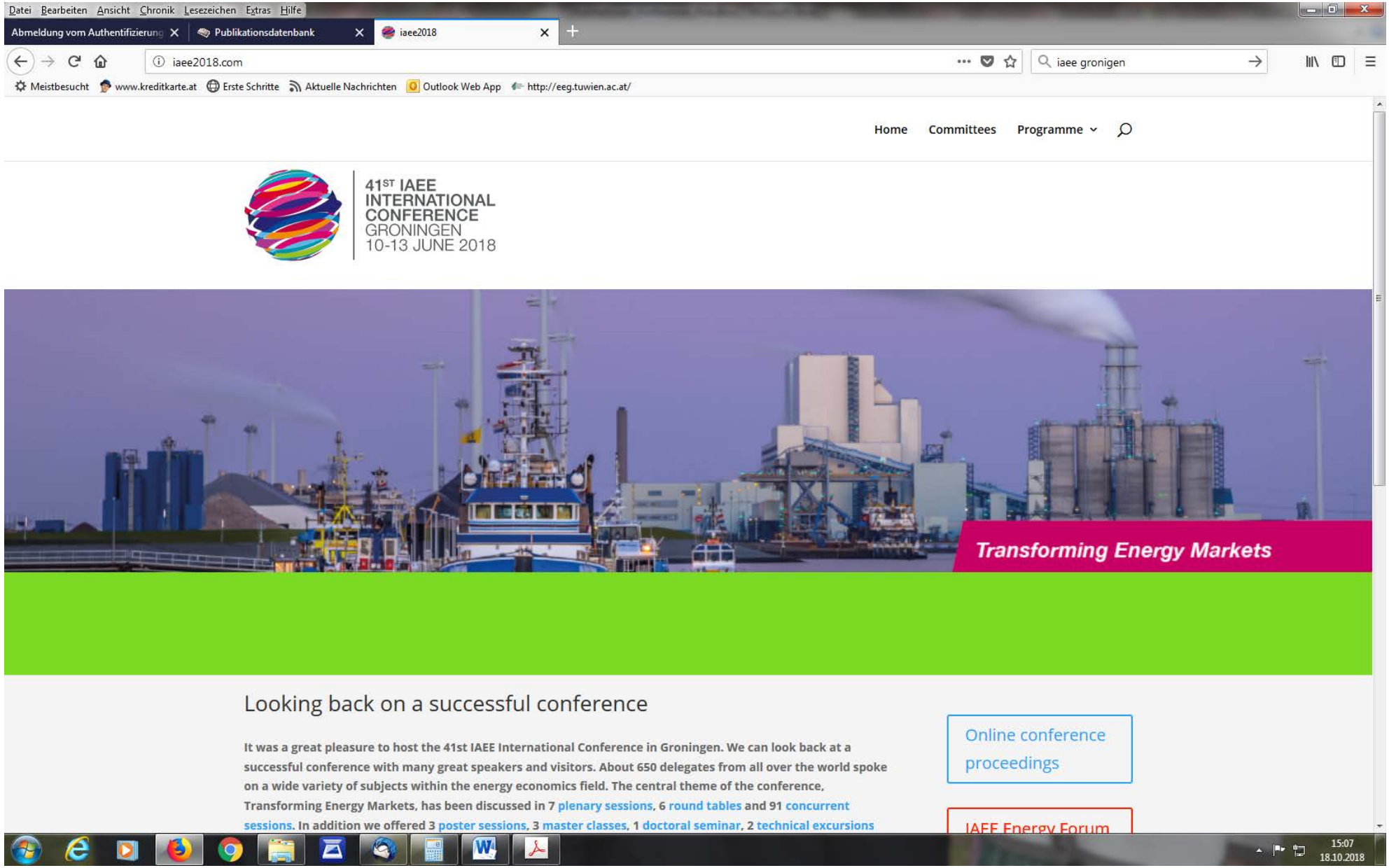
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Transforming Energy Markets
Looking back on a successful conference
It was a great pleasure to host the 41st IAEE International Conference in Groningen. We can look back at a successful conference with many great speakers and visitors. About 650 delegates from all over the world spoke on a wide variety of subjects within the energy economics field. The central theme of the conference, Transforming Energy Markets, has been discussed in 7 plenary sessions, 6 round tables and 91 concurrent sessions. In addition we offered 3 poster sessions, 3 master classes, 1 doctoral seminar, 2 technical excursions
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SUPPORT FOR RENEWABLE ENERGIES IN THE EUROPEAN UNION - LESSONS LEARNT AND RECOMMENDATIONS ON THE WAY FOWARD

