



Town of Rangely

RDC Packet

March 09, 2023 - Following RDA Meeting





(RDC)

Town of Rangely Conference Room

**** March 9, 2023 ****

Agenda

FOLLOWING RDA MEETING

Keely Ellis, Chairman

Ron Granger, Vice Chairman
Karen Reed
Ryan Huitt

Sara Peterson
Board Seat Open
Emma Baker

1) Call to Order

2) Roll Call

3) Minutes of Meeting

a) Discussion and Action to approve the January 19, 2023, minutes.

4) Changes to the Agenda

5) Old Business

6) New Business

a) Discussion and Action to approve Jan/Feb 2023 Financials.

b) Discussion and action to approve the an application to NWCDDC-Just Transition/OEDIT grant for the Rangely COGENCY project not to exceed \$1,000,000

c) Discussion and action to approve an application to for an EIAF DOLA Tier 2 Grant for the Rangely COGENCY Project not to exceed \$1,000,000

7) Information

8) Adjourn



(RDC)
Town of Rangely Conference Room
**** January 19, 2023 ****
Minutes
FOLLOWING RDA MEETING

Keely Ellis, Chairman

Ron Granger, Vice Chairman
Karen Reed
Ryan Huitt

Sara Peterson
McKenzie Webber
Emma Baker

1) **Call to Order** – 8:16am

2) **Roll Call** - suspended

3) **Minutes of Meeting**

a) *Discussion and Action to approve the November 9, 2022, minutes – Motion made by McKenzie Webber to approve the November 9, 2022, minutes, second by Ron Granger. Motion passed.*

4) **Changes to the Agenda** - None

5) **Old Business**

6) **New Business**

a) *Discussion and Action to approve Nov/Dec 2022 Financials. – Motion made by Emma Baker to approve Nov/Dec Financials, second by Ryan Huitt. Motion passed.*

b) *Discussion and Action to accept the resignation of McKenzie Webber to the Rangely Development Corporation – Motion made by Ron Granger to accept the resignation of McKenzie Webber to the Rangely Development Corporation, second by Ryan Huitt. Motion passed.*

7) **Information** – COGENCY update: Continue working with the federal funding group. Also have applied for another grant through DOLA for part of the match.

8) **Adjourn** - 8:21am

TOWN OF RANGELY
REVENUES WITH COMPARISON TO BUDGET
FOR THE 1 MONTHS ENDING JANUARY 31, 2023

RDC RANGELY DEV CORP FUND

	PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
<u>REVENUES</u>					
76-30-300 INTEREST INCOME	478.57	478.57	500	21.43	95.71
76-30-400 MISC INCOME	.00	.00	10,196,000	10,196,000.00	.00
TOTAL REVENUES	478.57	478.57	10,196,500	10,196,021.43	.00
TOTAL FUND REVENUE	478.57	478.57	10,196,500	10,196,021.43	.00

TOWN OF RANGELY
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 1 MONTHS ENDING JANUARY 31, 2023

RDC RANGELY DEV CORP FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
76-40-220	PROF/TECH SERVICES	21.91	21.91	500	478.09	4.38
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	TOTAL OPERATING EXPENSES	21.91	21.91	500	478.09	4.38
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	<u>CAPITAL IMPROVEMENTS</u>					
76-40-800	CAPITAL IMPROVEMENTS	.00	.00	10,196.00	10,196,000.00	.00
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	TOTAL CAPITAL IMPROVEMENTS	.00	.00	10,196.00	10,196,000.00	.00
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	TOTAL DEPARTMENT 40	21.91	21.91	10,196.50	10,196,478.09	.00
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	TOTAL FUND EXPENDITURES	21.91	21.91	10,196.50	10,196,478.09	.00
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	NET REVENUE OVER EXPENDITURES	456.66	456.66	0 (456.66)	.00
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

TOWN OF RANGELY
REVENUES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING FEBRUARY 28, 2023

