrook and include frequency planning.
- **RTÉ central costs** – these relate to costs charged by RTÉ Parent to the Network Business.
- **Depreciation** – should be excluded from this cost given that the model already charges the Broadcast Customer a Return on Cap Ex. To include depreciation as a charge would effectively result in the Broadcast Customer being charged twice for its use of the Network's fixed asset base.
- **Electricity** - this should include total electricity costs relating to the Network Business. These are allocated directly to the Broadcast Service Customer.
- **Capital Projects Team** – this should include the cost of the Capital Projects Team for work carried out for Regulated Network Customers. It is allocated directly to Broadcast Customers based on the level of Cap Ex allocated to those same customers.

# Tariff Model - Sample Screenshot

## Op Ex Inputs II.

### II. Operating Expenditure

#### i) Common Operating Expenditure

##### **Regional Costs**

	Year 1
Region No. 1 (John Hearne)	xxx,xxx
Region No. 2 (David Cunniffe)	xxx,xxx
Region No. 3 (Tom Mollen)	xxx,xxx
Region No. 4 (David Priestley)	xxx,xxx
Total	<u>x,xxx,xxx</u>

##### **Central Costs**

Network Central Costs	x,xxx,xxx
RTÉ Central Costs allocated to Network	xxx,xxx
Total	<u>x,xxx,xxx</u>

##### **Site by Site Specific Op Ex - % Allocation to 3rd Parties**

Rent	20%
------	-----

#### ii) Specific Op Ex to Broadcast Customers Yr 1

Electricity Specific Op Ex Charge	x,xxx,xxx
Capital Projects Team	xxx,xxx

Regional Op Ex should exclude rent, rates electricity charges, and costs relating to 3<sup>rd</sup> party services.

These relate to “RTÉNL central Costs”. Includes frequency planning. Excludes costs relating to 3<sup>rd</sup> party services.

These relate RTÉ Parent Costs allocated to Network Business. They exclude depreciation and exclude costs relating to 3<sup>rd</sup> parties.

This relates to the portion of site rent that should be deducted for 3<sup>rd</sup> party services

Total electricity charge for Network business

Total Cost of Capital Projects Team. Excludes team costs relating to 3<sup>rd</sup> party services.

# Tariff Model

## Cap Ex Inputs I.

The Cap Ex inputs that drive the model are located in this section. Cap Ex in this model is split between Opening Cap Ex and Ongoing Cap Ex.

- **Unallocated Common Cap Ex** – this allows for the allocation of Cap Ex that is not broken out at a site by site level. It should exclude any Cap Ex relating to party services.
- **Site by site Specific Cap Ex % allocation to 3rd parties** - all site by site inputs include costs for both the regulated business and 3<sup>rd</sup> party services. The portion of Cap Ex to be allocated to 3<sup>rd</sup> party services is determined by the inputs in this section.
- **Ongoing Common Cap Ex\*** – this relates to growth/expansion Common Cap Ex. It includes Cap Ex for towers and masts and other cap ex that can't be allocated directly to a Broadcast Customer. The forecasts should exclude any Cap Ex relating to 3<sup>rd</sup> party.
- **Ongoing Broadcast Customer Specific Cap Ex\*** – Cap Ex forecasts by Broadcast Customer relating to growth/expansion of the network.

\* All Ongoing Cap Ex should only relate to growth/expansion Cap Ex. Any Cap Ex relating to the maintenance of the network should not be included in the forecasts.

# Tariff Model - Sample Screenshot

## Cap Ex Inputs II.

III. Capital Expenditure		
i) Unallocated Common Cap Ex	1,000,000	
ii) Site Specific Cap Ex - % Allocation to 3rd Parties		
Buildings	20%	
Towers & Masts	20%	
Transmission Equip & Other	20%	
iii) Ongoing Common Cap Ex Forecast		
year 1	0	
year 2	0	
year 3	0	
year 4	0	
year 5	0	
year 6	0	
year 7	0	
year 8	0	
year 9	0	
year 10	0	
iv) Ongoing Broadcast Customer Specific Cap Ex		
	Yr 1	Yr 2
RTÉ 1	0	0
Network 2	0	0
TG4	0	0
TV3	0	0
Radio 1 FM	0	0
2FM	0	0
RnaG	0	0
Lyric FM	0	0
Today FM	0	0
Radio 1 AM	0	0
2FM AM	0	0
Radio 1 LW	0	0

Relates to Cap Ex not broken out on a site by site basis.

Relates to the portion of Specific Cap Ex that should be deducted for 3<sup>rd</sup> party services

Forecasts of Common Cap Ex i.e. towers, masts, etc. Should exclude any maintenance Cap Ex.

Forecasts of Cap Ex specific to each Broadcast Customer e.g. transmission equipment installed to service a customer. Should exclude any maintenance Cap Ex.

# Tariff Model

## Site by Site Inputs I.

Inputs at a site by site level are located in this section of the model. All site by site data should include charges for 3<sup>rd</sup> party services as they will be deducted elsewhere in the model.

- **Site No.** – this is an arbitrary number used for identifying the site.
- **Site Name** – a given.
- **Region** – the county is divided into 4 regions, each site is allocated a region. This relevant when regional costs are allocated to the various sites.
- **Power Output** – this is based on Wattage output of each site and is used for determining whether a site is a Tier 1,2 or 3 site. These tier weightings are used in turn for allocating common costs and cap ex to each site.
- **Site Specific Rent & Rates** – this should include rent & rates charged by the owner of the site to RTÉ Networks.
- **Specific Cap Ex** - Cap Ex is broken down into as much detail as possible. Where possible this section includes data at a site level for buildings, towers & masts, transmission equipment & other.

