

TURA Environmental Management System

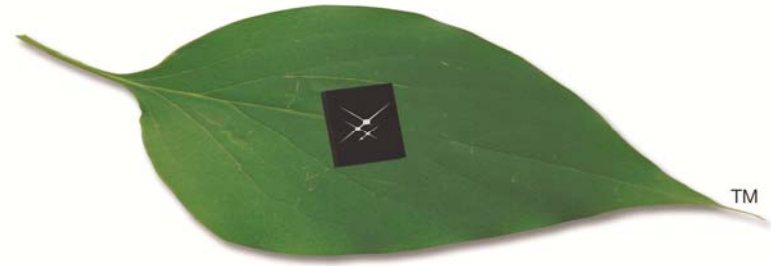
Sherri Gaudette, TURP, ISO14001 Certified Lead Auditor

Sr. Environmental Health & Safety Engineer

May 5, 2011



- *Skyworks Products*
- *Skyworks Environmental Programs*
- *Environmental Management Systems*
 - *ISO 14001 Certification*
 - *TURA EMS Requirements & Eligibility*
- *Why Did Skyworks Choose Alternative Planning?*
 - *Challenges*
- *EMS Focused Environmental Improvements*



Skyworks Products - Environmental Considerations

Skyworks Vision:

“Enabling Mobile Connectivity Through Semiconductor Innovation”

Wireless communications:

- *Cellular communication*
- *Remote meter reading for energy management*
- *Tire pressure monitoring for auto industry*
- *Cardiac catheter components*



Skyworks Environmental Management System



ISO 14001 Certified : Design and Development Through Manufacturing



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CERTIFICATE

The Certification Body of
TÜV SÜD AMERICA INC.

hereby certifies that

Skyworks Solutions, Inc.
20 Sylvan Road
Woburn, MA 01801 USA
(See attachment for complete listing of sites)

has implemented an Environmental Management System
in accordance with:

ISO 14001:2004

The scope of this Environmental Management System includes:

**The Design, Development and Manufacturing
of Semiconductor Devices, Including
Support Organizations / Operations.**

Certificate Expiry Date: June 24, 2013
Certificate Registration No: 951 10 5576
Effective Date: October 18, 2010



G. E. Miles
Gary E. Miles
VP, Regulatory Affairs



Page 1 of 2

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Environmental Policy Driven System

- Endorsed by Skyworks' Top Management
- Comply with all laws
- Prevent pollution emphasis on source reduction
- Establish objectives and targets for continuous improvement
- Conserve natural resources and minimize waste
- Promote environmental improvement throughout our supply chain



Skyworks is committed to the protection and preservation of the environment through the continuous improvement of its products and manufacturing processes worldwide. We abide by an Environmental Management System (EMS) designed to consistently:

- Comply with all applicable laws, regulations and requirements
- Prevent pollution
- Establish objectives and targets for continuous improvement
- Conserve natural resources and minimize waste
- Promote environmental improvement throughout our supply chain

Through responsible design, development and manufacturing of environmentally preferred products, we reduce our ecological footprint along with that of our customers and ultimately consumers.

Environmental Policy



SKYWORKS®
BREATHTHROUGH SIMPLICITY™

Who is Eligible for a TURA EMS?

- *Company has completed:*
 - *Initial TUR Planning*
 - *and 2 subsequent Plan Updates*
 - *At least 1 full EMS cycle (P-D-C-A)*
 - *and has undergone an independent audit within the last 2 years*
- *If EMS was developed in conformance with:*
 - *ISO 14001*
 - *US EPA's Performance Track Program*
 - *or another EMS standard adopted by a trade association or other standard-setting organization*
 - *it is considered appropriate with minor modifications*



