# Information Technology and Facilities Report

**Jerry Dreyer**

**Vice President & CIO**

**Board of Directors Meeting**

**September 20, 2011**

# Highlights

**Service Availability:**

- ✓ Market Operations IT systems met all SLA targets
- ✓ Market Data Transparency IT systems met all SLA targets
- ✓ Retail Market IT systems met all SLA targets
- ✗ Nodal Market IT Systems missed one SLA target (MMS SCED)

**4 Unplanned Outages: (8 missed SCED intervals)**

- Storage Area Network (SAN) communication failure (8/2)
    - Caused one missed SCED interval  (problem has not repeated)
    - Vendor and ERCOT staff are evaluating root cause of the failure (suspect SAN fabric issue)
- Erroneous megawatt telemetry  (8/12)
    - Caused two missed SCED intervals (solution failed)
    - Caused  LFC program to fail intermittently during a nine minute period
    - Immediate repair: Data fix was applied,
    - Mid-term repair: erroneous telemetry was corrected
    - Long-term: permanent fix (check for erroneous data) is being developed by the vendor and ERCOT
- Operating System (OS) bug and related high memory utilization  (8/13)
    - Caused four missed SCED intervals over 70 minute interval
    - Immediate repair - additional memory was added
    - Long-term: The infrastructure in the new Data Centers have updated software without this bug.
- Communication network experienced a slowdown between two servers
    - Caused one missed SCED interval (8/17)
    - Configuration changes have been made and the problem has not reoccurred
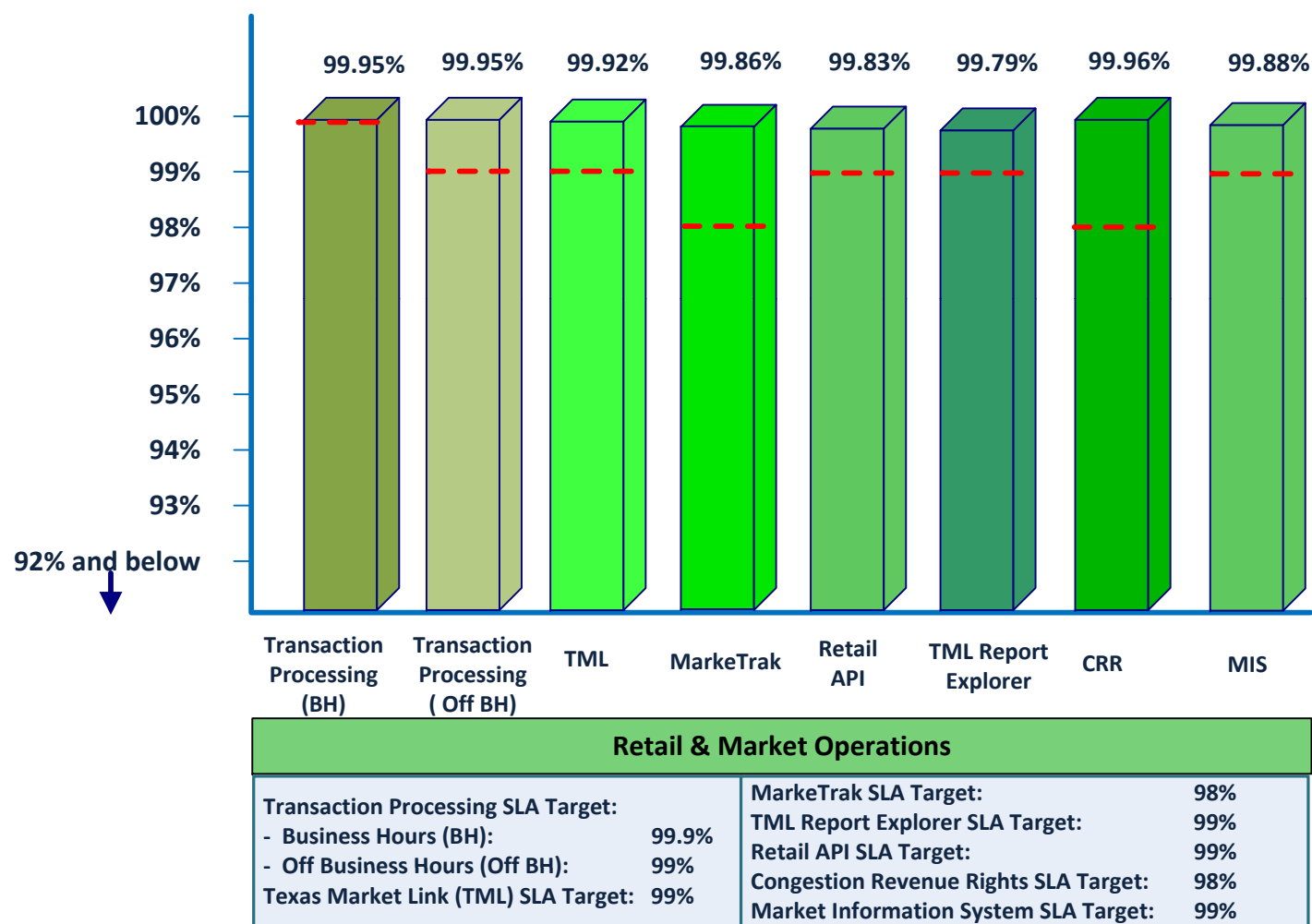
# Highlights

**1 Planned Outage:**

- **Adjust performance to address the increase in dashboard volume (8/10)**
    - Market Information System (MIS) started having error s with the dashboards on ERCOT.com
    - Increased process limit from 800 to 1000
    - Components of MIS affected for up to 30 minutes from 10:30pm until 11:00pm

**1 Facilities item of note – Passive Data Center lost one of two power feeds (9/5)**
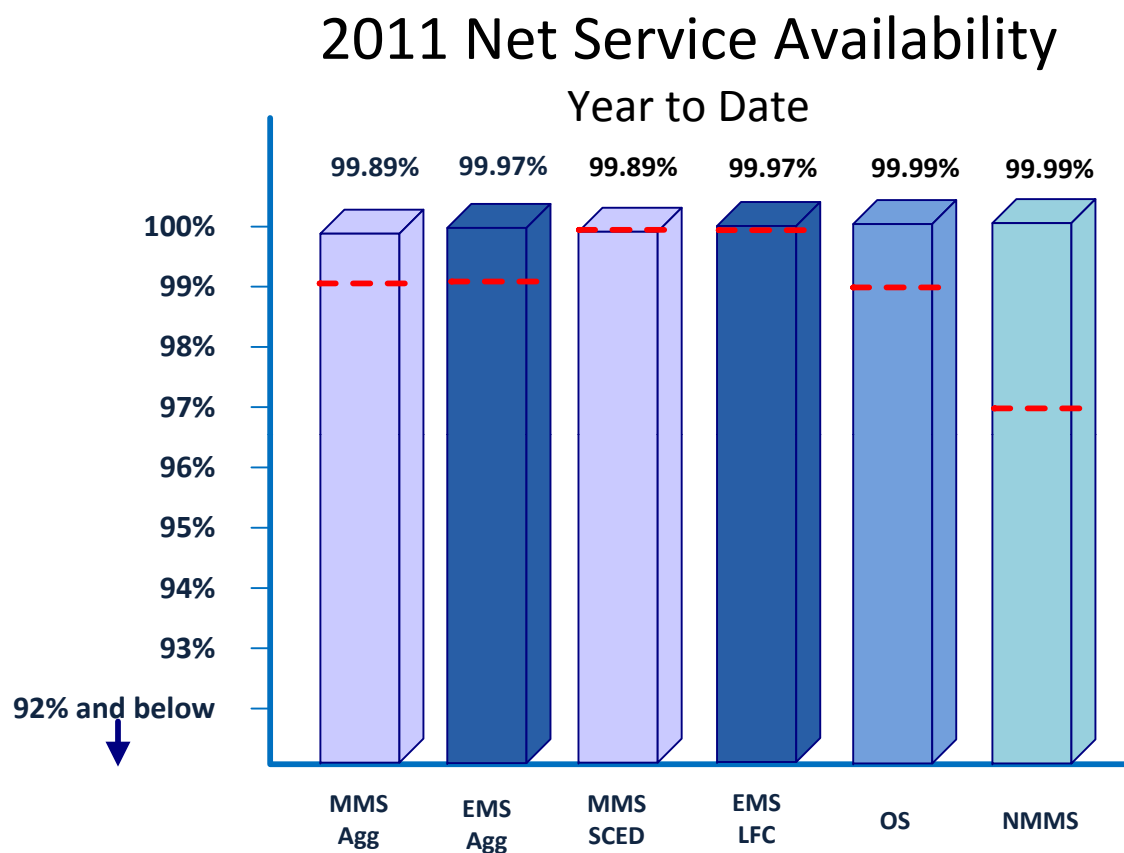- Bastrop site experienced a 78-minute outage of one power feed
- The root cause was wild fires in the area
- Utility provider shut down a feed at the request of the Sheriff's Department and Fire Department
- Utility restored service as soon as they were given the release

