



Open Data, Design, & Development at the Office of Natural Resources Revenue

How we rebuilt our open-data homepage part one: design

December 6, 2018

This is part one of a two-part series about our homepage redesign. [Read part two here.](#)

Digital teams from [18F](#) and the [Department of the Interior](#) have been publishing government data about energy and mineral extraction on federal lands and waters since 2014. The [Natural Resources Revenue Data](#) portal provides that open government data today.

Back in 2014, 18F built the site to support the federal government's participation in the [Extractive Industries Transparency Initiative](#) (EITI). While the U.S. government decided to no longer formally implement the EITI Standard in November 2017, the department remains a strong supporter of the principles of transparency represented by the initiative.

Our small digital team at the [Office of Natural Resources Revenue](#) continues the work of user-centered and open-data design started by 18F.

An interactive annual report

Conceived as an interactive version of the USEITI annual report, the scope of the site included data and information about the overall role of extractive industries in the U.S., not just on federal lands and waters. The site's homepage design emphasized contextual information over data presentation, even while offering a strong call to action to explore the data.

U.S. Department of the Interior

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Natural Resources Revenue Data

Home About How it works Explore data Case studies

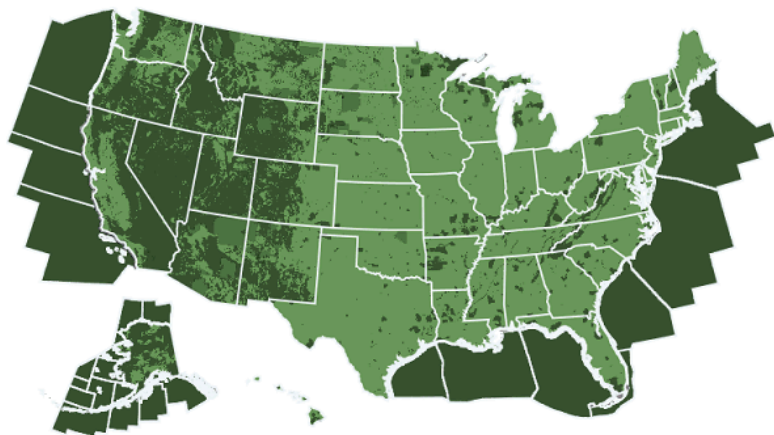
This site provides open data about natural resource management on federal lands and waters in the United States, including oil, gas, coal, and other [extractive industries](#).

Explore the data



Learn about extractive industries in each state

Explore production, revenue, and economic impact data for each state, as well as additional contextual information and data about several states that participated in deeper reporting: [Alaska](#), [Colorado](#), [Montana](#), and [Wyoming](#).



■ Federal land ■ Tribal land ■ Other (state, local, or private land)

Explore data:

Choose location



Learn about how the government manages federal energy and mineral resources, revenue, and disbursements.



How it works

Who owns natural resources in the U.S.?

Natural resources can be owned by citizens and corporations, the federal government, state and local governments, or Indian tribes and individuals.



Explore data

Where does the money go?

Revenue from natural resources goes to state governments, as well as several federal funds that support projects at the local and national levels.



Case studies

How do extractive industries affect communities?

Learn about 12 communities that led the U.S. in production of iron, copper, gold, coal, oil, and natural gas over the last decade.



How it works
What natural resources are extracted?

The U.S. is a top producer of oil, gas, and coal, as well as nonenergy minerals like gold, iron, and copper.



How it works
How does resource extraction result in federal revenue?

Companies that extract resources on federal land may pay bonuses, rents, royalties, fees, taxes, or other revenues to the federal government.



About
Download the 2017 Executive Summary

This document includes an overview of contextual information and updates to this site.



Built in the open

This site (v4.1.0) is powered by [open data](#) and [source code](#). We welcome contributions and comments on [GitHub](#).

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When our team took over management of the site, we knew we'd need to narrow the scope of the content, as we have limited resources relative to the EITI era. We also wanted to reevaluate user needs, focus on datasets only our organization could provide, and make sure we could validate the data.

