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ULUSLARARASI ENERJİ EKONOMİ VE GÜVENLİK KONGRESİ

ÖZET BİLDİRİLER KİTABI
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İÇİNDEKİLER

ENVIRONMENTAL PERSPECTIVE OF COVID-19 PANDEMIC AND ITS IMPACT ON THE GLOBAL ECONOMY

Prof. Dr. Berrin Tansel, Ph.D., P.E., F. ASCE, F. EWRI, F. WEF
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Abstract: While COVID-19 pandemic have resulted in major economic and social impact on production and transport of goods, delivery of services, trends of consumption and use products and services, modality of education, and employment levels, there has also significant impacts on the environment. The impact on the environment have been reported primarily in four areas: air quality, wildlife and habitat, solid waste quantity and composition, and energy demand and source. The lifestyle changes, and socioeconomic shifts have resulted in measurable impacts on air quality, primarily due to reduction in industrial and transportation emissions of carbon dioxide (CO2), nitrogen oxides (NOx), and particulate matter (PM). The reductions in air emissions have reduced greenhouse gas emissions globally. Over 30% reductions in PM2.5 levels have been reported globally in comparison to the levels reported in 2019. The large-scale lockdowns both regionally and globally and reduction in vehicle use have created avenues for wildlife to expand their habitats. On the other hand, types and quantities of solid waste produced have not been in the positive direction for global sustainability. Quantities of one time use disposable products and plastics have increases substantially due to potential risks of contamination. While the demand on broadband for communication has increased, demand on petroleum have declined due to reduced traffic and industrial activities. Global petroleum demand has declined rapidly in early 2020 in proportion to global response and measures for the pandemic. The consumption of petroleum products has fallen to its lowest level in decades in the US because of limits on travel and general economic slowdown caused by the pandemic. In the US, during the period from January to June 2020, the electric power sector consumed 184.8 million short tons (MMst) of coal, 30% less than during the same period in 2019. The US Energy Information Administration (EIA) projects that members of the Organization of the Petroleum Exporting Countries (OPEC) will earn about $323 billion in net oil export revenues in 2020, which is the lowest in 18 years. EIA also projects that changes in consumer behavior will also contribute to increased levels of residential consumption of natural gas during the winter months.

THE EFFECTS OF COVID-19 ON THE RESOURCE-RICH COUNTRIES: A COMPARATIVE ANALYSIS

Prof. Dr. Gary Campbell
Natural Resource Economics
College of Business
Michigan Technological University

Abstract: The sudden appearance of Covid-19 and its dramatic impact on the world economy has had a significant impact on resource-rich countries. Resource-rich countries depend on resource production for revenue, foreign currency, and economic opportunities, and these needs have been affected by the pandemic. Three areas of concern include production disruptions, lack of demand, and long-term effects. Production has been shut-down for periods of time in some countries, but most countries consider workers in resource production as essential, allowing production to continue. There are exceptions like uranium production. The consumption of resources has dropped because of stay-at-home orders, travel restrictions, and other mandates. This has led to lower prices and rising stocks for many resource markets. The petroleum industry has been hit particularly hard with a steep drop in demand. Likely longer-term impacts include: larger stocks that will continue to put negative pressure on prices, a reconsideration of the use of labor and supply chains, an unequal recovery of resource markets, and continuing financial impacts on countries that depend on resource markets that are slow to recover (petroleum is one possibility). In conclusion, resource production has largely continued during the pandemic. The decline in resource demand has been more of a problem and has occurred unequally across the different resource markets. Futures prices may remain weak for some resources due to increased stocks and a slow return to normal demand. There will be a serious reconsideration of weaknesses found in labor and supply chains for resource industries. Governments that are highly dependent on the most impacted resource markets (like petroleum) may be feeling the effects for some time.

100% RENEWABLE AND CARBON NEUTRAL SMART ENERGY SYSTEMS

Prof. Dr. Henrik Lund
Aalborg University, Denmark

Abstract: This presentation elaborate on the concept of Smart Energy Systems and present a case of applying such concept to the design of a 100% renewable energy and carbon neutral future for Denmark. The study focus on how such a national strategy for Denmark should be seen in the context of an overall strategy for the whole of European.

In recent years, the terms “Smart Energy” and “Smart Energy Systems” have been used to express an approach that reaches broader than the term “Smart grid”. Where Smart Grids focus primarily on the electricity sector, Smart Energy Systems take an integrated holistic focus on the inclusion of more sectors (electricity, heating, cooling, industry, buildings and transportation) and allows for the identification of more achievable and affordable solutions to the transformation into future renewable and sustainable energy solutions.

It is often highlighted how the transition to renewable energy supply calls for significant electricity storage. However, one has to move beyond the electricity-only focus and take a holistic energy system view to identify optimal solutions for integrating renewable energy. In this presentation, an integrated cross-sector approach is used to argue the most efficient and least-cost storage options for the entire renewable energy system concluding that the best storage solutions cannot be found through analyses focusing on the individual sub-sectors. Moreover, such approach leads to a solutions primarily based on existing energy infrastructures rather than leading to significant extra investments.

The presentation presents a set of methods and criteria to the design of national Smart Energy and Carbon Neutral strategies seen in the light of a context in which the rest of the world will do the same.

Prof. Dr. D'Maris Coffman
Director (Head of Department) of BSCPM

Abstract: This lecture argues that the challenges of managing demand-side reductions to combat climate change are similar to those encountered by states trying to control the COVID-19 pandemic. The results are not encouraging—politically, economically or environmentally—so top-down, supply-side decarbonisation must be the future of climate change mitigation. Climate change adaptation and remediation must also be considered as the climate crisis accelerates. The cases for these will be much easier to make once damage functions in the Integrated Assessment Model are revised in line with mounting evidence. At smaller scales, mitigation, adaptation and remediation are mutually reinforcing strategies, but at global scales may present a trilemma or impossible trinity.

OIL TANK FARM EMISSION TRENDS OF RUSSIAN REFINERIES

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Abstract: Russia is a leader in the primary processing of crude oil in Europe. However, most of the country's oil refineries have outdated production capacities of tank farms for storing oil, and the issue of emissions from Russian refineries is a research gap in this area. The aim of this study was to identify the dynamics of changes in the amounts of emissions from tank farms for oil storage at Russian refineries. A study period from 2008 to 2018 was considered. The contributions of this paper include the development of methods for estimating emissions for the regions of Russia, determining the trends in emissions, and demonstrating the possibility of improving tank farms for storing oil at Russian oil refineries. The results showed that the greatest emissions occurred in the Volga Federal District. The volume of emissions from that region exceeded the total emissions of the next three districts: the Central, Siberian, and Northwestern Federal Districts of Russia. The largest growth rate of emissions was demonstrated by the refineries of the Southern Federal District, exceeding those of the Central, Siberian, and Northwestern Federal Districts during the study period. In the Far Eastern and Ural federal districts of the country, annual emissions were much lower. During the study period, the total accumulated emissions exceeded 2.5 million tons; therefore, the country needs to carry out work to modernize the tank farms of oil refineries in accordance with the proposed direction.
Key Words: Oil, Refinery, Emissions, Tank farms, Federal District

HOW EFFECTIVE ARE GREEN PATENTS IN IMPROVING ENVIRONMENTAL QUALITY? EVIDENCE FROM 30 CHINESE PROVINCES AND 32 ECONOMIC SECTORS

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Abstract: In this study, we examine the impact of green technology and non-green technology patents on the industry-province level of CO2 emissions for 32 economic sectors situated in 30 Chinese provinces. To that goal, we built a 2003-2016 data set that merges data on industry-province economic indicators from China Industry Statistical Yearbook with proprietary data from PATSTAT by The European Patent Office. We construct a model at the industry-province level, which controls for a industry-province level output and an Environmental Kuznets Curve relationship between output and emissions, employment and effectiveness of local institutions, proxied by stringency of environmental regulation. We control for effects of industry, provinces, and time and distinguish between the effects of "green" and "non-green" patents of the respective industries. We further stratify the sample by energy-intensive vs. non-energy-intensive industries and provincial level of development. We employ both, static, and dynamic methods estimation methods, as well as non-parametric estimation and reveal a plethora of environmental effects.
Key Words: Environmental pollution, Industry CO2 emissions, Green and Non-Green Patents, Province CO2 emissions, China.

THE EFFECTS OF COMMODITY FINANCIALIZATION: EVIDENCE FROM COMMODITY MARKET VOLATILITIES

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Abstract: Over the last two decades, it has been witnessed that massive capital flooded into commodity markets, provoking the commodity financialization episode, which turned into a major stimulus for the rapid development of commodity market studies. Moreover, large capital inflow produced substantial liquidity for those markets and liquidity is an influential factor of market volatility. As commodity markets are increasingly important and their liquidities have been enhanced by the commodity financialization, it prompts us to scrutinize the impact of liquidity on commodity volatility as well as dynamic correlations with the stock market. In this paper, we unveil that commodity financialization has a vast impact on commodity markets' volatility as well as dynamic correlations with the stock market. We employ the DCC-GARCH model to substantiate that commodity financialization increased the commodity market fluctuations and more importantly, it created a closer relationship between the commodity market and the stock market. Given the closer relation predicted by DCC-GARCH model, it would be arguable that volatility spillovers between the commodity market and stock market would be persistently high in the future.
Key Words: Commodity Futures Markets; Financialization of Commodities; Dynamic Correlation.

