

CHP Status in Maryland

Michael Lee

Exeter Associates, Inc.

Columbia, MD

July 8, 2004

Mid-Atlantic CHP Application
Center Roadmapping Workshop

College Park, Maryland

Introduction

- Update on the Status of CHP in Maryland
- Michael Lee, Exeter Associates, Inc.

Topics of Discussion

- Installed CHP equipment in Maryland
- CHP Projects under development
- Regulatory environment
- Utility Relationships
- Environmental permitting
- Financial Incentives

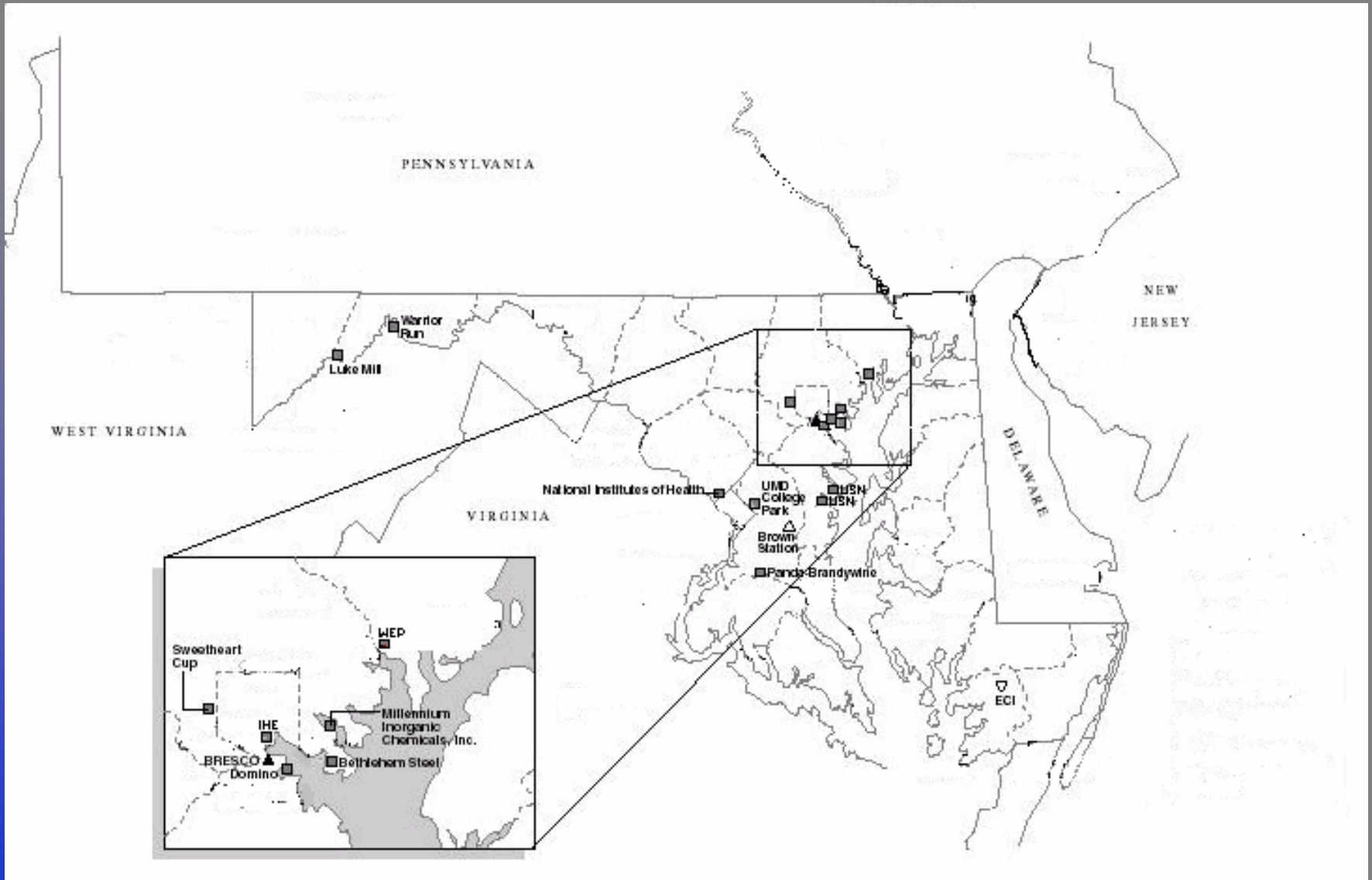
Status of CHP in Maryland

- Installed Base & Projects Under Development
- Sources used to compile information:
 - ◆ EIA-860 Database
 - ◆ Energy & Environmental Analysis, Inc. Database
 - ◆ Maryland Public Service Commission
 - ◆ Maryland Department of Natural Resources, Power Plant Research Program
 - ◆ Web Research

