



# Emergency Interruptible Load Service

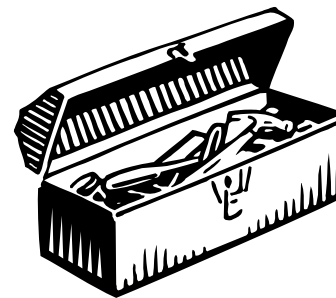
Status Report

ERCOT Board of Directors  
17 November 2008

Kent Saathoff

## EILS is:

- **An additional emergency tool for ERCOT operators to reduce the likelihood of involuntary firm load shedding (a.k.a. rolling blackouts)**
- **Service provided by Loads willing to interrupt during an electric grid emergency in exchange for a payment**
- **Deployed ONLY in the late stages of a grid emergency (EECP Step 3) as a last resort prior to firm load shedding (rotating outages)**

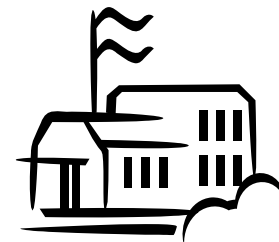
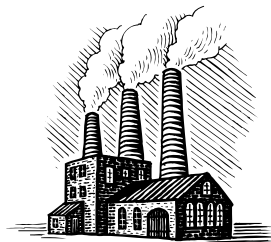


*'Another tool for the operator toolbox'*

# Eligibility: Who can participate?

- **EILS Resources**

- Individual Loads
- Aggregations



- **Must have:**

- 15-minute interval metering
  - Or a statistically valid sample approved by ERCOT
- Capability of interrupting at least 1 MW of load on 10 minutes notice at any time during the committed hours
- Representation by a QSE with a wide-area network agreement with ERCOT
  - Must have 24/7 operations that can receive the verbal dispatch instruction
  - QSE is responsible for notifying its EILS Resources

- **1,000 MW ceiling (has not been met to date)**
- **Procured for 4-month Contract Periods**
  - February thru May
  - June thru September (4CP months)
  - October thru January
- **Time Periods:**
  1. Business Hours 1: 8AM to 1PM Monday-Friday\*
  2. Business Hours 2: 1PM to 4PM Monday-Friday\*
  3. Business Hours 3: 4PM to 8PM Monday-Friday\*

\* Except ERCOT Holidays

  4. Non-Business Hours: All other hours
- **Time Periods are designed to allow flexibility for customers during traditional business hours**
- **Participants must have their interruptible load available during at least 95% of the hours in their committed Time Period(s)**

- **EILS is dispatched via VDI to the all-QSE hotline**



- **EILS Resources must shed at least 95% of their committed load within 10 minutes of QSEs' receipt of the instruction**
- **EILS Resources must keep their committed load off until released**
- **ERCOT Operations will release EILS Resources after LaaRs have been recalled and generation providing Responsive Reserves has been restored**
- **EILS Resources have 10 hours to return to service after release**

# Load acting as a Resource (LaaR) Responsive Reserve Service (RRS) & EILS Comparison Checklist

	<b>LaaR providing RRS</b>	<b>EILS</b>
<b>Deployment time (VDI)</b>	10 minutes	10 minutes
<b>Deployment trigger</b>	EECP Step 2 and frequency events	EECP Step 3
<b>Under-Frequency Relay</b>	$\geq 59.7$ Hz	Not Required
<b>Telemetry</b>	Required	Not Required
<b>IDR metering</b>	Required	Required (or ERCOT-approved statistical sample)
<b>Procurement</b>	Day-ahead AS market	RFP for 4-month Contract Periods
<b>Payment</b>	Market Clearing Price	As-bid if selected
<b>QSE Self-Provision</b>	Allowed	Allowed
<b>Testing</b>	Unannounced (annual)	Unannounced (annual)

- **April-May 2007 Contract Period**
  - 156 MW of bids received
    - Did not meet 500 MW minimum
- **June-Sept. 2007 Contract Period**
  - 213 MW of bids received
    - Did not meet 500 MW minimum
- **Oct. 2007 – Jan. 2008 Contract Period**
  - 170 MW of bids received (Business Hours)
  - 180 MW of bids received (Non-Business Hours)
    - Did not meet 500 MW minimum

