Fast-Responding Regulation Service iTest Performance Example

The Fast-Responding Regulation Service (FRRS) deployment logic has been implemented and tested in the ERCOT iTest system. This document provides FRRS deployment statistics for three individual days based on the frequency profile in the iTest system. In this iTest, a virtual FRRS resource is created to have a responsibility of 20 MW FRRS-UP and 20 MW FRRS-DOWN. The data in this document only provides the deployment instructions and doesn’t include actual impact of FRRS response.

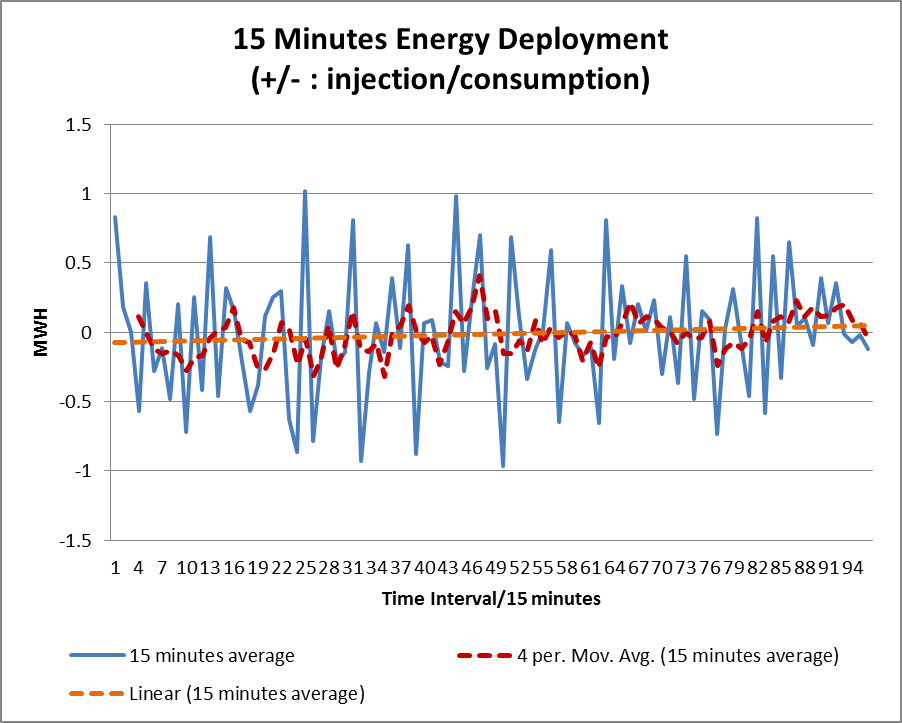
# Settings in the iTest:

* Nominal Frequency: 60 Hz
* Low frequency deployment threshold for band 1: 59.985 Hz
* Low frequency deployment threshold for band 2: 59.95 Hz
* Low frequency deployment threshold for band 3: 59.91 Hz
* Low frequency event reset threshold: 59.99 Hz
* High frequency deployment threshold for band 1: 60.015 Hz
* High frequency deployment threshold for band 2: 60.05 Hz
* High frequency deployment threshold for band 3: 60.09 Hz
* High frequency event reset threshold: 60.01 Hz
* Recall interval: 12 seconds
* Percentage of responsibility required if in band 1: 50%
* Percentage of responsibility required if in band 2: 100%

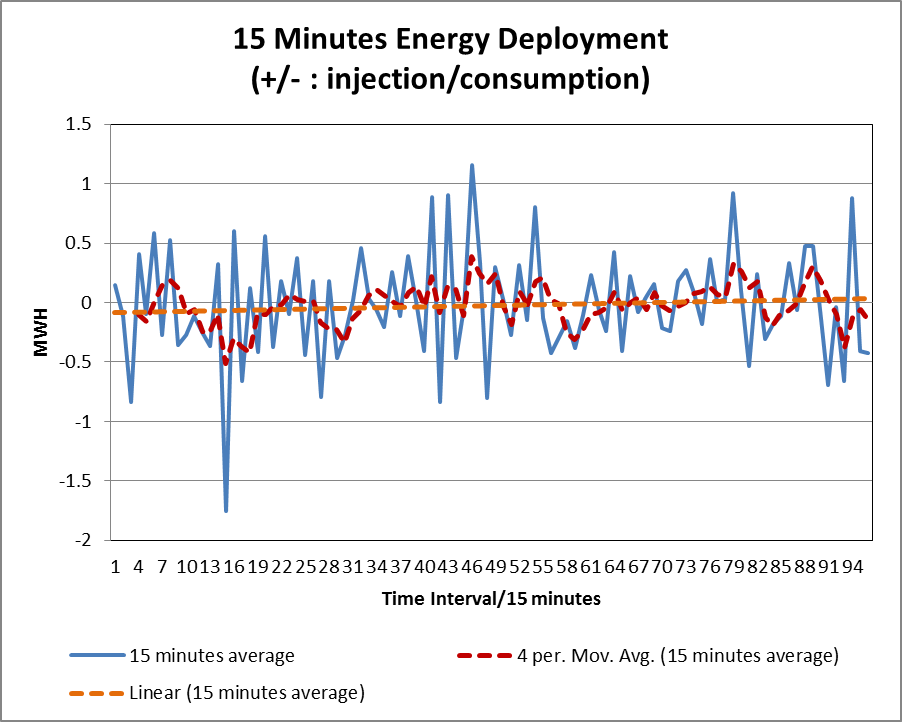
# ERCOT iTest FRRS Deployments

Tables and figures below include three days of ERCOT iTest FRRS deployment summary. The figure includes daily deployment energy for each 15 minutes interval (blue line), hourly moving average (red line) and daily deployment energy trend (orange line).

|  |  |  |
| --- | --- | --- |
| 11-Jan-13 | FRRS UP | FRRS DOWN |
| Daily deployment counts | 221 | 219 |
| Daily Deployment Energy(MWh) | 55.99 | 60.05 |
| Daily Deployment Duration(hours) | 6.22 | 6.66 |
| Max Duration for a single deployment(s) | 264 | 224 |
| Max Energy for a single deployment(KWh) | 733.33 | 733.33 |



|  |  |  |
| --- | --- | --- |
| 12-Jan-13 | FRRS UP | FRRS DOWN |
| Daily deployment counts | 308 | 269 |
| Daily Deployment Energy(MWh) | 72.77 | 75.06 |
| Daily Deployment Duration(hours) | 7.96 | 8.21 |
| Max Duration for a single deployment(s) | 224 | 344 |
| Max Energy for a single deployment(KWh) | 733.33 | 1255.56 |



|  |  |  |
| --- | --- | --- |
| 13-Jan-13 | FRRS UP | FRRS DOWN |
| Daily deployment counts | 263 | 253 |
| Daily Deployment Energy(MWh) | 64.01 | 67.15 |
| Daily Deployment Duration(hours) | 6.9 | 7.46 |
| Max Duration for a single deployment(s) | 244 | 284 |
| Max Energy for a single deployment(KWh) | 755.56 | 733.33 |

