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A Matter of National Security

- America's Most Closely Guarded National Secret Is the World's Ultimate Energy Solution

FROM THE DESK OF PORTER STANSBERRY

SPECIAL REPORT

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A Matter of National Security

America's Most Closely Guarded National Secret Is the World's Ultimate Energy Solution

The boys' scrotums were rotting off.

In 1776, surgeon Percivall Pott documented the first known environmental cancer. London's chimney sweeps were suffering gruesome lesions on the bottom of their scrotums. And, along with the growth of coal as a fuel source, the incidence of the disease was soaring.

Dr. Pott recognized the carcinomas. They were similar to lesions suffered by Persian traders, who also used coal as a fuel source. They carried coal braziers between their legs on top of their camels to stay warm.

London's chimney sweeps, who typically worked in the nude, were exposing their scrotums to cancerous soot and creosote. The toxic coal ash would collect in their sweat and then pool in the folds of their scrotums. The result was a terrifying cancer, squamous cell carcinoma. And the cure was gruesome: surgery, without anesthesia. The survivors' lives were much less enjoyable… and "productive."

Just imagine how much more successful the Neo-Malthusians at the Sierra Club and the other anti-human, radical environmental groups would be today if they could credibly claim using natural gas would make your children's balls rot off. It seems like a more existential threat than "global warming," doesn't it? Or maybe they could find a Nordic teenager to scold you that heating your home was making poor people's balls fall off. Just imagine the wealth-gap angst among the mask-wearing set!

But, in London in the 1700s, kids were actually losing their scrotums so that others could burn coal. Why would anyone risk their balls to clean chimneys…? Because coal, as the ascendant, abundant, and cheap form of energy, was England's life force.

As the British Isles were gradually deforested in the 1500s, coal began to replace wood as the cheapest source of energy. Beginning in 1600, shipments of coal into London grew exponentially from only 35,000 tons in 1600 (when it was used by royalty to heat castles) to 467,000 tons in 1700 (+1,234%) as it became the

dominant fuel source in the city. The dramatic increase in coal production and usage in the 1600s was truly remarkable, considering all of the labor involved in mining and transporting coal. However, there was a good economic reason: coal contains twice as much energy per pound as wood.

By 1800, following the introduction of the steam engine in 1712 (to pump water out of coal mines), the United Kingdom was producing an astonishing 10 million tons of coal (+2,041% in 100 years). Production would peak around 1900 at almost 300 million tons per year (+3,000% in 100 years).

Along with coal – a seemingly endless and more dense energy source – came a vastly larger population, a population unimaginable in history, prior to the motorization of coal production. For almost a thousand years (between 100 AD and 1000 AD), London's population remained around 50,000. It took another 500 years to double from there, to 100,000 by 1500. It then doubled again, to 200,000 by 1600, as virtually all of the forests were consumed.

The 1600s in England, and the half-million population barrier, was the first real "limit to growth," which the Malthusians always predict are sure to doom humanity.

And they were right, for a while.

In 1665, the Great Plague struck London. It was the worst outbreak of the bubonic plague since the Black Death in 1348. More than 100,000 people died. The plague left London at, more or less, the same population as in 1300. Malthus would have claimed victory.

But with the advent of the Newcomen engine in 1712 came cheap coal. London's population grew to a million by 1800, roughly four times more people than the city had previously been able to support. Then came railroads (to transport coal) and better steam engines. As coal production soared, so did London's population. Historically, the largest cities had always been in China, where urban populations topped out at about 1 million. But, by 1900, 6.5 million people lived in London, making it the largest city ever.

No question, coal is dirty and dangerous. London saw almost 4,000 people die in a week from a deadly coal smog in December 1952. Many of China's cities still face such risks.

Is it worth it? Only if you like people, prosperity, and wealth. It was coal that enabled London's population to soar. And it was demand for ever more coal that led to the industrial revolution via the development of steam engines and railroads. It all started with energy – coal.

And guess what...? Even now, 500 years later, coal is still the dominant source of energy in the world and thus the foundation of human life. Over the last 22 years, more than 1.4 thousand gigawatts of new coal-fired capacity has come online, almost all of it in India or China. To put that in perspective, that's more new coal fired power in the last 20 years than America's total installed base of all forms of power generation (1.2 gigawatts).

Additional new, coal-fired electrical production peaked most recently in 2015, with 107 gigawatts of new capacity coming online that year. Coal will be with us, as the leading energy source globally, for at least the next 30 years.