A data-only site

The Office of Natural Resources Revenue also maintained a separate “statistics” site – by way of a private contractor – that provided largely the same data as the USEITI site. While it included much of the same open data, the site’s codebase was proprietary, and it lacked contextual information about the laws, regulations, and processes that govern the extraction of natural resources on federal lands and waters. This site was effective at presenting data, but it assumed users were already familiar with the context and processes behind the data.

We decided to conduct an early research round of this site's users to make sure we scoped their needs for future development of Natural Resources Revenue Data, understanding we would combine the two sites to limit redundancy. Many of those observations informed our later prototypes and research rounds.

Reframing the site

We completed a full content audit of the site to generate a site inventory, evaluate readability and maintenance requirements, and determine which content was specific to USEITI.

Reviewing the content, we realized we needed to reframe our vision of the site to make sure we could deliver the most value to users.

A new product vision

Before working on the homepage, we rewrote [our product vision](#) to help guide our work:

We are informing policy debates and raising public awareness by building the definitive source of timely and useful data about how the government manages federal energy and mineral resources, revenue, and disbursements.

With this vision laying the foundation for our strategy, we set up interviews with active and potential users to test our assumptions and discover their needs.

The role of the homepage

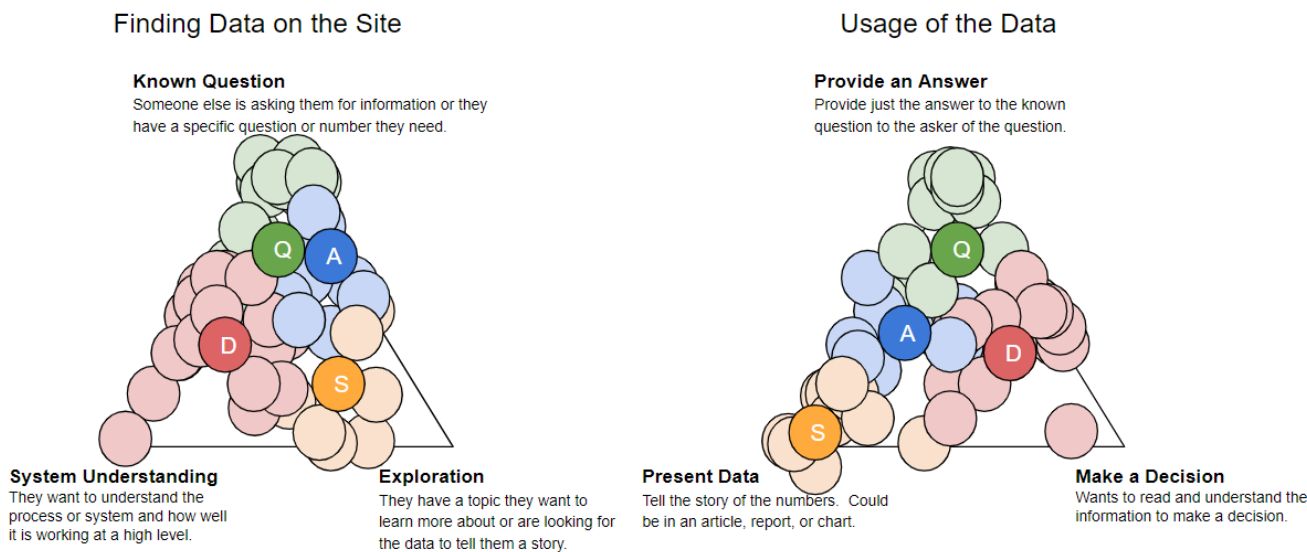
[Some have argued homepages aren't that important](#), or at least not as important as they used to be. The increased use of search and social media to convey users deeper into websites is evident, but most users we talked to still

use our homepage as their primary starting point. Our analytics show it's the most visited page on our site, with 22% of site sessions in 2018.