Gustav Resch, TU Wien, Energy Economics Group (EEG), Phone: +43 1 58801 370354, E-mail: resch@eeg.tuwien.ac.at
Lukas Liebmann, TU Wien, Energy Economics Group (EEG), E-mail: liebmann@eeg.tuwien.ac.at
Jasper Geipel, TU Wien, Energy Economics Group (EEG), E-mail: geipel@eeg.tuwien.ac.at
Marijke Welisch, TU Wien, Energy Economics Group (EEG), E-mail: welisch@eeg.tuwien.ac.at
Anne Held, Fraunhofer ISI, E-mail: anne.held@isi.fraunhofer.de
Mario Ragwitz, Fraunhofer ISI, E-mail: mario.ragwitz@isi.fraunhofer.de

Overview

Support for renewable energies has undergone significant changes throughout past years and new challenges are still lying ahead. This paper aims for discussing lessons learnt in designing and implementing support schemes for renewable energies (RE) as well as of recommendations on the way forward. A geographical focus will be laid on Europe, specifically the European Union and its Member States whereas a sectorial focus will be on the electricity sector.

We will start with a theoretical excurse on why dedicated support for renewable energies may make sense or even be a necessity in the light of prevailing market failures. A more practical argument for using dedicated policy instruments at sectorial instruments complementary to an "umbrella tool" like the EU Emission Trading Scheme today and in the (near) future: high transfer payments from the consumer to the RE producer can be avoided, limiting societal distribution effects.

Another core pillar of this paper will be a historic excurse, conducting a survey on how the choice of policy instruments and their specific design has changed over time. In early years, the enhanced takeup of RE at possibly low associated cost was in focus of the policy debate. With increasing shares of renewables a new paradigm came into play: enhancing market integration – leading to policy changes like e.g. the move from fixed feed-in tariffs to feed-in premium schemes. Since then RE producers had to take the responsibility on selling/marketing their produced electricity whilst receiving support as additional revenue stream. Thanks to further changes in the EU-wide legal "rules of the game" – i.e. the adoption of the European Commission's Guidelines on State aid for environmental protection and energy (No. 2014/C 200/01) – the choice of support instruments was narrowed down, requiring in general a competitive determination of support levels via auctions for the bulk of RE installations in EU countries. Within this paper we will report on lessons learnt and on how support scheme and specifically auction design may best be adapted to the specific needs.

The third pillar of this paper will be a forward-looking exercise, assessing the needs for dedicated support for renewable energies in the near to mid future. To which extent dedicated support for renewables can be phased out in the upcoming decade mainly depend on the costs of renewable energy technologies, on future power and carbon prices and on risks associated with investments in power assets. Further cost reductions for renewable energy technologies can be expected in the upcoming decade, also due to the increasingly global deployment of renewables. This will lower the costs of supporting the deployment of renewables. Future power and carbon prices are, however, subject to higher uncertainty. The EU carbon market is currently confronted with an oversupply of CO_2 emission allowances, while many EU power markets are struggling with overcapacity. Resolving these issues is also a matter of political intervention and therefore subject to high uncertainty. Previously conducted and ongoing model-based assessments of future renewables deployment at national and EU level considering given 2030 RE targets will clarify on that matter.

The paper will conclude with a summary of lessons learnt and recommendations on the way forward.

Methods

The work presented in this paper will build on detailed quantitative and qualitative assessments conducted in the IEE project Towards2030-dialogue (cf. [1]) as well as ongoing works undertaken or planned within the H2020 project SET-Nav (cf. www.set-nav.eu).[1]

[1] We gratefully acknowledge the intellectual and financial support provided by the Intelligent Energy Europe and the Horizon 2020 programme, operated by the European Commission and related Executive Agencies.

Concerning the quantitative analysis we made and will make use of TU Wien's specialised energy system model (Green-X (cf. www.green-x.at) for identifying and assessing possible RES developments up to 2030, indicating RES deployment at sector, at technology and at country level that can be expected under distinct policy designs. Complementary to results on RES technology deployment, related impacts on costs (generation cost), expenditures (capital and support expenditures) and benefits (fossil fuel and related CO2 emission avoidance) are a core element of the RES policy analysis. For specific purposes, e.g. for assessing the interplay between RES and future electricity market design that involves an analysis of the merit order effect and related market values of the produced electricity for variable and dispatchable renewables, Green-X is complemented by its power-system companion – i.e. the HiREPS model – to shed further light on the interplay between supply, demand and storage in the electricity sector thanks to a higher intertemporal resolution than in the RES policy and investment model Green-X.

Results and conlusions

It is too early to report on lessons learnt since our historic survey and porspective analyses are ongoing. These will be completed in due time.

References

[1] Resch G., L. Liebmann, A. Ortner, J. Geipel, M. Welisch, A. Hiesl, 2017. Towards2030-dialogue - a quantitative assessment of RES policy pathways and 2030 (RES) targets. Final scenario report compiled within the project towards2030-dialogue, supported by the EASME of the European Commission within the "In-telligent Energy Europe" programme. TU Wien, Energy Economics Group, Vienna, Austria, June 2017. Accessible at www.towards2030.eu.