



THE

GOODS

SPRING 2019

SPRING HAS
SPRUNG!



KENTUCKY ASSOCIATION OF MANUFACTURERS



KENTUCKY ASSOCIATION OF MANUFACTURERS

Advocate. Educate. Innovate.

New Members

Ampyss Healthcare Solutions
Aulick Chemical Solutions, Inc.
BenWal Capital
Campbellsville Industries, Inc.
Littler Mendelson, P.S.C.
Maxwell Bros. Lumber Co. LLC
Premier Fleet Graphics
Segepo-FSM
Sterling Tool & Die, Inc.
Thoroughbred Metalworks LLC
Trinity Consultants
USHC, LLC
Action Equipment Solutions
Blastics
Genius Solutions
Gryphon Environmental LLC
NCC Group Security Services,
Inc.
Paycor
Sycamore Growth Group
TB Miller Signs, LLC
AFA Engineering, LLC
MAML Group, LLC
Sandalwood Engineering &
Ergonomics

Welcome to KAM!

Contents

- 3 Calendar & KAM Board**
- 4 Executive Shop Talk with Lee Lingo**
- 6 Advocacy Corner**
- 8 Prescription Drug Trends**
McGriff Insurance
- 11 Utility Bill 101**
Harshaw Trane
- 12 KY Department of Agriculture Update**
Commissioner Ryan F. Quarles
- 13 Upcoming Events**
- 14 Advantages of ISO 45001 Certification**
Fisher Phillips
- 16 Manufacturing in America & Kentucky**
Advantage Kentucky Alliance
- 17 Surviving Today's Threats**
Advanced Global Communications
- 19 LIFT's Agreement Extension from U.S. DoD**
- 20 KAM Member Benefits**
Employee Benefits & Discount Programs
- 22 Low Risk Sourcing of Components**
Classic Electronic Components
- 25 Outsourcing Processing Systems**
Aztech Controls
- 26 Complex Vessel Fabrication**
Mitternight
- 29 Freight & Logistics: Driven by Payments**
Infintech LLC
- 30 Reducing Costs for High Energy Users**
Energy Architects/ConServ Energy Group
- 34 Sourcing Power Transformers**
Electric Service Company (ELSCO)

MARCH						
S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

07 Elevate w/WTCKY
29 2019 Session adjourns
TBD Mfg 411 Call-in Session

KAM Conversations Legislative
Calls will occur Thursdays at
4:00 pm EST during session

APRIL						
S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

19 Good Friday (half day)
26 Executive Committee
TBD Mfg 411 Regional Mtg

MAY						
S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

16 KAM Board Meeting
27 Memorial Day (closed)
TBD Mfg 411 Regional Mtg

JUNE						
S	M	T	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

TBD Mfg 411 Call-in Session
18 KDA-KAM LAND Forum -
Hazard
20 KDA-KAM LAND Forum -
Campbellsville



2019 KENTUCKY
TAX CHANGES

KAM BOARD

EXECUTIVE COMMITTEE

Jackie Hogan, Chair
Toyotetsu America, Inc., Somerset
Chris Driver, Sr. Vice Chair
Harshaw Trane, Lexington
Douglas Irvin, Treasurer
Darling Ingredients, Cold Spring
Richard N. Whitaker
Sumitomo Electric Wiring Systems Inc., Bowling Green
Lee Lingo, Executive Director
Kentucky Association of Manufacturers, Frankfort

DIRECTORS

Bluegrass
Rusty Ashcraft, Manager, Gov't Affairs & Environmental Policy, Alliance Coal, LLC
Joe Blackburn, Plant Manager, Schneider Electric USA, Inc., Lexington
Chris Driver, Filtration Program Leader, Harshaw Trane, Lexington
John-Mark B. Hack, VP for Business Development, Bristol Group, Inc., Lexington
Lee Lingo, Executive Director, Kentucky Association of Manufacturers, Frankfort
Rejeana Thompson, Aichi Forge USA, Inc., Georgetown
Ed Webb, President & CEO, World Trade Center Kentucky, Lexington

South Central
Jackie Hogan, General Manager, Toyotetsu America, Inc. Somerset
Carroll Knicely, Jr., General Manager, CHUHATSU North America, Inc., Glasgow
Richard Whitaker, Vice President, Sumitomo Electric Wiring Systems, Bowling Green

Eastern
Byron Craig, Business Development Manager, Boneal, Means
Jason Macak, Engineering Manager, Marathon Petroleum Company, Catlettsburg

Louisville
George D. Adams, Partner, Fisher & Phillips LLP
David Hall, Resident VP Public Affairs, CSX Transportation
Earl F. Jones, Senior Counsel, GE Appliances
Paula Smith, Senior Counsel, Gov't Affairs, Kentucky Farm Bureau Mutual Insurance
Ann Kelly Lopez, Plant Manager, The Chemours Company
Daniel Naes, Plant Director, Brown-Forman Corporation
Moriah Ogilvie, Director, KY Large Group & Assn Retention, Anthem
Christopher Perry, President & CEO, Kentucky Association of Electric Cooperatives
John Rainey, Regional Director, Government Affairs, Altria Corporate Services
Fred Thome, Plant Manager, Ford Motor Company
Paul W. Weis, Manager, Business Services, LG&E-KU

Northern
Douglas Irvin, VP of Environmental Affairs, Darling Ingredients, Inc., Cold Spring

Western
Robert J. Baker, President, Campbell Tobacco, Mayfield
Robert R. Cook, Sales Representative, Atmos Energy Corporation, Owensboro
Thomas Koehler, Site Manager, Wacker Chemical Corporation, Calvert City
C. Douglas Wolf, VP of Compliance, McCoy & McCoy Laboratories, Inc., Madisonville

KAM TEAM MEMBERS

Lee Lingo, Executive Director
Shelley Goodwin, Director of Operations
Matt Ellis, Director, Web Development & Creative Design
Sherry Harrod, Executive Assistant
Rachel Bayens, Legislative Agent
Carl W. Breeding, General Counsel
Lloyd "Rusty" Cress, Executive Director, KAM Chemical Industry Council
Prentice Harvey, Legislative Agent
Mike Helton, Advocacy Team Leader
Bert May, Legislative Agent
Dustin Miller, Legislative Agent
Kelly Shasky, Legislative Agent
Mike Shea, Legislative Agent





Executive Shop Talk

You've been busy and we've noticed.

Locally and nationally our unemployment rate continues to remain low. That's because the manufacturing sector continues to create new jobs and provide a stable environment for long-term careers.

According to the Manufacturers' Outlook Survey (conducted by the National Association of Manufacturers) our industry has enjoyed a record-high 91.8% manufacturing optimism average for 9 consecutive quarters. Clear illustrations of that optimism can be seen right here in the Commonwealth.

Governor Bevin recently announced Kentucky has grown its exported goods and services for the fourth consecutive year, reaching a new all-time high of \$31.76 billion. Importantly, the vast majority of that growth came from manufactured goods.

Fibonacci LLC, the nation's first HempWood operation which produces a hardwood alternative, will be locating a manufacturing facility in Calloway County. Toyota and Ford recently announced significant expansions of their Kentucky operations—with Toyota investing \$238 million and adding two new additional models to their Georgetown facility, and Ford adding 550 jobs and expanding production to meet demand for its Expedition models. And in one of the state's largest ever single investments, Nucor announced it would build a \$1.35 billion steel mill in Brandenburg which will create 400 well-paying full-time jobs.

Although these are just a few of manufacturing's projects and accomplishments, they illustrate that Kentucky manufacturing is not only strong but has momentum and is gaining strength. These are significant wins to be celebrated.

Now, let's switch gears and talk about Kentucky manufacturing's biggest unmet challenge—our workforce.

The projects listed above will create hundreds of full-time jobs and a significant number of construction, support, and supply chain jobs. The question is whether there will be workers trained and ready to fill all those jobs. Josh Benton, Deputy Secretary for Education and Workforce, illustrated the challenge when he informed attendees at Manufacturing Day at the Capitol that Kentucky currently has over 100,000 unfilled jobs, a significant number of which are in manufacturing.

That existing jobs vs. existing workforce deficit is growing as manufacturers expand and add new projects. That deficit is growing as baby-boomers retire. That deficit is growing as the percentage of workers challenged by substance abuse increases. And that deficit will continue to grow until we as an industry sector—I would say THE most important industry sector—step outside our plants and facilities and start promoting what we do and why we do it. Demand for qualified workers is extremely strong. In short, we have a supply problem.

Have you ever thought about the fact that the most popular toys for children, ALL children the world over—regardless of gender, nationality,

race and socio-economic status—are building related? Kids use sticks and stones, plastic bricks and wooden blocks, Lincoln Logs, erector sets, or even pillows and blankets to build forts. No matter the components, kids love to make things. WE. MAKE. THINGS. And yet the percentage of youth who seek out manufacturing- related jobs and careers is low. In fact, in far too many cases, it's not even a part of their career choice exploration. Why is that? How and why do we lose them?

EVERYTHING we use daily and most things we eat or drink have gone through some sort of assembly, manufacturing, or refinement process. Everything from our phones to our homes is created, made, and manufactured. Younger and older people are interested enough to watch shows about how things are made, how goods are repurposed for new uses, and about the dirtiest jobs people can imagine. And those shows have remained popular for decades. Still, relatively few people connect their interest in what they enjoy on TV to an actual income-earning job in manufacturing.

This must change and only we, the makers, can change it. Only we can tell OUR story. Only we can share OUR joy and satisfaction and sense of accomplishment in this industry. Only WE can change the trajectory of employment migration away from creating, making, and manufacturing. Only we can generate the supply.

Our industry has long since moved past the first Model T assembly line, Laverne & Shirley working in the bottling plant and Lucille Ball at the chocolate factory. We are hi-tech. We are clean. We are innovative and we offer challenging and rewarding careers. And we have positions for virtually any certificate, credential, or degree you can earn. Of course we need skilled tradespeople, assemblers, and engineers, but we also need accountants, biologists, chemists, health care professionals, and security experts. We need clerical personnel, graphic artists, inventors, legal eagles and salespeople too.

It's time we start telling our story, the story of how things are made. How WE make the things we need and use every day. The story of how

great a job or career in manufacturing is and how much it can change your life for the better.

Let's start filling jobs by consciously recruiting individuals looking for new opportunities and second careers. We can do that by reaching out to military servicemen and women who are entering the workforce and, even more important, by informing our younger people whose minds are still open to what they can grow up to accomplish.

In short, let's solve our workforce challenge by increasing the supply of people interested in manufacturing.

The cheapest and easiest and most cost-effective thing we can do to meet the challenge is tell our story. When we do, manufacturing's strength and prominence will continue to grow and produce vital and tangible benefits for this great Commonwealth.

