EUCERS Newsletter

Newsletter of the European Centre for Energy and Resource Security (EUCERS) **Issue 83, March/April 2019**

Introduction

Dear readers and friends of EUCERS,

It is my great pleasure to welcome you to this edition of the EUCERS newsletter. Due to the Easter holidays, we pooled the March and April issues. But do not worry: We will make up for it with a special issue during the summer, so you will receive the usual ten annual newsletters. As always, we present you with two articles concerning the topic of energy security.

In the first article, former EUCERS/KAS fellow Pablo Necoechea Porras updates us on energy transitions in Latin America.

The second article, written by Fernanda Delgado, a researcher at Brazil's Getulio Vargas Foundation, outlines the comeback of geopolitics in the global oil market.

We would like to invite you to the second EUCERS/KAS Energy Talk 2019 that will assess the future role of nuclear power in tackling climate change. A formal invitation will follow.

As always, please feel free to keep us informed about your research projects and findings as we look to remain at the forefront of new knowledge and innovative ideas.

Thank you for your interest in EUCERS and for being part of our community.

Yours faithfully,
Thomas Fröhlich
EUCERS Newsletter Editor

In this Month's Edition:

ARTICLES

Outlining the Energy Transition in Latin America and the Caribbean

By Pablo Necoechea Porras

This study analyzes regional energy transition with an overview of the main trends, differences within a framework of unequal distribution of energy resources, and an isolated strategy of diversification of Latin American and Caribbean (LAC) countries. This study analyzes two strategic LAC countries deeply involved in energy transition – Mexico and Brazil – considered key regional countries due to energy consumption, production, and CO2 emissions. The results confirm that a dynamic process of diversification in low-carbon energy transition strategies favors better conditions, as well as the necessity to explore regional geopolitical cooperation options to ensure an integrated regional framework of low-carbon energy transition.

There are vast amounts of energy sources in the region, which are irregularly distributed because many economies have large energy import rates. LAC countries had an annual GDP growth rate of 5.5% in 2007, which implied important challenges in regional energy. On the other hand, LAC countries had an annual GDP growth rate of 1.6% in 2017 (World Bank 2019). LAC economic growth last year was about 1.6%. However, LAC difficult economic situation could impede LAC growth. Data from World Bank estimates growth of about 2.1% by 2019, 2.4% by 2020 (Hunt, Freitas, and Pereira Jr., 2014). Those differences in annual growth have created mixed policy-making scenarios to secure regional energy security. Figure 1 shows LAC's historical performances in macro indicators terms and their projections for 2018 and 2019.

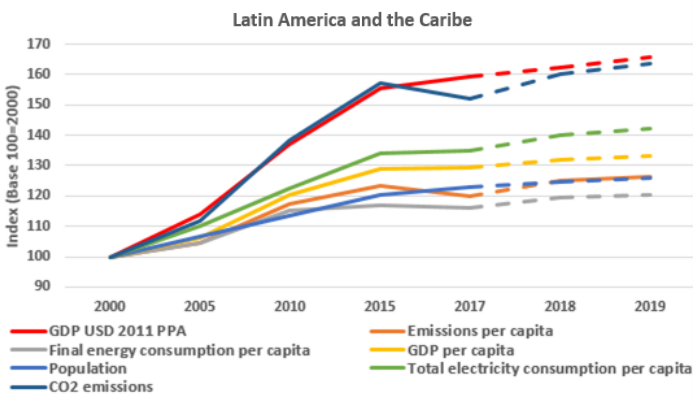
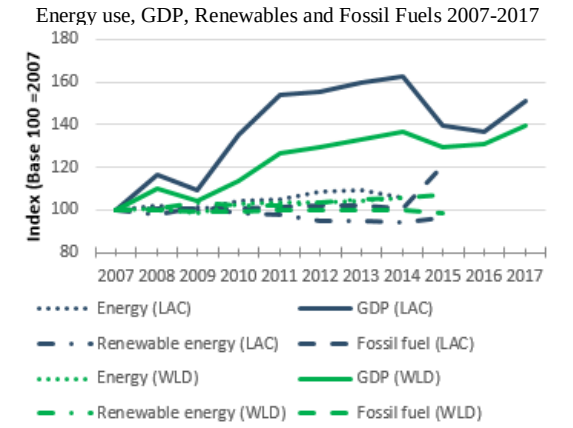


