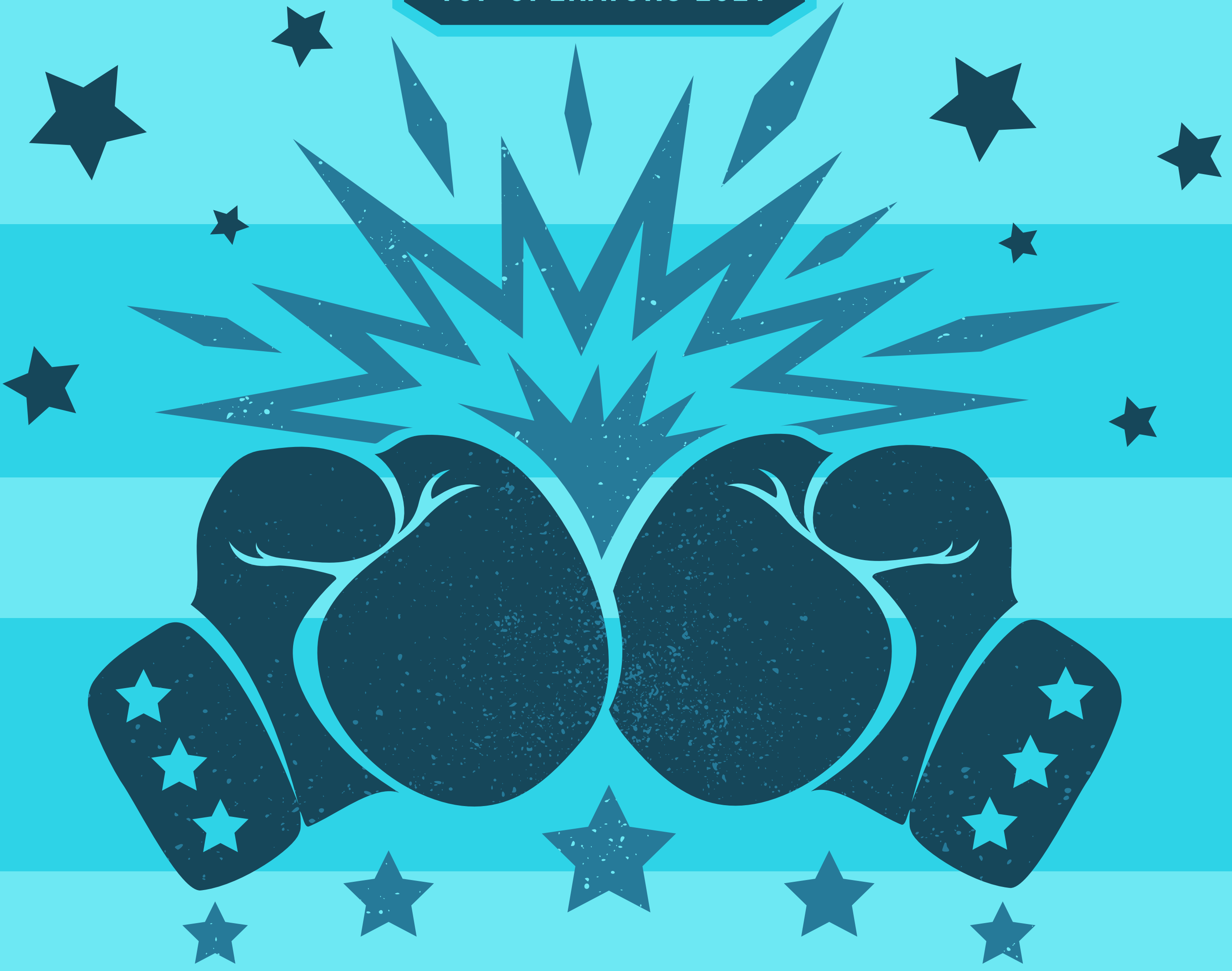
TOP OPERATORS 2021



UP OFF THE CANVAS

Canada's top operators bounce back from COVID-19 commodity collapse as 2021 advances

Daily Oil Bulletin KPMG CanOils

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EDITOR'S NOTE

What a difference a year makes.

Last year, when assembling the 2020 Top Operators report, the COVID-19 pandemic had shuttered the global economy. Oil demand had been reduced by over 20 million barrels per day and prices were at lows not seen in decades.

The mood of the Canadian industry was grim. After five years of being rocked by wild price volatility the pandemic hit like a knockout punch.

For many operators it proved to be the final blow. The 2021 Top Operators roster is smaller as a result. Fortunately, most managed to beat the count, and the industry as a whole emerged stronger, leaner, and more efficient.

Halfway into 2021, the fog of the COVID-19 battle is clearing as vaccinations increase throughout most of the developed world. Oil prices have stabilized and are climbing with demand as people return to normalcy. Natural gas prices have also improved. While still wary, operators are now looking forward to the next round.

But the pandemic left its scars. Balance sheets need repairing and debt needs to be reduced. Investors, after keeping the faith through the dark days, need to see a return on capital. The shift to working from home could also mark a long-term change, as employees look for flexibility in future work arrangements.

And the world didn't stand still in 2020. Environmental, social and governance (ESG) risks gained in prominence, partially due to the pandemic. The energy transition increased in pace.

The 2021 Top Operators Report looks back at how Canada's oil and gas leaders pivoted to meet the challenges of 2020, and how they are positioning their organizations for future success.

Once again, we have tapped into the experience of professional services firm KPMG in Canada to provide insight into what strategies operators could pursue to thrive in the current environment.

The report also features a broad swath of the insights and opinions from industry leaders gleaned from Daily Oil Bulletin coverage.

New this year is additional commentary from data providers Evaluate Energy and CanOils on how Top Operators data has changed year-over-year, and what those changes mean for the future. Also new is commentary from the DOB's new parent company, geoLOGIC systems ltd., on how technology changes are impacting operational efficiencies and the ability to manage operation risk.

The Daily Oil Bulletin and KPMG hope the 2021 Top Operators report provides some context to the current state of the industry and generates conversation on what comes next.

Keep on fighting and we will see you next year.

Finding balance

With commodity markets still recovering, oil and gas operators focus on financial health, operational excellence, shareholder interests, and ESG concerns

Michael McKerracher
National Energy Leader, KPMG in Canada

The worst is over.

As the pandemic recedes the global economy is gradually getting back on its feet.

Oil prices have bounced back and are now trading in the US$70 per barrel range, generating free cash flow for Canadian operators after flatlining for most of 2020. Natural gas prices are also at profitable levels for most operators, hovering at around C$3.00 per GJ going into the summer.

But that doesn't mean oil and gas operators can relax and let down their guard, said KPMG in Canada's National Energy Leader Michael McKerracher.

"Oil prices are at a plateau and could move either way. There are as many optimists as pessimists in the market. The OPEC plus group needs to manage supply well."

Given this market uncertainty operators must balance how they invest cash flows, he said. Repairing balance sheets remains the main priority, as it was before the pandemic.

"You need a healthy balance sheet. It was apparent a number of companies were challenged in staying solvent," explained McKerracher. "Large companies had the support of the debt markets and banks through the whole period. Smaller producers had to live through a tough environment. There was a lot of carnage along the way. Lots of good producers didn't make it."

As a result, "many companies are now focused on paying down debt," he noted. "Debt structures are being realigned as investors want lower debt to cash flow ratios."

After a tough last five years investors are looking to see a return on capital. They are also looking for improved ESG performance and a strategy for successfully navigating the energy transition as it gains momentum.

"Yield, dividends, share buybacks, capital expenditures, energy transition type costs – CFOs are trying to balance all these challenges," said McKerracher, adding that methods to return capital to shareholders will vary according to each operator's circumstances. "If you are not sure you can sustain dividend increases, then share buybacks make sense as they can be more flexible. Investors want increasing dividends but they don't want them going up and down."

There is a push by more optimistic analysts to see industry plow money back into capital expenditures to grow production. But McKerracher said it is unlikely large companies will adjust spending plans this year.

"Some smaller companies are going to spend to grow to a size to be noticed by analysts and investors. They want to grow to a size that investors are willing to play."

The long-term effort to cut costs and improve operational efficiency is expected to continue, he added, although the focus is changing towards investment in technology and away from lay-offs and service price concessions.

"Energy producers have driven most energy service companies to the point they can no longer reinvest to maintain operations. Some producers are realizing that and don't want companies to go under. They want to maintain a competitive market. Other than technology advances, there isn't a lot of additional cost savings outside of M&A activity."

Technology, whether subsurface or in the back office, will be the next target for investment to improve productivity and drive out costs. McKerracher sees significant opportunities in automating back office functions and leveraging data analytics to improve decision-making throughout organizations.

He also expects a growing focus on ESG and energy transition efforts as governments around the world push for what they call a "new normal". But he urges caution in how these transition choices are made.

"We've seen majors divest of oilsands plays or sell assets to look better in the ESG environment but this reduces cash flows and then they don't have anything left to reinvest," he explained. "It's not a real strategy for the energy transition."

The KPMG National Energy Leader also questions whether spending on carbon credits is a good long-term strategy.

"Companies shouldn't be buying carbon credits halfway around the world," he explained. "They have to build emissions reductions into their operations through technology like carbon capture, methane mitigation, or better cokers. Investing in technologies or processes core to their operations that reduce carbon will stand the test of time rather than buying credits where you don't know their quality over time. Credits are risky long-term. Global sentiment wants investment in the energy transition and we expect CFOs to spend as it fits into their operations."

So, what looks like success in the post pandemic era?

"Long-term lower debt, a sustainable dividend, and having the money to allocate to carbon zero efforts. I don't think industry will have an easy go of it. Production is needed now and for decades to come, but it's not going to get any easier."

Canadian Headquartered Company Production (2019/2020)

	Boe (000 boe/d)		Oil, Liquids, Oilsands (000 bbl/d)		Gas (mmcf/d)		Net Acres (undeveloped - 000 acres)	
	2019	2020	2019	2020	2019	2020	2019	2020
Canadian Natural Resources Limited	965.175	1,068.602	731.842	834.269	1,400.000	1,406.000	20,910.000	19,169.000
Suncor Energy Inc.	730.300	653.100	730.300	653.100	0.000	0.000	8,352.820	8,200.060
Cenovus Energy Inc.	451.680	471.740	380.930	408.480	424.000	379.000	4,800.000	4,600.000
Imperial Oil Limited	357.000	384.000	333.000	359.000	144.000	150.000	1,269.000	1,209.000
Tourmaline Oil Corp.	290.865	310.598	55.338	64.496	1,413.160	1,476.613	1,392.805	1,798.336
Husky Energy Inc.	246.183	221.733	196.600	178.200	297.500	261.200	4,918.000	4,432.000
Seven Generations Energy Ltd.	203.027	183.893	119.187	105.659	503.000	469.400	382.712	383.224
ARC Resources Ltd.	139.126	161.564	35.235	38.357	623.300	739.200	571.577	532.610
Crescent Point Energy Corp	126.113	103.144	114.708	93.698	68.432	56.678	1,187.120	1,182.993
MEG Energy Corp.	93.082	82.441	93.082	82.441	0.000	0.000	461.365	284.897
Peyto Exploration & Development Corp.	80.802	79.577	10.922	11.308	419.281	409.619	386.573	386.963
Birchcliff Energy Ltd.	77.977	76.401	17.151	17.889	364.958	351.068	193.050	198.554
Whitecap Resources Inc.	71.050	68.662	59.916	57.638	66.801	66.146	247.074	240.299
Paramount Resources Ltd.	82.394	68.340	31.846	26.889	303.300	248.700	1,844.000	1,477.000
Vermilion Energy Inc.	59.979	58.941	35.254	33.711	148.350	151.380	423.234	376.654
NuVista Energy Ltd.	50.803	50.443	20.417	19.488	182.322	185.732	47.843	47.600
Baytex Energy Corp.	58.625	48.602	50.463	41.469	48.969	42.799	1,192.338	1,075.441
Advantage Energy Ltd.	44.334	44.922	2.700	4.408	249.802	243.081	86.093	77.527
Pieridae Energy Limited	22.397	42.000	2.186	8.493	121.263	201.040	1,650.029	790.839
International Petroleum Corporation	37.500	35.000	19.500	17.800	108.000	103.200	n/a	146.204
Athabasca Oil Corporation	36.196	32.483	31.483	28.611	28.281	23.229	1,018.306	826.813
Obsidian Energy Ltd.	26.901	25.404	18.084	16.618	52.904	52.715	228.000	226.000
Kelt Exploration Ltd.	29.961	24.992	13.851	11.218	96.658	82.646	584.065	411.512
Storm Resources Ltd.	20.182	23.219	3.772	4.590	98.458	111.776	211.112	210.054
Teck Resources Limited	33.593	22.875	33.593	22.875	0.000	0.000	0.000	0.000
Tamarack Valley Energy Ltd.	24.072	22.027	15.165	13.289	53.444	52.426	496.440	621.622
Crew Energy Inc.	22.837	21.955	6.604	6.202	97.398	94.519	385.467	351.386

Canadian Headquartered Company Production (2019/2020) (continued)

	Boe (000 boe/d)		Oil, Liquids, Oilsands (000 bbl/d)		Gas (mmcf/d)		Net Acres (undeveloped - 000 acres)	
	2019	2020	2019	2020	2019	2020	2019	2020
PrairieSky Royalty Ltd.	21.757	19.712	11.240	9.695	63.100	60.100	0.036	0.026
Pine Cliff Energy Ltd.	19.142	19.006	1.521	1.626	105.725	104.277	143.730	112.292
Cardinal Energy Ltd.	20.319	18.442	17.723	16.177	15.576	13.585	185.218	115.788
Surge Energy Inc.	21.175	17.976	17.819	15.158	20.135	16.906	288.933	243.331
Pipestone Energy Corp.	4.762	15.570	2.137	6.730	15.751	53.039	86.147	81.187
Spartan Delta Corp.	0.225	15.421	0.041	4.817	1.102	63.625	10.484	n/a
Bonterra Energy Corp.	12.305	10.575	8.296	6.864	24.053	22.268	55.053	67.049
Yangarra Resources Ltd.	12.572	9.888	5.961	4.487	39.663	32.404	87.414	96.564
Enerplus Corporation	13.471	9.886	9.520	7.806	23.706	12.481	104.426	47.914
Freehold Royalties Ltd.	10.570	9.609	5.857	5.219	28.271	26.345	6.000	5.856
Journey Energy Inc.	9.372	8.379	4.526	3.834	29.079	27.270	134.039	121.141
Distinction Energy Corp.	8.327	6.657	3.454	2.949	29.237	22.247	58.878	58.996
Petrus Resources Ltd.	8.306	6.608	2.967	2.001	32.032	27.640	152.141	82.102
Gear Energy Ltd.	6.962	5.298	6.254	4.661	4.252	3.825	113.586	101.216
Perpetual Energy Inc.	8.988	5.012	1.943	1.428	42.300	21.500	217.255	207.562
Prairie Provident Resources Inc.	6.071	4.781	4.130	3.226	11.638	9.326	366.484	120.282
InPlay Oil Corp.	5.000	3.985	3.323	2.699	10.058	7.715	67.030	65.932
Razor Energy Corp.	4.387	3.783	3.615	3.000	4.635	4.695	79.261	41.707
Leucrotta Exploration Inc.	3.044	3.173	0.820	0.855	0.623	13.903	176.000	166.600
Persta Resources Inc.	1.907	2.363	0.163	0.139	10.465	13.341	28.000	n/a
TransGlobe Energy Corporation	2.328	2.277	1.396	1.496	5.594	4.686	33.197	33.837
Clearview Resources Ltd.	2.421	2.055	1.165	0.873	7.537	7.091	66.583	60.668
Questerre Energy Corporation	2.121	1.966	1.357	1.278	4.586	4.126	1,023.515	966.714
Hemisphere Energy Corporation	1.665	1.706	1.608	1.692	0.342	0.088	11.197	11.037
Highwood Oil Company Ltd.	1.493	1.560	1.493	1.560	0.000	0.000	365.419	554.259
Headwater Exploration Inc.	0.620	0.882	0.004	0.249	3.700	3.800	443.054	513.450
Altura Energy Inc.	1.742	0.880	1.218	0.522	3.145	2.151	80.204	77.015

Canadian Headquartered Company Production (2019/2020) (continued)