KAM's core mission is to enhance and protect the bottom lines of manufacturing companies. Telling the story of manufacturing, and thereby attracting a ready and qualified workforce, is integral to that mission. But we cannot do it without engagement by you, the on-the-ground manufacturers.

If you are already a member and are engaged in our workforce development promotion efforts, thank you. If you're not a member, we would love to represent your manufacturing-related business. If you're not engaged and want to be, we would love to hear from you. And, if you know someone who is in manufacturing or a manufacturing-related business you think we could help or could help us, we would appreciate an introduction.

Respectfully,



Lee Lingo
Executive Director
KAM



AdvocacyCorner

BY GOVERNMENT STRATEGIES

As I write this edition of the Goods, we have completed 29 of the 30 days of this year's legislative session. The final day, March 28, is reserved for consideration of any vetoes by the Governor. The final day is also a normal legislative day and bills that are pending may receive final action.

This session has been difficult to get a handle on with the 32 new members and a new leadership team in the House. Major issues were no different than the last 3 previous sessions—pensions, tax reform and revenue. Although all three were discussed at some point, very few bills were proposed and even less were passed.

The session got started with the appointment of a legislative working group to continue the interim discussion on pension reform. The group met through the recess period in January and heard the same testimony and potential recommendations as had been discussed throughout the 2018 session and the Interim that followed. In the end it was decided to continue the discussion through the Interim and into the budget session in 2020.

Comprehensive tax reform, although always on everyone's list, received no strong consideration. A selective group of leadership and key members met privately to discuss potential reforms that had been suggested or considered over the past year. There was nothing that resulted in those discussions on global tax reform., although a clean-up bill was introduced and passed.

KAM was successful in advocating for a number bills including the expansion of KEES Scholarship funds, work ready scholarships, net metering, legislation allowing for the use

of arbitration agreements as a condition of employment, an expansion of the Kentucky Jobs Retention Act, a bill limiting the use of firefighting foam to emergency situations and of course the tax cleanup bill mentioned above. All passed both chambers and are pending and expected to be signed by the Governor.

House Bill 354 was described as "cleanup bill" to the 2018 tax reform bill. The bill clarified language related to the mandatory combined reporting provisions by adding a "water's edge" provision. The bill also included reduction in the property tax for qualified heavy equipment and expanded and modified the tax code for major recycling projects.

The workforce development bill, HB 61, was sponsored by Rep. Kim Moser and passed unanimously. The bill provides for the expansion of KEES scholarship funds to qualified workforce development programs. KAM supported this legislation and we anticipate it being a help to members' workforce initiatives.

Senate bill 98, sponsored by Senator Mike Wilson also passed unanimously. The bill establishes a Work Ready Kentucky scholarship program similar to the program started by Governor Bevin's Executive Order this past interim. The scholarships apply to Kentucky's top (5) high-demand workforce sectors as identified by the Kentucky Workforce Innovation Board and the Education and Workforce Development Cabinet. The bill also adopted the Executive Order that Governor Bevin had previously enacted. KAM worked for passage of this legislation as well.

Senate Bill 100, sponsored by Senator Brandon Smith was this session's amendment to the net

metering bill. KAM has worked with a coalition of utilities and electric users on this bill for the past three sessions and it finally made it across the finish line this year. The bill provides for the state's Public Service Commission to determine a fair and reasonable compensation rate for net metered customers. We believe the legislation will promote a manufacturing –friendly environment in Kentucky.

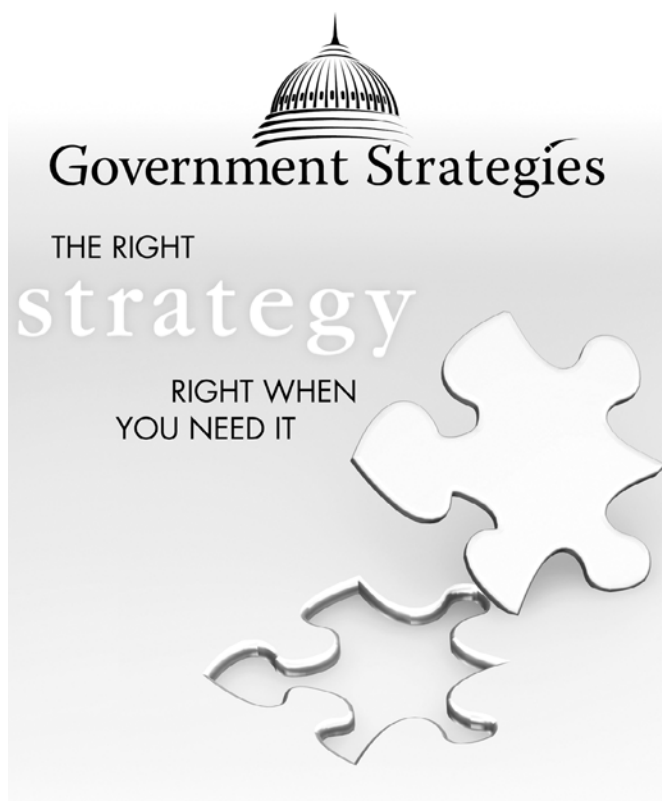
Senate Bill 7 sponsored by Senate President Robert Stivers addresses a Supreme Court ruling and relates to arbitration, mediation, or alternative dispute resolution agreements to be required by employers as a condition of employment.

Other bills that KAM supported but didn't make it through this session include unemployment insurance reform, and Transportation Infrastructure reform. We anticipate further discussion on both, especially Transportation Infrastructure, during the Interim and will be following very closely. The Infrastructure bill will raise much needed revenue for the state's road fund.

Speaking of the Interim, what can we expect the next 8 months or so? The Governor's

race will dictate a lot of the issues discussed. The next session is also a budget session and preparation of the budget will begin late this summer and early fall. The budget discussion and preparation will generate a more urgent need for new general fund and road fund revenue. Tax Reform and pension reform will remain the top issues for discussion among legislators and gubernatorial candidates. March 28th is this session's final day and by then most of the bills that were passed this session will have been acted upon either by being signed by the Governor, letting become law without his signature or vetoed. We will be having a final report that will update our bills of interest sometime after the 28th.

On behalf of the KAM Advocacy team, I want to take this opportunity to thank all of those that made calls, sent letters and emails and met with individual legislators to push the manufacturing agenda. It makes our job much easier when constituents of legislators can make those contacts and express an opinion. We will continue to build our grass roots base and as we do, KAM will become even more influential in Frankfort. Please don't hesitate to contact us with any questions or suggestions.



Government Strategies

THE RIGHT
strategy
RIGHT WHEN
YOU NEED IT

Government Strategies is a professional government relations firm that focuses on the preparation and implementation of Legislative and Executive Branch government strategies.

We offer:

- Strategic Government Relations Planning
- Legislative Lobbying Services
- Executive Branch Lobbying Service

With offices in Frankfort and Louisville, Kentucky, our practice spans the Commonwealth of Kentucky and throughout the United States serving an extensive selection of clients in a variety of industries.



MIKE HELTON, PARTNER

MIKE SHEA, PARTNER



RACHEL PHELPS, ASSOC. PARTNER

PRENTICE HARVEY, PARTNER

DUSTIN MILLER, PARTNER

frankfort

229 Shelby Street, Frankfort, KY 40601
Tel: 502-226-3975 • Fax: 502-226-3977

louisville

13000 Equity Place Suite 207, Louisville, KY 40223
Tel: 502-245-2532 • Fax: 502-245-2534



Prescription Drug Trends

Provided by McGriff Insurance Services, Inc., McGriff, Seibels & Williams, Inc., BB&T Insurance Services of California, Inc., and Precept Insurance Solutions, LLC

As prescription drug costs continue to increase, it is important for employers to understand the trends behind prescription drug costs and what they can do to better manage their health care expenses.

In 2019, the United States is projected to spend over \$500 billion on prescription drugs, by some estimates— 12 times more than the \$40.3 billion spent in 1990. Although prescription drug spending has historically been a small proportion of national health care spending compared to hospital and physician services, it has grown rapidly in recent years.

In 2014, prescription drug spending in the United States increased by 13.1 percent—the largest increase since 2003. This jump was due to a number of factors—a major one being a 30.9 percent increase in spending on specialty medications, which are high-cost drugs used to treat complicated conditions like hepatitis C, cancer and rheumatoid arthritis. The growth in prescription spending was also due to more people being insured and gaining prescription drug coverage as a result of the Affordable Care Act (ACA).

Prescription Drug Spending in Previous Years

The 2014 increase marked a departure from previous years' prescription drug trends. Annual prescription spending growth declined from 18 percent in 1999 to 5 percent in 2007 due to variety of factors, including greater usage of generic drugs, changes in the types of drugs being used and more tiered copayment

prescription plans. Spending fell 3 percent in 2008 as a result of the recession and safety and efficacy concerns.

Following years of decreasing rates, U.S. drug spending increased in 2012 by 3.8 percent. Since then, it has risen over 30 percent.

Changes to the Prescription Drug Payer Mix

The portion of prescription drug spending paid by private insurers increased from 27 percent in 1990 to 43.5 percent in 2013, contributing to a reduction in the amount people paid out of pocket, which dropped from 56.8 to 16.9 percent. During this same time, Medicare spending increased from 0.5 to 27.5 percent.

The implementation of Medicare Part D in 2006 dramatically altered payer mix, as Medicare expenditures soared from 1.9 percent in 2005 to 17.7 percent in 2006. Medicaid's expenses, on the other hand, fell from 17.7 percent to 8.5 percent during this time because Medicare replaced Medicaid as the primary insurer for individuals covered under both programs.

Reasons Behind Prescription Drug Trends

A multitude of factors led to changes in prescription drug costs, as outlined below.

Increasing Drug Prices

In 2017, traditional prescription drug spending decreased 0.3 percent. Specialty medications account for a smaller portion of U.S. prescriptions, yet they commanded 40 percent of the pharmaceutical market in 2016 (\$180

billion). Specialty drug spending is projected to experience rapid growth over the next several years, due to pricing increases. These increases are often cited by insurers as reasons for raising premiums.

Types of Drugs Used

In 2016, specialty drugs comprised just under 2 percent of total prescription volume, but accounted for nearly 40 percent of prescription spending. Approximately 49 percent of the drugs that gained Food and Drug Administration (FDA) approval in 2014 were specialty drugs, pointing to a steady rise in usage. This trend is likely to continue as more specialty drugs enter the market.

