

# **US EPA's Climate Protection Initiatives**

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**SF<sub>6</sub> and the Environment:  
Emission Reduction Strategies**

***November 2, 2000***

***San Diego, California***



# Organization

- ⌘ EPA's vision for high GWP emissions
- ⌘ EPA's climate protection partnerships
- ⌘ Magnesium industry partnership
- ⌘ Utilities partnership



# EPA Vision 2000-2010

⌘ High GWP gases important for some applications

⌘ Stabilize or reduce emissions

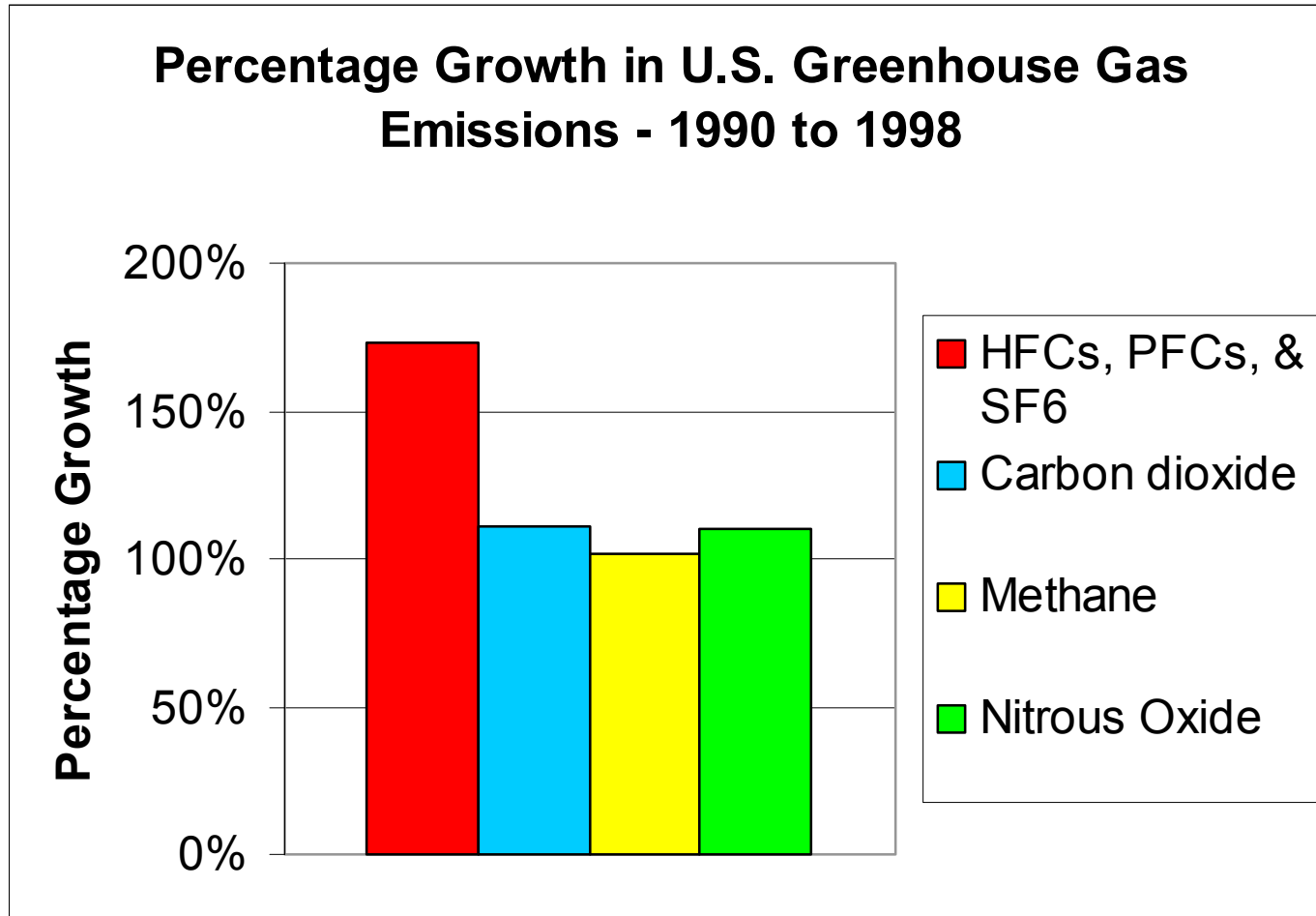
☑ Voluntary & regulatory (CFC-replacements) actions

