

**Great Lakes
Binational Toxics Strategy
Stakeholder Forum**

GLBTS Path Forward

**December 12, 2007
Union League Club
Chicago, Illinois**

PCBs

Work Group Co-Chairs:

Tony Martig, US EPA

Ken De, Environment Canada

December 12, 2007, Chicago

PCB Challenge Goals

Canada

- 90% reduction of high-level PCBs (>10,000 ppm) by 2000
- Accelerate destruction of stored high-level PCB wastes

United States

- 90% national reduction of high-level PCBs (>500 ppm) by 2006
- Ensure proper management and disposal of PCBs removed from use

Progress Toward the Challenge Goals: Canada

- **In Ontario, as of January 2007, 90.2% of high-level (more than 10,000 ppm) PCBs in storage have been destroyed since 1993 (about 2,307 tonnes remaining)**
- **For PCBs in service, target still remains to be met. About 70% of high-level PCBs in service destroyed (about 2771 tonnes remain in use/service)**
- **For PCBs in service, it is likely that the 90% reduction target can be met by 2014 (with the assistance of new PCB regulations)**

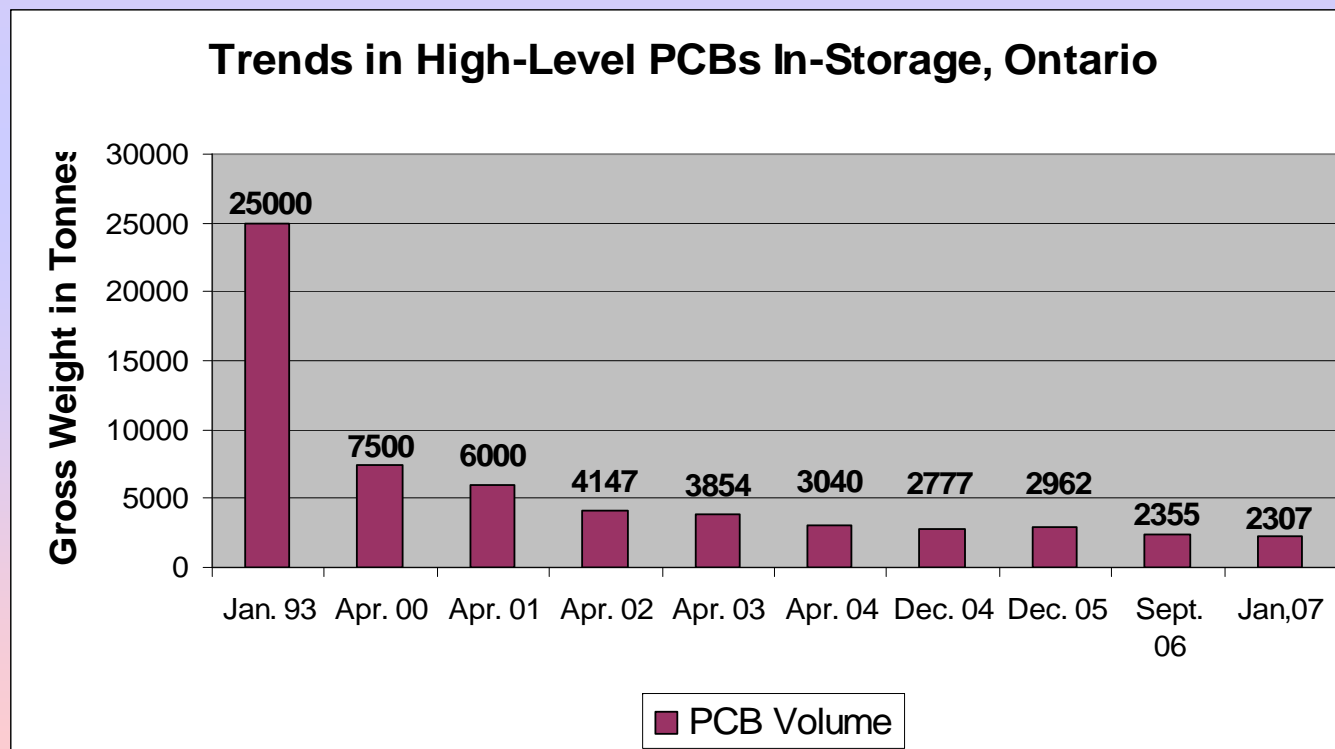
Progress Toward the Challenge Goals: Canada (continued)

- **Less than 400 PCB sites are remaining (including federal and non-federal), down from about 1,575 in 1993**
 - ◆ **An additional 198 sites are PCB free (both in storage and in service)**

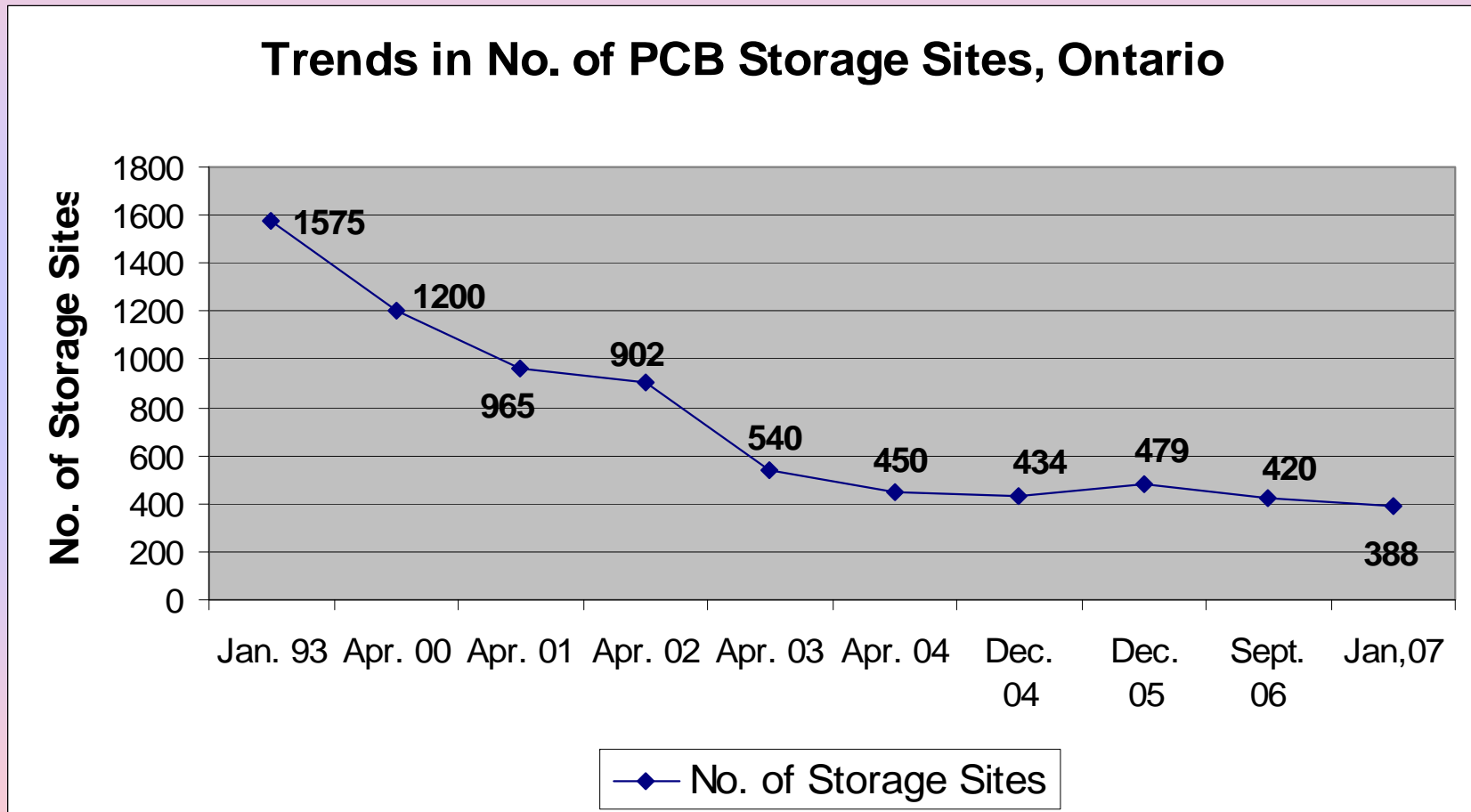
- **Two additional organizations – City of Toronto, Real Estate Div., and Dofasco, an integrated steel company in Hamilton, received PCB recognition plaques in the fall meeting at Windsor for achieving the GLBTS goal voluntarily**

