Update on NTS Demand Forecast

DSWG – 23 April 2007

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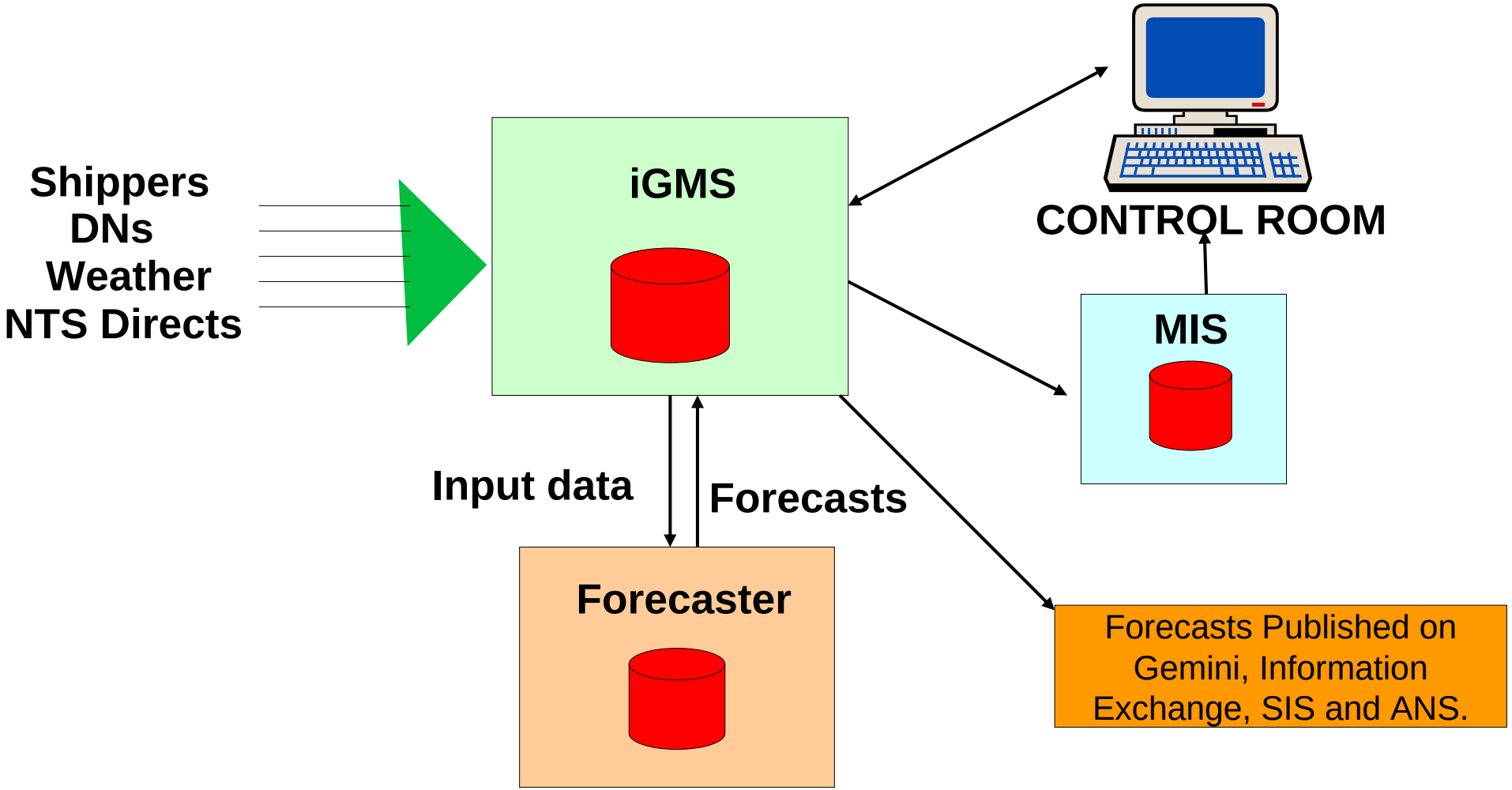
Agenda

