www.flacsoandes.edu.ec

FALL 2015

ReVista

HARVARD REVIEW OF LATIN AMERICA

ENERGY

OIL, GAS AND BEYOND

EDITOR'S LETTER BY JUNE CAROLYN ERLICK

Oil, Gas and Beyond

I was waiting for the ship to come in. In fact, so was everyone else in Nicaragua. Gas lines stretched around the block. The supermarket shelves were nearly bare. Lights went out again and again, plunging the country into frequent darkness. Telex machines couldn't work, and we reporters had to depend on the few places with generators to file our stories (for younger readers, this was pre-computer and smart phones). U.S. President Ronald Reagan had imposed a trade blockade on Nicaragua in May 1985. The Soviets were sending oil, dodging the blockade.

We reporters did what we always do: we reported on the ship's arrival. But we also breathed a collective sigh of relief. The arrival of the Soviet ship meant hot showers and light to read by.

Energy is intensely political. It shapes nations and trade and fuels wars and blockades. Energy, I discovered then, is also intensely personal. It shapes our lives on a daily basis. It's not only a matter of how we get around or whether we have enough food to eat; energy production affects the communities that receive it and those that produce it. It shapes attitudes toward gender and race and nationalism and identity. It pollutes the air and the rivers. It offers immense economic opportunities. Or it does both.

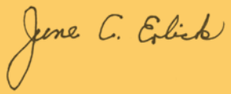
You might not think of Latin America and the Caribbean right away as a big energy producer or consumer. But Venezuela stands ninth in global oil production with gas reserves almost triple those of Canada. Three countries—Venezuela, Brazil, and Mexico—account for about 90 percent of the region's oil production. And Latin America and the Caribbean also have the capability to provide abundant alternative and renewable energy sources: wind, solar, geothermal and biomass, among others.

Perhaps because of my experience in Nicaragua, I started to conceive this issue in terms of meta-politics. And there is certainly a lot of politics related to energy in the region: the political upheaval of Brazil as a result of corruption scandals in the national oil company; the turmoil in oil-rich Venezuela; the impact of the semi-privatization of Mexico's oil industry; the targeting of Colombia's energy installations by guerrilla forces in a show of strength in the context of the ongoing peace process.

But then I thought back on how the arrival of oil had been experienced on a very local and personal level. I began to hear stories about the production of energy: what it felt like to grow up in an oil camp, how energy production affects indigenous women in one particular region, how local communities involve themselves in deciding what is done with oil.

And just recently Alvaro Jiménez, Nieman Affiliate at Harvard '09, happened to mention to me that he was starting a website "Crudo Transparente," a site that monitors the Colombian oil industry. Out of curiosity—and as a quick break from proofreading this issue—I took a peek. The site focuses on five areas: local economy, contracts and royalties, environment, security and human rights and ethnic conflicts. I was pleased to see how much overlap there was with the themes I had chosen for this issue of ReVista.

Although the website deals with only one country—Colombia—it felt like an affirmation of the focus I had chosen for this wide-ranging topic. Energy is political. Energy is personal. Energy matters.



VOLUME XV NO. 1

David Rockefeller Center for Latin American Studies

Director
Brian Farrell

Executive Director
Ned Strong

ReVista

Editor-in-Chief
June Carolyn Erlick

Copy Editor
Anita Safran

Publication Interns
Isabel Espinosa
Gabriela Farrell
Diego Lasarte

Design
Jane Simon Design

Printer
P+R Publications

Contact Us
1730 Cambridge Street
Cambridge, MA 02138
Telephone: 617-495-5428

Subscriptions, Back Copies and Comments
jerlick@fas.harvard.edu

Website
revista.drclas.harvard.edu

Facebook
ReVista, the Harvard Review of Latin America

ISSN 1541—1443
ReVista is printed on recycled stock.

