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# IAEE Energy Forum

Second Quarter 2017

International Association for Energy Economics



## President's Message

Dear fellow members of IAEE,



**W**hen we look at the determinants of economic growth, we find that natural resource-rich economies have an additional source of growth, but it is not always well exploited, and what is worse, often ends up becoming a curse rather than a blessing. And, it is astonishing to see how often countries with abundant natural resources, in oil or other extractive resources, have failed to grow faster than countries that have none. The abundance of these resources often leads to conflict, corruption and poverty. Sadly, countries with abundant oil resources are twice as likely to experience civil war as those without it. This trap is called the curse of natural resources, and history has many examples of economies whose wealth in natural resources led to less economic success. For example, Venezuela, the country with the largest oil reserves in the world, is facing a deep economic and political crisis. Transparency International ranks it one of the ten most corrupt economies, and the World Bank's *Doing Business* report ranks it as one of the three countries with the worst business environment.

Too often developing countries with abundant energy resources, such as oil and gas, face multiple problems transforming those resources into wealth. For example, and first, in these economies it frequently occurs that the rents and revenues from these resources are squandered, captured and misappropriated by officials or interest groups, public or private, and that ultimately, they do not benefit its population and future generations. Second, it is common to see problems on the definition of property rights and the rule of law, on the design of contracts, and on the granting of licenses and concession, which do not provide adequate assurances for foreign investors. Third, there exist the risks linked to the fiscal and economic direction of the country, which could be exposed to the volatility of prices of natural resources in world markets, especially if the income associated with the exploitation of these resources is a large fraction of the country GDP or of the government budget. And, in a period of price bonanza, such as high oil prices, that comes with a large inflow of foreign currency, the country might suffer from the Dutch disease; or regard to the criteria by which rents are saved or used, sometimes as foregone rents in the way of wide spread energy and other subsidies, and the impact on fiscal and monetary policy, in the short and long term. Furthermore, in the developing world there is a lack of energy and electricity infrastructure. Today 1.2 billion people lack access to electricity and 2.8 billion lack access to modern cooking facilities. These economies are in deep need for a proper institutional, regulatory and business framework to enable the required private investments.

For many decades, the U.S. was the largest energy consumer, accounting for 35% of

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Editor: David L. Williams

**President's Message** (continued from page 1)

world primary energy consumption in the early 1960s Today it accounts for 17.5%, having recently been surpassed by China with 23% of world primary energy demand. Albeit, in oil and gas, the U.S. remains as the largest world consumer with almost 20% of oil and 23% of natural gas, and third in coal, with 10%. Today China has emerged as the largest energy consumer. It has rapidly augmented its market share in oil, reaching 13% in 2015, up from 3.5% in 1990, and by far leads world consumption in coal, accounting for 50% of world consumption, seconded by India with 11%. On CO<sub>2</sub> emissions, the U.S. accounts for 16.4% of world total, second after China who accounts for 27.3% of total CO<sub>2</sub> emissions.

While the U.S. economy has long been a net energy importer, particularly in oil and natural gas, the shale revolution has begun to turn that upside down. Today, the U.S. has reduced its energy dependency; imported oil accounted for 67% of total U.S. oil consumption in the 2000 decade; in 2015 it accounted for 34.5%. This has been due in part to a reduction in domestic consumption, but also to an increase in local oil production thanks to new technologies which have unleashed important oil and gas resources that were not accessible two decades ago. These have also enabled the country to export increasing amounts of oil and natural gas. Expectations are that by the end of this decade, the U.S. will become a net exporter of natural gas. That was unforeseen a decade ago, when the country's need for crude oil was soaring while its production was falling.

The U.S. has been and will be, for years to come, an important player in world energy markets. This is because of its share in total world energy consumption and production, the key role that energy has in the functioning of its economy, and since the country's dependency on foreign energy sources, often from regions that are politically unstable and exposed to war and conflict. U.S. energy policy and technology has had high leverage in world energy markets, on oil rich locations that often see in the U.S. a reliable business opportunity to sell their products in a stable market, enabling investments that have the potential of improving the living conditions of their population; or, by bringing innovations which uncap energy sources, in FF as well as renewables; and, more recently, for energy importing countries, by increasing world energy security by increasing the supply of FF, in oil and natural gas, and other energy sources. For example, exports from the Sabine Pass liquefaction plant have reached locations as far from the U.S. as Asia. U.S. energy policy also has served as an example of what to do, and sometimes of what not to do, providing examples of successful business models, diverse regulations and industry standards..

**NEWSLETTER  
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**IAEE Mission Statement**

The International Association for Energy Economics is an independent, non-profit, global membership organisation for business, government, academic and other professionals concerned with energy and related issues in the international community. We advance the knowledge, understanding and application of economics across all aspects of energy and foster communication amongst energy concerned professionals.

