DOE CODE

Software Services Platform and Search Tool

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U.S. DEPARTMENT OF ENERGY | Office of Science | Office of Scientific and Technical Information

DOE CODE

What is DOE CODE?

- DOE CODE is the software services platform and search tool for DOE-funded code; replaces the Energy Science and Technology Software Center (ESTSC)
- Deployed in Nov. 2017, contains 4600+ software projects
- Provides functionality for collaboration, archiving, DOI registration, API submissions, and discovery
- Supports submission and announcement of:
  - Unclassified/Unlimited availability software
  - Limited availability software
  - Scientific and Business software

Software Submission

What software is eligible for submission?

- Software that was developed or modified by DOE labs, DOE facilities and DOE contractors or during work carried out for others at DOE facilities
- Software that meets the formal definition of scientific and technical information (STI) based on DOE Order 241.1B

Who submits software to DOE CODE?

- DOE Lab/Site software POCs
- Individual DOE-funded developers

Two Submission Paths:

➡ Submit: For code in early development and for developers wanting to obtain a DOI early in the process

➡ Announce: For code in later stages of development – ensures announcement in accordance with DOE statutory responsibilities

*Limited software may be Announced only

Metadata Requirements

Submit

- Project Type
- Repository URL, Landing Page, or Contact Email
- Software Title
- Description/Abstract
- License Information
- Developers