# Tariff Model - Sample Screenshot

## Site by Site Inputs II.

### IV. Site by Site Op Ex, Cap Ex and Broadcast Customer data

Sitename	Region	Power Output Watts	Site Specific Op Ex	Site Specific Cap Ex		
			Rent & Rates	Buildings	Towers & Masts	Transmission Equip & Other
Abbeyfeale	1	100	0.0	0	22,000	54,000
Achill	2	8,000	1,447.1	117,500	375,000	199,000
Aranmore	2	8,000	1,709.7	0	120,000	199,000
Ashford	3	20	0.0	0	20,000	54,000
Ashleam	2	25	1,510.8	0	20,000	54,000

Country divided into 4 regions

Power output used to determine which Tier a site falls into i.e. 1,2 or 3

Rent & Rates at the site level

Cap Ex employed at each site

# Tariff Model

## Allocation Input I.

This section of the Input sheet is required for the allocation of Op Ex and Cap Ex from the site level to the Broadcast Customer Level and the allocation of electricity charges to each Broadcast customer.

■ ***Broadcast Customers on each site*** – for each site the Model User will have to enter which Broadcast Customers are served on that site. If a Broadcast Customer is served on a given site this is represented by entering a “1” under the broadcast customer column at that site. If the broadcast customer is not served on that side a “0” should be entered. These inputs allow for the Op Ex and Cap Ex allocated to a specific site to be allocated to each Broadcast Customer served by that site.

■ ***% Mast Occupancy where available*** – this data is used to allocate Common Cap Ex on each site to Broadcast customers. It is not available for all sites. In cases where it is not available the Common Cap Ex is allocated on the same basis as Op Ex. In terms of Inputs on each site a % occupancy should be inputted for each Broadcast Customer served by that site. These should total 100%. If no mast occupancy data is available n/a should be entered.

■ ***Inputs for electricity allocation*** – this section should include KWH consumption by each Broadcast customer for each site. It is used for allocating the electricity costs to each Broadcast customer.

# Tariff Model - Sample Screenshot

## Allocation Inputs II.

### III. Site by site Op Ex, Cap Ex and Broadcast Customer data (continued)

Site No.	Sitename	Broadcast Customers on each Site			% Mast Occupancy where available			
		RTÉ 1	Network 2	TG4	RTÉ 1	Network 2	TG4	TV3
1	Abbeyfeale	1	1	1	n/a	n/a	n/a	n/a
2	Achill	1	1	1	n/a	n/a	n/a	n/a
3	Aranmore	1	1	1	n/a	n/a	n/a	n/a
4	Ashford	1	1	1	n/a	n/a	n/a	n/a
5	Ashleam	1	1	1	n/a	n/a	n/a	n/a
6	Athlone (Moydrum)	0	0	0	n/a	n/a	n/a	n/a
7	Ballingeary	1	1	1	n/a	n/a	n/a	n/a

If a Broadcast Customer is served on a particular site site enter 1 if not enter 0

where we have data available on Mast Occupancy for a particular site, enter % occupancy for each Broadcast customer. If no mast occupancy info available enter n/a.

Site No.	Sitename	Region	Inputs for electric. Allocation % In KWH		
			RTÉ 1	Network 2	TG4
1	Abbeyfeale	1	0.1	0.1	0.1
2	Achill	2	3.3	3.3	3.3
3	Aranmore	2	1.9	1.9	1.9
4	Ashford	3	0.2	0.2	0.2
5	Ashleam	2	0.1	0.1	0.1

KWH inputs by Broadcast Customer used for allocation of electricity charge.

# Tariff Model

## Model Expansion

### *Add existing Broadcast Customer to new site*

- Go to Input Sheet
- Go to section I.V. “Site by site Op Ex, Cap Ex and Broadcast Customer data”
- Go to section entitled “Broadcast Customers on each site”. Locate site and input 1 under the Broadcast Customer Column to add that customer to the site in question.

### *Add new sites*

1. 5 new sites can be added to the model
2. Go to Input sheet
3. Go to Section IV. “Site by Site Op Ex, Cap Ex and Broadcast Customer data”. Specifically to sites No. 104-108.
4. Work across horizontally and fill in all required data such as site name, power output, specific op ex, specific cap ex, broadcast customer on the site etc.

### *Add New Broadcast Customer\**

1. 5 new customers can be added to the model
2. Go to Input Sheet
3. Go to Section I. “Overall Assumptions”. Under Broadcast Customer Section add new Broadcast Customer name in one of New Service 1-5 slots. Under the Op Ex & Cap Ex Broadcast customer weighting enter 2 if new customer is TV or 1 if radio.
4. Go to Section III, “Capital Expenditure”. Go to section i) “Ongoing Broadcast Customer Specific Cap Ex. Enter forecasts for yrs 1-10 for the new customer.
5. Go to Section IV. “Site by site Op Ex & Cap Ex”. Under heading Broadcast Customers on each site enter “1” if customer will be on a site and “0” if not. Under “Inputs for electricity” enter data for new customers on a site by site basis.

\*to remove a Broadcast Customer follow same steps but enter 0 as input throughout

# DTT Pricing

# DTT Pricing

# DTT Pricing

Tariffs are calculated from Tariff Model for an agreed configuration

Due to the high number of input variables and the resulting very large number of possible outputs it is not considered practical to produce the tariff options in a rate card format

Tariffs can be provided for an agreed configuration

- Number of specified sites

- Transmitter power