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# **GEMI Survey**

## **EHS Metrics and Processes**

April 2007

Mark Hause  
GEMI Benchmark Chair

# Outline

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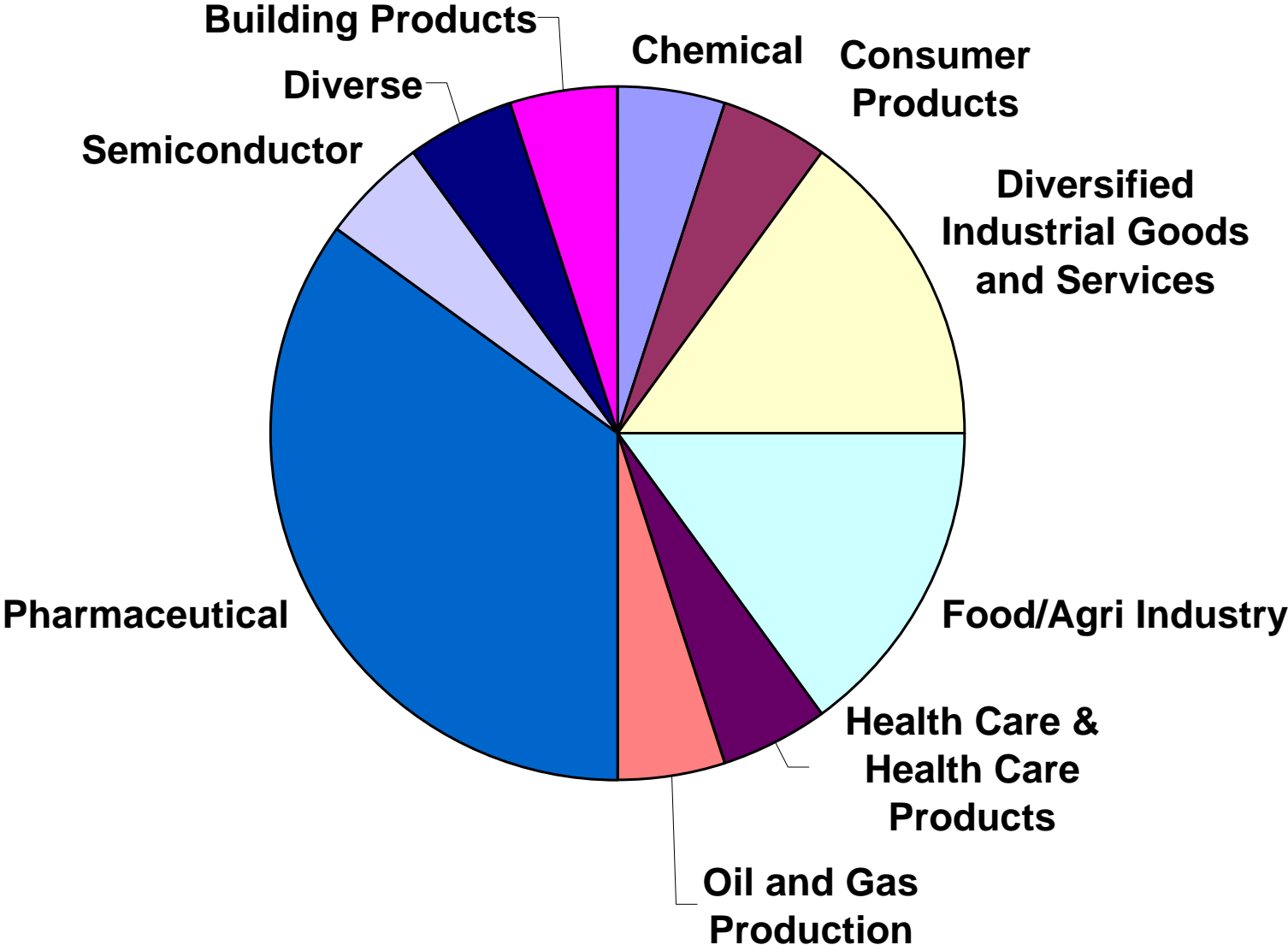
- Survey Recap
- EHS Leading Indicator Metrics
- Metrics Process and Practice
- Future Benchmarking

# Survey Overview

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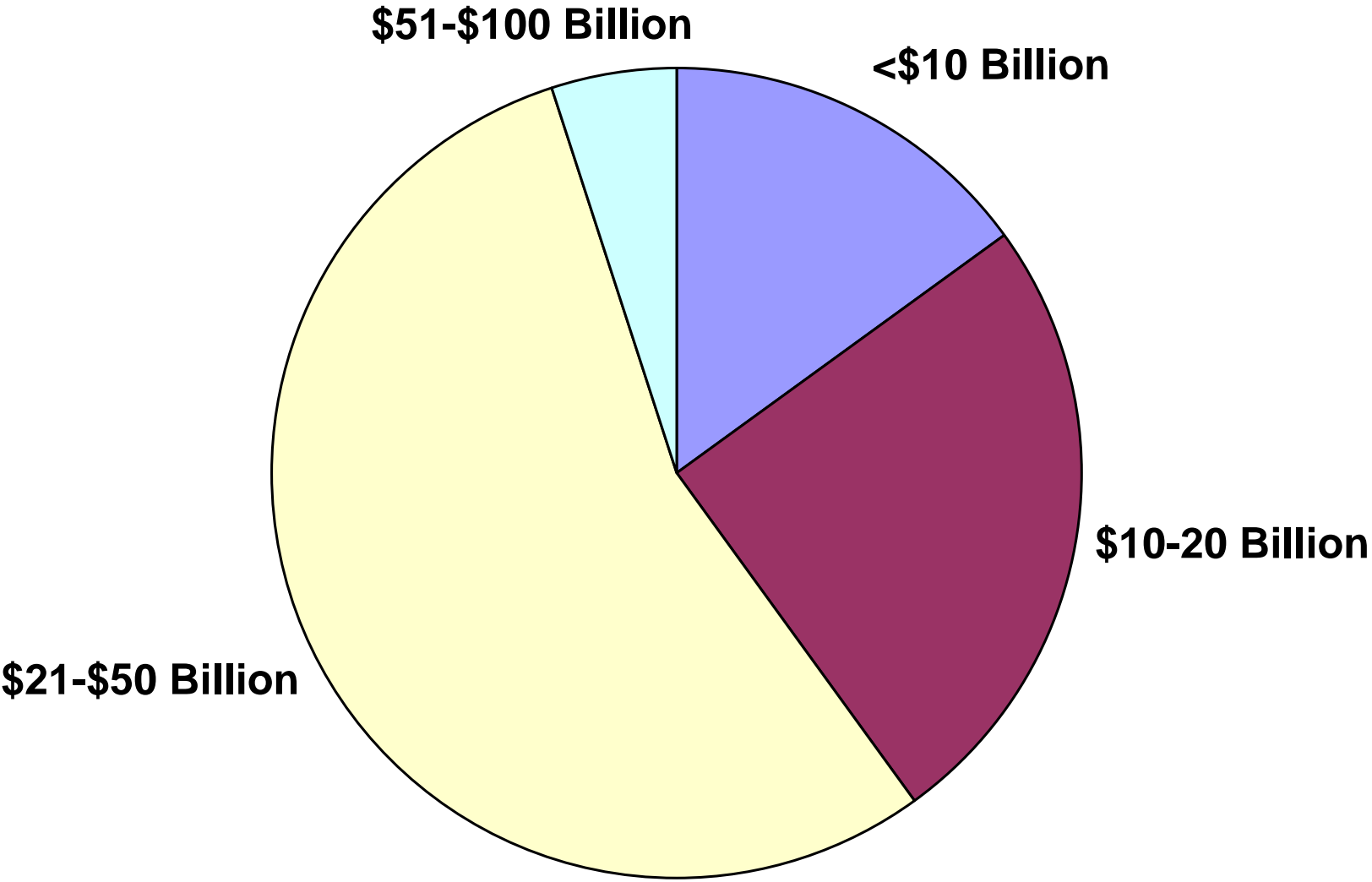
- Survey addresses the management of environment, health or safety (EHS) leading indicator metrics and metrics processes.
- Survey response rate ~50%
  - 21 companies responded to the survey
  - Not all companies completed all questions
- Broad industry coverage
- Although several questions were asked about normalization and external use, very few companies did either of these with most metrics.
- Also review data from a 2003 GEMI metrics survey.
- Thank you to all participants!

