Dioxins and Furans

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Dioxin/Furan Challenges and Progress

Canada

- 90% reduction *
- by 2000

* All media within Great Lakes Basin, baseyear 1988

- Progress: 89% reduction in total releases within GL Basin

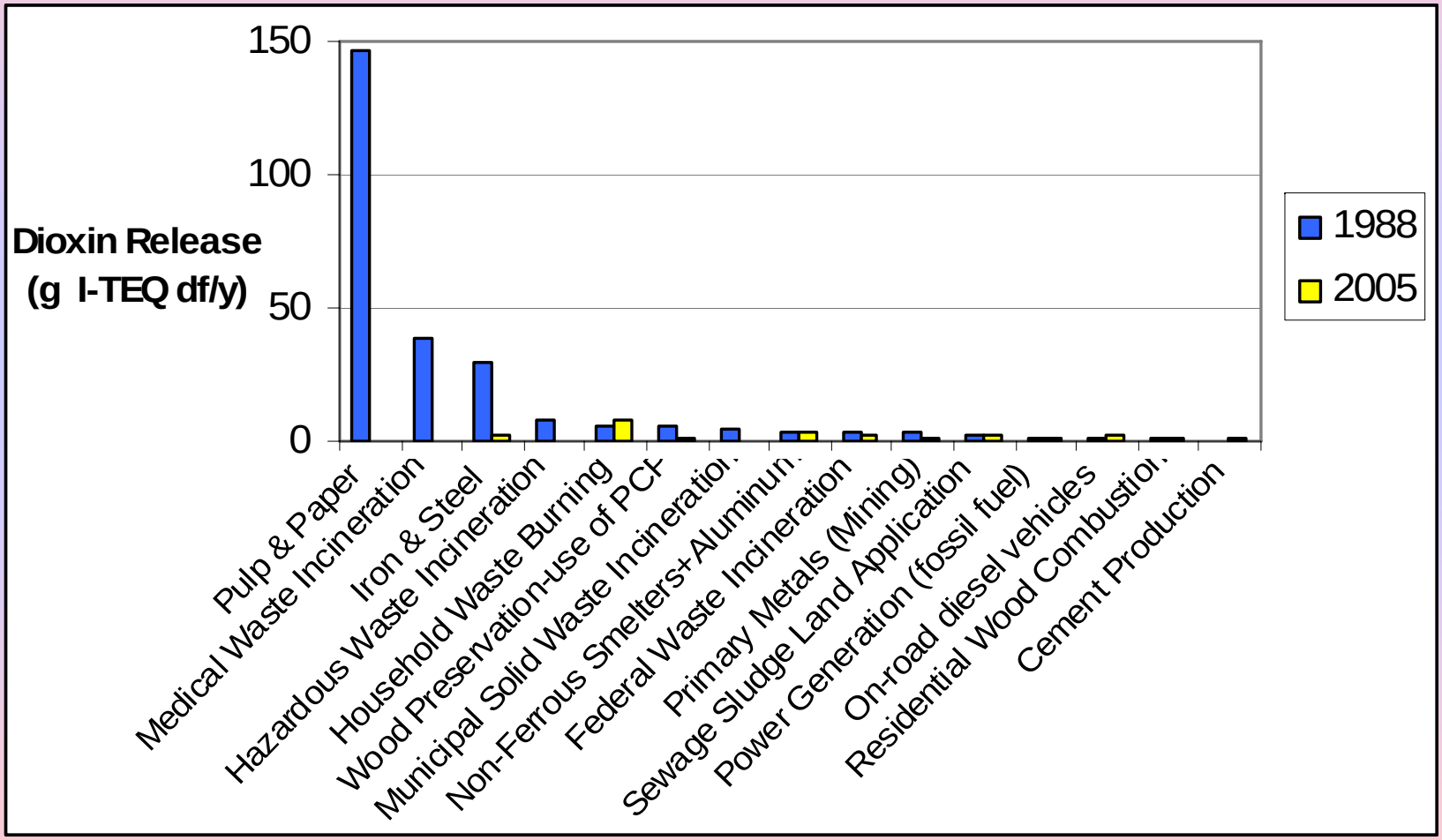
