

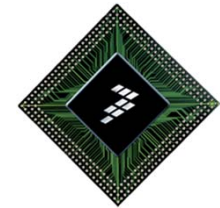
March 9, 2011

## 2011 ERC Annual Review

### Workshop on Emerging Research Topics

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## Conservation Goals by 2015 (baseline year 2008)

- ▶ By 2015, each Freescale manufacturing site will reduce
  - 10% electricity usage
  - 20 % direct greenhouse gas (GHG) emission (fluorinated GHGs, combustions of natural gas and diesel fuel, etc.)
  - 30% water usage

# Energy Conservation – Reducing Electricity Consumption

- ▶ Development of energy efficient tools
  - What factors will make the new energy efficient tools (equipment, pumps, energy saving mode, exhaust requirement, etc.)?
- ▶ Fundamental studies on options of improving the energy efficiency of existing tools
  - What modifications can be made to lower the energy consumption of the older tools?
- ▶ Addressing overall Facilities Operations related issues besides Fab manufacturing tool related issues
  - HVAC, exhaust, make-up air, compressed air, chilled water, process cooling water, etc.

# Fluorinated Greenhouse Gas Emissions Reduction

- ▶ Novel concept for fluorinated GHGs emission reductions at source:
  - Source reduction
  - Alternate chemistry
  
- ▶ Types of Control:
  - Metrology
  - Capture and Reuse vs. Abatement
    - Technology
    - Cost comparison

