



## **Annual Green Tier Report Summary For the Year 2015**

### **Introduction**

R Stresau Laboratory (Stresau) develops, manufactures and tests energetic devices for a variety of military and industrial applications. The facility has been in operation since 1961. R. Stresau Laboratory's evaluation expertise has been used in many branches of the armed services and a variety of industries.

Stresau is privately owned company located in northern Wisconsin. The company employs 78 people, as of December 31, 2015, and became ISO 9001:2008 re-certified in May 2015. In August of 2008, Stresau changed its work week to a four 10-hour work week. This has lowered the amount of energy consumed by the facility and by employees during their commute. It has an effect not only on energy consumption, but also on greenhouse gas emissions. Energy consumption is highest at the beginning of the day when everything starts up. By eliminating one start-up each week, the facility is realizing significant reduction in energy usage.

The facility is licensed to operate a Thermal Treatment Unit (TTU) to render waste on site, and has lowered its generator status from Small Quantity Generator (SQG) to Very Small Quantity Generator (VSQG). Stresau also has an active recycling program for metals, cardboard, batteries, CFL and fluorescent light bulbs and other materials.

In 2006 Stresau began discussions with the Wisconsin Department of Natural Resources about becoming a Green Tier participant and officially submitted an application to become a Tier 1 Green Tier participant on February 19, 2007. Upon acceptance as a Tier 1 Green Tier participant, Stresau committed to implementing an Environmental Management System and to engage in continuous improvement of their environmental performance.

### **Green Tier Acceptance Date**

R Stresau Laboratory was accepted into the Wisconsin Green Tier Program as a Tier I participant on April 30, 2009.