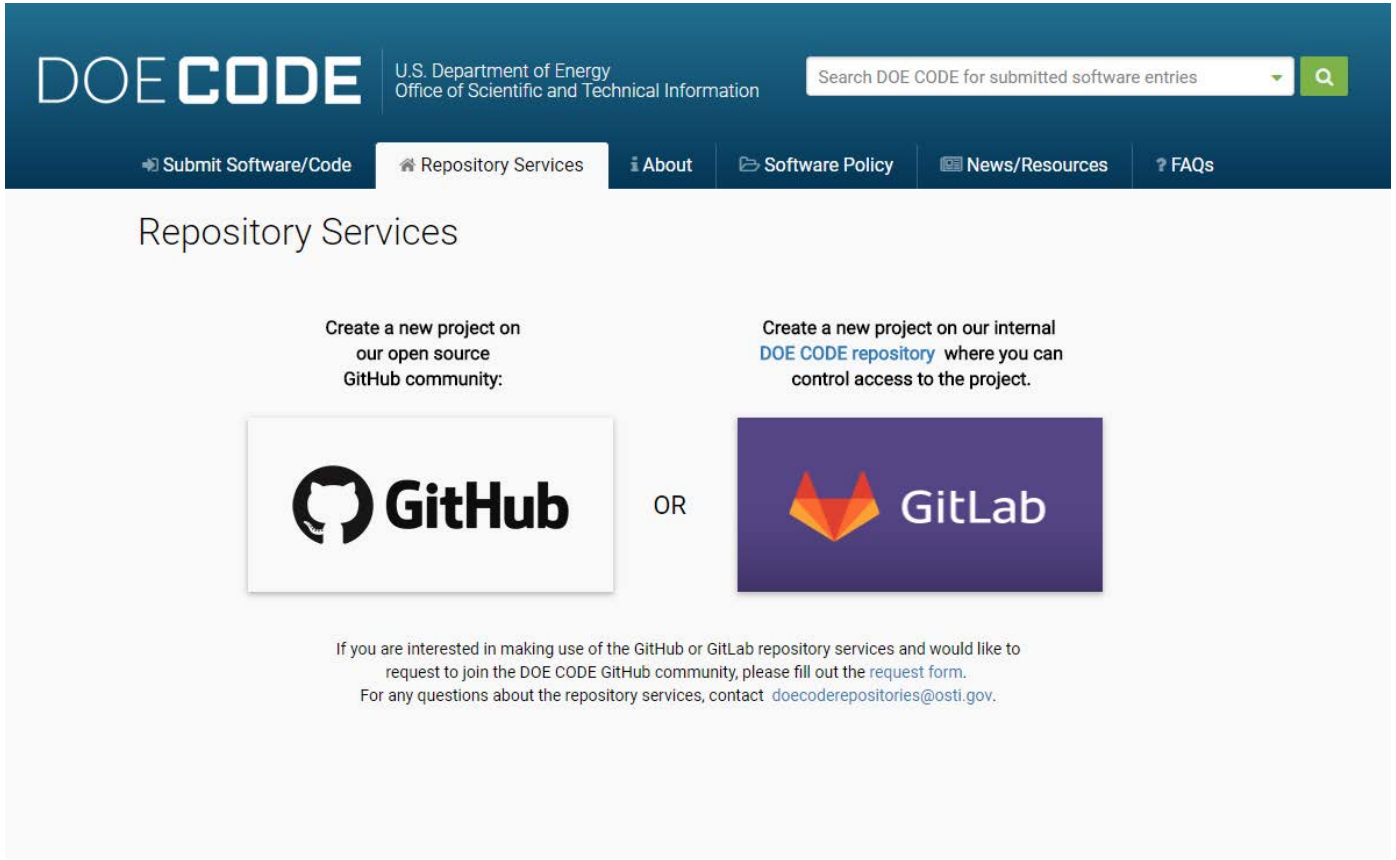
Announce

- Project Type
- Repository URL, Landing Page, or Contact Email
- Software Title
- Description/Abstract
- License Information
- Developers
- Release Date
- Source Code Upload
- Sponsoring Organization
- Primary Award Number
- Research Organization
- Contact Information

*All software submitted or announced undergoes an Approval