User research

Equipped with the knowledge that our homepage was valuable to our users, we set about prototyping and testing options with users. Our goal was to determine how our homepage could better serve the needs of users, whom we had segmented into four main user types:

- [Question answerer](#)
- [Agenda supporter](#)
- [Storyteller](#)
- [Domain learner](#)

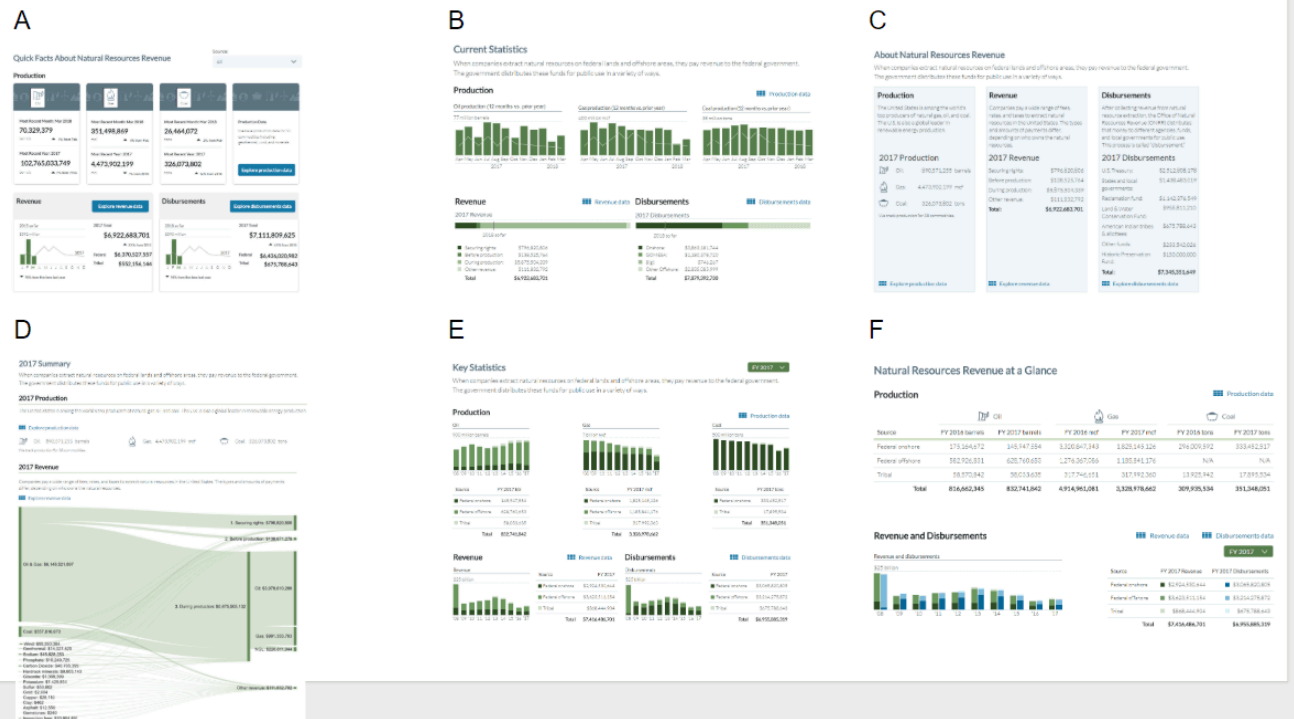


First round

In addition to making our homepage more in line with our new strategy, we were getting requests from users who fall into our “domain learner” and “question answerer” user types. They wanted summarized numbers on the homepage so they wouldn't have to dig through the [Explore Data](#) page to find

them. We [tested 6 options](#) with users matching a variety of user types. We landed on a couple options to test in the second round.

We showed 6 options for key facts on the home page.



Second round

In the [second round of testing](#), we included new users to make sure our additions didn't scare away those without a basic understanding of the data. We also hadn't done extensive testing on the existing homepage with new users. In addition, we tested with more domain learners to make sure we were meeting their needs. We learned that we needed to summarily explain the production, revenue, and disbursement process on the homepage and Explore Data page and landed on the best approach for the new summary information.