	Boe (000 boe/d)		Oil, Liquids, Oilsands (000 bbl/d)		Gas (mmcf/d)		Net Acres (undeveloped - 000 acres)	
	2019	2020	2019	2020	2019	2020	2019	2020
Saturn Oil & Gas Inc.	0.765	0.439	0.765	0.439	0.000	0.000	11.407	27.305
Vital Energy Inc.	0.378	0.373	0.362	0.345	0.095	0.163	8.981	7.819
Cuda Oil and Gas Inc.	0.281	0.262	0.038	0.029	1.453	1.399	0.000	0.000
Prospera Energy Inc.	0.397	0.262	0.396	0.249	0.004	0.076	2.234	2.234
Tenth Avenue Petroleum Corp.	0.177	0.183	0.013	0.013	0.981	1.020	0.000	0.000
ROK Resources Inc.	0.000	0.166	0.000	0.116	0.000	0.295	0.000	3.575
Pulse Oil Corp.	0.228	0.108	0.114	0.072	0.683	0.216	24.530	2.587
PetroFrontier Corp.	0.173	0.099	0.173	0.099	0.000	0.000	7.184	7.112
Arrow Exploration Corp.	0.109	0.094	0.006	0.006	0.623	0.530	21.213	12.390
Petrox Resources Corp.	0.025	0.018	0.025	0.018	0.000	0.000	0.240	0.240
Softrock Minerals Ltd.	0.004	0.015	0.004	0.015	0.000	0.000	0.000	0.000
Huntington Exploration Inc.	0.016	0.014	0.000	0.000	0.097	0.084	0.000	0.000
Samoth Oilfield Inc.	0.010	0.009	0.000	0.000	0.061	0.055	0.000	0.000
Strikewell Energy Corp.	0.011	0.009	0.006	0.005	0.031	0.023	0.432	0.480
Supernova Metals Corp.	0.000	0.007	0.000	0.007	0.000	0.000	0.000	0.000
Sahara Energy Ltd.	0.005	0.002	0.005	0.002	0.000	0.000	n/a	n/a
Falcon Oil & Gas Ltd.	0.001	0.002	0.000	0.000	0.009	0.011	0.000	0.000

Canadian Headquartered Company Reserves (2019/2020)

	Boe (million boe)		Oil & Liquids (million bbl)		Oilsands (million bbl)		Gas (bcf)	
	2019	2020	2019	2020	2019	2020	2019	2020
Canadian Natural Resources Limited	9156.000	11060.833	598.000	525.000	7770.000	9260.000	4728.000	7655.000
Cenovus Energy Inc.	5102.000	5029.833	69.000	57.000	4826.000	4812.000	1242.000	965.000
Suncor Energy Inc.	4615.000	4579.000	116.000	109.000	4499.000	4470.000	0.000	0.000
Tourmaline Oil Corp.	1294.439	1691.055	256.357	364.158	0.000	0.000	6228.491	7961.384
MEG Energy Corp.	1339.145	1299.502	0.000	0.000	1339.145	1299.502	0.000	0.000
Husky Energy Inc.	1285.533	1104.000	206.400	89.700	943.300	897.500	815.000	700.800
Seven Generations Energy Ltd.	841.837	709.685	452.794	381.205	0.000	0.000	2334.257	1970.877
Birchcliff Energy Ltd.	709.061	699.067	110.456	112.735	0.000	0.000	3591.632	3517.991
ARC Resources Ltd.	595.358	603.192	143.958	136.559	0.000	0.000	2708.400	2799.800
Imperial Oil Limited	3491.833	560.000	41.000	7.000	3354.000	525.000	581.000	168.000
Peyto Exploration & Development Corp.	527.317	536.519	84.706	82.628	0.000	0.000	2655.663	2723.349
Athabasca Oil Corporation	455.750	402.617	23.100	18.800	410.200	365.300	134.700	111.100
Advantage Energy Ltd.	352.825	387.023	30.471	29.959	0.000	0.000	1934.120	2142.386
Whitecap Resources Inc.	362.504	362.588	306.812	307.178	0.000	0.000	334.154	332.458
Teck Resources Limited	352.800	340.500	0.000	0.000	352.800	340.500	0.000	0.000
NuVista Energy Ltd.	353.439	333.037	121.201	120.912	0.000	0.000	1393.425	1272.748
Crescent Point Energy Corp	390.294	332.050	355.204	302.923	0.000	0.000	210.538	174.759
Paramount Resources Ltd.	334.818	311.323	158.235	142.256	0.000	0.000	1059.500	1014.400
Crew Energy Inc.	201.982	202.489	48.626	48.016	0.000	0.000	920.137	926.837
International Petroleum Corporation	172.900	182.200	108.000	123.400	0.000	0.000	389.400	352.800
Vermilion Energy Inc.	191.356	178.048	130.351	118.167	0.000	0.000	366.030	359.287
Pieridae Energy Limited	183.567	175.825	35.921	35.451	0.000	0.000	885.875	842.246
Storm Resources Ltd.	156.117	160.496	30.974	31.355	0.000	0.000	750.859	774.845
Spartan Delta Corp.	1.670	134.977	0.732	42.148	0.000	0.000	5.631	556.973
Sinopec Canada Energy Ltd.	168.094	121.688	62.529	41.184	0.000	0.000	633.391	483.025
Baytex Energy Corp.	150.541	118.254	120.076	96.327	11.799	5.737	111.996	97.138
Yangarra Resources Ltd.	85.412	96.434	37.183	39.681	0.000	0.000	289.375	340.513

Canadian Headquartered Company Reserves (2019/2020) (continued)

	Boe (million boe)		Oil & Liquids (million bbl)		Oilsands (million bbl)		Gas (bcf)	
	2019	2020	2019	2020	2019	2020	2019	2020
Kelt Exploration Ltd.	224.582	95.956	103.292	37.903	0.000	0.000	727.740	348.315
Bonterra Energy Corp.	81.537	75.319	54.480	50.239	0.000	0.000	162.345	150.476
Cardinal Energy Ltd.	81.886	75.075	74.102	67.248	0.000	0.000	46.704	46.963
Obsidian Energy Ltd.	80.833	71.333	57.000	48.000	0.000	0.000	143.000	140.000
Surge Energy Inc.	77.424	67.120	66.346	57.290	0.000	0.000	66.467	58.981
Tamarack Valley Energy Ltd.	57.886	63.839	37.426	40.261	0.000	0.000	122.759	141.466
Pipestone Energy Corp.	112.495	56.973	52.854	56.896	0.000	0.000	357.848	0.462
Pine Cliff Energy Ltd.	46.142	42.899	4.996	4.757	0.000	0.000	246.877	228.852
PrairieSky Royalty Ltd.	36.509	37.360	16.578	16.185	0.749	0.645	115.093	123.182
Distinction Energy Corp.	30.095	30.824	12.005	12.746	0.000	0.000	108.539	108.470
Journey Energy Inc.	33.422	29.195	16.889	14.372	0.000	0.000	99.199	88.940
Petrus Resources Ltd.	30.206	25.421	10.089	7.766	0.000	0.000	120.703	105.929
Perpetual Energy Inc.	40.298	25.049	6.706	6.589	0.000	0.000	201.549	110.762
InPlay Oil Corp.	18.573	21.624	12.797	14.480	0.000	0.000	34.657	42.863
Freehold Royalties Ltd.	20.379	19.178	11.127	9.929	0.000	0.000	55.509	55.496
Enerplus Corporation	26.639	18.592	23.680	16.182	0.000	0.000	17.756	14.461
Prairie Provident Resources Inc.	21.723	18.261	15.622	13.212	0.000	0.000	36.603	30.295
Questerre Energy Corporation	19.557	16.351	9.335	7.744	0.000	0.000	61.335	51.640
Leucrotta Exploration Inc.	21.188	14.792	5.174	2.900	0.000	0.000	96.084	71.352
Razor Energy Corp.	16.258	13.525	14.109	12.632	0.000	0.000	12.892	5.355
Gear Energy Ltd.	16.250	12.998	14.493	11.593	0.000	0.000	10.540	8.427
Hemisphere Energy Corporation	9.912	11.679	9.715	11.654	0.000	0.000	1.179	0.151
Clearview Resources Ltd.	11.843	10.491	6.410	5.600	0.000	0.000	32.600	29.348
Headwater Exploration Inc.	3.018	9.496	0.018	6.000	0.000	0.000	17.999	20.977
TransGlobe Energy Corporation	9.800	9.144	6.600	6.399	0.000	0.000	19.200	16.471
Altura Energy Inc.	6.347	5.676	4.171	3.722	0.000	0.000	13.052	11.726
Highwood Oil Company Ltd.	7.825	5.210	7.505	4.862	0.000	0.000	1.919	2.086

Canadian Headquartered Company Reserves (2019/2020) (continued)

	Boe (million boe)		Oil & Liquids (million bbl)		Oilsands (million bbl)		Gas (bcf)	
	2019	2020	2019	2020	2019	2020	2019	2020
PetroFrontier Corp.	3.716	3.808	3.716	3.808	0.000	0.000	0.000	0.000
Saturn Oil & Gas Inc.	3.613	3.345	3.613	3.345	0.000	0.000	0.000	0.000
Pulse Oil Corp.	1.591	1.277	1.179	1.041	0.000	0.000	2.474	1.418
Arrow Exploration Corp.	0.746	0.871	0.073	0.081	0.000	0.000	4.036	4.742
ROK Resources Inc.	0.000	0.742	0.000	0.625	0.000	0.000	0.000	0.703
Tenth Avenue Petroleum Corp.	0.772	0.662	0.058	0.048	0.000	0.000	4.285	3.685
Vital Energy Inc.	0.530	0.446	0.512	0.411	0.000	0.000	0.104	0.208
Cuda Oil and Gas Inc.	0.663	0.410	0.134	0.045	0.000	0.000	3.176	2.187
Prospera Energy Inc.	0.930	0.167	0.908	0.167	0.000	0.000	0.132	0.001
Strikewell Energy Corp.	0.076	0.070	0.042	0.040	0.000	0.000	0.206	0.181
Petrox Resources Corp.	0.032	0.028	0.032	0.028	0.000	0.000	0.000	0.000
Sahara Energy Ltd.	0.021	0.026	0.021	0.026	0.000	0.000	0.000	0.000
Softrock Minerals Ltd.	0.006	0.020	0.006	0.020	0.000	0.000	0.000	0.000
Pennine Petroleum Corporation	0.018	0.018	0.018	0.018	0.000	0.000	0.000	0.000

International Headquartered Company Canadian Production (2019/2020)

	Boe (000 boe/d)		Oil, Liquids, Oilsands (000 bbl/d)		Gas (mmcf/d)		
	2019	2020	2019	2020	2019	2020	HQ Country
ExxonMobil*	510.000	582.167	467.000	536.000	258.000	277.000	US
Ovintiv Inc.	241.100	231.300	65.100	60.300	1,056.000	1,026.000	US
Chevron Corporation	134.833	159.000	119.000	138.000	95.000	126.000	US
Royal Dutch Shell	184.245	148.788	83.786	73.902	602.753	449.320	Netherlands
Total	98.000	81.000	98.000	81.000	0.000	0.000	France
Petronas **	67.350	73.025	1.471	2.737	395.273	421.731	Malaysia
ConocoPhillips	62.500	69.667	61.000	63.000	9.000	40.000	US
Murphy Oil Corporation	59.361	57.543	14.135	14.096	271.355	260.683	US
CNOOC Ltd	70.630	55.488	69.947	55.471	4.100	0.100	China
Repsol	55.708	43.260	21.918	16.393	202.740	161.202	Spain
Sinopec **	26.952	29.336	3.580	3.086	140.338	157.594	China
BP Plc.	24.333	22.333	24.000	22.000	2.000	2.000	UK
Japan Petroleum Exploration Co., Ltd. ***	14.005	19.422	14.005	19.422	0.000	0.000	Japan
PKN Orlen	17.200	17.000	8.428	7.820	52.632	55.080	Poland
Indian Oil Corporation Limited***	7.941	7.573	0.525	0.602	44.496	41.829	India
Sasol Limited***	7.616	7.369	0.173	0.538	44.658	40.984	South Africa

* Includes production from Imperial Oil Ltd.
** estimated Working Interest production using CanOils Assets - Not reported figures
*** Non-December Year end, company's own year-end date used

Creating shareholder value

Rocked by volatility, investors want to see stable returns on their capital

Grant Brown

Managing Director and Partner, KPMG Corporate Finance Inc.

Bemal Mehta

Managing Director, Energy Intelligence for geoLOGIC systems and JWN

Curtis Hicks

Vermilion Energy Inc. President

Imad Mohsen

Parex Resources Inc. President and Chief Executive Officer

Grant Fagerheim

Whitecap Resources Inc. President and Chief Executive Officer

The days of investors rewarding oil and gas operators solely for growing production and reserves are long gone, said Grant Brown, Managing Director and Partner, KPMG Corporate Finance Inc.

While there is optimism in markets at current commodity prices, Brown said investors are still reeling from the volatility of the last few years and there is limited appetite to take on risk. Conservatism is the prevailing mindset, with the focus on debt retirement and then capital stabilization of the growth program.

“There is a more muted view on growth,” he explained. “Investors have shifted from growth metrics to return metrics, and that’s not going away.”

This sense of financial conservatism is evident in corporate guidance in the first half of 2021, said Bemal Mehta, Managing Director, Energy Intelligence for geoLOGIC systems and JWN. While capital expenditures are up compared to 2020, they are not returning to pre-COVID levels this year.

“There was a 30 per cent decline in capital expenditures in 2020 due to the impacts of COVID-19. In 2021, as prices have recovered, many companies are putting some of their cash flow to work to stabilize their production. Our numbers based on corporate guidance tell us capital spending should increase around 20 per cent from last year’s lows.”

The industry lost a lot of financial ground in 2020. Industry-wide, free cash flow (operating cash flow minus capital expenditures) declined from almost $20 billion in 2019 to a little over $300 million in 2020, with the majority of operators reporting negative numbers. Dividends were cut or eliminated, and share buybacks dropped from almost $6 billion in 2019 to $1.2 billion in 2020 as cash flows collapsed. With higher commodity prices and muted growth spending, free cash flow is climbing through the first half of 2021, said Mehta.

Vermilion Energy Inc. president Curtis Hicks said any free cash flow generated in 2021 will go to debt repayment. At US$60 WTI, Vermilion would generate around $650-$700 million in operating cash flow in 2021 from its Canadian and international operations, Hicks told the Scotiabank-Canadian Association of Petroleum Producers (CAPP) Energy Symposium. The company expects capital expenditures of $300 million for the year with all remaining cash flow going to debt repayment.

“We have to focus on profitability,” said Hicks. “That will put us in a position when our balance sheet is taken care of to return capital to shareholders and grow from there.”

Historically, the company targeted 25-30 per cent of its free cash flow for dividends. Dividends crept up to around half of free cash flow before being suspended in

2020. Hicks said the company expects to return around five to 10 per cent of free cash back to shareholders after it fixes its balance sheet.

"As we have more available cash flow, we will consider whether we have a flexible dividend or buybacks," he added.

KPMG's Brown said flexible or variable dividends make sense for many companies looking to manage through increasingly volatile price cycles.

"A variable dividend policy allows the company to give more during up-cycles and less down-cycle. A fixed dividend policy is designed to grow in dollar value over time. This reliability may be good for the shareholder in principle, but it's not capital efficient throughout the cycle and unlikely to optimize shareholder returns," he said.

Parex Resources Inc. finds itself in the enviable position of having zero debt. New president and chief executive officer Imad Mohsen said at US$60 WTI the Colombian oil producer would generate around $500 million in free cash flow. Around $200 million of that would go to share buybacks, with the remainder going to accelerate projects to drive production growth.

Mohsen said Parex currently prefers using share buybacks to increase shareholder returns as it provides the company with financial flexibility. But longer term he would like to see the company provide a mix of shareholder returns through growth, buybacks and potentially dividends. To get there the company will first have to prove the potential of its growth projects.

"When we have visibility on cash flow, then we can give dividends," he said.

Share buybacks have their place as a tool to efficiently return capital to investors, he added.

"They can be a useful lever to return excess cash and may be the best use of capital at times when companies have free cash and their share price is depressed. It may be a circumspect use of capital if the company is under-valued by the market."

Whitecap Resources Inc. prefers a balanced approach to returning capital to shareholders, said president and chief executive officer Grant Fagerheim.

At US$60 WTI, Fagerheim said the company would generate around $860 million in free cash flow, with around $500 million going to capital expenditures, $110 million returned to shareholders through dividends and $200 million used to pay down debt. The remainder would go carbon capture and hydrogen R&D work.

Fagerheim said in 2013 Whitecap developed a strategy to be a growth/dividend-oriented company. The company has built itself on low decline assets with low maintenance costs to achieve that strategy.

"Buybacks are another tool but they are secondary to balance sheet management and dividends," he said, adding that the company is targeting returning no more than 20 per cent of cash flow as dividends to maintain flexibility in the face of volatile commodity prices.

