bee Biomass Energy Europe

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BEE project concentrates on harmonising the biomass resource assessments in Europe and its neighbouring countries. This harmonisation will improve consistency, accuracy and reliability of biomass assessments, which can serve the planning of a transition to renewable energy in the European Union. The project is carried out during 2008 - 2010.

Project scope

The overall objective of the BEE project is to improve the accuracy and comparability of future biomass resource assessments for energy by reducing heterogeneity of terms and definitions, increasing harmonisation of data and calculations and exchanging knowledge on methods and approaches.

The relevant sectors that have been investigated are forestry, energy crops, residues from traditional agriculture and waste.

The project results are presented in project reports available at the website www.eu-bee.com.

Status of assessments

A total of 42 studies have been analysed covering (i) forestry and forestry residues, (ii) energy crops on agricultural and marginal land, (iii) agricultural residues and organic waste and (iv) total biomass potential for energy. Besides the great deviations in potentials at each point of time, it can also be noted that deviations in general increase over time. The biomass category mainly responsible for the increased deviations over time is energy crops, whose upper-limit potential increases drastically in some of the studies. In contrast, the potentials for residues from agriculture, forestry and organic waste do not exhibit any clear trend over time, and overall deviations in potentials are smaller.
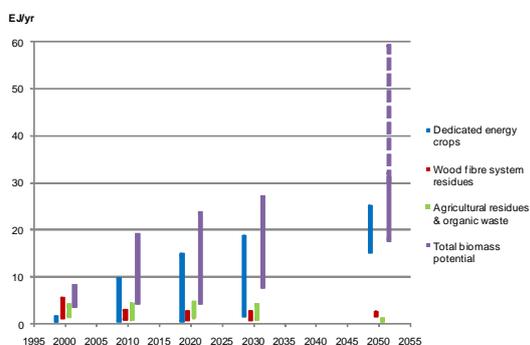
Assessment methods

A database of circa 250 bioenergy potential assessments was compiled, out of which 28 studies were selected for detailed analysis. The existing biomass resource assessments use a broad variety of approaches, methodologies, assumptions and datasets that lead to different estimates of future biomass potentials. An overview of approaches, methodologies and datasets in existing biomass assessments has been compiled and similarities and differences were evaluated. In addition, synergies of combining various approaches, methodologies and datasets have been identified, as well as remaining gaps in knowledge and data.

Harmonisation

In light of the overall project objective a two volume handbook has been developed to promote harmonisation in the development of biomass resource assessments. The first volume, Best Practices and Methods Handbook, provides best practice methods for determination of biomass resource potentials and provides guidance for transparent presentation of results by providing terms and definitions needed for the execution and presentation of biomass resource assessments. The second volume, Data Sources Handbook, provides information on data sets that are needed to conduct a biomass resource assessment with the methodologies described in Volume I.

Illustration cases

To test and validate the recommended resource assessment methods and data sources, a set of illustration cases were carried out. The illustration cases ranged from EU27 level to national and provincial level. The scope varied, covering all or part of the biomass types. By assessing the same biomass resources for the same geographical area using different methods (e.g. statistical, spatially explicit, and/or cost-supply analysis) it was possible to gain insight into important issues related to biomass assessments, such as uncertainty, harmonisation and data availability. It was concluded that a comprehensive assessment should apply different methods to assess the full picture.
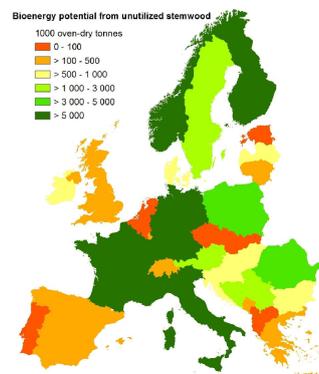
More information on BEE

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CEUBIOM, the "twin project" of BEE, works on classification of European biomass potential for bioenergy using terrestrial and earth observations. www.ceubiom.org