

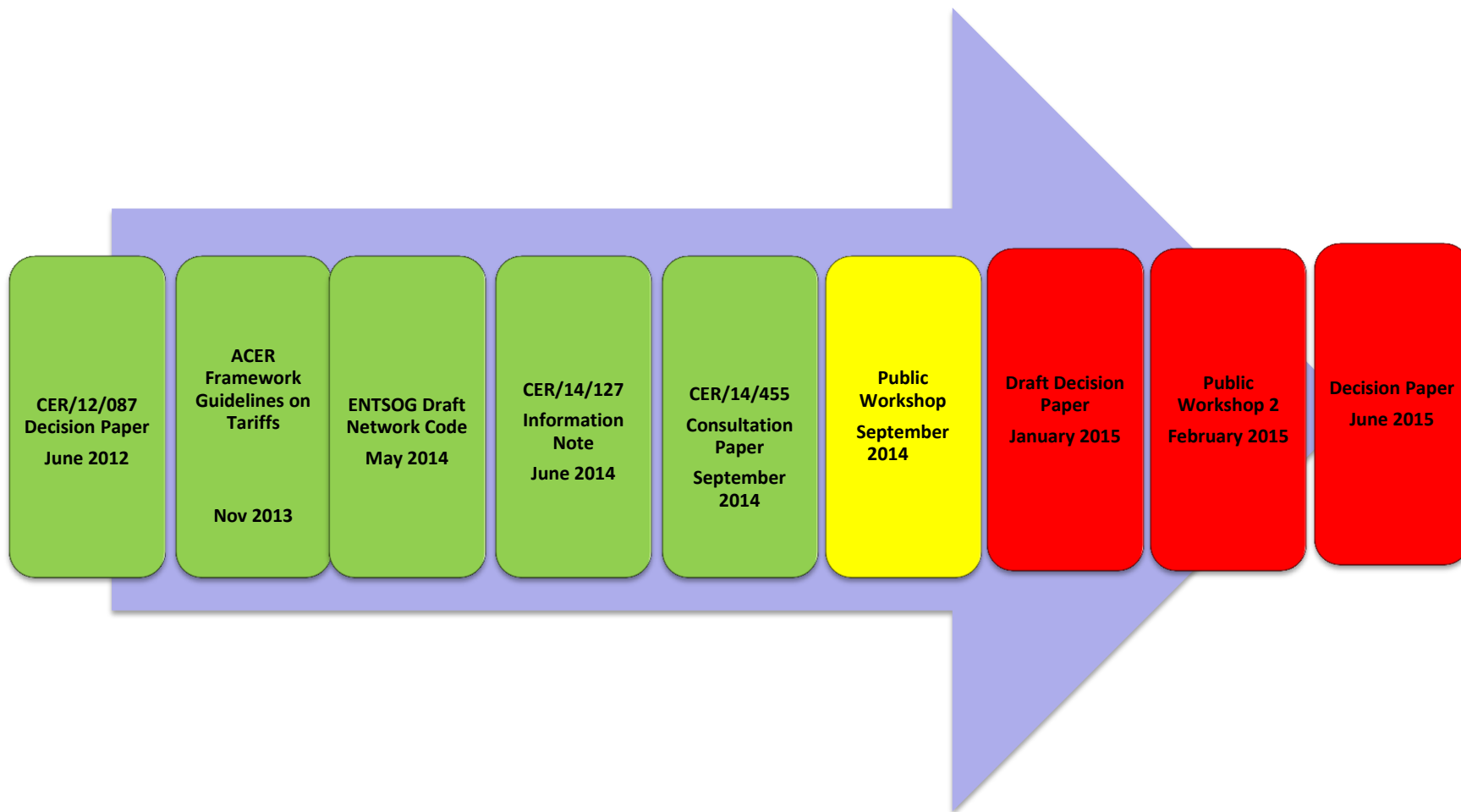
# **Future of Gas Entry Regime Initial Modelling Results**

