

Evaluation of past coal purchases for Intermountain Power Agency

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Executive summary

Intermountain Power Agency (IPA) requested a third-party evaluation of their coal procurement practices regarding Utah coal.

This analysis finds that over the last decade a little more than 5% of the coal purchased by IPA was purchased from non-Utah suppliers and about 1/5th of the non-Utah origin coal was purchased by Utah suppliers to meet IPA's needs. This is a very small part of the overall +46 million tons delivered to the plant between January 2010 and July 2020 and this occurred during a time of considerable uncertainty regarding Utah coal supply.

Utah coal producers have access to multiple markets including the domestic utility market, industrial accounts, and overseas power generators. Exports offer an exceptional business opportunity for Utah coal suppliers and they have participated as much as possible given infrastructure (i.e. ocean port) constraints. Exports have also produced tightness for coal availability from time-to-time and does have a follow-on effect which could limit options for domestic utilities such as IPA.

Utah coal production has been through considerable changes over the past 10 years including mergers, bankruptcies, recapitalizations. The portfolio of available supply changes as coal reserves are depleted or demand declines because of plant retirements. This means the available coal characteristics (quality) have also become more volatile. Add mining (geological) problems and the overall universe of possible supply is declining. Having access to what amounts to one non-Utah mine acts as a very low-cost insurance policy in a world of volatile supply.

The non-Utah supply is at a transportation distance disadvantage to the Utah coal, but the delivered cost of this coal is on-par with the Utah origination coal therefore there was no special treatment or premium for the alternative coal. The non-Utah coal also provides some benefits in that it is very low sulfur and low ash which allows some blending flexibility for IPA to purchase from a larger range of Utah coal which may not meet desired specifications on a stand-alone basis. Evaluating the relatively small amount of Colorado coal in terms of its effect on the overall blend of coal available for plant operations shows a meaningful improvement through lower sulfur and ash.

Environmental policies have also affected Utah coal, especially in the case of mine permitting. While there has been some easing of the rules, this may turn out to be transitory as national policies change. Further, coal supply could become disrupted by changing corporate policies, such as Environmental, Social and Corporate Governance (ESG) programs, where there could be a rapid change in direction for a coal producer. All these risks bolster the practices of IPA in they too have obligations to their Utah stakeholders.

Over the life of the plant, 165.8 million tons of coal were purchased by IPA. From that, 158.9 million tons (96%) originated in Utah. IPA's actions seem both necessary and prudent given the changes in the market since that time.

Background and scope

The Intermountain Power Plant (IPP) consists of two 900 MW (net) coal-fired units and is located roughly 10 miles north of Delta, Utah. The plant, along with its transmission system is owned by the Intermountain Power Agency. IPA operates and finances IPP. Power purchase agreements are in place with 23 Utah municipalities, 6 California municipalities and 6 rural electric cooperatives.

Entitlement to the power generated by IPP is allocated through separate power purchase agreements that have been in place since the plant's inception in the 1980s. Los Angeles Department of Water and Power (LADWP) has the largest share of the power generated by the plant at 48.617%. In total, California municipals have contracts in place to cover just under 79% of the capacity of IPP. The remaining is split among 23 Utah municipal purchasers (14%) and six cooperatives (7%). The operating agent for the plant is LADWP.

The first unit at IPP was completed in 1986 with commercial operations from the second unit starting a year later. The plant was consistently a top performer in the US, achieving capacity factors exceeding 90%.

California enacted "Senate Bill 1368" on September 29, 2006. SB 1368 added the "Greenhouse Gasses Emission Performance Standard for Baseload Electrical Generating Resources" to the Public Utilities Code. The added language set limits on the source of power it could deliver to its California utilities. SB 1368 prohibited IPP from delivering its coal-sourced power to California and prompted IPA to develop plans to convert the plant from coal to natural gas and hydrogen in 2025. From 2010 through 2019, annual power generated from the plant has declined 42% primarily because of SB 1368 and because natural gas prices and availability have become highly competitive with coal. The buildout of renewable generation, both wind and solar, across the western US has also contributed to declining demand for coal as a power generation fuel.

Coal purchases for IPP have overwhelmingly come from Utah mines. Since the plant began operations in 1986, it has taken delivery of 165.8 million tons of which 96% originated in Utah. Based on the U.S. Energy Information Administration (EIA) data, since 2010, IPP has taken delivery of 46.6 million short tons (mst) of which 2.9 mst (6.3%) came from non-Utah sources. Of the 2.9 mst of deliveries, 600,000 tons was purchased by Utah producers to meet contractual obligations leaving about 5% of the plant's deliveries from non-Utah suppliers. The largest non-Utah supplier is Arch Resources', West Elk mine near Somerset, Colorado. Arch Resources is the new name for Arch Coal.

IPA asked IHS Markit to evaluate if the purchases of non-Utah coal were both prudent and necessary for the efficient operation of the plant and was in the best interest of the stakeholders.

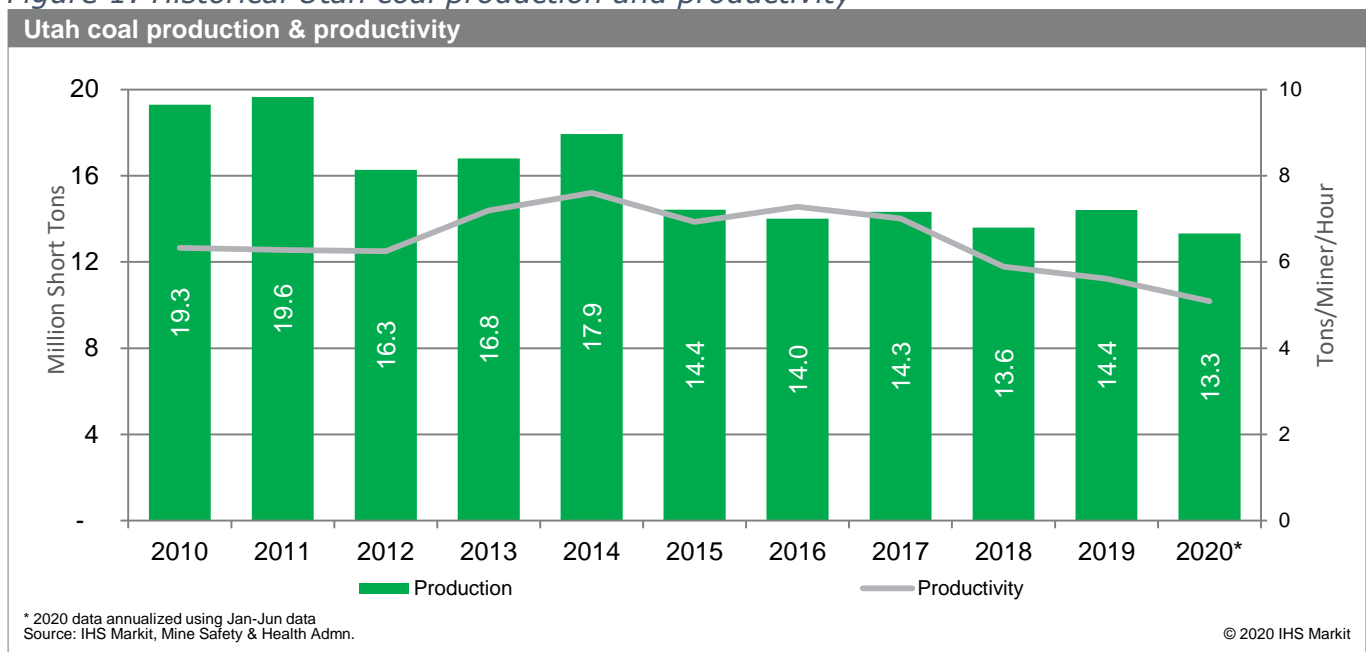
Utah coal production industry

Coal production and productivity

Coal production in Utah totaled 19.3 mst in 2010 and 14.4 mst in 2019 and is on pace to produce close to 13 mst in 2020 according to data from the Mine Safety & Health Administration (MSHA). The decline in production is due to the depletion of reserves at existing mines, more difficult mining conditions, financial difficulties and declining demand.

Productivity, as expressed as tons produced per hour worked for the coal miners, has also declined from 6.3 tons/miner/hour in 2010 to 5.1 tons/miner/hour for the first half of 2020. Changing mining conditions and moving into more problematic portions of the remaining reserve base are the primary reasons.

Figure 1: Historical Utah coal production and productivity



Following is the production history for Utah mining companies. The company and mine names reflect current ownership. Many of the names have changed because of a change in ownership. Gentry Mining is the new name for the former Rhino mines. Rhino declared bankruptcy on July 23, 2020 and the company was liquidated at auction. Gentry acquired Rhino's Utah assets.

