

Brief introduction to TSI - “get on” climate planning tool

[Måned og år]

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Indholdsfortegnelse

- 1 **Indledning og resumé**.....Fejl! Bogmærke er ikke defineret.
 - 1.1 Økonomi **Fejl! Bogmærke er ikke defineret.**
 - 1.1.1 Selskabsøkonomi..... **Fejl! Bogmærke er ikke defineret.**

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1 The delivered tool and supplementing materials

PlanEnergi developed a climate accounting tool for geographically bound areas on a local level. Originally it was made for Danish municipalities and made for monitoring climate impact from activities in a municipality's geography, but it can in principle be applied in any location where the needed background data can be made available. The tool consists of an energy balance which includes an account of CO₂-equivalent emissions (CO₂-e) from all energy producing and consuming sectors and CO₂-e balances for agriculture and other landuse, waste and industrial non-carbon emissions.

2 Use in the TSI "Get on" project

For the TSI "Get on" project the tool has been adapted for specific use as a planning rather than a monitoring tool. What is provided to planners of climate impact reduction measures, is a tool for modelling developments in all climate impacting sectors and a tool which can simulate climate effects of implementation of new technologies and in the end make assessment of changes to the climate impact possible. Thus, the main aim in the project has been to provide a template which must be populated with local data before use.

As the technologies existing energy production consist of in different regions around Europe, and as the agricultural production can be very different in different countries and regions, the tool may need some adaption to local conditions. But with the tool at hand, and by populating the tool with data, it is now possible for regions and municipalities in Europe to surveil and plan for climate reduction in accordance with Fit for 55 goals in the EU and in accordance with the IPCC framework. This does require though, that there is put an effort to educating staff in local authorities in use of the tool, as the tool is complex and proper use depends on the professional skills of the user.

Therefore, a second aim of the "Get on" project, has been to provide manuals for understanding and using the tool.

2.1 Content of delivered materials

The tool itself is made in excel format, and so are exercises, which have been made for training users of the tool in understanding details in the tool and how to make changes. The exercises simultaneously exemplify how to complete complex climate planning.

Along with the tool comes 2 written manuals, which takes the reader through the construction of the tool and how to audit or assess climate impact with the tool. The manuals give an in-depth description of the tools structure and the background data which makes the basis of the tool. The professional in climate assessment with good skills in use of excel spreadsheets will, by reading the manuals and simultaneous consulting of the relevant parts of the tool, be able to adapt the tool format and content to form a local balance for any geographical area in Europe when sufficient background data is available. Forming such a

local balance is the same as to construct a baseline for later planning of changes to this baseline from active climate reduction planning.

The exercises have been developed with the aim of introducing potential daily users of the tool to working with concrete planning themes in the tool, where it has already been populated with relevant data. The set of exercises is constructed to simulate the effects of active reduction measures within the energy sector and agricultural sectors. The exercise set has its main focus on modelling the climate effect of introducing new energy producing technologies which displace fossil energy sources rather than on more classical measures of climate impact reduction. The latter could be increased use of electrical vehicles, building insulation etc. though this kind of measures can easily be modelled in the tool, and guidance for this is given in the manuals. Modelling effects of technologies like biogas, e-methanol and other renewable carbonic fuels includes modelling of the potential for producing biomass, renewable electricity and CO₂-capture and to model the linkage between the technologies' production capacities, and this is quite complex to do, and requires some guidance and background knowledge. The set of exercises gives the user both.

After completing the exercises, the user has acquired an outset for general understanding of how to make changes in any part of the tool, given that the user has the professional knowledge needed regarding energy, agriculture, waste etc.

The provided copy of the tool is populated with data for 5 Danish municipalities which have been aggregated as if the 5 municipalities were one. The version of the tool has been used in a workshop organized for planners from the 5 municipalities. Danish municipalities are in an international context quite small, and new energy infrastructure will in general cover more municipalities. The exercises have been tested in this workshop. The participants at the workshop were expected to have read and worked with the manuals in advance. With the complete set of tool, manuals and exercises, it is possible for planners to train themselves in use of the tool in general. This training need not take place at a workshop but can be performed individually. For actual local planning purposes in other regions in Europe, this training must be supplemented with adaption of the tool to local conditions and with finding adequate background data and populating the tool with these to create the relevant local baseline.

For ease of understanding 3 video presentations of the tool and thinking behind exercises have been provided too.

2.1.1 Energy balances – about the guideline

The energy balance format is unchanged since 2011 – the guideline still applies to the format included in the “Get on” project. Guideline in English has been provided exemplified with data from the municipality Sønderborg in 2017. The guideline has been produced in a previous project but made available as supplemental documentation for the “get on” project.

The guideline includes simple exercises which makes the user of the tool acquainted with the construction of the energy balance and how to use it for making simple changes. References to cells do not take into account that new technologies have been included in the “get on” project and therefore 3 rows and 3 columns have been added. This means that

references are shifted 3 rows and 3 columns (e.g. a reference to a cell in the guideline could be X79. In the spreadsheet in the "Get on" template the corresponding cell is AA82).

2.1.2 Agriculture and landuse, waste and industrial emissions

The provided manual gives a description of data and the quality of data used to populate the tool. This description can be used as an outset for finding similar local data for any location in Europe. The manual also describes the construction of the climate audits for the agricultural and landuse sectors as well as waste and industrial production sectors.

2.2 Possible needed modifications in an international context

The climate planning tool reflects the actual energy, wastewater, industry, agriculture and forestry conditions in Denmark. For example nuclear power is not included as no nuclear power plants exist in Denmark and in a similar way crops like sunflower, wine-grapes and olives are not included in the agricultural accounts as these crops are not grown in Denmark (on significant scale). Thus, when using the tool in the context of any other country some adaptations may need to be made of the annexes and the main audits.

For professionals within energy engineering and agriculture and with suitable and specific professional knowledge such adaptations are possible. The manual provide a recipe for such constructions. But it is recommended to seek professional help to ensure correct adaptations which should be in accordance with available data.

Data in other countries will in most cases be of a less detailed character than the data available in Denmark but will expectedly still be usable for establishing a base-line to use for planning changes to the energy system. Data for emission factors are already provided in the country specific national inventory reports, and the task to be solved will be to find the local data for energy use and energy systems as well as production in the agricultural and forestry sectors and waste/wastewater handling as well as local industries' emission non-carbon climate gasses.