Ops Forum - Linepack Overview

Predicted Closing Linepack Funnel

0600 PCLP v CLP	2000/01	2007/08	2012/13	2013/14 YTD
Average Heavy	6.90	11.63 ⬇	16.85 ⬇	12.70 ⬆
Average Light	-5.82	-8.61 ⬇	-11.02 ⬇	-12.10 ➡

1800 PCLP v CLP	2000/01	2007/08	2012/13	2013/14 YTD
Average Heavy	4.35	3.76 ➡	6.82 ⬇	4.28 ⬆
Average Light	-3.60	-3.13 ➡	-4.31 ➡	-5.76 ⬇

1200 PCLP v CLP	2000/01	2007/08	2012/13	2013/14 YTD
Average Heavy	4.95	6.83 ⬇	10.76 ⬇	7.82 ⬆
Average Light	-5.02	-5.35 ➡	-7.78 ⬇	-8.20 ➡

2400 PCLP v CLP	2000/01	2007/08	2012/13	2013/14 YTD
Average Heavy	1.46	1.84 ➡	3.84 ⬇	1.83 ⬆
Average Light	-1.29	-1.56 ➡	-2.05 ➡	-2.00 ➡

PCLP Funnel

Linepack Swing

Comparison of Swing of NTS Linepack (mcm)
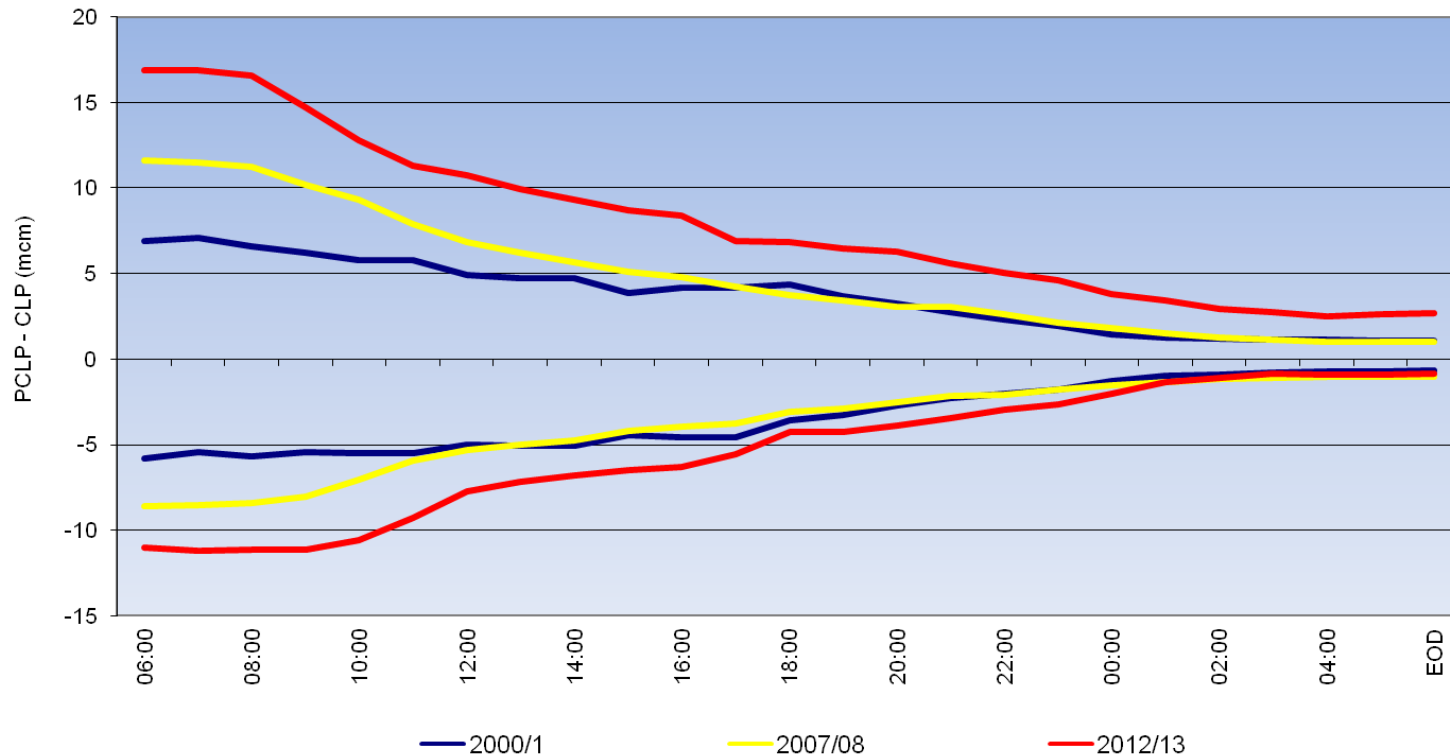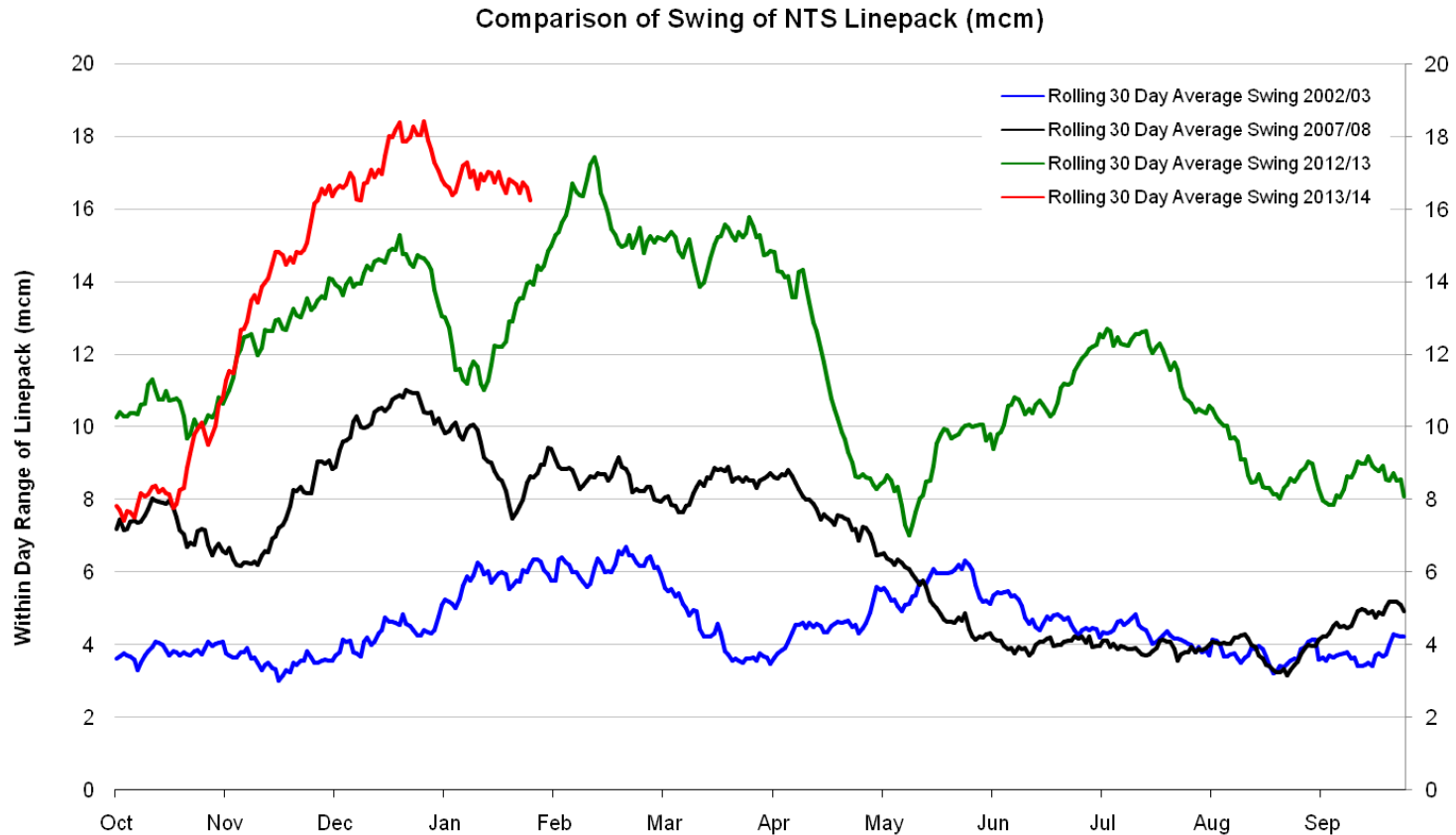
	2002/03	2007/08	2012/13	2013/14	Oct 2013	Nov 2013	Dec 2013	Jan 2014
Max Range	20.52	19.51	31.77	30.81	22.03	30.81	28.93	27.99
Min Range	0.92	1.06	2.47	2.51	2.51	9.01	10.03	11.08
Average Range	6.58	8.19	13.42	16.73	12.02	18.14	18.39	18.75
Max Swing	18.92	18.73	29.86	27.35	20.53	25.65	27.19	27.35
Min Swing	0.00	0.00	0.01	0.00	0.00	6.23	6.47	9.56
Average Swing	4.58	6.61	11.76	15.35	10.61	16.63	16.99	17.55

