Water is a vital and seemingly cheap resource for automotive manufacturing facilities. However, it is a mistake to think that its cost to your business is what appears on your water bill. Instead, automotive companies need to understand the many ways water interacts with their industrial processes because when you add together the costs associated with treating and moving it around a plant, water is not cheap.

**THE TRUE COST**

Automotive companies that investigate the true business costs of water can find that they are potentially pouring millions of dollars down the drain. This is illustrated by a study Arcadis carried out for a global automotive manufacturing company across one of its U.S. production sites. We identified ways to reduce the annual water consumption in just one of this company’s plants by 35% – more than 350,000m³ every year, enough water to fill 140 Olympic-size swimming pools. This equated to a reduction in annual operating costs by approximately $650,000 each year. When linked costs – such as lower energy bills for example – were taken into account, the measures that we proposed had the potential to save this facility more than $1.3 million dollars a year. The cost of implementation was just $750,000.

Reduced water usage saves on the energy needed to pump, heat and cool it at different stages of the industrial process. It also cuts the amount of chemicals used in manufacturing processes, such as coolant, degreasers, and acids and it reduces both the chemicals and energy used for water purification prior to onsite use, as well as for onsite wastewater treatment.

**REDUCE, REUSE, RECYCLE**

When you only use water once in your industrial process, you are allowing all of the money spent on energy and treatment chemicals to go down the drain. To significantly reduce this happening, various measures to reduce, reuse and recycle water can be adopted, such as recycling boiler...
feed and cooling tower water, and reusing the water used for cleaning manufacturing equipment.

However, many companies never take such steps because simple water audits fail to take into account how this vital liquid affects every part of the business. This means the true cost of water isn’t identified, and the need to make the necessary investments isn’t spotted. Or worse, proposed water efficiency measures are rejected because they don’t make financial sense.

BLITZ YOUR WATER

The way we helped this automotive manufacturing company – and many of our clients – identify water efficiencies that can be financially justified is by employing a method known as Water Kaizen Blitz (WKB). The ‘blitz’ part is a short intense dive into understanding how water is used onsite. At its heart is a collaborative approach that brings together people from every part of the business. Carefully structured teams are created to include a mixture of onsite personnel and consultants. Onsite personnel will include maintenance staff, who have detailed knowledge of the facilities and the manufacturing operations. Consultants will include experts in processes and technologies for reducing water use, including water treatment technologies.

At the U.S. automotive plant, water and utilities cost data was collected to develop a “total cost of water” for the site. The onsite teams were then given three days to carry out a Water Kaizen Blitz. By delving into every part of the plant’s operations, the teams were able to identify 16 project opportunities with a return on investment of less than 1.5 years, making significant savings each year.

It isn’t only large facilities like the U.S. automotive plant that benefit from this technique. Smaller manufacturing sites can also make sizeable gains by delving deeply into their water usage.

CORPORATE RISK

Many companies are waking up to the true cost of water, and not just in terms of how it affects manufacturing processes. Reputational and strategic risk associated with water use are increasingly being recognized as having tangible financial consequences for companies that fail to tackle them.

Water now frequently features in corporate risk assessments conducted for investors. In the bonds markets, models such as the UN’s Corporate Bonds Water Credit Risk Tool apply a shadow price for water to depict its true value over and above its purchase price. The tool combines water risks with a company’s water use and financial figures and evaluates how water stress would impact the company’s debt-to-income ratio, which in turn influences its bond rating. Even if your company isn’t seeking investment, in many countries water efficiency targets are now becoming legal regulatory obligations and failure to meet these targets typically result in financial penalties.

GUARDING A SCARCE RESOURCE

The wider context for all of this is that fresh water is becoming an increasingly scarce resource. In 2015, NASA’s satellite data revealed that a third of the world’s large aquifers are severely water-stressed and, according to the World Economic Forum, global water requirements in 2030 are projected to be 40% above sustainable water supplies. The global population and developing nations are growing so fast that soon there may not be enough water to go around. In addition, company shareholders and boards are starting to recognize the strategic risk associated with being seen as a business that wastes water. It might not be just money that you’re pouring down the drain. It could be your reputation too.

For more information, contact us:

Paul Fielden
Global Sector Lead, Automotive
E Paul.Fielden@arcadis.com

John McKenna
Water Kaizen Blitz Process Lead, Automotive
E John.McKenna@arcadis.com

@ArcadisGlobal
Arcadis
www.arcadis.com