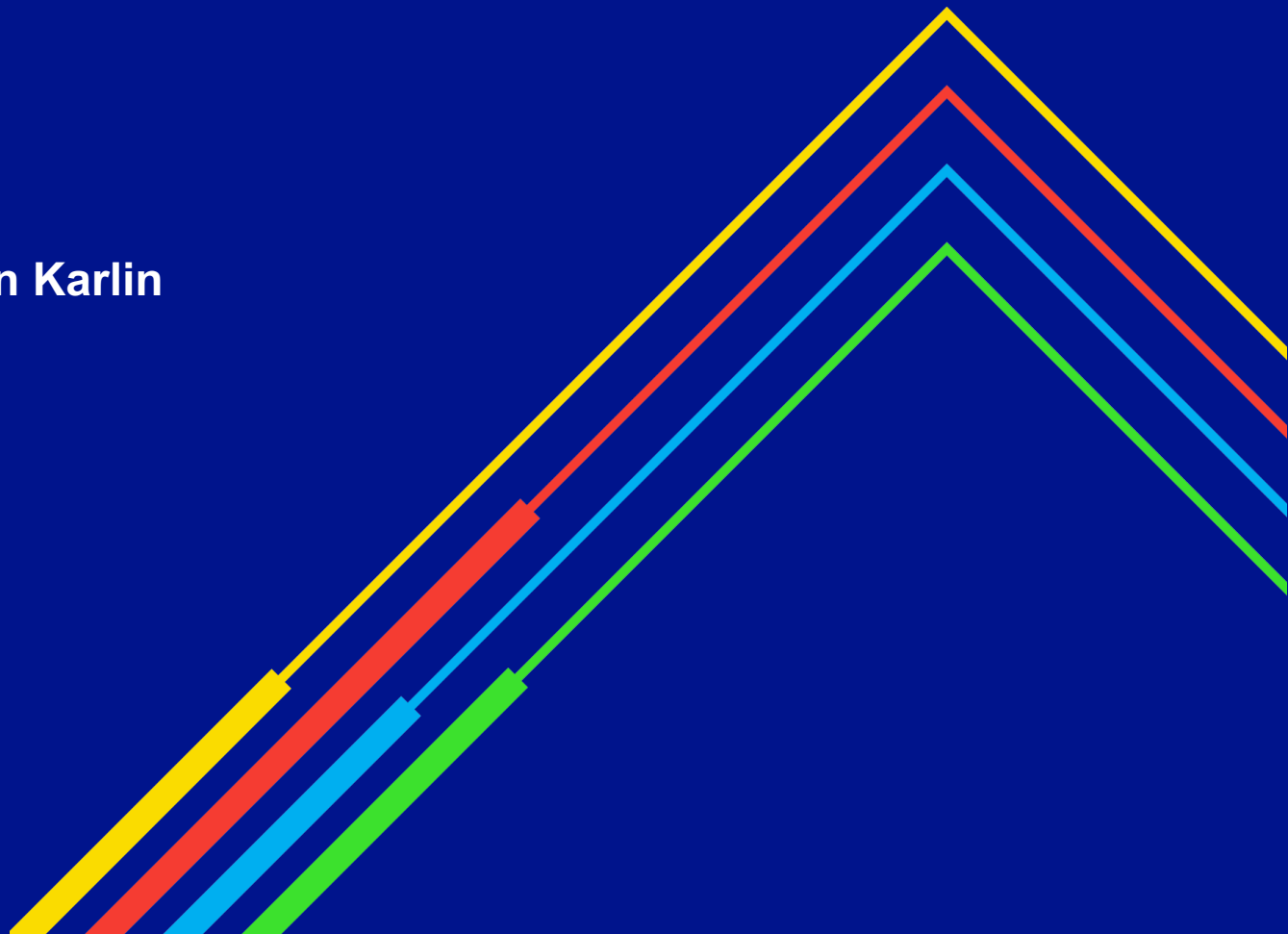
Combined Heat & Power Incentive Programs

Mark DiPetrillo & John Karlin

May 2nd, 2019



nationalgrid

What is CHP?