An official website of the U.S. government


U.S. Department of the Interior
Natural Resources Revenue Data

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Home About How it works Explore data Case studies

This site provides open data about natural resource management on federal lands and waters in the United States, including oil, gas, coal, and other **extractive industries**.

Explore the data Learn how it works See what's new on the site



Data highlights

When companies extract natural resources on federal lands and offshore areas, they pay revenue to the federal government. The government distributes these funds for public use in a variety of ways.

Production

Summary of production data for the highest volume products.

Explore production data for all products

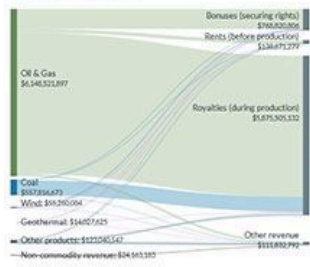


Monthly production data

Revenue

Calendar year 2017 revenue by phase.

Explore all revenue data

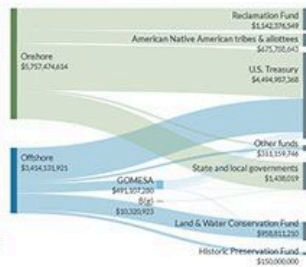


Total CY 2017 revenue: **\$6,922,683,701**

Disbursements

Fiscal year 2017 disbursements by source.

Explore all disbursements data



Total FY 2017 disbursements: **\$7,111,809,625**

Learn about extractive industries in each state

Explore production, revenue, and economic impact data for each state, as well as additional contextual information and data about several states that participated in deeper reporting: [Alaska](#), [Colorado](#), [Montana](#), and [Wyoming](#).

Explore data:

Choose location



Learn about how the government manages federal energy and mineral resources, revenue, and disbursements.

How it works
Who owns natural resources in the U.S.?
Natural resources can be owned by citizens and corporations, the federal government, state and local governments, or Native American tribes and individuals.

How it works
How does resource extraction result in federal revenues?
Companies that extract resources on federal land may pay bonuses, rents, royalties, fees, taxes, or other revenues to the federal government.

Case studies
How do extractive industries affect local communities?
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How it works Explore the data



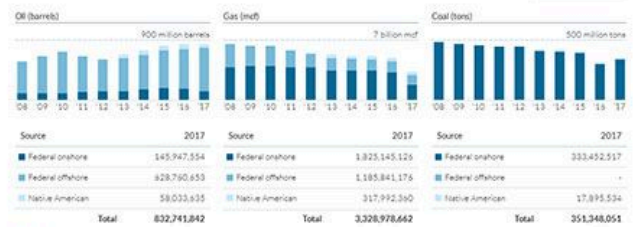
Key statistics for fiscal year 2017

When companies extract natural resources on federal lands and offshore areas, they pay bonuses, rent, and royalties to the federal government. The government distributes these funds for public use in a variety of ways.

Production

Summary of production data for the highest volume products.

Show: Yearly Monthly



Production data

Revenue

Revenue

Revenue

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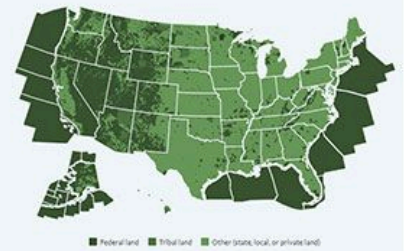
Disbursements

Learn about extractive industries in each state

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Explore data:

Choose location




Natural Resource Management Process

- Leasing**
Companies bid on and lease lands and waters from the federal government. They pay a bonus when they win a lease and rent until the land or water starts producing resources.
- Production**
Once the land or water produces enough resources to pay royalties, the leaseholder pays royalties and other fees to the federal government.
- Disbursement**
The federal government periodically disburses revenue collected from bonuses, rent, royalties, and fees to the U.S. Treasury, states, counties and specific funds designated by law. The recipients of the disbursements then allocate the funds to be used for specific purposes such as local government administration or land and water conservation.