# 2011 Net Service Availability (Retail and Market Ops)
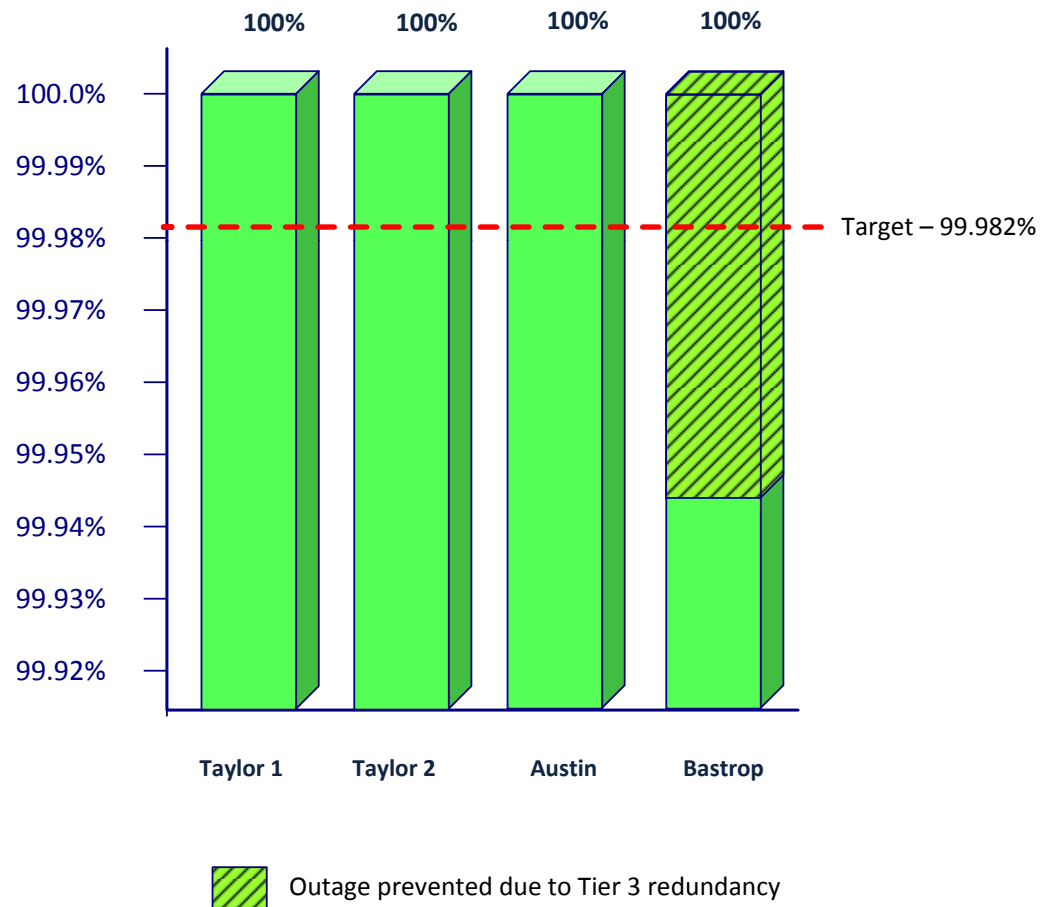
## 2011 Net Service Availability
### Year to Date



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 99.95% | 99.95% | 99.92% | 99.86% | 99.83% | 99.79% | 99.96% | 99.88% |

Transaction Processing (BH) · Transaction Processing ( Off BH) · TML · MarkeTrak · Retail API · TML Report Explorer · CRR · MIS

### Retail & Market Operations

| Transaction Processing SLA Target: | | MarkeTrak SLA Target: | 98% |
|---|---|---|---|
| - Business Hours (BH): | 99.9% | TML Report Explorer SLA Target: | 99% |
| - Off Business Hours (Off BH): | 99% | Retail API SLA Target: | 99% |
| Texas Market Link (TML) SLA Target: | 99% | Congestion Revenue Rights SLA Target: | 98% |
| | | Market Information System SLA Target: | 99% |

# 2011 Net Service Availability (Grid Ops)

## 2011 Net Service Availability
### Year to Date



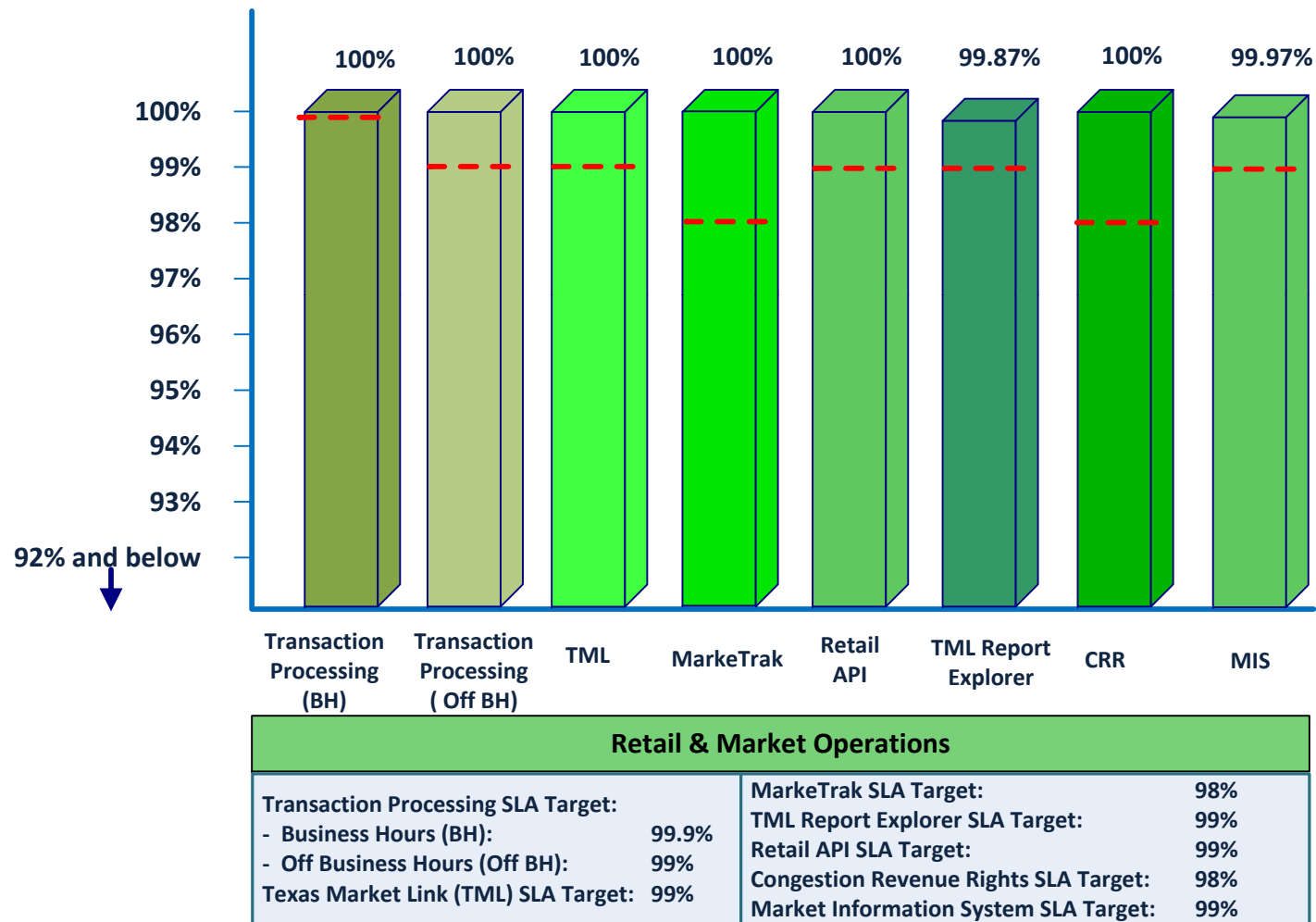| Grid Operations | | |
|---|---|---|
| MMS Aggregate SLA Target: 99% | EMS LFC Target: | 99.93% |
| EMS Aggregate SLA Target: 99% | Outage Scheduler Target: | 99% |
| MMS SCED SLA Target: 99.93% | NMMS Target: | 97% |