Figure 2: Utah coal production by company and mine (short tons 000)

Company/Mine (tons 000s)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020*
Alton Coal Devel.	-	-	-	566	555	327	703	724	494	240	254
Burton No 1	-	-	-	-	-	11	34	-	-	-	-
Coal Hollow	-	-	-	566	555	316	669	724	494	240	254
America West Res.	272	370	210	-	-	-	-	-	-	-	-
Horizon	272	370	210	-	-	-	-	-	-	-	-
Wolverine	11,665	11,841	9,061	9,659	11,386	11,197	10,821	10,885	9,057	8,707	3,891
Dugout Canyon	2,461	2,395	1,516	561	676	763	650	626	550	416	-
Fossil Rock	-	-	-	-	-	-	39	-	-	-	-
Skyline No 3	2,805	2,948	1,894	3,137	4,170	4,409	4,757	4,375	3,603	3,916	1,739
Sufco	6,398	6,498	5,650	5,960	6,539	6,024	5,375	5,884	4,904	4,374	2,152
Bronco Coal Res.	999	-	-	4	-	-	-	129	442	693	362
Emery	999	-	-	4	-	-	-	129	442	693	362
MidAmerican (PacifiCorp)	2,954	3,143	3,295	2,810	2,089	-	-	-	-	-	-
Deer Creek	2,954	3,143	3,295	2,810	2,089	-	-	-	-	-	-
ACNR (fmr Murray)	3,398	3,722	2,714	2,887	2,849	1,929	1,587	1,629	2,631	3,714	1,798
Lila Canyon	72	156	304	257	335	350	1,587	1,629	2,631	3,714	1,798
West Ridge	3,326	3,566	2,409	2,629	2,514	1,580	-	-	-	-	-
Gentry Mining (fmr Rhino)	-	572	997	876	1,056	967	894	958	974	1,051	352
Castle Valley No 4	-	572	997	876	1,056	789	724	783	871	417	11
Gentry (fmr CV #3)	-	-	-	-	-	177	170	175	103	634	341
Total	19,288	19,648	16,277	16,802	17,934	14,419	14,005	14,326	13,597	14,405	6,657

* 2020: January-June production data reported to MSHA

The above table illustrates the considerable variation in the coal mining landscape in Utah; depleting mines, bankruptcies, and start-ups. Over the course of the past 10 years, only Wolverine's Skyline and Sufco as well as ACNR's Lila Canyon have had uninterrupted production (Lila Canyon was technically "in development" in 2010-2014 as a replacement for West Ridge).

Productivity, as expressed as tons/miner/hour (production personnel only) has been volatile with the changes in output over time.

Figure 3: Utah coal mine productivity by company and mine (tons/miner/hour)

Company/Mine (t/m/hr)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020*
Alton Coal Devel.				8.09	5.71	2.82	7.40	8.52	5.52	2.78	4.75
Burton No 1						0.64	2.51				
Coal Hollow				8.09	5.72	3.20	8.21	8.62	5.52	2.78	4.75
America West Res.	1.60	1.41	2.11								
Horizon	1.60	1.41	2.11								
Wolverine	8.42	8.75	8.07	9.21	9.44	8.75	8.35	7.74	5.99	5.62	4.92
Dugout Canyon	6.08	6.30	7.18	4.02	4.31	4.46	4.07	4.05	3.87	2.49	
Fossil Rock							6.18				
Skyline No 3	6.00	6.35	4.28	7.30	7.75	7.70	7.96	6.41	5.04	5.83	4.17
Sufco	12.47	12.77	12.04	12.44	12.77	11.26	10.09	10.34	7.47	6.16	6.04
Bronco Coal Res.	3.18			0.50				3.30	4.59	4.27	4.54
Emery	3.18			0.50				3.30	4.59	4.27	4.54
MidAmerican (PacifiCorp)	5.32	5.56	5.95	5.58	6.31						
Deer Creek	5.32	5.56	5.95	5.58	6.31						
ACNR (fmr Murray)	5.73	5.05	4.38	5.60	5.73	5.50	5.09	5.73	6.76	6.79	6.46
Lila Canyon	1.67	3.22	4.70	4.39	4.07	2.79	5.17	5.73	6.76	6.79	6.46
West Ridge	6.05	5.18	4.35	5.76	6.06	7.01					
Gentry Mining (fmr Rhino)		4.84	6.50	5.14	4.90	4.42	4.80	4.73	4.58	4.91	3.53
Castle Valley No 4		5.34	6.94	5.59	5.18	3.96	4.37	4.48	4.52	4.42	1.37
Gentry (fmr CV #3)						9.24	8.17	6.33	5.22	5.30	3.72
Total	6.33	6.28	6.25	7.19	7.60	6.93	7.28	7.01	5.89	5.61	5.09

* 2020: January-June productivity data reported to MSHA

Ownership changes

The US coal industry has experienced immense change over the past 10 years. Mergers/Acquisitions and especially financial restructuring through bankruptcy. Utah is no exception as there have been meaningful fluctuations in ownership and structure for operators of Utah's coal mines.

Following are the most prominent changes:

- **America West Resources**, parent of Hidden Splendor Resources, filed for bankruptcy on February 1, 2013 because of insurmountable debts and safety violations. The mine is on property formerly owned/operated by Lodestar Energy which also went bankrupt in 2003. The mine has been sealed and is in final reclamation.
- **Wolverine Fuels, LLC**, is owned by Galena Private Equity Resources which is owned by Trafigura Group. They were formerly known as Bowie Resource Partners but changed their name to Wolverine and relocated their headquarters from Grand Junction, Colorado to Salt Lake City, Utah in October 2018. This also coincides with the closure of their Bowie #2 longwall mine in Colorado. This followed a recapitalization of the company in 2018 and reorganization of management. In 2013, Bowie acquired the Utah operations of Arch Resources (then Arch Coal) called Canyon Fuels. In 2019, Wolverine closed its Dugout Canyon continuous miner (CM) mine to concentrate of their remaining longwalls (Sufco and Skyline).

- **Bronco Coal Resources** acquired the reserves formerly owned by CONSOL in December 2015. The surface mine operated by CONSOL was idled in 1993 but restarted in 2003 before being idled again in late 2010. The mine was sold to C&P Coal Corporation which later became Bronco Coal. A new underground mine was developed on the property to extract lower sulfur coal, it was commissioned in 2017.
- **Deer Creek Mining** was owned by Energy West Mining Company, a subsidiary of PacifiCorp. PacifiCorp is owned by Berkshire Hathaway Energy. The longwall mine was one of the largest mines in Utah and it primarily served PacifiCorp's Huntington power station in Emery County. At the same time, PacifiCorp signed a long-term supply agreement with then Bowie Resource Partners (now Wolverine Fuels). Most of the replacement coal to come from the Sufco underground mine. Deer Creek was closed because of depleting reserves and high costs according to PacifiCorp.
- **American Consolidated Natural Resources** is the reorganized company following the 2019 bankruptcy of Murray Energy. This bankruptcy remains active, but the new entity emerged on September 16, 2020. The Lila Canyon mine replaced the depleted West Ridge mine over time as West Ridge produced its last coal in 2015, roughly concurrent with the commencement of longwall operations at Lila Canyon.
- **Gentry Mining** is the new entity operating the assets for Rhino Energy. Rhino Energy declared voluntary bankruptcy on July 23, 2020. Since then, the company was liquidated with the Utah assets (known as the Castle Valley Asset Group) auctioned and the winning bidder showing as COP Coal Development Company. COP Coal was the mineral lessor to Rhino. Rhino acquired the assets following bankruptcy proceedings involving C.W. Mining (a.k.a. Coop Mining) in 2007. Rhino closed the Castle Valley #4 mine in 2020 and has transitioned all operations to the Castle Valley #3 mine, now called Gentry.

Proposed new mining in Utah

Coal Energy Group 3's Kinney No. 2. This proposed 800,000 (maximum) ton per year CM mine is situated north of Scofield, UT. Coal quality will be similar to Skyline. The current permit application has received preliminary approval from the Utah Department of Natural Resources in 2019, but the final permit will not be issued until third-party surety reclamation bonds have been acquired. Coal from this mine will be trucked even though the UP Railroad is within a few miles of the mine. The partners developing this mine also have interests in Alton Coal and have also acquired the abandoned Wildcat Loadout near Helper, Utah. This loadout, assuming it is recapitalized, would have coal loading ability on the Utah Railway.

There has been no permit activity for this mine in 2020 and IHS believes the process has been suspended. There has not been any public news for this mine recently and the only activity in 2020 is a request to place traffic cones near a hawk's nest.

Wolverine's Fossil Rock (formerly known as Trail Mountain mine and Cottonwood reserve tract) is a 58 mm ton reserve located adjacent to the closed PacifiCorp's Deer Creek mine.

Trail Mountain was previously operated as a CM mine (last produced coal in 2001,) but Wolverine intends to develop longwall panels. The reserve, leased from the State of Utah, is called the Cottonwood Tract and is the largest undeveloped low sulfur coal in the region. The reserves were acquired from PacifiCorp on October 8, 2015. According to the latest filing with the Utah Division of Oil, Gas & Mining, Wolverine is to begin development in 2022 with longwall production in 2028. This coal would likely be sold to PacifiCorp and into the export market. According to Bowie's aborted S1 statement filed in February 2015, the original plan was to relocate the Sufco longwall to Fossil Rock and add a new longwall at Sufco to produce coal from the higher-sulfur lower-Hiawatha seam.

Utah coal reserves

According to the EIA, there are 180 mm tons of recoverable reserves at existing mines in Utah and over 2.4 billion tons of recoverable reserves out of 4.9 billion ton demonstrated reserve base. At 2019 mining rates, the reserves at existing mines will be depleted in about 11 years.

The unmined resources in Utah includes the Cottonwood Tract but also coal in Canyon, Castle Gate as well as considerable reserves that were within the boundaries of the Grand Staircase-Escalante National Monument. The realignment of the park boundaries in 2018 is believed to free access to some of the coal resources in that area. While the Grand Staircase-Escalante coal has potential for both domestic and export sales, trucking the coal from the region would be a challenge given the topography and long distance to the rail-line. Considerable infrastructure would be needed to facilitate coal mining in this region.