What's new

In our latest release on July 12, 2016 we made the following improvements:


- Added [2017 federal calendar year production data](#) to make sure you have the latest
- Revised [search results](#) to make it easier to find what you're looking for



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Option 1


Option 2

Third round

We then [tested 3 concepts](#) with additional content at the top of the homepage to explain the data and how the different pieces of data work together. We landed on one concept that worked best and also learned that general-public users are most likely to use the site to explore data related to their geographic area, so the map needed to come before the new summary information on the homepage.

When companies extract natural resources on federal lands and offshore areas, they pay bonuses, rent, and royalties to the federal government. The government distributes these funds for public use in a variety of ways.

[Explore the data](#) [Learn how it works](#)



A

How do natural resources lead to revenue?

Leasing
Companies bid on and lease lands and waters from the federal government. They pay a bonus when they win a lease and rent until resource production begins.

Production
Once enough resources are produced to pay royalties, the leaseholder pays royalties and other fees to the federal government.

Disbursement
The federal government periodically disburses revenue collected from bonuses, rent, royalties, and fees to various recipients for public use.


[Learn how it works](#) [Explore the data](#)

B

Overview | Production | Revenue | Disbursements

When companies extract natural resources on federal lands and offshore areas, they pay bonuses, rent, and royalties to the federal government. The government distributes these funds for public use in a variety of ways.

[Explore the data](#) [Learn how it works](#)



C

Overview | **Production** | Revenue | Disbursements

The United States is among the world's top producers of natural gas, oil, and coal. The U.S. is also a global leader in renewable energy production. We have data for production on federal lands and waters, Native American lands, and energy production for all owners.

[Learn more about production](#)

Explore production data

- All lands and waters
- Federal lands and waters
- Native American lands
- [Documentation and downloadable files](#)

Final design

These three studies led us to the design we built. It better explains the process behind the data to those who are not intimately familiar with the subject matter, while also providing high-demand, summary data to domain learners and question answerers. Based on the findings from these studies, we also plan to simplify the structure and navigation of the Explore Data page and make it easier to understand how to interpret and use the data.

Natural Resources Revenue Data

Overview

Production

Revenue

Disbursements

When companies extract natural resources on federal lands and offshore areas, they pay bonuses, rent, and royalties to the federal government. The government distributes these funds for public use in a variety of ways.

 Explore the data

Learn how it works

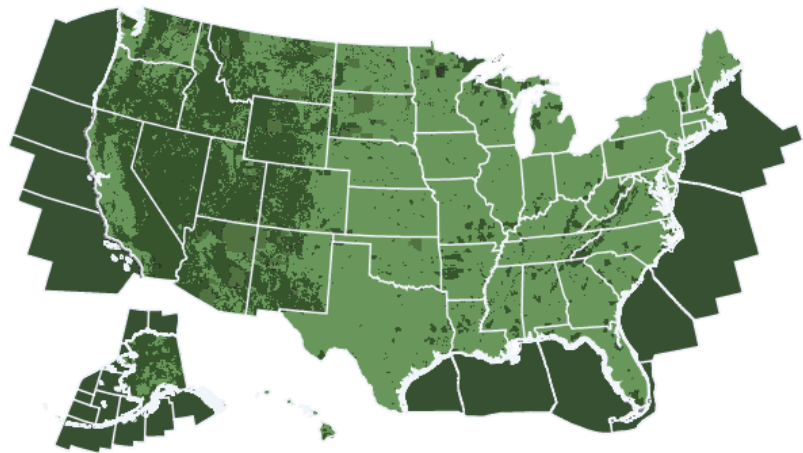


Learn about extractive industries in each state

Explore production, revenue, and disbursements data for each state.