TURA EMS Requirements

14 TURA EMS Requirements		ISO14001 Required Elements	
1	Environmental Policy	4.2	Environmental Policy
2	Aspects and Impacts	4.3.1	Aspects and Impacts
3	Legal Requirements	4.3.2	Legal Requirements
4	Objectives and Targets	4.3.3	Objectives and Targets
5	Environmental Management Programs	4.3.3	Environmental Management Programs
6	Roles and Responsibilities	4.4.1	Resources, Roles, Responsibility and Authority
7	Training	4.4.2	Competence, Training and Awareness
8	Communication	4.4.3	Communication
9	Operational Controls	4.4.6	Operational Controls
10	Documentation and Document Control	4.4.4, 4.4.5	Documentation and Document Control
11	Emergency Preparedness and Response	4.4.7	Emergency Preparedness and Response
12	Monitoring and Measuring	4.5.1	Monitoring and Measuring
13	Audits and Corrective Action	4.5.5, 4.5.3	Audits and Corrective Action
14	Management Review	4.6	Management Review

Essentially same requirements as ISO14001



Why Did Skyworks Choose Alternative Planning?

- *Already had ISO14001 certified EMS*
 - *minimal changes to existing EMS*
- *TURA EMS streamlined the environmental programs management*
 - *no need for separate TUR planning meetings*
 - *results of all environmental improvement projects tracked together*
- *Gives more visibility to TUR*
- *EMS Progress Report allows for reporting of other EMS activities*
- *EMS focus driven results*



EMS changes to Policy, Planning, and Legal Requirements

TURA EMS Requirements *Challenges*

The TURA EMS must:

- *Consider **reportable toxics** to be significant aspects*
- *Consider **toxics use reduction** when establishing objectives and targets associated with significant aspects*
- *Emphasize **source reduction** as the means of achieving objectives and targets*



Environmental Improvement Projects

FY11 Objectives Targets & Programs

Significant Aspects Site

Greenhouse gas
 Solid waste
 Chemical use
 TUR Chemicals (sodium hydroxide, acetone, hydrochloric acid, sulfuric acid, NMP)
 Hazardous waste
 Gas use

Significant Aspects Global

Energy
 Water
 Waste Hazardous & Solid
 CO2 (GHG)

Program	Objective & Target	Champion	Milestones	Status
Chemical Use				
Evaluate Ozone stripper process to replace the SEMI 14 Sulfuric Peroxide Strip process	Eliminate the use of 20 gallons of sulfuric acid per month	Bob Delotto/Chris Doucette		On hold need capital
Evaluate NMP reduction by extending PM's	Extend PM cycle above 2000 wafers	Bob Delotto		On hold during ramp installs & quals
Reduce the use of HCl	increase wafers per batch from 12 to 24 with the use of ETCH01 in place of HCL01	Frank Spooner	EHS Evaluation - Air permitting, Purchase & Install, Qual, TRB, RTP	RTP 12/1010
Reduce the use of BCB	Reduce dispense volume by 43% (reduces chemical use and hazardous waste production)	Matt Stevenson		Complete 3/2011

TUR Reportable Chemicals – Significant Aspects

Site General Scorecard

LEVEL 1		Primary Priorities to Improve	Owner	2009 Launch Point	FY10	Jul	Aug	Sep	Q1 Actual	Q2 Actual	Q3 Actual	Q4 QTD
TECHNOLOGY	T1	% to Plan of PHEMT7 Low Leakage Process Development	Dylan Bartle	100%	Goal	100%	100%	100%	100%	100%	100%	100%
					Actual	97%	100%	100%	100%	90%	96%	100%
	T2	% to Plan of PHEMT8 Process Development	Dylan Bartle	100%	Goal	100%	100%	100%	100%	100%	100%	100%
					Actual	80%	87%	87%	100%	100%	75%	87%
EHS	EHS1	Injury Illness Rate	Joe Torrice	1.5	Goal	1.5	1.5	1.5	1.5	1.5	1.5	1.5
					Actual	0.8	0.7	0.6	1.7	0.9	0.9	0.6
	EHS2	EMS Savings	Joe Torrice	N/A	Goal	\$4.7 K	\$4.7 K	\$6.8 K	\$24.6 K	\$31.9 K	\$19.9 K	\$16.1 K
					Actual	\$6.6 K	\$4.9 K	\$10.4 K	\$32.4 K	\$44.1 K	\$27.6 K	\$21.9 K
PEOPLE	P1	% of Six Sigma Trained Staff	Sholeh Gharib	32%	Goal	60%	60%	60%	32%	45%	45%	60%
					Actual	Measured Quarterly			32%	52%	52%	60%
	P2	% of Recognition Budget Spent	Pam Solomon	60%	Goal	90%	90%	90%	75%	80%	85%	90%
					Actual	Measured Quarterly			72%	100%	100%	100%

