

# IAEE Energy Forum

First Quarter 2016

International Association for Energy Economics



## CONTENTS

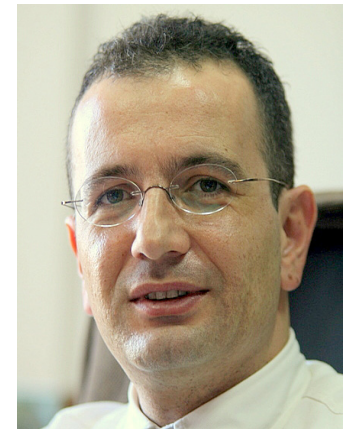
- 1 President's Message
- 7 Robbing Peter to pay Paul?  
The Case of Ontario's  
Privatization of Hydro One
- 13 Creating a Peer Relationship  
for Electric Generation
- 17 Economic Development  
Rates: Public Service  
or Piracy?
- 21 Techno-economic  
Evaluation of Fossil Fuel  
Electric Power Plants
- 25 Renewable Energy and  
Wholesale Electricity  
Price Variability
- 27 Electricity Market Reform  
in Sub-Saharan Africa and  
the Power Africa Initiative:  
The Nigerian Case
- 35 The Role of Transmission  
and Energy Storage for  
Integrating Large Shares  
of Renewables in Europe
- 37 Electricity Transmission  
Reliability Management
- 43 Calendar

Editor: David L. Williams

## President's Message

Dear fellow members of IAEE,

It is such a great pleasure and honour to lead this organization. Our organization has grown to 4237 members, a growth of 13% over the last five years. The family atmosphere of our Association is resulting from the rich social functions of our conferences and our next one is the 5th IAEE Asian Conference to be held on 14-17 February in Perth, Western Australia. I would like to thank past president Peter Hartley for the development of the Perth conference and for his excellent leadership. After Perth, we'll have the 9th NAAE/IAEE Conference on 24-26 April in Abuja, Nigeria, the 39th IAEE International Conference on 19-22 June in Bergen, Norway, and the 34th USAEE/IAEE Conference on 23-26 October in Tulsa, OK, USA. In addition to our standard set of international conferences, we're starting a new regional conference this year. The 1st IAEE Eurasian Conference will be held on 28-31 August in Baku, Azerbaijan. Please make sure that you attend at least one of our conferences this year. This is very important not only professionally but also socially for our organizational bonds to stick together. I am personally also engaged with business-and policy-oriented conferences on emerging issues of which I encourage you to become involved. The first one coming up elaborates on the new energy and business potential emerging in Iran after the embargo. Organized in collaboration with the Turkish Association for Energy Economics and the IRAEE, it will be held in January in Antalya, Turkey. The second one will elaborate on smart approaches in energy policy and on Slovenia's Energy Policy Manifesto. It will be held in March in Ljubljana, Slovenia. These conferences are organized under the umbrella of CECE, for more on which I invite you to visit the website [www.cuttingedgeconferences.com](http://www.cuttingedgeconferences.com).



We developed a number of strategic initiatives last year and are investing in the future of IAEE. Technology advances, so does our need to engage electronically with all of our members across the globe. Accordingly, we have developed our new website and will begin to carry electronic advertisements as well - if you are interested in advertising, please reach out to our Executive Director David Williams ([iaee@iaee.org](mailto:iaee@iaee.org)). Our Energy Data Links project is progressing very well - see our website on this at <http://www.iaee.org/en/EnergyDataLinks/>

Last year we established a new Affiliate in Slovenia. New affiliates now growing in Portugal, Greece and Ghana will be established very soon. IAEE hopes to foster the development of Affiliates in Croatia, Azerbaijan and Indonesia in 2016. If you are interested in developing an Affiliate in your location, please let us know.

Affiliates, if you desire an IAEE speaker to come to your meetings, please reach out to us. We have developed a Distinguished Lecturers Series - see website at <http://www.iaee.org/en/resources/dls.aspx>

As mentioned previously, the 1st IAEE Eurasian Conference will be held in Baku in August.  
(continued on page 2)

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

This will focus on energy economics emerging from the Caspian region. We are giving special importance to this new conference which is intended to be continued every other year. The plenary program covers the topics “Oil & Gas Price Dynamics and Expectations”, “Regional Energy Security”, “Regional Strategies to Alternative and Renewable Energy”, and “Unlocking Caspian Energy Potential”. An attractive technical program including oil & gas offshore platform tours and rich social activities await you in the city of winds, land of mud volcanoes. Come to beautiful Baku – it’s a “must not miss” event.

A new service we started last year is the IAEE summer school. We had the first IAEE summer school in Istanbul and the second one in Harbin China. Both were most successful and we plan for IAEE summer schools in Istanbul and Bergen this year, and hope to have another one in China again. Make sure you register early enough as there is very high demand for our summer schools and capacity is limited.

