

# Strong year predicted for American stainless market

Record sales in the automotive market, the ability to still turn a profit with oil at USD 40/barrel and a strong construction sector are all driving ahead stainless steel consumption in the United States. Stainless Steel World talked to industry expert Robert McIlvaine, President of the McIlvaine Company, to learn more about how the US market is performing.

By Joanne McIntyre

## Looking ahead to the end of 2016, what is the general outlook for stainless steel in the US this year?

“It helps to separate the consumption outlook from the revenue outlook for the suppliers. Consumption, in terms of tons of stainless steel, will show strong gains but the question will be: at what price will the steel be sold and who will sell it? AK Steel, ATI Flat Rolled Products, North American Stainless, and Outokumpu have all petitioned DOC claiming that Chinese suppliers have injured the domestic industry by unfairly selling low priced material in the U.S. Without any strong rebound in Chinese consumption, or a restraining order in the U.S. there will be continued pricing pressure.”

than the 2013 market. Single family housing will rise 20%, multi-family housing 7%, commercial buildings 11% and institutional buildings 9%. Manufacturing construction is likely to be flat as will public works construction. The five year forecast for construction is not quite so bullish but is still positive with annual growth pegged at over 3%.”

## What is the outlook for the US oil and gas industry?

“Stainless steel is widely used in the oil and gas industry. Sales of capital equipment associated with new wells are down by more than 70% from the high point a few years ago. New offshore project activity is down and

The new capacity requirements in the US are being addressed with renewables such as wind and solar as well as gas turbine generators. The gas turbine power plant market is quite large. The stainless consumption on a dollar basis is about 50% of what is needed in a coal fired plant. The US is installing nearly 25% of the 80,000 MW of new gas turbine capacity added to the world fleet each year. In the US plants are typically operated in the combined cycle mode. This requires steam piping, turbines and heat recovery steam generators with high alloy stainless. Many of these plants are also incorporating zero liquid discharge systems. The evaporators, crystallizers, compressors, valves,

## “Construction starts will rise 6% this year”

“From the consumption perspective I believe that this will be a good year. GDP will be up 2% while unemployment remains at 5% with low inflation. The major consuming markets will all be up in 2016.”

## What is your take on the consumption outlook for major markets such as automotive and construction?

“The US auto market will enjoy a banner year in 2016. Low interest rates, an improving labor market and cheap gasoline are the key drivers. Unit sales will be at near record levels. What is more important is that the amount of stainless per unit will also be up. The reason for this is the higher proportion of SUVs and light trucks sold in proportion to small passenger cars. First quarter delivery of cars and light trucks exceeded 4.5 million, which is the best start since 2000. The US construction starts are projected to rise 6% this year. However, housing starts were up 13% in 2015. Therefore the 2016 market will be 19% better than the 2014 market and 28% better

is not expected to accelerate until oil prices exceed USD 60/barrel. However stainless purchases associated with ongoing production will be up slightly. The US has become the world’s largest oil and gas producer. Shale oil and gas can be economically produced with oil prices at less than USD 40 barrel. Many producers believe that losses will be lower by continuing production rather than terminating it until prices rise.”

## Is the power industry going to be down due to the prohibition on new coal plants?

“New coal fired power plants are very large users of stainless steel and this market opportunity has completely evaporated in the US. However the US still must operate existing coal plants whose capacity exceeds that of Western Europe. Upgrades of the existing plants to meet new emission standards along with the unusually high cost of maintaining obsolete equipment, mean that stainless expenditures will be significant.

pumps and filtration equipment all make liberal use of stainless steel.”

## Are there other significant markets for stainless steel in the US?

“The US is now a low cost producer of petrochemicals thanks to natural gas availability at historically low prices. A number of petrochemical projects are underway. Many heavy industry sectors dependent on low cost fuel are also expanding in the US, while the food and pharmaceutical industries depend on stainless to maintain product purity. The US leads the world in pharmaceutical production and is one of the largest food processors so these are significant markets.”

## About the author

Bob McIlvaine founded the McIlvaine Company in 1974 and oversees the work of 30 analysts and researchers. He has a BA degree from Princeton University. For information see <http://home.mcilvaine.com/>

## News highlights from the United States

### Survey of America's oil and gas at OTC

Survey of America's oil and gas industry at OTC Houston in Texas has recently revealed 'adoption of new technologies' as the critical business issue in the next 18 months. Lloyd's Register had earlier challenged oil and gas companies to re-think their approach to technical innovation, performance and safety to secure the world's energy supply in a sustainable way, from reservoir and refinery to beyond.

