



Combined Heat and Power and Cap & Trade



Michael Colvin
Policy and Planning Division

California Public Utilities Commission

September 9, 2009





CHP Plays Two Roles

- In the context of AB 32, Combined Heat and Power (CHP) is both:
 - An emitter of GHG
 - An emissions reduction strategy
- Cap & Trade will impact both





Outline

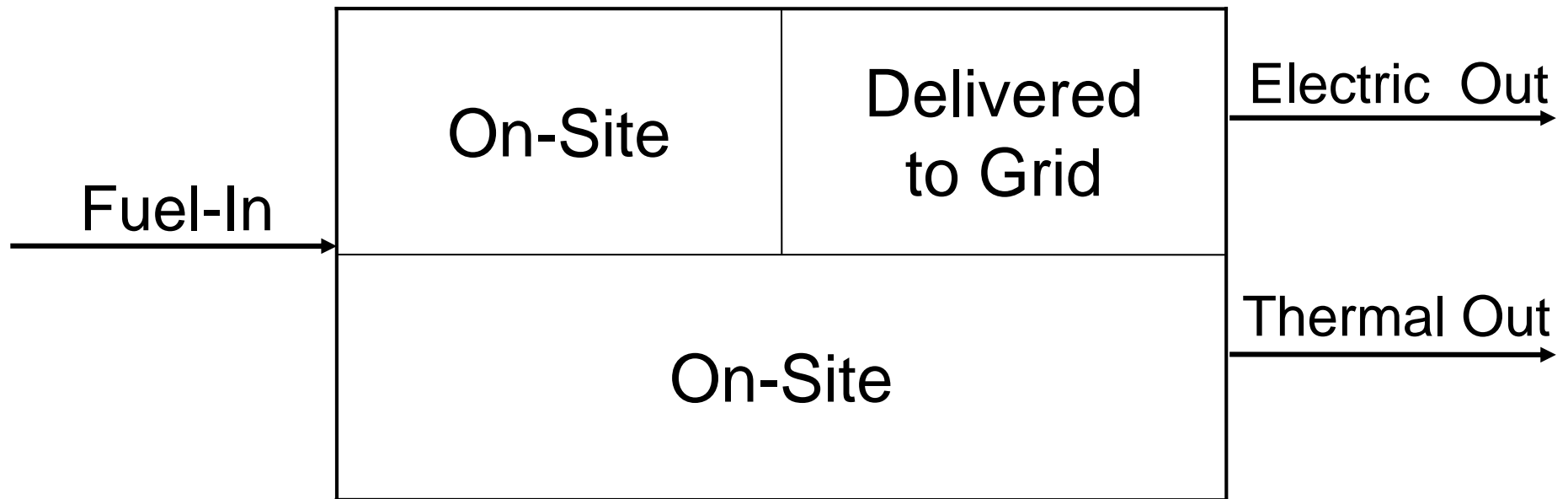
- How will Cap & Trade and CHP interact
 - As an emitter
 - As an emissions reduction strategy
- Policy Updates