United States

- 75% reduction *
- by 2006

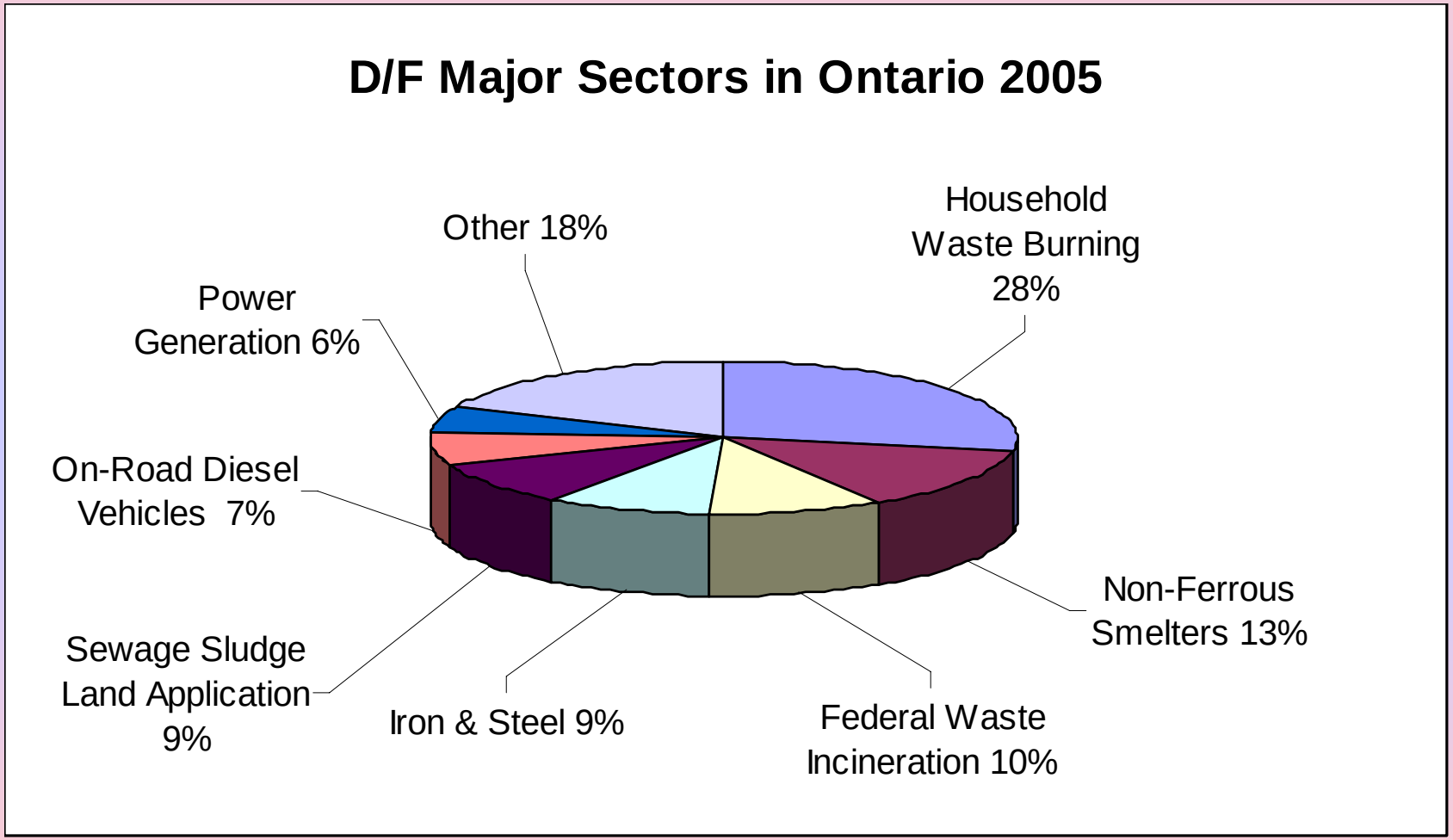
• Aggregate of air releases nationwide and water releases within the Great Lakes Basin, base year 1987

- Progress: Goal has been met
- 2000 Emissions 1422 grams 89% reduction from 1987 baseline

