

**THE 5<sup>TH</sup> MULTINATIONAL ENERGY AND VALUE CONFERENCE**

**May 7-9, 2015, Istanbul, TURKEY**

<http://www.centerforenergyandvalue.org/conf2015/>

**Organized by:**



*Center for Energy and Value Issues (CEVI)*

*Amsterdam, Netherlands*



*Kadir Has University,*

*Istanbul, Turkey*



*Hacettepe University Center for Energy Markets Research and Application,*

*Ankara, Turkey*

## THE LETTER OF CONFERENCE CHAIRS

Dear Colleagues,

It is our great pleasure to welcome you to the 5<sup>th</sup> Multinational Energy and Value Conference of CEVI. Thank you so much for being in Istanbul, we hope you will enjoy both the conference and this magical city. This conference is organized in collaboration with Kadir Has University and Hacettepe University. We believe that the international academic cooperation between two Turkish universities and CEVI in the energy area, will further develop and reach to a higher ground throughout this conference.

We expect that the conference will be very beneficial for the energy sector in the current situation in which the magnitude of the influence of Ukraine crisis and unexpected low energy prices particularly on the energy markets are becoming more intensive. The importance of international contacts and cooperation concerning energy finance has been steadily growing in the new energy scene where more secure, sustainable and competitive energy markets are needed.

The conference is organized in separate sessions in accord with the main objective of the ongoing CEVI conferences, aiming to create knowledge accumulation on energy and value issues for academic scholars and practitioners. The theme of the first day is "Energy Markets and Hubs" and the potential of Turkey to be an energy hub of South-eastern Europe will be discussed in two separate panels. Financing of the energy projects and Islamic finance sessions are scheduled for the second day, proceeding the academic papers of about 22 and related discussions. We hope that there will be a great interest to all sessions of this conference and the information accumulated will contribute much to the energy industry, small and medium enterprises, and academicians.

We, on behalf of the conference organizing committee, would like to thank particularly to the Rector of Kadir Has University from who provided us considerable support. Besides, we are grateful to our conference sponsors the Central Bank of Turkey, Borsa Istanbul, Takasbank and Igdas for their contributions. Our thanks are also due to the Ministry of Energy and Natural Sources, Energy Regulatory Board of Turkey and the Association of Natural Gas Distributors for their institutional support.

This conference is realized through a team work. In addition to the Organizing Committee members we have benefited from the experiences of the co-chairs and members of the program committee. Prof. Andre Dorsman and Prof. Wim Westerman assisted us to set up the international network. We particularly thank to Mustafa Kaya, Yılmaz Yıldız and Dr. Kazım Barış Atıcı for their intense efforts in organizing the web site, all communications, and paper works.

Conference Chairs

Volkan Ediger

Necmiddin Bağdadiođlu

Mehmet Baha Karan

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## CONFERENCE PROGRAM

<b>Thursday, May 7<sup>th</sup></b> <b>Room: D-B1. Büyük Salon</b>	
<b>9.30 -11.00</b>	<b>Opening Speeches</b> <i>Prof. Dr. Volkan Ediger – Conference Chair</i> <i>Prof. Dr. Necmiddin Bağdadioğlu – Conference Chair</i> <i>Prof. Dr. Mehmet Baha Karan – Conference Chair</i> <i>Mehmet Ertürk – EPDK Vice President</i> <i>Prof. Dr. Ali Çağlar, Vice Rector – Hacettepe University</i> <i>Prof. Dr. Mustafa Aydın, Rector – Kadir Has University</i>
<b>11.00-11.30</b>	<b>Coffee Break</b>
<b>11.30-12.00</b>	<b>Key Note Speech</b> <i>Development of Energy Union in EU</i> <i>Prof. Dr. Andre Dorsman</i> <i>Free University and President of CEVI</i>
<b>12.00-13.30</b>	<b>Lunch Break</b>
<b>13.30-15.30</b>	<b>Panel Discussion: Energy Markets</b> <b>Chair:</b> <i>Prof. Dr. Mehmet Baha Karan – Hacettepe University</i> <i>Dr. Murat Mazıbaş – Borsa İstanbul</i> <i>Sezai Bekgöz – Istanbul Settlement and Custody Bank Inc.</i> <i>Hacı Durgun – TEİAŞ</i> <i>Yaşar Arslan – Natural Gas Distribution Companies Association of Turkey</i>
<b>15.30-15.45</b>	<b>Coffee Break</b>
<b>15.45-17.45</b>	<b>Panel Discussion: Energy Terminal</b> <b>Chair:</b> <i>Prof. Dr. Volkan Ediger – Kadir Has University</i> <i>Dr. Saltuk Düzyol – General Manager of TANAP</i> <i>Dr. Cenk Pala – EnerjiSA</i> <i>Arif Aktürk – Naturgaz</i> <i>Hasan Özkoç – EU Commission, Turkey</i>