step before it becomes discoverable in our output products.

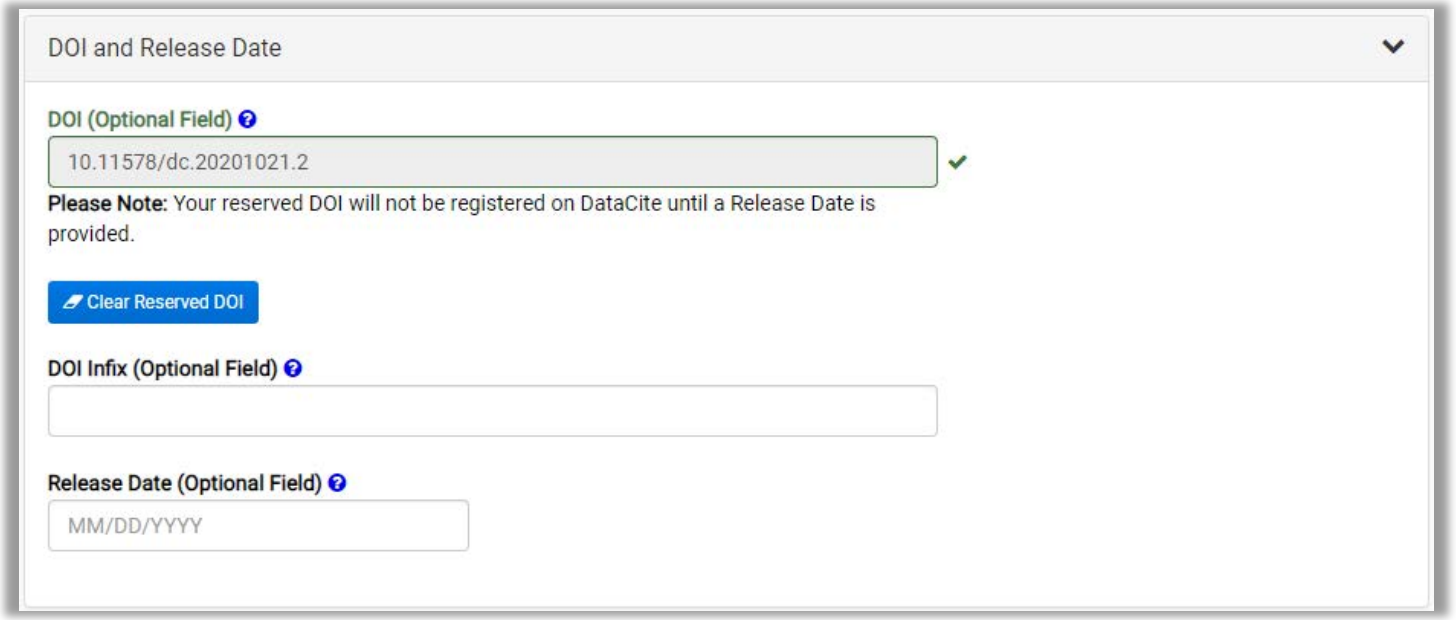
Repository Services

- DOE CODE provides repository hosting services via GitHub and GitLab for Unlimited availability software funded by DOE
  - GitHub – typical Open Source project functionality
  - GitLab – Open or Closed Source repositories, providing more control of the code



