

# **Implementing EPA's Final PSD and Title V Tailoring Rule**

PSTF Subcommittee Meeting

*Thursday, June 17, 2010*

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# EPA's PSD & Title V GHG Tailoring Rule

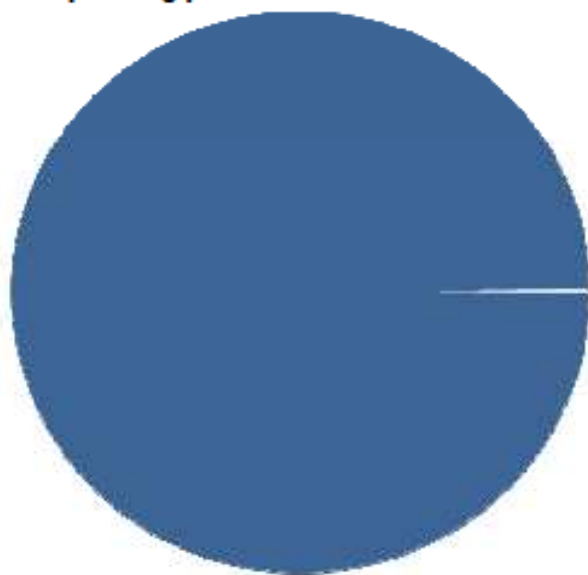
- Purpose:
  - To integrate Greenhouse Gases into PSD and Title V Programs in an Administratively Feasible Manner
  - Tailors the requirements to focus PSD and title V permit requirements on the largest emitting facilities
- GHGs Become “Subject to Regulation” on January 2, 2011, Due to Motor Vehicle Rule
- EPA Proposed the Tailoring Rule on October 27, 2009 and received over 400,000 comment letters
- EPA Issued the Final Tailoring Rule on May 13, 2010



## Operating Permits Burden Reductions

### Without the Tailoring Rule

**6 million** sources would have  
needed operating permits

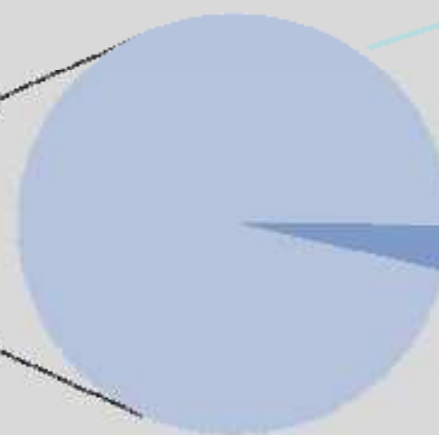


**78%** of total national stationary source GHG emissions  
would be covered

**\$21 billion** annual cost to permitting authorities

### With the Tailoring Rule

**Only 15,550** sources will  
need operating permits



**15,000** sources  
**already** have  
operating permits

**Only 550  
more** sources  
will be subject  
to operating  
permitting for  
GHGs alone –  
but not until  
more than a  
year from now.

**67%** of total national stationary source GHG emissions  
would be covered

**\$69 million** annual cost to permitting authorities

## PSD Permitting Burden Reductions

### Without the Tailoring Rule

**82,000** permitting actions per year would need to address GHGs

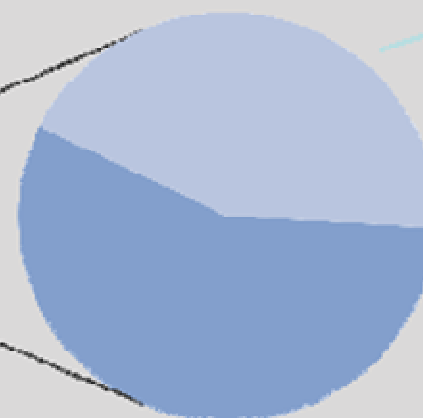


**78%** of total national stationary source GHG emissions are associated with facilities where actions could have occurred

**\$1.5 billion** annual cost to permitting authorities

### With the Tailoring Rule

**Only 1,600** permitting actions per year will need to address GHG



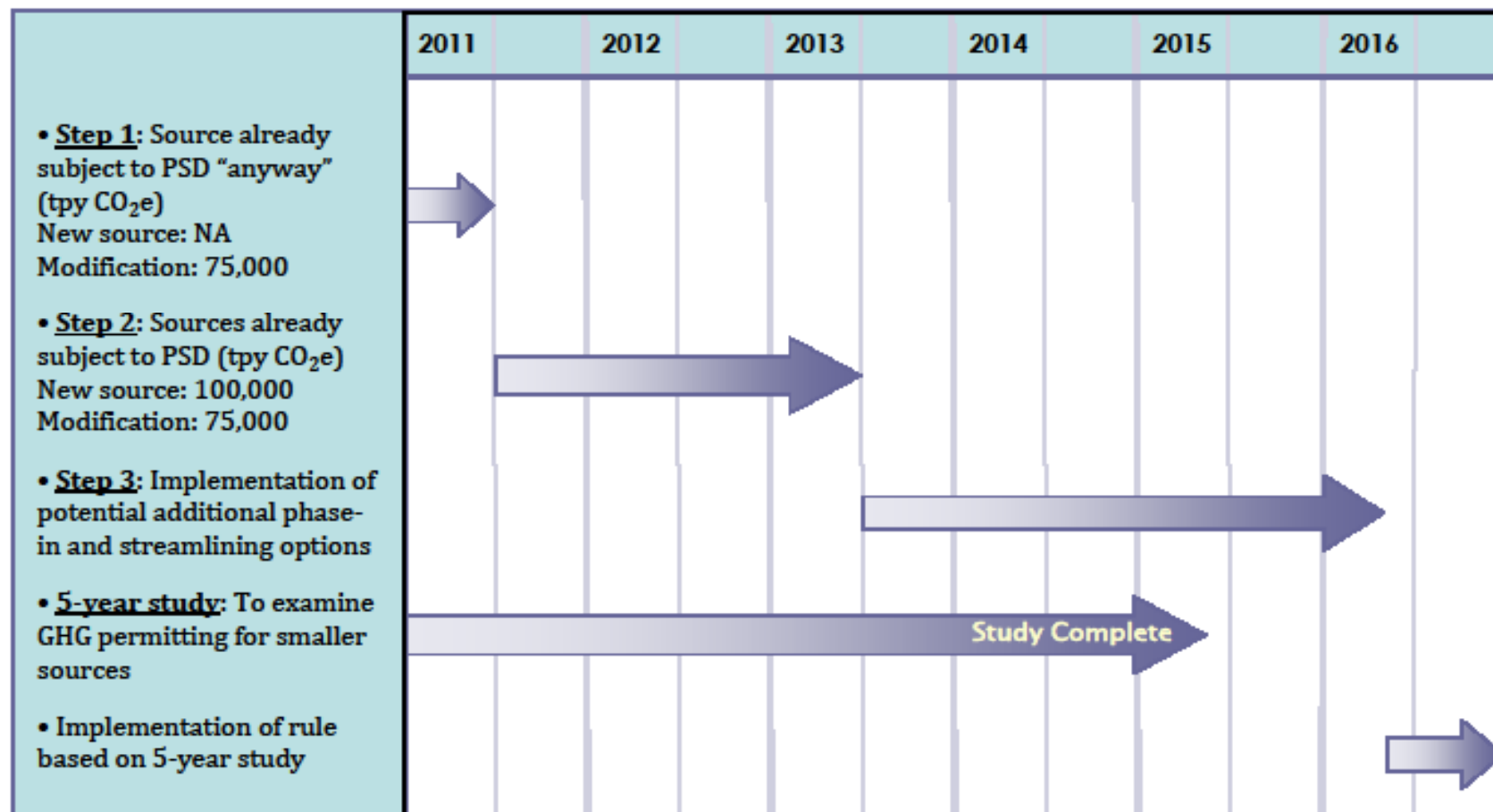
**700** permitting actions that would **already** occur will need to address GHGs

