
Scientific Tracks & Sessions

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Green Energy 2019



2nd International Conference on
Green Energy & Technology

April 08-09, 2019 | Zurich, Switzerland

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The socio-political dimension of the energy transition: Under which do citizens support renewable energy policies at the ballot box?

Isabelle Stadelmann-Steffen

University of Bern Institute for Political Science, Switzerland

The nuclear phasing out and promoted energy turnaround (Energiewende) could constitute a major driver for renewable energy projects. Increasing the share of renewable energy is seen as indispensable to solve the energy supply dilemma. This new orientation faces various challenges not only on a technical, but also on a political level. I emphasize that a governmental decision as such does not automatically induce energy transition, but renewable energy projects and innovative policy instruments enhancing them have to be accepted and realized at the national, regional and local level.

Whereas political actors and the population generally tend to have a positive view on renewable energy, opposition towards specific policies and projects is a recurrent issue in many countries. In participatory contexts like Switzerland, where citizens often need to support renewable energy policies in a direct-democratic vote, social acceptance by citizens is a crucial condition for the energy transition. But also in other countries, large-scale changes like the transition from fossil/nuclear to renewable energy will probably not be successful without at least some support by the population. Hence, in my presentation, I concentrate on the question: Under which conditions do citizens support renewable energy policy at the ballot box?

I will present findings from several large-scale population surveys conducted in Switzerland between 2016 and 2017, in particular also in the context of the national vote on the Government's Energy Strategy 2050. Based on conjoint analysis, I will show that the cost factor is the main single factor that determines voting on renewable energy policies – and this also is true for green-left voters. On the other hand, it proves to be quite difficult to find aspects that citizens perceive as benefit, i.e., compensating the costs. Whereas nuclear phasing out, subsidies for large-scale hydropower and a broad political coalition supporting the policy can be identified as triggers of support, the crucial potential benefit of renewable energy policies is not acknowledged by voters: A substantial part of citizens do not understand or do not believe in the efficacy of renewable energy policies.

Speaker Biography

Isabelle Stadelmann-Steffen is Professor of Comparative Politics at the Department of Political Science, University of Bern. Her research interests lie in the areas of public policy (especially welfare state policy and energy policy), direct democracy and political behavior and attitude research. In her current research projects, she is also working on the interfaces between these priorities. For example, it examines how policies such as family policy and energy policy influence citizens' political preferences.

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Analysis of the BESSt location in the UK Electricity Network

Patrick Agese
University of Reading, UK

Energy storage is an essential link in the electricity network and can facilitate grid flexibility, increase penetration of renewable energy resources and improve the electricity network efficiency, as a result reducing environmental impact. This research aims to examine the best possible locations for utilising BESS (Battery Energy Storage Systems) across the UK electricity grid by considering its benefits and associated beneficiaries. Several locations ranging from the generation to the distribution network has been explored with the key focus on technical benefits. Analysis of the literature shows that locating BESS system close to intermittent renewable sources and the end consumer showed optimal results.

Speaker Biography

Patrick Agese is a multi-award-winning energy specialist with extensive research and consulting experience on technical, financial and policy development in energy systems. He has over 5 years of experience on large energy demand reduction projects and has developed energy performance contracts for large global organisations such as Costain Group PLC, Anesco and Givaudan. He is also a sustainability enthusiast and has dedicated his professional career to developing clean energy solutions. He is currently undergoing PhD research on Urban Energy Rhythms at the University of Reading. The Urban Energy Rhythms research aims to characterise distinct energy assets and develop infrastructure design recommendations for optimising the deployment of these assets. Previous research in this area combines a series of deterministic methods for network planning, although these methods have been associated with drawbacks such as unnecessary distribution grid reinforcement, making them a barrier to increase penetration of distributed generation assets.

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Performance and combustion characteristics of a diesel engine fueled with waste vegetable oils

Abdullah Ali Abuhabaya¹ and Fengshou Gu¹

¹King Abdulaziz University, Saudi Arabia


The present study aims to investigate the impacts of biodiesel blend ratio on biodiesel's performance, combustion and emission characteristics. Experiments were conducted using JCB 444 TCA 74kW engine for neat biodiesel B100 and its blend fuels with B5, B10, B15, B20, B30 and B40 of biodiesel at different engine speeds and loads conditions without exhaust gas recirculation. The indicated engine power and torque using biodiesel were found to be lower than that of using diesel fuel for all of tested loads. The decreased of engine power and torque with biodiesel can be attributed to the lower calorific value of biodiesel. An obvious decrease in carbon monoxide (CO) and total hydrocarbon (THC) emissions was attained with the addition of biodiesel. Moreover, emissions of nitrogen oxides (NOx) were simultaneously reduced compared with using standard diesel fuel at low to middle loads.