Failure to Follow Physician Orders

Reductions in drug utilization may mean that patients aren't adhering to the drug treatments recommended by their doctors. A failure to fill prescriptions can have serious effects on patient health and lead to more costly medical problems down the road. A recent study found that 31 percent of prescriptions go unfilled and individuals over the age of 52 were more likely to fill their prescriptions than their younger counterparts. Women were more likely fill their prescriptions than men, and, unsurprisingly, drugs with higher copayments were less likely to be filled.

ACA's Impact on the Pharmaceutical Industry

The ACA implemented various provisions designed to help monitor the pharmaceutical industry, including imposing an annual fee on importers of branded prescription manufacturers and importers whose branded sales exceed \$5 million. This annual flat fee started at \$2.5 billion in 2011 and will increase to \$4.1 billion by 2018. The ACA also created a process for gaining FDA approval of biosimilar, or interchangeable, versions of brand-name drugs. Brand-name drugs, though, are given 12 years of exclusivity before biosimilar drugs can be approved.

In addition, the ACA requires non-grandfathered health plans to include prescription drugs as one of the "essential health benefits," and all forms of birth control must be covered without cost sharing. Over

the next few years, rebates and discounts will also be available to certain Medicare Part D beneficiaries.

Cost Control Strategies

Below are several tactics that insurers, employers and consumers have implemented in an effort to curb rising prescription drug expenses.

Managing Usage

Many health plans have responded by creating drug formularies, which exclude certain drugs from coverage, and step therapy requirements, which require individuals to try more cost-effective treatments before "stepping up" to more costly drugs. In addition, some insurance plans have increased patients' out-of-pocket responsibilities by imposing separate prescription deductibles and requiring certain medications to have a prior authorization. Prior authorizations may be required when an insurer believes a less expensive drug may work just as well as the more expensive drug the doctor prescribed.

Using Other Payment Methods

Using generic drugs is a well-known way to save money on prescriptions without sacrificing quality, but a lesser-known option may be using cash to buy prescriptions—instead of using insurance. No longer bound by gag clauses as of 2018, pharmacists can now say whether you'll save money by not using insurance and paying with cash instead.

Rebates and Discounts

Some businesses have elected to partner with organizations known as pharmacy benefit managers in order to negotiate with pharmaceutical manufacturers to receive rebates and discounts on prescription drugs based on factors like volume and market share. Similarly, some employers have joined together to create prescription drug purchasing pools in order to increase their purchasing power when negotiating lower prices for prescription drugs.

Employee Awareness

Employers are not the only ones seeking to reduce costs when it comes to pharmaceuticals. As employees' out-of-pocket responsibilities

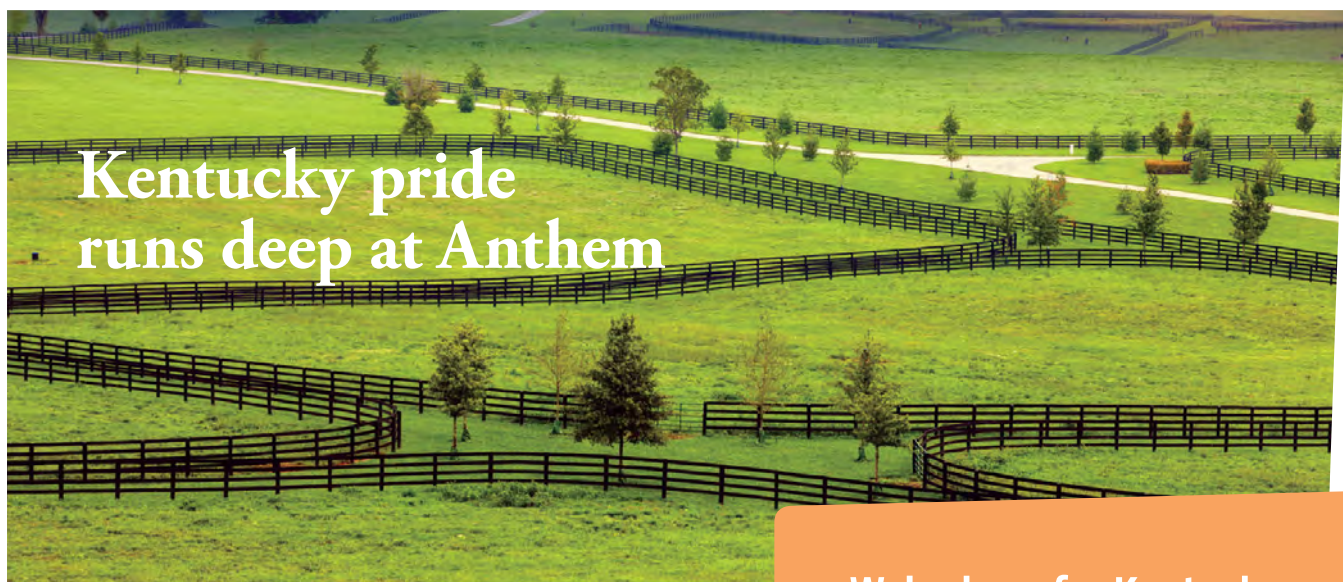
continue to grow, rather than paying for a brand name, more people are asking for cheaper or generic versions of drugs. Consumers are also using the internet and phone apps to make price comparisons between local pharmacies and to locate available coupons. Some consumers are also looking to mail-order pharmacies to handle 90-day supplies of their medications, which often offer lower drug prices.

Prescription Drug Trend Projections

The Centers for Medicare & Medicaid Services (CMS) projects that from 2012 to 2022, annual expenditures on prescription drugs will grow by 75 percent to \$455 billion. Outpatient

prescription drugs will account for about 9 percent of total health care spending. By 2022, the ACA is expected to add an additional \$15.3 billion in annual drug expenditures.

Furthermore, the CMS projects that from 2015 to 2024, prescription drug spending will grow, on average, 6.3 percent annually, which is slightly higher than its projections for health spending (which will increase at an average rate of 5.8 percent per year). The CMS notes that during this time, new specialty drugs will enter the market and there will be fewer generic drugs launched. These projections are subject to change.



Kentucky pride runs deep at Anthem

We see healthy this way: family, friends and community members who keep a lookout for each other. That's what you can count on with Anthem Blue Cross and Blue Shield (Anthem). We've been here for more than 75 years and it's our honor to be good neighbors, supporting organizations that help keep your families and your businesses thriving. So here's to the healthy state of Kentucky, strong now, stronger tomorrow.

We're here for Kentucky, now and always

See what Anthem can do for your business. Stop in for a visit at anthem.com.



Anthem Blue Cross and Blue Shield is the trade name of Anthem Health Plans of Kentucky, Inc. Independent licensee of the Blue Cross and Blue Shield Association. ANTHEM is a registered trademark of Anthem Insurance Companies, Inc. The Blue Cross and Blue Shield names and symbols are registered marks of the Blue Cross and Blue Shield Association.

Utility Bill 101

BY HARSHAW TRANE

Understanding your utility bill is crucial to keeping it low. We're all familiar with the way residential energy bills work. They're very simple – you're charged for the amount of energy you use, and you have a recurring monthly service charge. However, commercial and industrial buildings serve larger spaces, loads, and more complicated equipment, so electric bills tend to be more complex.

Like with residential bills, there is an Energy Charge (dollars per kilowatt-hour) and a monthly Meter Charge (dollars per month). However, commercial and industrial bills add what's known as a "Demand Charge." Demand is the measure of the maximum power supplied during the billing period, in kilowatts. It might help to use the analogy of the odometer and speedometer in a car. The amount of energy used (kilowatt-hours) can be compared to miles driven, as shown on the odometer. Energy demand, kilowatts, is more like the speed or the rate at which the miles are driven, as shown on the speedometer.

Demand is billed because electric utility companies invest in generating and distribution equipment to supply the power you may need, when you need it. Electricity is not easily stored, so it's generated as needed. Because of this, utility companies want to have adequate capacity on hand to meet customers' maximum requirements, both for quantity (kilowatt-hour) and power level (demand kilowatts). Commercial and industrial electric rates are set to cover the total cost of providing both.

While Kentucky electric utility rates for industrial and residential consumers are among the lowest in the nation, the commercial sector has seen higher increases in electric utility rates - Kentucky is ranked 21st for lowest commercial utility rates. One reason for this is that the commercial sector has not been well represented in the past on rate case interventions to negotiate fewer increases.

Kentucky utility companies enjoyed significant growth until about 2008. At that time, a couple of things happened simultaneously to curb this trend:

1. The Great Recession was underway, and businesses in the manufacturing and commercial sectors were using less energy. In Eastern Kentucky, we started to see a reduction of coal mining, which is highly energy intensive.
2. There was an enormous awakening among business leaders around sustainability, global warming and greenhouse gas reduction. Building codes increased sharply, and businesses began implementing energy-conservation measures.

Since 2008, electric utility companies in Kentucky have dealt with flat or declining sales. One-way utility companies protect revenue during periods of decline is to push for rate increases.

Businesses are seeing the spiral they're caught in, and there has been a recent groundswell of entities that are emerging to help solve the issue of rising electric utility rates. For example, Harshaw Trane helped to develop Kentucky Commercial Utility Customers (KCUC), Inc., a recently formed association that is the first in Kentucky devoted to helping commercial customers challenge electric utility rate increases. The association files interventions with the state on behalf of the commercial sector.

We know this is a complex and often confusing subject. If you need help understanding your bill, or want to find ways to lower it, we're here to help.

About Harshaw Trane Harshaw Trane: (www.harshawtrane.com) creates and sustains high performing, efficient and secure facility environments. An intelligent building technology and energy services provider, the company employs 300 highly-trained associates, including Certified Energy Managers and LEED® Accredited Professionals, is an ENERGY STAR Product and Services Provider, and is a founding member of the Kentucky Chapter of the U.S. Green Building Council. Harshaw Trane is headquartered in Louisville and has offices in Lexington and Bowling Green, Kentucky, and Evansville, Indiana.



Kentucky Dept. of Agriculture

Provided by Commissioner Ryan Quarles

As I write this, the General Assembly is entering its last few days of the legislative session. This year, the General Assembly gaveled in for a “short” 30-day session to deal with leftover items from the 2018 session. We took advantage of this opportunity to deal with several agricultural policy items, ranging from our out-of-date grain laws to industrial hemp.

One of KDA’s top priorities this legislative session was a reform of Kentucky’s outdated grain laws. I worked with Senate Agriculture Committee Chairman Paul Hornback and Chairman Heath on Senate Bill 153, an act that comprehensively modernizes the laws governing the Commonwealth’s grain industry and clears the way for the elimination of 11 administrative regulations. This bill was the result of a year-long conversation at KDA about the shortcomings of Kentucky’s grain laws, which hadn’t been updated since the 1990s. A lot has changed since then, and the needs of our grain producers, who provide many of the inputs for manufacturing. The bill passed both houses and now awaits the Governor’s signature. Please join me in thanking Senator Hornback and Representative Heath for sponsoring this bipartisan legislation.

