



# Utility Outsourcing, as seen through the lens of Boiler MACT

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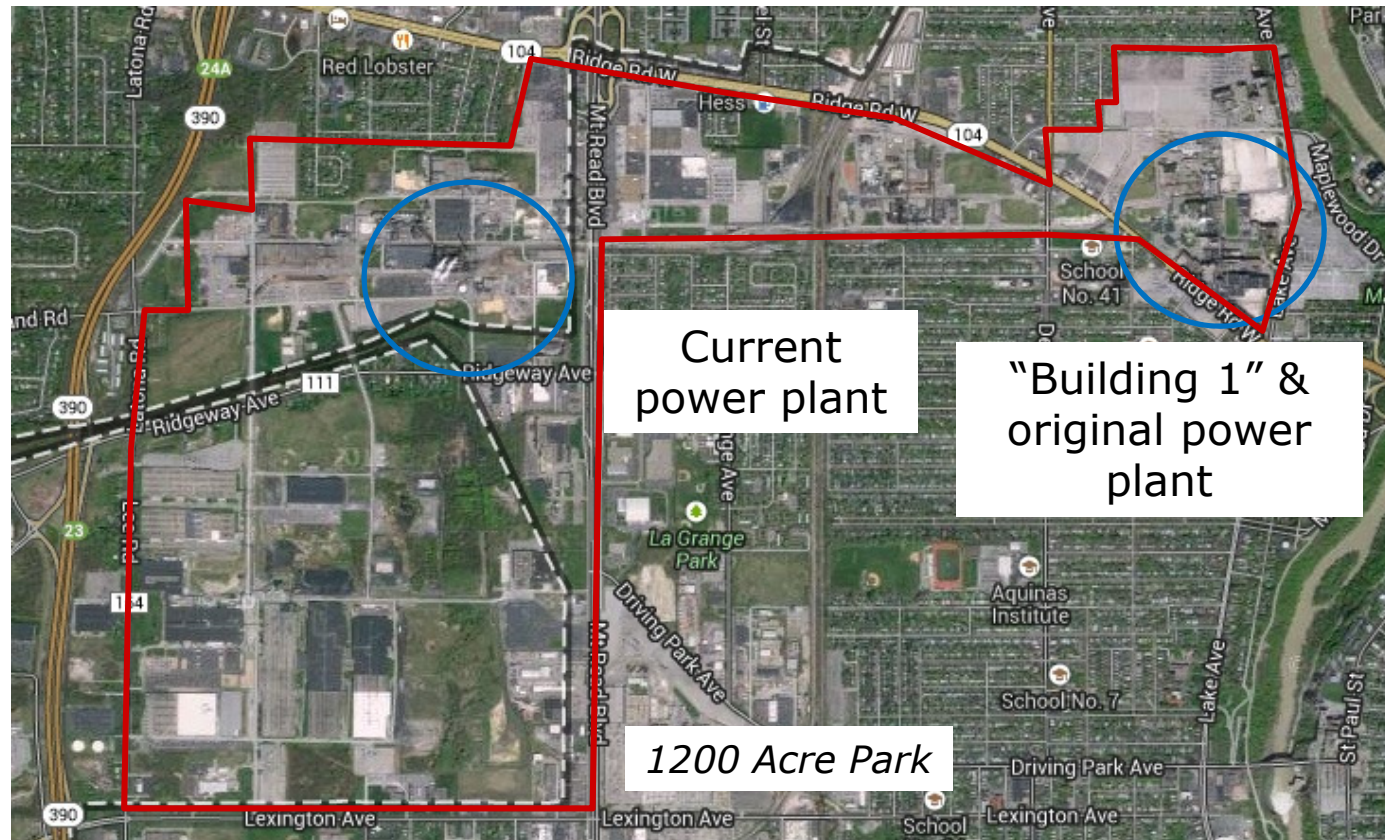


## About RED

- Mission: profitably reduce greenhouse gas emissions
- Developer, owner, operator of industrially-sited CHP and waste-energy recovery projects.
  - Technology & fuel agnostic as long as meets mission
- Founded in 2007 by Tom & Sean Casten; previously founded/ran Trigen Energy, Primary Energy, Turbosteam Corp
  - 200+ CHP projects over history, 13 countries, > \$2B total capital deployed.
  - RED-specific projects mix of biomass, nat gas, coal in steam cycles, gas turbines and engines
- Most recent acquisition very useful case study on the case for – and challenges with – utility outsourcing.



