

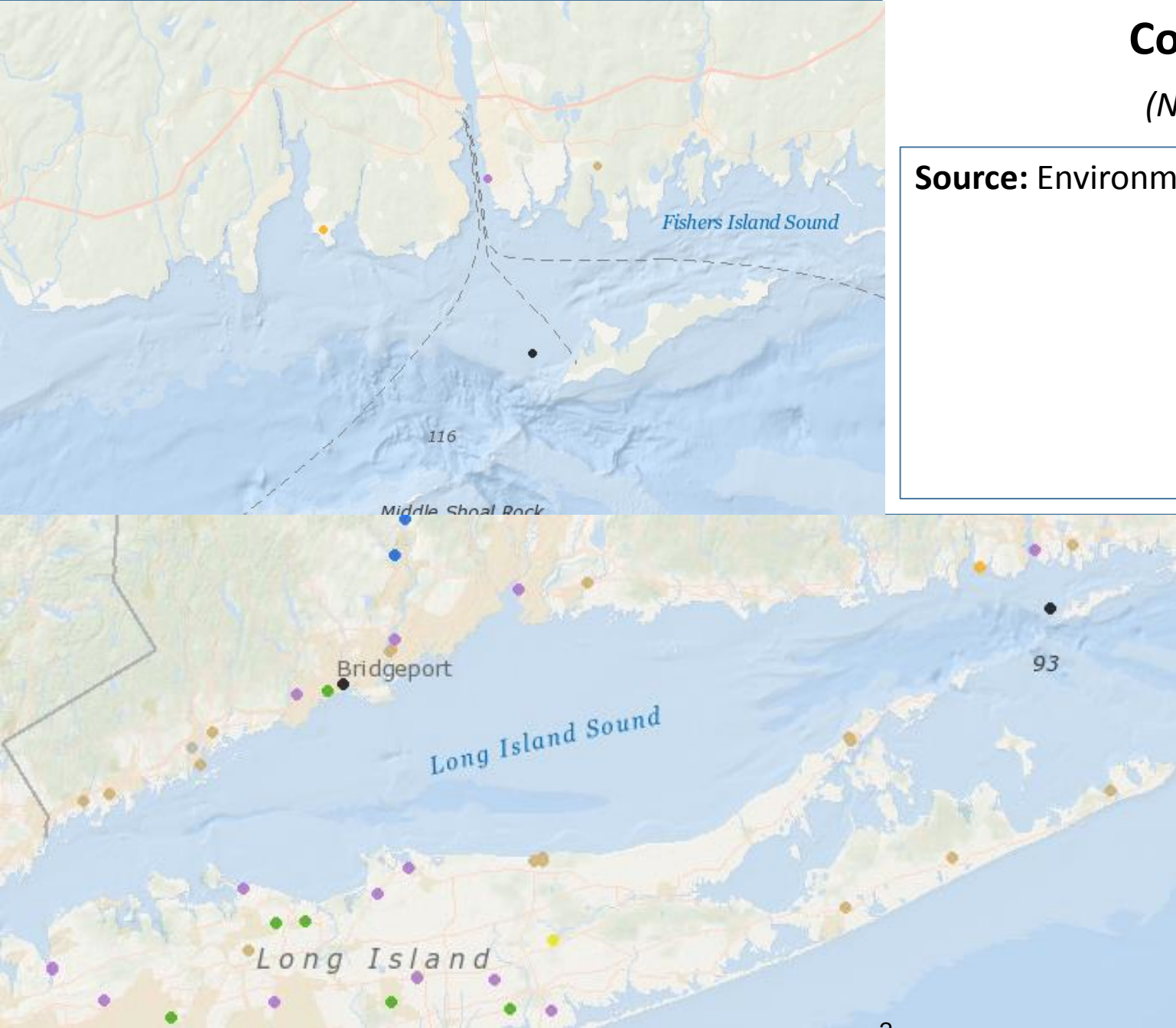
Energy & Telecommunications Sector Map Book

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Coastal Energy Facilities

(Northeast Ocean Data Portal)

Source: Environmental Protection Agency (EPA)



Coastal Energy Facilities

Blue Plan Sector(s): Energy & Minerals > Electrical/Transmission Lines & Energy Facilities

Summary Description: Abstract: These data depict the location of facilities that generate electricity. The locations are created from the Environmental Protection Agency Emissions & Generation Resource Integrated Database (eGRID). Only facilities adjacent to the coast and Great Lakes are shown. Contained within the database are records that define the fuel source and other characteristics of the facility that may benefit ocean planners. In some cases, the presence of a facility may indicate that certain power transmission infrastructure exists nearby. Absence of a facility or lack of sufficient capacity at a facility in a given area may also be an important characteristic in future energy planning activities. Please keep in mind this is not representative of the whole eGRID. This dataset can be linked back to the additional content of the eGRID by downloading the data and joining it back to the eGRID spreadsheet.

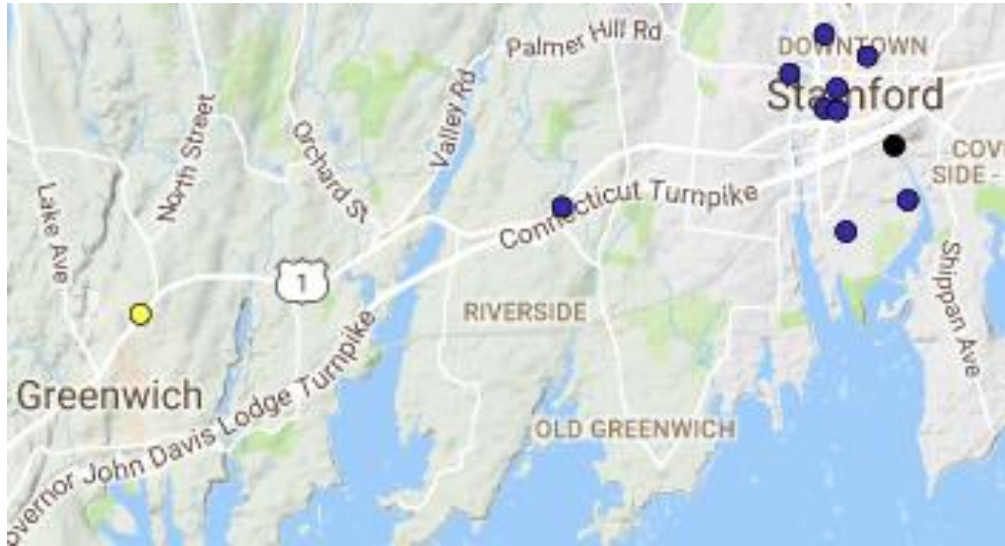
Full Description:

<https://coast.noaa.gov/dataservices/Metadata/TransformMetadata?u=https://coast.noaa.gov/data/Documents/Metadata/harvest/MarineCadastre/CoastalEnergyFacilities.xml&f=html>

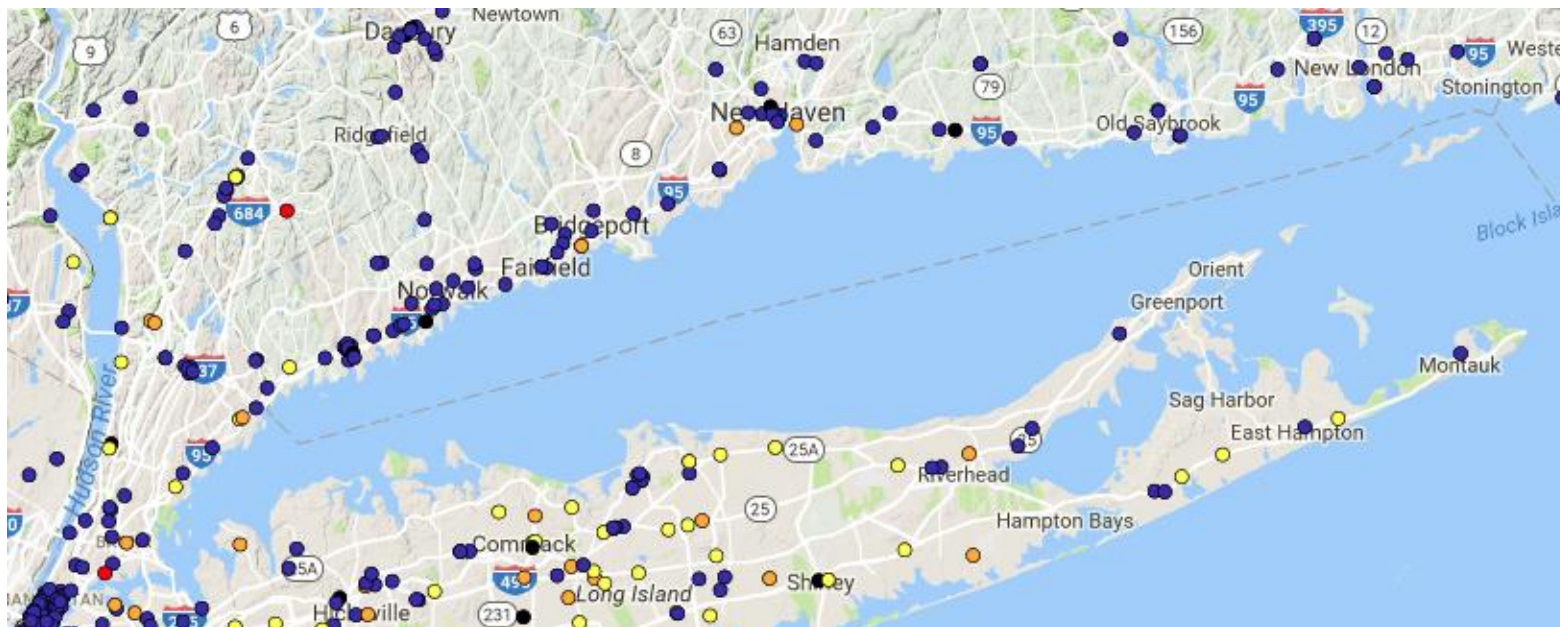
Access Instructions: Go to <http://www.northeastoceandata.org/data-explorer/>. Go to Energy and Infrastructure > Infrastructure > Coastal Energy Facilities

Alternative Fuel Stations

(Energy Zones Mapping Tool)



Source: U.S. Department of Energy Alternative Fuels Data Center Web Feature Service, Clean Cities (U.S. Department of Energy Vehicle Technologies Office)



Alternative Fuel Station

Fuel Type

- Biodiesel (BD)
- Compressed Natural Gas (CNG)
- Ethanol (E85)
- Electric (ELEC)
- Hydrogen (HY)
- Liquefied Natural Gas (LNG)
- Liquefied Petroleum Gas (LPG)

Alternative Fuel Stations

Blue Plan Sector(s): Energy & Minerals > Electrical/Transmission Lines & Energy Facilities

Summary Description: Through a nationwide network of local coalitions, Clean Cities provides project assistance to help stakeholders in the public and private sectors deploy alternative and renewable fuels, idle-reduction measures, fuel economy improvements, and emerging transportation technologies. Vehicle fleet managers and drivers, corporate decision makers, and public transportation planners can use these strategies to conserve fuel.

Full Description: https://ezmt.anl.gov/layer/884/metadata_file

Access Instructions: Go to <https://ezmt.anl.gov/mapping/viewer> (you will need to create an account). Under the Main Menu, click the Library icon and add the Alternative Fuel Station layer.

Biodiesel Plants

(Energy Zones Mapping Tool)

Source: U.S. Energy Information Administration (EIA-22M, Monthly Biodiesel Production Survey, May 2015)



Biodiesel Plants



Biodiesel Plants

Blue Plan Sector(s): Energy & Minerals > Electrical/Transmission Lines & Energy Facilities

Summary Description: Biodiesel plants of the United States as of May 2015.