# Industry Segment



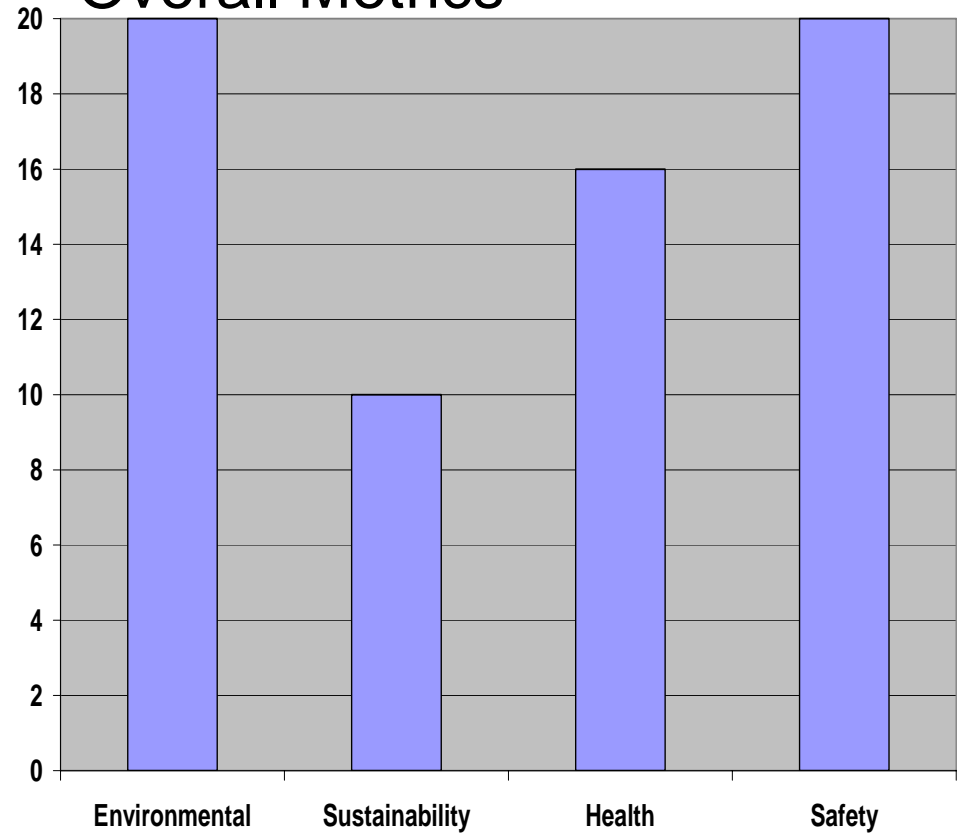
# Revenue

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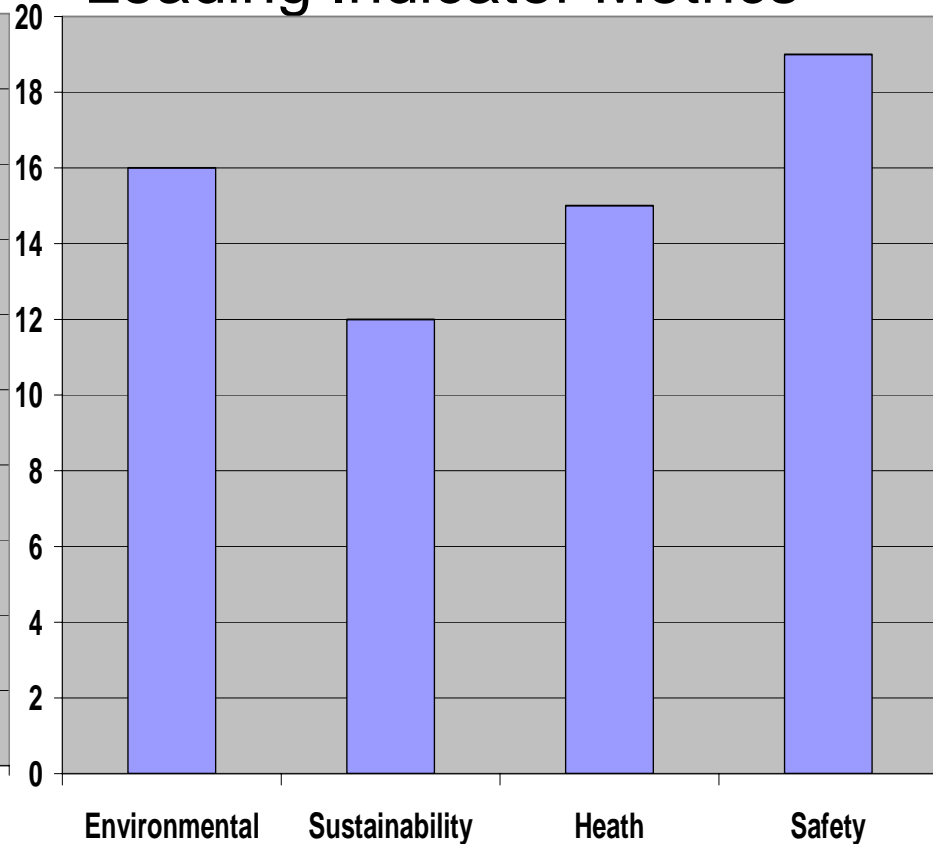


# Types of Metrics

## Overall Metrics



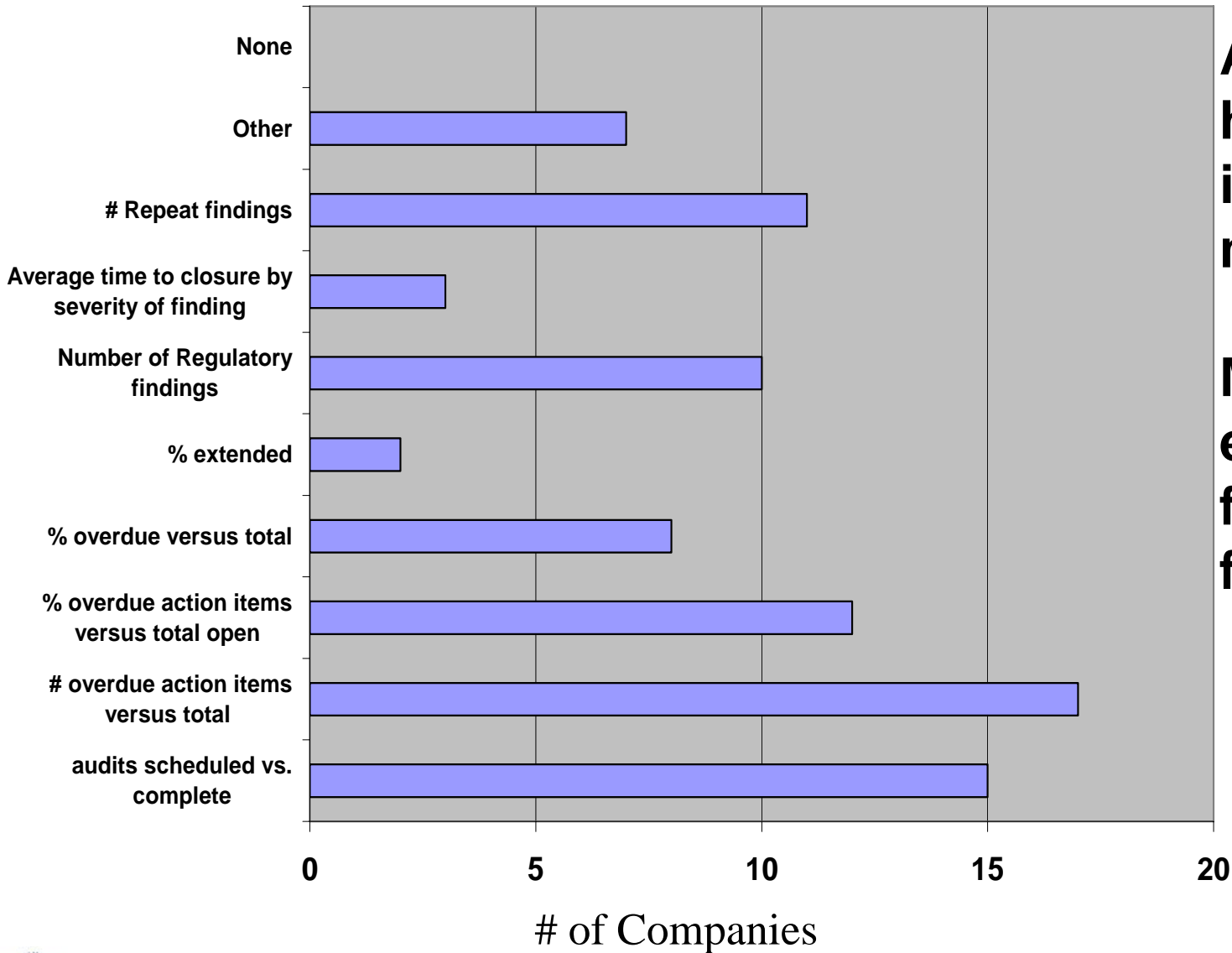
## Leading Indicator Metrics



**Most companies have EHS metrics, but only half have sustainability metrics.**

**Leading indicator metrics are comparable, but slightly lower overall.**

# EHS Audit Leading Indicator Metrics



**All companies have leading indicator audit metrics.**

**Most focus on ensuring follow-up on findings.**

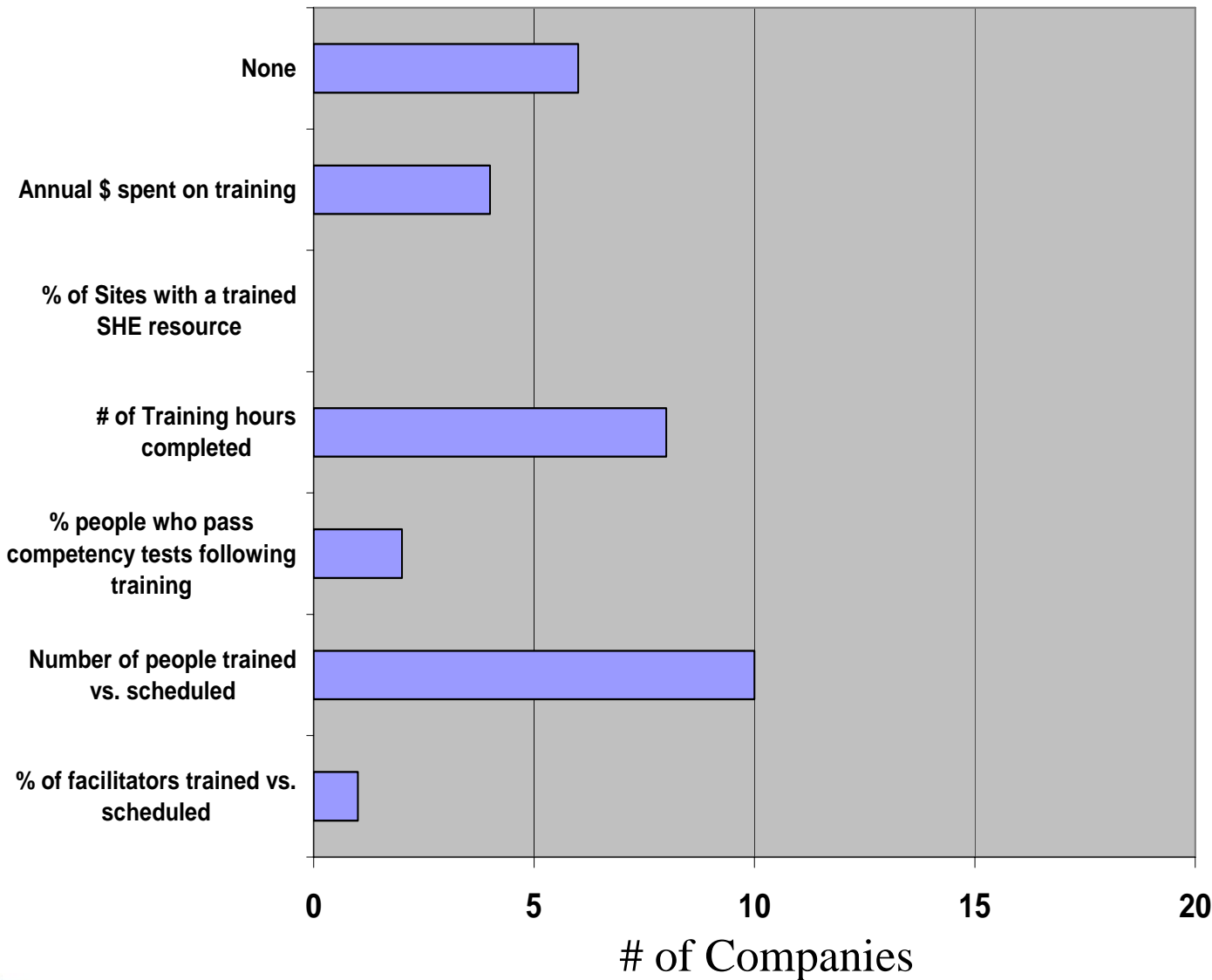
# Other EHS Audit Leading Indicator Metrics

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Several others were identified.

