20% RES by 2020 in Europe – future policy options for supporting renewable electricity

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ABSTRACT

Energy policy is the main driver for the enhanced deployment of electricity from renewable energy sources (RES-E) as observed in several countries worldwide. It is the core objective of this paper to provide a concise summary of recommendations on how to derive *effective* and *cost-efficient* support schemes for RES-E which are necessary to steer our energy system in the direction of sustainability and supply security.

A prospective analysis of possible future RES-E support options at European level aims to signpost the way forward.[1] The issue of the effectiveness and efficiency of support schemes is discussed mainly based on the results obtained from simulation runs using the ***Green-X*** model (www.green-x.at). Figure 1 indicates the investigated scenario paths and the resulting RES-E deployment – comprising a continuation of current national support schemes, a national improvement and a harmonisation at the European level based on either technology-specific or uniform support.

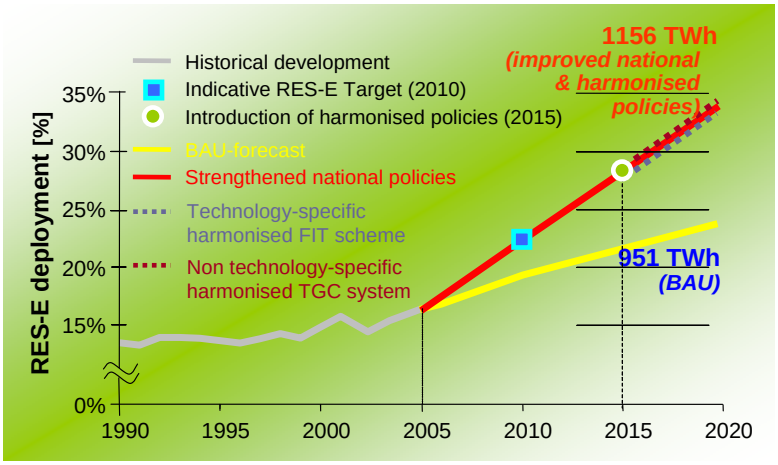

Figure 1. Overview on investigated cases

The major conclusions are:

The **key criterion for achieving an enhanced future deployment of RES-E in an effective and efficient manner,** besides the continuity and long-term stability of any implemented policy, **is the technology specification of the necessary support.** Concentrating on only the currently most cost-

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1 This assessment was conducted for the European Commission, DG TREN within the European research project futures-e (www.futures-e.org).

competitive technologies would exclude the more innovative technologies needed in the long run. Furthermore, it would not be possible to achieve any moderate to ambitious RES-E target without considering these moderate to novel RES-E options. In other words technology neutrality may be cost-efficient in the short term, but is more expensive in the long term. Even in the short term, the observable cost differences among cheap to moderate RES-E options recommend a diversification of support.

The major part of possible efficiency gains can already be exploited by optimising RES-E support measures at the national level – **about two thirds of the overall cost reduction potential can be attributed to optimising national support schemes**. **Further efficiency improvements** at a considerably lower level **are possible through an EU wide harmonisation of the support schemes provided that technology-specific support is implemented** and, furthermore, that a common European power market exists. In contrast, if harmonisation meant putting all the RES-E options in one basket and giving equal support to all the RES-E technologies considered, then the accompanying consumer expenditures would increase in the case of an ambitious RES-E target. Consequently, a harmonised non technology-specific support would not necessarily contribute towards increasing efficiency.