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Phantom Jobs: Fracking Job Creation Numbers Don't Add Up

Fossil fuel corporations and their supporters have overhyped the employment benefits of fracking.[1] Frackers have a long history of citing misleading jobs data.[2] The public and policymakers are being misled by deceptive models and inflated numbers that don't add up.

The latest report from the American Petroleum Institute (API), an oil industry trade association, breathlessly warns that a ban on fracking and federal leasing for oil and gas extraction could cost 7.5 million jobs.[3] Outlandish jobs claims have one goal: to hype the scope and impact of the oil and gas industry.

Food & Water Watch has analyzed the jobs claims made by three reports commissioned by API from PricewaterhouseCoopers (PwC) in 2013,[4] 2017[5] and 2019.[6] The job numbers in these reports vastly exceed data from the Bureau of Labor Statistics (BLS). One key conclusion: Employment numbers sold by frackers are false and disingenuous.

According to BLS data, from 2016-2018 approximately 636,000 jobs were directly related to oil and natural gas extraction nationally - 200,000 more than the pre-fracking boom (2001-2006) average. In Pennsylvania, a fracking epicenter, there were about 26,000 jobs in these industries, 18,000 more than the pre-boom average.[7]

Finding 1: PwC's topline jobs numbers rely on highly speculative indirect and induced jobs in other industries.

Indirect jobs are those within a supply chain that supports a given industry. Induced jobs are those supported by wages from both direct and indirect jobs.[8] Indirect and induced jobs account for nearly 75 percent of PwC's top-line numbers. Misattributing these jobs to the oil and gas industry distorts the size and scope of the industry's payroll.[9]

Moreover, indirect and induced jobs estimates do not account for substitution or crowding-out effects of oil and gas investment in other industries. In other words, the jobs PwC identifies would only be "lost" if the alternative to investment in oil and gas were doing nothing with capital and turning off the power. This is a false choice. In reality, the alternative to fracking would have been and could still be large-scale investment in clean, job-creating renewable electricity technologies.[10] Fracking jobs can instead be green energy jobs.

Finding 2: Misleadingly broad industry definitions and methodological inconsistencies falsely inflate direct job and employee compensation numbers.

Direct jobs are the number of jobs created directly by an industry. PwC's direct jobs claims vastly exceed BLS data. PwC includes several sectors in its analysis. Every sector it cites has lower employment than claimed. Three sectors with large discrepancies show the pattern:[11]

Job Sector	Year	Industry Jobs Claim	BLS Data	Discrepancy
NAICS code[12] 211: Oil and gas extraction (including natural gas liquid extraction)	2011	783,800	170,753	-613,047
	2015	832,300	192,537	-639,763
	2017	685,300	143,925	-541,375
NAICS code 213112: Support activities for oil and gas operations	2011	269,300	241,490	-27,810
	2015	320,100	278,444	-41,656
	2017	281,900	227,203	-54,697
NAICS code 213111: Drilling oil and gas wells	2011	97,400	87,282	-10,118
	2015	80,400	69,944	-10,456
	2017	71,100	57,316	-13,784

PwC also grossly inflates its claims about employee compensation. U.S. Bureau of Economic Analysis (BEA) data shows a more than $86 billion discrepancy for 2017 alone.[13]

Year	Industry Compensation Claims (in billions)	BEA Compensation Data (in billions)	Discrepancy
2011	$92.8	$30.6	-$62.2
2015	$144.3	$38.8	-$105.5
2017	$115.7	$29.2	-$86.5

Finding 3: Misleadingly broad definitions also overstate the industry's scope.

In its analyses, PwC includes broad swaths of the manufacturing industries, such as "fertilizer manufacturing" and "all other basic organic chemical manufacturing." Absurdly, it even includes jobs at gas stations (including convenience store workers).[14] In fact, gas station workers account for nearly 35 percent of all "oil and gas industry" jobs.[15]

When job categories new to the 2019 report [NAICS 32511 (petrochemical manufacturing); 325211 (plastic material and resin manufacturing); 325199 (all other basic organic chemical manufacturing); and 32531 (fertilizer manufacturing)] are excluded, job numbers actually decline from 2015 to 2017 despite booming oil and gas production.[16]

PwC also examines different industries across their three reports which confusingly creates the illusion of growing oil and gas employment.