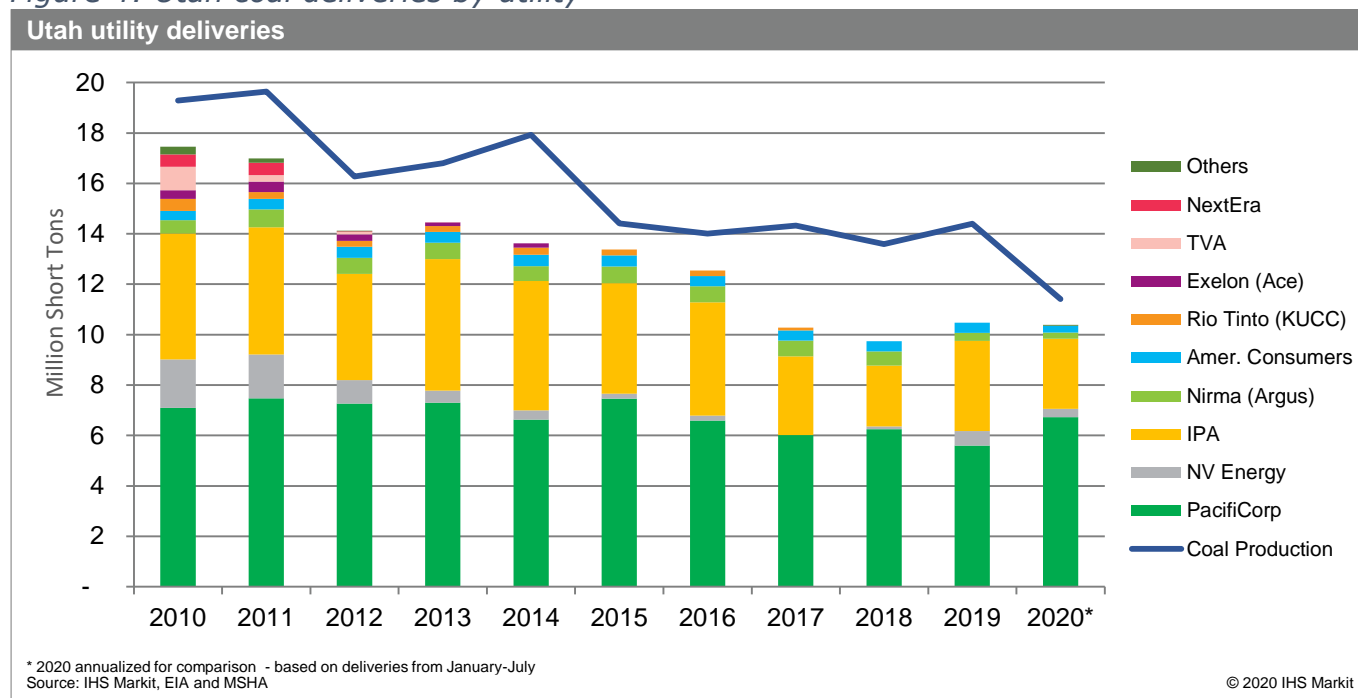
Markets for Utah coal

Most Utah coal is sold for electric power generation with the remaining sold for industrial use such as cement processing or for export. Some Utah coal is also exported, primarily to Asia for power generation. Utah does not produce metallurgical coal currently, but did so in the past, primarily for use at the decommissioned Geneva Steel plant near Provo.

From 2010 through July 2020, approximately 83% of Utah coal was used for power generation. Power generation's share of the Utah coal market has ranged from 72% to 93% depending mostly on export volume which varies year-to-year. This report will cover exports in a later section.

The largest consumer of Utah mined coal is PacifiCorp, followed by IPP then the Argus Cogen (Nirma Ltd) in Trona, California.

Figure 4: Utah coal deliveries by utility



Coal unit retirements

Coal unit retirements have increased at a steady pace in the U.S. This trend is expected to continue as utilities react to mounting pressure to limit carbon-dioxide emissions and as existing coal units age. Replacement power is primarily coming from more efficient natural gas plants and renewable generation.

Utah is no exception as it has seen its market decline because of retirements. Nevada Power’s Reid Gardner station (563 MW) was retired in 2017 and PacifiCorp’s Carbon Plant (172 MW) was retired in 2014 as well as the ACE Cogeneration plant in California. Rio Tinto’s Kennecott Utah Copper generation plant west of Salt Lake City was also retired in 2016 (Units 1-3) and 2019 (Unit 4).

The remaining utility market consists of:

- PacifiCorp’s Hunter (3 units totaling 1,361 MW) and Huntington (2 units totaling 909 MW)
- IPA’s IPP (2 units totaling 1800 MW) – to be replaced with natural gas/hydrogen in 2025
- Sierra Pacific’s North Valmy (2 units totaling 261 MW) – to be retired in 2021 and 2025
- Colmac Sunnyside’s Sunnyside Plant (1 unit, 53 MW)

Not included in the above list is Deseret Power’s Bonanza station near Vernal, Utah. The coal for the 500 MW plant originates at Blue Mountain Energy’s Deserado mine in Colorado and transported to the plant via private railroad.

The PacifiCorp plants in Utah, operated under the Rocky Mountain Power subsidiary, are expected to run for at least 15 more years according to [PacifiCorp's October 2019 Integrated Resource Plan](#).

Figure 5: PacifiCorp's 2019 Integrated Resource Plan

- Coal unit retirements scheduled under the preferred portfolio include:
- 2019 = Naughton Unit 3 (same as 2017 IRP), converted to natural gas in 2020
 - 2020-2023 = Cholla Unit 4 (same as 2017 IRP)
 - 2023 = Jim Bridger Unit 1 (instead of 2028 in the 2017 IRP)
 - 2025 = Naughton Units 1-2 (instead of 2029 in the 2017 IRP)
 - 2025 = Craig Unit 1 (same as 2017 IRP)
 - 2026 = Craig Unit 2 (instead of 2034 in the 2017 IRP)
 - 2027 = Dave Johnston Units 1-4 (same as 2017 IRP)
 - 2027 = Colstrip Units 3-4 (instead of 2046 in the 2017 IRP)
 - 2028 = Jim Bridger Unit 2 (instead of 2032 in the 2017 IRP)
 - 2030 = Hayden Units 1-2 (same as 2017 IRP)
 - 2036 = Huntington Units 1-2 (same as 2017 IRP)
 - 2037 = Jim Bridger Units 3-4 (same as 2017 IRP)

According to the IRP, PacifiCorp plans to operate Huntington until

2036 and Hunter until 2042. The IRP also highlights some risks. As noted in the table above, numerous coal unit retirements have been advanced from the previous (2017) IRP which means the retirements of Huntington and Hunter could be advanced as well. This is certainly heightened given the potential for a changing regulatory environment if there is a change in the administration in Washington DC.

Following is a table of utility coal purchases from Utah coal mines as reported to the EIA under Survey Form-923. Values are in thousand tons:

Figure 6: Utility deliveries by mine (tons 000s)

Plant Operator	Plant Name	Mine Owner	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Jan-Jul 2020
Domtar Inc	Ashdown	Wolverine											22
IPA	Intermountain	Alton Coal		407	569	738	555	326	716	724	484	212	315
		Amer. West	180	190	136								
		Bronco									59	266	
		Wolverine	3,422	3,248	2,057	2,700	2,977	3,046	2,745	2,384	1,875	1,677	1,309
		ACNR	1,394	1,154	951	1,242	1,052	875	1,041	22		765	
		Gentry		43	509	542	558	147					
IPA Total			4,995	5,043	4,222	5,222	5,142	4,395	4,502	3,130	2,418	2,919	1,624
Berkshire Hathaway (PacifiCorp)	Carbon (r)	Amer. West	47	80	82								
		Wolverine	348	327	100	13							
		PacifiCorp	46		8	83							
		ACNR	147	218	139	220	254	78					
		Gentry		11	270	250	313	72					
	Hunter	Wolverine	3,253	2,918	2,624	2,308	2,143	3,848	3,576	3,254	3,832	3,357	2,877
		PacifiCorp	576	595	699	769	359						
		ACNR	197	475	690	977	908	737	533	290	16		
		Gentry						183	8	47	39		
	Huntington	Wolverine	499	270	400	134	437	1,551	1,612	1,549	1,208	979	581
		PacifiCorp	1,970	2,560	2,194	2,521	2,094	159				11	
		ACNR	5	16	11		15		1	54	195	290	237
		Gentry			46	22	100	831	863	821	954	963	230
Berkshire Hathaway (PacifiCorp) Total			7,088	7,471	7,264	7,297	6,624	7,458	6,593	6,015	6,245	5,600	3,925
Amer. Consumers	Sunnyside Cogen	Wolverine						440					
		ACNR	368	422	445	430	452		397	412	405	402	158
Amer. Consumers Total			368	422	445	430	452	440	397	412	405	402	158
TVA	Allen (r)	Wolverine			0								
	Colbert (r)	Wolverine	421	166	14								
		Gentry	13										
	Cumberland	Wolverine			53	5							
	Gallatin	Wolverine	18										
	Johnsonville (r)	Wolverine	173										
	Shawnee	Wolverine	308	91	31								
TVA Total			932	257	98	5							
Air Prods	Stockton Cogen (r)	Wolverine	99	120	34								
Berkshire Hathaway (NV)	Reid Gardner (r)	Wolverine	526	533	588	434	331						
		ACNR	511	355	97	12							
Berkshire Hathaway (NV) Total			1,037	889	685	446	331						
Berkshire Hathaway (Sierra)	North Valmy	Wolverine	894	854	241	36	35	193	192		109	574	192
DTE Energy	MT Poso Cogen (r)	Wolverine	129	48									
Nirma	Argus Cogen	Wolverine	527	714	632	646	588	660	634	613	567	325	141
Rio Tinto	KUCC (r)	Wolverine	474	264	230	230	273	227	231	111			
Evergy	Lake Road (r)	Wolverine	23										
	Sibley (r)	Wolverine	255	37									
		ACNR			12								
Evergy Total			278	37	12								
NextEra	Crist	Wolverine	106	136									
		ACNR		352	22								
	Lansing Smith (r)	Wolverine	385										
NextEra Total			491	488	22								
Exelon	ACE Cogen (r)	ACNR	346	417	258	148	183						
Koch	GB West Mill	ACNR		4									
Newpage	Mead Paper	ACNR	75										
Total			17,731	17,027	14,143	14,460	13,629	13,373	12,550	10,281	9,744	10,474	6,063
	subtotal: Plants currently using coal		13,789	14,451	12,312	13,069	12,274	12,997	12,319	10,170	9,744	10,474	6,063
	subtotal: Plants no longer using coal		3,942	2,577	1,832	1,390	1,354	376	231	111			

Source: EIA Form 923

(r): Retired or no longer using coal as a source fuel

The trends outlined above are happening across the US. In 2010, IHS estimates approximately 313 GW of coal-based power generation capacity was active in the US but by the end of 2019, that declined 22% to 244 GW.