- RC 14001 Management Certifications
- Toller Audits
- Supplier Audits
- % completed on time
- Regulatory inspections with no further actions required.
- Audit findings open more than one year.
- Overdue Status Reports
- % Auditors trained
- Performance Against 10 Audit Quality Criteria By a Third Party
- Overdue Initial Action Plans
- Significant Findings
- Document best practices

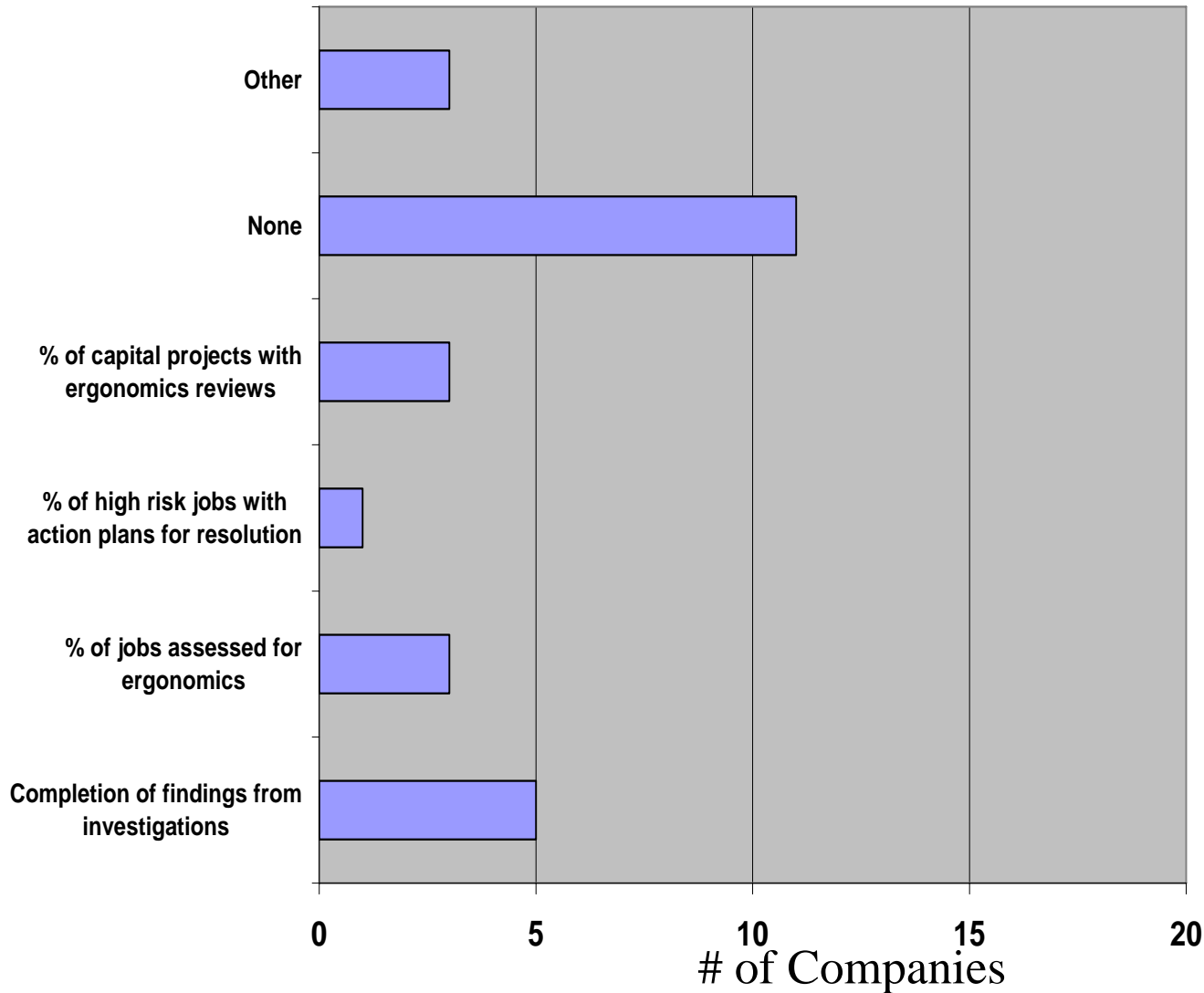
# EHS Training Leading Indicator Metrics



**Most companies have leading indicator training metrics.**

**Some respondents questioned whether training is a leading indicator.**

# Ergonomics Leading Indicator Metrics

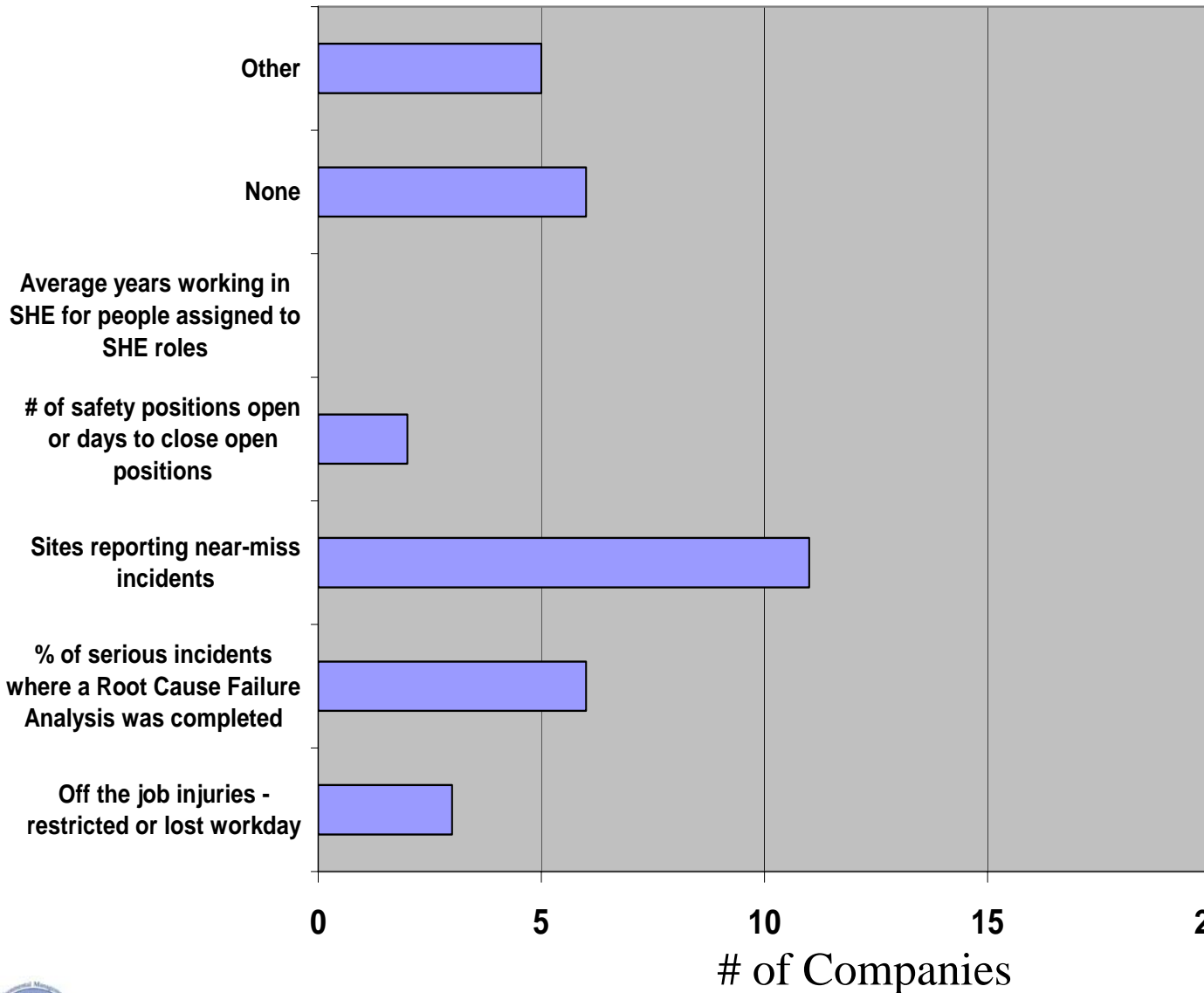


**Fewer than half of the companies have leading indicator ergonomics metrics.**

“Other” is % new manufacturing equipment receiving an ergo review



# Safety Leading Indicator Metrics



**Over half of the companies have leading indicator safety metrics.**

**Reporting near misses is the most prevalent.**

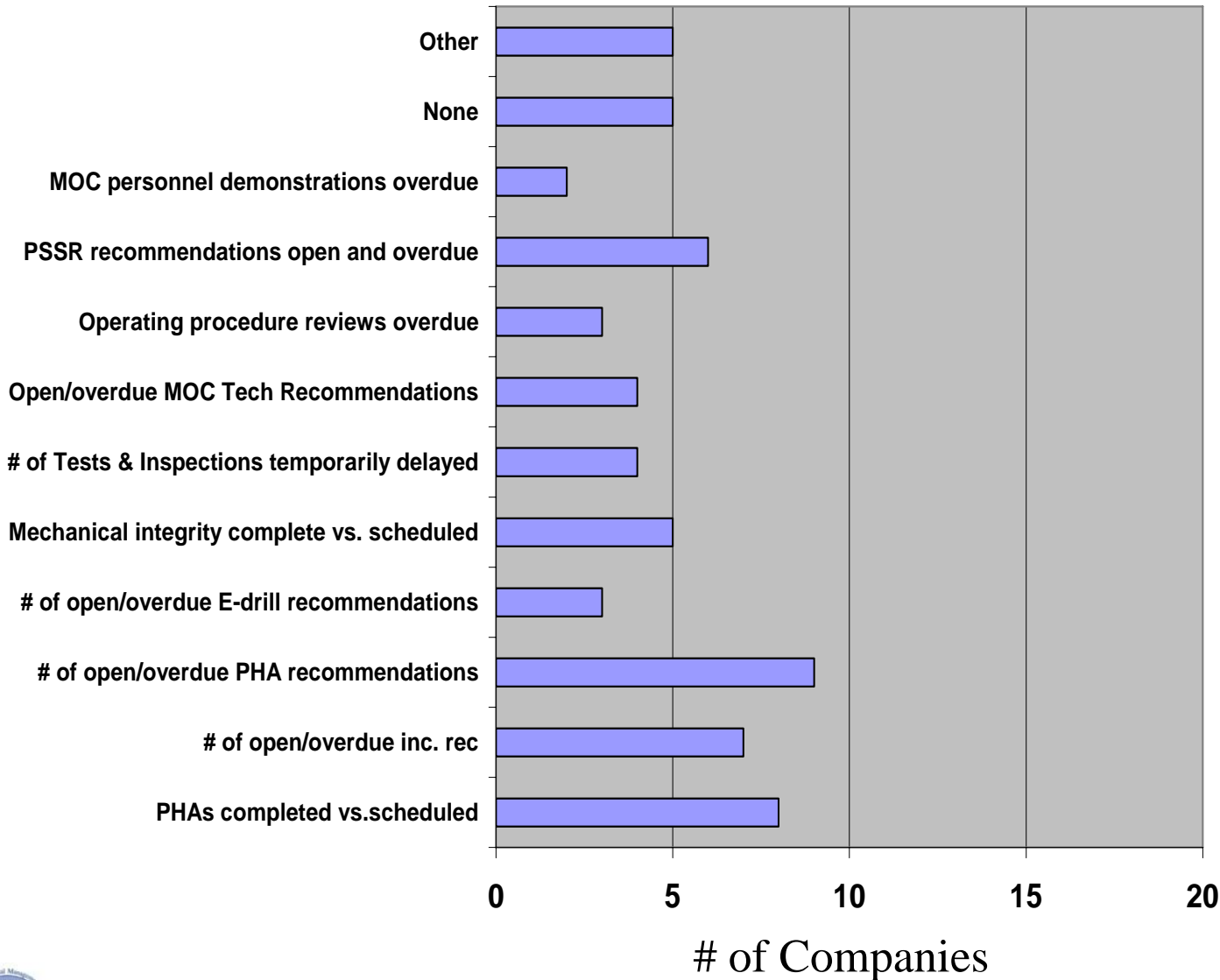
**Food and Pharma were least likely to have safety metrics.**

# “Other” Safety Leading Indicator Metrics

Several others were identified.