Finally, the strategy with biodiesel blends showed better combustion, emission characteristics as well as economy performance among all the fuels. For the efficient use of biodiesel blend fuels, it is suggested that the blend ratio should be carefully selected based on the engine operating conditions.

Speaker Biography

Abdullah Ali Abuhabaya has graduated from Um-Alqura University with Bachelor's degree in Mechanical Engineering in 2002, and the University of Huddersfield in UK with Master of Science in automotive system design and analysis and then PhD in Mechanical Engineering in 2012. His research interests are in Biofuels, Engine performance and exhaust gas emission analysis, also in design and analysis of machines. He participated in a number of International conferences and workshops in UK, China, Turkey and Cyprus and published a lot of work papers in alternative fuels for internal combustion engines.

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Research opportunities for recycling organic textile wastes

Aishwariya Sachidhanandham

Avinashilingam University for Women, India

Textile is one of the important industries to mankind and its growth is ever increasing. It holds a quintessential position supplying the needs of a new born to the dead and in some culture even the afterlife beliefs as it meets one of the essential factors for survival. Clothing today has extended its horizon and it extends from protection against extreme temperatures to establishing a social image for a person. It is possible to reach moon and mine with the help of clothing. It is the dark side that more production results in more pollution. Now, wastes (pollutants) are seen as a wealth potential. Especially the organic waste that has less chemicals can be recycled into a sustainable product. This paper deals with sharing the findings of the research that focused on bio-managing the hitherto polluting cotton textile waste into bio-manure, handmade

paper, absorbent wipes, composites and bio-mass briquettes. It can serve as an eye opener to the fraternity involved in exploring green energy and sustainable recycling technologies.

Speaker Biography

Aishwariya Sachidhanandham is a University Gold Medalist for both Bachelors and Master's degree programme specializing in Textiles, Clothing and Fashion. Her doctoral work was funded by the Department of Science and Technology, India under INSPIRE fellowship - AORC scheme provided for university rank holders. She is a recipient of Young Scientist Award 2011 (Lucknow, India) and an award for Best oral presentation 2012 (Surat, India). To her credentials, she has two patents filed, International and National publications as research papers, review articles, proceedings, chapters and as books. She holds membership with various professional bodies and also serves as part of editorial team. Her on-going research at the University focuses on conversion of textile waste into handmade paper. Sustainability, waste management and research on recycling are her area of research interests.

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Climate Change and its impacts in Nepal

Lekhanath Bagale

Government of Nepal, Ministry of Energy, Nepal

Climate change is one of the biggest global challenges of the 21st century. Natural resources are being exposed to climate change directly through changing weather patterns and indirectly through changes in quality of water, air, food quality and quantity, ecosystems, agriculture, livelihoods and infrastructure. However, in Nepal the effects of climate change differs its location between two rapidly growing economies of India and China. Nepal cannot escape the increasing influence of climate and global changes. The rapidly retreating glaciers (average retreat of more than 30 m/year), rapid rise in temperature (>0.06OC), erratic rainfalls and increase in frequency of extreme events such as floods and drought like situation are some of the effects Nepal. Most of the big rivers of Nepal are glacier-fed and its main resources of water and hydroelectricity will be seriously affected due to the ongoing changes in Glacier reserves, snowfall and natural hazards. These alarming trends not only make Nepal's major sectors of economy such as agriculture, tourism and energy more vulnerable but also endanger the health, safety and wellbeing of Nepalese people.

Climate change is becoming already dangerous to our survival and we have to do everything, possible to prevent as it being catastrophic to us. Especially the effects of greenhouse gases (GHGs) plays a


vital role towards climate change both drought, flooding and livelihoods in Nepal. The globally accepted strategy to contain disastrous climate change impacts is adaptation and mitigation.

In 2010, the Government of Nepal has approved National Adaptation Programme of Action. (NAPA) developed as a requirement under the UNFCCC to access funding for the most urgent and immediate adaptation needs from the least developed countries like Nepal. Somehow NAPA will be fulfilled the prime target of climate change impacts mitigation.