☑ All PFC & SF<sub>6</sub> industries are engaged

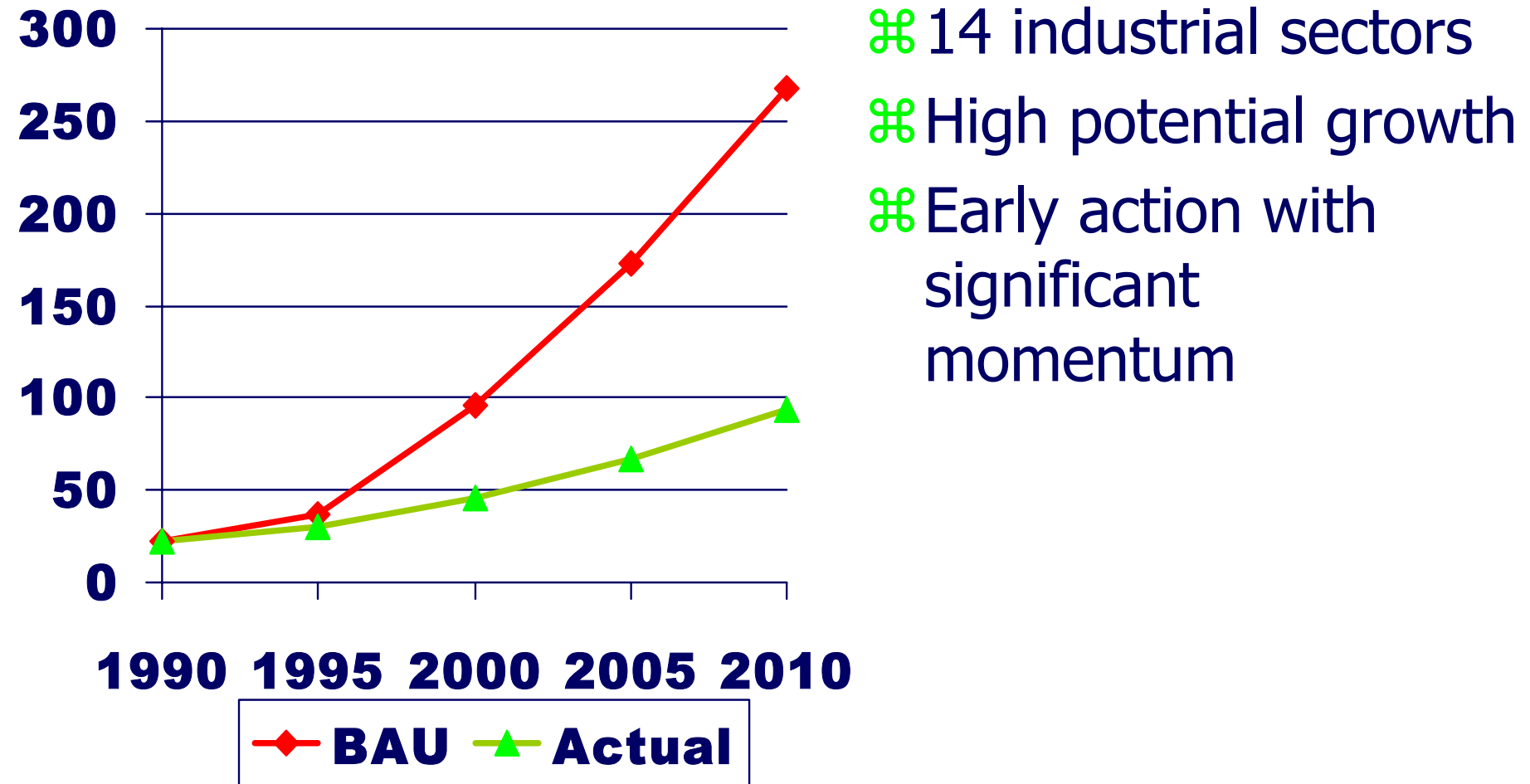
☑ Dialogue with HFC-using industries



# Rapidly Growing Emissions



# High GWP Reductions (MMTCE)



# Climate Protection Partnerships

## ⌘ Indirect CO<sub>2</sub> emissions

- ☑ Energy Star products
- ☑ Energy Star homes
- ☑ Energy Star buildings



## ⌘ Non-CO<sub>2</sub> emissions

- ☑ Methane
- ☑ High global warming potential (GWP) gases



# US Partnerships to Reduce Emissions

⌘ 1993 HFC-23 from HCFC-22 Production

☑ 100% participation

⌘ 1994 PFCs from Aluminum

☑ 10 of 11 companies (94% of industry)

