9. Internationale
Energiewirtschaftstagung
an der TU Wien

IEWT 2015

Kurzfassungsband

Energiesysteme im Wandel: Evolution oder Revolution?

11. – 13. Februar 2015
Wien, Österreich

Tagungsort:
Technische Universität Wien
Karlsplatz 13
1040 Wien

Veranstalter:

Institut für Energiesysteme und
Elektrische Antriebe der TU Wien (ESEA)

Energy Economics Group (EEG)

Austrian Association for Energy Economics (AAEE)

Perspektiven für Erneuerbare Energien in Europa bis 2030

(English title: Prospects for RES in Europe up to 2030)[1]

Energiepolitik

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Motivation und zentrale Fragestellung

The EU Energy Roadmap 2050 gave first signals of renewable energy development pathways beyond the year 2020 and identified renewables as a "no-regrets" option. Subsequently, Europe's way forward towards 2030 has been discussed intensively and at the Council meeting of this October (2014) the next step was taken: A binding EU-wide RES target of achieving at least 27% as RES share in gross final energy demand was adopted.

This papers aims for an outlook to 2030, discussing possible RES developments within the EU and related impacts on costs and benefits in the light of the new Council agreement on 27% RES by 2030. Furthermore, next steps in defining the framework for RES post 2020 will be identified and possible solutions presented.

Methodische Vorgangsweise

The work presented in this paper builds on detailed quantitative and qualitative assessments currently conducted in the IEE project DIA-CORE. [1] By use of a specialised energy system model (Green-X [2]) a quantitative assessment is conducted to identify and assess possible RES developments up to 2030, indicating RES deployment at sector, at technology and at country level that can be expected under distinct policy concepts. Complementary to results on deployment, related impacts on costs and benefits are a core element of the RES policy analysis.

The scenarios analysed combine two different characteristics: different ambition levels for RES deployment in 2030 in particular and different policy concepts for renewables from 2020 onwards:

- In the "Strengthened National Policies (SNP-27)" scenario a continuation of the current policy framework with national 2030 RES targets is assumed whereas.in the scenarios referring to the use of a quota system (i.e. QUO-27 and QUO-30), an EU-wide harmonized support scheme is assumed for the electricity sector.
- As a further sensitivity variant for the 27% RES by 2030 target we assessed the impact of having no dedicated support for biofuels post 2020.
- A baseline case serves as reference, assuming that RES policies are applied as currently implemented until 2020, while for the post-2020 timeframe a gradual phase-out of RES support is presumed.

Ergebnisse und Schlussfolgerungen

The binding EU-wide RES target of achieving at least 27% as RES share in gross final energy demand as adopted recently by the Council has to be seen as an important first step in defining the framework for RES post 2020. Other steps, like a clear concept for and agreement on the effort sharing across Member States have to follow.

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[1] Eine deutschsprachige Version des Abstracts wird nachgereicht.

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The agreed target of 27% RES appears feasible to achieve without strong efforts to be taken at EU and at country level. Even in the absence of additional energy efficiency measures alternative policy scenarios related to 27% RES by 2030 lead to moderate increases in system costs and support expenditures at EU-28 level compared to baseline conditions (where a phase-out of RES support beyond 2020 is presumed). A guiding framework and a removal of currently prevailing non-economic barriers is however a key necessity to keep the cost burden low and to balance cost nicely with accompanying benefits.

As exemplified in Fig. 1 and Fig. 2, more than 27% RES by 2030 appears feasible but requires additional efforts to be taken. The increase in renewables would however come along with increased benefits related to Europe's trade balance due to a (significantly) decreased demand for fossil fuels and related imports from abroad.