- Unsafe Behaviors per Unsafe Condition
- Resource capability vs. site hazard level
- Global Safety and Health Plan Self Assessment
- Observations, etc.
- Ratio of First Aids/ Recordables

# PSM Leading Indicator Metrics

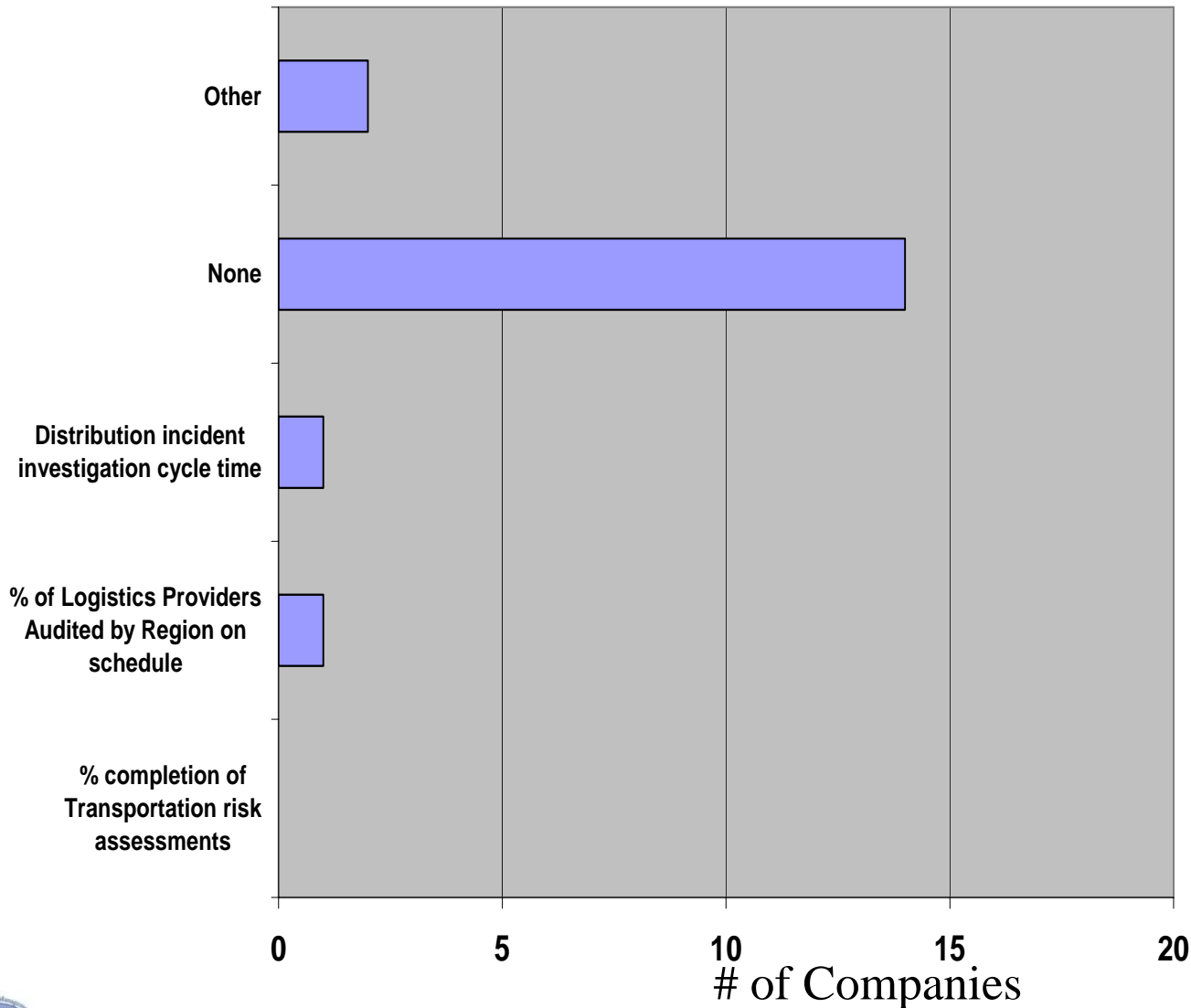


**Most of the companies have leading indicator PSM metrics.**

**These varied widely.**

**Food and Pharma were least likely to have safety metrics.**

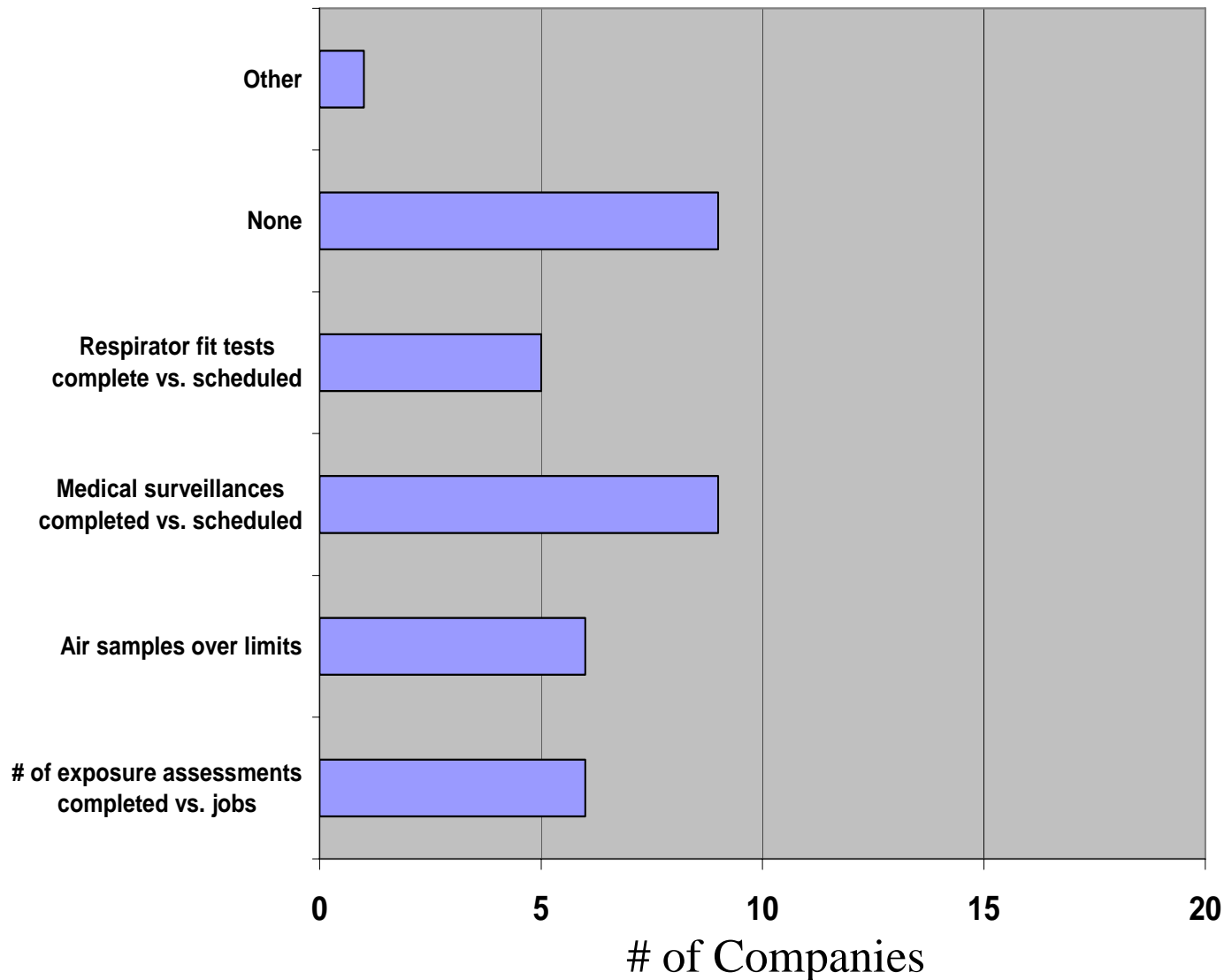
# Distribution Safety Leading Metrics



**Most of the companies do not have leading indicator distribution safety metrics.**

**Companies that transport chemicals were the only ones that did.**

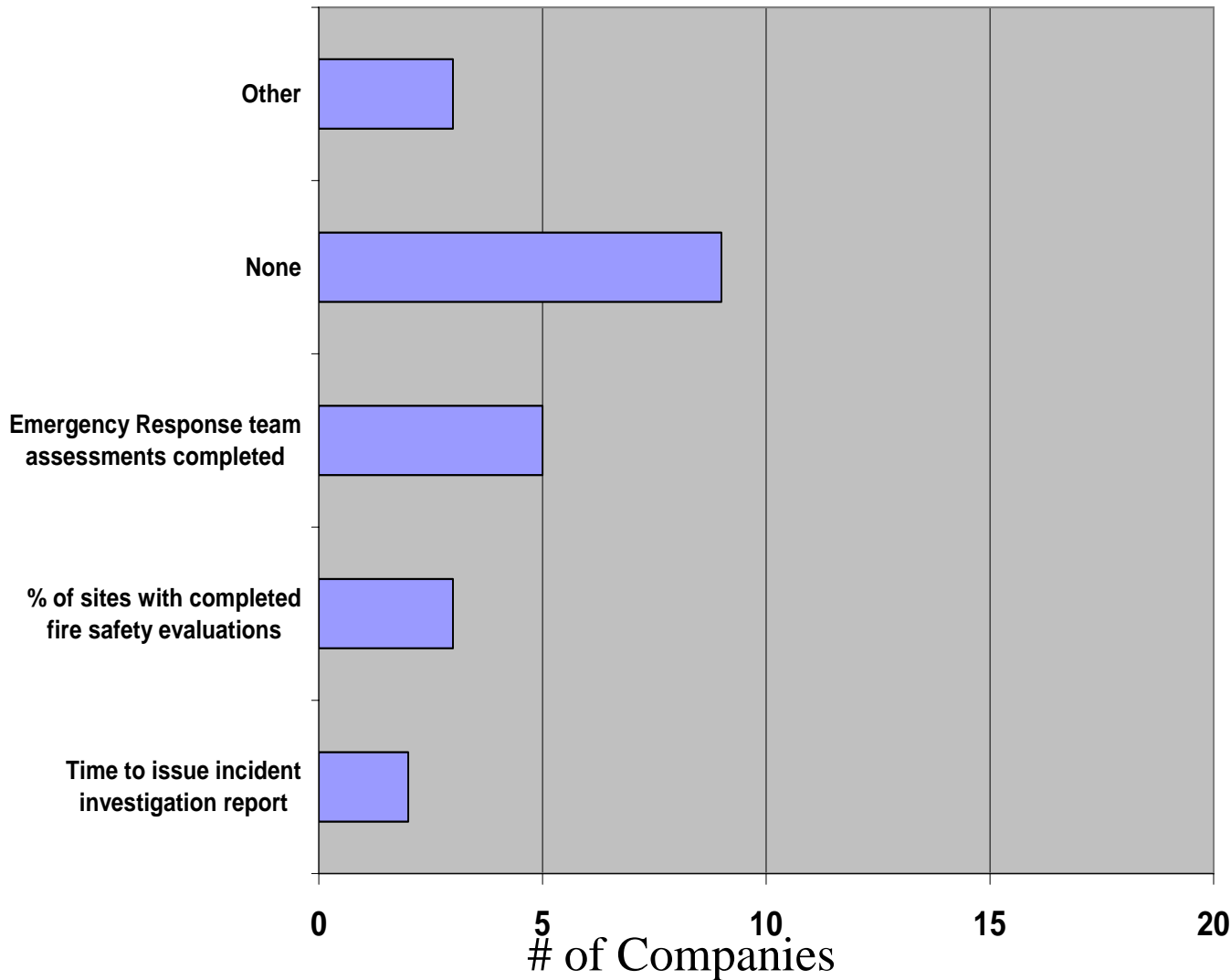
# Occupational Health Leading Metrics



**About half of the companies have leading indicator occupational health metrics.