



# **Status of SPP Heat Recovery Study**

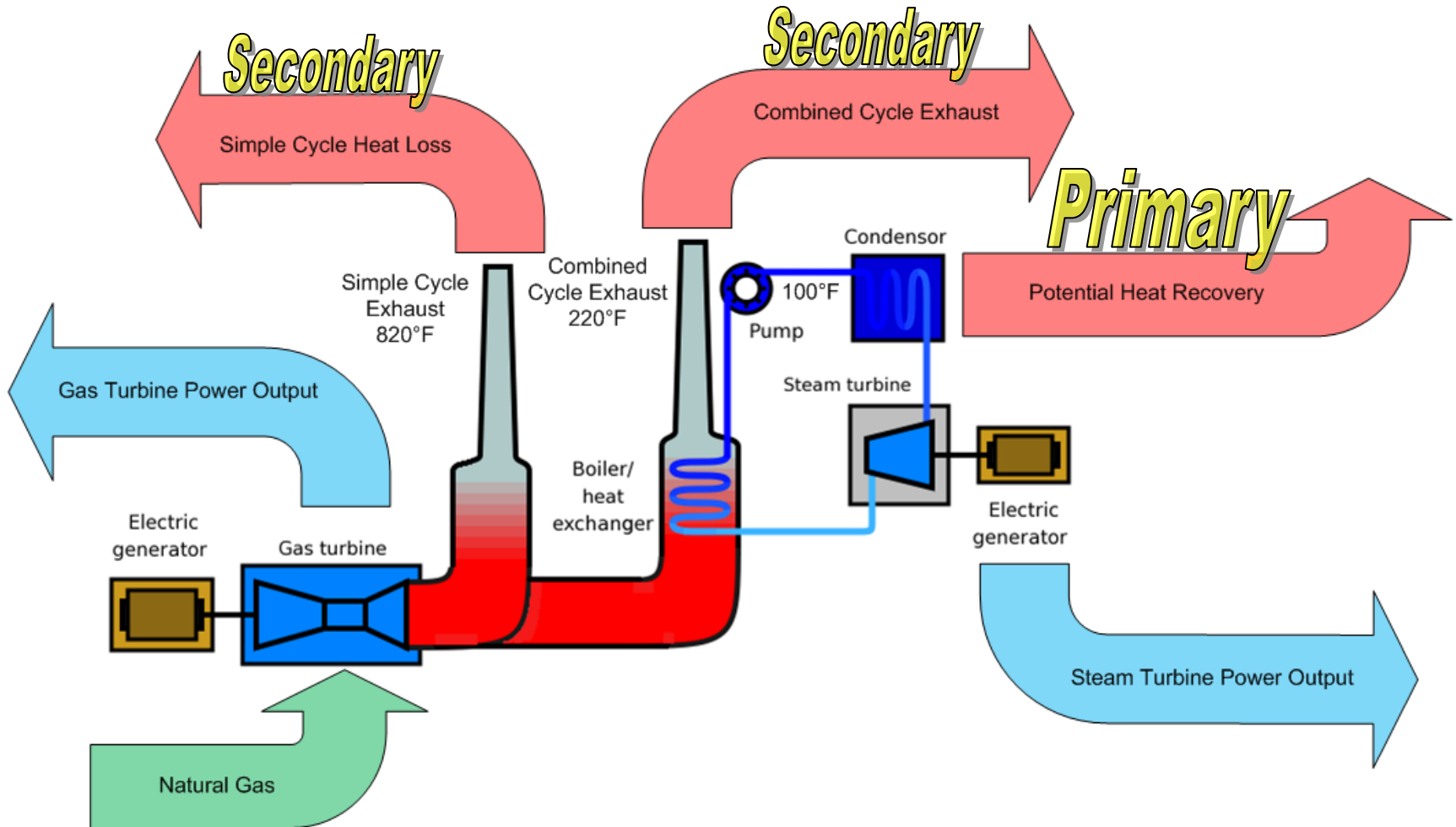
June 10, 2009

Operations Committee Meeting

- Quantify potential heat available
- Identify possible uses
- Identify local users
  - Size and distance
  - Gauge local interest & discuss opportunities with potential users
- Determine technical feasibility of heat recovery solutions

- Primary – Combined Cycle Steam Condensate
- Secondary – Combined Cycle Exhaust
- Secondary – Simple Cycle Exhaust