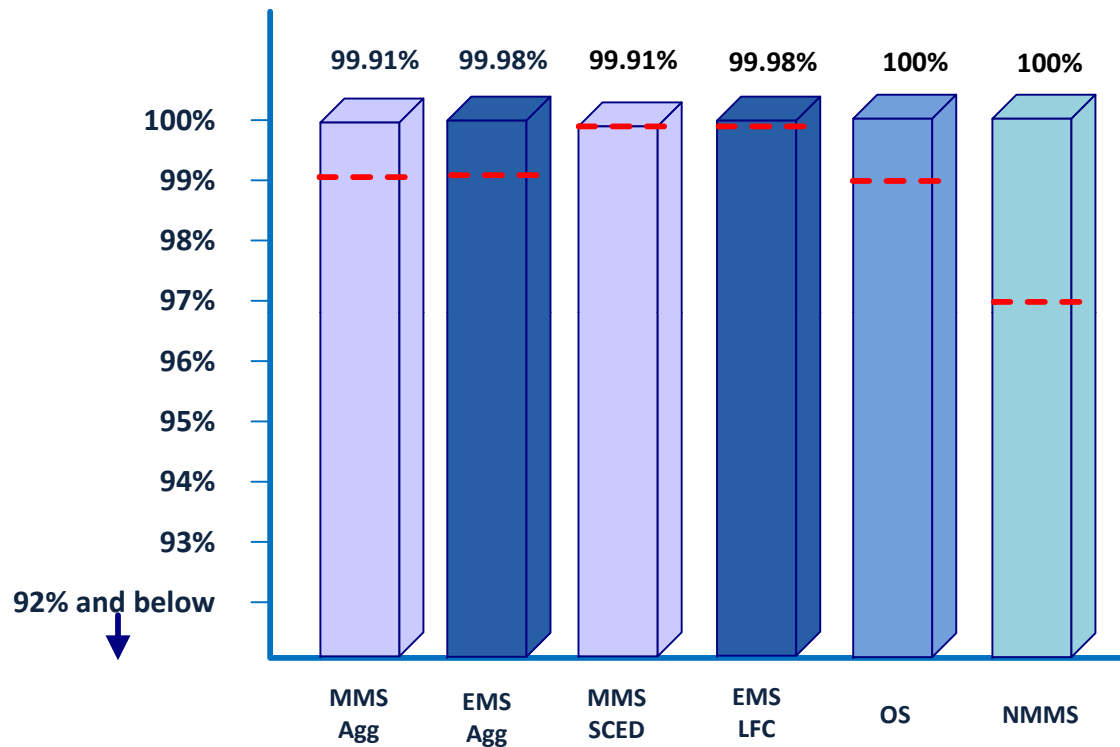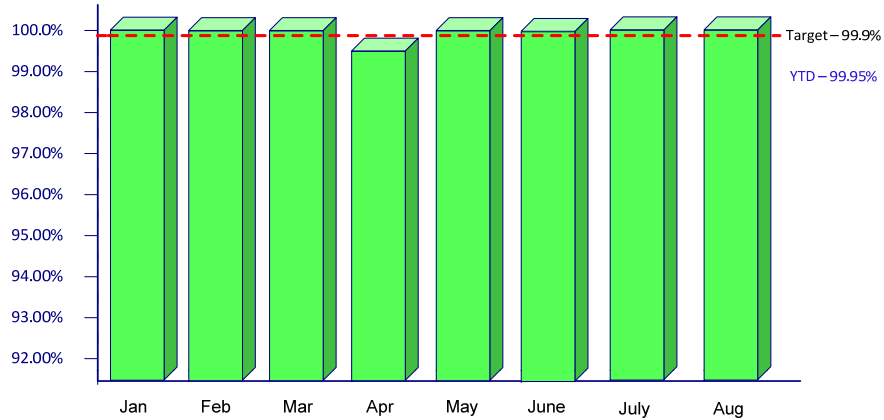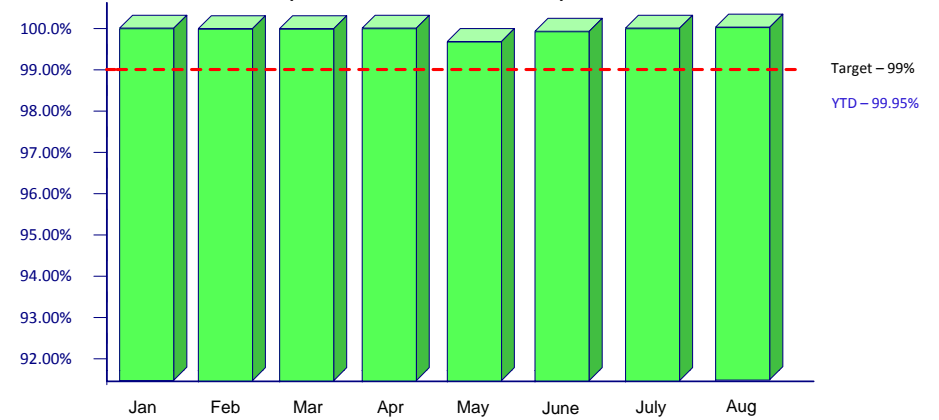# 2011 Data Center Availability

## 2011 Data Center Availability
### Year to Date



100%        100%        100%        100%

Target – 99.982%

Outage prevented due to Tier 3 redundancy

# August 2011 Net Service Availability

## August 2011 Net Service Availability



| | 100% | 100% | 100% | 100% | 100% | 99.87% | 100% | 99.97% |
|---|---|---|---|---|---|---|---|---|

Bars: Transaction Processing (BH), Transaction Processing (Off BH), TML, MarkeTrak, Retail API, TML Report Explorer, CRR, MIS

Y-axis: 100%, 99%, 98%, 97%, 96%, 95%, 94%, 93%, 92% and below

### Retail & Market Operations

| Transaction Processing SLA Target: | | MarkeTrak SLA Target: | 98% |
|---|---|---|---|
| - Business Hours (BH): | 99.9% | TML Report Explorer SLA Target: | 99% |
| - Off Business Hours (Off BH): | 99% | Retail API SLA Target: | 99% |
| Texas Market Link (TML) SLA Target: | 99% | Congestion Revenue Rights SLA Target: | 98% |
| | | Market Information System SLA Target: | 99% |

# August 2011 Net Service Availability

## August 2011 Net Service Availability



| Grid Operations | | |
|---|---|---|
| MMS Aggregate SLA Target: 99% | EMS LFC Target: | 99.93% |
| EMS Aggregate SLA Target: 99% | Outage Scheduler Target: | 99% |
| MMS SCED SLA Target: 99.93% | NMMS Target: | 97% |

# August 2011 Data Center Power Availability

## August 2011 Data Center Availability



Target – 99.982%

Legend: Outage prevented due to Tier 3 redundancy
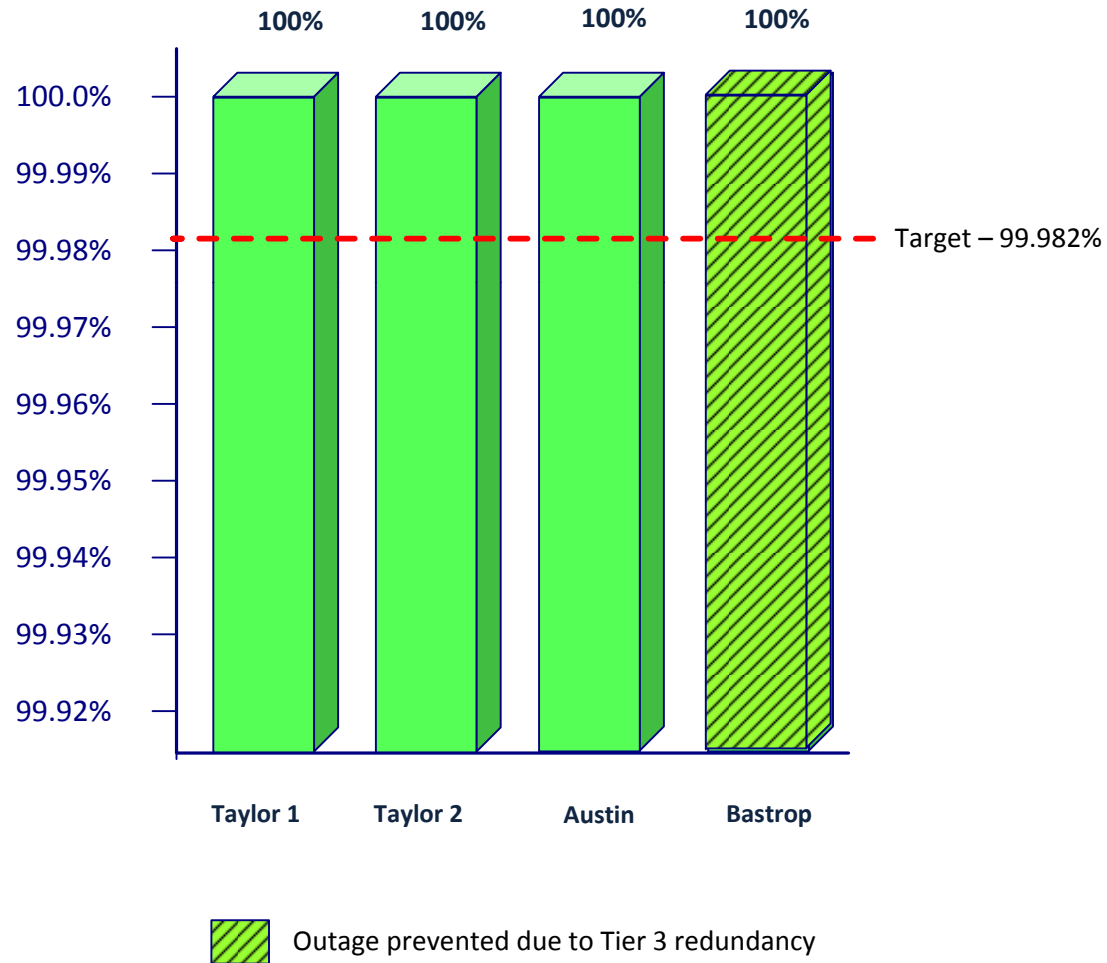
# YTD Availability – Retail Market IT Services