What is a CHP Unit

CHP Unit





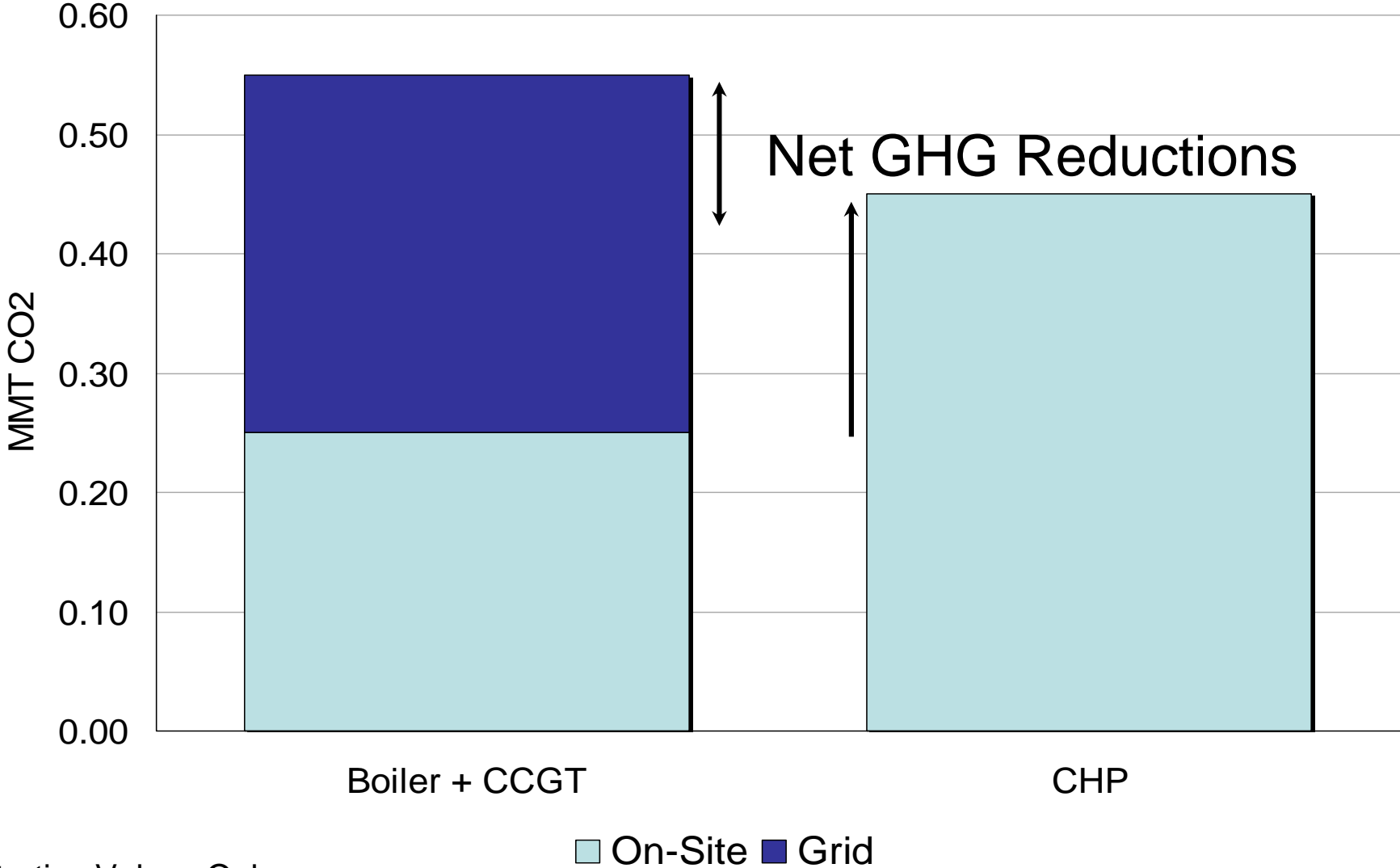
Cap & Trade and CHP

- As an emitter, CHP has both an electric and a thermal component
- Cap & Trade will interact with both
 - Certain design choices of Cap & Trade could create a disincentive – we need to make the right choices
- As an emissions reduction strategy
- D08-10-037