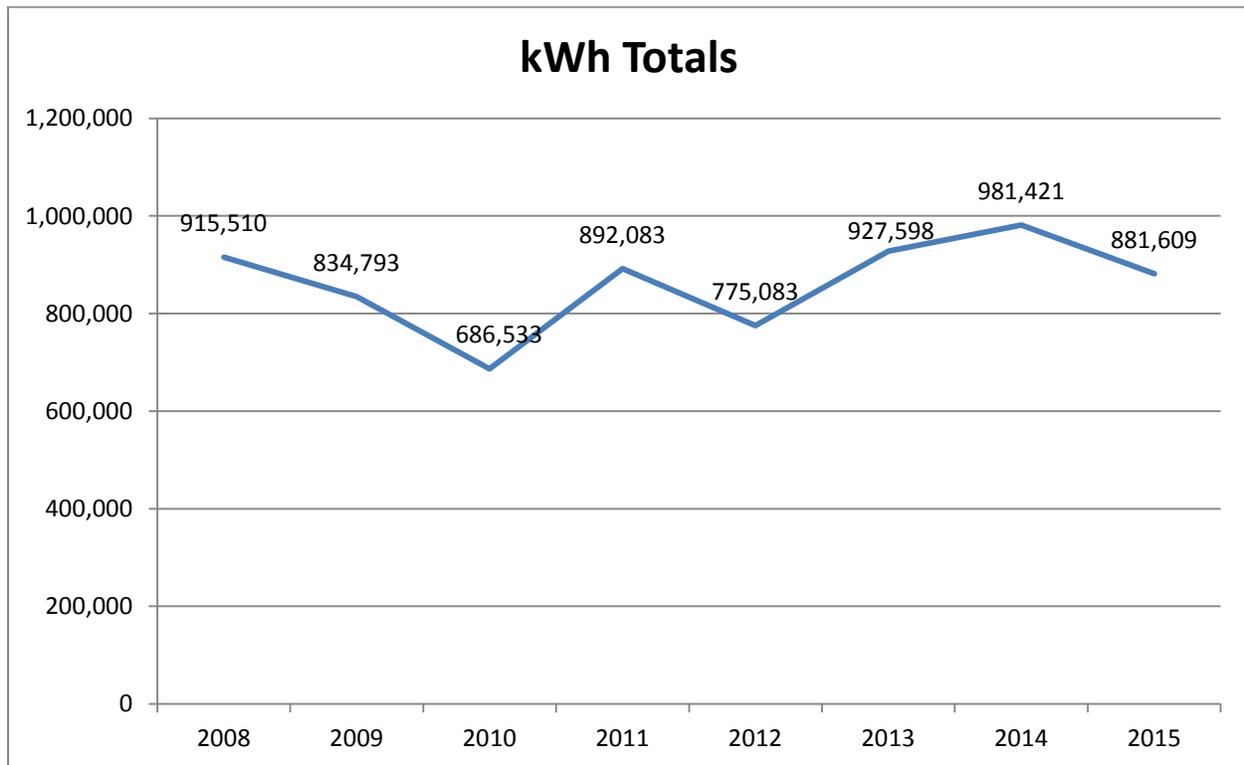
## Program Goals and Objectives

- Energy Use Reduction
- Recycling and Continued Waste Reduction
- Educate employees on environmental issues and opportunities
- Identification, elimination or reduction in non-biodegradable cleaning products
- Paperless file retention system (SentryFile)
- Improve efficiency of Thermal Treatment Unit (TTU)
- Participate in industry efforts to develop “green” energetics