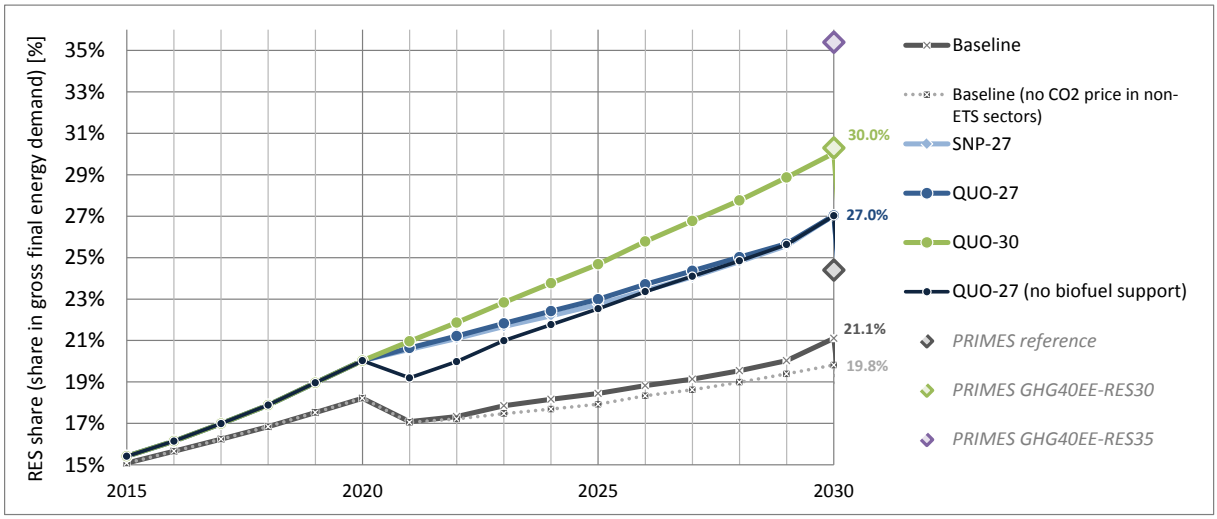

Figure 1: Comparison of the resulting RES deployment in relative terms (i.e. as share in gross final energy demand) over time in the EU 28 for all assessed cases (incl. PRIMES scenarios)

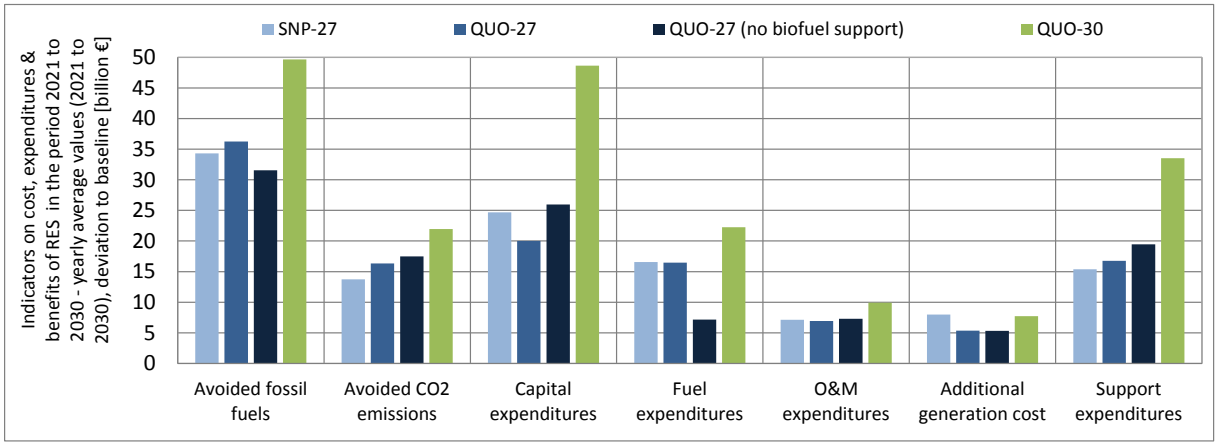

Figure 2: Indicators on yearly average cost, expenditures and benefits of RES at EU 28 level for all assessed cases, monetary expressed in absolute terms (billion €) per decade (2021 to 2030)

Literatur

[1] Resch, G., Liebmann, L., Busch, S. (2014): Prospects for RES in Europe up to 2030, An interim report compiled within the Intelligent Energy Europe project DIA-CORE. TU Wien - Energy Economics Group (EEG), Vienna, Austria. Accessible at www.diacore.eu.

[2] For details see: www.green-x.at