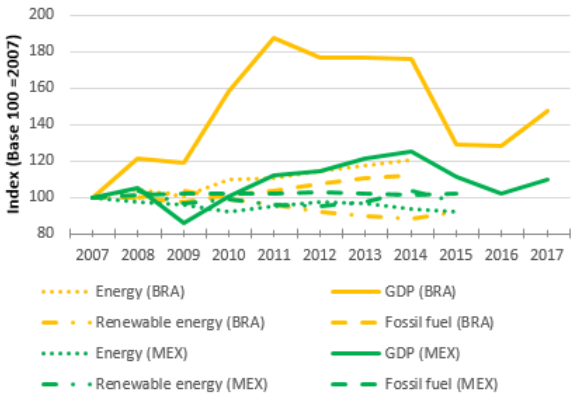
Figure 1. Source: World Development Indicators.

Pablo Necoechea Porras holds a B.A. in Business, a Master's in Competitiveness and Innovation (Deusto Business School), a Master's in Economics (U. Complutense de Madrid), and a Master's in Strategic Development (UPAEP University). He has worked in important consulting firms, and in different Mexican government levels managing sustainability and energy projects. He was one of the two 2016/2017 KAS/EUCERS fellows at King's College University. He is the current Sustainability Coordinator in Televisa, a Mexican multi-media company.

Energy is used to activate all kind of productive sectors. Historically, energy has had an economic growth function in LAC. Figures 1 and 2 show a positive correlation between energy and Gross Domestic Product (GDP). Figures show how both concepts have been correlated worldwide, as well as specifically in Brazil and Mexico.

The energy consumption trend is correlated with economic development. The more energy efficiency, the more economic growth as well as, the less energy consumption. This scenario could lead countries to a decarbonized economy trend.

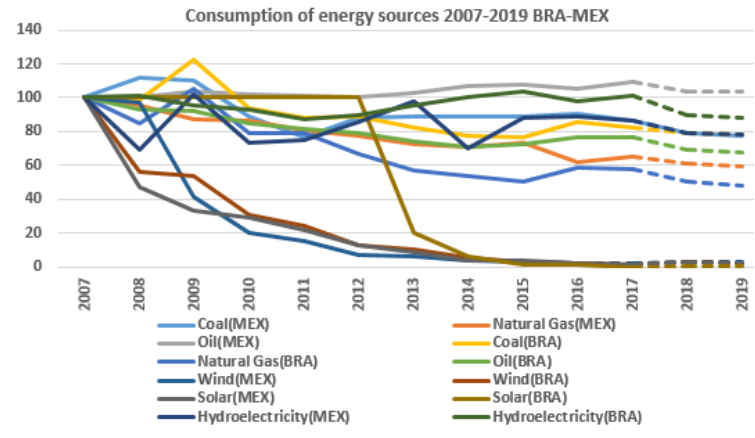


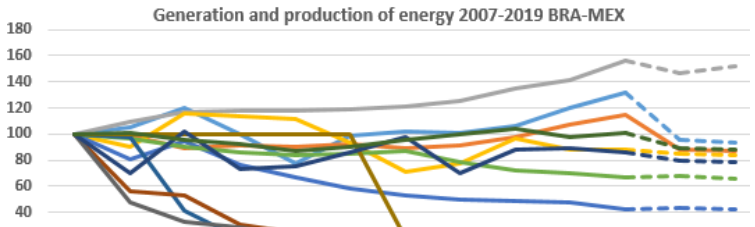


Figures 2 and 3. Source: World Development Indicators.

In LAC countries, the energy sector has been a core subject in countries' policy-making agendas. LAC countries have a historical dependency on fossil fuels. However, they are moving from heavy fossil fuels dependency to a decarbonized economy. Brazil is the biggest oil producer in Latin America and ranks as the third global in hydroelectricity generation. The country consumes 47% of oil in its energy mix. Hydro is the second energy source (29%) while coal and natural gas are decreasing (Morshed, F. 2018). Brazil aims to reduce at least 40% of its GHG emissions by 2030. To achieve those goals, Brazil has increased 52% of its no hydro renewable energy capacity versus 48% of hydro energy capacity. (Baldinho, A. 2019, February; personal interview).