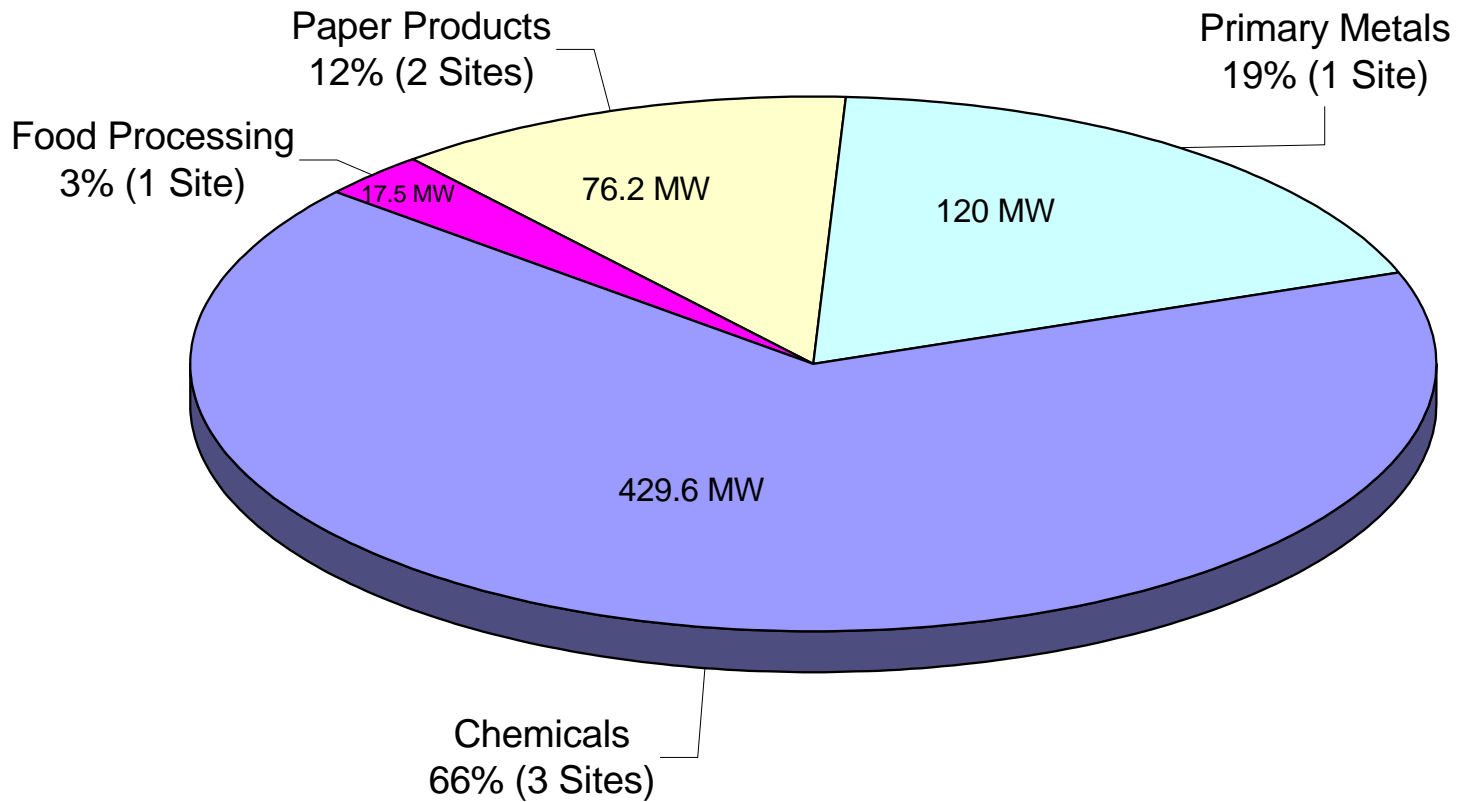
Maryland's Installed CHP Equipment

- 16 Sites
- 718 Megawatts of Capacity
- Sector Breakout
 - ◆ Industrial: 89.5% (643 MW)
 - ◆ Commercial: 10.5% (75 MW)

