Petroleos Mexicanos (Pemex) Sensitivity Analysis

Taxes: Pemex's Path to Insolvency

Special Report

Ratings

Foreign Currency

Long-Term IDR	BBB+
Senior Unsecured	BBB+

Local Currency

Long-Term IDR	BBB+

National

Long-Term Rating	AAA(mex)
Short-Term Rating	F1+(mex)

IDR – Issuer Default Rating.

Rating Outlooks

Long-Term Foreign-Currency IDR	Stable
Long-Term Local-Currency IDR	Stable

Taxes Will Lead to Insolvency: The Mexican government's continued demand for dividends from Petroleos Mexicanos (Pemex) in the form of taxes will force the company to borrow indefinitely and will make Pemex insolvent. This path will significantly increase the need for a larger rescue package from the government in the medium term. In 2015, Pemex transferred about 1.3x its EBITDA to Mexico and is expected to transfer almost all of it in 2016. Pemex's taxes make it improbable that the company would have positive FCF in the future.

Debt Weakens Credit Quality: Pemex is expected to end 2016 with USD100 billion in total debt. Without more adjustments to Pemex's tax program, its debt could surpass USD125 billion in two to three years, or more than USD15/barrel (bbl) of proved reserves, up from 9.9x in 2015, a ratio Fitch Ratings considers unsustainable. Pemex's leverage may improve in line with Fitch's oil price recovery expectations, but its reserve life of 7.8 years may not materially recover from the decline reported in 2015 without an increase in investment.

Announced Tax Reductions Insufficient: The recent support package from the government, though a step in the right direction, was insufficient to make the company self-sustainable. In addition to the pension related capital injections, the government introduced an average cost deduction floor for tax purposes of USD6.5/bbl. This could represent a reduction in taxes for Pemex of MXN50 billion if realization price for 2016 averages USD25/bbl. Pemex's gross transfers to the government should remain high, similar to the 66% transferred in 2015.

Efficiency Gains Not the Answer: Pemex's production costs are competitive and its room to lower replacement costs is limited, Lifting costs are USD6.7/bbl of oil equivalent (boe) and its reserve replacement is USD18/boe. Pemex would need to lower its pretax, full-cycle oil cost by USD14/bbl and see an oil price of more than USD100/bbl to have a break-even cash flow. A reduction in expenditures and investments increases risks and jeopardizes viability. Reductions of pension cash outflows are difficult and layoffs will provide minimal savings.

Capex Reduction Compromise Long-Term: Pemex's production stands to decrease by close to its depletion rate of 5%–10% over the medium term as a result of the significant capex curtailment. Over recent years, Pemex's capital investments have been below implied replacement cots and not enough to stem production decrease. The announced investment cuts will likely restart the production decline and proved reserves and reserve life could also decline.

FCF Negative Regardless of Price: Pemex's FCF will be negative under any oil price scenario if it were to replenish reserves as they are produced. Fitch estimates Pemex's after tax break-even prices for 2014 and 2015 were USD82/boe and USD57/boe, respectively. Divestitures could ease pressure, but will yield no long-term benefits if the proceeds are divided out instead of reinvested in profitable assets. Joint ventures are beneficial only in the very long term and Pemex could run into financial difficulties before seeing the benefits of partnerships.

Related Research

Petroleos Mexicanos (Pemex) (August 2016)

Latin American Oil Dashboard (May 2016)

Latin American Oil & Gas Netback Profile (Cash Costs at or Below Market Prices) (January 2016)

2016 Outlook: Latin American Oil and Gas (Lower Oil Prices for Longer) (November 2015)

Analysts

Lucas Aristizabal
+1 312 368-3260
lucas.aristizabal@fitchratings.com

Alberto De Los Santos
+52 81 8399-9110
alberto.delossantos@fitchratings.com

Continued Heavy Taxation to Make Pemex Insolvent

Fitch interprets the continued heavy taxation and capital investment cuts at Pemex during the downturn of the oil and gas industry as a sign of weakening government support for the company. The Mexican government's approach to Pemex during the downturn in the industry contrasts negatively with other countries' support toward their national oil companies (NOCs) during the trough.