Speaker Biography

Lekhanath Bagale currently a Ph.D. Research Scholar at the Tribhuvan University, Institutes of Science & technology, Kathmandu, Nepal, he has completed two Master degrees one is Master's Degree of Engineering (Hydrology) from the University of Roorkee (IIT Roorkee), India (2000 with UNESCO Fellowship) and another is Master's in Science, from Tribhuvan University, Nepal (1992). He has been working as a Senior Divisional Hydrologist, at the Government of Nepal, Ministry of Energy since 1998 to date. Also involving teaching as a Senior lecturer for Statistics and Research Methodology, TU, Nepal. He has specialization on Ground Water Hydrology & Water Resource Engineering. He has strong professional skills towards Hydrology, Hydropower, and Environmental fields. He has published various text books, papers, abstracts for national and international journals. He is a life member of the Society of Hydrology and Meteorology (SOHAM) and Nepal Engineering Council (NEC) as well as members of the various technical organizations.

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Production and potentials of Biomass residues and wastes for energy and materials recovery

Ashraf Abdelrahim ¹, Simona Di Fraia ¹, Nicola Massarotti ¹ and Laura Vanoli ²¹University of Naples Parthenope, Italy, ²University of Cassino and Southern Lazio, Italy

The increase in global population, coupled with economic development, had led to rapid urbanization and industrialization, which changed the consumption pattern of the population that ultimately led to the increment in demand for energy and associated services. Biomass residues and wastes are potentially major contributors of resources for energy and material production. Bioenergy can be produced from a variety of biomass feed stocks, including forest, agricultural and livestock residues; energy crops; the organic component of municipal waste; and other organic waste streams. This paper presents regional and global review of potential energy production from biomass residues and wastes, considering the amount of residues and wastes from major sources as well as pretreatment and conversion technologies. Four types of biomass energy sources are included: agricultural and forestry residues, animal residues and urban wastes. The potential biomass resource quantity was computed according to statistical reports and

literature review. In Italy country, residues from agricultural and forest, as well as urban wastes represent a large biomass potential. However, assessment of the national biomass availability is made difficult not only by the current lack of reliable official data, but also by a conceptual point: whether "available" is the total availability of biomass in the territory (potential availability), or whether it is the availability which is technically and economically viable.

Speaker Biography

Ashraf Abdelrahim is a doctoral student on Energy Science and Engineering program at University of Naples Parthenope. He majored in Mechanical Engineering at University of Khartoum, Sudan, and received MSc in Energy Engineering from the University of Khartoum in 2012. His research interests include energy management, simulation and modelling, energy consumption and planning and transition to sustainable energy systems, as well as energy efficient buildings and industry. He is involved in Parthenope's Laboratory of Thermo-fluid dynamics, Energy, and HVAC systems (LaTEC), an environment for experimental research in the above-mentioned areas. His doctoral study has been funded by National Research Council (CNR), the largest research council in Italy.

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Electromagnetic Alternator Engine

Riddik Adhikari

University of Engineering and Management, India

Today's main problem is global warming and climate change which is mainly due to air pollution. The air pollution is due to polluted gas in the atmosphere. The polluted gas mainly release by combustion process. Maximum combustion is occurring by engine where the chemical energy converted into heat energy or any kind of other type of energy. So we have to replace combustion engine, in this place electromagnetic alternator engine shall be used because it has better efficiency than combustion engine. The most important thing is that it does not create any type of pollution to the environment. The total mechanism of the engine is depending on Ampere's circuital law. The input energy source is electrical energy and the output will be mechanical and electrical, from here the efficiency of the engine must be greater than the combustion engine. The given torque is equal to normal 4 strokes engine, therefore the concept is very attractive for the modern world.

If a induction motor will be comparing with that particular engine, the power and given torque of electromagnetic alternator engine must be greater than induction motor. In this engine, no need to use any kind of heavy machine parts that's why the engine is very low cost as compared to today's engine and it can bring maximum benefit to all sectors of our society. The whole technology is green so the given output energy should be green, so the total considerable energy has been green, therefore we can called this energy which has been used for the mechanism is green energy.