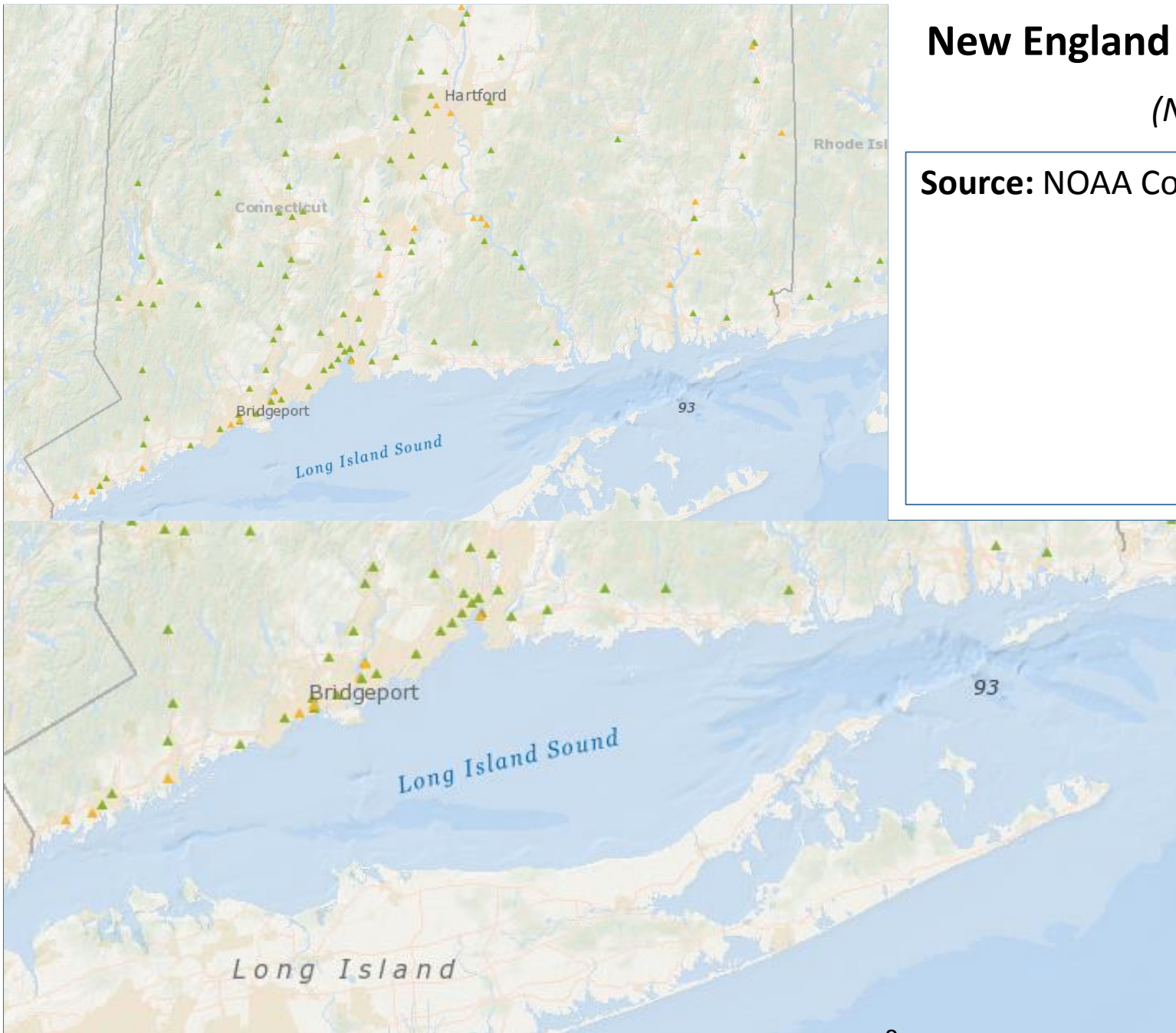
Full Description: https://ezmt.anl.gov/layer/859/metadata_file

Access Instructions: Go to <https://ezmt.anl.gov/mapping/viewer> (you will need to create an account). Under the Main Menu, click the Library icon and add the Biodiesel Plants layer.

New England Electrical Transmission Substations

(Northeast Ocean Data Portal)

Source: NOAA Coastal Services Center



New England Electrical Transmission Substations

- ▲ Substation
- ▲ Substation at Fossil Fuel Station
- ▲ Substation with Internal Combustion Generation

New England Electrical Transmission Substations



Blue Plan Sector(s): Energy & Minerals > Electrical/Transmission Lines & Energy Facilities

Summary Description: This data depicts substations (facilities that switch, change, and/or regulate electric voltage) in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. A substation is a part of an electrical generation, transmission, and distribution system. Substations transform voltage from high to low, or the reverse, or perform any of several other important functions. Between the generating station and consumer, electric power may flow through several substations at different voltage levels. These substations are all connected using segments of the New England Transmission Lines layer.

Full Description:

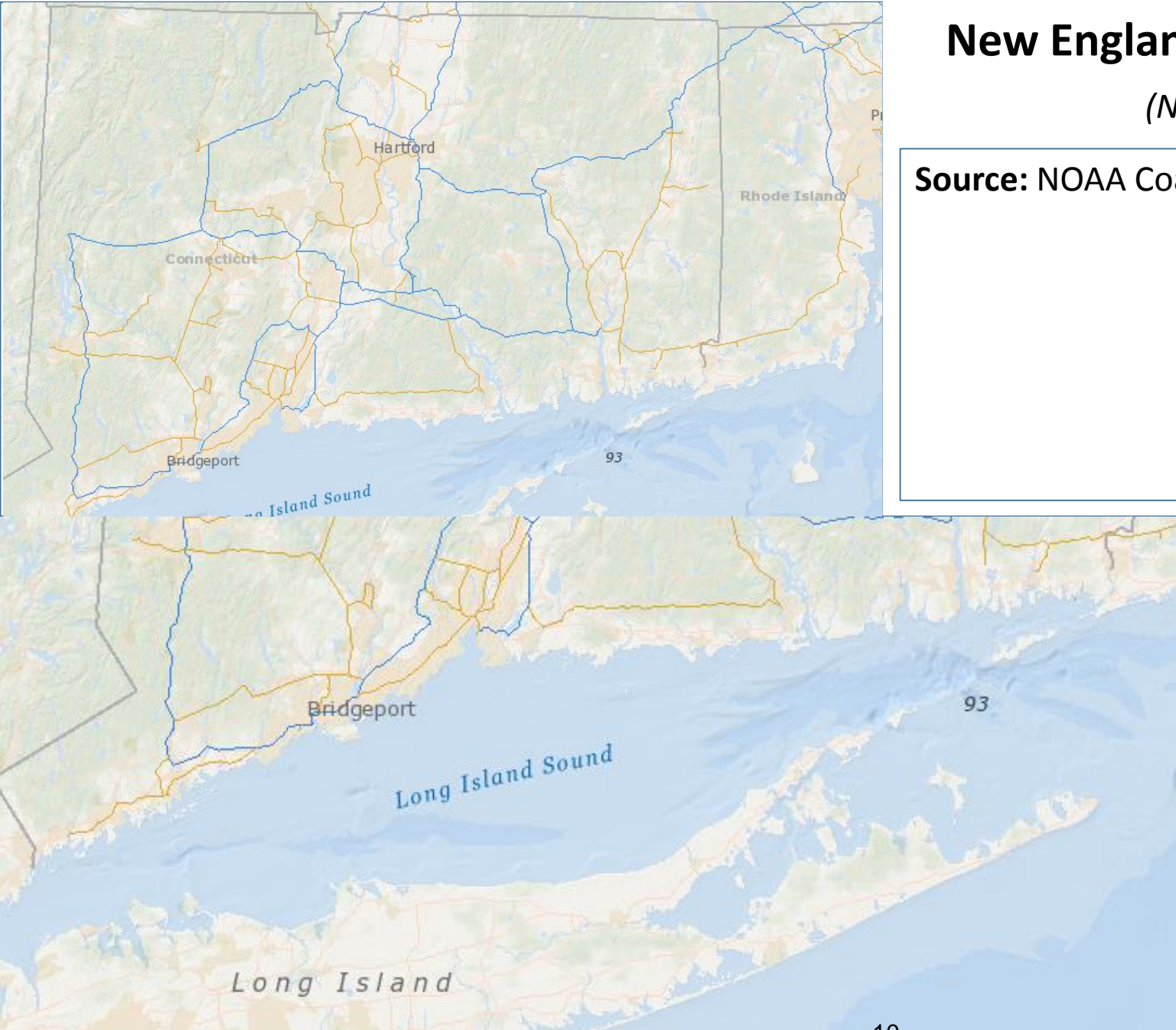
<http://www.northeastoceandata.org/files/metadata/Themes/EnergyAndInfrastructure/NewEnglandElectricalTransmissionSubstations.pdf>

Access Instructions: Go to <http://www.northeastoceandata.org/data-explorer/>. Go to Energy and Infrastructure > Infrastructure > New England Electrical Transmission Substations

New England Electrical Transmission Lines

(Northeast Ocean Data Portal)

Source: NOAA Coastal Services Center



New England Electrical Transmission Lines



Blue Plan Sector(s): Energy & Minerals > Electrical/Transmission Lines & Energy Facilities

Summary Description: This data depicts transmission lines in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. A transmission line is a structure that forms a path for directing the transmission of electric power. When interconnected with each other, transmission lines become transmission networks typically referred to as power grids. These lines are all connected to using points of the New England Substations layer. Substations transform voltage from high to low, or the reverse, or perform any of several other important functions. Between the generating station and consumer, electric power may flow through several substations at different voltage levels.

Full Description:

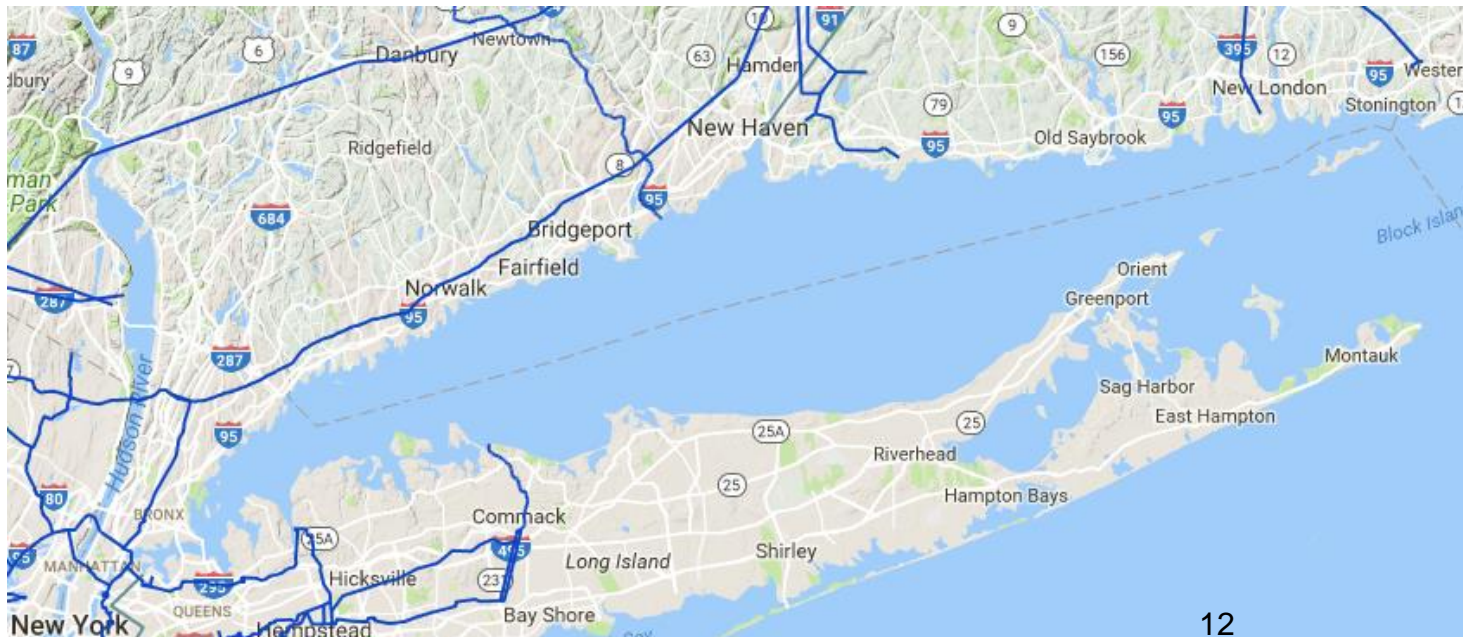
<http://www.northeastoceandata.org/files/metadata/Themes/EnergyAndInfrastructure/NewEnglandElectricalTransmissionLines.pdf>

Access Instructions: Go to <http://www.northeastoceandata.org/data-explorer/>. Go to Energy and Infrastructure > Infrastructure > New England Electrical Transmission Lines

Pipelines – Natural Gas and Petroleum Product

(Energy Zones Mapping Tool)

Source: U.S. Energy Information Administration



Pipelines - Natural Gas



Pipelines - Petroleum Product



Pipelines – Natural Gas and Petroleum Product

Blue Plan Sector(s): Energy & Minerals > Electrical/Transmission Lines & Energy Facilities

Summary Description: *Natural Gas Pipelines*: This is a polyline dataset representing the major natural gas transmission pipelines in the U.S. including interstate, intrastate, and gathering pipelines. These data were obtained by the U.S. Energy Information Administration from various sources including FERC Form 567—Annual Report of System Flow Diagrams and Capacity, and other external sources such as company web pages and industry press. Last updated 1/6/2012.

Petroleum Product Pipelines: Major petroleum product pipelines in the United States. Layer includes interstate trunk lines and selected intrastate lines. Based on publicly available data from a variety of sources with varying scales and levels of accuracy. Updated November 2014.