A Lloyd's Register survey of exhibitors at OTC Houston 2016 revealed more than 43% of respondents consider adoption of new technologies including additive manufacturing (or 3D Printing) and the use of unmanned robotics to be the primary issue.

Using new technologies from other industries (17%); Better collaboration within the industry (16%); Data rationalization and interpretation techniques (13%); and Education initiatives for graduates and new industry entrants (11%), were also seen to be important issues.

According to its annual 2015-16 Oil & Gas Technology Radar survey, "operational efficiency" is now the top driver for innovation investment. "Improving access to potential reserves" and "increasing the life span of assets" also rated more highly as innovation drivers, suggesting that, companies are looking to push up the top line by extracting maximum value from resources.

The company confirms that the offshore sector is rapidly realigning in response to the low oil price environment and other challenging dynamics. The issues appear to be well-understood, aided by good-quality dialogue and increased collaborative efforts.

### Atkins acquires PP&T segment of EnergySolutions

Atkins, the design, engineering and project management consultancy, has recently acquired the Projects, Products and Technology (PP&T) segment of EnergySolutions after receiving the necessary North American regulatory approvals.



PP&T is an innovative 650-person nuclear business that delivers a wide range of technical engineering and programme management services for the decontamination and decommissioning of high hazard government nuclear facilities. PP&T is a market leader in designing solutions for the treatment and stabilisation of high, intermediate and low level nuclear waste in North America. Its proven track record of executing large and complex projects provides Atkins with immediate access to Tier 1 (nuclear site management) government contracts for the management and decommissioning of nuclear sites in North America. The acquisition enhances Atkins' market presence in the UK. PP&T's skills and capabilities, combined with its proven Tier 1 track record, will also serve to strengthen Atkins' positioning for future decommissioning opportunities across Europe.

At the Fukushima Daiichi nuclear power station in Japan, PP&T has provided technology for the cleanup of radioactivity contaminated water. Atkins has acquired PP&T for an enterprise value of USD 318M and will be funded through Atkins' existing cash resources and available committed bank facilities.

### DOE holds workshops to aid Idaho IWTU startup

Technical experts from around the country recently converged in Idaho Falls to aid DOE's efforts to safely and effectively start up the Integrated Waste Treatment



Unit (IWTU), intended to treat the approximately 900,000 gallons of remaining radioactive liquid tank waste at DOE's Idaho Site. Scientists and engineers from DOE-Idaho, DOE-Headquarters, the Idaho National Laboratory, Idaho Cleanup Project, the National Engineering Technology Laboratory, and Hazen Research met at a Fluidized Bed Workshop in mid-April to discuss the mechanical processes that take place within the IWTU's Denitration Mineralization Reformer (DMR), a key reaction vessel in the facility. The gathered experts discussed the conditions observed inside the DMR during three prior waste simulant runs. During these runs, which used a non-radioactive chemical mixture with similar properties as the actual liquid waste stored in three underground tanks, operators and engineers noticed the formation of a bark-like material inside the DMR vessel walls. The workshop participants discussed what process operating conditions could be contributing to the bark-like formation inside the DMR vessel. DOE is working to meet an agreement with the state of Idaho to begin actual waste processing at IWTU by Sept. 30, 2016. The Department will only begin operations at the IWTU, however, when it is safe to do so.

### Kinder Morgan award EPC contract to IHI E&C

Kinder Morgan, Inc. and IHI E&C have jointly declared that Kinder Morgan subsidiaries, Elba Liquefaction Company, L.L.C. and Southern LNG Company, L.L.C., awarded to IHI E&C a contract for



the engineering, procurement, construction, commissioning and start-up of Kinder Morgan's natural gas liquefaction project at Elba Island, near Savannah, Georgia.

The approximately USD 2B Elba Liquefaction Project will consist of 10 Movable Modular Liquefaction System (MMLS) trains using Shell proprietary technology. The new units will connect to Kinder Morgan's existing re-gasification terminal at Elba Island, which will be modified to receive liquefied natural gas (LNG) from the new liquefaction facilities. Modifications to the existing Elba facilities will include compression for vapour handling and new pumps for loading the LNG on vessels for export.

"We are excited about this next step for our future LNG export project and look forward to working with IHI E&C to bring it to fruition," said Norman Holmes, president of Kinder Morgan's Southern Region Pipelines.

