Natural Gas Clean Air Project & Funding for the Intermountain Industrial Assessment Center (IIAC)

Technical Conference

Docket No. 19-057-33

February 5, 2020

Agenda

- Introductions
- 2019 House Bill 107 background
- Introduction to the IIAC
- Natural Gas Clean Air Project
- Revenue Requirement

Dominion Energy

2019 House Bill 107 background

- HB 107, passed during the 2019 legislative session, expands the Sustainable Transportation & Energy Plan (STEP) to include natural gas programs.
- With Public Service Commission approval, Dominion Energy Utah (DEU) can invest in sustainability projects.
  - The law allows DEU to seek up to $10 million annually, over a period of 5 years, beginning July 1, 2019.
- DEU can pursue a broad range of projects within these categories:
  - Innovative Utility Programs – Associated with natural gas use for "an economic development incentive rate, research and development of other efficiency technologies, acquisition of nonresidential natural gas infrastructure behind the large-scale natural gas utility's meter, the development of communities that can reduce greenhouse gases and NO_x emissions, a natural gas renewable energy project, a commercial line extension program, any other technology program."[1]
  - Natural Gas Clean Air Programs in the Transportation Sector – "An incentive or program to support the use of natural gas, including renewable natural gas, or a program to improve air quality through the use of natural gas or renewable natural gas."[2]
  - Funds are also allowed for the "...investigation, analysis, and implementation"[1] of the above programs.

[1]Utah Code Ann. § 54-20-105(3)
[2]Utah Code Ann. §54-4-13.1(4)

2019 House Bill 107 background

- The Commission may authorize DEU to implement and fund programs that it determines are in the public interest.
  - DEU sought input from the Division of Public Utilities and the Office of Consumer Services in meetings on November 21 and December 23, 2019 prior to submitting the filing in Docket No. 19-057-33 to the Utah Public Service Commission.
- In determining whether a project is in the public interest, the Commission shall consider the following factors:[1]
  - To what extent the use of renewable natural gas is facilitated or expanded by the proposed project;
  - Potential air quality improvements associated with the proposed project;
  - Whether the proposed project could be provided by the private sector or would be viable without the proposed incentives;
  - Whether any proposed incentives were offered to all similarly situated potential partners and recipients; and
  - Potential benefits to ratepayers

[1]Utah Code Ann. § 54-20-104(3)(c)

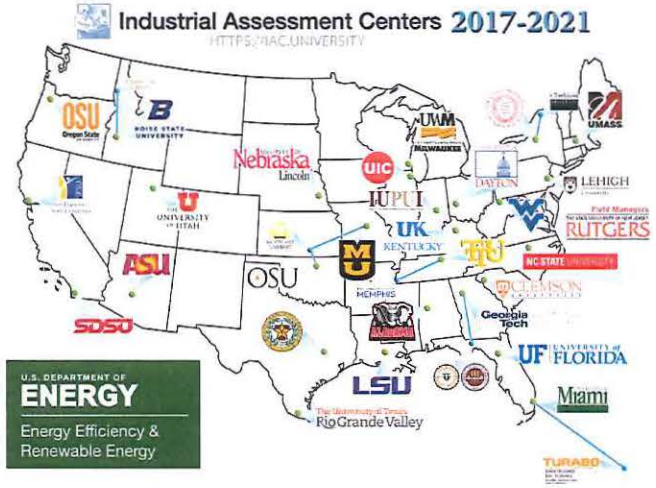
2019 House Bill 107 background

- Since passage of HB 107, DEU has worked to identify potential Natural Gas Clean Air projects.
- DEU has made contacts with legislators, cities, State agencies, school districts, and businesses in an effort to identify Natural Gas Clean Air projects.
- Potential projects identified include:
  - Combined Heat & Power (CHP)
  - Freight switcher diesel engine replacement
  - Landfills
  - Dairy farm production of renewable natural gas
  - School bus diesel engine replacement
  - Wastewater treatment facilities
- DEU requires the technical expertise of an organization like the IIAC to quantify the air quality improvements associated with the potential projects.

2019 House Bill 107 background

- DEU sought input from the Division of Public Utilities and the Office of Consumer Services in meetings on November 21 and December 23, 2019 prior to submitting the filing in Docket No. 19-057-33 to the Utah Public Service Commission.
- In Docket 19-057-33 DEU filed to partner with the IIAC and fund it at $800k per year for a period of three years.
  - Total proposed three year partnership with the IIAC is $2.4 million.
- $370k per year would match annual DOE grant and fund additional 20 assessments for a total of 40 annual assessments.
  - Combined assessments over three years of 120 (60 DOE funded / 60 Company funded).
- Remaining $430k per year would be a change in scope from traditional IIAC work and would be used for project and market assessments of future incentive filings with the Commission.
- Would give DEU independent technical expertise and quantification of air quality improvements associated with the potential projects.
- Administrative costs of $2.4 million are 8% of total $30 million (over three years) of program expenditures.

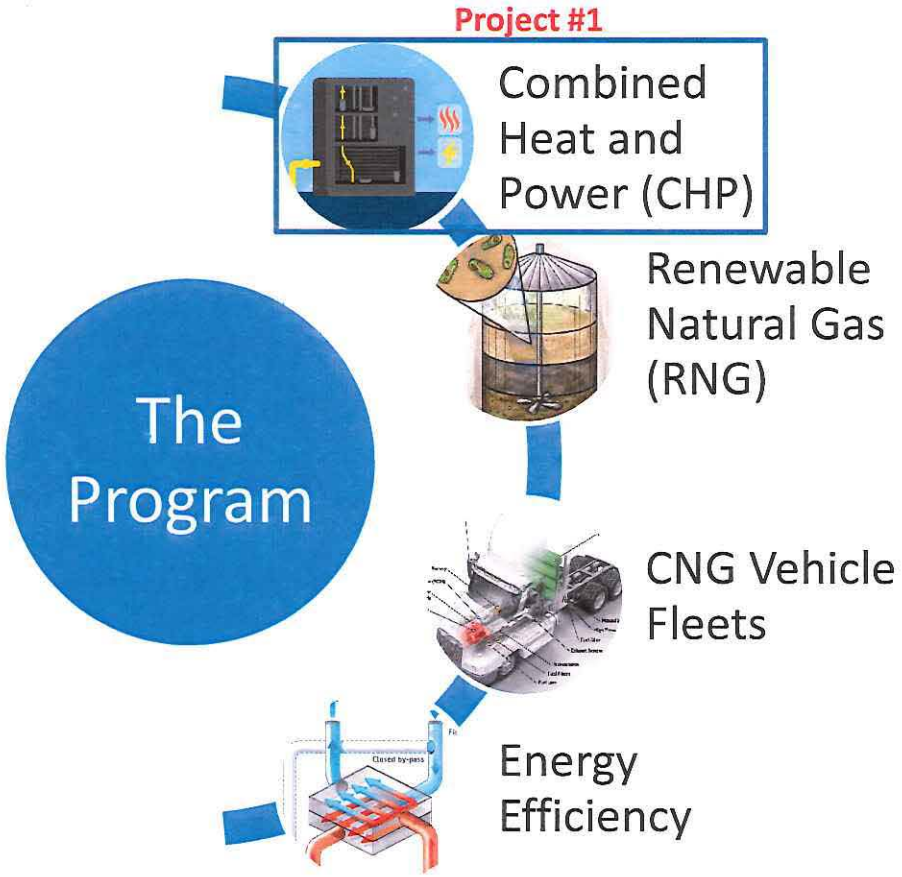
Introduction to the Intermountain Industrial Assessment Center



Dominion Energy

Presentation Overview

- **The Program**
  - Proactive RFP process to find projects
  - Leverages matching funds and infrastructure from DOE, U of U, and Governor's Office (OED)
  - Bonus: an energy assessment service to many more Utah businesses*
  - Energy efficiency is the most cost-effective way to reduce emissions**
- **The Project**
  - Dominion challenged us to propose 1 high-impact project upfront
  - Tangible energy efficiency, grid resiliency, process reliability, cost, and air quality benefits
  - Already under consideration by client
    - Had a bid process started
    - Project relies on incentive



*We propose some qualifications (e.g., size, air quality improvement potential, etc.) to focus on highest impact