Mexico has vast oil and gas reserves. However, Mexico historically has had an old and non-technological energy industry; the country's oil imports are almost the same amount as its exports. Since the Mexican energy reform in 2013, renewable energy opportunities have had the chance to be developed to reach its renewable energy goals (35% by 2024). Till 2011, Argentina performed as an important fossil fuels producer. However, the Kirchner-Fernandez governments affected its energy industry, and the country became a significant energy importer. Nowadays, Argentina depends on oil and gas (almost 87%), but the country aims to reduce its fossil fuel dependency to reach its renewable energy targets (20% of its electricity produced by renewable energy sources by 2025). Also, Chile has a strategic geographic location and the country aims to take advantage of its solar and wind energy sources to reduce fossil fuels consumption. Figures 4 and 5 show Brazil and Mexico historical energy sources consumption and energy generation and production of and their projections for 2018 and 2019.





Figures 4 and 5. Source: BP Statistical Review of World Energy.

Energy transition in Brazil and Mexico

Brazil already has the vast majority of its electric energy supplied by hydroelectric plants. Brazil has been increasing renewable energy investments and energy efficiency to have the potential to achieve environmental targets agreed at COP21 and to continuing its energy transition agenda. However, social and political movements have delayed its transition agenda.

Historically, Brazil had an oil monopoly through Petróleo Basoreleiro S.A. (Petrobras). In 1997, the government launched a new regulatory industry framework. The Petroleum Investment Law liberated oil production. The new framework increased natural gas consumption, sectoral competition, and investments. With the reform, the government maintained important energy facilities' management and the control of certain energy products' prices. However, oil and gas exploration and subsidies decreased. Nowadays, government policies are centered on energy efficiencies and renewable energy usage to meet the rising need for fuel and electricity. Hydropower is the first source of electricity while biomass (ethanol petrol blend) has contributed to energy security, especially for the transport sector.

Mexico started a significant energy reform, ending the state-monopoly of both state companies Petroleos Mexicanos, its oil and gas state company (Pemex), and Comisión Federal de Electricidad (CFE), which is the electric state company. The energy reform ended Pemex's 77-year energy production monopoly, and many private companies since have gained contracts in bid rounds that will bring an estimated $59 billion in investment (Daniel, R, 2018). The country is seeking investors and private companies, and training the country's labor force to meet the rising energy demand. Gas use is increasing remarkably with the interconnection of pipelines. The reform also aims to attract investments to increase energy renewable production and

consumption, to reach the Country's environmental commitments.

Mexico's energy mix is to oil-dependent, where oil products still account for over half of the total primary energy demand. Nevertheless, climate change and environment policies are nowadays part of the government agenda. Mexico was one of the first Countries to submit commitments into the Paris Agreement. The Country realized its potential for solar and wind energy. Since 2013, the country has been implementing an energy reform that could potentially transition to a decarbonized economy. However, the United States' natural gas imports have discouraged energy renewables investments.

LAC has an important challenge. 2018, was a pivotal year for energy in LAC, as the region's top oil producers had presidential elections, which could represent changes in energy policy. Recent countries such as Brazil and Mexico, which are pursuing market-oriented energy reforms, have increased investment pledges. Both landscapes create remarkable uncertainty for companies and investors in the oil and other economic sectors.

Conclusion

LAC countries have a historical dependency on fossil fuels, and the region is still an important fossil fuel consumer, producer, and exporter. However, LAC countries are moving from heavy fossil fuels dependency to a decarbonized economy. Some LAC countries have been experiencing energy transition due to their large energy renewables potential such as hydroelectric, wind and solar power.

The energy matrix of LAC compares favorably with other regions of the world. Hydropower has become the most widely used source of renewable energy in the region, although it has been losing importance due to dry seasons suffered in certain regions. Renewable solar and wind energy sources have been growing recently because of technological innovations, regulatory changes, and their competition in average costs per MWh.

