



## CCUS Benefit Cost Assessment: San Juan County, NM

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# Discussion of energy projects

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- Jobs +
- Economic opportunities +
- Helps protect a way of life +
- Impacts the environment -
- Uses resources -

# Impacts and Considerations

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*Environmental Justice*

*Social Justice*

*Economic Justice*

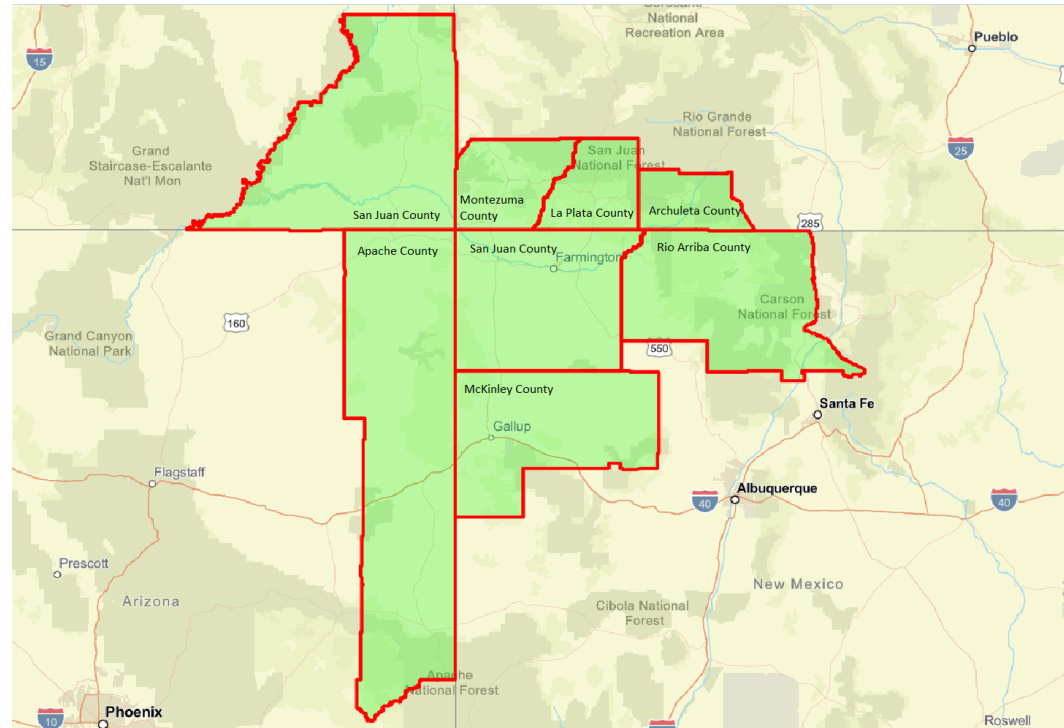
# Benefit Cost Assessment

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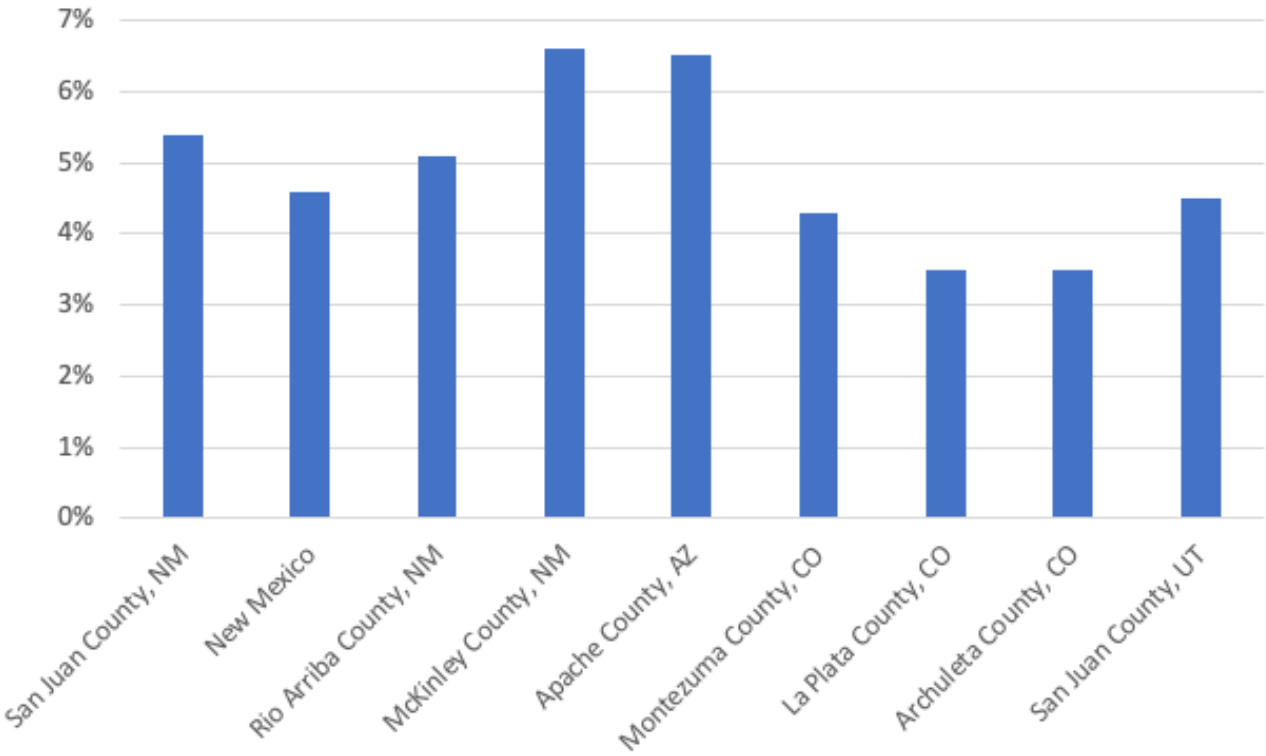
- Direct
- Indirect
- Externalities
- Assessed in monetary units (allows comparison)

# Area of Interest

- San Juan County, NM
- NM
  - Rio Arriba
  - McKinley
- AZ
  - Apache
- CO
  - Montezuma
  - La Plata
  - Archuleta
- UT
  - San Juan
- NM