# Eastman Business Park Utilities Business







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## History of Eastman Business Park Utilities Business

- Built by George Eastman in 1890
- Fully integrated trigeneration plant built to serve Kodak manufacturing needs
  - 2.1 million lbs/hr steam generation
  - 145 MW power generation
  - 64,000 tons chilling capacity
  - 50 million gallon/day water intake
  - 75 million gallon/day sewer treatment
- Starting in 2004, Kodak began divesting manufacturing operations in the park. This created two problems:
  - Created perceived conflict of interest
  - Illegal to sell power at retail to an unaffiliated business as a non-regulated entity.



## Solutions

- Regulatory issues solved by securing “lightly regulated” status
- Conflict of interest issues were solved largely by bringing new customers into the old, pre-existing model
  - Historically utilities had been run as a cost-center; this was preserved for sales to non-Kodak customers
  - All non-Kodak customers shared in year end credits/debits based on year end variance to budget



## Problems innate to running utilities as a cost-center

- Provides little/no incentive for capital investment, especially if they lead to cost savings.
- Makes utility operations a 'dead end' on corporate org chart
- Leaves unaddressed other perceived conflicts (e.g., load-shedding)
- These challenges are paradoxically easier when load is falling
  - Falling overall loads in park had effect of increasing overall 'reserve margin' on system, driving up reliability
- 3<sup>rd</sup> parties in park make these problems evident, but the root cause is a failure to run the utilities as a stand-alone business.



## And then came Boiler MACT

- Steam generation from 4 boilers: 1 PC, 3 cyclones, all cyclones pre-Clean Air Act, PC is pre-1990 amendments (Title V)
- Commissioned big-name engineering firm to do big, expensive analysis of alternatives. Key conclusions:
  - Lots of options, all are lousy
  - Best option is to invest \$160M in controls and upgrades that will drive down overall plant efficiencies because of parasitic loads
  - No meaningful examination of value-accretive alternatives.
  - Given cost-based model, all would have driven up utility costs.
  - Given over-sizing of current boilers to today's loads, any paths to save money by 'right sizing' boilers implicitly lowers reliability.
- Solution: sell the utilities business.





## **KEY POINT: SELLING THE UTILITIES BUSINESS WAS NOT A BAD IDEA**

- Quite the contrary: should have been done a long time ago. But the timing was lousy.
  - Significant asset value in utilities offset by MACT liability assumed by buyer.
  
- Q: how many current industrial facilities are somewhere along this trajectory, deferring hard decisions about utility asset but sailing towards the inevitable?
  - Utility assets treated as a cost-center
  - Perceived low-cost of self-generated energy because of capital amortization and/or marginal-cost internal accounting
  - Limited/compromised access to capital for energy efficiency
  - Utilities used by multiple P&Ls and/or owners