I know you’ve heard a lot about hemp since the passage of the 2018 Farm Bill. Our industry continues to grow by leaps and bounds. I submitted Kentucky’s state plan to the U.S. Department of Agriculture the day it was signed by President Donald J. Trump. I was proud to support a bill sponsored by House Agriculture Committee Chairman Richard Heath to update Kentucky’s hemp laws to match the language

in the new federal Farm Bill. It also awaits the Governor’s signature.

Lastly, I wanted to make a plug for this year’s Linking Agriculture for Networking and Development (LAND) forums, sponsored by the Kentucky Agricultural Development Fund (KADF). These one-day conferences present excellent opportunities to engage with Kentucky agricultural producers. I’m excited to share with you that KDA’s Tim Hughes, who has led KDA’s LAND conferences, has agreed to take on new responsibilities advising me on international trade. If you ever need anything from our office in the agriculture, manufacturing, and trade nexus, I encourage you to contact our office. As for any one of the upcoming seven LAND forums, be sure to stay tuned to the pages of The Goods for the upcoming dates.

It has been an honor to advocate for all of Kentucky agriculture this legislative session. If you or business has an issue that I can help you with, please do not hesitate to contact my office. We’re here to serve you!



Upcoming Events



2019 LAND Forums

The LAND (Linking Agriculture for Networking & Development) forums are intended to bolster existing collaboration between agriculture and manufacturing to develop and expand upon the existing supply chain for agricultural product to the manufacturing sector.

These events are intended for manufacturers, agricultural leaders, economic development professionals, local and state officials, academia, and other stakeholders.

Dates and locations are listed below.

June 18 - Ky River ADD - Hazard, KY

June 20 - Taylor Co. Cooperative Extension Office - Campbellsville, KY

July 16 - Gallatin Co. Cooperative Extension Office - Warsaw, KY

August 1 - Muhlenberg Cooperative Extension Office - Central City, KY

August 2 - Marshall Co Cooperative Extension Office - Benton, KY

September 17 - Derrickson Agricultural Complex - Morehead, KY

For registration or more information, please click [HERE](#).



Global Executive Forum: Foreign Trade Zones, Optimizing Savings and Operations

Thursday, April 18th | 8:00am-10:00am
The Olmsted | Louisville

Join keynote speaker Erran Persley, Commissioner of Business Development for the Kentucky Cabinet for Economic Development and a group of dynamic panelists at the Global Executive Forum on Foreign Trade Zones,

April 18th. Persley will discuss specific tax savings, operational plans and tax-saving avenues. Learn the benefits of FTZs and the general procedures for establishing one.

For registration or more information, please click [HERE](#).

Attaining ISO 45001 Certification Gives Manufacturing Companies a Competitive Advantage

By Todd B. Logsdon and Ed Foulke, Fisher Phillips

Any sales and marketing training manual will tell you that your company needs to differentiate itself from competitors. Success depends on not looking like every other company that provides products and services similar to yours. The new international occupational health and safety (OHS) standard – ISO 45001, published in March 2018 – offers a fresh and important competitive advantage that smart businesses will quickly utilize. Manufacturing companies, who naturally must be concerned about workplace safety, should learn about ISO 45001 and how implementing it will help them dramatically improve their safety culture.

ISO 45001—What is it?

The eagerly anticipated ISO 45001 standard, developed with input from experts in more than 70 countries, has been called the “gold standard.” The world’s first international certification standard addressing health and safety at work, it provides a framework that will help businesses significantly enhance their safety and health performance, reduce workplace injuries and illnesses and dramatically improve employee productivity and quality. Improving these metrics leads to increased profitability.

ISO 45001 specifications and guidance were developed to be integrated into the business management processes of organizations of every size, type or industry.

The new standard takes a unique approach because it is specifically directed at engaging an organization’s top leadership in safety and health risk management. OSH standards have been around for years, but ISO 45001 is the first to mandate safety and health as part of a complete, integrated management function. The standard elevates safety to a core function, on par with quality, production and finance, and positions it as a necessity for sound and

reputable companies.

Under the ISO 45001 framework, management teams are responsible for creating, facilitating, maintaining, evaluating and promoting their companies’ safety risk management systems in order to provide a safe and healthy workplace for both employees and “other interested parties,” including contractors, vendors, suppliers and even the public, passers-by and neighbors. ISO 45001 requires worker involvement, as well, in decision-making and evaluation.

The Interaction of ISO 45001 with ISO, OSHAS or VPP Certifications

OSHAS 18001, used in approximately 130 countries and currently the most widely adopted workplace health and safety standard, will expire in 2021. ISO 45001 will replace it, so companies that already hold OSHAS 18001 certification have two more years to make the transition. However, companies should be aware that, per the International Organization for Standardization, ISO 45001 is its own separate standard and not merely an updated version of OSHAS 18001.

Businesses that hold other ISO certifications will have an advantage when it comes to implementing ISO 45001, as well. The ISO 45001 standard uses the same Annex SL structure (essentially a template) utilized in ISO 9001 or ISO 14001. As a result, if your business is already ISO certified, it will be easier for you to put ISO 45001 implementation, documentation and auditing procedures in place.

Businesses operating as OSHA Voluntary Protection Program (VPP) sites will also have an advantage when it comes to implementing ISO 45001. These companies already have demonstrated that management is committed

to workplace health and safety. As a result, they probably have established workplace cultures that intentionally focus on minimizing employee injuries and illnesses. ISO 45001 will help these businesses become even more proactive when it comes to employee safety.

Benefits to Obtaining ISO 45001 Certification

Using the ISO 45001 framework in your workplace can help improve corporate culture, boost cost-savings initiatives, increase worker productivity, enhance product quality and enhance recognition and reputation among clients and the community. Choosing to obtain this safety certification milestone enables – and provides a foundation for – your company to create a prevention-oriented culture. Because ISO 45001 certification will drive operational cooperation and internal process improvement, it will support and help you meet your business goals. ISO 45001 certification will be a marketplace differentiator that will help expand your customer base or market share. It's a worthwhile choice for all of those reasons – and for the fact that businesses at the top of the supply chain are likely to begin requiring their

vendors and suppliers to become ISO 45001 certified as a prerequisite for continuing those relationships.

Steps for Achieving ISO 45001 Certification

The first step is to decide if your business wants to improve and create a great – even world-class – safety culture. Assuming the answer to that question is “yes,” then you should identify where gaps may exist, assess the steps you need to take to address them, develop an action plan, eliminate the gaps and provide the onsite resources required to successfully complete the ISO 45001 certification audit. Your company will be in a better position to meet its sustainability goals, improve productivity, increase profitability and enhance its corporate image among employees, investors, clients and/or customers – not to mention that you'll have achieved a distinct and powerful differentiation from your competitors.

For more information, contact a member of the Fisher Phillips Safety Solutions team at fpsafety.com/team or Todd Logsdon at 502.561.3991/tlogsdon@fisherphillips.com.

WE ARE MANUFACTURING



**KENTUCKY ASSOCIATION
OF MANUFACTURERS**

Manufacturing in America and in Kentucky

By Kurt Felten, Marketing Specialist for Advantage Kentucky Alliance

If you are in Kentucky and work in manufacturing or related industry, then you are most likely familiar with Advantage Kentucky Alliance (AKA). You are probably aware that AKA is a statewide, not-for-profit partnership that provides assistance and training to help manufacturers of all sizes grow and improve! We are the affiliate of the U.S. Department of Commerce NIST Manufacturing Extension Partnership (MEP) Program for the State of Kentucky. You may know that AKA offers expertise, training, and facilitated planning to manufacturers in a whole myriad of areas such as business strategies, process improvement, business growth and cost reduction, etc.

We have the word “alliance” in our name because we are organized in such a way that we have many partnerships or “allies” so that we are able to bring multiple organizations together to help your business. One of the alliances that we now partner with is ManufacturingUSA.

ManufacturingUSA is spread out over the whole country (not just Kentucky). They are a public-private partnership with U.S. industry and academia. You might be aware of the large gap in funding and investment between the private sector and the public sector – government and universities put a lot more funding and investment dollars into the manufacturing innovation process than private companies typically do. This is especially notable for small to mid-sized companies within the private sector. Manufacturing USA believes that if we add applied research to education and workforce skills, we will be developing a stronger future with “Manufacturing Hubs”. Therefore Manufacturing USA works to take federal funding to stakeholders to de-risk innovation. They focus on industry-relevant

problems that impact commercial production (that’s you).

Manufacturing USA combines the efforts of 14 institutes (See the graphic below). These institutes have over 1300 individual members, most of which are come from small to mid-sized manufacturers. These institutes are working on over 300 collaborative R&D projects combined. They have pooled together about \$3 billion between federal and non-federal funding.

Manufacturing USA has a vision to help the U.S. become leaders in advanced manufacturing. Their mission is to “connect people, ideas and technology to solve industry-relevant advanced manufacturing challenges, thereby enhancing industrial competitiveness and economic growth, and strengthening our national security.”

Do you have any problems at your company? Would you be interested in designating resources to resolve issues at your company? Get the ball rolling on solutions now. Contact Kurt Felten Marketing Specialist at Advantage Kentucky Alliance to get the ball rolling toward success. He can be reached at 270-745-3370 or kurt.felten@wku.edu.



Surviving Today's Threats: Security for the 21st Century

By Advanced Global Communications

Kentucky veteran with 25 years of security management and consulting experience urges manufacturers to adopt a holistic approach in combating security threats.

From robotics to global supply-chain risks, Kentucky manufacturers grapple with tremendous change. Physical security is no different. In the 21st century, gone are the days when uniformed guards alone reflect the best practice.

Any serious discussion of security now involves a mix of concerns: Examples include how departments handle difficult terminations, active shooters, violence due to domestic spillover, executive protection, undercover activities, drug use and theft.

Uniformed security details continue to have a vital role. But today's solutions call for a well-planned, holistic approach, advises KAM member Advanced Global Communications, which provides security consulting, armed response and investigations through subsidiary Advanced Risk Services (ARS).

"Creating a security program, based on your operations and organizational needs is the best solution," said ARS manager Jeremy Bates, who served with the 20th Special Forces Group (Airborne) for the Kentucky National Guard. "Security programs should keep a constant pulse on the culture, awareness levels and overall posture of an organization."

How do you get started? The key is to fold seemingly disparate security topics into a single, overarching plan, said Bates. After all, effective security is a cultural goal, much like customer service and safety. Efficacy depends on buy-in from all departments as they work together to protect people, property and assets.

