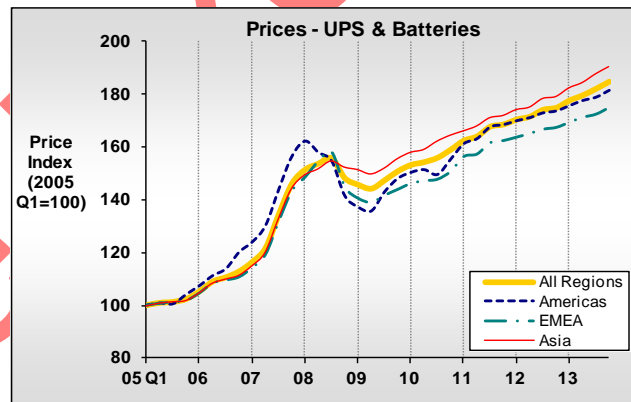
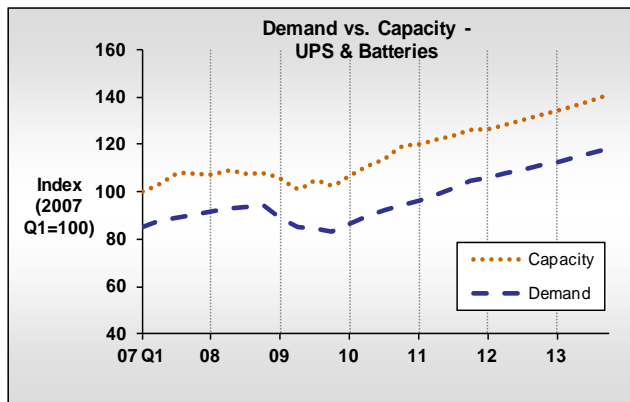


# 1 Industrial UPS & Batteries

Sales grew 3% in Q3 and will grow 3% more in Q4 on orders for data centers and backup power on oil rigs. Sales growth will fall to 6.5% annually in 2012 and 2013, as telecommunication spending growth slows from 11% in 2011 to 6% in 2012. Demand growth will outpace capacity additions in Q4 and Q1, raising utilization rates 1% per quarter to 84% in 2012 Q1. Utilization will remain stable through 2013 with planned capacity additions from Bosch, Saft, and Samsung to keep up with demand growth. Lead times fell from 11 to 10 weeks in Q3 due to advancements in battery manufacturing and a \$400m decrease in backlogs. Lead times will remain steady through 2013, as suppliers hire temporary workers to deal with surges in demand. Prices rose 2.3% in Q3 on rising Asian labor costs and profit margins. Price growth will soften to 0.5% in Q4 on a 20% drop in lead prices. Prices will rise 4% in 2012 and 6% in 2013 on 4-5% higher plastic costs. Increases in nickel costs will accelerate from 6% to 13% in 2013.

Figure 1: Key Indicators for UPS & Batteries

Key Indicators	Q4 2011 - Q1 2012	Q4 2011 - Q4 2013
Demand	▲ 1.5%	▲ 13.2%
Order Lead Time	▲ 0.6%	▲ 1.1%
Prices	▲ 1.1%	▲ 9.6%
Capacity Utilization	▲ 1.0%	▲ 1.0%
Supplier Concentration	LO 0.8%	LO 6.2%



EnerSys formed a JV with South African PowerTech and acquired South American Industrial Battery to expand geographically. PowerTech is a publicly held \$470m producer of transformers and batteries, and provides power system integration services. Industrial Battery is an Argentinean based publicly held producer of lead acid batteries. LG introduced the first lithium polymer UPS systems, which weigh 80% less than others. Satco introduced what it claims is the most energy efficient three-phase UPS system at 98% efficiency.