**900 more** permitting actions will occur to address GHGs – but not until more than a year from now

**67%** of total national stationary source GHG emissions are associated with facilities where actions could occur

**\$36 million** annual cost to permitting authorities

## Permitting Steps under the Tailoring Rule



# Final PSD/T-V GHG Tailoring Rule

## Step 1: Permit Issuance Dates of January 2, 2011 – June 30, 2011

- Applies to “Anyway” sources subject to PSD or Title V permitting programs
- Any increase of  $\geq 75,000$  tpy of CO<sub>2</sub>e at a source already subject to PSD or Title V will be subject to PSD (i.e. GHG BACT)
- Only those sources currently with title V permits will address GHGs, and only when applying for, renewing or revising their permits
- EPA’s GHG Mandatory Reporting is not an “Applicable Requirement” under Title V
- No sources will be subject to Clean Air Act PSD and/or Title V permitting requirements solely due to GHG emissions

# Final PSD/T-V GHG Tailoring Rule

## Step 2: Permit Issuance Dates of July 1, 2011 – June 30, 2013

- Sources subject to GHG permitting requirements under step 1 will continue to be subject to GHG permitting requirements

### PSD Permitting

- New projects with emissions of  $\geq 100,000$  tpy of CO<sub>2</sub>e
- Modifications at an existing Major source with increase of  $\geq 75,000$  tpy of CO<sub>2</sub>e

### Title V Permitting

- All new and existing sources with PTE  $\geq 100,000$  tpy CO<sub>2</sub>e
- These newly subject sources must apply within 1 year after becoming subject to the program (on or before July 1, 2012), unless the permitting authority sets an earlier deadline.



# **Final PSD/T-V GHG Tailoring Rule**

## **Step 3: Other Actions**

### **To Be Determined by July 1, 2012**

- The rule establishes an enforceable commitment for EPA to complete another rulemaking by July 1, 2012
- Potential additional phase-in of smaller GHG sources and streamlining options
- If Step 3 established, it will take effect on July 1, 2013
- No permitting requirements for sources <50,000 tpy of CO<sub>2</sub>e
- No permits required for smaller sources until at least April 30, 2016
- Consider permanent exclusion of certain smaller sources





# Final PSD/T-V GHG Tailoring Rule

## Additional Issues

- 5-year study on GHG permitting for smaller sources
  - Complete study by April 2015
  - Complete rule amendments by April 30, 2016

- Pollutants covered under GHG

	<u>Global Warming Potential</u>
▪ Carbon Dioxide (CO <sub>2</sub> )	1
▪ Methane (CH <sub>4</sub> )	21
▪ Nitrous Oxide (N <sub>2</sub> O)	310
▪ Hydrofluorocarbons (HFC-23)	11,700
▪ Perfluorocarbons (PFC-14)	6,500
▪ Sulfur Hexafluoride (SF <sub>6</sub> )	23,900

- The aggregate sum of these six GHGs is the identified air pollutant in EPA's Light-Duty Vehicle Rule, and the associated Endangerment Finding and Cause or Contribute Finding