Begin your security planning by addressing these main goals:

Assess the "state of security"

Like a home inspection, these security assessments provide a detailed report with photos, executive summary, cost-benefit analyses and "risk score sheets" among other contents. Well executed assessments account for your plant's physical barriers and site hardening, entry points, access control, security lighting, intrusion detection systems, video surveillance, security officer operations as well as security policies and procedures, among other facets.

Details matter. For example, an examination of security officers may include their awareness of high-risk areas and a fresh look at their current routines of established tours, etc. How about generators to operate data centers, emergency lighting, etc. during an emergency? Is there enough fuel for each generator? A well-conducted assessment looks at details like these.

Conclusions from these assessments become the basis for formulating a security master plan or for amending existing business-continuity plans. Specific threats that can be addressed by your master plans are:

- **Active shooter response** – Revelations from the assessment can shed light on your level of preparedness for dealing with an active shooter. This includes potential weaknesses or soft spots regarding physical structures, mass notification systems and employee awareness. Do all employees and managers know how to respond to an active shooter? Do they understand what to do from their office, break room, warehouse floor, conference room, etc.? What conclusions did the assessment provide to iron out their actions when seconds matter?
- **Difficult terminations** – Your security assessment will examine security officer operations. Are your current security operations in tune with difficult terminations? The findings can help

determine if greater cooperation and communication are needed among various departments regarding problematic terminations. Again, details make or break your plan. For example, if you terminate over the phone, do you have a procedure to collect company-owned items and devices?

- **Workplace violence, strikes and other threats** – Your master plan should account for domestic spillover, or workplace violence that carries over from problems at home, in addition to difficult strikes and even armed protection for executives. Your assessment will examine current security programs, training, awareness and procedures. The findings can help determine if they account for such threats before an incident happens.

- **Developing a security culture** – A professional assessment can examine more than a dozen areas, even compliance, emergency response and life safety. This can provide a picture as to whether your organization has a true security culture, a nonexistent one or a culture that has become stale. After all, every employee should be aware of your security program, learn his or her obligation and understand the relationship between security and organizational success.

For more information, contact Jeremy Bates at Advanced Risk Service (502) 551 - 5106 or email info@advancedriskservices.com.



**WE ARE
THE SOLUTION
TO YOUR
WORKFORCE
NEEDS**

**16 COLLEGES : 70 CAMPUSES
AND OVER 700 PROGRAMS.**

WE ARE IN **EVERY COMMUNITY.**
WE KNOW YOUR PEOPLE **AND YOUR BUSINESS.**
OUR **CUSTOMIZED SOLUTIONS** HAVE PROVEN **IMPACT.**

LET'S GET TO WORK.
859.256.3100



KENTUCKY
COMMUNITY & TECHNICAL
COLLEGE SYSTEM

KCTCS is an equal opportunity employer and education institution.

KENTUCKY COMMUNITY & TECHNICAL COLLEGE SYSTEM



Marking its 5th Anniversary, LIFT Receives Agreement Extension from the U.S. Department of Defense

Lightweight Innovations For Tomorrow (LIFT), a Detroit-based national manufacturing innovation institute, celebrating the 5th anniversary of its founding, today announced that the Department of Defense has extended its cooperative agreement for another year while negotiations are underway for a new long-term partnership.

The American Lightweight Materials Manufacturing Innovation Institute (ALMMII), which operates LIFT, signed the original cooperative agreement with the Department of Defense, through the Office of Naval Research, in February 2014, as one of the founding members of the Manufacturing USA network. LIFT is a public-private partnership committed to the development and deployment of advanced lightweight material manufacturing technologies and implementing education and training initiatives to better prepare the workforce today and in the future.

"The first five years of our institute have been a tremendous success, moving from an idea on paper to creating a world-class facility in Detroit and building an ecosystem of experts across the country," said Nigel Francis, LIFT CEO and executive director. "The value we have shown the Department of Defense, together with our industry and academic partners, enabled this extension and we are now working towards a new long-term agreement to be in place in the near future."

During its initial five years, LIFT and its national network of partners have, among a wide array of other successes:

- Developed methods of reducing the weight of cast iron automotive parts by 50%;
- Streamlined the shipbuilding process by reducing distortion caused by welding and enabling the use of lightweight materials;
- Optimized the design of anti-lock brakes and electronic stability control system kits for military Humvees, which can reduce the number of fatal rollovers by 74 percent;
- Piloted "Operation Next" to support separating military men and women by providing educational opportunities and employment in some of the most in-demand advanced manufacturing jobs;
- Launched the "MakerMinded" online STEM activity and competition platform for middle and high-school students in eight states;
- Developed the IGNITE: Mastering Manufacturing foundational curriculum, piloted at schools in three states, to better prepare high school students for the 21st Century design and production environment.
- Designed and implemented 40 education and workforce development partnerships in Michigan, Ohio, Indiana, Kentucky and Tennessee, to address the manufacturing skills gap and align technology and talent development in advanced manufacturing.

This year is an exciting one for the institute as it plans an expanded technology scope to provide more services to small and medium-sized manufacturers. LIFT will also open the "LIFT Learning Lab"- an immersive lab focused on building the pipeline of advanced manufacturing technicians - in its Detroit facility later this spring.

For more information on LIFT and its technology and education & workforce initiatives, visit www.lift.technology.



Tier 1 Partners for Employee Benefits



**KENTUCKY ASSOCIATION
OF MANUFACTURERS**

The Kentucky Association of Manufacturers (KAM) has served as the leading advocate for the manufacturing industry for over 100 years. KAM's mission is to protect a manufacturing-friendly environment for the Commonwealth through advocacy; workforce development, education & training; and cost-saving benefits for members.

While there are many benefits to joining KAM, the specific cost-saving programs outlined here are great opportunities to help both employers and their employees in the manufacturing sector.



Group Health Insurance

This program is offered through Anthem's BlueCard® Network of providers. It includes a variety of medical plan options, including PPO, HRA, and HSA plans, as well as Anthem Vision, Dental, Life, LTD & STD plans.



Supplemental Insurance

Colonial Life offers employee-paid policies that enhance the health and life insurance employers provide. These can be used for things such as lost wages, out-of-pocket expenses and household bills.



Benefits Administration

Employee Navigator's benefits administration software makes it easier to attract and retain great talent by offering an extensive benefits package with less benefits administration work.



Biometric Health Systems

Heuser Diagnostics is scientific wellcare that engages members to advance their own health. Our team helps to ensure members are on track to achieve their goals through fitness and nutrition.



Payroll, Timekeeping & HR Services

Manufacturing talent is hard to come by, retaining skilled workforce is a challenge, and maintaining compliance is never ending. Paycor's HCM software can help you succeed in all 3 areas and be a leader in a tough market.



TASC

Flexible Spending Accounts (FSAs) provide significant savings to employees and employers alike. Employers save on payroll taxes for every dollar of employee participation, often enough to cover the plan's cost.

To learn more about these programs and cost-saving capabilities, please contact our partners below:

Daryl Carlson, McGriff Insurance Services, Inc. - dcarlson@mcgriffinsurance.com | 859-338-0081

Collin Barber, McGriff Insurance Services, Inc. - cbarber@mcgriffinsurance.com | 859-422-3884

Griffin Meredith, Commonwealth Insurance Partners - gmeredith@cipky.com | 502-631-9600

Sue Tucker, Colonial Life - sue.tucker@coloniallifesales.com | 859-509-5831

Darya Goble, Paycor, Inc. - dgoble@paycor.com | 859-684-9122



Discount Programs for Members



The Kentucky Association of Manufacturers (KAM) has served as the leading advocate for the manufacturing industry for over 100 years. KAM's mission is to protect a manufacturing-friendly environment for the Commonwealth through advocacy; workforce development, education & training; and cost-saving benefits for members.

While there are many benefits to joining KAM, the specific cost-saving programs outlined here are great opportunities to help both employers and their employees in the manufacturing sector.



Group Health Insurance

This program is offered through Anthem's BlueCard® Network of providers. It includes a variety of medical plan options, including PPO, HRA, and HSA plans, as well as Anthem Vision, Dental, Life, LTD & STD plans.



Uniform Rentals

ARAMARK has earned an exceptional reputation for taking care of its customers. Rent, lease or purchase, ARAMARK offers a full range of services and large variety of products at discount prices.



Credit Card Processing

Take advantage of a smarter way to process payments. Infintech counsels participating merchants on best practices so they can efficiently process credit cards at a fraction of their current cost.



Shipping Discounts

Enroll or re-enroll in your KAM UPS Savings Account and receive new and improved members-only flat rate pricing and take advantage of UPS Smart Pickup® service free for one year.



Savings on Office Supplies

The average business can save \$150 per employee annually on office supplies by participating in the Office Depot Discount program, and it's one more perk you can provide your employees, compliments of KAM.



State Park Discounts

Receive a 10% discount on all state park accommodations (lodge or cottage rooms) as well as discounts on state park golf course greens fees (\$5 off for 18 holes and \$2 off for 9 holes).

To learn more about these programs and cost-saving discounts, please contact KAM at:

Kentucky Association of Manufacturers
609 Chamberlin Avenue, Frankfort, KY 40601
Call 502-352-2485 or email s.goodwin@kam.us.com



Taking an Independent Path: Strategies for Low Risk Sourcing of Components in a Constrained Market

Direct sourcing of electronic components for the industrial control equipment industry used to be pretty simple. An OEM would order direct from the manufacturer or through authorized distributors to obtain any required components. There was usually no need to look any further.

Today, the challenges of a highly stressed supply chain are forcing many equipment OEMs to rethink the way they source components. With parts such as multi-layer ceramic capacitors (MLCCs) and other low-cost components in chronic shortage with extended lead times for delivery, manufacturers must be able to get these parts on-time at the lowest possible cost without assuming additional risk.

As a result, many are turning to independent or hybrid distributors for long lead-time parts. The primary caveat: the components must meet the specifications thereby avoiding compromising the integrity of the end product. In other words, equipment manufacturers want components that can be traced back to the original manufacturer.

For many companies, sourcing parts from the independent channel requires a significant shift in mindset. It also requires a comprehensive strategy for identifying and working with reliable independent stocking distributors to ensure they get components they need, when they need them.

"For industrial control equipment manufacturers

there has been harmony in the supply chain for most of the past decade, so the need to identify alternative suppliers has not been as pressing as it is now," says Mike Thomas, vice president and global general manager at Classic Components, an independent distributor based in Torrance, CA. "That means many companies have not invested a lot of time or attention strategizing about how to use independent distribution channels effectively.

The process begins, he says, with understanding how to distinguish one independent distributor from another. This often comes down to a mixture of experience, reputation and the extent of the supplier's global supply network. Therefore, it is critical to understand the quality management systems of your independent partners.