**https://www.edf.org/blog/2014/06/10/cheapest-way-cut-climate-pollution-energy-efficiency

Leveraging an Existing Resource

- DOE-funded Program
  - Actually older than the DOE itself (40+ years)
- Intermountain Industrial Assessment Center (IIAC) is hosted by the University of Utah
- Our Job:
  - Provide a **no-cost energy assessment** to *manufacturing* enterprises (federally funded)
  - Find and promote energy saving ideas
  - Visit plant → collect data → quantify savings → report back
- Work closely with the private sector
  - Rocky Mountain Power
  - Dominion Energy
  - Professional consulting firms often accompany us
    - …and really want to hire our graduates!
- Strong partnership with the Governor's Office of Energy Development (OED)
  - Small funding source, close collaboration
  - Our program alone raised the state's energy efficiency rating*

IIAC INTERMOUNTAIN INDUSTRIAL ASSESSMENT CENTER

U.S. DEPARTMENT OF ENERGY

Energy Efficiency & Renewable Energy

GOVERNOR'S OFFICE OF ENERGY DEVELOPMENT

Advancing Utah's Energy Future

*Per Dr. Laura Nelson's remarks at the 2019 Utah Governor's Energy Summit

Utah's Ratings with the American Council for an Energy Efficient Economy (ACEEE)

- Utah's Scores
  - Total 19.5/50
  - Government 4/6
  - Buildings 5.5/8
  - Utilities 6.5/20
    - Includes "Energy Efficiency as a Resource"
  - CHP 0.5/3
  - Transportation 3/10

https://database.aceee.org/state/utah

How STEP Funding Aligns with State Priorities

Improving energy efficiency generally leads to reduced air emissions.

In 2019, the Legislature funded the University of Utah's Kem Gardner Policy Institute to develop a roadmap for the state's air quality and climate future. Two highlights:

- "Foremost is to defend Utah's commerce and industry, .. by encouraging investment in efforts and technologies that cut emissions, raise energy efficiency... convert waste to renewable natural gas."

- "Encourage energy efficiency audits for small industrial and commercial facilities."

The Utah Roadmap

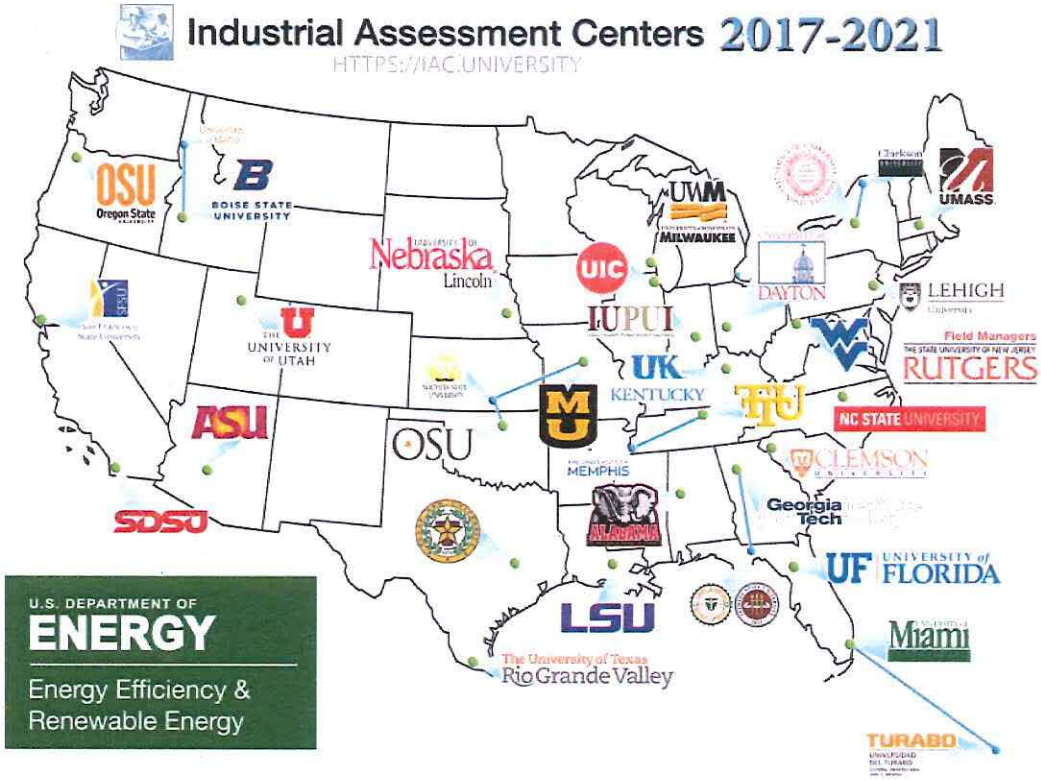
Positive solutions on climate and air quality

STEP and Evaluation of Air-Quality Impacts

- IIAC focuses on energy savings, economic benefits, and workforce development
- Energy savings can have complementary air-quality benefits
  - Some projects involve transferring emissions to different regions
  - Important to evaluate tradeoffs and air-quality impacts in non-attainment regions
- STEP funding will bring Dr. Kelly's team to evaluate air-quality impacts

IACs Around the Country

- Each IAC is recognized by DOE as a regional authority on industrial energy efficiency
- $137,000 annual savings identified on average per facility
- IIAC (in Utah) averaging 55% implementation rate over last 3 years
- Services only available to manufacturing sector
  - STEP allows expansion to commercial, institutional, waste, municipal, fleets, etc.



https://iac.university/

https://www.energy.gov/sites/prod/files/2019/03/f60/eere-industrial-assessment-centers-impacts.pdf

https://iac.university/center/UU - Processed statistical data available upon request.

Some Examples of Projects We've Identified...

Energy Efficiency Project Example #1
(DPU 5)

Install efficient LED lights

Estimated Annual Cost Savings [$/yr]	176,898
Estimated Annual Energy Savings [kWh/year]	2,888,469
Implementation Cost [$]	256,282
Estimated Payback Period [years]	1.44

<2 year payback. No incentive required.
This was partially implemented.

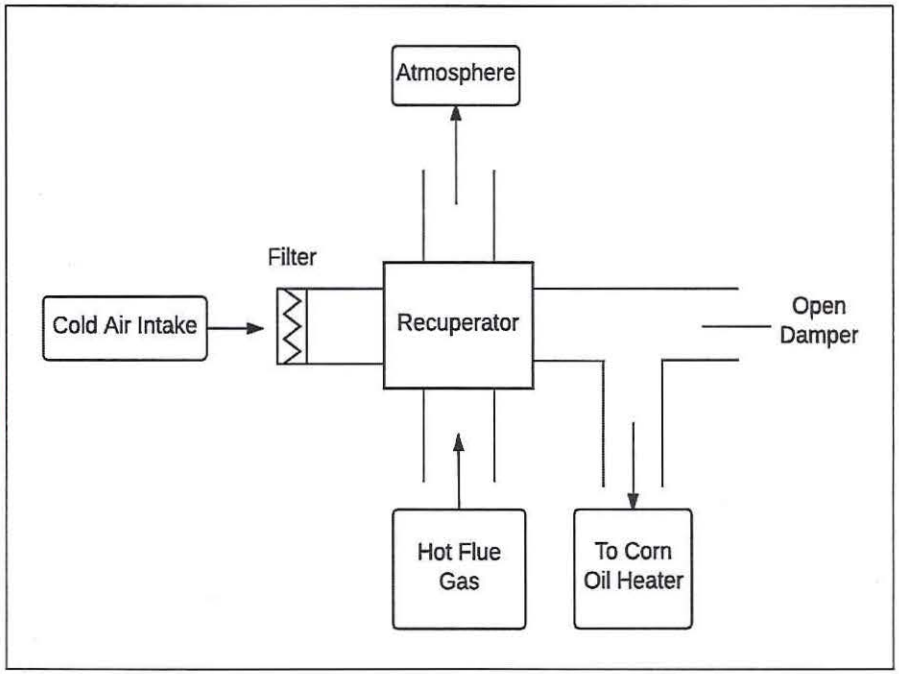
An IIAC report will contain more extensive details on the recommended project, including detailed explanation of benefits, detailed implementation costs (often accompanied by vendor bids), explanations for how to implement, etc.
A sample report excerpt is provided separately under highly confidential designation.