In 2015, the Colombian and the Brazilian governments allowed Ecopetrol S.A. and Petroleo Brasileiro S.A. (Petrobras), respectively, to cease dividend payments while their effective tax payments decrease in line with the decrease in net income. These NOCs had transfers to their governments in the form of manageable and sustainable royalties that neither hindered their capital structures nor forced them to increase debt levels. In contrast, Pemex's aggregate tax rate continued relatively unchanged at a range of 66%–68% of the value of its production between 2012 and 2015, or approximately 130% of EBITDA in 2015.

Pemex's extraordinarily high level of transfers to the central government has forced the company to significantly increase its indebtedness, which Fitch sees as an inefficient funding mechanism given Pemex's higher financing costs when compared with that of the government. The Mexican government and Pemex would have saved an estimated USD330 million per year in interest expenses had the government issued the more than USD25 billion of incremental debt incurred by Pemex during the past two years to pay taxes. The average yield of Pemex's international bonds during 2015 was approximately 4.57%, where as that of similar Mexican government obligations was 3.25%. This would have increased total government debt approximately 2% of GDP.

Pemex is subject to several taxes and profit-sharing fiscal programs. These include production tax, or profit-sharing duty, as well as a hydrocarbon extraction duty and exploration duty. In addition to these tax programs, since 2015 Pemex may pay dividends and is also subject to the Mexico statutory income tax rate of 30%. Although Pemex paid no income tax during 2015 and instead received a credit, income tax payments could increase progressively if Pemex's royalty rate trends down.

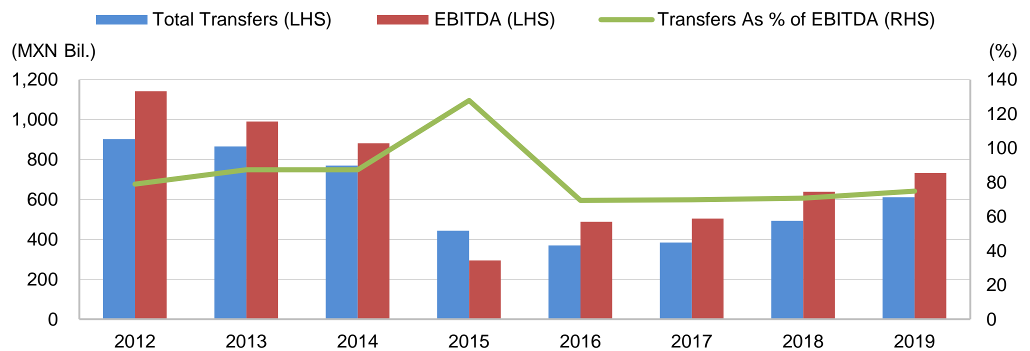
Pemex's largest cash transfers to the central government come in the form of profit sharing, which accounted for approximately 88% of transfers, followed by hydrocarbon extractions duties. Pemex's tax rates are now somewhat sensitive to realization price after the introduction of the hydrocarbon extraction duty and the deductible costs floor of USD6.1/boe for shallow offshore formations and USD8.3/boe for onshore fields, or an average of USD6.5/boe early this year. The first table on page 3 shows Fitch's estimated aggregate crude production and extraction tax rate for Pemex per year and price as a percentage of the value of production.

Related Criteria

Criteria for Rating Non-Financial Corporates (September 2016)

Parent and Subsidiary Rating Linkage (August 2016)

Transfers to Government Versus EBITDA



Source: Petroleos Mexicanos, Fitch.

Liquids Production and Extraction Taxes

(%)

Oil Price (USD/bbl)	2016	2017	2018	2019
35	63.2	62.2	61.2	60.2
45	66.1	65.0	64.0	62.9
55	68.8	67.7	66.6	65.3
65	70.8	69.3	67.9	66.5
75	72.0	70.6	69.2	67.8
100	75.1	73.7	72.3	70.9

bbl – Barrel.
Source: Pemex, Fitch.

