



**October 19, 2012**

**Dear clients and colleagues,**

How would you run a country without oil? An electric drive vehicle (EDV) could be a solution if they are convenient and affordable. EDVs have to be convenient with features available in other cars and should not be something you drive for an hour and charge for six hours. It has to be affordable to the average individual. This is quite a challenge as a manufacturer needs to balance between the laws of Physics and Economics. After many years of waiting, electric cars are showing up in showrooms. The EDVs have been proving the skeptics wrong with the advancement of technology. We are of the opinion a revolution – although at its infancy – has started.

Environment is an important theme in our portfolio. This week we profile Polypore International, Inc., a recent addition to the portfolio that should benefit from the trend.

**Polypore International, Inc. (PPO US \$35.85)**

[www.polypore.net](http://www.polypore.net)

#### ***Business Overview***

Polypore is a leading global high-technology filtration company specializing in manufacturing microporous membranes that are used to either separate chemicals or filter liquids, thereby removing solid particles. The core businesses represent approximately 70% of recurring revenue. Being a very technical business, they have a leading market position with just two or three competitors.

Polypore's strong position in the niche battery separator market, allows it to generate high returns in an otherwise difficult battery industry. Namely as they don't make lithium or lead-acid batteries, rather provide a key functional component that manages the ion flow. All batteries need such separators to function.

Polypore operates two business segments. The energy storage segment (75% of revenue) caters to consumer electronics (CE), EDVs, backup power and forklifts. The separations media segment (25% of revenue) caters to healthcare and industrial specialty space such as liquid filtration, water treatment, etc.

Polypore has found a niche as a supplier to lithium and lead acid battery makers. Lead acid batteries are used in a variety of industrial applications as well as in EDVs. Lithium batteries have been gaining popularity for use in portable CE devices such as iPhones, iPads, BlackBerry, laptops and various other power tools.

The shift to lithium ion batteries in consumer electronics boosts the company's growth and margin profile. It also has a presence in the medical filtration business and is the world leader in blood oxygenation. Polypore's products provide the functionality in blood oxygenators during on-pump open heart surgery.

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About 42% of sales are in Asia and the balance is pretty equally split between the Americas and Europe. Polypore is well positioned to take advantage of global trends, particularly with the development of Asian countries, and stronger demand for automobiles and general industrial expansion.

### ***History***

Private equity firm GTCR Golden Rauner purchased Polypore in mid 1990s, converting it into a leader in hemodialysis membranes and separators for batteries. The original Daramic assets that served as the main foundation for growth have a history dating back to the rapid automotive battery market growth in the 1930s. The company went public in 2007.

### ***Market Data***

Market Cap U\$1.7B, debt \$715M, cash \$44M, p/e (12/2013) 15.2x, ev/ebitda (12/2013) 9.1x and net debt/ebitda 2.5x.

### ***The market***

Lithium batteries are replacing nickel batteries in the power tools space as they offer the possibilities of making them cordless; for example, vacuum cleaners and garden equipment like leaf blowers and weed whackers. The core market, which includes power tools and CE, is growing around 10% driven by growth in the number of devices as well as application proliferation, meaning lithium batteries are being incorporated in new products. In the larger format battery, the EDV market is developing with hybrid vehicles and is similar to the CE as the first hybrid vehicles were nickel-based and are converting to lithium.

The EDV market alone is a large, addressable market. There are about 60M vehicles produced around the world in a given year. If we assume a 5% penetration rate for hybrid alone by 2015, it equates to three million vehicles. A 5% penetration would more than double the size of the existing lithium-ion battery market.

### ***Growth strategy***

- Lithium Ion separators are a growth opportunity in both CE and hybrid markets
- International presence helps diversify and create a stable base for growth
- New product specifications for batteries require larger separators, resulting in growth in separator revenue that exceeds actual battery growth

### ***Competitive advantages***

- High barriers to entry as making a battery is complex
- Separator is a requisite piece for any battery chemistry, and cannot be substituted
- Energy storage segment has strong cost advantages over peers' product
- Costs are heavily tilted toward equipment costs as opposed to labor costs

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### **Risks**

- Customer relationships may deteriorate
- Input price rises might not be passed through in a timely manner

### **Valuation**

Target price = \$49.65, using DCF model at growth rate of 15% for the next 7 years, 6% at maturity, risk premium of 9%, and payout at maturity of 45%.

Have a nice weekend.

The Global Alpha Team

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