This issue of *ReVista* is made possible through generous support of **Santander Universities Global Division.**

ReVista

HARVARD REVIEW OF LATIN AMERICA

FALL 2015
VOLUME XV NO. 1

Published by the David Rockefeller Center for Latin American Studies
Harvard University

ENERGY
OIL, GAS AND BEYOND

IN EVERY ISSUE

ONLINE

Look for more content online at revista.drclas.harvard.edu

ON THE COVER

Petrobras Oil Platform

Photo By Ricardo Stuckert/PR

(Agência Brasil [1]) [CC BY 3.0 br (http://creativecommons.org/licenses/by/3.0/br/deed.en)], via Wikimedia Commons

Peruvian Oil Production

Challenges and Opportunities BY ELEODORO MAYORGA ALBA

THE PETROLEUM SECTOR I KNOW BEST IS Peru's, where I recently served as Minister of Energy and Mines. Because of the recent drop in prices, oil-producing countries are starting to adjust their contracts and review the sector regulation in order to protect their investments. In Peru the necessary changes have not been made, and there's a risk production will continue to decline.

The need for adjustments extends far beyond a matter of investments though. It affects the possibility of accessing new technologies to protect the environment and of fair consultations with indigenous and other communities. And if low prices spur low production, the very existence of a pipeline to get oil to markets may be threatened.

In 2014, Peru was slowly starting to reverse its declining production, but the drop in oil prices has had a strong impact. The country had been producing some 200,000 barrels of oil daily in 1980, but the lack of investment and unsuccessful exploration investments had caused a decline. By 2013, Peru was producing only 63,000 barrels a day.

The exception in this downward spiral has been the development of natural gas deposits. Concentrated in the area of Camisea, gas has enabled Peru to enjoy secure, clean and low-cost energy since 2004.

Before the last trimester of 2014, everyone thought oil production would increase. Forecasts indicated that 2015 would end up with a production of 72,000 barrels daily and reach 150,000 by 2020. But now, plans to develop small deposits of petroleum discovered in the northern jungle region are being postponed.

Current production is 58,000 barrels daily—a block less than anticipated. And it's feared that the Northern Oil Pipeline may have to close because of a lack of crude oil. What has happened? What can be done to reverse a situation that will have a negative impact on Peru's balance of payments and future investments?

I'd like to focus here on oil production in the northern and central jungle areas, leaving aside other regions, including Camisea's gas production. And I'd like to propose some steps to avoid declining production and to allow profits (the difference between world price for crude oil production and total costs of local production) to keep on benefiting the country on the national and regional levels, as well as business.

Many oil-producing countries are responding to the drop in oil prices through changes in contracts, particularly those signed for the more risky investments. These measures include deadline extensions for the exploratory phase, reductions in discount rates and royalties, and accelerated depreciation. However, a counter cost to these changes would be compliance with increasingly strict environmental standards and with social policies to commit more resources to benefit the neighboring communities.

RESERVES IN THE NORTHERN AND CENTRAL JUNGLES

The northern and central jungle regions have a potential of likely reserves in relatively small fields of 20 to 30 million barrels. None of these reserves could alone sustain the construction of a new oil pipeline: the success of oil operations in this region depends on the continuity of service of the Northern Oil Pipeline.

Strategic allies need to elaborate a plan that will develop these oil fields so as to profit each operator, allowing production to increase in the short run and to maximize the recuperation and value of assets in the medium- and long-term.

IMPACTED PROJECTS

Perenco, a French company associated with PetroVietnam, has stopped work in blocks 67 and 39 until oil prices go up. Its production costs—including transportation on barges of an essential dissolvent from the Gulf of Mexico and the cost of moving its own oil production to the first station of the pipeline—do not permit it to continue operations until the price of oil approaches US$70 per barrel. Perenco had plans to produce up to 60,000 barrels daily, but now limits its production to 1,000 barrels a day, which is sent by river to the refinery in Manaus, Brazil.