With 2018 elections, LAC faces new energy policy challenges. However, instead of taking divisive positions on energy policy the governments should seek now to build consensus and trans-sectoral collaborations to maximize productivity that could deliver revenues for the government or prepare for diminished economic returns from the energy sector.

It is essential to implement actions to increase energy efficiency by improving supply to promote economic development in Latin American Countries and to reduce energy consumption and pollutants emissions into the atmosphere. It is essential to diversify the energy matrix by expanding the adoption of renewable energies and clean technologies, as well as designing environmental strategies to take into account the positive externalities for other economic sectors.

Sources

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The international oil market: back to fundamental geopolitics

By Fernanda Delgado

Fernanda Delgado holds a PhD in Energetic Planning, with an emphasis on petroleum geopolitics, and Master's degrees in Management Engineering and in International Finance. She published several books on Petropolitics, and is an affiliated professor of Oil Geopolitics in the Brazilian Navy Officers University. Fernanda furthermore gained professional experience in Brazil and abroad at companies such as Deloitte, Vale S.A., the Gama Filho University, Royal Shipping Services and Dickinson Maritime Agency.

After a period in which market fundamentals drove oil price dynamics, geopolitical aspects of supply are back to determining prices. Differently from before, when supply and demand balancing was a result of oil behaving plainly as a commodity, the current scenario suggests that geopolitical constraints would strongly influence oil prices in a return to geopolitics fundamentals. In such context, OPEC (and now OPEC+, that means OPEC members plus Russia) regains its discretionary power over the oil market. The Middle East is on the epicenter of this risk market imbalance. Nevertheless, Venezuela also contributes greatly, as its oil industry needs investments, and the country's economic collapse and volatile political situation has led to a fast decline in production. This article will summarize the consequences for each oil actor on this new price dynamics. For some countries, with more than 50 year of oil production ahead, modest prices are better in order not incentivize energetic alternatives to crude oil. For other countries, with smaller reserves and less production years ahead, the best strategy could be to speed up oil production in order to advance cash flow.

In the Middle East, Iran was again affected by US policies towards the country and the consequence was the removal of one million barrels of oil from daily international offering. The decision to regulate Iran's nuclear activities changed the focus of the oil market from economic fundamentals of supply and demand to geopolitics. At first, there is an understandable uncertainty about its potential impact on Iran's oil exports, which currently hovers around 2.4 million barrels per day. Currently, other producers such as Venezuela or Mexico are not able to increase production in the short term. Hence, low prices could not come at a worse time for Iran, whose economy is extremely dependent on oil exports. Low oil prices would add an even greater strain on a government that is struggling to pacify a citizenry frustrated with the rising cost of living and gradual elimination of subsidies in exchange for ever more defense spending (XANDER SNYDER, 2019).

In the case of Saudi Arabia, the country has been seeking economic, religious and social reforms, which has led the kingdom to consistently reduce Iranian influence with the support of the United States. Saudi Arabia is trying to save itself essentially by reproducing the strategy implemented in 2014: cut production enough to drive some American shale producers out of business, then raise production again. In December 2018, OPEC+ agreed to cut oil production by 1.2 million barrels a day (800,000 barrels a day of which came from OPEC), and on January a Saudi Aramco representative claimed that OPEC may cut even more (over one million barrels per day in total) by the end of the month (XANDER SNYDER, 2019). Besides that, Saudi Arabia's production cuts also aim at increasing prices in the international market with a focus on Saudi Aramco's IPO. Important to mention is that Saudi Arabia is highly dependent on oil exports, which account for approximately 25% of its Gross Domestic Product (GDP). However, of the 12 million barrels a day of oil produced in 2017, they consumed nearly four million barrels a day, which means that the oil industry accounted for an even larger portion of its economy.