RDC RANGELY DEV CORP FUND

	PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
<u>REVENUES</u>					
76-30-300 INTEREST INCOME	508.03	986.60	500	(486.60)	197.32
76-30-400 MISC INCOME	.00	.00	10,196,000	10,196,000.00	.00
TOTAL REVENUES	508.03	986.60	10,196,500	10,195,513.40	.01
TOTAL FUND REVENUE	508.03	986.60	10,196,500	10,195,513.40	.01

TOWN OF RANGELY
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING FEBRUARY 28, 2023

RDC RANGELY DEV CORP FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
76-40-220	PROF/TECH SERVICES	11.91	33.82	500	466.18	6.76
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	TOTAL OPERATING EXPENSES	11.91	33.82	500	466.18	6.76
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	<u>CAPITAL IMPROVEMENTS</u>					
76-40-800	CAPITAL IMPROVEMENTS	.00	.00	10,196.00	10,196,000.00	.00
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	TOTAL CAPITAL IMPROVEMENTS	.00	.00	10,196.00	10,196,000.00	.00
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	TOTAL DEPARTMENT 40	11.91	33.82	10,196.50	10,196,466.18	.00
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	TOTAL FUND EXPENDITURES	11.91	33.82	10,196.50	10,196,466.18	.00
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	NET REVENUE OVER EXPENDITURES	496.12	952.78	0	(952.78)	.00
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Summary-TOR Cogency Project estimates- WWTP, WTP, Rec Center Totals

v52162023

No. Task		TOR Match Sources								
		Total	DOE	TOR	Cogency	TOR	IIJA LOMA	OJT/OEDIT	DOLAEMIG	
1	Analyse existing electricity and Gas usage for daily and seasonal variations	\$ 63,700.00	\$ 37,700.00	\$ 26,000.00	\$ 26,000.00					
2	Size Cogency Generator system based on electrical demand vs Thermal demand	\$ 62,400.00	\$ 41,600.00	\$ 20,800.00	\$ 20,800.00					
3	Planning, Permitting and Estimating phase	\$ 390,000.00	\$ 260,000.00	\$ 130,000.00		\$ 130,000.00				
	a. Discussions w Moon Lake over net metering	\$ 45,500.00	\$ 40,950.00	\$ 4,550.00		\$ 4,550.00				
	b. Wwoo additional users of excess Electrical or Thermal energy	\$ 68,250.00	\$ 45,500.00	\$ 22,750.00		\$ 22,750.00				
4	Design, Develop plans and specs for installation of system:	\$ 1,137,500.00	\$ 676,000.00	\$ 461,500.00	\$ 253,500.00		\$ 78,000.00	\$ 130,000.00		\$ 1,137,500.00
5	Development of bid package for construction	\$ 156,000.00	\$ 104,000.00	\$ 52,000.00		\$ 52,000.00				\$ 461,500.00
6	Bid Phase	\$ 156,000.00	\$ 104,000.00	\$ 52,000.00		\$ 52,000.00				\$ -
7	Construction Phase	\$ -								
	a. Geotech	\$ 117,000.00	\$ 65,000.00	\$ 52,000.00			\$ 52,000.00			
	b. construction management	\$ 156,000.00	\$ 104,000.00	\$ 52,000.00		\$ 52,000.00				
	c. specialty inspections	\$ 91,000.00	\$ 91,000.00							
	d. Construction	\$ 2,405,000.00	\$ 780,000.00	\$ 1,625,000.00	\$ 130,000.00	\$ 173,365.00		\$ 321,635.00	\$ 1,000,000.00	\$ 625,000.00
	e. prepurchase specialty equipment	\$ 2,340,000.00	\$ 780,000.00	\$ 1,560,000.00	\$ 500,000.00	\$ 241,875.00	\$ 818,125.00			\$ 1,560,000.00
	f. Pipeline to provide add'l customers w thermal energy stream	\$ 1,950,000.00	\$ 1,300,000.00	\$ 650,000.00	\$ 59,300.00		\$ 51,875.00	\$ 538,825.00		\$ 650,000.00
8	Monitoring and reporting phase	\$ 354,900.00	\$ 236,600.00	\$ 118,300.00		\$ 118,300.00				
9	Issue Final Report	\$ 88,725.00	\$ 59,150.00	\$ 29,575.00		\$ 29,575.00				
10	Public Outreach and Education Webinar and Conference	\$ 70,000.00	\$ 52,500.00	\$ 17,500.00		\$ 7,960.00		\$ 9,540.00		\$ -
	SubTotal	\$ 9,651,975.00	\$ 4,778,000.00	\$ 4,873,975.00	\$ 989,600.00	\$ 884,375.00	\$ 1,000,000.00	\$ 1,000,000.00	\$ 1,000,000.00	\$ 3,873,975.00
	Bond and Insurance @4% of construction costs	\$ 188,760.00	\$ 93,600.00	\$ 95,160.00	\$ 10,400.00	\$ 84,760.00				\$ 95,160.00
	Total	\$ 9,840,735.00	\$ 4,871,600.00	\$ 4,969,135.00	\$ 1,000,000.00	\$ 969,135.00	\$ 1,000,000.00	\$ 1,000,000.00	\$ 1,000,001.00	\$ 3,969,135.00