# Comparison: Proposed & Final GHG Tailoring Rule

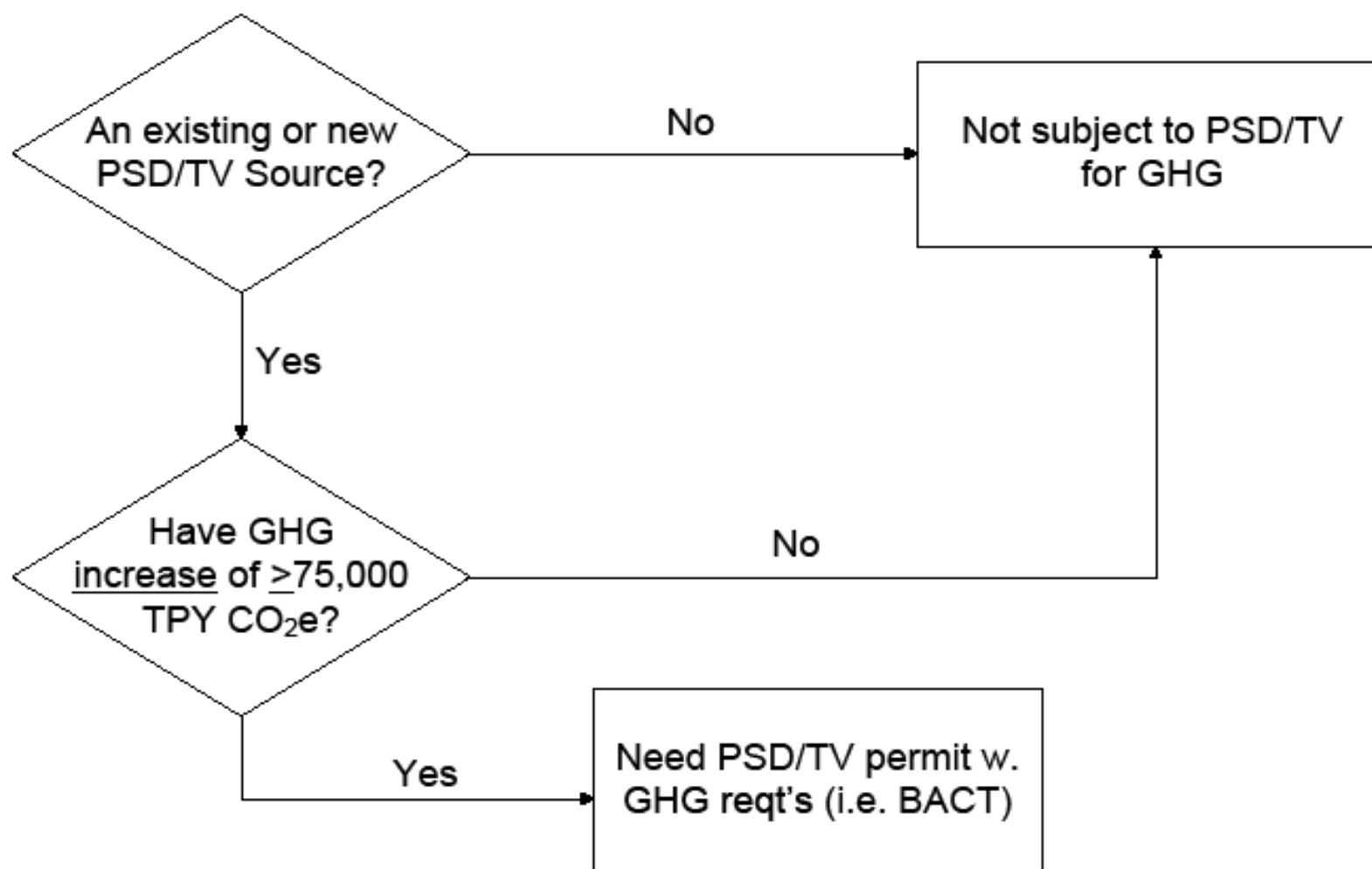
Proposed	Final Rule (May 13, 2010)	
First Phase (6 years period)	Step 1: 1/2/ 2011 – 6/30/2011	Step 2: 7/1/ 2011 – 6/30/ 2013
Title V		
25,000 tpy of carbon dioxide CO <sub>2</sub> e	Covers Existing TV Sources with modification $\geq$ 75,000 tpy CO <sub>2</sub> e	All sources $\geq$ 100,000 tpy CO <sub>2</sub> e
PSD		
A new facility or a major modification > 25,000 tpy CO <sub>2</sub> e Modifications at existing sources between 10,000 and 25,000 tpy CO <sub>2</sub> e.	Covers Existing PSD Sources with modification >75,000 tpy CO <sub>2</sub> e	New construction projects with $\geq$ 100,000 tpy CO <sub>2</sub> e Modifications at existing facilities with increase of $\geq$ 75,000 tpy CO <sub>2</sub> e
Second Phase  Conduct study and propose revised applicability		Step 3 Consider permanent exclusion of sources <50,000 tpy of CO <sub>2</sub> e
Effective upon Adoption	Effective on 01/02/11, the same date as the effective date of motor vehicle rule	