Progress Toward the Challenge Goals: Canada (continued)

Trends in High-Level PCBs in Storage in Ontario in Gross Tonnes

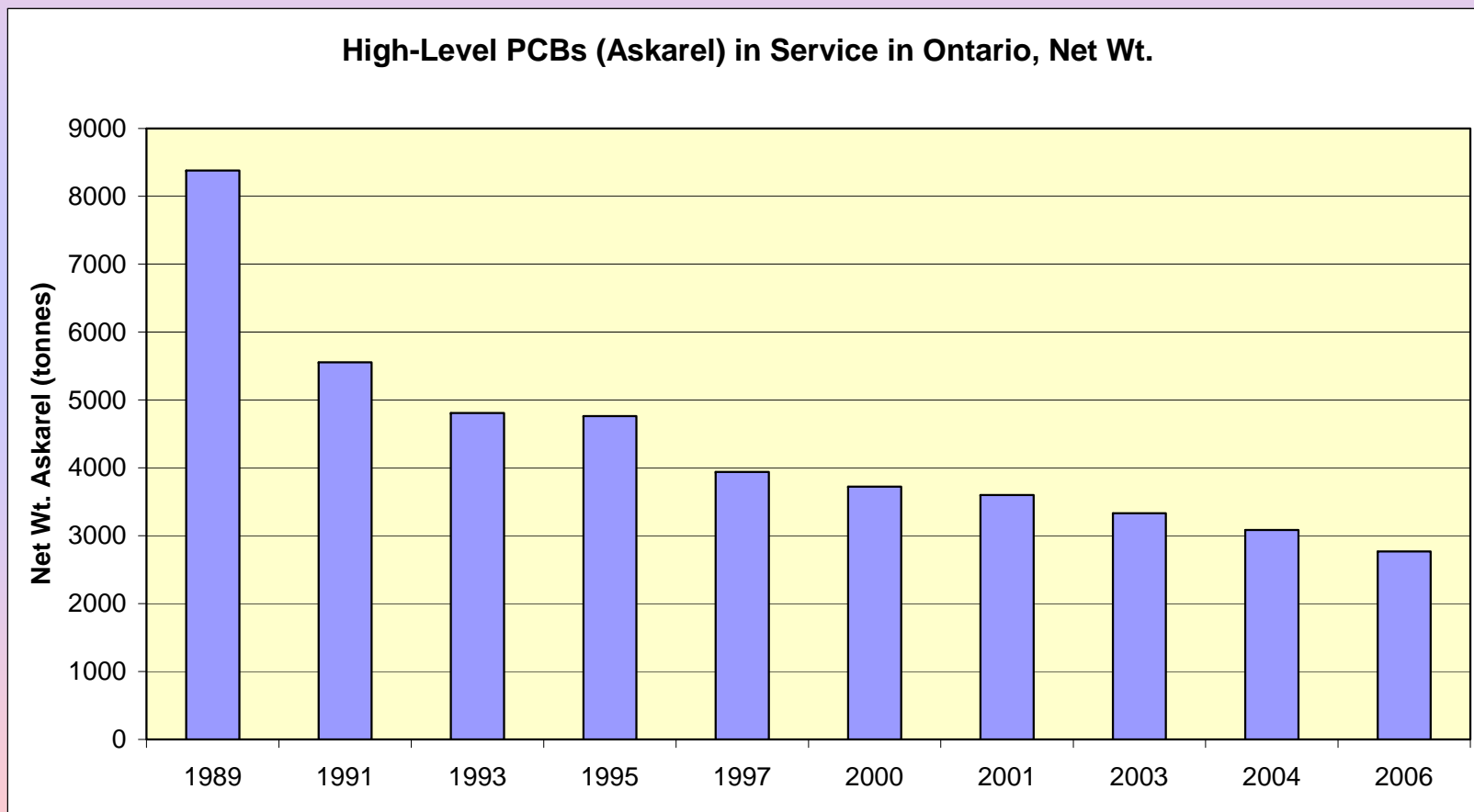


Trends in Number of PCB Storage Sites in Ontario



High-Level PCBs In Service in Ontario

In Net Wt Tonnes



Progress Toward the Challenge Goals: U.S.