Still, on the supply side in Venezuela, the decline in oil production is accelerating. By the middle of 2019, production may fall by hundreds of thousands of barrels per day. IEA data (2018) showed that Venezuelan output is 550,000 barrels per day lower than its target under the Vienna Accord, and that this deficit is more than Saudi Arabia's total commitment. The potential double supply deficiency represented by Iran and Venezuela could present a big challenge for producers that want to avoid sharp increases in prices and fill the vacuum. As mentioned, sanctions imposed in January by the US government will exacerbate oil production decline. Under these sanctions, PDVSA was listed as a Specially Designated National, meaning US citizens are generally prohibited from dealing with it. However, any payment must be processed into an escrow account that can only be accessed by a new government. Export of diluents to PDVSA is expressly prohibited. Venezuelan oil exports to the US have already dropped by more than two thirds from

a pre-sanctions average of 500,000 barrels a day and will likely stop altogether once pre-paid shipments reach US refiners. Crude exports to the United States account for about 75% of the cash Venezuela receives for crude shipments. Venezuela has found buyers in India and Europe — at a significant discount due to higher transport costs — but many vessels are reportedly docked at the country's ports for lack of buyers. Venezuela is also struggling to find alternative suppliers for diluents, which are needed for blending its extra heavy crude before it is produced and transported.

Figure 1: Change in total oil supply, 2018-2024 in m bbl/d

Source: EIA, 2019

As a result of the higher declines in Venezuela and the lower performance in Africa, as well as the artificial shortage created by production cuts, OPEC's gross output decreased from 130,000 barrels per day in 2018 to 31.65 million barrels per day in the end of 2018, as seen in the figure. Additionally, OPEC cut its forecasts for world oil demand in 2019 due to slowing economic activity and expectations of faster supply growth, underscoring the challenge of avoiding a surplus as it initiates new production cuts. In a monthly report (February 2019), the Organization lowered its forecast for economic growth in 2019 and said demand for its oil would fall to 30.59 million barrels per day, 240,000 barrels a day less than forecasted in 2018.

Global oil supplies remained stable at about 98 million barrels per day. Strong performance of non-OPEC members, that increased by 1.87 million barrels per day in 2018, offset lower OPEC output. Such growth was mainly driven by the US, that increased global supply by 1.78 million barrels per day compared to 2017. However, the crisis in Venezuela and the overall shortages in global oil markets could open space for other non-OPEC actors. Latin American countries would emerge as strong exporters for the United States.

The crisis in Venezuela and overall shortages in global oil markets could open a space for non-OPEC Latin American countries to export to the United States. Mexico will see some additional production from fields awarded under the previous government. New oil producer Guyana will start commercial production next year, likely ramping up to 700,000 barrels per day. Colombia may eventually see an increase in production from offshore and unconventionals. The government recently signed its first offshore contract in decades with state oil company Ecopetrol and created a commission to evaluate the possibility of fracking in the country. Brazil's Petrobras is planning to bring 13 offshore production units online in the next four years to develop pre-salt reserves. This, alongside new production from IOCs, means that the Brazilian oil sector regulator (ANP) expects Brazil's output to climb to 4.5 million bpd by 2025.

Based on the geopolitical evidence and understanding that the Saudi state-owned IPO should only happen in 2020, evidence leads to the conclusion that the new price level should remain stable. In the short term, an even greater downturn in the world's stock markets is expected, corroborating with the current pricing scale up environment. Nevertheless, the expectation for 2019 is production growth and global demand deceleration even if geopolitical risks remain, as well as OPEC+ production cuts.

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ANNOUNCEMENTS

Invitation to the 2nd EUCERS/KAS Energy Talk 2019

Pathways to Climate Security II - A nuclear dawn? The future role of nuclear power in tackling climate change

13 June 2019, 14:00-16:00 followed by a reception
♦ King's College London ♦
Strand Campus ♦ WC2R 2LS

Dear EUCERS members,

We would like to cordially invite you to the second instalment of 2019's EUCERS/KAS Energy Talk Series. It will take place on June 13, 2019 from 14-16:00 at King's College London Strand Campus and will be followed by a reception.

Please register by filling your name and affiliation under the following link
https://tinyurl.com/EUCERS-Talk-2-2019
to attend by 10 June 2019.

This panel discussion will assess the future role of nuclear energy in mitigating climate change.