# GHG Tailoring Rule

## Step 1 (January 2 to June 30, 2011)

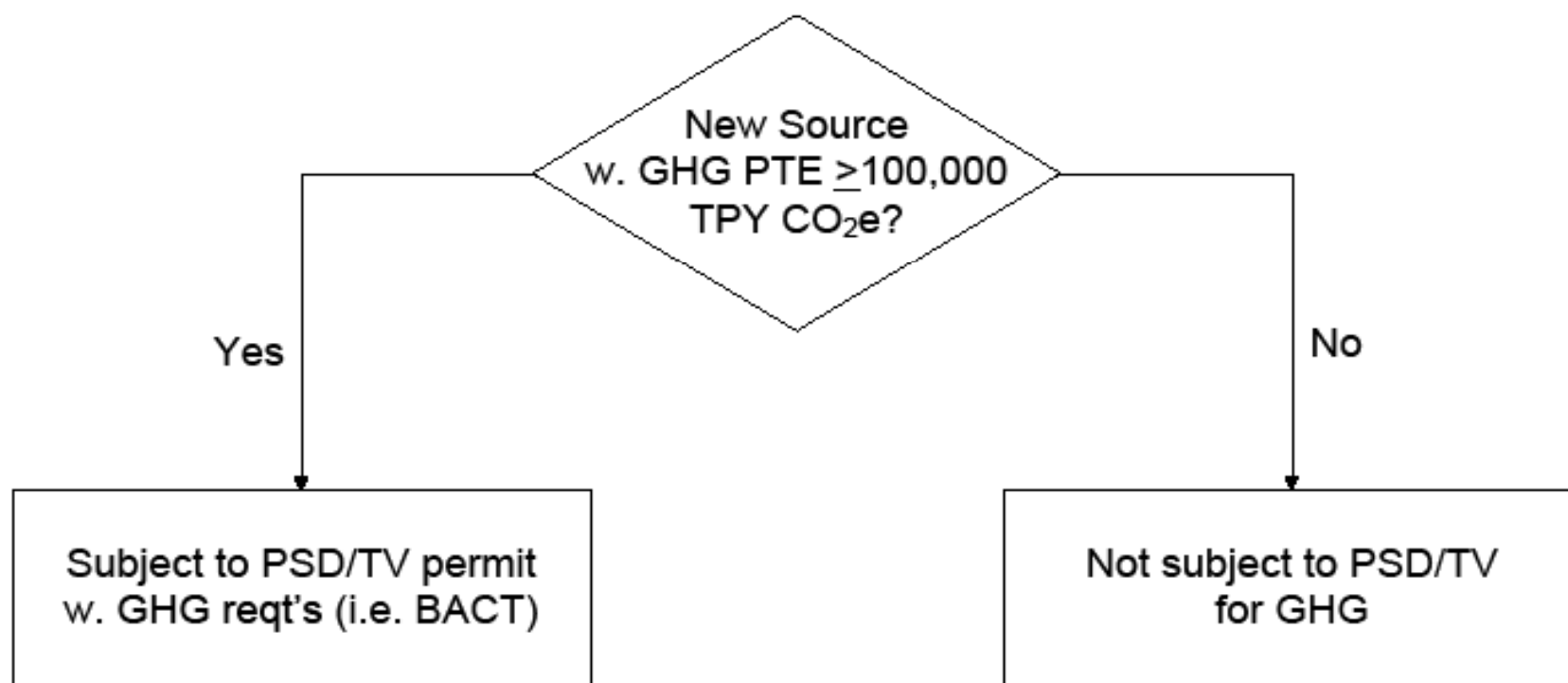
Applicability  
New & Existing Sources



# GHG Tailoring Rule

## Step 2 (July 1, 2011 - June 30, 2013)

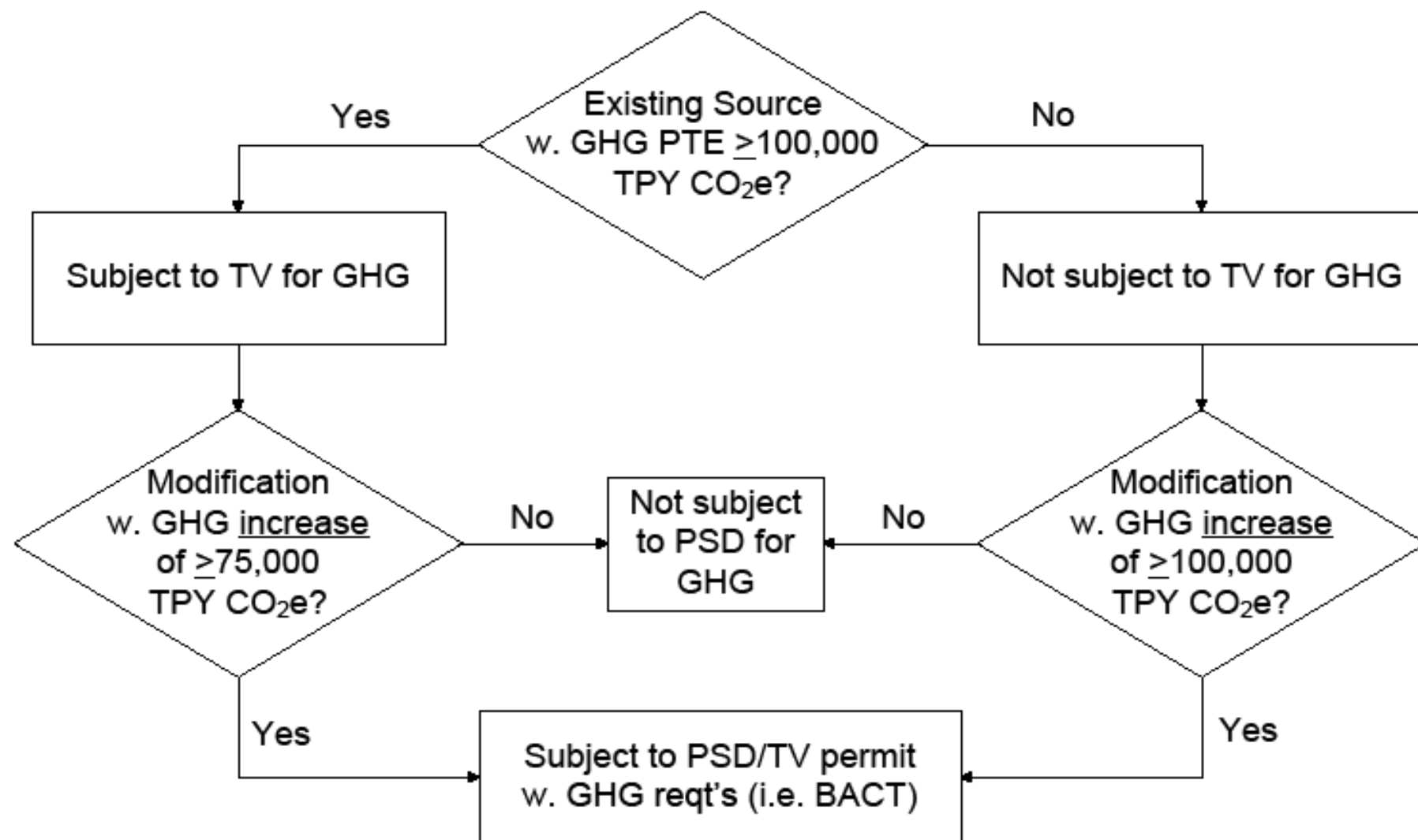
Applicability  
New Sources



# GHG Tailoring Rule

## Step 2 (July 1, 2011 - June 30, 2013)

Applicability  
Existing Sources



# GHG Tailoring Rule Impacts – Nationwide

Step 1: “anyway” sources = 240 PSD Permits +  
448 PSD Modifications annually trigger  
GHG BACT

Step 2: 550 new “major” sources needing Title V  
permits  
≈ 900 new PSD modifications annually  
for GHGs alone

# EPA's Estimated Annual **Cost** of the GHG Tailoring Rule

	Title V	PSD
Permitting Agencies	Additional \$ 4 million /Yr	Additional \$ 24 million / Yr
Sources	\$46,350/permit \$25.5 million (over 3 yrs for 550 New Permits)	\$84,500/permit \$76 million (for 900 PSD Permit Mods.)

# Potential PSD Sources Affected in Steps 1 & 2

- Power Plants
- Refineries
- Large Industrial Operations (Cement Facilities)
- Landfill Operations (Biogenic CO<sub>2</sub> fugitives?)
  
- Small Commercial and Industrial Operations are shielded from the PSD & Title V requirements strictly due to their GHG emissions



# Projects Triggering PSD/TV for GHG

## GHG Emissions of 100,000 TPY of CO<sub>2</sub>e

- Boilers - 195 MMBtu/hr (NG-Fired @ 8,760 hrs/year)

<u>NOx Equivalent</u>	
<u>ppm (corrected to 3% O<sub>2</sub>)</u>	<u>Mass Emissions (TPY)</u>
7	7.4
9	9.5
30	31.6

- Gas Turbines

- 18 MW (Simple Cycle – 10,389 Btu/kW-hr)
- 25 MW (Combined Cycle – 7,598 Btu/kW-hr)



# PSD Applicability

- New or Modified Sources
  - Emission Increase of 100 / 250 TPY for Listed / Unlisted Source Categories
- Significant Emission Increase at a Major Stationary Source

	<u>CO</u>	<u>VOC</u>	<u>NOx</u>	<u>SO2</u>	<u>PM</u>	<u>PM10</u>
Significant Threshold (TPY)	100	40	40	40	25	10

Other Toxics  $\leq$  0.6 TPY

- Any Net Emission Increase at a Major Stationary Source Located within 10 km of a Class I area with impact of  $> 1.0 \text{ ug/m}^3$  (24-hour average)