Statewide GHG Emissions Decrease but On-site Responsibility Increases





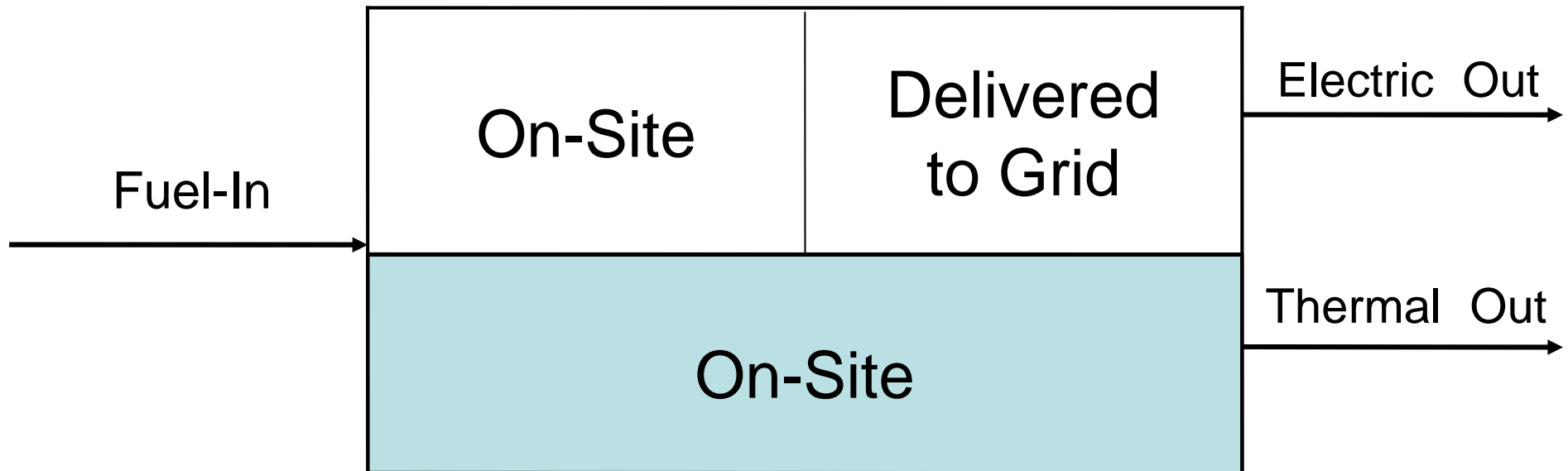
Avoiding a Disincentive...

- Previous slide shows potential for Cap & Trade disincentive for CHP
- Decision recommends a consistent approach in allocation methodology in program design
- Allocation and design consistently compared to its separate parts
- Let me show you...