- **According to the PCB Transformer Registration Database, updated in August 2006, only about 14,700 PCB transformers were registered with U.S. EPA**
- **According to annual disposal data, at the end of 2005, an estimated 73,000 PCB transformers and 1,294,000 large PCB capacitors remained in use in the U.S.**
 - ◆ **Estimate obtained by subtracting the annual disposal data from the 1994 estimated baseline**
- **Lack sufficient data to determine with accuracy the number of PCB capacitors remaining in service**

2007 Activities: U.S.

- **U.S. Stakeholder PCB Phase-out Efforts Continued and Initiated**
 - ◆ **Most USWAG companies have procedures in place to ensure >50 ppm PCB equipment identified during repair/servicing is disposed and/or retrofilled**
 - ◆ **USWAG member companies in the GL basin also have dedicated efforts to identify/remove PCB-containing equipment from service**
 - ◆ **Mining Outreach Program – US EPA, Region 8**
 - ◆ **PCB software/spreadsheet tool to determine and compare the costs of phasing out PCB transformers against the costs of continued use developed; currently being evaluated by US EPA**
 - ◆ **Study of PCB emissions from in-service PCB transformers completed – more information may be needed**

Summary of Challenge Goal Status: Canada

- **Canada met the challenge goal for high-level PCBs in storage**
- **Canada working to meet its challenge goal for in-service PCBs**

Path Forward

- **Continue with Tier-I Activities**
- **Continue to seek PCB reduction commitments through PCB reduction commitment letters and other PCB phase-out efforts**
- **In view of new PCB regulations, “Recognition & Award” program will discontinue**
- **Continue to gather and update PCB equipment inventories in the U.S. and Canada**
- **Continue outreach/compliance promotion efforts (for new PCB Regulations targeted to be in *Canada Gazette II* in 2008)**
- **PCB Management Assessment recommendations implementation**



Dioxins and Furans

Work Group Co-Chairs:

Anita Wong, Environment Canada

Erin Newman, US EPA

December 12, 2007, Chicago

Dioxin/Furan Challenges and Progress

Canadian Challenge Goal

- 90% reduction* by 2000

*All media within Great Lakes Basin, base year 1988

- Progress: **89% reduction** in total releases within GL Basin based on 2005 data