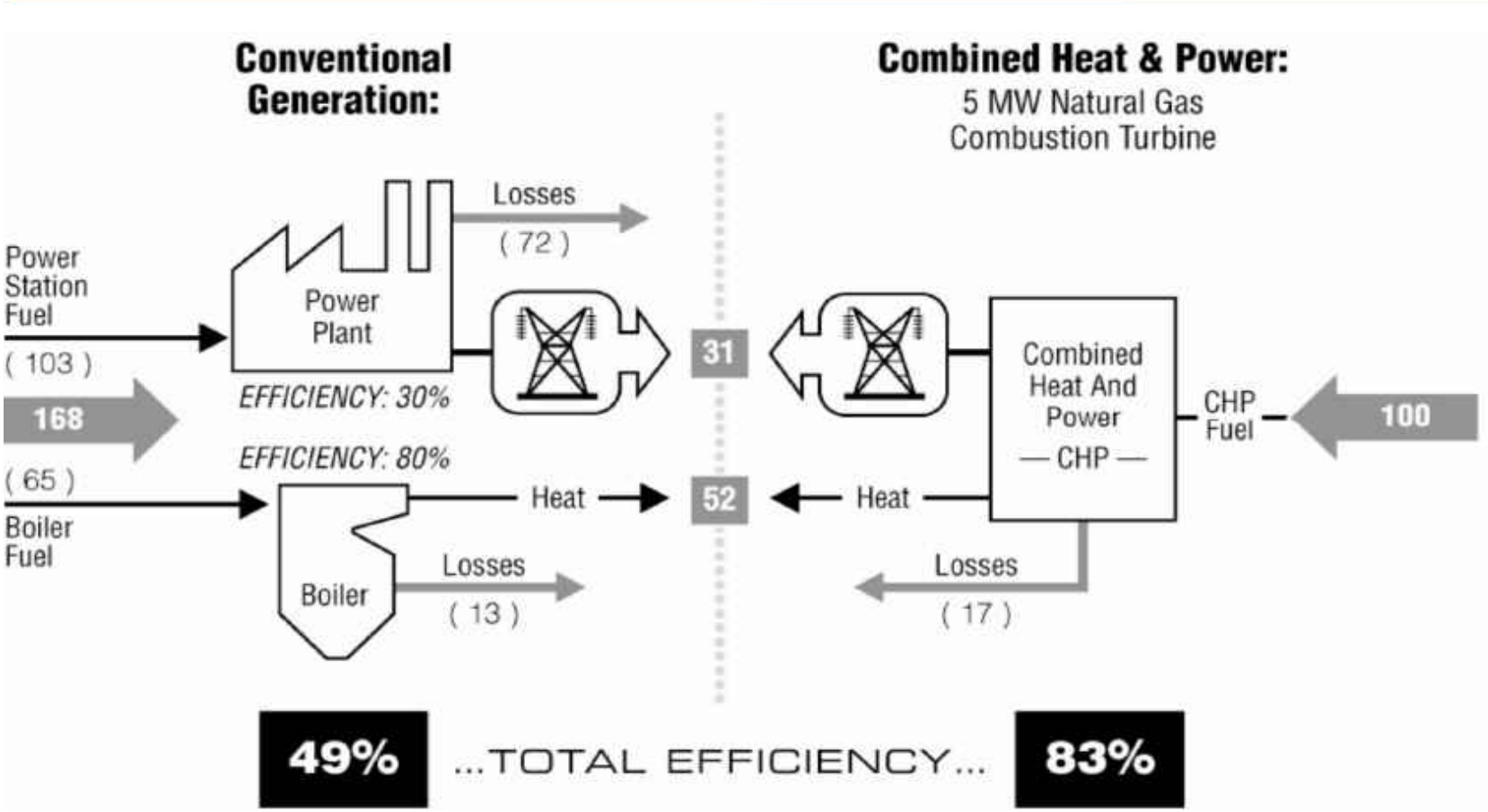
Combined heat and power (CHP), also known as cogeneration, is the simultaneous production of electricity and heat from a single fuel source, such as: natural gas, biomass, biogas, coal, waste heat, or oil.

Technologies:

- Reciprocating Engine
- Fuel Cell
- Microturbine
- Gas Turbine
- Steam Turbine

Why should we care about CHP?

Efficiency, Carbon Reduction & Reliability



Available EE Incentives and Funding

- Incentives are based on the Net Capacity and the system efficiency of the project.
  - $900/kW - Greater than 55% System Efficiency
  - $1000/kW - Greater than 60% System Efficiency
  - $1125/kW - Greater than 55% SE & lowered site energy by 5% using program
  - $1250/kW - Greater than 60%
- As you see above, higher system efficiencies & reducing the site's energy use by 5% using program can increase the incentive
- Total incentive payments (inclusive of AGT incentive) may not exceed 70% of the total project cost.
- Performance incentive for projects greater than 1 MW; $20/kW up to 10 years
- Engineering/TA study can be Co-Funded.

So what's the fine print?

- Must be an electric customer
- System must provide both electric and thermal output
- 55% minimum system efficiency
- Must pass our Benefit cost test
- Program is fuel Neutral
- Incentives subject to budgetary limitations and caps
- Incentives greater than $3 million subject to PUC approval
- Projects 1 MW or larger commit to 10 years of operation or will have to refund prorate portion of incentive
- CHP system sizing shall not exceed the thermal and/or electrical loads of the building after implementing the identified EE measures.
- 5% site energy reduction can span 5 years forward or back.

Applying for an Incentive/Process Overview

Contact Local Sales Utility Representative to find out Incentive levels before selling a project.

- Scoping Study
- Submit DG application
  - Submit a Distributed Generation(DG) application sooner than later. This might mitigate costs and will reserve a spot in the queue ahead of future DG projects. $3/kW Max $2500 application fee
- Tech Review
  - TA Study
- Installation – Authority to Interconnect
- Inspection then Commissioning

Link for CHP Guidebook

http://www.ngrid.com/ri-chp

Changes from last year

- New CHP project/program manager position to help you guide through the process
- Continued use of EE TA studies to find opportunities to reach the 5% threshold
- Working with the state to simplify our Advanced Gas Technology program
  - Any Suggestions?
  - New method of calculating incentive?

Market Review / Next Steps

- Continued success with program
  - 2 systems installed last year
- High Interest in Fuel Cells throughout region
  - Larger projects than in the past (> 1 MW)
  - Life Cycle has to be addressed through warranties
- We would like to work on more smaller systems
  - Currently working on (2) 25kW projects being installed in multifamily facilities

Questions?

Contacts:

John Karlin

(508) 860-8656

john.karlin@nationalgrid.com

Mark DiPetrillo

(401) 784-7147

mark.dipetrillo@nationalgrid.com

nationalgrid