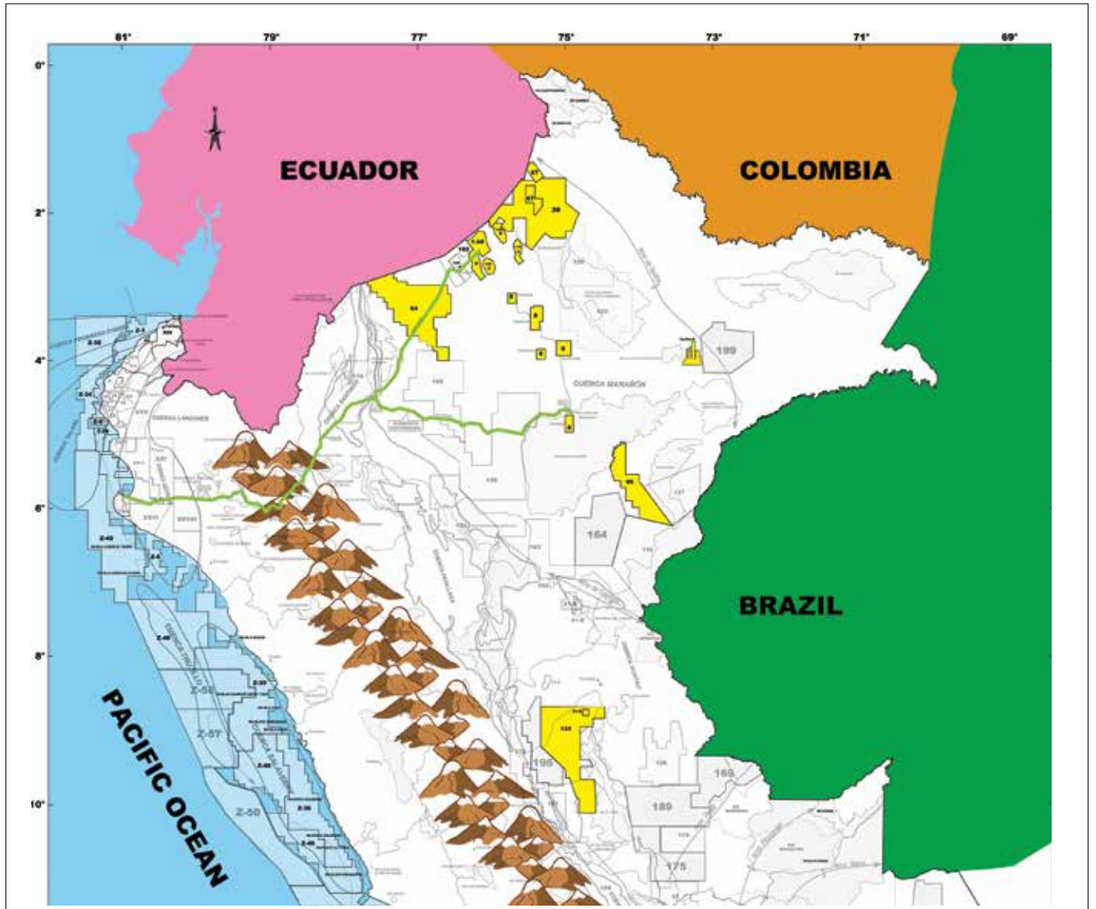
A Canadian company, Gran Tierra, has decided to sell its block 95 because of the fall in oil prices and disappointing explorations of a second well. In January 2014, the company estimated that the block had 61.5 million barrels of proven and probable reserves.

Another company affected by the drop in oil prices is CEPSA, a Spanish firm controlled by the International Petroleum Investment Company of Abu Dhabi. Together with the Canadian company Pacific Rubiales, which has 30% of the project, it operates block 131, which depends on the oil pipeline to get its production to the market. At the end of 2014, CEPSA began production in one well, and encouraging tests from it justified sinking two more wells. CEPSA has confirmed a small deposit capable of producing between 5,000 to 8,000 barrels daily. PETROPERU has been the major purchaser of this production. If the oil pipeline ceases to function, the production will have nowhere to go.

The Argentine firm PLUSPETROL has also experienced a severe drop in production. At the end of the 1990s, its block 8 was producing between 25 and 30,000 barrels a day; now—because of lack of investment and the intrusion of water—it only produces 8,500 barrels daily. Pluspetrol's block 1AB, now reconfigured as block 192, is currently under bid. Once it produced 100,000 barrels of oil daily; now it produces only 10,000. The accumulated production of oil for this block is 716 million barrels. Yet this block holds the country's greatest oil reserves. With its contract scheduled to end in August 2015, its production was evaluated for investment. Development of the proved reserves would increase production to 25,000 barrels daily in 2023, a figure that could be even greater if other reserves are discovered.

Even with low oil prices and the cost of importing the necessary dissolvent, this block provides royalties higher than 25%. Its potential encompasses proved developed reserves of 70 million barrels and an undeveloped potential of 90 million barrels, figures that justify a new 30-year concession. Oil wells with both heavy and light crude oil will permit the block to reach 28 million barrels a day by 2030. This scenario would include the development of the Chonta and Vivian reservoirs

Reserves	Proven and Probable Millions of Barrels
Block 1–AB	198
Block 8	68
Block 67	217
Block 64	55
Block 39	162
Block 95	62
Total>	**762**
source:Perupetro	chart by author



The map shows the placement of the oil blocks in Peru.

