

THE MASSACHUSETTS TOXICS USE REDUCTION INSTITUTE

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DRAFT CONCEPT for a State-Level PRIORITY CHEMICAL SUNSET/SUNRISE PROCESS

- A. The goal of the Process is to oversee the transition from priority toxic chemicals to more benign materials or processes in industrial production, social services or domestic consumption while minimizing social and economic dislocations.
- B. Process is overseen by a state Board of Chemical Management [BCM] and a Scientific Advisory Board [SAB]. Both are appointed boards. The BCM is composed of state agency officials, and business and public interest representatives.
- C. The state formalizes a five step **Priority Chemical Sunset/Sunrise Process [PCSS Process]**

Step One: IDENTIFICATION

Priority chemicals are identified through two alternative routes: a) the SAB establishes a criteria system by which chemicals are ranked and each year selects the top ranked chemicals to commence a PCSS Process, or b) any group of ten citizens may petition to have a particular chemical reviewed by the BCM for potential designation as a "priority chemical".

Step Two: VALIDATION

The BCM establishes a special Priority Chemical Task Force [PCTF] for each designated priority chemical to oversee the process and make recommendations back to the BCM. The PCTF is composed of government professionals. During Step Two the PCTF holds hearings and contracts studies to determine the justification for a sunset, the feasibility of a sunset, the potential for alternatives, the social and economic effects of a sunset, and the strategies for promotion of a sunset and a sunrise. The result is either a Strategic Plan for a sunset/sunrise or recommendation to the BCM to conclude the process at Step Two.

Step Three: PROMOTION

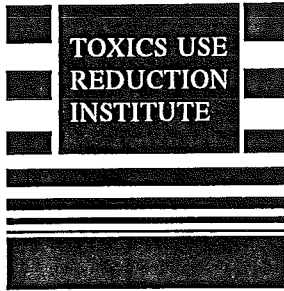
During Step Three the PCTF begins implementing the Strategic Plan by coordinating a set of activities designed to promote the reduction in use of the priority chemical and the development of alternative chemicals or processes. These may include education, consultation, sponsored research and economic activities.

Step Four: REDUCTION

During Step Four users of the priority chemical will be required to prepare toxics use reduction plans and proceed with reduction and substitution programs. Users will need to set goals and schedules and the PCTF will need to monitor progress, identify barriers and seek to facilitate effective implementation.

Step Five: CESSATION

At Step Five the PCTF recommends to the BCM the implementation of a legally mandated ban on production, use or disposal to complete the conversion. This ban may include exemptions or licensure for special justifications.



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DRAFT CONCEPT for a State-Level SUNSET/SUNRISE IMPACT ANALYSIS

- A. The goal is to develop a systematic means of determining the social and economic impacts of chemical transitions.
- B. Government agencies identify
 1. all stakeholders: users, producers, distributors, communities, labor
 2. the function of the chemical, for what and how it is used
 3. likely substitutes (see concept paper on Sunrise Process)
 4. technical feasibility of a substitute
 - a. if available, what are market implications?
 - b. if not, anything under research and development? At what stage?
- C. Industry develops a plan to assess impact of substitute (see step 4 of Priority Chemical Sunset/Sunrise Process) Considerations include:
 1. product quality
 2. product cost
 - a. cost of materials
 - b. production rate
 - c. waste disposal costs
 - d. energy costs
 3. capital investment for product/process change

4. labor costs
 - a. operation and maintenance
 - b. workers compensation costs
 - c. absenteeism
 - d. staff time spent on; spill/leak incident reporting, monitoring, manifesting, labeling, Right to Know training, inspections, permitting

5. other costs
 - a. insurance
 - b. personal protective equipment
 - c. chemical use fees (TURA fees)

6. potential liability
 - a. disposal
 - b. storage
 - c. transportation
 - d. civil actions
 - e. economic loss from remediation
 - f. penalties/fines

7. intangibles
 - a. corporate image
 - b. employee relations
 - c. shareholder reactions
 - d. community standing

D. Government and Industry assess impact of substitute on Labor

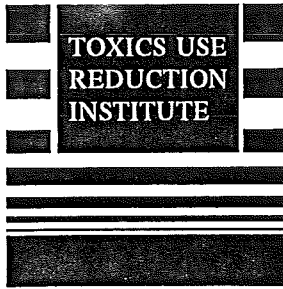
1. loss or gain in jobs
2. occupational hazards
3. changes in quality of job

E. Government assesses impact of substitute on Community

1. jobs
2. energy use

F. Government assesses impact of substitute on Environment

1. ecological impact
2. affect on water, air, soil
3. energy use



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DRAFT CONCEPT for a State-Level SUNRISE PROCESS

1. The goal of the Sunrise Process is to create a process for phasing-in safe alternatives. The Sunrise Process consists of two stages: 1) the development and use of a methodology for evaluating substitutes and 2) the implementation of government policies that promote the development of safe alternatives.
2. In the first stage a safe alternatives methodology is developed and used for evaluating alternatives. The safe alternatives methodology consists of two different sets of criteria for evaluating alternatives: 1) restrictions criteria and 2) safe alternatives criteria.
 - a. Restrictions criteria are the same as those used to identify priority chemicals. These criteria include bioaccumulative and persistency factors, chemical emissions and use, and toxicity to humans, mammals, birds, and aquatic organisms (see Glenn and Foran, "Criteria for Identifying Chemical Candidates for Sunsetting", for other relevant criteria). Substitutes that fail the restrictions criteria would be excluded from market.
 - b. The purpose of the safe alternatives criteria is to promote the development of alternative technologies, processes, materials, and products that are not only free of restriction-inducing characteristics, but are safe, clean, and sustainable. Safe alternatives criteria will provide guidelines for the development of alternatives that are consistent with long-term environmental, occupational, and community health goals and a basis for prioritizing government resources. Listed below are potential safe alternatives criteria.
 - i. Alternatives that are consistent with the principles of clean production and sustainability:
 - (1) increase energy efficiency
 - (2) reduce hazards to workplace safety and health

- (3) promote the reuse of products and the use of secondary materials
 - (4) produce products that are repairable
 - (5) reduce hazardous and solid waste
 - (6) lead to zero discharge (closed-loop systems) in production
 - (7) lead to environmentally sound products and packaging
 - ii. Alternatives that eliminate the function of the chemical (e.g., change from solvents to no clean process).
 - iii. Alternatives that are safe according to quantitative structure-activity relations analysis (QSAR). Use QSAR as a proxy for long-term studies on carcinogenicity, and reproductive and developmental toxicity.
- 3. Develop policy framework to support safe alternatives development. Listed below are potential policies to be implemented or coordinated by the government:
 - a. develop a database on alternative processes, technologies, and materials and their technical and economic feasibility
 - b. fund research and development (R&D) at universities
 - i. test technical feasibility of new processes, technologies, and materials at universities
 - c. offset the costs of industry R&D
 - i. low-interest loans
 - ii. loan guarantees
 - iii. development loans
 - iv. grants
 - d. joint public-private R&D projects
 - e. government purchasing of products made with safe alternatives
 - f. tax the target chemical, use the revenues for safe alternative R&D and worker re-training