<b>Friday, May 8<sup>th</sup></b>		
<b>9.00-11.00</b>	<b>Panel Discussion: Financing of Energy Projects and Islamic Finance</b> <b>Room: A-BI. Cibali Salonu</b> <b>Chair: Doğan Tırtıroğlu – Kadir Has University</b> <i>Satı Balcı – Development Bank of Turkey</i> <i>Tolga Yakar – Islamic Development Bank</i> <i>Umut Feyzioğlu – İşbank</i> <i>Hasan Bolat – İş Leasing</i>	
<b>11.00-11.15</b>	<b>Coffee Break</b>	
<b>Session 1</b>	<b>Energy and Social Responsibility</b> <b>Room: A-BI. Cibali Salonu</b>	<b>Energy Systems</b> <b>Room: A-BI. Galata Salonu</b>
<b>11.15-12.15</b>	<p><b>Chair: Andre Dorsman</b></p> <p><b>(16)</b> The Impact of Corporate Social Responsibility on the Tone of Earnings Press Releases in the Oil &amp; Gas Industry <i>Ozgur Arslan-Ayaydin and James Thewissen</i> <b>Discussant: Bert Scholtens</b></p> <p><b>(19)</b> Corporate Social Responsibility in Energy Corporations <i>Halit Gonenc and Bert Scholtens</i> <b>Discussant: James Thewissen</b></p>	<p><b>Chair: Necmiddin Bağdadioğlu</b></p> <p><b>(3)</b> Deregulation in Electricity Markets: The Interplay of Political Stability and Fossil Fuel Prices <i>John Simpson</i> <b>Discussant: Reinier Verhoog</b></p> <p><b>(22)</b> Energy systems in transition: changing roles, power and agency of key stakeholders in the Swiss electricity market <i>Renier Verhoog and Matthias Finger</i> <b>Discussant: Wietze Lise</b></p>
<b>12.15-13.30</b>	<b>Lunch Break</b>	
<b>Session 2</b>	<b>Oil and Gas Markets</b> <b>Room: A-BI. Cibali Salonu</b>	<b>Energy Politics</b> <b>Room: A-BI. Galata Salonu</b>
<b>13.30-15.30</b>	<p><b>Chair: Wim Westerman</b></p> <p><b>(1)</b> Analysing the Effects of Liberalization of the Turkish Natural Gas Market <i>Erdoğan Telatar and Mubariz Hasanov</i> <b>Discussant: Ayhan Kapusuzoğlu</b></p> <p><b>(2)</b> Country versus Global Influences on Future Spot Natural Gas Prices: Evidence of Deregulation from America and Britain <i>John Simpson and Abdul Alsameen</i> <b>Discussant: Mübariz Hasanov</b></p>	<p><b>Chair: Erdoğan Telatar</b></p> <p><b>(7)</b> Regulatory Framework for Biofuels in Brazil: History and Challenges under the law of the WTO <i>Angelica Paiva Rutherford</i> <b>Discussant: John Karkazis</b></p> <p><b>(11)</b> The Energy Policy of Greece and Cyprus in the Eastern Mediterranean <i>John Karkazis and Ioannis Vidakis</i> <b>Discussant: Necmiddin Bağdadioğlu</b></p> <p><b>(18)</b> Turkey's Obligations Deriving from Kyoto Protocol and Assessments Related to the Turkish Carbon Market <i>Necmiddin Bağdadioğlu and Doğu Sever</i> <b>Discussant: Angelica Paiva Rutherford</b></p>

	<p><b>(4)</b> The Dynamic Interactions of World Natural Gas Markets <i>Ayhan Kapusuzođlu, Xi Liang and Merve Karacaer Ulusoy</i> <b>Discussant:</b> <i>Dođan Tirtiroglu</i></p> <p><b>(8)</b> Long Run Relationship Between Oil Price and Stock Market Performance: An Empirical Evidence On Energy Sustainability Index Countries <i>řahnaz Koçođlu, Mehmet Baha Karan and Ayhan Kapusuzođlu</i> <b>Discussant:</b> <i>John Simpson</i></p>	<p><b>(13)</b> Visual Analysis of Electricity Demand: Energy Dashboard Graphics <i>Fatma řınar and Cořkun Kűcűkűzmen</i> <b>Discussant:</b> <i>Hasan Alma</i></p>
<b>15.30-15.45</b>	<b>Coffee Break</b>	
<b>Session 3</b>	<p><b>Energy and Valuation</b> <b>Room:</b> <i>A-B1. Cibali Salonu</i></p>	<p><b>Energy Economics</b> <b>Room:</b> <i>A-B1. Galata Salonu</i></p>
<b>15.45-18.00</b>	<p><b>Chair: Bert Scholtens</b></p> <p><b>(10)</b> Valuing a European energy firm <i>Nanne Brunia and Wim Westerman</i> <b>Discussant:</b> <i>Cořkun Kűcűkűzmen</i></p> <p><b>(12)</b> Valuation of Privatized Electricity Distribution Companies of Turkey <i>Hasan Alma and Mehmet Baha Karan</i> <b>Discussant:</b> <i>John Simpson</i></p> <p><b>(9)</b> A comparative analysis of socially responsible investing funds and Islamic fixed income security funds: evidence from the field <i>Mohamed Bejaoui, Andre Dorsman and Rihab Grassa</i> <b>Discussant:</b> <i>Wim Westerman</i></p> <p><b>(21)</b> Sustainable Stock Exchanges <i>Robert Klijn and Marcel Schulze</i> <b>Discussant:</b> <i>Andre Dorsman</i></p>	<p><b>Chair: John Karkazis</b></p> <p><b>(5)</b> The Relationship between Energy and Economic Growth: An Empirical Evaluation on Central Asian Countries and Azerbaijan <i>Sıdika Bařçı, Cumhuri řiçekçi and Emrah Őz</i> <b>Discussant:</b> <i>Erđinç Telatar</i></p> <p><b>(6)</b> An Assessment of Energy Efficiency in Turkey <i>Wietze Lise</i> <b>Discussant:</b> <i>Neslihan řetinkaya</i></p> <p><b>(14)</b> Multiple Criteria Decision Analysis Approaches for Energy Investment Decisions <i>Ahmet Bahadır řimřek, Kazım Barıř Atıcı and Aydın Ulucan</i> <b>Discussant:</b> <i>Eren Yıldız</i></p> <p><b>(20)</b> Is Oil Price Decline Cure for Turkey's Current Account Deficit? <i>Eren Yıldız, Merve Karacaer Ulusoy, Bahadır Uysal and Neslihan řetinkaya</i> <b>Discussant:</b> <i>Sıdika Bařçı</i></p>