Industrial market for Utah coal

Industrial markets are opaque – that is data concerning their annual purchases is gathered through investigation of company documents and other sources.

IHS believes there is a viable industrial market for Utah origin coal, primarily for cement and lime kilns as well as steam production for sugar beet processing. The largest industrial consumer, Nirma’s Searles Valley Minerals, is the primary power supply for the trona mining operations in California.

The nearby table is our estimate of the annual consumption of Utah coal.

Figure 7: Industrial buyers of Utah coal

Company	Plant	State	Consumption Tons (000s)
Ash Grove Cement	Durkee	OR	120
Ash Grove Cement	Leamington	UT	120
Calif Portland Cement	Rillito	AZ	200
Calif Portland Cement	Colton	CA	260
Cemex	Victorville	CA	320
Graymont	Cricket Mtn	UT	115
Graymont	Pilot Peak	NV	115
Lafarge-Holcim	Devils Slide	UT	60
Lehigh Hansen Cement	Redding	CA	160
Mitsubishi Cement	Cushenberry	CA	150
Nevada Cement	Fernley	NV	85
Nirma -Searles Valley Minerals	Argus	CA	600
Spreckels Sugar	Brawley	CA	24
Estimated Annual Consumption			2,329
Annual Consumption less Searles Valley			1,729

Export market for Utah coal

Utah mined coal has reached overseas markets with some success over the past decade despite challenges with port availability. Utah producers have found this to be a worthwhile market as prices have, at times, allowed for some reasonable margins. This coal is desirable for power generation in Japan, Korea and Taiwan and it has moved to Vietnam and Chile and Central America. It is a bituminous product which has similar characteristics to the Newcastle, New South Wales, Australia (NEWC) product. This coal is often sold at a premium to the lower heat-value Indonesian subbituminous.

Asian buyers look to the US for supply diversity and security much in the same way IPA uses non-Utah coal in its supply portfolio. Heavy reliance on one region has proven risky because of disruptions caused by weather or geopolitical issues. However, US coal is not always competitive as forces of supply and demand makes US coal uneconomic depending on various market conditions. This includes availability of other coal as well as freight rates, trade policy, and foreign currency exchange.

Further, Utah coal exports are constrained by port availability. Utah and Colorado origin coals are currently using port space in California.

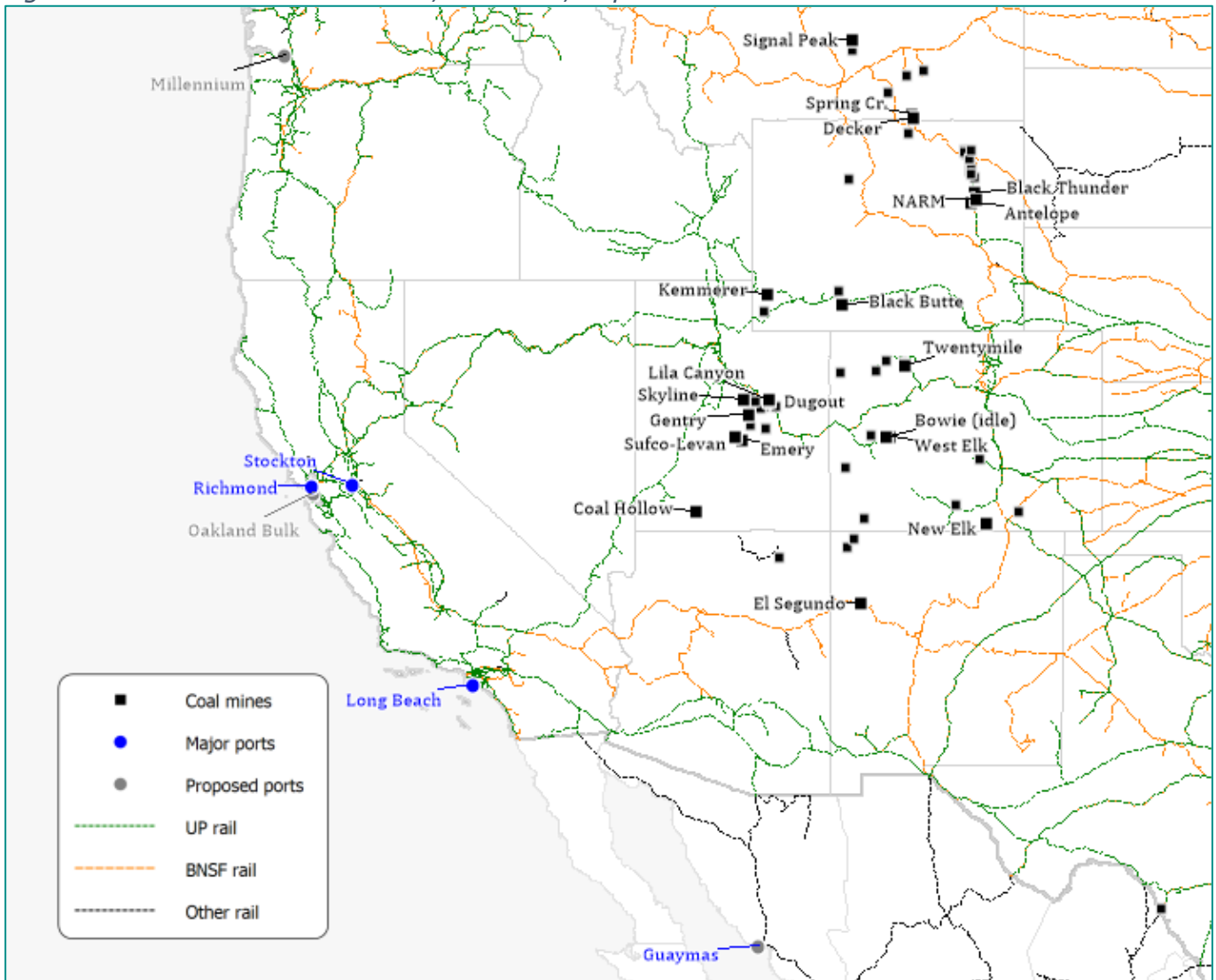
The export facilities are:

- Koch Carbon’s Oxbow Terminal – Port of Long Beach, CA. This facility also handles other bulk commodities, particularly petroleum coke. IHS believes Arch Resources’ West Elk mine in Colorado has been the primary exporting company through this port.
- City of Stockton’s Port of Stockton, CA – The Metropolitan Bulk Terminal has capacity to load one Panamax vessel per week to 50,000 tonnes which is 2.6 million tonnes annually

- Levin Richmond Terminal Corp's Levin-Richmond – Richmond, CA. – This terminal can load one Panamax vessel per week at 50,000 tonnes but is severely constrained by storage capacity and its ability to handle large trainsets. Currently, this terminal is primarily used to “top-off” vessels that originate at the Port of Stockton. However, it has loaded empty vessels from time-to-time. Wolverine is the largest exporter through the Stockton/Levin-Richmond ports.
- Port of Guaymas, Guaymas, Sonora (Mexico). Utah origin coal has been exported through Guaymas, peaking in 2018. IHS believe most of this coal originated from the Lila Canyon mine.

Utah has also been active in pursuing new port infrastructure. The Oakland Bulk & Oversized Terminal is a proposed public/private partnership to use redeveloped land of the former Oakland Army Base on San Francisco Bay. The project has been caught in a legal maelstrom which has delayed development.

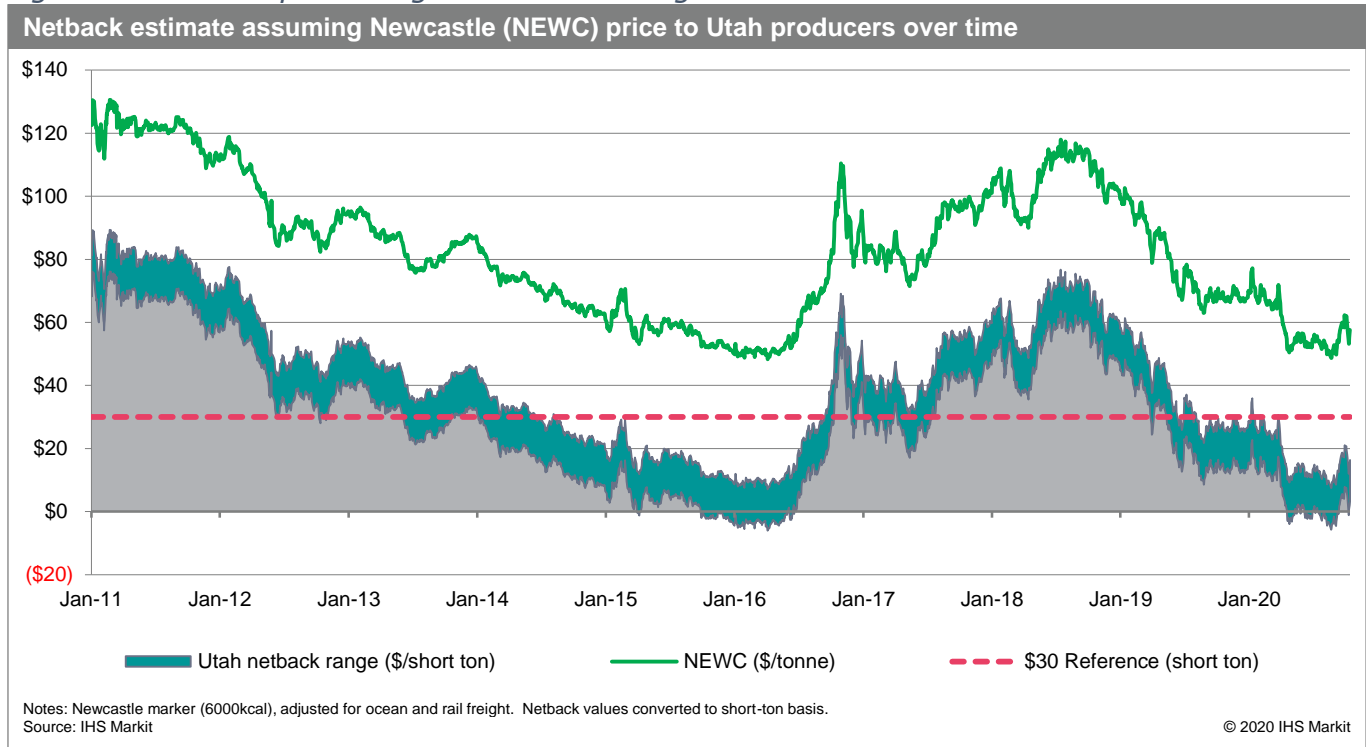
Figure 8: Western US coal mines, railroads, export terminals



