Energy efficiency and renewable energy modeling with ETSAP TIAM - challenges, opportunities, and solutions

The objectives of the Sustainable Energy for All (SE4ALL), a United Nations (UN) global initiative, are to achieve, by 2030: 1) universal access to modern energy services; 2) a doubling of the global rate of improvement in energy efficiency; and 3) a doubling of the share of renewable energy in the global energy mix (United Nations, 2011; SE4ALL, 2013a). The purpose of this study is to determine to what extent the energy efficiency objective supports the other two objectives, and to what extent the SE4ALL objectives support the climate target of limiting the global mean temperature increase to 2° C over pre-industrial times. To accomplish this, pathways are constructed for each objective, which then form the basis for a scenario analysis using the Energy Technology System Analysis Program TIMES Integrated Assessment Model (ETSAP-TIAM). This presentation focuses on the modeling challenges including updating data, setting constraints, and reporting on output. The presentation also addresses the addition of new model components such as traditional biomass and building energy efficiency.

General information
Publication status: Published
Organisations: Department of Management Engineering, Systems Analysis, DTU Climate Centre
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Publication date: 2016
Peer-reviewed: Yes
Event: Abstract from 69th Semi-Annual ETSAP Meeting
Electronic versions:
ETSAP_meeting_abstract.docx
URLs:
http://iea-etsap.org/index.php/workshops-meeting/cork-may-16 (Link to conference)
Source: PublicationPreSubmission
Source-ID: 126256544
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2016 › Research › peer-review