Cabling Resources

The following is a list of publicly available online resources and education materials related to submarine cable installation and operations.

COWI has no direct control over the content of any linked websites, or the changes that may occur to the content on those websites. Links to external websites are provided in good faith, but it is the responsibility of the user to make their own decisions about the accuracy, currency, comprehensiveness, reliability and correctness of information contained in linked external websites. Links to external websites do not constitute an endorsement or a recommendation of any material on those websites or of any third party products or services offered by, from or through those websites. Users of links provided by this website are responsible for being aware of which organization is hosting the website they visit.

NYSERDA and Technical Working Group Publications:

* Offshore Wind Submarine Cabling (Learning from the Experts), NYSERDA webinar, [Offshore Wind Submarine Cabling (Learning from the Experts) - YouTube](https://www.youtube.com/watch?v=Cr4QTBcXW_c)
* Offshore Wind Submarine Cabling Overview, Fisheries Technical Working Group, April 2021, [Offshore Wind Submarine Cabling Overview (nyftwg.com)](https://www.nyftwg.com/wp-content/uploads/2021/05/Offshore-Wind-Submarine-Cable-Report.pdf)
* Anchor Strike Study, Maritime Technical Working Group, March 2022, [Maritime Technical Working Group Support (nymtwg.com)](https://www.nymtwg.com/wp-content/uploads/2023/02/MTWGAnchorPenetrationandStrikes_FinalReport_2021.pdf)

International Cable Protection Committees:

* International Cable Protection Committee, [International Cable Protection Committee (ICPC) (iscpc.org)](https://www.iscpc.org/)
* Danish Cable Protection Committee, [Home - dkcpc](https://dkcpc.dk/)

International Maintenance Agreements:

* Atlantic Cable Maintenance & Repair Agreement, [Atlantic Cable Maintenance & Repair Agreement (ACMA) (acma2017.com)](https://www.acma2017.com/)
* Mediterranean Cable Maintenance Agreement, [Home (mecmamc.org)](https://www.mecmamc.org/public/)
* Yokohama Zone, [Yokohama Zone](http://yokohamazone.com/index.php)

International Cable Associations:

* North Atlantic Submarine Cable Association (NASCA), [Home - NASCA (n-a-s-c-a.org)](http://www.n-a-s-c-a.org/)
* European Subsea Cables Association (ESCA), [European Subsea Cables Association (ESCA) (escaeu.org)](https://www.escaeu.org/)
* Oceania Submarine Cable Association (OSCA), [- OSCA (oscagroup.com)](http://www.oscagroup.com/)
* SubOptic Association, [SubOptic](https://suboptic.org/)
* International Seabed Authority (ISA), [About ISA – International Seabed Authority](https://www.isa.org.jm/about-isa/)

United States Agency Information:

* Federal Communications Commission, <https://www.fcc.gov/>
  + Submarine Cable Landing Licenses, [Submarine Cable Landing Licenses | Federal Communications Commission (fcc.gov)](https://www.fcc.gov/research-reports/guides/submarine-cable-landing-licenses)
  + Cable Landing License Act & Executive Order No. 10530, [Cable Landing License Act | Federal Communications Commission (fcc.gov)](https://www.fcc.gov/cable-landing-license-act)
  + Submarine Cables, information, [Submarine Cables | Federal Communications Commission (fcc.gov)](https://www.fcc.gov/submarine-cables)
  + Circuit Capacity Data for U.S.-International Submarine Cables, [Circuit Capacity Data for U.S.-International Submarine Cables | Federal Communications Commission (fcc.gov)](https://www.fcc.gov/international/circuit-capacity-data-us-international-submarine-cables)
* Public Safety and Homeland Security Bureau (PSHSB)/Communications Security, Reliability and Interoperability Council (CSRIC)
  + Working Group 8 Submarine Cable Routing and Landing, Final Report – Protection of Submarine Cables Through Spatial Separation, Dec. 2014, [CSRIC\_IV\_WG8\_Report1\_3Dec2014.pdf (fcc.gov)](https://transition.fcc.gov/pshs/advisory/csric4/CSRIC_IV_WG8_Report1_3Dec2014.pdf)
  + Working Group 4A Submarine Cable Resiliency, Final Report – Interagency and Interjurisdictional Coordination, June 2016, [WG4A\_Report-Intergovernmental-Interjurisdictional-Coordination\_June2016.pdf (fcc.gov)](https://transition.fcc.gov/bureaus/pshs/advisory/csric5/WG4A_Report-Intergovernmental-Interjurisdictional-Coordination_June2016.pdf)
  + Working Group 4A Submarine Cable Resiliency, Final Report – Clustering of Cables and Cable Landings, [WG4A\_Final\_091416.pdf (fcc.gov)](https://transition.fcc.gov/bureaus/pshs/advisory/csric5/WG4A_Final_091416.pdf)
* U.S. Department of the Interior, Bureau of Ocean Energy Management (BOEM), [BOEM Homepage | Bureau of Ocean Energy Management](https://www.boem.gov/)
  + Fishing and Offshore Renewable Energy Frequently Asked Questions, [Fishing and Offshore Renewable Energy Frequently Asked Questions | Bureau of Ocean Energy Management (boem.gov)](https://www.boem.gov/renewable-energy/state-activities/fishing-and-offshore-renewable-energy-frequently-asked-questions)
  + Renewable Energy, Regulatory Framework and Guidelines, [Regulatory Framework and Guidelines | Bureau of Ocean Energy Management (boem.gov)](https://www.boem.gov/renewable-energy/regulatory-framework-and-guidelines)
  + Renewable Energy, Survey Guidelines For Renewable Energy Development, [Survey Guidelines For Renewable Energy Development | Bureau of Ocean Energy Management (boem.gov)](https://www.boem.gov/renewable-energy/survey-guidelines-renewable-energy-development)
  + Information Guidelines for a Renewable Energy Construction and Operations Plan (COP), May 2020, [Information Guidelines for a Renewable Energy Construction and Operations Plan (boem.gov)](https://www.boem.gov/sites/default/files/documents/about-boem/COP%20Guidelines.pdf)
  + Development of Mitigation Measures to Address Potential Use Conflicts between Commercial Wind Energy Lessees/Grantees and Commercial Fishermen on the Atlantic Outer Continental Shelf: Report on Best Management Practices and Mitigation Measures, July 2014, [Fishing-BMP-Final-Report-July-2014.pdf (boem.gov)](https://www.boem.gov/sites/default/files/renewable-energy-program/Fishing-BMP-Final-Report-July-2014.pdf)
  + Observing Cable Laying and Particle Settlement During the Construction of the Block Island Wind Farm. BOEM OCS Study 2017-027 pursuant to Contract No. M15PC00002, March 2017, [5596.pdf (boem.gov)](https://espis.boem.gov/final%20reports/5596.pdf)
  + ICF. 2020. Comparison of Environmental Effects from Different Offshore Wind Turbine Foundations. U.S. Dept of the Interior, Bureau of Ocean Energy Management: Sterling, VA. [Comparison of Environmental Effects from Different Offshore Wind Turbine Foundations (boem.gov)](https://www.boem.gov/sites/default/files/documents/environment/Wind-Turbine-Foundations-White%20Paper-Final-White-Paper.pdf)
  + Normandeau Associates, Inc., Exponent, Inc., T. Tricas, and A. Gill. 2011. Effects of EMFs from Undersea Power Cables on Elasmobranchs and Other Marine Species. U.S. Depth. Of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2011-09. <https://espis.boem.gov/final%20reports/5115.pdf>
  + Snyder, D., W. Bailey, K. Palmquist, B. Cotts, and K. Olsen. 2019. Evaluation of Potential EMF Effects on Fish Species of Commercial or Recreational Fishing Importance in Southern New England. U.S. Dept. of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2019-049. [Evaluation of Potential EMF Effects on Fish Species of Commercial or Recreational Fishing Importance in Southern New England (pnnl.gov)](https://tethys.pnnl.gov/sites/default/files/publications/Snyderetal2019.pdf)
* U.S. Department of Interior Bureau of Safety and Environmental Enforcement
  + Offshore Wind Submarine Cable Spacing Guidance, <https://www.bsee.gov/sites/bsee.gov/files/tap-technical-assessment-program/722aa.pdf>
  + Sharples, M. 2011. Offshore Electrical Cable Burial for Wind Farms: State of the Art, Standards and Guidance and Acceptable Burial Depths, Separation Distances and Sand Wave Effect. Bureau of Ocean Energy Management. [https://www.bsee.gov/sites/bsee.gov/files/tap-technical-assessment-program/final-report-offshore-electrical-cable-burial-for-wind-farms.pdf (bsee.gov)](https://www.bsee.gov/sites/bsee.gov/files/tap-technical-assessment-program/final-report-offshore-electrical-cable-burial-for-wind-farms.pdf)
* U.S. Department of Energy Office of Energy Efficiency & Renewable Energy
  + Best, B., Kilcher, L., Submarine Cable Analysis for U.S. Marine Renewable Energy Development, National Renewable Energy Laboratory, Technicpa Report NREL/TP-5000-71125, November 2019 NREL, [Submarine Cable Analysis for US Marine Renewable Energy Development (nrel.gov)](https://www.nrel.gov/docs/fy20osti/71125.pdf)
  + Manhar, D., Effects of EMF Emissions from Cables and Junction Boxes on Marine Species, [Effects of EMF Emissions from Cables and Junction Boxes on Marine Species (energy.gov)](https://www.energy.gov/sites/prod/files/2017/03/f34/effects-emf-emissions-from-cables-junction-boxes.pdf)
* Federal Energy Regulatory Commission (FERC), [Home Page | Federal Energy Regulatory Commission (ferc.gov)](https://www.ferc.gov/)
* U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), [Submarine Cables | National Oceanic and Atmospheric Administration (noaa.gov)](https://www.noaa.gov/submarine-cables)
  + NOAA, Submarine Cables – Domestic Regulation, [Submarine Cables - Domestic Regulation | National Oceanic and Atmospheric Administration (noaa.gov)](https://www.noaa.gov/gc-international-section/submarine-cables-domestic-regulation)
* U.S. Department of Defense, U.S. Army Corps of Engineers (Army Corps), Regulatory Program and Permits, [Civil Works Regulatory Program and Permits (army.mil)](https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/)