DOI Assignment

- DOI assignment is for Unlimited availability software only
- Easy to reserve
- Option to include a custom DOI Infix
- Release Date required to complete DOI registration with DataCite



Project Discovery

DOE CODE

- Unlimited availability software - submitted and announced projects
- Offers specialized software searching and filtering capabilities

OSTI.GOV

- Unlimited availability software - announced projects only

when research is part of the answer
science research CONNECTION

- Limited availability software
- Specifically designed for DOE community who must have SRC account to access metadata record

geothermal_osr (Energy Predictor for Geothermal Open Source Reservoir)

Full Project

RESOURCE

Publicly Accessible Repository
https://github.com/NREL/geothermal_osr

https://doi.org/10.11578/dc.20220324.1

SAVE / SHARE

Export Metadata

NREL

Abstract

This is a repository with the tools developed for predicting energy produced at Open-Source Reservoir (OSR). It includes both simulation data for OSR, as well as Jupyter notebooks for training and evaluating prediction models. OSR was constructed based on the data from Brady Hot Springs reservoir (Nevada, USA) but has a number of sufficiently modified characteristics and does not disclose any sensitive data.

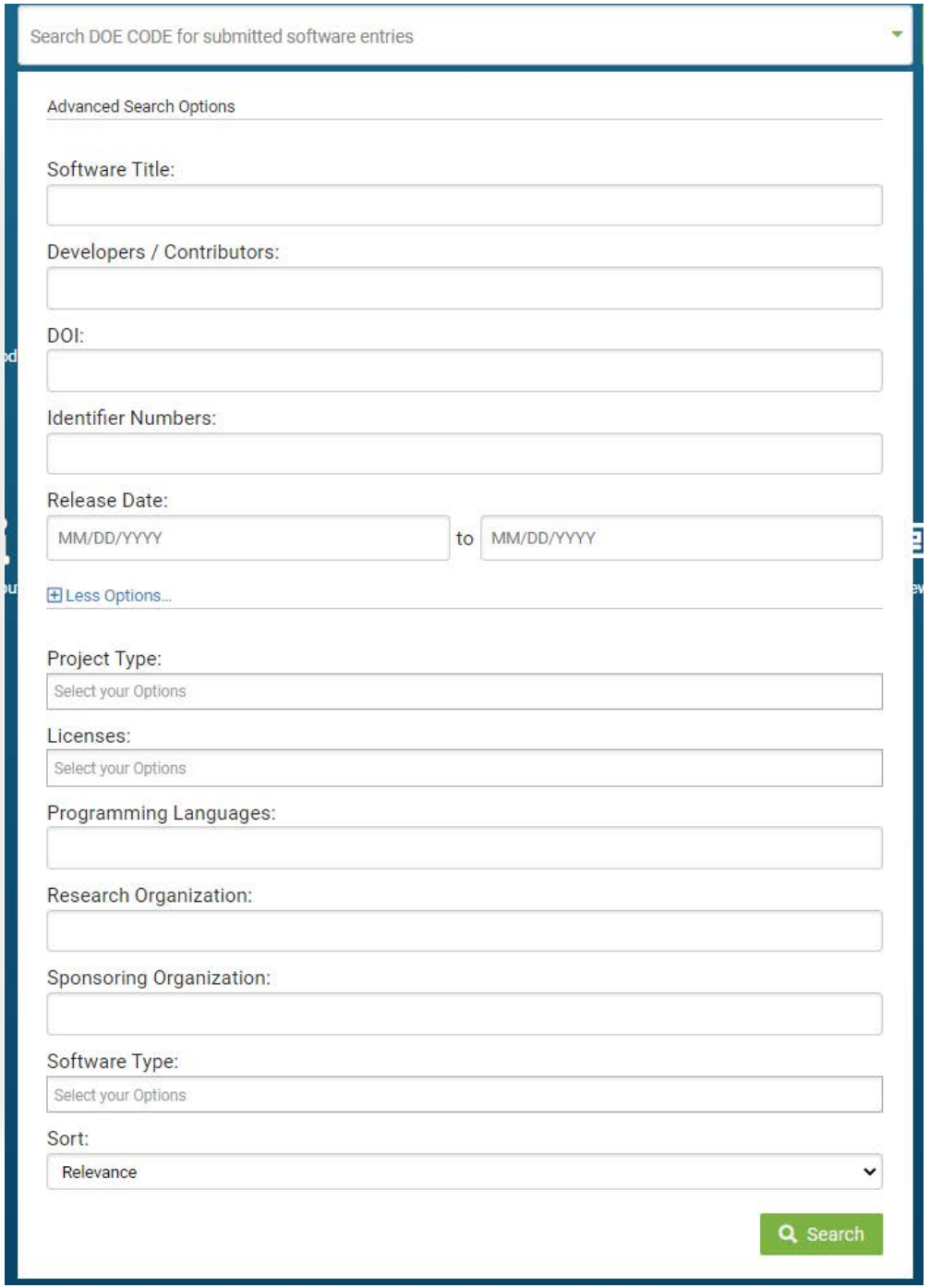
Developers:	Duplyakin, Dmitry [1]; Beckers, Koenraad [1]; Martin, Michael [1]; Johnston, Henry [1]; Siler, Drew [2]
	+ Show Developer Affiliations
Release Date:	2022-01-13
Project Type:	Open Source, Publicly Available Repository
Software Type:	Scientific
Programming Languages:	JUPYTER NOTEBOOK
Licenses:	BSD 3-clause "New" or "Revised" License
Sponsoring Org.:	USDOE Office of Energy Efficiency and Renewable Energy (EERE), Renewable Power Office. Geothermal Technologies Office
Primary Award/Contract Number:	AC36-08GO28308
Code ID:	71965
Site Accession Number:	NREL SWR-22-23
Research Org.:	National Renewable Energy Laboratory (NREL), Golden, CO (United States) U.S. Geological Survey
Country of Origin:	United States

