



IBM Corporate Environmental Affairs

# IBM CO2 CLIMATE STEWARDSHIP PROGRAM: THE ROLE OF RENEWABLE ENERGY CERTIFICATES

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# IBM CLIMATE STEWARDSHIP PROGRAM

- **Current Facility Profile**
- **CO2 Reduction Strategy**
- **Role of Renewable Energy and Renewable Energy Certificates**

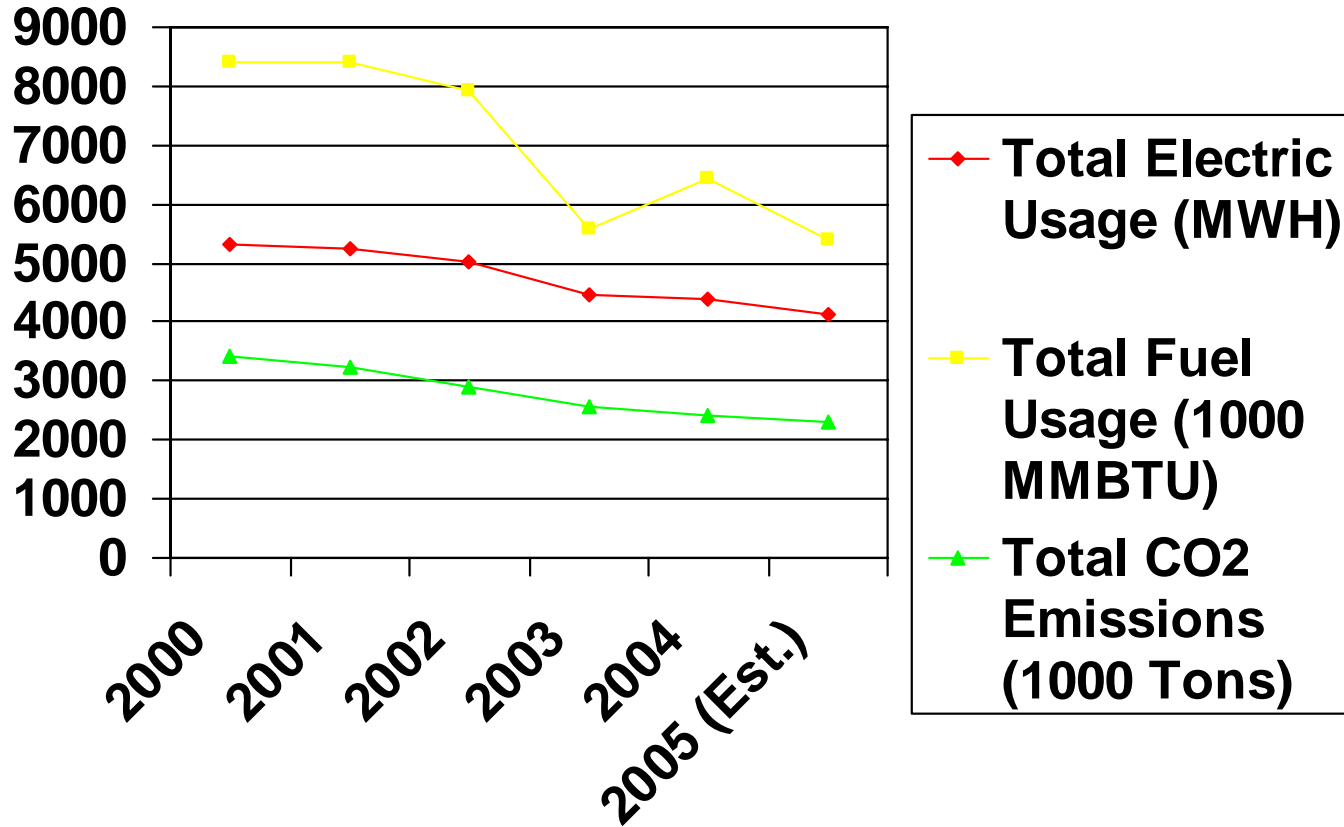
# IBM CORPORATE ENERGY STRATEGY

- **Recognize the Importance of Climate Change**
- **Energy Engineers Responsible for Major Facilities and Regions**
- **Objective of 4% Reduction in Energy Usage/CO2 Emissions Against Annual Energy Usage**
  - Energy Conservation Projects
  - Use of Renewable Energy
- **Developing an Absolute CO2 Reduction Objective**