Retail Transaction Processing (Business Hours) — Target – 99.9%, YTD – 99.95%

Retail Transaction Processing (Off Business Hours) — Target – 99%, YTD – 99.95%

Texas Market Link — Target – 99%, YTD – 99.92%

MarkeTrak — Target – 98%, YTD – 99.86%
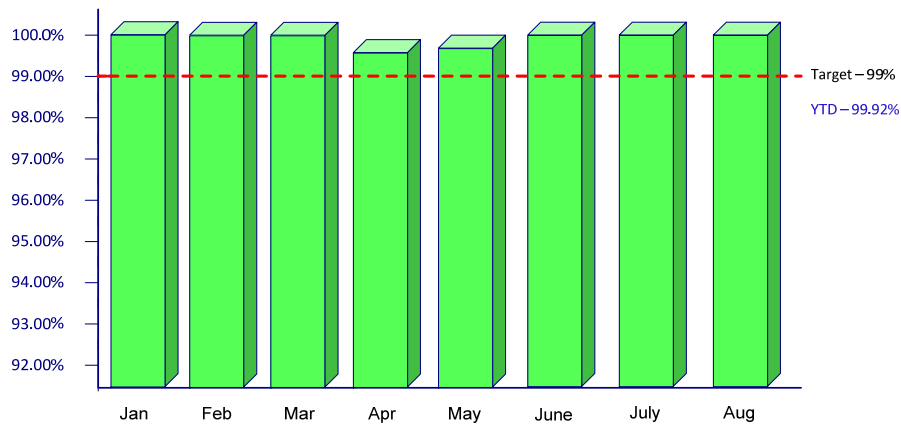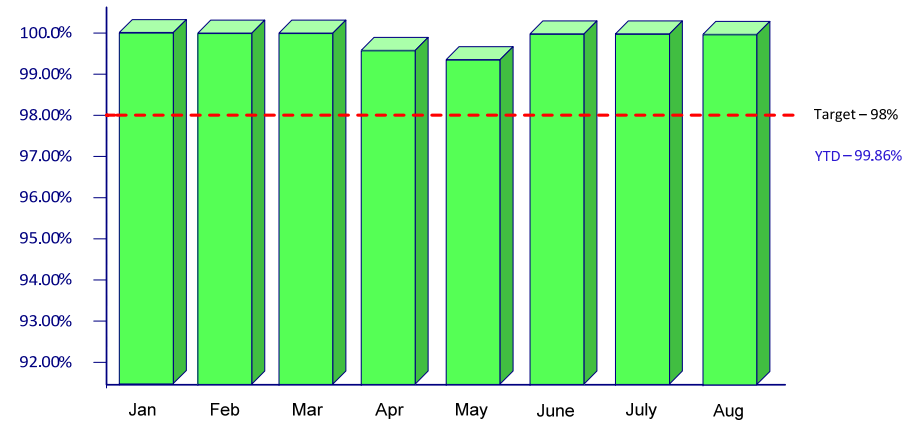
# YTD Availability – Market Operations



Retail API chart — Target – 99%, YTD – 99.83%
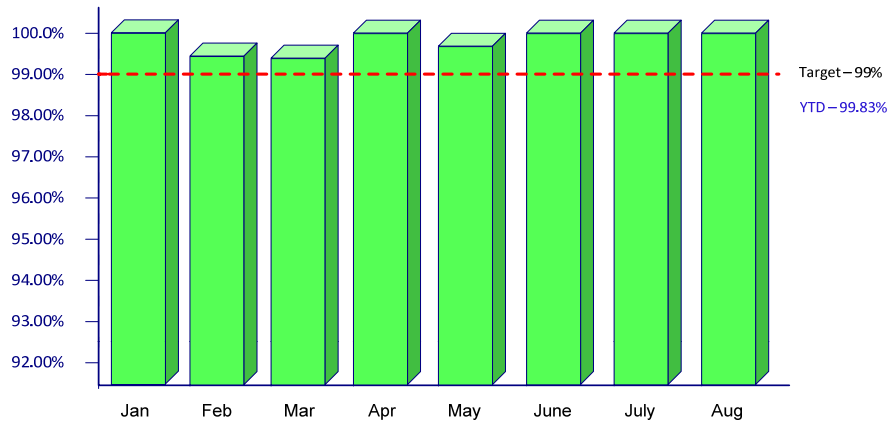