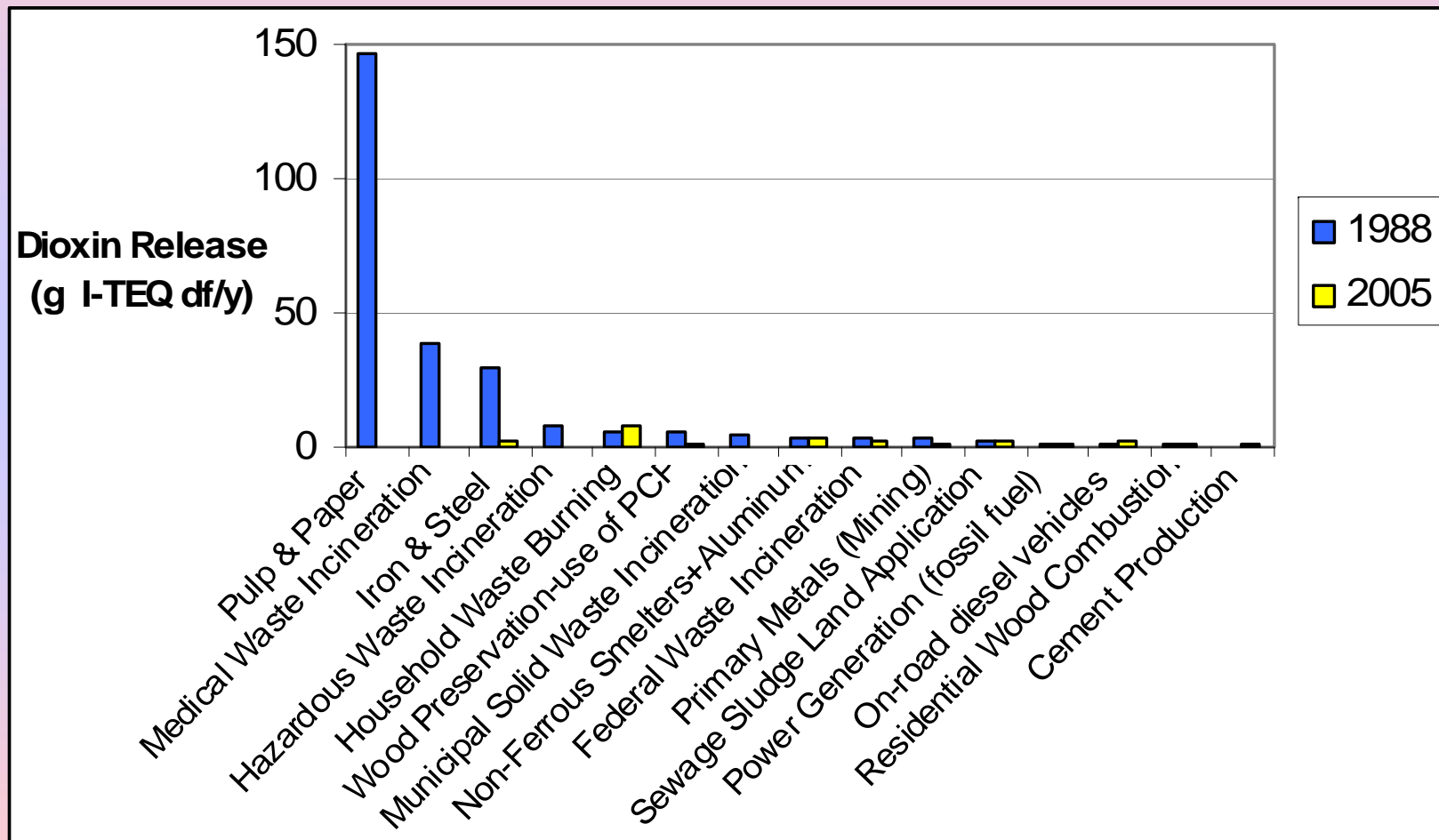
U.S. Challenge Goal

- 75% reduction* by 2006

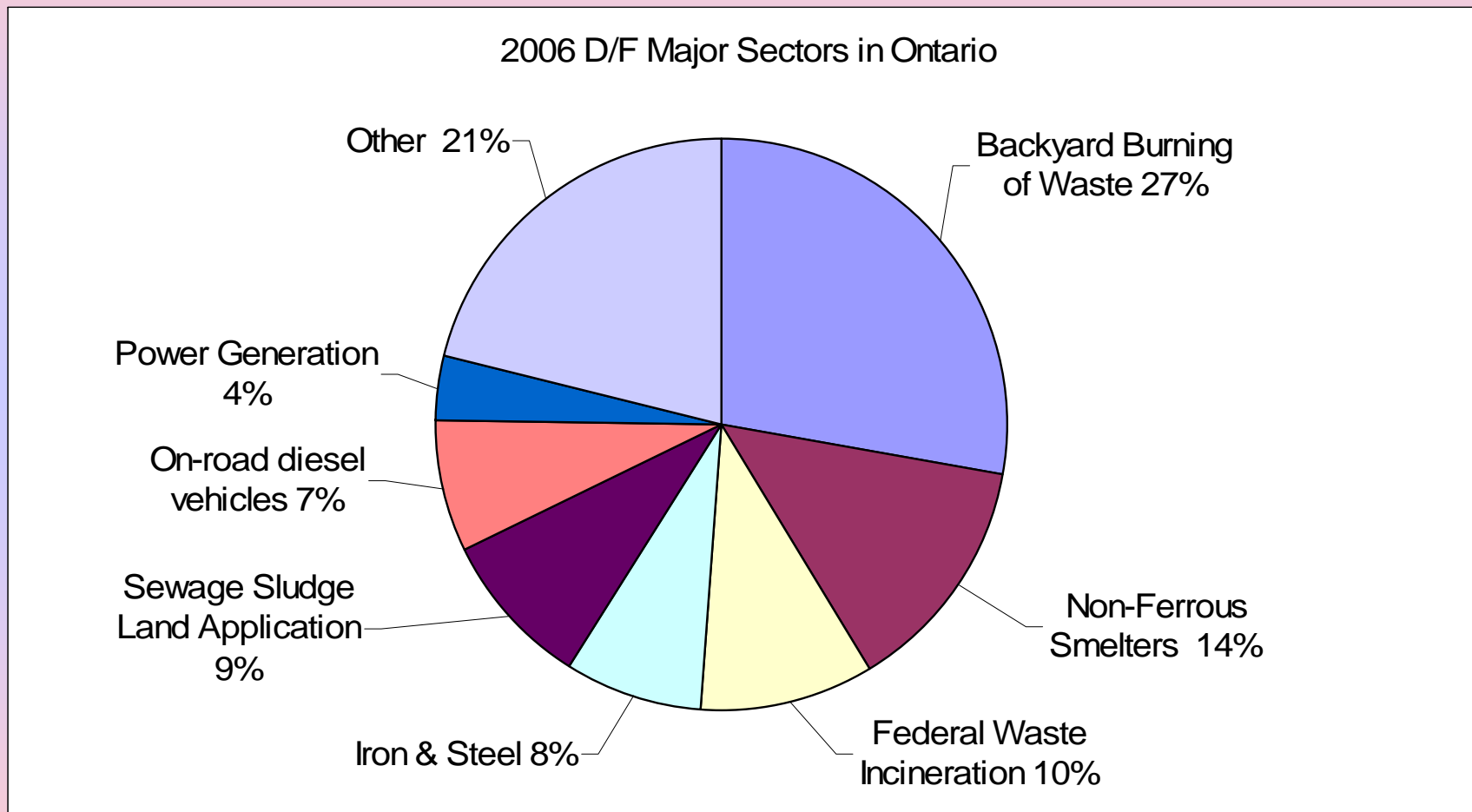
*Aggregate of air releases nationwide and water releases within the Great Lakes Basin, base year 1987

- Progress: Goal has been met
- 2000 emissions ~1,422 grams **89% reduction** from 1987 baseline based on 2000 data

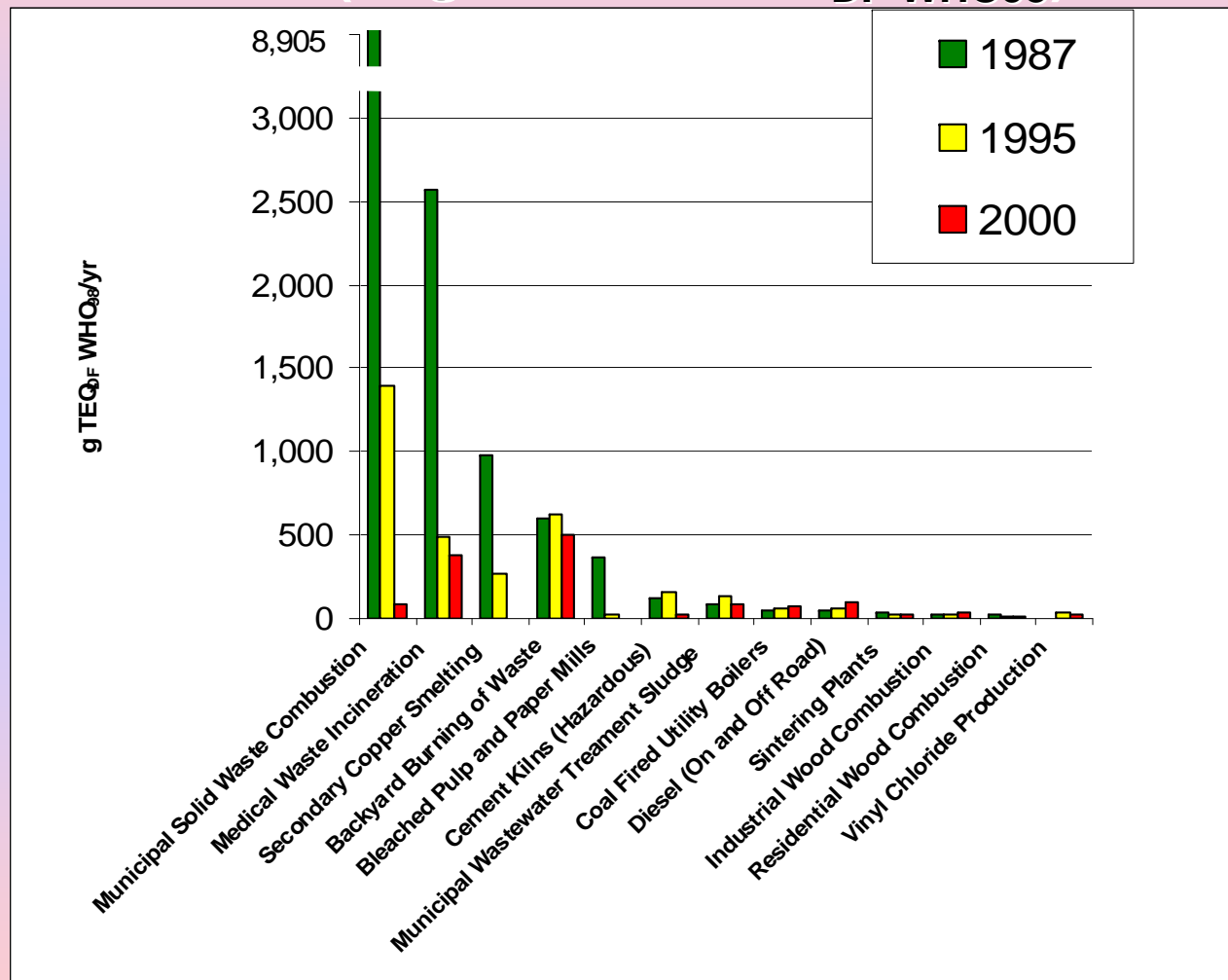
Top Ontario 1988/2005 Dioxin/Furan Release Sources