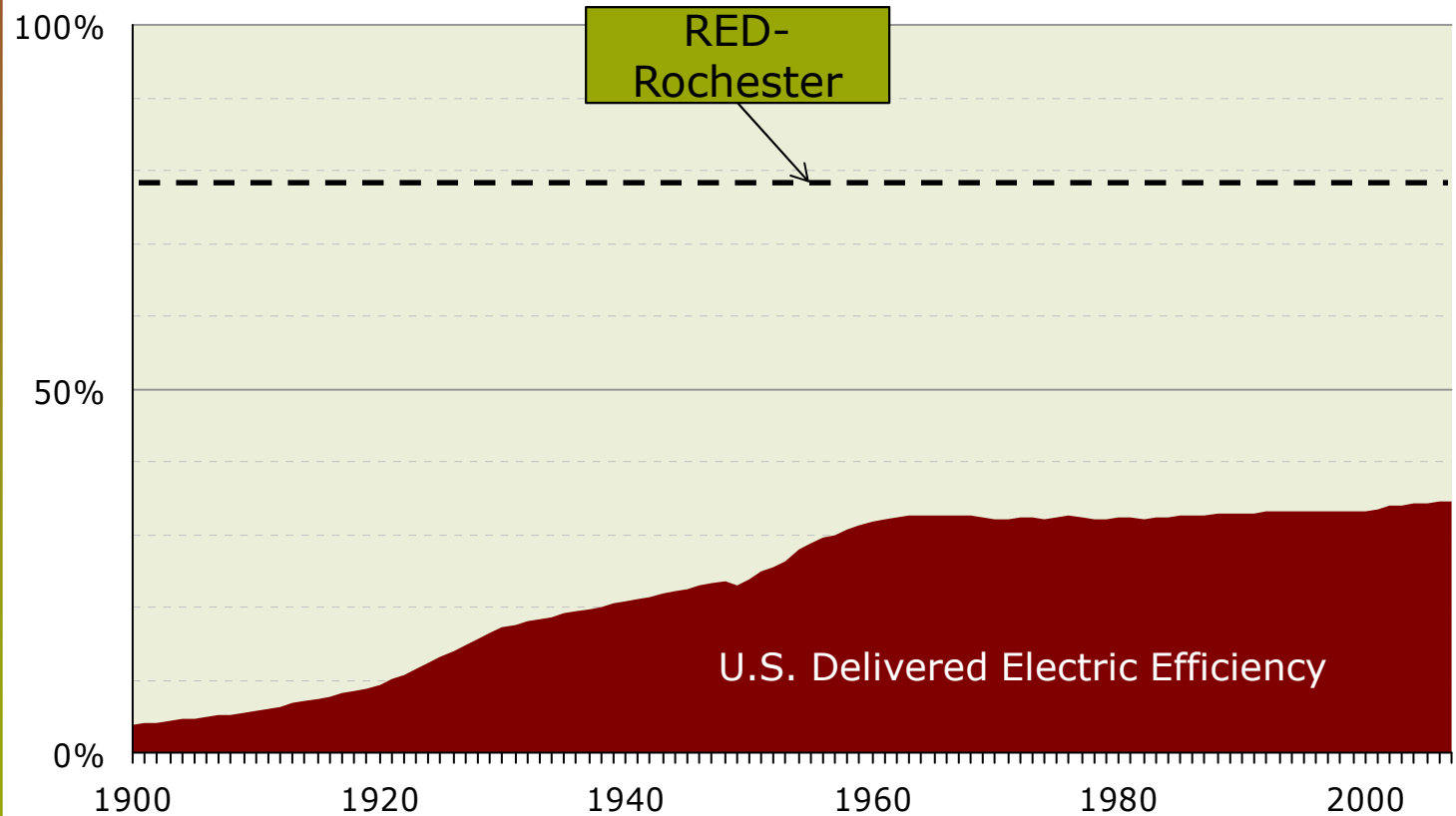


## Two short years later, RED owns the utility business...

- Along the way we had to:
  - Develop a MACT plan
  - Renegotiate 13 separate utility service agreements
  - Navigate Kodak's bankruptcy
  - Petition the PSC to preserve lightly-regulated status
  - Resolve multiple legacy environmental issues
  - Try to retain user certainty for long-term loads in spite of 2 years of uncertain M&A activity

