* Filename
  + Description
  + Additional Information about how to download data
  + Keyword (keyword) to be inserted in Arrays.py
  + **Special Instructions**
  + Download Link

**Files that Require Download**

United States

* Natural\_Gas\_Consumption\_by\_End-Use\_Sector\_and\_Census\_Division
  + USA Consumption by Sector for NANGAM Regions
  + Download as Table CSV
  + <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=77-AEO2017&cases=ref2017&sid=ref2017-d120816a.7-2-AEO2017.1-0~ref2017-d120816a.37-2-AEO2017.1-0~ref2017-d120816a.21-2-AEO2017.1-0~ref2017-d120816a.133-2-AEO2017.1-0&sourcekey=0>
* Natural\_Gas\_Delivered\_Prices\_by\_End-Use\_Sector\_and\_Census\_Division
  + USA Consumption Price by Sector for NANGAM Regions
  + Download as Table CSV
  + <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=78-AEO2017&cases=ref2017&sourcekey=1>
* Lower\_48\_Natural\_Gas\_Production\_and\_Supply\_Prices\_by\_Supply\_Region
  + USA Production for NEMS Regions
  + Download as Table CSV
  + Keyword usa\_prod\_split
  + Keyword Array nems\_regions\_full
  + **Manually Insert ‘Gulf Coast’ for ‘Gulf’**
  + **Manually Insert ‘West Coast’ for ‘Pacific’**
  + **Manually Insert ‘ONS’ for ‘Lower 48 Onshore’**
  + **Manually Insert ‘ONS’ for ‘Lower 48 Price Onshore’**
  + **Manually Insert ‘OFS’ for ‘Lower 48 Offshore’**
  + **Manually Insert ‘OFS’ for ‘Lower 48 Price Offshore’**
  + <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=72-AEO2017&cases=ref2017&sid=ref2017-d120816a.7-2-AEO2017.1-0~ref2017-d120816a.37-2-AEO2017.1-0~ref2017-d120816a.21-2-AEO2017.1-0~ref2017-d120816a.133-2-AEO2017.1-0&sourcekey=1>
* Oil\_and\_Gas\_Supply
  + USA Production for Alaska and Hawaii
  + Download as Table CSV
  + **Manually Insert ‘ONS’ for ‘Lower 48 Onshore’**
  + **Manually Insert ‘OFS’ for ‘Lower 48 Offshore’**
  + <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=14-AEO2017&cases=ref2017&sourcekey=0>
* Energy\_Consumption\_by\_Sector\_and\_Source
  + USA Consumption for Alaska and Hawaii
  + Download as Table CSV
  + <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=2-AEO2017&cases=ref2017&sourcekey=0>
* NG\_CONS\_SUM\_DCU\_SAK\_A
  + Alaska Consumption
  + **Manually Insert (From the year 2015 or whatever year[0] is) [Total Consumption, (Residential Consumption), (Commercial Consumers), (Lease Fuel Consumption + Plant Fuel Consumption + Pipeline Use + Industrial Consumption), (Vehicle Fuel Consumption), (Natural Gas Price Sold to Electric Power Consumers)] into Arrays.py for array usa\_cons\_als**
  + <https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SAK_a.htm>
* NG\_PRI\_SUM\_DCU\_SAK\_A
  + Alaska Consumption Price
  + **Manually Insert (From the year 2015 or whatever year[0] is) [0, (Natural Gas Delivered to Residential), (Natural Gas Sold to Commercial), (Natural Gas Industrial Price), 15.71, (Natural Gas Price Sold to Electric Power Consumers)] into Arrays.py for array usa\_cons\_price\_als**
  + <https://www.eia.gov/dnav/ng/ng_pri_sum_dcu_SAK_a.htm>
* EIA-StatetoStateCapacity
  + US Pipeline Capacity
  + Keyword Array provinces\_to\_regions
  + Keyword Array usa\_states\_acronyms
  + Keyword Array usa\_states\_full
  + Keyword Array states\_to\_regions
  + Keyword Array cities\_to\_regions
  + Keyword state\_from
  + Keyword state\_to
  + Keyword county\_from
  + Keyword county\_to
  + Keyword operating
  + Keyword status
  + Keyword capacity
  + Keyword capacity\_year
  + **Manually Insert ‘Capacity’ for ‘Capacity (mmcfd)’ on Pipeline State2State Capacity Sheet**
  + <https://www.eia.gov/naturalgas/data.php#pipelines>
* Primary\_Natural\_Gas\_Flows\_Entering\_NGTDM\_Region\_from\_Neighboring\_Regions
  + US Pipe Flow
  + Keyword r\_into
  + Keyword r\_from
  + **Manually Insert ‘Mountain’ for ‘Arizona/New Mexico’**
  + **Copy row with first entry ‘Canada (through Mountain)’ to between rows 35 and 36. Rename cell 23A to Mountain**
  + **Manually Insert ‘Canada West’ for all phrases containing ‘Canada’**
  + **Manually Insert ‘South Atlantic’ for ‘Florida’**
  + **Manually Insert ‘Pacific’ for ‘California’**
  + **Manually Insert ‘From’ for ‘from’**
  + <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=90-AEO2017&cases=ref2017&sid=ref2017-d120816a.7-2-AEO2017.1-0~ref2017-d120816a.37-2-AEO2017.1-0~ref2017-d120816a.21-2-AEO2017.1-0~ref2017-d120816a.133-2-AEO2017.1-0&sourcekey=1>
* Natural\_Gas\_Imports\_and\_Exports
  + Mexican Production Price
  + Download as Table CSV
  + Keyword usa\_to\_can
  + <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=76-AEO2017&region=0-0&cases=ref2017&start=2015&end=2050&f=A&linechart=ref2017-d120816a.22-76-AEO2017&ctype=linechart&sourcekey=0>