MAP BY ELEODORO MAYORGA ALBA

with exploration to determine if they hold sufficient amounts of light crude to compensate for the dissolvent imports.

For this all to work, the current bidding must be successfully concluded. However, a revision of the terms published by PERUPETRO, the oil regulatory agency, is worrisome:

• The deadline to present offers is quite short. The block has a number of fields in different areas, and a fairly complex infrastructure operating for years. Only those who have worked on this block (PLUSPETROL in particular) and have knowledge on the ground are in a position to present sensible offers; the rest of the companies might have to raise their offers.

• Another problem is the existence of payments for assets, as shown on the books. They are no longer realistic, given the low oil prices. Even if the price becomes effective after the second year and can be paid in installments, it still represents a significant burden in cash flow.

• Moreover, relations with the indigenous community have been fraught, and it has been difficult to implement the agreements made before the bidding process begins. The role of the Peruvian state in regards to PLUSPETROL, which has headed the operation for the last 30 years, and the ineffective way of their handling of agreements with the communities, can bring production stoppages and high costs for any company that starts up activities in this block.

• The option for a 25% participation of PETROPERU still up in the air, adds to the uncertainty. It would seem inconsistent for the board of directors to vote in the affirmative on a project with such environmental and economic challenges after turning down simpler and less risky projects. Anywhere else, the participation of the state would be welcome in order to facilitate the relations with the indigenous communities.

• The sequence of decisions that have to be made after a contract is signed doesn't leave time for research on how to improve the engineering practices for this block. To rate the offers only on the basis of who will provide the best royalties or the greatest number of wells leaves out consideration of the time and effort needed to research new technologies.

There is a risk of a further drop in production because of a delay in the bidding process or because the new operator does not have the necessary experience and needs more time to begin operations. In that case, production could go down to 8,000 to 9,000 barrels daily, creating a situation of very high tariffs and endangering the minimum production needed to operate the pipeline.

The operation of the pipeline depends on the volume transported and the tariffs charged. If the current formula is applied, there will be a significant increase in tariffs. The question is how to avoid the paralysis of the pipeline and how to increase production in line with the geological potential of the region.

RECOMMENDATIONS

a) The most pressing need is to maintain or if possible reduce the pipeline tariff, eliminating fixed costs such as depreciation and to reduce the discount rate from 12 to 6%, which ought to be the cost of the capital of PETROPERU. This measure would reduce the tariff during the current crisis period, but later there should be a period of recovery so as not to affect the economy of PETROPERU.

b) In the medium term, production must be increased through cooperation between all the companies involved. Otherwise each will face the problem of economies of scale in the costs of dissolvent and transportation. PERUPETRO, the government regulatory agency, should call up a working group that can coordinate realistic goals for oil production. As PETROPERU operates the pipeline and the Iquitos refinery, it should be part of this group independently of whether it participates in the operation of block 192.

c) I recommend contacting Petroamazonas, Ecuador's state oil company, which has signed new contracts to explore neighboring blocks of the border of Peru. The company must be approached because its production could generate the operating base needed by the pipeline.

d) CEPSA must receive incentives to elevate its production to 8,000 barrels daily to increase the amount of dissolvent available in the region.

e) The new operator of block 192 will play a crucial part in Peru's oil panorama. The bidding rules on this block should be revised because they will determine production in the near future. Combined with the drop in oil prices, a fall in oil production will generate a recession with high social costs for this region of the country.

Eleodoro Mayorga Alba *is the former Peruvian Minister of Energy and Mines; he is a petroleum engineer with a doctorate in economics, with more than 40 years of experience negotiating contracts and consulting with governments in the hydrocarbon sector. He can be reached at emayorgaalba@gmail.com*

Solar energy in high-altitude Arequipa, Peru, is captured through steel and other metal; opposite page: wind energy in Peru.

ALTERNATIVE ENERGY

ABOVE: PHOTO BY RENZO NUÑES/OJOS PROPIOS; OPPOSITE PAGE: DOUGLAS JUARES, OJOS PROPIOS