**

**Food and Pharma were least likely, although some “chemical” companies did not.**

# Fire Safety Leading Indicator Metrics



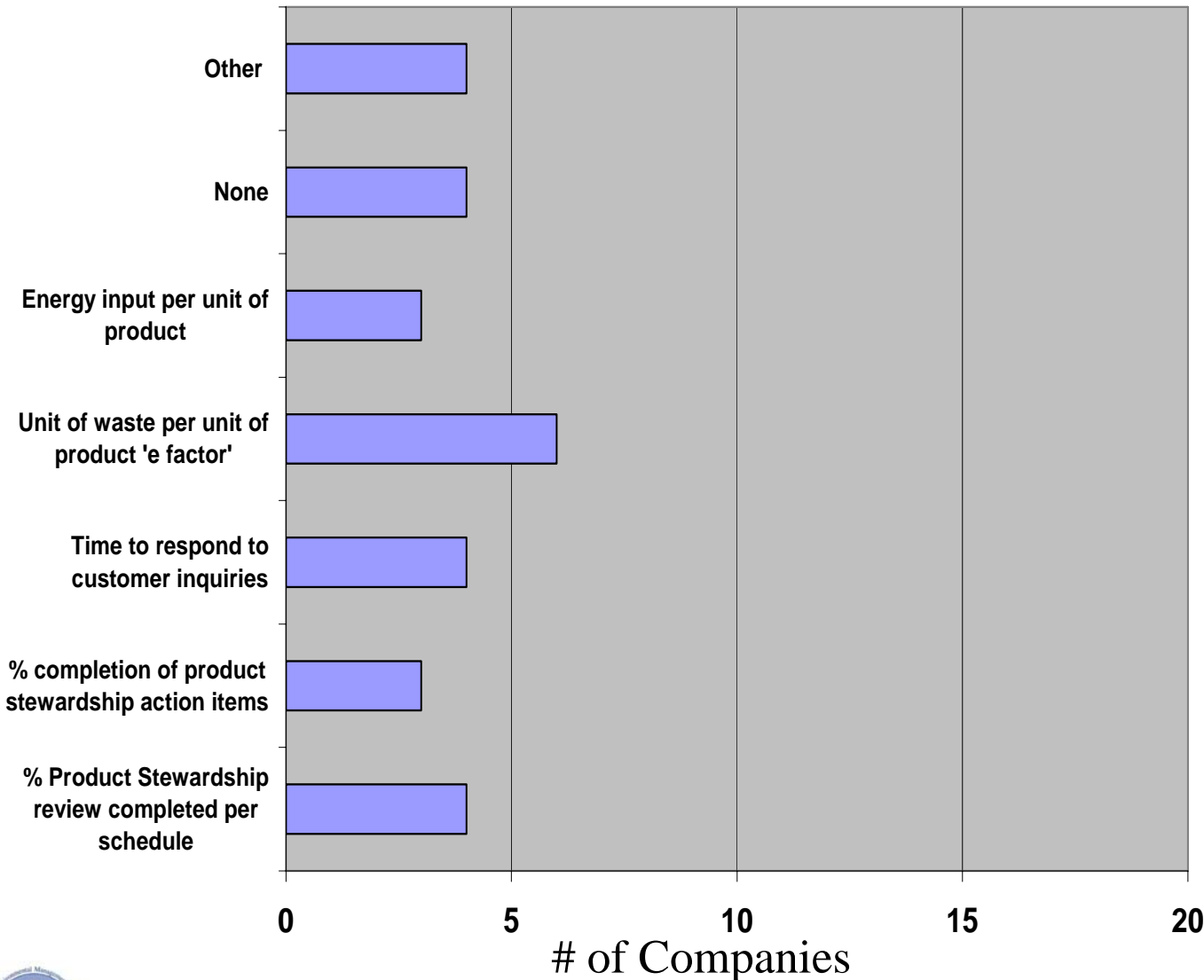
**About half of the companies have leading indicator fire safety metrics.**

**Pharma was least likely, although some “chemical” companies did not.**

“Other” is “response to insurance audits” and “Evacuation Drills”.



# Product Stewardship Leading Metrics



**Most companies have Product Stewardship leading indicator metrics.**

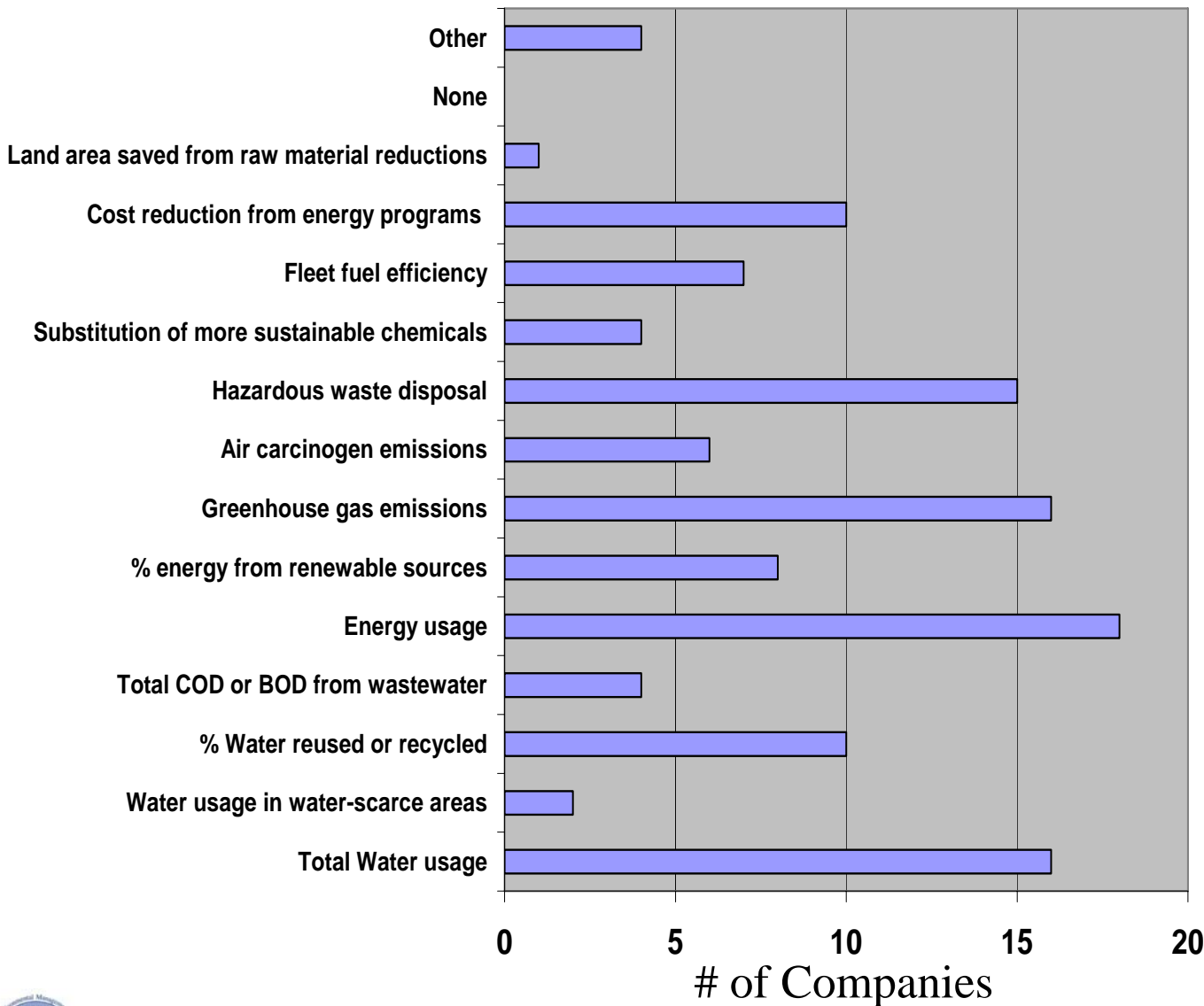
**Energy-related metrics were the most prevalent.**

# “Other” Product Stewardship Metrics

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- Information entered in database
- Environmental risk assessment
- Energy consumption in use
- Material content
- Carbon footprint
- Reuse / recyclability
- Packaging reductions

