

Online Webinar  
August 25, 2011

# Trigeneration using Adsorption Chillers

For Audio

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**Host**

Krishnan Umamaheswar

US DOE Gulf Coast Clean Energy Application Center

**Co-presenter:**

Wes Livingston

Power Partners, Inc.



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# Before we begin...

- Presentation
  - Emailed to all attendees within 24 hours
  - Posted to [www.gulfcoastcleanenergy.org](http://www.gulfcoastcleanenergy.org)
- Questions
  - Submit via Chat Feature
  - Answered via email
- Continuing Education Units (CEU)
  - Upon request



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# Primary Activities – Gulf Coast Application Center

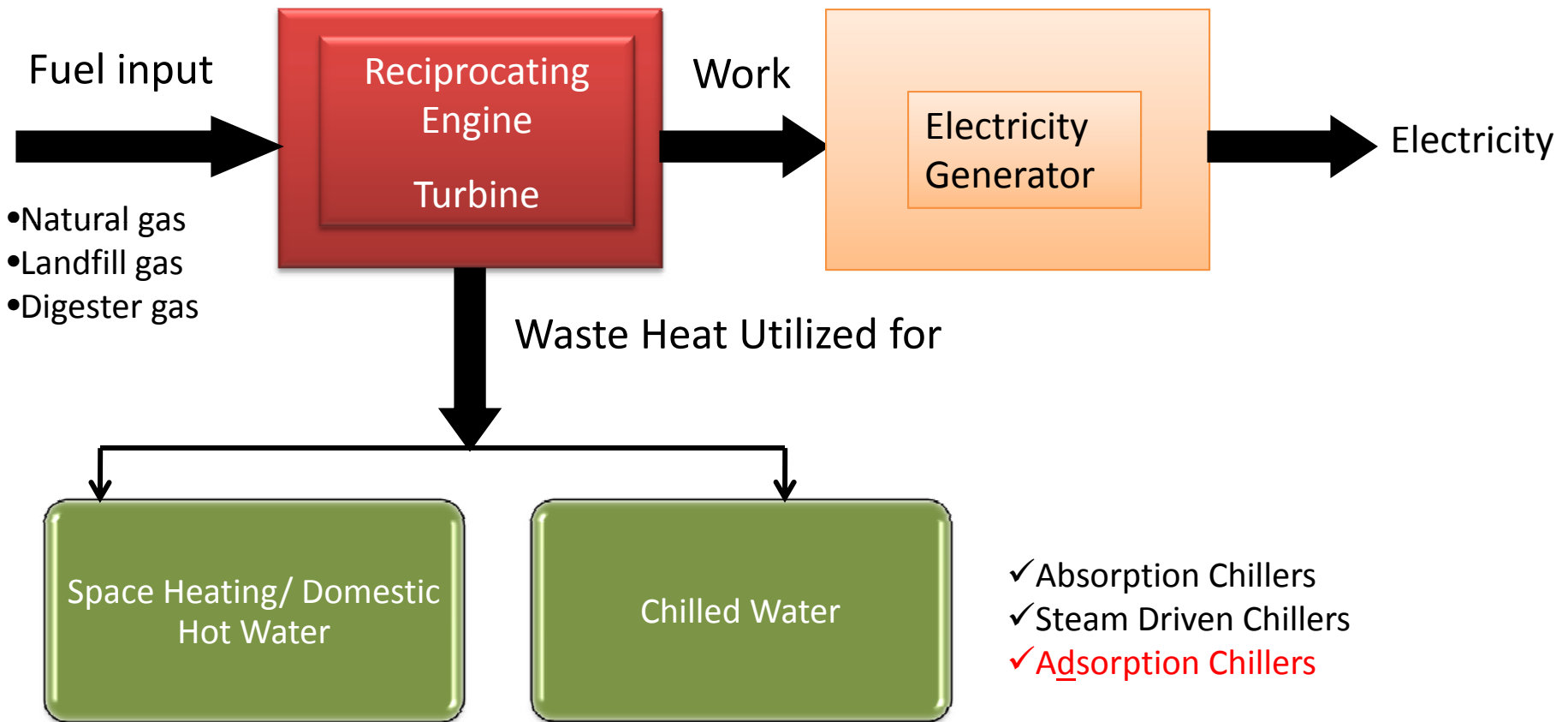
- Promote CHP, Waste Heat Recovery & District Energy through
  - Education & Outreach
    - Website
    - Newsletters
    - Webinars
    - Workshops
  - Policy Initiatives
    - Educate legislators
    - Comment on dockets/rulings
    - Support TXCHPI (active CHP industry advocates in the region)
  - Project Support
    - Free or low cost CHP feasibility studies
    - Case Studies/Project profiles
    - Answer technical questions
    - Connect end-users to equipment manufacturers
    - Facilitate tours to CHP installations for prospective adopters
    - Manufacturer neutral and unbiased service