Allocation to CHP as an Industrial Point Source

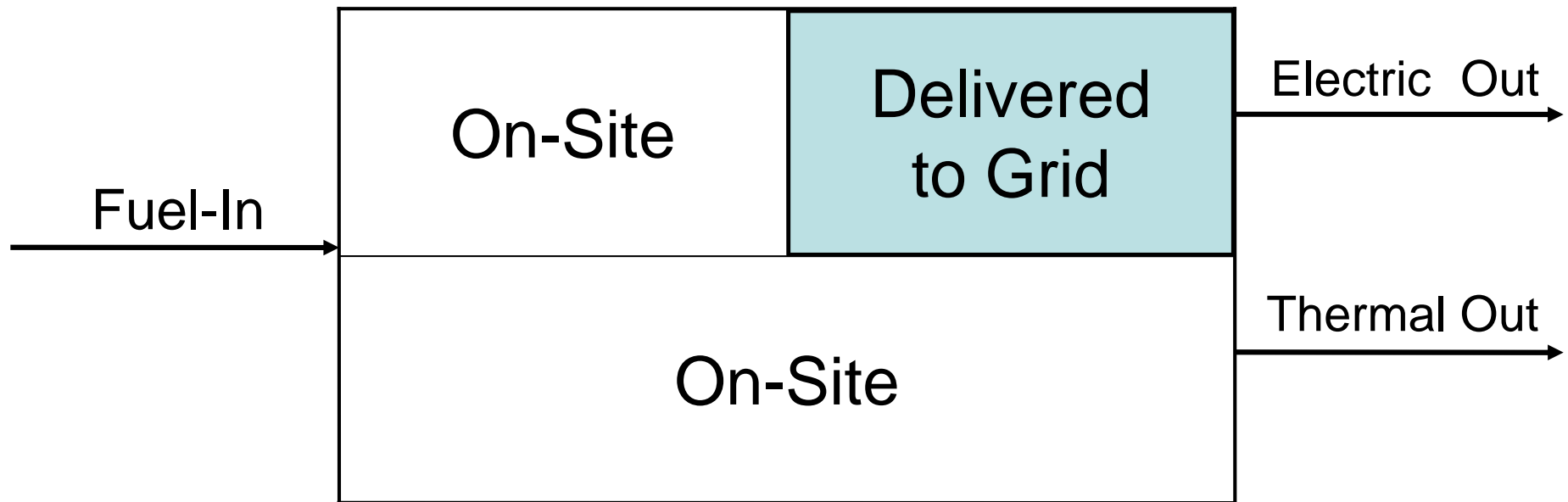


- What would the facility have done for heat “if not” for the CHP?
 - Amount of heat required by facility is the same
 - Since CHP is more efficient, it will require either the same or fewer allowances compared to a standard boiler + separate power
 - Allowance allocation should be the same for thermal either way
- 8 • Bottoming-cycle CHP with no supplemental firing is “thermal only”





Allocation to CHP as a Deliverer

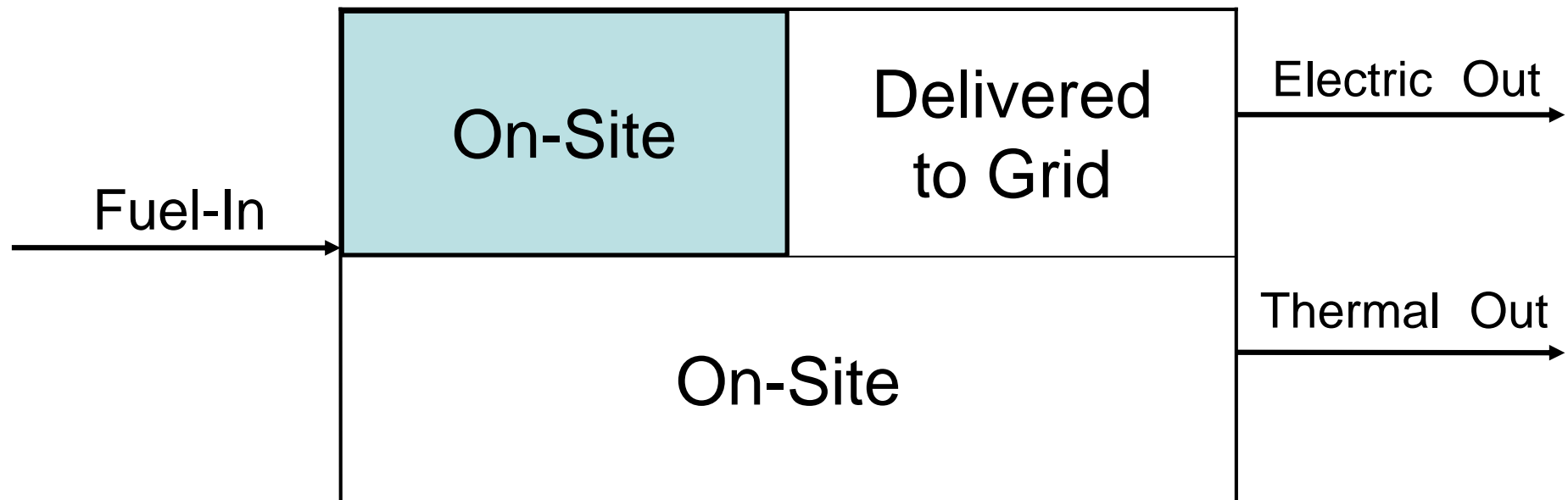


- Electricity delivered to the grid should be treated like *any other deliverer*
- Allowance allocation to CHP should be like any other deliverer
- GHG cost should be incorporated into the price & contract