In reality, only 37 percent of the jobs detailed in PwC's report are *directly* involved in oil and gas extraction (NAICS 21). Furthermore, BLS data shows these jobs account for only 21 percent of the broader sector.[17]

Food & Water Watch created a more accurate model using a definition that encompasses only jobs *directly* involved with domestic oil and gas production, specifically: oil and gas extraction; support activities for oil and gas operations; drilling oil and gas wells; oil and gas pipeline construction; and pipeline transportation.

These five sectors accounted for 621,504 jobs in 2017 and 685,534 jobs in 2018. Strangely, PwC reports these same five sectors employed at least 1,243,800 in 2017 alone.

Finding 4: The job sectors highlighted by PwC employed fewer people from 2016-2018 than at the peak of the fracking boom, from 2012-2014.

Food & Water Watch evaluated the change in employment from before the fracking boom to current employment levels in PwC's chosen job sectors. BLS data shows that average employment in those sectors was 1,893,402 from 2001-2006 and 2,099,173 from 2016-2018, a gain of 205,771 jobs.

Using Food & Water Watch's more accurate definition of the oil and gas extraction industry shows employment growth similarly below API's claims. Employment in these sectors averaged 435,706 from 2001-2006 and 636,376 from 2016-2018, a gain of 200,670.[18]

Moreover, despite continually increasing oil and gas production, these sectors actually employed 129,535 fewer people from 2016-2018 than they did at their peak, from 2012-2014.[19]

FWW's results track with academic estimates of the employment impacts of fracking, even when these studies include induced and indirect jobs. For example, a 2017 study which does not consider the trade-off between fracking and other employment opportunities finds that new oil and gas extraction from 2005-2012 created 640,000 jobs.[20] Similarly, another peer-reviewed 2017 study estimates that fracking generated 550,000 jobs.[21]

Finding 5: Pennsylvania's oil and gas industry employs fewer than API claims.

Food & Water Watch used BLS data[22] to evaluate fracking's employment impacts in Pennsylvania by comparing average employment levels from 2001-2006 (pre-boom) to average employment levels from 2016-2018 (post-boom).

API falsely claims that a fracking ban would cost Pennsylvania a staggering 551,000 jobs - more than 10 percent of all private employment in the state.[23] Even using PwC's overly broad industry definition finds that the oil and gas and petrochemical industries employed 72,845 pre-boom and 89,319 post-boom, a change of 16,474. Over the same period, oil and gas industry jobs rose from 7,633 to 25,960. This change of 18,327 is a plausible estimate of fracking's modest employment impact.[24]

Conclusions

The employment benefits of frackinghave been overhyped to manipulate the public and policymakers. With deceptive models, stunningly broad definitions and creative spin, frackers have created illusions, not jobs. Policymakers should know that fracking jobs numbers do not stand up to scrutiny; rosy projections are no counterweight to environmental, climate and public health concerns. Industry-hyped projections should not inform or influence policy decisions.

The United States must invest aggressively to deploy existing technologies and solutions for harnessing zero-emission renewable electricity and to upgrade energy efficiency. We need a New Deal-scale green public works investment to drive the rapid transition to clean energy. These aren't make-work jobs — a dramatic economic reorientation to 100 percent renewable energy is necessary to stave off the worsening effects of climate catastrophe.[25] Instead of the phantom jobs "created" by fracking, we should invest in real jobs to support a transition to 100 percent clean, renewable energy backed up by affordable storage and transmission.