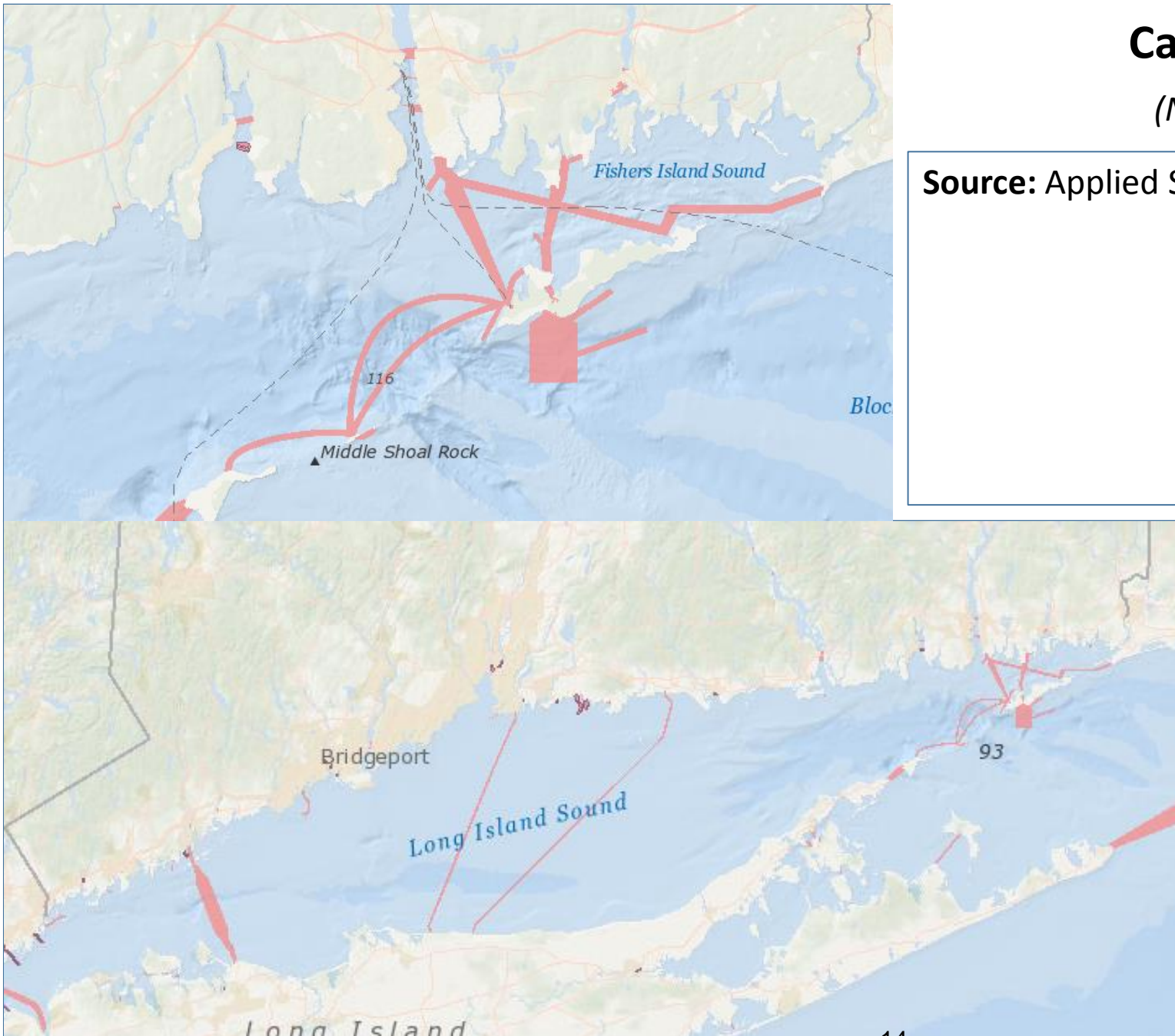
Full Description: https://ezmt.anl.gov/layer/857/metadata_file and https://ezmt.anl.gov/layer/858/metadata_file

Access Instructions: Go to <https://ezmt.anl.gov/mapping/viewer> (you will need to create an account). Under the Main Menu, click the Library icon and add the Pipelines – Natural Gas layer and the Pipelines – Petroleum Product layer.




Cable and Pipeline Areas

(Northeast Ocean Data Portal)

Source: Applied Science Associates



Cable and Pipeline Areas

-  cable
-  pipeline
-  cable/pipeline

Cable and Pipeline Areas

Blue Plan Sector(s): Energy & Minerals > Electrical/Transmission Cables & Energy Facilities

Summary Description: *Abstract:* This dataset identifies locations that contain one or more submarine cable and/or pipeline areas. The submarine cable areas dataset APPROACH_HARBOR_CBLARE_poly from NOAA ENC Direct to GIS was downloaded for the northeast region using the bounding coordinates North: 44, South: 37, East: -65, and West -74. The NOAA ENC dataset for pipeline areas APPROACH_HARBOR_PIPAREA_POLYGON_poly was also downloaded for the same area and examined. The most recent NOAA Raster Navigational Charts (RNCs) were downloaded from <<http://www.charts.noaa.gov/RNCs/RNCs.shtml>> on August 5, 2011 for regions 1 and 2. Each chart at the 1:40,000 to 1:20:000 scale range was examined, with some additional charts at 1:15,000 for certain locations. The NOAA ENC Direct data were compared against the RNCs to identify cable and pipeline areas on the charts that required digitization. Digitization occurred at scales ranging from 1:12,000 to 1:4,000. Duplicates for existing features were examined and the least appropriate feature was deleted, and in some locations the cable or pipeline area boundary was redrawn. Areas labeled as Cable and Pipeline Areas on the RNCs were noted in the attribute table. Some features were merged into one feature if they represented the same cable area and corresponded to the same source chart. The original field names for source information, source date, and accompanying information about the area were retained from the NOAA ENC data, however excess fields were deleted. Originally cable and pipeline areas were created in separate datasets, yet these were integrated into a single dataset. Any duplicated features were removed and details on whether the feature represented a cable area, pipeline area, or both were noted in the attribute table.

Full Description:

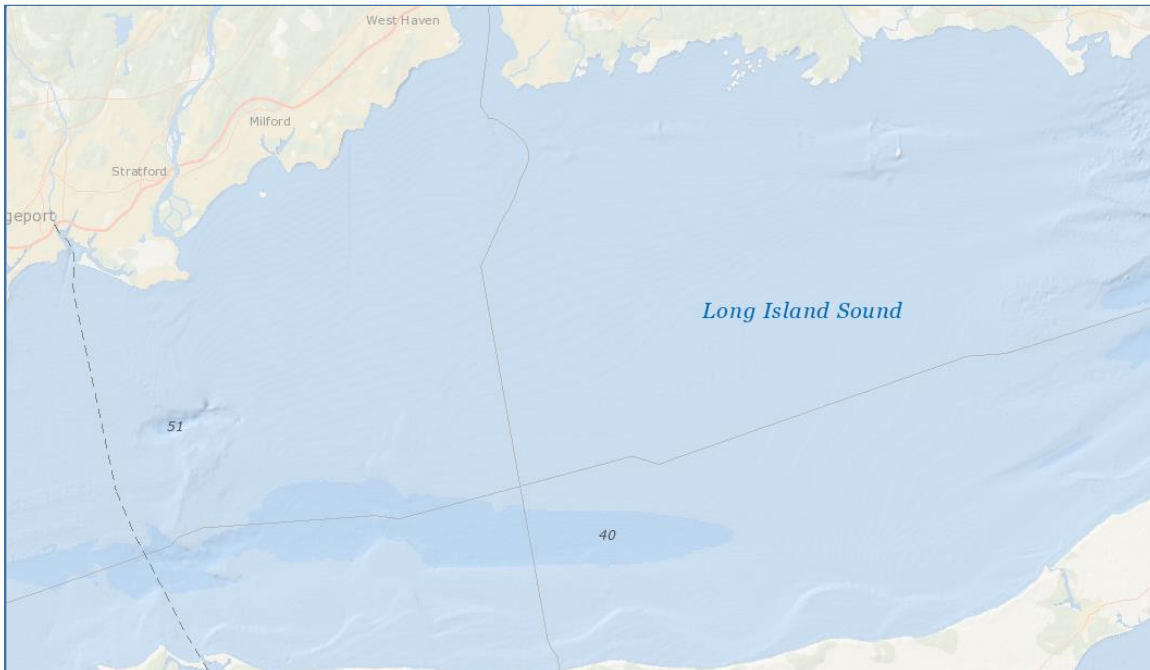
<http://www.northeastoceandata.org/files/metadata/Themes/EnergyAndInfrastructure/CableAndPipelineAreas>

Access Instructions: Go to <http://www.northeastoceandata.org/data-explorer/>. Go to Energy and Infrastructure > Infrastructure > Cable and Pipeline Areas

Submarine Cables

(Northeast Ocean Data Portal)

Source: NOAA Coastal Services Center



Submarine Cables

—

Submarine Cables

Blue Plan Sector(s): Energy & Minerals > Electrical/Transmission Cables & Energy Facilities

Summary Description: This map layer shows the locations of submarine cables in coastal and offshore waters of the northeastern U.S. Laid on the seabed, these cables are used for transmitting telecommunications or electrical power.

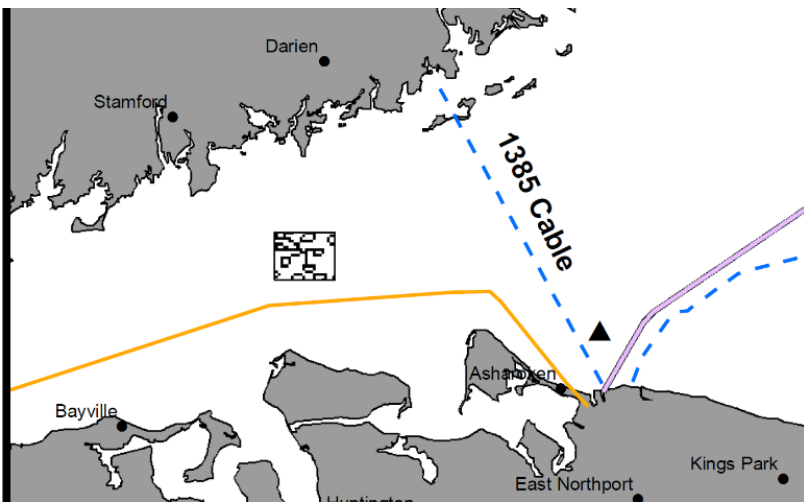
Full Description:

<http://www.northeastoceandata.org/files/metadata/Themes/EnergyAndInfrastructure/SubmarineCables>

Access Instructions: Go to <http://www.northeastoceandata.org/data-explorer/>. Go to Energy and Infrastructure > Infrastructure > Submarine Cables

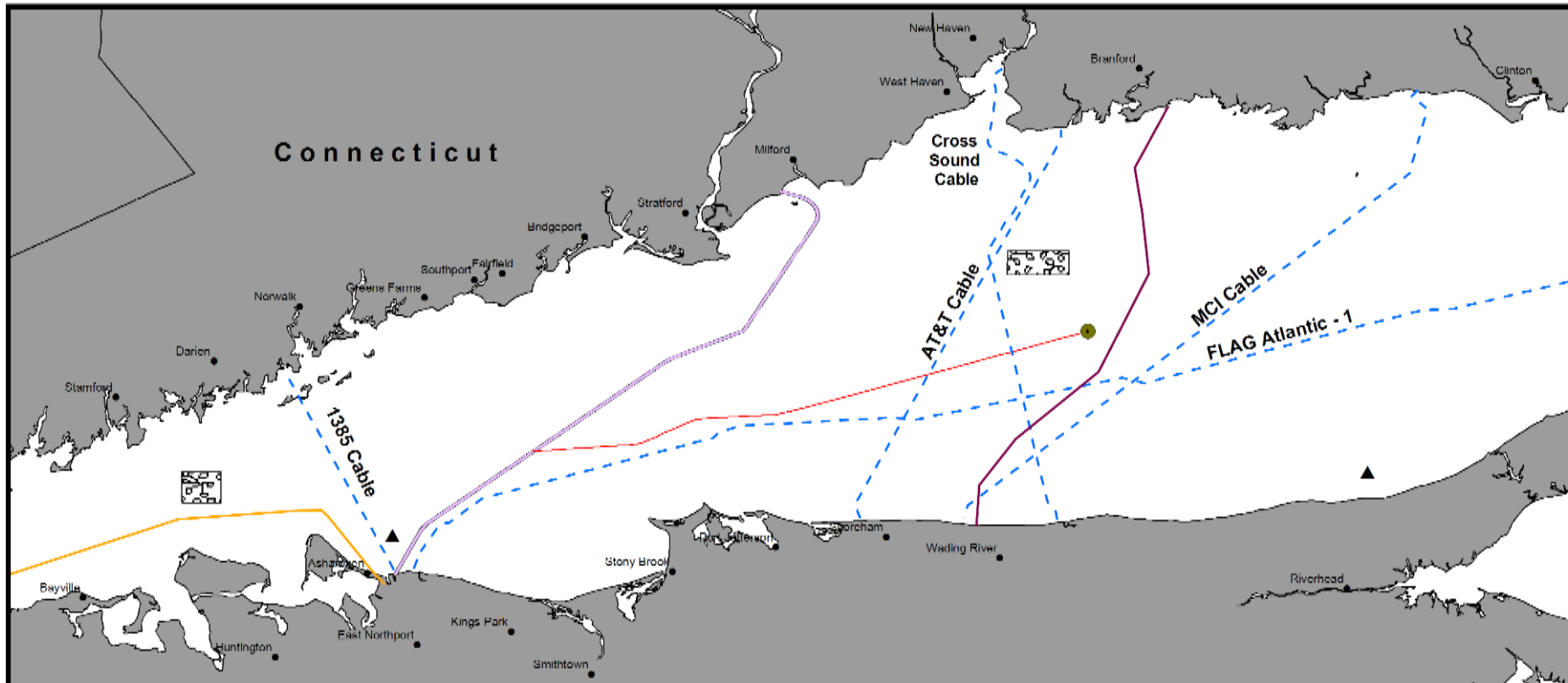
Existing and Proposed Long Island Sound Projects

(Federal Energy Regulatory Commission)






Source: Final Environmental Impact Statement (FEIS) on the Broadwater LNG Project (Docket Nos. CP06-54-000, et al.), Issued: January 11, 2008

***** Please Note:** The “Proposed Broadwater Pipeline Route”, “Proposed Island East Pipeline”, and “Proposed FSRU Location”, as depicted on this map product, are to be viewed as previously-proposed infrastructure projects in Long Island Sound for information purposes only. These three proposed infrastructure projects are NOT currently in the Sound nor are they currently being considered for federal or state permits.***



Legend

-  Proposed FSRU Location
-  Offshore Platform
-  Proposed Broadwater Pipeline Route
-  IGTS Pipeline
-  Eastchester Extension Pipeline
-  Subsea Cable
-  Dredged Material Disposal Site - Active
-  Proposed Islander East Pipeline

Existing and Proposed Long Island Sound Projects



Blue Plan Sector(s): Energy & Minerals > Electrical/Transmission Lines & Energy Facilities

Summary Description: Map of nine existing energy-related infrastructure projects in central Long Island Sound: two existing natural gas pipelines, five existing subsea telecommunication or electric transmission cables, and two offshore oil transfer platforms. Also depicted are the previously-proposed Broadwater Pipeline, Islander East Pipeline, and Floating Storage Regasification Unit, none of which are currently in Long Island Sound or are currently being considered for federal or state permits.