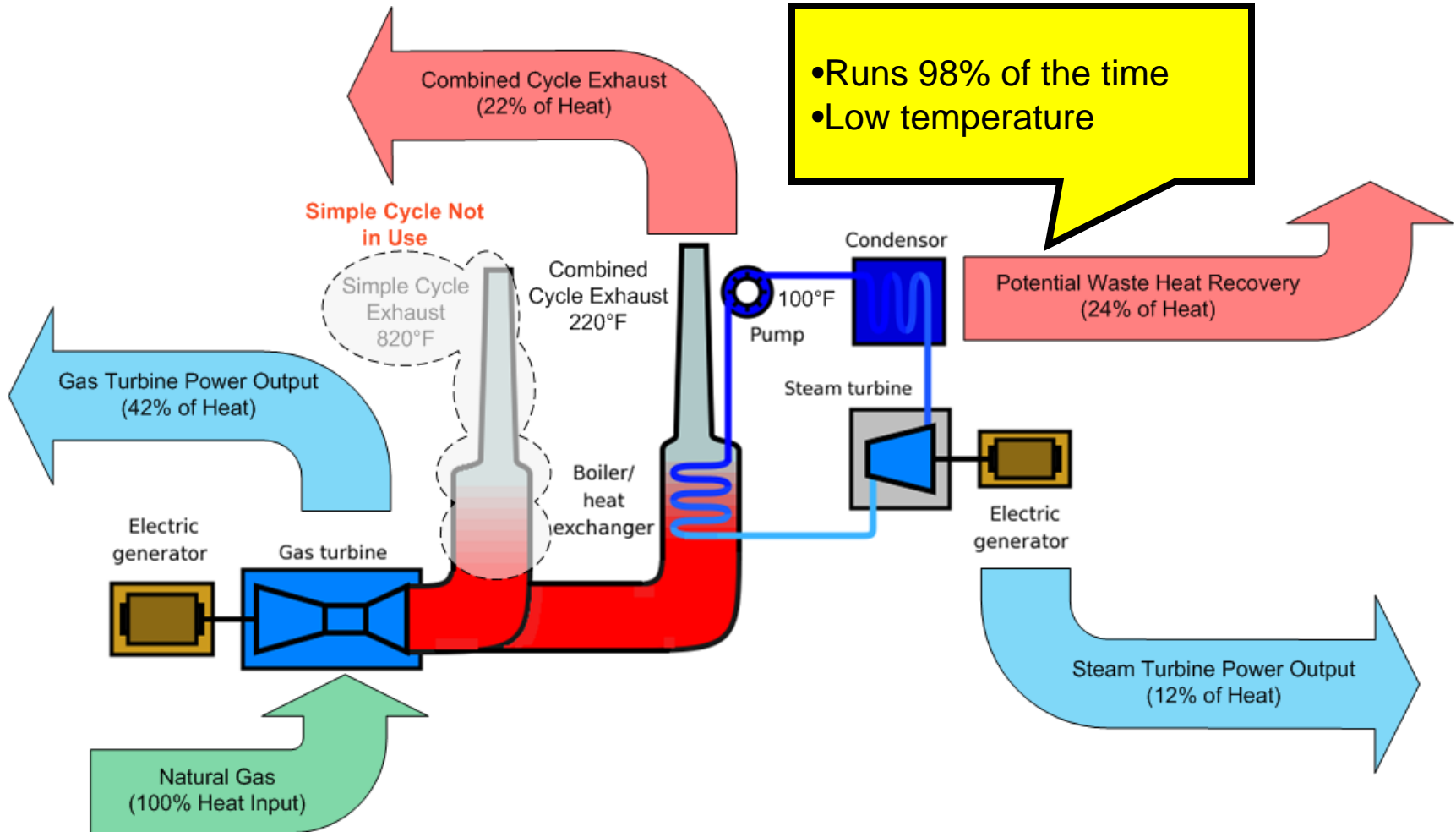
# Sources



<http://upload.wikimedia.org/wikipedia/commons/8/84/COGAS-diagram.png>

# Source Viability

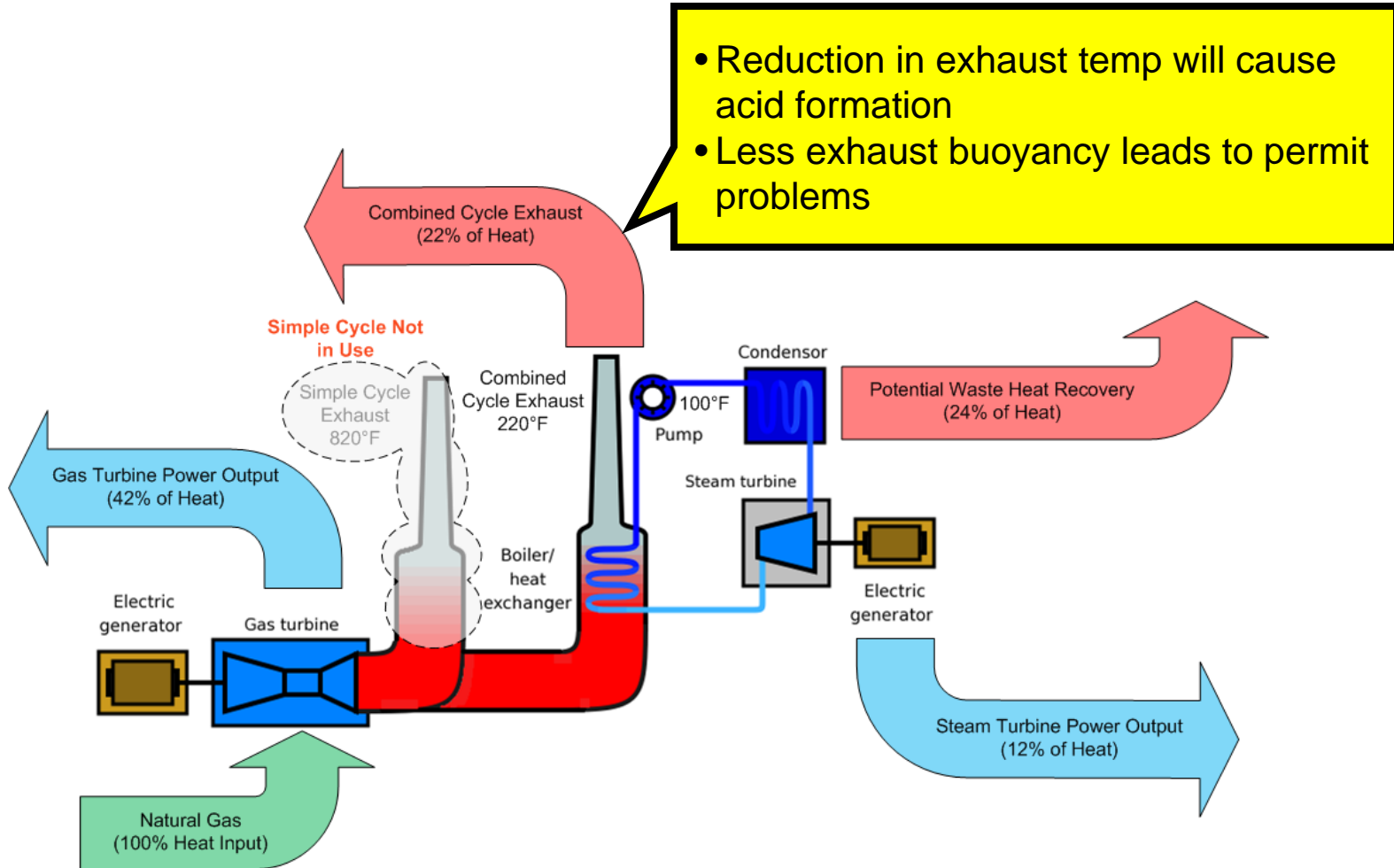
Primary – Combined Cycle Condensate



<http://upload.wikimedia.org/wikipedia/commons/8/84/COGAS-diagram.png>

# Source Viability

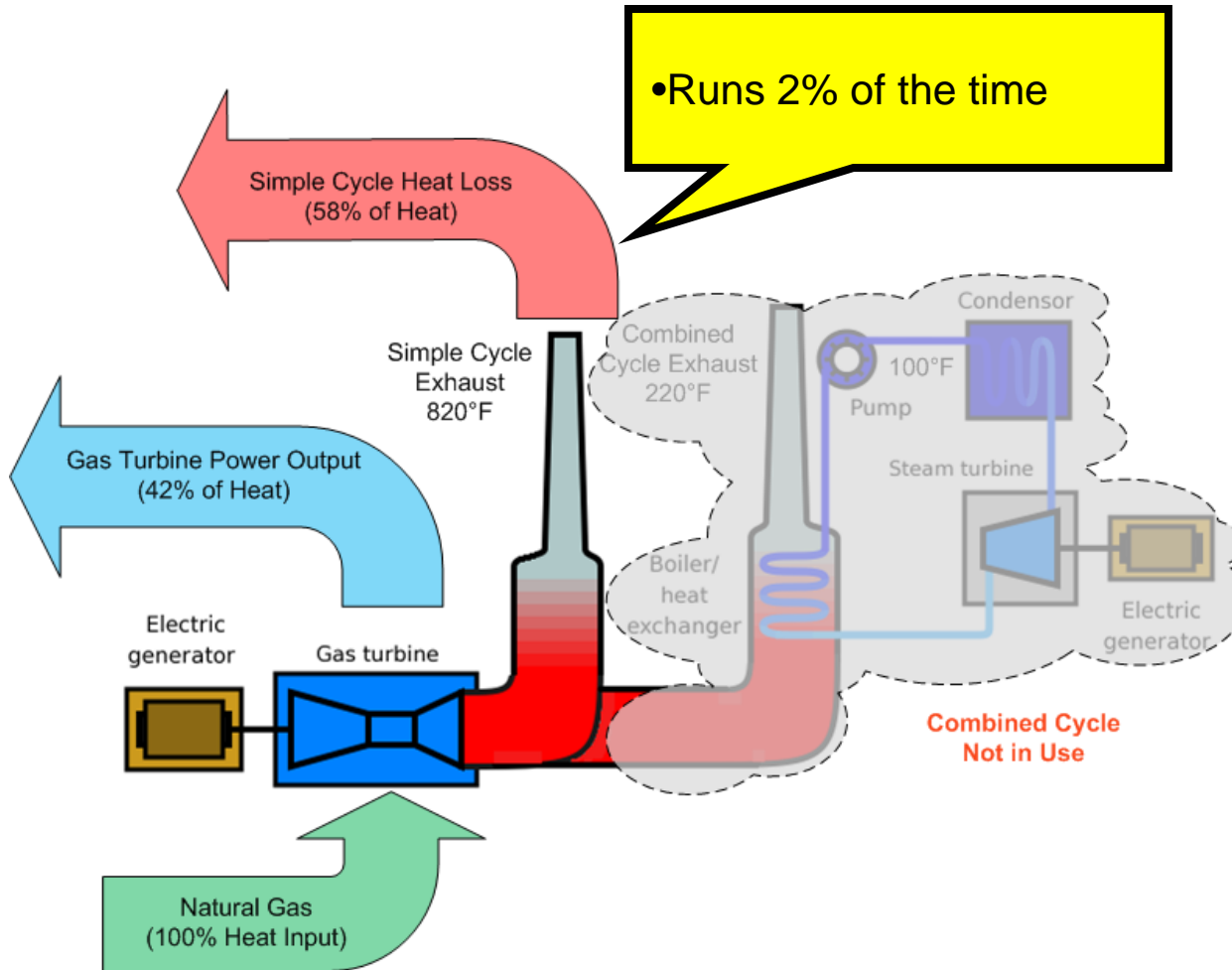
## Secondary – Combined Cycle Exhaust



<http://upload.wikimedia.org/wikipedia/commons/8/84/COGAS-diagram.png>

# Source Viability

## Secondary – Simple Cycle Exhaust



<http://upload.wikimedia.org/wikipedia/commons/8/84/COGAS-diagram.png>

- Process Heating
- Space Heating
- Water Heating
- Snow Melt

- Low Heat Use (Each < 5% of Available Heat)
  - Existing building space heating
  - New building (SPP) space heating
- Medium Heat Use (Each 5-10% of Available Heat)
  - Enhancement of SPP cycle
    - Air inlet heating for gas turbines
    - Natural gas heat for gas turbines
  - Snow melt for existing roads
  - Snow melt for new roads
- Expect to use 10-20% of available heat inside the fence

- Low Heat Use (Each < 5% of Available Heat)
  - AWWU water heating
  - Process heating for Granite Construction