TML Report Explorer chart — Target – 99%, YTD – 99.79%



Market Information System chart — Target – 99%, YTD – 99.88%



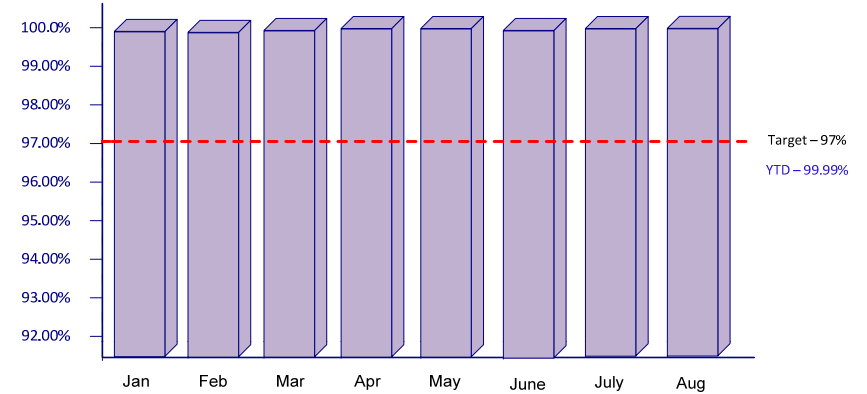Congestion Revenue Rights chart — Target – 98%, YTD – 99.96%
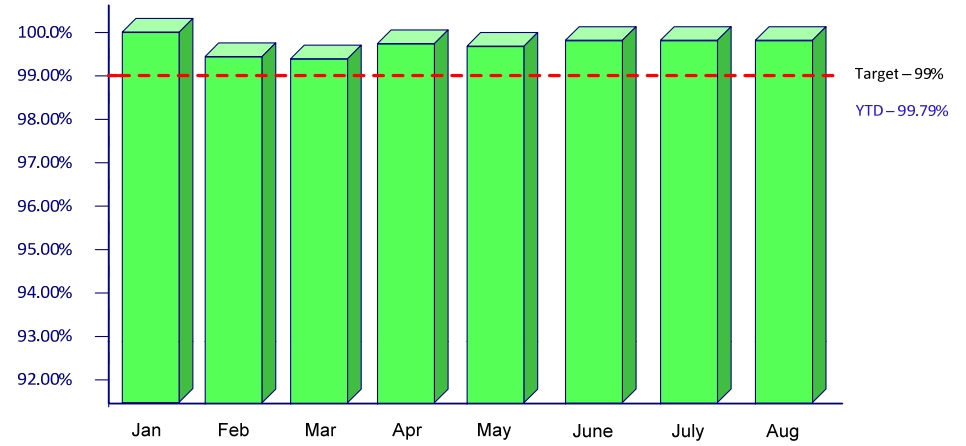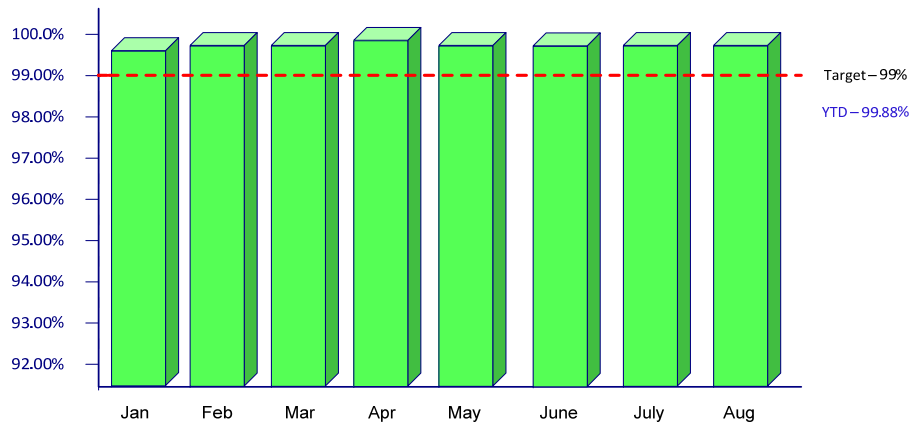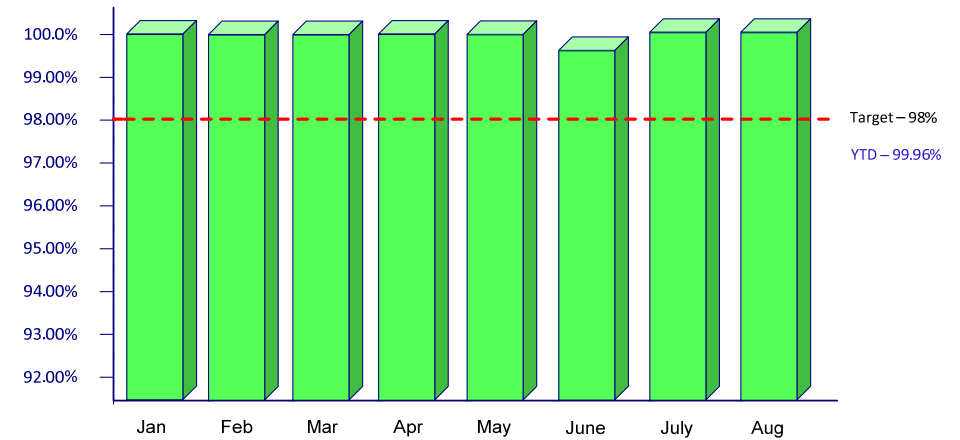
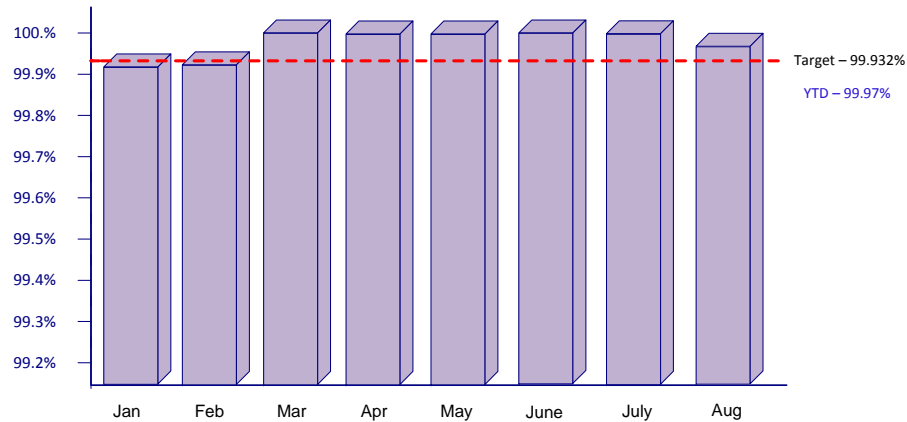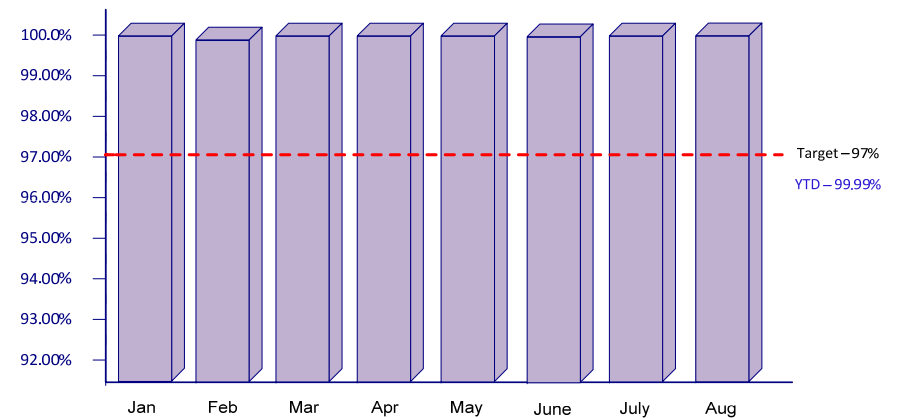# YTD Availability – Grid Operations IT Services
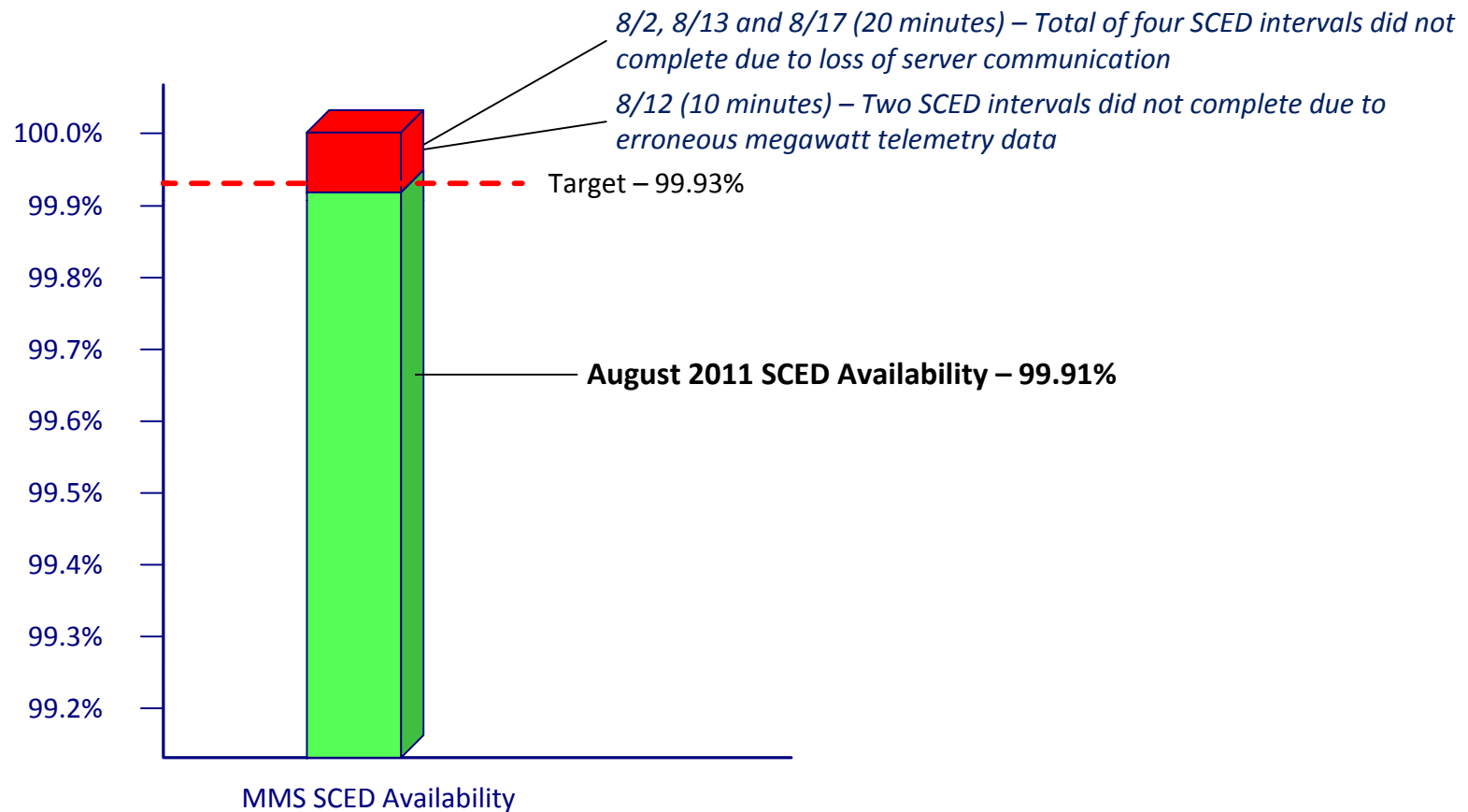