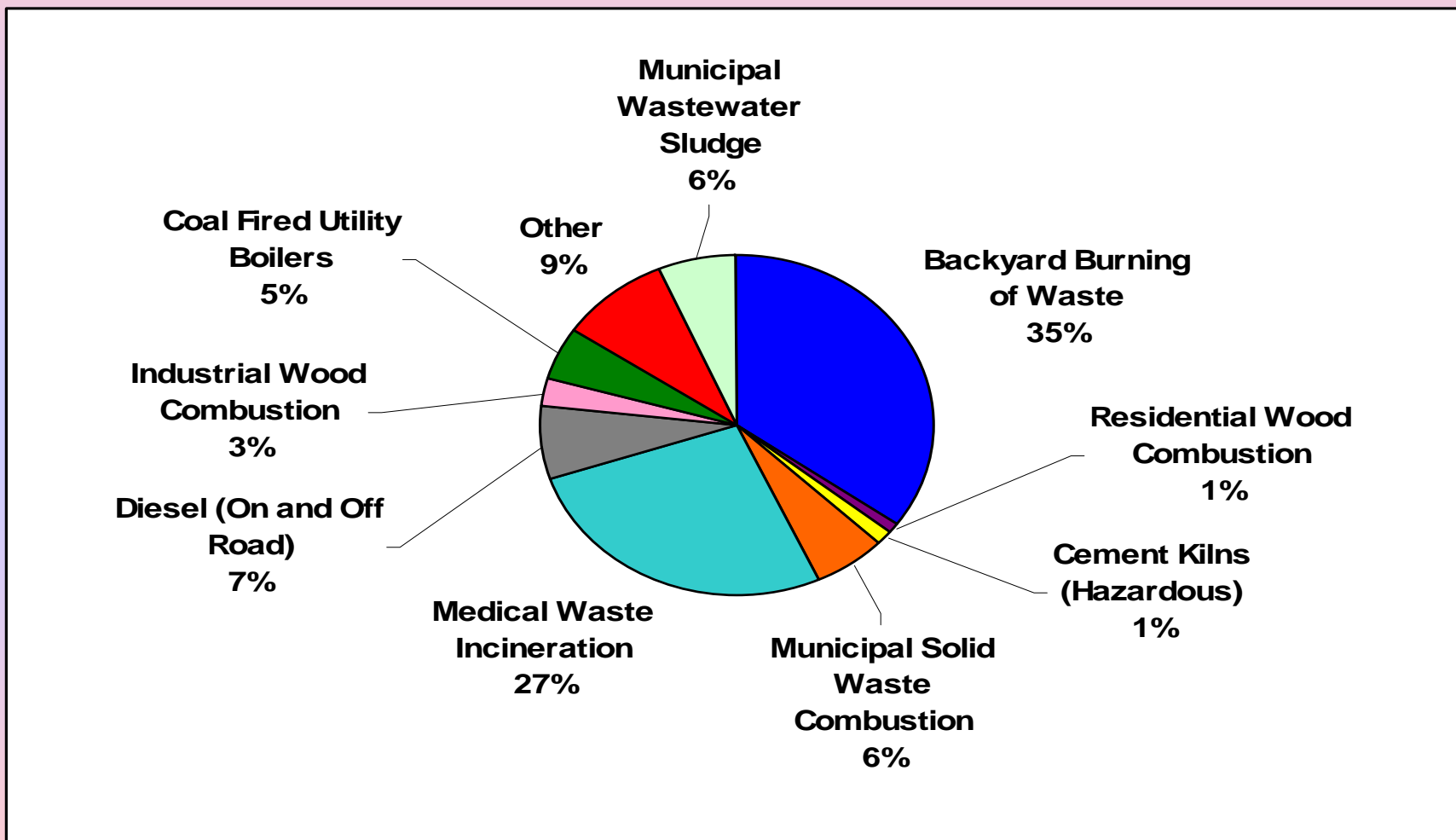
Ontario 2006 Dioxin/Furan Release Sources



Top U.S. Inventoried Dioxin Emissions for 1987, 1995, & 2000 (in grams of TEQ_{DF-WHO98})