# Examples of Projects which could Trigger PSD Evaluation

Cogeneration			NOx (Tons/yr)	CO (Tons/yr)	CO2 (Tons/yr)*
Rating (MW)	Turbine (MMBTU/hr)	Duct Burner (MMBTU/hr)	Trigger: 40 tpy	Trigger: 100 tpy	Trigger: 75,000 tpy
44	509	132	21.3	14	220,472
85	1070	510	52.3 (use a cap of 39.9)	33	425,911

\* Using EPA's Emission factor of 0.572 kg CO2/kwh (Table IId, Emission Factors for Electricity Use by Project Equipment by eGrid (2004), Climate Leaders - Commercial Boilers)

## Examples of Projects which could Trigger PSD Evaluation at a Landfill (based on source test data)

Equipment	Rating MM BTU/Hr	Inlet CH4 concen- tration	Inlet Fuel rate (dscfm)	CO2 (tpy)	NOx (tpy)
Power Generating Boiler	260	34%	12,324	218,296	30
Flare	99.2	44%	3,396	93,627	20
Steam Generating Boiler	49.2	25%	3,278	78,030	8

# GHG Tailoring Rule Authority

## 60 Day Letters

- **Each state is required to submit a letter to appropriate EPA Regional Administrator within 60 days after the date of publication of the Tailoring Rule in Federal Register (by August 2, 2010)**
  - States should explain whether they will apply the meaning of term “subject to regulation” as established by EPA for GHGs for both PSD and Title V
  - If yes, whether state intends to do so without undertaking regulatory or legislative process
  - If state must revise its statutes or regulations to implement Tailoring Rule, provide an estimate of the time needed to do so

**EPA will propose a new rule in August/September 2010 for states which will not have authority by January 2, 2011 to avoid construction bans**



# Implementation of GHG Tailoring Rule by SCAQMD

- **Title V Rules**

- Amend “Rule 3001 – Applicability” to change the definition of major source to incorporate GHGs.
- Amend “Rule 3008 – Potential to Emit Limitation” to exempt synthetic minor sources from Title V permits.

- **PSD Rules**

- Amend “Rule 1702 – Definitions” to incorporate GHGs.

- **Title V Permits**

- Within 3 years (by July 1, 2014) issue all required GHG Title V Permits for existing sources.



# Compliance with GHG Tailoring Rule

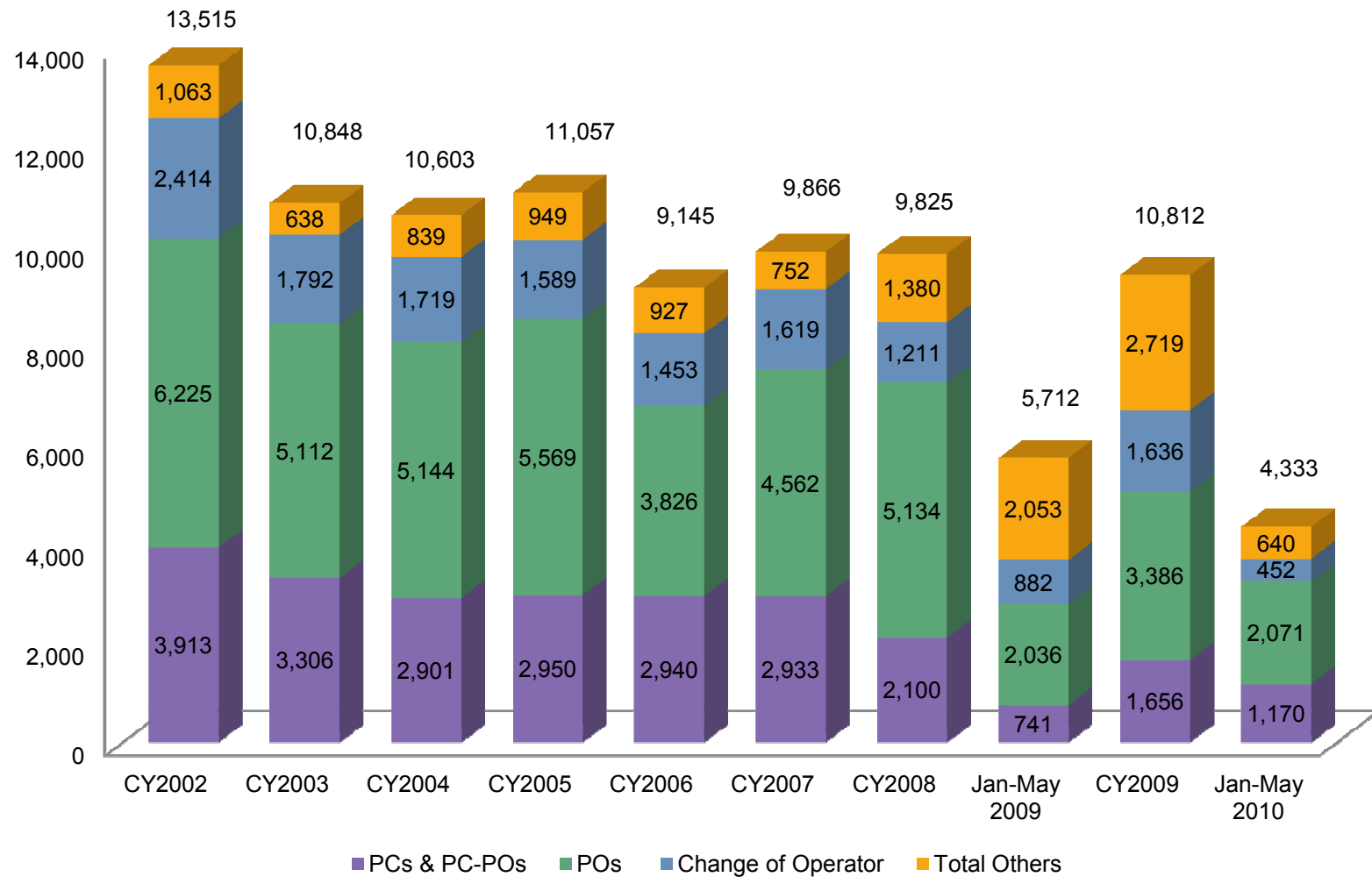
- Existing sources not previously subject to Title V must submit Title V applications within 12 months (no later than July 1, 2012).
- Existing Title V permits that expire:
  - After July 1, 2014 – must be amended by December 1, 2012.
  - Before July 1, 2014 – can be amended upon permit renewal.