2021 Canadian Company Corporate Guidance as of July 31, 2021

	Currency	Production Guidance (boe/d)			Capital Expenditure Guidance (US/C$ Million)		
		2020	2021	Change between 2020 & 2021 Guidance	2020	2021	Change between 2020 & 2021 Guidance
Advantage Energy Ltd.	C$	45,000	49,500	10.0%	154.5	125	-19.1%
Altura Energy Inc.	C$	-	1,125	-	-	7.5	-
Alvopetro Energy Ltd.	US$	2,086	-	-	-	-	-
ARC Resources Ltd.	C$	158,500	294,500	85.8%	350	975	178.6%
Athabasca Oil Corporation	C$	32,250	33,000	2.3%	85	100	17.6%
Baytex Energy Corp.	C$	80,000	79,500	-0.6%	275	300	9.1%
Birchcliff Energy Ltd.	C$	76,500	80,000	4.6%	285	220	-22.8%
Bonterra Energy Corp.	C$	10,600	12,900	21.7%	49	77	57.1%
Canacol Energy Ltd.	US$	30,583	28,583	-6.5%	108	140	29.6%
Canadian Natural Resources Limited	C$	1,163,000	1,225,000	5.3%	2700	3205	18.7%
Cardinal Energy Ltd.	C$	18,345	18,594	1.4%	31.6	46.3	46.5%
Cenovus Energy Inc.	C$	459,000	770,000	67.8%	800	2500	212.5%
Clearview Resources Ltd.	C$	-	-	-	-	1.75	-
Crescent Point Energy Corp	C$	121,000	132,000	9.1%	665	647.5	-2.6%
Crew Energy Inc.	C$	21,500	27,000	25.6%	87.5	132.5	51.4%
Crown Point Energy Inc.	US$	-	-	-	0.7	6.8	871.4%
Enerplus Corporation	C$	90,500	113,000	24.9%	295	380	28.8%
Forza Petroleum Limited	US$	-	-	-	22	51	131.8%
Freehold Royalties Ltd.	C$	10,000	10,750	7.5%	-	-	-
Frontera Energy Corporation	US$	47,000	38,500	-18.1%	110	270	145.5%
Gear Energy Ltd.	C$	5,250	5,550	5.7%	14	27	92.9%
Gran Tierra Energy Inc.	US$	36,500	28,000	-23.3%	70	140	100.0%
Headwater Exploration Inc.	C$	-	7,125	-	-	107.5	-
Hemisphere Energy Corporation	C$	-	1,900	-	-	6	-
Imperial Oil Limited	C$	395,000	415,000	5.1%	900	1200	33.3%
InPlay Oil Corp.	C$	3,975	5,250	32.1%	25	23	-8.0%
International Petroleum Corporation	US$	41,000	42,000	2.4%	80	37	-53.8%
Journey Energy Inc.	C$	8,250	7,750	-6.1%	6	5.5	-8.3%
Kelt Exploration Ltd.	C$	24,400	21,000	-13.9%	145	150	3.4%

2021 Canadian Company Corporate Guidance as of July 31, 2021 (continued)

	Currency	Production Guidance (boe/d)			Capital Expenditure Guidance (US/C$ Million)		
		2020	2021	Change between 2020 & 2021 Guidance	2020	2021	Change between 2020 & 2021 Guidance
Leucrotta Exploration Inc.	C$	-	-	-	-	30	-
MEG Energy Corp.	C$	82,375	92,000	11.7%	150	335	123.3%
NuVista Energy Ltd.	C$	50,000	51,000	2.0%	175	240	37.1%
Obsidian Energy Ltd.	C$	25,400	24,200	-4.7%	67	143.5	114.2%
Paramount Resources Ltd.	C$	72,500	81,000	11.7%	225	275	22.2%
Parex Resources Inc.	US$	46,500	48,000	3.2%	140	260	85.7%
PetroShale Inc.	C$	11,500	11,000	-4.3%	8	55	587.5%
Peyto Exploration & Development Corp.	C$	-	-	-	225	325	44.4%
Pieridae Energy Limited	C$	42,500	42,500	0.0%	11	50	354.5%
Pine Cliff Energy Ltd.	C$	18,750	18,250	-2.7%	7.6	13	71.1%
Pipestone Energy Corp.	C$	15,500	25,000	61.3%	108	160	48.1%
Prairie Provident Resources Inc.	C$	-	4,400	-	-	16.9	-
Spartan Delta Corp.	C$	14,500	44,000	203.4%	-	175	-
Storm Resources Ltd.	C$	23,250	27,000	16.1%	58	87.5	50.9%
Suncor Energy Inc.	C$	695,000	760,000	9.4%	3800	4150	9.2%
Surge Energy Inc.	C$	21,000	18,000	-14.3%	98.5	55	-44.2%
Tamarack Valley Energy Ltd.	C$	21,500	33,000	53.5%	111	172.5	55.4%
Teck Resources Limited	C$	35,500	20,200	-43.1%	2985	3545	18.8%
Tourmaline Oil Corp.	C$	311,000	435,000	39.9%	835	1270	52.1%
TransGlobe Energy Corporation	US$	13,550	12,500	-7.7%	7.1	27.2	8.8%
Vermilion Energy Inc.	C$	95,000	84,000	-11.6%	360	300	-16.7%
Whitecap Resources Inc.	C$	67,750	110,500	63.1%	190	365	92.1%
Yangarra Resources Ltd.	C$	14,500	-	-	-	85	-

Managing financial risk

Building back better means low debt, laser focus on core assets and long-term strategy, and leveraging available financial tools to limit risk

Jeff Tonken
President and Chief Executive Officer of Birchcliff Energy

Michael McKerracher
National Energy Leader, KPMG in Canada

Mark Young
Evaluate Energy Senior Analyst

For Jeff Tonken, president and chief executive officer of Birchcliff Energy, the COVID-19 induced price collapse last spring was a warning bell on the risks of debt in volatile oil and gas markets.

"I started this company 17 years ago and I didn't like the position of risk we took when commodity prices really fell apart last year. It made me very, very uncomfortable," Tonken told the Scotiabank-CAPP investors conference early this spring. "So we've taken the position that we're going to pay our debt to zero. We think we can do that sometime by 2024."

Tonken said it is a prudent approach given the changing dynamics of the market and the sentiment of investors.

"You hear a lot of noise in the market with respect to the banks, with respect to the energy transition, with respect to financial results and we want to find ourselves in a position where we just pay our debt straight down and drive our dividend straight up."

KPMG National Energy Leader Michael McKerracher said debt is the largest financial risk facing Canadian operators. The lure of low-interest capital in recent years has resulted in the demise of some very good Canadian operators, he added.

"They accessed cheap U.S. debt that they would refinance and roll forward until they couldn't. Then they had to give the company away to the debt holders." Investors are also looking more closely at debt levels. "The investment community is going to demand lower debt multiples than in the past."

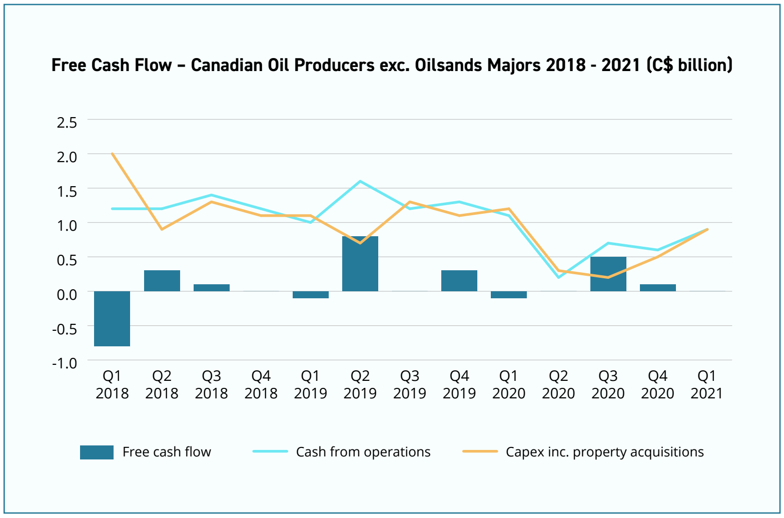
The ability to pay down debt means managing other financial risks, said McKerracher. Pricing volatility and the long-term demand growth outlook are two key factors that need to be managed.

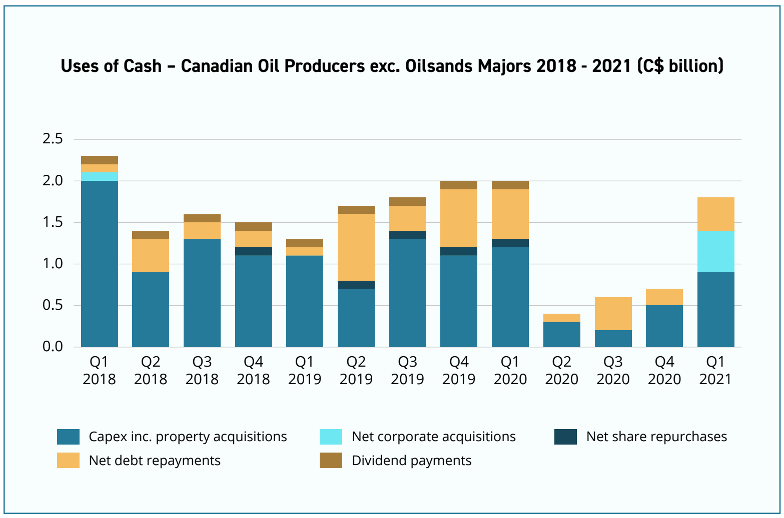
Projects with long payout cycles will likely not happen, he said, as industry focuses on smaller projects that optimize cash flow in volatile commodity cycles. This includes investment in oilsands megaprojects.

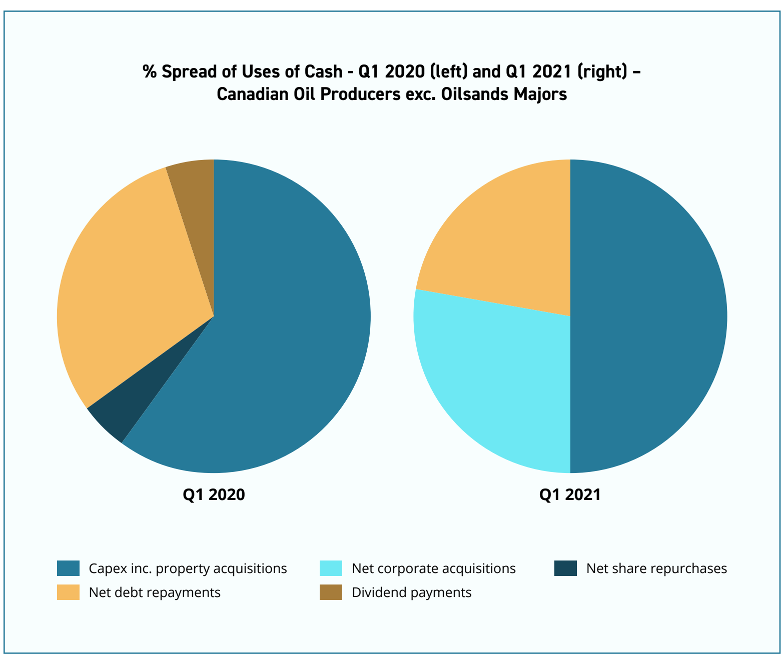
"I don't think the industry will initiate the volume of megaprojects we've seen in the past," he said, adding that doesn't mean an end to production growth. "With in situ, they can do smaller projects."

With muted long-term demand forecasts, other projects have also been deemed too risky, he added. "In prior years companies have reconsidered and are only advancing projects with the best returns. They have high-graded their assets and many projects on the books will never get built. Projects that are highly capital intensive may also never be built. These are stranded assets."

Investing in and integrating with downstream refineries proved a successful financial strategy to manage pricing volatility for oilsands operators in recent years. McKerracher said natural gas operators could adopt this strategy as well. Historically, gas producers have







built gathering and processing infrastructure only to sell it when prices declined and cash became in short supply.

"Companies are realizing that having control of their products through the value chain improves sustainability," he said. "They can better control their destiny if they can control their infrastructure."

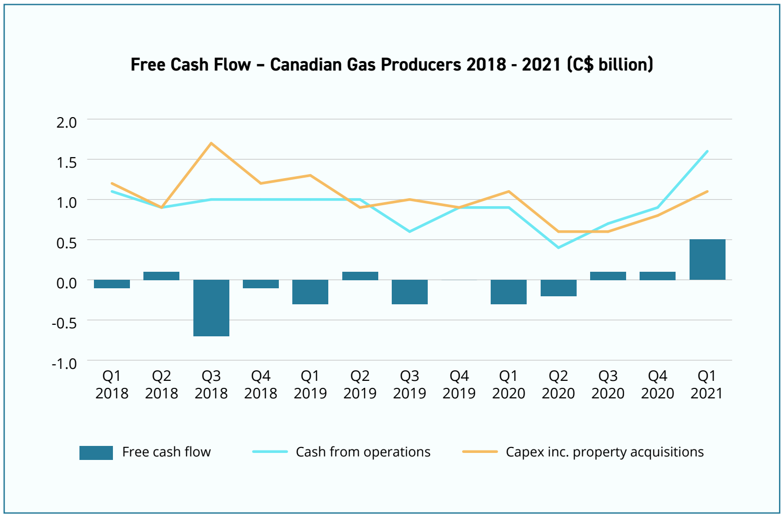
Over the years operators have also attempted to manage financial risk via rebalancing production portfolios by increasing oil and gas weighting based on future pricing expectations. McKerracher said he doesn't believe this is a viable future strategy for any but the largest operators. It's much better to focus on what operators are good at.

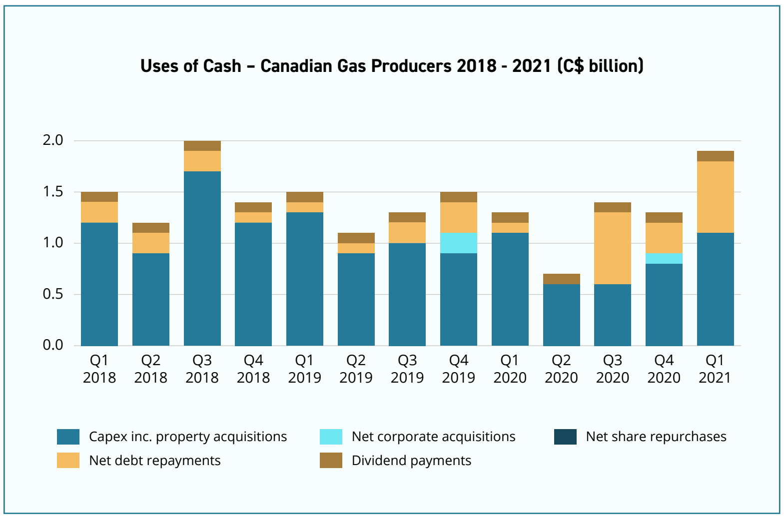
"I don't know long-term if this is a winning strategy. Oil and gas require different skill sets and you have to be a certain size to play that game. I think developing a long-term strategy and sticking with it will work better for most companies. Expertise and strategy are much more important."

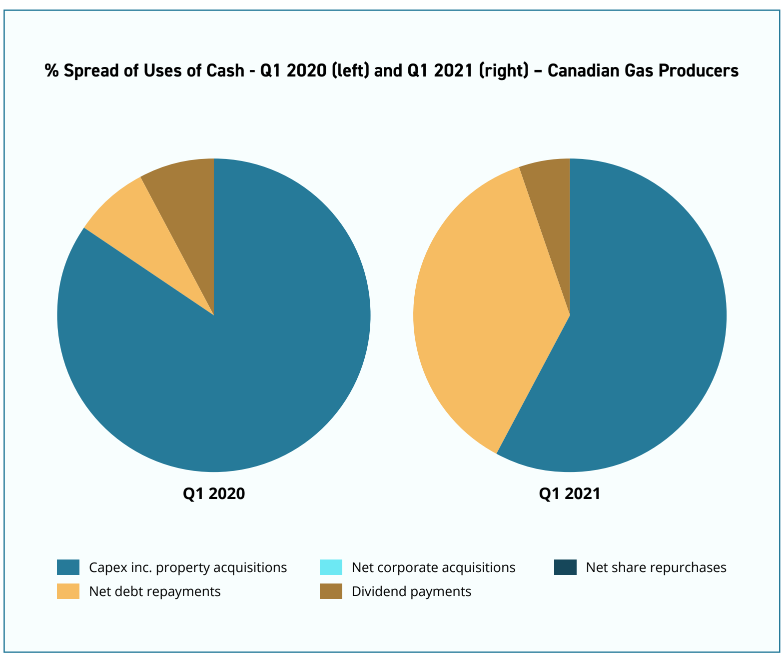
Andy Mah, president and chief executive of Advantage Energy, said his company's focus would remain on gas drilling rather than diverting funds to increase liquids output.

"As the oil prices fell off, we backed off on that a bit and said, 'Let's just hold back.' We went back to drill some wells at our Glacier asset and, given the prices in gas were kind of holding and getting better in the back part of 2020 and we're continuing to see what I believe is a constructive gas tape going forward, we'll continue to focus on that," he said.

"So in order for us to come back to liquids growth, we certainly keep an eye on the liquids pricing going ahead. But I think we've seen the







volatility in the oil sector, and I think we'll have a much better picture when we get to the back half of this year, and we'll decide if we want to put some money there."

Having a hedging strategy in place can also be key to manage financial risk, said Evaluate Energy senior analyst Mark Young, who recently analyzed hedging results for 72 North American operators for 2020 and early 2021.

"Hedging provided a much-needed glimmer of positivity for North America's oil producers last year," said Young. "More than $7 billion was raised in realized hedging gains from settled derivatives in 2020 by the companies we analyzed. This translates to an 11 per cent boost in E&P revenues for the group over the entire year.

