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Issued to Hanan ISHAQUE Alpen Adria University Klagenfurt Klagenfurt, Austria

CERTIFICATE OF **ATTENDANCE**

With this certificate we acknowledge that

Hanan ISHAQUE

has attended the 11th Conference on Sustainable Development of Energy, Water and Environment Systems - SDEWES2016 held from September 4 - 9, 2016 in Lisbon.

Prof Zvonimir Guzović Secretary of the Conference GNEVIC Fromming

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Issued to Hanan ISHAQUE Alpen Adria University Klagenfurt Klagenfurt, Austria

CERTIFICATE OF PRESENTATION

With this certificate we acknowledge the oral presentation by Hanan ISHAQUE of the submission

Is it Wise to Compromise Renewable Energy Future for Expediency? Analysis of Pakistan's Long-Term Electricity Generation Pathways Hanan Ishaque*

in the session entitled "RS54: Sustainable resilience of systems" at the 11th Conference on Sustainable Development of Energy, Water and Environment Systems - SDEWES2016 held from September 4 - 9, 2016 in Lisbon.

Prof Zvonimir Guzović

Secretary of the Conference Gurovic Fromming

Hanan Ishaque Post Conference Report

11th SDEWES Conference Lisbon 04-09 September 2016

The 11th Conference on Sustainable Development of Energy, Water and Environment Systems – SDEWES Conference, held in Lisbon from 04-09 September 2016. The event was dedicated to the improvement and dissemination of knowledge on methods, policies and technologies for increasing the sustainability of development by de-coupling growth from natural resources and replacing them with knowledge based economy, taking into account its economic, environmental and social pillars, as well as methods for assessing and measuring sustainability of development, regarding energy, transport, water, environment and food production systems and their many combinations.

The purpose of my participation in the event was twofold: to present the research paper titled "Is it Wise to Compromise Renewable Energy Future for Expediency? Analysis of Pakistan's Long-Term Electricity Generation Pathways" and secondly to conduct interviews with experts and researchers about the use of scenario modelling techniques in energy system analysis in context of my ongoing PhD work at the department of economics in AAU.

My presentation was scheduled on 7th September 2016 under track titled 'Sustainable resilience of systems' chaired by Prof. Sebastian Werle. The presentation was followed by discussion and feedback from the participants and the session chair. I also participated in other sessions relevant to my field of work and on sidelines of conference, held formal and informal discussions with participants about three main themes i.e. Optimization in LEAP modelling, energy system optimization and extent of data requirement in comparable bottom up optimization models such as Markal-Times model and thirdly methods of emission analysis for environmental impact assessment of power generation scenarios.

The participants came from diverse backgrounds but were currently involved in energy planning for different economies at aggregate and disaggregate levels. I collected valuable information about different modelling techniques used in energy systems analysis. The researchers gave me useful insight into how I could expand the scope of my work and use simulations analysis to derive meaningful results. They also benefitted from the briefing on my work especially from developing economy perspective. Overall, the event was a great learning experience and enriched my understanding of the subject and importance of collaboration within the scientific communities. It was extremely rewarding to be part of the research activity.

I am very grateful to Förderverein for the financial support.

Sincerely, Hanan Ishaque PhD Candidate