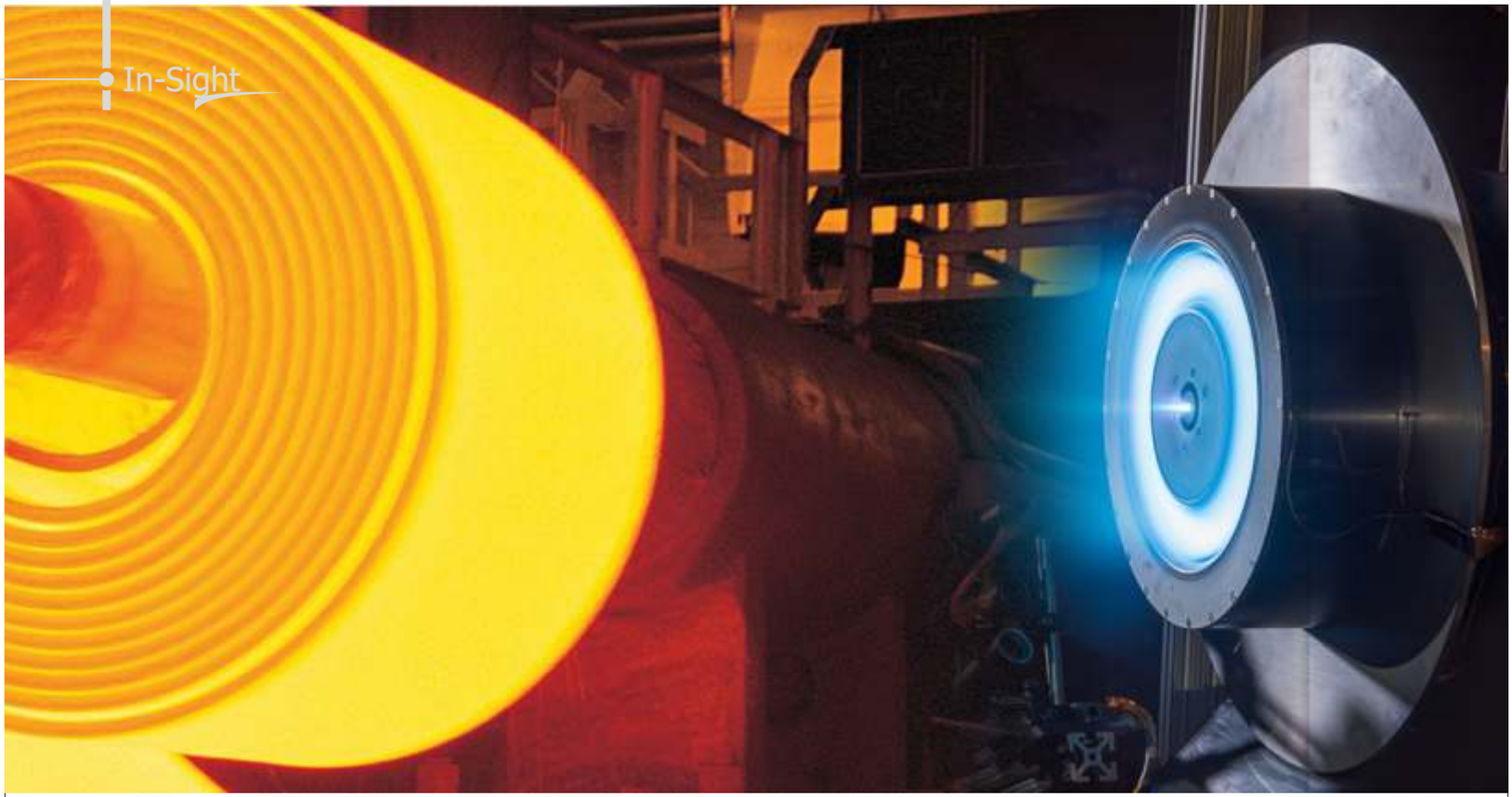

Electric Propulsion and the Steel Industry

Disrupting Innovation can HURT, if you are not the one disrupting

- Pankaj Jain
Sr. Vice President, Marketing - Kalyani Steel Ltd.

The auto industry is more than a century old. This industry – has relied on burning fossil fuels via an internal combustion engine as their primary means of propulsion.