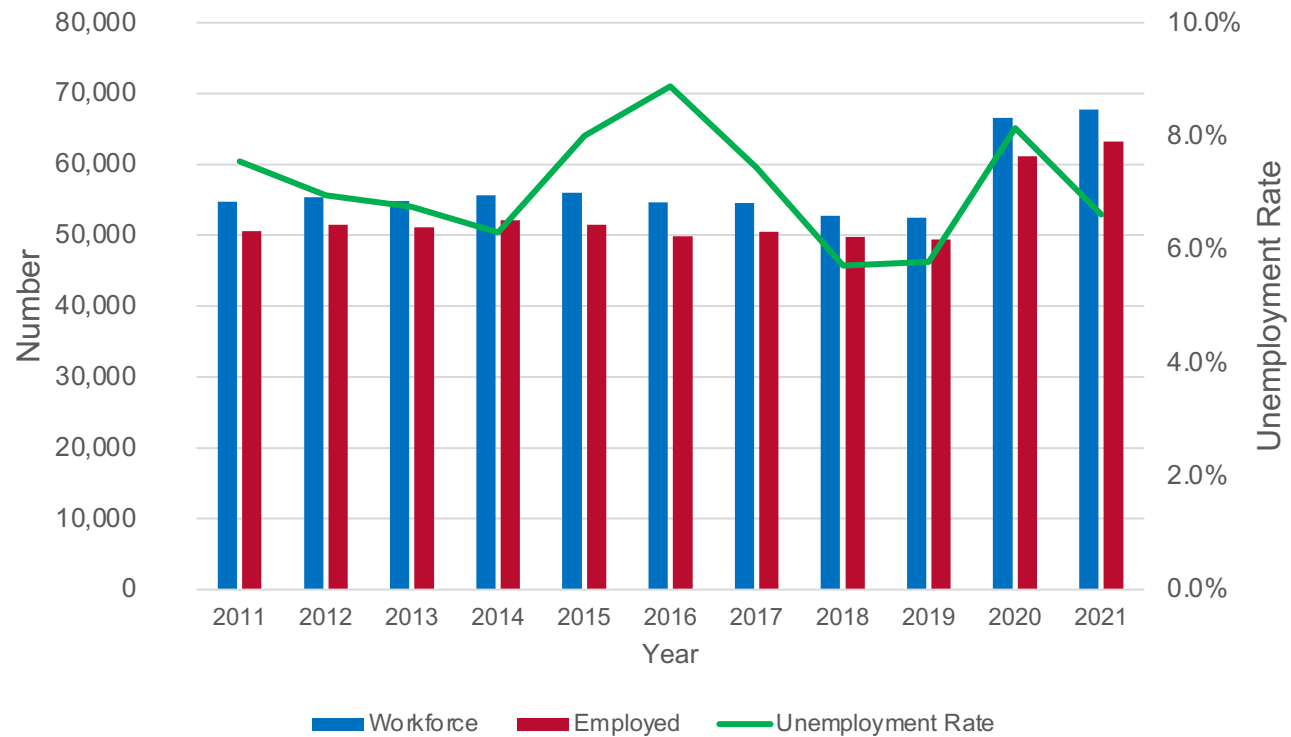
# Regional Unemployment



(from US Bureau of Labor Statistics)