☑ 44% reduction since 1990

⌘ 1996 PFCs from Semiconductors

☑ Global industry cooperation/reduction target

⌘ 1999 SF<sub>6</sub> from Electric Power Systems

⌘ 1999 SF<sub>6</sub> from Magnesium



# Memorandum of Understanding (MOU)

- ⌘ Flexible agreement

  - ☑ International cooperation

- ⌘ Defines EPA's and company's responsibilities

- ⌘ Partnership is expected to:

  - ☑ Achieve emission reductions

  - ☑ Track and report emissions/reductions

  - ☑ Set reduction goal





# EPA's Commitments



- ☑ Assist in evaluation of reduction technologies
  - ☒ Process optimizations, alternative gases, equipment
- ☑ Provide positive recognition
  - ☒ Annual Climate Protection Award
- ☑ Seek full participation
- ☑ Facilitate information sharing
  - ☒ Host technical conferences
  - ☒ Annual report



# Company Commitments



- ⌘ Strive to reduce emissions
- ⌘ Track and report annual emissions
- ⌘ Explore long-term emissions control options
- ⌘ Share non-confidential information on successful strategies



# Timeline



⌘ 1998:

- ☑ Meet with industry
- ☑ Develop MOU

⌘ 1999:

- ☑ Launch Partnership - 12 Charter Partners

⌘ 2000:

- ☑ Technical conference
- ☑ 1st annual report



# EPA Congratulates Charter Partners

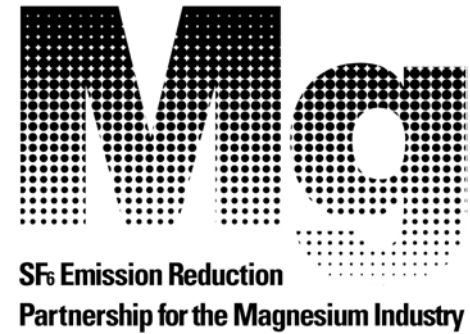


- ⌘ Acme Die Casting
- ⌘ Chicago White Metal Casting
- ⌘ Del Mar Die Casting
- ⌘ Diversified Diemakers
- ⌘ Hyatt Die Cast & Engineering Corporation
- ⌘ Lunt Manufacturing

- ⌘ Magnesium Corporation of America
- ⌘ Magnesium Products of America
- ⌘ Northwest Alloys
- ⌘ Product Technologies
- ⌘ Spartan Light Metal Products
- ⌘ Wyman-Gordon Investment Castings



# EPA Welcomes New Partners



⌘ CONTECH Metal Forge Division of SPX Corporation

⌘ Magnesium Aluminum Corporation

⌘ Northern Diecast



# First Year Results: 1999



## ⌘ Strong industry participation

☑ 100% U.S. primary production

☑ >60% U.S. casting capacity

## ⌘ Total emissions

☑ 115,000 kg SF<sub>6</sub>

☑ 0.75 MMTCE



# First Year Results: 1999



⌘ Usage rate (kg SF<sub>6</sub>/tonne Mg)

☑ Range = 0.2 - 11.7

☑ Median = 1.4



# Partnership's Next Steps



- ⌘ Support IMA's substitute gas study
- ⌘ Evaluate emission reduction technology
- ⌘ Revise tracking software
- ⌘ Create Internet web site
- ⌘ SF<sub>6</sub>/Mg reaction study





# Power of Partnerships

- ⌘ Motivate supplier innovation
- ⌘ Increase certainty for business planning
- ⌘ Assure customer confidence
- ⌘ Earn favor with environmental NGOs
- ⌘ Control own destiny
- ⌘ Deliver cost-effective environmental protection