TOR In-Kind \$ 469,135.00
TOR Cash \$ 500,000.00
still need \$ -

Key:
Cons1,2,3 - Consultant 1-n
JM - J. Mullen, PE
Contr1,2,3 -Contractors 1-n
C- Cogency Power

Town of Rangely Cogency Solar Cogeneration Demonstration Projects



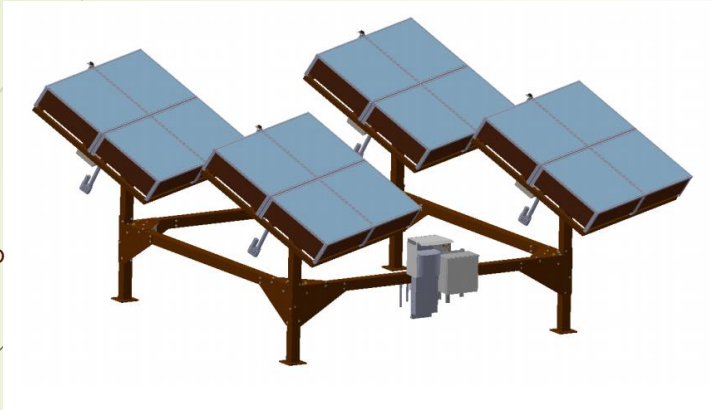
Overview of the Cogency Solar Cogeneration Technology:

- ▶ Not a typical silicon semiconductor panel
 - ▶ Silicon semiconductor panels typically 28-30 % efficient
- ▶ Cogency solar cogeneration is 75% efficient
 - ▶ Uses Gallium Arsenide photovoltaic cells that cogenerate heat along with electricity
 - ▶ High concentration allows easy and efficient heat collection resulting in a 55% increased power production

Design - Netzero Developments (NZD)

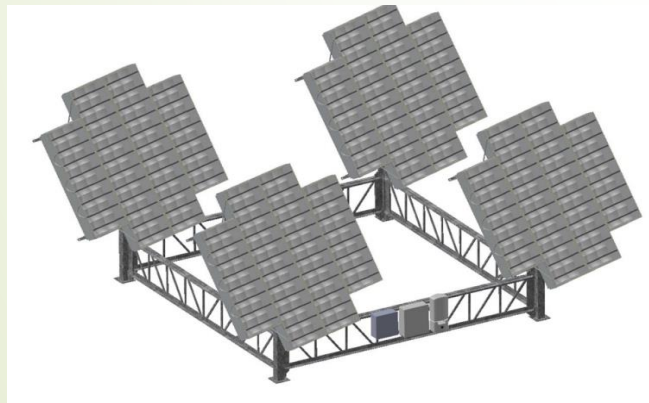
Beta System

- 5 Test Sites - Mountain, Desert, Marine Climates
- 51 Generators placed into service
- Incredible learnings



