

Tools for TAPs: Hands-on Activities

These activities are intended to give you experience with using the tools you've heard about during the conference. Use the Tools for TAPs LibGuide (available at <http://guides.library.illinois.edu/tools-for-taps/>) for links to specific resources. **The Energy & Water and P2 101 LibGuide sections of the Tools for TAPs guide don't have activities associated with them.** If you work through the activities below and still have time left, explore the tools in those sections of the guide. **As you work through these activities, think about how you might use these resources when you return to the office after the conference.**

Data

Toxics Release Inventory using Envirofacts, ECHO, and the TRI Food Manufacturing Data Tool

There are several different paths to get to TRI data. These activities will help you understand the differences in the data sources, which will help you decide which works best for you.

- 1) Use TRI Explorer to generate a list of facilities in your state. Refine your search by the industry sector of your choice.
 - a. Click on the first company in the sorted list
 - b. What information do you find on this report?
 - c. How do you download your search results?
- 2) Repeat the above steps using **TRI Search in Envirofacts**. How do these results differ from TRI Explorer?
- 3) Repeat the above steps using the **TRI P2 Search**. How do these results differ from TRI Explorer and TRI Search?
- 4) Repeat the above steps using **ECHO** [Hint: Click the **More Search Options** link underneath the Quick Search dialog box]. How do these results differ from the TRI searches that you did using EnviroFacts?
- 5) Repeat the above steps using the TRI P2 Profile: Food Manufacturing data tool. How do these results and other features of this tool differ from the other tools above?

EJSCREEN

TAPs can use EJSCREEN to identify areas to target under the P2 Program's State or Community Approaches to Hazardous Materials Source Reduction National Emphasis Area or gather additional supporting data to justify grant funding for projects in areas already targeted.

- 1) Review the information on **Learn to Use EJSCREEN** and **Understanding EJSCREEN Results**.
- 2) Use the **Find Address or Place box** at the top of the EJSCREEN tool to search for a geographic area of interest to you.
- 3) Click the **Generate Reports** link and select a more detailed location using any of the three options provided. If you experiment with more than one, note that you can erase what you've already done by clicking **Erase** on the menu bar.
- 4) Click the different options on the graphs to see how your selected area compares statewide, regionally, and nationally. Note that the graph shows percentiles.
- 5) Click the Get Data Table button to display the data table corresponding to the graph. To export the data, click the disk icon on the top right of the table view.

Greenhouse Gas Reporting Program

You can access these data through Envirofacts or through EPA's FLIGHT tool. FLIGHT visualizes the data in a map and allows users to display and download search results, charts, and graphs. Through Envirofacts, users can download search results or display individual facility records. The activities below focus on the FLIGHT tool.

- 1) Open **FLIGHT**. Choose your state from the dropdown menu.
- 2) Filter your search by one of the criteria at the top of the page. Choose the one that is most interesting to you. Click **Apply Search**.
- 3) Use the buttons at the top right of the page to change the display from **Map to List, Trends, Bar Chart, and Pie Chart**.
- 4) Download one of the charts using the **Print or Download Chart button** at the top right of the chart
- 5) Export the data from your search using the Export Data button immediately to the right of the **green Apply Search button**.

Greenhouse Gas Inventory Data Explorer

The Greenhouse Gas Inventory Data Explorer allows users to create customized graphs, examine trends over time, and download the data. Although it doesn't include facility information, this tool is useful for its comprehensive accounting of total greenhouse gas emissions for all man-made sources in the United States.

- 1) Select a sector from the pull-down menu
- 2) Select a break out category from the pull-down menu
- 3) Select a year (or range of years) from the pull-down menu.
- 4) Change your selections to see how the graph changes.
- 5) Export one of the charts by clicking the Export button at the upper right of the chart.
- 6) Download the data by clicking the Download the Data link below the data table.

Environment Data from the Energy Information Administration

EIA's greenhouse data include **ONLY** carbon dioxide emissions from energy and industry, by consuming sector (residential, commercial, industrial, transportation, electric power), and other emissions. Although they do offer data downloads, most of their data are available in analyzed form.