Energy Efficiency Project Example #2
(DPU 5)

Recover waste heat to pre-heat cold intake air

Estimated Annual Cost Savings [$/yr]	14,977
Estimated Energy Savings [MMBtu/yr]	4497.7
Implementation Cost [$]	8,120
Estimated Payback Period [years]	0.54

<2 year payback. No incentive required.
This was implemented.

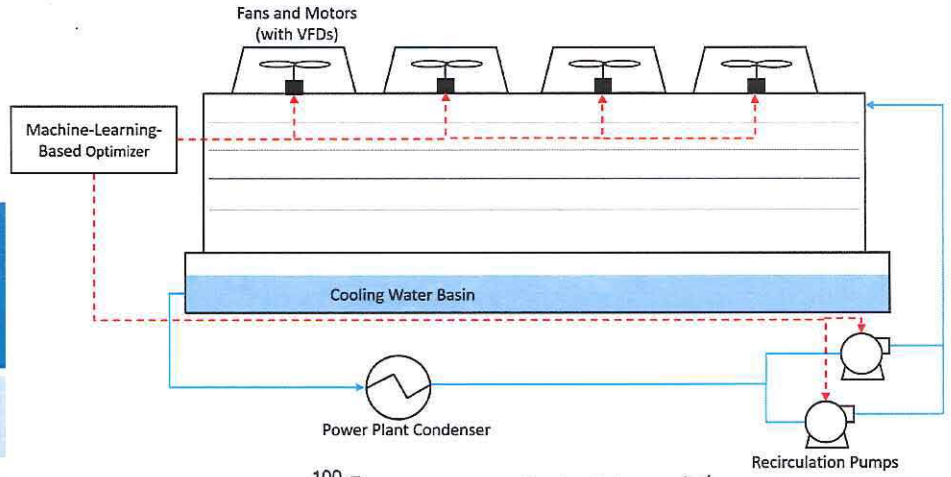


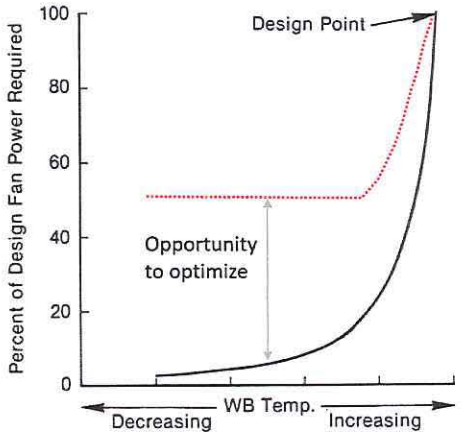
Energy Efficiency Project Example #3
(DPU 5)

Use optimization software for cooling tower

Estimated Annual Cost Savings [$/yr]	149,664
Estimated Energy Savings [kWh/yr]	2,410,048
Implementation Cost [$]	22,400
Estimated Payback Period [years]	0.15

This was implemented.
The IIAC actually got a supplemental $25K grant to help them with it.



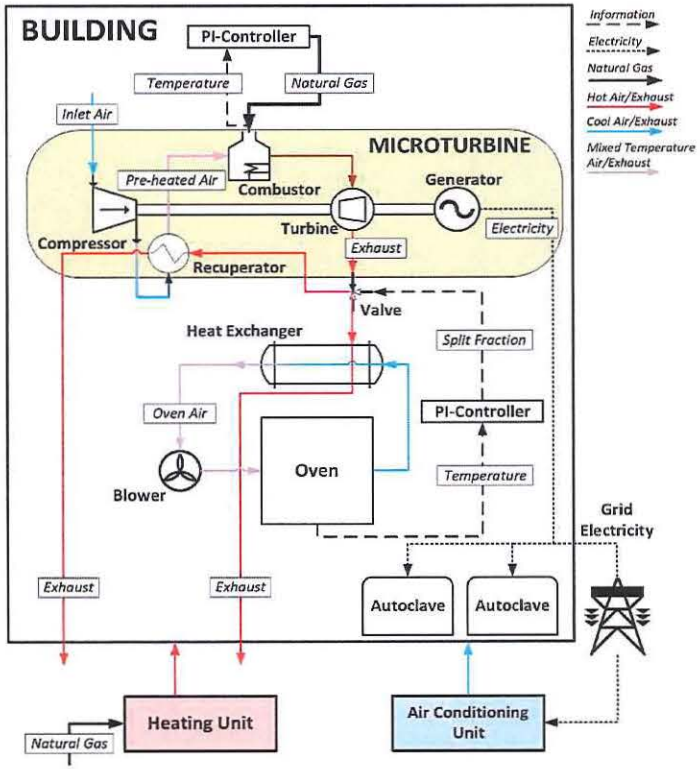


CHP Project Example
(DPU 5)

Install combined heat and power (CHP, a.k.a., cogeneration) to replace *very* inefficient electric process heating

Estimated Annual Cost Savings [$/yr]	159,197
Estimated Usage Savings [kWh/yr]	3,037,367
Estimated Demand Savings [kW/month]	1,200
Implementation Cost [$]	1,737,000
Estimated Payback Period [years]	10.9

- Company seriously considering this
- Can't expand due to power import limitation
- They need:
  - A financial incentive to bring down payback
  - Help with engineering and project facilitation



Project Identification and Evaluation

- 100s of projects identified
- 55% implementation rate
  - <2 year payback

no brainer

  - 2-5 year payback

maybe

  - >5 year payback

probably not

    - High impact projects for the community
    - Capital & mgmt. approval is difficult
    - This is where help is needed!!!

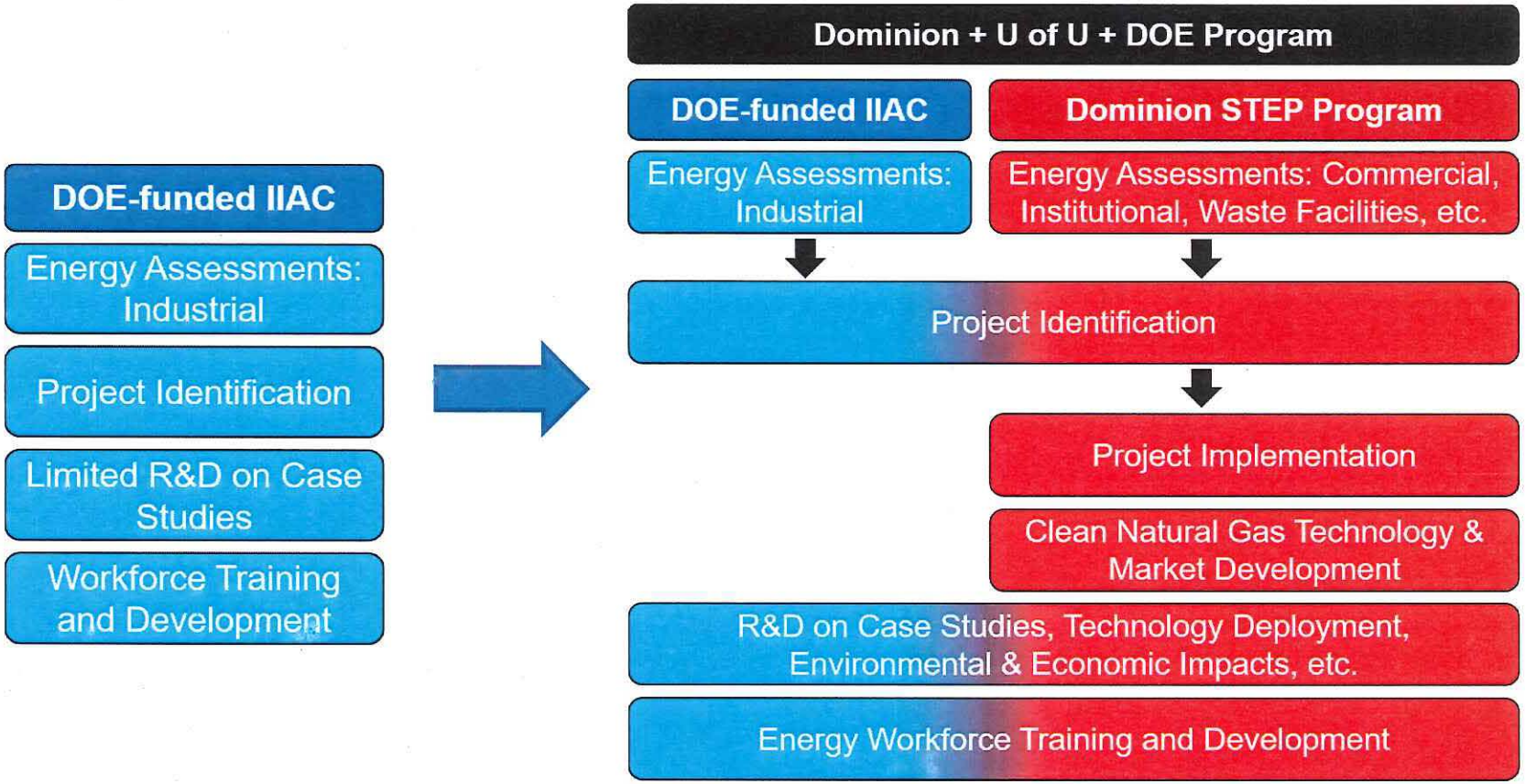
Pharmaceutical

Heavy Industry

Discrete Parts Mfg.