DOES ENVIRONMENTAL FOOTPRINT LEVELS CONVERGE BETWEEN EUROPEAN COUNTRIES? A PANEL ROLLING WINDOW KSS TEST WITH CROSS-SECTIONAL DEPENDENCE

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Abstract: In this study, we utilize the technique of rolling window nonlinear unit root test to obtain time-varying estimates of the convergence of ecological foot prints within the EU and candidate countries. We selected 16 European countries (Albania, Austria, Belgium, Denmark, France, Germany, Greece, Italy, Luxembourg, Netherlands, Poland, Portugal, Romania, Spain, Sweden and Turkey) according to data availability. Thus, it is analyzed whether the environmental burdens of European countries aim similar environmental goals converge for the period 1961-2016.
According to panel rolling window KSS with cross-sectional dependency test results, it is seen that the intercept model results and the intercept and trend model results are quite close to each other. The Cropland series is stationary between 1961-1975 except 1962. There is no change in the following years. In 1985, a change occurred and the series became stationary. At the end of the period, it is seen that the series are stationary since 2001. Fishing footprint series are stationary in 1961, 1982, 1985, 1989 and 1992. During this period, the series are generally stationary in years of 1982-2001, although it is not stationary for some years. Fishing footprint series between 1962-1981 are not stationary. When it comes to the end of the period, it is seen that the series are nonstationary since 2002. The Forest footprint series are stationary in 1968 and the Grazing Land footprint series are stationary in 1961 and 1979. Finally, the Total footprint series are stationary in 1970, 1974, 1977 and 1984.
Keywords: Panel KSS Unit Root Test, Rolling Window, Convergence, Environmental Footprint.

CONVERGENCE IN RENEWABLE ENERGY SOURCES DIFFUSION WORLDWIDE

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Abstract: The diffusion of renewable energy sources (RES) is a fundamental objective of the worldwide policy actions for sustainable development, at the UN level with the sustainable development goals (SDG) recommendations, to ensure access to affordable, reliable, sustainable and modern energy for all (SDG 7). Also, primary attention to RES has been given at the EU level with the new Green Deal and the new objectives of the Next Generation EU after the Covid pandemic, and at the level of national Governments worldwide. So far, there has not been a worldwide analysis of the RES convergence process across countries worldwide, given that the issue of climate change is a worldwide externality. Previous analyses have focused on specific regions, such as EU, OECD, provinces of China. This paper fills this gap, providing new evidence on the convergence process of RES for 176 countries worldwide, from 1990 to 2015, using a common data set, with panel data approach using spatial contiguity to account for spatial spillover effects. The data set comprises more that 98% of the world population. We introduce conditional variables, to test conditional convergence, related to the policy regulation and socio-economic indicators, such as openness to trade, developments of financial markets, income distribution, level of education. This approach is the new contribution of this article in the literature. The results reveal that there is evidence of sigma- absolute and conditional beta-convergence process for several groups of countries. Moreover, the conditional convergence analysis shows that spatial spillover effects exert rich and complex impact on convergence speed. Finally, to provide policy recommendations, we simulate alternative scenarios to assess when the target levels of RES can be reached worldwide.
Key Words: Renewable Energy Sources; Conditional Convergence; Worldwide Countries Data Set.
Jel Codes: C33 Q20 O11 O13 R11.

GELİŞMEKTE OLAN ÜLKELERDE KÜRESELLEŞMENİN ÇEVRE ÜZERİNE ETKİLERİ

Neşe TUNÇBİLEK
Recep ULUCAK

ÖZET: Bu çalışma, Türkiye, Çin, Endonezya, Güney Afrika, Brezilya, Şili, Mısır, Tayland, Kolombiya, Meksika, Filipinler, Peru, Malezya, Polonya, Hindistan olmak üzere 15 gelişmekte olan ülke için 1970-2016 dönemi panel veri yöntemleriyle küreselleşmenin çevre üzerindeki etkisini analiz etmektedir. Bunun için küreselleşme ile kontrol edilen bir çevresel Kuznets eğrisi modeli takip edilmektedir. Ayrıca, çalışmada literatürden faklı olarak çevresel tahribatların en kapsamlı göstergesi, ekolojik ayak izi, bağımlı değişken olarak kullanılmıştır. Değişkenler arasındaki ilişkiyi tespit etmek için öncelikle birim kök testleri, eşbütünleşme testleri uygulanmıştır ve daha sonra uzun dönem katsayıları tahmin edilmiştir. Ekonometrik uygulamaların sonucunda kişi başı gayri safi yurtiçi hasıla (GSYİH) ve kişi başı gayri safi yurtiçi hasılanın karesinin (GSYİH) ekolojik ayak izini arttırdığı, küreselleşmenin ise ekolojik ayak izini azalttığı sonuçları elde edilmiştir. Buna ekolojik ayak izi açısından çevresel Kuznets eğrisi hipotezinin geçerli olmadığı sonucuna ulaşılmıştır.
Anahtar Kelimeler: Küreselleşme, Çevre Sorunları, Ekolojik Ayak İzi

The impact of globalization on the Environment in Developing Countries

ABSTRACT: In this study, we investigate the environmental impact of globalization in fifteen developing countries over the period from 1970 to 2016. The countries are Brazil, Chile, China, Colombia, Egypt, India, Indonesia, Malaysia, Mexico, Peru, Poland, Philippines, South Africa, Thailand, and Turkey, respectively. To this end, an environmental Kuznets curve model controlled by globalization is followed. Contrary to the prevailing literature, the most comprehensive indicator of environmental damage, the ecological footprint, was used as the dependent variable in the study. In order to determine the relationship between the variables, firstly unit root tests and cointegration tests were applied and then the long-term coefficients were estimated. As a result of econometric applications, it has been obtained that per capita gross domestic product (GDP) and the square of per capita gross domestic product (GDP) increase the ecological footprint, while globalization reduces the ecological footprint. So, it is concluded that the environmental Kuznets curve hypothesis is not valid in case the ecological footprint is used to represent environmental degradation.
Keywords: Globalization, Environmental degradation, Ecological Footprint

ENERJİ NAKİL HATLARINDA EKONOMİK KAYIPLARI AZALTMAYA VE YANGIN RİSKİNİ ÖNLEMEYE YÖNELİK VEJETASYON YÖNETİM STRATEJİLERİ

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Özet: Enerji, günlük hayatın vazgeçilemez bir parçasıdır ve Enerji Nakil Hatları (ENH) mevcut coğrafya ile iç içe yani bütünleşik bir yapıdadır. Özellikle orman içinde kilometrelerce uzayan hatlarda enerjiyi iletmek kolay değildir ve birtakım olumsuzluklar söz konusudur. Örneğin, çabuk büyüyen orman ağaçlarının ENH hattına teması ile arızalar oluşmakta, orman yangınlarına sebebiyet vermekte, ciddi ekonomik kayıplara neden olmaktadır. ENH'larda oluşan bir olumsuzluk ise kullanıcı/müşteri memnuniyetini de etkilemektedir. Bu tür sorunların önüne geçebilmek için Başkent EDAŞ tarafından 2019 yılında EPDK'ya bir AR-GE projesi sunulmuş ve uygulanmak üzere onaylanmıştır. Uygulama alanı Bartın olan projede, vejetasyon yönetim stratejileri yoluyla orman örtüsünün ve özellikle ağaçların ENH altında meydana getirdiği teknik ve ekonomik kayıpları azaltmak ve olası yangın riskini önlemek amaçlanmıştır. Projede, ilk olarak kayıpları ve riskleri azaltmaya yönelik ekolojik, edafik ve sosyo-kültürel koşulların dikkate alındığı ağaçlandırma stratejileri geliştirilmiştir. Stratejiler, "Türün Yanma Özelliği", "Morfolojik Özellikler", "Edafik-Klimatik Özellikler" ile "Sosyo-Ekonomik Özellikler" olmak üzere dört kriter üzerinden değerlendirilmiştir. Değerlendirmeler ve hesaplamalar çok kriterli karar verme yöntemlerinden biri olan Analitik Hiyerarşi Süreci (AHS) tekniği ile gerçekleştirilmiştir. Hesaplamalar sonucunda en önemli kriter 0,276 ile "Türün Yanma Özelliği", ikinci önemli kriter ise 0,258 ile "Sosyo-Ekonomik Özellikler" olmuştur. İkinci aşamada ise amaca uygun saptanmış 10 potansiyel orman ağacı türü (Defne, Fındık, İğde, Kızılcık, Kivi, Kocayemiş, Orman Gülü, Sandal Ağacı, Yabani Elma ve Zeytin) belirlenen kriter ağırlık puanlarına göre yine AHS ile sıralanmıştır. Kriter ağırlık puanlarına göre yapılan sıralamada türler arasında en yüksek önceliği 0,116 ile Defne almıştır. Üçüncü aşamada proje sahasında ENH altı ağaçlandırma çalışmaları yapılmış olup bu aşamada ise AHS'de ilk sırayı alan Defne türü kullanılmıştır. Her bir bölge ve iklim koşuluna göre projede geliştirilen vejetasyon yönetim metodolojisi kullanılabilir. Proje kazanımların uygulamaya aktarılması ile orman içi ENH'larda meydana gelen orman yangınları ve elektrik arızalarındaki kayıplar azaltılarak enerji arz sürekliliği sağlanacak ve çevrenin korunmasına katkı yapılacaktır.

Anahtar Kelimeler: Enerji Verimliliği, Yangın, Vejetasyon Yönetimi, ENH Ağaçlandırma Stratejileri, Analitik Hiyerarşi Süreci (AHS).

VEGETATION MANAGEMENT STRATEGIES TO REDUCE ECONOMIC LOSSES IN ENERGY TRANSMISSION LINES AND PREVENT FIRE RISK

Abstract: Energy is an indefeasibly part of everyday life, and The Electric Transmission Lines (ETL) are integrated with the current geography. It is not easy to transmit energy, especially in lines that last for miles in the forest, and there are some negativity. For example, failures occur with the contact of fast-growing forest trees to the ETL, causing forest fires and causing serious economic losses. In order to avoid such problems, an R&D project has been presented to EPDK in 2019 by The Başkent EDAŞ and approved for implementation. The project, whose application area is Bartın, is intended to reduce the technical and economic losses caused by forest cover and especially trees under ETL through vegetation management strategies and to prevent the risk of possible fires. Strategies were evaluated on four criteria: "Burning Property of the Species", "Morphological Properties", "Edaphic-Climactic Properties" and "Socio-Economic Properties". Evaluations and calculations were carried out using Analytical Hierarchy Process (AHP) technique. As a result of the calculations, the most important criterion was "Burning Property of the Species" with 0.276 and the second important criterion was "Socio-Economic Characteristics" with 0.258. In the second stage, 10 potential forest tree species (Daphne, Hazelnut, Silverberry, Cornus, Kiwi, Arbutas, Rhododendron, Sandalwood, Crap Apple and Olive) were listed with AHP. Daphne took the highest priority among the species with 0.116. In the third stage, ETL afforestation works were carried out in the project area, and at this stage, the Daphne species, which ranked first in the AHP, was used. In fact, different vegetation management strategies may need to be developed according to each region and climate conditions. By transferring the project gains to the application, the losses in forest fires and electrical faults in intraforest ETLs will be reduced, resulting in energy supply continuity and contributing to the protection of the environment.
Key Words: Energy Efficiency, Fire, Vegetation Management, ETL Afforestation Strategies, Analytical Hierarchy Process (AHP).
Jel Codes: C49 L94.