Canada

* Natural\_Gas\_Production
  + Canadian Production
  + Select Appendices: Natural Gas Production
  + Select Case: Reference
  + Select Region: Canada
  + <https://apps.neb-one.gc.ca/ftrppndc/dflt.aspx?GoCTemplateCulture=en-CA>
* 1710000501-eng
  + Canadian Population
  + All ages aggregate, Both sexes aggregate, (Every Province separate except Northwest Territories including Nunavut), (Every Year separate)
  + Display Geography as Row, Reference Period as Column
  + Download CSV as Displayed
  + **Manually Insert ‘Nunavut’ for ‘Nunavut 6’**
  + **Manually Insert ‘Northwest Territories’ for ‘Northwest Territories 6’**
  + **Manually Shift ‘Newfoundland and Labrador’ down one cell**
  + <https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1710000501>
* End\_-\_Use\_Demand
  + Canadian Consumption (Minus Electricity)
  + Select Appendices: End – Use Demand
  + Select Case: Reference
  + Select Region: Canada
  + <https://apps.neb-one.gc.ca/ftrppndc/dflt.aspx?GoCTemplateCulture=en-CA>
* Electricity\_Generation
  + Canadian Electricity Generation
  + Select Appendices: Electricity Generation
  + Select Case: Reference
  + Select Type: Primary Fuel
  + <https://apps.neb-one.gc.ca/ftrppndc/dflt.aspx?GoCTemplateCulture=en-CA>
* Primary\_Energy\_Demand
  + Canadian Consumption for Electricity
  + Select Appendices: Primary Energy Demand
  + Select Case: Reference
  + Select Region: Canada
  + <https://apps.neb-one.gc.ca/ftrppndc/dflt.aspx?GoCTemplateCulture=en-CA>
* Natural\_Gas\_Imports\_and\_Exports
  + Canadian Production Price
  + Download as Table CSV
  + <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=76-AEO2017&region=0-0&cases=ref2017&start=2015&end=2050&f=A&linechart=ref2017-d120816a.22-76-AEO2017&ctype=linechart&sourcekey=0>
* End\_-\_Use\_Prices
  + Canadian Consumption Price
  + Select Appendices: End – Use Prices
  + Select Case: Reference
  + Select Sector: (Insert Sector)
  + <https://apps.neb-one.gc.ca/ftrppndc/dflt.aspx?GoCTemplateCulture=en-CA>
* can\_pip\_cap
  + **Manually Insert ‘Capacity’ for ‘Average annual Capacity (BCF/day)’**
  + Canadian Pipe Capacity
  + Manual Entry from website
  + Enter all Group 1 Natural Gas Pipeline Capacities
  + Keyword can\_to\_can
  + <https://www.neb-one.gc.ca/nrg/ntgrtd/trnsprttn/2016/grp-1-nd-grp-2-ppln-cmpns-eng.html>

