MARAMA Mid-Atlantic Regional Air Management Association, Inc.

EMISSIONS INVENTORY UPDATE

OTC Public Information Meeting
March 21, 2012
Washington, DC
Julie McDill & Susan Wierman

TOPICS

1. Emissions Inventory Analysis
   - What are expected changes in emissions 2007 to 2020?
2. On-Road Mobile - MOVES
   - What's available?
3. ERTAC – EGU Forecast
   - How will it work? When will results be available?

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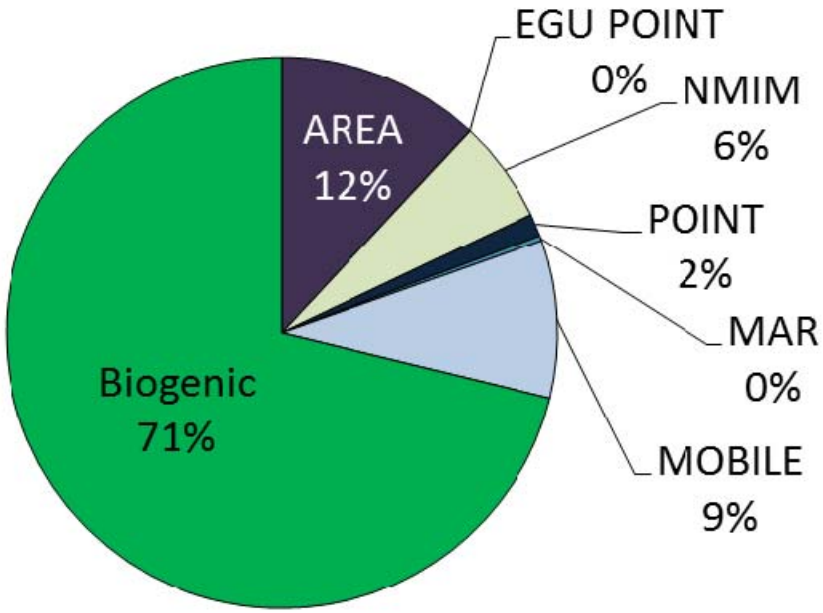
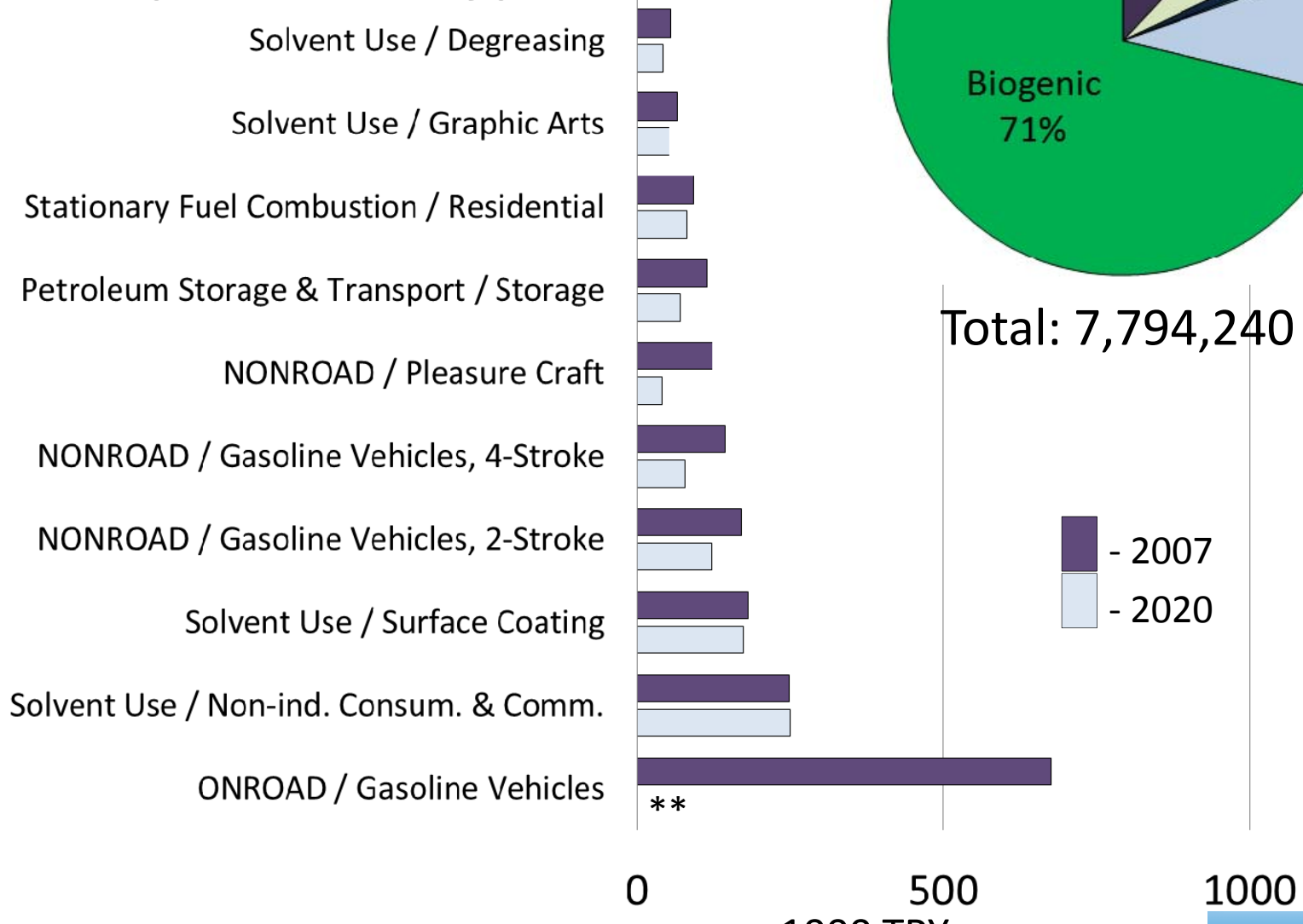
MARAMA 2007 V3
VOC
Top Source Types (SCC)