ZAMAN SERİSİ VERİ MADENCİLİĞİ YÖNTEMLERİ İLE TÜRKİYE İÇİN KARBON AYAK İZİ TAHMİNİ

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Özet: Küreselleşen dünyada hızla artan nüfus, üretim ve tüketim alışkanlıkları, ekonomik büyüme gibi birçok faktör iklim değişikliklerine sebep olmaktadır. Karbon ayak izi, atmosfere salınan CO2 salınımının bir ölçüsü olup, bu ölçü günden güne artmakta ve buzulların eriyerek deniz seviyesinin yükselmesine, su kaynaklarının azalmasına ve küresel ısınmaya sebep olmaktadır. Türkiye ekonomik kalkınmasını tamamlamaya çalışan bir ülke olarak karbon ayak izini azaltmak için Kyoto Protokolü ve Paris İklim Sözleşmesi gibi uluslararası anlaşmalar imzaladığından, karbon ayak izini tahmin eden ve azaltılması için politikalar geliştiren çalışmalara önem vermektedir. Bu doğrultuda yapılan çalışma, Türkiye'nin nüfus, gayri safi yurt içi hasıla, enerji üretimi ve enerji tüketimi gibi bağımsız değişkenler ile sera gazı emisyon oranlarının gelecek dönem tahminlerini zaman serisi veri madenciliği yöntemleri ile bulmayı amaçlamaktadır.
Anahtar Kelimeler: Karbon Ayak İzi, Yenilenebilir Enerji, Zaman Serisi Veri Madenciliği.

ESTIMATION OF THE CARBON FOOTPRINT FOR TURKEY WITH TIME SERIES DATA MINING METHODS

Abstract: In globalizing world, many factors such as rapidly increasing population, production and consumption habits and economic growth cause climate changes. The carbon footprint is a measure of CO2 emissions released into the atmosphere, which increases day by day, causing glaciers to melt and increase sea level, reduce water resources, and global warming. For Turkey, as a country trying to complete its economic development, signed international agreements such as the Paris Climate Convention and Kyoto Protocol to reduce the carbon footprint, gives great importance to the studies estimating carbon footprint and making policies to reduce it. In this regard, the purpose of this research is forecasting Turkey's population, gross domestic product, energy production and energy consumption with independent variables such as greenhouse gas emissions involves using time series data mining forecast future periods.
Key Words: Carbon Footprint, Renewable Energy, Time Series Data Mining.
Jel Codes: Q01, S56.

EKOLOJİK AYAK İZİ ÇALIŞMALARININ BİBLİYOMETRİK ANALİZİ

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Özet: Ekolojik ayak izi son yılların en çok dikkat çeken araştırma konularından biri haline gelmiştir. Özellikle küresel ısınma ve iklim değişikliği gibi öne çıkan çevresel tehditlere paralel bir şekilde artan çevresel farkındalık, bireysel ve toplumsal düzeyde ekolojik ayak izi olarak kavramsallaştırılmış olan ekosistem üzerindeki antropolojik baskının ölçülmesi ve gerekli önlemlerin alınması doğrultusunda önemli bir motivasyon kaynağı olmuştur. Bu doğrultuda özellikle politika yapıcılara yol göstermek ve çevreye yönelik politikalara bilimsel dayanak sunmak amacıyla ekolojik ayak izi pek çok bilimsel araştırmanın odak noktası haline gelmiştir. Bu çalışmada, ekolojik ayak izinin artan popülaritesi göz önüne alınarak Web of Science SCI, SCI-E ve SSCI indeksli dergilerde yayımlanmış olan çalışmaların bibliyometrik analizi yapılmaktadır. Elde edilen istatistiki bilgiler konunun disiplinlerarası boyutu ve artan önemini net olarak ortaya çıkarmaktadır.

BIBLIOMETRIC ANALYSIS OF ECOLOGICAL FOOTPRINT STUDIES

Abstract: The ecological footprint has become one of the most striking research topics in recent years. Environmental awareness, which increases in parallel with increasing environmental threats such as global warming and climate change, has been an important source of motivation for measuring the anthropological pressure on the ecosystem, which has been conceptualized as an ecological footprint. In this direction, the ecological footprint has become the focal point of many scientific studies, especially in order to guide policy makers and to provide a scientific basis to environmental policies. In this study, bibliometric analysis of the studies on the ecological footprint, which were published in Web of Science SCI, SCI-E and SSCI indexed journals, taking into account the increasing popularity of ecological footprint. The statistical information obtained clearly reveals the interdisciplinary dimension and increasing importance of the subject.

ÇEVRE TEKNOLOJİLERİ TAŞIMACILIK SEKTÖRÜ CO^2 EMİSYONLARINI AZALTMAYA YARDIMCI OLUR MU? AB15 ÜLKELERİNDEN KANITLAR

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Özet: Mevcut literatürde CO2 emisyonları ile teknolojik gelişme arasındaki ilişkiyi ampirik olarak araştıran birçok çalışma bulunmaktadır. Ancak bu çalışmaların büyük bir çoğunluğu sektörel düzeydeki farklılıkları göz ardı etmekte ve ülke düzeyindeki kanıtlara odaklanmaktadır. Bu çalışma, literatürdeki bu araştırma açığını doldurmaya çalışmakta ve çevre teknolojilerinin CO2 emisyonları üzerindeki etkisini sektörel düzeyde incelemektedir. Bu amaçla, özel olarak ulaştırma sektörüne odaklanmakta ve 1977-2015 dönemini incelemektedir. Bu ilişkiyi ampirik olarak incelemek için CCEMG ve AMG tahmincilerinden yararlanılmaktadır. Elde ettiğimiz bulgular, daha önce ülke düzeyinde yapılan ampirik çalışmalardan farklı olarak, çevre teknolojileri ile ulaşım sektörü CO2 emisyonları arasında istatistiksel olarak anlamlı bir ilişki olmadığını ortaya koymaktadır. Çalışmada AB15 ülkelerinin 2050 yılına kadar sıfır karbon hedefine ulaşması için özellikle ulaşım sektörü çevre teknolojilerine daha fazla yatırım yapması gerektiği öneriliyor.
Anahtar Kelimeler: Ulaştırma sektörü, CO2 emisyonları, çevre teknolojileri, AB15.

DO ENVIRONMENTAL TECHNOLOGIES HELP TO REDUCE TRANSPORT SECTOR CO^2 EMISSIONS? EVIDENCE FROM THE EU15 COUNTRIES

Abstract: A growing number of studies empirically investigate the nexus between CO2 emissions and technological progress in the existing literature. However, these studies largely ignore sectoral-level differences and mostly focus on country-specific evidence. This study attempts to fill this research gap and examines the impact of environmental technologies on CO2 emissions at the sectoral level. To this end, it specifically covers the transport sector in the EU15 countries over the period between 1977 and 2015. In order to empirically investigate this relationship, we use the Common Correlated Effects Mean Group (CCEMG) and the Augmented Mean Group (AMG) estimators. Unlike the earlier country-level empirical studies, our findings reveal that there is no statistically significant linkage between environmental technologies and transport sector CO2 emissions. It is recommended that the EU15 countries should invest more in environmental technologies especially in the transport sector for becoming a carbon-neutral economy by 2050.
Key Words: Transport sector, CO2 emissions, environmental technologies, EU15.
Jel Codes: O32, O52, Q53, Q55, R40.

SINO-US STOCK MARKET SYSTEMIC RISK, ECONOMIC POLICY UNCERTAINTY AND GLOBAL OIL MARKET: AN EMPIRICAL ANALYSIS BASED ON TVP-SV-VAR MODEL

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Abstract: This paper investigates interaction effects among Sino-US stock markets, economic policy uncertainty (EPU) and Global oil market. Specifically, by using TVP-SV-VAR models, it analyzes the data of fluctuation rates of the stock price in China and US markets, EPU index, and fluctuation rates of oil price in global markets from 2003 to 2020. It is found that the correlation effects among China and US stock markets and the global oil market are significant. The fluctuation of China and US stock markets affects the global oil market; however, compared with the China Stock market, the US stock market shows stronger impacts on the global oil market. It is also found that the increasing economic policy uncertainties (EPU) of the US also strengthen the fluctuation of global oil price whist the EPU of China does not show significant effects on it. Compared to sudden events like the circuit breaker in stock markets and the European debt crisis, the impacts of EPU on the stock market was more significant during the global financial crisis which covers a longer period. Moreover, it is also found that the global oil price has significant impacts on both the Sino-UK stock markets and the EPU of two countries.
Key Words: Fluctuation, Stock Market, EPU, Global Oil Price.