EMS Scorecard is part of the Woburn site general scorecard

Environmental Scorecard

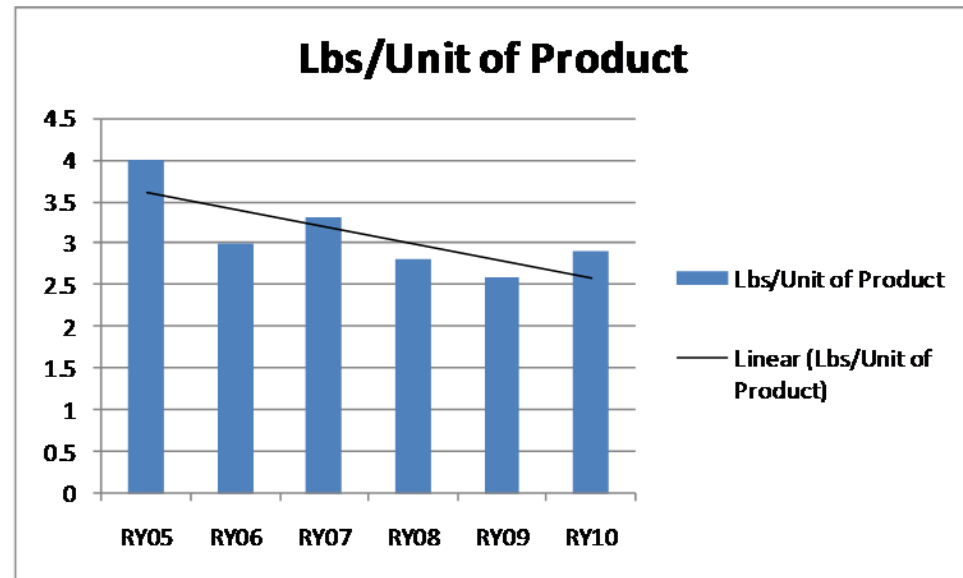
Environmental Scorecard FY10				FY10	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Savings from EMS Compliance	Torrice	0	Goal	\$ 5,980.00	8734.00	\$ 9,934.00	\$10,634.00	\$10,634.00	\$10,634.00	\$ 9,523.46	\$ 5,804.43	\$5,002.22	\$4,862.93	\$4,793.29	\$ 6,827.59
				Actual	\$ 7,257.14	\$11,120.18	\$14,043.91	\$14,193.16	\$13,955.50	\$15,902.43	\$10,064.46	\$ 8,396.18	\$9,141.22	\$6,638.22	\$4,871.29	\$10,424.79
2	Utility Conservation	Gaudette	\$ -	Goal	\$ 5,980.00	\$ 5,980.00	\$ 5,980.00	\$ 5,980.00	\$ 5,980.00	\$ 5,980.00	\$ 4,869.46	\$ 1,150.43	\$ 348.22	\$ 208.93	\$ 139.29	\$ 2,173.59
				Actual	\$ 7,257.14	\$ 8,127.20	\$ 8,054.80	\$ 8,799.61	\$ 8,504.50	\$ 8,216.43	\$ 4,869.46	\$ 1,150.43	\$ 348.22	\$ 348.22	\$ 139.29	\$ 2,173.59
3	MAU 1&2 Preheat coil Conversion	Gaudette	0 (MMBTU)	Goal	157	157	157	157	157	157	86	18	2	2	1	31
				Actual	157	157	157	157	157	157	86	18	2	2	1	31
2	Hazardous Waste Reduction	Gaudette	\$ -	Goal	\$ -	\$ -	\$ 1,200.00	\$ 1,900.00	\$ 1,900.00	\$ 1,900.00	\$ 1,900.00	\$ 1,900.00	\$ 1,900.00	\$ 1,900.00	\$ 1,900.00	\$ 1,900.00
				Actual	\$ -	\$ 2,410	\$ 3,041	\$ 2,640	\$ 2,697	\$ 4,932	\$ 2,441	\$ 4,492	\$ 6,039	\$ 3,536	\$ 5,755	\$ 5,497
3	NMP Recycling	Gaudette	0 (Gallons)	Goal	0	800	800	800	800	800	800	800	800	800	800	800
				Actual	0	903.00	1046.00	955.00	968	1475	910	1375	1425	990	1420	1370
2	EMS Administration Programs	Gaudette	\$ -	Goal	\$ -	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200
				Actual	\$ -	\$ -	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200.00	\$ 1,200.00	\$ 1,200.00
3	Process Audits	Gaudette	0 (Hours)	Goal	0	5	5	5	5	5	5	5	5	5	5	5
				Actual	0	0	5	5	5	5	5	5	5	5	5	\$ 5.00
2	EMS Service Programs	Gaudette	\$ -	Goal	\$ -	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00
				Actual	\$ -	\$ 582.75	\$ 1,748.25	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00	\$ 1,554.00
3	WWT System Internalize PMs	Gaudette	86 PM's	Goal	0	8	8	8	8	8	8	8	8	8	8	8
				Actual	0	3	9	8	8	8	8	8	8	8	8	8