**Saturday, May 9<sup>th</sup>**

*Bosphorus Tour and Social Activities*

## ABSTRACTS

### 1. ANALYSING THE EFFECTS OF LIBERALIZATION OF THE TURKISH NATURAL GAS MARKET

*Erdinç Telatar*  
*Okan University, Turkey*

*Mübariz Hasanov*  
*Okan University, Turkey*

In this paper, we analyse economic consequences of full liberalization of the Turkish natural gas market. For this purpose, we build a simple game-theoretic model where each exporter of natural gas faces supply constraints. We first derive equilibrium quantity and market price analytically under supply capacity constraints of exporters. Then, using actual supply constraints of each supplier and calibrated demand functions we compute estimates of equilibrium quantity and prices. Our results suggest that full market liberalization will bring huge economic gains to the Turkish consumers.

**Keywords:** Natural Gas Markets, Liberalization, Capacity Constraints

**JEL Codes:** C72, D43, D52, Q35

### 2. COUNTRY VERSUS GLOBAL INFLUENCES ON FUTURE SPOT NATURAL GAS PRICES: EVIDENCE OF DEREGULATION FROM AMERICA AND BRITAIN

*John Simpson*  
*Center for Energy and Value Issues (CEVI), The Netherlands*

*Abdul Alsameen*  
*Center for Energy and Value Issues (CEVI), The Netherlands*

This Chapter revisits the importance of domestic versus global economic factors in explaining future spot gas prices in the domestic natural gas markets of the US and the UK, which arguably are the two leading major Western economies engaged in ongoing market reform. The Chapter is based on Simpson (2011) with a significant rewrite around an update of data, analysis and conclusions. The study, involving a comparison of progress in each economy towards natural gas market liberalization, should be interesting for policy makers globally. Assuming that market liberalization will in due course produce economic welfare benefits, the study posits that the relative importance of these factors is one indicator of the extent of natural gas market deregulation in each market. Updating the Simpson (2011) study, lagged daily oil and gas data from 3<sup>rd</sup> January 2000 to 28<sup>th</sup> July 2014 are analysed and a proven structural break is introduced to control for time varying relationships as affected by the global financial crisis. Global oil futures prices together with domestic gas futures prices are not shown to be very strong predictors of future domestic spot gas prices, thus indicating some progress in US and UK domestic gas market deregulation. However cointegration and Granger causality studies show that there is some distance to go in market liberalization for both the US and the UK. It is up to further research to explain why this is the case in terms of policy actions taken.

**Keywords:** Oil prices, Gas prices, Futures, Cointegration, Vector Autoregressive Models, De-coupling, Deregulation.

**JEL Codes:** C22; C52; O13; Q43.

### **3. DEREGULATION IN ELECTRICITY MARKETS: THE INTERPLAY OF POLITICAL STABILITY AND FOSSIL FUEL PRICES**

*John Simpson*

*Center for Energy and Value Issues (CEVI), The Netherlands*

Electricity markets are perceived to be monopolistic or oligopolistic in nature, whether government or private sector owned. Prices, therefore, are subject to government (political) interference and/or monopoly pricing as well as economic factors, such as the supply cost of fossil and other fuels. Greater interest is now being shown by international energy economists, regulators, policy makers and practitioners as to whether or not country electricity markets are becoming more globalised with pricing subject to economic factors, such as global fossil fuel prices. This chapter examines a representative sample of larger OECD country and transitional/developing country electricity markets in a dynamic model. In the long-term in the cointegrated markets, economic and financial forces of energy prices and fossil fuel prices interact with political forces indicating the degree of political stability and level of government interference to produce stability in the electricity markets. No such stability occurs in the long-term for the remainder of the markets where it might be suggested that government interference may yet be distorting the electricity markets concerned thus producing relatively less degrees of electricity market liberalisation. With regard to the short-term dynamics the only countries where the electricity markets are endogenous when all variables interact in each market on a one month lag are Hong Kong and Canada. Only in the cases of China, New Zealand and Malaysia are electricity prices significantly exogenous.