DOES ECONOMIC UNCERTAINTY AND INVESTORS SENTIMENT MATTER FOR ENERGY FUTURES RETURNS? A MULTI-SCALE STUDY BASED ON VARIATIONAL MODE DECOMPOSITION

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Abstract: The literature on energy prices considers fundamentals and macroeconomic factors as the principal drivers of crude oil and natural gas futures prices. However, the Behavioral finance theory challenged this latter assumption. Employing a variational mode decomposition and non-parametric causality approach, this paper provides evidence that a significant causal flow does exist between energy futures returns and sentiment proxies. However, results vary with respect to time frequencies and to the energy market. Using daily data from 2002 to 2018, of energy futures prices (natural gas and crude oil) and investor/market sentiment proxies (the American Association of Individual Investors, the Volatility Index, and the Economic Policy Uncertainty), we demonstrate that sentiment indices spill over and exhibit significant causalities with energy prices. The interaction between energy prices and economic uncertainty is relatively weak in the short run and strength toward the long run. Besides, bear investor sentiment better predicts energy returns compared to bull sentiment index. While bearish investors show significance over the entire sample period and for all the time frequencies, bullish investors manifest only in the long run for both crude oil and natural gas returns. Regarding VIX, it has better estimative power for WTI returns compared to HH returns and less causality power compared to investor sentiment indexes.
Key Words: Uncertainty, Volatility, Time-Frequency Domain, Non-Parametric Causality.

ENERJİ ÜRETİMİNDE ISI POMPASI KULLANIMININ GELECEĞİNİ BİR DURUM ÇALIŞMASI İLE DEĞERLENDİRMEK

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Özet: Enerji, insanların günlük yaşamlarını, devletlerin ekonomisini ve siyaseti etkileyen güçlü faktörlerden biridir. Son yıllarda nüfus artışı, sanayileşme ve kentleşme gibi nedenlerle enerji tüketim oranı artmıştır. Bu nedenle enerji verimliliği konusu önem kazanmaktadır. Bu artan enerji ihtiyacı, fosil yakıtların çevreye zararlı etkileri, rezervlerin azalması ve artan doğalgaz fiyatı gibi ekonomik etkiler, alternatif enerji kaynaklarının kullanımına yol açmıştır. Çevreye duyarlı, yüksek verimli ısı pompaları gibi yenilenebilir enerji kaynaklarının kullanımı cazip hale geldi. Isı pompalarını kullanmak, ısıyı bir kaynak olarak kullanmanın yollarından biridir ve aynı zamanda AB'nin 2020 stratejilerinin neredeyse sıfır emisyon oluşturma hedefine ulaşmak için iyi bir seçenek gibi görünmektedir. Isı pompalarının birçok avantajı vardır ve bu avantajları nedeniyle insanlar dünyada ısıtma (ayrıca soğutma) için ısı pompalarını kullanma eğilimindedir. Isı pompası sisteminin konut ısıtmasında kullanılması, özel binalarda olduğu kadar enerji verimliliğine katkı sağlanması, doğal kaynakların korunması ve çevre kirliliğinin azaltılması açısından da önemlidir. Bir sistemi uygulamak için ekonominin maliyetlerini analiz etmek önemlidir. Bu çalışmanın amacı, enerji üretiminde ısı pompası kullanımının geleceğini değerlendirmektir. Bu çalışmada, ısı pompası sistemleri detaylı bir şekilde incelenmiş, İstanbul (Türkiye) 'de kentsel dönüşüm sonrası inşa edilen ve doğalgaz sistemiyle ısıtılan bir daire seçilerek ısı pompası sistemi ile güçlendirilmiştir. Doğalgazla ısıtma ile ısı pompası kullanımı arasındaki farklar tartışılmış ve ısı pompalarının avantajları gösterilmiştir.
Anahtar Kelimeler: Yenilenebilir Enerji, Enerji, Isı Pompaları, Alternatif Enerji Sistemleri, Enerji Sistemleri.

EVALUATING THE FUTURE OF HEAT PUMP USAGE IN ENERGY PRODUCTION WITH A CASE STUDY

Abstract: Energy is one of the powerful factors affecting people's daily lives, the economy of states, and politics. In recent years, the rate of energy consumption has increased due to reasons such as population growth, industrialization and urbanization. For this reason, the issue of energy efficiency gains importance. This increased energy need, the harmful effects of fossil fuels on the environment, the decrease in reserves and economic impacts like increasing natural gas price have led to use of alternative energy sources. Like heat pumps that are environmentally, high efficient, using of renewable energy resources has becomes attractive. Using heat pumps are one the ways to use heat as a source and also look good option to reach nearly zero emission building goal of the EU's 2020 strategies. Heat pumps have multiple advantages and because of these advantages people tend to use of heat pumps for heating (also cooling) in the world. Using the heat pump system in residential heating is as important as it is in the private buildings too in terms of contributing to energy efficiency, protecting natural resources and reducing environmental pollution. In order to implement a system, it is important to analyze the costs of the economy. The aim of this study is to evaluate the future of heat pump use in energy production. In this study, heat pump systems were examined in detail, an apartment built after urban transformation in Istanbul (Turkey) and heated by natural gas system was selected and that it was retrofitted with a heat pump system. The differences between the heating by natural gas and using heat pumps were discussed and shown the advantages of the heat pumps.
Key Words: Renewable Energy, Energy, Heat Pumps, Alternative Energy Systems, Energy Systems.

THE ENERGY-GROWTH NEXUS REVISITED: AN ANALYSIS OF DIFFERENT TYPES OF ENERGY

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Abstract: This study revisits the nexus between energy consumption and economic growth by considering different types of energy use, namely, total energy use, fossil fuel energy use, and renewable energy use. For this purpose, a dynamic fixed effects estimator (DFE) is applied to the autoregressive distributed lag (ARDL) model which is built upon an extended version of Neoclassical production function. This study examines a global sample of 107 countries during the period 1996-2014, classified into three subsamples of countries based on different income levels. Overall, we find that, in the short run, the uses of total energy and fossil fuel energy significantly and positively contributed to higher income in both total and per capita terms. Meanwhile, the growth effects of renewable energy consumption appear to vary across different subsamples. In the long run, the impacts of energy on economic growth are mostly insignificant for subsamples. This supports energy conservative policies without harming economic growth.
Key Words: Energy-growth nexus; Renewable energy; Panel data analysis; DFE ARDL; Global sample.
Jel Codes: Q43.

ENERGY PRICE, EMISSION PRICE AND GEOPOLITICAL RISK DEPENDENCE STRUCTURE: IMPLICATIONS FOR PORTFOLIO DIVERSIFICATION

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Abstract: This study examines the short- and medium run dependence structures across oil price, emission price and global economic uncertainty using daily data covering the period between 2008 and 2017 and focusing on all quantiles of the distribution in BRICS countries. Previous studies have focused on the co-movement between EU-ETS, oil price and natural gas overlooking the significance of geopolitical risk in this relationship. Very few attempts were made to capture the co-movements between oil price and economic policy uncertainty and to capture the co-movement between oil price and emission price, but all failed to look at the wider context of global geopolitical uncertainty and the role that emission price movements can play in the context. In this study, we employ the spillover index developed by Diebold and Yilmaz (2012) to identify the dependence structure between oil price, natural gas price, emission price and global geopolitical uncertainty and a Variational Mode Decomposition (VMD) copula function., the key findings suggest that there are spillover effects among geopolitical risks, carbon price and oil price. Particularly, the study find spillover from carbon price to oil price and from geopolitical risk to oil price. The study outcomes could potentially have substantial influence on hedging strategies and portfolio risk diversification strategies for both hedge funds and institutional investors in general as well as economic policy makers. In short, the study makes a twofold contribution, which are academically rigorous but also relevant to the worlds of business and economic policy.
Key Words: Oil price, ETS, economic policy uncertainty, VMD.
Jel Codes: C32, C58, G10, Q03, Q04.

THE PAYOFF OF BEING ETHICAL: ENVIRONMENTAL MANAGEMENT STRATEGIES OF US BANKS AND THEIR TAIL RISK

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Abstract: Do economic realities coincide with environmental management strategies of banks? We answer this question, by studying environmental policies of banks and their impact on tail risk. Utilizing Asset4 ESG data for environmental measure, we test our hypothesis with a sample of US banks for the period from January 2002 to December 2017. We employ a novel extreme value theory to measure tail risk of banks. The results indicate that the banks' better environmental strategies are likely to reduce their tail risk providing evidence that better environmental strategies do coincide with the economic realities. We test the consistency of our results by using alternate proxies for tail risk and our results are not driven by endogeneity concerns. Finally, the nature of relationship differs with governance level, CSR committee existence, crisis period and institutional ownership presence.
Key Words: Environmental Performance, Multivariate Extreme Value Theory, Tail Risk, Banks, ESG.

DYNAMIC IMPACT OF ENERGY PRICES ON GREEN PRODUCTIVITY IN EUROPEAN UNION COUNTRIES

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Abstract: Energy inflation may encourage energy productivity from both demand and supply sides as businesses adopt green management practices and use more energy-saving technologies while customers prefer greener goods and services produced with lesser energy. In the study, we try to explore whether changes in domestic energy prices alter countries' green productivity trajectories using a 24-year (1995-2018) annual panel data set of 22 European Union countries. We define green productivity, i.e., the dependent variable, as the gross domestic product per unit of energy-related carbon dioxide emissions. The independent variable, i.e., domestic energy prices, is proxied by the consumer price index in the energy sector. Our control variables include technological competitiveness, trade openness, deindustrialization, and environmental tax revenues. In the analysis process, we first confirm the presence of the cross-section dependency and heterogeneity of the panel data and then verify the first-difference stationarity of the variables. Several tests consistently reveal a cointegration relationship between variables. Finally, we estimate the long-run elasticities using Dynamic Ordinary Least Squares (DOLS) and Fully Modified Ordinary Least Squares (FMOLS) estimators followed by the recent panel causality tests. Results reveal that energy prices are positively associated with green productivity meaning that energy inflation encourages energy-saving green technologies. This evidence is consistent with the development that especially industrial countries have decoupled their economic growth performances from emission-intensive energy use since the energy shocks in the early 1970s. Additional findings show that technological competitiveness and environmental tax revenues are negatively associated with green productivity while deindustrialization is found as the key driver of green productivity. Despite a unidirectional causality from trade openness, its impact remains inconclusive. Our study concludes that governments should support businesses to improve energy efficiency and green productivity especially when the energy prices persistently increase. This win-win strategy may benefit both environment and businesses.

