**ECRAN modelling training – Module 1**

**Exercise for participants**

The following exercise is a part of module 1 of the ECRAN modelling training on LEAP. The exercise consists of two parts. Participants are requested to complete both tasks and report on their progress to the ECRAN team by the deadlines indicated. If you need support in conducting the exercise please, do not hesitate to contact the ECRAN team for help!

The tasks have to be understood in connection with the LEAP exercises introduced at the training in Skopje and they are based on the data sets provided for your countries by Charlie Heaps (further referred to as Charlie’s data). [[1]](#footnote-1)

**Task 1.**

Step 1: Please open the LEAP model for your country distributed by Charlie. Using “the current accounts” view please check the input data needed to populate the variables. At present, these variables are filled with Charlie’s data sets gathered from the IEA balances and other sources. They are compiled until the base year 2011 and include

1. key social and economic data such as population, urbanisation rates, human development indicators, GDP, sectors’ value added, income, transportation intensity and others listed in “Assumptions”
2. historical energy balances for the energy demand sectors and the transformation sector listed in “Demand” and “Transformation”
3. GHG emission factors entered for the Demand and Transformation sectors.

Please, identify locally available input data for these variables in your countries and compare it to Charlie’s data for at least 5 years (2007-2011) but if data is readily available for a longer period according to Charlie’s data.

Step 2: Please see how GHG emissions calculated by LEAP using Charlie’s data match the latest GHG inventory available for your country[[2]](#footnote-2). If there are significant differences among these, then please try to find out causes for the differences. For this compare Charlie’s input data and the locally available input data, which you identified in the previous sub-task 1.1.

As a result of your work:

1. Please, **prepare a brief report on the coincidences and differences between GHG emissions** calculated by LEAP based on Charlie’s data sets and emissions as reported in the national inventories**. P**lease also report on the similarities and differences in the input data which could be the reason for differences. Please provide your judgement which data is the better one.
2. Please, **prepare an improved data-set** based on your research with the indication of data sources in “notes” in LEAP and save it under a different name. You will need it at the next training.

Deadline for submitting the improved data set and a short report (maximum 2 pages) **by the January 31st, 2015.** Please inform us on the intermediary progress and difficulties by December 19th, 2014.

**Task 2.**

Step 1: Please review the modelling tree for the demand and transformation sectors in the LEAP model for your country. Please make suggestions how to improve the tree based on the data identified in the Task 1; you may also wish to think about the further sector disaggregation into branches. These could be, for instance, disaggregation of the residential sector by end-use or by types of buildings; disaggregation of the services sector by branches, by end-uses, or by types of buildings; further disaggregation of transport or industry, etc. The tree should include the following sectors:

* buildings (including residential and services)
* transport
* industry
* electricity and heat production and distribution
* agriculture and fisheries (only energy use!)

Step 2: Please, **choose two of the above mentioned sectors** (e.g. transport, industry) for which would be interested to build later detailed scenarios to the future. Identify what historic data is available for these sectors in your country in addition to the level of disaggregation of the Task 1. Identify also the data available in your country to build mitigation scenario to the future. The scenarios should include at least a reference scenario and one scenario with policies and measures. Such data include assumptions about the development of social and economic indicators, technology stocks (shares or saturations of technologies), and energy intensities of end-uses/technologies. Some assumptions are common for the reference and mitigation scenarios (social and economic data). Technology stocks and energy intensities of end-uses/technologies are different for the reference and mitigation scenarios and depend on policies and measures assumed. **Please, provide a list of data and its sources in a note which also identifies data gaps and/or data quality problems.**

Step 3: For the chosen two sectors prepare **detailed branches** in LEAP in the “current account” view, which will enable you later to conduct analysis on emission reduction scenarios, keeping in mind data availability identified by the previous step 2.

Step 4: For the two sectors selected in Step 1 and modified in Step 3 please populate their variables with the historic input data identified in Step 2 until the base year (2011 or 2012 until the data is available). Where the data is not available please try to find data in literature, obtain information from relevant experts, or make assumptions. Please use the current accounts of LEAP only, no need to prepare scenarios at this point in time. Please indicate source of the data in notes in LEAP. Please keep the data gathered for building reference and mitigation scenarios, you will need it at the next training .

Deadline for submitting the outputs and a short report (maximum 2 pages) to describe steps 1) to 4) above for Task 2 by **February 28th, 2015.** The submission address of the outputs of Task 1 and Task 2 is [jozsef.feiler@ecranetwork.org](mailto:jozsef.feiler@ecranetwork.org), with a copy to [imre.csikos@ecranetwork.org](mailto:imre.csikos@ecranetwork.org)

If you are having difficulties in carrying out these tasks, please contact Jozsef Feiler at [jozsef.feiler@ecranetwork.org](mailto:jozsef.feiler@ecranetwork.org), who will appoint members of the helpdesk to assist you. For this purpose please appoint a single contact point in your country who will communicate any difficulties to the ECRAN team.

You may also wish to join the LEAP Facebook group or the COMMAND website and ask there your questions.

The Facebook group is here: <https://www.facebook.com/groups/LEAPSoftware>

The COMMEND web site: <http://www.energycommunity.org/>

**Resources:**

http://www.energycommunity.org/

Energy Statistics Manual - <http://www.iea.org/publications/freepublications/publication/energy-statistics-manual.html>

GHG Projection Guidelines – European Commission

<http://ec.europa.eu/clima/policies/g-gas/monitoring/docs/ghg_projection_guidelines_en.pdf>

<http://ec.europa.eu/clima/policies/g-gas/monitoring/docs/ghg_projection_guidelines_a_en.pdf>

<http://ec.europa.eu/clima/policies/g-gas/monitoring/docs/ghg_projection_guidelines_b_en.pdf>

1. Unfortunately, we do not possess the data set for Kosovo.  The training participants from Kosovo may chose for which country they complete the exercise.  Alternatively they may take a model of any country and start populating it with the data available locally and improving it. Please also see the Kosovo balances of IEA available online for 2000-2012 (<http://www.iea.org/statistics/statisticssearch/>). The comparative part of the exercise is to skip. [↑](#footnote-ref-1)
2. You can check for inventory data from local experts adn at <http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php> - usually National Communications contain a chapter on inventories, but the data might not be enough detailed – varies by country. [↑](#footnote-ref-2)