**Keywords:** Electricity, Energy, Economic, Political, Domestic, Government, Interference.

### **4. THE DYNAMIC INTERACTIONS OF WORLD NATURAL GAS MARKETS**

*Ayhan KAPUSUZOGLU*

*Yıldırım Beyazıt University, Turkey*

*Xi LIANG*

*University of Edinburgh, United Kingdom*

*Merve KARACAER ULUSOY*

*Yıldırım Beyazıt University, Turkey*

The purpose of this study is to analyse the short and long-term interactions between the natural gas markets in the context of Europe, Japan and the United States that are the main constituents of natural gas consumption in the world and between the natural gas and oil markets. In this direction, the analysis is performed by using a monthly data including the period of 2000.02-2010.12 (131 observations) and Eviews 7.0 software. The data of the variables used in this study are obtained from the data book of Energy Prices and Taxes Statistics, which is published by International Energy Agency (IEA) in quarterly periods and the related databases are reached from OECD iLibrary (<http://www.oecd-ilibrary.org/>). These data are composed of average import prices within the context of Europe (Pipeline Gas and Liquefied Natural Gas/LNG), Japan (LNG) and the United States (Pipeline Gas and LNG), the average Henry Hub spot prices that reflect the natural gas spot prices along with Brent and West Texas Intermediate crude oil average spot prices that are taken as a benchmark for international oil prices. Within the framework of this study, first of all the main descriptive statistics are presented by taking raw and natural logarithms of the variables. Furthermore, a perceptual space is created in accordance with the euclid distances and the similarities/differences are determined by using the multidimensional scaling analysis performed with SPSS 22.0 software. In the following

process, unit root tests (Augmented Dickey Fuller, Phillips Peron and Kwiatkowski-Phillips-Schmidt-Shin) are applied in order to examine the stationarity of the variables before performing the short and long-term econometric analyses. In accordance with the results of the applied tests, it is confirmed that not all variables within the scope of the analysis are stationary in level, however when their first differences are taken, all of them become stationary in the same level. The next step in this direction, in order to examine the long-term co-integration relationship between the variables, first of all the number of lags is determined in accordance with the relevant information criterion and afterwards the Johansen co-integration test is performed and the variable groups that have long-term relationships with each other are presented. Finally, the pairwise Granger causality test is performed in order to examine the short-term causality relationships and the results of uni-directional, bi-directional and non-casual relationships are found.

**Keywords:** Natural Gas, Globalization, Cointegration, Causality

**JEL Codes:** C10, F14, L95

## **5. THE RELATIONSHIP BETWEEN ENERGY AND ECONOMIC GROWTH: AN EMPIRICAL EVALUATION ON CENTRAL ASIAN COUNTRIES AND AZERBAIJAN**

*Sıdıka BAŞÇI*

*Yıldırım Beyazıt University, Turkey*

*Cumhur ÇİÇEKÇİ*

*Middle East Technical University, Turkey*

*Emrah ÖZ*

*Middle East Technical University, Turkey*

Many countries need energy for economic development and growth. Thus, it is vital to secure enough energy resources to sustain economic growth. In 1990's after the collapse of Soviet Union, the countries in Central Asia and Azerbaijan gained their new position in the international system as new independent states and they have gone into a new process with becoming integrated to global economy via international trade and energy channels. At the end of the separation process from Soviet Union, even these countries did not have industrial power, they had very rich energy resources that have been pusher factor on their economic growth potential. Therefore, it is very important to investigate into the effects of energy use on economic growth in these countries. In this study, general nature of energy industry in countries in Central Asia and Azerbaijan reviewed under subtitles of production, consumption, reserves and exportation categories. Furthermore, the effect of energy use on economic growth is analyzed for panel of these countries by using Neo-classical Aggregate Production Model where capital, labor and energy are treated as separate inputs. Our empirical study indicated that the more energy use does not lead to more economic growth.

**Keywords:** Central Asia, Energy Consumption, Economic Growth, Panel Data

**JEL Codes:** O13, P28

## 6. AN ASSESSMENT OF ENERGY EFFICIENCY IN TURKEY

*Wietze Lise*

*AF-Mercados EMI Ankara, Turkey*

Energy Efficiency (EE) is a priority for Turkey. It will improve both the competitiveness and lead to a long-run sustainable growth of the economy. This is due to reducing its energy dependence and energy security of supply and at the same protecting the environment and mitigating climate change. The Turkish Government has been promoting EE since 2007 by new policies and regulations. The new draft Strategy on Energy Efficiency 2011-2023 is committed to reduce the Turkish energy intensity by at least 20% in 2023 compared to the values of 2011. There are clear targets for the Public Sector where the annual energy consumption must be decreased by 10% until 2015 and by 20% until 2023.

The Turkish economy is substantially more energy intense than the OECD. The main reason for this is that Turkey only has started its energy efficiency initiatives recently. Moreover, Turkey has still a high level of industrialization as compared to the OECD which has a high level of energy consumption. This presentation will use European examples to set out a path Turkey could follow to introduce energy efficiency measures. This will lead to a recommended approach for Turkey, to keep on track to meet their 2023 targets.