Key Words: Energy Prices, Green Productivity, Environmental Tax, Heterogeneous Panel, EU Countries.
Jel Codes: F64, H23, O13, O44, Q50.

RENEWABLE ENERGY CONSUMPTION AND THE PRODUCTION FUNCTION IN MENA COUNTRIES

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Abstract: With the purpose of investigating the role of renewable energy in association with production practice, this research selects a multivariate panel data approach to understand and scrutinise the renewable energy augmented production function, with particular emphasis on the association between capital, labour, output, consumption of renewable energy, inflation (CPI) and the trade for 8 MENA countries. Utilising data from 2000 until 2016 and employing panel co-integration tests, the key findings demonstrate evidence of a long-term correlation between the variables. In addition, bi-directional causality between real growth domestic product (GDP) and inflation is uncovered. Interestingly, the study found evidence of two uni-directional causalities, running from inflation to renewable energy and from renewable energy to real GDP. Moreover, the findings deliver an alternative macroeconomic interpretation for the influence of inflation on factor input substitution. Our findings emphasise the critical role that renewable energy plays in the production process and its comprehensive, positive economic effects.
Key Words: Production Function; Renewable Energy; Output, Trade, İnflation; MENA; Panel Data.
Jel Codes: E23, O13, P18, P48, Q42, Q43.

CAN REGIONAL TRADE INTEGRATION AND RENEWABLE ENERGY TRANSITION ENSURE ENVIRONMENTAL SUSTAINABILITY IN SOUTH ASIA?

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Abstract: Environmental sustainability across South Asia has become one of the utmost important policy agendas of the concerned governments. The susceptibility of the South Asian economies to the multidimensional climate change adversities has motivated the need to unearth the macroeconomic factors that can function to ensure sustainability of the environmental attributes. Hence, this paper aims to evaluate the impacts of greater regional trade integration among selected South Asian economies and renewable energy transition on per capita carbon dioxide emissions across South Asia between 1990 and 2016. The results from the recently developed cross-sectionally augmented autoregressive distributed lag approach, accounting for cross-sectional dependency and slope heterogeneity issues, reveal that facilitating trade among the regional neighbors reduces carbon emissions both in the short- and long-run. Besides, enhancing the share of renewable energy in the aggregate energy consumption figures is also found to reduce the emissions in both the short- and long-run. Moreover, both regional trade integration and renewable energy transition are found to jointly reduce carbon-dioxide emission in South Asia. The results also authenticate the existence of the environmental Kuznets curve hypothesis in the South Asian context. Hence, the findings from this study impose key policy takeaways concerning environmental sustainability in South Asia.

Key Words: Environmental Sustainability; Regional Trade; Renewable Energy; Carbon Dioxide Emissions; South Asia.

ENERGY SECURITY-GROWTH NEXUS IN EUROPEAN COUNTRIES: ECONOMETRIC ANALYSIS IN THE AGE OF ENERGY TRANSITION

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Abstract: The European Energy Road Map 2050 (COM(2011) 885 final of 15 December 2011) has set out to reduce carbon footprint of energy sector, creating new challenges to power markets in the transition to a low-carbon system. This purpose has to converge to high levels of energy security and affordable electricity supplies. We want to investigate how the increased penetration of renewable energy resource in energy production has affect the GDP and the energy security for the European Union Countries during 1980-2019. In this paper GDP and energy security indicators are used as outputs of a ray production function whose inefficiencies are explained through the shares of fossil and renewable energy. Following Löthgren (2000), we develop a multiple-output production model using ray production function with polar coordinates that allow for the estimation of production frontiers and the country-specific inefficiency effects. Furthermore, we employ two energy security indexes (Matsumoto et al., 2018; Iddrisu and Bhattacharyya, 2015) which account for the energy source diversification and the ability to manage the internal energy supply expressed by the self-sufficiency index. Several panel econometric techniques are applied in order to define the correct specification of the ray production function and appraise the robustness of results. Adopting multi-output production function, along with different indicators of energy security, allows us to explore new nexus between growth and security, crucial to address policy design in the perspective of the New Green Deal. Renewable energy sources are found to have positive effects, reducing the deviations from the efficient frontier. The policy implications of the results are discussed focusing on the relationships among RES promotion, economic growth and energy security.

Key Words: Energy Security, Energy Sources, Economic Growth, Multi-Output Function, Panel Models
Jel Codes: C23; O13; Q42; Q49.

THE RELEVANCE OF BRAND MARKETING FOR THE IMPROVEMENT OF LOCAL REGIONAL DEVELOPMENT: THE CASE OF THE AZORES INSULAR REGION

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Abstract: The Autonomous Portuguese region of Azores is one of the European Union's Outermost Regions (OR). With nine islands located in the heart of the Atlantic Ocean, the Archipelago is a midpoint between the North American Continent and Europe. So, this ultra-peripheral territory is strategically positioned. In fact, these characteristics have enabled the acknowledgment of the region as a sustainable nature-based destination. Recently, based on its remoteness and breathtaking nature, it has been often labeled with adventure tourism by global references like Bloomberg, Departures, BBC, Forbes, GeekyExplorer, Lonely Planet, among several others. Moreover, its natural and cultural legacy and its generalized rural environment make it the ideal place for slow tourism adventures. Thereby, this typology of tourism associated with the marketing and advertisement created around it is seen as an

indispensable channel for influencing sustainable regional growth and, consequently, territorial sustainability as a whole. Thus, through preliminary investigation outcomes, it is possible to envision that the marketing and advertisement made over the new typologies of tourism and the Azores' singularity as a destination could represent significant impacts over the regional socio-economy basis and also to the local development and growth of the region. Moreover, it was also possible to identify that the most feasible Azores Slow and Nature-based tourism growth opportunities were located in niche markets with excellent added value: marine tourism and rural tourism. Nevertheless, it is pivotal to be conscious of the possibility of tourism massification, restraining sustainable development, and, accordingly, the essence of the destination's tourism experience and jeopardize the destination branding.
Key Words: Marketing and Advertisement; Regional Studies; Nature-based Tourism; Strategic Planning; Slow Tourism; Sustainability.
Jel Codes: R1; R10; R11.

NET-SIFIR KARBON EMİSYON HEDEFİ: CIVETS ÜLKELERİ

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Özet: 4. sanayi devrimiyle birlikte karbon emisyonlarını azaltma isteği ve baskısı ile ortaya çıkan sıfır karbon algısının toplum yapısında ve ekonomik sistem üzerinde değişikliklere yol açtığı görülmektedir. Bu kapsamda Kolombiya, Endonezya, Vietnam, Mısır, Türkiye ve Güney Afrika (CIVETS) ülkelerinde net sıfır emisyon hedeflerine ulaşılması için ekonomik büyüme, finansal kalkınma, enerji kullanımı ve karbondioksit emisyonlarının etkisinin incelenmesi amaçlanmaktadır. Çalışmada 1961-2019 yıllarını kapsayan veriler kullanılarak kısa ve uzun dönemli ilişkileri incelemek için doğrusal ve doğrusal olmayan gecikmeli dağıtılmış otoregresif model (ARDL) yaklaşımı kullanılmıştır. Ek olarak, ele alınan ülkeler kapsamında ekonomik büyümenin tahmini etkileri çevresel Kuznets eğrisi hipotezi kapsamında incelenerek sürdürülebilir büyümenin varlığının sorgulanması planlanmaktadır.
Anahtar Kelimeler: Net-Sıfır Karbon, ARDL/NARDL, CIVETS, Kuznets Eğrisi, Sürdürülebilir Büyüme.

NET-ZERO CARBON EMISSION TARGET: CIVETS COUNTRIES

Abstract: Zero carbon perception resulting from the desire and pressure to reduce carbon emissions, with the 4th industrial revolution, has caused changes in the social structure and economic system. In this paper examines the impact of economic growth, financial development, energy use and carbon dioxide emissions to achieve net zero emission targets in Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa (CIVETS). Linear and nonlinear auto-regressive distributed lag model (ARDL) approaches was used to examine the short and long-term relationships in 1961-2019 periods. Moreover, the effects of economic growth are examined within the scope of the environmental Kuznets curve hypothesis and the existence of sustainable growth is being investigated in selected countries.
Key Words: Net-Zero Carbon, ARDL/NARDL, CIVETS, Kuznets Curve, Sustainable Growth.
Jel Codes: C22, O44, Q54, Q55.

ATIK AZALTMA VE GERİ DÖNÜŞÜM İLE ENERJİ VERİMLİ BİNALARDAN OLUŞAN BİYO-YENİLENEBİLİR KOJENERASYON TABANLI İZOLE MİKRO ŞEBEKENİN KONTROLÜ

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Özet: Hızlı nüfus artışı, sanayileşme ve hızlı kentleşme gibi birçok nedenden dolayı son zamanlarda atık üretiminin hızla artması çevresel ve sosyal sorunları önemli ölçüde ağırlaştırmaktadır. Bu problemler ayrıca beraberlerinde enerji talebinde büyük artışları da ortaya çıkarmaktadırlar. Sürdürülebilir bir toplum için bu atıkların kullanılarak biyoenerji gibi yenilebilir yeşil enerji üretimine yönelik çözümlerin bulunması hayati önem taşımaktadır. Burada atıkları yeniden kullanarak azaltılmasını sağlamak ve yeşil güç üretmek için tüm olası teknikleri içeren yenilenebilir biyoenerji kojenerasyon tabanlı hibrit mikro şebekeler kullanımı yukarıdaki sorunların çözümünde muazzam katkılar sağlayacaktır. Rüzgar, güneş ve biyoenerji kojenerasyon tabanlı mikro şebekelerin kendi güç gereksinimlerini üretmeleri için her köye/topluluğa tahsis edilmesi bu katkıların sağlanması için motive edici bir güç oluşturacaktır. Yeni yenilenebilir enerji teknolojilerinin ortaya çıkışı, güç sistemi kontrolünde birçok zorluk ortaya çıkarmaktadır. Yenilenebilir enerji kaynakları kesintili ve öngörülemez bir yapıya sahiptirler. Bu kaynaklar, gelecekteki güç sistemimizi oluşturması düşünülen mikro şebekelerin vaz geçilmez elemanlarıdır. Mikro şebekede yüksek yenilenebilir enerji penetrasyon seviyesi ile bu sistemlerin kontrolü önemli bir problem oluşturmaktadır. Bu çalışmada biyo yenilenebilir kojenerasyon tabanlı bir izole mikro şebeke sistemin kontrolü için tip 2 bulanık tabanlı bir kontrol yapısı sunulmuştur. Çalışmada farklı atmosferik durumlar ve atık durumları için çalışma senaryoları düşünülmüştür. Bu senaryolar yardımı ile önerilen kontrol yapısının mikro şebekenin kontrolündeki başarısı gösterilmiştir.
Anahtar Kelimeler: Atık azaltma, Geri dönüşüm, Mikro şebeke kontrolü, Kojenerasyon.