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# Agenda

Time	Item	
<b>10:30-11:00</b>	Introduction to Gas Entry Reform	<ul style="list-style-type: none"> <li>-Why are we reforming?</li> <li>-The European context</li> <li>-Work to date</li> <li>-Developments of the Network Code</li> </ul>
<b>11:00-11:30</b>	Cost Allocation Methodologies & Key assumptions	<ul style="list-style-type: none"> <li>-Introduction to the 3 modelled options</li> <li>-Cost concepts</li> <li>-What is outside of scope</li> <li>-Assumptions and model inputs</li> <li>-Secondary Adjustments</li> <li>-Capacity/Commodity split and Entry/Exit split</li> </ul>
<b>11:30-12:30</b> <b>1:15-2:00</b>	Modelling the Cost Allocation Methodologies	<ul style="list-style-type: none"> <li>-Overview of the model</li> <li>-Inputs into the model</li> <li>-Entry and Exit zones</li> <li>-Expansion Constants</li> <li>-Project based costs</li> <li>-Walk through model</li> </ul>

# Timeframes for reform



## Responding to this Consultation

- Consultation Paper CER/14/455 includes specific questions
- To assist the CER we request stakeholders to focus on these questions as they form the main inputs into the modelling
- Responses via online questionnaire are preferred  
<https://www.surveymonkey.com/s/H6WZ3JY>
- Alternatively to Colm Ó Gormáin at cogormain@cer.ie
- Consultation closes 14<sup>th</sup> October 2014 ( 6 weeks)

## Introduction to Gas Entry Reform

Reform began in 2012 with CER/12/087

3 key concepts

- Forward looking (LRMC-projects)
- IC assumed to be marginal source of gas
  - Reward efficient Entry points by reference to IC Entry

## What CER stated in 2012

CER/12/087 stated that;

*“The current transmission entry tariffing regime needs reform. Without reform, and assuming the investments in the ICs are not to be stranded, the reduced IC throughput (due to new sources of gas coming on stream) will increase the unit IC entry tariff, potentially significantly so. This higher IC entry tariff would, in turn, push up the wholesale price for gas in Ireland. This would be inefficient and damaging to both consumer interests and Ireland’s energy Competitiveness.”*

## European Developments



### European Commission

- Third Package ( Directive 2009/73/EC, Regulation 713/2009 & Regulation 715/2009
- Obligation imposed on ACER & ENTSOG to develop a series of Framework Guidelines & Network Codes
- EC invited ACER to develop FG on Tariffs



Develops Framework Guidelines in cooperation with NRAs.

- Outlines high level principles for ENTSOG to develop Network Code
- Framework Guidelines are non-binding
- In March 2013 EC requested ACER to develop a revised chapter on Cost Allocation Methodologies
- FG includes 4 Cost Allocation Methodologies
- FG was published November 2013



Responsible for developing the FG into a Network Code

- This text will go through Comitology and become directly binding via a Regulation
- ACER and European Commission provide input to Draft Network Code to ensure consistent with Framework Guideline
- Network Code aims to codify the high level principles of the Framework Guideline
- ENTSOG consult on a Draft Network Code.

