

THE FORD MOTOR STORY



Ford Motor Company is a leading American auto manufacturer founded in Dearborn, MI by Henry Ford in 1903. At present Ford operates more than 70 facilities in more than 20 countries worldwide, employing 160,000 people globally. Bill Ford Jr committed Ford to a vision of sustainability and positioned the company as a leader in the drive to improve energy efficiency, reduce greenhouse emissions and achieve sustainability in manufacturing processes.

Professional Supply Inc. (now Worthington Energy Innovations) has been a regular partner in Ford's sustainability and energy projects since the 1980s.

HISTORY

Professional Supply Inc.'s ("PSI") work with Ford Motor Company dates to the early 1980s when Tom Kiser presented his revolutionary concept of eliminating steam and using building pressurization rather than ductwork for HVAC systems. At the time Ford's management team regarded the ideas as too unconventional.

Kiser presented his ideas a second time at Ford's facility in Sandusky, Ohio during a joint meeting between Ford management and United Auto Worker's Union ("UAW") leadership. There was renewed interest in building pressurization because that strategy also promised to improve indoor air quality. With the blessing of both management and the UAW PSI's system was commissioned at Sandusky in 1986. Union industrial hygienists measured air samples before and after installation and concluded that air quality had improved by 300%.

It soon became clear that Sandusky was Ford's most energy efficient facility. The project delivered \$1.7 million dollars in annual energy savings making it a two-year ROI. The project's success was revolutionary: PSI replaced coal-fired steam boilers with natural gas hot-water boilers when the cost of coal was only \$1.88 per million BTUs and natural gas came in at \$5.20 per million BTUs.

Sandusky's success led Ford back to PSI to replace a steam system at its glass manufacturing plant in Nashville, Tennessee. By that time, Kiser and his team had developed a new technology: the "Liquid Chimney" Heat Recovery System. The system recovered waste heat from boilers and returned it to the hot water delivery system. The Nashville project cost \$4.1 million dollars to implement and returned \$3.9 million in annual savings. Ford's PSI plants continued to perform so well that Ford returned to PSI



to ask how they could best use PSI to retrofit more facilities.

“DON’T GIVE ME ONE PLANT, GIVE ME TWENTY”

Ford approached Tom Kiser in 1998 to find out if PSI had a solution for more facility retrofits. Tom Kiser said, “Don’t give me one plant at a time, give me twenty. ” — because taking PSI’s solutions to scale would not only speed up implementation times but also deliver savings on equipment and installation.

Ford agreed to take PSI solutions to scale only if PSI would be willing to finance the equipment and installation costs and guarantee the performance of PSI’s systems. Tom Kiser agreed and Ford selected 12 plants in the United States and Canada. The projects encompassed more than 25 million ft² of manufacturing, and mixed-use office that included administrative offices, cafeterias and other campus facilities and were estimated to cost \$150 million.

It turned out that taking PSI’s solutions to scale was the right strategy because PSI was able to implement these new energy systems well under the original budget estimates. PSI implemented the projects over a 3 year period for only \$94 million.

PSI guaranteed \$150 million in savings to Ford from these projects over ten year contracts and ended up saving them **\$350 million.**

The key lessons Tom Kiser learned from doing the largest performance contract in Ford Motor history are:

- The right funding model + performance accountability means everyone wins
- Energy assets perform better when owned and operated by experts whose core business is energy
- Longer contracts are better because performance improves over time
- Relationships drive success

River Rouge Heritage Green Roof



These lessons became the foundation that [Powerdigm’s Funding Model](#) evolved from.