- **February thru May 2008 Contract Period**

<b>Time Period</b>	<b>Business Hours</b>	<b>Non-Business Hours</b>
<b>Definition</b>	<b>8 AM to 8 PM</b> Mon-Fri except Holidays	<b>All other hours</b>
<b>EILS Procured</b>	262 MW	185 MW
<b># of EILS Resources</b>	<b>10</b> (includes 5 aggregations)	<b>7</b> (includes 2 aggregations)
<b>Avg. Cost</b> per MW per Hour	<b>\$9.73</b>	<b>\$7.86</b>
<b>RRS Avg. Cost</b> MW/Hr. (for comparison)	<b>\$36.09</b>	<b>\$24.92</b>

- **Total cost for this Contract Period: \$5.3 million**



- **June thru September 2008 Contract Period**

<b>Time Period</b>	<b>Business Hours</b>	<b>Peak Hrs. 1</b>	<b>Peak Hrs. 2</b>	<b>Non-Business Hours</b>
<b>Definition</b>	<b>8 AM to 1 PM</b> Mon-Fri except Holidays	<b>1 PM to 4 PM</b> Mon-Fri except Holidays	<b>4PM to 8 PM</b> Mon-Fri except Holidays	<b>All other hours</b>
<b>EILS Procured</b>	310 MW	219 MW	216 MW	216 MW
<b># of EILS Resources</b>	<b>19</b> (includes 13 aggregations)	<b>16</b> (includes 10 aggregations)	<b>15</b> (includes 9 aggregations)	<b>14</b> (includes 8 aggregations)
<b>Avg. Cost per MW per Hour</b>	<b>\$10.92</b>	<b>\$11.06</b>	<b>\$11.29</b>	<b>\$8.97</b>
<b>RRS Avg. Cost MW/Hr. (for comparison)</b>	<b>\$29.98</b>	<b>\$55.52</b>	<b>\$75.78</b>	<b>\$24.10</b>

