



the **ENERGY** lab

R&D FACTS

Geological & Environmental Sciences

## NETL's Energy Data Exchange (EDX) – A Web-Based Tool to Coordinate Energy Research

*Data Exchange for Energy Solutions*



### Background and Benefits

The Energy Data Exchange (**EDX**; [edx.netl.doe.gov](http://edx.netl.doe.gov)) is an online coordination and collaboration platform developed by NETL's intramural research program to support subsurface energy research. Efficient and timely research has always been driven by access to existing information, the ability to quickly share and coordinate data with collaborators, and the ability to disseminate the results of work products as they develop. EDX supports these needs, offering timely access and coordination to data for researchers that require information associated with subsurface energy sources. In addition, EDX is utilized as a platform for rapidly disseminating NETL's research products.

EDX builds on NETL's experience in online tools such as the Knowledge Management Database (KMD) and NATCARB. KMD is a platform for disseminating results from DOE's oil and gas programs, including past technical reports and data. NATCARB is a platform for coordinating information on both CO<sub>2</sub> sources and potential CO<sub>2</sub> storage reservoirs, growing out of the efforts of the Regional Carbon Sequestration Partnership program. EDX extends these platforms in two ways:

- EDX incorporates a broad set of subsurface information common to CO<sub>2</sub> storage and other subsurface energy needs (e.g. shale gas, tight oil, deepwater and ultra-deepwater, and unconventional fossil resources). This set of information includes reservoir data, fluids properties, wellbore data, fault/fracture data, and groundwater data. Although some of the information resides in EDX as data derived from NETL research, much of the information exists online distributed in external databases. In these cases, EDX serves as a clearinghouse, allowing researchers to locate data rapidly by serving as a portal to these other datasets. Through this coordinated approach, EDX addresses one of the key lessons learned during DOE's work on the Deepwater Horizon oil spill--namely that locating and accessing data across a range of sources is challenging and often inefficient.
- EDX serves as a platform for disseminating research data both within projects, across projects, and externally. In this role, EDX facilitates coordination of both restricted-access and open-access research data and through the use of online visualization tools. EDX also facilitates seamless integration with researchers at collaborating institutions. Importantly, EDX can serve as an external platform, allowing the research team to "publish" data and reports easily from the secure internal collaboration platform to the open-access external technology transfer platform when appropriate.

### CONTACTS

#### George Guthrie

Focus Area Leader  
Office of Research and Development  
412-386-6571  
[George.Guthrie@netl.doe.gov](mailto:George.Guthrie@netl.doe.gov)

#### Kelly Rose

EDX Coordinator  
Office of Research and Development  
541-967-5883  
[Kelly.Rose@netl.doe.gov](mailto:Kelly.Rose@netl.doe.gov)

## NATIONAL ENERGY TECHNOLOGY LABORATORY

Albany, OR • Anchorage, AK • Morgantown, WV • Pittsburgh, PA • Sugar Land, TX

Website: [www.netl.doe.gov](http://www.netl.doe.gov)

Customer Service: 1-800-553-7681



U.S. DEPARTMENT OF  
**ENERGY**

Ultimately, EDX seeks to ensure improved access to data and resources from a range of sources, offering a venue for the “publication” and dissemination of new datasets as well as historical, often inaccessible, assets ensuring their use for future, yet-to-be envisioned purposes.

Primary users of EDX are researchers actively engaged in work relevant to subsurface energy systems. However, the open-access resources within EDX can also be made available to the public, policy makers, commercial, and non-government organizations. EDX provides this access while helping to accelerate further research on pressing energy-related issues associated with oil, natural gas, the environment, and carbon management.

## Functionality:

Core elements of EDX functionality are:

- An online platform for rapid and efficient access to priority datasets,
- Ability for researchers to share and “publish” online their data-driven products,
- A secure environment for multi-organizational research teams (including member researchers from DOE National Laboratories and other organizations) to share, build, and collaborate in a common workspace (available spring 2013), and
- Online tool to disseminate data, information, and results from DOE’s Fossil Energy intramural research portfolios (e.g., the DOE EPACt Complementary Program, CO<sub>2</sub> Storage Program, National Risk Assessment Partnership (NRAP), National Methane Hydrates Program, etc.).

Datasets physically housed within EDX are provided by users either as links to external websites or when appropriate as standalone files such as Microsoft® Excel, .jpg, .zip, etc. Datasets can be “published” in their original and complete form in EDX and accompanied by associated reports, dissertations, or appropriate metadata. EDX also recognizes that there are significant established online resources and offers the ability to store links to external online data, thus improving coordination with existing resources to EDX users.

Contributing to EDX is quick, easy, and streamlined. The process begins by completing the online submission form where users can describe attributes, characteristics, and keywords of the submission. This information serves as the building blocks of EDX and is utilized to compile search results. Providing thorough and accurate information about the submission will enhance its visibility.

## EDX Version 2:

Version 1 of EDX was released in July of 2012. Additional functionality and capabilities will be embodied in EDX Version 2, scheduled for release in the spring of 2013. EDX Version 2 will provide advanced coordination, collaboration, and data visualization functionality. The following features will be included in this deployment:

- EDX will support a variety of *Group Functionalities*, ranging from informal collaboration among a subset of colleagues that can be quickly created, to more formal and secure groups that will evaluate and verify the credentials of those requesting to join and participate. This functionality will augment the ability to restrict data to certain groups.
- The *Data Visualization Tool* will display files within EDX and assist in determining if the user would like to download those files.
- The *Collaborative Workspace* will be an environment where researchers can quickly and efficiently share data, ideas, and research techniques in a secure and dedicated work space.
- The *Rapid Response Tool* will be utilized in the event of a natural disaster, man-made catastrophe, or any other energy related event where news and data must be quickly coordinated and exchanged.

EDX will continue to evolve after deployment of Version 2 so check back often as information grows and functionality for this system improves. Registered users interested in options for specialty datasets and customized solutions can contact EDX Support at [EDXsupport@netl.doe.gov](mailto:EDXsupport@netl.doe.gov).



Visit us at [www.edx.netl.doe.gov](http://www.edx.netl.doe.gov)