CONTROL OF BIO-RENEWABLE COGENERATION-BASED ISOLATED MICROGRID CONSISTING OF WASTE REDUCTION AND RECYCLING AND ENERGY-EFFICIENT BUILDINGS

Abstract: The rapid increase in waste production in recent times due to many reasons such as rapid population growth, industrialization and rapid urbanization has significantly aggravated environmental and social problems. These problems also cause large increases in energy demand with them. It is vital for a sustainable society to find solutions for the production of renewable green energy such as bioenergy using these wastes. The use of hybrid microgrids based on renewable bioenergy cogeneration, which includes all possible techniques to reuse waste and generate green power, will make a tremendous contribution to solving the above problems. The allocation of wind, solar and bioenergy-based microgrids to each village/community to generate their own power requirements will create a motivating force for these contributions. The emergence of new renewable energy technologies reveals many challenges in power system control. Renewable energy sources have an intermittent and unpredictable nature. These resources are indispensable elements of microgrids that are thought to constitute our future power system. With the high level of renewable energy penetration in the micro grid, the control of these systems creates an important problem. In this study, a type 2 fuzzy-based control structure for the control of a bio-renewable cogeneration-based isolated micro-grid system is presented. In the study, working scenarios for different atmospheric and waste situations are considered. With the help of these scenarios, the success of the proposed control structure in the control of the microgrid has been demonstrated.
Key Words: Waste reduction, Recycling, Microgrid control, Cogeneration.
Jel Codes: Q4.

FORECASTING CRASHES IN OIL PRICES DURING COVID-19 PANDEMIC: AN EXPLAINED MACHINE LEARNING MODELS

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Abstract: This paper aims to predict oil prices during COVID-19 pandemic. We employ six advanced machine learning models, namely, LightGBM, CatBoost, Extra Trees, XGboost and neural network models. An accurate forecasting framework can effectively capture the price change trend and reduce the impact of COVID-19 pandemic. In this sense we combined the best model with ensemble technique related to its ability to boost accuracy performance. In addition a large data with different asset classes used to investigate the crash period. The research even introduced SHapley Additive Reasons (SHAP) values for model analysis and interpretability. Empirical results indicate the superiority of the LightGBM and ensemble technique over other models. Moreover, using the efficient SHAP algorithm, this new framework provides favorable explanations of the model performance and highlights the core features for predicting oil prices.
Key Words: Crude Oil; Crash; COVID-19; Machine Learning Models
Jel Codes: K32; Q45; C22.

COVID-19'UN FAYDALARI, HAVA KALİTESİ İLİŞKİSİ; İSTANBUL HAVALİMANI ÖRNEĞİ

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Özet: Dünyanın gündeminde olan küresel iklim değişikliği devletler tarafından yıllardır üzerine çözüm aranan ciddi bir problem halini almıştır. Bu soruna çözüm yolları aranırken sera gazı emisyonu azaltma çalışmaları başvurulan yöntemlerden biridir. Pandemi olarak adlandırılan "Covid-19 Salgını" kapsamında alınan önlemler karşısında ulaşım sektöründe yaşanan durgunluk, dünya genelinde olumsuz ekonomik etkilere neden olsa da hava kalitesinin arttırılması konusunda olumlu bir etkiye sahiptir. Bu nedensellik, sera gazı emisyonlarının geride bıraktığımız yıllara kıyasla azalmasına sebep olmuştur. Dünya genelinde yapılan ölçümlemelerde; pandeminin ortaya çıkışından sonra uçuş sayılarının azalmasıyla birlikte sera gazı emisyonlarında düşüş gözlemlenmiştir. T.C. Çevre ve Şehircilik Bakanlığı verileri ışığında yapılan karşılaştırmalarda; Dünya'da, uçuş olan döneme göre sera gazı emisyonlarının azaldığı tespit edilmiştir. Dünya'da; 6 Ocak 2020 tarihinde günlük sera gazı emisyonu azaltımı oranı %0,1 iken 7 Nisan 2020'ye gelindiğinde bu oran %17,3 seviyesine yükselmiştir. İnsan faaliyetlerinden kaynaklanan karbondioksit emisyonları içerisinde havacılık sektörü %2,46'lık bir paya sahiptir. Pandemi sebebiyle alınan tedbirler kapsamında uçuşların tamamen durmasının İstanbul Havalimanı ve çevresinde hava kalitesi üzerinde etkisinin incelenmesi araştırmanın konusunu oluşturmuştur.
Anahtar Kelimeler: Havacılık, Sera Gazı Emisyonu, Covid-19, Küresel İklim Değişikliği

BENEFITS OF COVID-19, AIR QUALITY RELATIONSHIP; THE CASE OF ISTANBUL AIRPORT

Abstract: Global climate change, which is on the world's agenda, has become a serious problem that has been sought by governments for years. While looking for solutions to this problem, greenhouse gas emission reduction studies are one of the methods used. Even though the stagnation in the transportation sector in the face of the measures taken within the scope of the "Covid-19 Outbreak", which is called the pandemic, has negative economic effects worldwide, it has a positive effect on improving air quality. This causality has led to a decrease in greenhouse gas emissions compared to the past years. In the measurements made around the world; After the emergence of the pandemic, a decrease in greenhouse gas emissions has been observed with the decrease in the number of flights. In the comparisons made in the light of the data of Republic of Turkey Ministry of Environment and Urbanisation; It has been determined that greenhouse gas emissions decrease in the world compared to the period of flight. In the world; While the daily greenhouse gas emission reduction rate was 0.1% on January 6, 2020, this rate increased to 17.3% by April 7, 2020. Aviation sector has a share of 2.46% in carbon dioxide emissions resulting from human activities. The subject of the study was to examine the effect of stopping flights completely on air quality in and around Istanbul Airport within the scope of the measures taken due to the pandemic.
Key Words: Aviation Greenhouse Gas Emission, Covid-19, Global Climate Change.

BÖLGESEL KONUT VE SANAYİ ELEKTRİK TÜKETİMİNİN BELİRLEYİCİLERİ ÜZERİNE MEKANSAL EKONOMETRİK ANALİZ

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Özet: Bu araştırmanın amacı Türkiye'de 2007-2018 dönemi için konut ve sanayi elektrik tüketiminin belirleyicileri Düzey II bölgeleri örnekleminde mekansal panel veri yöntemi ile analiz etmektir. Mekansal panel veri yönteminin komşu bölgeler arasındaki etkileşimi dikkate almasından araştırmanın yöntemi olarak belirlenme nedenidir. Araştırmada bölgesel konut ve sanayi elektrik tüketiminin belirlemeye yönelik iki model kurulmuştur. Birinci model bölgesel konut elektrik tüketimini belirleyicilerini analiz etmeye ilişkin iken, ikinci model bölgesel sanayi elektrik tüketimini belirlemeye yöneliktir. Mekansal panel veri yöntemi ile modellerde yer alan değişkenler arasındaki ilişkide mekansal etkinin varlığı incelenmektedir. Literatür doğrultusunda kurulan modellerin ilkinde bağımlı değişken olarak bölgesel kişi başına düşen konut elektrik tüketimi tercih edilirken, bağımsız değişkenler olarak kişi başına düşen gelir, kentleşme düzeyi, nüfus ve bölgesel kişi başına konut elektrik tüketiminin gecikmeleri tercih edilmektedir. İkincisinde bağımlı değişken olarak kişi başına sanayi elektrik tüketimi yer alırken, bağımsız değişken olarak sanayileşme düzeyi, kentleşme düzeyi, nüfus ve bölgesel kişi başına sanayi elektrik tüketiminin gecikmeleri tercih edilmektedir. Araştırmanın modellerinde bağımsız değişkenler arasında bölgesel kişi başına düşen konut ve sanayi elektrik tüketiminin gecikmelerinin olması modelde yer alan değişkenler arasındaki dinamik ilişkinin de incelenmesini sağlamaktadır. Analiz bulguları bölgesel konut ve sanayi elektrik tüketimini etkileyen faktörleri tespit etmenin yanında bu faktörler arasındaki farklılığın da ortaya konması beklenmektedir. Bu araştırmanın literatüre iki farklı açıdan katkı sunması beklenmektedir. Bunlardan ilki Türkiye'de konut ve sanayi elektrik tüketimini Düzey II bölgeleri bazında incelemesi iken, ikincisi modellerdeki değişkenler arasındaki dinamik ilişkinin mekansal panel veri yöntemi ile incelenmesidir.

Anahtar Kelimeler: Bölgesel Konut Elektrik Tüketimi, Bölgesel Sanayi Elektrik Tüketimi, Mekansal Panel Veri Analizi.