- 1) Explore the analyses available in the **Current Issues and Trends** section.
- 2) Click the **Analysis & Projections tab** and explore some of the links. Two of potential interest are the U.S. States Portal and the Total Energy Data Browser.

Energy Use Data

The **Manufacturing Energy Consumption Survey (MECS)** is a national sample survey that collects information on the stock of U.S. manufacturing establishment, their energy-related building characteristics, and their energy consumption and expenditures.

- 1) Explore some of the analyses and energy briefs on the page.
- 2) Explore the two Industry Analysis papers.

Census Bureau

The Census Bureau collects a wide variety of socio-economic data on United States, Puerto Rico and the Island Areas. For P2 TAPs, the **County Business Patterns Database** contains a wealth of information about specific industrial sectors including number of establishments, number of employees, and total payroll. These data provide more complete information about the size of specific manufacturing sectors which are not readily apparent from looking at environmental data like TRI. Once you've pulled the data you need, you will download the data set to manipulate in Excel or another data visualization program like Tableau.

County Business Patterns (Economic Data By Industry Sector)

- 1) Go to **American FactFinder's Advanced Search** to build your query
- 2) From the Geographies search option on the left, select State, then select your state (or multiple states by holding **[CTRL]** and clicking multiple state names). Click **Add To Your Selection** button.

- 3) From the Industry Codes option on the left, select NAICS/NAICS Based Industry, then the All Codes radio button
- 4) Click the plus sign next to Industry Sector in the Industry Code Filter Options box
- 5) Select 31-33 Manufacturing from the list
- 6) Check the box next to **ALL-L3-31-33**. This will get the data associated with all manufacturing establishments by 3-digit NAICS code.
 - a. If you want *all* sectors and subsectors within the manufacturing sector, select ALL- 31-33.
 - b. If you want specific sectors or subsectors, check only those selections. Experiment with the filters to see what data you get when you change them.
- 7) Click the **Add** button at the top of the table to add your selections to the query.
- 8) Close the Select Industry Codes table by clicking the **Close** button at the top right of the table window.
- 9) Select the Geography Area Series: County Business Patterns table from the list.
- 10) Download your selection. Experiment with it in Excel if you want to experiment with visualizing the data.

Census Bureau Community Facts

Community Facts provides aggregated information in a wide variety of categories based on state, county, city, town, or zip code.

- 1) Go to **American FactFinder** and select **Community Facts**.
- 2) Enter your state's name.
- 3) Explore the different categories of data to see what's available.

Chemical/Materials Substitution Tools

- 1) Go to **ChemHAT** and find information on nPB (CAS# 106-94-5). What information do you find here? What are some alternatives to nPB as a flux remover?
- 2) Go to **SOLV-DB**. Select a solvent name from the pull-down menu. What information do you find here?
- 3) Go to the **Green Alternatives Wizard** and select a chemical or process to replace or an alternative chemical or alternative process. What information do you find here?

P2 Calculators

A biopharmaceutical company implemented several sustainability projects. Using the data below, calculate the company's cost savings and greenhouse gas reductions using the **EPA P2 and GHG calculator spreadsheets**.

| Baseline Metric | Amount | Cost per unit |
|---------------------------------|-------------------|-----------------------|
| Electricity consumed | 344,849,327 kWh | \$. 1001/kWh |
| Natural gas consumed | 14,990,083 therms | \$.53/therm |
| Nonhaz solid waste – Landfilled | 21,971,726 lbs | \$59.51/ton |
| Haz waste generated) | 4,552,605 lbs | \$3/lb disposal costs |

| Project | Reduction | Unit of Measurement |
|--|------------|------------------------------------|
| Upgrade to Building Air Handling Units | 5,950 | kWh |
| Upgrade to Building Air Handling Units | 2,130 | therms |
| Variable Frequency Drive Installation | 598,467 | kWh |
| Variable Frequency Drive Installation | 20,430 | therms |
| Beneficial reuse of waste to energy | 16,000,000 | lbs nonhaz solid waste to landfill |
| Chiller replacement | 28,480 | kWh |
| Chiller replacement | 970 | therms |
| R&D PPE recycling | 5,500 | lbs nonhaz solid waste to landfill |
| Eliminated use of caustic (Sodium Hydroxide) | 309,529 | lbs haz waste disposed |