**Keywords:** Energy Efficiency, Turkey

**JEL Codes:** Q4, Q41, Q48

## 7. REGULATORY FRAMEWORK FOR BIOFUELS IN BRAZIL: HISTORY AND CHALLENGES UNDER THE LAW OF THE WTO

*Angelica Paiva Rutherford*

*University of Liverpool, United Kingdom*

The main objective of this paper is to examine the clashes between national policies promoting green energy and international trade liberalisation commitments, using the Brazilian biofuels programmes, in particular the measures of mandatory blending and the Social Fuel Seal, as a case example. Drawing on past and present Brazilian legislation, this study initially analyses the driving forces behind the development of the biofuels agenda in Brazil and is followed by a discussion of the general principles of the law of the World Trade Organisation concerning subsidies, national treatment and non-discriminatory rules, and the applicability of environmental, social inclusion and energy security exceptions to domestic policies supporting green energy.

**Keywords:** Biofuels, Renewable Energy, WTO Law, Environmental Protection, Social Inclusion, Energy Security, Exceptions

**JEL Codes:** F130, K39

## **8. THE EFFECT OF ENERGY SUSTAINABILITY ON THE RELATIONSHIP BETWEEN OIL PRICE AND STOCK MARKETS: EMPIRICAL EVIDENCE ON THE WEC ENERGY SUSTAINABILITY INDEX**

*Şahnaz Koçođlu*  
*Gazi University, Turkey*

*Mehmet Baha Karan*  
*Hacettepe University, Turkey*

*Ayhan Kapsuzođlu*  
*Yıldırım Beyazıt University, Turkey*

The aim of this study is to analyze and understand the relation between oil price and stock markets in the energy sustainable countries. The energy sustainability in this study is defined according to the Energy Sustainability Index prepared by World Energy Council (WEC). To measure the performance of the countries in energy sustainability, firstly top and bottom performers in Energy Sustainability Index rankings were identified. In addition to the rankings, the countries were grouped based on their grades they got from energy sustainability sub-dimensions. At the end, including the top and down 7 countries in the main index, 14 groups of countries were formed based on different performance levels in energy sustainability. For each group, the average stock market values of the countries in the defined group were taken to create a stock market index representing the stock market performance of the group in question. Then the relation between the stock market performance of the group and oil prices were analyzed through Johansen Co-integration Test and Granger Causality Test in the 2004-2014 period. To identify a possibly differing relation during the 2008 Financial Crisis, a sub-period covering the years 2008-2010 was created and the analysis were redone. The result of the top 7 counties in Energy Sustainability Index indicates that their stock market performances are immune from oil prices. However, there is a co-integration between stock market performance and energy prices for the down 7 countries, so economies of the down 7 countries are sensitive to oil prices. During the crisis period a co-integration appears between the variables, and there exists a uni-directional causality relationship from stock market index to oil prices for all countries. Finally, none of the sub-indexes are individually fully compatible with the main index co-integration outcomes in the total period. In summary, the analyses carried out based on the Energy Sustainability Index groupings suggest that Energy Sustainability Performance of the countries can change the nature of the relation between oil price and stock markets.

**Keywords:** Oil Prices, Stock Markets, Energy Sustainability Index, World Energy Council, Co-integration, Causality

**JEL Codes:** C58, G12, Q43

## **9. A COMPARATIVE ANALYSIS OF SOCIALLY RESPONSIBLE INVESTING FUNDS AND ISLAMIC FIXED INCOME SECURITY FUNDS: evidence from the field**

*Mohamed Bejaoui*

*VU University Amsterdam, The Netherlands*

*André B. Dorsman*

*VU University Amsterdam, The Netherlands*

*Rihab Grassa*

*Tunisian Association of Islamic Finance, Tunisia*

Within Islamic finance transactions are guided by ethical, moral, and social considerations. Moreover there is a thought that money should be used to create social value, rather than just wealth. With regard to these point of views Islamic Finance is in line with Socially Responsible Investing (SRI). SRI is also referred as “ethical investment” and refers to the practice combining social, environmental and ethical requirements when making financial investment decisions. In contrast to conventional finance (CF) where the investments are focused upon financial risk and return from stocks and bonds. Thus from financial point of view SRI and CF differ but also from ethical point of view. Additional, we might can say that SRI and IF are more or less in line with each other, but I cannot find any attempts made to evaluate the performance of SRI funds that invest in (socially responsible) fixed-income securities of sustainable firms and IF funds that invest in fixed-income securities of Islamic firms which follow the Shari’ah law. This, therefore, raises the question what has been the performance of socially responsible portfolios relative to Islamic finance portfolios and in particular whether investors should expect socially responsible investments to yield higher or lower returns than IF investments. One of the contribution of this paper is to give investors, who are triggered to invest in (ethical/sustainable) Sharia’ah compliant firms, insight in the difference between SRI Funds and Islamic Finance funds from a financial point of view.