# San Juan Unemployment

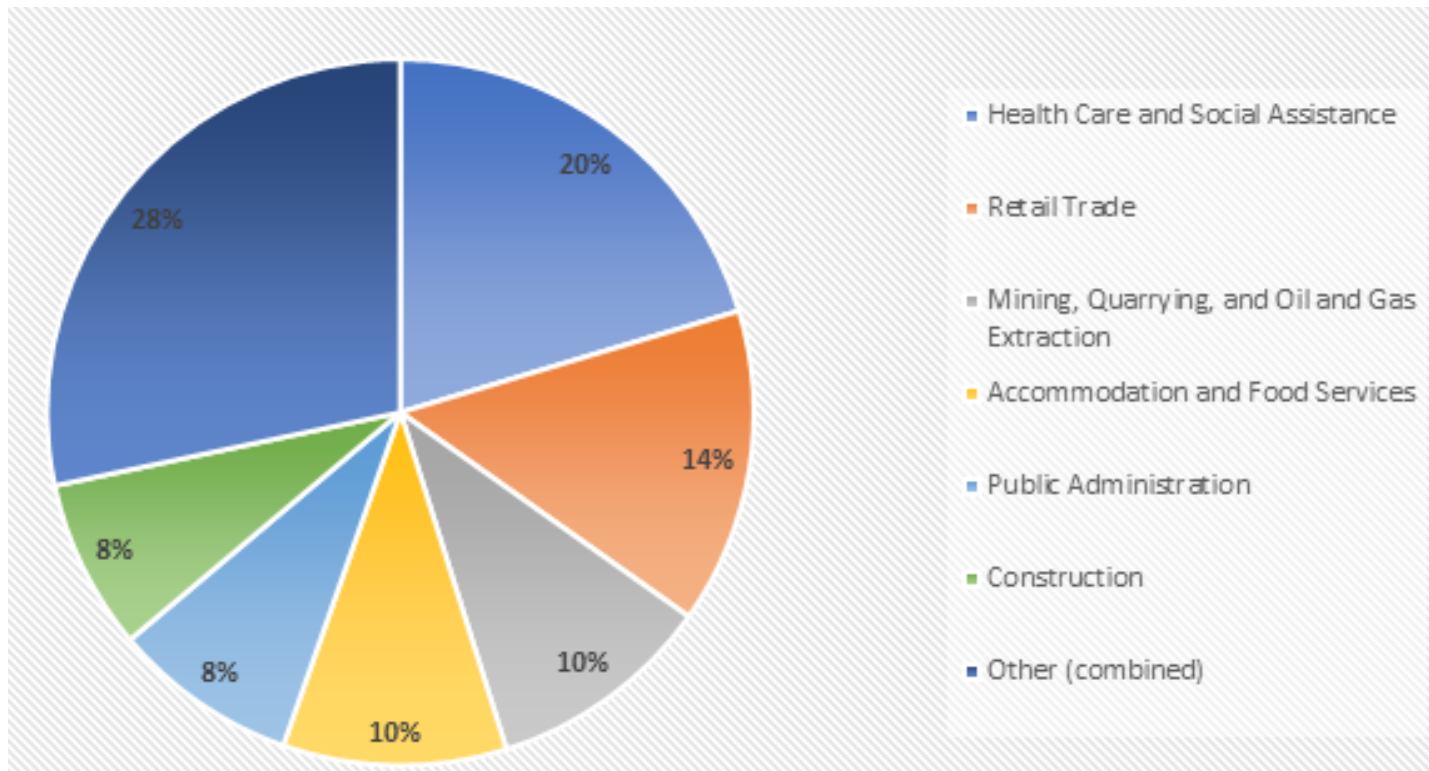


(from US Bureau of Labor Statistics)



# San Juan County Employment

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(from US Bureau of Labor Statistics)



# Assessment

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- Employment (numbers of workers), wages (labor income), value added (wealth created) - IMPLAN
- Environmental costs and benefits (EGRID, COBRA)
- Tax Impact (economic impact and current tax policy)

# Impact of CCUS

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- Status quo (current operating status)
  
- Shut down

# Jobs, Labor Income, Value Added (SJC)\*

San Juan County, NM Jobs, Labor Income, and Value Added by Scenario				
Event	Status Quo (annual)	Shut Down (annual)	CCUS (annual)	CCUS construction (one-time)
<b>Jobs</b>				
<b>Direct</b>	450	0	468	4,723
<b>Indirect</b>	313	0	443	738
<b>Induced</b>	263	0	318	2,165
<b>Labor Income (million)</b>				
<b>Direct</b>	\$39.7	\$0.0	\$42.2	\$488.3
<b>Indirect</b>	\$24.3	\$0.0	\$34.9	\$32.6
<b>Induced</b>	\$10.7	\$0.0	\$13.0	\$88.0
<b>Value Added (million)</b>				
<b>Direct</b>	\$143.0	\$0.0	\$174.6	\$711.6
<b>Indirect</b>	\$77.1	\$0.0	\$111.7	\$75.6
<b>Induced</b>	\$21.7	\$0.0	\$26.3	\$177.2

\* Preliminary results



# Jobs, Labor Income, Value Added (SJC)

Jobs, Labor Income, and Value Added by Event (Direct, Indirect, and Induced Impacts) (San Juan County, NM)				
Event	Construction Capital Expenditures	San Juan Coal Mine Retained Employment	San Juan Generating Station Retained Employment	Additional O&M with Carbon Capture
<b>Jobs</b>				
Direct	4,773	200	250	18
Indirect	738	62	251	130
Induced	2,165	86	177	55
<b>Labor Income (millions)</b>				
Direct	\$488.3	\$17.8	\$21.9	\$2.5
Indirect	\$32.6	\$3.8	\$20.5	\$10.6
Induced	\$88.0	\$3.5	\$7.2	\$2.3
<b>Value Added (millions)</b>				
Direct	\$711.6	\$65.0	\$78.0	\$31.6
Indirect	\$75.6	\$10.6	\$66.5	\$34.6
Induced	\$177.2	\$7.1	\$14.6	\$4.6

