



Committee Meeting Agenda & Minutes

Market Trends Committee

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, September 12, 2016

Location:

Sacramento, CA

Time

3:00-5:00 pm

Chairperson:

John Hoeft

Preparation

This meeting will engage all participants allowing each to have a higher level of contribution to the subjects. Come to this session prepared to be a subject matter expert (SME) or to learn more about these issues. We will also be electing new committee officers.

Schedule

List leaders and a description for each topic or activity.

Item	Description
Welcome	Call to order, Approved Minutes, Market Trends Initiatives,
Breakout Instructions <ul style="list-style-type: none"> - 30 minutes discussion, 10 minute report out - Team Leads - Facilitate and promote discussion <ul style="list-style-type: none"> o Educate o Market Trends o Topics 	
Fuel Quality <ul style="list-style-type: none"> • Fuel quality issues/mishaps and impact on power-gen installations • Ultra-low sulfur diesel impacts on diesel (Corrosion/bacteria/time degradation) • Engine emissions evolution and influence on Tier IV engines 	Leaders: Brad Holmes
Fuel Quality takeaways:	Reliable supplier (Quality, does it comply with standards?) Maintenance program (Special focus on tank corrosion, etc.) Keeping water out (Microbial induced corrosion caused by Ultra-Low Sulfur diesel) <ul style="list-style-type: none"> - “normal free-flow vent” can ingress water by condensation - Impact on ancillary equipment (Senders, fuel level probes, etc.)

	<p>Type of fuel (Bio vs. straight diesel) Factory approved additives (Dosage) Most common diesel used today has shelf life of 28 days Chemistry/content of nat'l gas (Distribution issue, flare gas, etc.)</p>
<p>Disruptive Technologies & Incentives</p> <ul style="list-style-type: none"> • Identification of alternative energies and impact to diesel power-gen market <ul style="list-style-type: none"> ○ Natural gas, renewables, micro-grid, storage influence on: <ul style="list-style-type: none"> ▪ Data centers/IPP/ Cogen/ Critical and standby ○ Has government funding of subsidies influenced development? 	<p>Leaders: Mike Sanford</p>
<p>Disruptive tech. takeaways:</p>	<p>Stored energy / power electronics</p> <ul style="list-style-type: none"> - Complement to diesel generation (Or adapted diesel generator solution – i.e. variable speed) <p>Emissions</p> <ul style="list-style-type: none"> - Not just impacting USA (Euro 5, etc.) - Detractor in terms of reliability and increased cost (Makes customers consider other options) <p>Micro/distributed generation</p> <ul style="list-style-type: none"> - Hybrid systems <p>Gas</p> <ul style="list-style-type: none"> - Natural gas are viable alternative to diesel power-gen (In some cases advantageous i.e. emissions requirements) - Bi-fuel/dual fuel <p>Telematics</p> <ul style="list-style-type: none"> - Proactive maintenance based on actual data - Time based maintenance vs. needs - Possible negative impact of failure being advertised to broader audience - Information security - Health and safety (Remote start vs. local maintenance being performed) <p>Geographical redundancy</p> <ul style="list-style-type: none"> - Software driven, capable of shifting data center demand/need
<p>Peak Shaving Management Issues</p> <ul style="list-style-type: none"> • Peak shaving and demand response trends (Water districts, utilities, etc.) • ISO/PJM/ERCOT trends • CHP • Control technologies that influence 	<p>Leaders: Hans Melberg</p>
<p>Peak shaving takeaways:</p>	<p>Invite utility to speak to group Educating the customers Webcast of groups (en-lieu of giving physical presentations) Tax credits (What are available, how to locate/navigate) Dept. of Defense (Invite?) Fuel supplies</p>

	<p>Green Faster on line = more money Utility interruptible rate Tier IV emissions, on-demand response Switching diesel to gas engines Switchgear fairly simple, depends on utility Flare gas probably not economical Capture state-by-state emissions programs for demand response Interconnection topics Impact of coal fired plants (Closing due to <u>new</u> policies?) <u>– new opportunities for onsite power?</u></p>
<p>Market opportunities for Onsite Power</p> <ul style="list-style-type: none"> • Regional niche market successes (Applications/industries such as data center, hospital, education, water & sewer) <ul style="list-style-type: none"> ○ kWe mix, LV/MV/HV, amperage limitations • International market opportunities <ul style="list-style-type: none"> ○ Possibility of serving international markets with surplus, lower tier rated engines 	<p>Leaders: Bob Apple & Don Kujowski</p>
<p>Market opportunities takeaways:</p>	<p>Health care/elder care (Growing market need based on aging population) - Require smaller more remote sites Big pharma – new drugs require refrigeration door to door Data sites - Driven by very large, modular sites (Cloud, IOT) Big box stores: seeing business need that they didn't recognize 5 years ago (Lost revenue) Telecom/5G introduction and infinite growth of utilization Re-applying lower Tier product for export to new markets Telematics: more and more visibility demand Micro-grid (Blended solar, wind, recip.) Gas stations/requirements along evacuation routes Portable power use is growing (Rental markets serving concerts, sporting events, etc.) "Black Swan" event Land fills Waste treatment Service aspect growth (Reliability/uptime and load banking requirements in legislation) Question: what impact do we see as opportunity in wastewater treatment (Methane capture and reuse)?</p>
<p>Pulse Report</p>	<p>John Hoeft</p>
<p>New Business</p>	<p>John Hoeft</p>
<p><i>Election of New Officers</i></p>	<p>John Hoeft & David Brown</p>
	<p>Chris Nagle elected Secretary of Market Trends committee</p>
<p><i>Actions from meeting:</i></p>	
<p>Complete MOM, attendee list, presentations for submittal to EGSA and membership</p>	<p>Justin McMahon (9/14/2016)</p>
<p>Assemble working group to develop Webinar or education session on</p>	<p>Joe Z., Justin M., Chris N. (Volunteer help offered by: Dane Olson: Generator Solutions, Inc</p>

telematics	Mike Sanford: Cummins Power Gen
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