Standard Energy Efficiency Data Platform™

SEED PLATFORM™ 2.0
Overview

Building Energy Data Management Tool

- Web based platform
- Open source code
  - https://github.com/seed-platform
- Funded by U.S. Department of Energy
- Supported by
  - National Renewable Energy Laboratory (NREL)
  - Lawrence Berkeley National Laboratory (LBNL)
  - Third party software contributors
Overview

Getting Started with SEED

• Support Website
  • https://seed-platform.org/

• Web based platform

• Stand up your own instance (AWS or internal servers)
  • Developer documentation
    • https://seed-platform.org/developer_resources/

• Use a web hosting service
  • https://seed-platform.org/technical_ally/

• Test account through LBNL

• User documentation
  • https://seed-platform.org/documentation/
  • https://seed-platform.org/getting_started/
Data Management

Collect Data from different sources and merge them together

- **Files**
  - “flat” (CSV, Excel) -- one record per building
  - XML options for data to attach to the building -- GreenButton, BuildingSync, HPXML

- There is no restriction on number of fields or field types

- At least ONE field must be common between the data files to match the records (Address, Tax Lot ID, Building ID).

- This makes it possible to import data files with very different data, and connect them together

- Data is imported and matched based on a user-defined time period

- Once the data files have been matched together, it is possible to query the results for various uses.
Data Management

SEED has the following features after data is imported and matched:

- **Data Quality Checking**
  - User defined checks for field ranges
  - Check at time of mapping and later on final inventory
  - Automatically adds labels to problem data (as defined by user)

- **Filtering**
  - Essentially querying the data
  - Can filter on labels

- **Labels**
  - Can add labels to records for categorizing

- **API** (Application Programming Interface) **Connections for other applications**
Primary Current Use Case

Energy Benchmarking

- Commercial Buildings (primarily)
- Residential Buildings (as long as the data is “flat”)

Used by Jurisdictions with Benchmarking Req’ts to produce:

- Annual Benchmarking Disclosure Report
  - Building or Tax Lot status relative to Benchmarking req’t
- List of Violations
  - Buildings or Tax lots that did not comply with req’t
- Annual Report of Building Stock Performance
  - Analysis of building stock energy consumption by any characteristic represented in the merged data (floor area, sector, age)
Data Management

Benchmarking Workflow

- **Import data from different sources**
  - Building / Property List
    - Tax assessor lists
    - Costar Data
  - Benchmarking data
    - Portfolio Manager Data

- **Match data from different sources**
  - There must be at least one common field to match on

- **Handle data with different types of relationships**
  - Tax Assessor data defined by Lot/Parcel
    - VS
  - CoStar or Portfolio Manager data defined by buildings

- **Maintain data based on compliance year**
SEED Workflow

1. Import data (by Cycle)
2. Map fields (define fields for matching records)
3. Merge & pair data
4. View Inventory (Tax Lot and Property data)
5. Filter / Label Inventory
6. Export Data
Physical reality of the data

The relationship of Buildings to Parcels/Tax Lots can be complicated

**Case A:** 1 Building to 1 Parcel
- Parcel 100
  - Address 1

**Case B:** Many Buildings to 1 Parcel
- Parcel 101
  - Building
  - Address 2

**Case C:** 1 Building to many Parcels
- Parcel 200
  - Address 6
- Parcel 300
  - Address 7
- Parcel 450
- Parcel 500
- Parcel 501
  - Address 8

**Case D:** Campus -- many buildings to many parcels
- Parcel 600
- Parcel 700
- Parcel 800
  - Building 5
    - Address 9
    - Address 10
  - Building 6
  - Building 7
  - Address 11
  - Address 12
Data Model Schematic

- View different states in time
- Many to many relationship between Tax Lot data and Building/Portfolio Manager data
- Viewing Tax Lot and Property data combined / rolled up

- Views point to the most current version of the data for a given time period (reporting cycle)
- Audits track the history of changes to records

M2M table tracks relationship between tax lots and properties over time

Building is renamed “Property” to capture both single building and campus scenarios
Getting Started

The DOE developed the Standard Energy Efficiency Data (SEED) Platform™ as a free software tool that provides a standardized format for collecting, storing and analyzing building energy performance information about large portfolios. Upload your buildings list to get started.

Upload your buildings list  Getting Started Guide