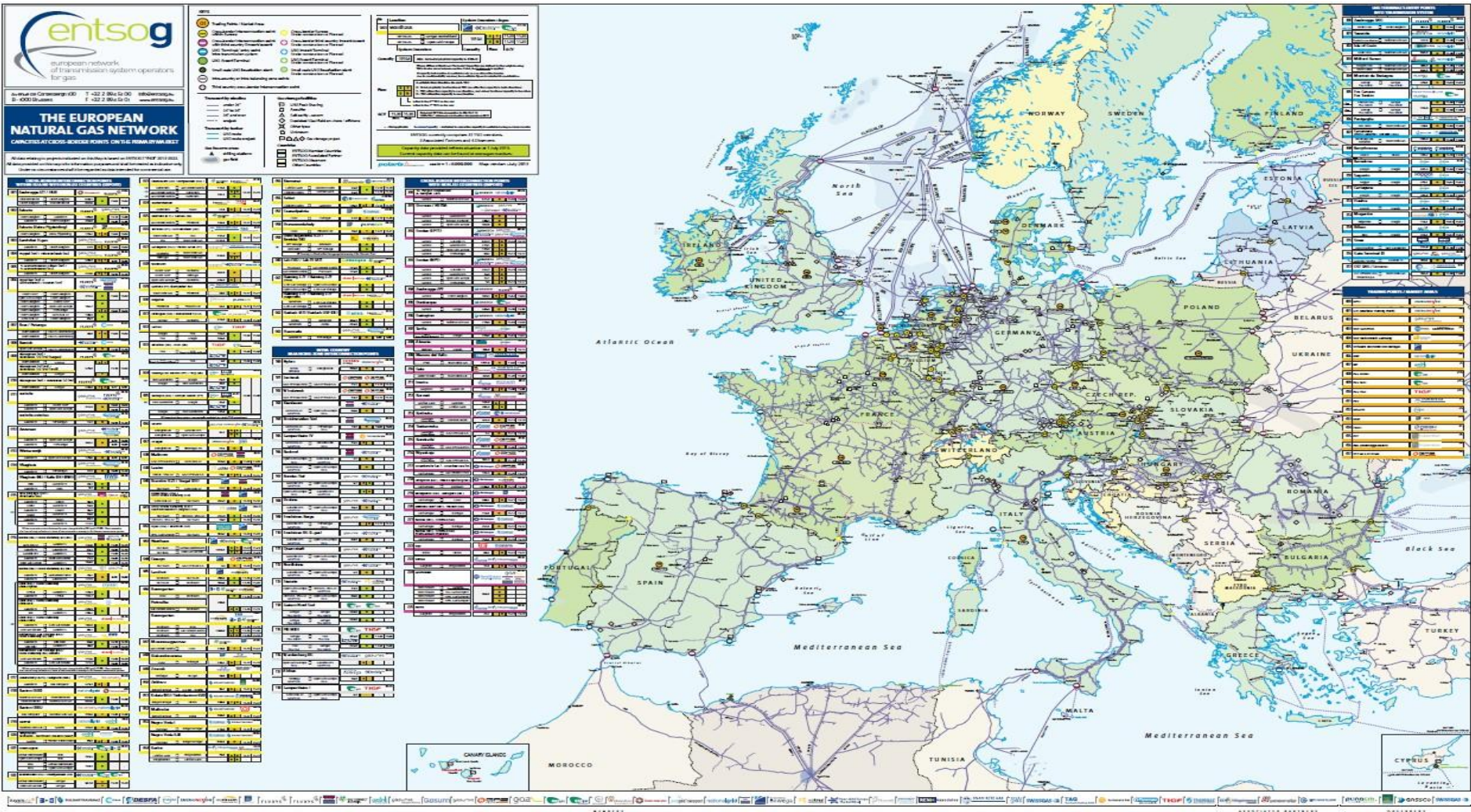


Network Code is subject to Member State and Commission over-sight as part of Comitology  
After any changes are made the Council of Ministers and the European Parliament vote on the Regulation

The Network Code Regulation is expected to be binding on all Member States in 2017



***“Contribute to non-discrimination, effective competition and the efficient functioning of the market” - Regulation 715/2009 EC***





## ACER Framework Guidelines

Cost Allocation Methodologies are a central tenet of the FG  
4 methodologies available

Allocates the Allowed Revenues, firstly between Entry &  
Exit...

....and then between the various Entry Points and Exit Points

The Tariffs must be based *primarily* on Capacity  
charges...strong emphasis on Capacity based charges, as the  
primary driver of the system.

# ACER Cost Allocation Methodologies

## Postage Stamp

- Historic costs
- Limited circumstances for application
- Ruled out for Ireland in CER/12/087
- Single reference price for all Entry Points & Exit Points
- No adjustments required as costs are allocated based on historic costs

## Capacity Weighted Distance Approach

- Historic costs
- Allocates costs on the capacity that is provided by that Entry Point
- Weighting factor allocates the costs
- Results in a uniform unit price per capacity unit per distance
- Introduces cost drivers such as distance and how much capacity each entry point provides
- No adjustments required

# ACER Cost Allocation Methodologies

## Virtual Point

- Reference Node chosen
- May be a physical point
- All flows from Entry are brought to this reference node
- If an Entry/Exit split is chosen then the VP is moved to determine the split
- Flow distances ( €/km) multiplied by Expansion Factor
- Adjustments required

## Matrix

- Similar to the VP as forward looking
- Rather than VP, each Entry Point is measured by reference to all Exit Zones, with one Entry tariff applying after applying least squares error.
- Flow distances multiplied by Expansion Factor
- Adjustments required
- May incorporate project based costs

# What Cost Concepts are allowed?

## **Observed costs**

- Based on observed costs of the system ( Historic)
- Or, replacing the system in a given year
- Applies to Postage Stamp & CWDA (Can also apply to Matrix)

## **Incremental costs**

- Based on standardised costs of expansion of the system-LRMC
- Incremental Costs ( cost of capacity where supply or demand triggers the need e.g. a new power station –Long Run Incremental Cost (LRIC)
- Project based costs –Long Run Average Incremental Cost ( LRAIC)