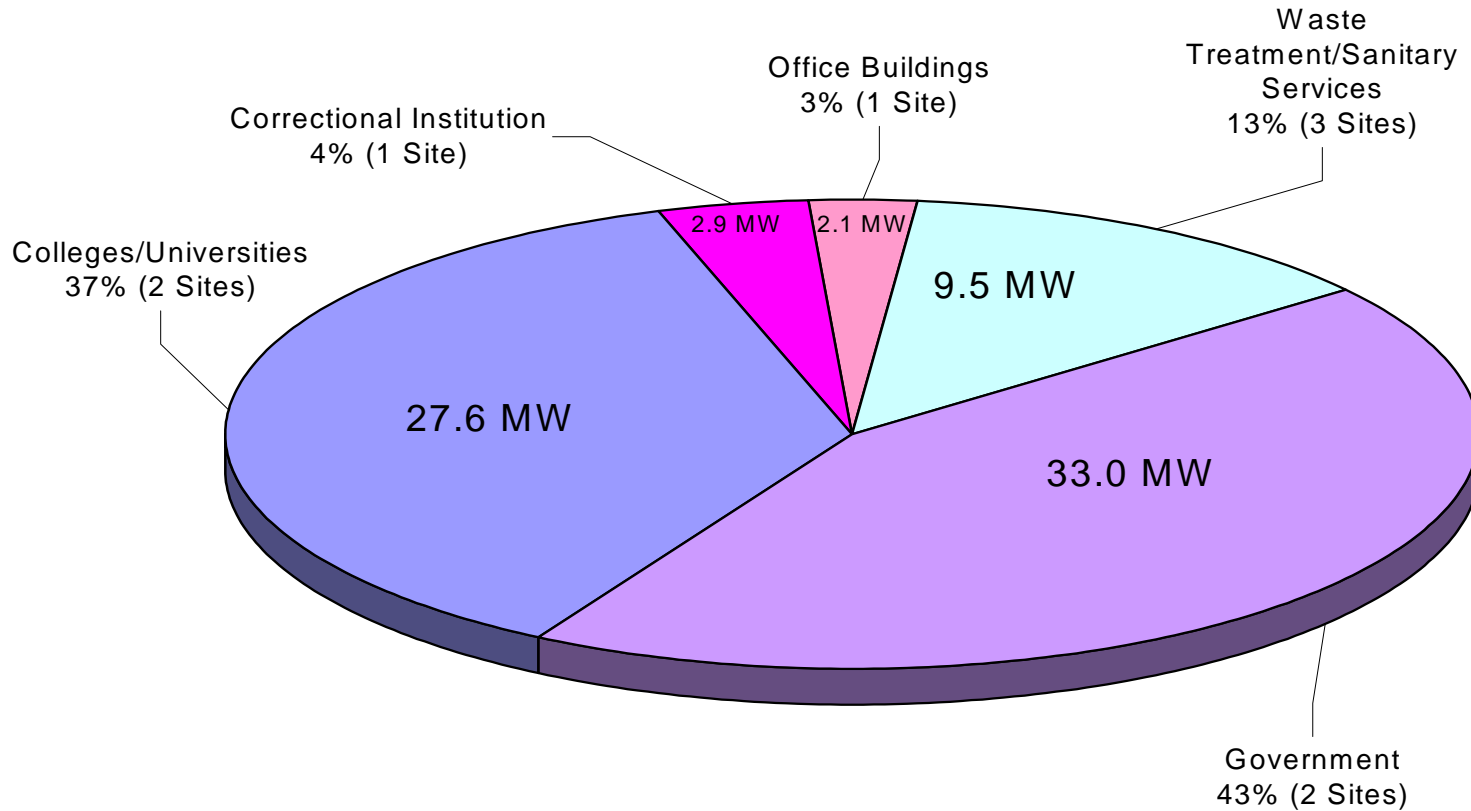
Map of CHP Facilities in Maryland



Industrial



Commercial



Maryland CHP Sites by Service Territory

Service Territory	Plants	Generators	Nameplate Capacity (MW)	Percent Capacity (%)