State or offshore region:

Choose location 



 Federal land  Native American land  Other (state, local, or private land)

Data summary

Summary of production, revenue, and disbursements for resources extracted on federal lands and waters and Native American lands

Production

Production data for major commodities

 Explore all production data

Show: **Yearly** Monthly

Oil (barrels)

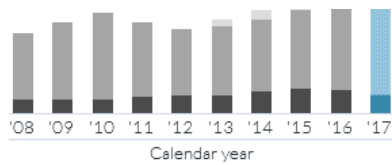


Gas (mcf)

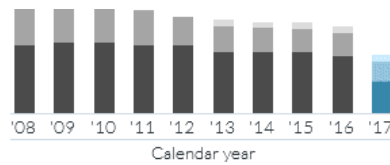


Coal (tons)

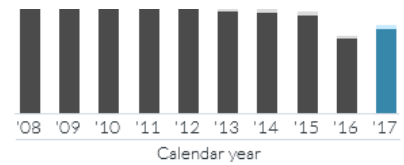




| Source | 2017 (bbl) |
|------------------|--------------------|
| Native American | 58,033,635 |
| Federal offshore | 628,760,653 |
| Federal onshore | 145,947,554 |
| Total | 832,741,842 |



| Source | 2017 (mcf) |
|------------------|----------------------|
| Native American | 317,992,360 |
| Federal offshore | 1,185,841,176 |
| Federal onshore | 1,825,145,126 |
| Total | 3,328,978,662 |



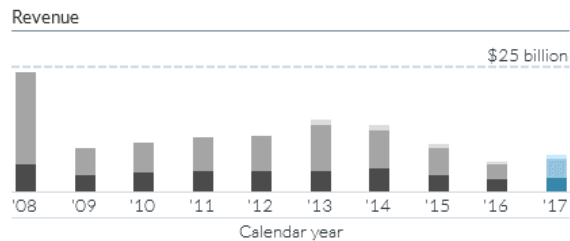
| Source | 2017 (tons) |
|------------------|--------------------|
| Native American | 17,895,534 |
| Federal offshore | - |
| Federal onshore | 333,452,517 |
| Total | 351,348,051 |

Revenue

Federal revenue from bonuses, rent, and royalties paid by companies to extract natural resources

[Explore all revenue data](#)

Show: Yearly Monthly

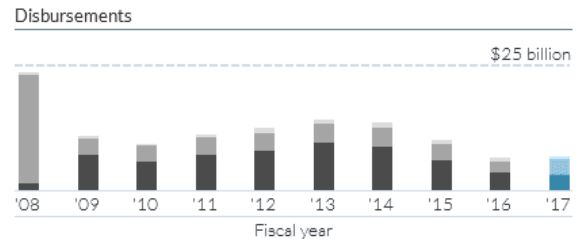


| Source | 2017 |
|------------------|------------------------|
| Native American | \$868,444,904 |
| Federal offshore | \$3,623,511,154 |
| Federal onshore | \$2,924,530,644 |
| Total | \$7,416,486,701 |

Disbursements

Distribution of federal revenue to local governments, the U.S. treasury, Native Americans, and designated funds

[Explore all disbursements data](#)



| Source | 2017 |
|------------------|------------------------|
| Native American | \$675,788,643 |
| Federal offshore | \$3,214,275,872 |
| Federal onshore | \$3,065,820,805 |
| Total | \$6,955,885,319 |

What's new

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- Revised [search results](#) to make it easier to find what you're looking for



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Coming in part two

In part two of our series on our homepage redesign, we'll cover how we built our homepage in [GatsbyJS](#), as we transition the site's codebase from [Jekyll](#).

Note : Reference in this blog to any specific commercial product, process, or service, is for the information and convenience of the public, and does not constitute endorsement, recommendation, or favoring by the Department of the Interior.



Shannon McHarg: User Experience Designer at the Office of Natural Resources Revenue.



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[How we rebuilt our open-data homepage part two: development](#) >

[Home](#)



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From the team that works on Natural Resources Revenue Data and ONRR.gov. Have feedback or a blog post idea? Drop us a line.

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