- Introduction
- Demand Forecast - Overview
- New Forecasting Process Introduced
- Forecast Performance
- Discussions on Provision of Additional Information to the Market
- Conclusions

Introduction

- At DSWG in August 2006,we presented
  - an overview of NG demand forecasting process
  - key information used in the forecast
  - a description of models used
- Objective of this presentation
  - Update on the new process introduced
  - Demand forecast performance
  - Discussion on provision of additional background information to help market understand our forecasts
    - Forecast methodology statement
    - Demand side response

NTS Demand Forecast Process



Overview of Models and Key Inputs

- LDZ Demand, forecast by each LDZ
  - Weather forecast
    - Temperature, wind speed
  - Historical demand, within day forecast
  - Holiday factors
  - 10 different forecast algorithms/models
- NTS directly connected loads
  - Bottom-up approach – forecast by each offtake
  - Key input
    - Historical demand
    - Weather, holiday factors
  - One of 3 models
    - Use OPN, Profile, or Regression
- Total forecast NTS demand is the sum of its components

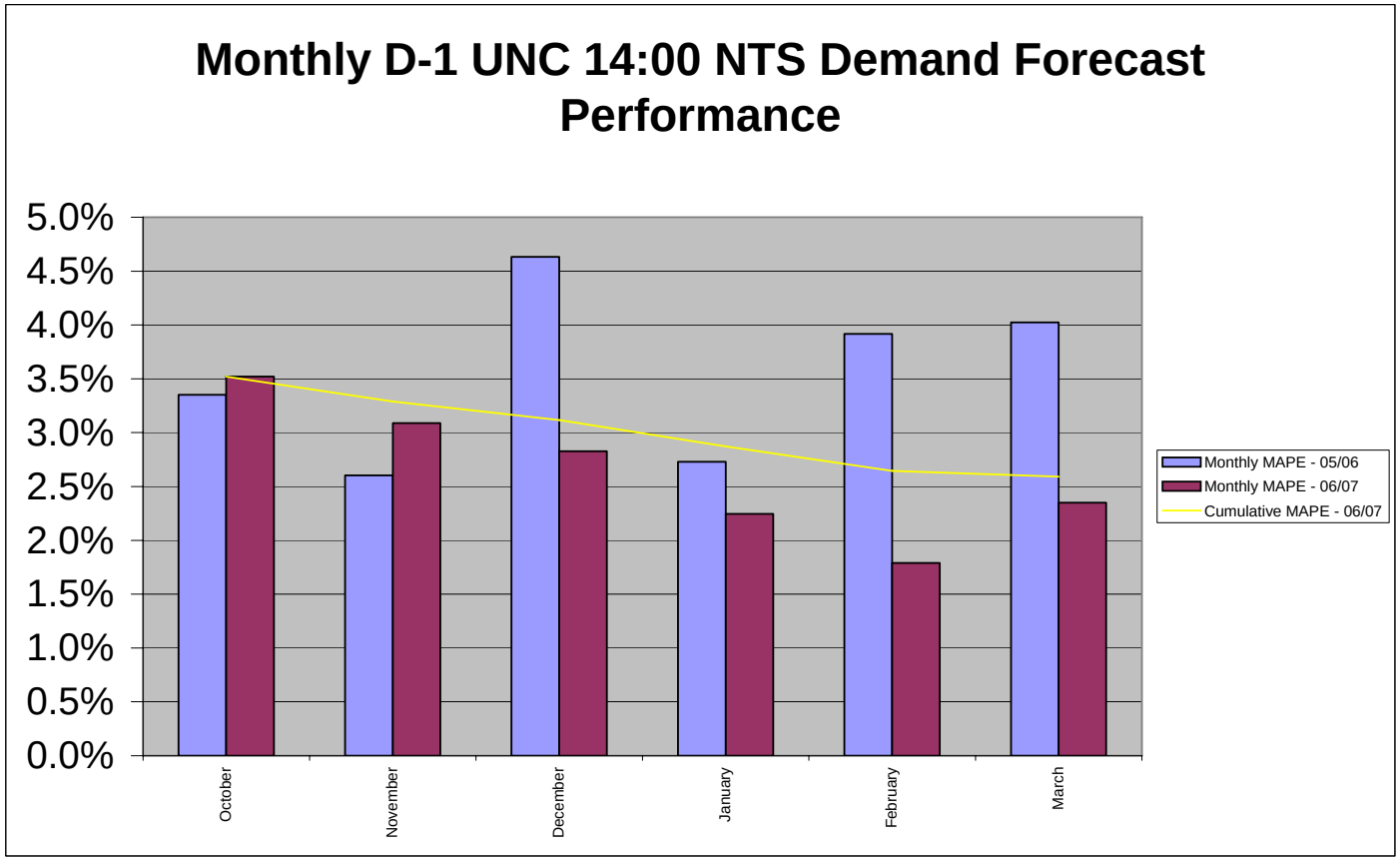
New Forecasting Processes Introduced From October 2006

