

Proposed RAs Option for All- Island Harmonised Transmission Loss Adjustment Factors (TLAFs)

System Operator Presentations

1. Current Methodology – Pros & Cons
2. Responses to Preferred Options Paper
3. Studies into ULF and Impact on Constraints

1. Current TLA_F Methodology – Pros & Cons

(Tim Hurley)

Outline of Presentation

- Current Method – Milestones
- Current Method – Positive Aspects
- Current Method – Common Issues

Current Method - Milestones

- In place ROI (2000)
- SEM High Level Design (2005)
- Consultation period (2006-2007)
- In place SEM (2007)
- Annual consultations

Current Method - Positive Aspects

- Seeks Efficiency of Dispatch
 - Real time TLAFs most efficient
- Aims to be Cost Reflective
 - Allocates, relative to location, more/less losses

Current Method - Common Issues

- Volatility
- Predictability
- Transparency
- Ex ante (6 mths to 18 mths)
- Compatibility with large scale intermittent generation
- Based on current SEM/system design
- Iterative dispatch

2. Responses to Preferred Options Paper

(Helen Magorrian)

Introduction

- Preferred Options Paper - published Nov '09
- Overview of Responses - published Jan '10
- 20 Industry Respondents on 3 outlined approaches
 1. Compression
 2. Splitting
 3. Purchase of Losses

Compression

- Little support for compression methodology – respondents suggested approach would result in :
 - Cross subsidisation
 - Increased regulatory risk
 - Inefficient dispatch
 - Diluted locational signal

Compression

- Generators beside large demand centres with TLAF >0.98 were particularly anti compression
- Generators with TLAF <0.98 were broadly supportive of any change from existing approach which could be demonstrated to provide real value added benefits.
- Wind Farms were generally pro uniform loss factor

Splitting

- Generally respondents expressed interest in this approach but requested greater detail on how this would be implemented
- Concerns around the impact such changes would have on key mechanisms such as constraints, error supply unit, SMP etc.
- Some respondents suggested that the proposal was not consistent with the principles of SEM

Purchase of Losses

- Generally respondents were in favour of this option & suggested the focus should be on moving to this as an enduring solution rather than having a 3 step strategy of:
 1. Compression – Short Term Solution
 2. Splitting – Medium Term Solution
 3. Purchase of losses – Long Term Solution
- Respondents felt the timeline for implementation was too long

Summary

- SOs provided responses to RAs
- Relatively little support for Compression as a Short Term Option
- RAs published 'Proposed Decision' on 18th June 2010 that losses be treated on a Uniform Basis

3. Studies into Calculation of Uniform Loss Factor and Impact on Constraints Costs

(Louise Carolan)

Presentation Outline

Following on from 'Proposed Decision' paper, RAs requested that the SOs examine:

- Average System Losses
 - SOs ran a number of Studies to Investigate Forecast System Losses for 2010/11
- Impact of a ULF on Constraints Costs
 - SOs examined the impacts on the Constraints Costs when a ULF was used in place of a TLAF

Studies into Average System Losses

Studies into Average System Losses

1. PSSE Losses LookUp Table
2. Plexos Generation Forecast run through PSSE
AC Load Flow
 - Load Loss Factor Methodology used for Validation

1. PSSE Losses Look-up Table

- No. of PSSE Study Cases at different demand levels – look up table
- Forecast demand estimates generation for study period
- Losses related to generation levels

2. Plexos Forecast Generation & AC Load Flow

- Constraints Forecast Model run through Plexos
 - Forecast of generation for the year (8,760 cases)
- 8,760 Cases run through AC Load Flow
- Output Losses for every Period
- Average Losses as % of Sent Out Units

Load Loss Factor - Validation

- Load Loss Factor (LLF) calculated based on total load and peak load:
 - $LLF = (LF)k + (LF)^2(1-k)$
- LLF used to validate calculated approximate annual losses

Results

- *Studies yielding approximately 2.0% Average*

System Losses

Considerations

- Offset between PSSE Losses and Actual Losses
– voltage profiles
- Assumptions for the Constraints Forecast Model based on a Locational Loss Factor Methodology

Studies into Effects of ULF on Constraints Forecast

Constraints Costs

- No systematic reason for impact on Constraints Forecast
- Constraints Forecast may increase or decrease depending on circumstances at a point in time
- Impact on Constraints Forecast inherently bounded by the Loss Factor Differentials

Study

- Using SO models used for the Constraints Forecast Analysis, replaced TLAF with Uniform Loss Factor
- SO model assumptions based on a Locational Loss Factor Methodology
- No increase in demand modelled

Results

- **Indicative Studies for 2010/2011**
 - Forecasting small increase in Constraints Costs
 - No systematic reason for increase

Thank You