"The picture is quite different in early 2021 as many producers have missed out on the recent pricing gains due to conservative hedging strategies. It is hard to criticize any producer that was more cautious when it came to hedging heading into the new year. Instead of gambling on exposure to fluctuating oil prices, the chaos of last year plainly made it a priority for many producers to lock in oil volumes even at new lower market prices via hedging. This provided greater certainty and stability around cash flow."

Canadian Headquartered Company Financials (2019/2020)

All data in C$ million	Revenues net of royalties		Net Income (loss)		Operating Cash Flow		G&A Expenses		Total Debt (year-end)		Capex exc. Acquisitions/ Divestments	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Suncor Energy Inc.	38344.000	24662.000	2899.000	-4319.000	10421.000	2675.000	195.000	386.000	18416.000	22135.000	5436.000	3806.000
Imperial Oil Limited	32194.000	20548.000	2200.000	-1857.000	4429.000	798.000	1043.000	862.000	5333.000	5279.000	1814.000	874.000
Canadian Natural Resources Limited	22871.000	16893.000	5416.000	-435.000	8829.000	4714.000	344.000	391.000	22791.000	23143.000	3913.000	2670.000
Husky Energy Inc.	19946.000	13311.000	-1370.000	-10016.000	2971.000	841.000	695.000	729.000	6982.000	7557.000	3432.000	1587.000
Cenovus Energy Inc.	20180.000	13227.000	2194.000	-2379.000	3285.000	273.000	269.000	225.000	8631.000	9494.000	1180.000	841.000
Teck Resources Limited	11934.000	8948.000	-605.000	-864.000	3484.000	1563.000	161.000	132.000	5746.000	7881.000	3468.000	3628.000
MEG Energy Corp.	3931.000	2292.000	-62.000	-357.000	631.000	302.000	68.000	49.000	3404.000	3198.000	198.000	149.000
Seven Generations Energy Ltd.	2783.300	2257.400	473.800	-2154.100	1344.900	857.200	64.000	56.300	2034.800	1956.700	1229.500	626.000
Tourmaline Oil Corp.	1836.150	2224.463	319.740	618.311	1174.929	1125.136	51.996	63.893	1629.888	1954.434	1068.707	911.989
Crescent Point Energy Corp	2877.100	1488.000	-1033.300	-2519.900	1742.900	860.500	91.900	78.700	3086.300	2416.100	1306.200	698.800
Vermilion Energy Inc.	1747.471	1140.844	32.799	-1517.427	823.465	500.152	58.976	60.840	2017.737	2010.372	523.164	367.202
ARC Resources Ltd.	1222.300	1134.400	-27.600	-547.200	638.800	655.700	60.800	66.300	923.800	751.100	692.200	343.200
Baytex Energy Corp.	1485.678	811.742	-12.459	-2438.964	834.939	353.096	45.469	34.268	1847.470	1793.165	552.291	280.340
Whitecap Resources Inc.	1200.476	810.894	-155.873	-1844.973	645.358	450.175	24.827	20.675	1257.462	1172.856	403.977	195.886
Enerplus Corporation	1254.806	737.205	-259.720	-923.367	694.240	446.365	49.532	44.584	659.704	527.259	629.800	295.700
Paramount Resources Ltd.	851.562	594.717	-87.856	-22.693	255.694	80.910	52.573	32.891	663.941	835.210	404.118	220.775
Birchcliff Energy Ltd.	606.238	523.988	-55.392	-57.821	327.066	188.180	26.815	24.615	659.022	771.302	258.839	289.662
Athabasca Oil Corporation	820.750	458.558	246.865	-657.525	92.632	-22.910	22.645	19.431	559.687	559.498	199.141	111.640
International Petroleum Corporation	736.500	437.410	137.162	-104.413	358.441	103.465	10.692	10.716	323.358	416.863	239.172	104.152
NuVista Energy Ltd.	557.815	407.707	-63.833	-197.879	263.856	147.200	16.852	14.014	642.352	706.356	301.822	180.442
Peyto Exploration & Development Corp.	456.028	377.976	133.495	-35.555	316.936	203.053	7.883	6.729	1128.738	1177.670	212.975	240.232
Obsidian Energy Ltd.	397.800	285.800	-788.300	-771.700	76.800	79.400	20.000	13.900	574.300	462.200	103.200	57.200
Pieridae Energy Limited	107.986	254.008	-71.573	-100.592	-51.772	0.909	29.074	41.231	208.482	222.570	3.125	17.243
Advantage Energy Ltd.	247.446	234.611	-24.654	-284.045	156.063	100.714	11.802	11.315	298.161	249.384	184.922	157.935
Tamarack Valley Energy Ltd.	343.756	197.533	-39.011	-311.384	205.231	125.290	12.464	11.082	205.077	221.011	178.966	103.543
Kelt Exploration Ltd.	375.055	196.802	6.572	-324.807	162.488	59.279	8.889	7.322	386.228	1.464	317.326	152.089

Canadian Headquartered Company Financials (2019/2020) (continued)

All data in C$ million	Revenues net of royalties		Net Income (loss)		Operating Cash Flow		G&A Expenses		Total Debt (year-end)		Capex exc. Acquisitions/ Divestments	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Cardinal Energy Ltd.	325.842	193.209	-34.340	-363.160	119.979	43.525	15.861	13.273	222.897	239.132	65.268	31.506
Surge Energy Inc.	346.815	191.323	-158.664	-747.297	149.417	72.190	14.287	12.486	431.787	405.599	119.465	52.773
PrairieSky Royalty Ltd.	268.400	171.400	111.400	31.700	209.700	152.300	19.100	16.300	10.100	45.100	0.000	0.000
TransGlobe Energy Corporation	185.545	153.796	-5.291	-103.800	59.382	42.526	19.037	14.931	50.760	30.008	48.913	10.056
Storm Resources Ltd.	165.253	148.476	11.313	-0.214	68.506	52.659	6.883	6.309	124.349	136.753	97.846	59.193
Crew Energy Inc.	190.522	132.988	12.071	-203.180	81.395	37.989	11.636	8.083	350.712	335.659	114.094	86.260
Pipestone Energy Corp.	59.609	131.765	-13.985	-17.277	10.562	41.638	8.875	6.302	216.965	191.691	162.194	104.593
Bonterra Energy Corp.	188.475	113.821	21.923	-306.889	81.132	32.073	6.873	9.814	292.565	300.386	53.627	43.728
Pine Cliff Energy Ltd.	102.762	101.048	-56.430	-50.107	15.536	8.787	4.192	4.491	64.351	63.936	8.379	7.517
Spartan Delta Corp.	1.649	90.839	-1.998	47.663	-1.298	32.209	1.405	9.235	0.000	49.766	0.034	16.820
Freehold Royalties Ltd.	140.837	89.958	5.193	-13.931	105.801	65.767	12.063	10.930	110.925	94.913	49.689	8.359
Yangarra Resources Ltd.	133.216	81.486	43.313	4.847	81.205	43.872	2.978	2.360	195.569	205.437	114.401	51.093
Journey Energy Inc.	98.590	63.996	-31.355	-56.624	27.748	11.605	6.928	5.734	118.268	83.175	20.789	7.103
Distinction Energy Corp.	106.494	60.038	-74.581	-10.859	52.616	20.867	5.275	7.883	151.178	0.751	28.849	23.047
Gear Energy Ltd.	117.476	58.245	-5.680	-77.324	49.876	30.217	5.517	5.181	76.959	63.592	36.989	12.441
Razor Energy Corp.	85.119	47.773	-29.573	-46.197	16.210	4.193	6.327	4.507	49.411	54.172	7.485	0.808
Prairie Provident Resources Inc.	87.805	46.693	-33.079	-90.773	4.380	10.182	7.452	5.502	121.236	108.225	12.141	4.044
Petrus Resources Ltd.	64.284	45.174	-42.176	-97.554	27.822	28.924	3.644	3.409	128.151	115.093	18.073	14.298
InPlay Oil Corp.	69.198	39.010	-26.842	-112.629	27.669	8.475	6.427	4.487	54.698	64.385	32.106	23.134
Highwood Oil Company Ltd.	36.595	23.612	-11.013	-9.284	11.667	9.114	5.528	6.551	37.318	7.149	11.949	4.711
Perpetual Energy Inc.	63.953	23.600	-94.015	-61.597	17.806	-9.533	11.660	7.870	126.766	99.046	12.939	5.939
Leucrotta Exploration Inc.	28.383	23.195	-5.529	-110.855	10.465	1.187	4.776	4.533	0.169	5.866	13.454	13.716
Questerre Energy Corporation	31.232	20.609	65.704	-117.623	11.337	6.408	3.816	2.534	16.496	15.682	25.105	5.622
Hemisphere Energy Corporation	27.633	16.957	1.578	-0.416	10.452	9.390	2.119	1.953	33.133	25.312	10.947	1.685
Clearview Resources Ltd.	23.573	15.767	-8.768	-10.842	4.980	1.783	2.286	1.611	14.807	13.490	1.474	0.638
Persta Resources Inc.	12.219	12.730	-50.466	-24.291	-1.398	0.000	4.191	2.945	25.399	28.308	-1.309	2.689

Canadian Headquartered Company Financials (2019/2020) (continued)

All data in C$ million	Revenues net of royalties		Net Income (loss)		Operating Cash Flow		G&A Expenses		Total Debt (year-end)		Capex exc. Acquisitions/ Divestments	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Headwater Exploration Inc.	9.103	8.843	2.815	6.707	8.861	0.230	3.002	2.835	0.607	0.527	0.685	2.277
Altura Energy Inc.	23.110	7.961	2.215	-22.313	12.994	2.406	1.624	1.590	0.242	4.191	12.884	7.874
Saturn Oil & Gas Inc.	17.491	7.162	0.822	-7.758	9.184	0.851	1.582	1.310	23.752	29.122	25.686	1.128
Arrow Exploration Corp.	33.497	6.261	-7.916	-43.229	5.109	-3.082	9.476	5.796	7.806	7.508	11.647	1.194
Cuda Oil and Gas Inc.	6.782	5.539	-41.901	-40.355	-5.727	2.259	3.908	3.370	43.198	53.247	13.538	10.642
Vital Energy Inc.	6.173	4.192	0.852	-7.565	2.103	1.542	1.016	0.700	0.000	3.841	2.675	3.949
Prospera Energy Inc.	7.240	3.084	-0.094	-11.726	1.297	0.632	0.583	0.075	2.412	1.575	0.038	0.024
PetroFrontier Corp.	2.863	1.139	-0.825	-1.868	-0.739	-1.192	1.101	0.903	4.278	3.707	0.186	0.518
Pulse Oil Corp.	2.073	0.966	-3.102	-3.176	-2.031	-0.106	1.123	1.341	0.000	0.120	8.750	0.044
Tenth Avenue Petroleum Corp.	0.789	0.751	-0.524	-0.143	-0.004	0.173	0.234	0.261	1.306	1.183	0.000	0.005
ROK Resources Inc.	0.000	0.616	-0.745	-1.613	-0.530	-1.274	0.579	1.025	0.000	0.000	0.001	0.673
Strikewell Energy Corp.	0.506	0.368	-2.128	-2.319	-0.072	-0.053	0.132	0.166	12.550	12.602	0.000	0.003
Petrox Resources Corp.	0.580	0.304	-0.104	-0.419	-0.021	-0.205	0.273	0.241	0.000	0.000	0.000	0.000
Softrock Minerals Ltd.	0.102	0.142	-0.140	-0.016	-0.048	0.008	0.077	0.117	0.070	0.000	0.000	0.000
Supernova Metals Corp.	0.000	0.087	-0.214	-1.576	-0.142	-0.535	0.165	0.536	0.000	0.060	0.011	0.378
Huntington Exploration Inc.	0.038	0.050	-0.182	-0.177	-0.166	-0.370	0.177	0.113	0.000	0.000	0.000	0.000
Samoth Oilfield Inc.	0.018	0.030	-0.865	-0.227	0.067	-0.211	0.433	0.072	0.000	0.000	0.000	0.000
Sahara Energy Ltd.	0.153	0.026	-0.450	-2.050	-0.382	-0.369	0.488	0.394	0.000	0.040	0.000	0.000
Falcon Oil & Gas Ltd.	0.007	0.007	-2.303	-2.454	-2.613	-2.885	2.357	2.509	0.000	0.000	0.717	0.266

Return of the dealmakers

M&A activity thawed in 2020 and is heating up in early 2021 as operators build scale and fill value chain gaps

Brian Schmidt

President and Chief Executive Officer, Tamarack Valley Energy

Grant Brown

Managing Director and Partner, KPMG Corporate Finance Inc.

Dollar-wise, 2020 was a strong year for mergers and acquisitions (M&A) in Canada. Deal values rose from around $5 billion in 2019 to a little over $10 billion in 2020, driven largely by the Cenovus Energy takeover of Husky Energy.

This trend has continued in early 2021, with the $3.7 billion takeover of Seven Generations Energy by ARC Resources, and Crescent Point Energy acquiring Shell's Duvernay assets for $712 million.

There are a variety of drivers behind these deals, said Grant Brown, Managing Director and Partner, KPMG Corporate Finance Inc.

"There are the traditional drivers – asset proximity, operational leverage, field consolidation, and access to capital. There are companies looking to fill voids in the value chain. For example, Cenovus was long on production and short on refining and export access while Husky was in the opposite position. The challenging market means companies need to find ways to build efficiencies, and other ways to grow."

Companies are evaluating their portfolios continuously. Long dated assets are being culled for disinvestment, along with some shorter-cycle non-core opportunities. But Brown said finding middle ground between buyers and sellers at a time of volatile commodity markets is key to making deals happen.

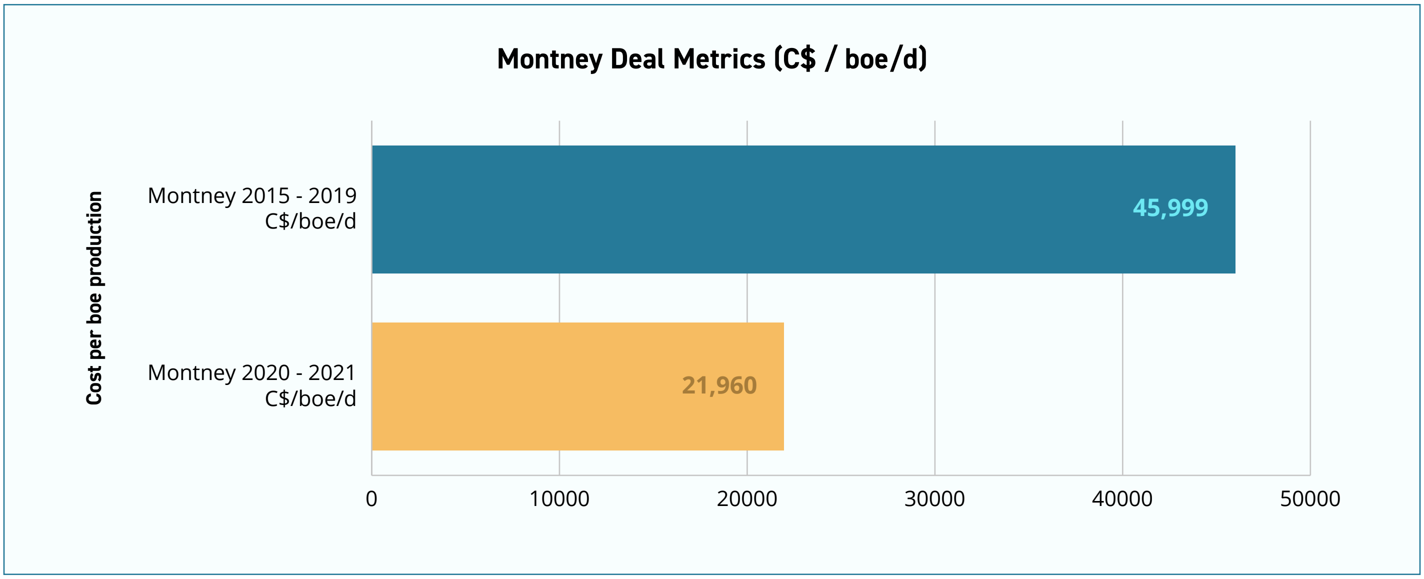
"We're not seeing many forced sellers," he said. "Dealing with the different expectations of the buyers and sellers is the biggest challenge."