A SPATIAL ECONOMETRIC ANALYSIS ON THE DETERMINANTS OF REGIONAL RESIDENTIAL AND INDUSTRIAL ELECTRICITY CONSUMPTION

Abstract: The aim of this research is to analyze the determinants of residential and industrial electricity consumption in NUTS II regions of Turkey by spatial panel data method. It is the reason why the spatial panel data method is determined as the method of the research since it takes into account the interaction between neighboring regions. Two models are established to determine the regional residential and industrial electricity consumption. The first model is analyze the determinants of regional residential electricity consumption, the second model is analyze the determinants of the regional industrial electricity consumption. The existence of spatial effect in the relationship between the variables in the models is examined with the spatial panel data method. In in line with the literature, regional per capita residential electricity consumption is preferred as the dependent variable, while per capita income, urbanization level, population and lagged value of regional per capita residential electricity consumption are preferred as independent variables in the first model. Regional per capita industrial electricity consumption takes place as the dependent variable, while the industrialization level, urbanization level, population and lagged value of regional per capita industrial electricity consumption are preferred as independent variables in the second model. Among the independent variables in the research models, lagged value of regional per capita residential and industrial electricity consumption enable the analysis of the dynamic relationship between the variables in the models. The analysis findings are expected to reveal the factors affecting regional residential and industrial electricity consumption, as well as the difference between these factors. This research is expected to contribute to the literature in two different ways. The first, the determinant of residential and industrial electricity consumption are examined on NUTS II regions. The second, dynamic relationship between the variables of the models are analyzed by spatial panel data methods.

Key Words: Regional Residential Electricity Consumption, Regional Industrial Electricity, Spatial Panel Data Anaysis

Jel Codes: O18,R12,C23

CLEAN ENERGY SECTORAL MARKETS, ECONOMIC POLICY AND OIL MARKET UNCERTAINTY: A WAVELET-BASED CROSS-QUANTILOGRAM ANALYSIS

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Abstract: This paper aims to contribute to the literature on clean energy stock market performance by jointly examining the impact of oil market uncertainty and Economic Policy Uncertainty (EPU) index for the U.S. on sectoral clean energy stocks from November 10, 2010 to August 19, 2020 (June 21, 2019 for financial sector). In particular, we analyze the dependence and directional predictability from EPU and oil market uncertainty index (OVX) to sectorial renewable energy stock in U.S (NASDAQ OMX Green Building, NASDAQ OMX Green Economic, NASDAQ Clean Edge Green Energy, NASDAQ OMX Green Financial, NASDAQ OMX Green IT and NASDAQ OMX Green Transportation). To serve our purpose, we use wavelet methodology and the cross-quantilogram. Our results show a significant dependence between selected variables across different time scales and across different quantiles of the distribution.
Key Words: Economic Activity; Energy Market; Stock Market; Asymmetric Shocks.

TÜRKİYE'DE PETROL TALEBİNİN FİYAT VE GELİR ESNEKLİKLERİ: SEKTÖREL BİR ANALİZ

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Özet: Bu çalışmanın temel amacı 1971-2017 dönemi için Türkiye'nin petrol talebinin fiyat ve gelir esnekliklerini sektörel bazda tahmin etmektir. Bu amaç doğrultusunda, sektörel enerji tüketimi verileri Uluslararası Enerji Ajansı, sektörel gayrisafi yurtiçi hâsıla (GSYİH) verileri Birleşmiş Milletler, dünya petrol fiyatları ise British Petrol veri tabanından temin edilmiştir. Çalışmada serilerin durağanlık dereceleri I(0) ya da I(1) olarak tespit edildiği için değişkenler arasındaki eşbütünleşme ilişkisi ARDL Sınır Testi ile tahmin edilmiştir. Elde edilen bulgulara göre, sektörel bazda, sanayide, hanede ve hizmetlerde değişkenler arası uzun dönemli ilişkinin varlığı tespit edilirken, ulaşım sektöründe bahsi geçen değişkenler arasında herhangi bir ilişki bulunamamıştır. Bununla birlikte, toplam enerji tüketimi, GSYİH ve dünya petrol fiyatlarının uzun dönemde eşbütünleşik olduğu tespit edilmiştir. Çalışmada, uzun dönemde enerji talebinin gelir esnekliği pozitif, fiyat esnekliği ise negatif olarak hesaplanmıştır.
Anahtar Kelimeler: Enerji Talebi, Eşbütünleşme Analizi, Fiyat Esnekliği, Gelir Esnekliği, Türkiye.

INCOME AND PRICE ELASTICITY OF ENERGY DEMAND IN TURKEY: A SECTORAL ANALYSIS

Abstract: The main goal of this study to estimate price and income elasticity of oil demand for Turkey on a sectoral basis during the period 1971-2017. For this purpose, sectoral energy consumption data are obtained from the International Energy Agency, sectoral gross domestic product (GDP) data are gathered from the United Nations, and world oil prices are taken from British Petrol databases. Since the stationarity degrees of the series are determined as I(0) or I(1) in the study, the cointegration relationship between the variables is investigated through the ARDL Bounds Test. According to the findings, a long-term relationship between variables is found on a sectoral basis; industry, household, and services, while no relationship is determined between the aforementioned variables in the transportation sector. However, a cointegration relationship has been found between total energy consumption, GDP, and world oil prices for the Turkish economy. In the study, the income elasticity of energy demand is calculated as positive, and the price elasticity is estimated as negative in the long run.
Key Words: Cointegration, Energy Demand, İncome Elasticity, Price Elasticity, Turkey.
Jel Codes: B22, C22, Q43.

ASSESSING THE VALUATION THE PORTUGUESE REAL ESTATE MARKET: USING REAL OPTIONS

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Abstract: Bearing in mind the contribution of real options analysis on the valuation of undeveloped building sites is meaningful in the decision-making regarding the apartment-buildings construction. The authors have used these real options for the Portuguese real estate sector. Thereby, through the use of options model based on Quigg methods, and including the inevitable rearrangements for the Portuguese market, it was found that the scale price flexibility parameter and construction expenditures' elasticity of scale parameter had a powerful impact on building sites' values. The empirical analysis revealed that the option to defer adds value to undeveloped building sites' valuations.
Key Words: Real Options, Real Estate, Uncertainty, Defer, Optimal Timing.
Jel Codes: D81; D92.

EKONOMİK BÜYÜME İLE YENİLEBİLİR VE YENİLENEMEZ ENERJİ TÜKETİMİ İLİŞKİSİ: FREKANS ALANDA PANEL NEDENSELLİK TESTİ

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Özet: Çevre konusunda yapılan araştırmalar, iklim değişikliğinin gerçek bir tehdit olduğunu kanıtlayıp, hem gelişmiş hem de gelişmekte olan ülkelerin enerji kaynaklarını fosil temelli kaynaklardan güneş, rüzgar, jeotermal, hidroelektrik, biyo-yağlar ve okyanus enerjisi gibi yenilenebilir alternatiflere kaydırmaları gerektiği göstermişlerdir. Gelişmiş ve gelişmekte olan ülkelerin öncelikli hedeflerinden biri olan ekonomik büyümeyi odağa alan bu çalışmada, 1971-2015 döneminde seçilen 16 ülke için iki farklı nedensellik ilişkisi test edilecektir: (i) yenilenebilir enerji tüketimi ile ekonomik büyüme ve (ii) yenilenemez enerji tüketimi ile ekonomik büyüme. Bu amaçla, frekans alanda zaman serisi nedensellik testi ile panel nedensellik testi kullanılmış; ülke bazlı sonuçlar yenilenebilir ve yenilenemez enerji tüketimi ile ekonomik büyüme arasındaki genelde nedensellik ilişkisi olmadığını gösterirken, frekans alandaki panel nedensellik testi sonuçları nedensellik ilişkisinin varlığını destekleyen güçlü kanıtlar sunmuştur.
Anahtar Kelimeler: Ekonomik Büyüme, Yenilenebilir Enerji Tüketimi, Frekans Alanda Nedensellik Testi.

DISAGGREGATING RENEWABLE AND NONRENEWABLE ENERGY CONSUMPTION IN ENERGY GROWTH NEXUS: EVIDENCE FROM PANEL FREQUENCY DOMAIN APPROACH

Abstract: The environmentalists argue that the climate change is a real threat, and therefore they believe both developed and developing countries should shift their energy sources from fossil-based to renewable alternatives, including solar, wind, geothermal, hydropower, bio-oils and ocean power to sustain economic growth. In this context, this study investigates the causal relationship between two sets of pairs: (i) renewable energy consumption and economic growth and (ii) nonrenewable energy consumption and economic growth for the selected 16 countries for the 1971-2015 period. To fulfill this objective, the study employs a recently introduced frequency domain approach in both single-country form and multi-country (panel) form. The study indicates some dissimilarities on renewable and nonrenewable energy consumption and economic growth nexus in the selected countries. Besides, although the results of single country frequency domain test mostly support neutrality hypothesis, multi-country frequency domain test finds strong evidence supporting bidirectional causality among these sets of pairs.
Key Words: Economic Growth, Renewable Energy Consumption, Frequency Domain Causality Test.
Jel Codes: C32, C33, Q42, Q43.

SUSTAINABLE DEVELOPMENT AND RENEWABLE ENERGY SOURCES IN TURKEY

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ABSTRACT: Everything sustainable must be based on a resource, and to ensure this, the source should also be sustainable. In this context, the sustainability and safety of resources are essential for the sustainability of development and welfare. However, the earth is threatened by human-oriented degradation. In terms of sustainable development, energy is now in a dilemma because of today's fossil fuels. The use of fossil fuels, which is inevitable in economic production, on the other hand, is the leading cause of environmental degradation and climate change. This situation puts the global community in serious trouble to reach the primary goals of Sustainable Development. This study aims to address all aspects of sustainable development and energy and question the role of energy in Sustainable Development. The Sustainable Development approach, which seeks to leave a livable world for future generations, must overcome its dilemma with energy to achieve its goals. As a notion including social, economic, and environmental dimensions, Sustainable development can be defined as meeting today's needs considering future generations while providing equilibrium between the environment and human. Thus, the sustainable development approach of international organizations such as UN, WB, OECD, and WWF is analyzed.

Keywords: Sustainable Development; Energy sources; Strategic plans; Energy policies.