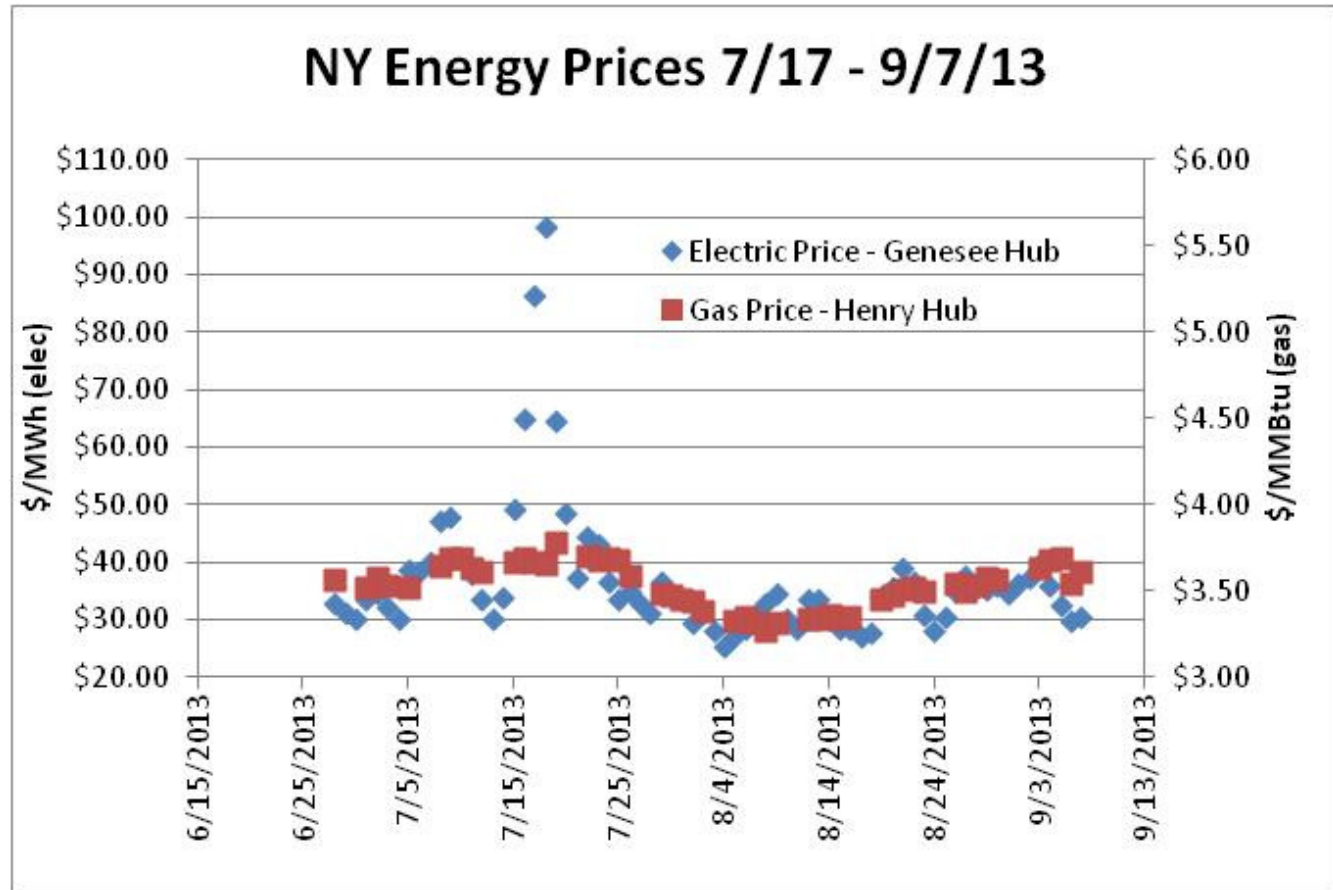


## 2 charts to inform RED MACT plan: 1) efficiency is a physical hedge, and...