SCED
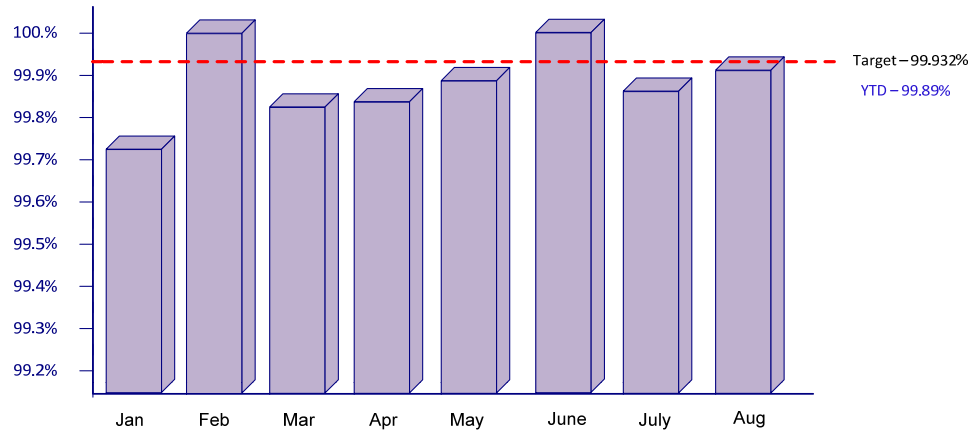


Network Model Management System
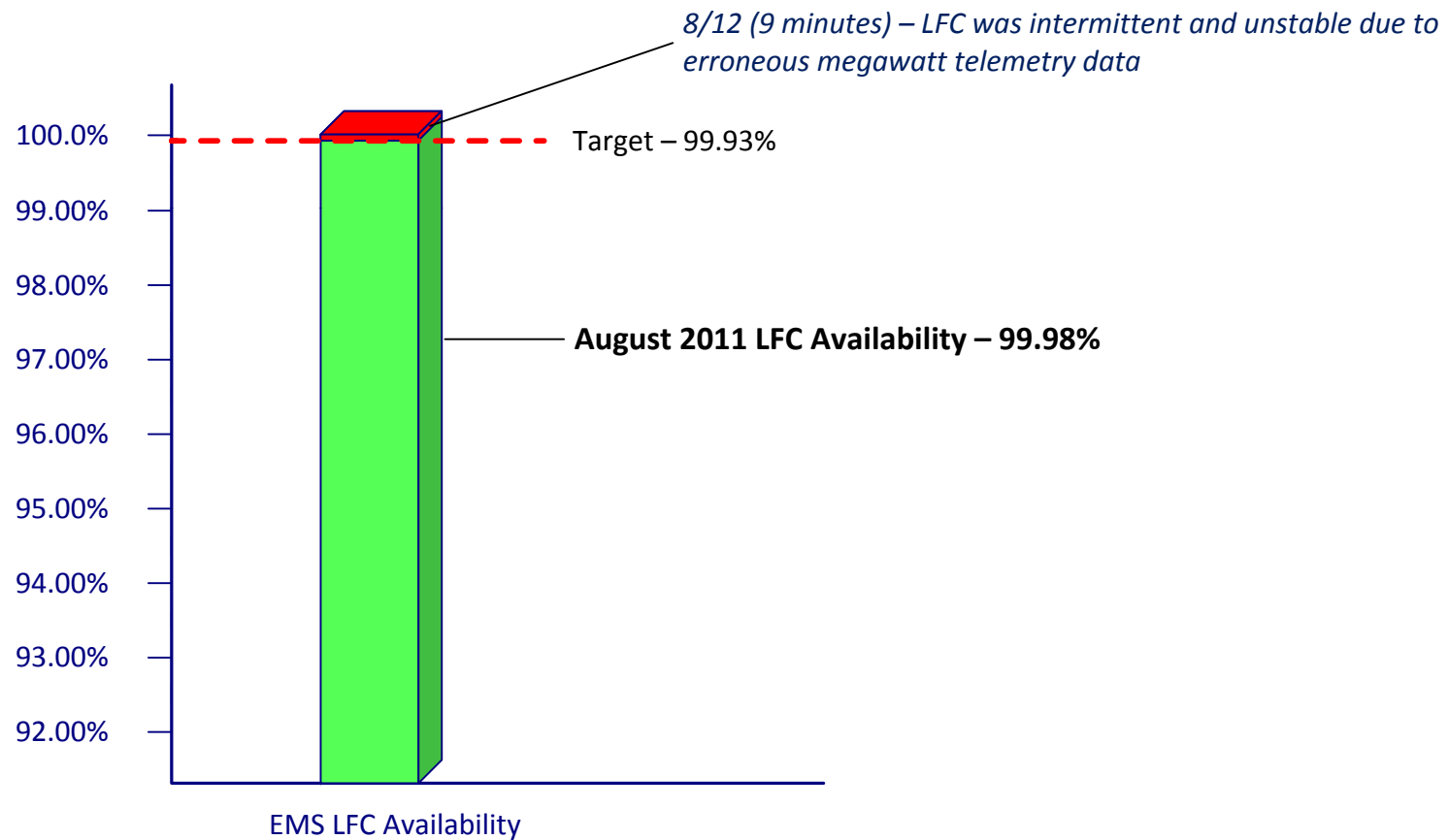


LFC



Outage Scheduler

# SCED Availability

## August 2011 MMS SCED Availability Summary



*8/2, 8/13 and 8/17 (20 minutes) – Total of four SCED intervals did not complete due to loss of server communication*

*8/12 (10 minutes) – Two SCED intervals did not complete due to erroneous megawatt telemetry data*

Target – 99.93%

**August 2011 SCED Availability – 99.91%**

MMS SCED Availability

# Load Frequency Control Availability

## August 2011 EMS LFC Availability Summary



*8/12 (9 minutes) – LFC was intermittent and unstable due to erroneous megawatt telemetry data*
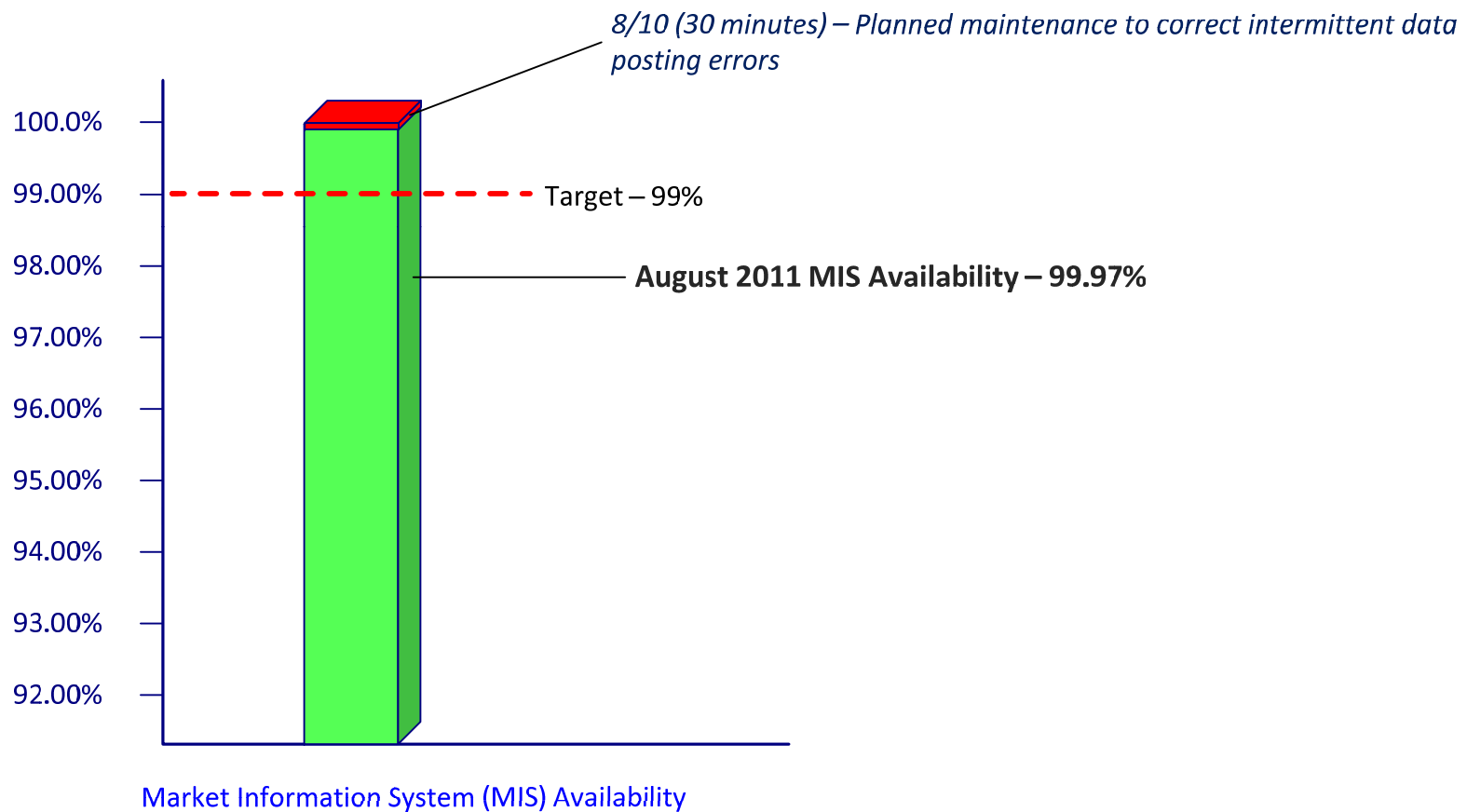
Target – 99.93%