# Permit Inventory Status Update

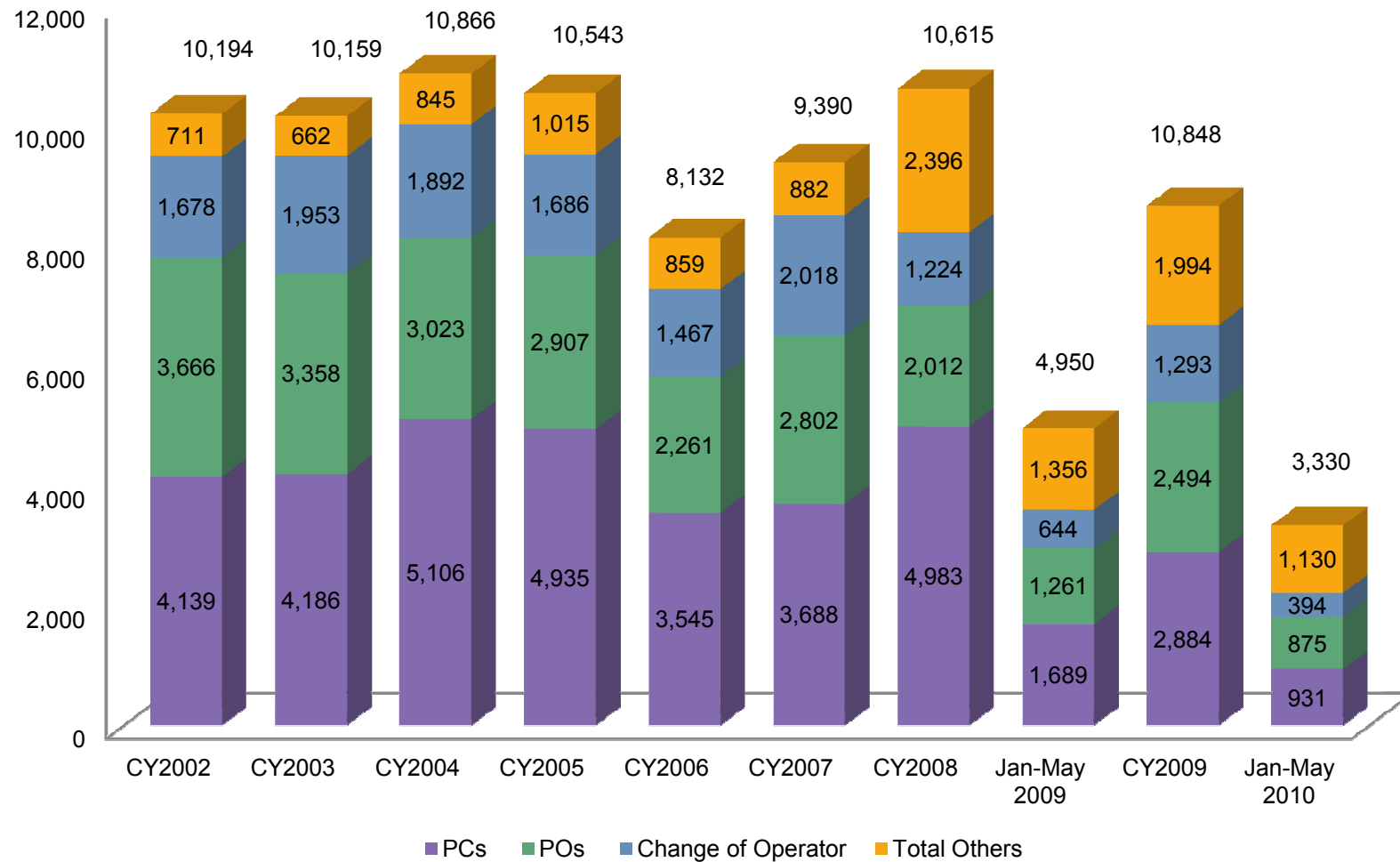
Mohsen Nazemi



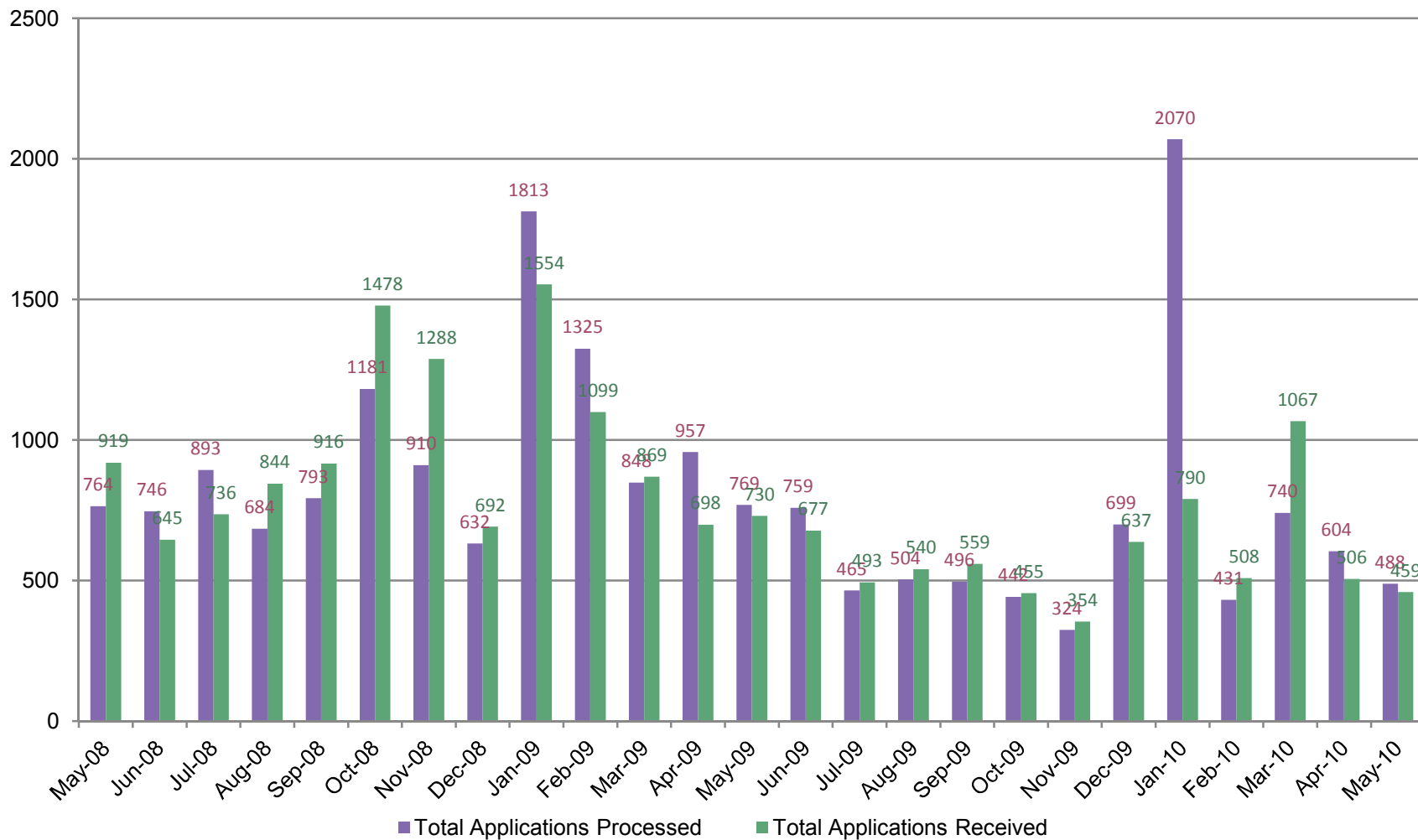
# Permit Inventory Status Update - Applications Processed