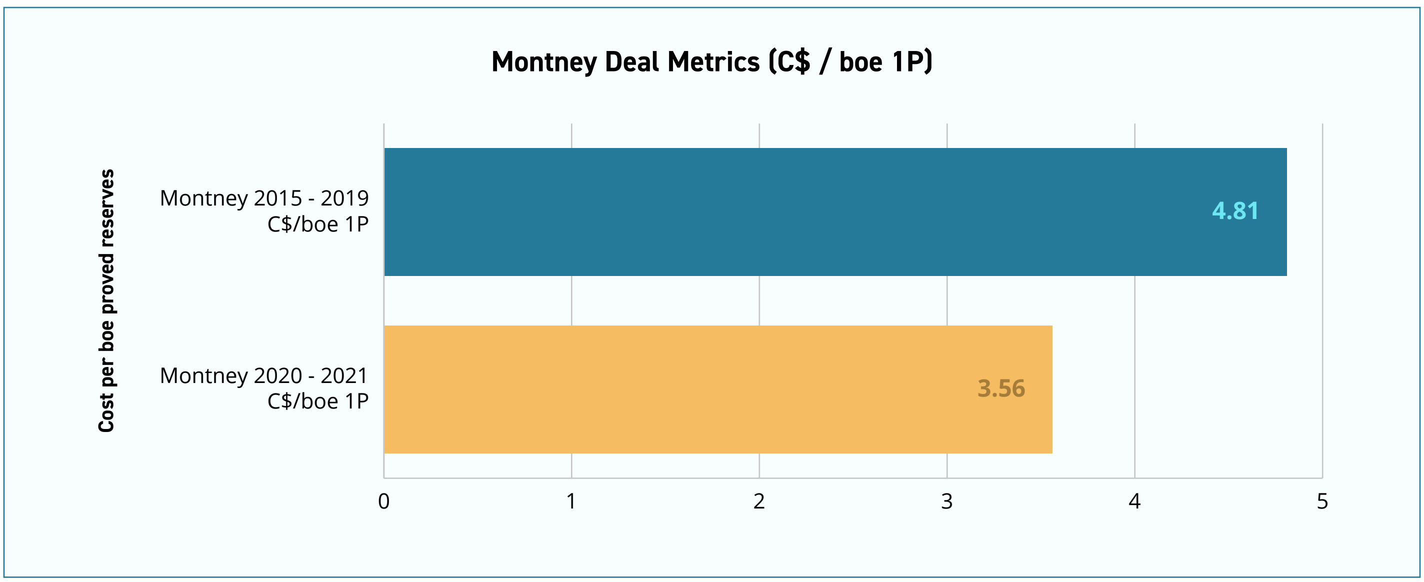
The deals done in 2020 and early 2021 are sending some interesting signals, said Bemal Mehta, Managing Director, Energy Intelligence for geoLOGIC systems ltd. and JWN.

"After years of speculation, ownership of the Montney play is now rapidly consolidating. Aside from the ARC/Seven Generations deal we have seen Tourmaline do a series of acquisitions, CNRL take over Painted Pony, ConocoPhillips buy assets from Kelt, and Whitecap acquire Kicking Horse. There have been smaller deals as well. All of these deals are about individual operators gaining scale and efficiency. They are also about gaining market share without increasing overall production from the basin.

"The two large deals in the Duvernay are also interesting. Ovintiv had been looking to offload its Duvernay assets for years before finally doing a deal. Shell's divestment follows the path of oil super-majors shedding what they see as non-core assets globally. The buying management teams in both cases are technology-focused companies that believe they can lower costs and build-out on current development."

Private equity appears to be selling off across the WCSB, Mehta said. CanOils data shows that there has





been $2.4 billion of corporate and asset sales by private companies since the start of 2020, a larger figure than the total divestments by private companies for the combined four-year period between 2016 and 2019.

"These have largely been low-premium consolidation deals. They are bolt-on acquisitions by larger operators solidifying their positions in core areas."

So will the M&A rush continue?

According to CNRL president Tim McKay, there may not be many more chances to keep consolidating on a large scale, although there are always opportunities to rationalize sections and optimize land positions. In terms of the better M&A deals, he noted, they probably occurred over the past 12 months.

"I just think, as always, and you've heard the mantra, that the lowest-cost operator will be the last one standing. To me, you've seen it very much this last year. The very good operators are consolidating their positions in Canada," he explained.

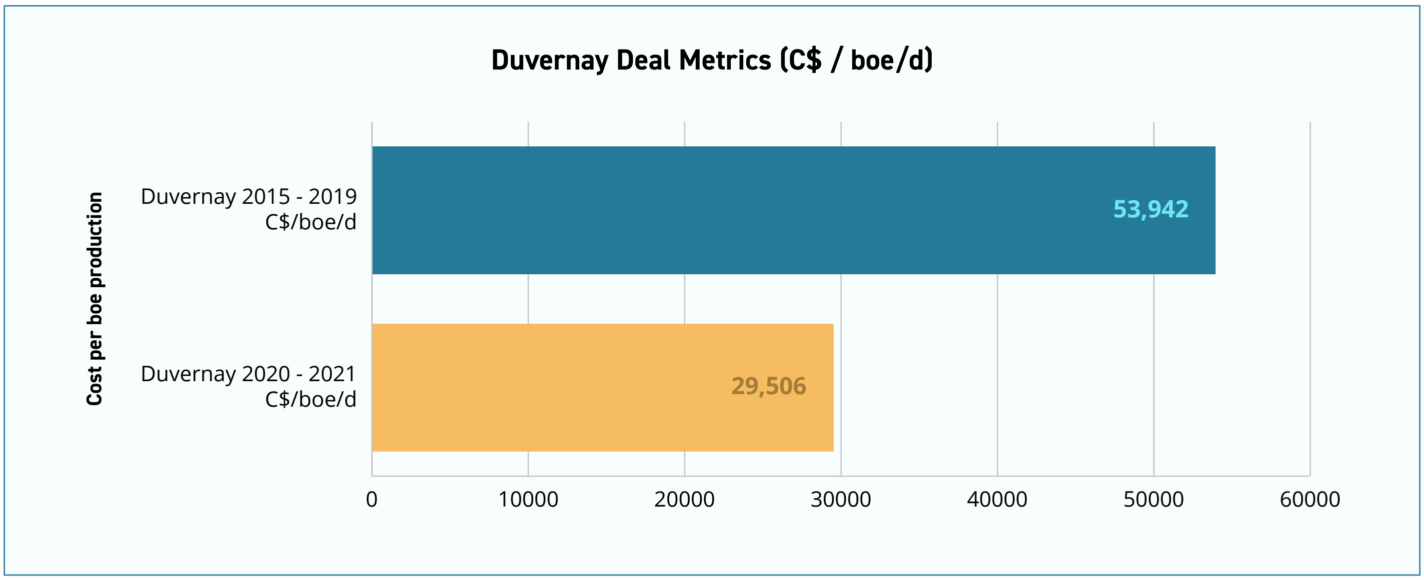
But many smaller and mid-sized operators will continue to look for acquisitions to increase scale and efficiency.

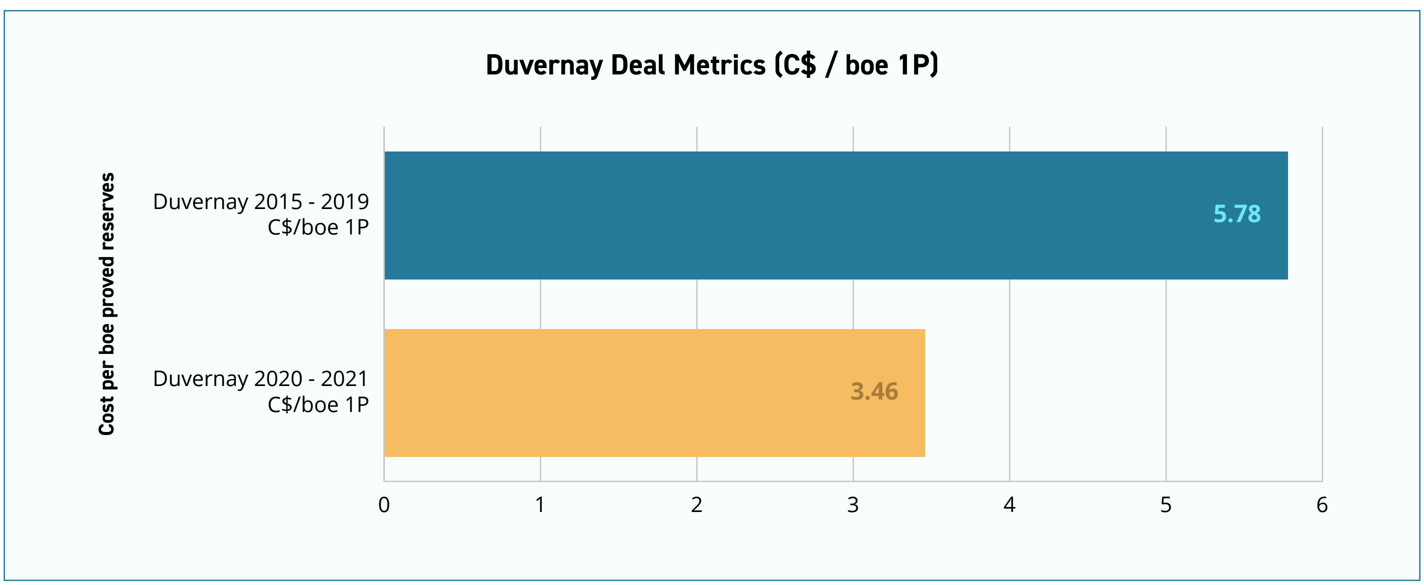
Tamarack Valley Energy has been active in the acquisition market building up a position in the Charlie Lake play.

“We do see some consolidation opportunities in Charlie Lake,” said Brian Schmidt, president and chief executive officer, during a conference call in April after taking over private producer Anegada. “I really like the smaller kind of opportunities that we’re able to put together in this area, and Anegada has passed a list of opportunities over to us, and we’re pursuing those.

Darren Gee, president and CEO of Peyto, said he’s not looking to bulk up his company just for the sake of getting bigger. That said, he’s not averse to the possibility of enacting a deal if it ticks all the boxes.

“The concept of mergers to get bigger to get better cost of capital or some other size advantage, obviously we’ve looked at that. But really I think a company our size is kind of in the sweet spot,” he said. “We’ve got size enough so we can have continuous operations, we’ve got purchasing power with the service companies, we’ve got the ability to do long-term market diversification and I think, arguably, when we’ve got reasonable cash flows coming from reasonable prices we’ve got good cost of capital, too.”





ANATOMY OF A DEAL

Terry Anderson

President and Chief Executive Officer at ARC Resources

What are operators looking for when they make a deal?

In the case of ARC Resources and Seven Generations Energy, combining operations made sense for a variety of financial and operational reasons.

With its increased size and scale, the combined company expects to have improved access to capital and greater relevance in the global energy market. These enhancements are expected to support additional long-term market access and integration opportunities to increase revenue diversification and profitability, said Terry Anderson, president and chief executive officer at ARC.

“The combined company will have size and scale that will generate significant free cash flow, providing greater optionality in future capital allocation decisions and enhancing ARC’s ability to deliver strong returns to shareholders,” said Anderson. “The company will have resiliency to better withstand volatile and uncertain market conditions.”

“The combination will allow us to considerably enhance our diversification amongst our product, geographic and marketing and sales mixes. We think this will give us greater optionality in allocating capital through all the price cycles and in diversifying risk.

“Also of great importance, combining with Seven Generations preserves our strong financial position, which has been a key pillar of our company since we started 25 years ago. Our company will have a low-cost capital structure with ample liquidity. Initial leverage for the combined company will be slightly above ARC’s targeted range. But we have a strong deleveraging plan in place that will reduce the combined net debt to an expected 1.3 times funds from operation by year-end, based on forecasted commodity prices.”

Addressing synergies, Anderson sees a lot of opportunities on the operating expense side.

“So, we’ll be able to gain more purchasing power through a whole bunch of different avenues like for chemicals, maintenance, fleet vehicles. We think there's consolidation in some of the gas plants,” he said. “So, there’s probably at least three per cent reduction in all of our operating expenses that we see, that will add up to around $15 million annually on that.”

He also expects savings on the capital spending side.

“So obviously, we will be able to, I guess, command better pricing from the perspective of having more drilling rigs together, more frack crews, and just the design and execution of the plan. I think there’s savings there from being able to consistently have rigs – the same rigs will be going throughout the year. That’s how ARC runs the business right now, having two rigs that go steady throughout the whole year, and we don't ramp up or ramp down – if we can actually keep them steady through that time, there’s some savings through that.

“So that kind of sums up more of the operational side, but also on the transportation midstream, Seven Generations has some unutilized transportation on Alliance, which actually ARC can utilize, so that’ll actually help out on that side, too.”

Top 25 Deals in Canada 2020

	Acquirer	Target	Deal Summary	Total Acquisition Cost (C$ million)*
1	Cenovus Energy Inc.	Husky Energy Inc.	Cenovus Energy Inc. acquires Husky Energy Inc.	12463.0
2	Whitecap Resources Inc.	TORC Oil & Gas Ltd	Whitecap Resources Inc. acquires TORC Oil & Gas Ltd.	1114.2
3	Tourmaline Oil Corp.	Jupiter Resources Ltd	Tourmaline Oil Corp. acquires Jupiter Resources Ltd.	619.0
4	ConocoPhillips	Kelt Exploration Ltd.	ConocoPhillips acquires additional Montney acreage from Kelt Exploration Ltd.	533.1
5	Canadian Natural Resources Limited	Painted Pony Energy Ltd.	Canadian Natural Resources Limited acquires Painted Pony Energy Ltd.	461.1
6	Whitecap Resources Inc.	NAL Resources Limited	Whitecap Resources Inc. acquires NAL Resources Limited from Manulife Financial Corporation	281.0
7	Waterous Energy Fund	Osum Oil Sands Corp.	Waterous Energy Fund acquires an additional 43% stake in Osum Oil Sands Corp.	203.2
8	Tourmaline Oil Corp.	Modern Resources Inc.	Tourmaline Oil Corp. acquires Modern Resources Inc.	143.3
9	Headwater Exploration Inc.	Cenovus Energy Inc.	Headwater Exploration Inc. acquires Marten Hills oil assets in northern Alberta from Cenovus Energy Inc.	131.5
10	Topaz Energy Corp.	Tourmaline Oil Corp.	Topaz Energy Corp. acquires a newly created GORR in developed and undeveloped lands in the Alberta Deep Basin from Tourmaline Oil Corp.	130.0
11	Spartan Delta Corp.	Bellatrix Exploration Ltd.	Return Energy Inc. - now known as Spartan Delta Corp. - acquires assets located in west-central Alberta from Bellatrix Exploration Ltd.	108.8
12	International Petroleum Corporation	Granite Oil Corp.	International Petroleum Corporation acquires Granite Oil Corp.	80.9
13	i3 Energy Plc	Gain Energy Ltd.	i3 Energy plc acquires all producing and non-producing petroleum assets held by Gain Energy Ltd. in Alberta and Saskatchewan	77.1
14	Tamarack Valley Energy Ltd.	Woodcote Oil Corp.; Highwood Oil Company Ltd.	Tamarack Valley Energy Ltd. acquires all of the issued and outstanding shares of Woodcote Oil Corp. and working interests in Greater Nipisi and Jarvie assets from Highwood Oil Company Ltd.	74.0
15	Burgess Energy Holdings LLC	Athabasca Oil Corporation	Burgess Energy Holdings LLC acquires royalty interests located in Northeast Alberta from Athabasca Oil Corporation	70.0

*Deals with an equity stake included in the acquisition have been valued based on the share price of the acquiring party on the day of deal closure

Top 25 Deals in Canada 2020 (continued)

	Acquirer	Target	Deal Summary	Total Acquisition Cost (C$ million)*
16	Paramount Resources Ltd.	NuVista Energy Ltd.	Paramount Resources Ltd. acquires an additional 7.67% stake in NuVista Energy Ltd. via a block trade	60.1
17	The Hill Companies	i3 Energy plc	The Hill Companies acquires oil and gas assets in Saskatchewan from i3 Energy Plc through subsidiary Harvard Resources Inc.	45.0
18	White Oak Global Advisors LLC	Eagle Energy Inc	White Oak Global Advisors LLC acquires Eagle Energy Inc.	37.5
19	Tourmaline Oil Corp.	Perpetual Energy Inc	Perpetual Energy Inc. divests a 50% working interest in its East Edson property	35.0
20	Prairie Storm Resources Corp.	Prairie Storm Energy Corp.	Quendale Capital Corp. - now known as Prairie Storm Resources Corp. - acquires Prairie Storm Energy Corp.	28.8
21	Tourmaline Oil Corp.	Chinook Energy Inc.	Tourmaline Oil Corp. acquires Chinook Energy Inc.	24.4
22	Unspecified	City of Medicine Hat	City of Medicine Hat divests its 27.6263% working interest in the Medicine Hat Glauconitic “C” East Unit to an undisclosed buyer	20.0
23	Whitecap Resources Inc.	Hyak Energy ULC	Whitecap Resources Inc. acquires Hyak Energy ULC	16.2
24	Topaz Energy Corp.	Tamarack Valley Energy Ltd.	Topaz Energy Corp. acquires a 2% newly created gross overriding royalty in the Nipisi and Jarvie areas of Alberta from Tamarack Valley Energy Ltd.	16.0
25	Unspecified	Journey Energy Inc.	Journey Energy Inc. divests producing assets in its Telfordville area and a 4.2 megawatt power project in the Countess area	15.0

*Deals with an equity stake included in the acquisition have been valued based on the share price of the acquiring party on the day of deal closure

Total Deals and Value by Year (2016-2020)

	2016	2017	2018	2019	2020
Deal Values (C$ billion)	13.7	41.6	14.6	6.6	14.3
Deal Counts	170	185	175	98	87

Attracting capital

Tough debt and equity markets mean living within means

Grant Brown
Managing Director and Partner, KPMG Corporate Finance Inc.