Figure 2: Top UPS & Battery Suppliers

	Name	Home Country	3-Year Annual Growth Rate	Electrical as a % of Sales	2010 UPS & Battery Revenues (\$M US)	R&D % of Sales 2010	Stock Price Change Last 90 Days	Q4 News
1	Schneider	France	1.6%	60%	\$2,257	2.6%	-8%	Expanded network by forming two distribution alliances
2	EnerSys	USA	-11.7%	83%	\$1,312	N/A	19%	Opened third battery facility in China (37k m <sup>2</sup> )
3	Exide	USA	-14.8%	37%	\$1,001	N/A	-46%	Alliance with North Star for automotive battery R&D
4	Simplo	Taiwan	19.0%	69%	\$917	3.1%	-8%	Signed first vehicle battery contract with Luxgen Motors
5	Saft	France	-2.3%	100%	\$613	N/A	9%	Opened its first li-ion battery plant in Florida, US
6	Eaton	USA	-5.6%	49%	\$563	3.1%	8%	Offering third party aftersales services
7	Emerson	USA	-6.9%	5%	\$468	2.2%	3%	Awarding distributors financially for goal attainment
8	LG Chem	S. Korea	21.8%	2%	\$418	0.3%	-9%	JV with Hyundai for automotive li-ion battery R&D
9	Samsung	S. Korea	3.6%	8%	\$360	1.1%	2%	Will invest \$2b to increase solar battery production
10	Exide Ind.	India	9.1%	41%	\$357	N/A	-27%	N/A

## 1.1 Sourcing Recommendations – Industrial UPS & Batteries:

1. Purchase nickel cadmium battery requirements for 2013 in 2012. In 2013, nickel prices will grow at 13% compared to 6% in 2012, while lead prices will fall 5%. During this period, nickel cadmium battery prices will rise 2-3 times faster than lead acid batteries. Nickel is rising comparatively slower than other years in 2012, due to a curb on housing construction in China and economic decline in Europe.
2. Re-evaluate the scope and duration of available maintenance offerings by current suppliers given the broad range of new supplier capabilities. Many suppliers have expanded and improved their maintenance capabilities, making it worth a re-evaluation. Mitsubishi opened two new service centers in the US to reduce service lead times. Eaton is now offering an online remote monitoring service that relays information to Eaton's regional service center. HP now offers three year maintenance agreements for UPS systems; compared to Schneider that offers only two.
3. Qualify Staco as a supplier. It claims that its new First Line P-Series 65k VA three-phase UPS system is 98%. This is 5% higher than Schneider's comparable Galaxy 3000 UPS system. Moreover, it is equipped with a filter to protect upstream power-supply sources from any harmonics and reactive power generated by the loads power.

## 1.2 Sales grew 3% in Q3 and Q4 on orders for data centers and oil & gas exploration. A slowdown in construction and telecommunication activity will result in sales growth slowing to 1.5% quarterly in 2012-2013.

Sales grew 3% in Q3 on new orders for data centers and oil & gas exploration. Global rig count (excluding Canada) rose 4.3% sequentially in Q3 driven by a 33% YOY sequential increase in crude oil prices<sup>1</sup>. BP, Statoil, and Petrobras placed orders for backup power systems to support drilling operations in West Africa, Northern Europe, and Brazil. Orders for data centers for 1 kVA to 5 kVA UPS systems that can provide power supply for five minutes to an hour, preventing data loss in the case of blackout, were placed by Yahoo and Single Hope. Yahoo expanded its existing US data centers in New York and Washington State and began constructing new facilities in Singapore and Switzerland as part of a \$500m data expansion plan. Single Hope, a US provider of web hosting, invested \$7m to double its existing network capacity in its Chicago data center.

Sales will grow 3% in Q4 due to additional orders of UPS Systems & Batteries to continuously provide power to new telecommunication and construction infrastructure. During this quarter, telecommunication spending will grow 3% and purchases of inputs and supplies for construction will grow 4%. Sales will grow fastest in Asia at 3.5%, compared to the Americas and EMEA where sales will rise 2.3 and 3%, respectively. Regional Asian growth is driven by economic growth in China and India at 8-9% annual rates. At the end of 2011, purchases of inputs and supplies for construction will rise 19% in Asia compared to 15% globally. Telecommunication spending in Asia will rise 15% compared to 11% globally. Chinese mobile service providers, Google, and Giga News will invest in telecommunication developments in Asia. China Mobile, China Unicom, and China Telecom invested \$1b to increase network coverage. UPS Systems & Batteries are used in telecom towers to ensure continuous signal transmission. Google completed the world's largest server farm in India. Giga News

<sup>1</sup> Canadian rig count is excluded due to high seasonality.