Utah coal competes primarily with thermal coal originating in Australia. The Newcastle coal has the advantage of geography as the coal mines are not far inland and the port infrastructure is highly developed and capable of taking the largest vessels. Australia is also geographically closer to Asian markets. Contrast this with the ports available to Utah producers. The distance is hundreds of rail miles which means the rail cost disadvantages Utah coal compared to its primary competition. Additionally, the US ports have vessel size limitations and limited capacity.

The following chart illustrates the effect of changing international prices on the price available to Utah producers.

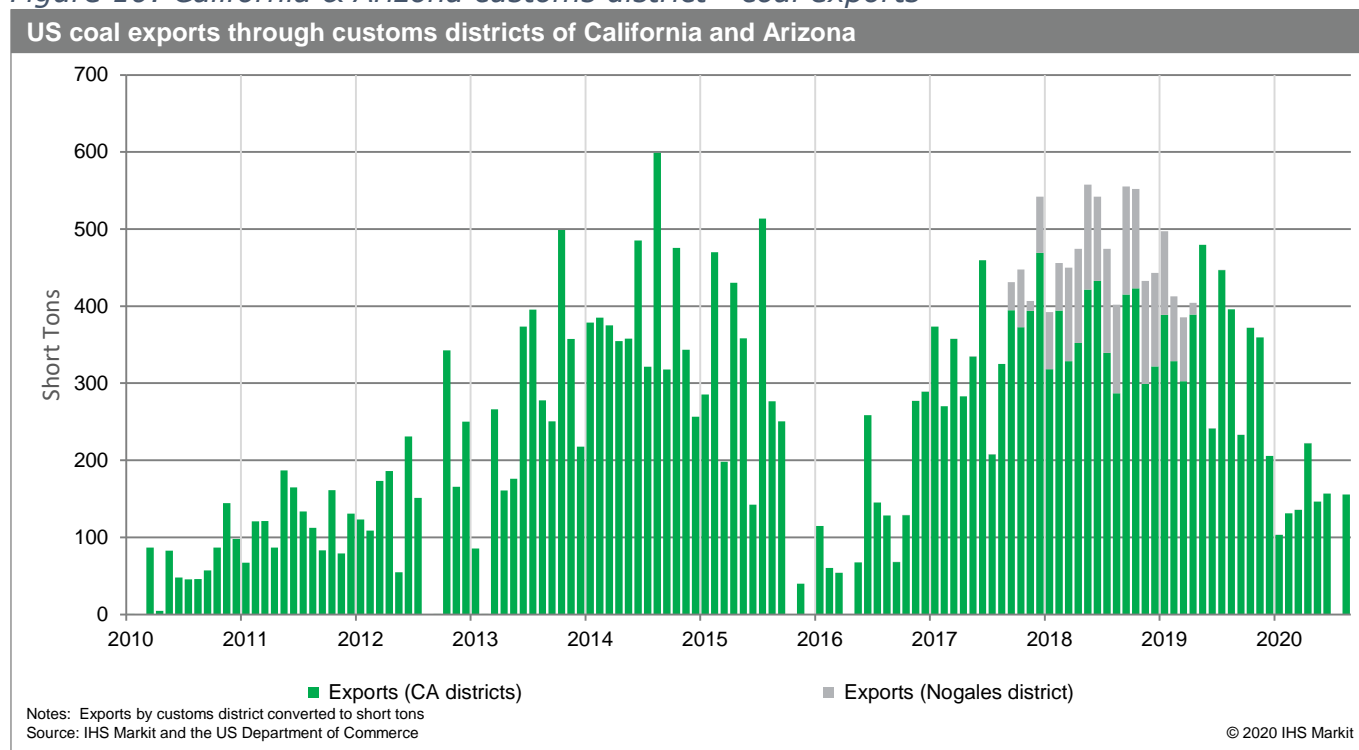
Figure 9: Netback price range for Utah coal against Australian NEWC



The \$30 line is for reference only and is not intended to represent what a Utah coal producer would accept. The chart also shows a range as both mine prices and rail costs will vary with time. But this does show relatively that Utah coal was very competitive from 2017 through 2018 and into 2019 before international prices declined.

The following chart shows the relative volume of coal exports through California (both Utah and Colorado coal) and Guaymas (Utah coal).

Figure 10: California & Arizona customs district - coal exports



The relationship between the international price and volume of exports is quite clear. Wolverine emphasized this point when they announced in 2019 their intent to develop the 58 mst Cottonwood tract through the old Trail Mountain mine. Part of the justification was the export market and their relative success in serving that market in 2018: “Last year, Wolverine shipped 3 million tons — a third of its total production — to Japan through the San Francisco Bay, according to [Garrett] Atwood” according to an article in the [Salt Lake Tribune](#) on September 24, 2019.

This is a good opportunity market for Utah coal producers and export volume is likely to rebound when seaborne prices increase, especially as NEWC prices increase above \$80/metric ton. This also assumes there is no regulatory roadblock limiting coal exports in the future.

The export market has been an important market for Utah coal producers. This market can affect domestic sales as volume pulled into the export market because of higher prices limits the amount of coal available for domestic demand.

Utah Coal logistics

Utah coal moves to customers by rail, truck, or a combination of the two. The only Class I railroad serving Utah coal is the Union Pacific and only one mine, Wolverine’s Skyline, is directly served by the railroad. All other coal produced in Utah requires trucking on public roads to a rail loadout.

The largest, and most central coal transfer facility is Savage Industries' Savage Coal Terminal (SCT) located about 10 miles south of Price, Utah. Trucking coal to the rail loadout adds costs to the production of roughly 8 to 10 cents per mile per ton with contract discounts. Additionally, the loading facilities, like SCT, charge a fee for their services.

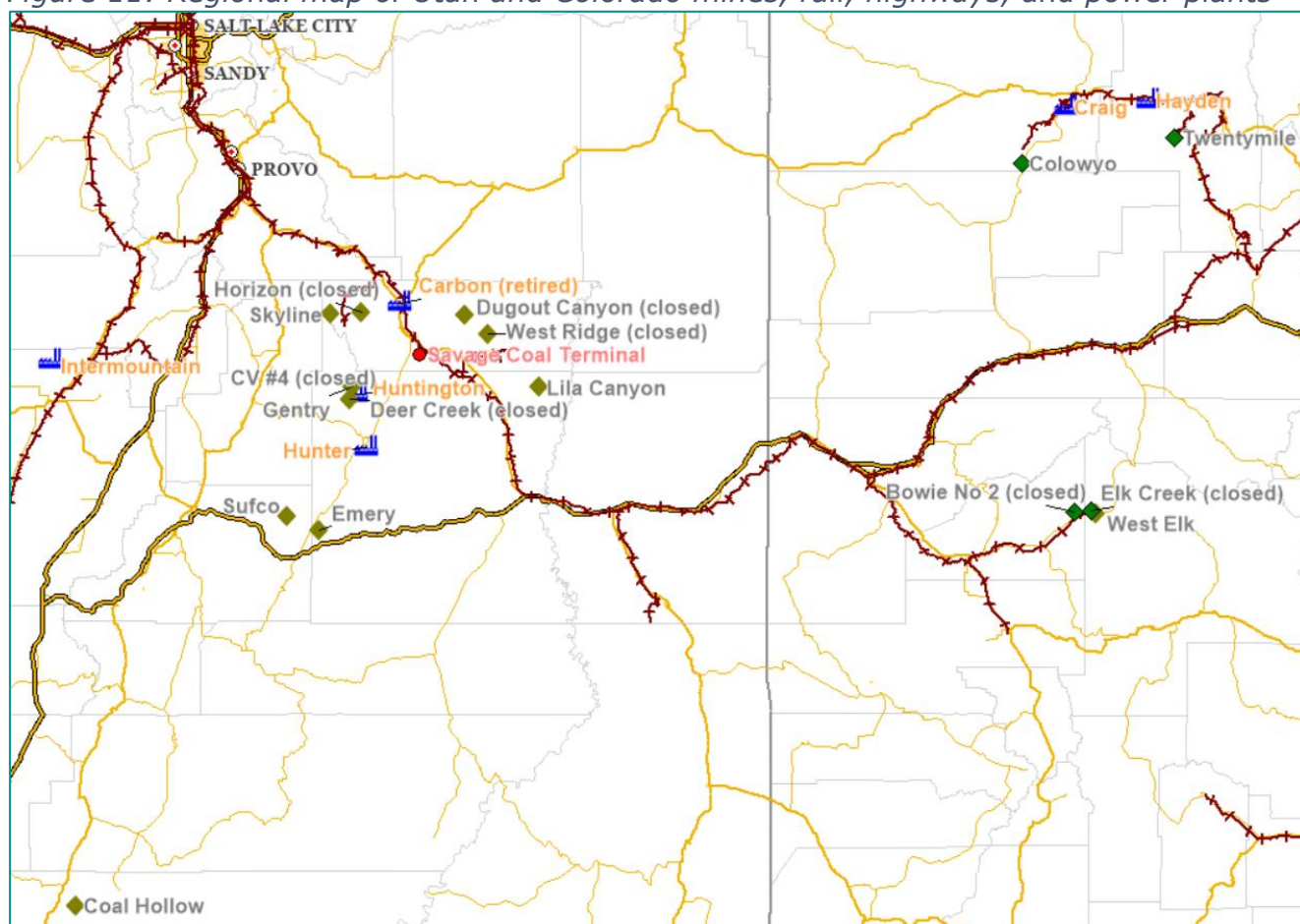
- PacifiCorp receives its coal only by truck as there is no rail coal unloading at either Hunter or Huntington. If PacifiCorp needed to take rail delivery, the most likely transfer point would require railcar unloading at SCT then trucking the coal to Hunter or Huntington – assuming no new rail infrastructure is added – this has been proposed in the past.
- North Valmy and Nirma receive their coal by UP rail.
- Export coal is delivered by UP rail to the piers in California. For access to the Guaymas terminal in Mexico, the UP hands-off the train to Ferromex (largest Mexico rail operator) at the Nogales, Arizona border gateway.