GÜNEŞ ENERJİ SANTRALLERİNİN ELEKTRİK DAĞITIM ŞEBEKESİNE ENTEGRASYONU VE ETKİLERİNİN İNCELENMESİ

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Özet: Yenilenebilir enerji kaynakları arasında daha kolay ölçeklendirilebilme ve daha çok lokasyona kurulabilme özelliklerinden dolayı yoğun bir ilgi gören, Elektrik Piyasasında Lisanssız Elektrik Üretimine İlişkin Yönetmeliğin yürürlüğe girmesiyle de önü açılan güneş enerjisine dayalı üretim tesislerinin elektrik dağıtım şebekesine çok sayıda entegrasyonunun gerçekleşeceği öngörülmektedir. Elektrik dağıtım şebekeleri, orta gerilimden alçak gerilime doğru olan tek yönlü enerji akışına göre tasarlandığından ötürü, farklı gerilim seviyelerinden şebekeye bağlanan üretim santralleri ile birlikte çift yönlü enerji akışına açık hale gelmiş ve başta gerilim regülasyonunun bozulması olmak üzere birçok entegrasyon sorununu da beraberinde getirmiştir. Güneş enerjisine dayalı elektrik üretim santrallerinin şebekeye entegrasyonlarında, üretim tesisi ve bölgedeki yük durumu, gerilim regülasyonunun sağlanması ve teknik kayıplarının elimine edilmesi hususunda önemli rol oynamaktadır. Bu çalışmada Kahramanmaraş bölgesindeki güneş enerji santrallerinin buradaki elektrik dağıtım şebekesine entegrasyonu sonucunda ortaya çıkan gerilim regülasyonu sorunları ve bu santrallerin teknik kayıplara olan etkiler incelenmiştir. Çalışma kapsamında, üzerinde çok sayıda güneş enerji santralinin bağlı olduğu bir pilot fider belirlenmiş ve güç sistemi benzetim programı olan Digsilent Power Factory yardımıyla hem yük akışı analizleri gerçekleştirilmiş hem de fider üzerindeki hat ve transformatör kayıpları incelenmiştir. Analiz sonuçlarına göre; üretim santrallerinin bölgede tüketilen enerjiden daha çok seviyede üretim yapması durumunda gerilim yükselmelerinin yaşanması suretiyle gerilim regülasyonunda bozulmalar olduğu ve teknik kayıplarda da artış yaşandığı görülmüştür. Üretim ve tüketim koşullarının beklenen yönde değiştirilmesiyle de gerilim regülasyonunun sağlanmasında ve teknik kayıpların azalmasında olumlu sonuçlar elde edilmiştir.
Anahtar Kelimeler: Güneş, Şebeke, Gerilim, Kayıp, Regülasyon.

INTEGRATION OF SOLAR POWER PLANTS ON THE ELECTRICITY DISTRIBUTION NETWORK AND AN INVESTIGATION OF ITS EFFECTS

Abstract: Among the renewable energy sources, it is anticipated that many integration of solar energy-based generation facilities, which have attracted a great deal of attention due to their easy scalability and their ability to be installed in more locations, will be integrated into electricity distribution network. Since electricity distribution networks are designed according to unidirectional energy flow from medium voltage to low voltage, they have become open to bidirectional energy flow with generation plants connected to the network at different voltage levels and brought many integration problems, especially the deterioration of voltage regulation. In the integration of solar power plants into the grid, the load situation in the generation facility and the region plays an important role in ensuring voltage regulation and eliminating technical losses. In this study, the voltage regulation problems that arise as a result of the integration of solar power plants in the Kahramanmaraş region to the electricity distribution network there and the effects of these power plants on technical losses are examined. Within the scope of the study, a pilot feeder on which a large number of solar power plants are connected was determined and both load flow analysis and line and transformer losses on the feeder were examined with the help of Digsilent Power Factory, a power system simulation program. According to the analysis results; it has been observed that increases in technical losses and there are disturbances in the voltage regulation due to voltage increases in case the generation plants produce at a higher level than the energy consumed in the region. By changing the production and consumption conditions in the expected direction, positive results have been obtained in providing voltage regulation and reducing technical losses.
Key Words: Sun, Grid, Voltage, Loss, Regulation.

ENERJİ ARZ GÜVENLİĞİNDE DEĞİŞİMİN YÖNÜ

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ÖZET: Enerji arz güvenliği, ülkelerin ekonomik büyümelerinin sürdürülebirliği için çok önemlidir. Enerji kaynaklarına ulaşmak ve bu kaynakların sürdürülebilir olması enerji arz güvenliğinin önemli boyutlarını teşkil etmektedir. Enerji arz güvenliğinde yıllara göre farklı kaynaklar öne çıksa da son yıllarda doğal gaz ve yenilenebilir enerjinin gittikçe artan önemini görüyoruz. Bu nedenle, bir yandan dışa bağımlılığı çok yüksek olan doğal gazın arz güvenliği sağlanırken diğer yandan yerli kaynak olarak adlandırılan hidro, güneş ve rüzgar gibi yenilenebilir kaynaklarından yararlanmak enerji arz güvenliği açısından önemlidir. Dolayısıyla, enerji kaynaklarının herhangi bir sıkıntı yaşanmadan sağlanması ve bu kaynakların ekonomik olması enerji arz güvenliğinin olmazsa olmaz koşuludur. Bu nedenle, enerji arz güvenliğinde özellikle yenilenebilir kaynakların toplam enerji arz güvenliğinde payını artırmak stratejik öneme sahiptir.
JEL: Q40 , Q41, Q42, Q43

DIRECTION OF CHANGE IN ENERGY SUPPLY SECURITY

ABSTRACT: Energy supply security is very important for the sustainability of countries' economic growth. Access to energy resources and the sustainability of these resources constitute important dimensions of energy supply security. Although different sources stand out in energy supply security over the years, we see the increasing importance of natural gas and renewable energy in recent years. For this reason, it is important for energy supply security to benefit from renewable resources such as hydro, solar and wind, which are called as domestic resources, while ensuring the supply security of natural gas, which is very dependent on foreign sources. Therefore, providing energy resources without any difficulties and being economical of these resources are indispensable conditions for energy supply security. Therefore, it is strategically important to increase the share of renewable resources in energy supply security, especially in total energy supply security.
JEL: Q40 , Q41, Q42, Q43

EĞİTİM SEVİYESİ İLE ENERJİ TÜKETİMİ VE KARBON EMİSYONU İLİŞKİSİ

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Özet: Bu çalışmada eğitim, enerji tüketimi ve karbon emisyonu arasındaki ilişkiler OECD ülkeleri için incelenmektedir. Bu kapsamda 32 OECD ülkesine ilişkin 1995-2014 yıllarını kapsayan veriler ile eğitim seviyesinin, enerji talebi, enerji yoğunluğu ile karbon emisyonu ve karbon yoğunluğu üzerindeki etkileri araştırılmıştır. Sonuç olarak, eğitim seviyesi ile enerji talebi, enerji yoğunluğu ve karbon emisyonu ve karbon yoğunluğu serileri arasında uzun dönemli bir koentegrasyon ilişkisinin mevcut olduğu görülmüştür. Ayrıca eğitim seviyesinin uzun dönemde ilgili değişkenler üzerinde negatif ve anlamlı bir etkisinin olduğuna karar verilmiştir.
Anahtar Kelimeler: Eğitim Seviyesi, Enerji Tüketimi, Karbon Emisyonu, Panel Veri Metodolojisi

INFORMATION SECURITY WITH INTERNET OF THINGS ARRIVAL IN HOSPITAL ENVIRONMENT: A BIBLIOGRAPHIC APPROACH

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ABSTRACT: This research approaches information security taking under consideration the internet of things arrival in hospital environments. Such approach is required due to the frequent cases of breaches in protection of hospital information. This study has the purpose to accomplish a bibliographic research, with the purpose of updating the information concerning the mechanisms that can contribute to information security in hospital environments, all of this has the goal to improve security procedures, contributing with the development of a hospital safety culture. This attempt will be achieved from a qualitative bibliographic research, developed from material already elaborated, consisting on books and scientific articles. The study showed that, in what concerns information security in hospital management, there's only real success when everyone involved realize the importance of taking the security measures that are able to protect the information against real threats, besides the need of investment in information technology area and capable professionals with constant training.
Keywords: Information Security. Internet of Things. Hospital Safety.

ENERJİ YOKSULLUĞU ÜZERİNE BİR İNCELEME

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Enerji ekonomisi literatürünün iktisat biliminin farklı dalları ile ilintili çok sayıda alt kolları vardır. Literatüre katkı yapmayı amaçlayan çalışmalar teorik bilgilerden yararlanmakta, araştırma kapsamı, dönem ve veri kısıtı gibi değişkenlere bağlı olarak farklı ekonometrik yöntemler kullanmaktadır.
Enerji yoksulluğu, enerji ekonomisinin önemli alt alanlarından birisidir. Son yıllarda bu alanda kayda değer bir literatür oluşmuştur. Enerji yoksulluğu konusunu araştıran çalışmalardan bazıları daha önce bu konuda kullanılan kavramları kullanırken, bazılarıda yeni kavramlar geliştirme çabasına girmektedirler. Bu çalışmanın amacı enerji literatürü üzerine bir değerlendirme yapmaktır. Enerji yoksulluğu konusunu ele alan çalışmalarda kullanılan ya da geliştirilmeye çalışılan kavramlar üzerinde durulacak, elde edilen bulgular ve analizler ele alınacaktır.
Anahtar Kelimeler: Enerji ekonomisi, enerji yoksulluğu, yakıt yoksulluğu, enerji politikaları.

AN INVESTIGATION OF ENERGY POVERTY

ABSTRACT: Energy economics literature has many sub-branches related to different fields of economics. Studies aiming to contribute to the literature benefit from theoretical framework and use different econometric methods depending on the variables such as research scope, period and data constraint.
Enegry poverty is one of the important fields of study in energy economics. In the recent years, there is a growing literature on this subject. While some of the studies investigating energy poverty use the concepts on this subect, some others try to develop new concepts. The aim of this study is to make a literature survey on energy literature. The concepts used or tried to be developed in studies dealing with energy poverty will be emphasized and the findings and analyzes will be discussed.
Key words: Energy economics, energy poverty, fuel poverty, energy policies.