Production System

- Low-cost Fabrication
- Low-cost Installation
- Low-cost Maintenance
- High Output per acre

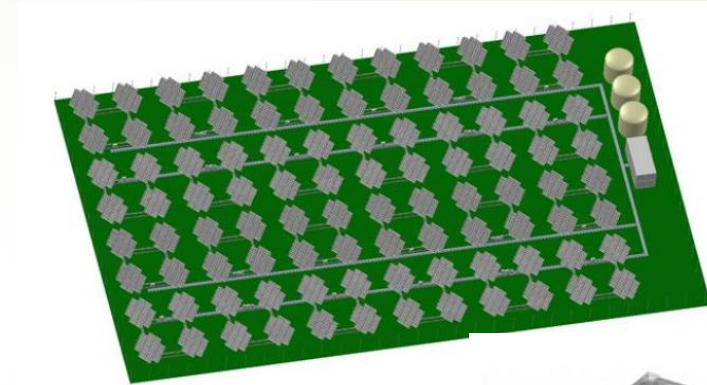


RANGELY
COLORADO

Site Layout

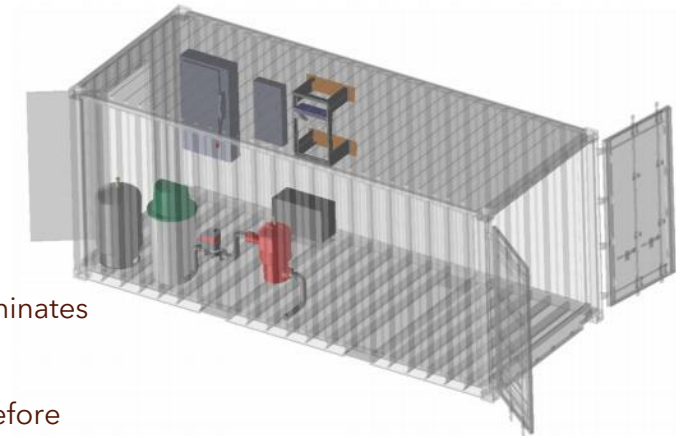
Example Installation Site

- Limited to no site engineering - considerable expense and time savings
- Ease of installation - reducing process and cost



Site Field Box

- Standard shipping container - eliminates custom build equipment shelter
- Low Cost & Standardized
- Equipment installed and tested before shipping
- Easy to ship, install and maintain
- Stores spare parts and maintenance equipment





Overview of the Cogency Solar Cogeneration Technology Cont'd:

- Cogency solar cogeneration is more efficient because:
 - Uses solar tracking technology that maximizes power output
 - Uses parabolic concentrating mirrors with 1000:1 concentration – greatly reduces needed cell area
 - High concentration allows easy and efficient heat collection resulting in a 55% increased energy production

Summary of the Cogency Solar Cogeneration Technology:

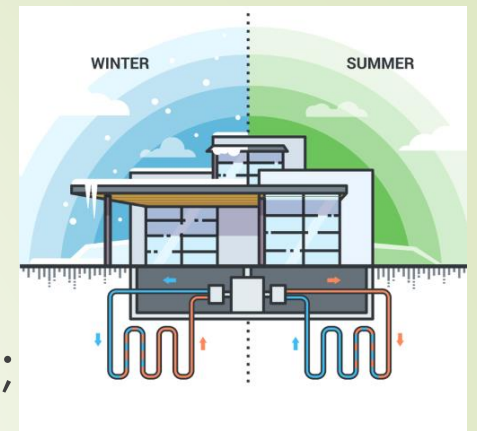
- **Gallium arsenide solar cells**
 - 30 + years in aerospace satellite and Space Station applications
 - Boeing subsidiary is the supplier
 - Performance degradation on hot days more than 90% less than silicon PV
- **High Sun Magnification**
 - 1000:1 concentration – greatly reduces needed cell area
 - Gallium arsenide is expensive per area; hence it reduces footprint
 - Silicon PV has 166,400 sq.in. of solar material per 29.5 kW. We use 56 sq. in.
 - Only 0.1% of the system generates heat; easy and inexpensive to collect heat
- **Solar Thermal & Storage**
 - High concentration allows easy and efficient heat collection resulting in a 55% increased power production
 - Geothermal seasonal storage – 93% average efficiency
 - Matches high summer production with high winter demand
- **Satellite Tracking Technology**
 - Tracking accuracy $\pm 0.5^\circ$ maximizes solar power output
 - Power feedback loop optimizes tracking and is self-correcting
 - Ease of installation and maintenance
- **Patents**
 - 17 patents in place to support deployment
 - Know-how and industrial secret
 - Technology tested in different environments with a success track record