IPP is located to the west of the Price River Valley where most of the coal mines are located. The Price River Valley is defined by the Wasatch Plateau to the west and north, and the Book Cliffs to the east. It presents transportation challenges as severe elevation changes are required to move coal from the valley to IPP.

- Rail service is the UP mainline which must take fully loaded trains from SCT over Soldier Summit pass (a net elevation change of close to 1,800 feet), then down to Provo (Springville). The exception is Wolverine's Skyline mine which is a high elevation mine whose rail loadout has access to the mainline of the UP Railroad close to the top of Soldier Summit pass.
- Truck access to IPP is off Utah Route 174. Coal from Wolverine's Sufco mine can be trucked directly to the plant or it is taken to Wolverine's Sharp rail loadout near the town of Levan where UP trains make the final delivery to IPP. All coal from Alton Coal is delivered by truck from the mine which is approximately 175 miles from the plant. Alton Coal explored the construction of a rail loadout in Cedar City. The coal would have been hauled 50 miles by truck from the Coal Hollow mine to the Cedar City loadout for transloading into unit-trains. However, the cost of rail service plus the truck haul far exceeds the existing truck-only transportation costs; so, the rail loadout project in Cedar City is infeasible.

The following map shows the relative location of the Utah coal mines, power plants, railroads, highways, and the Savage Coal Terminal. The rail-served mines in Colorado are also included to show the relative distances.

Figure 11: Regional map of Utah and Colorado mines, rail, highways, and power plants



Arch Resources' West Elk mine, its history and logistics

IPP has taken delivery of West Elk coal over the past ten years. Data from EIA suggest total West Elk deliveries were about 2.9 mst, of which 600 thousand tons were purchased by either Alton coal or Wolverine. An additional 61 thousand tons were delivered to IPP from Wolverine's now closed Bowie #2 mine in Colorado.

West Elk produced 4.1 mst in 2019 using longwall mining methods. IHS expects the mine to produce less than 3 mst in 2020. West Elk was named as part of the proposed joint venture with Peabody Energy which would have combined their Colorado and Wyoming mines under one unit. In September 2020, the FTC effectively blocked the formation of the JV because of concentration issues in the Powder River Basin, and since then Arch Resources has announced they are seeking to leave the thermal coal business. Arch has not made any indications regarding the disposition of West Elk, but it widely believed they are seeking a buyer or other alternatives, including ramping down operations at the mine.

West Elk is the lone surviving mine in the North Fork Valley of the Gunnison River as both Oxbow's Elk Creek and Wolverine's Bowie are both closed. This coal has served the export market through the Oxbow Terminal in Long Beach, California and through ports in New Orleans and Houston.

The UP Railroad serves the mine via a rail spur from Grand Junction to the mine near Somerset. The rail distance from West Elk to IPP is 431 rail miles. The rail distance from SCT to IPP is 172 miles. IHS estimates the difference in rail freight charge is between \$4-\$5 per ton additional for the Colorado coal which puts it at a distinct competitive disadvantage to most Utah origin coal.

West Elk produces a consistently high Btu, very-low sulfur product. These characteristics have allowed this coal to travel thousands of miles because it provides utilities flexibility to meet strict environmental emissions limits without the installation of additional costly control equipment. In the case of IPA, the low sulfur and low ash provided an excellent blend product allowing the plant to use more higher-sulfur, higher ash Utah coal and still meet strict emissions limits.

Utah Coal quality trends

Coal produced in Utah has held up generally, but heating values have slipped and ash has generally increased. Small excursions in coal quality can have a large impact on both the operational performance and compliance with environmental laws.

The differences in coal quality may not appear that meaningful, however this coal quality is not representative of the quality characteristics of the coal available to IPA’s through their existing portfolio of suppliers.

The degradation in coal quality has happened as the mines with the higher quality coal have been depleted and generally replaced with mines that have higher sulfur and ash content.

Following is a table of reported delivered coal quality by mine for both the Utah producers and the primary source of non-Utah coal that has been used at IPP. Arch Resources’ West Elk mine is located near Somerset, Colorado, southeast of Grand Junction is included for comparison.

Figure 12: Utah coal quality trends

	Btu/Lb	Sulfur %	LbSO2	Ash %
2010	11,517	0.60	1.05	11.16
2011	11,530	0.62	1.07	10.76
2012	11,345	0.57	1.01	11.90
2013	11,358	0.62	1.09	11.23
2014	11,458	0.56	0.98	10.62
2015	11,257	0.58	1.03	11.60
2016	11,067	0.60	1.08	12.16
2017	11,039	0.57	1.02	11.66
2018	11,177	0.52	0.92	11.54
2019	11,297	0.54	0.96	11.50
2020*	11,279	0.57	1.01	11.72

* January-July weighted average

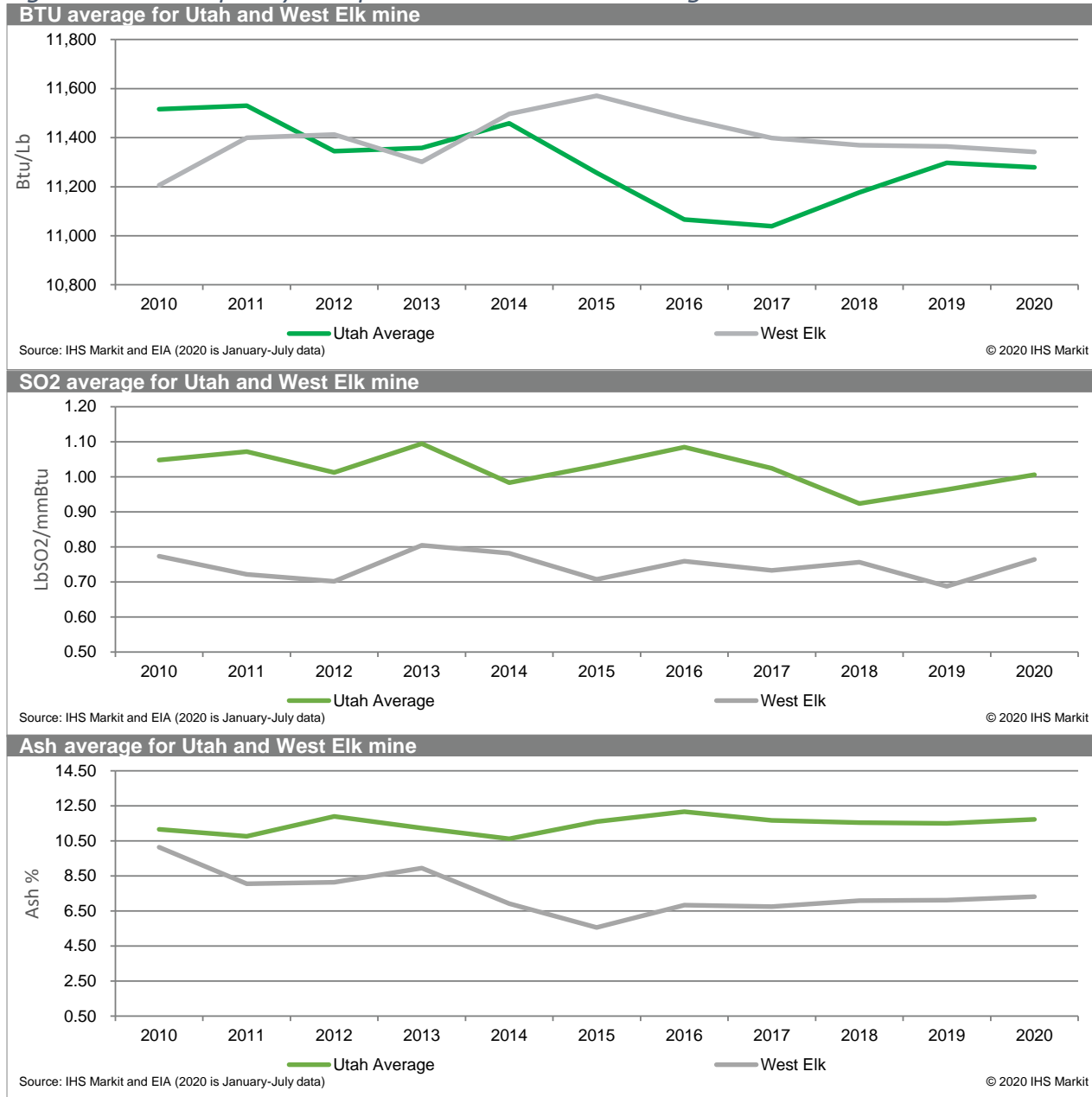
Figure 13: Utah coal quality trends, by mine