# Sustainability Leading Metrics - Footprint

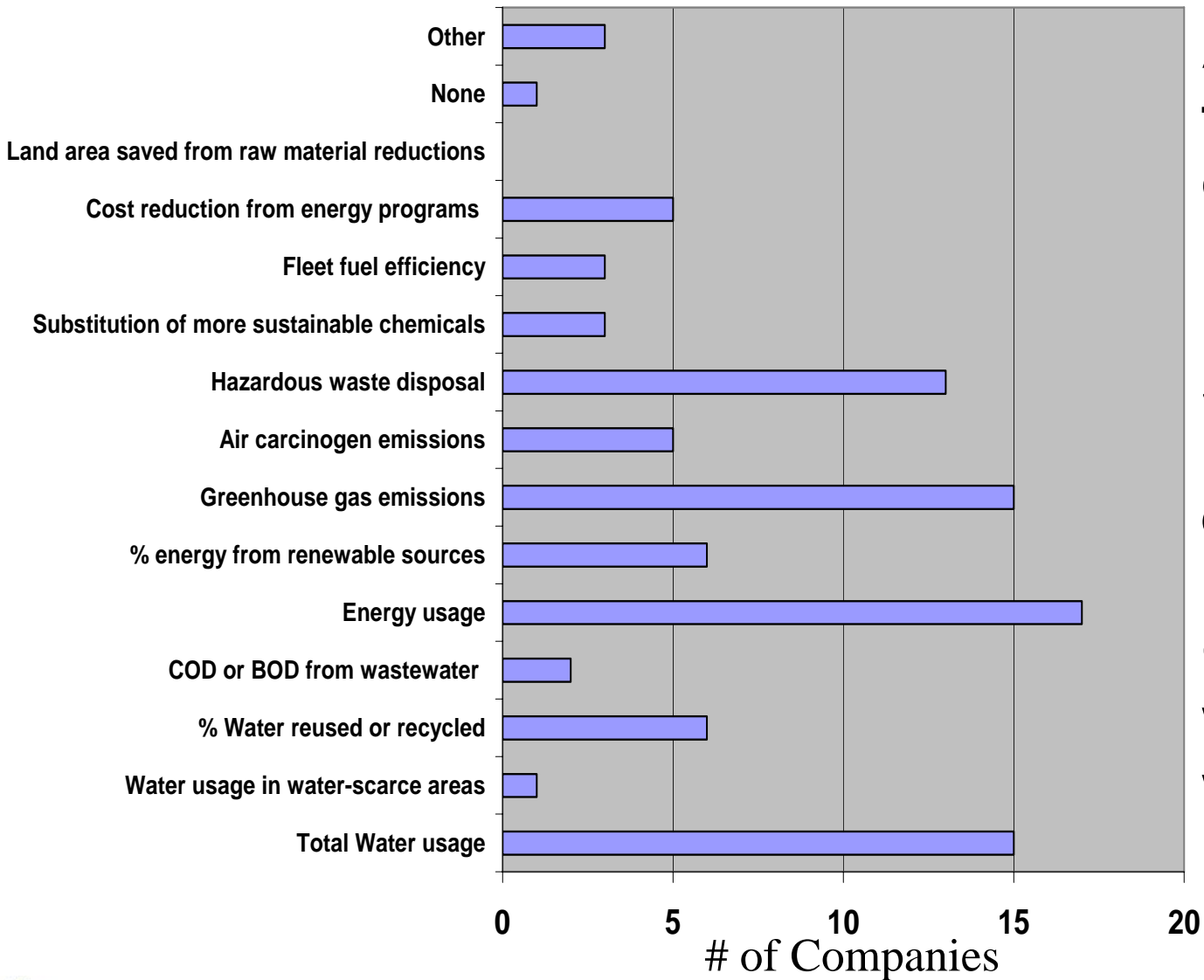


**All of the companies have leading indicator sustainability metrics.**

**GHG, energy, water and waste were the most prevalent.**

**Most of these were normalized.**

# Sustainability – Footprint (External)



**Almost all of the companies communicate leading indicator sustainability metrics externally.**

**GHG, energy, water, and waste were the most prevalent.**

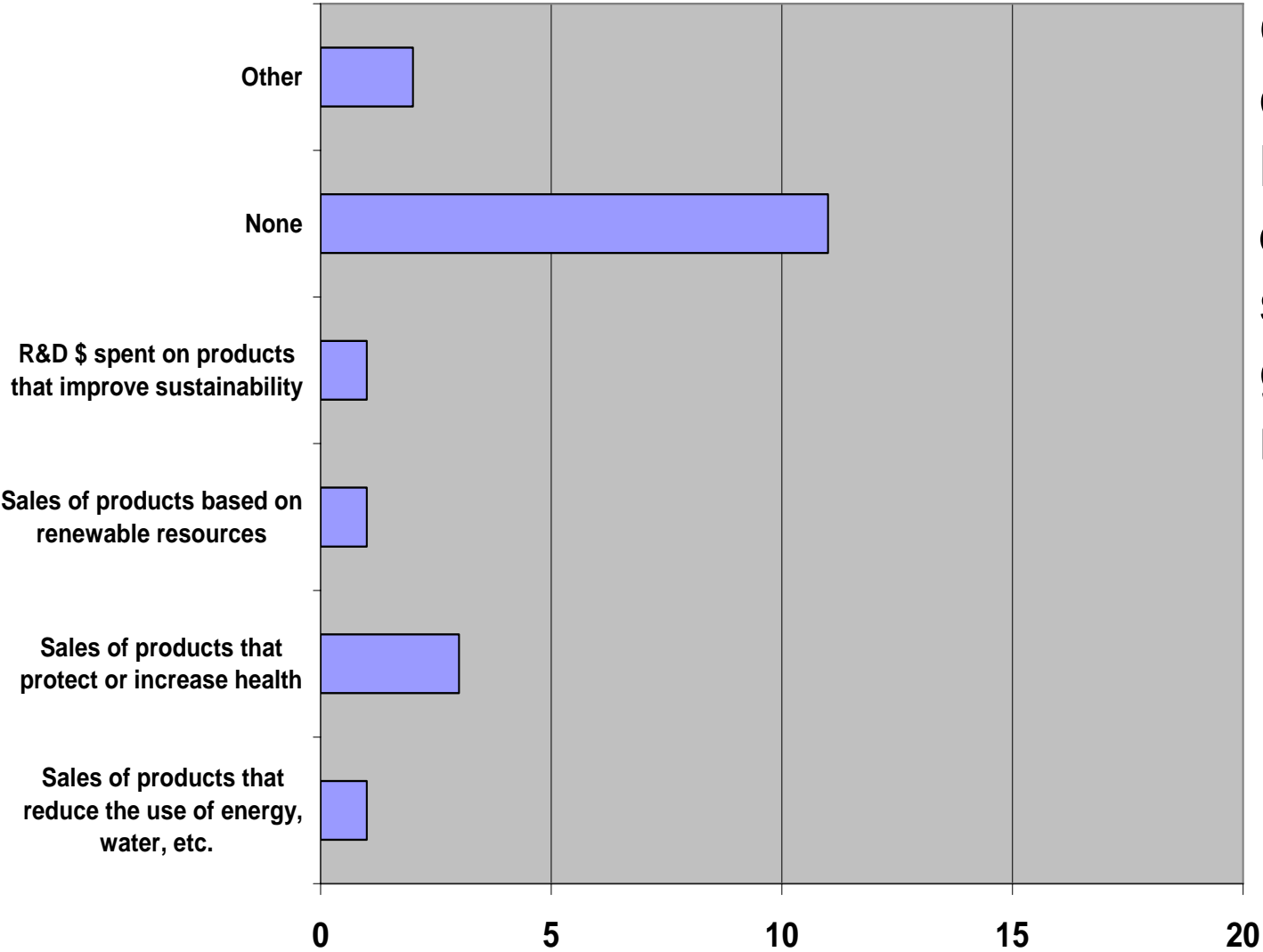
# Other Sustainability Leading Metrics

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Several others were identified.

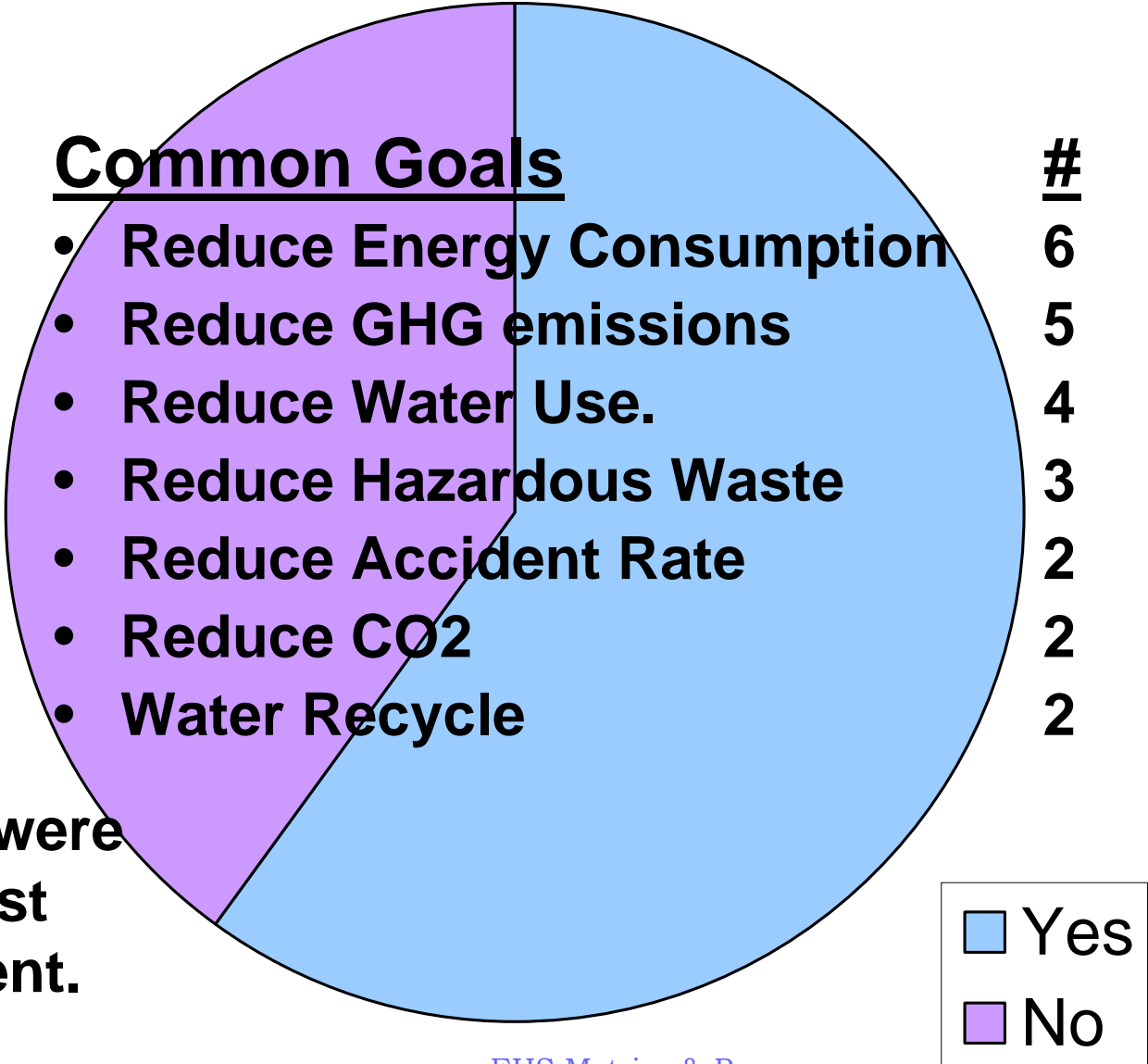
- Total solid waste
- VOC emissions,
- Pollution prevention projects (#, savings, pollution prevented)
- Recycling rates,
- Employee ride share
- Philanthropy - contributions to external environmental education,
- CSR activities
- Access to Medicine
- Many others