Bemal Mehta
Managing Director, Energy Intelligence for geoLOGIC systems and JWN

New capital, the lifeblood of Canada's oil and gas industry prior to the market crash of late 2014, remains scarce as the industry recovers from the pandemic.

Equity financings have declined from a total of $11.9 billion in 2016 to just $722 million in 2020. Debt financings totaled nearly $9.8 billion in 2020 as existing debt was refinanced or rolled over.

"Clearly things remain tough for debt and equity," said Grant Brown, Managing Director and Partner, KPMG Corporate Finance Inc. "Volatility and export access remain challenges, and ESG is becoming more of a focus. Most debt deals have been refinancing or extending out maturities. Large entities are tapping the bond market. There have been very limited equity issuances."

Brown said with low interest rates there is some temptation for operators to borrow in debt markets. But conservatism is the word on both sides of debt transactions.

"Lenders and bond markets are focused on not allowing operators to extend debt too far," said Brown.

ESG concerns are also impacting capital markets, he added, as investors sort out what ESG means to company valuations and what impact the ongoing energy transition will have on their investments in the near and longer-term.

"Some operators view it as an opportunity," said Brown. "The world is becoming more carbon-focused. They are asking what can they do in the transition to take advantage of new opportunities. But it's important to understand the energy transition is going to take a long time."

There are a lot of nuances within debt and equity financing deals, said Bemal Mehta, Managing Director, Energy Intelligence for geoLOGIC systems ltd. and JWN. Canada's largest operators dominated debt financings, with many deals pushing due dates out into the latter half of the decade.

"Short-term, the cost of capital is very low, but as due dates push out it rises substantially. This tells us that lenders are confident the post-pandemic recovery is sustainable, at least in the shorter-term, and lenders believe current broader economic conditions and central bank policies will remain stable. Longer-term, there are a number of concerns – inflation, oil and gas demand in relation to the energy transition, export constraints – that all impact the cost of capital."

Equity markets have been a challenge for oil and gas operators the last five years, said Mehta. Interestingly, there continues to be some equity available, however, for Canadian operators focused on international exploration.

"Half of the top 10 equity financings in 2020 were for companies focused internationally. These operators are spread around the world, from Latin America to Africa to Europe. Canadian exploration expertise continues to remain in demand globally and there appears to be some appetite for investment risk outside our borders."

With limited access to capital, some companies are turning to alternative finance mechanisms like royalty spin-offs or the sale of infrastructure assets to pay down debt or fund capital projects, said Brown. These types of deals come with immediate gain at the risk of long-term pain.

“Selling royalties can be a source of non-dilutive capital for debt reduction or growth while maintaining operational control. But you are selling a share of future revenue and its value can be won or lost based on future prices.”

Brown said the same holds true for selling infrastructure, a method of alternative financing common among gas producers at low points in pricing cycles.

“Selling infrastructure assets is another non-dilutive source of capital. The disadvantage long-term is if you are in a take-or-pay arrangement it can increase operating costs.”

Closed Financings, E&P in Canada in 2020

	2016	2017	2018	2019	2020
Equity (C$ million)	11869	5923	1083	706	722
Debt (C$ million)	2951	17420	4455	4123	9778

Top 10 Debt Financings 2020 for Canadian-listed companies

	Company	Financing Summary	Value (C$ million)
1	MEG Energy Corp.	US$1,200m of 7.125% senior unsecured notes due 2027	1,487
2	Husky Energy Inc.	Cdn$1.25b of 3.50% notes due 2028	1,250
3	Suncor Energy Inc.	Cdn$1.25b of 5% Senior Unsecured Series 7 Medium Term Notes due April 9, 2030	1,246
4	Cenovus Energy Inc.	U$1b of 5.375% senior unsecured notes due 2025	1,239
5	Canadian Natural Resources Limited	US$600m of 2.050% Notes due on June 15, 2025	742
6	Suncor Energy Inc.	US$550m of 3.100% Notes due May 2025	681
7	Baytex Energy Corp.	US$500 million of 8.75% senior unsecured notes due 2027	620
8	Canadian Natural Resources Limited	US$500m of 2.950% Notes due on June 15, 2030	619
9	Suncor Energy Inc.	US$450m of 2.800% Notes due May 2023	557
10	Canadian Natural Resources Limited	Cdn$0.5b of 1.45% medium term note due November 2023	499

Top 10 Equity Financings 2020 for Canadian-listed companies

	Company	Financing Summary	Value (C$ million)
1	Topaz Energy Corp.	IPO Prospectus Offering of 16,730,760 Common Shares at $13.000 each	217
2	Spartan Delta Corp.	Non-Brokered Private Placement of 2,945,500,000 Subscription Receipts at $0.020 each	59
3	Freehold Royalties Ltd.	Bought Deal Prospectus Offering of 9,856,000 Subscription Receipts at $4.800 each	47
4	Tamarack Valley Energy Ltd.	Non-Brokered Private Placement of 40,925,000 Common Shares at $1.150 each	47
5	Touchstone Exploration Inc.	Non-Brokered Private Placement of 24,291,866 Common Shares at $1.322 each	40
6	Africa Energy Corp.	Marketed Private Placement of 81,667,000 Common Shares at $0.363 each	37
7	Africa Energy Corp.	Marketed Private Placement of 104,652,174 Common Shares at $0.254 each	33
8	Headwater Exploration Inc.	Non-Brokered Private Placement of 32,608,696 Subscription Receipts at $0.920 each	30
9	Serinus Energy Inc.	Non-Brokered Private Placement of 787,936,852 Common Shares at $0.028 each	27
10	Reconnaissance Energy Africa Ltd.	Bought Deal Prospectus Offering of 32,855,409 Common Share Units at $0.700 each	23

Managing operational risk

Back-office automation, data driven decision-making is driving next wave of operational efficiency

Narmin Vasanji
Partner, Advisory Services, Management Consulting, KPMG in Canada

Terry Jbeili
geoLOGIC systems ltd. President and Chief Operating Officer

The COVID-19 pandemic put many oil and gas operators and oilfield service companies in survival mode.

But that doesn't mean the push to find operational efficiencies through digital transformation slowed, said Narmin Vasanji, Partner, Advisory Services, Management Consulting at KPMG in Canada.

"Working from home proved people could work in different locations. We saw more use of collaboration tools like Zoom and Teams. It forced people to think differently," she said. "People were thinking of software as a service in the middle of the pandemic. A lot of companies were also looking at data warehouses and data lakes to improve analytics and insights for nimble decision making."

"Companies with the resources to weather the storm are now thinking about how to utilize technology and automate. They see it as a competitive advantage," she added.

The advent of cloud computing is a key driver accelerating the digital transformation, said Vasanji. Larger companies are now accessing their enterprise resource planning (ERP) software over the cloud, providing greater flexibility and easier integration of new data sets. Consolidation in the industry is adding urgency to the shift.

"We're seeing a lot of consolidation and we will see more consolidation. "These all come with synergy targets, often 20-30 per cent in savings," she said. "Companies need to merge systems and create one source of data truth. For the back office, they need to merge functions post integration, and that creates some challenges. On the operations side there is less impact to staffing but companies always need to get efficiencies out of the transaction."

"There's ample opportunity to become more efficient," she added, highlighting automation in the back office as one often over-looked area. "During the cycle when commodity prices ramp up, companies don't focus on back office costs. Then there's a downturn and they layoff employees, leaving those left at the company to perform the jobs of many. The inefficiencies remain."

Automating repetitive processes is one opportunity, said Vasanji. "Financial processes are a good area to find efficiencies such as invoice automation or automating time sheets from workers in remote locations. This creates capacity for finance teams to focus on forecasting and analysis to help operations make better decisions."

Even greater opportunities exist through the use of data analytics, said Vasanji. By applying predictive analytics or visualization tools to data, companies can begin to look forward and improve decision-making. For example, basic spend analysis throughout the supply chain to better understand where money is going, to process mining tools that enable visualization of processes to address issues and take action.

Technical data used by geologists, engineers and other disciplines to inform decision-making is also evolving, said Terry Jbeili, geoLOGIC systems ltd. president and chief operating officer. geoLOGIC recently partnered with the Daily Oil Bulletin to survey industry professionals on data usage in current workflows and to identify areas of improvement. The survey results were released in a white paper.

"What we learned is there is a need for technical disciplines within organizations to have easier access to multiple data sets and advanced visualization tools to drive efficiencies," said Jbeili. "Operational efficiency ranked as the number one reason for using data by the respondents. Other major use cases included project planning and business development (M&A)."

With funds for capital investment in limited supply, Jbeili said having accurate, comparable data and interactive visualization tools to help target spending towards the highest return assets is essential.

"There is an extremely complex interrelationship between reservoir geology, rock characteristics and how different technologies applied during the process of field development interact with the reservoir and affect performance," said Jbeili. "How well asset teams understand the reservoir and make relevant engineering and technology choices has a major impact on asset value. This requires the ability to validate and integrate numerous data sets and to be able to understand how shifting different variables impacts overall productivity."

The vast majority of survey respondents reported challenges in integrating different data sets into their workflows. Data silos continue to be a challenge that needs to be addressed, he added.

There is also increasing demand by other technical disciplines to access existing and new data sets, said Jbeili. One example of this is the need for data for environmental disclosures related to ESG reporting. Accessing the needed data sets and visualization tools through cloud computing could help "democratize" data and improve decision-making throughout organizations.

"Cloud computing provides flexibility for lighter data users within large companies who may only use a handful of data sets in their regular workflows," said Jbeili, adding that in smaller companies it could provide access to data for all disciplines at a lower cost due to not needing to maintain legacy systems.

Forty per cent of survey respondents said their data is cloud-based. Among this number, some companies have totally moved to the cloud, while others are running hybrid systems with some data cloud-based and some hosted internally.

Companies that have migrated data and intelligence tools to the cloud say it provides improved security and lowers costs. Savings are being driven by the reliability of cloud computing, with less downtime experienced by users due to the automation of many processes and with data updates and software updates completed without outages.

Other key benefits to cloud computing cited by survey respondents include scalability, accessibility, flexibility, data and intelligence sharing, and collaboration opportunities - benefits which will only expand as more data sources drive companies' broadening spectrum of energy intelligence applications, analytics and workflows as well as their need to integrate and report on these data and insights.

It's not just large companies that can benefit from the digital transformation, Vasanji added. Around one-third of small and mid-size companies are looking to automate to get rid of paper or are moving to the cloud.

"Everything is scalable," she said. "There is ERP software for differing sizes of clients, and some are more affordable for smaller companies."

MODULAR OILSANDS EXTRACTION DRIVES MINING OPERATIONAL EFFICIENCIES

Joy Romero

Vice-President, Technology and Innovation, CNRL

Canadian Natural Resources Limited's In-Pit Extraction Process promising a major leap in cost reduction is moving towards commercialization.

CNRL has successfully piloted each level of its In-Pit Extraction Process (IPEP), said Joy Romero, vice-president, technology and innovation. "We have learned new things that we want to tie into the next phase."

The IPEP at the company's Horizon oilsands mining operation utilizes a modular extraction plant that can be moved as the mine face advances. CNRL has called it a potential game-changer for oilsands mining.

"What's exciting about it is that this in-pit technology is the perfect complement to the other [mine] technologies" added Romero, which together will significantly cut GHG emissions and costs. "We anticipate somewhere between 30 to 40 per cent cost reductions, in the sort of $2 to $3 per bbl range, and it eliminates tailings ponds – it produces dry tailings."

IPEP is able to utilize mainly off-the-shelf mining equipment. By processing ore within the mine, CNRL reduces materials transportation costs. And by eliminating the need for tailings ponds, it reduces reclamation costs.

"Use of water is dramatically less," Romero said.

"This is that next step that really just makes a really big difference in that capacity to reclaim the mine site basically immediately, long term. So just a gigantic step change in how we've been processing to date."

The company is continuing piloting "to be sure of a few more tweaks that we want to make in the technology and to confirm the economics, of course," Romero said. "We started off with a 100 tonne an hour pilot. Since then we have actually piloted at 500 tonnes and we're just getting ready to go in and pilot at 750 tonnes an hour, close to our final commercial level."

Canadian Oil and Gas Company Netbacks (2019/2020)

All data in C$/boe	Netback/boe (pre-hedging)		Opex per boe		Royalties per boe		3 Year F&D per boe	
	2019	2020	2019	2020	2019	2020	2019	2020
Saturn Oil & Gas Inc.	51.87	32.86	n/a	n/a	2.88	2.41	19.67	20.12
MEG Energy Corp.	68.58	31.48	7.01	7.69	1.32	0.30	n/a	n/a
Freehold Royalties Ltd.	34.59	23.83	n/a	n/a	0.17	0.09	2.22	1.24
Athabasca Oil Corporation	42.70	22.23	13.14	11.55	1.22	0.51	7.66	16.46
Softrock Minerals Ltd.	32.81	20.31	n/a	n/a	n/a	n/a	0.00	0.00
Husky Energy Inc.	24.15	18.70	n/a	n/a	3.05	1.92	10.16	13.83
Supernova Metals Corp.	n/a	18.47	n/a	n/a	n/a	5.64	n/a	n/a
Crescent Point Energy Corp	33.81	18.24	12.29	12.62	8.15	4.88	24.21	30.28
Hemisphere Energy Corporation	33.11	17.21	9.81	7.42	6.38	2.73	4.45	3.32
Whitecap Resources Inc.	30.27	16.87	12.38	11.84	9.79	4.82	13.11	10.60
Yangarra Resources Ltd.	22.18	16.20	5.76	5.26	2.34	1.16	5.11	5.32
Baytex Energy Corp.	29.28	15.48	11.16	11.35	8.98	5.61	17.57	19.38
Vermilion Energy Inc.	27.67	15.16	12.01	11.98	4.47	3.06	11.52	12.35
Canadian Natural Resources Limited	30.56	14.63	16.64	14.86	3.80	1.40	4.57	3.70
Vital Energy Inc.	28.62	14.52	n/a	n/a	10.28	5.50	n/a	14.77
Bonterra Energy Corp.	26.45	14.29	n/a	n/a	3.18	2.02	10.62	12.21
Obsidian Energy Ltd.	21.00	13.83	14.81	12.41	3.12	1.47	11.05	9.07
Tamarack Valley Energy Ltd.	28.69	13.62	n/a	n/a	4.45	3.04	17.41	18.94
Headwater Exploration Inc.	26.66	13.17	n/a	8.98	1.02	2.03	6.45	3.72
TransGlobe Energy Corporation	19.95	13.13	11.45	17.59	31.40	20.22	11.84	9.60
Gear Energy Ltd.	28.25	13.04	15.78	14.80	5.71	3.51	20.20	23.83
Suncor Energy Inc.	37.28	13.01	30.15	30.05	5.37	0.94	35.92	19.43
Seven Generations Energy Ltd.	21.04	12.91	4.42	3.99	2.28	1.82	20.07	28.21
Petrus Resources Ltd.	15.70	12.61	4.25	4.64	2.35	2.15	12.67	8.82
Cuda Oil and Gas Inc.	17.52	12.56	n/a	n/a	8.82	6.91	3.54	3.59
Questerre Energy Corporation	23.49	12.04	n/a	n/a	2.09	1.83	6.08	4.60
International Petroleum Corporation	26.07	11.58	14.33	13.41	2.20	1.22	9.58	9.53
ARC Resources Ltd.	14.12	11.47	4.97	3.95	1.39	0.80	6.78	5.72
InPlay Oil Corp.	22.75	11.45	14.36	14.43	3.19	2.00	14.19	11.51
Surge Energy Inc.	27.73	11.42	15.05	15.45	6.71	3.72	14.41	16.36
Cenovus Energy Inc.	23.03	11.17	8.35	8.18	7.12	2.11	5.96	5.15
Tourmaline Oil Corp.	9.47	11.16	3.28	3.14	0.78	0.58	5.34	5.35

Canadian Oil and Gas Company Netbacks (2019/2020) (continued)

