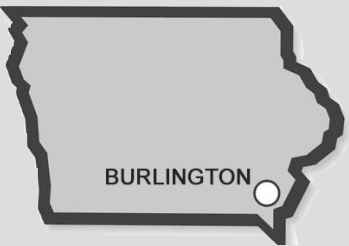


Federal-Mogul Corporation

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Federal-Mogul is a global supplier of automotive subsystems and components servicing both the worlds’ equipment manufacturers and after market consumers. Federal-Mogul has headquarters in Southfield, MI, and employs 45,000 people in 29 countries.

The Burlington plant specializes in automotive ignition products, specifically Champion® spark plugs. Currently, 520 people are employed over three shifts producing approximately 500,000 spark plugs a day with the plant in production 5.5 days a week, 50 weeks a year. The Burlington facility is TS 16949 and ISO 14001 certified.

Project Background

The project objective was to evaluate current high waste processes and determine if solutions could be found that would lessen both the environmental and economical impact of these processes. Projects included evaluating the cracked ammonia atmosphere used for annealing, the sillment spray drying process and completing an analysis of the plant’s lighting system.

Incentives to Change

Working with the DNR is of the utmost importance at Federal-Mogul. In order to maintain the TS 16949 and ISO 14001 certifications, the company must commit to continually improving energy use and implementing new pollution prevention strategies. Currently, ammonia is cracked into hydrogen and nitrogen to supply the atmosphere of the annealing furnaces. While this reaction is efficient, it requires the storage of 10 tons of liquefied ammonia onsite yearly as well as necessitates air permits. There is also the possibility of efficiency improvements in other processes.

Results

Conversion from cracked ammonia to H-N mixed atmosphere It was proposed to utilize a mixed hydrogen-nitrogen system, in which these gases were purchased and mixed onsite, as an alternative to cracking ammonia. A test of the annealing furnaces was run and all trials were a success. The only cost is for the labor to exchange tanks, thus the payback period is nominal.

Sillment Production

The current sillment spray drying system was designed 40 years ago when spark plug production was five times its current level. Currently,

the system runs only 16 hours a week and produces about 30 percent waste. By installing a new spray drying system based on current production needs, waste could be reduced by nearly 80 percent and electricity and natural gas consumption could be reduced by more than 60 percent. With an installation cost of about \$350,000, this system would have a 3.5 year payback period.

Sillment Container Reuse

The Burlington plant produces sillment, a material used in the packing of spark plugs, and ships the material internationally to other production sites. The sillment is shipped in plastic containers to insure that moisture levels stay low. These containers are expensive to purchase and are not returned for reuse. By instituting a reuse procedure for the containers, the purchase cost can be eliminated. With return shipping costs as the only project expense, the payback period is nominal.

Fluorescent Lighting

Over the past year, T5HO fluorescent fixtures have been updated allowing for a one for one exchange of Metal Halide bulbs with 3-bulb T5 fixtures to be done without rewiring.



Air Pollutants Diverted in Tons

	Total for all sectors
SO2	6.67
CO	0.68
NOX	3.17
VOC	0.11
LEAD	0.0
PM	0.16

Green House Gases Diverted in Tons (CO2 Equivalent)

	Total for all sectors
CO2	1,131.20
CH4	41.03
N2O	13.55
CFCS	15.03

Project	Annual Cost Savings	Environmental Results	Status
H-N MIXING ATMOSPHERE	\$3,000	111,000 kWh	In Progress
SILLMENT PRODUCTION	\$100,000	133,000 kWh 31,600 therms	Recommended
SILLMENT CONTAINER REUSE	\$16,700	Reuse 24 tons of plastic	Recommended
LIGHTING UPGRADE	\$133,000	2 million kWh	In Progress