## **10. VALUING A EUROPEAN ENERGY FIRM**

*Nanne Brunia*

*University of Groningen, The Netherlands*

*Wim Westerman*

*University of Groningen, The Netherlands*

We study the case of a large Dutch firm, having conventional and non-conventional energy business, with also some presence in Europe and even beyond. Valuing energy firms does in principle not differ from valuing firms in general, although multi-level regulation issues and energy market developments blur the picture. Key value drivers include growth of revenues (prices x volumes), earnings before interest, depreciation and amortization margins to net sales (“EBITDA margins”), capital expenditures (“CAPEX”) and costs of capital. The actual valuation requires processing an array of data on regulation, market and firm specifics and much economically relevant as well as precise calculation work. We show with a checklist a vast number of relevant inputs to be taken into account for a transaction valuation. While our case valuation has decreasing practical relevance in the present energy markets, our methodology is still largely valid under the current technology driven circumstances.

**Keywords:** Valuation, Modelling, Europe

**JEL Codes:** G34, M41

## 11. THE ENERGY POLICY OF GREECE AND CYPRUS IN THE EASTERN MEDITERRANEAN

*John Karkazis*

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Michael L. Ross (in his book “The oil curse: how petroleum wealth shapes the development of nations”, Princeton University Press, 2012) looks at how developing nations are shaped by their mineral wealth and how they can turn oil from a curse into a blessing: “countries that are rich in petroleum have less democracy, less economic stability, and more frequent civil wars than countries without oil”. What explains this oil curse? And can it be fixed? In this groundbreaking analysis, Ross traces the oil curse to the upheaval of the 1970s, when oil prices soared and governments across the developing world seized control of their countries' oil industries. Before nationalization, the oil-rich countries looked much like the rest of the world; today, they are 50% more likely to be ruled by autocrats - and twice as likely to descend into civil war - than countries without oil. *The Oil Curse* shows why oil wealth typically creates less economic growth than it should; ... and why it creates more problems in poor states than in rich ones. It also warns that the global thirst for petroleum is causing companies to drill in increasingly poor nations, which could further spread the oil curse. This landmark book explains why good geology often leads to bad governance, and how this can be changed”. This paper will analyze the role Greece and Cyprus are intending to play in the energy scene of Eastern Mediterranean. Greece is principally a transit country: very significant gas and oil pipelines will be soon crossing its terrestrial and maritime territory. Simultaneously, Greek hydrocarbons production does not cover the country's needs, connecting inevitably Greece to the EU's strategic plans for securing energy supply and transport. Furthermore, given the economic features of the country, EU's contribution demands the creation of a favorable and stable climate for energy investments including infrastructures and transport networks. Finally, considering the existing Turkish pursuits in the area and the possible role of Turkey as an energy hub in the wider region, this paper will speculate on whether energy policies give new opportunities for a cooperation or infuse new dimensions to the existing conflicts.

**Keywords.** Energy Policy, Energy Resources, Gas, Eastern Mediterranean, E.U., Greece, Cyprus, Israel, Turkey, Energy Security

## 12. VALUATION OF PRIVATIZED ELECTRICITY DISTRIBUTION COMPANIES OF TURKEY

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A new market model has been introduced in Turkish electricity market with the big change in 2001, which is based on liberalization of competitive segments and economic regulation in non-competitive segments. Although it was not an obligation in terms of the new model, abandonment of public operation and privatization both in liberalized segments and regulated segments occurred in line with the choice of the political authorities in Turkey. The companies within the topic of the dissertation are distribution retail sale companies those founded by separation from TEDAŞ (State-owned Turkish Electricity Distribution Company) and then bundled as distribution-retail sale privatized within scope of Law on Privatization Practices numbered 4046. These companies has been valued considering conditions at the time they were privatized and in light of existing data and then prices obtained in their privatization auctions has been compared with these theoretical values. Reasons behind the differences between them has been analyzed and

commentated, by which attention has been drawn to guiding considerations for policy makers and regulators at next stages of the market development.

**Keywords:** Electricity Market, Firm Valuation, Electricity Distribution, Electricity Retail Sale, Privatization

### 13. VISUAL ANALYSIS OF ELECTRICITY DEMAND: ENERGY DASHBOARD GRAPHICS

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A real time interactive data management for Impulse and Response Analysis Technique using lattice and ggplot2 Graphical Packages embedded in R software has been employed. Average consumption, peak consumption and daily consumption data have been used while the temperature data is also employed to highlight the significance of relationship between consumption and the weather conditions. The demand for electricity by the factors affecting the demand with a multi-dimensional matrix graphics based on Energy Dashboard Software has been analysed leading to visualisation.

**Keywords:** Graphical Data Mining, Visual Analysis, Energy Dashboard Graphics, Effect and Response Analysis, Interactive Data Management

**JEL Codes:** C55, C6, C8, C87

### 14. MULTIPLE CRITERIA DECISION ANALYSIS APPROACHES FOR ENERGY INVESTMENT DECISIONS

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We aim to illustrate how Multiple Criteria Decision Analysis (MCDA) and Geographic Information Systems (GIS) can be used for decision aiding in energy investment decisions. The proposed methodology aims to provide a structured decision aiding which can be applied to energy site selection problems. The methodology involves together use of both tools (MCDA and GIS). GIS is used to generate layers of data and to apply a pre-elimination. Multiple Criteria Decision Analysis (MCDA) is then used to rank and sort the alternative areas via identified evaluation criteria. Several policy implications can be put forth for different stakeholders. We advocate that a structured decision-making process can yield more rational decisions on investments at both financial and technical levels.

