Package 'EIAapi'

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Type Package

Title Query Data from the 'EIA' API

Version 0.1.2

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Description Provides a function to query and extract data from the 'US Energy Information Administration' ('EIA') API V2 <https://www.eia.gov/opendata/>. The 'EIA' API provides a variety of information, in a time series format, about the energy sector in the US. The API is open, free, and requires an access key and registration at <https://www.eia.gov/opendata/>.

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Encoding UTF-8

RoxygenNote 7.2.1

Imports data.table (>= 1.14.2), dplyr (>= 1.0.9), jsonlite (>= 1.8.2), lubridate (>= 1.8.0)

Suggests knitr, plotly (>= 4.10.0), rmarkdown

SystemRequirements The package required the jq command line library. Please check https://stedolan.github.io/jq/download/ for download instructions.

URL https://github.com/RamiKrispin/EIAapi

BugReports https://github.com/RamiKrispin/EIAapi/issues

NeedsCompilation no

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Repository CRAN

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R topics documented:

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eia_backfill   *Pull a Large Number of Observations with a Sequential Query*

Description

This function allows users to overcome the API's observation limit per query by breaking down the query into smaller sequential sub-queries and appending back the results. The main use case of this function is for backfilling hourly series.

Usage

```
eia_backfill(start, end, offset, api_key, api_path, facets)
```

Arguments

start	defines the start time of the series, should use a POSIXt class for hourly series or Date format for non-hourly series (daily, monthly, etc.)
end	defines the end time of the series, should use a POSIXt class for hourly series or Date format for non-hourly series (daily, monthly, etc.)
offset	An integer, defines the number of observations limitation per query. In line with the API limitation of up to 5000 observations per query, the offset argument's upper limit is 5000 observations.
api_key	A string, EIA API key, see https://www.eia.gov/opendata/ for registration to the API service
api_path	A string, the API path to follow the API endpoint https://api.eia.gov/v2/. The path can be found on the EIA API dashboard, for more details see https://www.eia.gov/opendata/browser/
facets	A list, optional, set the filtering argument (defined as 'facets' on the API header), following the structure of list(facet_name_1 = value_1, facet_name_2 = value_2)

Details

The function use start, end, and offset arguments to define a sequence of queries.

Value

A time series

Examples

```
## Not run:
 start <- as.POSIXlt("2018-06-19T00", tz = "UTC")
 end <- lubridate::floor_date(Sys.time()- lubridate::days(2), unit = "day")
 attr(end, "tzone") <- "UTC"
 offset <- 2000
 api_key <- Sys.getenv("eia_key")
 api_path <- "electricity/rto/region-sub-ba-data/data/"
```

```
        facets = list(parent = "NYIS",
                      subba = "ZONA")

        df <- eia_backfill(start = start,
                           end = end,
                           offset = offset,
                           api_key = api_key,
                           api_path = api_path,
                           facets = facets)

        at_y <- pretty(df$value)[c(2, 4, 6)]
        at_x <- seq.POSIXt(from = start,
                           to = end,
                           by = "2 years")
        plot(df$time, df$value,
             col = "#1f77b4",
             type = "l",
             frame.plot = FALSE,
             axes = FALSE,
             panel.first = abline(h = at_y, col = "grey80"),
             main = "NY Independent System Operator (West) - Hourly Generation of Electricity",
             xlab = "Source: https://www.eia.gov/",
             ylab = "MegaWatt/Hours")

        mtext(side =1, text = format(at_x, format = "%Y"), at = at_x,
              col = "grey20", line = 1, cex = 0.8)

        mtext(side =2, text = format(at_y, scientific = FALSE), at = at_y,
              col = "grey20", line = 1, cex = 0.8)

      ## End(Not run)
```

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eia_get   *Query the EIA API*

Description

Function to query and extract data from the EIA API v2

Usage

```
eia_get(
  api_key,
  api_path,
  data = "value",
  facets = NULL,
  start = NULL,
  end = NULL,
  length = NULL,
```

```
  offset = NULL,
  frequency = NULL,
  format = "data.frame"
)
```

Arguments

`api_key`	A string, EIA API key, see https://www.eia.gov/opendata/ for registration to the API service
`api_path`	A string, the API path to follow the API endpoint https://api.eia.gov/v2/. The path can be found on the EIA API dashboard, for more details see https://www.eia.gov/opendata/browser/
`data`	A string, the metric type, by default uses 'value' (defined as 'data' on the API header)
`facets`	A list, optional, set the filtering argument (defined as 'facets' on the API header), following the structure of list(facet_name_1 = value_1, facet_name_2 = value_2)
`start`	A string, optional, set the starting date or time of the series using "YYYY-MM-DD" format for date and "YYYY-MM-DDTHH" format for hourly time series
`end`	A string, optional, set the ending date or time of the series using "YYYY-MM-DD" format for date and "YYYY-MM-DDTHH" format for hourly time series
`length`	An integer, optional, defines the length of the series, if set to NULL (default), will default to the API default value of 5000 observations per pull. The API enables a pull of up to 100K observations per call. If needed to pull more than the API limit per call, recommend to iterate the call with the use of the start, end and/or offset arguments
`offset`	An integer, optional, set the number of observations to offset from the default starting point of the series. If set to NULL (default), will default to the API default value of 0
`frequency`	A string, optional, define the API frequency argument (e.g., hourly, monthly, annual, etc.). If set to NULL (default), will default to the API default value
`format`	A string, defines the output of the return object to either "data.frame" (default) or "data.table"

Value

data.table/data.frame object

Examples

```
## Not run:
# Required an EIA API key to send a query
api_key <- "YOUR_API_KEY"

df <- eia_get(
  api_key = api_key,
  api_path = "electricity/rto/fuel-type-data/data/",
  data = "value"
)
```

```
## End(Not run)
```

---

eia_metadata   *Pull Metadata from EIA API*

Description

Get data descriptions and metadata from the EIA API

Usage

```
eia_metadata(api_path = NULL, api_key)
```

Arguments

api_path   A string, the API category/route path following the API endpoint (i.e., 'https://api.eia.gov/v2/')
            If set to NULL (default) or as empty string "" it returns the main categories avail-
            able on the API. The path can be found on the EIA API dashboard, for more
            details see https://www.eia.gov/opendata/browser/

api_key   A string, EIA API key, see https://www.eia.gov/opendata/ for registration to the
            API service

Details

The function enables to explore the different data categories and available routes inline with the
API dashboard (https://www.eia.gov/opendata/browser/)

Value

a list object with the series description and metadata

Examples

```
## Not run:
electricity_metadata <- eia_metadata(api_key = Sys.getenv("eia_key"),
                                     api_path = "electricity")

electricity_metadata$response$description
electricity_metadata$response$id
electricity_metadata$response$name
electricity_metadata$response$routes


## End(Not run)
```

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