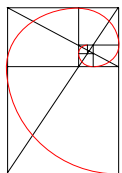


**Long-range Energy Alternatives Planning System**

## **Notes on Using the New Mapping Features in LEAP**

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Download the latest version of LEAP from <http://forums.seib.org/leap>

## **Contents**

<b>1</b>	<b>INTRODUCTION.....</b>	<b>3</b>
<b>2</b>	<b>INSTALLING THE OPTIONAL MAPPING COMPONENTS .....</b>	<b>4</b>
<b>3</b>	<b>SETTING-UP MAPS.....</b>	<b>5</b>
<b>4</b>	<b>ASSOCIATING LEAP REGIONS WITH MAP SHAPES.....</b>	<b>6</b>
<b>5</b>	<b>USING MAPS IN RESULTS VIEW .....</b>	<b>7</b>

# 1 Introduction

In addition to using charts and tables to display results, in multi-regional areas you can now also optionally display LEAP results on a color code GIS (Geographical Information System) map.

Maps in Results View are only available if all of the following conditions are met:

- You have installed the Version 2005.028 (or later) of LEAP. You can download LEAP from <http://forums.seib.org/leap> or if LEAP is already installed you can update to the newest version from menu option: **Help: Check for Updates**.
- You have downloaded and installed LEAP's optional mapping components (see below).
- You are working on a multi-region area (i.e. one with more than one region).
- You have chosen a GIS "shape" file in the **General: Basic Parameters: Mapping** screen.
- You have mapped the regions in your Area to the shapes in the GIS "shape" file on the **General: Regions** screen.

If these conditions are met, the Results View will display an extra tab labeled Map. Click this tab to see any results variable displayed on a color coded map for a given year.

For more information: please refer to the LEAP help files (installed with LEAP).

For further assistance, please use the LEAP technical support discussion forum on the LEAP web site (<http://forums.seib.org/leap>).

## 2 Installing the Optional Mapping Components

Maps in LEAP are only enabled if the optional mapping components for LEAP have first been installed on your PC.

To keep the size of the standard LEAP installation files to a minimum and to minimize download times, the mapping components are made available as a separate downloadable program named LEAPMapComponents.exe.

You can download this file from the LEAP web site (<http://forums.seib.org/leap>). Go to the LEAP: Download menu option to download the optional mapping components.

Once downloaded, exit LEAP and then run LEAPMapComponents.exe to install the mapping components. When prompted, select your LEAP program folder as the destination for installation of the mapping components. The installation package will install and register various mapping components. It will also install a set of sample map "shape" files in a folder named "\_MAPS" immediately below the main LEAP program folder.

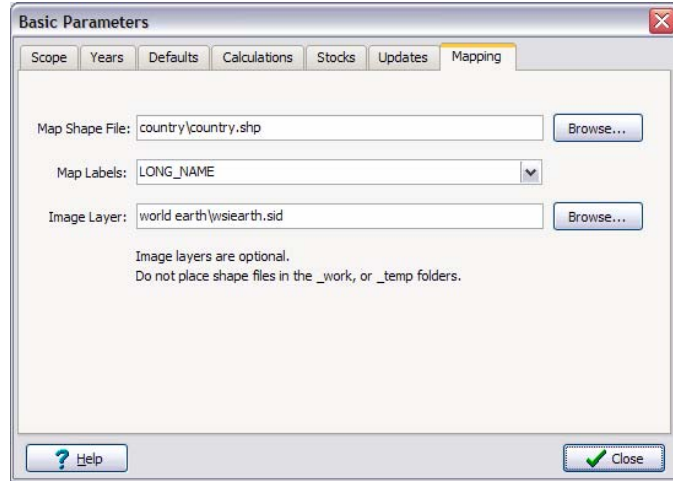
Once installed, run LEAP as before to take advantage of the additional mapping features. Go to the **General: Basic Parameters: Mapping** screen to set-up mapping for an area.