Cost-Deduction Cap and Profit Sharing

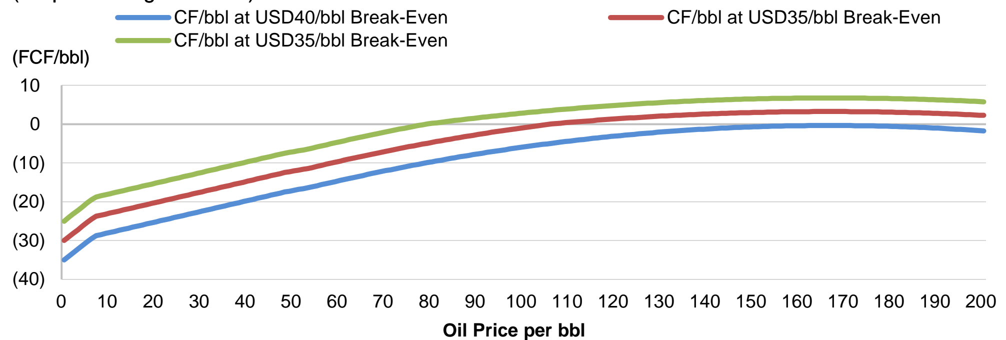
Year	Cost Cap (%)	Royalty Rate (%)
2015	10.60	70.00
2016	11.08	68.75
2017	11.55	67.50
2018	12.03	66.25
2019	12.50	65.00

Source: Pemex, Fitch.

As a result of energy reform, the Mexican government changed Pemex's production tax program by replacing it with a profit-sharing tax and extraction tax programs. The profit-sharing program is similar to the previous production tax program as it allows the company to deduct the maximum from its taxable income of either an average USD6.5/bbl or a percentage of the value of its production. The company then transfers a portion of the remaining profits to the government according to the profit-sharing rate (royalties). This fixed royalty rate program would be marginally beneficial for Pemex with high oil prices, as it would allow the company to retain a higher portion of its profits. However, this benefit is not enough to offset the increased taxation at higher prices that result from extraction taxes.

The Mexican government also introduced an extraction tax that was applicable to Pemex for the first time in 2015. As part of this tax, Pemex reported approximately MXN52 billion of extraction taxes as part of its production costs in 2015. The formula for liquids extraction tax has a floor of 7.5% applicable whenever the price of crude is below USD48/bbl. When the price of oil is above USD48/bbl, the extraction tax rate will be 0.125x the price of oil plus 1.5 percentage points; that is, if the price of oil is USD50/bbl, the extraction tax would be 7.75% and if the price of oil were to be USD100/bbl, the rate would be 14%. This, makes Pemex's tax rate sensitive to oil prices. Associated gas production pays an extraction tax rate equivalent to the price of gas per million British thermal units (mmBtu) divided by 100 and none-associated gas has a tax rate of zero when prices are below USD5/mmBtu and the same tax rate of associated gas when prices are above USD5.5/mmBtu.

Liquid Production Cash Flow
(Perpetual Negative FCF)



CF – Cash flow. bbl – Barrel.
Source: Fitch.

Migrating Assignment into Contracts Is a Long-Term Positive

The company could see a significant improvement in its tax regime if the Mexican government allowed it to migrate assignments for existing producing fields into the new profit or production sharing contracts offered under the current auctions. The new profit or production sharing contracts have a cost cap deduction of up to 60% of the value of their products and the sharing tax applies to the balance. This compares with Pemex's current cost deduction cap of 11.08% or an average of USD6.5/bbl.

Fitch sees it as unlikely that the Mexican government would allow Pemex to migrate existing producing fields assigned to the company during the first round zero of the energy reform into the new contract program in the near future. The Mexican government and the hydrocarbons regulator have allowed Pemex to seek partners for exploration fields in upcoming rounds, which will effectively allow the company to take advantage of the new tax and royalty program for the auctioned exploration fields. This will not result in a significant reduction in taxes in the short to medium term and Pemex will only see a progressive reduction in taxes once these exploration fields commence production, which could take place five years after auction. Additionally, Pemex's underling weak financial position may compromise its ability to attract suitable partners if it is not believed to have the sufficient funds to contribute to partnerships.

Strategic Importance Could Diminish

Pemex's ratings continue to reflect the company's strategic importance for Mexico and its close linkage with the sovereign. Although Fitch expects Pemex's strategic importance to continue in the short to medium term and the ratings to continue to closely link to those of the sovereign, its strategic importance is likely to decrease in the long term. This could happen as the country opens the market to provide a greater supply of fuels and the company is not able to transfer the funds it once did to the central government.