I want to hear from you. IAEE is your organization and we actively work to develop the products and services that serve your needs. Please reach out to me ([gurkank@boun.edu.tr](mailto:gurkank@boun.edu.tr)) with your ideas and suggestions on how to better serve our member needs.

Finally, I would like to express my sincere thanks to all IAEE members for the vote of confidence that I lead the organization. It’s an exciting time for IAEE and you will want to engage with our members, conferences and our products & services.

**Gürkan Kumbaroğlu**

## NEWSLETTER DISCLAIMER

*IAEE is a 501(c)(6) corporation and neither takes any position on any political issue nor endorses any candidates, parties, or public policy proposals. IAEE officers, staff, and members may not represent that any policy position is supported by the IAEE nor claim to represent the IAEE in advocating any political objective. However, issues involving energy policy inherently involve questions of energy economics. Economic analysis of energy topics provides critical input to energy policy decisions. IAEE encourages its members to consider and explore the policy implications of their work as a means of maximizing the value of their work. IAEE is therefore pleased to offer its members a neutral and wholly non-partisan forum in its conferences and web-sites for its members to analyze such policy implications and to engage in dialogue about them, including advocacy by members of certain policies or positions, provided that such members do so with full respect of IAEE's need to maintain its own strict political neutrality. Any policy endorsed or advocated in any IAEE conference, document, publication, or web-site posting should therefore be understood to be the position of its individual author or authors, and not that of the IAEE nor its members as a group. Authors are requested to include in an speech or writing advocating a policy position a statement that it represents the author's own views and not necessarily those of the IAEE or any other members. Any member who willfully violates IAEE's political neutrality may be censured or removed from membership.*



INTERNATIONAL  
ASSOCIATION *for*  
ENERGY ECONOMICS

## 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

## Editor's Notes

The response to our call for articles on the electricity market has been very gratifying. Indeed, the response was such that we'll be continuing the subject in the next issue. In the meantime, read on.

[Peter Walsh](#) and [David Freeman](#) write that in November of last year, the Province of Ontario, Canada sold 15% of Hydro One, the publicly-owned electricity distribution and transmission utility, in order to generate funds for infrastructure projects. The sale marked the first step in the eventual disposition of 60% of the utility. They present a financial evaluation of Hydro One which suggests the sale may have been underpriced and that perhaps an alternative source of infrastructure funding would have been a more reasonable solution

[Mark Lively](#) explains that many large consumers of electricity find it expedient to generate their own electricity instead of buying from the local electric utility. The hesitancy associated with long term contracts can be alleviated by pricing unscheduled deliveries using WOLF, a Walrasian tâtonnement for electricity, with prices changing at least every minute.

[John Wolfram](#) notes that utilities use *Economic Development Rates* to provide discounts to large firms to promote business attraction, expansion and retention. But do these rates really provide a public service, or do they create interclass subsidies? He describes how these rate structures can effectively support regional economic development when implemented properly.

[Hari C. Mantripragada](#) writes that a systems-wide techno-economic evaluation of a power plant is needed for making key decisions. He provides a broad overview of the factors affecting the performance and cost of a power plant, followed by illustrative case studies. The article uses the Integrated Environmental Control Model (IECM), a power plant modeling software tool developed at Carnegie Mellon University.

[Eric Johnson](#) and [Matthew Oliver](#) note that policies that encourage renewable energy development often seek to reduce electricity price risk for renewable energy investors. They show why renewables may actually reduce short-run price variability and, therefore, risk.

[Gbadebo A. Oladosu](#) reviews electricity sector reforms in Nigeria as an archetype for Sub-Saharan Africa. He highlights the requirements for success, and the crucial role of initiatives such as Power Africa.

[Christian Skar](#), [Ruud Egging](#) and [Asgeir Tomasgard](#) discuss a model based analysis of the need for energy storage in a European power system with high shares of renewable energy for several scenarios with varying degree of transmission system reinforcements. In scenarios with high levels of transmission system investments the need for new energy storage capacity is found to be limited. The importance of energy storage is shown to increase substantially if the transmission system is not significantly developed.

[Marten Ovaere](#) posits that Network operators have been managing reliability of the power system using the deterministic N-1 reliability criterion. Increasing uncertainty due to renewable generation, combined with advances in communication and information technologies, induce network operators to introduce probabilistic methods in power system management. These methods incorporate probabilities and consequences of contingencies.

Finally, we're pleased to introduce a new format and style to the *Energy Forum*. This is a work in progress and over the next several issues we'll be bringing on a few more changes. We hope you'll like it.

DLW

With your smart device,  
visit IAEE at:



International  
Association  
for Energy  
Economics