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# TURA Program Assessment

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# TURA Program Assessment

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- Context
    - 1997 Assessment
    - 2006 Amendments
    - 20<sup>th</sup> Anniversary
  - Overview
    - Review of TURA program activities
    - Prior studies of the TURA program
    - Online survey & telephone interview results
    - Lessons & opportunities
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# Review of TURA Program Activities

- Training programs
  - Site visits
  - Grant programs
  - Information services
  - Compliance assistance & enforcement
  - Laboratory activities
  - Engagement with industry & communities
  - Policy engagement
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# Existing Studies of the TURA Program

- Studies produced by the TURA program
    - 1997 Program Evaluation
    - Annual data release reports
    - OTA study of effectiveness of on-site technical assistance
  - Studies produced outside the program
    - Academic studies
    - Studies related to program replication efforts
      - California
      - Ontario
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# Survey of TURA filers & planners

- How facilities are reducing toxics
  - Benefits of implementing toxics use reduction projects
  - TUR implementation challenges
  - Value of TURA program services and resources
  - Changes in facilities' experiences over time
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# How facilities are reducing toxics

- Six TUR techniques
    - All six techniques are used, some with greater frequency than others
    - 63% have used improved operations and maintenance
  - Reducing the use of toxic solvents;
  - Reducing toxics in waste water treatment;
  - Reducing or eliminating the use of lead and other toxic substances targeted by the EU's Restriction on Hazardous Substances;
  - Integration between TUR activities and other management systems.
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# Benefits of implementing TUR projects

- *Organizational benefits*
    - Increased management attention to environmental practices within the facility (55%)
      - *“TURA is a great reason to make sure management and others are involved, and it facilitates routine business discussion.”*
  - *Health & safety benefits*
    - Improvements in worker health & safety (51%)
      - e.g. Automation to reduce possibility of spills & leaks;  
Elimination of carcinogenic solvents.
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# Benefits of implementing TUR projects, cont'd

- *Financial benefits*
    - Financial savings resulting from TUR implementation, 2000-2006 (41%)
  - *Compliance benefits*
    - Benefits related to compliance with other state or federal regulations (33%)
    - International requirements, e.g. RoHS (open-ended responses only)
  - *Efficiency benefits*
    - Improvements in production efficiency resulting from implementation of TUR projects (29%)
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## Benefits experienced as a result of implementing TUR projects in the period 2000-present

<b>Benefit</b>	<b>Percentage (of 196 Respondents)</b>
Increased management attention to environmental practices	55%
Improved worker health and safety	51%
Financial savings	41%
Compliance with other state or federal regulations	33%
Improvements in production efficiency	29%
Improved product marketing	21%
Improvements in product quality	17%
Improvements in technology and physical infrastructure	15%
Compliance with international standards	11%
Improved worker-management relations	11%
Other	9%
Improved community relations	8%
Retention of a product line	6%



# TUR Implementation Challenges

- *Technical challenges*
  - *Technical feasibility problems (62%)*
- *Financial challenges*
  - *Implementation cost (55%)*
- *Institutional challenges*
  - *E.g. management policies (9%), lack of organizational support (7%)*



## Barriers to implementing TUR projects in the period 2000-present

<b>Barrier</b>	<b>Percentage (of 196 Respondents)</b>
Technical feasibility problems	62%
Financial costs too high	55%
Concerns about product quality	49%
Customer requirements	45%
Lack of sufficient expected benefits	29%
Project considered too time consuming	19%
Project considered low priority for management	9%
Lack of support from supply chain partners	8%
Regulatory environment	7%
Other	7%
Lack of organizational support for implementation	7%

## Usefulness of TURA Program Resources: Respondents on behalf of a facility

<i>Resource</i>	<i>How useful was [item] in helping your company implement TUR? (percentage of respondents that used each resource)</i>		
	<i>Very</i>	<i>Somewhat</i>	<i>Not useful</i>
TURA program trainings, conferences, and workshops (154)*	33	56	10
TURA program websites (148)	26	66	8
TURA program written resources (120)	15	68	18
TUR planner course (101)	33	57	10
Compliance assistance (94)	28	55	17
Library and reference services (72)	18	63	19
Site visits to your facility (69)	16	58	26
Cleaner technology demonstration site events (64)	14	53	33
Laboratory services (42)	14	52	33

\* Figure in parentheses indicates the number of respondents that answered the question.

<b>Usefulness of TUR Plan Elements: Respondents on behalf of a facility (%)</b>			
<i>Plan element</i>	<i>How useful was [item] in helping your company's TUR efforts?</i>		
	<i>Very</i>	<i>Somewhat</i>	<i>Not useful</i>
Materials accounting and process characterization (190)	41	43	16
Environmental health and safety (EH&S) evaluation of potential TUR projects (186)	35	49	16
Identification and screening of TUR options (188)	34	52	14
Technical evaluation of potential TUR projects (186)	31	54	16
Financial evaluation of potential TUR projects (187)	27	55	18
Soliciting TUR ideas from employees (190)	26	46	27
Developing a management policy (188)	26	59	16
Developing chemical use and byproduct reduction goals (188)	26	52	22
(#)= Number of Respondents for specific resource			



# Changes in facilities' experiences over time

- Usefulness of 1<sup>st</sup>, 2<sup>nd</sup>, & subsequent planning cycles (pre-2006 amendments)
- 1<sup>st</sup> cycle: 70% “always” or “usually” find new opportunities; 15% “sometimes.”
- 2<sup>nd</sup> cycle: 36% “always” or “usually”; 34% “sometimes”
- Subsequent: 4% “usually”; 23% “sometimes”
- What helps make later planning cycles useful?
  - Shift planning perspective
  - Additional regulatory motivators
  - Length of time devoted to planning process

## Frequency with which the planning process results in the discovery of new TUR opportunities or options

Plan	Always	Usually	Sometimes	Not Often	Never	Don't Know
First TUR Plan	36%	34%	15%	6%	2%	6%
Second TUR Plan	2%	34%	34%	21%	2%	6%
Subsequent TUR Plans	0%	4%	23%	55%	9%	6%

\*Totals may not add up to 100% due to rounding.



# Municipal, small business, & community projects

- Community grant recipients
    - Most continued after end of grant period
    - Many leveraged significant additional funding after the TURI grant
    - Economic benefits (marketing; employee training; long-term savings from water supply protection)
    - Resources provided in conjunction with grant (technical support; contacts, media)
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# Opportunities

- Leverage TUR further for product quality improvements
- Increase awareness & use of TURA program services
- Expand organizational benefits of TUR planning
  - Improve quality of planning process
  - Increase TUR project implementation rates
  - Link TUR with other management systems
  - Continue to help facilities learn from one another
- **Process-specific opportunities**