Naval power and energy systems technology development roadmap

What is the naval power & energy systems technology development roadmap?
The following is the Naval Power and Energy Systems Technology Development Roadmap, the Naval Sea Systems Command's strategy to meet future weapon and sensor systems power requirements. The document was released June 26. Today, the U.S. Navy is on the cusp of revolutionary changes in how warfare at sea is conducted.

What are the long-term trends leading the development of naval power systems?
This TDR proposes multiple paths to continue providing targets in the face of uncertainty. Long term trends directly leading the development of Naval Power Systems are expected to continue. In general,they are: Navy platforms will require more electric power,on demand,to meet the needs of ever improving mission systems.

What is the prime mover product area for naval power systems?
The prime mover product area for naval power systems focuses primarily on diesel engines and gas turbines. Energy recovery and fuel cells are also discussed. Steam turbine prime movers for naval nuclear propulsion applications are not within this roadmap's purview.

How will naval power conversion technology influence the selection of interfaces?
However, the concepts and underlying technologies, such as advance power electronic devices, transformers, converter topologies and control philosophies, and passive filtering improvements developed by industry will provide the basis for naval power conversion equipment and should influence the direction the Navy goes in selection of interfaces.

Does low voltage power distribution still exist in naval power systems?
While low voltage power distribution equipment will still existwithin naval power systems,this discussion on distribution is focused on medium voltage 1-13.8KVAC or 1-20kVDC equipment to support emerging higher power needs (discussed in sections IV and VI).

This document provides a roadmap for developing naval power systems technologies over the next 30 years to support future Navy capabilities. It identifies emerging requirements driven by advanced weapons, sensors, and energy security needs. The near-term focus is on developing an energy magazine and energy recovery technologies. The mid-term introduces new ship ...

Naval Sea Systems Command (NAVSEA) released the Naval Power and Energy Systems Technology Development Roadmap (NPES-TDR) providing an evolutionary strategy to meet future weapon and sensor systems power requirements, June 26 veloped by ...

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The Navy is looking at a variety of new propulsion systems -- from gas turbines to electric engines -- that will get surface ships where they need to go, and give them the energy they need to power new weapon systems. Naval Sea Systems Command released in 2019 the "Naval Power and Energy Systems Technology Development Roadmap," which ...

Released in late June, the 2019 Naval Power and Energy Systems Technology Development Roadmap (NPES TDR) is intended to guide the development of integrated power and energy systems to meet the need of the legacy fleet, ships currently in build, and the US Navy"s Future Surface Combatant Force.

Naval power and energy systems are described in detail in the 2019 Naval Power and Energy Systems Technology Development Roadmap (NPES TDR). The NPES TDR focuses and aligns the power system investments for the Navy, Defense Department, industry and academia to guide future research and development investments to enable the Navy to ...

Abstract : The need for integrated power systems will increase in the coming decades with the increased projected propulsion and ship service power demands for future combatants with advanced sensors and weapons such as railguns and lasers. Integrated propulsion systems will also benefit the signature performance of future submarine classes. ...

In June 2020 NAVSEA published a Naval Power and Energy Systems Technology Development Roadmap that proposed strategies for expanding ship power capacity to support the power-hungry SPY-6(v) radar ...

5 days ago· On June 26, 2019 Naval Sea Systems Command released the Naval Power and Energy Systems Technology Development Roadmap (NPES-TDR) "providing an evolutionary strategy to meet future weapon and sensor systems power requirements." ... Naval power and energy systems technology development roadmap. June 26, 2019

Naval Sea Systems Command (NavSea) has stepped up the pace of developing and testing power generation and management technologies for surface ships and submarines, following the release in June 2019 of the Naval Power and Energy ...

Next Generation Integrated Power System: NGIPS Technology Development Roadmap 5a. CONTRACT NUMBER 5b. GRANT NUMBER 5c. PROGRAM ELEMENT NUMBER 6. AUTHOR(S) 5d. PROJECT NUMBER 5e. TASK NUMBER 5f. WORK UNIT NUMBER 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Sea Systems ...

On 6/18/24 Naval Sea Systems Command issued Sources Sought N00024-24-I-4144 for Naval Power &

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Energy Systems Technology Development Roadmap (NPES TDR) Update due 10/10/24. The opportunity was issued full & open with NAICS 335311 and PSC 1905.

Naval Power & Energy Systems (NPES) Technology Development Roadmap (TDR): - ESO developments are aligned with the Navy"s 30 year shipbuilding plan via the Naval Power and Energy Systems Technology Development Roadmap, which outlines the way ahead for future developments and provides a basis for coordinated planning and investment by the Navy and ...

The need for integrated power systems will increase in the coming decades with the increased projected propulsion and ship service power demands for future combatants with advanced sensors and ...

Download scientific diagram | Integrated Power and Energy System IPES is described in the 2015 U.S. Naval Power and Energy Systems Technology Development Roadmap (NPES TDR) as "an advanced power ...

Subsea & Seabed Power - The Naval needs in the undersea domain are growing and the means for powering platforms, sensors, and systems by understanding and utilizing the physics of the seabed and water column is ongoing and the interests are expanding. Several seabed energy conversion efforts are underway, and more attention is needed to areas that are unexplored to ...

WASHINGTON - Naval Sea Systems Command (NAVSEA) released the Naval Power and Energy Systems Technology Development Roadmap, providing an evolutionary strategy to meet future weapon and sensor systems power requirements, June 26, the command said in a release of the same date.. Developed by the Electric Ships Office within Program ...

High on the list for the years to 2025 is the full-scale demonstration of the energy magazine concept introduced in the previous roadmap - a common, modular and scalable intermediate power system for use across multiple mission systems and ship installations. Development goals over the period include advanced medium voltage DC circuit ...

In the Navy"s 2019-2037 technology development roadmap for naval power and energy systems (NPES), it calls naval electrification "a critical part of the kill chain" based on its electrification needs for high-power radars and networks, directed-energy weapons for counter-unmanned systems and missiles, and prime mover propulsion for silent ...

WASHINGTON --- Naval Sea Systems Command (NAVSEA) released the Naval Power and Energy Systems Technology Development Roadmap (NPES-TDR) providing an evolutionary strategy to meet future weapon and sensor systems power requirements, June 26.

The Navy recently produced a Next Generation Integrated Power System (NGIPS) Technology Development Roadmap that establishes the Navy"s goal of incorporating a Medium Voltage DC (MVDC) Integrated ...

roadmaps--a Naval Power Systems (NPS) Science and Technology (S& T) Roadmap, an Expeditionary Energy (E2) S& T Roadmap, and a Naval Diversity Equity and Inclusion Workforce Development (NDEI-WD) Roadmap. "This assessment of needs for both technology and workforce development will help to inform the Office of Naval Research"s

Naval Power and Energy Systems Technology Development Roadmap (NPES TDR) is intended to guide the development of integrated power and energy systems to meet the need of the legacy eet, ships currently in build, and the US Navy s Future Surface Combatant Force. Written by the Electric Ships O ce (PMS 320) within Programme Executive O ce

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