Mexico

* mex\_consumption\_price
  + Mexican Consumption Price
  + **Manual Copy Pasting**
  + **Manually Insert [0, Avg Residential Public Price, Avg Commercial Public Price, Avg Industrial Public Price, Avg Residential Public Price, Avg Industrial Public Price] into MEX\_Prod\_Cons.py for array mex\_cons\_price\_raw**
  + <https://www.gob.mx/cms/uploads/attachment/file/177623/Prospectiva_de_Gas_LP.pdf>
* reg\_bal\_mex
  + Mexican Production and Consumption
  + Keyword Array mex\_regions\_full
  + Keyword Array mex\_regions\_acronyms
  + Keyword production
  + Keyword imports
  + Keyword exports
  + **Manual Copy Pasting**
  + **Manually Insert ‘All Sectors’ for ‘Consumption’**
  + **Manually Insert ‘Residential’ for ‘Residential Sector’**
  + **Manually Insert ‘Commercial’ for ‘Commercial Sector’**
  + **Manually Insert ‘Industrial’ for ‘Industrial Sector’**
  + **Manually Insert ‘Transportation’ for ‘Transportation Sector’**
  + **Manually Insert ‘Electric Power’ for ‘ Electric Sector’**
  + **Manually Insert ‘Production’ for ‘Regional Production’**
  + <https://www.gob.mx/cms/uploads/attachment/file/177624/Prospectiva_de_Gas_Natural_2016-2030.pdf>
* mex\_pip\_cap\_bcfd (Same file as reg\_bal\_mex)
  + Mexican Pipeline Capacity
  + Keyword region\_from
  + Keyword region\_to
  + **Manually Insert ‘Capacity’ for ‘Average Volume MMCF/day)’**
  + **Manual Copy Pasting (NOTE: IN BCF/DAY)**
  + <https://www.gob.mx/cms/uploads/attachment/file/177624/Prospectiva_de_Gas_Natural_2016-2030.pdf>

Rest of World

* World\_total\_natural\_gas\_production\_by\_region
  + Rest of World Production
  + Keyword united\_states
  + Keyword canada
  + Keyword Mexico
  + Keyword total\_world
  + **Manually Insert ‘United States’ for ‘United Statesa’**
  + <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=41-IEO2017&sourcekey=0>
* World\_natural\_gas\_consumption\_by\_region
  + Rest of World Consumption
  + **Manually Insert ‘Mexico’ for ‘Mexico and Chile’**
  + <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=6-IEO2017&cases=Reference&sourcekey=0>
* Delivered\_energy\_consumption\_by\_end-use\_sector\_and\_fuel
  + Rest of World Consumption By Sector
  + Keyword all\_sectors
  + **Manually Insert ‘Residential’ for ‘Residential Sector’**
  + **Manually Insert ‘Commercial’ for ‘Commercial Sector’**
  + **Manually Insert ‘Industrial’ for ‘Industrial Sector’**
  + **Manually Insert ‘Transportation’ for ‘Transportation Sector’**
  + **Manually Insert ‘Electric Power’ for ‘Electric Power Sector’**
  + **Manually Insert ‘All Sectors’ for ‘Total Energy Consumption’**
  + <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=15-IEO2017&cases=Reference&sourcekey=0>

**Files that Require Manual Entry**

* NEMS\_to\_NANGAM\_ONS
  + NEMS to NANGAM Conversion Matrix Onshore
  + Keyword Array nems\_regions\_acronyms
  + Keyword Array nangam\_regions\_acronyms
* NEMS\_to\_NANGAM\_OFS
  + NEMS to NANGAM Conversion Matrix Offshore
  + Keyword Array nems\_regions\_acronyms
  + Keyword Array nangam\_regions\_acronyms

**Additional Steps**

* Adjust the Variables of the top of Arrays to customize program