Food Processing

The Vision for the Program
(OCS 7)

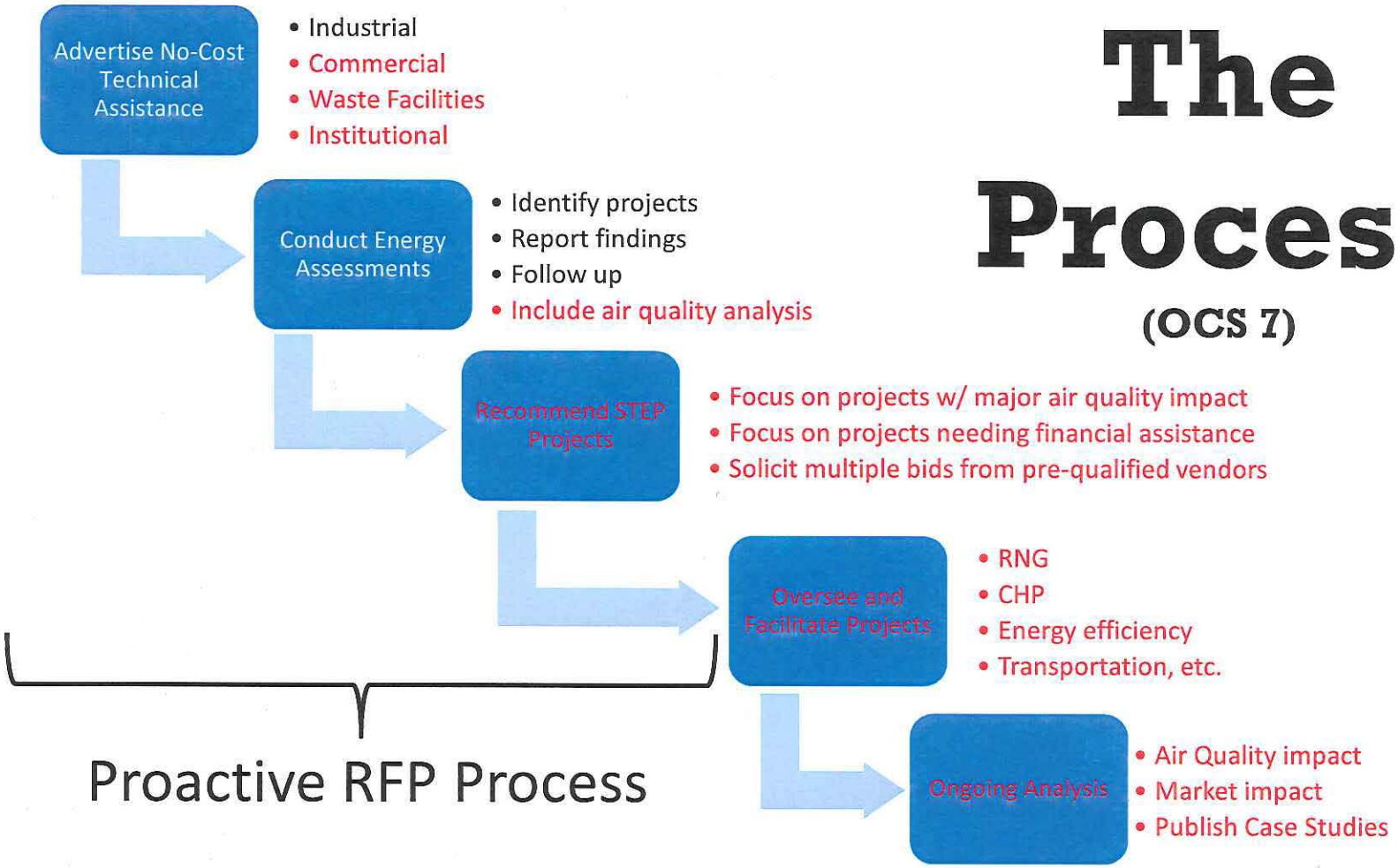


Five Major Objectives (OCS 7)

- Conduct 40 Energy Assessments Annually (20 DOE + 20 STEP for Three Years, 120 total)
- Identify RNG, CHP, Transportation, and Energy Efficiency Projects to Apply STEP Funds
- Facilitate and Oversee Project Implementation
- Measurement and Verification + Publish on Air Quality (and other) Impacts of Projects
- Develop Streamlined Processes and Qualified Vendors to bring down Cost of Clean NG in UT

The Process

(OCS 7)



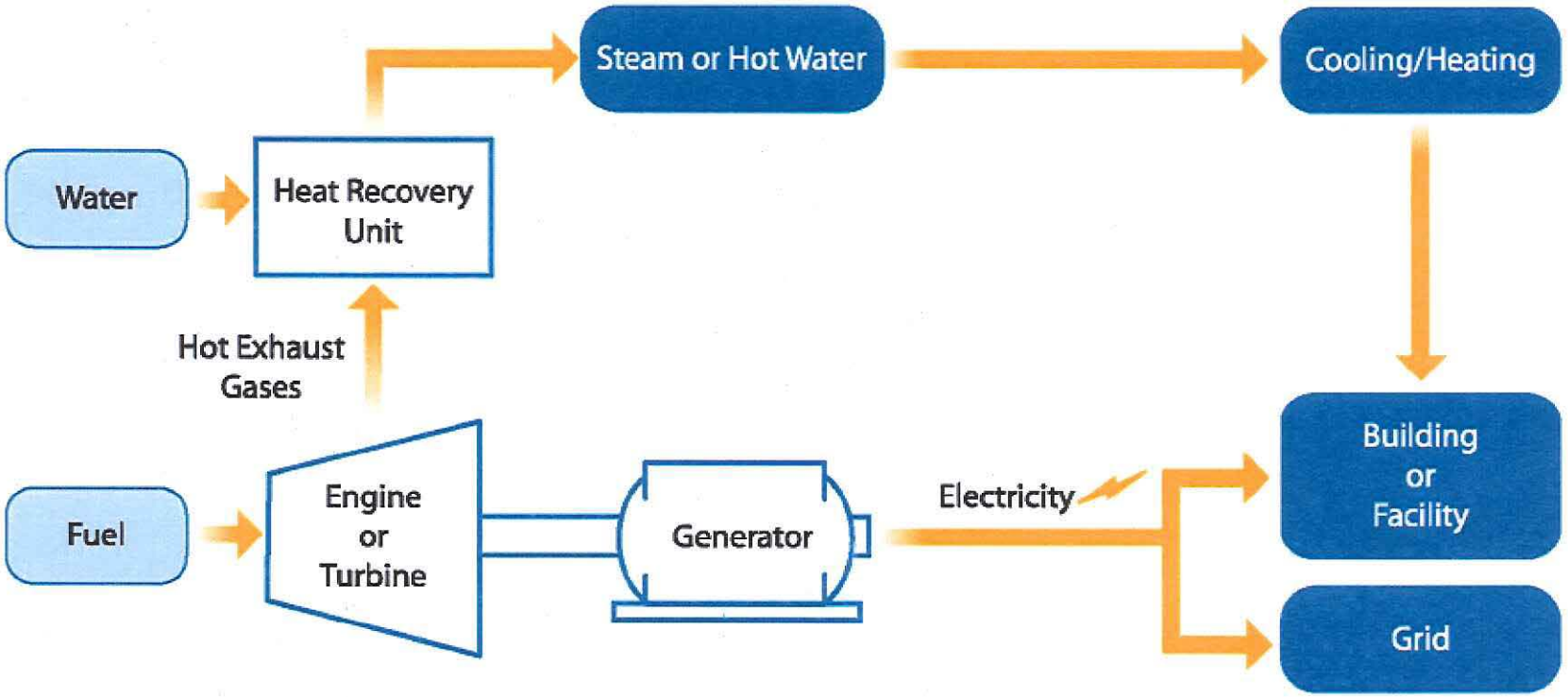
Red = New with STEP Funding

Benefits of the Proposed Program

- Leverages existing infrastructure and technical expertise
- Leverages matching funds from DOE and OED
- "Boots on the ground" approach
  - Site assessments open to any business
  - Low-hanging fruit projects will be implemented with no additional STEP funds
  - STEP funds used to help impactful projects needing assistance
- Transparent, third-party for project selection and implementation
- Ongoing analysis will document emissions and cost savings
- Will build a streamlined process and qualified network of vendors
- Will bring down costs and grow the market for clean NG tech