Citation Formats

MLA | APA | Chicago | BibTeX

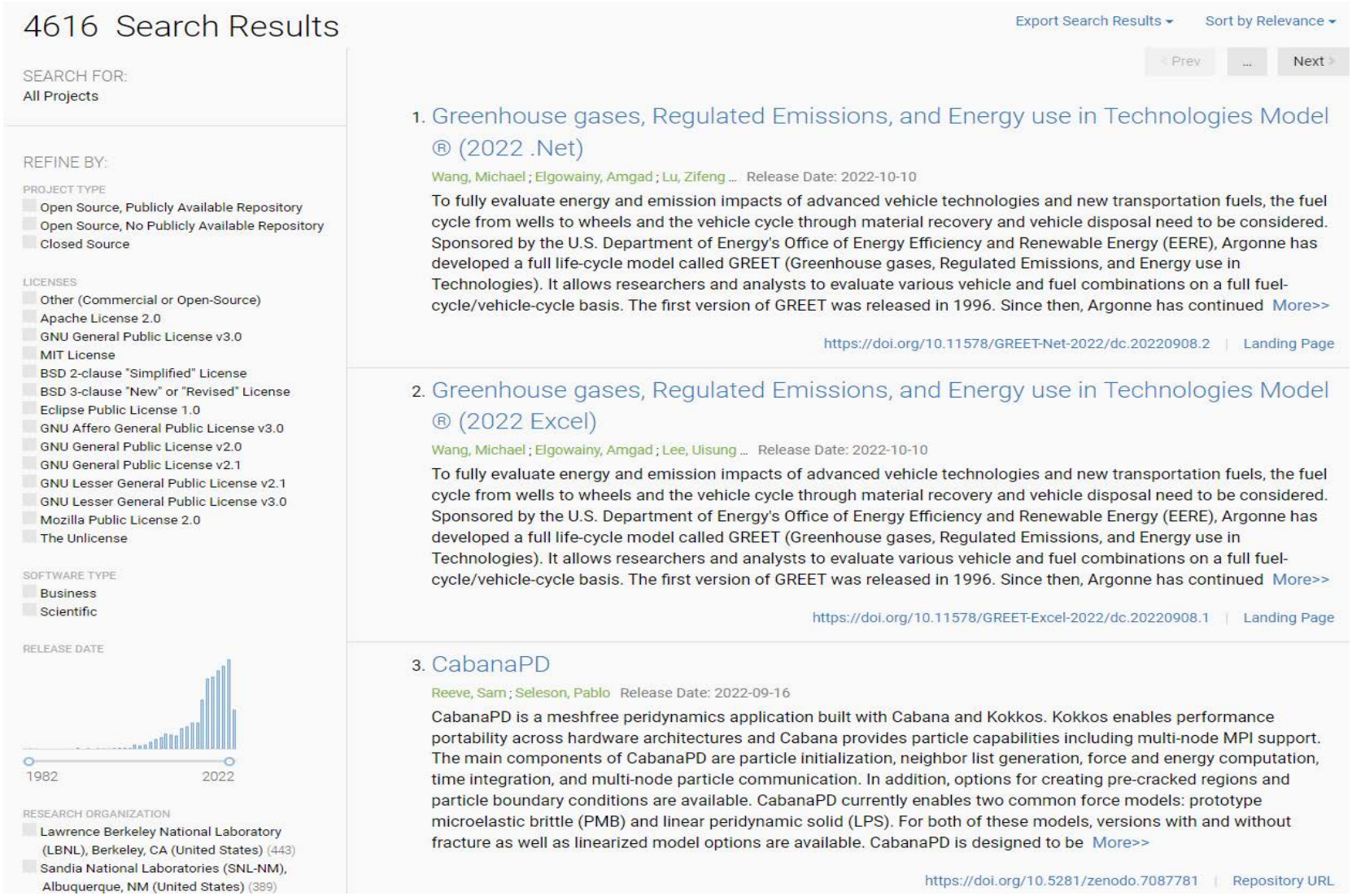
Duplyakin, Dmitry, Beckers, Koenraad, Martin, Michael, Johnston, Henry, and Siler, Drew. *geothermal_osr (Energy Predictor for Geothermal Open Source Reservoir)*. Computer Software. https://github.com/NREL/geothermal_osr. USDOE Office of Energy Efficiency and Renewable Energy (EERE), Renewable Power Office. Geothermal Technologies Office. 13 Jan. 2022. Web. doi:10.11578/dc.20220324.1.