# Sustainable Growth Leading Metrics



**Only three companies have established sustainable growth metrics.**

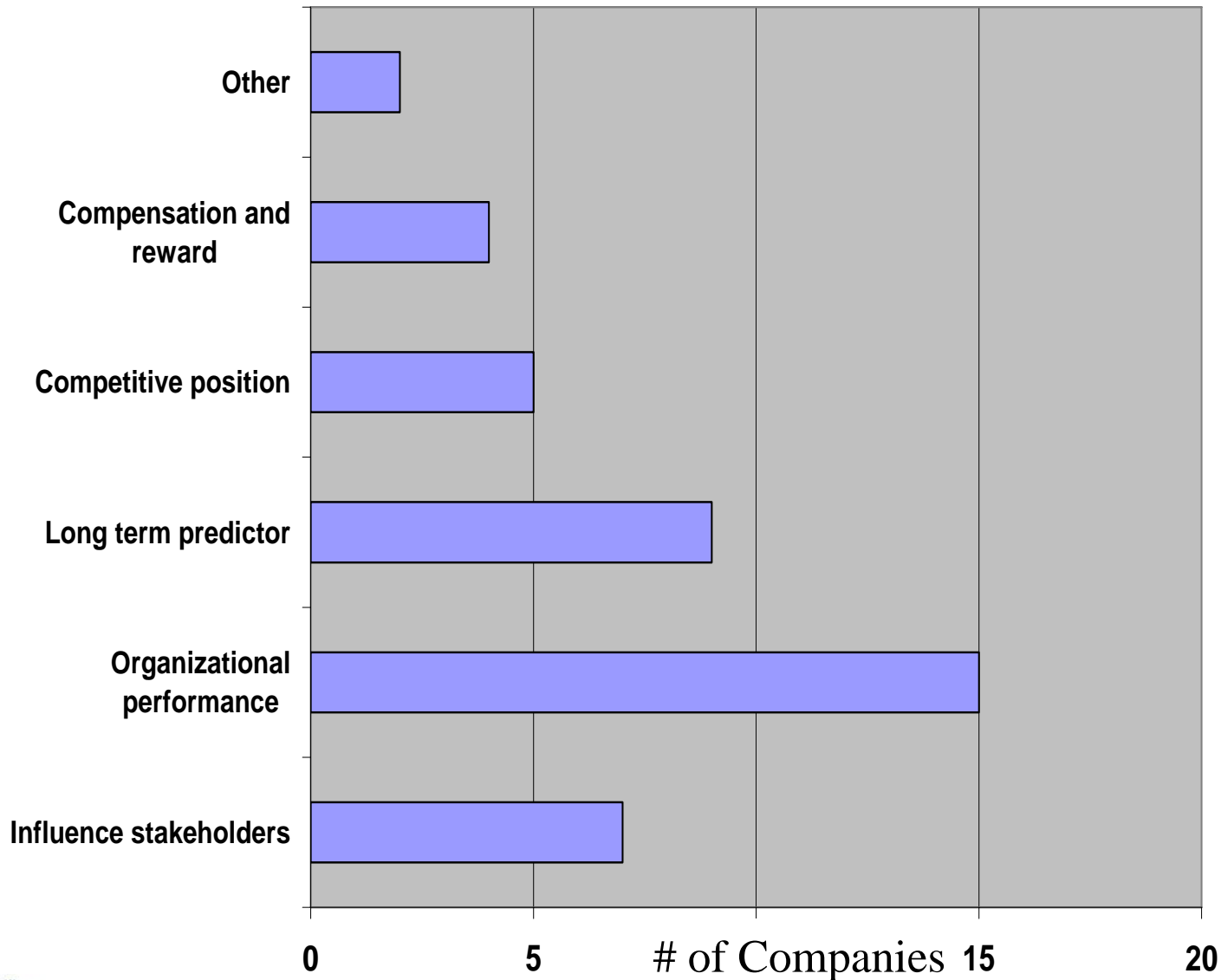
# Sustainability Goals



**60% of companies have established sustainability goals.**

**These were the most prevalent.**

# Why Do Companies Develop Leading Metrics?



**Most use leading metrics to measure organizational performance.**

# New Metrics - Practical Considerations

		What steps do companies perform when developing new EHS metrics?	Very Important	Considered	Not Important
2003	2007				
1	1	Compare new metrics with existing or developing standards	53%	47%	0%
4	2	Define internal measurement techniques and performance goals	53%	47%	0%
6	3	Identify external benchmarks	41%	59%	0%
5	4	Define reporting levels and responsibilities	35%	53%	12%
7	5	Conduct pilot testing to confirm / validate data measurement	35%	53%	12%
3	6	Involve key business unit, operational and line managers	24%	76%	0%
8	7	Conduct a cost / benefit analysis for rationalizing new metric	24%	65%	12%
2	8	Account for off-shore facility considerations / applicability	24%	41%	29%
9	9	Perform a formalized stakeholder needs evaluation	18%	53%	29%
10	10	Personnel evaluations/compensation	12%	65%	24%

**“Off-shore” impact implications was the biggest change since 2003.**

# New Metrics – “Value-Added” Factors

2003 2007 Top 10 “value-added” factors companies consider when assessing a GLOBAL EHS metric

Very Important    Considered    Not Important

4	1	Can be clearly stated / is easily understood by management	75%	25%	0%
1	2	Can be used to demonstrate progress towards goals and objectives	69%	31%	0%
2	3	Can be used to motivate a desired behavior or change	69%	31%	0%
3	4	Easy to measure/data collection at a reasonable cost or automated	63%	38%	0%
7	5	Has strong linkage to strategy and objectives	56%	44%	0%
5	6	Shows strengths and weaknesses of business or EHS processes	44%	56%	0%
8	7	Can be aggregated by site, business, region . . .	44%	56%	0%
2	8	Reflects risk associated with operational / EHS activities	38%	63%	0%
9	9	Shows tie between EHS, operational, and management performance	38%	63%	0%
10	10	Potential for improving company's financial return	31%	69%	0%

**With the exception of “risk”, findings were similar to 2003.**

# Leading Indicator – “Value-Added” Factors

Global	Leading	Top 10 “value-added” factors companies consider when assessing a LEADING EHS metric	Very Important Considered Not Important		
			Very Important	Considered	Not Important
2	1	Can be used to demonstrate progress towards goals and objectives	75%	25%	0%
3	2	Can be used to motivate a desired behavior or change	75%	25%	0%
1	3	Can be clearly stated / is easily understood by management	75%	25%	0%
4	4	Easy to measure / data collection at a reasonable cost / automated	58%	42%	0%
5	5	Has strong linkage to strategy and objectives	50%	50%	0%
8	6	Reflects risk associated with operational / EHS activities	42%	58%	0%
9	7	Shows tie between EHS, operational, and management performance	42%	58%	0%
6	8	Shows strengths and weaknesses of business or EHS processes	42%	50%	8%
7	9	Can be aggregated by site, business, region . . .	33%	67%	0%
10	10	Potential for improving company's financial return	25%	75%	0%

**No major differences between “leading” and “Global”.**

# Data Sources

Findings are comparable to 2003.

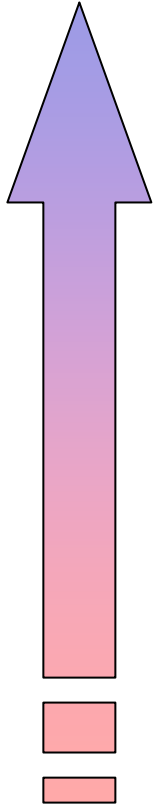
## 2007 Data

- Inventory and production records
- Regulatory reports
- Audit results / findings
- Management systems reviews
- Computerized MIS
- Monitoring / measuring equipment
- Financial and accounting systems
- Interviews / discussions
- External reports and studies
- Quality management systems

## 2003 Data

- Regulatory reports
- Audit results / findings
- Computerized MIS
- Monitoring / measuring equipment
- Management systems reviews
- Inventory and production records
- External reports and studies
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- Quality management systems
- Financial and accounting systems

Common



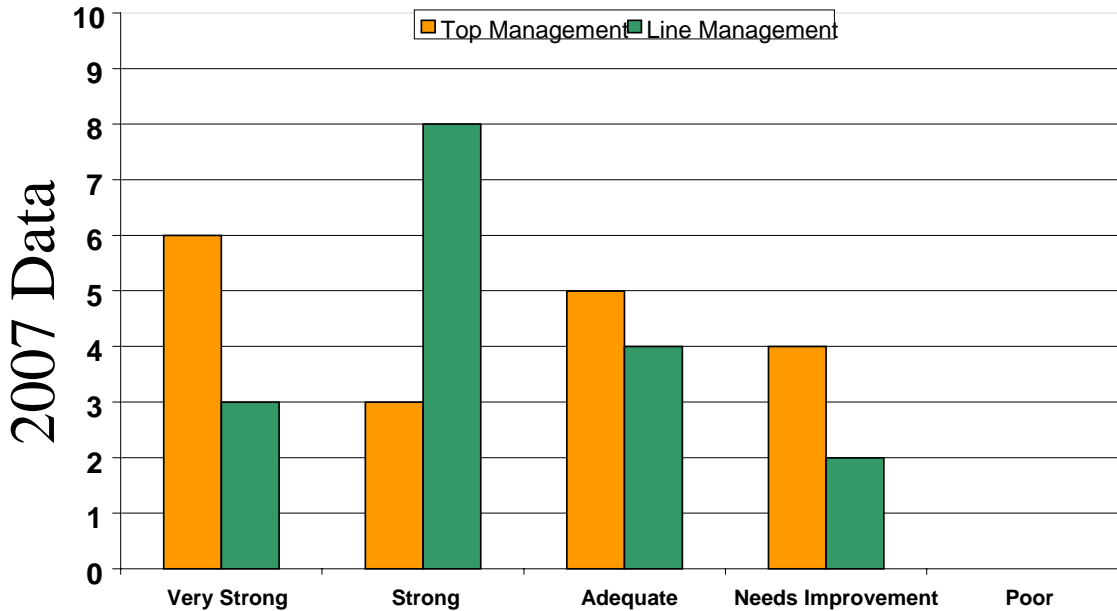
Uncommon

# Data Capture & Validation

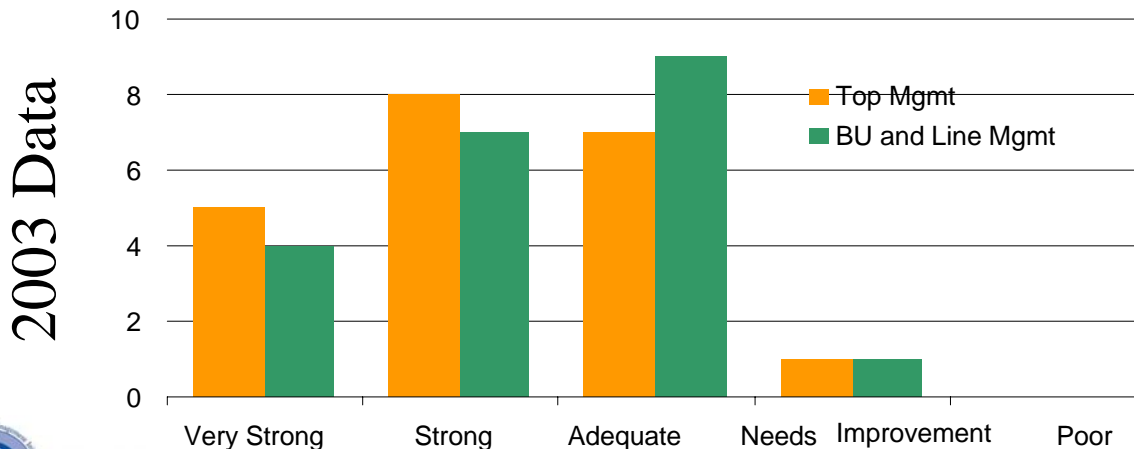
Capture		2007	2003
Manual Process		0%	0
Some Automation		12%	10%
Electronic and Manual		53%	40%
Mostly Electronic	<b>Some growth in automation of metrics gathering processes</b>	18%	40%
Integrated MIS		18%	10%
<b>Validation</b>			
Via audit programs		53	71%
Formal internal data checking processes		65%	71%
Searches of reg. agency or 3 <sup>rd</sup> -party databases		6%	38%
Via an independent, 3 <sup>rd</sup> -party consultant		47%	10%
No validation practices implemented		12%	5%

**Less reliance on databases and audits; more use of consultants.**

# Overview of Metrics Processes



- **Most companies do not have a problem with management support of the EHS metrics program**