Total: 7,794,240 TPY



** - Data not yet available

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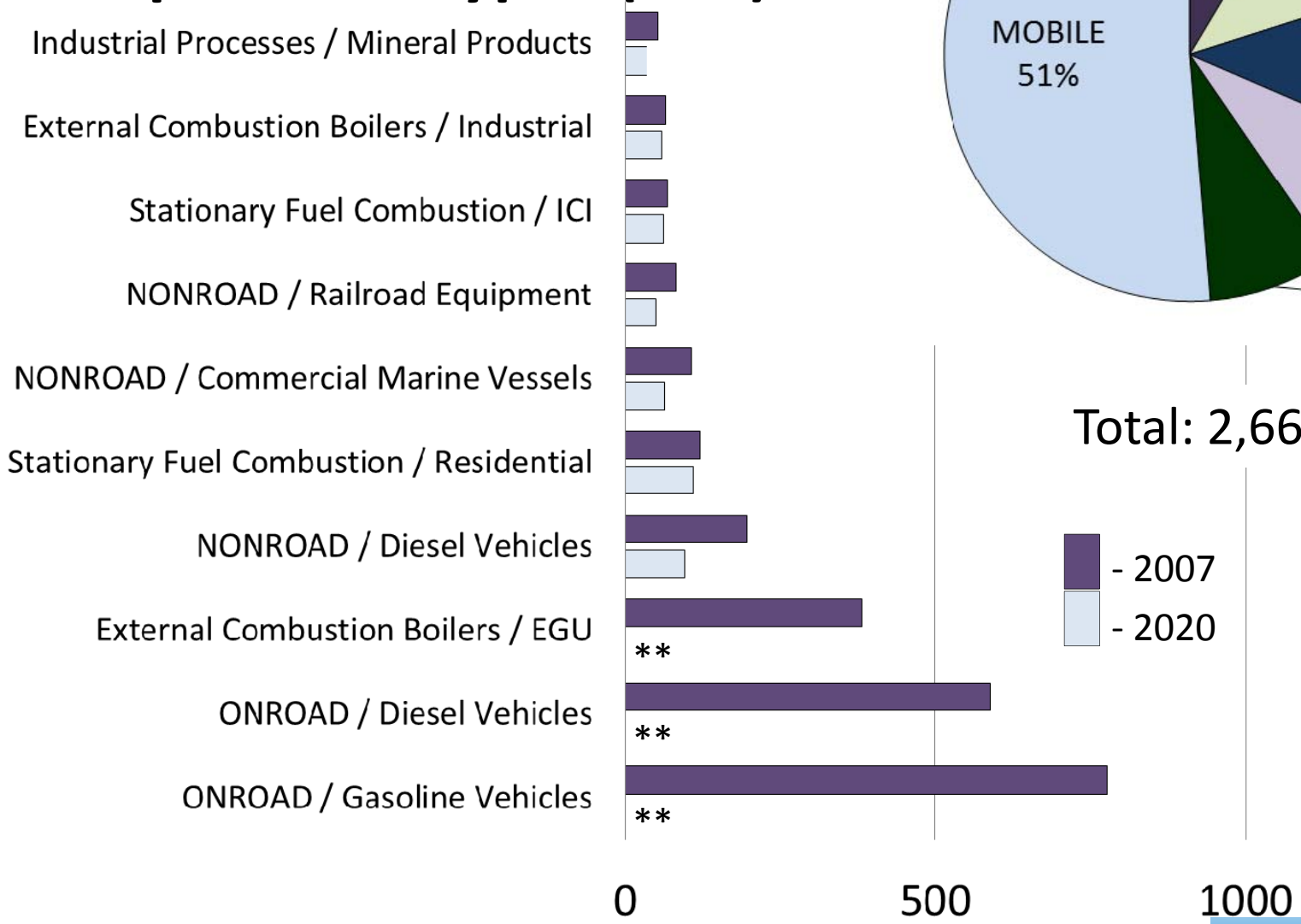
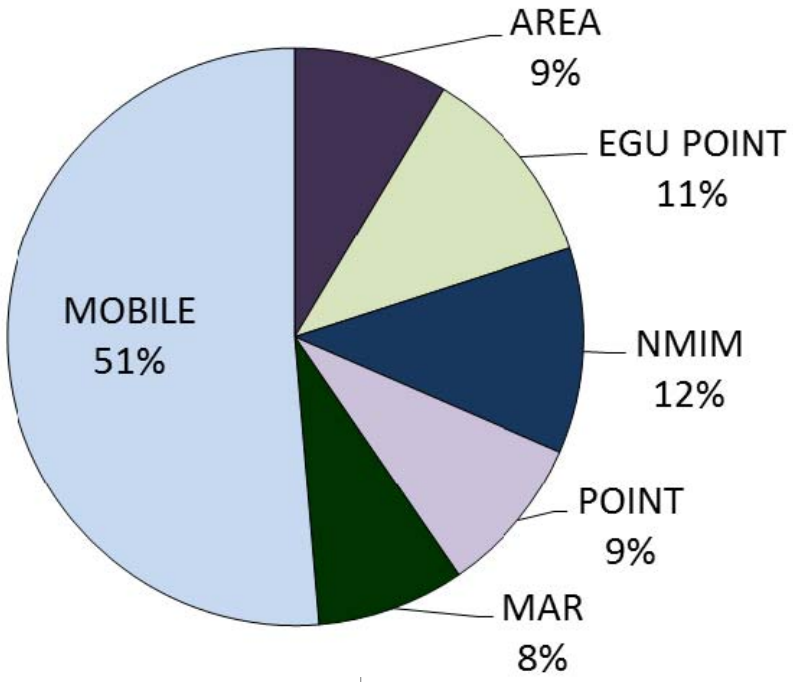
MARAMA 2007 V3
NOX
Top Source Types (SCC)