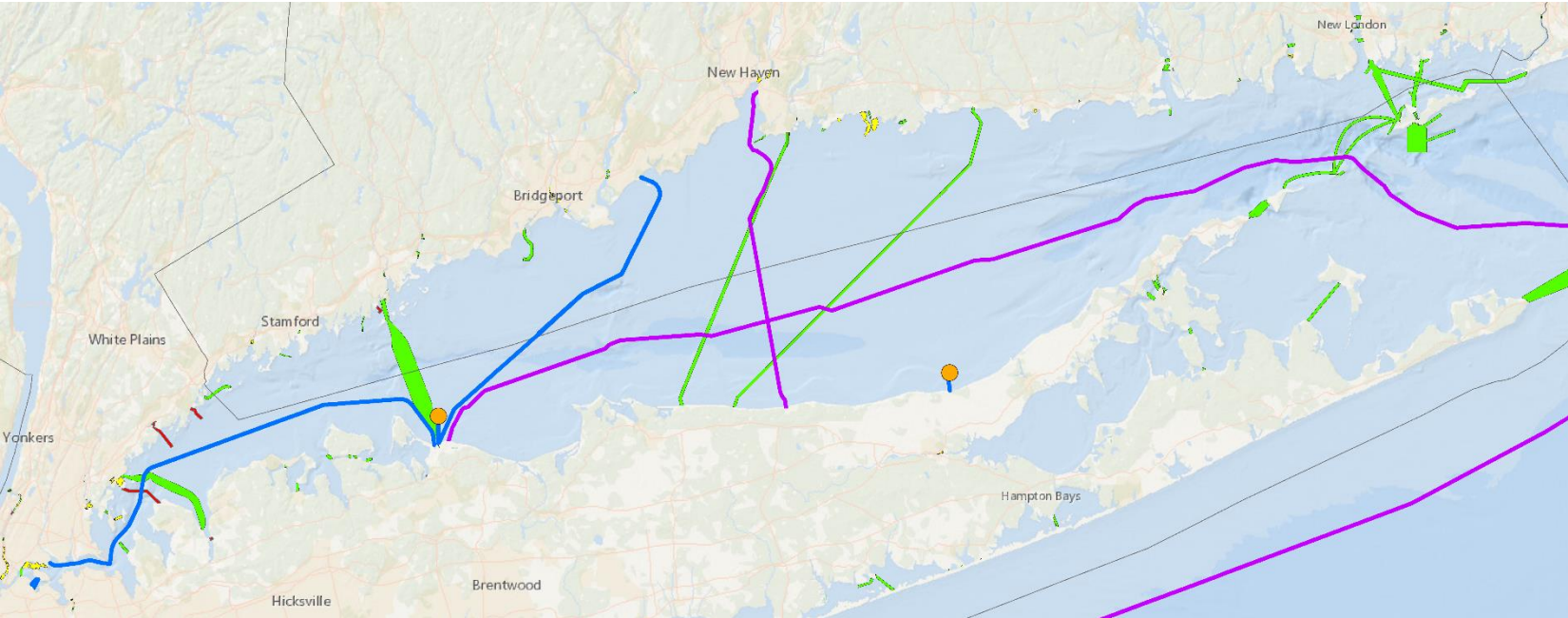
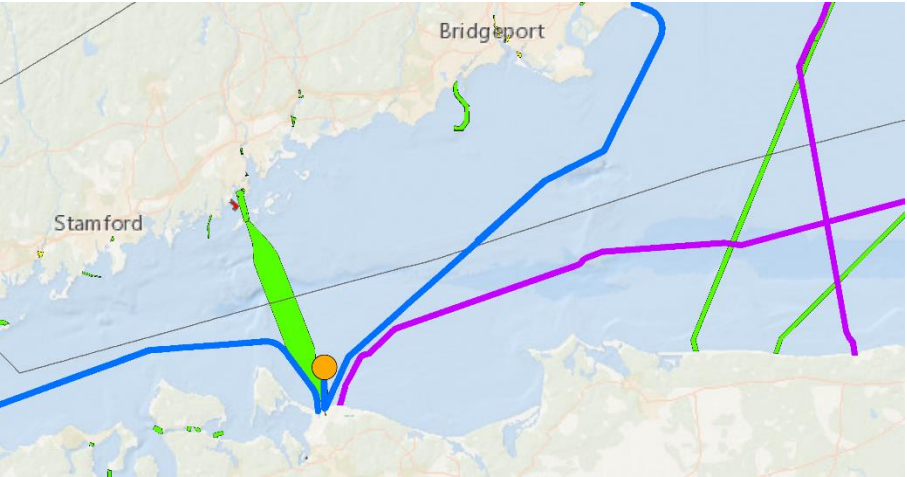
Full Description: See Section 3.11.1 in the FERC Final Environmental Impact Statement on the Broadwater LNG Project: <https://www.ferc.gov/industries/gas/enviro/eis/2008/01-11-08-eis.asp>

Access Instructions: Go to <https://www.ferc.gov/industries/gas/enviro/eis/2008/01-11-08-eis.asp>

Major Energy and Telecommunications Infrastructure in Long Island Sound

(Northeast Ocean Data Portal, NOAA ENC Direct to GIS)

Source: NOAA Office of Coast Survey, NOAA Coastal Services Center, Applied Science Associates, U.S. Geological Survey's The National Map



- Offshore Terminal
- Submarine Cable
- Submarine Pipeline
- Cable Area
- Pipeline Area
- Cable and Pipeline Area



Major Energy and Telecommunications Infrastructure in Long Island Sound



Blue Plan Sector(s): Energy & Minerals > Electrical/Transmission Cables & Energy Facilities

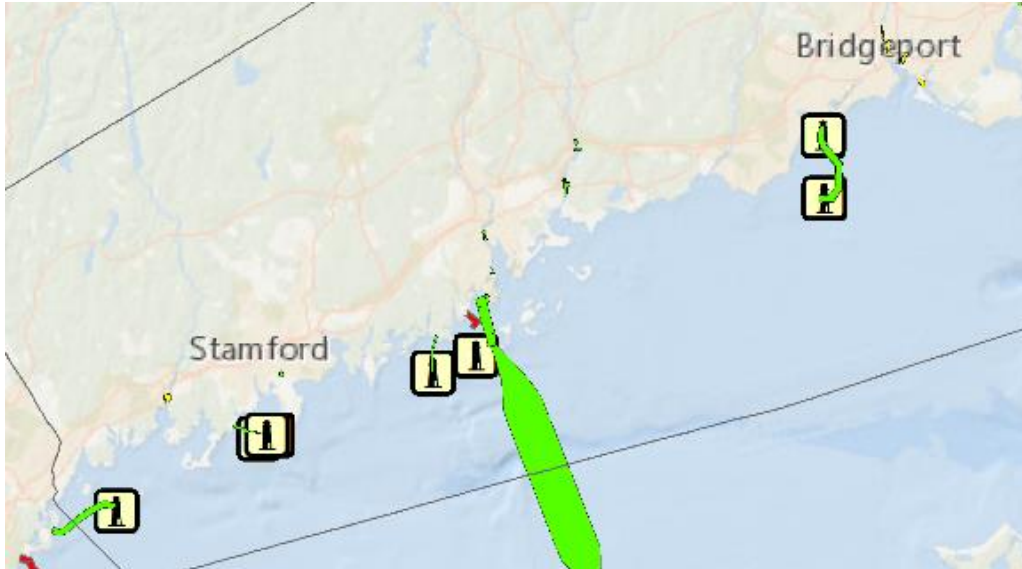
Summary Description: This map product was created using ArcGIS ArcMap and is a combination of other map products in the Energy & Telecommunications Sector Map Book (specifically, Cable and Pipeline Areas, Existing and Proposed LIS Projects, and Submarine Cables). Spatial data was downloaded from the Northeast Ocean Data Portal and NOAA’s Electronic Navigation Charts (ENCs) via the NOAA ENC Direct to GIS graphical interface and was qualitatively vetted against descriptive data found in NOAA Raster Navigation Chart (RNC) numbers 12354, 12358, 12362-12375, and 13209, 13211-13214. NOAA ENC data was downloaded specifically from the “Approach” data set. State boundary data is from the U.S. Geological Survey.

Full Description: For information about the Cable and Pipeline Areas, Existing and Proposed LIS Projects, and Submarine Cables map products, see their corresponding entries in the Energy & Telecommunications Sector Map Book. Information about NOAA ENC data can be found at https://encdirect.noaa.gov/help/encdirect_help.html. Information about NOAA RNCs can be found at <https://nauticalcharts.noaa.gov/charts/noaa-raster-charts.html>.

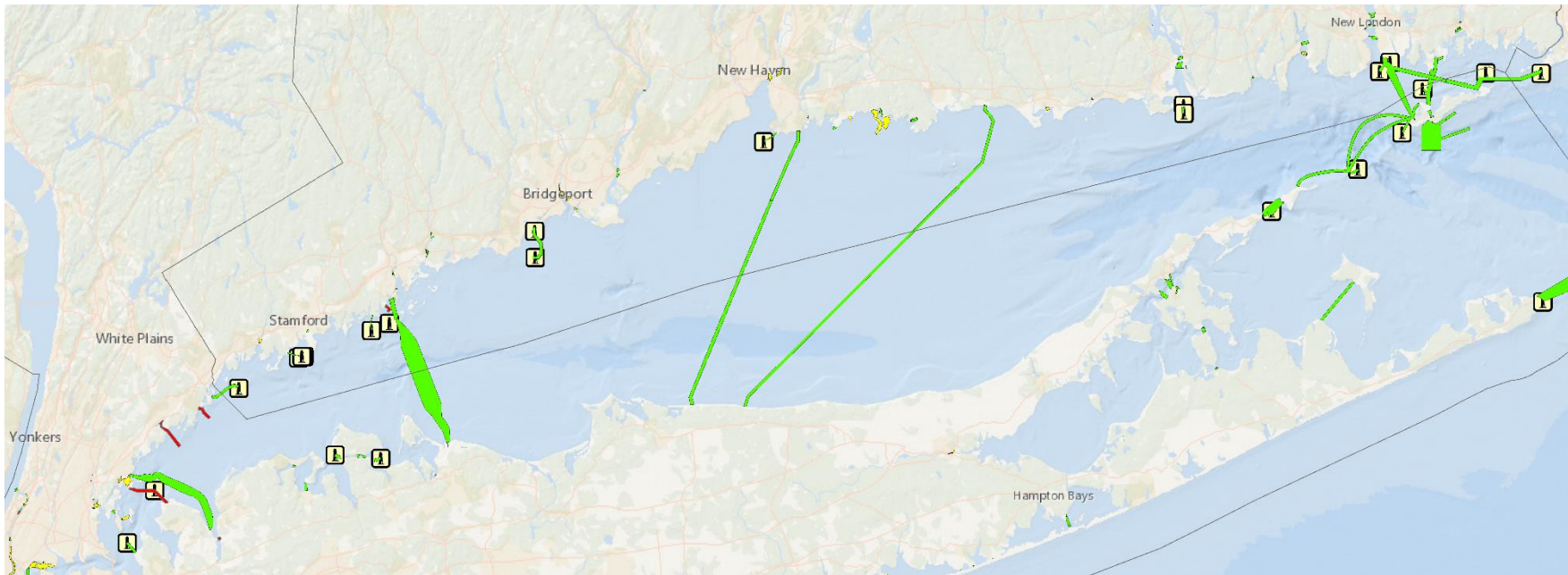
Access Instructions: For access to the Cable and Pipeline Areas, Existing and Proposed LIS Projects, and Submarine Cables map products, see their corresponding entries in the Energy & Telecommunications Sector Map Book. Access to NOAA ENC data and the NOAA RNCs is available via the two URLs noted above.