- **Support seems to be lower than in the previous survey.**

# Conclusions

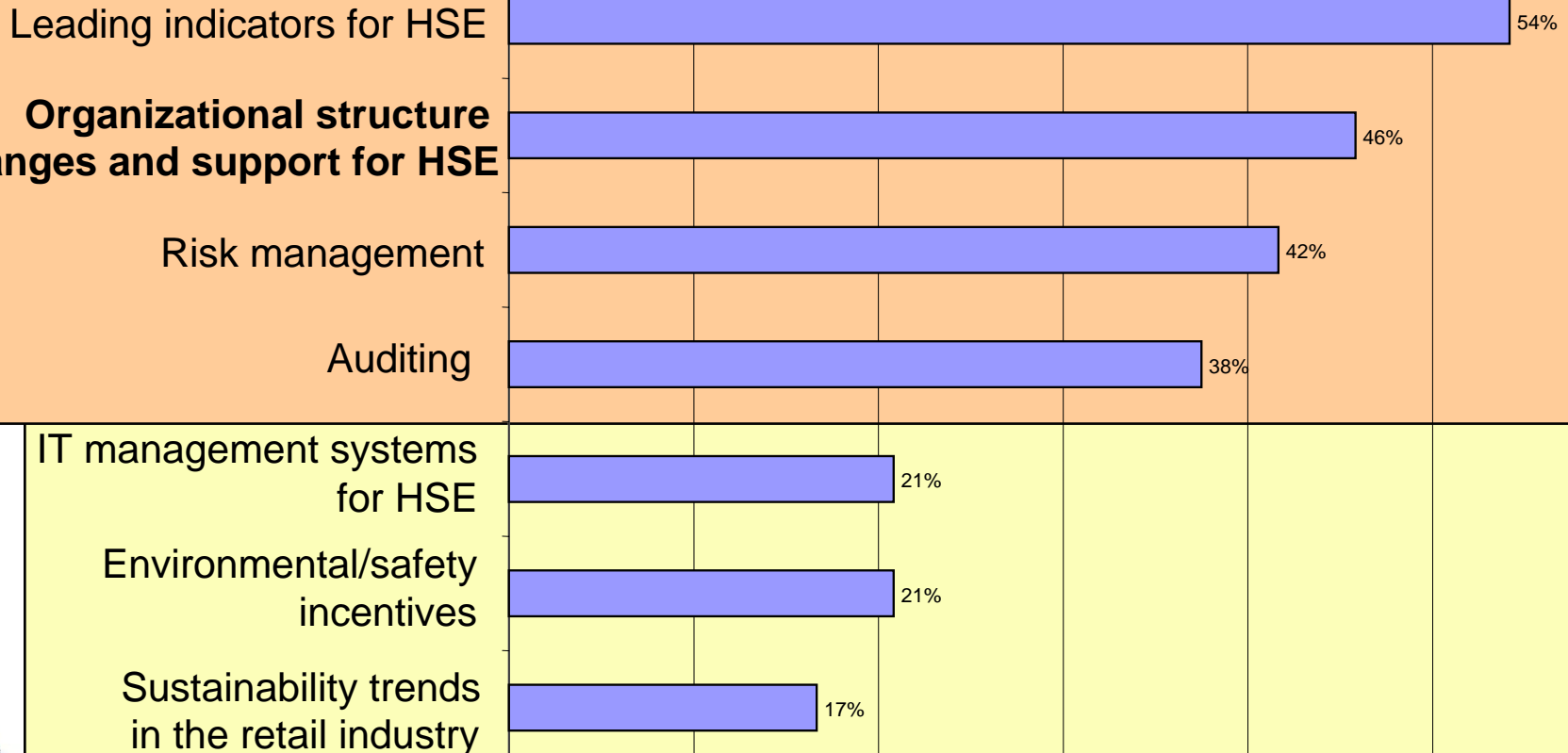
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- All companies use leading indicator metrics in some area of EHS. Sustainability and auditing are highest.
- The use of lagging indicators outweighs the use of leading indicators.
- There are many different leading metrics in use with the broadest range in the area of sustainability.
- Differences exist between metrics that are used internally and those that are communicated externally. Sustainability was an exception.
- EHS metrics are linked to the business.
- Findings are comparable to a similar 2003 survey on metrics processes and management support.
- Companies continue to search for better metrics.
- Questions /comments?

# Future Benchmarking

Organization structure changes and support for HSE is the next topic for benchmarking.

Q19. What other topics should GEMI benchmark in 2007? (Check all that apply.)  
(n=24)



0% 10% 20% 30% 40% 50% 60%



# Background Slides

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# Audit Normalization and External Use

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## Normalization

- Limited use of normalization beyond the use of %.
- Focus is on % completed.

## External Use

- Four companies communicate # of regulatory findings externally.
- One publishes their 3<sup>rd</sup> party audit report
- One publishes # of audits completed vs. scheduled.
- Other metrics published include:
  - Total Findings
  - Open Findings

# EHS Training Normalization/External Use

## Normalization

- One company collects training hours per employee

## External Use

- Two companies publish # of training hours provided
- One company publishes # of people trained
- One shares data with SRI

# Ergonomics Normalization/External Use

- Normalization is focused on % of capital projects assessed, % high risk jobs action plans developed and % jobs assessed.
- External use is limited to one company that publishes jobs and capital projects assessed.

# Safety Normalization/External Use

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- Normalization is generally on incidents per exposure hours
- Limited external use of metrics – one company

# Other PSM Metrics

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- Mechanical Integrity Test results  
Corrective Action Completion
- Process Hazard Management Plan  
progress - % complete
- Normalization is limited
- Only one company publishes data  
externally.

# Distribution Safety Leading Metrics

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- Normalization is limited to %
- No external usage

# Occupational Health Metrics

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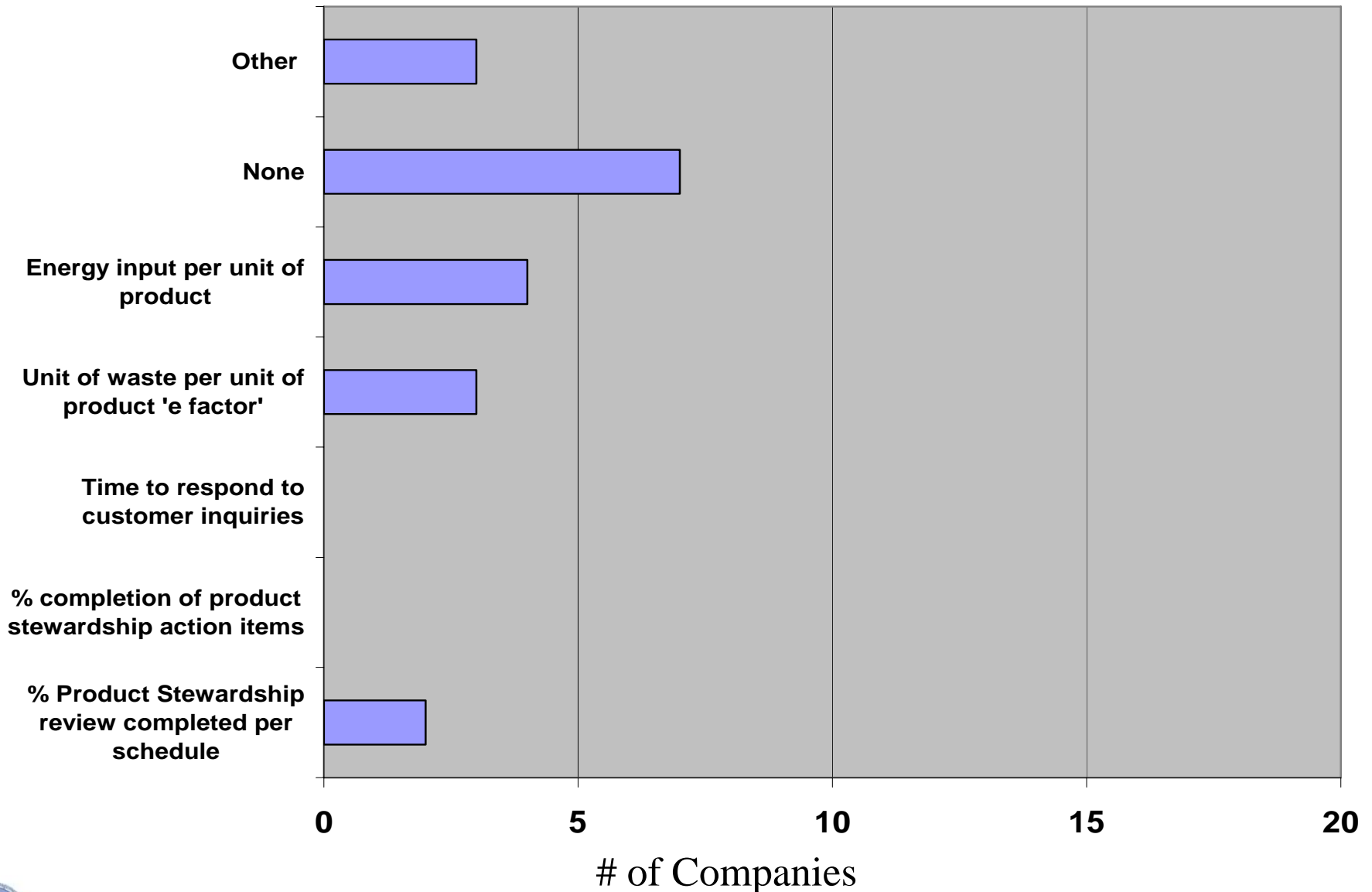
- Normalization and External Usage are minimal.

# Normalization of Sustainability Metrics

Total Water usage	Water usage in water-scarce areas	% Water reused or recycled	Total COD or BOD from wastewater emissions	Energy usage	% of total energy from renewable energy sources	Greenhouse gas emissions	Air carcinogen emissions	Hazardous waste disposal	Substitution of more sustainable chemicals	Fleet fuel efficiency	Cost reduction from energy savings programs	Land area saved from raw material reductions	None	Other (Please specify)
				Revenue		Revenue								
per \$1000 of sales				per \$1000 of sales				per \$1000 of sales						Solid waste per \$1000 of sales
		Water Index Calculation		Total Sales \$										
													None	
per dollar of sales				per employee		sales				average per vehicle type.				
Sales				Sales		Sales		Sales						
				revenue				production						
				net sales				net sales						net sales for VOC emissions
														sales, mileage, hours worked, etc.
/sales, etc.		/sales, etc.	/sales, etc.	/sales, etc.	/sales, etc.	/sales, etc.	/sales, etc.	/sales, etc.	/sales, etc.	/sales, etc.	/sales, etc.			
for corporation on annual basis				for corporation on annual basis	as noted	for corporation on annual basis	for corporation on annual basis	for corporation on annual basis			for corporation on annual basis			
unit of production	unit of production			unit of production		unit of production	unit of production	unit of production						
				to \$ sales		to \$ sales	to \$ sales	to \$ sales						
tons product				tons product		tons product								



# Product Stewardship - External



# Other Sustainability Goals

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- Reduce General absence rate
- Reduce Ecobalance
- COD
- Mass efficiency
- Local Protection of EHS
- Contributing to Community Success
- Product Safety Commitment
- Sustainable Chemistry
- Products Designed to Solve World Challenges
- Air Carcinogens
- Fleet Fuel Efficiency
- Independent Verification of environmental management systems
- Products that Reduce Greenhouse Gas Emissions
- Revenues from Non-Depletable Resources
- Environmentally Smart Market Opportunities from R&D
- Environmental and economic sustainability goals
- Access to medicine
- Reduce office paper consumption
- Education – Educate Teachers
- Track stakeholder feedback in community relations
- Achieve a 33% worldwide volunteer rate
- Partnerships with Historically Black Colleges
- Support women and under-represented minorities.
- Support diversity suppliers.
- Contractor health and safety performance
- Maintain ethical sourcing standards,
- Develop sustainable agriculture programs.
- Minimize the environmental impacts of our business.
- Contribute to consumer diet, health and lifestyle solutions.
- Help create prosperous, educated, inclusive and healthy communities