Endnotes

[1] See Wood MacKenzie Energy Consulting, American Petroleum Institute (API). "U.S. Supply Forecast and Potential Jobs and Economic Impacts (2012-2030)." September 7, 2011; Public Policy Institute of New York State. "Drilling for Jobs: What the Marcellus Shale Could Mean for New York." July 2011; America's Natural Gas Alliance. "Why Natural Gas?" Available at http://www.anga.us/why-natural-gas, accessed August 21, 2013.
[2] See Food & Water Watch (FWW). [Report.] "Exposing the Oil and Gas Industry's False Jobs Promise for Shale Gas Development. How Methodological Flaws Grossly Exaggerate Jobs Projections." November 2011.
[3] API. "America's Progress at Risk: An Economic Analysis of a Ban on Fracking and Federal Leasing for Natural Gas and Oil Development." DM2020-002. 2020 at 4 and 5.
[4] PricewaterhouseCoopers (PwC). Prepared for API. "Economic Impacts of the Oil and Natural Gas Industry on the US Economy in 2011." July 2013.
[5] PwC. Prepared for API. "Impacts of the Oil and Natural Gas Industry on the US Economy in 2015." July 2017.
[6] PwC. Prepared for API. "Impacts of the Natural Gas, Oil and Petrochemical Industry on the US Economy in 2017." December 2019.
[7] FWW Analysis of Bureau of Labor Statistics (BLS). Quarterly Census of Employment & Wages. (QCEW). Annual Employment by North American Industry Classification System (NAICS) Sector. Accessed February 2020.
[8] PwC (2019) at 1.
[9] PwC (2019) at E-1.
[10] Shearer, Christine et al. "The effect of natural gas supply on US renewable energy and CO2 emissions." *Environmental Research Letters*. Vol. 9. September 2014 at 1 and 2; Bistline, John E. "Electric sector capacity planning under uncertainty: Climate policy and natural gas in the US." *Energy Economics*. Vol. 51. July 2015 at 236, 241 and 244.
[11] FWW Analysis of PwC (2019) at 5 and Table 4 at 9; PwC (2017) at Table 4 at 12; PwC (2013) at Table 4 at 11; BLS CQEW (2020).
[12] NAICS codes are an index of industries. Shorter codes are broader industries that add specificity with each digit e.g. 21 (mining) includes 211 (oil and gas extraction) as well as 212 (coal mining).
[13] FWW Analysis of PwC (2019) at Table 4 at 9; PwC (2017) at Table 4 at 12; PwC (2013) at Table 4 at 11; Bureau of Economic Analysis. Components of Value Added by Industry. Compensation of Employees Oil and Gas Extraction. Accessed March 2020.
[14] PwC (2019) at 3.
[15] PwC (2019) at 5 and Table 4 at 9.
[16] FWW Analysis of BLS CQEW (2020).
[17] PwC (2019) at Table 4 at 9.
[18] FWW Analysis of BLS CQEW (2020); the correspondence in these differences validates FWW's narrower industry definition.
[19] FWW Analysis of BLS CQEW (2020).
[20] Feyrer, James et al. "Geographic dispersion of economic shocks: Evidence from the fracking revolution." *American Economic Review.* Vol. 107, No. 4. April 2017 at 1314 to 1315.
[21] Maniloff, Peter and Ralph Mastromonaco. "The local employment impacts of fracking: A national study." *Resource and Energy Economics*. Vol 49. August 2017 at 62.
[22] Due to non-disclosure, three sectors were assumed to have employment equal to the average of the nearest years in which employment was disclosed (this totals fewer than 5,000 employees a year).
[23] BLS. Current Employment Statistics. Total Private Employment. Seasonally Adjusted. SMS42000000500000001; API. "America's Progress at Risk: An Economic Analysis of a Ban on Fracking and Federal Leasing for Natural Gas and Oil Development." DM2020-002. 2020 at 5.
[24] FWW Analysis of BLS CQEW (2020).
[25] Davenport, Coral. "Major climate report describes a strong risk of crisis as early as 2040." *New York Times*. October 7, 2018.