

EU-DEEP INTEGRATED PROJECT – TECHNICAL IMPLICATIONS OF THE “HOSTING CAPACITY” OF THE SYSTEM FOR DER

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ABSTRACT

The profitability of Distributed Energy Resources (DER) lies in the depth of the EU-DEEP Integrated Project. Basically the approach starts from the analysis of the demand. Large-scale technical investigations that are required to assess DER integration are essentially devoted to analyses of the effects of DER on system operation, on reliability of supply and on power quality envisaged in a systemic way. The “hosting capacity” concept has been defined as the DER penetration level where a performance index reaches its lowest acceptable limit. The major advantage using this approach is that discussions about integration issues of DER are framed into a set of performance criteria. This “hosting capacity” approach has been applied to numerous issues starting from high-frequency distortion but presently includes voltage dips, protection schemes, distribution system overload, frequency control, transmission system security management, etc. In the present paper, the approach is briefly described and examples about distribution system protection, voltage issues and distribution network “sizing criteria” are illustrated in more detail in the frame of typical European distribution networks.