**August 2011 LFC Availability – 99.98%**

EMS LFC Availability

# TML Report Explorer Availability
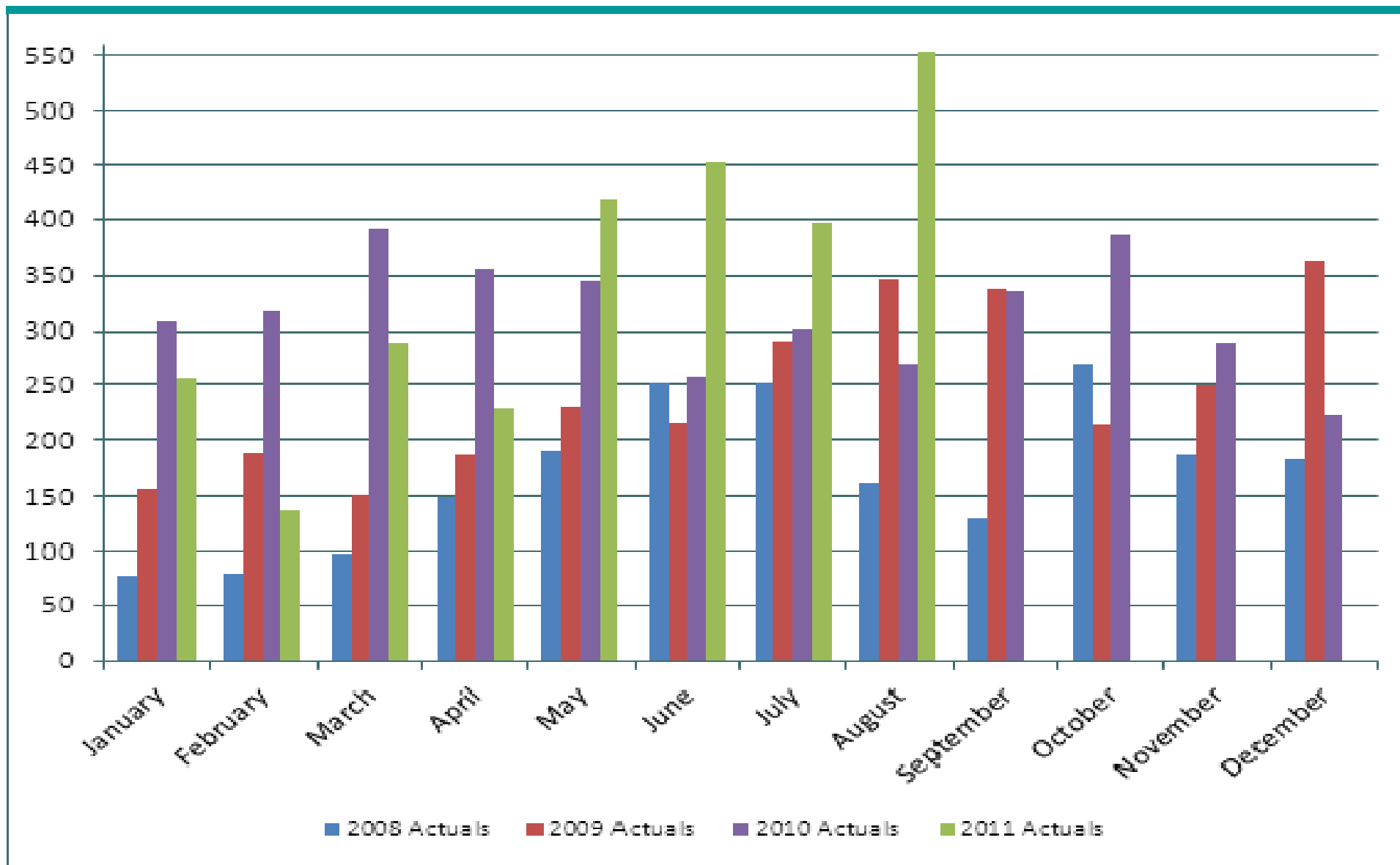
## August 2011 TML Report Explorer Availability Summary

*8/23 (50 minutes) – Enterprise Application Integration had to be restarted to restore service; Find ESSID and Find Transaction were unavailable.*

Target – 99%

**August 2011 TML Report Explorer Availability – 99.87%**

100.0%
99.00%
98.00%
97.00%
96.00%
95.00%
94.00%
93.00%
92.00%

TML Report Explorer Availability
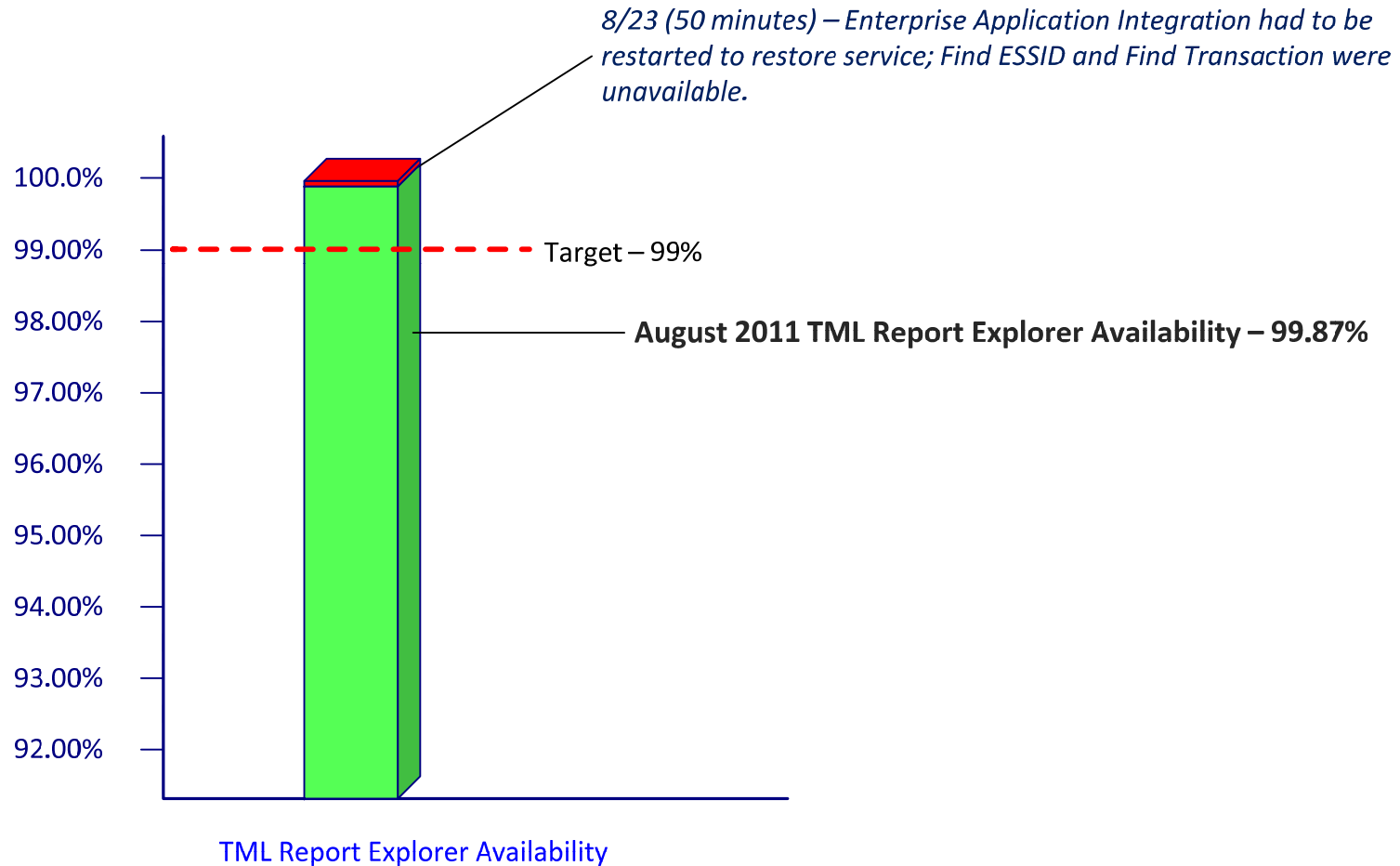
# MIS Availability