Allegheny Power	2	3	294.0	40.9
BGE	8	20	167	23.3
Conectiv	1	2	2.9	0.4
Pepco	5	11	254.5	35.4
Total	16	36	718.4	100.0 %

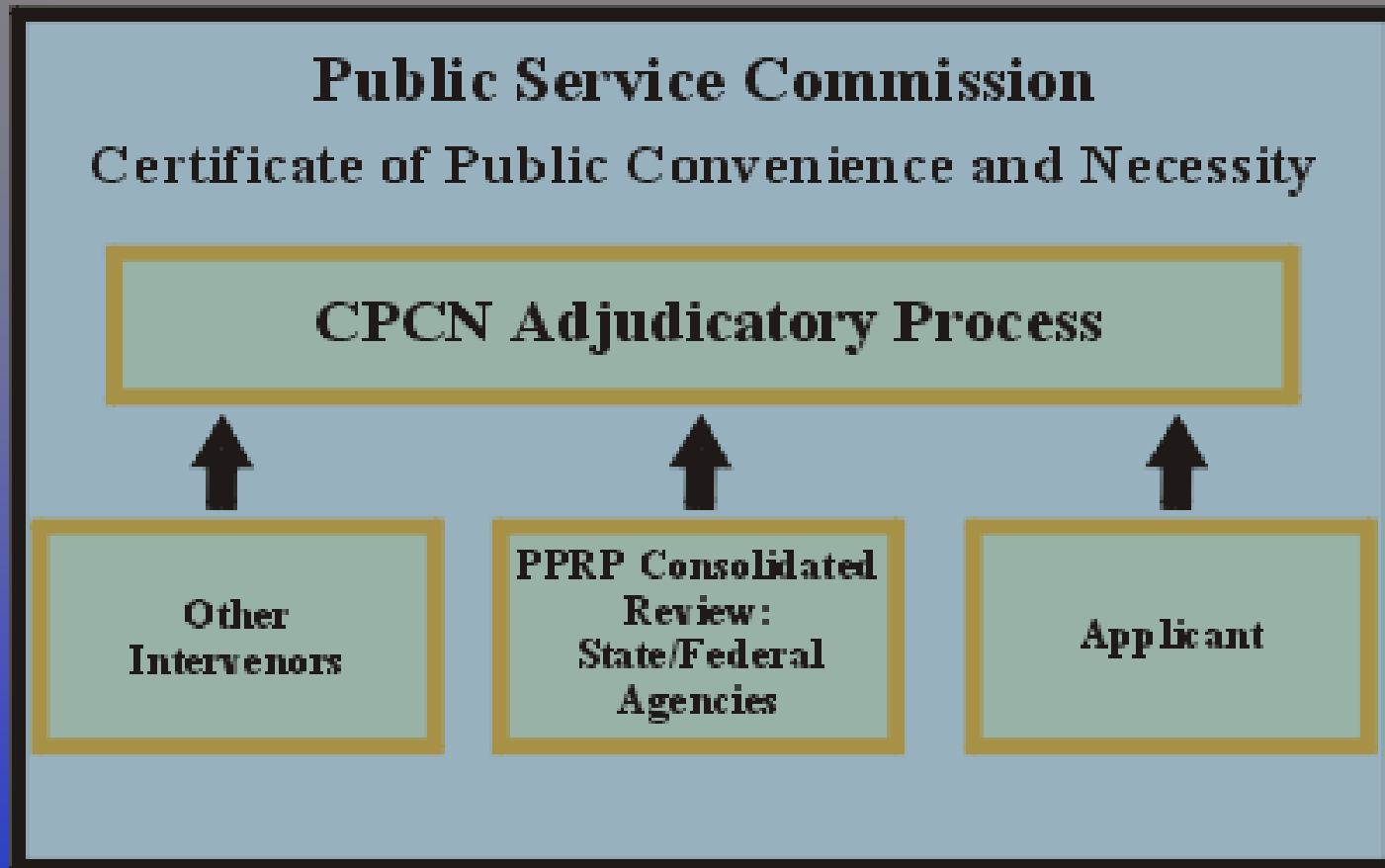
Projects Recently Constructed or Under Assessment