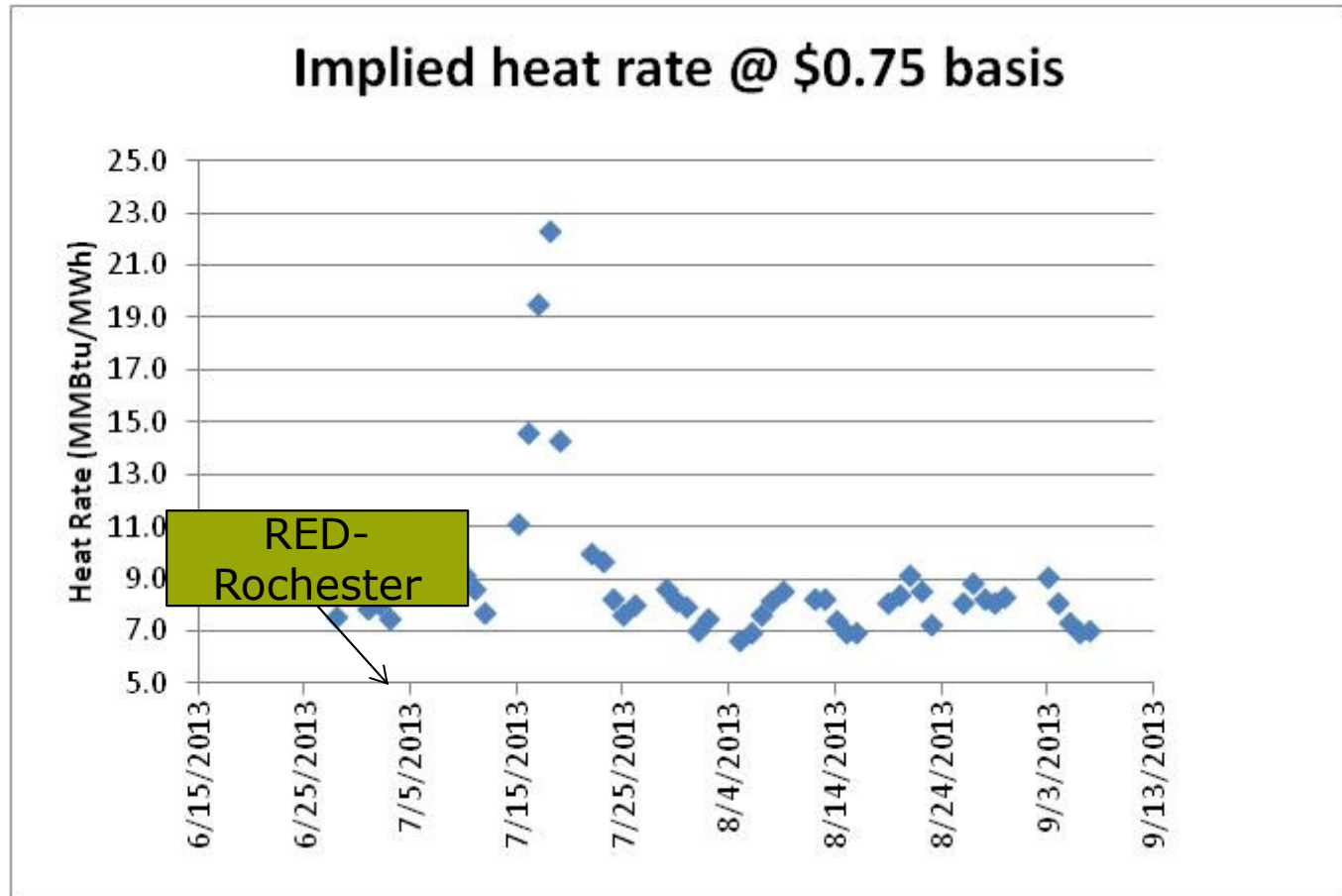


## ...2) given the gas-marginal NY power grid...