2000 Top U.S. Dioxin/Furan Releases



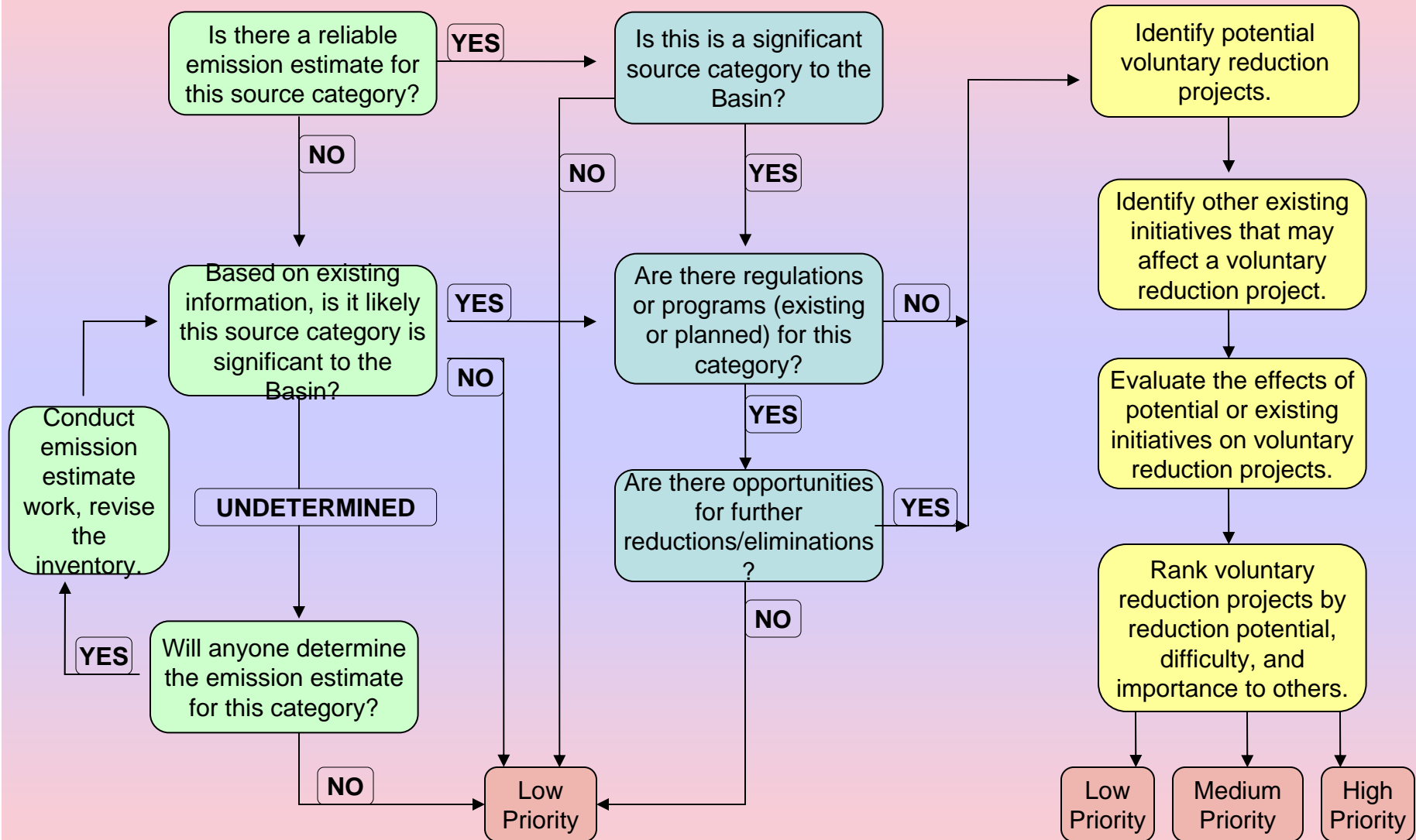
Prioritizing Sources

- **Criteria for Inventoried Sources of Interest:**
 - ◆ **Reliable emission estimates**
 - ◆ **Likely to be significant in the Basin**
 - ◆ **Releases account for more than 2% of the total dioxin inventory**
 - **U.S. – Use 2000 inventory**
 - **Canada – Use 2005 inventory**

- **Will consider non-inventoried sources of interest**

THE GREAT LAKES BINATIONAL TOXICS STRATEGY

Dioxin/Furan Workgroup Decision Tree for Prioritizing Sources



Burn Barrel Subgroup



- Ongoing Federal, State/Provincial and Tribal/First Nations activities in both countries



AIR DEFENDERS THE QUEST FOR CLEAN AIR

HOME SEEK IDENTIFY RESOLVE MISSION

IDENTIFY

The Problem

Burning trash is:

- Unhealthy
- Unnecessary
- Unsafe
- Unneighborly
- Illegal

But... what about campfires?

Learn Not to Burn

May 09, 2007

Newsletter

Roundtable



Canadian Centre
for Pollution Prevention

Leaders in Shaping the Future of Consumption and Production

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Great Lakes Trash and Open Burning Website

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"reducing the practice of residential garbage burning within the Great Lakes Basin."

Agriculture Sector

- Due to close proximity to food sources, workgroup is examining agricultural burning activities more closely
- Agriculture issues related to dioxins/furans and other air toxics:
 - Burning garbage, plastics
 - Animal carcass crematories
 - Outdoor boilers
 - Energy facilities to heat greenhouses
 - Feed and feed trough material
- Workgroup discussing formation of subgroup
 - ◆ Develop scope / Terms of Reference
 - ◆ List of potential members and lead

Options for Dioxin Workgroup

- **Reviewing 4 options:**
 - ◆ **Maintain active status**
 - ◆ **Maintain active status but reduced effort**
 - ◆ **Inactive status but maintain subgroups**
 - ◆ **Combine with another workgroup**

- **Structural issues need to be reviewed**
 - ◆ **E.g., subgroups**



Mercury

Work Group Co-Chairs:

Alexis Cain, US EPA

Robert Krauel, Environment Canada

December 12, 2007, Chicago

Canada's Mercury Reduction Challenge and Progress

Challenge:

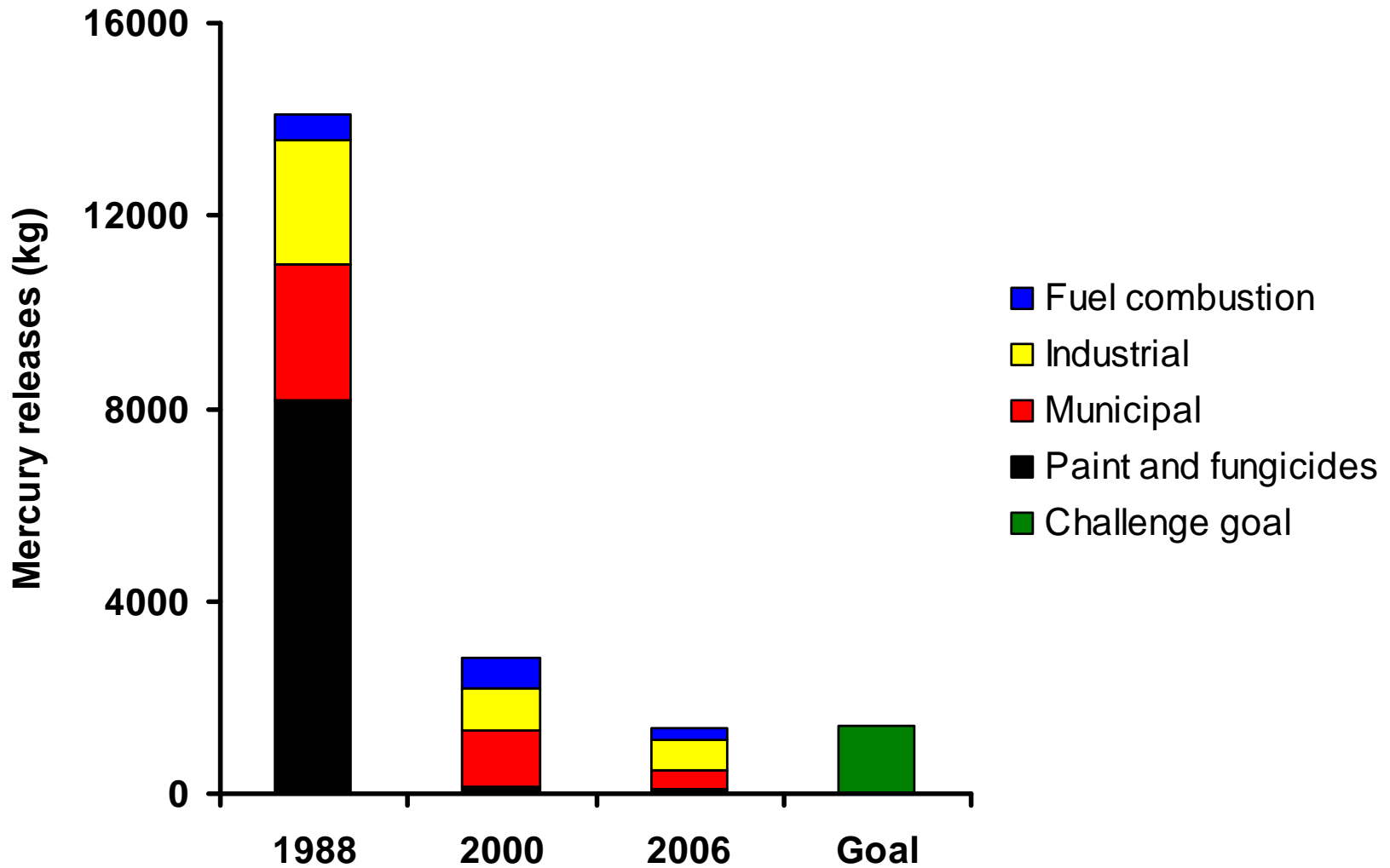
“Achieve by 2000, a 90% reduction in the release of mercury, or where warranted the use of mercury, in the Great Lakes Basin”