Allocation to CHP as a Retail Provider

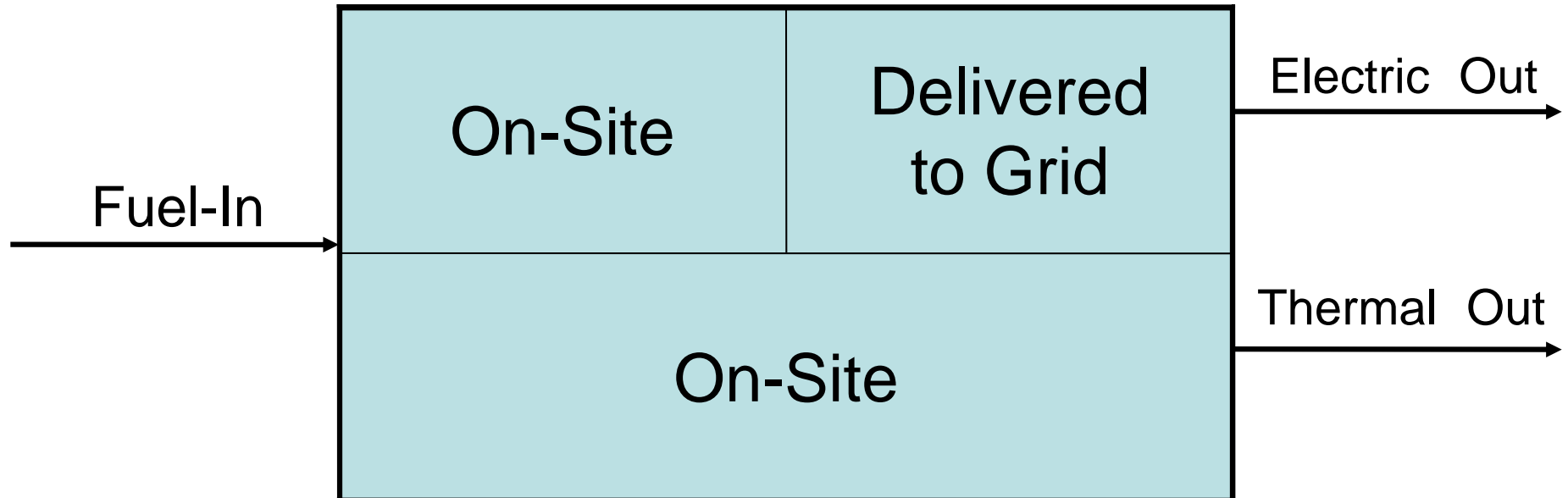


- In its capacity as an on-site provider, the CHP unit functions like a retail provider to the host site
- Allowances allocation to CHP should be treated like any other retail provider
- Any revenue recycling should also flow to the facility like other retail providers





Putting this Back Together



- Consistent allocation to each of the outputs is one strategy to prevent a potential disincentive to CHP
- Question: is there an alternative (and superior) way to prevent a disincentive for CHP in the Cap & Trade rules?





Reaching the Target

- Scoping Plan states 4,000 MW of *new* CHP to get 6.7 MMT of reductions statewide
- The CPUC's approach is to look at improving efficiency of existing facilities *and* to bring on new to reach emissions reduction target for IOUs





Reaching the Target

Baseline of GHG Emissions Already Avoided From the Existing CHP Fleet

+

Addition of *new* CHP facilities
(with GHG benefits compared to a benchmark)

+

Repowering or improvement of existing facilities
(to get additional GHG benefits compared to baseline)

+

Removing existing *inefficient* facilities
(are GHG adding compared to a benchmark)