Mine Owner	Mine	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Btu/Lb												
Alton Coal	Coal Hollow	-	9,667	9,842	9,759	9,784	9,768	9,887	9,925	9,874	9,867	10,100
Amer. West	Horizon	11,683	11,668	11,500	-	-	-	-	-	-	-	-
Wolverine	Dugout	11,694	11,573	11,867	11,125	10,995	11,748	11,993	11,993	11,992	11,749	-
	Skyline #3	11,578	11,537	11,487	11,491	11,417	11,449	11,205	11,180	11,279	11,431	11,566
	Sufco	11,015	11,071	10,980	10,935	10,914	10,762	10,689	10,840	10,972	11,050	11,235
Bronco	Emery*	12,104	12,098	-	-	-	-	-	-	11,818	11,360	-
PacifiCorp	Deer Creek	11,672	11,751	11,498	11,593	11,875	11,500	-	-	-	11,777	-
ACNR	Lila Canyon	-	-	11,774	-	-	-	11,646	11,698	12,064	12,235	12,323
	West Ridge	12,041	12,261	12,084	12,149	12,502	12,442	-	-	-	-	-
Gentry	Gentry (CV #3)	-	-	-	-	-	10,934	11,096	11,096	11,096	-	-
	CV #4	11,700	11,940	11,866	11,916	11,889	11,741	11,862	11,891	11,828	11,821	11,655
Weighted Average UT		11,517	11,530	11,345	11,358	11,458	11,257	11,067	11,039	11,177	11,297	11,279
Arch Res	West Elk	11,206	11,400	11,413	11,301	11,497	11,571	11,479	11,399	11,369	11,364	11,342
LbSO2/mmBtu												
Alton Coal	Coal Hollow	-	2.32	2.17	2.31	1.96	1.81	2.08	2.07	1.78	1.83	1.89
Amer. West	Horizon	0.97	1.03	0.84	-	-	-	-	-	-	-	-
Wolverine	Dugout	1.18	1.20	1.05	0.70	0.90	1.50	1.57	2.50	1.82	2.29	-
	Skyline #3	0.69	0.84	0.75	0.81	0.83	0.89	0.93	0.91	0.90	0.80	0.86
	Sufco	0.67	0.66	0.62	0.62	0.58	0.78	0.81	0.79	0.77	0.85	0.93
Bronco	Emery*	1.69	1.80	-	-	-	-	-	-	0.79	0.83	-
PacifiCorp	Deer Creek	0.88	0.97	1.03	1.08	0.87	0.93	-	-	-	0.93	-
ACNR	Lila Canyon	-	-	2.07	-	-	-	1.70	1.62	1.54	1.44	1.53
	West Ridge	2.02	1.77	1.78	1.89	1.81	1.80	-	-	-	-	-
Gentry	Gentry (CV #3)	-	-	-	-	-	1.56	0.94	0.94	0.94	-	-
	CV #4	1.20	1.01	1.05	1.04	1.06	1.12	1.10	1.02	1.00	1.13	1.17
Weighted Average UT		1.05	1.07	1.01	1.09	0.98	1.03	1.08	1.02	0.92	0.96	1.01
Arch Res	West Elk	0.77	0.72	0.70	0.80	0.78	0.71	0.76	0.73	0.76	0.69	0.76
% Ash												
Alton Coal	Coal Hollow	-	9.50	8.72	8.99	9.01	8.81	9.60	8.54	9.42	8.97	8.71
Amer. West	Horizon	10.84	10.30	12.83	-	-	-	-	-	-	-	-
Wolverine	Dugout	11.34	11.96	10.42	11.55	13.77	12.33	11.48	11.66	11.71	12.44	-
	Skyline #3	9.76	10.24	10.67	10.77	11.06	10.81	11.85	11.48	11.58	11.51	11.87
	Sufco	10.85	9.95	11.14	11.58	11.59	12.68	12.93	12.22	11.73	11.81	12.01
Bronco	Emery*	9.46	9.47	-	-	-	-	-	-	9.76	13.35	-
PacifiCorp	Deer Creek	11.63	11.66	13.42	11.99	10.58	11.26	-	-	-	10.40	-
ACNR	Lila Canyon	-	-	11.72	-	-	-	12.17	11.23	9.82	9.61	8.26
	West Ridge	12.93	11.10	13.35	10.33	7.95	9.00	-	-	-	-	-
Gentry	Gentry (CV #3)	-	-	-	-	-	16.09	12.00	12.00	12.00	-	-
	CV #4	13.00	11.16	12.15	11.21	11.55	12.20	12.24	12.38	12.53	11.63	13.41
Weighted Average UT		11.16	10.76	11.90	11.23	10.62	11.60	12.16	11.66	11.54	11.50	11.72
Arch Res	West Elk	10.13	8.05	8.14	8.94	6.91	5.55	6.83	6.75	7.08	7.11	7.32

* Emery mine in 2010-2011 was a surface mine, reopened in 2018 as a deep mine in lower sulfur seam

Coal quality differences between most of the Utah origin coal and the coal coming from West Elk is significant. In terms of heating values as measured by Btu/lb, the Colorado origin coal is above 11,000 Btu/lb which compares favorably with most Utah coal. However, sulfur content in Colorado coal is meaningfully lower than most Utah coal. Wolverine's Sufco and Skyline have lower sulfur, but not as low as the Colorado coal. Ash content is also significantly lower for the Colorado coal.

Figure 14: Coal quality comparisons for Utah mines against West Elk



These coal quality constituents have real cost effects on power generation. The greater the heating values, the more efficient the plant is in terms of converting thermal energy to electricity. Sulfur, when burned, creates sulfur-dioxide (SO₂) which is a primary pollutant controlled by the Clean Air Act. Ash is the residual product which needs to be handled both in the boiler and the emissions. Ash properties can degrade the performance of the boiler and higher ash coal results in additional disposal costs. Blending coal types is often used to create an optimal recipe for the plant's boilers.

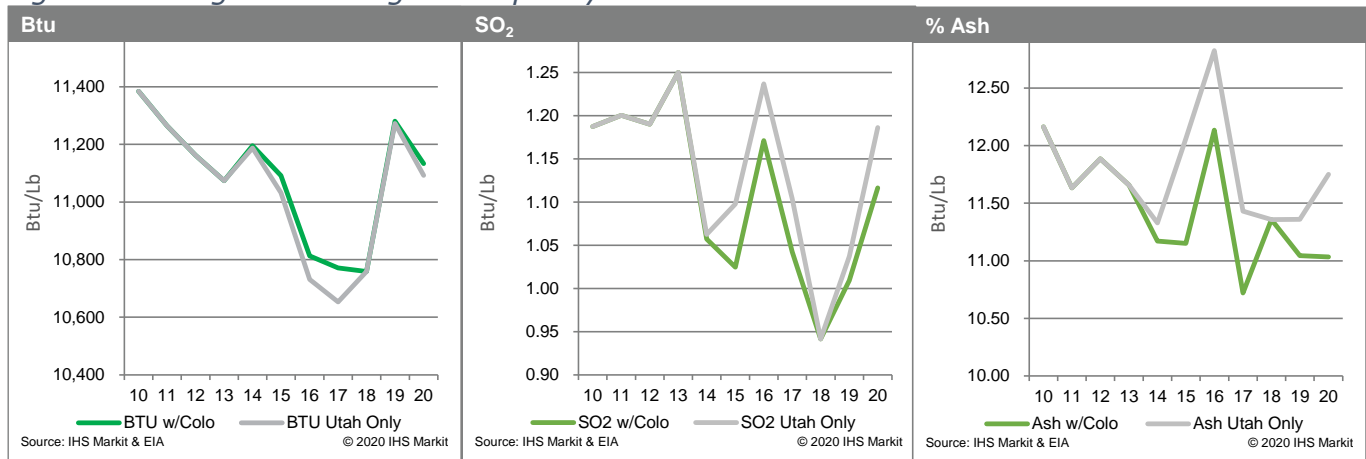
Utilities monitor the inbound quality because of the implications this has on the plant's performance. Coal supply agreements contain negotiated coal quality parameters which usually provide a price premium or penalty for excursions above or below an agreed

specification. Most contracts also provide utilities with the ability to reject shipments if they fail to meet the negotiated quality range. Further, if a mine consistently fails to achieve stated qualities, the utility has the right to terminate the agreement. Sometimes this results in contractual breach.

Coal quality delivered to IPP with and without Colorado

The coal purchased by IPA further illustrates this issue. The coal delivered to IPP over the past 10 years shows the differences in the coal characteristics. The small volume of Colorado coal purchased has a meaningful effect on the average quality of the coal available for the plant’s operations.

Figure 15 Weighted average coal quality delivered to IPP



While the differences in heating value are somewhat small, it does affect the overall efficiency of plant operations and therefore cost. More meaningful differences are in sulfur (expressed in the chart as LbSO₂/mmBtu) and ash. The small addition of Colorado coal acts as a “sweetener” to the overall coal blend which reduced emissions and improves plant performance.

Geological risks

Coal mining has risks and mining in Utah is no exception. Except for the Coal Hollow mine, all other Utah coal is produced using underground methods. Deep mining in Utah has its own challenges, specifically complex geology. The region has had its share of disruptions including some with tragic loss. These include intrusions of non-coal material (partings), unexpected faults or unmapped changes in coal characteristics. This is over structural failures which have disrupted the mining process in the past.