Most of this air pollution we cause results from the burning of fossil fuels, such ascoal, oil, natural gas, and gasoline to produce electricity and power our vehicles. Some of the most significant hidden costs of fossil fuels are from the air emissions that occur when they are burned. All fossil fuels emit carbon dioxide and other harmful air pollutants when burned. These emissions lead to a wide variety of public health and environmental costs that are borne at the local, regional, national, and global levels.

Time has come when we need to break the dependence on fossil fuels and move towards clean renewable energy. As far as the auto industry is concerned, Electric Vehicles appear to be like a panacea. The time is not just right (if not delayed) but critical.

Somebody had said: The illiterates of the next century are not going to be the persons who can't read and write but those who can't learn, unlearn and relearn.

The writing on the wall is loud and clear: Allconnected to the world of auto industry and steel need to understand that Electric vehicles (EVs) are now a reality and possibly one of the biggest disruptions of our times.

Let us understand what EVs are.

Very simply put, EVs uses one or more electric motors or traction motors for propulsion. It may be powered through a collector system by electricity from off-vehicle sources, or may be self-contained with a battery, solar panels, or a generator to convert fuel to electricity. EVs include road and rail vehicles, surface and underwater vessels, electric aircraft, and electric spacecraft.

EVs use the concept of a normal electric motor. They use electricity stored in a battery pack to power the motor and turn the wheels. There is no need of manual transmission in the electric vehicles as all the power is available all the time.

Until now, the biggest roadblock used to be storing enough power, so that an electric vehicle can go long distances while keeping the number of batteries in the vehicle low. But now, there have been major breakthroughs in battery technology.

The acceptance of EVs:SPEEEEDING UP…..

The whole world is accepting EVs with open hands and at a fast pace.

CHINA: World No 1 in Electric Vehicles also…

In 2015, China declared its plan to dominate the world's electric car industry by 2025. Last year (2016) China sold more than half a million EVs (0.645 million), making it World's biggest market. And if you are thinking that most would be cars and 2 wheelers, you're mistaken. About 340,000 of those were passenger cars, the rest were mostly buses.

Another interesting fact is that most of the China's electric vehicles are manufactured indigenously. Last year China's leading electric vehicle maker, Shenzhen-based BYD, turned out 100,000 cars. The leader in the US, Tesla, managed to sell 76,000 into its home market.

EUROPE: World No 2 - and some European countries are really fast in adoption

With sales of 0.637 Million Cars, Europe stands World No 2. The adoption is really fast, with countries like Norway leading the path with EV sales of close to 40% of overall sales.Dutch Bank predicts that come 2035, Europeans will buy only EVs. This challenges Europe's automotive and auto-component industry, which holds close to 25% of global car production.

US: World No 3 –but possibly with largest options in EV Models

With more than 30 EV models, sales grew by more than 37% in 2016 to touch an overall sales of 0.57 Million.U.S. Forbes predicts that EVs will make up 65% of new U.S. light-duty vehicle sales by 2050.

The India Story

slow so far but very ambitious

India may be slow in embracing electric vehicles, but once it takes off, the adaptation will be fast. The current mood of the Govt. of India looks very clear. If Gadkari is to be believed, government's larger plan is to have only electric vehicles by 2030. That is the reason that while speaking to SIAM Group, he made it clear that Petrol and diesel vehicles will need to make way for electric powertrains and engines running on other fuel variants such as ethanol and biofuels The speed of adoption will be something similar to Mobile Phones where India demonstrated an incredible shift and surpassed even US to become World No 2. If Planned and executed well, the shift towards electric vehicles will also enhance India's energy security, and reduce the nation's oil import dependence

Connected and autonomous vehicles (CAV) are also receiving significant attention and funding. It is believed that the CAV future lies in electrification and the link to 'smart cities'. It is likely that CAV developments could pull forward the automotive electrification timeline.

The BIG QUESTION -"What's in there for the MEN in STEEL" ?

As the demand for conventional internal combustion engines diminishes, so will the demand for engineering steels typically required for the manufacture of ICE components such as connecting rods, cam-shafts, transmission shafts, etc. But this drop in engineering steel demand will be compensated through the growing demand for new flat steel automotive products. Electric propulsion systems need advanced electrical steel grades for electric motors, and for energy storage, advanced plated steels for battery casings.

What Charles Darwin said long ago – "It is not the strongest of the species that will survive, but the one most responsive to change"is very apt.

Sometimes when you're in a dark place, don't think that you are buried, consider that you've been planted. Life is either a daring adventure or nothing. EVs are one of the biggest opportunities of our times. Let's embrace it and make the best out of the same.