Scorecard is combined EMS Objectives Targets & Programs & Regulatory

Clause	Process	Type	Description	Actual
4.5.3	NP – Internal Audit Corrective Action (EMS)	Process not implemented	The process for corrective action response is not effectively implemented for ISO 14001 Internal Audits	correction of finding in lieu of root cause and actions for prevention.
4.4.6	Irvine- waste handling	Process not followed/ process not defined	The documented operational controls for fluorescent light bulbs	Process for managing used bulbs not followed/ Work instruction IRV-W-0014 does not have controls for broken bulbs

No Findings for Woburn Site

- *Increased time between PM' s on equipment*
 - *reduced solvent usage*
- *Changed a process to vapor deposition from wet chemistry*
 - *reduced solvent usage*
 - *reduced hazardous waste*
- *Coordinate reactor cleans*
 - *reduced acids usage by half*
- *Improved O&M for IWWT system*
 - *use less treatment chemical*

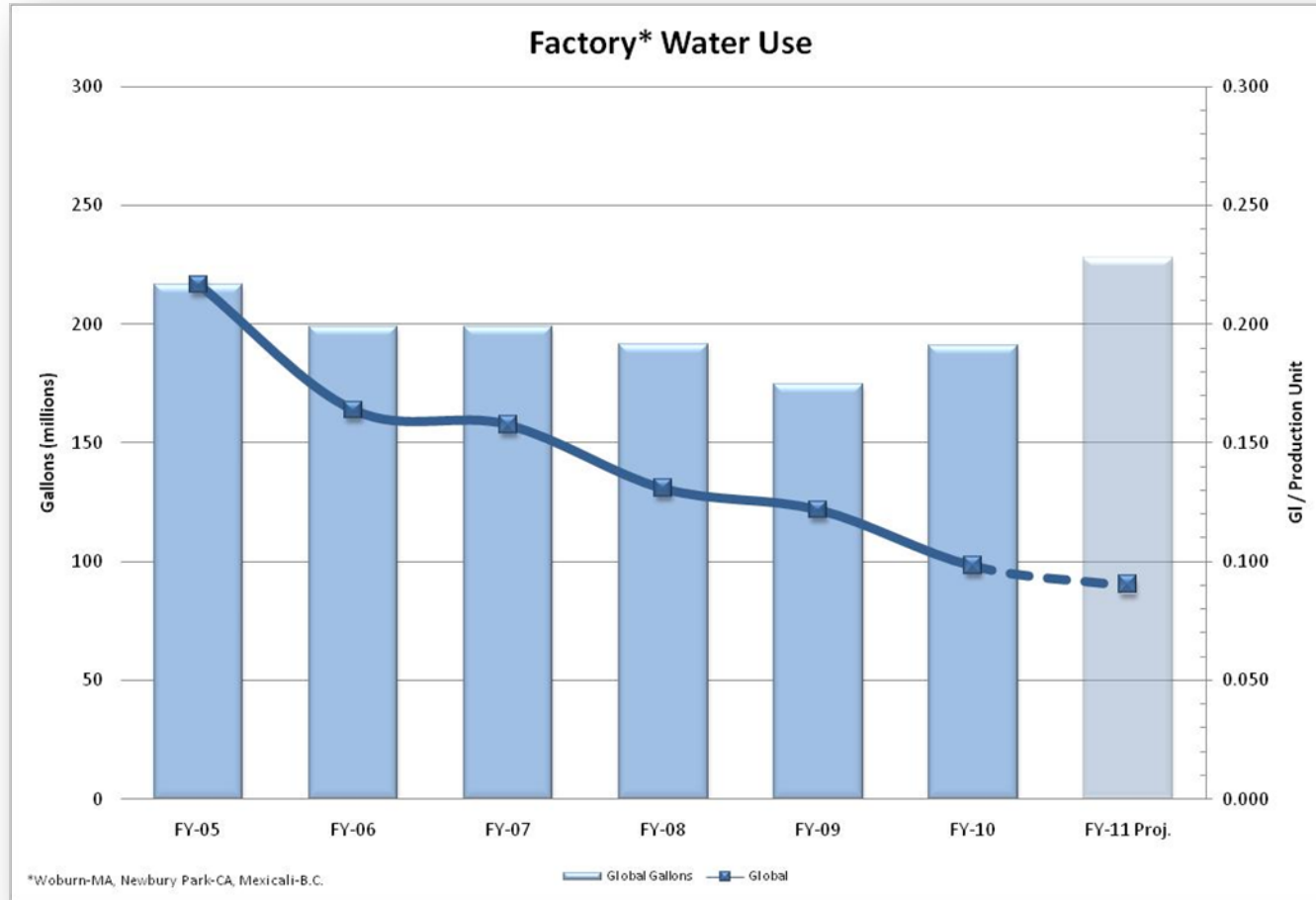


- *Changed a process to eliminate a solvent*

Decreased TUR Chemical Usage Despite Increased Production

EMS Sustainability Programs

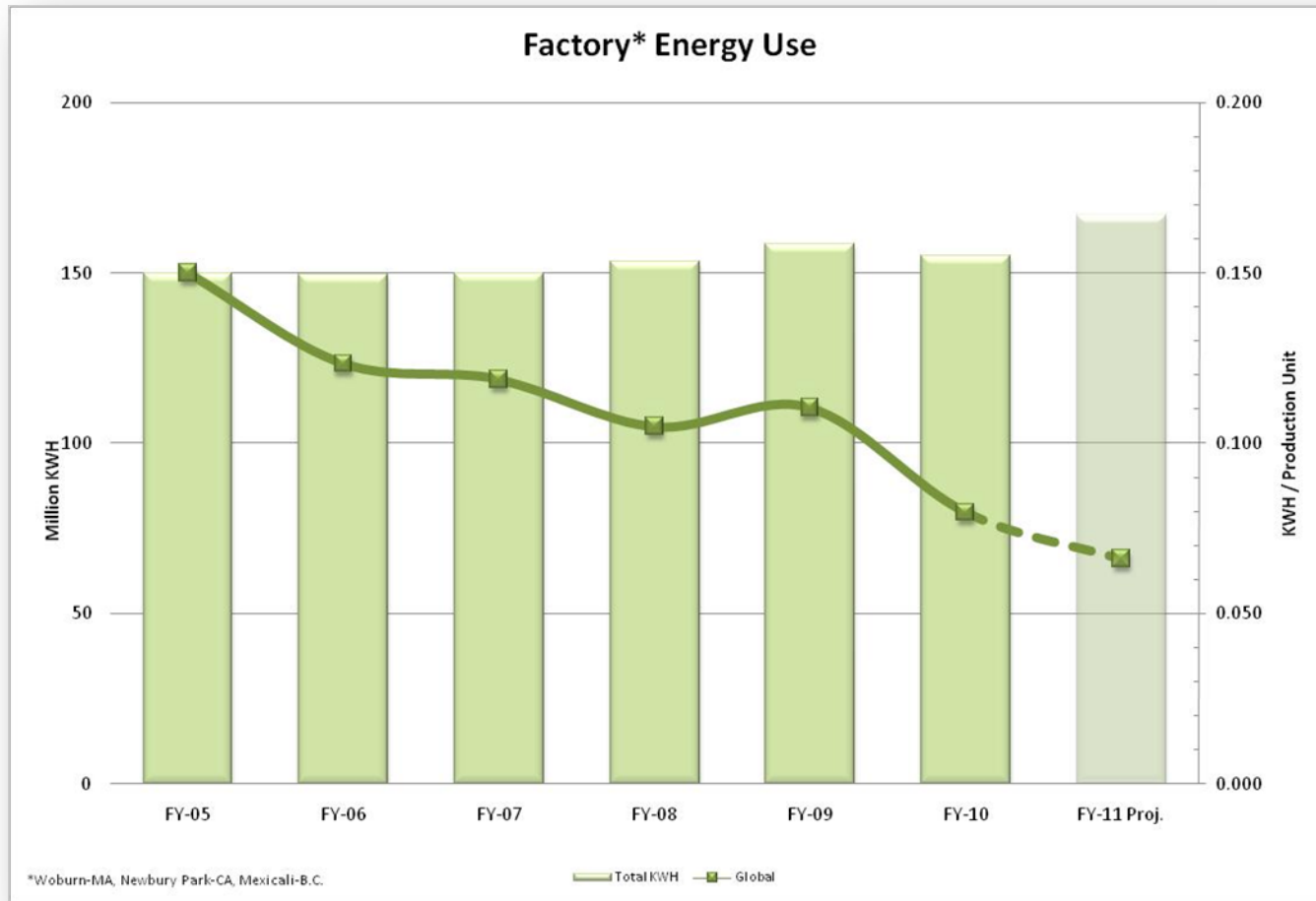
Water Metrics



19% Y-O-Y Improvement 2009 / 2010

EMS Sustainability Programs

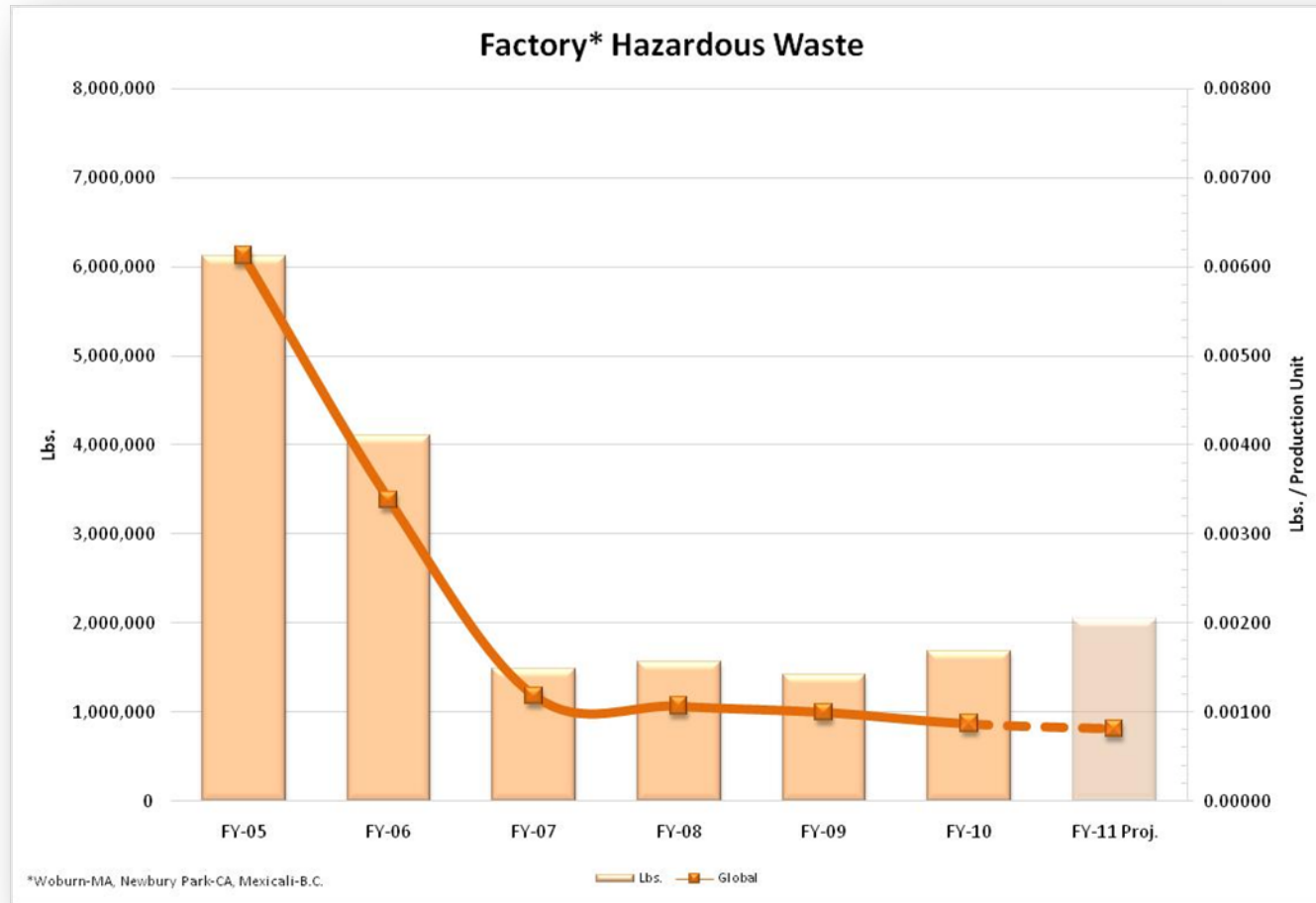
Energy Metrics



28% Y-O-Y Improvement 2009 / 2010

EMS Sustainability Programs

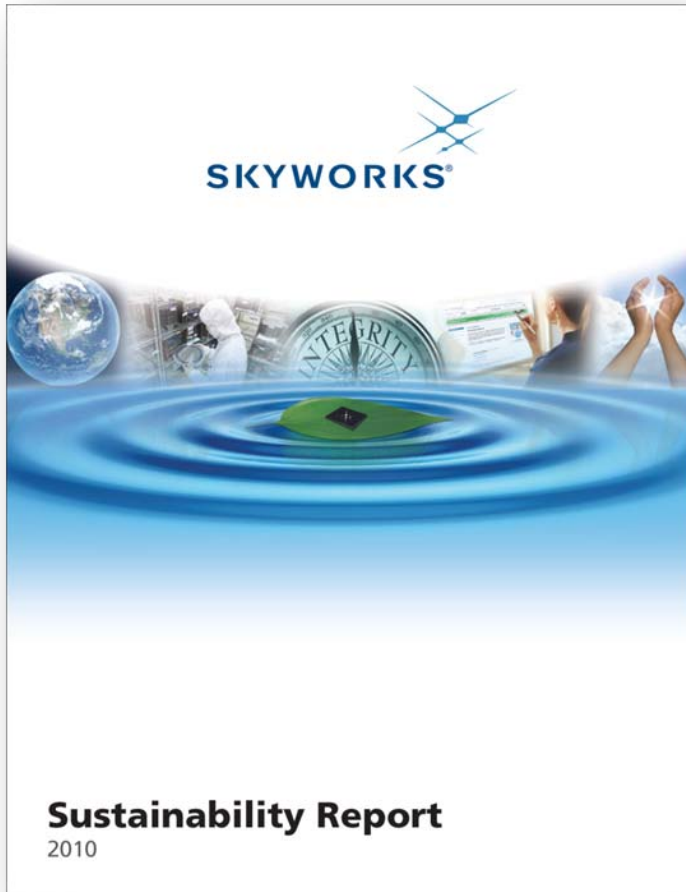
Hazardous Waste Metrics



12% Y-O-Y Improvement 2009 / 2010

Sustainability Programs

Public Reporting



Environmentally Preferred Product* Sales as a % of Total Unit Sales

Year	% Pb-Free	% Green
2005	34%	0%
2006	74%	0%
2007	84%	0%
2008	84%	0%
2009	59%	21%
2010	34%	66%

*EPF includes Skyworks Pb-free and Skyworks Green™

Sustainability Through Product Performance and Applications