All data in C$/boe	Netback/boe (pre-hedging)		Opex per boe		Royalties per boe		3 Year F&D per boe	
	2019	2020	2019	2020	2019	2020	2019	2020
Enerplus Corporation	22.21	10.28	7.88	7.94	8.63	5.61	10.86	11.48
Birchcliff Energy Ltd.	25.82	10.28	6.13	2.95	0.96	0.65	3.52	5.45
Cardinal Energy Ltd.	21.96	9.99	21.30	17.87	8.87	4.93	7.88	8.32
Peyto Exploration & Development Corp.	23.88	9.52	4.01	2.08	0.46	0.76	5.22	4.03
Distinction Energy Corp.	14.77	9.33	9.44	8.18	2.13	1.80	9.21	8.24
Altura Energy Inc.	24.61	9.11	8.25	13.27	4.16	2.03	8.67	8.71
Pipestone Energy Corp.	16.29	8.48	13.89	11.18	1.68	0.73	6.47	5.09
Advantage Energy Ltd.	9.76	8.44	1.98	2.43	0.29	0.64	4.39	4.23
Prairie Provident Resources Inc.	21.37	8.44	16.12	16.83	4.55	2.87	13.45	11.99
Spartan Delta Corp.	-6.12	8.03	n/a	6.11	-0.26	1.57	3.52	0.59
Paramount Resources Ltd.	12.67	7.85	12.50	11.88	2.11	1.25	10.77	11.37
NuVista Energy Ltd.	16.11	7.80	9.61	9.83	1.49	0.92	5.54	5.66
Storm Resources Ltd.	10.90	7.47	5.87	4.64	1.11	0.78	2.64	2.72
Kelt Exploration Ltd.	18.19	7.36	9.18	9.56	1.76	1.13	5.55	4.71
Crew Energy Inc.	12.41	6.77	6.30	5.91	1.77	0.81	5.88	5.02
Journey Energy Inc.	12.19	5.95	15.16	13.45	4.03	2.25	14.54	12.97
Clearview Resources Ltd.	9.40	5.26	14.88	13.45	3.18	1.18	1.62	0.93
Leucrotta Exploration Inc.	13.02	5.22	6.43	7.51	0.00	0.75	7.13	6.62
Imperial Oil Limited	24.80	4.80	n/a	n/a	n/a	n/a	32.12	10.24
Pulse Oil Corp.	8.50	4.79	10.26	13.82	1.68	0.62	40.98	40.23
Tenth Avenue Petroleum Corp.	6.35	4.73	n/a	n/a	1.17	2.06	0.00	0.00
Perpetual Energy Inc.	12.00	4.55	5.59	6.34	3.17	3.21	7.27	5.67
Highwood Oil Company Ltd.	18.29	3.82	n/a	n/a	7.82	3.28	11.37	13.47
Petrox Resources Corp.	29.18	2.95	n/a	n/a	n/a	n/a	0.00	0.00
Pine Cliff Energy Ltd.	1.77	2.12	10.78	10.49	0.80	0.90	3.51	3.13
Persta Resources Inc.	5.15	1.90	n/a	n/a	3.51	0.87	16.60	9.79
ROK Resources Inc.	n/a	1.47	n/a	8.66	n/a	3.09	n/a	n/a
Pieridae Energy Limited	1.45	0.07	9.42	13.23	0.46	0.63	0.04	0.07
Razor Energy Corp.	13.95	0.00	64.11	27.77	8.86	3.19	18.61	42.58
PetroFrontier Corp.	17.10	-3.02	n/a	n/a	3.95	2.28	n/a	n/a
Arrow Exploration Corp.	25.91	-6.00	n/a	n/a	5.71	2.18	23.01	19.45

Top 25 Oil/Liquids Producers in Canada (2019/2020)

		2020 Oil, Liquids, Oilsands Production (000 bbl/d)
1	Canadian Natural Resources Limited	834.269
2	Suncor Energy Inc.	653.100
3	Cenovus Energy Inc.	408.480
4	Imperial Oil Limited	359.000
5	Husky Energy Inc.	178.200
6	Seven Generations Energy Ltd.	105.659
7	Crescent Point Energy Corp	93.698
8	MEG Energy Corp.	82.441
9	Tourmaline Oil Corp.	64.496
10	Whitecap Resources Inc.	57.638
11	Baytex Energy Corp.	41.469
12	ARC Resources Ltd.	38.357
13	Vermilion Energy Inc.	33.711
14	Athabasca Oil Corporation	28.611
15	Paramount Resources Ltd.	26.889
16	Teck Resources Limited	22.875
17	NuVista Energy Ltd.	19.488
18	Birchcliff Energy Ltd.	17.889
19	International Petroleum Corporation	17.800
20	Obsidian Energy Ltd.	16.618
21	Cardinal Energy Ltd.	16.177
22	Surge Energy Inc.	15.158
23	Tamarack Valley Energy Ltd.	13.289
24	Peyto Exploration & Development Corp.	11.308
25	Kelt Exploration Ltd.	11.218

Top 25 Gas Producers in Canada (2019/2020)

		Gas production (mmcf/d)
1	Tourmaline Oil Corp.	1,477
2	Canadian Natural Resources Limited	1,406
3	ARC Resources Ltd.	739
4	Seven Generations Energy Ltd.	469
5	Peyto Exploration & Development Corp.	410
6	Cenovus Energy Inc.	379
7	Birchcliff Energy Ltd.	351
8	Husky Energy Inc.	261
9	Paramount Resources Ltd.	249
10	Advantage Energy Ltd.	243
11	Pieridae Energy Limited	201
12	NuVista Energy Ltd.	186
13	Vermilion Energy Inc.	151
14	Imperial Oil Limited	150
15	Storm Resources Ltd.	112
16	Pine Cliff Energy Ltd.	104
17	International Petroleum Corporation	103
18	Crew Energy Inc.	95
19	Kelt Exploration Ltd.	83
20	Whitecap Resources Inc.	66
21	Spartan Delta Corp.	64
22	PrairieSky Royalty Ltd.	60
23	Crescent Point Energy Corp	57
24	Pipestone Energy Corp.	53
25	Obsidian Energy Ltd.	53

Top 25 Canadian Headquartered International Producers (2020/2021)

		Total Production outside of Canada (000 boe/d)		Oil production outside of Canada (000 bbl/d)		Gas production outside of Canada (mmcf/d)		Netback (C$/boe)	
		2019	2020	2019	2020	2019	2020	2019	2020
1	Enerplus Corporation	87.571	80.811	45.113	43.248	254.745	225.376	22.21	10.28
2	Frontera Energy Corporation	70.875	47.800	68.474	46.255	14.406	9.270	36.02	20.01
3	Parex Resources Inc.	52.687	46.518	51.708	45.218	5.874	7.800	53.55	30.36
4	Canadian Natural Resources Limited	55.611	43.725	47.944	39.392	46.000	26.000	30.56	14.63
5	Suncor Energy Inc.	46.900	42.000	46.900	42.000	0.000	0.000	37.28	13.01
6	Husky Energy Inc.	43.817	36.667	9.900	11.000	203.400	235.700	24.15	18.70
7	Vermilion Energy Inc.	40.377	36.249	20.632	18.647	118.470	105.610	27.67	15.16
8	Baytex Energy Corp.	39.056	31.180	30.094	24.069	53.773	42.665	29.28	15.48
9	Canacol Energy Ltd.	24.272	28.812	0.351	0.291	143.524	171.126	30.07	28.68
10	Gran Tierra Energy Inc.	29.015	20.072	29.015	20.072	0.000	0.000	45.94	20.58
11	Crescent Point Energy Corp	36.117	18.498	32.257	16.703	23.160	10.769	33.81	18.24
12	PetroShale Inc.	8.680	12.928	7.561	10.949	6.716	11.870	34.40	17.02
13	Jadestone Energy Inc.	13.531	11.438	13.531	11.438	0.000	0.000	87.26	69.82
14	TransGlobe Energy Corporation	13.713	11.148	13.713	11.148	0.000	0.000	19.95	13.13
15	International Petroleum Corporation	8.300	7.200	8.300	7.200	0.000	0.000	26.07	11.58
16	Forza Petroleum Limited	7.600	6.900	7.600	6.900	0.000	0.000	38.18	6.08
17	ShaMaran Petroleum Corp.	3.973	5.896	3.973	5.896	0.000	0.000	44.44	20.83
18	PetroTal Corp.	4.131	5.675	4.131	5.675	0.000	0.000	36.64	18.65
19	Africa Oil Corp	0.000	4.850	0.000	0.023	0.000	28.962	n/a	n/a
20	Jura Energy Corporation	1.084	2.244	0.002	0.023	6.489	13.325	28.01	25.86
21	Sherritt International Corp	1.417	1.687	1.189	1.687	1.368	0.000	n/a	n/a
22	Touchstone Exploration Inc.	1.825	1.392	1.825	1.392	0.000	0.000	35.26	19.50
23	Crown Point Energy Inc.	2.959	1.314	1.759	0.526	7.202	4.726	24.89	8.00
24	Renaissance Oil Corp.	1.239	1.214	0.373	0.357	5.193	5.145	6.38	4.42
25	Pan Orient Energy Corp.	1.060	1.213	1.060	1.213	0.000	0.000	n/a	n/a

* Netback is for total company, not just international operations

Total impact

Environmental, social and governance factors becoming integrated into financial risk management

Atin Prakash
Senior Manager, Sustainability Services, KPMG in Canada

Martha Hall Findlay
Chief Sustainability Officer for Suncor Energy

Bill Whitelaw
Managing Director of Strategy and Sustainability at geoLOGIC Systems and JWN

Environmental, social, and governance (ESG) factors are rapidly being integrated into corporate financial risk management as investors, regulators and the public look for operators to better understand and manage non-traditional risks to their company's long-term sustainability.

"The last 12-18 months have been an almost watershed moment for ESG," said Atin Prakash, Senior Manager, Sustainability Services, KPMG in Canada. "It has become mainstream. It has expanded from what used to be a niche area for a few highly impacted industries and socially driven companies to something adopted across industries and geographies."

There are a number of drivers for this mainstream acceptance of ESG, said Prakash. The current focus on climate change and the growing divesture movement targeting companies with high-emissions intensity, or a lack of strategy to deal with those emissions, are significant factors. Concerns about social issues like inequality, diversity and inclusion are also driving ESG integration. The COVID-19 pandemic has also brought external risks to the forefront.

"The biggest reason is investors and companies are realizing how vulnerable they are to these external changes and they are starting to see them as financial risks," said Prakash. "Insurance companies are getting a lot of claims related to extreme weather events which they can no longer absorb. They are seeing their profitability decrease and the models they use are being disrupted by ESG topics."

"Climate change is the one most strongly focused on because its potential financial impacts are the greatest," he added. "There is also an increasingly keen focus on diversity and inclusion. It is seen as a better approach to building companies. Gender, age, race, experience are all different aspects of diversity. Companies with a more diverse workforce are typically better governed, better at decision-making, and more adaptive and nimble."

If COVID-19 has shown anything, according to Martha Hall Findlay, chief sustainability officer for Suncor, globally it has enhanced the recognition that the 'S' and the 'G' — the 'social' and 'governance'— in ESG are really important.

However, she noted, as Canadian energy producers continue to tackle emissions, it only makes overall what they have to offer that much more competitive. In Suncor's case, the company has committed to reducing its emissions intensity by 30 per cent from 2014 levels by 2030.

"The more we are working towards that kind of a goal, which we are, our view is that ESG is fantastic for us," Hall Findlay said.

"And so, 10 per cent of our whole procurement in products and services — and we're a big company — is with Indigenous communities. And that just builds in terms of economic activity, independence, and now we have various tank farm equity arrangements."

Enbridge president and chief executive Al Monaco said setting performance targets is an important part of his company's ESG efforts.

These targets are tied to compensation programs and supported by hard-backed plans, said Monaco. "This isn't really something new for us. I know it has been a focus of the market recently, but this is really about how we do business. The way we look at ESG is as a multi-stakeholder measure of trusting what we do. As you know, people must trust us these days in order for us to get things done."

The "harsh reality" is that low-cost, reliable energy will always drive the economy, suggested the CEO, and as the demand for energy increases by 20-25 per cent over the next two to three decades to meet the needs of the developing world, all supplies will be required for the future. "The bottom line of all that is that oil is going to be critical for many years to come. It's critical for transportation. We know that EV penetration will increase, but it's going to take time."

Fortunately, Monaco said, western Canadian producers have done a tremendous job at reducing emissions, while organizations are adopting net-zero strategies, and Canada boasts an "aggressive or advanced, depending on how you look at it," carbon-pricing framework.

"Enbridge has committed to reduce the intensity of GHG emissions from our operations by 35%. We plan to get there with an aggressive strategy of modernization, innovation and "greening the grid" initiatives including our solar self-power projects."

From an oil and gas perspective, ESG is not something new, said Prakash. Certain aspects like health, safety and environmental management are well established. Companies also have a long history of strong governance, employee relations, and working with local communities.

"What's happening now is ESG is giving structure and putting a framework to policies that already existed," he said. "ESG is sort of a catch-all term. When most people think ESG they think of planting trees or making donations, but that's really CSR (corporate social responsibility). ESG is different. It looks at topics that can have an impact on companies or business rather than just focusing on topics stakeholders care about. It's an evolution of CSR being made relevant for companies rather than only for the community at large."

How companies tell their ESG story is also evolving, said Prakash.

"Investors are making demands on companies for data-driven ESG disclosure. It's not just story-telling. Their expectation is ESG reporting backed with numbers, data and initiatives around material topics that may impact financial performance."

Investors are also looking for performance, he added. Companies are identifying material topics and setting targets and strategies to reach those targets. These include topics like GHG emissions, water use, or diversity targets.

"Investors have expectations to see such targets and performance against these targets.".

The frameworks being used to disclose performance are also evolving as ESG becomes mainstream. In North America, the investment community is converging around SASB standards for reporting all ESG factors, and the TCFD framework for climate related disclosures.

"Financial regulators are also getting involved and putting out guidance," he added, including the Canadian stock exchanges. "So we're starting to see some convergence but it is important to remember financial accounting standards are over 100-years-old and there are still different approaches and frameworks."

While transparent ESG disclosure demonstrating performance improvements is important for companies, Hall Findlay told a recent DBRS Morningstar webinar that the securities regulators should not be the ones enforcing this. An increasingly ESG-conscious investment community will demand compliance.

"I think the people who are doing the investing are already causing it to happen. It doesn't need to be regulated. It's being regulated in the market already. If people are not disclosing, then they're going to pay for it eventually. If they're disclosing but they're not showing improvement in their performance, then they're going to pay for it."

Prakash said many Canadian companies are well positioned to get ahead of the curve when it comes to ESG, but the industry must continue adapting to external trends that could impact their business.

"It requires companies to quickly adapt to trends happening globally and in Canada at a much quicker pace."

To stay ahead, Canada must recognize ESG practices must trickle down across the energy supply chain, he added.

"ESG is no longer a leading practice but a market expectation everyone must reach. We saw it first in large companies and it's now happening in mid-tier and smaller operators. Investors are now focusing on service companies in the energy sector. We know anecdotally that service companies are now getting requests on ESG. Large upstream companies are now moving ESG out into their supply chains."

What is becomingly increasingly clear in the ESG space is the importance of "data integrity" – that is, recognition that for data to be an effective element of the ESG reporting process, its source should be separated where possible from a company's internal processes, noted Bill Whitelaw, managing director of strategy and sustainability at geoLOGIC Systems and JWN.

"For stakeholders to trust data, they want to know that it has been curated effectively; that it comes from a place of third-party integrity and validation," noted Whitelaw. "Companies need to find ways and means of ensuring the data they use cannot be questioned as to its credibility. Companies are typically caretakers of their own data; what they need is independently curated data. There is a major distinction between caretaking and curation in terms of the value associated with the processes of producing sound data."

FINDING WIN-WIN ESG OPPORTUNITIES

Rhona DelFrari

Cenovus Chief Sustainability Officer and Senior Vice-President, Stakeholder Engagement

The best ESG opportunities have both economic and environmental benefits for operators. When it comes to SAGD operations that means making solvents commercial in existing and new development.

Cenovus Energy has been piloting solvents for more than a decade, noted Rhona DelFrari, its chief sustainability officer and senior vice-president, stakeholder engagement, at the virtual Scotiabank-Canadian Association of Petroleum Producers (CAPP) Energy Symposium. Cenovus is currently testing butane and propane at pilot projects at its Foster Creek operations.

One of the ongoing pilots – known as a solvent-aided process, or SAP – is injecting about 10 per cent propane along with steam into the reservoir. The results are quite consistent with what Cenovus has seen in the past, she said, with about a 30 per cent steam-to-oil ratio (SOR) reduction.

"When you're reducing it by 30 per cent, that's not only reducing the emissions by about 30 per cent – which is a big factor for us and one of the driving reasons that we're advancing solvents – but it's also reducing our water use and cutting down on costs."

The other pilot is a solvent-driven process (SDP) also using propane. "What we're doing for that is, we're injecting a larger percentage of the solvent along with the steam, anywhere up to about 60 per cent in fact. And our initial findings are that it's reducing our SOR. So again, increasing our efficiency and reducing our emissions by up to 40 per cent, so very promising technology."

Natural Resources Canada and Alberta Innovates are providing $7.5 million and $2 million in funding, respectively, for the SDP pilot.

DelFrari said solvent processes bring a small increase in upfront capital costs if Cenovus is building out an operation that includes solvent facilities as part of it. "But overall, when you take into consideration the reduced operating costs, it definitely is going to have an economic benefit."

As part of its next phase, Cenovus is moving from single well piloting to a full well pad pilot. "That will give us a greater indication of the potential for the economic benefits as well."

Imperial Oil is also deep into testing solvents at its Cold Lake operations, said Sherri Evers, vice-president, commercial and corporate development.

Imperial is "using a lot of solvent-based approaches for in situ development, and that can have anywhere from a 20 to 90 per cent reduction in greenhouse gas intensity," Evers said.