Pemex's strategic importance for the country is the result of its current monopoly position in the supply of liquid fuels, the material direct and indirect financial exposure of the country's financial market and its historic high level of transfers to government. This level of importance will continue to exist over the short to medium term. Nevertheless, it might not be the case in the long term if the company continues sacrificing investments and increasing its leverage indefinitely to maintain its high level of transfers to the central government.

Pemex expects to reduce its investments in downstream assets and to take advantage of tools from the energy reform to enter into partnerships to invest in the downstream business segment in exchange for interest in existing assets. Although this reduces the company's

capital investments in assets with relatively low return on invested capital, which is positive for the company's credit profile, it will also progressively reduce Pemex's strategic importance for the country. A large presence of private participation in Pemex's existing downstream assets could potentially isolate the country from the risk of the supply of liquid fuels a financial distress situation in Pemex could have for the country.

Over the next two years, the prices of gasoline and diesel fuel in Mexico will be freely determined by market conditions, which will progressively reduce Pemex strategic importance for the country should there be a significant presence of private participants in the supply of liquid fuels. Mexico's gasoline and diesel prices have historically operated under government price controls. Until 2006, this resulted in a subsidy to consumers as domestic liquid fuel prices were lower than global parity. Since 2010, the Mexican government has been increasing prices, which, coupled with the recent decrease in international oil prices, brought domestic prices to international parity. Until the energy reform, Pemex enjoyed a legal monopoly on the supply of liquid fuels in the country. Since then, legal barriers to entry have been lifted and, after prices are liberalized, Pemex will face a gradual increase in competition for the supply of liquid fuels to the country given its proximity to the U.S. main refinery market.

Efficiency Gains Help, but Are Not the Answer

Fitch estimates that for Pemex's upstream business segment to report positive FCF under the current tax regime while replenishing reserves, the company would have to lower its pretax, full-cycle cost for crude to less than USD30/bbl from its current rate of USD43/bbl and at the same time for realization prices to increase above USD100/bbl. Lowering full-cycle costs, which includes lifting costs; selling, general and administrative (SG&A); interest expenses and replacement costs, is very challenging as the company has very competitive lifting costs. Lowering interest expenses on a per barrel basis will require Pemex to improve its capital structure and administrative expenses that are in line with other companies in the region.

A more relevant, yet still very moderate measure to help the company stem cash flow drain is to more efficiently procure supplies. This will be especially meaningful if Pemex manages to reduce its finding and development costs, which at USD18/boe are competitive for the industry, yet above what it could be for its operations. Fitch considers it very challenging and unlikely that Pemex would be able to lower its full-cycle costs for crude to the above mentioned levels, and oil prices are not expected to return to USD100/bbl on a sustained basis in the near term.

Although Pemex faces constant criticism of its inefficiencies due to its large labor force when compared with oil companies of similar size, it is very competitive and reducing labor force, in and off itself, will not result in positive FCF. Pemex's labor costs, excluding pension contributions, as a percentage of its operating and administrative expenses, represent approximately 4%–6% or approximately MXN50 billion per year. During 2015, Pemex reduced its labor force by approximately 9% to approximately 138,700 employees from 153,400 in 2014. As of Dec. 31, 2015, the Petroleum Workers' Union represented approximately 79.0% of Pemex's workforce.

Full-Cycle Costs and Required Revenues

(USD/boe)	Petroleos Mexicanos		ExxonMobil		Chevron		Shell		BP	
Date	**2014**	**2015**	**2014**	**2015**	**2014**	**2015**	**2014**	**2015**	**2014**	**2015**
Total Production (000 boe/day)	3,538	3,269	3,969	4,097	2,571	2,622	3,189	3,052	2,143	2,258
Lifting Costs	8.2	6.7	12.6	10.6	17.7	14.6	15.1	13.4	13.8	11.4
SG&A (70% to Upstream)	4.3	3.8	6.1	5.4	3.4	3.2	8.4	7.5	11.0	9.8
Interest Costs (70% to Upstream)	1.8	2.1	0.1	0.1	0.4	0.6	1.1	1.2	0.9	0.9
Production Taxes	0.0	2.5	9.0	4.7	0.6	0.3	6.7	3.0	12.3	7.0
Total Periodic Cost (Half-Cycle)	**14.3**	**15.2**	**27.8**	**20.8**	**22.1**	**18.7**	**31.3**	**25.1**	**38.0**	**29.1**
Average Three-Year FD&A	18	18	20	20	30	30	38	38	20	20
15% Return on Invested Capital	2.7	2.7	3.0	3.0	4.5	4.5	5.7	5.7	3.0	3.0
Full-Cycle Costs	**35.0**	**35.9**	**50.8**	**43.8**	**56.6**	**53.2**	**75.0**	**68.8**	**61.0**	**52.1**
Upstream Taxes	46.9	18.3	14.6	4.3	16.0	3.7	14.0	0.3	4.1	0.5
After Tax Implied Break-Even Price	**81.9**	**54.2**	**65.4**	**48.1**	**72.5**	**56.9**	**89.0**	**69.1**	**65.0**	**52.6**
Total Upstream Taxes, Royalties and Duties	46.9	20.9	23.6	9.1	16.6	4.0	20.7	3.2	16.3	7.5