Know Your Source

According to Thomas, the mantra in his industry to eliminate risk is "know your source." To accomplish this, leading independent distributors invest millions to manage global supply networks, rate/prioritize suppliers, establish preferred supplier relationships and acquire the latest inspection equipment and utilize effective Quality Management Systems (QMS).

"Over time, companies like ours have developed a very complex method of identifying and eliminating risk," says Thomas. "That includes knowing how to inspect and test components that come in to our facility, but also

goes well beyond that.”

It also means analyzing and inspecting sources with an investigative diligence. What path did the parts take to get there? Who is the manufacturer and how is that relevant? Where was it made? How was it shipped and packaged? Is demand of a component strong enough to make its availability viable? Only thorough examination and assessment of all these factors, in conjunction with traceability, can the risk be truly mitigated.

“When we purchase components like MLCCs, for example, we are purchasing from a direct source,” explains Thomas. “That could be a regional or foreign distributor, an OEM partner or direct from the factory.”

To verify the chain of custody, traceability documentation can be provided that identifies the name and location of all the supply chain intermediaries from the part manufacturer to the direct source of the product. If this traceability is unavailable, a risk mitigation plan is required. Finally, visual inspection, testing and physical analysis are performed on all incoming products.

Purchasing Power

The truth is that many of the shortages were predicted some time ago. As a result, leading independent stocking distributors like Classic Components have spent the past few years engaged in a long-term strategy of identifying, and investing in, directly sourced critical electronic components.

By doing this, independent distributors protect the supply, but are also able to lock in lower prices by making purchases before the inevitable changes driven by reduced supply and increased demand.

To protect high-volume orders, a distributor can lock in prices and delivery dates for many months at a time. This ensures that the inventory will be there when the customer needs it and not sold to someone else.

In some cases, they can even make speculative purchases for a customer and/or provide

financing to purchase inventory when a qualified client has capital constraints.

Global Networks

Another direct source for high demand parts comes from tapping into a large global network. Because of the worldwide demand for components, independent distributors have expanded globally and placed sourcing experts in key supply markets.

For example, in addition to its 60,000 square foot facility in Torrance, California, Classic Components has established 12 regional offices in strategic locations throughout the world to support its global distribution business. The company boasts nearly 200 employees, who specialize in various aspects of the business, including supply chain, quality, technology and logistics.



The buyers can develop an intimate knowledge of regional supply chains with the expertise to find and manage quality component suppliers. These experts then leverage these relationships to bring the best price and delivery to their customers.

“By using regional quality centers and logistic hubs, we have the flexibility to purchase components from any country, in any currency, and then ship them to anywhere they are needed,” explains Thomas.

He gives the example of a customer in Mexico that wants components from Taiwan, due to availability. If the Taiwanese supplier will only sell to local companies, Classic Components can purchase the components from its satellite



office located there. Later the stock can be transferred or sold to another branch office before it is ultimately delivered to the customer in Mexico.

Classic's global logistics can also help to manage or avoid tariffs by shipping to and from our international hubs in Hong Kong and the UK.

Rigorous Vetting

Another way to ensure the reliability of the independent distributor is to ensure they are thoroughly vetted. Established companies are used to complying with frequent requests for audits. In fact, some of the robustness of the quality systems implemented by independent distributors can be attributed to this activity.

Continuing Shortages

With significant shortages in many high usage

electronic products needed in the industrial equipment industry expected to continue for at least the next 2-3 years, the independent distributors' seat at the electronic components sourcing table has never been more relevant.

Through investment in developing deep global networks, inspection, authentication, inspection and quality systems, independent stocking distributors stand ready to provide industrial equipment OEMs a robust option to navigate the white waters of international supply nimbly, effectively, and without the risk.

For more information, contact Classic Components Corp. 23605 Telo Avenue, Torrance, CA 90505; www.classic-ic.com; 310.539.5500; info@class-ic.com.



**Safety &
Environmental**
TECHNOLOGIES, INC.

**Call us today for any of your
Safety and Environmental needs!**

Our mission is to provide peace of mind through attention to detail and a dedication to our customer's welfare. Safety Enviro has been providing high quality and cost effective safety and environmental contracting services since 1991.

In that time we have grown to become a reputable source for solving complex safety and environmental problems.



Safety Enviro Services:

- OSHA/EPA Compliance
- Industrial Hygiene
- Permitting/Consulting
- Remedial Investigations & Feasibility Studies
- Test Well Installation and Monitoring
- Phase I & II Environmental Site Assessments & Investigations
- OSHA Safety Training
- Environmental/Safety Audits
- Environmental Contracting

Safety & Environmental Technologies, Inc.

3016 Ohio Drive • PO Box 316 • Henderson, KY 42419

Office: 270-844-4026 • Fax: 270-844-4292

Visit our new website at www.safetyenviro.com



Outsourcing Critical Aspects of Processing Systems

When designing and building systems that extract, dispense or blend chemicals, OEMs face a critical business decision: whether to fully engage as a manufacturer or to outsource certain or all aspects to a qualified contract manufacturer.

However, even within contract manufacturing there can be a broad range of capabilities. Some shops focus on build-to-print projects. Others offer a diverse range of capabilities, supply chain management and engineering services.

According to Jason Medhurst of Aztech Controls, there are benefits to a full-service approach that includes engineering.

"OEMs don't always know how much engineering and design support they actually need," says Medhurst. "They'll ask us to build a system and say, 'we've engineered it for you' and we discover the design is in its infancy."

"In other cases, we receive well-developed drawings and the engineering requirements are minor. Then, we might help them with supply chain management," Medhurst adds, explaining this can include sourcing, purchasing and holding in inventory all the component parts of the system.

David Radnich, retired engineer, recounts a project for a just-in-time chemical blending and delivery system. The project was part of a cost-cutting initiative to eliminate the need to purchase a very expensive chemical blend for a large semiconductor chip manufacturer.

After working up an initial design concept with

his team, Radnich contacted Aztech Controls. Together, the two groups quickly completed the design and the contract manufacturer built the entire system at its facility in Arizona.


"They built an extremely cost-effective prototype unit and were able to integrate it into our system very quickly; I'm talking a few weeks, not months," says Radnich.

The next step was a full scale version of the system.

"The chemical blending system was truly state-of-the-art, next generation," says Radnich. "It saved the company money from an equipment, installation and operational standpoint."

For more information, contact Aztech Controls at (480) 782-6000, visit aztechcontrols.com, e-mail: sales@aztechcontrols.com.





Complex Processing Vessel Fabrication Calls for Grace Under Pressure

Chemical, oil & gas refinery and petrochemical facilities use complex processing vessels such as heat exchangers, chemical reactors, distillation columns, and pressure equipment that operate under extremely intense environments.

These vessels must endure high temperatures and high pressure over decades of grueling use. They are critical pieces of operating equipment that often function as the central processing units of an entire manufacturing facility. As a result, any equipment downtime can be extremely costly to the operator.

Supporting the many industries that depend on these high-performance vessels is a marketplace of equipment designers and engineers, specialized in metallurgy, vessel fabricators, maintenance and repair services, advanced product testing technologies and certification and accreditation organizations. Given the performance and safety requirements for a complex processing vessel, leading fabricators certify their vessels with the American Society of Mechanical Engineers (ASME) to indicate that their products fulfill the requirements of relevant ASME codes and standards.

Eighty years ago, the roots of the complex processing vessel sector started with boiler manufacture and repair shops and has now grown to include off-the-shelf heat exchanger and pressure vessel fabricators and highly sophisticated and credentialed design and manufacturing specialists. These specialist

fabricators work with customers to design, engineer, manufacture, and test ASME Division I and II code vessels of every size, material, and finish including rare and challenging alloys selected for their superior performance and durability.

One of the challenges facing industries that require specialized complex processing vessels is the relatively small number of these specialist fabricators. There are still relatively few worldwide who provide the in-house design and engineering expertise to craft vessels that can withstand high intensity environments.

Manufacturing processes that involve high temperatures and high pressures require equipment that is constructed from specialized alloys and that are custom-designed to the operator's unique needs. Far from off-the-shelf, clients often turn to a specialist fabricator to design custom equipment based on a profile of their operating criteria. The fabricator then needs to create a design, engineer, manufacture and test to ASME codes.

Tate & Lyle is a global supplier of ingredients to food and beverage markets. When constructing their plant in McIntosh, Alabama they required custom-designed distillation columns, pressure vessels and heat exchangers. Because of high operating temperatures and pressure, specialized solutions were required for performance and durability. Moreover, the company needed equipment that could run 24/7 with only two shutdowns a year.

"At the time, the engineering team only provided a fabricator with a data sheet of the requirements - things like how many gallons for the vessels, operating temperatures, pressure levels, and how many nozzles were needed. From there, we needed the vendor to come up with the equipment design and be able to build it to ASME Section VIII Div. 1 code," says Linda Rutherford, a member of the Quality Control department at Tate & Lyle. "Because of the criticality of the equipment to our manufacturing process, we needed equipment that would not break down and stand the test of time. And at this plant, we measure durability in decades."

Based on a combination of capability, quality, service and price criteria, the company partnered with Alabama-based Mitternacht, a fabricator specialist that holds certifications in ASME Div. I and II stamps as well as a Chinese License for Pressure Vessels A2. Mitternacht designed and engineered the plant's original separators, heat exchangers, storage tanks, and pressure vessels. Given the operating parameters, the company built the equipment, which included fabricating pressure vessels more than 100 feet tall, using stainless, specialized alloys.

Complexity Starts with Design & Engineering

The work of fabricating a specialized processing vessel first begins with design and engineering. While an industrial customer will have a finished and approved drawing package for a standard heat exchanger, customers will also seek specialized expertise in designing and engineering vessels for custom processes with unique code parameters. This requires the fabricator to create a piece of equipment that meets their unique and challenging specifications.

As in the case of Tate & Lyle's plant, complexity can start with the original design request. A process engineer will draw up a concept and then turn to a company like Mitternacht to determine how to create it. According to Lance Covan, owner of Mitternacht, "Our clients will look to us for the code specifications, identify what's allowable, define what will meet the

certifications of the given parameters they have in their plan and also what will not."

The design of a new complex processing vessel is a product of material selection which itself is based on temperature and pressure considerations. A fabricating specialist will identify all the parameters based on ASME, metallurgical and temperature requirements to meet a client's process needs.

Once a vessel is designed and engineered, fabricating to meet the performance specifications requires expertise and craftsmanship in metallurgy. And specialized alloys selected for their performance attributes can themselves be inherently challenging. Welding specialized high-grade nickel alloys of up to 99% nickel, such as Nickel 200 for example, is a demanding process.