Total: 2,665,252TPY

** - Data not yet available

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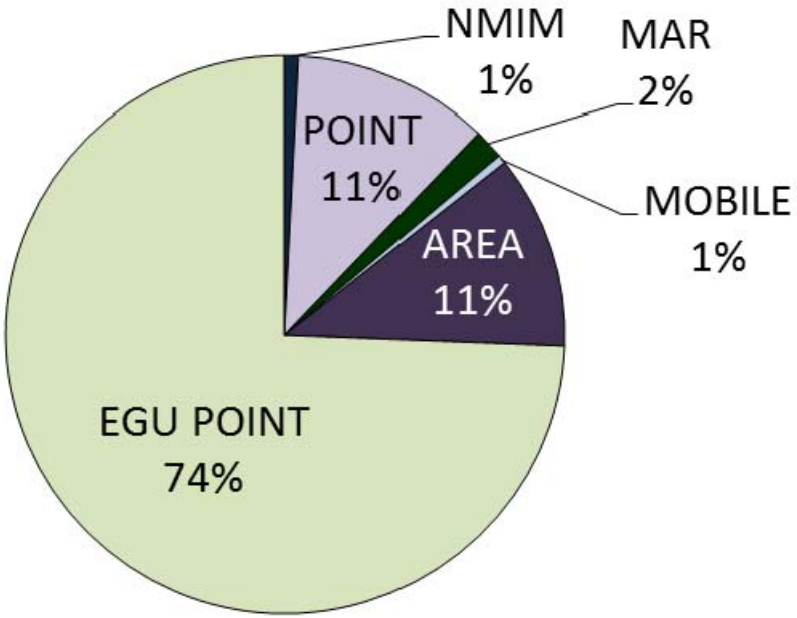
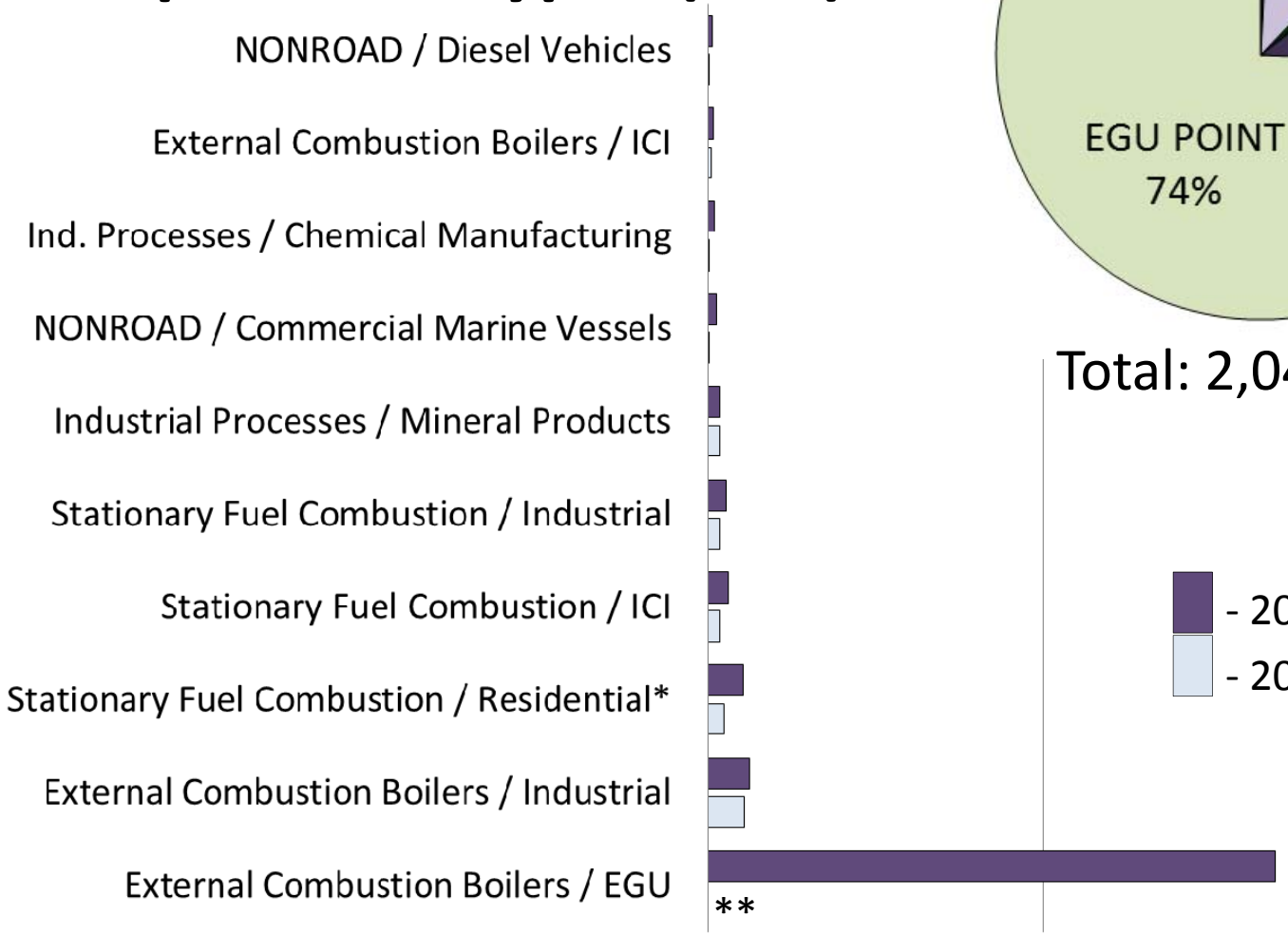
MARAMA 2007 V3
SO2
Top Source Types (SCC)