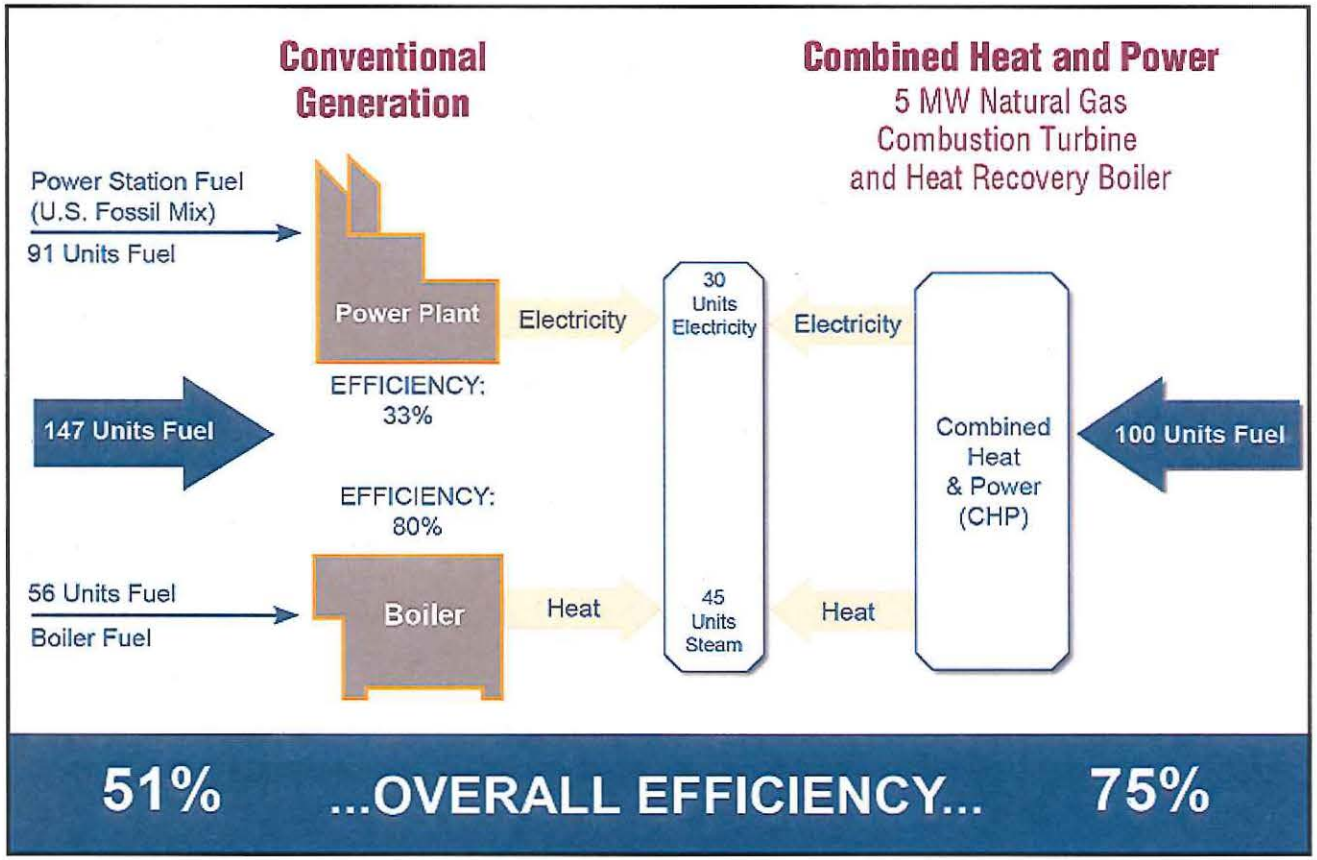
Now, onto the proposed project...

What is Combined Heat and Power (CHP)?
(DPU 1)



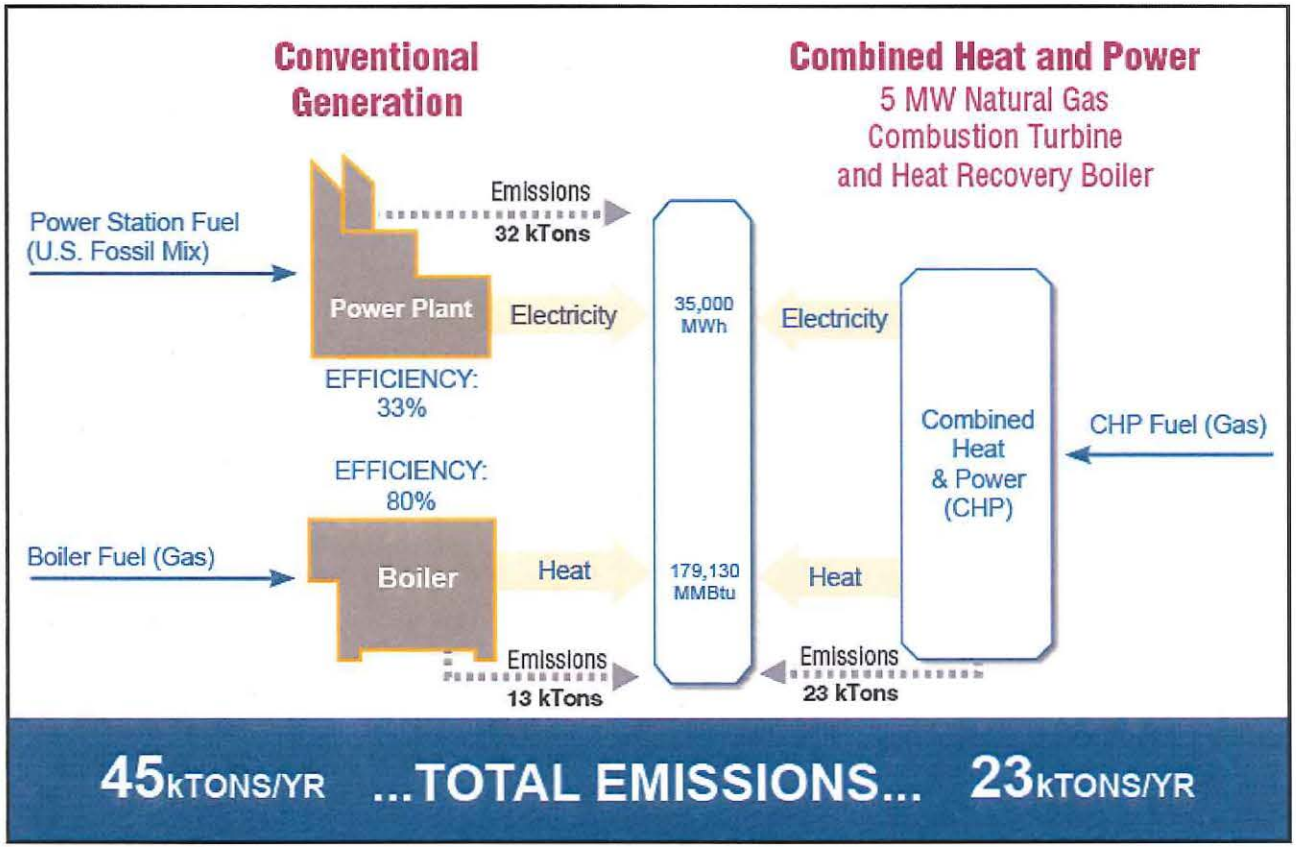
https://www.epa.gov/chp/what-chp

Efficiency Impact of CHP
(DPU 1)



https://www.epa.gov/chp/chp-benefits

Emissions Impact of CHP
(DPU 1)



https://www.epa.gov/chp/chp-benefits

Cost and Reliability Impacts of CHP

https://www.epa.gov/chp/chp-benefits

Renewable CHP
(OCS 6)

Solar and wind are becoming cost effective

- Reliability and storage remain major technological hurdles

How about heat, especially process heat?