Boe – Barrels of oil equivalent. FD&A – An estimate of finding, development and acquisition cost.
Source: Company Reports, Fitch.

Although Pemex has significantly lower lifting and periodic costs when compared with independent oil and gas companies (IOCs) of similar size, it pays more than twice the average in upstream taxes, royalties and duties of its independent peers. The table above compares transfers to the government with taxes, royalties and duties paid by the upstream segments of similar size IOCs as well as Pemex's full-cycle costs for crude and gas production. The data for the IOCs refers to total consolidated and equity-method accounted production, costs and taxes. SG&A expenses, as well as interest costs, refer to 70% of the total consolidated figures reported by each company on their income statement as a portion of these expenditures can be attributable to none-upstream business segments. Finding, development and acquisition costs are estimates as this figure is not consistently reported by all companies.

Capital Structure Path to Insolvency

Pemex's stand-alone credit quality is in line with a 'B–' long-term Issuer Default Rating, should the company not be owned by the state and the government were not to provide financial support should Pemex require it. This stand-alone view also assumes that the Mexican government continues extracting a large amount of funds from Pemex in the form of taxes, resulting in feeble FFO. Pemex's stand-alone credit profile has been weakened in recent years by the significant increase in debt the company has issued primarily to cover its large transfers to Mexico in the form of taxes, duties and royalties. Pemex's debt trajectory could continue pressuring the company's stand-alone credit quality, which could reach an unsustainable level, should the Mexican government continue issuing debt at Pemex's level to transfer funds to the central government.

Pemex's capital structure is expected to continue weakening over the foreseeable future. Fitch expects Pemex's FFO-adjusted leverage to stay elevated at approximately 13x–15x starting in 2017. Under Fitch oil price assumptions, Pemex's total debt could reach or surpass USD125 billion in two to three years' time or more than USD15 of debt/every barrel of proved reserves, up from 9.9x in 2015, a leverage Fitch considers unsustainable.

Symbolic Government Support

Mexico's support toward Pemex has been shown in recent months by the Ministry of Finance's public statements of support as well as announced, modest capital injections and marginal tax reductions. This support has been so far more symbolic than material, and Fitch expects the Mexican government to execute more meaningful support actions when the company needs

them. Pemex has also received credit lines for an aggregate amount of MXN15 billion from the country's development banks.

Although Pemex significantly benefited from its pension reform and matching contribution from the Mexican government, the company's unfunded pension obligations and post-employment benefits (POPEB) continue to be sizable at approximately USD70 billion as of June 2016. As of March 2015 and before the company concluded its pension reform, Pemex reported POPEB liabilities of approximately USD98.6 billion. Fitch expects Pemex POPEB liabilities to continue growing over the medium term from its post-restructuring amount if employees who were not covered by the reform and do not opt to migrate to the new pension plan approach retirement age.

As a result of the pension reform completed toward the end of 2015, Pemex is expected to receive a MXN184 billion match from the Mexican government. On Dec. 24, 2015, the company received an initial capital injection of MXN50 billion as an initial match to the company's estimated pension savings. The MXN50 billion was initially contributed to the company in the form of non-tradable government securities, which were exchanged for MXN47 billion of liquid notes and sold in August 2016 to aid the company's liquidity. Fitch expects the Mexican government to inject the remainder of the match during the remainder of 2016 and for some of the funds to be injected as liquid government securities earmarked exclusively for future POPEB outflows.