Baseline: 1988

Progress:

- Reduction >90% (as of 2006)

Ontario Mercury Releases



U.S. Mercury Reduction Challenge and Progress

Challenge:

“Achieve by 2006 a 50% reduction in use and air emissions of mercury nationwide”

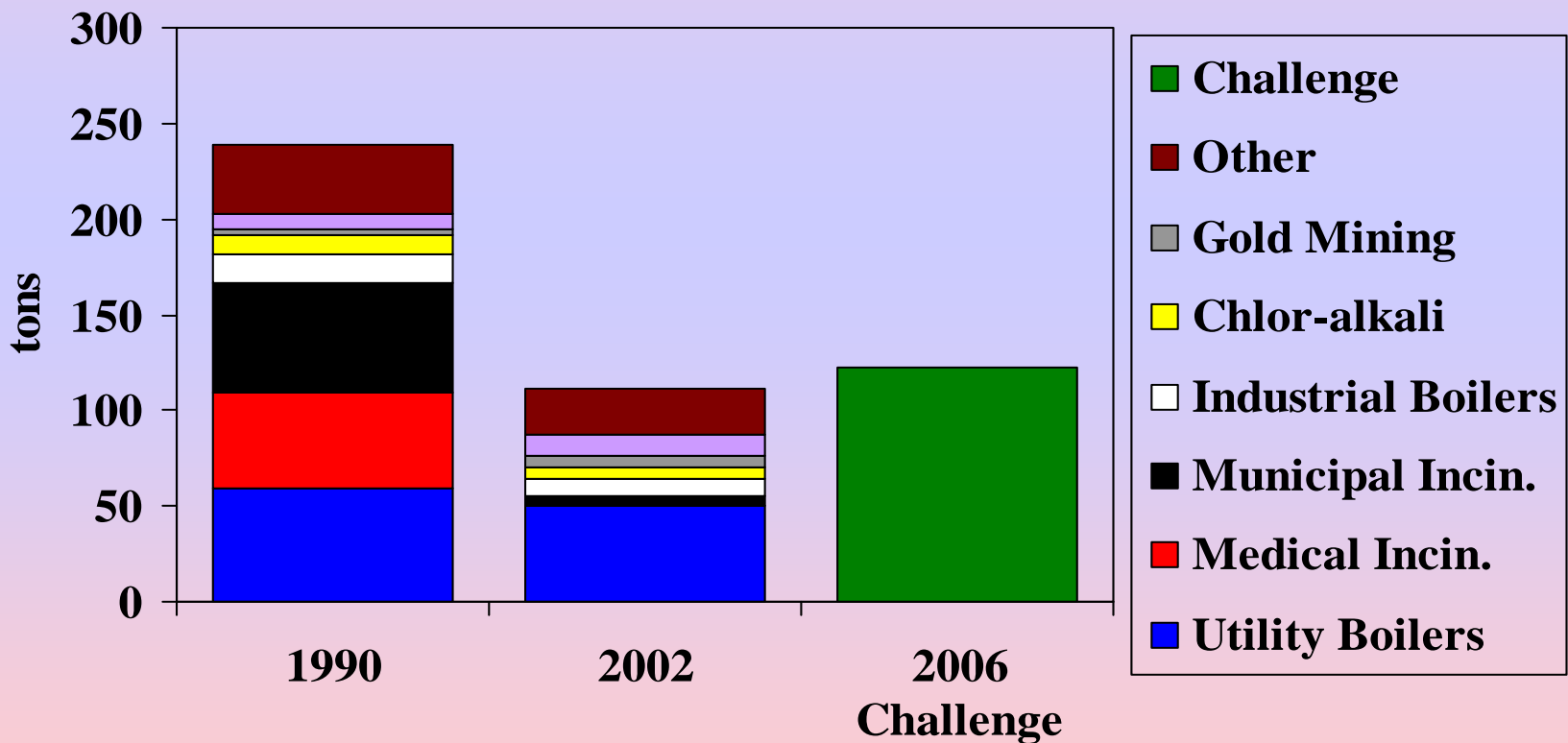
■ Baselines:

- ◆ Emissions: 1990
- ◆ Use: 1995

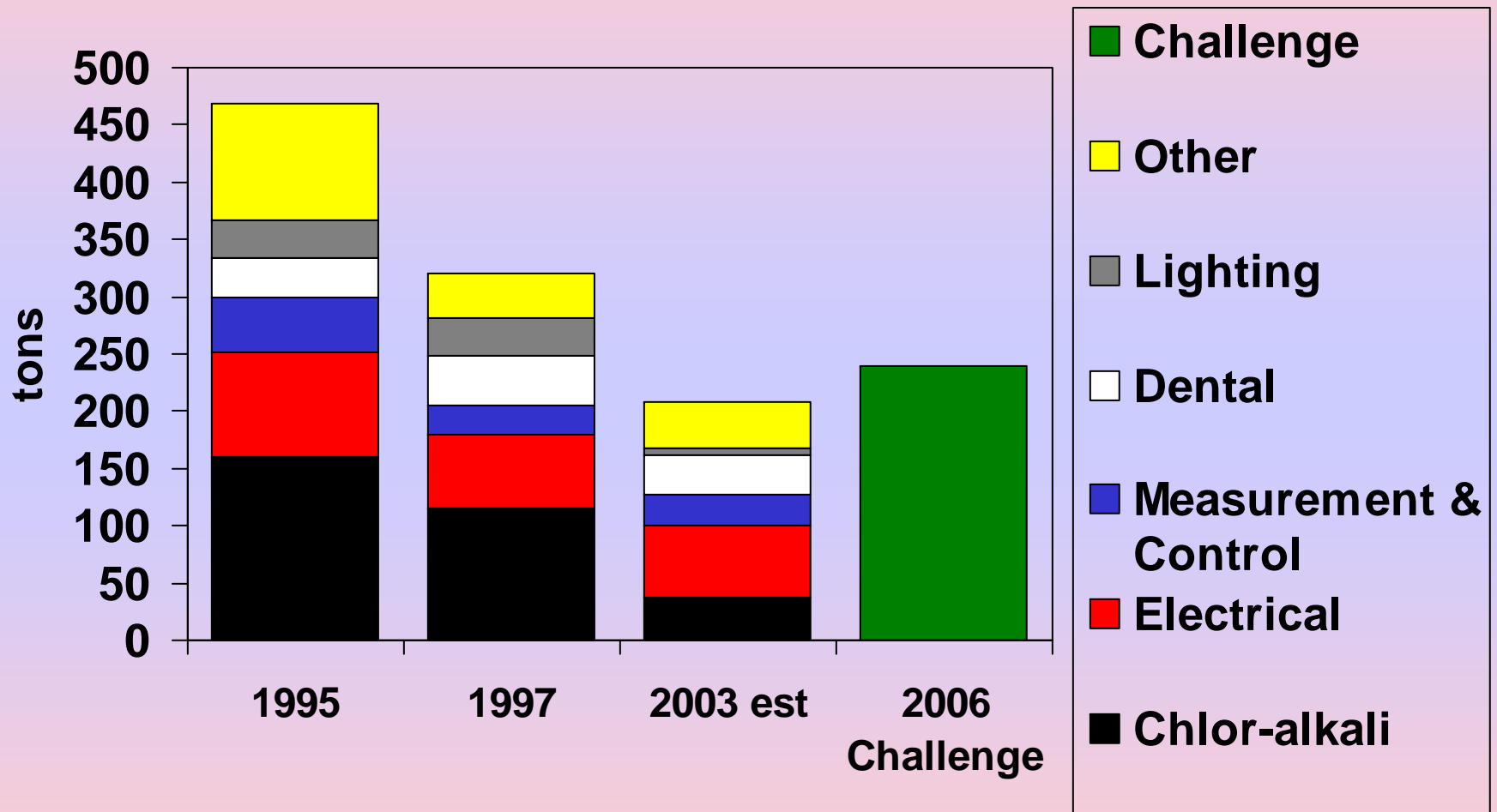
Progress (best guess):