- Electric heating is not efficient or cost effective
- Can't rely on intermittent renewables for continuous process heating

CHP can use renewable natural gas

- Which STEP can identify and develop

CHP is hydrogen-ready*

- The fuel of the future
- A good way to store energy

CHP can increase electric grid reliability

- Essentially, it can help enable solar and wind

CHP, even using fossil NG, is still a cheaper way to reduce emissions

- See next slide

* https://pv-magazine-usa.com/2020/01/27/green-hydrogen-backed-by-us-solar-firms-8minute-and-intersect-power/

Environmental and Economic Technology Comparison
(OCS 6)

A summarized economic and environmental analysis of solar photovoltaic vs. combined heat and power (CHP) for an industrial system where CHP is used to replace boiler steam.

	Solar	CHP	RNG
Capital Cost	$4.87 M	$4.02 M	$1.90 M
Annual Cost Savings (relative to grid & boiler)	$302 K	$643 K	$117 K
Simple Payback	16.1 years	6.3 years	16.2 years
CO_2 Avoided	3,721 tons/yr	8,543 tons/yr	2,418 tons/yr
Cost per ton of CO_2 avoided	117.3 $/ton	62.9 $/ton	$105.3 $/ton
NO_x avoided	8,231 lbs./yr	38,800 lbs./yr	TBD
Cost per lb. of NO_x avoided	$53.01/lb.	$13.87/lb.	TBD

An area we want to develop

Analysis assumes 2 MW_e electricity production for the Solar and CHP cases. All waste heat is utilized by the CHP system as industrial process heat. The RNG system is for an anaerobic digester to process animal waste for 3,000 animal units. All source data (costs, efficiencies, emission factors, etc.) come from www.epa.gov, www.eia.gov, and academic research journals available at www.sciencedirect.com. The solar system does not have battery storage, so the site must use solar energy when it is available. No subsidies or tax incentives are considered in any scenario.

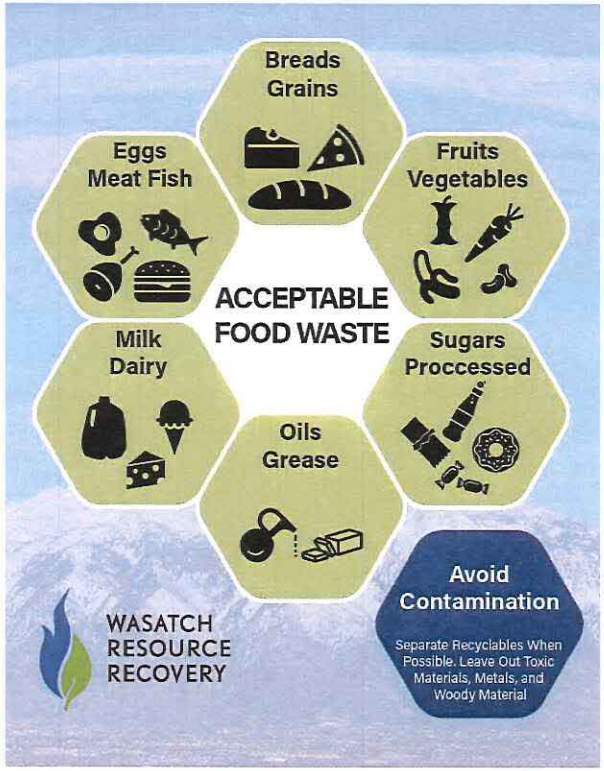
The analysis for renewable natural gas (RNG) still contains significant uncertainties. Compared to solar and CHP, data for RNG is not nearly as abundant and definitive from trusted sources like epa.gov and eia.gov. Most data for this analysis is obtained from a research article: "Anaerobic Digestor Production and Cost Functions" from the *Journal of Ecological Economics.*

Renewable Natural Gas Opportunities

- Dedicated Waste Processing Facilities
- Methane Capture from Landfills
- Waste Water Treatment Plants
- Animal Waste from Dairies, Farms, Feed Lots

https://www.socalgas.com/smart-energy/renewable-gas/what-is-renewable-natural-gas

Potential Project: Dedicated Waste Processing for RNG

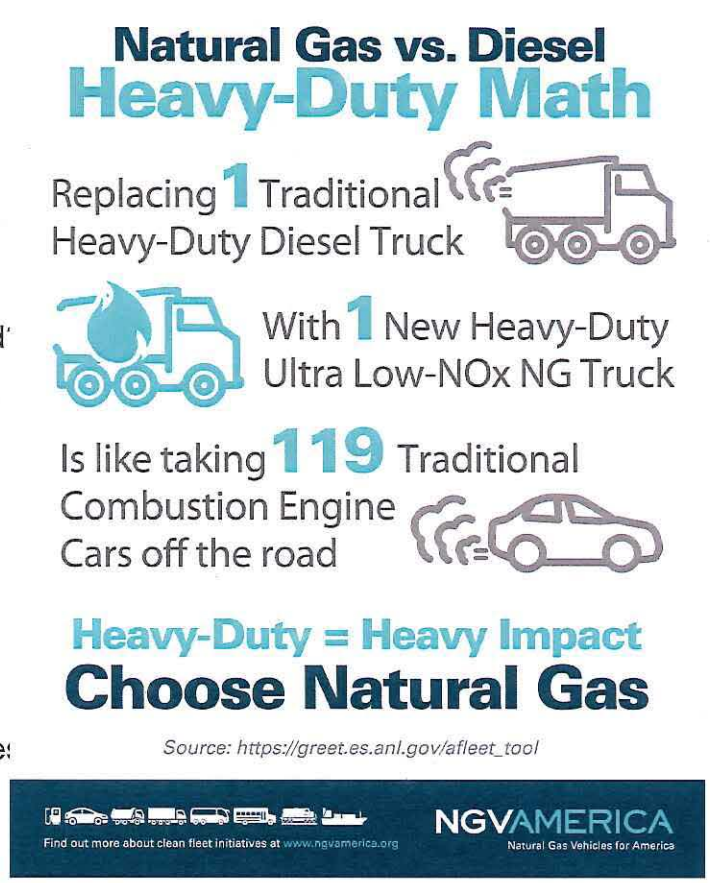


http://wasatchresourcerecovery.com/project-status/

- Same approach:
  - Assess the facility
  - Identify projects:
    - Greenfield, upgrades, expansions, etc.
  - Evaluate cost/benefit of using STEP funds
- Dual opportunity: IIAC can help connect the dots
  - Facilities wanting to process waste
  - Facilities needing to get rid of waste
- A key area where development is needed

Fleet upgrade projects

- STEP funds will allow IIAC to study impacts and cost-effectiveness of converting fleets from Diesel to NG
  - How do costs and benefits compare to other projects?
  - What infrastructure is needed'
  - Which organizations will be committed?
- Starting points:
  - Jordan School District
  - ACE Disposal
  - UDOT Snow Plows
  - Atlas Disposal Station
  - Kennecott Dump Trucks
  - Potential DE Station Upgrade
- Approach: start with an assessment of their facilities and/or fleets