There may not even be a weld procedure in existence for the client's specifications. It then is up to the fabricator to define and achieve the weld parameters that have never before been made. Says Covan, "we've had to literally write the manual through the process of fabricating the vessel. We will work with metallurgists on the client side who require certain things without the benefit of any real precedent in the market because the weld has never been made before."

Staying in Code

Metallurgical craftsmanship is also called upon in the repair of corroded vessels. According to Covan, "a lot of highly corrosive chemical catalysts move in and out of exchangers. We can apply overlays of weld metal with a process that build up the thickness lost to corrosion given the caustic environment. It's one thing to do this with carbon steel, but when you deal with specialty noble metals, this kind of work is highly specialized."

Industrial quality control specialists like Tate & Lyle's Linda Rutherford regularly monitor the thickness of vessels to ensure they remain in specification. "A key to durability is selecting the right metals in the first place", says Rutherford. "Then when repairs and maintenance are needed, the code work



needs to be completed and recertified. We've asked Mitternight to repair and complete replacements of pressure vessels and heat exchangers."

Vertical Integration Supports Long-Term Success

With so much invested in the performance, safety and durability of complex process vessels, operators can find a lot of value in working with a fabricator who not only has expertise in specialized metal alloys but who can partner with them through the entire design-engineer-fabricate-test-support continuum. Not only do fewer handoffs protect the intellectual property of a client's process design and custom vessel needs, but there is less risk of fabricating delays.

According to Covan, "Vertical integration means more control and control means making deadlines. Delivery is critical because we can be talking about millions of dollars a day at risk for a client. When you can control the entire process, you have a much better chance of meeting delivery deadlines."

Tate & Lyle has had a 20-year relationship with Mitternight at their plant which is now the only one of its kind in the U.S. Ongoing support includes the fabrication of new vessels, repairs (including rerolling exchanger tubes), replacements of pressure vessels and heat exchangers and fabricating alterations such as cutting in extra nozzles on 2:1 elliptical heads.

Having a trusted relationship with a specialist fabricator who can support an industrial client from design to service is key to long-term success. In the case of the 12-foot diameter specialized alloy column, Mitternight worked with Tate & Lyle's senior plant personnel including their QA & Engineering teams to plan, design and schedule in-house fabrication, field work, installation, final welding and testing – all within a scheduled plant shutdown of 8 days.

For more information, contact Mitternight, 5301 US-43, Satsuma, AL, 36572; visit www.mitternight.com; call (251) 675-2550; or email info@mitternight.com.

Freight & Logistics: An Industry Driven by Payments



Cash flow is extremely important in any industry – especially the freight and logistics industry. Seamless payments are becoming more important to this sector because the industry is dependent on the efficient and secure movement of funds to complete business transactions.

The industry has long been vulnerable to payment delays, errors, and fraud mainly due to its complex nature and the use of old technologies. CloudTrade Logistics Vice President, Roger Hatfield, said that freight and logistics is an industry driven by payments, and that solution providers need to start by fixing the issues associated with invoicing to really make an impact on the industry.

The Invoice

An invoice is the first step in initiating a payment, that holds key information associated with both sides of a transaction. Paper invoices and manual data entry are still very prevalent in the freight and logistics industry. According to PYMTS.com, a customer's payment is often delayed to a service provider and the service provider also fails to reconcile payments received due to the lack of efficiency within the industry and old habits.

When companies can't match an invoice against a purchase order or delivery documentation, it can lead to these payment delays, fraud, and even non-compliance with rules and regulations. Also, inaccurate data or delayed invoice data can postpone cash flow to shippers who rely on supply chain financing to run their

business. "Since the invoice discount rate is driven by the age of the invoice, the processing cycle is critical," Hatfield said.

Faster and accurate invoicing and automated data capture are key to faster payments in the freight and logistics industry. Seamless invoicing, payments, and movement of data, from compliance and fraud risk mitigation to quicker access to working capital are all important to the success of this business sector.

Infintech Can Help

Chasing checks is annoying and cash flow is stressful, but our Infintech advisors make credit card processing simple. When you accept credit cards, you have leverage to influence payment terms and improve your cash flow – which will earn you more business.

Infintech offers solutions specific to the freight and logistics industry that include:

- Significantly Reduced Credit Card Processing Rates
- Electronic Invoicing
- Next-Day Funding
- Level 3 and Large Ticket Processing
- Accounting and ERP Software Integration
- Simple Reporting and Deposit Reconciliation

Ready to strengthen your company's cash flow? Contact us [online](#) or call 1-800-621-8931.





Big Energy Users Now Have Opportunities to Reduce Their High Energy Costs by Pursuing Unique Energy Cost Saving Techniques and Systems That Are Not Yet Widely Utilized

By Energy Architects & ConServ Energy Group

Industrial facilities are always under continual pressure to meet production quotas and avoid costly shutdowns. When production is too slow and gets behind and or when there is equipment failure, all heck can break loose as many thousands of dollars of revenues and profits can be lost per day. Because of these pressures to perform, so many plant managers and equipment operators generally don't have the freedom or the time to pay close attention to the energy and commodities being consumed in their processes whether it be for electricity, natural gas, or expensive process specialty gases. The most important priority is to get the best products out the door on time every time, especially with the advent of "On Time Delivery" where for example so much pressure has been put on suppliers to the automobile industry.

Below are five areas of unique energy cost saving measures we feel are never pursued enough :

RATES AFFECTING THE BIGGEST ENERGY USERS - ELECTRICITY & NATURAL GAS

Always start with what we would consider to be the easiest opportunities regarding your overall rate per kWh for electricity or dekatherms of natural gas broken down to all the components that should be separately itemized on spreadsheets that accompany the billing invoice. Find out what typical costs are being experienced by similar sized industries within your same region. Understand the rates that apply to your facility, especially time of day usage opportunities for energy and demand charges. Be aware of penalty clauses such as low power factors where the penalty can show up as "reactive energy charges" on the invoice. If sufficient \$\$ power factor penalties are being assessed, investigate whether secondary or primary capacitor correction should be utilized. Also don't be afraid to negotiate with your utility suppliers. For example, we have always enjoyed having meaningful win, win negotiations with Municipal Energy Suppliers

and Co-ops who own their own electric generation because they really appreciate their industries and want to be a close working partner with them where everyone wins. Regarding natural gas, know the benefits of other available wellhead suppliers as well as volume discounts that may be available through other pipelines that also may serve your vicinity. Increased "in same region" multi-plant partnership volume purchases from suppliers & pipelines can save big \$\$\$.

INDIVIDUAL LARGE INDUSTRIAL PROCESS ENERGY SAVINGS BY BENCHMARKING

It has been determined that "on average" 50% of the energies being used in industrial processes are wasted energies. Specialized companies are available who have the expertise to dive down deep into the energies being consumed by various individual, industrial processes such as steel and aluminum production, refineries, agricultural processing (soybeans, flour, ethanol), distilleries, tire manufacturers, chemical companies, poultry-beef-pork processors, and a host of other food manufacturers. By utilizing software that can accept many data tag feeds from existing control and monitoring equipment and computers, a benchmark energy profile can be developed for each stage of an individual industrial process showing the energies that are being used versus what energies should be being used in an ideal situation. After these benchmarks are determined, work between the specialty company and the operators of these processes can generally over a series of 12 to 20 weeks narrow down procedures and operating characteristics that have been able to save an average of 30% of the energy being wasted. Capital investment can then be used, if desired, to reclaim the other 20% of the wasted energy. Most of the case histories we are familiar with are saving over a million dollars per year in energy costs per process with relatively little or no out-of-pocket costs to the industrial client.

COMBINED HEAT & POWER SYSTEMS (CHP)

Co-generation or Combined Heat & Power Systems (CHP) have been around for over a 100 years. However, due to the relative low cost of electricity over the past number of

years, companies generally didn't really pay that much attention to the very high total energy efficiencies offered by CHP which can literally save millions per year for large facilities. What is needed for an industry to be a good candidate for CHP is a large electric load coupled with a large steam and hot water load either at a single plant or at plants that are adjacent to one another. By using turbine generators or reciprocating engines to generate electricity, all the heat thrown off by these generation systems can be captured (recovered) and routed to the boilers and hot water systems. The generation & heat cycle efficiency of a CHP System can approach 90%, versus the typical generation cycle efficiency of 40% to 45% reached by many electric utilities. Obviously, the incredible difference in generation efficiency occurs because most electric utilities throw away the heat generated from their turbines whether these turbines utilize boilers fired from coal, natural gas, oil, or nuclear fuels. Dramatic examples of this thrown away heat are the gigantic cooling towers utilized by nuclear plants. On occasion we have seen an electric utility where they are feeding the heat from their generation of electricity across a property line fence through an insulated piping system to an industry such as a tire plant. This is a big win, win for both plants as the plant receiving the heat pays a reduced rate for this heat and they preheat the supply water to their boiler and hot water systems, thus substantially reducing the amount of natural gas needed to fire these systems to their desired temperatures. Great candidates for CHP are any industrial plants that have both large electric needs and large steam and or hot water requirements such as tire plants, carpet manufacturers, agricultural processing plants (poultry, pork, and beef) where hot water clean up is routine throughout the day. Even orange juice plants that start with the oranges and process through to juice concentrate are a candidate. On the commercial side casinos and large hotel resort properties are good opportunities where there are 24 hour demands on electricity coupled with large hot water needs. Large universities are also great candidates for the same reasons. All these properties can also use absorption chillers (which operate from the generation waste heat)

for space cooling. Another big opportunity for CHP are hospitals where CHP can be planned in the beginning or retrofitted with hospital expansions. CHP packages are readily available that can come shipped on a sled ready for tie in to the new hospital wing electric distribution system with piping ready for tie in to the steam & hot water system. One other opportunity for large commercial facilities is the option for the CHP company to monetize existing infrastructure by buying back the existing electric and steam distribution networks for example from a university or hospital. This can free up major dollars to be routed back to endowments in the case of universities or used for buying more modern equipment for hospitals. Chief Financial Officers start to really show a lot of interest when they learn a CHP Company will be willing to monetize all their nonperforming assets while at the same time modernizing them, while still receiving guaranteed substantial energy cost savings from their CHP System provider regarding their electric and natural gas utility costs.