Most recently, Wolverine has been granted partial relief in the royalties due to the Bureau of Land Management because of “significant and unique adverse geologic conditions” The discount royalty applies to Sufco’s Quitchupah and Greens Hollow leases in the Upper Hiawatha low-sulfur seam. Sufco has announced its intent to open a new mine in the Cottonwood tract as mentioned previously.

While geological issues are not isolated to Utah, they do add to the risks for power plants that rely on that supply and when the universe of available suppliers is shrinking, the risk of disruption increases.

Most of the power from IPP now serves both municipal and regional systems. The entity has a duty to these constituents including reliable competitive power.

Environmental policy as it relates to Utah production

Environmental regulations have eased somewhat during the Trump Administration. Two Federal coal leases in Utah were granted in February 2019. The first was a property with 30.8 mst recoverable coal to Alton Coal. The second was a lease modification which adds federal coal to the Sufco mine and extends the life of the property for approximately five years. The lease sales were themselves made possible by overturning the 2016 moratorium on new coal leases imposed during the Obama Administration.

Additionally, the Trump Administration reduced the footprint of the Grand Staircase-Escalante National Monument and in early 2020, opened over 800,000 acres to potential energy development. Thus far, no development has proceeded, most likely because of the difficult energy environment following the global pandemic.

If the administration changes in 2021, there is strong chance the Federal coal leasing moratorium could be reimplemented. This and other potential reversals could make development of new coal properties more difficult, including properties not producing federal coal.

One such example was the rollback of rules originally promulgated by the Obama Administration which would have expanded the definition of water protected under the Clean Water Act. The Trump Administration reversed most of those changes and narrowed the jurisdiction of protected waters and removed climate change as a consideration. This to the ire of multiple environmental organizations and would seem ripe to revisit under a new administration. Given all coal mining has some impact on water, even those on non-federal property, it could affect the ability to obtain new permits and possibly interfere with current mining operations.

Environmental organizations have also sued coal producers for failing to consider the effects of climate change. Numerous suits remain active in Colorado today. A different administration would likely take up this cause and support new regulations and bolster existing efforts. The Endangerment Finding which ruled that carbon dioxide is a pollutant remains in effect.

Finally, beyond anything the government might do is the growing presence of ESG programs. ESG has become a cornerstone for many businesses and this is having a chilling effect on coal. Returning to the example of Arch Resources. This is the second largest coal producing

company in the US and it is actively looking to divest itself of its thermal coal properties. The leading reason for this is they want to separate themselves from the negative images associated with climate change. But unsaid is that Arch has found its pathways to financing have been reduced by ESG programs by many large banks and financial institutions.

These are not idle risks and could unexpectedly affect a coal mining operation. This could come in the form of a court ruling or a decision at the head offices of a major shareholder in a mining company or even a large transportation provider.

Summary: The health of Utah coal industry and recommend best practices for future IPP coal purchases

The Utah coal industry has been a microcosm of the changes occurring in coal production nationally. It is an industry that has been affected by financial difficulty, geological problems, and the greater impact that the development of natural gas and renewable energy have had on the perception of using coal as a primary fuel for electric power generation. Utah producers have been facing a declining market for their product as large coal-fueled power plants have been retired, many ahead of their economic life. IPA's own situation is an example of that – where the primary market for the electric power in California regulated against using coal as a source fuel for power.

Coal mining companies have had more than their share of financial trials over the past 10 years with most US coal producers seeking Chapter 11 protection under US bankruptcy laws. Utah is no different as evidenced with Rhino's liquidation and Murray Energy's bankruptcy. Evidence of other financial stress include Alton Coal who is behind on property taxes in Kane County as of October 25, 2020. America West Resources' Hidden Spender operations which were liquidated. The largest producer in the state, Wolverine, was recapitalized by its parent company in 2018 to address financial needs.

Also outlined in this report is the market for Utah coal is cyclical, especially given opportunities to sell coal overseas and sometimes at margins that exceed realizations from domestic buyers. There are periods where mine realizations are meaningfully greater than the domestic market and this could affect coal availability in Utah. There is no blame here, this is a market reality.

Finally, as covered in this report, environmental rules and regulations are evolving and oftentimes outside the control of the state. We could be on the cusp of such a tightening of rules depending on the outcome of national elections on November 3, 2020. But regardless of the direction of federal environmental policy has been the momentum of corporations to advance their ESG positions. This too could limit the reliability of a Utah (or any) coal producer to meet the needs of the market.

IPA is owned by Utah municipalities and cooperatives as it serves their needs for reliable, competitive electric power. The utility has been challenged because it purchased 5-6% of its coal over the past 10 years from neighboring Colorado. The coal IPA has purchased allowed the power plant to run efficiently and use additional off-specification Utah coal. It also expands the universe of supply which acts like an insurance policy during times of market tightness and possible credit issues.

Finally, it provides additional price discovery as the Colorado coal must be evaluated on the same delivered, competitive price basis. Mentioned in this report is Colorado suppliers are at a cost disadvantage because of the added rail freight compared to most Utah supply. Therefore, unless IPA is paying a premium for this coal, which they are not, then IPA is acting in a prudent manner.

An examination of records shows the prices paid for the Colorado coal, on a cents/million Btu basis, are well within the range of prices offered for Utah coal on a heat-content adjusted basis. These are arms-length transactions into a blind bidding process. Having additional vendors in a coal requisition, especially those that offer operational efficiencies, is considered prudent, not only as a check on remote supply but also to verify a fair and level field for nearby supply.

The following table provides the weighted average delivered price (including freight,) expressed in "cents per million Btu" to adjust for variation of the heating value of the coal. This clearly shows that IPA is not paying a premium for non-Utah coal despite the inherent distance disadvantage. Again, this is for very small proportion of the coal delivered to the plant.

Figure 16: Delivered cost analysis for IPP supply

			Cents/mmBtu										
Mine Owner	Coal Origin	Reported Seller	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Alton Coal Dev.	Coal Hollow	ALTON COAL DEVELOPMENT		215.93	221.16	228.04	224.41	215.00	212.30	218.26	228.08	225.46	226.86
America West	Horizon	HIDDEN SPLENDOR RESOURCES	202.50	213.93	222.35								
Arch Coal Inc	West Elk	ALTON COAL DEVELOPMENT						195.05	200.42				
		ARCH COAL SALES					188.65	197.01	204.93	213.26		221.97	227.48
		BOWIE RESOURCES						206.38	204.90				
Wolverine	Bowie No 2	BOWIE RESOURCES						198.81					
Wolverine	Dugout Canyon	CANYON FUEL (Arch before 6/13)	166.16	177.84		206.89	203.88						
	Skyline No 3	ARCH COAL SALES (as of 06/13: Wolverine)			199.85	201.07							
		BOWIE RESOURCES						203.83	214.85	221.37	222.32		
		BOWIE RESOURCES						206.41					
		ENSERCO		209.11									
		RHINO ENERGY (now Gentry)						225.00				216.23	227.02
		WOLVERINE FUELS LLC					201.70	205.04				225.39	227.39
	Sufco	ARCH COAL SALES (as of 06/13: Wolverine)			205.98	212.43							
		BOWIE						211.42	198.87	220.93	226.63		
		BOWIE RESOURCES						218.51	218.93		228.30	229.02	227.49
		CANYON FUEL	172.63	163.46		216.62	220.11						
		SUFCO					221.19	218.34					
Bronco Coal Res.	Emery	BRONCO UTAH OPERATIONSLLC									204.11	185.33	
ACNR (Murray)	Lila Canyon	BOWIE							220.70				
		UTAH AMERICA										202.41	
		WEST RIDGE								219.52			
		WEST RIDGE RESOURCES								220.70			
		WESTERN RIDGE RESOURCES								214.31			
		WESTRIDGE RESOURCES								223.54	157.20		
	West Ridge	WEST RIDGE						193.70					
		WESTERN RIDGE RESOURCES						202.24					
		WESTRIDGE	222.92	220.38	220.93	234.70	231.80						
		WESTRIDGE RESOURCES	235.68	214.20	217.61	234.10	193.83	197.12					
Rhino (now Gentry)	Castle Valley No 4	RHINO ENERGY		232.90	234.70	244.95	247.19	222.83					

The small volume acquired outside Utah has provided benefits to the Utah stakeholders of IPA and assurance that fuel procurement is both fair and transparent. It is the same insurance that Utah suppliers have relied upon in the past when they could not meet delivery obligations. It is common practice that a supplier will source similar coal from another supplier under certain negotiated conditions. Assuming the supply agreement allows for this, a supplier may want to purchase coal because of production/coal quality problems, over-sold situations, or other opportunities like exports.

Over the past 10 years our analysis shows over 4.5 million tons of coal were purchased by coal suppliers to supplement or replace their own production. Some non-Utah coal was purchased by Utah suppliers, under their existing contracts, and shipped to IPP to ensure their success and viability. Some non-Utah suppliers purchased Utah coal to ship on their contracts. Foreclosing on this would unnecessarily constrain trade and could be harmful to Utah suppliers.

The amount of change experienced in Utah has been tremendous. There is not one coal mining company that existed in the 1980s that is still operating today and only two mines from that era are still producing coal. There has been tragedies and upheavals and unexpected geological events. Since 2010, Utah coal production has fallen over 25% and options for IPP's coal supply is growing narrower. Despite this, IPA has successfully purchased the vast majority of its coal from Utah sources over the life of the plant.

In conclusion, the relatively small volume of non-Utah coal delivered to IPP over the past 10 years given the state of the Utah coal market has proven its worth on multiple levels. The fuel procurement practice at IPA is entirely transparent and is acting in the best interest of the many stakeholders, including the coal suppliers.