Summary of the Cogency Solar Cogeneration Technology Cont'd:

- **Combined Technologies**
 - Highly Concentrated Solar – electricity + heat (70-75% eff.)
 - Geothermal Technology
 - Can provide thermal energy storage – seasonal and daily
 - Efficient heating and cooling
- **Cogency Power (CPP) solar**
 - Meets thermal needs 24/7/365
 - Heating, cooling, hot water, refrigeration and freezing
 - Delivers electrical power
 - 50-75% cheaper than current electricity costs
 - 80% less land usage than conventional PV solar
- **Netzero Energy (NZE) combines geothermal technology with CPP solar**
 - Achieves netzero carbon emissions at very low cost
 - Significantly improves geothermal performance and economics

Goals of the Project:

- Create full scale demonstration projects in several applications that show the capabilities of the technology;
- Obtain experience designing the facility interfaces, constructing the projects, and operating the equipment;
- Become a showplace where interested parties (politicians, investors, developers, and customers) can see the technology in operation and review critical performance, cost savings and carbon reduction data;
- Locate manufacturing operations in NW Colorado when interest creates demand for the equipment;
- Create training certificate programs at CNCC Rangely and Craig campuses to train manufacturing workforce, system installers and field maintenance technicians.





Expected Outcomes: What can Cogency and NW Colorado do for each other?

- Projects in NW Colorado will save money, cut fossil fuel use, reduce carbon emissions for Rangely municipal facilities and other project locations;
- Locating manufacturing operations in NW Colorado will provide good-paying jobs with lateral transfer of existing labor skills



Expected Outcomes: What can Cogency and NW Colorado do for each other?

- Cogency believes NW Colorado projects will create demand for the Cogency Solar Cogeneration technology;
- Inflation Reduction Act tax credits encourage locating manufacturing operations in NW Colorado when interest creates demand for the technology and equipment;
- When demand for the technology increases, Cogency will work with CNCC Rangely and Craig campuses to create training certificate programs to train installers and field maintenance technicians.



Expected Outcomes: What can Cogency and NW Colorado do for each other?

- Large communities are slow at implementing new ideas. Smaller communities can be nimble in decision-making.
- Towns like Rangely could become national leaders in showing how to harden their critical infrastructure in the process of deploying state-of-the-art solar technology.
- Cogency represents a path to building microgrids hardened against all threats that are economically attractive to deploy. In other words, energy security becomes a “free” by-product of wise energy management.



Relevance to Just Transitions

- Rangely is a rural, Tier 1 Community in Rio Blanco County
- This project is a targeted economic development effort that we expect will:
 - create new jobs that provide incomes at or above the median income of the community,
 - Provide additional contract work to existing companies,
 - generate new or increased property tax payments, and
 - increase the economic diversity of our local economy.