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# Trigeneration : Production of Electricity, Heat and Chilled Water



# Trigeneration : Issues

- Negative perception of thermally activated chillers
  - Significant advances in technology
- Can trigeneration compete economically with power purchased from the utility?
  - Low natural gas prices & minimal volatility (last few yrs)
- Cooling only CHP less efficient on a BTU basis than heating only CHP
  - Energy Security, project-specific economics, etc may dictate decision



# Trigeneration Efficiency Analysis

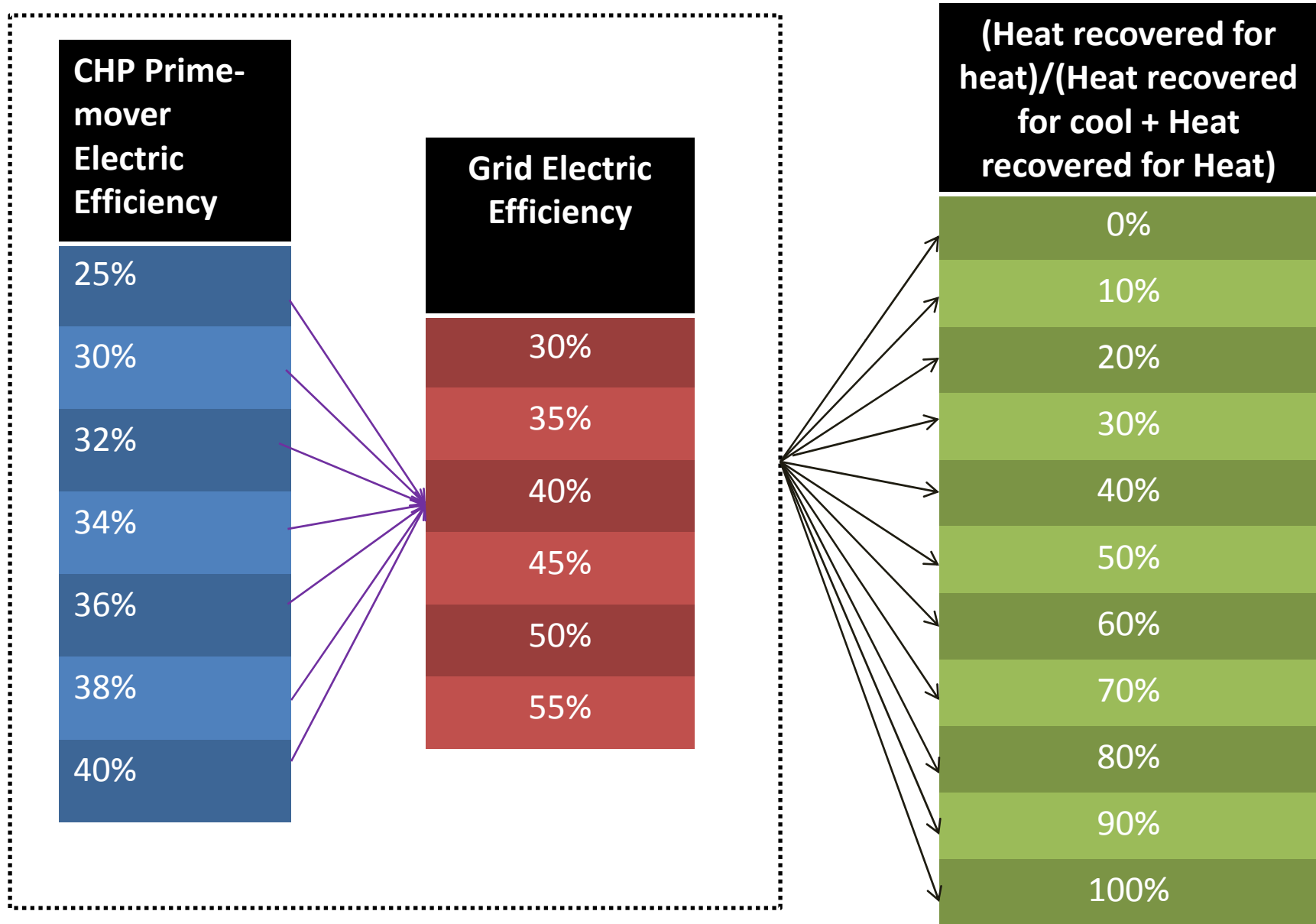
- Develop of matrix of scenarios
  - Grid Electric Efficiency
  - CHP Prime Mover Electric Efficiency
  - % of waste heat used for heating & chilled water