Total: 2,042,957 TPY



* Predominantly Distillate Oil Burning
** Data not yet available

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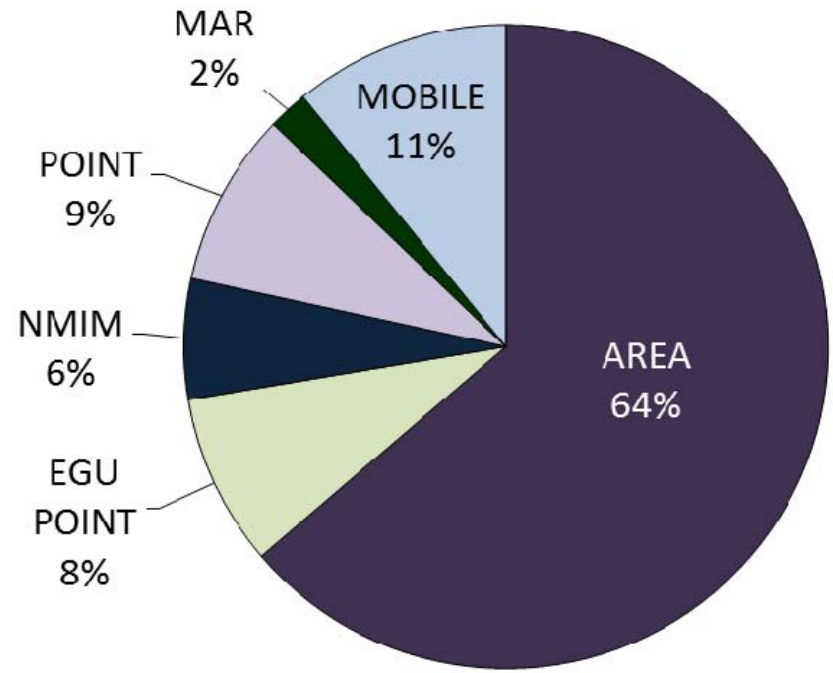
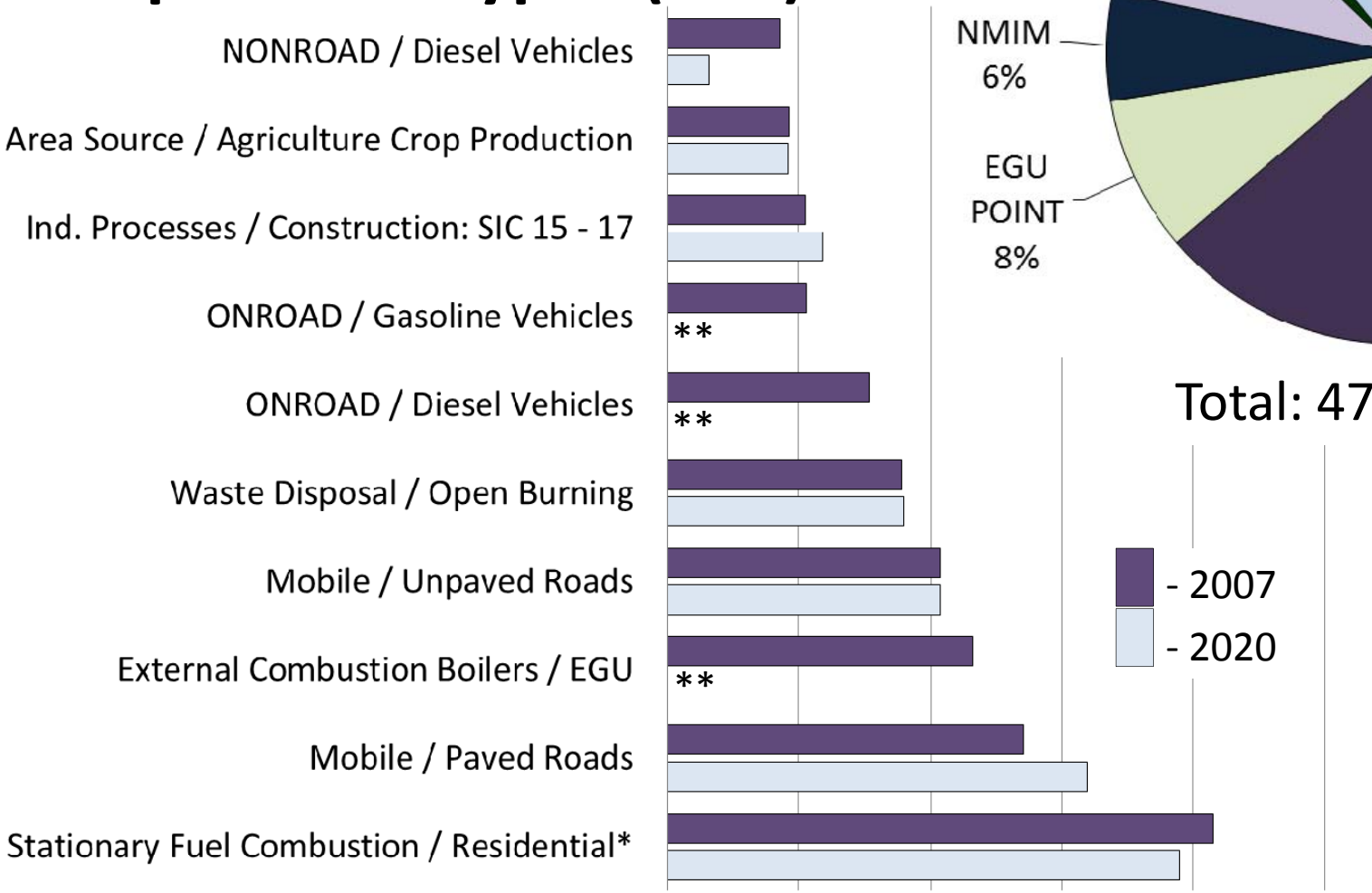
MARAMA 2007 V3
PM2.5
Top Source Types (SCC)



