



Electronics and Semiconductor Industry Challenges

Since 1992, CAPACCIO's EH&S scientists and engineering experts have been delivering unparalleled expertise through a variety of services designed especially for the electronics and semiconductor industry. Our staff has a multitude of experience working as Facility and EH&S Managers in this industry and our engineers, scientists, and regulatory specialists are experienced in a variety of electronics and semiconductor manufacturing and facilities processes. With this industry knowledge, CAPACCIO can help streamline your processes, improve your EH&S performance, and provide a team of expert staff resources to assist EH&S Managers in meeting both short and long-term objectives. Our on-site EH&S services have helped EH&S managers address staffing needs for ongoing and developing EH&S programs more cost-effectively.

CAPACCIO specialists are also members of and participate in several industry organizations (SESHA, SEMI, ASQ, QSGNE, MHT) enabling us to provide insight into trends this industry may expect and foresight into how we can help our clients prepare for these challenges. Below we have provided examples of how CAPACCIO can assist you with these current and projected industry challenges.

1. Market Growth Cycles

Although the electronics and semiconductor industry has shown steady growth over time, historically it has consistently experienced cycles of rapid growth followed by slowing and rebuilding periods. This presents unique challenges for the EH&S professional, not the least of which is maintaining appropriate staffing with experienced personnel.

According to October 2010 IPC reports, the U.S. electronics manufacturing services industry has shown a steady climb in sales over the past six months, especially in the semiconductor industry. The SIA November 2010 update confirms steady increases in sales in the third quarter of 2010. In its recent forecast for 2011 and 2012, SIA projects sales to grow by 6.0% in 2011 and another 3.4% in 2012, with a forecasted compound annual growth rate of 13.4% for the period 2009 through 2012. After a strong rebound in 2010, Gartner projects continued moderate increases in wafer fabrication equipment sales with 3.9% forecasted for 2011.

The return to growth predicted for the electronics and semiconductor industry, although a positive trend, will result in depletion in inventory and difficulty sustaining market demand. In response to this demand, companies will need to ramp up production, expand their facilities, and seek outsourced manufacturing assistance.

Also with growth, EH&S and Facilities Managers in electronics and semiconductor companies will need to address possible increases in chemical usage and storage; increases in water and energy trends; and constraints on in-house environmental, health and safety resources.

CAPACCIO can assist your organization in meeting these demands with:

- Planning
- Facility Commissioning and Decommissioning
- Pollution Abatement System Design Evaluation & Upgrades including air, wastewater, hazardous and solid waste
- Environmental Permitting and Compliance
- Environmental Regulatory Reporting, Data Collection, and Analysis
- ISO 14001 EMS and OHSAS 18001 HSMS and integrated EHS management systems development, maintenance, and updates
- EH&S regulatory and systems audits
- Occupational Health & Safety Compliance Reviews, Program Development and Updates
- Environmental Program Development and Updates
- Water Conservation, Energy Conservation; Waste Reduction Assessments and Programs
- GHG Assessments & Emissions Reporting
- On-Site EH&S Resources

2. Chemical Use and Product Content Restrictions

With more and more legislative directives being initiated across the globe, staying up-to-date with International Waste Electronic and Electrical Equipment (WEEE); International Restriction of the Use of Hazardous Substance (RoHS); Registrations, Evaluation, and Authorization of Chemicals (REACH); and related restrictions is a challenge. Additionally, supply chain management for product compliance is a very important responsibility.

CAPACCIO can assist with your product compliance challenges with:

- Regulatory & quality systems expertise
- Strategic planning
- Integration of engineering and on-site supplemental staff
- Supplier Training Program
- 3rd Party Supplier Audit
- Program implementation and development

3. Emerging and New Technologies

Advanced development occurs with increasingly smaller products. Nanotechnology, along with other advancements in product design, brings new challenges. This will result in increasing interconnects in a reduced space and the usage of new chemicals which leads to new EH&S requirements.

Areas where CAPACCIO can assist with these challenges include:

- Safety, PPE, installation and decommissioning of old tools
- New chemical usage resulting in need for Tier II; SARA, Safety: PPE Assessments
- ISO 14001; DFE; Sustainability

4. Sustainability and Social Responsibility

Although the electronics and semiconductor industry will see growth in the demand for its products, the amount of customers purchasing the products is decreasing due to downsizing and mergers. Electronics and semiconductor companies will be faced with having to work together to develop new technologies and define "what's next" in the market, but, on the flip side, will also need to differentiate themselves from their competitors so their new products and applications will be chosen by the dwindling supplier base. New environmental requirements placed by Sony, Wal-Mart and other large companies will also play a factor and need to be considered.

CAPACCIO can keep your company ahead of the curve through:

- Sustainability program development
- Sustainability and corporate assessments including:
 - Meeting the EICC standard
 - Helping with SRI Certification
 - Verification
 - Benchmarking
- Sustainability reporting
- Sustainability awareness training
- Stakeholder programs
- GHG services



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5. Supply Chain Management: Going Green

Recent requirements placed by Sony, Wal-Mart and other large customers of electronics and semiconductor products have made the greening of supply chains and supplier compliance an absolute necessity. CAPACCIO can assist in ensuring you meet your customer's requirements through:

- Training and integration of requirements through the supply chain
- Product Compliance
- ISO 14001 Assessments (ISO 14001 Flow Down of requirements to suppliers)
- Set up supplier assistance program for ISO 14001 implementation
- 3rd Party Audits

6. Resource Demands: Water, Energy, Materials

With the increase in production there will need to be a way to reduce resource demands needed to produce these products for better efficiency and bottom line profit. Water recycling/reuse/reclaim is increasingly important to facilitate expansion. Renewable energy may be a consideration to curbing this energy increase and lowering cost which can also lead to improved public Image and reduced overhead costs. CAPACCIO can assist by providing energy assessments, water assessments and sustainability programs.

QUALIFICATIONS

CAPACCIO professionals are:

- Certified Industrial Hygienists (CIH)
- Certified RABQSA Auditors
- Licensed Professional Engineers (PE)
- Certified Hazardous Materials Managers (CHMM)
- Certified Environmental, Health & Safety Trainers (CET)
- Certified Safety Professionals
- Licensed Site Professionals (LSP)