Cables, Cable Areas, Lighthouses, and Beacons

(Northeast Ocean Data Portal, NOAA ENC Direct to GIS)



Source: Applied Science Associates; U.S. Army Corps of Engineers and PAL Inc. (via CT State Historic Preservation Office/Historic Commission, CT Office of State Archaeology, University of Connecticut Dodd Center Special Collections Library, NY State Historic Preservation Office); U.S. Geological Survey's The National Map



-  Beacon or Lighthouse
-  Cable Area
-  Pipeline Area
-  Cable and Pipeline Area

Cables, Cable Areas, Lighthouses, and Beacons

Blue Plan Sector(s): Energy & Minerals > Electrical/Transmission Cables & Energy Facilities

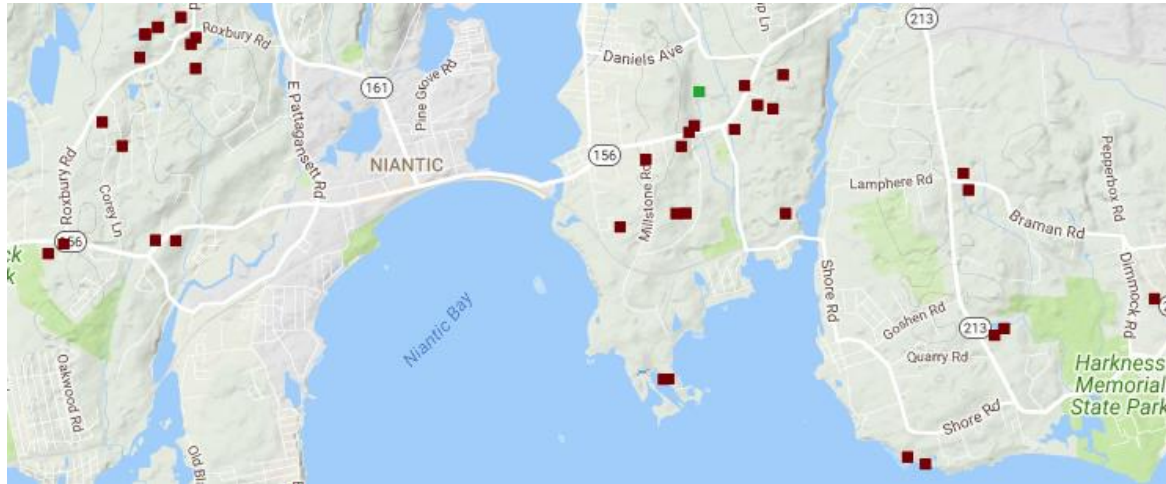
Summary Description: This map product was created using ArcGIS ArcMap and is a combination of the Cable and Pipeline Areas map product (included in the Energy & Telecommunications Sector Map Book) and lighthouse and beacon data from the U.S. Army Corps of Engineers' (USACE) Long Island Sound Dredged Material Management Plan (DMMP) and NOAA navigational charts. NOAA lighthouse and beacon data includes shore-adjacent lighthouses and named, in-Sound lighthouses and beacons that either closely border, overlap, or cap-end known cable lines or cable areas. Spatial data was provided by USACE and downloaded from the Northeast Ocean Data Portal and NOAA's Electronic Navigation Charts (ENCs) via the NOAA ENC Direct to GIS graphical interface. NOAA data was qualitatively vetted against descriptive data found in NOAA Raster Navigation Chart (RNC) numbers 12354, 12358, 12362-12375, and 13209, 13211-13214. NOAA ENC data was downloaded specifically from the "Approach" data set. Known pipeline areas were included on this map product because the pipeline area running from New Rochelle, NY, to Sands Point, NY, contains an electric cable (the "Y50" cable). State boundary data is from the U.S. Geological Survey.

Full Description: For information about the Cables and Pipelines map product, see its corresponding entry in the Energy & Telecommunications Sector Map Book. Information about DMMP data can be found at <http://www.usace.army.mil/Portals/74/docs/Topics/LISDMMP/STID11-LIS-DMMPCulturalResourceInventory.pdf> on pages 6-13 and 135. Information about NOAA ENC data can be found at https://encdirect.noaa.gov/help/encdirect_help.html. Information about NOAA RNCs can be found at <https://nauticalcharts.noaa.gov/charts/noaa-raster-charts.html>.

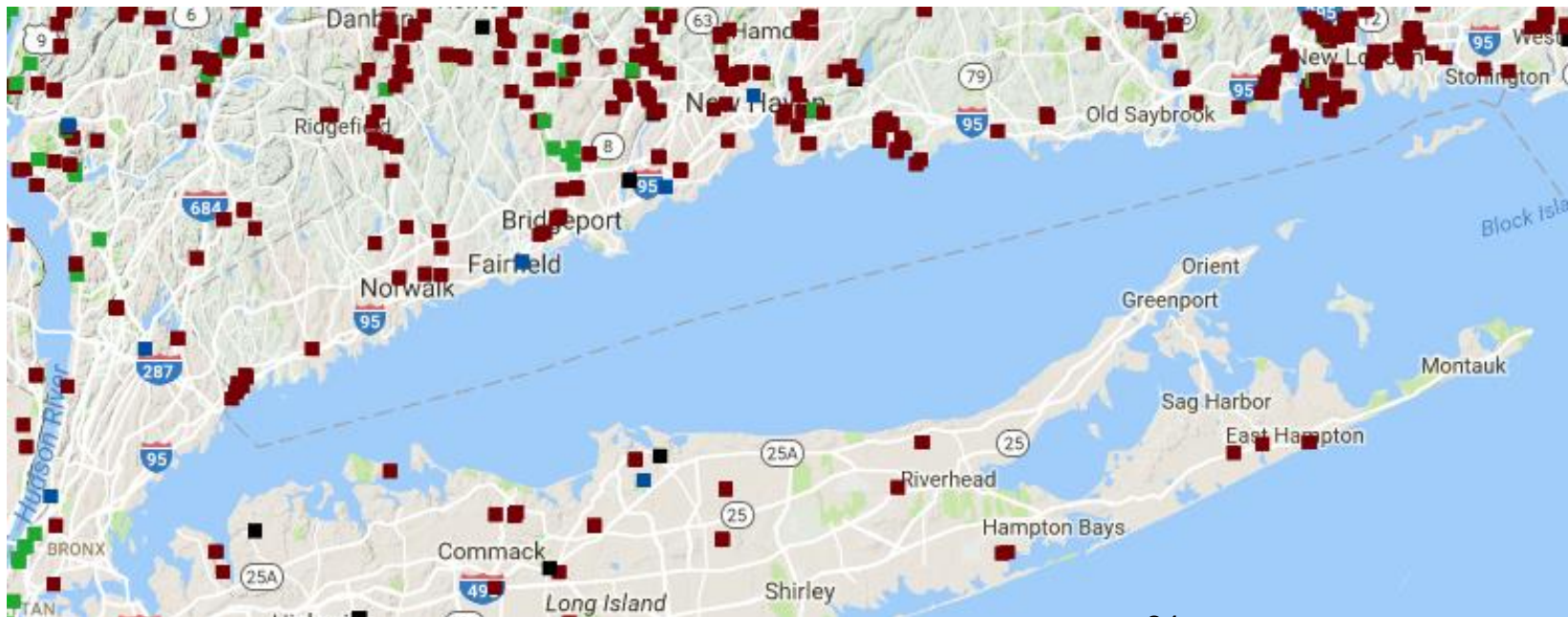
Access Instructions: For access to the Cables and Pipeline Areas map product, see its corresponding entries in the Energy & Telecommunications Sector Map Book. Access to NOAA ENC data and the NOAA RNCs is available via the two NOAA URLs noted above. Access to DMMP data is not available online; however, the National Park Service has spatial data on lighthouses available at <https://www.nps.gov/nr/research/>.

Mineral Resources

(Energy Zones Mapping Tool)



Source: U.S. Geological Survey Mineral Resource Data System, U.S. Bureau of Mines Mineral Availability System/ Mineral Industry Locator System (now part of USGS)



Mineral Resource

Status of Development

- Mine, Past, or Present Producer
- Prospect or Occurrence
- Processing Plant
- Unknown

Mineral Resources

Blue Plan Sector(s): Energy & Minerals > Sand and Gravel

Summary Description: Mineral resource occurrence data covering the world, most thoroughly within the U.S. This digest is intended for use as reference material supporting mineral resource and environmental assessments on local to regional scale worldwide.

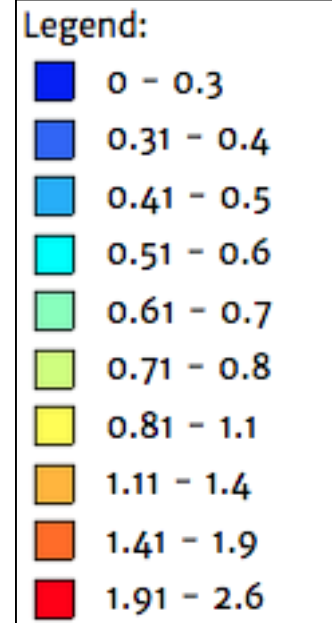
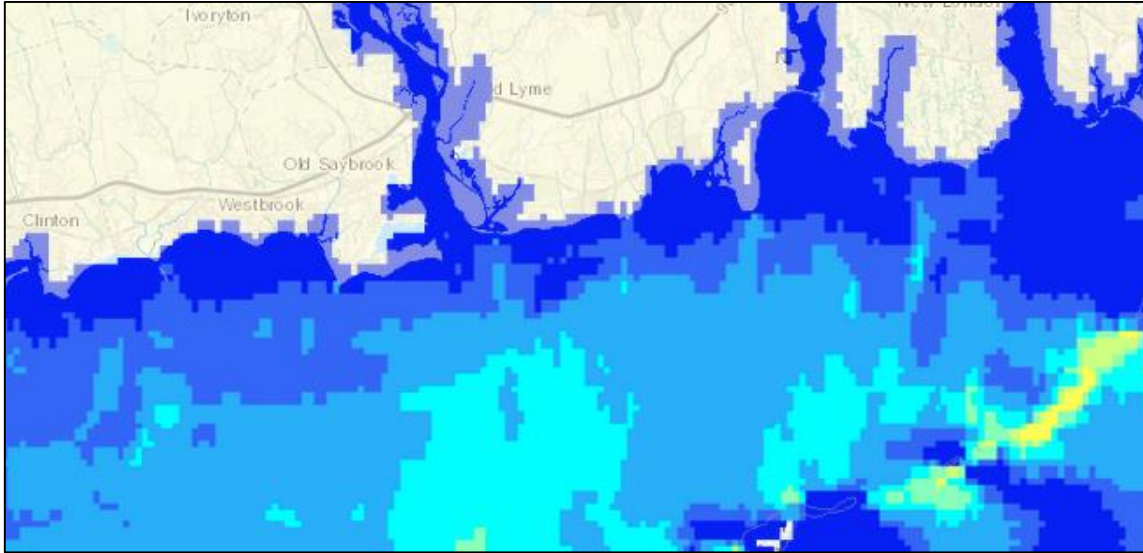
Full Description: https://ezmt.anl.gov/layer/140/metadata_file

Access Instructions: Go to <https://ezmt.anl.gov/mapping/viewer> (you will need to create an account). Under the Main Menu, click the Library icon and add the Mineral Resource layer.

Tidal Stream Resource Potential – Mean Current

New York Geographic Information Gateway (NYGIG)

Source: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy



Tidal Stream Resource Potential – Mean Current

Blue Plan Sector(s): Energy & Minerals > Renewables > Tidal & Wave

Summary Description: Data depicts tidal stream mean current within U.S. waters. Tidal streams are high velocity sea currents created by periodic horizontal movement of the tides. Tidal stream energy is derived from the kinetic energy of the moving flow. A numerical model was used for simulating the tidal flows along the coast of the entire United States. Model results were calibrated with available measurements of tidal currents from NOAA tidal current stations. It should be noted that tidal currents and associated power per unit area can have significant spatial variability; therefore currents at one location are generally a poor indicator of conditions at another location, even nearby. Tidal current (velocity) is measured in meters per second (m/s). For more information, please click here. *Purpose*: Average current speed (meters/second) of tidal stream in US waters.

Full Description: Go to

<http://opdgig.dos.ny.gov/geoportal/catalog/search/resource/detailsnoheader.page?uuiid={286FAA27-CF09-475A-A608-9AABA22D80C7}>

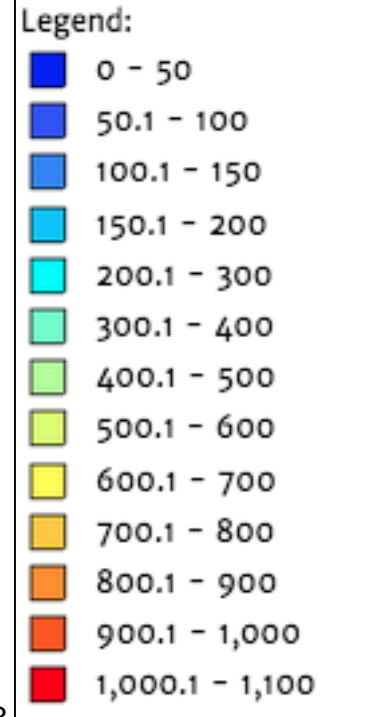
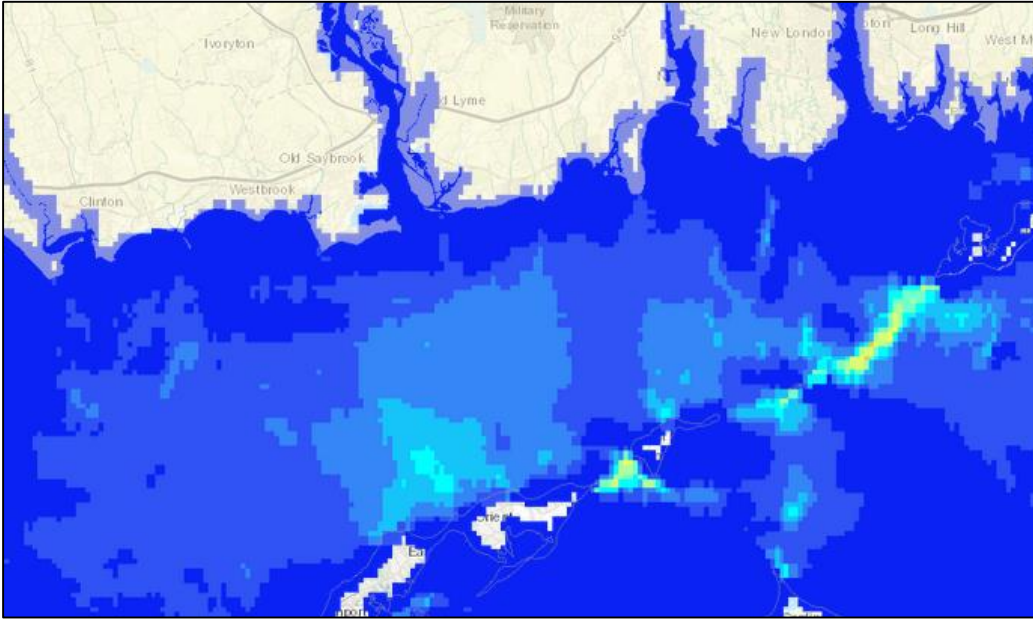
Access Instructions: Go to: <http://opdgig.dos.ny.gov/#/map>

and search “Tidal Stream Resource Potential– Mean Current”