# Secondary Adjustments

## Equalisation

- Applies to a set of points, which may not be a mixture of domestic & cross-border
- CER will apply Equalisation for domestic Exit Points
- Policy decision settled in CER/12/087

## Rescaling

- Applied in certain circumstances to ensure allowed revenues are recovered
- Applied to avoid negative capacity charges
- Can either be a fixed adder or multiplier
- CER has applied Rescaling to the “pre-adjusted tariffs” to recover the revenue from Entry
- Differential is maintained between Entry Points

## Benchmarking

- Applies in limited circumstances
- Case-by-case where effective pipeline to pipeline competition exists
- CER has not applied benchmarking to the Initial Modelling results



# ENTSOG Draft Network Code

## 5<sup>th</sup> Cost Allocation Methodology

- Based on assets
- Requires identification of a homogeneous set of network users
- Allocates the value of the asset to that homogeneous group

## Composition of Allowed Revenues

- **Reserve Prices**-Capacity based-Outcome of Cost Allocation Methodology
- **Commodity**- Flow based charges
- **Complementary Revenue Recovery Charge**- Capacity or Commodity based, but must be calculated separately from the Reference Prices
- Based on current definition of *Transmission Services* which excludes regional or local services

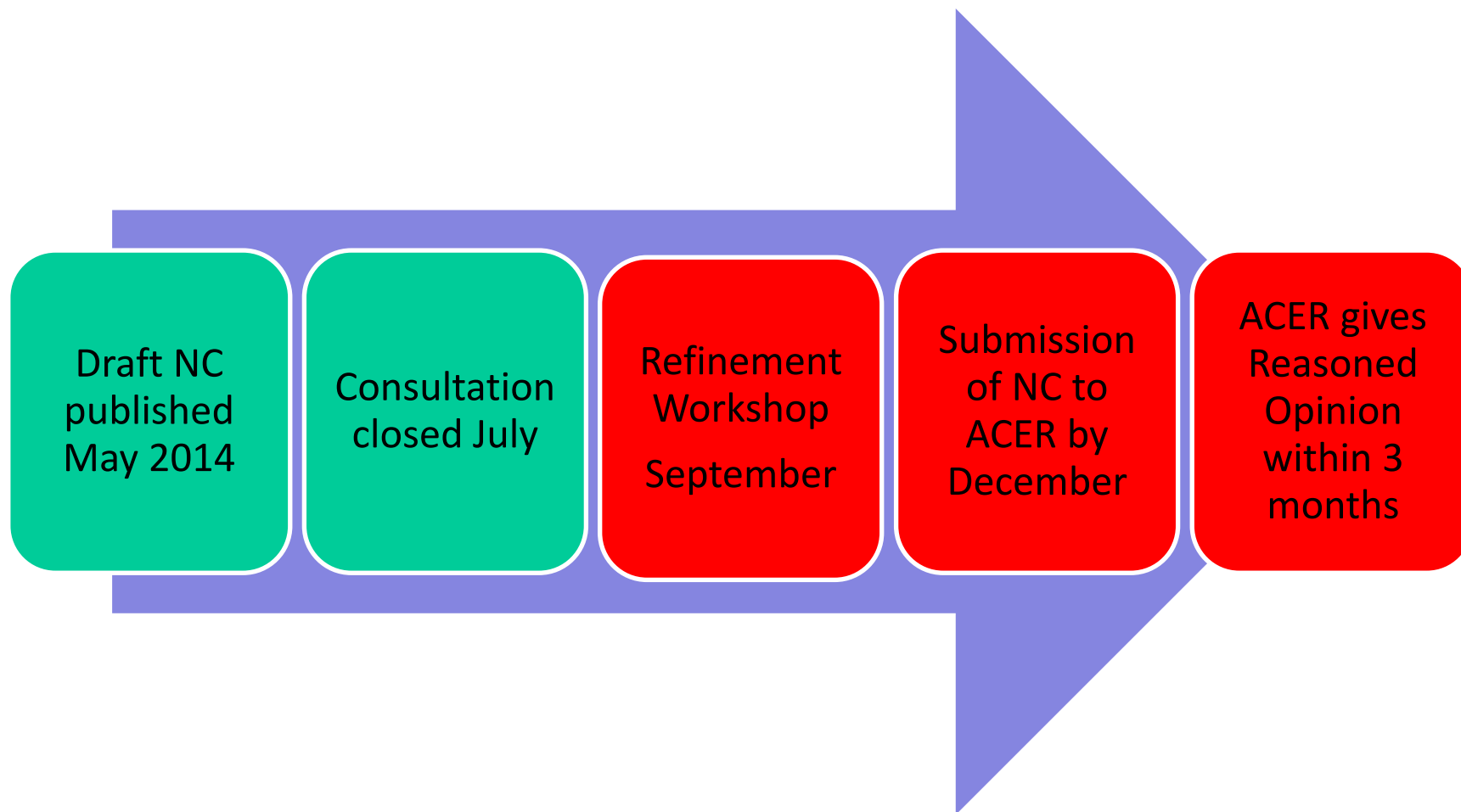
## Publication requirements

- Additional details on publication requirements (Article 24)
- Includes standardised format for publication (Article 26)

## ENTSOG Network Code

- ENTSOG consulted on Network Code
- Currently being refined by ENTSOG
- ACER have indicated their preliminary views, including the objection to the 5<sup>th</sup> Cost Allocation Methodology
- Refinement Workshop September 2014
- Stakeholder support process
- Final Draft for December 2014

# ENTSOG Network Code



# Inputs to the Cost Allocation Methodology

## Methodologies

- CWDA
- Virtual Point
- Matrix
  - Expansion Constant
  - Project based

## Fixed inputs

### Entry/ Exit Split

- 50:50
- No explicit split in current regime
- May be input or output

### Capacity/Commodity Split

- 100:0
- In line with ACER guidance on Reserve Prices
- ENTSOG NC has more details on Commodity

# Scenarios & Merit Order

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Moffat	✓	✓	✓	✓
Inch	✓	✓	✓	×
Corrib	×	✓	✓	×
SLNG	×	×	✓	✓
Exits	✓	✓	✓	✓



# Merit Order

NDP 2014 presumes Indigenous Production, then Storage, followed by Interconnectors. While LNG has not been modelled in NDP 2014, we have presumed that LNG will flow after indigenous production and Storage