- The Food & Drug Administration's White Oak Campus
5.8 MW Dual Fuel
- MD Dept. of General Services/Towson State
4 MW
- Allen Family Foods, Inc
4 MW
- NSA (Initial stages of evaluation)

Regulatory Environment

- Maryland Public Service Commission
 - ◆ Issue Certificate of Public Convenience and Necessity (CPCN)
 - ◆ CPCN Exemptions
- PJM Interconnection

Certificate of Public Convenience and Necessity (CPCN)



Source: PPRP, Certificate of Public Convenience and Necessity, Available: <http://www.esm.versar.com/pprp/licensing/cpcn/cpcn.html>

Certificate of Public Convenience and Necessity (CPCN)

- Any person building a power plant or transmission line must obtain a CPCN
- The Applicant addresses a range of environmental, engineering and socioeconomic issues
- The Maryland DNR, Power Plant Research Program
 - ◆ Responsible for managing & coordinating the State's comprehensive review
 - ◆ Presents a consolidated set of licensing recommendations to the MPSC
- Local, State, and Federal government agencies have input in the process (e.g., PSC, MDE, MDNR, County Government, Historic Trust, US Corps of Engineers)

CPCN Exemptions

- Passed in 2001 by the General Assembly specifically to assist the establishment of on-site generating stations in manufacturing and commercial facilities
- The full CPCN process was seen as an impediment to these distributed generators and a streamlined approval process was therefore implemented
- MD Department of Environment, Air and Radiation Management Administration permits to construct & operate still apply

CPCN Exemptions

- Generators that can apply for exemptions:
 - ◆ An on-site generation facility
 - ◆ Capacity does not exceed 70 MW
 - ◆ Less than 20 percent of the energy generated is sold to the wholesale market

Utility Environment: The Electric Customer Choice and Competition Act of 1999

- ◆ Allows electric retail customers the opportunity to shop for generation services
- ◆ The traditional local electric utilities sold their assets or transferred them to unregulated subsidiaries
 - ★ Eliminates the utility's incentive to favor its own generation resources, oppose competition, and not negotiate interconnection agreements in good faith
 - ★ Encourages new electricity suppliers to enter and compete (can potentially build CHP plants in-state)

Interconnection Requirements

- Maryland does not currently have formal interconnection requirements for general distributed generation installations, and certification and siting issues are considered on a case by case basis.
- The PSC requires self generators to request an interconnection, operation, and maintenance agreement with the local electric company. CHP sites will need to coordinate planning, construction and/or operation with the local electric company.