- Medium Heat Use (Each 5-10% of Available Heat)
  - Building space heating
- High Heat Use (Each > 10% of Available Heat)
  - Snow melt on existing roadways
  - Building heating and snow melt for Airport
- Users outside the fence will potentially be the largest heat consumers

# Potential Users



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5311 Electron Drive  
ADN etc

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5491 Electron Drive  
Carquest, McKesson, AFF

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1300 W 56th Street  
AFF

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5900 Arctic Blvd  
Hutitig Building Products

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1300 W Dowling Road  
Granite Construction

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1200 W Dowling Road  
Alaska Steel

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6141 Rovenna Street  
Wes Gro Paint and Drywall

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6330 Arctic Spur Road  
Body of Christ Ministry

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6350 Arctic Blvd  
Airgas

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6307 Arctic Spur Road  
K&L Distributors (Budweiser)

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6220 Rovenna Street  
NAPA Distribution Center

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6501 Changeport Drive  
The Dome

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6689 Changeport Drive  
Changeport Church

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6601 Changeport Drive  
SYSCO

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6441 Interstate Circle  
Princess Tours

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6500 Interstate Circle  
Watterson Construction

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1550 Ressel Avenue  
Fed Ex Ground

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# Key Points

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- The closer the better
- The bigger the user the better



# Next Steps

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- Continue to identify potential users
- Refine cost estimates for infrastructure development
- Determine economic viability
- Pursue grant opportunities