SMOKESTACK HEAT RECOVERY FROM NATURAL GAS FIRED EXHAUST STREAMS

Very few people ever stop to think about the billions and billions of Btu's of waste heat continually being thrown away through smokestacks, and I don't mean from burning wood. If companies really want to quit wasting so much heat energy, why for example would some automobile plants not consider their smokestacks where a 500 degree exhaust stream from a natural gas fired RTO (Regenerative Thermal Oxidizer) serving their paint booths is being thrown away through a 6 foot diameter stack 50 feet high. This could easily amount to 30 to 40 million BTU's per hour being thrown away to the atmosphere. As another example, consider natural gas fired boilers serving carpet manufacturers or natural gas furnaces operating at 1000 degrees that are being used for melting recycled aluminum, where even a hotter exhaust stream is being thrown away. To affect recovery from all of the above, there are now what we call side-stream heat exchangers that can be tied in at the smokestack breaching where a considerable amount of the waste heat stream can be

induced and routed through the heat exchanger where it heats a secondary water loop. The most efficient use of this recovered heat from a RTO or boiler is to preheat boiler feedwater for that industry before it reaches their boiler. In regard to a furnace, the extreme stack heat could be used through a reverse chiller concept known as an ORC (Organic Rankine Cycle) to generate electricity for a portion of the plant. Generally, we recommend designing any stack gas heat exchanger to capture approximately 75% to 80% of the available heat going up the stack in order to allow enough stack gas heat to be able to exit the main stack at a high enough temperature to prevent any condensing of the exhaust stream in the stack. Paybacks for heat recovery projects several years ago were in the 2 year or less range. However, since natural gas costs did a nose dive and are still down quite a bit from where they were, paybacks on heat recovery projects are now more in the 4 year range when the "all in natural gas cost" at the customer's meter is above the \$4.00 per dekatherm or MCF range. Even when some waste energy projects are pushing 4 to 5 year paybacks, we feel they still should be receiving a lot more attention from companies than they are, especially when creative financing and lease to purchase options are available from turnkey installation companies that should be able to provide a minimum 20 year lifespan through periodic planned maintenance.

GASIFYING WASTE STREAMS LIKE WOOD WASTE AND OTHER ORGANIC MATERIALS TO PRODUCE SIGNIFICANT PROCESS HEAT AND OR ELECTRICITY

The age of the gasifier is finally starting to come into its own as gasifiers are now available which can gasify wood waste and other organic materials destined for a landfill by producing a SynGas. This SynGas has a much lower BTU per cubic foot value than natural gas, however there are special older variety large nozzles that can readily burn this SynGas where the heat can be used for industrial processes, can be used to preheat boiler feedwater, or can drive an ORC or turbine for generation of electricity. Some of the simplest gasifiers with the fewest moving parts are the downdraft types where by merely chipping the wood waste and routing this

waste stream to the top of the gasifier within 30 minutes can start producing a significant amount of usable heat. As an example a 64 ton per day downdraft gasifier using dry wood waste can produce 20 to 25 MMBtu's per hour that can power an efficient ORC to create 1,250 kW to 1,500 kW of electric power 24 hours a day. As an example and working closely with a major waste management company to create an economic model, the following was a proposal for a Michigan landfill. Instead of dumping all wood waste into their landfill, the clean wood waste would be routed to a special area of the landfill where 2-64 ton gasifiers would be set up. This wood waste would then be chipped and conveyed to each gasifier where SynGas would be produced and fired to provide sufficient heat to drive a 1,500 kW ORC. These 2-64 ton gasifiers would together produce 3,000 kW of electricity. Then as an addition to these gasifiers, the waste exhaust gases from 8-1,500 kW CAT on site generators running on methane gas 24/7 would be recovered to produce an additional 1,500 kW of electricity through another ORC. Therefore, just for this one landfill, 128 tons of wood waste per day would not be deposited in the landfill "taking up air space" and a total of 4,500 kW of electricity producing 108,000 kWh's of energy per day could be sold through an inter-connect back to the local utility. This example landfill project could produce between 20 and 25 million dollars in net profit potential to the

waste management company over a 20 year period. Referring to the above example, when a larger amount of organic waste is available that has the potential to produce over 5,000 kW of electricity, steam turbine installations can be considered which are more efficient than ORC's. It is also even better if a particular company can utilize the electricity on site that is produced from either ORC's or steam turbines to defer having to pay retail electric rates. It should be noted that waste streams with a high ash content are not good candidates for gasifiers such as waste streams from pulp and paper plants.

ABOUT ENERGY ARCHITECTS & CONSERV ENERGY GROUP

EnergyArchitects.com and ConServEnergyGroup.com specialize in working with larger industrial and commercial customers to create lower and more efficient energy costs. With corporate offices located in Brentwood, TN., Paul W. Holland, P.E., CEO of both companies, and his group have established a 38 year history of working with industries throughout the U.S. They are known as "The Energy Answer Team" with over \$570 million in savings created. They are teaming partners with Waste Management, Engie-Opterra, MPC Energy, and Aries Energy and are proud new members of KAM. Call us at 615-221-9022.



ConServ Energy Group



How to Cut Losses when Sourcing a Power Transformer

Power transformers can last anywhere from 15-30 years, but when they enter the end of their life cycle and suddenly self-destruct, plant managers are left scrambling to find a replacement. Under the gun, they often believe the best move is to source a duplicate from the exact same manufacturer. Otherwise, the fear is that the installation will slow to a crawl while contractors in the field try to make a square peg fit in a round hole, almost literally. For good reason, too, as the process of trying to match the transformer bus work and fitting it into the enclosure can drastically delay installation and keep a plant offline for far too long.

However, the availability of transformer manufacturers that specialize in customizing the bus work and footprint to match an end-user's setup saves time and money, while greatly reducing downtime and the associated headaches. Plant engineers can benefit from a few tips before choosing based on the lowest quote.

Case in point

The fear of switching to a different transformer manufacturer is well founded, as many engineers have been burned by the false promises from some vendors who proclaim, "Trust us, we can do it and it will fit," with their fingers crossed. Quite often, it doesn't. Feet that don't match runners and bus bars that don't line up properly often delay installations for days or weeks until everything can be cobbled together. In the meantime, production suffers.

Last summer, the CertainTeed plant in L'Anse, Michigan, encountered this exact issue. They had a turn-to-turn short in the 1000 KVA transformer running their manufacturing floor. "It ended up being a total failure, so production went down immediately," recalls Logan Edwards, an electrical engineer for the building products producer.

CertainTeed is North America's leading brand of exterior and interior building products, including roofing, siding, fences, decking, railing, trim, insulation, gypsum and ceilings.

"We could not afford to halt production, so I rented a 1000 KVA generator until we could get an exact replacement for the transformer," continues Edwards. "But the monthly rental fee for the generator was extremely expensive - approaching five figures. Plus, the fuel required to run it was costing thousands of dollars. The hard part was none of this was considered capital. It was all an operating expense. So, we needed a transformer, fast to help offset the mounting operating costs."

"In a high-production manufacturing plant, getting the power back is the highest priority," says Alan Ober, an engineering manager at ELSCO (www.elscotransformers.com) a Cincinnati, Ohio-based transformer manufacturer providing new, repaired and rebuilt transformers ranging from 500 through 3750 KVA in 2.5, 5 and 15KV primary voltages.

With 42 years of experience as a lead design and integration engineer, Ober has lived the war stories (both losses and victories) and has the wisdom to explain why engineers need not fear the prospect of sourcing a transformer from a manufacturer other than that on the nameplate.

Finding like for like, in a hurry

In search of not only a fast and perfect fit – along with original quality of construction – plant engineers often assume that they can still get the same exact replacement from the same exact manufacturer.

"The reality is that many of the original manufacturers went out of business long ago or were bought out," observes Ober. "For instance, GE Industrial, Square D, Schneider and a lot of others are either no longer in business or are part of other companies now."

Even if a plant manager insisted on a power transformer being built to original specifications, that can take an extended amount of time, and there still is no guarantee that the unit would match exactly.

Yet, through much due diligence some plant engineers have discovered a way around the “exact replacement vs. quick replacement” dilemma in the form of vendors who specialize in repairing original transformers, or building new transformers with quality materials, in advance.

Once completed, both remanufactured and new transformers are stocked in a warehouse. When an engineer calls up for an emergency replacement, the transformer is pulled out of storage, custom bus work is machined to the exact specifications of the enclosure, and the transformer is loaded onto a truck. Some manufacturers can do all this in a matter of 24-36 hours.

Much of the credit for such a solution goes to the careful gathering of the dimensions of the transformer, and then duplicating it as precisely as possible. As a result, both the high side and low side line up as in the original installation. The same attention to dimensional detail extends to ensuring the transformer feet fit on the front-to-back runners of the existing enclosure. As a result, the transformer gets energized quickly and the plant resumes full operation with minimal downtime.

Failed Delivery

“I started looking to see who could get me a dry type transformer to replace the blown one,” continues Edwards. “The rating would be the same, but we knew it would be hard to find a custom retrofit transformer.”

Edwards gathered multiple quotes from different vendors and decided upon one who promised form-fitting bus work at a bargain price. Part of the low price stemmed from the fact that their transformer was wound with aluminum, which costs less than copper but is also less durable.

“They said, ‘Don’t worry. We’ll have it done by such-and-such time,’ adds Edwards. “So, we scheduled a specific downtime to get it installed.”

However, as is often the case, the manufacturer over promised and under delivered.

“The weekend before we were set for installation, they called to tell me that there had been some issues and it wasn’t going to happen by the scheduled date,” explains Edwards. “What a

letdown.”

Not only was it a hassle for the plant to reschedule the downtime, but they were still piling up operational costs with the generator.

“That’s when I reached out to ELSCO who I used before and asked if they could rush a transformer with custom bus work before the ‘down’ which was scheduled in three to four days.”

Measuring up

Few manufacturers offer the customization of a transformer before shipping, and of those only a handful can turn it around within a day or two and guarantee it fits right the first time. So, it is critical to ensure the vendor selected is actually capable of the carrying out the task.

The trick for any transformer manufacturer to create custom bus work that match exactly is to obtain the exact tolerances. This may seem simple, but it’s more than just H x W x L.

“If the bus is right there where it’s supposed to be, then all the installers have to do is measure the cable coming from high-side switch, cut it, terminate it, and they are done,” says Ober. “Then, you can energize it in as little as two hours after the transformer is setting on its base.”

“It’s funny how it all worked out. The transformer we got from ELSCO had the higher quality copper windings, which increased cost, but we ended up with a much more robust transformer,” adds Edwards. “The added cost for the copper was actually a ‘wash’ considering that we would have had to rent the generator another week while waiting for the cheaper transformer.”

Edwards then worked with a contractor to have it installed. “We didn’t have to shim it up, nor did we have to slot any additional holes. Everything fit perfectly.”

For more information, contact: Electric Service Company (ELSCO); 5331 Hetzell Street, Cincinnati; OH 45227; 800-232-9002 or 513-271-1752; FAX: 513-271-0543; info@electricsservice.com or www.electricservice.com.