PJM Interconnection Requirements

- ◆ Membership can be required
- ◆ Specific guidelines, requirements, and procedures to participate
- ◆ Assigns costs: attachment facilities, network facilities
- ◆ Special cases
 - ★ Expedited process for < 20 MW
 - ★ Behind-the-meter generators
 - Aggregate to > 10 MW
 - Revenue quality metering & telemetry equipment

Standby Service: General

- Must be contracted for in advance
- Generally monitoring and metering equipment will have to be paid for by the customer contracting for standby service
- Protective equipment is required to protect the utility's systems, other customers' property, and also to prevent interference with the utility's service to other customers
- BGE as well has an insurance requirement against liability

Standby Service: General

- BGE & Allegheny Power offer interruptible and firm service
- Allegheny Power offers a lower rate for planned outages
- For BGE and Pepco, the customer determines the capacity level to be contracted for, thereby allowing a CHP customer to consider the reliability of on-site generation equipment and the site's overall ability to shed load

Standby Charges

- Three of the four investor-owned utilities have rate schedules for standby service
 - ◆ Allegheny Power: Schedule AGS
 - ◆ Baltimore Gas and Electric Company: Schedule S
 - ◆ Pepco: Schedule S
- Delmarva Power & Light
 - ◆ Does not offer a standby service for customers with generation “behind-the-meter”
 - ◆ DP&L has recently submitted a standby service Rider S proposal to the Maryland PSC

Status of Standby Service in Maryland

	Standby Service	Proposed	Known Interest in Rate Changes
Allegheny Power	X		
BGE	X		
Delmarva P&L		X	
Pepco	X		X

Cogeneration & Emission Permitting in Maryland

- Any new, modified, or reconstructed fuel-burning equipment is potentially subject to a range of permitting requirements and emission limitations
- All projects are evaluated to determine potential emissions and appropriate levels of required pollution control
- Generally, applicable air quality regulations are governed by following:
 - ◆ Unit capacity
 - ◆ Potential emissions
 - ◆ Location
 - ◆ Fuel type