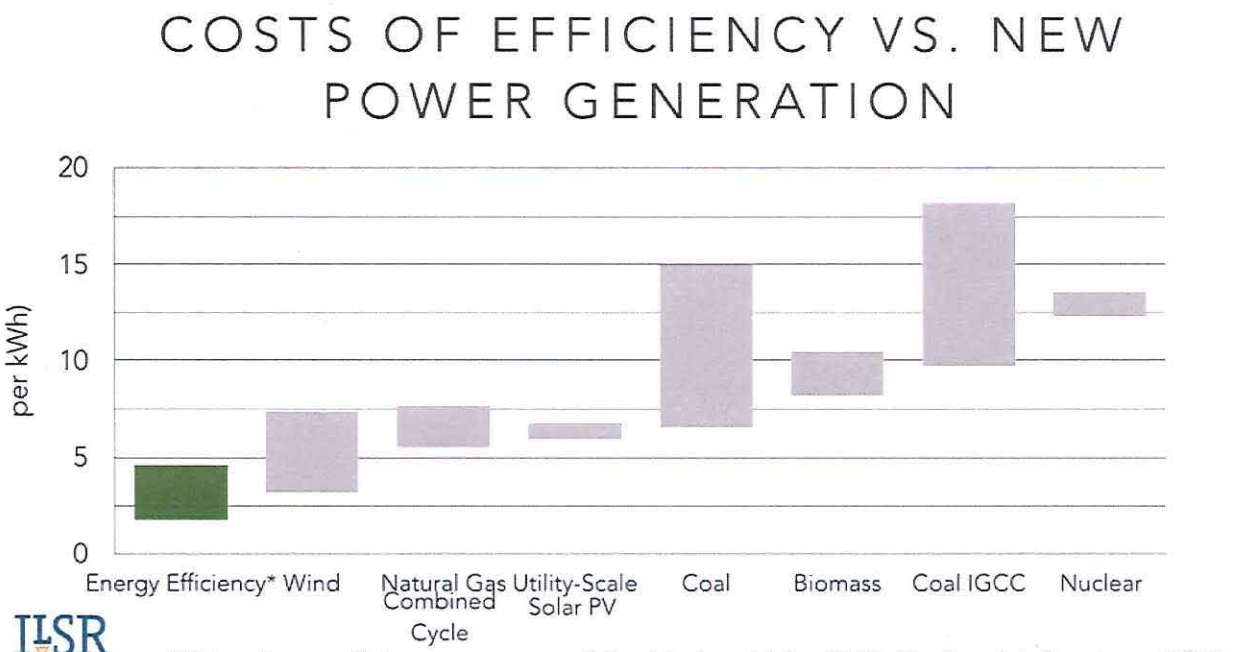


https://www.ngvamerica.org/rally/natural-gas-vs-diesel-heavy-duty-math/

https://www.ngvamerica.org/rally/the-worlds-cleanest-heavy-duty-engine-runs-on-natural-gas/

Energy Efficiency Projects

- Energy efficiency remains the lowest-cost way to save or produce energy
- These are generally the no-brainer (<2 yr. payback) projects (or operational changes)
  - Identifying them is half the battle
  - Companies don't have the training, focus, and/or resources to pursue
  - An energy assessment explaining or evaluating makes a huge difference
- Projects are highly varied and need trained professionals to identify and/or analyze



https://ilsr.org/report-inclusive-energy-financing/

Five Factors of HB 107

Renewable gas facilitation

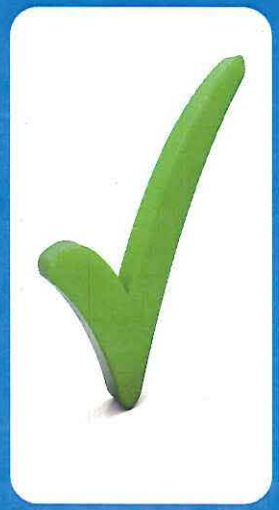
Air quality improvements

Private sector and incentives

Similar potential partners and recipients

Potential benefits to ratepayers

Five Factors of HB 107



Potential benefits to ratepayers

- Job creation and workforce development
- Market development, including rural Utah
- Energy efficiency programs
- Costs go down, efficiency goes up
- Puts off new electricity generation
- Legislature approved $10M/yr for air quality improvements

The Following Slides Contain Confidential Information

Highly Confidential—Subject to Public Service Commission of Utah Rule R746-1-602 and 603

Proposed CHP Project

- Client was already undergoing a bid process for CHP
  - Site has considered CHP at different times for ~15 years
  - Other company sites have successfully deployed CHP
    - [redacted]
- [redacted]
  - [redacted]
  - STEP provides lesser of $13.5M [redacted]
  - STEP takes it from [redacted] year payback to [redacted] year payback
- Reduces NOx by [redacted] tons annually
- Reduces CO2 by 95,000 tons annually
  - Equivalent to 18,200 passenger vehicles or 9,100 homes
- May delay a major electric feeder upgrade
- Confidential info provided in original testimony and subsequent data request responses

*Information from vendor's initial estimate. IIAC can verify performance numbers. Financial estimate may change as process continues.

Breakout of NOx reductions (OCS 1, 2)

Highly Confidential—Subject to Public Service Commission of Utah Rule R746-1-602 and 603

- On-site reductions in Salt Lake non-attainment area
  - [redacted] tpy (existing) – [redacted] tpy (CHP +SCR) = [redacted] **ton/yr**
  - [redacted]**% reduction** on site
- Grid reductions
  - [redacted] tpy (existing) * 0.2 (fraction of electricity generation in greater Wasatch Front) = [redacted] **ton/yr**
  - Note – grid reductions are based on annual average production in Utah (first draft estimate) and include capacity factor for each generator. Most recent eGrid has 22% of electrical generation along the Greater Wasatch Front. Additional effort would be needed to estimate the air quality impacts in each non-attainment area.
- Total reductions to greater Wasatch Front = [redacted] **ton/yr**
  - [redacted]**% of NOx emission reduction in Salt Lake non-attainment area** (based on 2019 SIP inventory)

Electricity Generation Sources in the Greater Wasatch Front (OCS 3)

Plant name	Plant transmission or distribution system owner name	Plant county name	Plant primary fuel	Plant primary coal/oil/gas/ other fossil fuel category	Plant annual net generation (MWh)
Lake Side Power Plant	PacifiCorp	Utah	NG	GAS	4,861,169
Currant Creek Power Project	PacifiCorp	Juab	NG	GAS	2,418,275
Nebo Power Station	Utah Associated Mun Power Sys	Utah	NG	GAS	433,490
US Magnesium	PacifiCorp	Tooele	NG	GAS	217,209
West Valley Power Plant	PacifiCorp	Salt Lake	NG	GAS	215,130
Kennecott Power Plant	PacifiCorp	Salt Lake	WH	OTHF	193,008
Tesoro SLC Cogeneration Plant	PacifiCorp	Salt Lake	NG	GAS	182,165
eBay - South Jordan	PacifiCorp	Salt Lake	NG	GAS	75,228
Gadsby	PacifiCorp	Salt Lake	NG	GAS	59,310
Trans-Jordan Generating Station	PacifiCorp	Salt Lake	LFG	BIOMASS	38,504
HTW Plant 303 COGEN	PacifiCorp	Salt Lake	NG	GAS	32,632
Salt Lake Energy Systems	PacifiCorp	Salt Lake	LFG	BIOMASS	25,856
Bountiful City	City of Bountiful	Davis	NG	GAS	20,513
Hill AFB LFG Facility, Bldg #737	PacifiCorp	Davis	LFG	BIOMASS	13,718
Whitehead	City of Springville - (UT)	Utah	NG	GAS	10,131
Murray Turbine	City of Murray - (UT)	Salt Lake	NG	GAS	9,221
Provo Power Plant	PacifiCorp	Utah	NG	GAS	5,297
Snowbird Power Plant	PacifiCorp	Salt Lake	NG	GAS	15
Payson	Payson City Corporation	Utah	NG	GAS	4

From EPA's e-grid for 2018 (January 28, 2020)

EPA Technology Comparison (OCS 4 and DPU 3)

- Direct excerpt from EPA
  - CHP less expensive than solar and wind
  - CHP has substantially higher NO_X reductions
- To get $/$NO_X$ removed:

$$\frac{\text{Total lifecycle costs}}{\text{Total lifecycle } NO_X \text{ offset}}$$

- Costs include annualized capital costs (i.e., with interest rate and financing life)
- There are many factors that go into this
  - Assumptions → Hard numbers only as detailed engineering and financing are complete

How do the benefits and costs of CHP compare to other clean energy technologies?