Relevance to Just Transitions

Just Transition stated goals:

1. Align state and federal programs to assist local strategies
2. Target early successes in business start-ups, expansions, retention, and attraction
3. Empower communities with resources to drive their own economic transitions
4. Coordinate infrastructure investments to support local and regional transition strategies
5. Identify and support state, regional, and local institutions to facilitate needed investments
6. Attract grants and investments to power local economic growth

Expected Economic Impact

- This first \$9.8M project will have a direct economic impact;
- When we include expansion of manufacturing operations to Rangely and other locations in NW Colorado, they will generate additional economic impacts. We will quantify these in the next week before we apply for the OJT/OEDIT grant;
- We also estimate that for each direct job created, new indirect jobs will also be created. We will quantify these in the next week before we apply for the OJT/OEDIT grant;

Northwest Colorado - Rangely, Craig, Meeker, Hayden, etc.					
	Year End Headcount				
Manufacture Description	Year 1	Year 2	Year 3	Year 4	Year 5
Generators/Month	6	35	224	583	964
Optical Engine (manual assy)			22	58	96
Field Box			6	29	48
Total			28	87	145

Expected Employment Impact, Manual Assembly

Northwest Colorado - Rangely, Craig, Meeker, Hayden, etc.					
	Year End Headcount				
Manufacture Description	Year 1	Year 2	Year 3	Year 4	Year 5
Generators/Month	6	35	224	583	964
Optical Engine (robotic assy)			9	23	39
Field Box			6	29	48
Total			15	52	87

Expected Employment Impact, Robotic Assembly

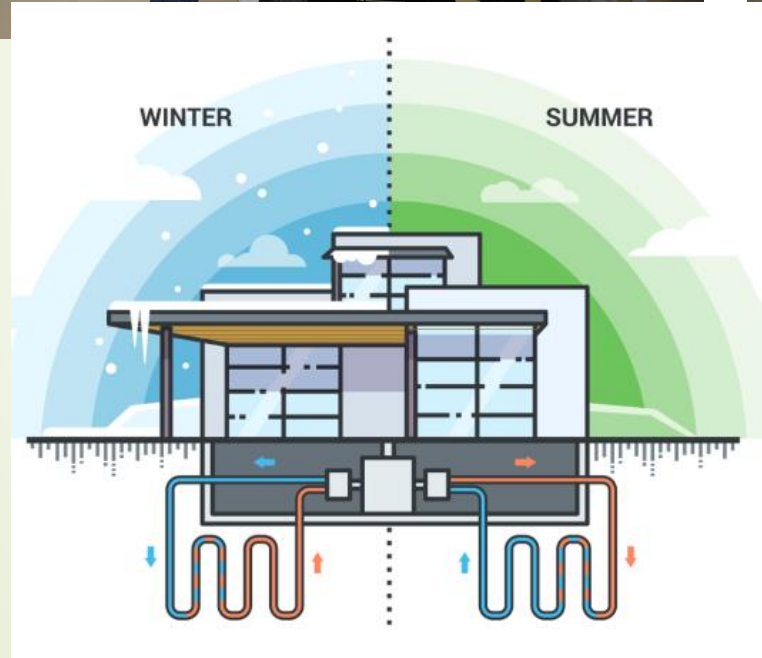
Expected Employment Impact, Cont'd

- 1 in 10 of these jobs is supervisory
- Inflation Reduction Act Tax credits will allow higher salaries
- As manufacturing moves into robotic assembly, total # of jobs will decrease, but skill set required is more complex and will result in fewer but higher paying jobs in some production lines