You can check if the mapping components have been correctly installed in LEAP by visiting the **Help: About** screen. The system information will indicate whether or not the mapping components are installed.

## Setting-Up Maps

Use the **Mapping** tab on the **General: Basic Parameters** screen to set-up maps for an area. This tab is only available if you have first installed the optional mapping components for LEAP *and* your LEAP area has more than one region.

Use the Mapping tab to associate your LEAP area with a GIS "shape" file. You will also need to select the field in the shape file that contains the labels to be displayed on the map. Shape files are a standard mapping file format used in ArcView and other GIS systems. Most mapping software is capable of generating and reading shape files and a set of sample shape files is installed on your PC when you install the mapping components for LEAP. By default, these sample shape files are installed in a folder named "\_MAPS" immediately below the LEAP program folder. The samples include a world map divided into different countries (country.shp).



You can also optionally nominate an image file to use as a background for the map. LEAP supports various standard GIS image files such as ".SID", ".GIS" and ".LAN" image files.

Once you have selected a shape file and label field on this screen, you will then need to go to the **General: Regions** screen to establish the links between the regions in your LEAP area and the shapes in the GIS map. Each LEAP region can be mapped to one and only one GIS shape, so you will need to choose a GIS shape file that has the same level of regional disaggregation as your LEAP area. For example, if the regions in your area correspond to countries, then you will need a GIS shape file that is also broken down by country. If your LEAP regions correspond to regions within a country you will need a more disaggregated shape file.

### 3 Associating LEAP Regions with Map Shapes

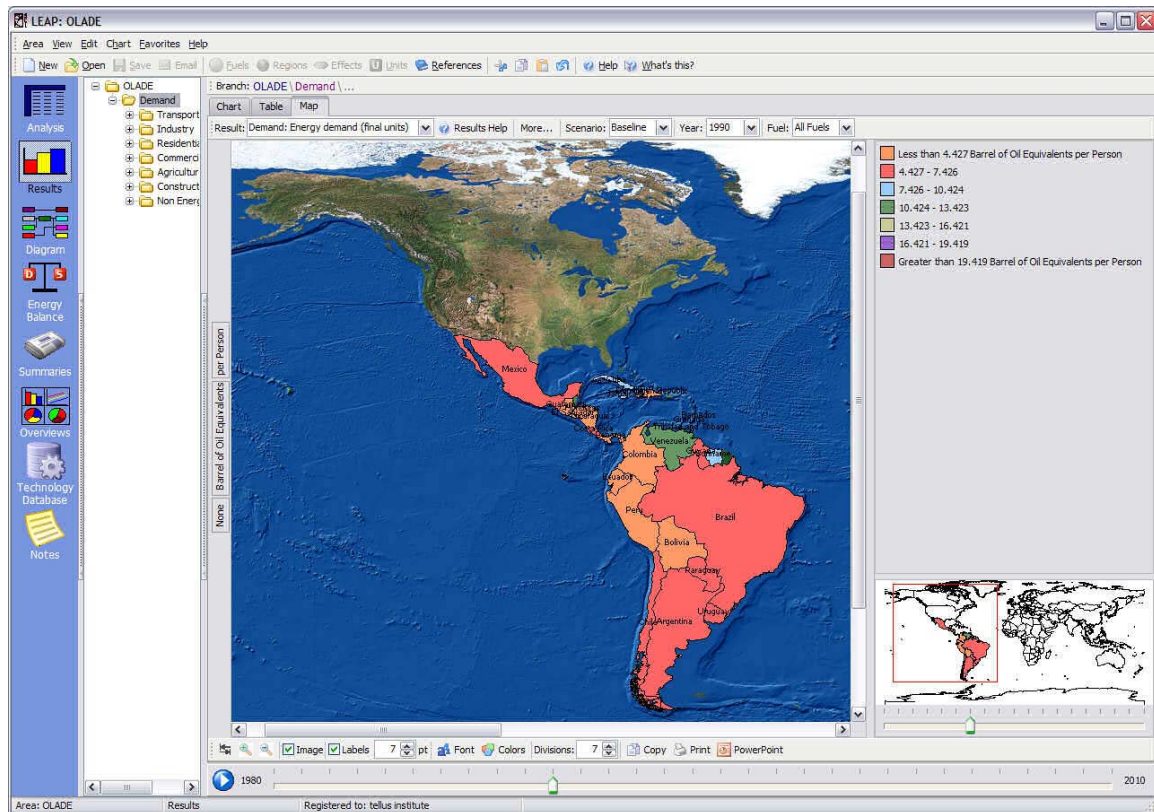
Once you have set-up mapping on the **General: Basic Parameters: Mapping** screen, go to the General: Regions screen. Here you can associate each region in your LEAP area to a shape in the GIS “shape” file. Each LEAP region should be mapped to one and only one GIS shape, so you will need to choose a GIS shape file that has the same level of regional disaggregation as your LEAP area.