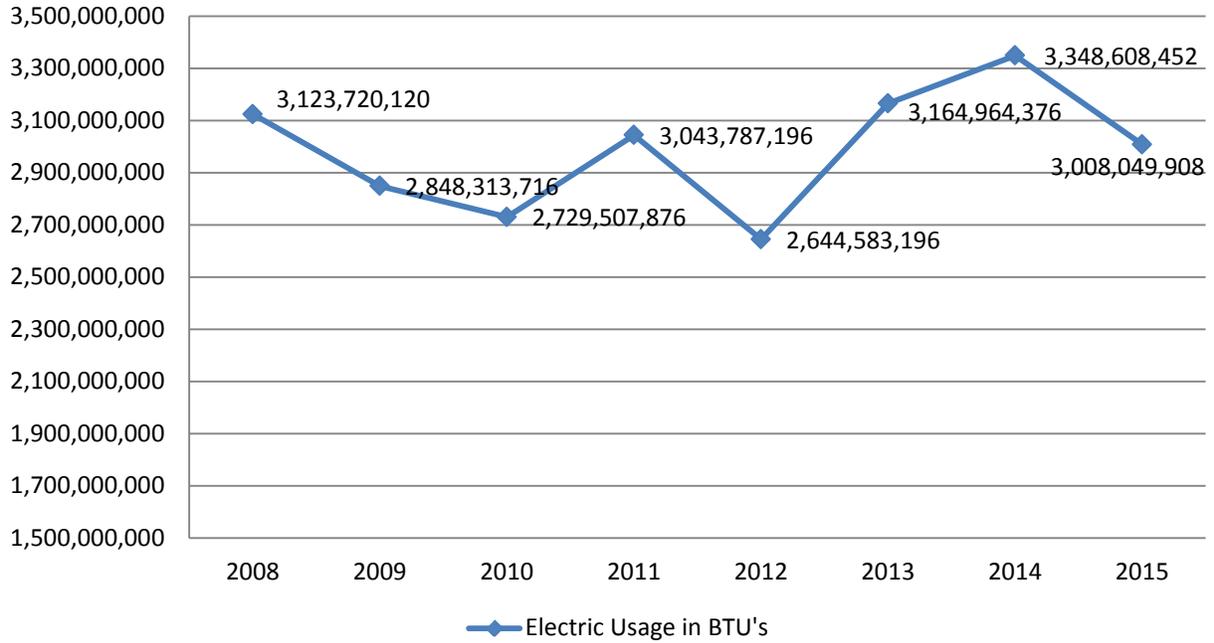
- **Energy Use Reduction**

Objective/Completion Date	Results/Outcome
<p>Installation of high efficiency fluorescent lights</p> <p>Completion Date: Completed July and August 2008</p>	<p>Fluorescent bulbs installed in August 2008 bulbs in office building to reduce electric usage.</p>
<p>Installation of HVAC programmable thermostats</p> <p>Completion Date: Completed September and November 2008</p>	<p>New programmable thermostats were installed to reduce LP gas usage.</p>
<p>Installation of high efficiency LP gas and hydronic furnaces.</p> <p>Completion Date: Ongoing</p>	<p>Upon completion of Building 5, high efficiency furnaces were installed as well as in-floor heating.</p> <p>Installed a high-efficiency tankless gas boiler in Building 10K as well as in magazine S7-B.</p> <p>High efficiency heating/AC unit installed in Bldg. 17 and new Bldg. 18 in Sept. &amp; Nov. 2015.</p> <p>High efficiency units will be installed in all future units.</p>
<p>Increase building insulation.</p> <p>Completion Date: Ongoing</p>	<p>Additional insulation was installed in many buildings to increase efficiency.</p>