- Emissions: > 50% reduction (as of 2002)
- Use: > 50% reduction

U.S. Mercury Emissions: 2006 Challenge, 1990 Baseline



U.S. Mercury Use



Source: US Geological Survey, *Minerals Yearbook*, 1996, 1997. Chlorine Institute Annual Report to EPA, 2004; National Electrical Manufacturer's Association, direct communication, 2004.

Accomplishments

- **Draft Great Lakes Mercury in Products Phase-down Strategy under the Great Lakes Regional Collaboration—public comments received**
- **Environment Canada's proposed Risk Management Strategy for Mercury-containing products**

Accomplishments

- **Chlorine Institute: 9th Annual Report (for 2006 Mercury Use)—greater than 90% reduction since 1990**
- **National Vehicle Mercury Switch Recovery Program—now operating in all 50 states**
- **“Switch the Stat” program launched for collection of thermostats in Ontario**
- **Recycling Council of Ontario expands Fluorescent Lamp Stewardship Program**

Next Steps

- **Implementation of Phase-down Strategy and Risk Management Strategy for mercury containing products**
- **Development of a new Mercury Emissions Reduction Strategy under the Great Lakes Regional Collaboration**
- **Continue information sharing about cost-effective reduction opportunities**
- **Tracking of Environmental Progress**



Benzo(a)Pyrene and Hexachlorobenzene

Work Group Co-Chairs:

Steve Rosenthal, US EPA

Tom Tseng, Environment Canada

December 12, 2007

B(a)P and HCB Challenge Goals

Canada

- Seek a 90% reduction in releases
- By 2000

United States

- Seek reductions in releases that are within, or have the potential to enter, the Great Lakes Basin
- By 2006

Progress Toward the Challenge Goals

- **Both Canada and the U.S. have achieved reductions**

- **The U.S. has met its commitment**
 - ◆ **B(a)P emissions in Great Lakes states reduced by ~77% from 1996 to 2001**
 - ◆ **HCB emissions reduced from 1990 to 1999, and further by 2002 (28% reduction from 1999-2002)**

- **Canada continues to pursue its goal, but it is unlikely that 90% reduction goal will be met in the near future**
 - ◆ **B(a)P releases reduced by ~52%, relative to 1988**
 - ◆ **HCB releases reduced by ~74%, relative to 1988**

Recent B(a)P Activities: U.S.

■ Residential Wood Combustion

- ◆ **Artificial Wax Firelog Testing completed**
- ◆ **Wood Stove Change-out Program completed in Dayton, Ohio in August 2006**
- ◆ **EPA has initiated its Outdoor Wood-fired Hydronic Heater Program**
- ◆ **Conducted 4 Tribal workshops in Minnesota, Wisconsin, and Michigan with Canadian First Nations Burn-it-Smart trainers**

■ Scrap Tires

- ◆ **GIS mapping and tire pile inventories prepared for GLs States**
- ◆ **Scrap Tire Cleanup Guidebook completed January 2006 and online training has been developed**

Recent B(a)P Activities: U.S. (continued)

■ Scrap Tires (continued)

- ◆ **Best Practices training held in Philadelphia for Pennsylvania, Maryland, New Jersey, Delaware and in Alabama and South Dakota**
- ◆ **“Scrap Tire Markets in the United States” completed by RMA in November 2006**

■ Coke Ovens

- ◆ **Pushing, Quenching, and Combustion Stack MACT went into effect in April 2006**
- ◆ **Residual risk requirements for doors, lids, offtakes and charging went into effect in July 2005**
- ◆ **USEPA has been working with Environment Canada and Ontario MOE on an emission reduction and monitoring program at Algoma Steel in Ontario**

■ Midwest Clean Diesel Initiative

Recent HCB Activities: U.S.

- **Burn Barrel reduction work ongoing through Burn Barrel Subgroup**
- **Ongoing effort to confirm lower levels of HCB in pesticide products**
- **Substantial emission reductions from several major chemical companies**
- **Phase one of HCB Inventory has been completed**

Outlook: U.S.

- **U.S. meeting its commitments for B(a)P and HCB**

- **Planned HCB Activities**
 - **Special HCB Inventory Study partially funded**
 - **Continue soliciting voluntary chemical company reductions**

Outlook: U.S. (Continued)

- **Planned B(a)P Activities**
 - **A Wood Stove Change-out funded for Michigan**
 - **Additional Tribal Burn-It-Smart Workshops will be put on**
 - **Reduction activities planned for wood-fired boilers**
 - **Scrap tire piles will continue to be inventoried**
 - **Initiate emission reduction strategies from coal tar based parking lot sealcoats**
 - **Additional coke oven emission reduction requirements will be implemented**

Recent Activities: Canada

B(a)P:

- Residential Wood Combustion
- Creosote-Treated Wood
- Source apportionment study

HCB:

- HCB Modeling Project



Outlook: Canada

- HCB releases are very low (13.1 kg (~29 lbs))
 - ◆ Pesticides (#1 source): Promote further reductions
 - ◆ Burn Barrels (#2 source): Update residential waste generation data
 - ◆ Ferric/Ferrous Chloride (#3 source): Update information on sewage sludge

- Will not meet B(a)P goal
 - ◆ Iron & Steel (#1 source): Number under review by NPRI
 - ◆ Creosote Railway Ties (#2 source): Ontario Creosote Survey being conducted
 - ◆ Wood Stoves (#3 source): Workshops with municipalities; EPA-certified stoves testing; update wood usage data