Tidal Stream Resource Potential – Mean Power Density

New York Geographic Information Gateway (NYGIG)

Source: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy



Tidal Stream Resource Potential – Mean Power Density

Blue Plan Sector(s): Energy & Minerals > Renewables > Tidal & Wave

Summary Description: Data depicts tidal stream mean power within U.S. waters. Tidal streams are high velocity sea currents created by periodic horizontal movement of the tides. Tidal stream energy is derived from the kinetic energy of the moving flow. A numerical model was used for simulating the tidal flows along the coast of the entire United States. Model results were calibrated with available measurements of tidal currents from NOAA tidal current stations. It should be noted that tidal currents and associated power per unit area can have significant spatial variability; therefore currents at one location are generally a poor indicator of conditions at another location, even nearby. Tidal power (energy) is measured in watts per meter squared (W/m²). For more information, please click here. *Purpose*: Average power (watts/square meter) of tidal streams in U.S. waters.

Full Description: Go to:

<http://opdgig.dos.ny.gov/geoportal/catalog/search/resource/detailsnoheader.page?uuiid={A5F9D612-7F29-4D23-AB90-C0FD13B7AB99}>

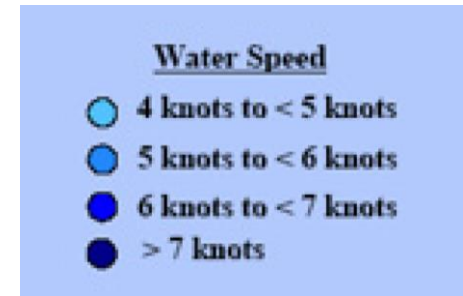
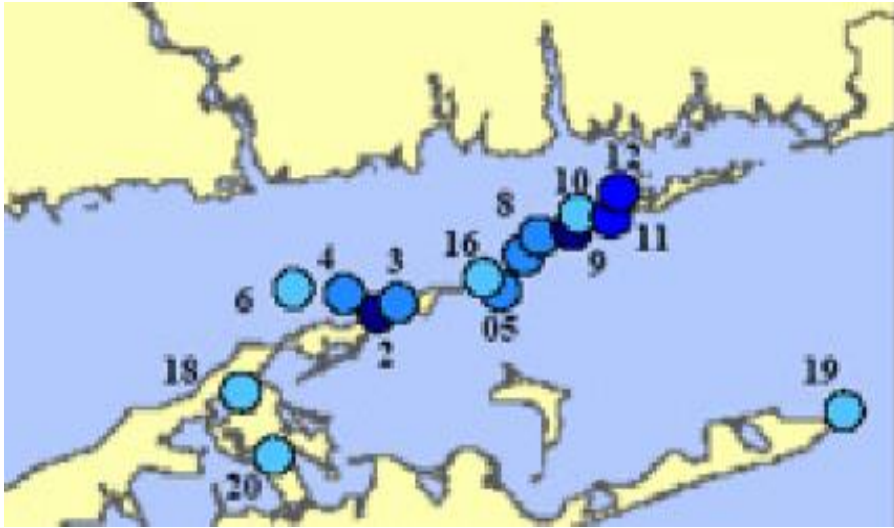
Access Instructions: Go to: <http://opdgig.dos.ny.gov/#/map>

and search “Tidal Stream Resource Potential– Mean Power Density”

Potential Tidal Energy Sites Around Long Island, NY

(Long Island Power Authority)

Source: E3, Inc. (Long Island Tidal and Wave Energy Study: An Assessment of the Resource)



Potential Tidal Energy Sites Around Long Island, NY



Blue Plan Sector(s): Energy & Minerals > Renewables > Tidal & Wave

Summary Description: An evaluation was performed by E3, Inc. staff to determine the potential for power at over 483 prospective tidal sites off the shorelines of Long Island, New York, Rhode Island, and New Jersey based on information available at NOAA data collection sites and extrapolated values. Of these sites, approximately twenty priority locations were mapped and identified. This map product indicates the water speed at each of these sites in Long Island Sound.

Full Description: See report at <http://www.lipower.org/pdfs/company/papers/report-wave0107.pdf>

Access Instructions: Go to Section 2 of the report at <http://www.lipower.org/pdfs/company/papers/report-wave0107.pdf>

Potential Tidal Energy Sites with Depth < 50 ft, Long Island

(Long Island Power Authority)



Source: E3, Inc. (Long Island Tidal and Wave Energy Study: An Assessment of the Resource)



Potential Tidal Energy Sites with Depth < 50 ft, Long Island

Blue Plan Sector(s): Energy & Minerals > Renewables > Tidal & Wave

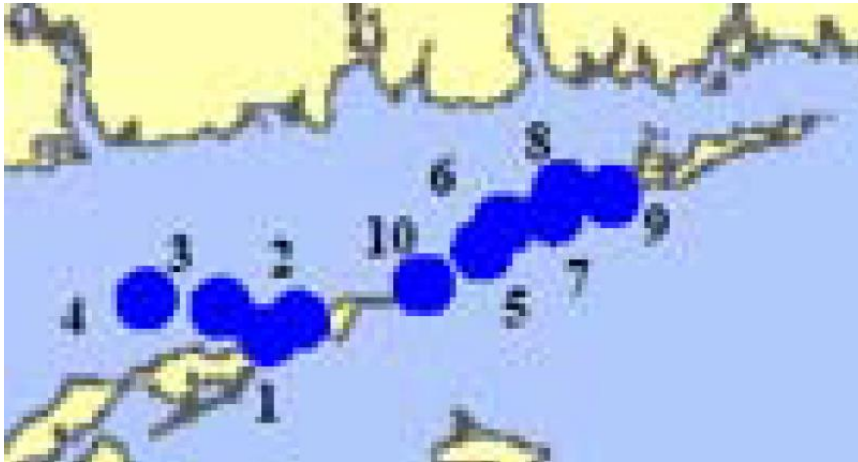
Summary Description: An evaluation was performed by E3, Inc. staff to determine the potential for power at over 483 prospective tidal sites off the shorelines of Long Island, New York, Rhode Island, and New Jersey based on information available at NOAA data collection sites and extrapolated values. Of these sites, approximately twenty priority locations were mapped and identified. This map product indicates the sites in Long Island Sound with water depth less than 50 feet. Depth variables may significantly impact deployment strategies for bottom-mounted pylon systems and may impact navigational issues.

Full Description: See report at <http://www.lipower.org/pdfs/company/papers/report-wave0107.pdf>

Access Instructions: Go to Section 2 of the report at <http://www.lipower.org/pdfs/company/papers/report-wave0107.pdf>

Potential Tidal Energy Sites with Depth > 50 ft, Long Island

(Long Island Power Authority)



Source: E3, Inc. (Long Island Tidal and Wave Energy Study: An Assessment of the Resource)



Potential Tidal Energy Sites with Depth > 50 ft, Long Island

Blue Plan Sector(s): Energy & Minerals > Renewables > Tidal & Wave

Summary Description: An evaluation was performed by E3, Inc. staff to determine the potential for power at over 483 prospective tidal sites off the shorelines of Long Island, New York, Rhode Island, and New Jersey based on information available at NOAA data collection sites and extrapolated values. Of these sites, approximately twenty priority locations were mapped and identified. This map product indicates the sites in Long Island Sound with water depth greater than 50 feet. Depth variables may significantly impact deployment strategies for bottom-mounted pylon systems and may impact navigational issues.

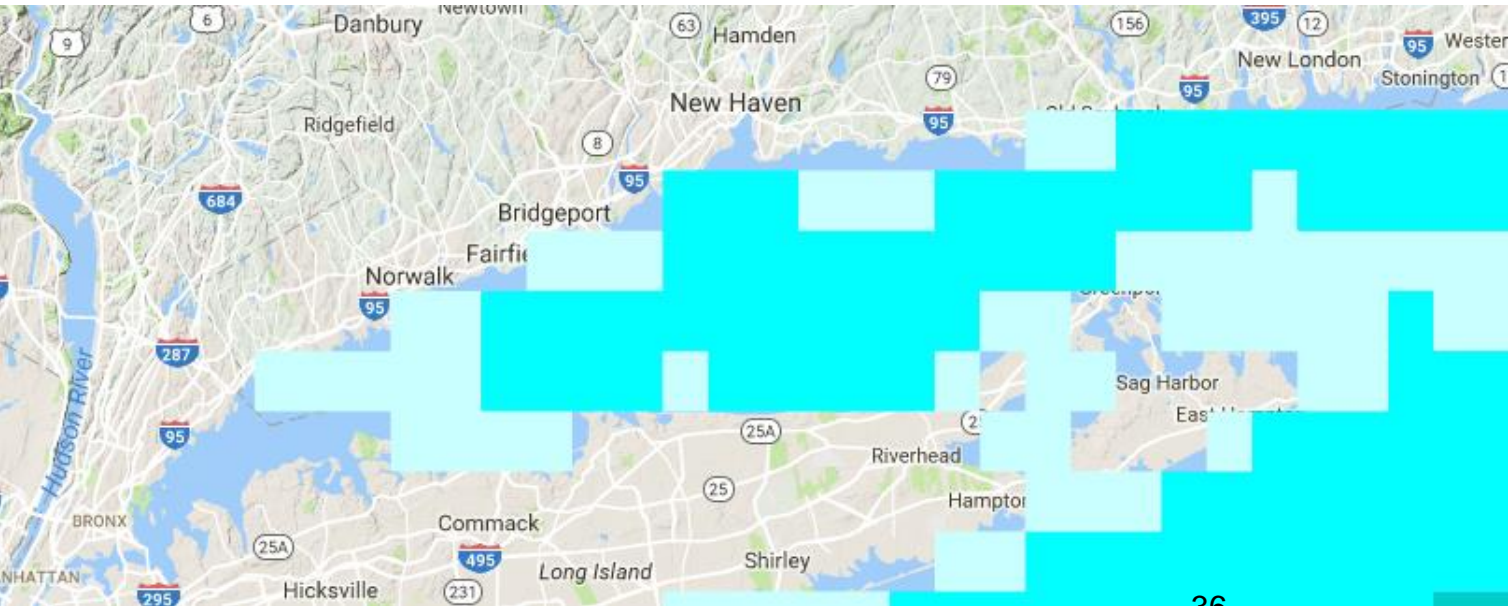
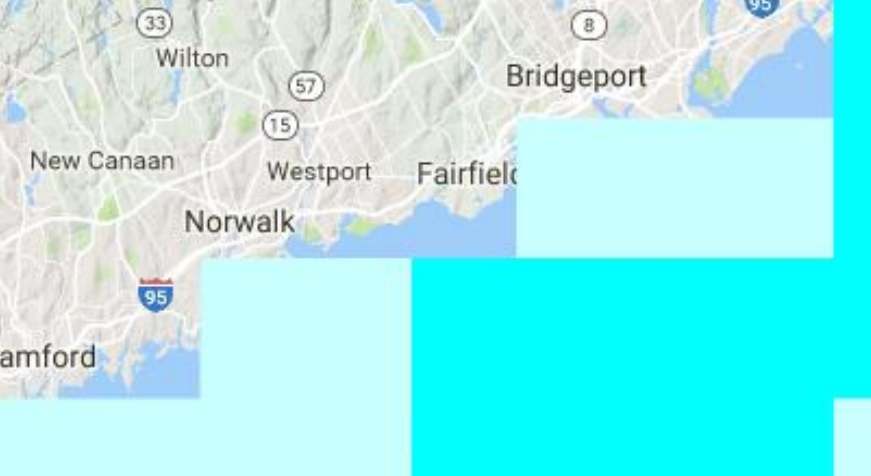
Full Description: See report at <http://www.lipower.org/pdfs/company/papers/report-wave0107.pdf>

Access Instructions: Go to Section 2 of the report at <http://www.lipower.org/pdfs/company/papers/report-wave0107.pdf>

Wave Energy – Water Depth

(Energy Zones Mapping Tool)

Source: National Renewable Energy Laboratory, Electric Power Research Institute, Virginia Tech