## August 2011 MIS Availability Summary



*8/10 (30 minutes) – Planned maintenance to correct intermittent data posting errors*

Target – 99%

**August 2011 MIS Availability – 99.97%**
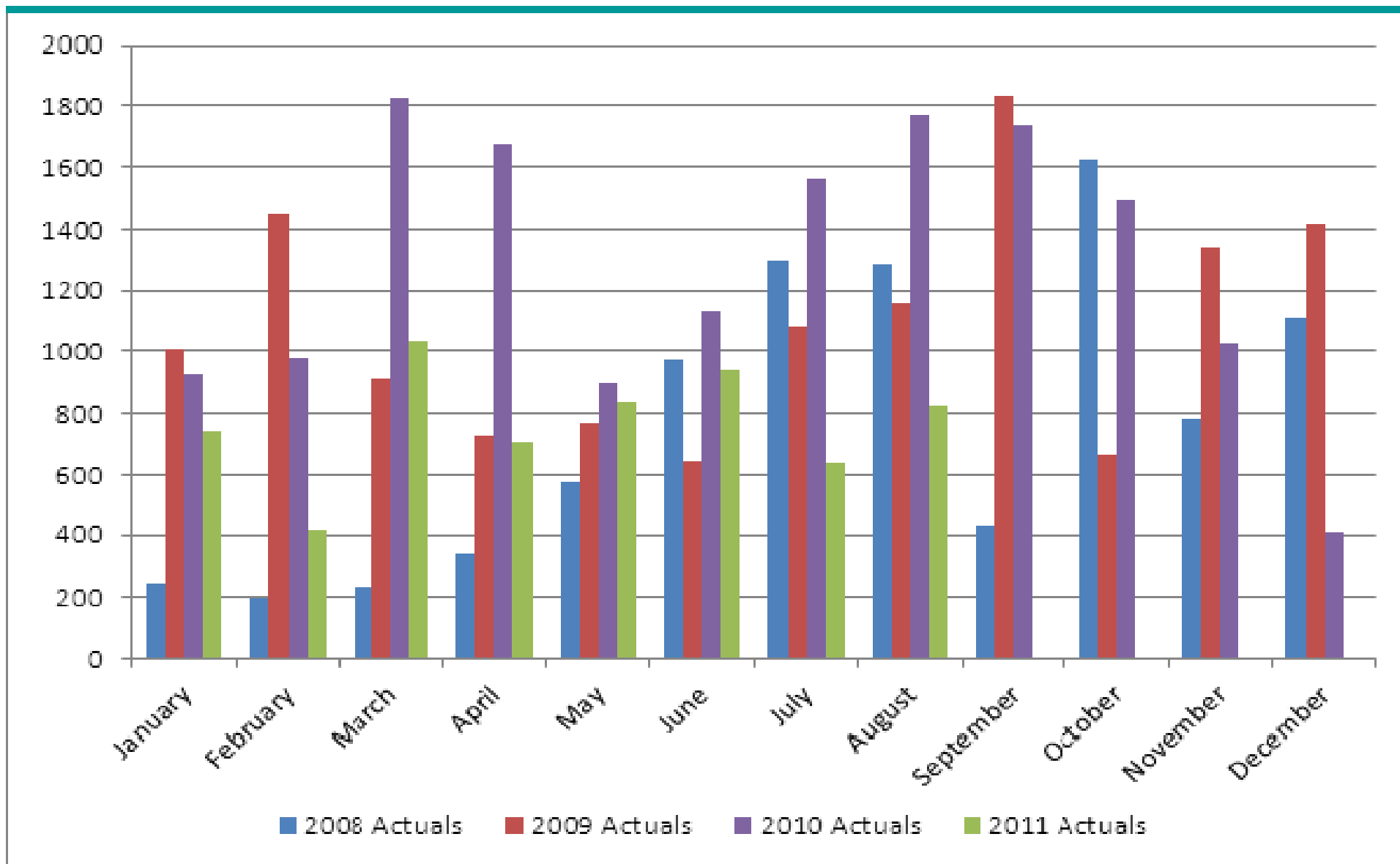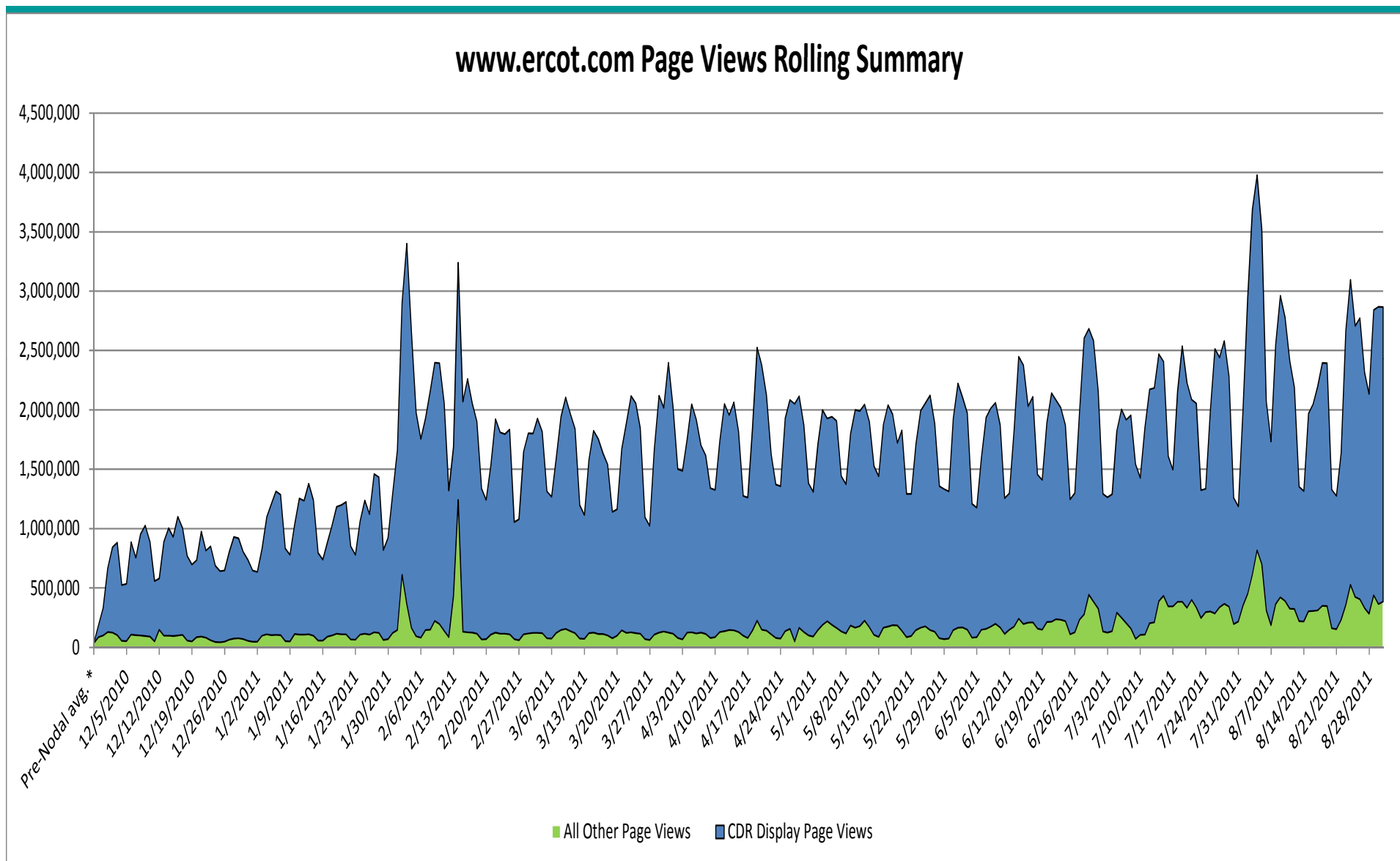
Market Information System (MIS) Availability

# Release Management Metrics (Releases)

# Release Management Metrics (Changes)

ERCOT Public

# ERCOT Public Website Metrics (August 2011)



www.ercot.com Page Views Rolling Summary

Legend: ■ All Other Page Views  ■ CDR Display Page Views

# ERCOT Public Website Metrics (August 2011)



www.ERCOT.com Usage