# Jobs, Labor Income, Value Added (Regional)

MRIO Analysis (8 counties): Jobs, Labor Income, and Value Added by Scenario				
Event	Status Quo (annual)	Shut Down (annual)	CCUS (annual)	CCUS construction (one-time)
<b>Jobs</b>				
<b>Direct</b>	450	0	468	4,773
<b>Indirect</b>	362	0	513	840.4
<b>Induced</b>	356	0	449	2,471.5
<b>Labor Income (million)</b>				
<b>Direct</b>	\$39.7	\$0	\$42.2	\$488.3
<b>Indirect</b>	\$32.2	\$0	\$46.7	\$37.1
<b>Induced</b>	\$14.3	\$0	\$18.0	\$99.9
<b>Value Added (million)</b>				
<b>Direct</b>	\$143.0	\$0	\$174.6	\$711.6
<b>Indirect</b>	\$87.7	\$0	\$127.2	\$84.0
<b>Induced</b>	\$28.5	\$0	\$35.8	\$199.8

# Summary

	San Juan County	Surrounding Counties
<b>Jobs</b>		
Direct	18	0
Indirect	130	70
Induced	55	131
<b>Labor Income (in millions)</b>		
Direct	\$2.5	\$0.0
Indirect	\$10.6	\$11.8
Induced	\$2.3	\$5.0
<b>Value Added (in millions)</b>		
Direct	\$31.6	\$0.0
Indirect	\$34.6	\$15.5
Induced	\$4.6	\$9.5

# Environmental Impacts

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- Emissions
  - CO2 reduction of 6 million metric tons (global impact)
  - SOX, NOX, VOC's, PM 2.5, PM 10
- Water

# Environmental Impacts (2022\$ in millions, annual)

Annual Impacts of San Juan Generating Station – status quo (2022\$)	
<b>San Juan County, NM</b>	
Low Health Impacts (\$ million)	\$1.27
High Health Impacts (\$ million)	\$2.78
<b>San Juan, McKinley, Rio Arriba Counties (effected study area counties)</b>	
Low Health Impacts (\$ million)	1.39
High Health Impacts (\$ million)	3.24
<b>New Mexico</b>	
Low Health Impacts (\$ million)	5.33
High Health Impacts (\$ million)	12.04





# Environmental Impacts (30 years)

<b>Total Health Impacts of San Juan Generating Station (30 years) – status quo (2022\$)</b>	
<b>San Juan County, NM</b>	
<b>Low Health Impacts (\$ million)</b>	16.43
<b>High Health Impacts (\$ million)</b>	35.97
<b>San Juan, McKinley, Rio Arriba Counties (effected study area counties)</b>	
<b>Low Health Impacts (\$ million)</b>	17.98
<b>High Health Impacts (\$ million)</b>	41.92
<b>New Mexico</b>	
<b>Low Health Impacts (\$ million)</b>	68.96
<b>High Health Impacts (\$ million)</b>	155.77

# Total Impacts (2022\$'s in millions)

CCUS Relative to Shut Down						
annual	Benefits			Costs		
	Labor Income	Value Added	Tax Revenue	PM2.5 Health Impacts	Water	Annual Net Social Benefits
	\$86.2	\$259.2	\$10.16	-\$2.32	-\$2.58	\$352.82

CCUS Relative to Status Quo						
annual	Benefits			Costs		
	Labor Income	Value Added	Tax Revenue	PM2.5 Health Impacts	Water	Annual Net Social Benefits
	\$14.9	\$68.9	\$10.16	\$0.0	-\$0.86	\$93.1

# Take Aways

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- Social benefits exceed social costs
- Provides jobs to SJC and surrounding areas
- Provides a starting place to begin to assess environmental and social justice
- Number of factors not considered

# Questions?

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Thank You!

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