- **Total projected cost for this Contract Period: \$6.6 million**

# Procurement History (cont.)

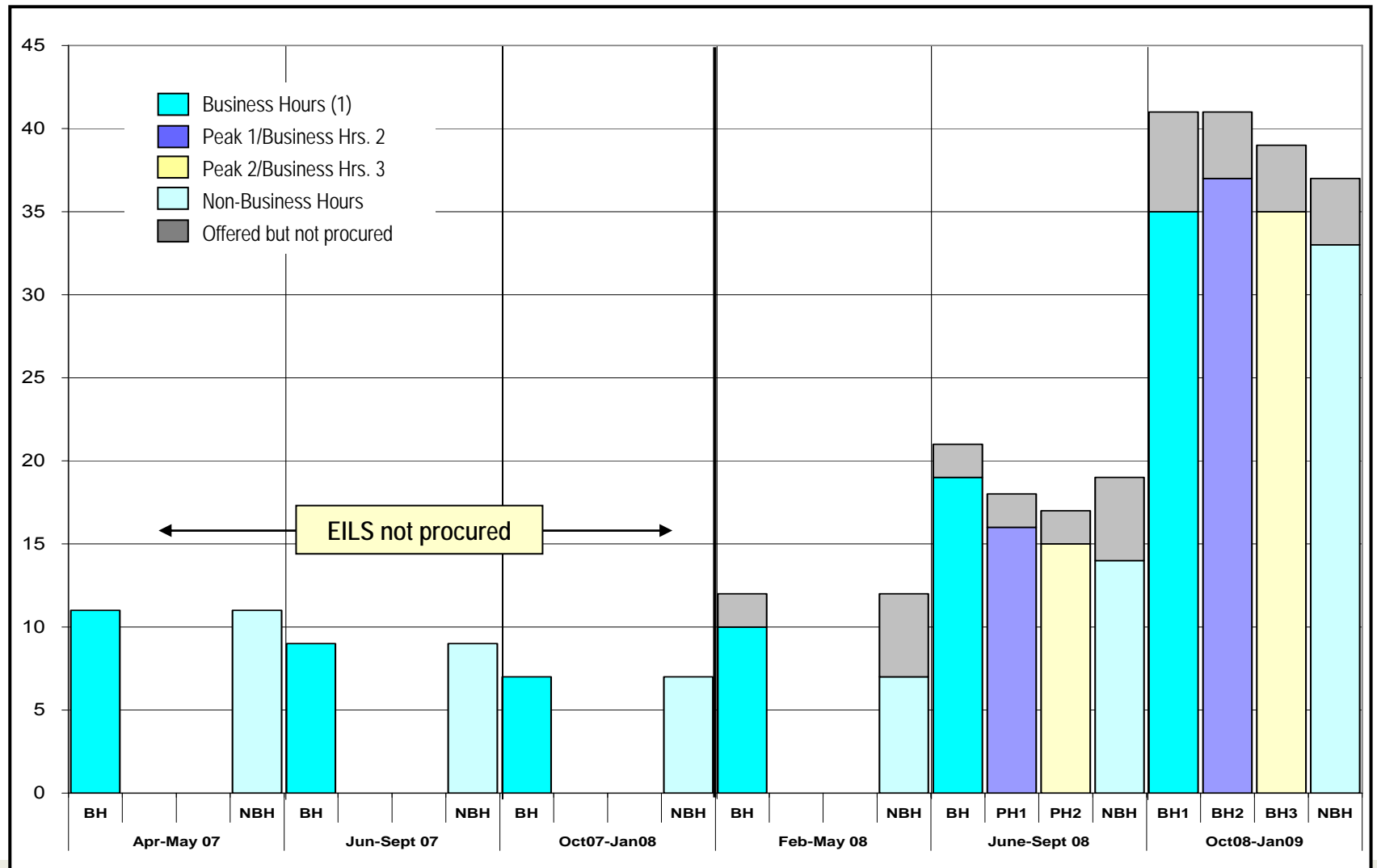
- Oct. '08 - Jan. '09 Contract Period**

<b>Time Period</b>	<b>Business Hours 1</b>	<b>Business Hours 2</b>	<b>Business Hours 3</b>	<b>Non-Business Hours</b>
<b>Definition</b>	<b>8 AM to 1 PM</b> Mon-Fri except Holidays	<b>1 PM to 4 PM</b> Mon-Fri except Holidays	<b>4PM to 8 PM</b> Mon-Fri except Holidays	<b>All other hours</b>
<b>EILS Procured</b>	272 MW	289 MW	291 MW	273 MW
<b># of EILS Resources</b>	<b>35</b> (includes 25 aggregations)	<b>37</b> (includes 25 aggregations)	<b>35</b> (includes 23 aggregations)	<b>33</b> (includes 21 aggregations)
<b>Avg. Cost per MW per Hour</b>	<b>\$10.83</b>	<b>\$11.28</b>	<b>\$11.39</b>	<b>\$9.61</b>
<b>RRS Avg. Cost MW/Hr. (October '08 only)</b>	<b>\$9.92</b>	<b>\$16.53</b>	<b>\$21.94</b>	<b>\$10.46</b>

- Total projected cost for this Contract Period: \$8.2 million**
- Total projected cost for the 2008 EILS program year: \$20.1 million**

- **From the Preamble to the Rule amendments (Project 34706):**
  - ‘The commission also finds value in having resources that have not participated in demand response programs being enabled to do so by this program.’
  - ‘One of the goals of the commission in the restructured market has been developing additional demand-response resources.’
- **To date, LaaRs totaling 100 MW have participated in some of the EILS Time Periods**
- **Otherwise, EILS Resources to date have been entirely non-LaaR (new to the ERCOT markets)**
- **All participation in the current Contract Period is non-LaaR**

- No. of EILS Resources bidding by Contract Period**



- EILS MW by Contract Period**