Employment Impact, Cont'd



Employment Impact, Cont'd





Summary-TOR Cogency Project estimates- WWTP, WTP, Rec Center Totals								v52162023
No.	Task	Total	DOE	TOR	TOR Match Sources			OJT/OEDIT
					Cogency	TOR	IJA LOMA	
1	Analyse existing electricity and Gas usage for daily and seasonal variations	\$ 63,700.00	\$ 37,700.00	\$ 26,000.00	\$ 26,000.00			
2	Size Cogency Generator system based on electrical demand vs Thermal demand	\$ 62,400.00	\$ 41,600.00	\$ 20,800.00	\$ 20,800.00			
3	Planning, Permitting and Estimating phase	\$ 390,000.00	\$ 260,000.00	\$ 130,000.00		\$ 86,325.00		\$ 43,675.00
	a. Discussions w Moon Lake over net metering	\$ 45,500.00	\$ 40,950.00	\$ 4,550.00		\$ 4,550.00		
	b. Brainstorm and woo additional users of excess Electrical or Thermal energy based on 4 mile radius:	\$ 68,250.00	\$ 45,500.00	\$ 22,750.00		\$ 22,750.00		
4	Design, Develop plans and specs for installation of system:	\$ 390,000.00	\$ 260,000.00	\$ 130,000.00				\$ 130,000.00
	a. Changes to electrical system	\$ 201,500.00	\$ 104,000.00	\$ 97,500.00	\$ 97,500.00			
	b. Changes to HVAC systems	\$ 156,000.00	\$ 104,000.00	\$ 52,000.00	\$ 52,000.00			
	c. Installation of Pipeline for geothermal ground loop	\$ 156,000.00	\$ 104,000.00	\$ 52,000.00	\$ 52,000.00			
	d. Design and installation of microhydro	\$ 52,000.00		\$ 52,000.00	\$ 52,000.00			
	e. Civil site work	\$ 182,000.00	\$ 104,000.00	\$ 78,000.00			\$ 78,000.00	
5	Development of bid package for construction	\$ 156,000.00	\$ 104,000.00	\$ 52,000.00		\$ 52,000.00		
6	Bid Phase	\$ 156,000.00	\$ 104,000.00	\$ 52,000.00		\$ 52,000.00		
7	Construction Phase	\$ -						
	a. Geotech	\$ 117,000.00	\$ 65,000.00	\$ 52,000.00			\$ 52,000.00	
	b. construction management	\$ 156,000.00	\$ 104,000.00	\$ 52,000.00		\$ 52,000.00		
	c. specialty inspections	\$ 91,000.00	\$ 91,000.00					
	d. Construction	\$ 2,405,000.00	\$ 780,000.00	\$ 1,625,000.00	\$ 130,000.00	\$ 1,225,000.00		\$ 270,000.00
	e. prepurchase specialty equipment	\$ 2,340,000.00	\$ 780,000.00	\$ 1,560,000.00	\$ 500,000.00	\$ 241,875.00	\$ 818,125.00	
	f. Pipeline to provide addl customers w thermal energy stream	\$ 1,950,000.00	\$ 1,300,000.00	\$ 650,000.00	\$ 59,300.00		\$ 51,875.00	\$ 538,825.00
8	Monitoring and reporting phase	\$ 354,900.00	\$ 236,600.00	\$ 118,300.00		\$ 118,300.00		
9	Issue Final Report	\$ 88,725.00	\$ 59,150.00	\$ 29,575.00		\$ 29,575.00		
10	Public Outreach and Education Webinar and Conference	\$ 70,000.00	\$ 52,500.00	\$ 17,500.00				\$ 17,500.00
	SubTotal	\$ 9,651,975.00	\$ 4,778,000.00	\$ 4,873,975.00	\$ 989,600.00	\$ 1,884,375.00	\$ 1,000,000.00	\$ 1,000,000.00
	Bond and Insurance @4% of construction costs	\$ 188,760.00	\$ 93,600.00	\$ 95,160.00	\$ 10,400.00	\$ 84,760.00		
	Total	\$ 9,840,735.00	\$ 4,871,600.00	\$ 4,969,135.00	\$ 1,000,000.00	\$ 1,969,135.00	\$ 1,000,000.00	\$ 1,000,000.00
			TOR In-Kind	\$ 417,500.00				
			TOR Cash	\$ 500,000.00				
			still need	\$ 1,051,635.00				



Conclusions

- ▶ The Town of Rangely believes that this proposal captures the intent of the Just Transitions program to create means of economic diversification, create jobs and increase the tax base.
- ▶ This project enjoys support from many diverse stakeholders and members of the community.