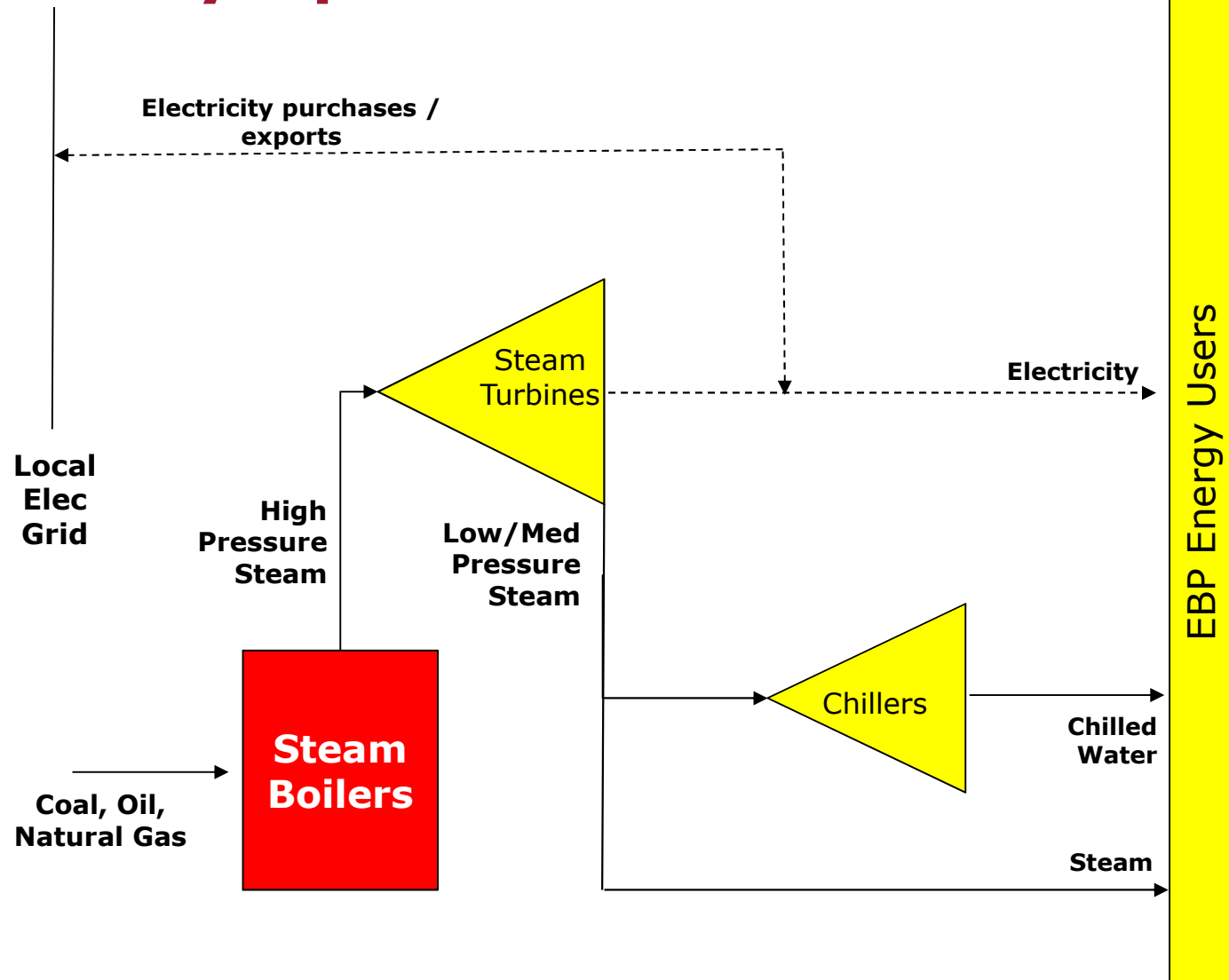
## ...efficient conversion to gas makes money, even at wholesale pricing