Fitch estimates Pemex's POPEB adjusted leverage is more than 10.0x, or double adjusted EBITDA/financial debt. Pemex's annual contributions to fund its POPEB plan have been somewhat manageable and during 2015 and 2014 they totaled MXN49.2 billion and MXN38.0 billion, respectively. These contributions to the POPEB plan were marginally higher than the payments by the pension fund of MXN46.8 billion during 2015, marginally increasing pension plan assets to MXN5.2 billion from MXN3.0 billion in 2014. The amount of funds available under the plan do not compare favorably with POPEB liabilities of MXN1.26 trillion, or USD73 billion, as of 2015.

Key Forecast Assumptions

Fitch's expectations are based on the agency's internally produced, conservative rating case forecasts. They do not represent the forecasts of rated issuers individually or in aggregate. Key Fitch forecasts assumptions include:

- West Texas Intermediate crude prices average USD42/bbl in 2016, increasing to USD65/bbl by 2019.
- The company continues to face difficulties increasing its production over the next four years.
- Pemex will receive support from the sovereign.

Forecast Summary — Petroleos Mexicanos (Pemex)

	Historical		Fitch Forecast		
(MXN Mil.)	12/31/14	12/31/15	12/31/16	12/31/17	12/31/18
Summary Income Statement					
Gross Revenue	1,587,755	1,166,362	1,077,888	1,149,018	1,412,111
Revenue Growth (%)	(1.3)	(26.5)	(7.6)	6.6	22.9
Operating EBITDA	888,403	295,471	489,150	505,204	638,357
Operating EBITDA Margin (%)	56.0	25.3	45.4	44.0	45.2
Operating EBITDAR	888,403	295,471	489,150	505,204	638,357
Operating EBITDAR Margin (%)	56.0	25.3	45.4	44.0	45.2
Operating EBIT	579,707	(154,387)	364,843	377,363	498,422
Operating EBIT Margin (%)	36.5	(13.2)	33.8	32.8	35.3
Gross Interest Expense	(51,559)	(67,774)	(92,028)	(103,035)	(111,214)
Pretax Income	482,316	(381,067)	272,815	274,328	387,208
Summary Balance Sheet					
Readily Available Cash	117,989	109,369	261,219	131,758	115,235
Total Debt with Equity Credit	1,143,248	1,493,382	1,768,133	1,788,133	1,988,134
Total Adjusted Debt with Equity Credit	1,143,248	1,493,382	1,768,133	1,788,133	1,988,134
Net Debt	1,025,259	1,384,013	1,506,914	1,656,375	1,872,899
Summary Cash Flow Statement					
Operating EBITDA	888,403	295,471	489,150	505,204	638,357
Cash Interest	(47,248)	(62,719)	(92,028)	(103,035)	(111,21)
Implied Interest Cost (%)	4.8	4.8	5.6	5.8	5.9
Cash Tax	(770,672)	(383,435)	(327,127)	(339,208)	(434,842)
Associate Dividends Less Distributions to NCI	336		0	0	0
Other Items Before FFO	(6,921)	99,994	(148,295)	(49,889)	(51,485)
Funds Flow from Operations	63,898	(50,689)	-78,300	13,072	40,816
FFO Margin (%)	(4.0)	(4.3)	(7.3)	1.1	2.9
Change in Working Capital	27,511	90,307	(15,315)	4,753	17,581
Cash Flow from Operations (Fitch Defined)	91,409	39,618	(93,615)	17,825	58,397
Total Non-Operating/Nonrecurring Cash Flow	—	—	—	—	—
Capex	(230,640)	(259,213)	—	—	—
Capital Intensity (Capex/Revenue) (%)	14.5	22.2	—	—	—
Common Dividends	—	—	—	—	—
Net Acquisitions and Divestitures	—	4,381	—	—	—
Capex, Dividends, Acquisitions and Other Items Before FCF	(230,640)	(254,832)	(167,286)	(167,286)	(274,921)
FCF After Acquisitions and Divestitures	(139,231)	(215,214)	(260,901)	(149,461)	(216,524)
FCF Margin (After Net Acquisitions) (%)	(8.8)	(18.5)	(24.2)	(13.0)	(15.3)
Other Investing and Financing Cash Flow Items	12,113	—	0	0	0
Net Debt Proceeds	215,944	187,652	274,751	20,000	200,001
Net Equity Proceeds	(51,583)	10,000	138,000	0	0
Total Change in Cash	37,243	(17,562)	151,850	(129,461)	(16,523)
Coverage Ratios (x)					
FFO Interest Coverage	2.3	0.0	0.1	1.1	1.4
FFO Fixed-Charge Coverage	2.3	0.0	0.1	1.1	1.4
Operating EBITDAR/Gross Interest Expense + Rents	17.2	4.4	5.3	4.9	5.7
Operating EBITDA/Gross Interest Expense	18.8	4.7	5.3	4.9	5.7
Leverage Ratios (x)					
Total Adjusted Debt/Operating EBITDAR	1.3	5.1	3.6	3.5	3.1
Total Adjusted Net Debt/Operating EBITDAR	1.2	4.7	3.1	3.3	2.9
Total Debt with Equity Credit/Operating EBITDA	1.3	5.1	3.6	3.5	3.1
FFO-Adjusted Leverage	10.6	(504.4)	128.8	15.4	13.1
FFO-Adjusted Net Leverage	9.5	(467.4)	109.8	14.3	12.3

