Geospatial Energy Mapper Tutorial Video Transcript

In this video, we'll go over Geospatial Energy Mapper and how it can be used in coordination with the CITAP portal and as a useful tool for the resource reports that are part of the application process.

This is the CITAP home page and at the bottom is this GIS mapping tool link. Clicking that link will launch Geospatial Energy Mapper, or GEM, which is a publicly accessible mapping tool that's focused on energy planning.

GEM includes a large catalog of mapping layers that you can overlay on the map. At the lower left, there's a set of mapping themes. Clicking one of them populates the map with that theme, highlighting the content for that topic, and the table of contents will contain more layers for that theme.

Other controls and features of GEM will be shown later in the video.

In this context GEM will mainly be useful for parts of the resource reports that are part of the 10 CFR 900.6 regulations in the Federal Register. Those topics, alongside the applicable content and capabilities in GEM are shown here.

Next, I'll demonstrate how to use GEM to load a project of interest from a GIS file and superimpose mapping data associated with one of the resource report topics.

Specifically, I'll load a GIS file, add mapping data available in GEM, adjust the map view and look up information, measure distances, sketch areas and lines on the map to highlight locations of interest, print a map, and download GIS data for use in other systems.

I'm going to be using an example of the TransWest transmission line project available from the Bureau of Land Management, a project which was permanent recently. Let's start at this URL (https://gbp-blm-egis.hub.arcgis.com/) and search for "TransWest Express".

On this page I can look up more details or I can simply click "Download" for the data. I have several options, and in this case I'm going to choose to download a Shapefile.

Returning to GEM, use the file tool to browse to the downloaded file. Click file at the top right, then choose "File", pick it, and click "Load". Next I'm going to adjust the title a little bit, and I'm going to give it a color. Note that "Zoom to Extent" is clicked. Then, when I add it to the map, the map will zoom to that location.

Loading GIS files in GEM with this tool only loads it in your browser memory. It's not transmitted anywhere or saved when you quit GEM.

First let's demonstrate how maps could be made for General Project Description resource report. I have the Electrical Infrastructure map theme clicked already, and it's showing power plants and transmission lines, but not substations. So, I'm going to turn the substations on and turn the power plants off. And then I'm going to zoom the map. I'm clicking to drag and rolling the mouse wheel to zoom in. And here I'm going to show part of the route. Notice that the project is obscuring some of the lines underneath it, so I can adjust the transparency with this slider here and make it able to show both.

I can also click on features. If I click here, I find that there are several transmission lines at this location: there's a 345, 500 kV, and a second 500 kV line.

Now I'm going to clear the Table of Contents by clicking these minus icons at the at the right.

Let's take a look at the Protected Areas mapping theme. I'm going to keep the layers, which means that my project that I added earlier will be preserved in the Table of Contents. I'm going to turn off this Protected Areas Database for now, and I'm going to drag my layer to the top of the Table of Contents so that it will be drawn on top of the other features.

Now let's take a look at some of the land designations available in GEM. The National Historic Trails layer—this dashed line on the screen—has some crossings with the project path. If I click on that I find that it's the Old Spanish National Historic Trail.

Next let's look at Areas of Critical Environmental Concern (ACECs). This one in particular is the River Mountains ACEC, and you can look up some of the others that are within the path of the corridor.

Here's a National Conservation Area named Sloan Canyon.

The layers within the Table of Contents for this mapping theme should be very informative for the resource report having to do with land designations. As you do this, you can see where sensitive or protected resources exist around your area of interest and it may influence the permitting process or decisions about the route.

Map themes help save time, but the Layer Catalog has more content and more functionality.

Let's find the Areas of Environmental Concern layer in the layer catalog. Under filter by keyword, I'm going to type in part of the name, and that's going to isolate the layers with that particular string in the name, and I'm going to click on the title. This populates the panel on the right. It provides a short description, the date the data were published, and when it was last updated in GEM. You can access metadata, which is more descriptive information about the layer, or you can download it as a GIS file.

The Layer Catalog lists everything available in GEM. There are about 240 mapping layers currently. The Mapping Themes, in contrast, feature only some of the content.

Now let's try the Measure tools. If I'm interested in seeing how far this particular ACEC is from the project path I can… I'm going to zoom in a little bit by rolling the mouse wheel… click a starting point and then stretch a line, and I can double-click to finish. If I want to measure another distance, I can simply repeat that process.

The area tool is similar. If I click Area I can click once to start a measurement and then draw my shape that I want to measure, and double-click to finish. The area will be reported on the screen. Click the X to finish measuring.

If we wanted to highlight an issue of interest, we can use the Draw tool to sketch features on the map. First of all let's draw a polygon, and let's just say this area along the path is near the National Historic Trail and we just want to point that out in some sort of illustration. And then maybe we could also add a line. So here, for example, say we wanted to just highlight this nearby ACEC.

These features on the map can be adjusted. If you click on them, you can adjust them. Click and drag. And you can also clean up by deleting features. These also are temporary graphical overlays while you're using GEM. Let's keep this one on the screen.

Next, I'll demonstrate the Print tool, which is a way of capturing the current map. I can put that in a PDF file or print to a printer. You'll get a snapshot of the map with a little bit of descriptive information about GEM, and then any of the layers that are drawn in the map will be shown in a legend. You can click Save and save that to your disk, or you can print it.

This has been a quick tour of some of the features of GEM that illustrate how you can load a Shapefile, work with it on the map, and superimpose it with the whole variety of content. And measure and draw features as well as capturing results in a file.

If you have any questions about GEM you can use the link at the top left to e-mail CITAP@hq.doe.gov and your questions will be routed to folks that can answer them.

Thank you.