United States Undersea Cable Mapping Sources:

* U.S. Navy, Naval Seafloor Cable Protection Office, [Naval Sea Floor Cable Protection Office (navy.mil)](https://www.navfac.navy.mil/Business-Lines/Design-and-Construction/Products-and-Services/NAVFAC-Ocean-Facilities-Office/Naval-Sea-Floor-Cable-Protection-Office/)
* Marine Cadastre, <https://marinecadastre.gov/>
* North American Submarine Cable Association (NASCA), [Cable Maps - NASCA (n-a-s-c-a.org)](http://www.n-a-s-c-a.org/cable-maps/)
* National Oceanic and Atmospheric Administration (NOAA), [NOAA Charted Submarine Cables | InPort](https://www.fisheries.noaa.gov/inport/item/57238)
* NOAA Fisheries. 2020a. 2019 Commercial & Recreational Landings: New York. Available online at: [HOME (noaa.gov)](https://www.fisheries.noaa.gov/foss/f?p=215:200:8817814928460:Mail::::)

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* Seaway Offshore Cables video, [Submarine Cable Installation Works on Nordsee One OWF - YouTube](https://www.youtube.com/watch?v=3NJQZmHWQSo&t=210s)
* Boskalis subsea cable installation videos, [Subsea cable installation | Boskalis](https://boskalis.com/activities/offshore-energy/offshore-wind-farm-installation/subseacables)
* Nexans Aurora Subsea Cable Installation Vessel video, [Meet Nexans Aurora! - YouTube](https://www.youtube.com/watch?v=L_pROFi83Hc)
* Prysmian Group Installation Capabilities – Hydroplow video, [Prysmian Group Installation Capabilities - Hydroplow - YouTube](https://www.youtube.com/watch?v=TkTqpIooDhw&t=2s)
* Royal Institution of Naval Architects, Cable Installation - Risk Identification from Vessel Selection to Cable Laying and Burial, AqualisBraemar LOC, [Cable installation - Risk Identification from Vessel Selection to Cable Laying and Burial - YouTube](https://www.youtube.com/watch?v=K6uXJgZY6-4)
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* Kingfisher Information Service, [Homepage | KIS-ORCA](https://kis-orca.org/)
* TeleGeography, Submarine Fibre Optic Cable Map, [Submarine Cable Map](https://www.submarinecablemap.com/)
* Brake, D. 2019. Submarine Cables: Critical Infrastructure for Global Communications. Prepared for the Information Technology and Innovation Foundation. Available online at: [2019-submarine-cables.pdf (itif.org)](https://www2.itif.org/2019-submarine-cables.pdf)
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