The provisional programme is as follows:

14:00 Welcome Address and Introduction
Professor Dr Friedbert Pflüger, Director, EUCERS, King's College London (confirmed)
Mr. Felix Dane, Director UK & Ireland, Konrad Adenauer Foundation (confirmed)

Keynote address
-Ms. Agneta Rising, Director General, World Nuclear Association (tbc) Impulse statements
-Dr. Mikhail Baryshnikov, Head of Innovation, TENEX (confirmed) -Representative, UK Nuclear Decommissioning Authority (tbc)
-Representative, TÜV Nord (tbc)
-Dr. Frank Umbach, Research Director, EUCERS, King's College London (confirmed)

15:00 Discussion
16:00 Reception

Documentation of the 1st EUCERS/KAS Energy Talk 2019: Pathways to Climate Security I - Renewables and Decarbonisation.

On 1 April 2019, the first EUCERS/KAS Energy Talk of the year took place at King's College London. The participants discussed the impact of renewables on global decarbonisation strategies.

The recording of the event can now be found online:
https://soundcloud.com/warstudies/event-pathways-to-climate-security-i
and a full event documentation can be found on the website of the Konrad Adenauer Foundation UK:
https://www.kas.de/web/grossbritannien/veranstaltungen/detail/-/content/der-einfluss-erneuerbarer-energien-auf-globale-dekarbonisierungsbemuehungen-1--eucers-kas-energy-tal

Simon Chin-Yee's report on Climate Change and human security can be found here:
https://www.kcl.ac.uk/sspp/departments/warstudies/research/groups/eucers/pubs/k-ws-climatechangehumansecurity-eucers-paper18-web.pdf

EUCERS ON THE ROAD

15.04.2019 Islamabad, Pakistan	Frank gave a presentation on "Energy Efficiency and the Electricity Sector" presented at the UNIDO Workshop 'Towards Sustainable and Greener Pakistan – Promoting Energy Efficiency and Conservation for Future', UN Industrial Development Organization (UNIDO)
11.04.2019 Brussels, Belgium	Friedbert spoke on "The fight for EU energy security" at a Politico Europe event in Brussels.
3.-5.04.2019 Warsaw, Poland	Frank gave the second part of his annual seminar on "EU Energy (Foreign) Policies at the EU-College at Natolin.
28.03.2019 Warsaw, Poland	Frank was a speaker at the panel discussion on "Towards Energy (In-) Security: Pragmatic Energy Policy and the Politicization of Energy in the Eastern Partnership" at the College of Europe-International Conference "The Eastern Partnership 10 Years after the Prague Summit: In Search of New Momentum – 10 Years of Eastern Partnership".
27.-29.03.2019 Warsaw, Poland	Frank gave the first part of his annual seminar on "EU Energy (Foreign) Policies at the EU-College at Natolin."
15.03.2019 Berlin, Germany	Friedbert co-hosted and moderated an event together with the World Energy Council-Global Gas Center titled "The role of natural gas and its interaction with renewables".
11.03.2019 Kuwait	Frank gave a presentation on "Regional Energy Security Developments and Challenges" at the joint NATO-Kuwait "Critical Energy Infrastructure Protection & Resilience Course", NATO-ICI Regional Centre
11.03.2019 Kuwait	Frank gave a presentation on "Global Energy Security Developments" at the joint NATO-Kuwait "Critical Energy Infrastructure Protection & Resilience Course", NATO-ICI Regional Centre.

PUBLICATIONS

Umbach, Frank "New Prospects for EU-LNG Imports from the U.S. and other Global LNG Suppliers", in: Central Europe Energy Partners (CEEP)-Report, No.1 (56) 2019, 1.Q., pp. 8-9 (https://gallery.mailchimp.com/d38a92aba449c750209f1f37f/files/32d8179b-eb69-487f-98aa-90c75b7982c5/CEEP_REPORT_Q1_2019.pdf).

— "The Future of LNG in Europe", Geopolitical Intelligence Service (GIS), 18 March 2019, 9 pp. (https://www.gisreportsonline.com/the-future-of-lng-for-europe,energy,2829.html).— "Energy Security in the Digital Age and its Geopolitical Implications for Asia", Panorama 2/2018 (ed. by Konrad-Adenauer-Foundation/KAS, Singapore), pp. 137-149.

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