DOE CODE
U.S. Department of Energy
Office of Scientific and Technical Information
Search DOE CODE for submitted software entries
Submit Software/Code
Repository Services
Software Policy
Resources
About
FAQs
News


Search DOE CODE for submitted software entries
Advanced Search Options
Software Title:
Developers / Contributors:
DOI:
Identifier Numbers:
Release Date:
MM/DD/YYYY
to
MM/DD/YYYY
Less Options...
Project Type:
Select your Options
Licenses:
Select your Options
Programming Languages:
Research Organization:
Sponsoring Organization:
Software Type:
Select your Options
Sort:
Relevance
Search

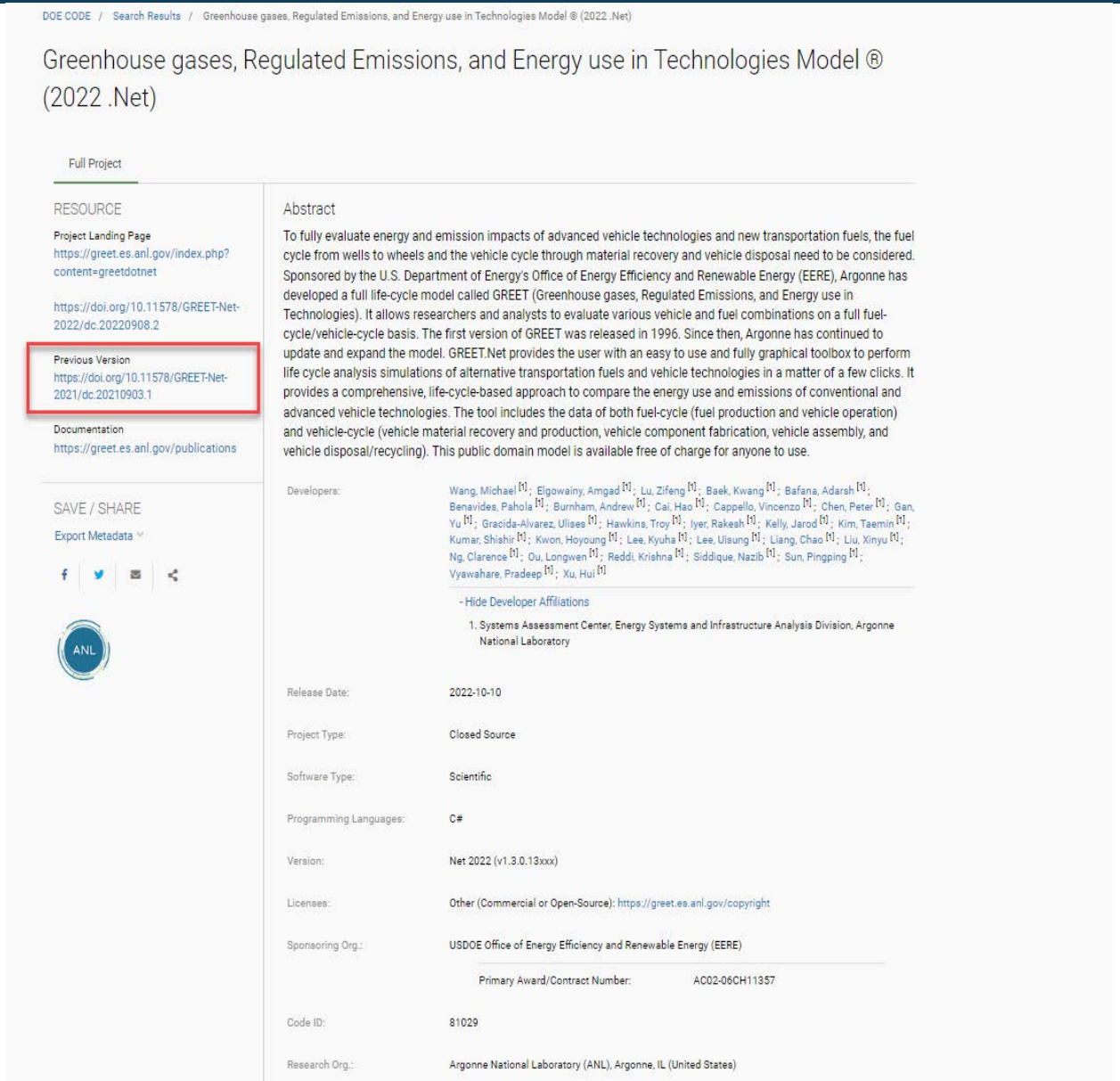
Search Results and Options

- Can refine results by:
  - Project Type
  - License
  - Release Date
  - Research Organization
  - Software Type (Business or Scientific)
- Export results as JSON or CSV file.



Versioning and Tagged Releases

- DOE CODE offers the option to create a record that is a newer or previous version of any DOE CODE record has already submitted or announced.
- Once a "New" or "Prev" record has been submitted or announced, DOE CODE will automatically add metadata to all newer/previous records to reflect the appropriate relationship using the DOI Related Identifier fields.
- DOE CODE allows for submitting a tagged release of software hosted in GitHub as an individual record and obtain a separate DOI for the release.
    - Example: https://github.com/doecode/server/releases/tag/v2.0.1



Contributors

Contributors | Contributing Organizations

Contributors

To edit data, click on the row containing the information to modify.

Show 10 entries Search:

First Name	Last Name	Contributor Type
No data available in table		

Showing 0 to 0 of 0 entries Previous Next

Add Contributor

Enter Contributor

* First Name (Required Field)

Middle Name (Optional Field)

* Last Name (Required Field)

Email (Optional Field)

ORCID (Optional Field)

Affiliations (Optional Field)

Select your Options

* Contributor Type (Required Field)

Close Save and Close

MEASUR - Manufacturing Energy Assessment Software for Utility Reduction

Full Project

RESOURCE

Publicly Accessible Repository
https://github.com/ORNL-AMO/AMO-Tools-Desktop

https://doi.org/10.11578/dc.20220107.3

Documentation
https://ornl-amo.github.io/docs/html/index.html

SAVE / SHARE

Export Metadata

Abstract

MEASUR your energy savings with the free DOE MEASUR software The Department of Energy (DOE), with Oak Ridge National Laboratory (ORNL), released version 1.0 of their energy efficiency software tool MEASUR (Manufacturing Energy Assessment Software for Utility Reduction). MEASUR has been available for several years as a beta version, being tested by industry experts and real users, and will continue to be updated and improved in the coming years. It is an integrated suite of tools to aid manufacturers in improving the efficiency of energy systems and equipment within a plant, including motors, pumps, fans, process heating, steam, and compressed air. Additionally, there are modules for wastewater energy analysis and to help perform energy treasure hunts. Several calculators are also included, allowing users to independently perform smaller calculations and analyses (such as estimating pump head, performing a fan traverse analysis, estimating waste heat recovery potential, and cataloging compressed air leaks). The MEASUR modules are based on previous DOE software tools that have been used by industry since the early 2000s (such as MotorMaster, AirMaster+, PSAT, PHAST, and FSAT). The original tools only ran on Windows operating systems, and by Windows 10, most of them were inoperable. DOE started their energy More>>