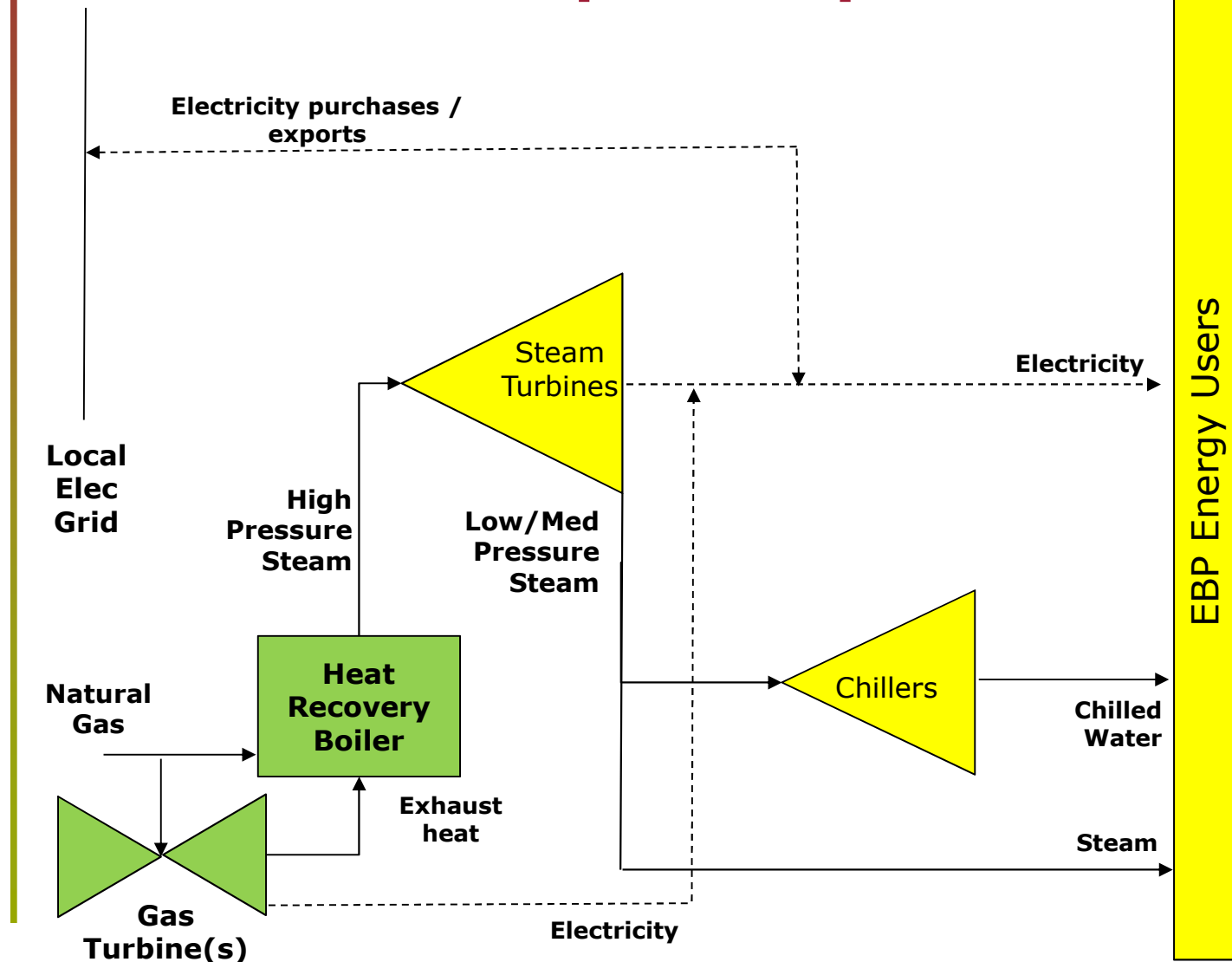


# Today's plant





# RED MACT Compliance plan





## Plan from here

- Lots of efficiency projects to be deployed, some already underway, all will drive down cost of utility services
- MACT plan is – essentially – a giant efficiency play. Compliance need not be economically painful provided you:
  - Chase efficiency
  - Don't ignore the "P" side of the P&L
  - Include power gen; that's where the economic hedge lies
- Meanwhile: it would be easier with environmental regs if we were less concerned about the environment.
  - Much effort remains with air regulators



## Obstacles we face on compliance speak to larger issues

- Natural gas supply in area only sufficient to build out ~50% of plan. This is an even bigger barrier outside of NY.
- Pollution controls on coal boilers don't require new permits, but installation of new gas turbines that shut down coal boilers do.
  - NSR waiver would require demonstrating criteria pollution below 5-year average. Disincentive to phased implementation.



## Takeaways

- Lesson 1: Run your energy operations as a standalone P&L, compensate utility operators accordingly.
- Lesson 2: If lesson 1 is too hard, get out of the utility business before you're forced to.
- Lesson 3: Boiler MACT is a huge economic growth/investment opportunity that can lower your energy costs, but requires unconventional approaches
- Lesson 4: Fully unlocking the potential for energy efficiency in the heat & power sector requires NSR reform.