SNEC 14th (2020) International Photovoltaic Power Generation and

Smart Energy Conference

**Speaker Form**

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| **个人简介****Personal Brief Introduction** | Dr Yanfei Li is a Research Fellow with the Economic Research Institute for ASEAN and East Asia (ERIA), an international economic policy think tank. He is also currently an Associate Professor with Hunan University of Technology and Business. He specializes in energy markets, energy policy, and economics of technological change, serving the interests of both academic and public sectors. Dr Li’s current research covers regional natural gas trade and market integration, regional power infrastructure planning and electricity trade, economic and environmental assessment of energy technologies, hydrogen economy, and energy-economy-environment modelling. His academic research appears on top energy and economics journals such as Energy Economics and Energy Policy. He also regularly contributes opinion articles to public media such as South China Morning Post, the Diplomat, China Daily, the Nikkei Asian Review, and the ASEAN Post. He acquired PhD in Economics from Nanyang Technological University in Singapore and Bachelor’s degree in Economics from Peking University in Beijing.李谚斐博士，国际经济政策智库东盟与东亚经济研究所研究员。同时现任湖南工商大学副教授。他专注于研究能源市场、能源政策和技术变革经济学，并服务于学术和公共部门。李博士目前的研究领域包括区域天然气贸易和市场一体化、区域电力基础设施规划和电力贸易、能源技术的经济和环境评估、氢经济、新能源交通，以及能源经济环境模型。他的学术研究发表在顶级能源和经济学期刊上，如《能源经济学》和《能源政策》。他还定期向《南华早报》、《外交家》、《中国日报》、《日经亚洲评论》、《东盟邮报》等公共媒体发表评论文章。他在新加坡南洋理工大学获得经济学博士学位，在北京大学获得经济学学士学位。 |
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| **演讲题目****Speech Title** | **Hydrogen as Clean Energy for Transport and Power Sector Applications in Asia**Energy Consumption, Carbon Emissions, and Costs |

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| **摘要/演讲概要****Abstract/Brief Introduction of the Speech** | We start our discussion with the topic of Hydrogen as RE Storage: Power Grid Applications, followed by discussions on FCEV Applications in ASEAN and China. For the latter, we introduce our modeling on the Well-to-Wheel energy consumption and emissions of hydrogen energy, as well as the Total cost of ownership (TCO) of FCEV. We will introduce the results in Benchmark, Sensitivity and Future Scenarios, respectively.As the Conclusions and Way Forward, we take note of the following points:* Hydrogen and FC technologies are yet to meet the targets of costs
* Current subsidies for passenger cars seem to be sufficient, however, whether or not such is sustainable remains questionable
* At the moment, more subsidies on FC buses and trucks are necessary
* Large scale applications could help bring down the costs: economy of scale yet to be exploited
* Wider applications of hydrogen energy, such as in railway, aviation and shipping, can further boost the economy of scale for hydrogen energy infrastructure. Our studies will thus extend to these areas in the future.

我们首先讨论氢作为可再生能源储存的话题: 即电网应用，然后讨论FCEV在东盟和中国的应用。对于后者，我们介绍了我们对氢能源的油井到车轮概念下的能耗和排放以及FCEV的总拥有成本(TCO)的建模。我们将分别介绍基准场景、灵敏度场景和未来场景的结果。在得出结论和展望未来时，我们注意到以下几点:•氢和燃料电池技术尚未达到成本目标•目前对氢燃料电池乘用车的补贴似乎已经足够了，但这种补贴能否持续下去仍值得怀疑•目前，FC公交车和卡车需要更多补贴•大规模应用可能有助于降低成本:规模经济有待开发•氢能在铁路、航空和航运等领域的广泛应用，可以进一步推动氢能基础设施的规模经济。因此，我们的研究将在今后扩展到这些领域。 |