<p>Exploration of alternative energy sources</p> <p>Completion Date: Ongoing</p>	<p>Stresau will continue to research alternative energy sources to reduce the amount of energy consumed.</p> <p>Solar panels added to the chemical storage building and TTU for recharging and maintenance of 12v battery systems.</p>
<p>Replace existing motors with energy efficient motors.</p> <p>Completion Date:</p>	<p>When existing motors need replacing, Stresau will research and replace with the most energy efficient motor available.</p>

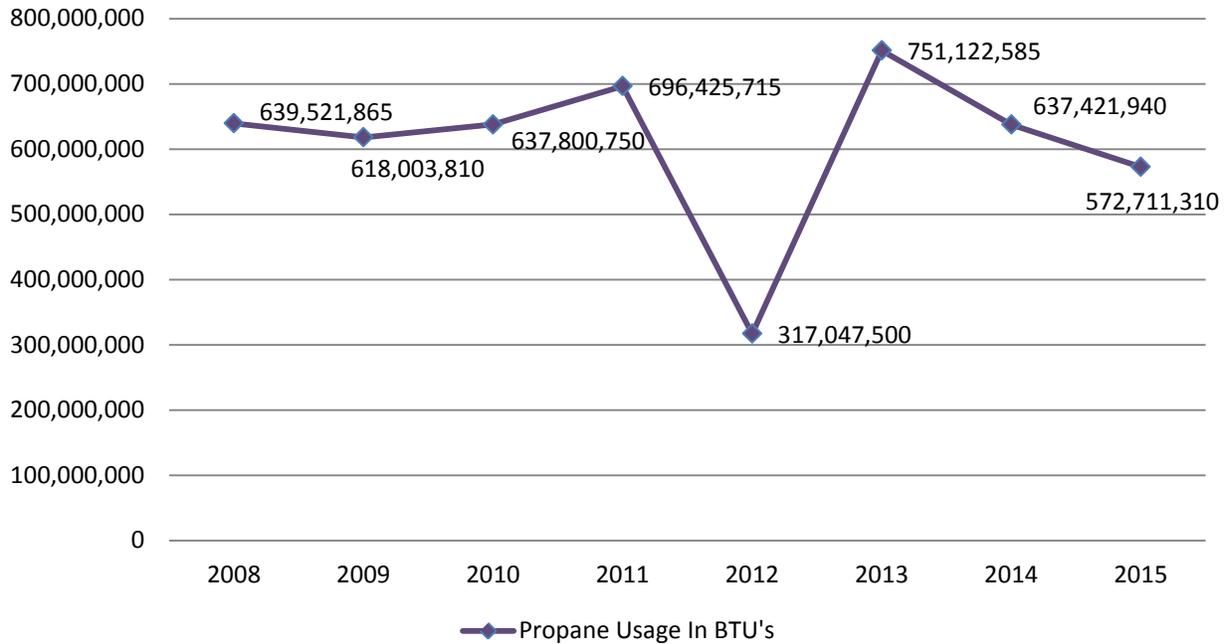
Ongoing	
Switching over current outside lighting and making more energy efficient.  Completion Date: November 2010	Eliminate the use of flood lights attached to building by adding new light poles and lights. Energy efficient lighting installed to assist facility security CCTV system.
Decrease fuel usage / emissions discharge in facility vehicles.  Completion Date: Purchased October, 2010	Purchased a Japanese kei mini-truck for facility maintenance personnel use. A 650 cc engine reduces fuel consumption and pollution emissions.  The Ex Prep Ford Ranger, with a v6, was replaced by a more fuel efficient 4-cylindar Toyota.
Decrease overall operating energy usage.  Completion Date: Ongoing	Facility continues to operate a 10-hour day, 4-day week work schedule. Energy usage slashed to a minimum by operating only essential processes during non-production times.