HOW TO INTERPRET THE FORECAST PRESENTED: The forecast presented is based on the agency's internally produced, conservative rating case forecast. It does not represent the forecast of the rated issuer. The forecast set out above is only one component used by Fitch to assign a rating or determine a rating outlook, and the information in the forecast reflects material but not exhaustive elements of Fitch's rating assumptions for the issuer's financial performance. As such, it cannot be used to establish a rating, and it should not be relied on for that purpose. Fitch's forecasts are constructed using a proprietary internal forecasting tool, which employs Fitch's own assumptions on operating and financial performance that may not reflect the assumptions that you would make. Fitch's own definitions of financial terms such as EBITDA, debt or free cash flow may differ from your own such definitions. Fitch may be granted access, from time to time, to confidential information on certain elements of the issuer's forward planning. Certain elements of such information may be omitted from this forecast, even where they are included in Fitch's own internal deliberations, where Fitch, at its sole discretion, considers the data may be potentially sensitive in a commercial, legal or regulatory context. The forecast (as with the entirety of this report) is produced strictly subject to the disclaimers set out at the end of this report. Fitch may update the forecast in future reports but assumes no responsibility to do so.
NCI – Noncontrolling interest.
Source: Pemex, Fitch.

The ratings above were solicited by, or on behalf of, the issuer, and therefore, Fitch has been compensated for the provision of the ratings.

ALL FITCH CREDIT RATINGS ARE SUBJECT TO CERTAIN LIMITATIONS AND DISCLAIMERS PLEASE READ THESE LIMITATIONS AND DISCLAIMERS BY FOLLOWING THIS LINK: HTTPS://FITCHRATINGS.COM/UNDERSTANDINGCREDITRATINGS. IN ADDITION, RATING DEFINITIONS AND THE TERMS OF USE OF SUCH RATINGS ARE AVAILABLE ON THE AGENCY'S PUBLIC WEB SITE AT WWW.FITCHRATINGS.COM. PUBLISHED RATINGS, CRITERIA, AND METHODOLOGIES ARE AVAILABLE FROM THIS SITE AT ALL TIMES. FITCH'S CODE OF CONDUCT, CONFIDENTIALITY, CONFLICTS OF INTEREST, AFFILIATE FIREWALL, COMPLIANCE, AND OTHER RELEVANT POLICIES AND PROCEDURES ARE ALSO AVAILABLE FROM THE CODE OF CONDUCT SECTION OF THIS SITE. FITCH MAY HAVE PROVIDED ANOTHER PERMISSIBLE SERVICE TO THE RATED ENTITY OR ITS RELATED THIRD PARTIES. DETAILS OF THIS SERVICE FOR RATINGS FOR WHICH THE LEAD ANALYST IS BASED IN AN EU-REGISTERED ENTITY CAN BE FOUND ON THE ENTITY SUMMARY PAGE FOR THIS ISSUER ON THE FITCH WEBSITE.