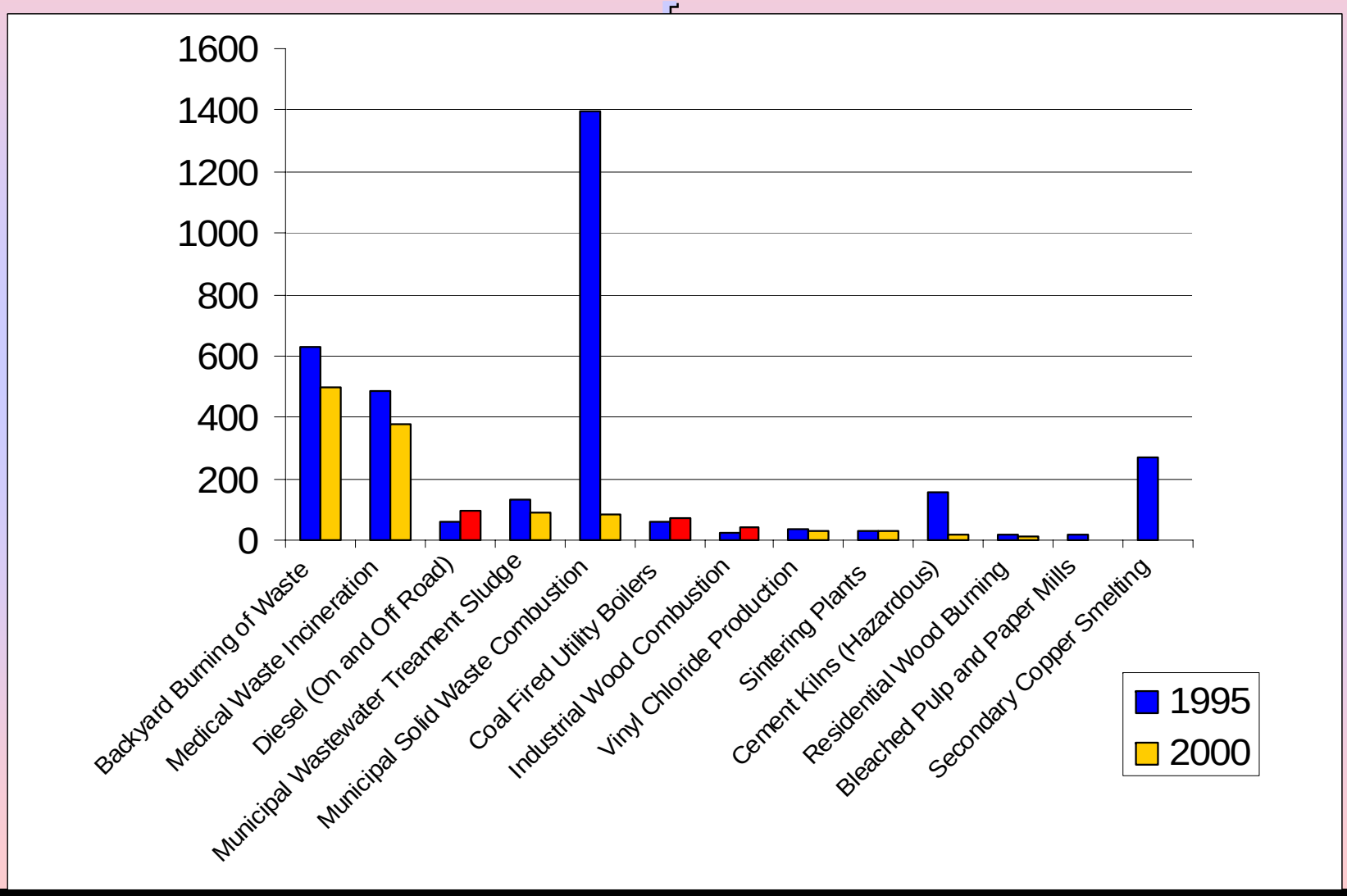
Top Ontario 1988/2005 Dioxin/Furan Release Sources



