

Panel Discussion – Technical Performance and Cost of Mercury Control Technology Other Than Sorbent Injection

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Mercury Control Using Autogenic Unburned Carbon As Sorbent

- ◆ **Examples include:**
 - GE-EERC's combustion control method
 - NETL's Thief process
 - CONSOL Energy's Low-Temperature Mercury Control (LTMC) process

Conventional Operation

Bituminous Coal

75% Hg
Emitted

Boiler

Standard Air
Heater

Gas
Side

700 °F

300 °F

ESP

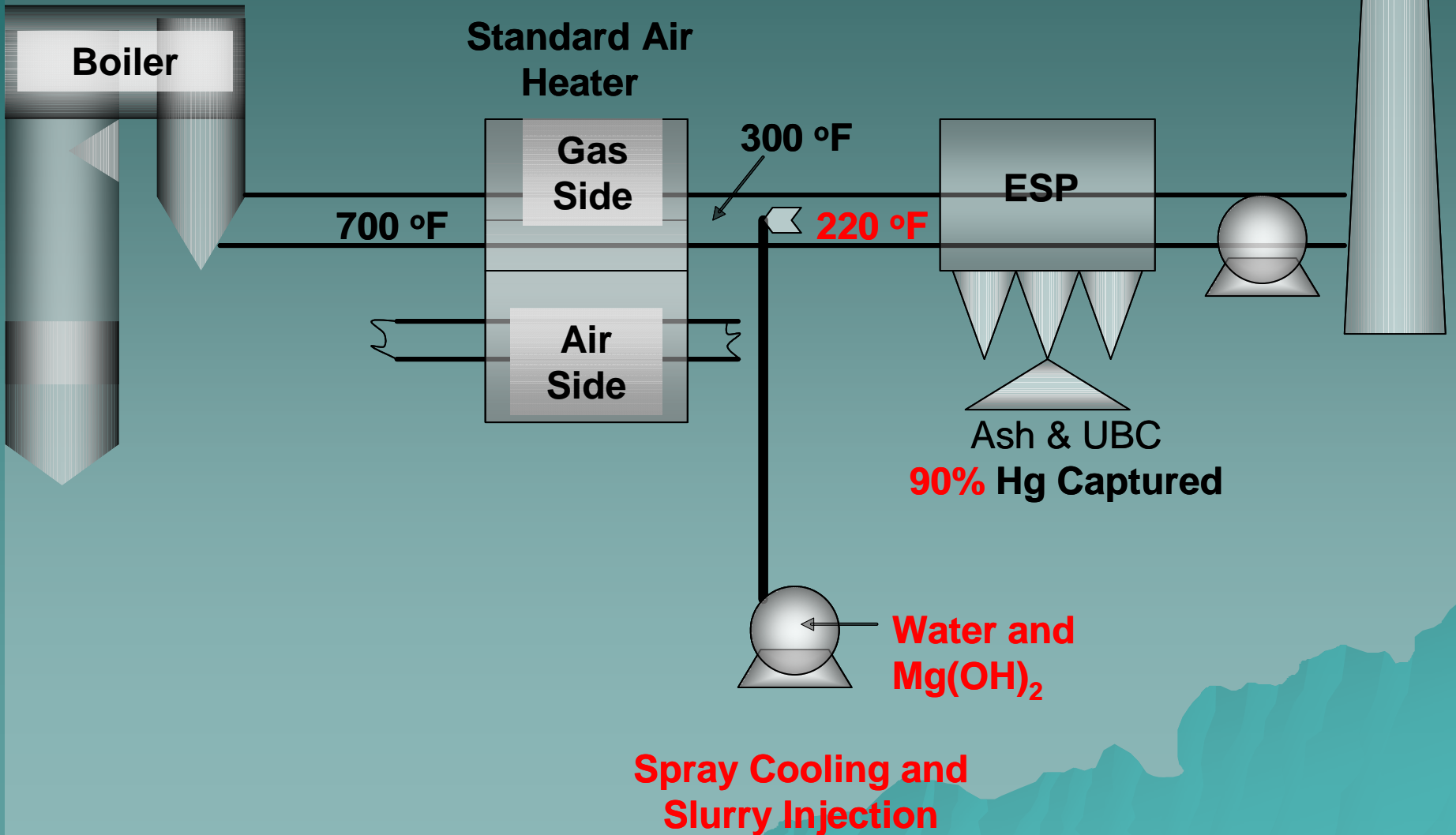
Air
Side

Ash and UBC
25% Hg Captured



Mercury Removal with Deep Cooling of Flue Gas via Water and $Mg(OH)_2$ Spray

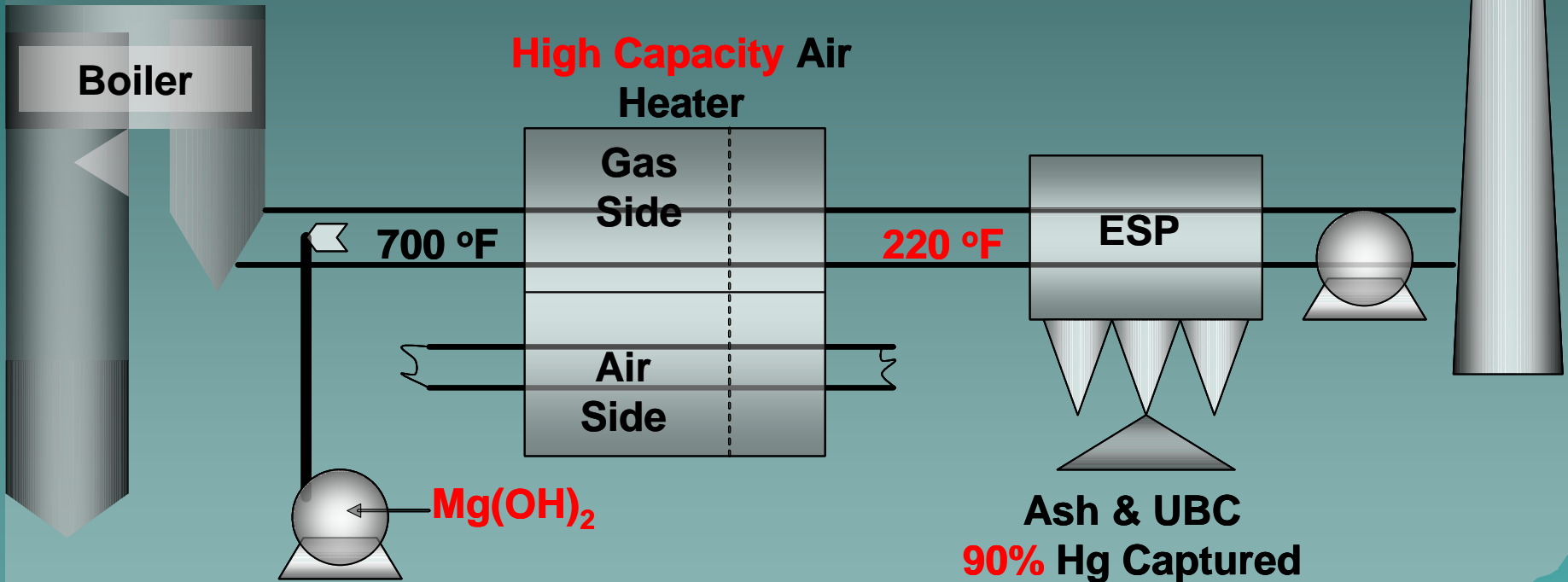
Bituminous Coal



Mercury Removal with Deep Cooling of Flue Gas via Air Heater

Bituminous Coal

**10% Hg
Emitted**



**Slurry
Injection**



What is the Potential Market Size for These Technologies?

- ◆ Databases used:
 - 1999 EPA ICR Part 2 database (ICR)
 - 2003 EIA-767 database (EIA)
 - Q3 2004 EPA Acid Rain Program Preliminary Summary Emission Report (EPA-AR)
 - Energy Velocity database (EV)

Potential Market Size

	<u>No. of Units</u>	<u>Capacity, MWe</u>
All U.S. coal-fired EGUs >25 MWe	1143	328,052
- Eliminate units >400 MWe	-319	-206,863
- Eliminate units with first primary fuel not bituminous coal (EIA)	-145	-25,573
- Eliminate all status except "OP" (EIA)	-44	-2,684
- Eliminate FGD and FBC (EIA, ICR, AR)	-173	-27,903
- Elim. units in ICR, but not EIA and AR	-37	-2,981
- Eliminate units west of Miss. River	-26	-2,233
- <u>Eliminate FGD or Hg controls announced (EV)</u>	<u>-83</u>	<u>-17,665</u>
Candidate units*	316	42,151

*Additional candidates include steam-only units and small EGUs.



Potential Market

- ◆ **316 Units, 42 GWe**
- ◆ **Not broadly applicable, but much more than a niche**
- ◆ **Potential market is limited, but substantial**