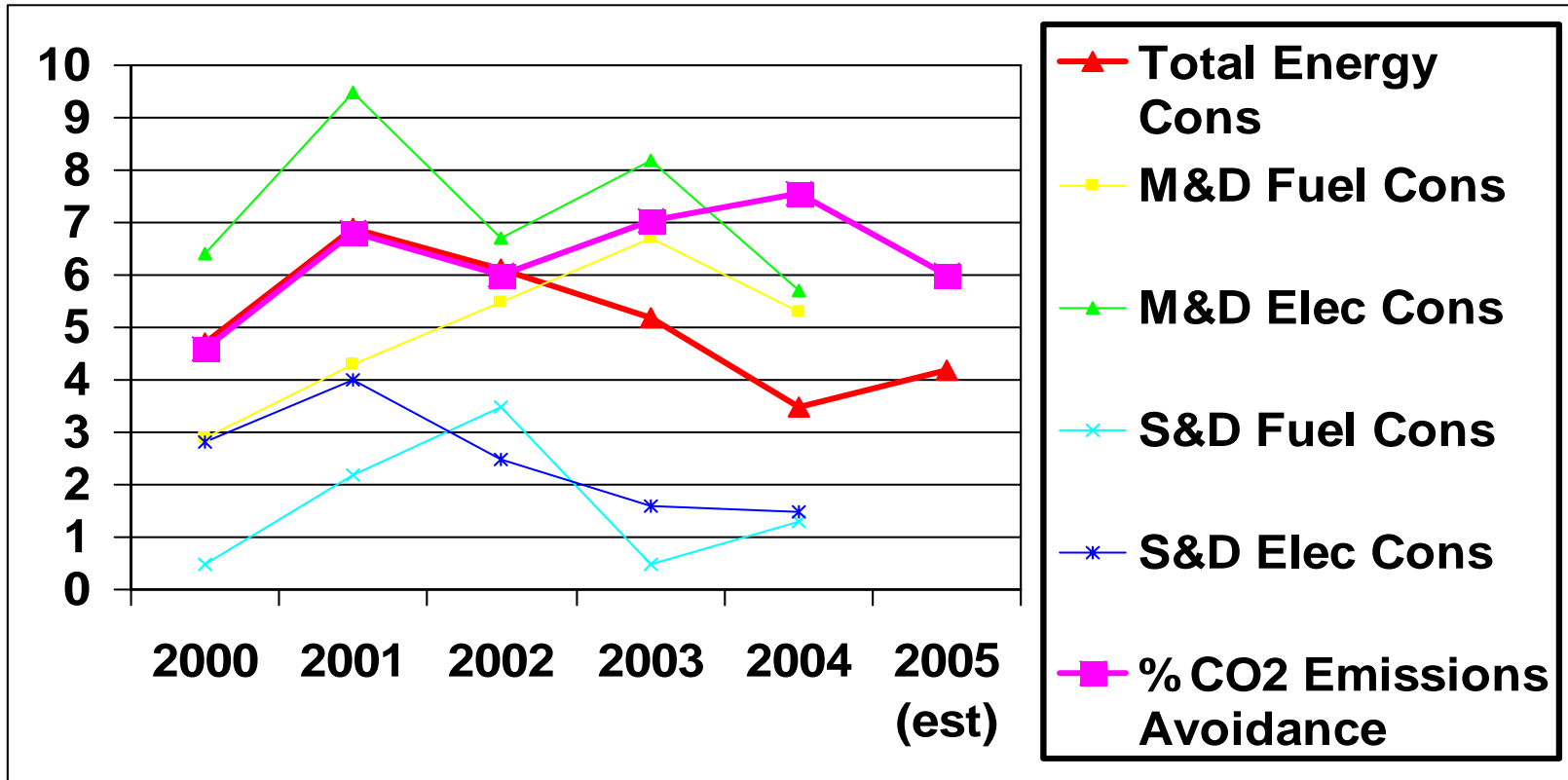
# IBM PROFILE

- **Evolving Toward a Services Oriented Business Model**
  - 40% of Space is Large Campus (>50 K square meters)
    - 25% Heavy Manufacturing
    - 75% Office/Lab/Development
  - 60% of Space is Sales, Service and Distribution Space
  