Copyright © 2016 by Fitch Ratings, Inc., Fitch Ratings Ltd. and its subsidiaries. 33 Whitehall Street, NY, NY 10004. Telephone: 1-800-753-4824, (212) 908-0500. Fax: (212) 480-4435. Reproduction or retransmission in whole or in part is prohibited except by permission. All rights reserved. In issuing and maintaining its ratings and in making other reports (including forecast information), Fitch relies on factual information it receives from issuers and underwriters and from other sources Fitch believes to be credible. Fitch conducts a reasonable investigation of the factual information relied upon by it in accordance with its ratings methodology, and obtains reasonable verification of that information from independent sources, to the extent such sources are available for a given security or in a given jurisdiction. The manner of Fitch's factual investigation and the scope of the third-party verification it obtains will vary depending on the nature of the rated security and its issuer, the requirements and practices in the jurisdiction in which the rated security is offered and sold and/or the issuer is located, the availability and nature of relevant public information, access to the management of the issuer and its advisers, the availability of pre-existing third-party verifications such as audit reports, agreed-upon procedures letters, appraisals, actuarial reports, engineering reports, legal opinions and other reports provided by third parties, the availability of independent and competent third-party verification sources with respect to the particular security or in the particular jurisdiction of the issuer, and a variety of other factors. Users of Fitch's ratings and reports should understand that neither an enhanced factual investigation nor any third-party verification can ensure that all of the information Fitch relies on in connection with a rating or a report will be accurate and complete. Ultimately, the issuer and its advisers are responsible for the accuracy of the information they provide to Fitch and to the market in offering documents and other reports. In issuing its ratings and its reports, Fitch must rely on the work of experts, including independent auditors with respect to financial statements and attorneys with respect to legal and tax matters. Further, ratings and forecasts of financial and other information are inherently forward-looking and embody assumptions and predictions about future events that by their nature cannot be verified as facts. As a result, despite any verification of current facts, ratings and forecasts can be affected by future events or conditions that were not anticipated at the time a rating or forecast was issued or affirmed.

The information in this report is provided "as is" without any representation or warranty of any kind, and Fitch does not represent or warrant that the report or any of its contents will meet any of the requirements of a recipient of the report. A Fitch rating is an opinion as to the creditworthiness of a security. This opinion and reports made by Fitch are based on established criteria and methodologies that Fitch is continuously evaluating and updating. Therefore, ratings and reports are the collective work product of Fitch and no individual, or group of individuals, is solely responsible for a rating or a report. The rating does not address the risk of loss due to risks other than credit risk, unless such risk is specifically mentioned. Fitch is not engaged in the offer or sale of any security. All Fitch reports have shared authorship. Individuals identified in a Fitch report were involved in, but are not solely responsible for, the opinions stated therein. The individuals are named for contact purposes only. A report providing a Fitch rating is neither a prospectus nor a substitute for the information assembled, verified and presented to investors by the issuer and its agents in connection with the sale of the securities. Ratings may be changed or withdrawn at any time for any reason in the sole discretion of Fitch. Fitch does not provide investment advice of any sort. Ratings are not a recommendation to buy, sell, or hold any security. Ratings do not comment on the adequacy of market price, the suitability of any security for a particular investor, or the tax-exempt nature or taxability of payments made in respect to any security. Fitch receives fees from issuers, insurers, guarantors, other obligors, and underwriters for rating securities. Such fees generally vary from US$1,000 to US$750,000 (or the applicable currency equivalent) per issue. In certain cases, Fitch will rate all or a number of issues issued by a particular issuer, or insured or guaranteed by a particular insurer or guarantor, for a single annual fee. Such fees are expected to vary from US$10,000 to US$1,500,000 (or the applicable currency equivalent). The assignment, publication, or dissemination of a rating by Fitch shall not constitute a consent by Fitch to use its name as an expert in connection with any registration statement filed under the United States securities laws, the Financial Services and Markets Act of 2000 of the United Kingdom, or the securities laws of any particular jurisdiction. Due to the relative efficiency of electronic publishing and distribution, Fitch research may be available to electronic subscribers up to three days earlier than to print subscribers.

For Australia, New Zealand, Taiwan and South Korea only: Fitch Australia Pty Ltd holds an Australian financial services license (AFS license no. 337123) which authorizes it to provide credit ratings to wholesale clients only. Credit ratings information published by Fitch is not intended to be used by persons who are retail clients within the meaning of the Corporations Act 2001.