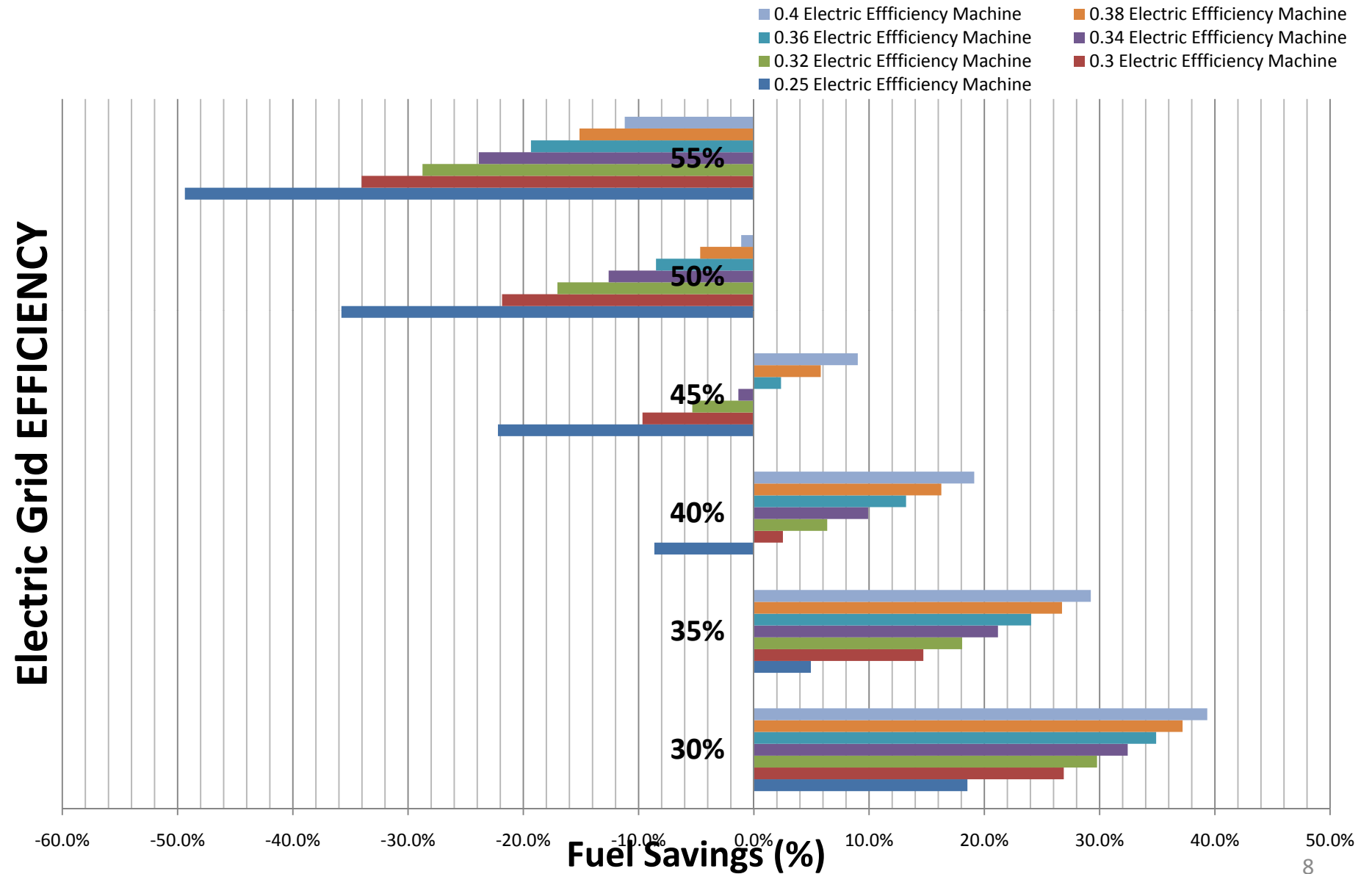
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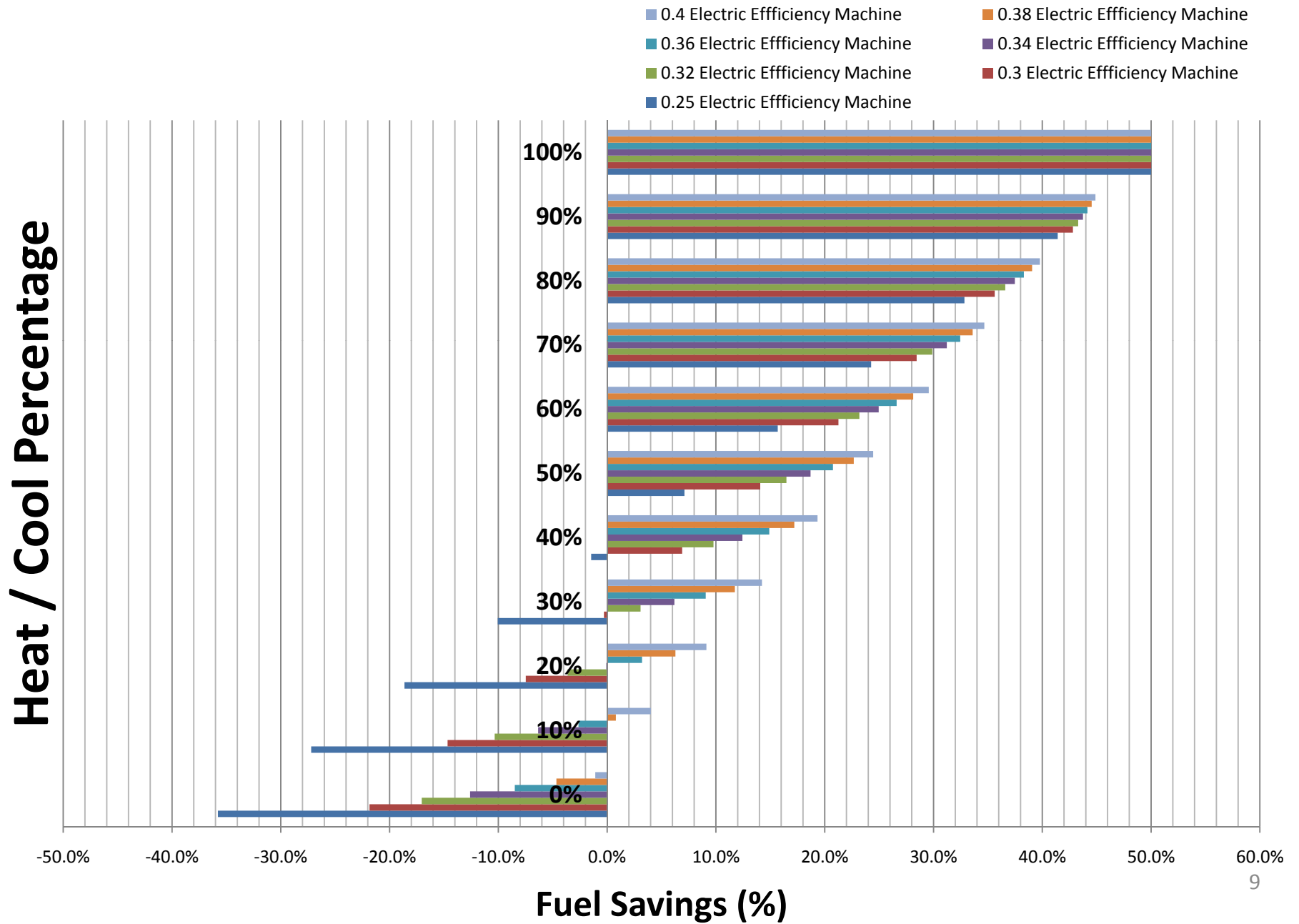
# Trigeneration Analysis Matrix : 420 scenarios



# Cooling only CHP – Fuel Savings :100% heat recovered for Chilling



# Trigeneration vs. 50% Electric Grid Efficiency – Fuel Savings Comparison



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# Upcoming webinars

9/1 – CHP Core Principles & Technologies

9/7 – CHP Feasibility Studies : Processes  
& Tools

-----Break due to CHP2011 conference-----

-----New Webinars : November-----

## GC RAC webinars

- Frequent
- Free
- CEUs upon request
- Archived
- Suggest a topic

Go to [www.GulfCoastCleanEnergy.org](http://www.GulfCoastCleanEnergy.org) > News & Events > Webinars



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## COMBINED HEAT AND POWER CONFERENCE & TRADE SHOW

October 17-19, 2011 • Westin Galleria Hotel • Houston, Texas

- **Conference & Trade Show dedicated to Cogeneration, Trigeneration & Waste Heat Recovery**

- CHP Technical Workshops
- Plenary Sessions
- Breakout Sessions
- Expo Hall
- Site Tours

- **Ways to Participate**

- Register
- Present
- Exhibit
- Sponsor

Conference Website –  
[www.chpcon2011.com](http://www.chpcon2011.com)



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