We facilitate:

- Worldwide information flow and exchange of ideas on energy issues
- High quality research
- Development and education of students and energy professionals

We accomplish this through:

- Providing leading edge publications and electronic media
- Organizing international and regional conferences
- Building networks of energy concerned professionals

With a new administration in the U.S. Federal government, we have a great opportunity with our newsletter to learn from the ideas and work of our fellows, and to look at U.S. energy policy, and what to expect for the coming years: What will happen in the U.S., energy markets, technology, environmental regulation, and leaderships? What are the expected changes in energy regulation, on tax and trade policy, as well as on energy efficiency, on fuel efficiency standards and environmental regulation? What about the ease of energy infrastructure deployment on the access to fossil fuels and renewables, and on the competitiveness of the U.S. economy and its different industries? And what are the likely impacts elsewhere and the responses to changes in the U.S. energy and environmental policy.

We optimistic that material in this issue of The Energy Forum is in the interest of our broad international audience, and we deeply thank the contributions from our fellow members, as well as your engagement within our different services and activities with IAEE and its affiliates.

**Ricardo Raineri Bernain**



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## Editor's Notes

**E**nergy policy in the new U.S. Administration is a popular topic. The response to our call for articles on the subject has been quite rewarding and we're most appreciative. As a result we'll continue the topic in the next (third quarter) issue and if what you read here strikes a responsive cord and you'd like to add your thoughts, please do so. In the meantime, be thinking about the theme "*renewables and conventional energy resources: challenges, opportunities, complementarities, rivalries and game changers*". We'll tackle that next, most likely in the fourth quarter issue.

**Ben Schlesinger** writes that energy policy under the Trump Administration is beginning to resemble a stable extension of past policies, with a more production-oriented but still "all of the above" approach. His article takes its signals from a reading of new energy-related cabinet members and recent oil pipeline approvals, and it reviews emerging technological barriers the new Administration is likely to face in trying to resuscitate coal.

**Jeff Lane, Jennifer Morrissey** and **Andrew Shaw** explore the potential role for states to drive national energy policy in light of the Trump Administration's efforts to roll back regulations affecting the U.S. energy sector. With no comprehensive national energy policy enacted by Congress in over a decade, states have already begun to take initiatives to fill the void. Now with federal regulations expected to be scaled back significantly over the next few years, states will have an even larger role.

**Jared Anderson** notes that the energy industry - oil & gas sector in particular - is excited about the energy regulation roll back currently underway. But the lack of clarity regarding long-term energy policy goals and impacts leaves energy business leaders cautiously optimistic about the regulatory changes to emerge over the next four years.

**Douglas Reynolds** considers three alternative U.S. energy policies regarding oil and electric utilities. He suggests keeping oil supply options open such as in Alaska's Arctic, but also considers a gasoline tax and deregulating transportation markets. Another alternative policy for electric utilities includes a stock-option like incentive mechanism for utility managers.

**Tom Russo** and **Kelly Schaeffer** note that the U.S. Army Corps of Engineers could play a lead role in increasing non-federal hydropower at its dams. Legislation and a Corps-FERC Memorandum of Understanding could facilitate this. However, the Corps' inexperience in reviewing FERC hydropower project proposals are impediments. The Trump Administration may incent the Corps and FERC to implement a program.

**Ben Wealer, Victoria Czempinski, Christian von Hirschhausen** and **Sebastian Wegel** discuss nuclear power, noting that it is about to lose its short-term competitiveness, with 16GW of capacity already closed or likely to be closed in the near future. Sustainable organizational models are needed to contain decommissioning costs. The biggest challenge is nuclear waste, both with respect to financing and siting long-term and intermediate storage.

**Mamdouh Salameh** argues that even if Donald Trump's campaign promises were to be fulfilled, their impact on the global oil market and the price of oil would be limited.

**Daniel C Mussatti** explores how one might craft a national energy policy by recognizing the shortfalls of previous energy policies that refused to incorporate the inevitable forces of economic behavior.

**Marc H. Vatter** and **Daniel F. Suurkask** estimate effects relevant to a possible shift in U.S. trade policy on electric loads in Mexico. They conclude that, if a shift in trade policy toward Mexico is seen as a realistic possibility, it would be worthwhile to analyze its impact on loads, especially energy loads, in scenarios.

**Parag Nathaney** and **Rachel Finan** note that though the recent presidential transition has altered the priorities concerning the energy industry, the trend toward utility grid modernization is one domain of the industry that may remain largely on course, potentially even accelerating under new federal policy shifts and recent FERC directives.

**Austin Zwick** illustrates how fracking is a regional employment magnet for those workers willing to commute by "drive-in, drive-out" from nearby states.

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