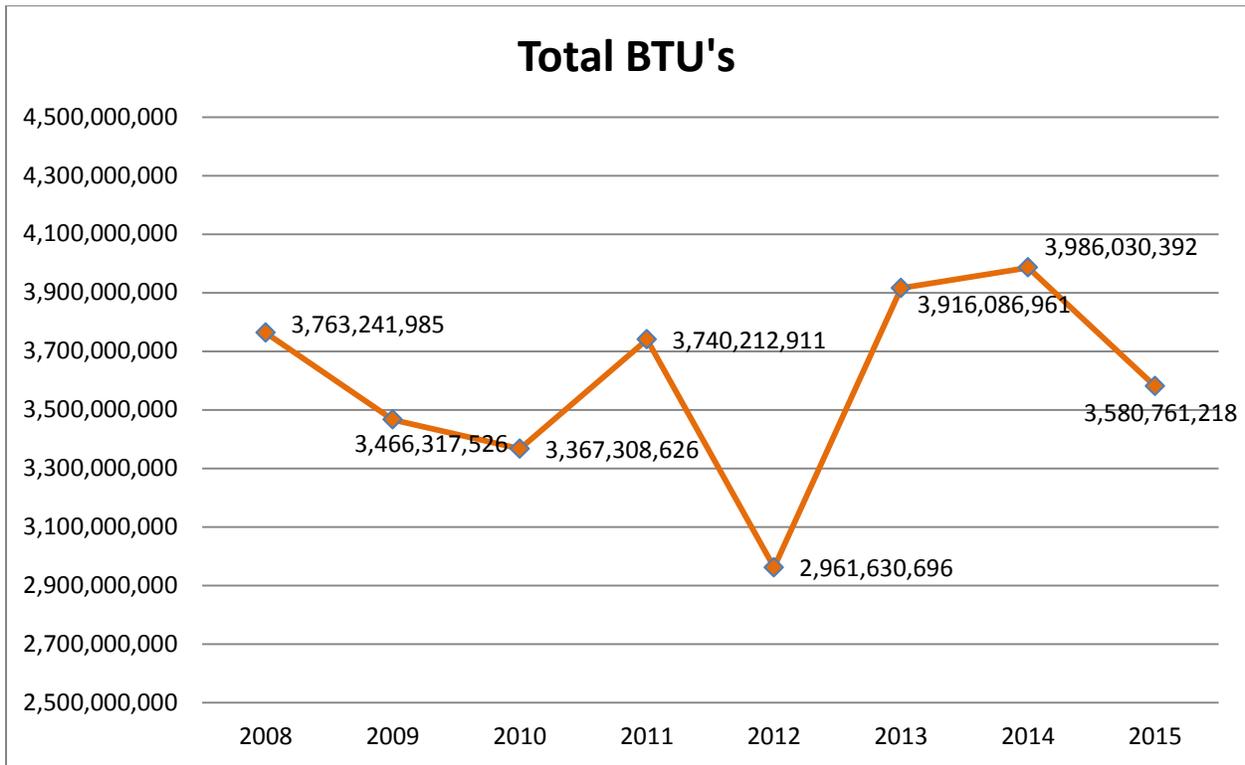


## Electric Usage in BTU's



## Propane Usage In BTU's





- Recycling and Continued Waste Reduction**

Objective/Completion Date	Results/Outcome
Utilization of recycled materials in production operations  Completion Date: Ongoing	Continue to bid manufactured items using recycled cost savings packaging materials
Recycling Program Implemented  Completion Date: Ongoing	A program has been put in place to recycle scrap metal, aluminum, plastic, cardboard, pallets and more.
Continued recycling / disposal program  Completion Date: Ongoing	Recycling bins placed in break rooms for the collection of batteries, fluorescent bulbs, including CFL's, and old eyeglasses. Employees are encouraged to bring items from home as well for recycling / disposal rather than disposing in landfill.  During 2015, 104 lbs. of various types of batteries were collected and shipped for recycling, and kept out of the landfill.
Proper Disposal of Hazardous Materials	On an annual basis, expired / waste hazardous materials are properly disposed up through the NWRPC Clean Sweep program.

Completion Date: Ongoing	E-waste properly disposed of through the services of 5R Processors, Ladysmith, WI.
Reduction in the use of bottled water. Completion Date: 2009	Began using a reverse osmosis water system, replacing a plastic bottled water system.
Solvent Recycling Completion Date: July 2011	Solvent recovery system installed and operational to reduce disposal.

• **Educating Employees on Environmental Issues and Opportunities**

<b>Objective/Completion Date</b>	<b>Results/Outcome</b>
Topics Include: <ul style="list-style-type: none"> <li>• Living a Greener lifestyle by Reduction, Reuse and Recycling;</li> <li>• Updates on Stresau programs;</li> <li>• Information on alternative fuels, solar and wind.</li> </ul> Encourage vehicle fuel efficiency  Completion Date; Ongoing	Training is provided to all employees via staff minutes and distributed every two weeks to all employees and posted on employee bulletin boards. Postings and handouts are provided to employees as well, covering a wide range of informational and environmental topics.  Preferred parking spaces provided for carpool vehicles

• **Identification, Elimination or Reduction in Non-biodegradable Cleaning Products**

<b>Objective/Completion Date</b>	<b>Results/Outcome</b>
Identify environmentally harmful cleaning products used and replace with environmentally friendly alternatives.  Completion Date: Ongoing	Environmentally friendly cleaning products replaced previously used cleaning products.  Additional products will be reviewed and alternatives introduced on an ongoing basis.

• **Paperless File Retention System Implemented**

<b>Objective/Completion Date</b>	<b>Results/Outcome</b>
Reduce the use of paper through the implementation of electronically stored	Ongoing efforts are made to reduce the use of paper by storing documents electronically through the

documents.  Completion Date: Ongoing	implementation of SentryFile software. Files are assigned a specific number and they are easily accessible to employees needing to access information from the file.
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- **Improve Efficiency of Thermal Treatment Unit (TTU)**

<b>Objective/Completion Date</b>	<b>Results/Outcome</b>
Improve efficiency of Thermal Treatment Unit (TTU)  Completion Date: Ongoing	At the encouragement of the local WDNR, an experimental air introduction unit was fabricated and tested to improve the burn in the TTU, reducing the amount of released air particulate and resultant ash. Preliminary testing proved successful, and an improved unit was constructed and is in use that adds an adjustable fan velocity control.  This is a 12v battery operated system, with a solar panel being used to maintain and recharge the battery.

- **Participate in Industry Efforts to Develop “Green” Energetics**

<b>Objective/Completion Date</b>	<b>Results/Outcome</b>
Industry wide effort to develop “green” energetics  Completion Date: Ongoing	Stresau participated in the research and testing of energetic material aimed at replacing lead based energetics

## **Violations Noted**

There were no Wisconsin DNR or EPA violations cited in 2015 for the facilities.

## **Outlook for 2016**

Going forward, environmental improvements in 2016 and beyond may appear smaller in scale; however, their impact will be lasting. Employing an altered mindset toward reduction in our affect on the environment in all aspects of our business, including the actions of our employees, will help us attain new advancements in environmental responsibility. Even incrementally smaller changes can have a larger impact through a compilation of changes.

Report submitted to:

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