Wave Energy - Water Depth

- 0 - 20 (m)
- 20 - 50
- 50 - 200
- 200 - 1000
- > 1000



Wave Energy – Water Depth

Blue Plan Sector(s): Energy & Minerals > Renewables > Tidal & Wave

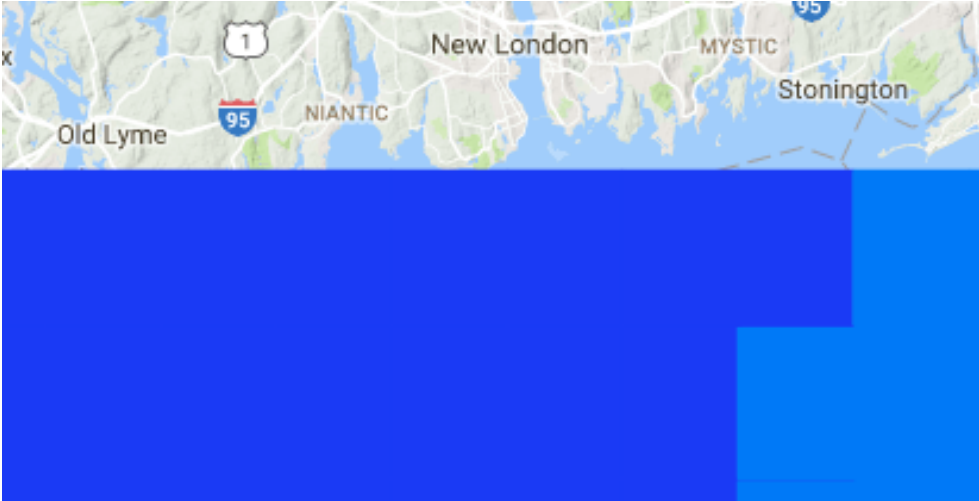
Summary Description: This data is representing Wave Depth. Bathymetric effects are known to have a large effect on wave characteristics at depths shallower than approximately 20m (~65 ft) on the Atlantic coast and 50 m (~160 ft) on the Pacific coast. A variance between depths exists due to the feature differences for each continental shelf. The methodology used in this resource assessment precludes providing site-specific information to such developers. Reliable site-specific information in shallow waters can only be produced using results from models with higher spatial resolution that include shallow-water physics. The wave resource assessment group acknowledges that its results will not be accurate in the shallower waters of the inner continental shelf. These shallow water regions are located within the dark gray boundaries on the map.

Full Description: https://ezmt.anl.gov/layer/233/metadata_file

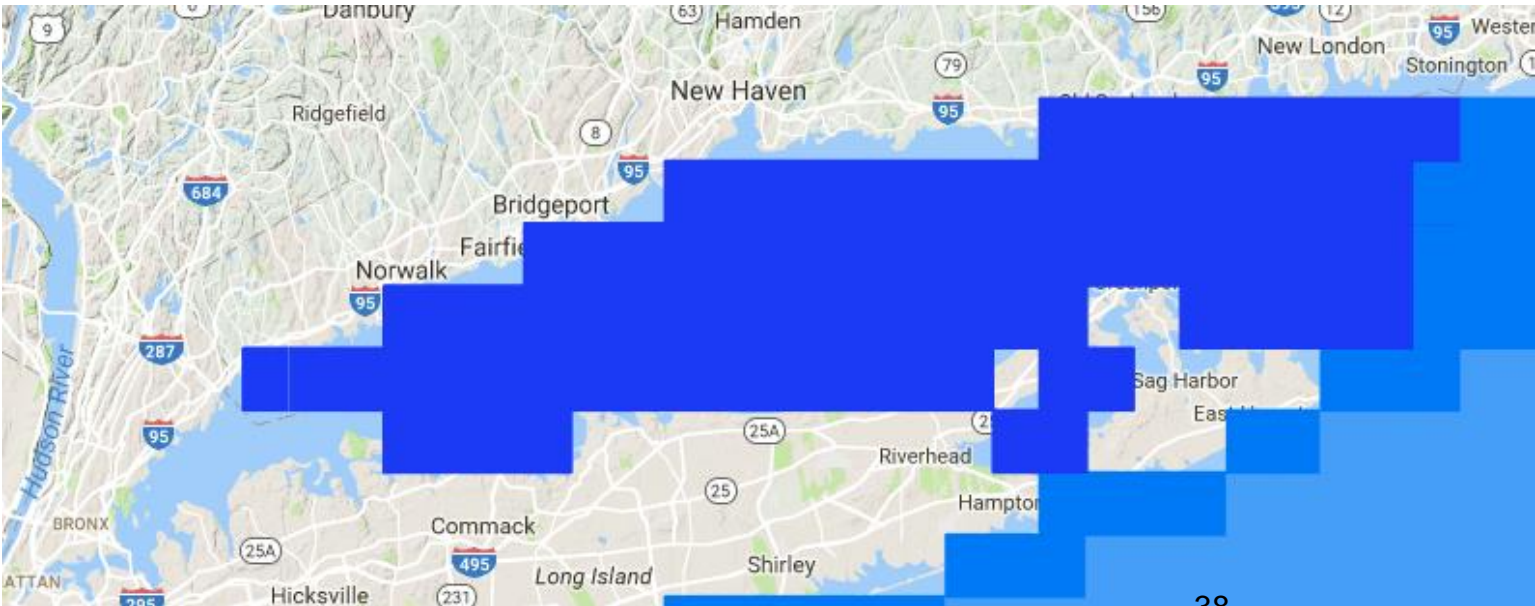
Access Instructions: Go to <https://ezmt.anl.gov/mapping/viewer> (you will need to create an account). Under the Main Menu, click the Library icon and add the Wave Energy – Water Depth layer.

Wave Energy – Significant Wave Height

(Energy Zones Mapping Tool)



Source: National Renewable Energy Laboratory, Electric Power Research Institute, Virginia Tech



Wave Energy - Significant Wave Height

- Annual
- < 0.5 (m)
 - 0.5 - 1.0
 - 1.0 - 1.5
 - 1.5 - 2.0
 - 2.0 - 2.5
 - 2.5 - 3.0
 - 3.0 - 3.5
 - 3.5 - 4.0
 - 4.0 - 4.5
 - > 4.5



Wave Energy – Significant Wave Height

Blue Plan Sector(s): Energy & Minerals > Renewables > Tidal & Wave

Summary Description: This data is representing Significant Wave Height. Bathymetric effects are known to have a large effect on wave characteristics at depths shallower than approximately 20m (~65 ft) on the Atlantic coast and 50 m (~160 ft) on the Pacific coast. A variance between depths exists due to the feature differences for each continental shelf. The methodology used in this resource assessment precludes providing site-specific information to such developers. Reliable site-specific information in shallow waters can only be produced using results from models with higher spatial resolution that include shallow-water physics. The wave resource assessment group acknowledges that its results will not be accurate in the shallower waters of the inner continental shelf. These shallow water regions are located within the dark gray boundaries on the map.

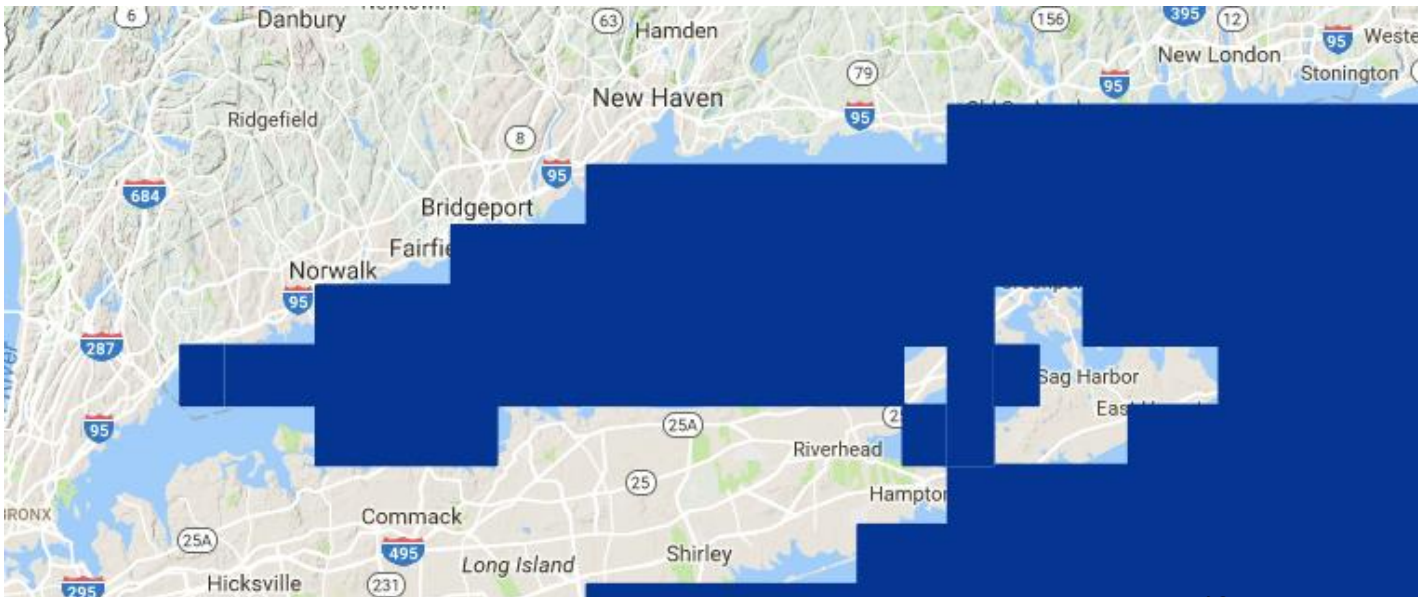
Full Description: https://ezmt.anl.gov/layer/236/metadata_file

Access Instructions: Go to <https://ezmt.anl.gov/mapping/viewer> (you will need to create an account). Under the Main Menu, click the Library icon and add the Wave Energy – Significant Wave Height layer.

Wave Energy – Power Density

(Energy Zones Mapping Tool)

Source: National Renewable Energy Laboratory, Electric Power Research Institute, Virginia Tech



Wave Energy - Power Density

Annual



Wave Energy – Power Density

Blue Plan Sector(s): Energy & Minerals > Renewables > Tidal & Wave

Summary Description: This data is representing Wave Power Density. Bathymetric effects are known to have a large effect on wave characteristics at depths shallower than approximately 20m (~65 ft) on the Atlantic coast and 50 m (~160 ft) on the Pacific coast. A variance between depths exists due to the feature differences for each continental shelf. The methodology used in this resource assessment precludes providing site-specific information to such developers. Reliable site-specific information in shallow waters can only be produced using results from models with higher spatial resolution that include shallow-water physics. The wave resource assessment group acknowledges that its results will not be accurate in the shallower waters of the inner continental shelf. These shallow water regions are located within the dark gray boundaries on the map.

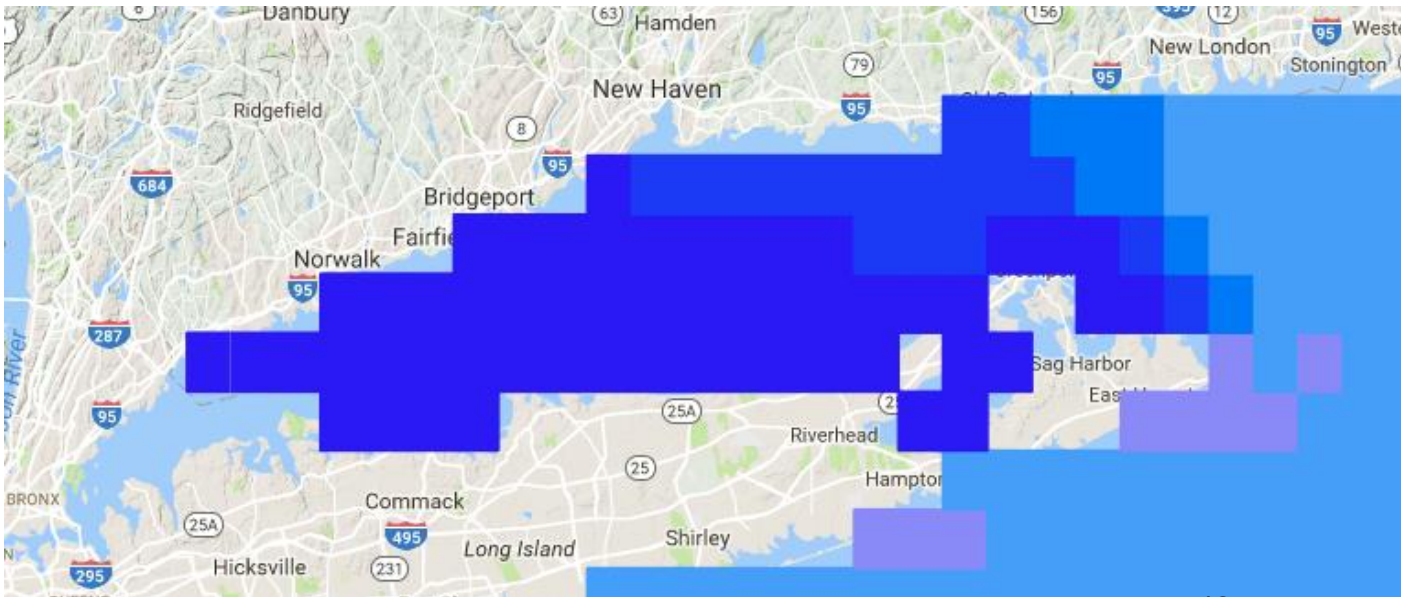
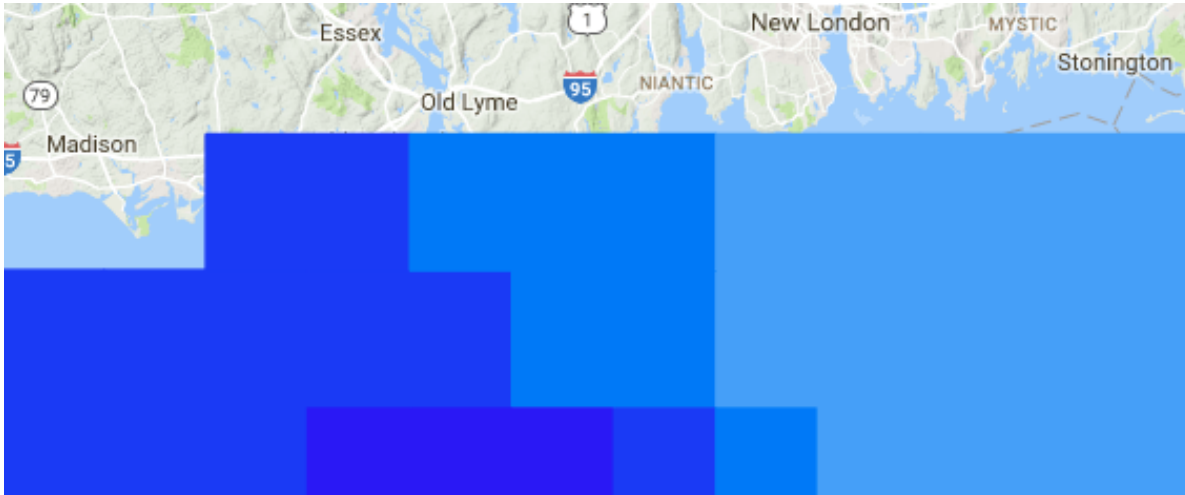
Full Description: https://ezmt.anl.gov/layer/235/metadata_file