Time of Day Linepack Swing

nationalgrid

Time of Minimum Actual Linepack

Supply Shocks

nationalgrid

Risks

national**grid**
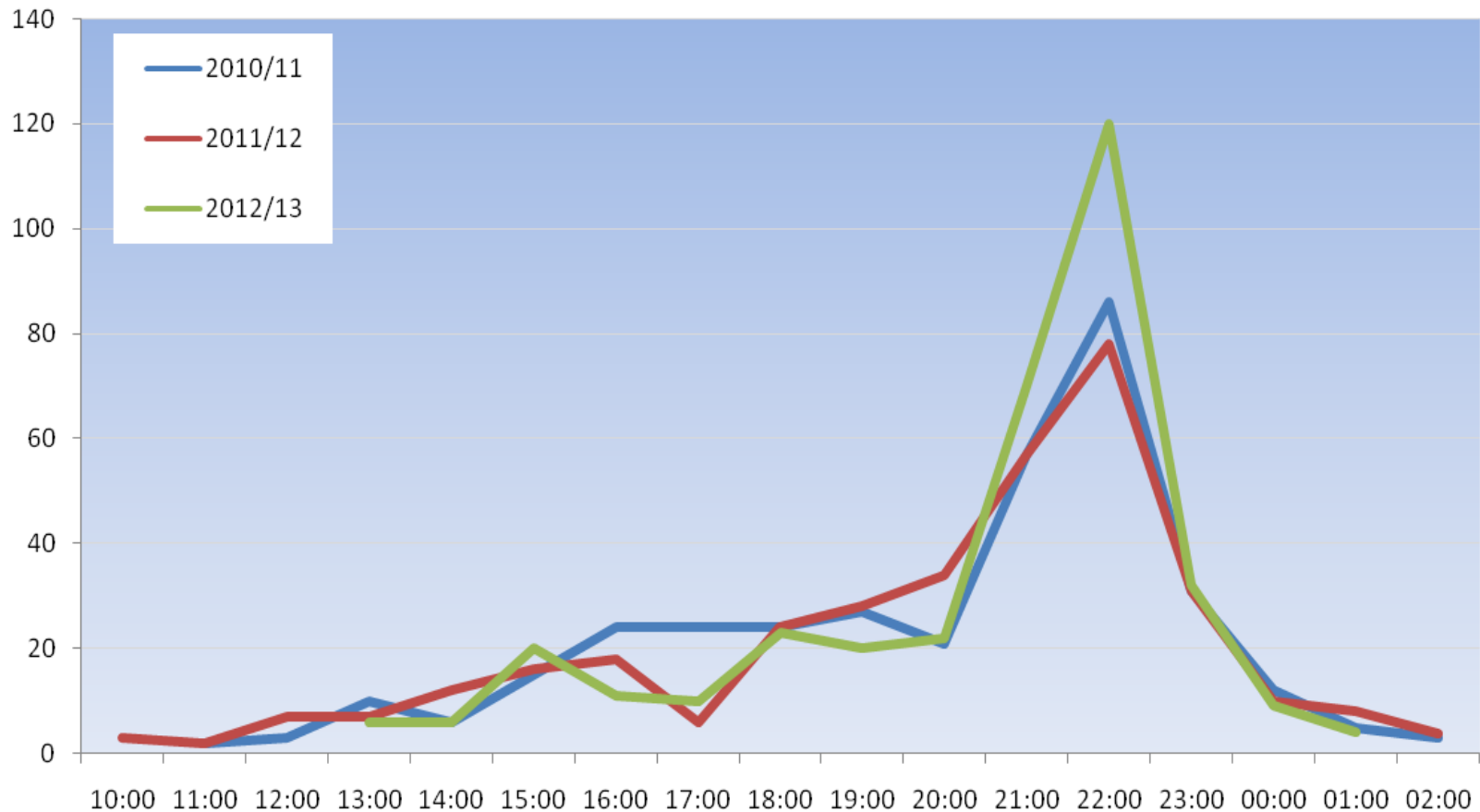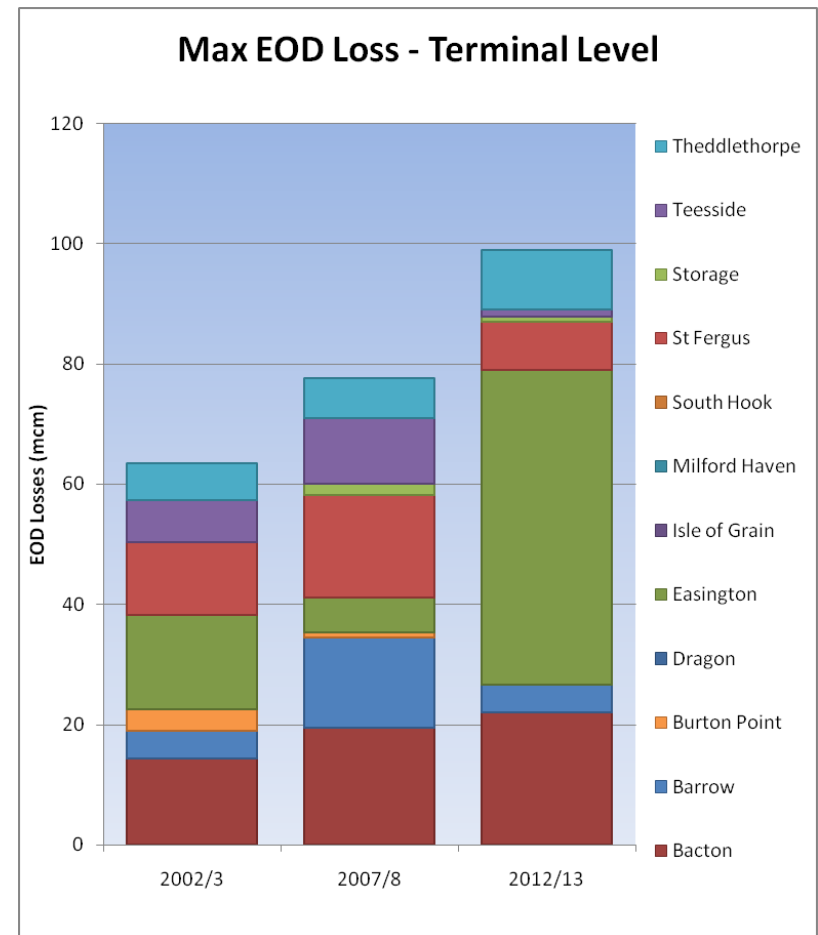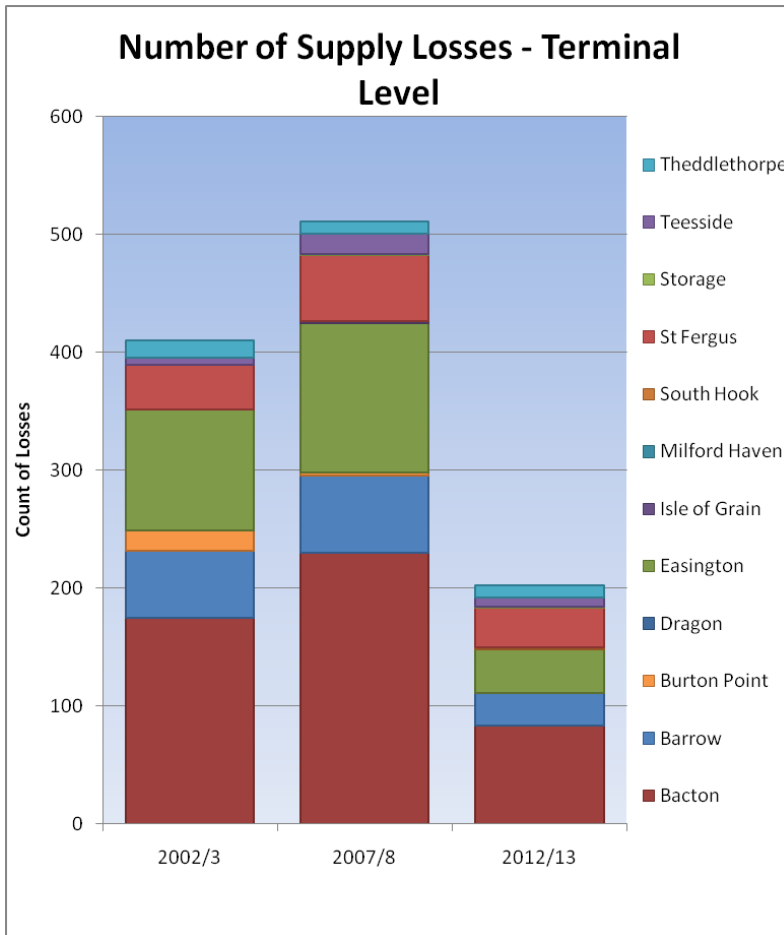
Increased levels of linepack swing occurring late in the gas day leaves the NTS at a greater risk from high volume supply shocks

These may lead to an increase in System Management actions and impact the ability to meet end of day requirements

Options:

1. Proactively manage Linepack Swing by working collaboratively with Customers

2. Increase in Constraint Management and Balancing Actions

Impact of Supply Shock on Linepack

Potential supply shock impact on Actual Linepack
Gas Day: 27th Dec 2013

Supply Shock

344

328

317

300

Actual LP Swing = 27mcm

345

Increased levels of linepack swing late in the day due to a supply loss poses a significant supply risk

System Management Principle Statement Actions (SMPS) may incur costs to Shippers and include:

Step 1
• Residual Balancing
• Exit Capacity (Scale-back, Surrender)
• Locational Actions
• Operating Margin Contracts

Step 2
• Emergency Management

□ Opening LP   — Actual LP   - - - Langeled Supply Shock Impact