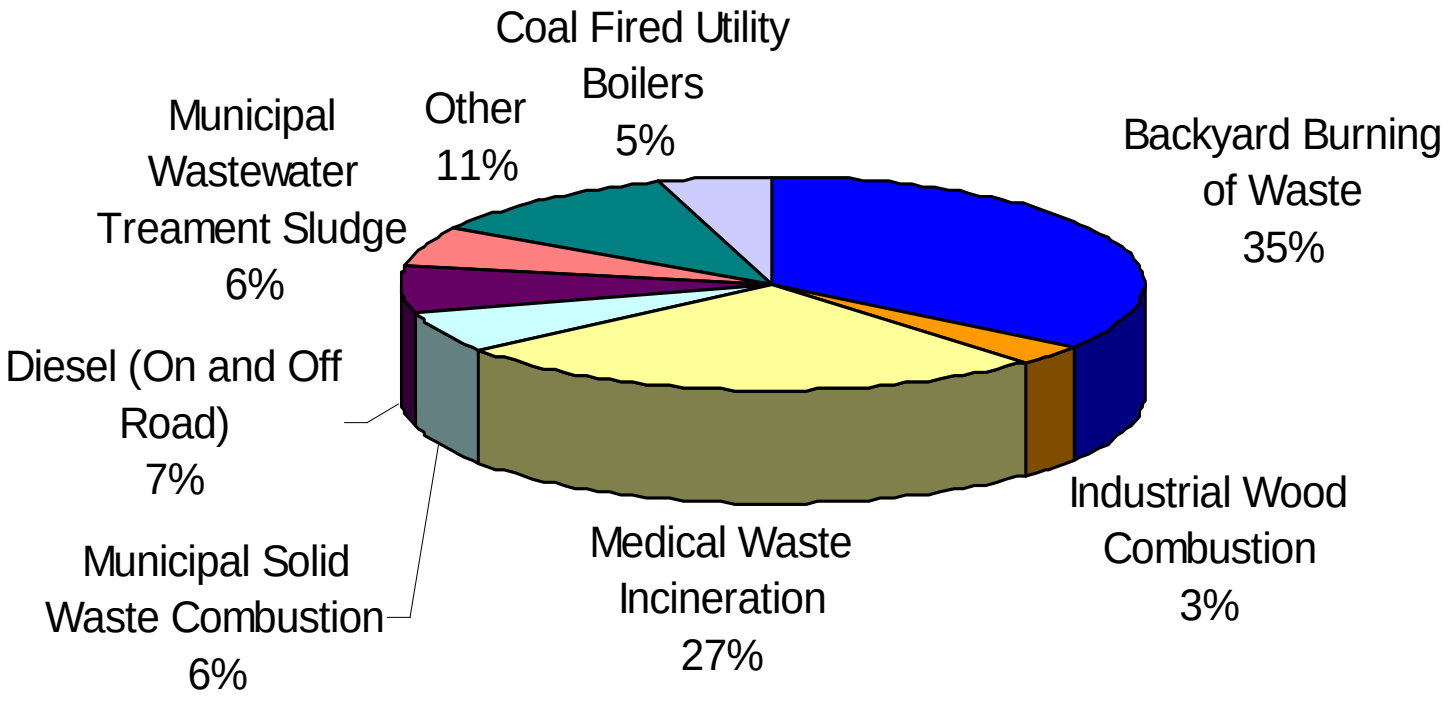
Ontario 2005 Dioxin/Furan Release Sources



Top U.S. Inventoried Dioxin Emissions for 2000 (Grams of $TEQ_{DF\text{-}WHO98}$)



2000 Top U.S. Dioxin/Furan Releases



Ontario Reduction Activities

Backyard Burning	Ongoing outreach activities with Burn Barrel Subgroup
Federal Waste Incineration (6 remain in operation in Ontario)	EC may develop agreements with federal facilities to meet Canada-wide Standards
Iron and steel	Track reductions through Canada-wide Standards
Sewage Sludge Application	Recent monitoring data showed low d/f concentrations
Motor Vehicles	Fuel and vehicle emission regulations, and in-use diesel retrofit programs
Thermal Power Generation (fossil fuel)	Ontario phase-out of coal-fired power plants

U.S. Reduction Activities

Medical Waste Incineration	Addressed via the MACT standards
Municipal Waste Combustion	Addressed via the MACT standards
Cement Kilns	Addressed via the MACT standards
Backyard Burning	Addressing under the GLBTS and under a new workgroup with OAQPS
Diesel Heavy Duty Trucks	New standards for diesel fuel and engines. Voluntary programs to accelerate diesel retrofits and replacements – unsure of dioxin impacts
Coal Fired Utility Boilers	Mercury controls such as carbon injection may provide co-benefits
Sewage Sludge Application	Due to low concentrations and low health risk, EPA has concluded no action needed

Other Issues

- Agricultural burning
  - Source inventory excludes some open burning activities
  - Burning activities close to food source
  - Exploring reduction opportunities with agricultural officials and community
- Pathway Intervention
  - Most significant human exposure is from food
  - Invited health and food officials to present dioxin levels in food and to discuss how BTS can influence pathway intervention
- Ambient air monitoring
  - Track ambient concentrations through existing air monitoring networks in Canada and U.S.

Reducing Household Garbage Burning

www.openburning.org

- **US EPA**
  - **Burn Barrel Toolkit "Learn Not to Burn" for local officials**
    - **individual fact sheets for each state and case studies of efforts to reduce household garbage burning.**
    - **series of presentations given to local officials in the Basin.**
  - **Illinois, Indiana, Michigan, Minnesota, New York, Wisconsin, and Tribes**
    - **continuing activities to educate and influence behavioral change, supported by infrastructure and the institution of local by-laws.**
  - **Initiating new national workgroup**

- **Environment Canada in Ontario**
  - ***Adopt a Watershed Pilot Project* with Conservation Authorities**
    - **promote community working group activities to reduce open burning in rural areas.**

Outlook for Future Actions

- Continue burn barrel subgroup activities
- Investigate opportunities to reduce agricultural waste burning
- Continue source characterization work and seek reductions from top sources
- Track releases and ambient air concentrations
- Explore pathway intervention