Use the **Guess Blank GIS Mappings** button at the foot of the Regions screen to have LEAP attempt to guess the LEAP-to-Shape File associations by matching the names used in LEAP to those used in the GIS shape file.

## 4 Using Maps in Results View

Once a map has been set-up and you have associated your LEAP regions with shapes in the GS Shape file, you can go to the Results View to see results displayed on the map.


**Maps** are available as a new tab on the Results View screen alongside the **Chart** and **Table** tabs.



The Map screen shares the same basic controls for selecting results as the Chart and Table views including the Tree on the left of the screen, the unit selection boxes immediately to the left of the map and the toolbars used to select the type of results to be displayed.








The Map screen is divided into 3 parts.

1. The **main map pane** is displayed on the left of the screen. To zoom-in on the map (🔍), left-click the mouse and drag to select a rectangular shape, or simply hold down the Ctrl key and left-click the mouse. To zoom out (🔍), hold down the Ctrl key and right-click the mouse. Alternatively, use the toolbar below the main map to zoom in, zoom out, or zoom to the maps full extent (🌐). You can also select these actions by right-clicking on the map to display the map popup menu. Hold down the Shift key and left-click and drag to pan to a different part of the map in the main map pane.

2. The **legend** is shown on the top-right part of the screen. The legend indicates the values associated with each color used on the map. Use the toolbar below the map to choose the number of value divisions used to color the map or to select a different color palette ().
3. The **inset map pane** is shown on the bottom-right part of the screen. This small map indicates gives you a birds-eye view of the full extent of the map. A red box drawn on the inset map indicates the part of the map that is currently selected. As you zoom-in or zoom-out of the map, the red box will be redrawn. You can also click and drag the red box to pan to and display a different part of the map in the main map pane. Alternatively use the zoom-slider bar below the inset map to zoom in or zoom out.



The main options used to control the look of the map are collected on the toolbar shown next to the main map pane. These options let you:

-  Zoom the main map pane to the full extent of the map.
-  **Zoom In** the main map pane (or Ctrl-Left Click).
-  **Zoom Out** the main map pane (or Ctrl-Right Click)
- **Image:** Show or hide the maps background image. This option is only enabled if you have first selected a background image layer on the **General: Basic Parameters: Mapping** screen.
- **Labels:** Show or hide the labels associated with the map regions. Note that labels are only displayed for the map shapes linked to LEAP regions. Go to the **General: Basic Parameters: Mapping** screen to select the field in the shape file that contains the shape labels.
- **Fonts:** Select the size and typeface of the fonts used to display labels on the map.
-  **Colors:** Select the color palette used to display the results on the map.
- **Divisions:** Select the number of value divisions on the map. Each division corresponds to an item in the map legend. The divisions are spaced equally between the maximum and minimum results values.
-  **Copy:** Copies the part of the map shown in the main map pane to the Windows Clipboard.
-  **Print:** Prints the part of the map shown in the main map pane.
-  **PowerPoint:** Copies the part of the map shown in the main map pane to a Microsoft PowerPoint slide.