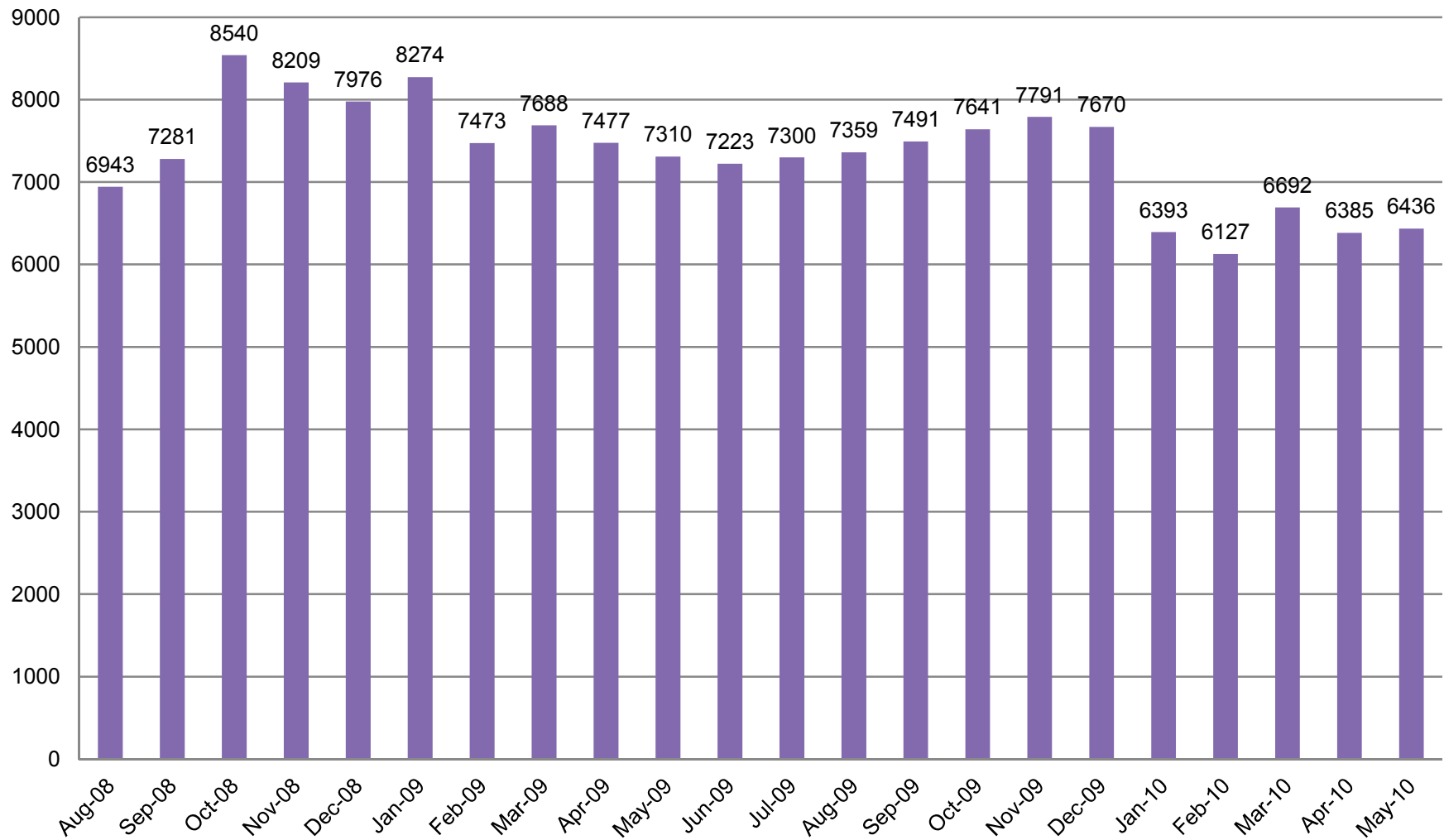
# Permit Inventory Status Update - Applications Received