Skyworks' iPAC™ front end modules (FEMs) use 20% less electricity than the competing COVAC architecture. This translates into 25% longer talk time, smaller batteries, and lower overall phone energy consumption. To date, Skyworks has sold 1.7 billion iPAC FEMs, saving over 1.5 billion kWh of consumer electricity use, 260 million kWh of which was in 2010 alone⁴. This savings more than offsets the total electricity use of all Skyworks manufacturing facilities worldwide.

Skyworks' products also help to minimize energy consumption and increase efficiency across multiple markets. Whether they are products that support "smart grid" technologies including automated metering infrastructure (AMI) or wireless communication solutions from home appliances that provide consumers with real time energy consumption, devices for hybrid electric vehicles or support for wireless medical devices, Skyworks products promote sustainability through product performance and the applications they enable.

Health and Safety

The safety of our employees is of utmost importance exceeded by nothing else. Skyworks operates all facilities in a responsible manner, providing safe and healthy working conditions. In keeping with this commitment, we maintain an Occupational Health and Safety (OHS) management system to ensure we consistently:

- Remain in compliance with all applicable safety and health regulatory requirements
- Integrate safety considerations into strategic business decisions, engineering design, procurement, facilities management and production
- Cultivate safety responsibility by employees at all organization levels
- Promote continuous improvement of the OHS management system and objectives

These efforts are supported by a knowledgeable and experienced team of Health and Safety professionals and employees across the company who are responsible for meeting a stringent set of health and safety goals and performance objectives.

TRIR, or total recordable incidence rate, is the number of injuries and illnesses per 100 employees per year. Skyworks' injury rate has declined from 2.0 in 2005 to 1.4 in 2010.

Total Recordable Incident Rate*

Year	TRIR
2005	2.0
2006	2.0
2007	2.0
2008	1.5
2009	2.0
2010	1.4

*U.S. manufacturing facilities only

LTIR, or lost time incident rate, is the number of injuries resulting in employees being out of work due to the injury, per 200,000 hours worked. Skyworks' 2010 LTIR of 0.4 days represents a 43% year-over-year improvement from 2009.

Days Away Incident Rate*

Year	DAIR
2005	0.6
2006	0.7
2007	0.5
2008	0.4
2009	0.7
2010	0.4

*U.S. manufacturing facilities only

⁴ Based on an average of 2012 USWh/minute

Available at: http://www.skyworksincl.com/downloads/green_initiative/skyworks_sustainabilityreport.pdf