

**New York State
Environmental Investment Program
Research Project Summary
Xiom Corporation**

Project Background

Founded in 2000, Xiom Corporation (Xiom) developed a novel on-site polymer powder coating system with New York State co-funding assistance. In the process, plastic powder is conveyed via compressed air through the spray gun, melted by propane and air or propane and oxygen, and propelled onto a substrate. The Xiom system produces no Volatile Organic Compounds (VOC's), cures rapidly without an oven, uses no water or electricity, can apply many types of polymer powders on a wide range of substrate materials, and lasts longer than paint.

Xiom is a publicly traded company (XMCP) listed on NASDAQ.

Project Description

Despite its promise, the original Xiom process produced functional coatings with significant orange peel, created coatings that were too thick (5-10 mils), and coated with an inefficient narrow spray pattern. These drawbacks severely limited the technology acceptability compared to traditional wet painting and dry powder coating that require smooth, wide profile, and thin coatings.

For this project, Xiom and its technical consultant, H&W Systems, Inc. addressed the following key questions: 1) What are the technical requirements needed to minimize orange peel appearance? 2) What design changes are required to enable a wide spray pattern that exceeds 8 inches? 3) What steps must be taken to achieve consistent thin (less than 0.003 inch) coatings? 4) How can the end-users be convinced that the new technology is a reliable replacement?

In addition to in-house efforts, Xiom supplied coating systems and materials to three NYS test sites to gain field feedback and verify that project goals were achieved.

Project Results

All project goals were met. The Xiom team developed a new wide spray pattern gun with burner/nozzle designs capable of 8-12 inch spray patterns. Thin 1-3 mil coatings were produced in a repeatable fashion. The orange peel look was drastically reduced; for matte/semi-gloss finishes the Xiom coating matched oven quality.

At project completion, direct benefits to Xiom included the creation of 10 more jobs, the addition of new and better products to the product line, the ability to coat equipment components internally, and an almost three-fold growth in sales.

Future Implications

For NY State, assuming 10% market penetration in 5 years, the following pollution prevention can result annually: reduction of 9,530 tons of VOC, 1,720 tons of fine powder particulate, 1,200 tons of NOx, 360 tons of CO, 513,000 tons of CO₂, and 57 tons of GHG. Other benefits stemming from technology substitution include: significant energy savings by avoiding oven use, reduction of paint sludge and cleaning solvents, and obviating the need for VOC emissions controls from wet coating spray booths and cure oven exhaust.

Contractor: Xiom Corporation
County: Suffolk
ESD Region: Long Island
ESD Contact: 518/292-5340

NYS EIP Investment: \$182,500
Contractor Match: \$134,875
Total: \$317,375
Completion Date: May, 2008