Initial engineering, procurement and construction planning are being performed by IHI E&C's Houston office while awaiting approval of the project by the Federal Energy Regulatory Commission (FERC). Proactive quality management will encompass every aspect of the project, from EPC through to commissioning and start-up.

## Alcoa to supply metal parts for Airbus

Alcoa, Lightweight metals leader, has recently entered into an agreement with Airbus to supply 3D-printed titanium fuselage and engine pylon components for Airbus commercial aircraft. Alcoa expects to deliver the first additive manufactured parts to Airbus in mid-2016.



Alcoa Chairman and Chief Executive Officer Klaus Kleinfeld said “The unique combination of our multi-material alloy development expertise, powder production capabilities, aerospace manufacturing strength and product qualification know-how position us to lead in this exciting, emerging space.” The agreement will draw on Alcoa’s decades of aerospace experience and new technologies gained through the recent acquisition of RTI and organic expansion in Whitehall, Michigan. Alcoa also recently invested in 3D-printing and metallic powder production capabilities at its technical center outside of Pittsburgh, Pennsylvania. Alcoa acquired RTI International Metals (RTI) last year, now known as Alcoa Titanium & Engineered Products (ATEP) which grew Alcoa’s additive manufacturing capabilities to include 3D-printed titanium and specialty metals parts produced at ATEP’s Austin, Texas facility. The Airbus agreement will draw on these capabilities as well as ATEP’s titanium ingot melting and billetizing, machining, finishing and inspection technologies. Alcoa will employ advanced CT scan and Hot Isostatic Pressing (HIP) capabilities at its advanced aerospace facility in Whitehall, Michigan. HIP is a technology that strengthens the metallic structures of traditional and additive manufactured parts made of titanium and nickel based superalloys.

## DTL to be used at spacecraft launch pad

The United Launch Alliance (ULA), Vandenberg Launch Operations, California, are soon going to use specialized combination dampers, designed and manufactured by Damper Technology Ltd (DTL). The dampers are specifically designed for reliability and precise control, and are a critical application to the ‘clean air’ system supply. Made of SS-316, the combination dampers have been treated with a special glass bead cleaning process to make sure they meet the specification, of a completely clean assembly, without any trace of contaminants or greases. All internal components have been selected with the intent that the dampers remain clean in operation. Launches from the Vandenberg Launch site in California are mainly for Satellite deliveries and it is the hope that these dampers will become a permanent part of ground equipment for this and other launch sites in the future.



## Stainless Steel in the USA

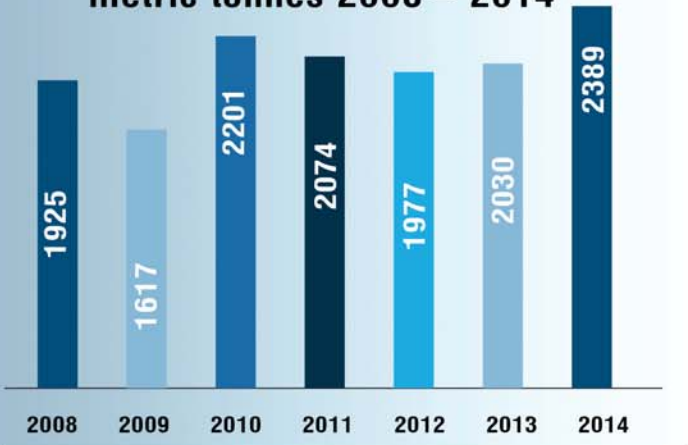
WORLD STAINLESS STEEL



# No.3

USA is the **third** largest steel producer in the world

### USA Stainless melt shop production (ingot/slab equivalent) in 1,000 metric tonnes 2008 – 2014



# 922.2

Foreign trade exports of stainless steel in 2014 from NAFTA = 922.2 x 1,000 metric tonnes

## Gateway Arch St. Louis

At **63 stories** tall, the Gateway Arch in St.Louis is the largest single stainless steel structure in the world



**Lukens Steel Company**, in Coatesville, Pennsylvania, is the oldest steel mill in commission within the United States. Its origins can be traced back to Isaac Pennock who established The Federal Slitting Mill in 1793.

### US stainless steel scrap prices per tonne (March 2016)

304	\$ 1080	\$ 300	CR 430
316	\$ 1380	\$ 210	CR 409
CR 409	\$ 240	\$ 330	CR 430

Sources: ISSF, Scrapmonster.com, MEPS, Wikipedia