## 16. THE IMPACT OF CORPORATE SOCIAL RESPONSIBILITY ON THE TONE OF EARNINGS PRESS RELEASES IN THE OIL & GAS INDUSTRY

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Oil and gas production companies have garnered enormous attention from their stakeholders, placing increasing expectations on them to engage in socially responsible investments. However there is ample evidence in the literature that corporate social responsibility (CSR) investments that address broader stakeholder concerns do not financially pay off and thus do not necessarily align with maximization of their shareholders' wealth. Earnings press releases (EPRs) are the quantitative information that managers resort to communicate with shareholders their future prospects of the firms. As an impression management, managers may use a more optimistic tone while communicating the corporate performance third to investors. Our analysis focuses on the 2005-2014 earnings press releases issued by the universe of US firms in the oil and gas industry covered by the Kinder, Lydenberg and Domini Research and Analytics database. We find that oil and gas companies that are more socially responsible use a more optimistic tone in their EPRs. The motivation of the tone inflation can be owed to the attempt of managers to signal their shareholders that CSR investments are not executed at the expense of their wealth. Our next analysis show that the socially responsible oil and gas companies that resort to tone inflation indeed have a poorer accounting performance, measured as return on assets (ROA).

**Keywords:** Corporate social responsibility, Textual tone, Earnings press releases, Oil and gas industry  
**AMS Codes:** G14, G30, G32

## 18. TURKEY'S OBLIGATIONS DERIVING FROM KYOTO PROTOCOL: ASSESSMENTS RELATED TO THE TURKISH CARBON MARKET

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Considering the energy sustainability issue alongside environmental concerns, this paper assesses Turkey's obligations deriving principally from the Kyoto Protocol and its implications with a specific focus on carbon trade. Although signed the Kyoto Protocol in 2009, Turkey is one of the G20 and OECD countries with no emission reduction commitment. Yet Turkey is among the first 15 OECD countries with the worst emission records (70% of her greenhouse emission coming from energy sector). While not having any commitment to reduce greenhouse emission originated from the Kyoto Protocol, Turkey recognizes her responsibilities originated from international treaties as well as the *acquis communautaire*, and accordingly implements various policies, including voluntary emission trade initiated in 2005. Nonetheless, the progress has been rather slow, among other reasons, due to inadequate legal infrastructure and high level of emission in the Turkish energy sector. Consequently this study argues that unless the necessary legal adjustments, particularly in the Turkish tax law, are made, the carbon trade in Turkey is likely to be exposed to carbon trade fraudulent which was one of the major problems in the EU ETS. Conversely Turkey has accumulated significant experience through the voluntary emission trade so far. Besides based upon 2014 data, Turkey has a potential of reducing

20 million tons emission yearly by vitalizing 308 renewable energy projects. These might serve well Turkey's quest for realizing the goal of environmentally friendly energy sustainability.

**Keywords:** Kyoto Protocol, Carbon Trade, Energy Sustainability

## 19. CORPORATE SOCIAL RESPONSIBILITY IN ENERGY CORPORATIONS

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We investigate the performance of a large sample of international operating energy companies regarding several dimensions of corporate social responsibility (CSR). Furthermore, we relate their performance regarding CSR to various measures of corporate financial performance (CFP). As to CSR, we use disaggregated data from ASSET4. As to CFP, we investigate stock market return, Tobin's Q, and Return on Equity. We encounter a lot of heterogeneity within our sample of energy companies, both regarding indicators of CSR and CFP. However, in most instances, there does not appear to be significant interaction between the two within the energy industry.

**Keywords:** Energy, Firm-level analysis, Corporate Social Responsibility, Value, Return

**JEL Codes:** G34, M41

## 20. IS OIL PRICE DECLINE CURE FOR TURKEY'S CURRENT ACCOUNT DEFICIT?

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Turkey is an energy dependent country where most of its energy needs are met by the fossil fuels. Hence, a movement on oil prices is expected to have a significant effect on current account balance. In the recent economic environment, understanding the real impact is essential because oil is still a very important means of energy and it can change a country's economic situation.

In the current conjuncture of the world, there is an unexpected decrease in oil price and the consequences of this trend are very unpredictable. Unlike other researches in the study, we would like to see if there is an asymmetric relationship between the oil price and current account balance. Considering this information, the analysis is based upon totally 65 data set covering the quarterly period of 1997Q2-2013Q2 and performed by using the variables, current account balance over GDP, real exchange rate, current account balance and industrial production, running VAR model. The data

on current account balance over GDP have been collected from FED St. Louis Data Base, the data on the real effective exchange rate have been collected from the Central Bank of the Republic of Turkey, the data on the industrial production of Turkey have been collected from Bloomberg and the data on Brent oil prices have been collected from Thomson Reuters. The results of the past studies show that oil price increase has a negative impact on current account balance whereas this study aims to go deeper and work on the existence and power of the impact when the oil price declines.