Developers: Accawi, Gina [1]; Root, Robert [2]; Blondheim, Nick [2]; Howard, Dmitry; Hernandez, Rachel [2]; Armstrong, Kristina [1]; Cranfill, Kita [1]; Shires, Preston [1]; Kaminski, Michal; Hadden, Jon; DePauw, Josh; Sakovets, Yevi [2]; Causey, Colin; Beanblossom, Kyle; Whitmer, Michael; Ledbetter, Allie; Rappoport, Ben; Saravanan, Shiva; Merchant, Charlotte; Kokul, Shubham; Fontenot, Zach; Vance, David [1]; Worley, Andrew; Aziz, Omer [1]; Ferree, Autumn; Rosser, Noah; Jensen, Jeff; Adams, Mark [1]; Rios, Raul

- Hide Developer Affiliations

1. Oak Ridge National Lab. (ORNL), Oak Ridge, TN (United States)
2. Intertech, Inc.

Contributors:

Project Leader: Wenning, Thomas [1]; Armstrong, Kristina [1]
Project Manager: Accawi, Gina [1]
Research Group: Casada, Don; Thekdi, Arvind; Martin, Vern; Martin, Donovan; Falk, Mats; Wroblewski, Ron; Harrell, Greg; Cunningham, Glenn; Papar, Riyaz; Brockway, Walt
Researcher: Abbas, Ahmad; Chaudhari, Subodh [1]; Sundaramoorthy, Senthil [1]; Botts, Alex [1]; Cox, Daryl [1]; Guo, Wei [1]
Supervisor: Nimbalkar, Sachin [1]

- Hide Contributor Affiliations

1. Oak Ridge National Lab. (ORNL), Oak Ridge, TN (United States)

Archiving

- OSTI maintains a dark archive and serves as departmental backup and storage
  - Open Source Software hosted in a public repository (Git or SVN)
    - Copy of the source code is automatically pulled and stored in dark archive
    - Copies are pulled daily, so subsequent changes to the source code are captured/preserved
  - Open Source Software **not** hosted in a public repository and Closed Source Software
    - File upload of source code must be provided during announcement of the software
- Copy of the source code is used for archiving and preservation purposes only and **not** distributed by OSTI
- All source code files are inspected before project approval to ensure requirement is met

Resources

- DOE CODE reports its software inventory to the government-wide Code.gov website, which fosters scientific progress, provides transparency to and promotes public understanding and use of DOE-funded open source software.

Help - information about Submitting and Announcing software to OSTI / DOE CODE

Videos & Tutorials

- Introducing DOE CODE

Selected Articles and Presentations

- 05/16/2018 Poster presented at Oak Ridge National Laboratory Software Expo 2018 by Lance Vowell (OSTI), Shelby Stooksbury (OSTI/IIA), and Tim Sowers (OSTI/IIA)
- 05/03/2017 The New Energy Science and Technology Software Center presented at the DOE Scientific and Technical Information Program (STIP) Annual Working Meeting by Jay Jay Billings (ORNL)
- 04/21/2017 DOE CODE Metadata by Katie Knight (ORNL) at the Code4LibSE 2017 Emory Meeting
- 03/01/2017 Poster presented at SIAM CSE17 PP108 Minisymposterium: Software Productivity and Sustainability for CSE and Data Science by Jay Jay Billings (ORNL)

API Documentation

Community and Best Practices

- DOE CODE GitHub site
- Code.gov
- The Better Scientific Software Portal
- Semantic Versioning
- Force11 Software Citation Implementation Principles

Helpful Links

Software Policy: osti.gov/doecode/policy

FAQs: osti.gov/doecode/faq

Help: osti.gov/doecode/help

osti.gov/doecode/

github.com/doecode

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