Total: 476,064 TPY



* Predominantly Oil Burning
** Data not yet available

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MOBILE EMISSIONS - MOVES

- **MOVES FOR 2007 COMPLETE**
  - **Used in Level 2 modeling**
- **MOVES FOR 2020 NEARING COMPLETION**
  - **Should be available soon**

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ERTAC EGU Growth

- **Eastern Regional Technical Advisory Committee (ERTAC)**
- **Collaboration:**
  - NE, Mid-Atlantic, SE, and Lake Michigan area states;
  - Industry; and
  - Multi-jurisdictional organizations
- **Goal: Methodology to Estimate Electric Generating Unit (EGU) Future Emissions**
  - Conservative predictions of activity
  - Transparent
  - Inexpensive
  - Relies on base year activity data
  - Flexible

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What You Can Expect….

- **Provides growth estimates for**
  - USEPA Clean Air Markets Division (CAMD) reporting units
  - Coal, oil, natural gas
- **Regional boundaries delineate NYC**
  - Flexibility in growth rates
  - No unit retired w/o state input
- **Future year hourly temporal profiles for**
  - NOx, SO2, activity data
  - New units that didn't operate in the base year

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Progress So Far ....

- **Development:**
  - Methodology created, documentation crafted
  - Preprocessor running on Linux and Windows platforms (GA, VA, MARAMA, IN, NJ, OTC)
  - Working out bugs – Adjusting methodology as needed; limited resources
- **Estimating Growth in Generation:**
  - Growth rates and regions defined
  - Updating with current AEO; working to update growth rates table and crosswalk
- **Input File Development:**
  - 2007 unit file and known future controls file reviewed by states
  - Further state input required

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How does the algorithm work? Inputs

- **Starting Point: Base Year Clean Air Markets Div. activity data**
  - Gross load hourly data, unit fuel, unit type, location
  - Units categorized by type, fuel, region
- **States provide known new units, controls, retirements, fuel switches, etc**
- **Energy Information Agency annual energy growth factors**
- **NERC peak growth factors**

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How does the algorithm work? Processing

- Project growth by region: peak and nonpeak
- Adjust growth to account for unit retirements, new units, fuel switches
- Allocate growth on an hourly basis to units by region and type
- Check system integrity: Does enough generation exist to satisfy future needs?
- Check policy: Will units meet program caps?
- Interation