At its Mahkeses operations at Cold Lake, the company is applying liquid addition to steam for enhancing recovery (LASER) to CCS wells. It anticipates LASER will contribute 11,000 bbls/d at its peak. Commercial solvent-assisted SAGD production is expected at Grand Rapids in 2023.

"Those two technologies alone could lead to a 25 per cent reduction in greenhouse gas intensity," added Evers. "And then other things we're looking at include a cyclic solvent process at Cold Lake, and that uses propane instead of steam. So again, one of the opportunities to look at is propane to the site."

"But certainly, it helps to reduce significant water use and can help reduce greenhouse gas intensity by as much as 90 per cent in the process. And if you combine that with some carbon capture and storage [CCS], you could actually see production coming out of Cold Lake at net-zero emissions."

WHAT OIL AND GAS LEADERS THINK ABOUT ESG

The *Daily Oil Bulletin* surveyed oil and gas industry executives and professionals twice in 2020 to track their evolving views on ESG implementation. Here are some of the results:

- Nearly **70 per cent** of companies use ESG principles in developing corporate strategy and key performance indicators (KPIs)
- The number one reason cited for integrating ESG principles into strategy was to lower business risks, followed closely by to satisfy investor concerns
- Nearly **60 per cent** of companies reported interaction with investors with policies that exclude some or all oil and gas companies due to ESG considerations
- Greenhouse gas emissions, asset retirement obligations, water use, and presence of risk management programs ranked a the top environmental concerns of investors
- Safety performance, community initiatives, and stakeholder engagement strategies and programs ranked as the top social concerns of investors
- Having processes in place to identify, assess and manage risks ranked as the top governance concern, followed by showing the company is implementing governance best practices
- Nearly **90 per cent** of respondents said their company actively seeks out and supports Indigenous suppliers
- Nearly **60 per cent** said their organization is extremely or very effective in its efforts to engage with Indigenous communities
- Only **26 per cent** said the provincial governments where they operate are extremely or very effective at supporting their companies ESG efforts
- Only **17 per cent** said the federal government is extremely of very effective in supporting their ESG efforts

Note: The Daily Oil Bulletin surveyed 330 industry executives and professionals in July and November of 2020 to get their views on ESG integration within the industry

Shift work

Uncertainty, remote work, digital transformation, and ESG concerns driving evolution in the workplace

Shesta Babar

Director, People & Change Services, KPMG in Canada

Bill Whitelaw

Managing Director of Strategy and Sustainability at geoLOGIC Systems and JWN

Canada's oil and gas workforce has seen a lot of change in the last six years as low and volatile commodity prices resulted in layoffs and increased workloads for those remaining. From August 2014 to February 2020 there was a twenty-three per cent decline in oil and gas employment.

The Covid-19 pandemic has added to this uncertainty.

Between February and May 2020, when the pandemic told hold, there was a twenty per cent loss in jobs. Already stressed employees were being asked to do more with less. Layered on top of the employment losses is the rapid digital transition resulting in changing industry workflows, and a rising focus on environmental, social and governance (ESG) risk management impacting how work is performed. And then came the shift to working from home.

Throughout the pandemic KPMG have been surveying executives and tracking employee concerns, said Shesta Babar, Director, People & Change Services at KPMG in Canada.

Early on, many employees liked the move to working from home, but attitudes have gradually changed, said Babar, citing responses to KPMG's survey of 2,003 Canadians from March 25 to March 30, 2021 using Delvinia's Asking Canadians panel on their Methodify platform.

"Seventy-seven per cent said they wanted flexibility in where they worked. Of course, flexibility means different things to different people, but the hybrid workplace is the new model," said Babar.

Employer attitudes have also shifted in their thinking throughout the pandemic. When the pandemic hit oil and gas company leadership was focused on stabilizing their business processes after the shift to remote work. They then began focusing on retaining and attracting talent. They are now focused on dealing with climate changes issues and digital transformation.

"The results of KPMG's CEO Outlook survey show in August of 2020 talent was the number one risk for energy leaders," said Babar. "In a follow-up pulse survey in 2021, forty-three per cent said the environment and climate change was their number one risk. They want to be able to lock in the climate change gains as result of the pandemic. Compared to other industries, only nine per cent said environmental and climate change risk was the top priority."

The digital transformation is also top-of-mind for energy executives. Sixty-three per cent said they are investing in automation to drive efficiencies, followed by investment in AI. There is shift in applying digital technologies from transactional to analytical workflows, said Babar.

While many workers fear the digital transformation may result in further job losses, Babar said it would more likely result in a shift in skills.

“You need data scientists skilled at understanding data sources, cleaning, extracting and manipulating data to get insights,” she explains. “You need subject matter experts to understand the data and use it to get results. The skills required include an ability to take the data and tell a story with the numbers.”

As workers return to offices this fall, it is likely there will be a multitude of different work location models tested by companies. A number of oil and gas producers and global companies have already indicated they will be bringing all workers back to the office fulltime. Whether other organizations follow is an open question.

Bill Whitelaw, managing director of strategy and sustainability at geoLOGIC Systems and JWN Energy, suggests companies take a close look at some of the less obvious opportunities that exist in the hybrid work model, including the opportunity to rethink their external communications efforts to take advantage of employees who are tied to their communities in different ways.

“With employees not always coming to work in the ‘downtown echo chamber’, there may be creative of ways of connecting to the communities in which staff live,” noted Whitelaw. “As the sector enters its next phase of evolution, the stories people tell at the community grassroots level may be able to help shift public opinion and perceptions of the energy transition journey on which many companies have embarked. The sector shouldn’t pass up this opportunity.”

ENERGY TRANSITION TO DRIVE NEW JOBS

Kevin Krausert

Chief Executive Officer and Co-Founder of Avatar Innovations Inc.

Despite the challenges faced by the Canadian oil and gas sector, there is a bright future for those who have been employed in it, or who hope to be, Kevin Krausert, chief executive officer and co-founder of Avatar Innovations Inc., told the recent PetroLMI Future of Working in Energy Forum.

Krausert said the sense of doom and gloom the Canadian energy sector is experiencing is unwarranted.

"The old model, where you got a degree and worked for a company for 35 years is gone," he said. But that doesn't mean there won't be many opportunities in the energy sector of the future. It's one of the reasons a key part of Avatar's focus has been on getting involved in educating workers for the energy industry of the future.

The perception is that the only opportunities in the green economy are in the solar and wind power sectors. In fact, Krausert noted that "decarbonizing" the world's heavy industrial-dominated economy presents numerous opportunities. This includes such areas as the fertilizer and petrochemical sectors, long-haul transport and the aviation industry.

"How do we contribute to the pathways the world is moving to?" he asked. Those opportunities will involve carbon capture and sequestration (CCS), digitization, methane emissions reduction, renewable natural gas and biofuels and the emerging hydrogen economy. He said those sectors would create a need for many thousands of new jobs.

In the CCS area, for example, there has been an estimate there will be a need for 20,000 such projects worldwide, while there are only 12 now.

The hydrogen economy, as outlined in recent reports by the federal government, will also create a need for thousands of jobs. In addition, the geothermal sector will create many opportunities.

He said the "blue hydrogen" sector, which will use natural gas, is likely to be much faster growing than "green hydrogen" based on hydro and other renewable sources.

Krausert said that, aside from training for these jobs of the future, job seekers will need to understand where the opportunities are, concentrate on networking to find the jobs of the future, and emphasize their adaptability.

Tackling the energy transition

Operators plot their path to net zero

Alex Pourbaix
Cenovus Energy President and CEO

Mike Rose
President and Chief Executive Offcer, Tourmaline Oil Corp.

Dan Lyons
Senior Vice-President, Finance and Administration at Imperial Oil

Michael McKerracher
National Energy Leader, KPMG in Canada

Pledging to get to net zero emissions by 2050 has become table-stakes in today's oil and gas industry.

But how companies meet that pledge is what matters, said KPMG in Canada's National Energy Leader Michael McKerracher. Oil and gas is going to be needed for decades to come. Companies that can manage cash flow while cutting emissions will be sustainable in the long run.

"Successful companies will build transition plans into their business strategy. They will also build meaningful emissions reductions into their operations," said McKerracher. While some companies may find it advantageous to invest in wind or solar, overall he said moving further away from the core business of producing oil and gas may not be the best way forward. "Buying credits is a short-term strategy. Investing in new technology for the core business to make meaningful change and then moving into wind and solar is more sustainable."

While global energy giants are going all-in on renewables, large Canadian operators tend to agree with McKerracher's strategy.

For Canadian Natural Resources Limited, producing renewable energy through wind farms, for example, would require a fairly substantial shift for a company already adept at producing oil, and one that can achieve goals within the environmental realm based on its current abilities, president Tim McKay told the 2021 Scotiabank-Canadian Association of Petroleum Producers (CAPP) Energy Symposium.

"The preference is to stick with what we know and what we're good at," he said. "Obviously, if you look at the carbon capture infrastructure we have here in Canada, then to me it's just a huge opportunity to leverage our knowledge, our expertise in that, to drive our GHG intensity down."

He added, "There is going to be a need for oil in the long-term. And so, to me, it's what you can do in terms of your operating costs, your operating efficiency, and in terms of driving your CO2 down. We are very good at those three items, and I just look at it as one of those."

Cenovus Energy's aspirations with renewable energy will not see the company become a large independent power producer of such alternatives on its own, but are much more about finding opportunities to partner with third parties through power purchase agreements, according to president and CEO Alex Pourbaix.

"For one example of that, we could potentially offset our scope-two emissions and potentially further strengthen relationships with Indigenous groups that are very interested in the renewable power area, or we could do PPAs with developers to decarbonize our Scope 1 and Scope 2 emissions."

While his company is more likely to become a "late-entrant renewable power developer," Pourbaix said Cenovus may have some potential diversifications into complementary businesses, particularly ones that could drive improved greenhouse-gas (GHG) and environmental, social and governance (ESG) performance. "That, for example, could include renewable power options."

There are alternative energy opportunities for Imperial Oil such as biofuel blending, but renewables such as wind farms and solar farms simply are not in the company's current proverbial wheelhouse, noted Dan Lyons, senior vice-president, finance and administration at Imperial.

Imperial is certainly committed to reducing its GHG intensity and making other ESG improvements, such as via SA-SAGD at Grand Rapids, which has environmental and economic benefit. As well, the Canadian firm could potentially leverage parent company Exxon Mobil Corp.'s technology and expertise in the carbon capture, utilization and storage (CCUS) space.

Lyons said: "We believe there are investments that reduce [GHG] intensity. You could even call them 'alternative' in some sense that could be economic for us. That's an important aspect of this. We want to both reduce greenhouse-gas intensity and provide economic returns."

"Renewables are a pretty low ROI business, and so I don't think we're big enough to participate in that space," said Mike Rose, president and chief executive officer, Tourmaline Oil Corp. Rose noted that his company already strives to reduce emissions in the field, doing so in five-year increments with a technology plan to achieve its targets.

"We think that's the best way for us to contribute as an industry. We'll let the super majors kind of do what they want, but to some extent I don't know if that actually reduces emissions. It kind of just moves them around. We're more dialed in on reducing emissions right now.

As the sector moves forward with its various emissions initiatives, it will be important for it to monitor and report on progress in a way that allows people outside the industry to grasp the totality of the effort, noted Bill Whitelaw, managing director of strategy and sustainability at geoLOGIC systems ltd. and JWN.

"We're seeing an amazing and diverse variety of efforts in the reduction space…but for the sector as a whole to benefit, someone has to be keeping score, cataloguing and reporting on what's happening. Individual corporate stories matter, of course, but for the sector's overall benefit, there has to be a creative form of collective storytelling…that's what will give the sector credibility and create trust with external stakeholders."

While individual companies are busy building ESG narratives, there's a larger opportunity to build a broader sectoral ESG narrative as well, added Whitelaw.

CLEANING UP THE VALUE CHAIN

Jessica Shumlich
Chief Executive Officer of Highwood Emissions Management

Canada's oil and gas operators are rapidly moving to cut emissions from their operations and the use of energy to power operations. But to reach net zero, they also need to focus on reducing emissions from the end-use of their products.

"If you want to look at real environmental effects, companies must commit to reducing or eliminating their Scope 1, 2 and 3 emissions," said Jessica Shumlich, chief executive officer of Highwood Emissions Management. "This puts pressure on the complete value chain and will help the entire industry really move to these ambitious targets. I believe that if the industry can show that we're making real progress on the entire life cycle of emissions reductions, then that will help with the longevity of the industry."

Emissions along the value chain often represent a company's biggest greenhouse gas impacts, which means companies have been missing out on significant opportunities for improvement.

Nina Lothian, fossil fuels director at the Pembina Institute, said the challenge to meet Canada's targets is so significant that all approaches are needed, including technology and diversification.

"There's an important role for governments and policy," she said. "Industry can take the action, but they need investors, government and the public to be on side with that action. Having a stable, predictable policy environment that allows them to make the investment decisions today to decarbonize is critically important. Companies aren't necessarily going to make those investments unless they're certain that they make business sense. And so you need that stable policy environment to support that decision making."

Lothian pointed to the Alberta government's plan to explore extending producer responsibility around plastics. She said there is a parallel between the responsibility attached to the producer of a plastic product and a fossil fuel product in terms of considerations related to impacts on economics and environment through the full life cycle.

"As a company, you have some responsibility for the full life cycle of your products, including how they end up in terms of the waste stream," said Lothian.

Shumlich said stakeholders, shareholders, and the general public are demanding the sector manage emissions properly with real plans in place to reduce or eliminate Scope 1, 2 and 3 emissions.

"We've seen deals fall through because of emissions concerns," she said. "And so, it's not going to be long in my belief that in order to, for example, sell your LNG to the European Union, you're going to have to show that you are either at net zero or on your way to net zero for your Scope 1, 2 and 3 emissions."

Lothian said there is a perception that this work is all pain, which she calls misguided because the world is changing.

"Our perspective is low cost and low carbon will put an operator in a much more competitive position than if they hadn't acted on both of those. And so, companies addressing their emissions actually positions them for a more competitive future."

Thermal Oilsand emissions intensity changes (2018-2019)

Project Name	Operator	2019 on 2018 % Decrease in GHG Intensity.	2019 GHG intensity (Kg-CO2e/bbl)	2018 GHG intensity (Kg-CO2e/bbl)	2019 GHG Emissions (tonnes-CO2e)	2018 GHG Emissions (tonnes-CO2e)
MacKay River	Suncor Energy Inc.	17%	87.76	105.66	1151068	1385860
Sunrise	Cenovus Energy Inc.	17%	77.48	93.04	1412667	1696283
Kirby	Canadian Natural Resources Limited	10%	51.00	56.92	642627	717308
Surmont (ConocoPhillips)	ConocoPhillips Canada Ltd	10%	58.47	65.17	2938070	3274901
Long Lake (In Situ)	CNOOC International	10%	104.13	115.30	1687856	1868954
Firebag	Suncor Energy Inc.	3%	69.23	71.55	5155814	5328988
Primrose & Wolf Lake	Canadian Natural Resources Limited	1%	145.30	146.26	3569779	3593441
Foster Creek	Cenovus Energy Inc.	-1%	61.35	60.47	3625589	3573492
Cold Lake	Imperial Oil Limited	-2%	105.99	104.14	5712208	5612492
Lindbergh	Cona Resources Ltd.	-3%	75.40	72.87	450236	435118
Christina Lake	Cenovus Energy Inc.	-5%	46.11	43.79	3386694	3215870
Leismer (AOC)	Athabasca Oil Corporation	-6%	76.26	71.80	526763	495958
Christina Lake Regional	MEG Energy Corp.	-8%	81.36	75.62	2304490	2142002
Tucker	Cenovus Energy Inc.	-9%	105.47	97.16	862551	794642
Hangingstone (JACOS)	Japan Petroleum Exploration Co., Ltd	-21%	78.84	65.18	539487	446046
Orion	OSUM Oil Sands Corporation	-38%	114.85	83.07	464536	336009
Redwater	North West Upgrading Inc.	-45%	830.98	572.89	656312	452469
Rush Lake	Cenovus Energy Inc.	-53%	93.47	60.93	431540	281316

Upgrader emissions intensity changes (2018-2019)

Project Name	Operator	2019 on 2018 % Decrease in GHG Intensity.	2019 GHG intensity (Kg-CO2e/bbl)	2018 GHG intensity (Kg-CO2e/bbl)	2019 GHG Emissions (tonnes-CO2e)	2018 GHG Emissions (tonnes-CO2e)
Horizon (Upgrader)	Canadian Natural Resources Limited	6%	84.56	90.10	5318924	5667523
Syncrude (Upgrading)	Syncrude	-4%	132.87	127.75	12253788	11781861
AOSP Scotford Upgrader 1	Shell Canada Ltd.	-7%	30.47	28.58	3078620	2887599
Lloydminster Upgrader	Cenovus Energy Inc.	-9%	65.16	59.97	1184592	1090254
Suncor Upgrader	Suncor Energy Inc.	-10%	72.55	66.08	8637568	7866994

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