# Booking Scenarios

Entry Point	All	Scenario 1		Scenario 2		Scenario 3		Scenario 4	
	Tech capacity GWh/d	Avrg. peak flows (GWh /d)	Booked capacity (GWh/d)	Average peak flows (GWh/day)	Booked capacity (GWh/d)	Average peak flows (GWh/d)	Booked capacity (GWh/d)	Average peak flows (GWh/d)	Booked capacity (GWh/d)
Moffat	342	203	159	110	58	42	42	45	45
Inch	35	35	36	35	36	16	16	-	-
Corrib	103	-	-	93	93	70	70	-	-
Shannon		-	-	-	-	109	58	193	142

# Exit Zones

- Aggregation of a number of exit points within catchment area
- Technical capacity based on AGIs
- Location based on weighted average of the exit points in the zone
- Constant exit demand assumed across Scenarios
- Exit zones are necessary for calculation of Cost Allocation Methodologies, even though....Domestic Exit tariff will continue to be postalised via the Equalisation secondary adjustment

# Expansion Constants

## How an Expansion Constant is used ( CER/14/455)

The key cost drivers for gas transmission systems are the amount of gas to be transported and the distance over which the gas is to be transported. Expansion constants are a way of expressing these key cost drivers in a single number.

Essentially the expansion constant describes the cost of the pipeline required to move one unit of gas (normally expressed in GWh) by a distance of 1km. The example below illustrates how an expansion constant can be used where the expansion constant is €20 per unit of gas per km

Distance between the points = 150km

Quantity of gas to be moved = 100 units

Cost of the pipeline = €20/km/unit \* 150km \* 100 units = €300,000

## Expansion Constants & Secondary Adjustments

- Expansion Constants may apply uniformly across system or to segments of the system
- Initial modelling reflects 2 Expansion Constants
- “Dry” Expansion Constant=€11,000
- “Wet” Expansion Constant=X3
- CER Expansion Constant reflects a blend of past projects + Benchmarking against international subsea pipelines for Wet Expansion Constant



## Secondary Adjustments

- 2 Secondary Adjustments have been applied to modelling
  - **Equalisation** for domestic Exits
  - **Rescaling** for VPA and Matrix to ensure Required Revenues are met
- “Pre-adjusted tariffs” are without rescaling applied
- CER has used a fixed-adder approach to then recover the Required Revenues from Entry
- Negative tariffs are constrained to zero. Fixed adder applies from a zero base for these Entry Points