Access Instructions: Go to <https://ezmt.anl.gov/mapping/viewer> (you will need to create an account). Under the Main Menu, click the Library icon and add the Wave Energy – Power Density layer.

Wave Energy – Energy Period

(Energy Zones Mapping Tool)

Source: National Renewable Energy Laboratory, Electric Power Research Institute, Virginia Tech



Wave Energy - Energy Period

Annual

- < 3 (sec)
- 3 - 4
- 4 - 5
- 5 - 6
- 6 - 7
- 7 - 8
- 8 - 9
- 9 - 10
- 10 - 11
- 11 - 12
- > 12

Wave Energy – Energy Period

Blue Plan Sector(s): Energy & Minerals > Renewables > Tidal & Wave

Summary Description: This data is representing Wave Energy Period. Bathymetric effects are known to have a large effect on wave characteristics at depths shallower than approximately 20m (~65 ft) on the Atlantic coast and 50 m (~160 ft) on the Pacific coast. A variance between depths exists due to the feature differences for each continental shelf. The methodology used in this resource assessment precludes providing site-specific information to such developers. Reliable site-specific information in shallow waters can only be produced using results from models with higher spatial resolution that include shallow-water physics. The wave resource assessment group acknowledges that its results will not be accurate in the shallower waters of the inner continental shelf. These shallow water regions are located within the dark gray boundaries on the map.

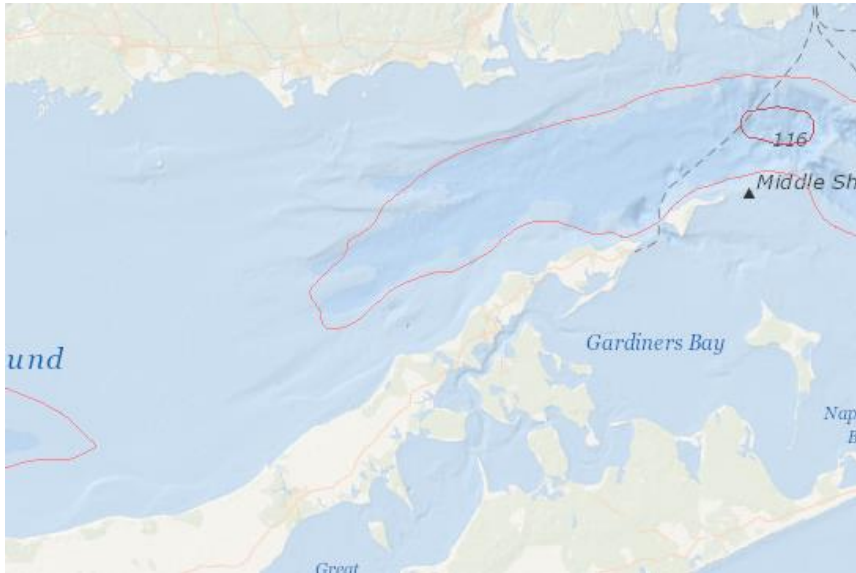
Full Description: https://ezmt.anl.gov/layer/234/metadata_file

Access Instructions: Go to <https://ezmt.anl.gov/mapping/viewer> (you will need to create an account). Under the Main Menu, click the Library icon and add the Wave Energy – Energy Period layer.

Offshore Wind Technology Zones

(Mid-Atlantic Ocean Data Portal)

Source: NOAA Office for Coastal Management



- Shallow Zone (30 m)
- Transition Zone (60 m)
- Deepwater Zone (900 m)

Offshore Wind Technology Zones

Blue Plan Sector(s): Energy & Minerals > Renewables > Wind

Summary Description: Coastal bathymetric depth, measured in meters at depth values of: -30, -60, -900 Shallow Zone (0-30m): Technology has been demonstrated on a commercial scale at these depths. Foundation types include monopile, gravity base and suction buckets designs. Transition Zone (30-60m): Technology has not been demonstrated on a commercial scale at these depths but several small scale projects have been successfully installed and commissioned at these depths Foundation types include tripod, jacket and tripile designs. Deepwater Zone (60 - 900m): Technology has not been demonstrated on a commercial scale at these depths but several pilot projects have been successfully demonstrated. Foundation types include spar, semi-submersible and tension leg platform designs.

Full Description:

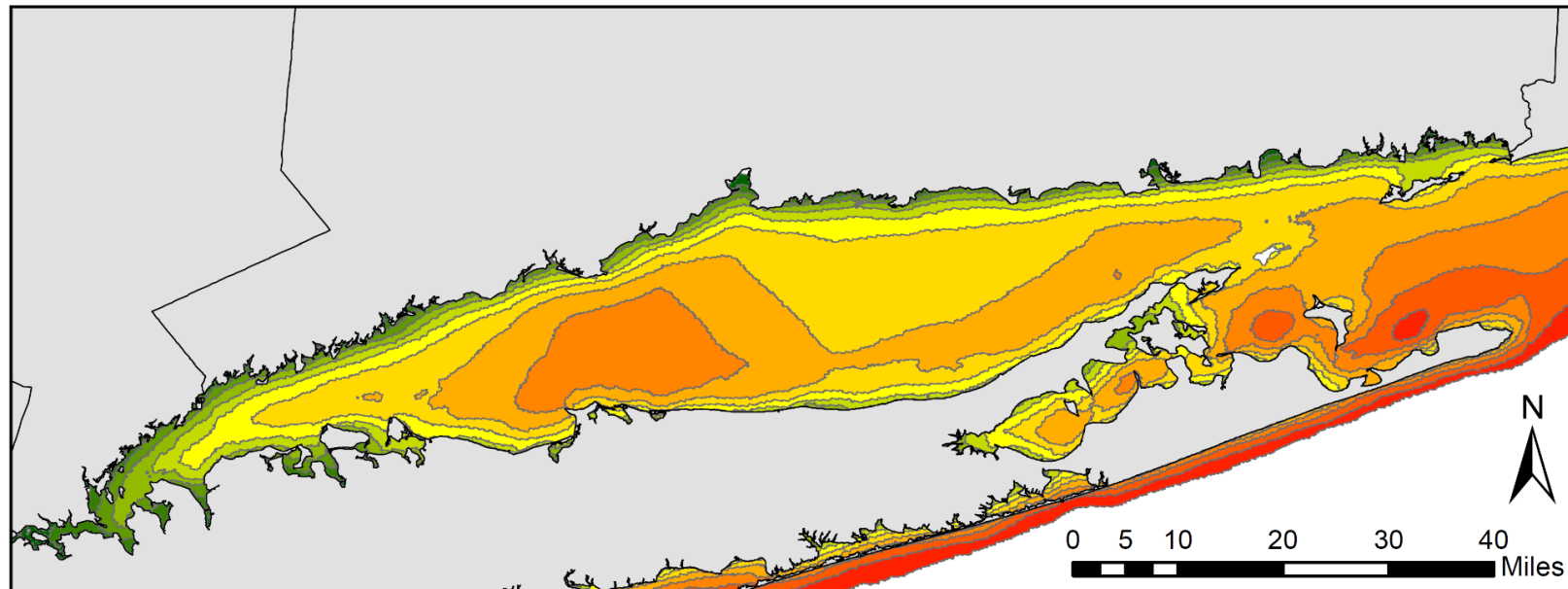
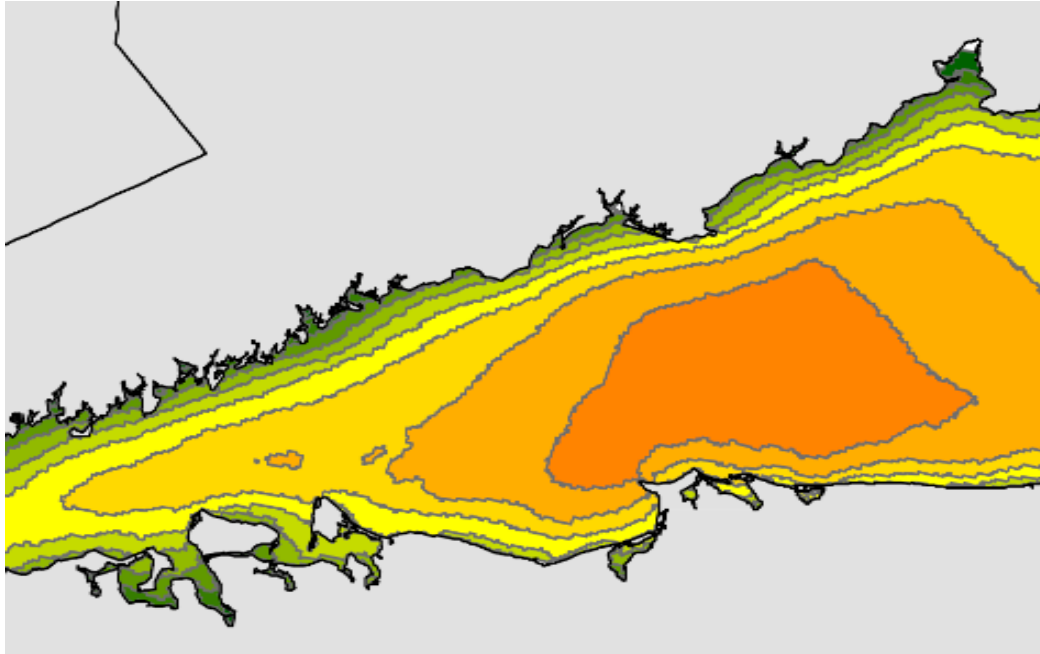
<https://coast.noaa.gov/dataservices/Metadata/TransformMetadata?u=https://coast.noaa.gov/data/Documents/Metadata/harvest/MarineCadastre/OffshoreWindTechnologyDepthZones.xml&f=html>

Access Instructions: Go to <http://portal.midatlanticocean.org/visualize/>. Go to Renewable Energy > Offshore Wind Energy Technology Zones

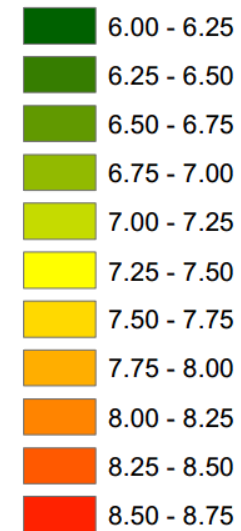
Offshore Wind Speed 90m

(National Renewable Energy Laboratory)

Source: National Renewable Energy Laboratory, Atlantic Coast 90-m Windspeed Offshore Wind
(Updated: 06/26/2012 from original 2010 data)



Offshore Wind Speed 90m (m/s)



Offshore Wind Speed 90m

Blue Plan Sector(s): Energy & Minerals > Renewables > Wind

Summary Description: This layer represents the predicted mean annual wind speeds at 90-m height presented at a spatial resolution of 200 m. Areas with annual average wind speeds of 7 meters per second (m/s) and greater at 90-m height are generally considered to have a wind resource suitable for offshore development.

Full Description: More information on the characteristics and validation methods can be found in the report “Assessment of Offshore Wind Energy Resources for the United States”:

<https://www.nrel.gov/docs/fy10osti/45889.pdf> (2010 Report)

<https://www.nrel.gov/docs/fy16osti/66599.pdf> (2016 Report)

Also see https://ezmt.anl.gov/layer/153/metadata_file for more information on very similar data from 2010.

Access Instructions: Map product downloaded from GIS data downloadable from:

<https://www.nrel.gov/gis/data-wind.html>. Very similar data from 2010 can be found by going to <https://maps.nrel.gov/wind-prospector/>. Go to Data Layers > Wind Resource > Offshore Wind Speed 90m.