Speaker Biography

Riddik Adhikari is studying B.Tech final year in Mechanical Engineering from University of Engineering and Management, Kolkata. He has done few attractive projects in his B.Tech career. He has filed one patent for green electrical engine. Also he has wrote 3 research papers in last 3 years and all are published in international journal. Now he is looking for his master degree from abroad in next year.

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Impacts of Climate Change on human health in Nepal

Bharat Nepali

Dhaulashree Power Company, Nepal

Nepal is one of the climate change prone countries in the world. Geophysical and socioeconomic condition of country have predetermined vulnerability of the country to drought, earthquake, epidemic, fire, flood, forest fire, land slide and other climate related events affecting human and animal health, injuries, and quality of life. In light of such a situation we aimed to review knowledge related to potential health impacts of climate change on population of Nepal. Literature search using major public health, environmental and social databases as well as international reports was completed to get an overview of existing knowledge. There is a little published knowledge related to potential health impacts of climate change on population of Nepal. However, the knowledge of relationship between climate change and health and knowledge of environment allow discussing main routes of potential impact as well as health effects is a crucial

issue to explore. More direct, population based research would be necessary to provide sound knowledge for emergency planning and mitigation measures. The scientific evidence on climate change is complex and difficult to understand by non-expert, but there is a strong acceptance that the earth's climate is changing more rapidly that might be expected and such changes are likely to have results from human activities.

Speaker Biography

Bharat Nepali has completed his Graduates study in Pharmacy at the age of 24 from Tribhuvan University, Kathmandu, Nepal secured in first division and continues his further study in the field of management, currently he continues his study at Masters' level in Business Studies (MBS level), he has a strong knowledge towards the medical and environmental fields. Currently he is joined at Dhaulashree Power Company Pvt. Ltd. as a post of Environment Officer. He has published more than 5 papers in renowned journals and has been serving as an editorial board as member of repute.

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Muhammad Usman

Former Director General of Agricultural Research System | Pakistan

Session Introduction

Title: Major sources of Green Energy is the important tool for the reduction of global poverty and hunger in the developing countries of the world like South Asia

Muhammad Usman | Former Director General of Agricultural Research System | Pakistan

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Major sources of Green Energy is the important tool for the reduction of global poverty and hunger in the developing countries of the world like South Asia

Muhammad Usman

Former Director General of Agricultural Research System, Pakistan

The aims of presentation consist of green energy, global poverty and hunger were study in order to find out the most cheapest and economical sources of green energy for poverty alleviation in South Asia like Pakistan. Green energy is also called renewable energy or sustainable energy, comes from natural sources like wind, water, sunlight, rains, tides, plants, algae and geothermal heat. South Asia comprises the countries of Pakistan, Bangladesh, India, Bhutan, Maldives, Nepal, and Sri-Lanka. South Asia is about one fifth of the world's population, which is considered as the most densely populated region in the world. As per study, the resources in South Asia are limited and the population increases from time to time. The second problem in South Asia is the concentration of non-renewable energy, which are very costly although a great potential of green energy like biomass, biofuels, hydropower, solar, landfill gas, wind and geothermal are available in difference countries of the world like South Asia. Similarly many countries in the world are striving to utilize green energy in an efficient way to replace the cost of furnace oil, gas and other costly fuel used for non-renewable energy. The study further showed that about 1.4 billion peoples are lack of electricity

in the world population of 7 billion and nearly one billion peoples go to bed hungry each night particularly in the developing countries like South Asia, as per report recorded by the World Bank. It was concluded from the study that green energy should be commercialized to reduced energy crises, increase income, employment, create more jobs, stranger economy as well as to reduce poverty in South Asia like Pakistan.

Speaker Biography

Muhammad Usman, Former Director General of Agricultural Research System, Government of Pakistan who retired from service after a spotless career of about 35 years with senior level experience on research and development of integrated agricultural production, industries green energy and bioenergy on a sustainable way. He is basically an agricultural scientist with specialization of agricultural, food and biochemistry working on the yield and quality of various products and published several research papers. He is considered as the senior most scientists in the world, always participated in the international conferences as a keynote speech, renowned speaker, organizing committee member as well as moderator of the conferences around the world. He established "Prominent Agro Based Industries, Agro Based Industries and Consultancy SDN BHD" in Malaysia and "Foundation for Rural Development in Pakistan", with primarily aims to work on integrated agricultural project for Rural Development through improvement in agriculture and consultancy services to the formers at Malaysia.

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