- On 1 October 2006, a demand forecast incentive was placed on NGG to produce as accurate a forecast as possible for UNC D-1 14:00 NTS demand
- Due to short time scales and long lead time in model development, it was not possible for us to introduce new models for this winter
- We invested in and introduced new forecasting processes
  - Enhanced forecasting support function
  - Control room training
  - Risk management framework
  - Provision of additional information to Control Room
  - Detailed performance monitoring
- Development and implementation of UNC Mod 100/123
- Identified a program of model development and enhancements

Revised Forecasting Process

- Objective
  - Enhancement to the existing models
  - Feed back emerging trend into the forecast
  - Manage “tight” days/period
  - Develop and promote best practice
- Weather
  - Trend between model output and change in weather forecast
  - Information not in models, e.g cloud cover, precipitation
- Prices
  - Not used by models
  - Gas prices in the UK and Zeebrugge
    - Impact on IUK flows, especially whether it would flip over
  - Spark spread, dark spread
    - Power station demand
  - Storage injection
- Weekend/week day effects, holidays, Christmas/new year, shoulder months
- Manage cold snaps

Demand Forecast Performance – Winter 06/07



- Good performance achieved in winter 06/07
- Key factors:
  - NGG initiatives
  - Focussed approach
  - New process
  - Close monitoring
- Key external factors
  - Gas price was low and less volatile, 70% less volatile
  - Warmest winter on record, 1 in 79 warm
- Demand forecast is and will always be inherently uncertain
  - Weather
  - Prices
  - Demand response to within day price movement and other changes