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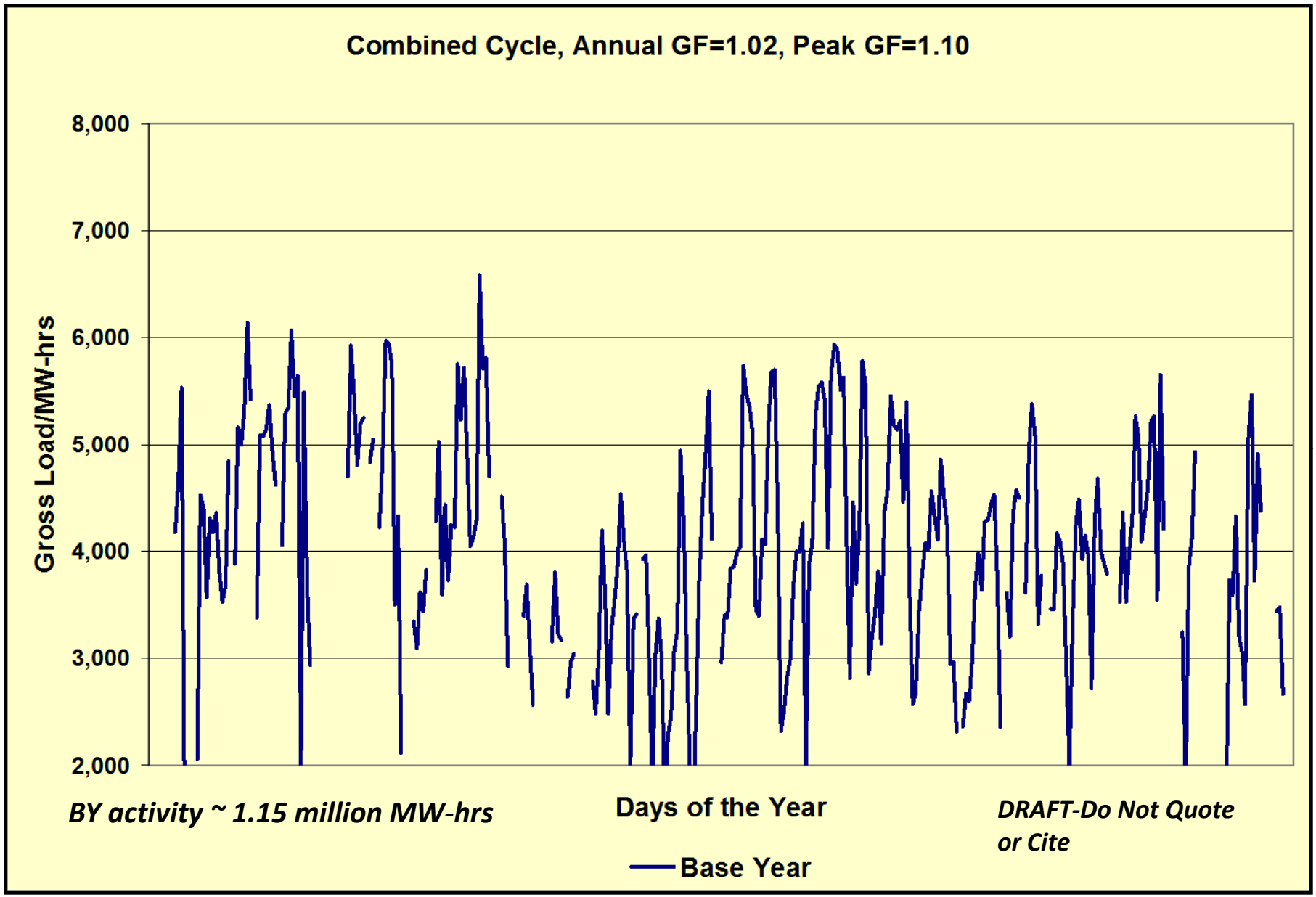
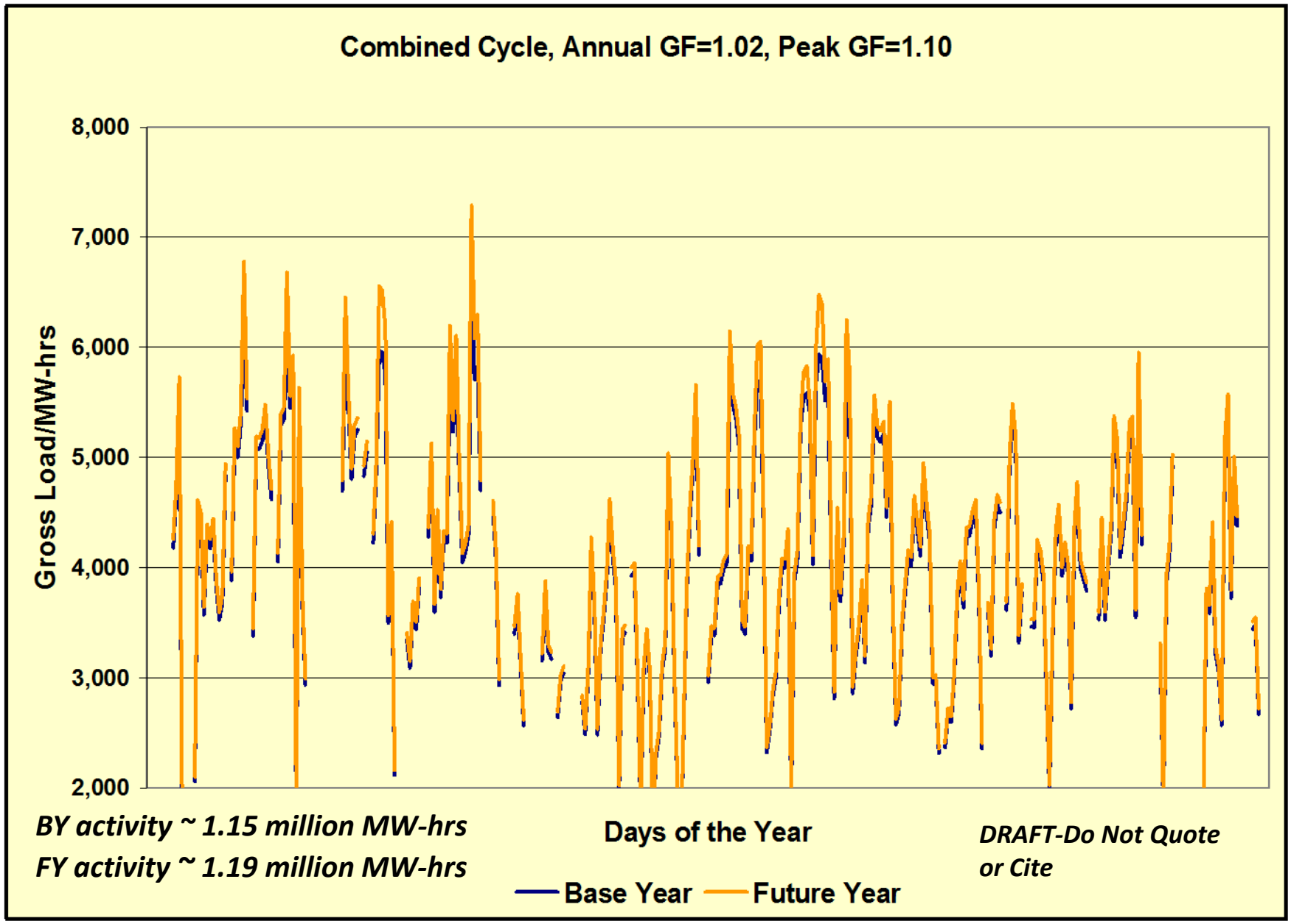
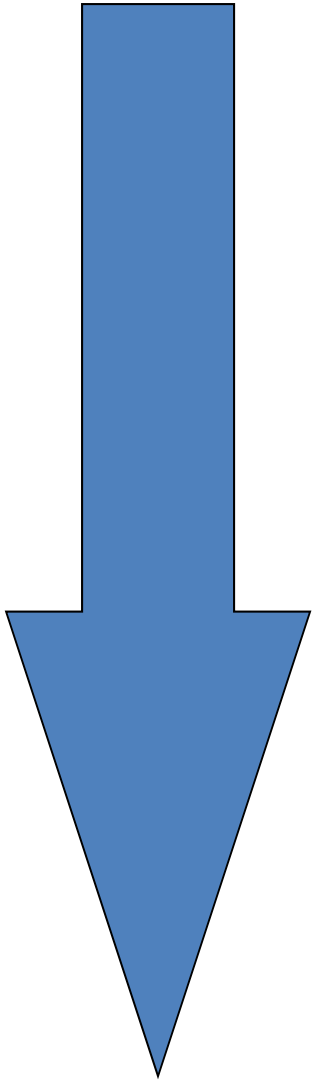
A conceptual example…..



A conceptual example…..



Timeline



- January, 2012
  - Preprocessor debugging
  - Preprocessing of databases
- February & March, 2012
  - Main processor debugging
  - Initial multi-state test runs
- April & May, 2012
  - Update growth factors
  - Documentation updates
  - State review of unit and controls data
- June, 2012
  - State/MJO runs of full input files
  - Results post processing

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