- **Energy Conservation Opportunities are Diminishing**
  
- **Desire to Increase CO2 Reduction Efforts**

# WW ENERGY USAGE & CO2 EMISSIONS



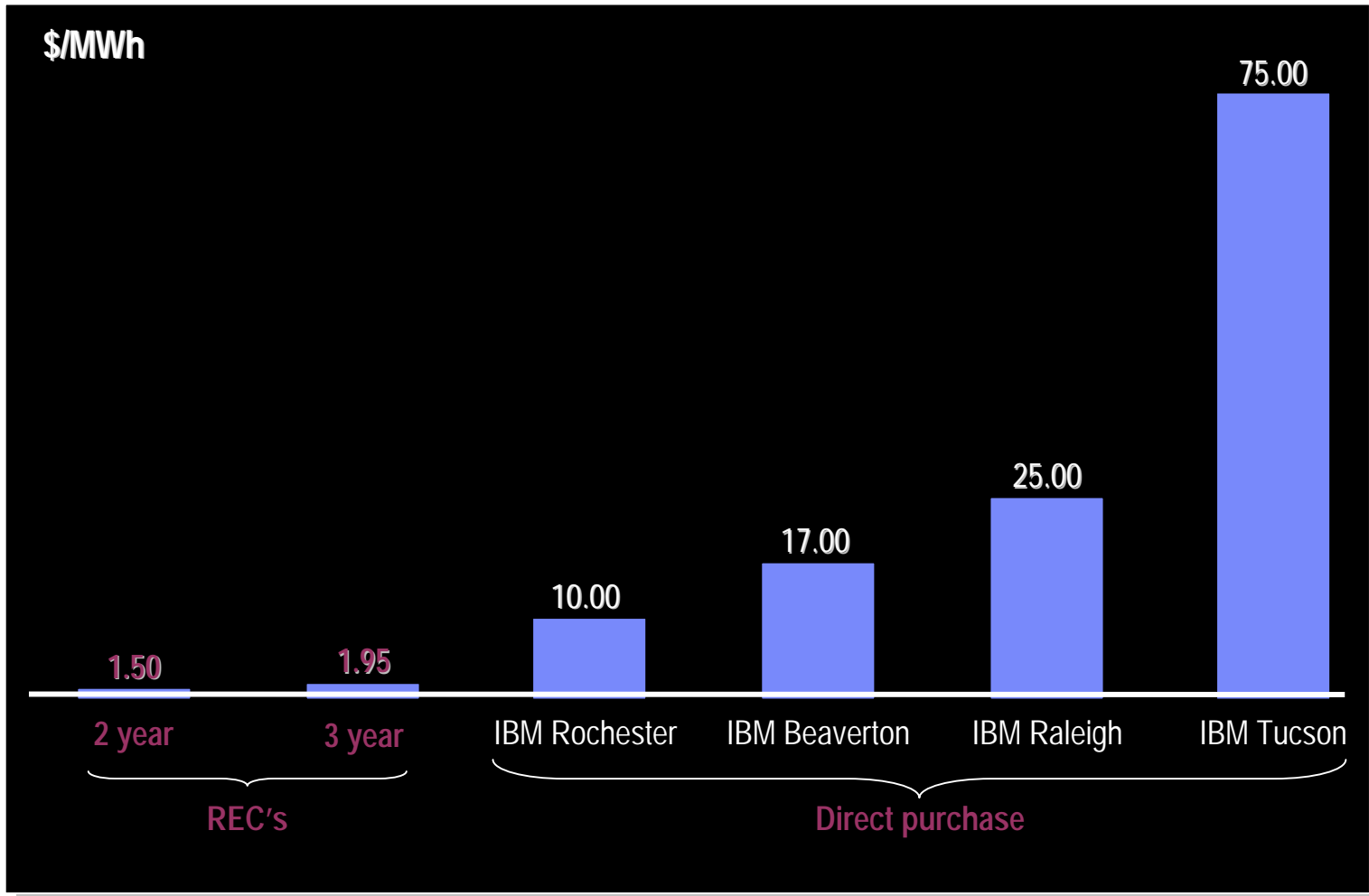
# ENERGY CONSERVATION BY TYPE



# ROLE OF RENEWABLES

- **Direct Renewable Energy Purchases**
  - European Union
    - 8% of Electrical Usage in Germany
    - 50-100% of Electrical Usage in UK (Varies Annually)
  - United States
    - Austin: 10% of Power Usage
    - Small Purchases at Major U.S. Sites
- **Worldwide in 2004, 5% of Electrical Usage is Supplied by Renewable Sources**
- **Currently, All Major Purchases are Subsidized**

# Green Power Premium REC's vs. Direct Purchase





# Utilization of Renewable Energy Certificates

- **In United States, Renewable Energy Market is:**
  - Geography Dependent
  - Difficult, Expensive to Access in Regulated Jurisdictions
  - Variable Cost, Recent Increase in Renewable Projects
  
- **Entered REC Market**
  - Removes Geographic Constraints
  - Cost Effective Purchases of CO2 Avoidance
  - Support Leading Edge Projects
  - Purchased 72000 MWH for 2006 To Date
    - Intend to Purchase 96000 MWH Total in 2006

# BENEFITS AND CHALLENGES FOR REC PURCHASES

## ■ BENEFITS

- Maintains IBM Leadership in GHG Emissions Reductions
- Increases IBM CO2 Emission Reduction Efforts
- Supports Development of Cost Competitive Renewable Energy Sources
  - Drive Technology In Anticipation of RPS Requirements
  - Anticipation of Carbon Cap in U.S>
- Small Investment (.06% of US Electricity Spend)

## ■ CHALLENGES

- Explaining How the Certificates Function
- Assure Transfer of CO2 Avoidance From Renewable Generation
- Provide Business Case for REC Purchases, Sustain the Commitment