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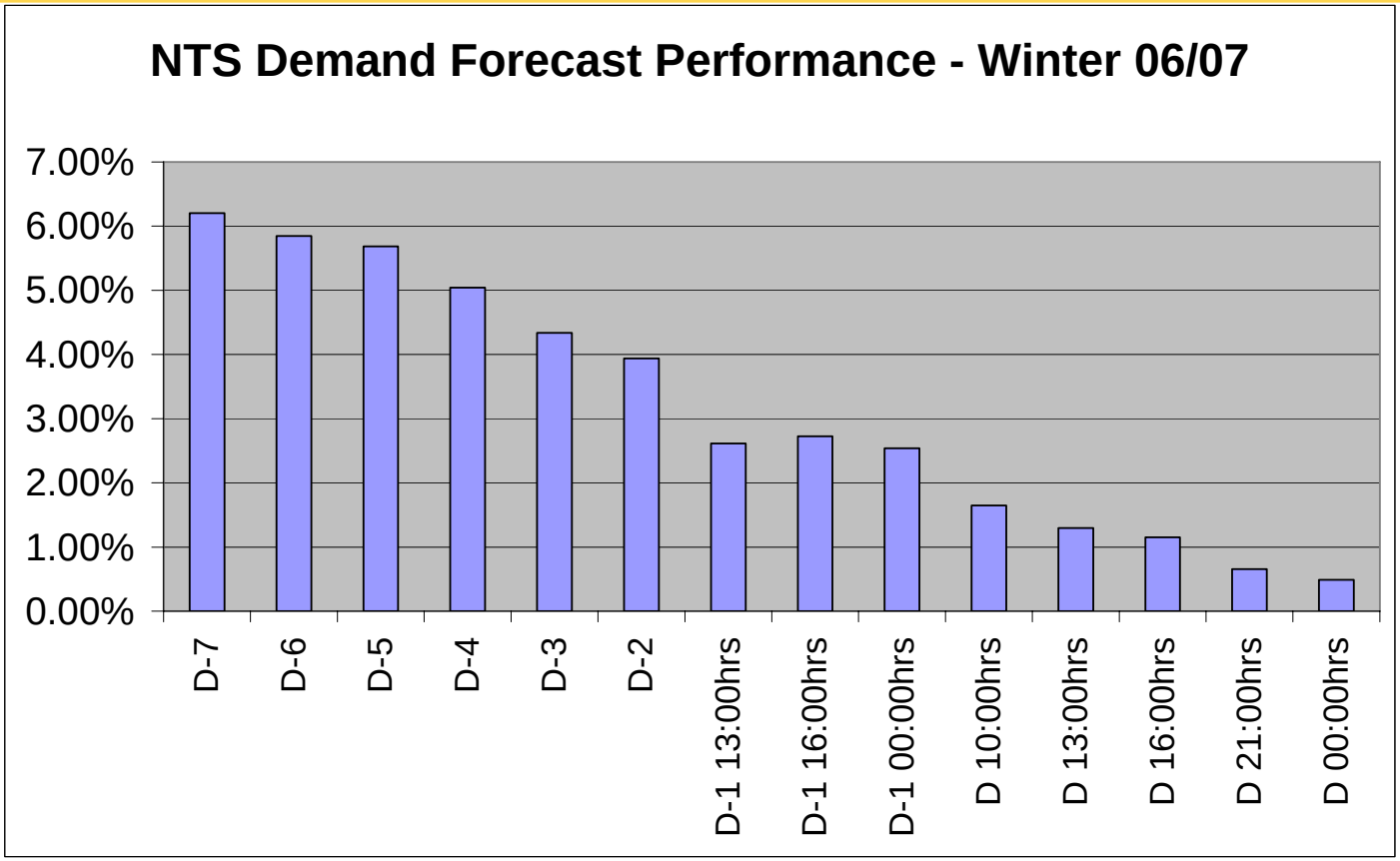
All Published Demand Forecast Performance – Winter 06/07



- Average error across all timescales is about 3%
- In comparison, the shipper end of day imbalance is 1.5%

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Treatment of Demand Side Response In the Forecast

- No demand side response is explicitly included in the forecast because
  - We do not forecast gas prices
  - The circular relationship between demand side response and price means that the inclusion of demand side response may result in a lower price which in turn may not trigger the level of estimated response
  - Relationship between demand side response and prices is complex and difficult, if not impossible, to determine
- Any underlying trend in demand changes in response to price movement is implicitly included models in the forecast as models are trained every week

Publication of Additional Information Relating to Demand Forecast

- NGG publishes a statement on how medium to long term demand forecast is produced on its website
- A similar statement on the methodology used to forecast short term NTS demand could be published including general description of
  - Forecasting process
  - Key inputs
  - Models used
- However it should be recognised that the forecasting process, especially forecast models, is subject to change from time to time as NGG seeks to achieve continuous improvement on demand forecast performance