## **21. SUSTAINABLE STOCK EXCHANGES**

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How do stock exchanges, in their role as facilitators and owners of the world's largest money platforms, contribute to more sustainable businesses and what is their effect on companies in the energy sector? We would like to show how stock exchanges, who strive to attract and control capital flows to their own platforms by applying free market principles, realize that sustainability is an inevitable way of how markets in the 21st century should be aligned in the long run.

Creating a level playing field is one of the conditions to make progress in this area; another is the changing attitude of shareholders. E.g. pension funds and insurers could stimulate with their investment policies the companies in which they are invested and those on the short-list, to more transparency on how they have integrated sustainability.

The Sustainable Stock Exchange (SSE) initiative, launched by the United Nations, and thus at the highest intergovernmental level, is best positioned to stimulate stock exchanges in applying sustainability principles. This paragraph will therefore show which measures have been undertaken as an outcome of the SSE efforts, and how the various stock exchanges worldwide have implemented consequently various sustainability policies aimed at the capital market participants.

**Keywords:** Stock exchange, sustainability, capital market

## **22. ENERGY SYSTEMS IN TRANSITION: CHANGING ROLES, POWER AND AGENCY OF KEY STAKEHOLDERS IN THE SWISS ELECTRICITY MARKET**

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Many countries are currently committing to large scale energy transitions, which will bring significant changes to both technical and social systems underlying their energy infrastructures. The characteristics of energy systems are high asset specificity, long asset lifetime, and few players who dominate the market, who have a vested interest in maintaining the status quo (Finger, Groenewegen & Künneke, 2005). Additionally, governments are increasingly struggling to govern energy transitions as decision making power is becoming increasingly distributed amongst stakeholders.

In recent years, infrastructure transition research has gained significant momentum (Chappin, 2011; Markard, Raven & Truffer, 2012). Energy transitions are amongst the most studied in the literature. This literature is useful for studying transitions as it addresses, for example, policy-making, technological systems, social systems, lock-in effects, and long-term visions. However, transition research has been criticized for neglecting dimensions such as politics, agency, power (Smith, Stirling & Berkhout, 2005; Smith, Voß & Grin, 2010; Meadowcroft, 2009), and spatial dimensions of transitions (Coenen, Benneworth & Truffer., 2012). This omission can be problematic since these dimensions are important for understanding the implications of both social and technical challenges that countries are facing in energy transitions.

In this paper we will adopt a multi-level transition perspective (Geels, 2002). Specifically, we will address the roles of power and agency in energy transitions, as these are closely related (Smith et al., 2005). Recent efforts to conceptualize and study power and agency have focused on case studies instead of expanding existing transition frameworks (e.g.: Arapostathis et al., 2013; Mah & Hills, 2014; Avelino, 2009). The work by Hoffman (2013) extends the multi-level perspective, but only pays specific attention to the conceptualization of power.

Three main steps structure our analysis. First, we provide a conceptualization of agency and power for stakeholders in the energy sector. Second, our main theoretical contribution is to incorporate this conceptualization in the existing multi-level perspective. Third, our practical contribution is to demonstrate the usefulness of the extended framework by applying it to a qualitative case study of the Swiss energy transition. This will provide insights in changing roles, agency and power of key stakeholders to better govern the energy transition in Switzerland.

We have chosen Switzerland because it has politically committed to a nuclear phase-out and maintaining a low carbon emission energy system. Furthermore, Switzerland is characterized by its decentralized government structure and fragmented energy sector, which makes governing the Swiss energy transition that much more complex.

**Keywords:** Market Structure, Pricing and Design, Antitrust Issues and Policies, Energy, Market Design, Legal Monopolies and Regulation or Deregulation, Government Policy

**JEL Codes:** D4, L4, Q4, D47, L43, Q48

## ABOUT CENTER FOR ENERGY AND VALUE ISSUES (CEVI)

The main objective of the CEVI is creating knowledge accumulation on energy and value issues through establishing organization of lectures for scholars and practitioners, providing cooperation with different institutions on the national and international level. Specifically, CEVI is aimed at the cultivation of the closely interconnected fields of energy and value including their relations to the disciplines of economics, finance, management and law through providing relevant conditions for an intensive dialogue in the field of energy among practitioners, financial experts, economists and scientists leading to advanced research projects.

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The founding fathers of CEVI are Hacettepe University, Ankara Turkey, VU University Amsterdam, Amsterdam, The Netherlands and Curtin University, Perth Australia. CEVI will also be partner with the University of Groningen. Sponsorship will be provided by the founding universities, corporate firms and regulatory bodies. Members of the CEVI is designed to be comprised by private scientists, private practitioners. The board of CEVI is established by the following members:

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- ***Financial Aspects in Energy*** (2011), edited by André Dorsman, Wim Westerman, Mehmet Karan and Özgür Arslan; ISBN 978-3-642-19708-6
- ***Energy Economics and Financial Markets*** (2012), edited by André Dorsman, John Simpson and Wim Westerman; ISBN 978-3-642-30600-6.
- ***Perspectives on Energy Risk*** (2014); edited by André Dorsman, Mehmet Karan and Timur Gök.
- ***Energy Technology and Valuation Issues*** (forthcoming); edited by André Dorsman, John Simpson and Wim Westerman.