

# LEADERSHIP PROFILES: 3M, BASF & BAYER

## 3M SETS AMBITIOUS CLIMATE AND ENERGY TARGETS

Since meeting its goal of improving energy efficiency by 30% from 2005 to 2015, 3M has since established a 2025 goal to increase energy efficiency indexed to net sales by another 30%. The company's action to eliminate inefficient energy use has the dual effect of reducing energy costs and helps to meet 3M's ambitious absolute GHG reduction target (reduce emissions by 50% from 2002 levels by 2025).

3M's ambitious energy efficiency target will be addressed through building upgrades and CHP. 3M has identified certain locations where the use of CHP and heat recovery systems will curb energy waste as well as reduce the company's direct emissions. The company has identified a potential for 40% to 300% energy savings by switching from conventional lighting to LED lighting. Switching 250,000 lamps represents an estimated \$6 million dollars in savings for the company.

Source: 3M, 2017, <https://bit.ly/2BbSU5Q>

## BASF MAXIMIZES ENERGY POTENTIAL TO DRIVE SAVINGS

BASF is the one of the world's largest chemical manufacturers, with more than 15,000 employees in the U.S. The company works to ensure that not one therm or kilowatt is wasted in the manufacturing process. To that end, it has developed the "Energy Verbund Concept" to generate energy onsite with CHP and to capture waste heat from its manufacturing plants and re-use it to help power other plants. These systems are saving BASF around 19-million megawatt hours per year globally. Today, more than 70% of BASF's electricity demand is produced by CHP, saving the company 14-million megawatt hours in 2016 alone. Worldwide, BASF runs six large-scale Verbund sites and 338 other production sites. BASF has two Verbund sites in the U. S., one in Geismar, Louisiana and one in Freeport, Texas.

BASF also uses certified energy management systems to monitor much of its energy use and find opportunities to improve efficiency. In 2015, the company committed to doubling its monitoring efforts and plans to install energy management systems to cover 90% of its primary energy use by 2020. This will open the door to even greater savings.

Through these and other efficient uses of energy, BASF is close to meeting its publicly stated goal of reducing GHG emissions by 40% by 2020 (from a 2002 baseline). As of 2016, the company had already achieved a 37.2% reduction.

Source: BASF website: <https://on.basf.com/2yeaKoG>

## BAYER INVESTS IN COMBINED HEAT AND POWER

Following the Paris Climate Agreement, Bayer set ambitious greenhouse gas (GHG) reduction and energy efficiency targets: a 10% improvement in energy efficiency and a 20% reduction in specific GHG emissions by 2020 compared with 2015 levels.

More than 90% of Bayer's own energy generation comes from combined heat and power (CHP), such as at their Baytown, Texas plant. The Baytown facility, which uses the most energy of all Bayer's U.S. locations, encountered significant steam and electricity costs and had aging boilers that caused reliability issues. The 830-megawatt CHP project allowed Bayer to receive long-term pricing agreements on electricity rates and avoid capital costs. Although Bayer does not disclose exact cost savings, the company acknowledged it experienced energy cost reductions. Bayer's energy costs totaled \$200 million nationwide in 2000.

Sources: Bayer, 2015, <http://bit.ly/2ENODp1> and Pew, 2011, <http://bit.ly/2EEcwhi>