# Permit Inventory Status Update - Applications Processed & Received

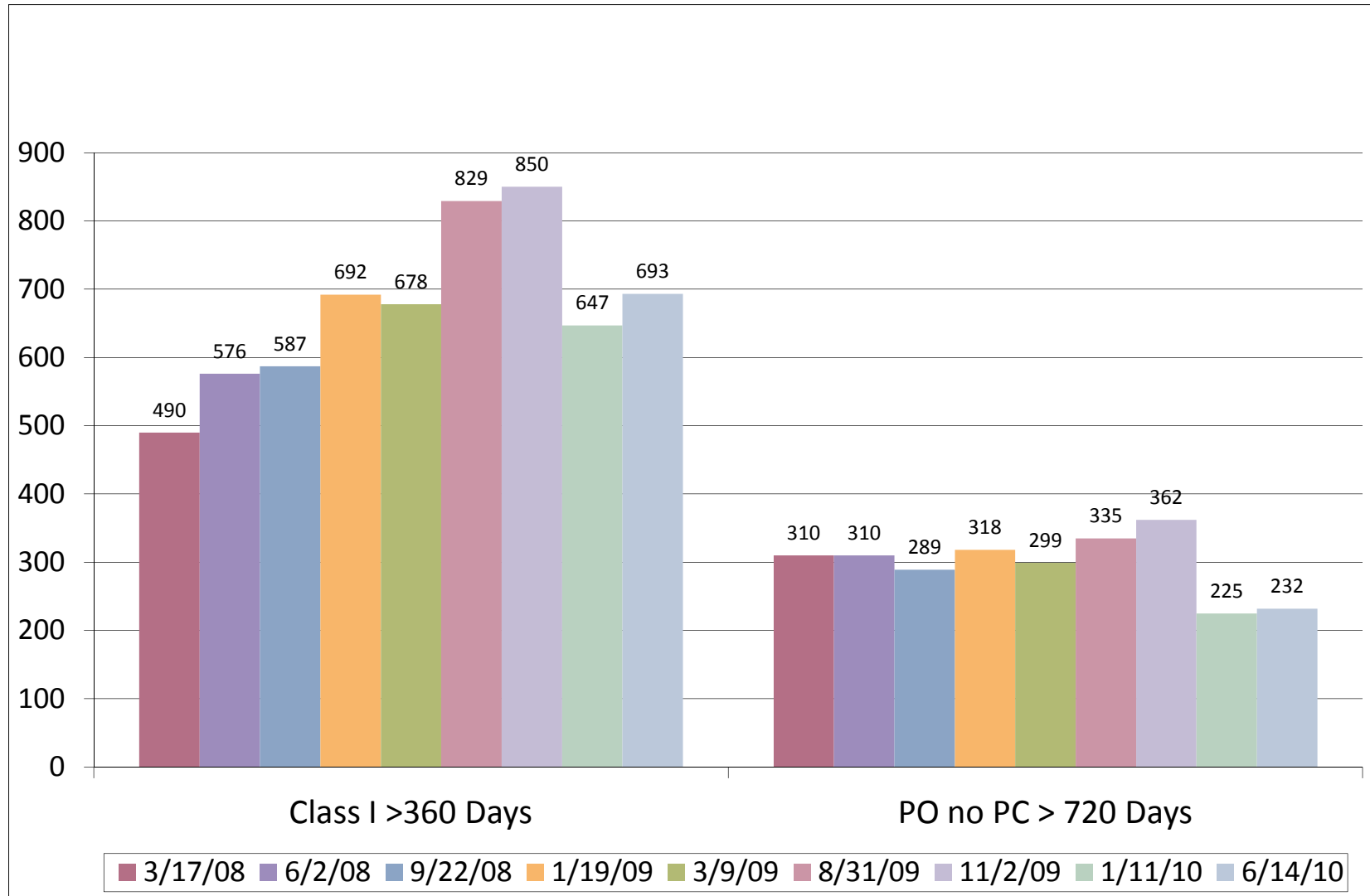


# Permit Inventory Status Update - Applications Pending



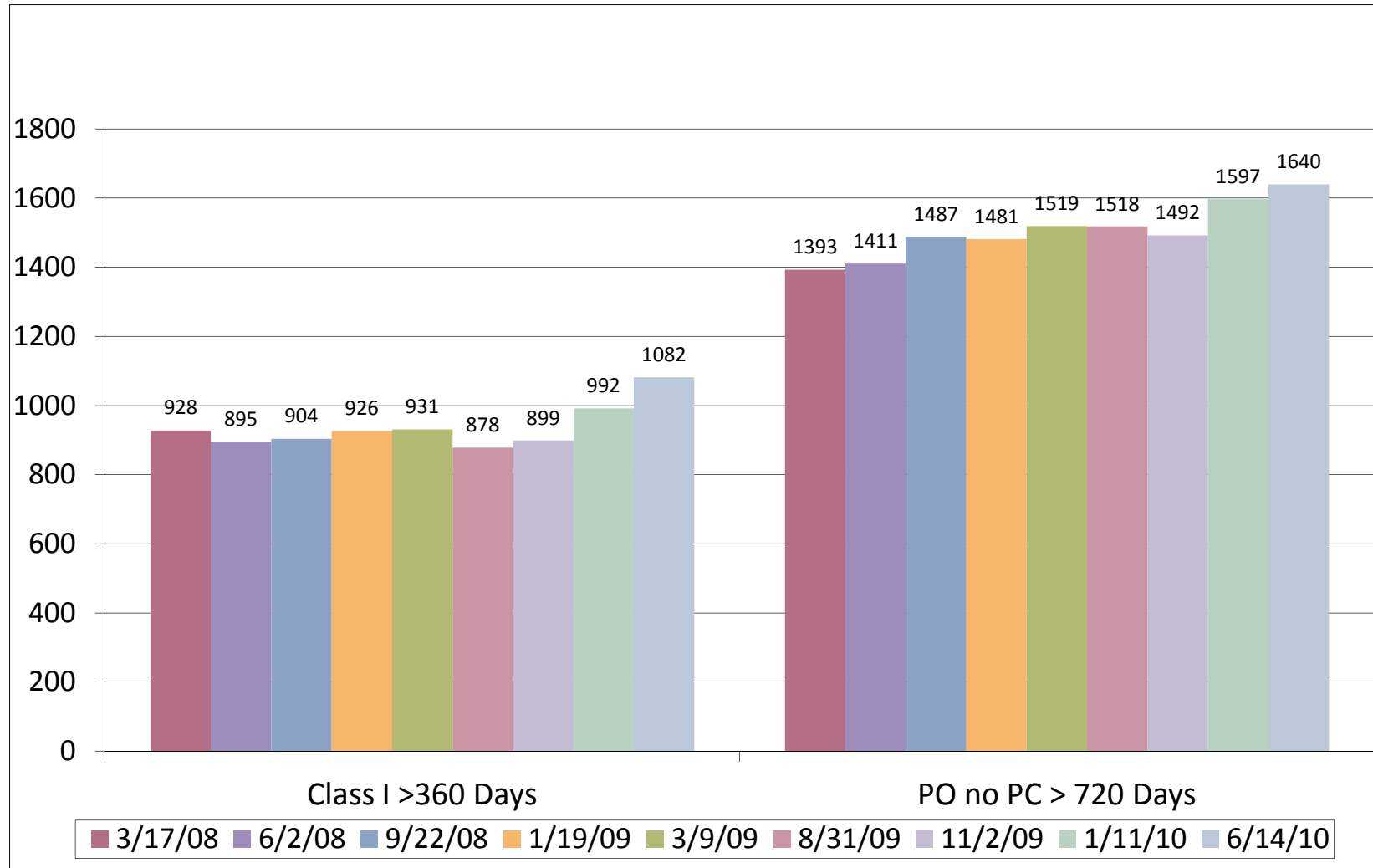
# Permit Inventory Status Update

## Aged Application Report - Application Count



# Permit Inventory Status Update

## Aged Application Report – Average Age



# Initial Title V Permits Status

## June 14, 2010