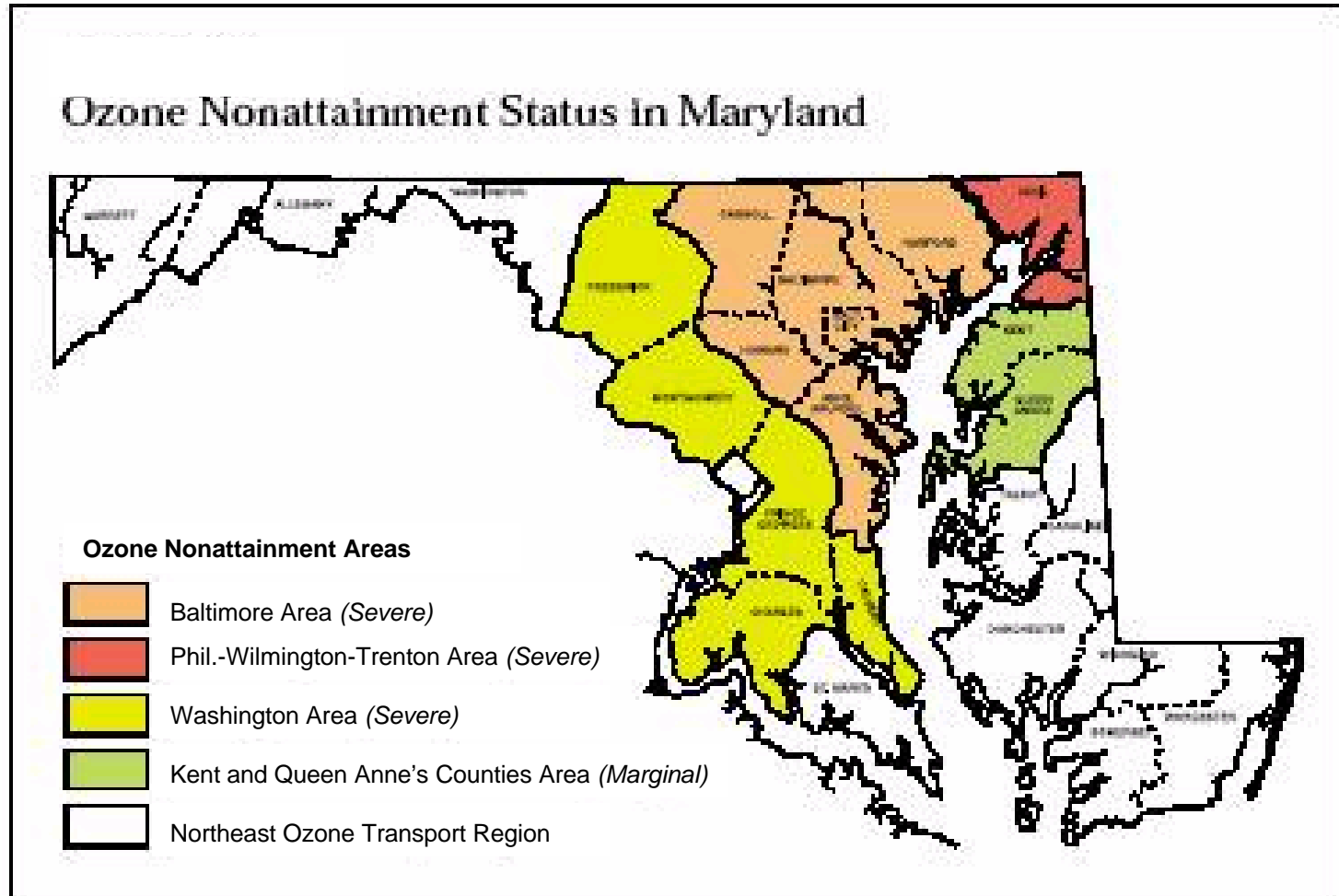
Direction in Permitting

- Maryland Department of Natural Resources, Power Plant Research Program provides CPCN assistance and review, including the pre-application and application stages
- Maryland Department of Environment, Air and Radiation Management Administration provides assistance and oversees the permitting process (CPCN & CPCN exemptions)
- Specific emission regulations are specified in the Code of Maryland (COMAR) (e.g, COMAR 26.11.09 Control of Fuel-Burning Equipment, Stationary Internal Combustion Engines, and Certain Fuel Burning Installations)

National Ambient Air Quality Standards (NAAQS)

- The EPA has defined air quality standards for six criteria pollutants: CO, NO₂, SO₂, PM₁₀, Lead, & O₃
- EPA designated 13 Maryland counties as non-attainment for ozone
 - ◆ Precursors include Volatile Organic Compounds (VOC) & NO_x
 - ◆ EPA reclassified the Washington ozone non-attainment area from serious to severe in March 2003
- Standards are based on potential emissions; facility operators can agree to accept constraints on operations to limit actual emissions
 - ◆ Fuel usage
 - ★ Annual hour a specific fuel is used
 - ★ Fuels used (e.g, natural gas over oil)
 - ◆ Overall annual hours of operation

Ozone Severity Map



Financial Incentives for CHP Installations

- Currently, no public purpose funded energy efficiency programs are specifically available for CHPS
- Maryland Energy Administration
 - ◆ Commercial/Institutional and Industrial efficiency programs
 - ◆ Developing: Energy Efficiency and Economic Development Loan Program (EEEDLP)
 - ★ \$2 million in seed money
 - ★ Funds approximately 500 K per year
 - ★ Business loans for energy efficiency and conservation improvements
 - ★ Uses the cost savings on operating expenses to repay the loans
- Contact for other potential funding opportunities