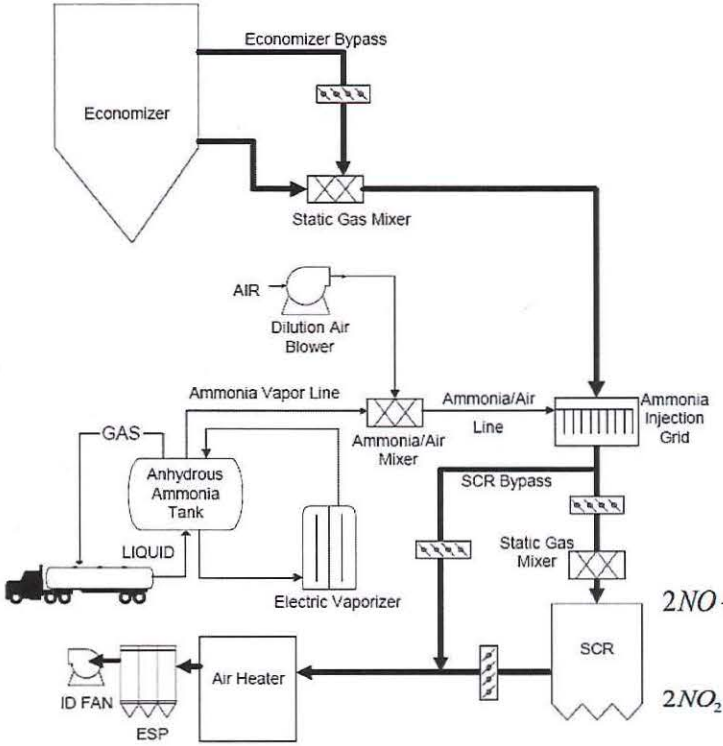
Category	10 MW CHP	10 MW Wind	10 MW PV	10 MW Natural Gas Combined Cycle
Annual Capacity Factor	85%	34%	25%	70%
Annual Electricity	74,446 MWh	29,784 MWh	21,900 MWh	61,320 MWh
Annual Useful Heat	103,417 MWh_t	None	None	None
Footprint Required	6,000 sq ft	76,000 sq ft	1,740,000 sq ft	N/A
Capital Cost	$20 million	$24.4 million	$60.5 million	$9.8 million
Cost of Power*	7.6 ¢/kWh	7.5 ¢/kWh	23.5 ¢/kWh	6.1 ¢/kWh
Annual Energy Savings	316,218 MMBtu	306,871 MMBtu	225,640 MMBtu	163,724 MMBtu
Annual CO_2 Savings	42,506 Tons	27,546 Tons	20,254 Tons	28,233 Tons
Annual NOx Savings	87.8 Tons	36.4 Tons	26.8 Tons	61.9 Tons

Table Assumptions: 10 MW Gas Turbine CHP-28% electric efficiency, 68% total efficiency, 15 PPM NOx; Electricity displaces National All Fossil Average Generation (eGRID 2010)-9,720 Btu/kWh, 1,745 lbs CO_2/MWh, 2.3078 lbs NOx/MWh, 6% T&D loss; Thermal displaces 80% efficient on-site natural gas boiler with 0.1 lb/MMBtu NOx emissions; NGCC NOx emissions = 9 ppm; DOE EIA Annual Energy Outlook 2011 assumptions for Capacity Factor, Capital cost, and O&M cost of 7 MW utility scale PV, 100 MW utility scale Wind (1.5 to 3 MW modules) and 540 MW NGCC; Capital charges based on: 7% interest, 30 year life for PV, Wind and NGCC, 9% interest, 20 year life for CHP; CHP and NGCC fuel price = $6.00/MMBtu.
*The cost of power for CHP is at the point of use; the cost of power for PV, wind and central station combined cycle is at the point of generation and would need to have transmission and distribution costs added to the totals in the table (2 to 4 ¢/kWh) to be comparable.

https://www.epa.gov/sites/production/files/2015-07/documents/combined_heat_and_power_frequently_asked_questions.pdf

What is Selective Catalytic Reduction?
(DPU 1, 2 and OCS 6)

- Post combustion NO_X removal technology
- Uses Ammonia (NH_3) and a catalyst to convert NO_X into elemental nitrogen and water vapor
- Can remove over 90% of NO_X from combustion flue gas streams
- An exhaust scrubber is used to remove SO_X, which is not an issue with NG combustion (it is an issue with coal combustion)
- The proposed site does not currently have SCRs on boilers



$$2NO + 2NH_3 + \frac{1}{2}O_2 \xrightarrow{catalyst} 2N_2 + 3H_2O$$

$$2NO_2 + 4NH_3 + O_2 \xrightarrow{catalyst} 3N_2 + 6H_2O$$

https://www3.epa.gov/ttn/ecas/docs/SCRCostManualchapter7thEdition_2016.pdf

Other Technology Options (OCS 5, 6)

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- Keep existing boilers, but install SCR on them?
  - No financial incentive for company to do this
  - This would require a mandate
  - SCR alone only provides a fraction of air quality benefit
  - CHP has substantial NO_X emissions by virtue of being much more energy efficient
  - CHP has tangible financial benefits to the company, so they would actually do it
- All electric boilers (assuming driven by renewables)?
  - CHP has 25-30 year life (conservative, as parts can be replaced to keep it going for a long time)
    - They have boilers as old as [redacted] onsite with no immediate plans to replace (absent this project)
  - Will it be replaced by an electric boiler before end of life?
    - **No.** Technology doesn't exist at this scale (and likely never will) because of extreme high cost and reliability issues associated with relying on intermittent renewables.
    - Electrification doesn't make sense for high temperature, high load process heat
      - If technology existed, project would require [redacted] MW of solar [redacted]
      - Enough to power [redacted] homes on average
      - If 100% renewable, you'd have to grossly oversize solar and include prohibitively expensive storage system
    - If renewable is desired, CHP + RNG / H_2 is the future for industrial facilities, not solar/wind + batteries
      - CHP makes sense in the present and in the future
    - **Process heat is a major necessary area of development in that conversation**

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Project Summary

- This program makes sense because:
  - Infrastructure already exists (people, facilities, methodologies)
  - DOE endorsement and matching funds
  - "Boots on the ground" approach
  - Direct benefits to any interested facility and Utah residents
- Good faith effort to put forward a high-impact project
  - Flagship project with *many* tangible benefits
  - Heavily invested site putting up [redacted]% of costs
- The program (above) needs resources to continue doing rigorous project analysis
  - We need a chicken before we start getting the eggs
- We really appreciate questions and discussion!

Revenue Requirement

DPU 4 – Project Accounting

Account 182.450	Dr	Cr
Combined Heat/Power	$4,500,000	
IIAC Funding	$66,667	
Interest	$12,500	
Surcharge Revenue		($447,222)
Balance	$4,131,945	

DPU #4 – Tariff Changes

GS VOLUMETRIC RATES

Rates Per Dth Use
Dth = decatherm = 10 the

	Summer Rates: Apr. 1 - Oct. 31	
	First 45 Dth	All Over 45 Dth
Base DNG	$1.72670	$0.72670
CET Amortization	0.00033	0.00014
DSM Amortization	0.26120	0.26120
Energy Assistance	0.01244	0.01244
Infrastructure Rate Adjustment	0.27907	0.11734
Tax Reform Surcredit	(0.10813)	(0.10813)
Tax Reform Surcredit 3	(0.03438)	(0.03438)
STEP Surcharge	0.00594	0.00254
Distribution Non-Gas Rate	**$2.14317**	**$0.97785**

Dominion Energy

2.18 SUSTAINABLE TRANSPORTATION ENERGY PLAN, Utah Code Ann. § 54-20-105 (STEP) DEFERRED ACCOUNT ACCRUAL

The Company shall record all STEP related expenses in the STEP Deferred Account (Account 182.4).

ASSIGNMENT TO CLASSES

The Surcharge will be assigned to each rate class based on the Commission-approved total pro rata share of the DNG tariff revenue ordered in the most recent general rate case. The Surcharge assigned to each class will be collected based on a percentage change to the demand charge, if applicable, and each block of volumetric rates of the respective rate schedules.

ADJUSTMENT OF SURCHARGE

The Company will file an application to adjust the Surcharge as needed.

CARRYING CHARGE

An annual interest rate, as described in § 8.07 Calculation of Carrying Charge, shall be applied monthly to the STEP Deferred Account balance, as adjusted for the corresponding tax deferral balance in Account 283. The STEP Deferred Account will be increased by the carrying charge.

QUESTIONS?

Dominion Energy