## Market Trends

### Committee Meeting Objective:
The Committee provides a forum for market trends within the power generation industry to be discussed and analyzed.

### Date and Time:
Monday, March 20, 2017

### Location:
Naples 3

### Time:
3:00 - 5:00 p.m.

### Chairperson:
Joe Zirnhelt

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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| **Introductions**           | **Leader:** Joe Zirnhelt  
  - Welcomed new and existing members  
  - Overview of meeting agenda  
  - Encouraged attendee involvement in committee  
  - Reminded attendees to complete Meeting Evaluation Form |
| **Review Committee Initiatives** | **Leader:** Justin McMahon  
  - Committee Objectives: Discuss and review industry trend information that impacts PG market, create value for members & drive conference attendance |
| Telematics Presentation     | **Leader:** Dane Olson, Generator Solutions  
  - Defined telematics- branch of information technology that deals with long distance transmission of computer information  
  - Telematics operation – generator information (status) relayed to cloud then to operator display  
  - Telematics in Power Generation industry used in refueling, fleet management and building management  
  - Telematics can be used to help optimize technician inventory for service calls as well as optimize dispatch via vehicle telematics (GPS)  
  - Generator service companies use telematics to improve client experience via providing end-user necessary information on equipment  
  - Telematics used by utilities, generator manufacturers |
<table>
<thead>
<tr>
<th>Telematics Presentation</th>
<th>Leader: Mike Sanford, Cummins</th>
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<tbody>
<tr>
<td>• Data collected via telematics will continue to be used to improve research and development efforts within the power generation industry</td>
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<td>• Telematics used in ensuring equipment meets compliance requirements</td>
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<td>• ROI – need to consider cost of being out of compliance, future repairs or cost of not being in compliance</td>
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<tr>
<td>• Reviewed telematics market segments (manufacturers, engineers, utilities, Service companies and generator owners)</td>
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<td>• Largest risk to telematics is the vehicle data is transmitted over (landline, satellite, internet, etc...). Topics covered to mitigate risks.</td>
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<th>Active vs. Passive DPF Regeneration</th>
<th>Leader: Chris Avery, Rypos</th>
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<tr>
<td>• Diesel particulate filter designed to reduce PM/soot by minimum of 85% will ability to burn off particulates</td>
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<td>• Compliance is main driver of DPF usage in addition to</td>
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sustainability efforts and aesthetics (marine)

- Reviewed passive DPF’s operation and disadvantages – filter that allows exhaust to pass while capturing particulates. Uses heat to regenerate. Typically standby engines do not reach temperatures in normal operation to regenerate restricting exhaust evacuation and lowering engine output.
- Passive DPF’s typically need to run longer in order to regenerate
- Reviewed different active DPF options (fuel burner & electrically self-regenerating)
- Reviewed active self-regenerating electric DPF – uses filter to capture particulate matter and electricity to create heat to regenerate. This technology monitors backpressure to determine when to self-regenerate
- Reviewed advantages of active DPF: automatic operation, lower fuel penalty, low maintenance and flexible in design
- Reviewed market trends relative to DPF industry: Tier 4 compliance, demand response, design awareness, health and safety, title 5 sites and replacement of existing DPF’s

Review of Topics from Fall 2016 meeting:

Leader: Joe Zirnhelt

- Fuel Quality – continues to grow as an issue in industry
- Disruptive Technologies & Incentives – telematics introduced in breakout session and drove discussion at meeting; micro grids and stored energy were discussed; emissions identified as a detractor within industry; natural gas discussed as a viable alternative to diesel fuel
- Peak Shaving Management Issues – several considerations discussed; many barriers however many opportunities within industry. Key is for members to determine how to participate in market.
- Market opportunities for Onsite Power – healthcare, data centers, retail and need for secure data
- Identification of any new relevant trend updates since last meeting
- Encouraged all members to update group with developments since last meeting

Pulse Survey

Leader: Chris Nagle

- Review of results from Fall 2016 -
• Solicit volunteer to analyze Fall 2017 results: Jeff Webb from ESSE volunteered

New Business

Leader: Joe Zirnhelt
• Solicited speakers for fall conference
• Mike Sanford (Cummins) would assist to find any relevant Subject Matter Experts from Cummins as needed for conference in Minneapolis Fall 2017

Action Items (additional space on back)

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<tr>
<th>Item</th>
<th>Person Responsible</th>
<th>Deadline</th>
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<tbody>
<tr>
<td>Task</td>
<td>Name of person assigned to complete task</td>
<td>Date and time task should be completed.</td>
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<tr>
<td>Coordinate 2017 Survey</td>
<td>Jeff Webb, ESSE</td>
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Market Trends Committee Mission Statement:

This Committee provides EGSA with a forum in which market trends and other market data closely related to the power generation industry may be discussed in a way that benefits the Association and its members. Beyond discussion, the Committee has the responsibility and ability to develop and make recommendations to the Board regarding programs and methods for the compilation of statistical information. The Committee focuses on complete power generation packages as well as component level trends to enhance the Association’s market knowledge of trade, product sales, growth rate, emerging technologies, economic trends, market forecasts and other statistical data in an effort to assist Association members in accomplishing their objectives.