-

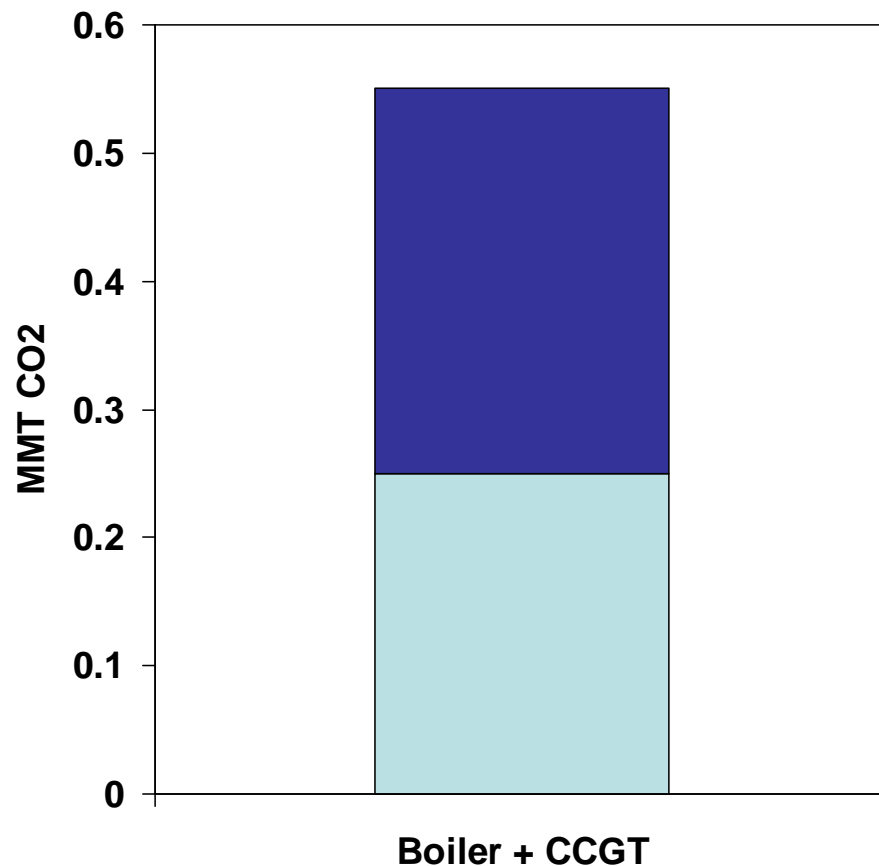
Losing existing *efficient* facilities
(makes the target larger)

IOU Share of CHP's Scoping Plan Target





What Would Happen “If Not for” CHP?



- Benchmark is a combination of a heat rate AND a standard boiler efficiency
- The difference between a benchmark and CHP is the GHG reduction.
- The “cap” would induce the benchmark to be more efficient





How Cap & Trade Could Induce Greater Efficiency

- Allowances would put a price on carbon for combustion of fossil fuels
 - Some potential operational improvements as cap tightens
 - Price of allowances send signal to repower existing fleet based on heat rate and boiler efficiency
 - Additional reductions from new CHP vs. existing fleet





New Policy Framework for CHP

- Barriers exist for increased CHP penetration
- Feed-in Tariff will be a part of the new framework
- New rulemaking (OIR) to coordinate policy on CHP issues
 - Accomplish share of Scoping Plan target and other policy drivers
 - Timeframe: Framework development in 2009-10; Implementation in 2010





Feed-in Tariff for CHP

- A CHP facility up to 20 MW nameplate that is new / repowered
 - Goal is to promote a thermal match to maximize use of waste heat
- FiT allows the facility to sell excess electricity generated
- GHG reductions from program will count towards Scoping Plan target
- Two contracts under development
- One for “small” facilities
- One for “medium” size facilities
- Established by AB 1613 and modified by AB 2791 (R08-06-024)





Details on Feed-in Tariff

- Initial Staff Proposal released and workshop held in February
 - Additional negotiations on contract occurred in Spring
 - Final Staff Proposal released in July 2009
- Considers contracts, pricing proposals, other program design elements
- Collaborating with CEC on efficiency matters and other terms & conditions
 - Tariff targeted completion by end of calendar year 2009
 - Phase II – develop “pay as you save” pilot program





How the Pieces Fit Together

Small
(< 20 MW) Large
(> 20 MW)

New / Repowered	<i>Feed-in Tariff</i>	CHP OIR
Existing	CHP OIR	CHP OIR

These program options will coordinate with each other to reach GHG and policy objectives





Thank you!
For Additional Information:

www.cpuc.ca.gov

mc3@cpuc.ca.gov

(415) 355-5484