Sorry, snowflakes, dirty energy is never going away. Instead, technologies have been, and will continue to be, developed to make coal (and other fossil fuel energy sources) cleaner and safer.

Environmentalism is the New Fascism

The modern environmental movement began following World War II as a reaction against nuclear power and modern chemistry.

Rachel Carsons's Silent Spring, written as she was being treated with toxic chemicals for breast cancer, and Paul Ehrlich's Population Bomb (which sold over 2 million copies), are two seminal works from that era. They argued (wrongly) that Earth could not support its existing human populations and that further growth in human population would lead, inevitably, to ecological and humanitarian disasters. Ehrlich, for example, predicted that rioting for food would lead to the deaths of millions of people by the 1980s.

Many others have followed this path.

Perhaps the greatest political opportunist of the age, Al Gore, won a Nobel Prize in 2007 for his documentary, An Inconvenient Truth. It was one of the greatest hoaxes of all time, featuring a "hockey stick" showing rapidly increasing temperatures. Only problem is that the data was completely made up, as subsequent hacked emails and further studies have proven. Nevertheless, in his acceptance speech, Al Gore didn't hesitate to make shocking predictions. He claimed that the Arctic ice cap was melting away so fast that it would be completely free of ice within seven years:

"Last September 21, as the Northern Hemisphere tilted away from the sun, scientists reported with unprecedented distress that the North Polar ice cap is "falling off a cliff." One study estimated that it could be completely gone during summer in less than 22 years. Another new study, to be presented by U.S. Navy researchers later this week, warns it could happen in as little as 7 years. Seven years from now." Gore also claimed that "Major cities in North and South America, Asia and Australia are nearly out of water due to massive droughts and melting glaciers."

(A far more reasoned and credible view about the earth's climate cycles can be found in **Congressional testimony from Dr. Patrick Moore**, a founder of Greenpeace.)

The danger of such thinking isn't the ridiculous conclusions. As economist Julian Simon proved so eloquently, man is the ultimate resource. Given freedom, protection for property, and a free market, man will continue to expand his ability to create wealth.

Nevertheless, as H.L. Mencken explained, demagogues will always predict doom to gain yet more power over the public. “The whole aim of practical politics is to keep the populace alarmed (and hence clamorous to be led to safety) by menacing it with an endless series of hobgoblins, all of them imaginary.” The danger is how these arguments can lead to radical political decisions that corrupt the free markets and then cause actual disasters.

Look at Germany’s Green Party. It not only pushed to ban coal-fired power plants, it simultaneously banned nuclear power. If you’re going to outlaw 80% of the world’s current power sources… you’ll send your country back to the Stone Age. Not surprisingly, it’s these same folks who are likewise against things like GMO crops and pesticides that vastly increase crop yields, while dramatically reducing chemical pollution.

So… the same folks (the Germans) who thought the Nazis would save them from the Great Depression are now in favor of the radical environmentalists. It’s like they have no sense of irony at all. It’ll be interesting to see how close Germany comes to the “Population Bomb” forecasts with these policies.

And here’s what’s worse.

This same kind of thinking has intruded into investment management. The idea is so-called **“ESG” (environmental, social, and governance) rankings**. These are scores that, like credit ratings, allow money managers to know what industries are, according to the prevailing progressive guidance, “verboten.”

Chances are very good that if you own any kind of mutual fund or 401(k), your capital is being directed away from the industries that are most vital to increasing human life and prosperity. Your assets are, probably, selling America’s oil and gas sector and buying unreliable and expensive solar and wind power. But while snowflake economics are taking over America’s investment committees and corporate boardrooms, there’s one place where it can’t be tolerated.

The Scariest Part of Woke America?

How It Infiltrates The Military

When actual lives are on the line, it’s interesting how priorities come into stark relief.

War, for instance, requires efficient energy that works. Full stop. Sorry, snowflakes. Grab a rifle or shut up.

During the height of the U.S. wars in Iraq and Afghanistan from 2001 - 2010, more than half of U.S. combat casualties were sustained during transport missions. And over 80% of these stemmed from demand for two critical battlefield resources: water and fuel.

Running a military requires a lot of energy. The Department of Defense (DoD) consumes 10 million gallons of fuel per day, and 30 terawatt-hours (TWh) of electricity per year (for perspective, one terawatt-hour is enough to power roughly one million households).

As military technology continues to advance, the energy demands of the modern battlefield will only increase. That spells more opportunities for the enemy to strike vulnerable fuel supply chains, leading to more American lives lost. To address this growing vulnerability, the DoD established the Task Force on Energy Systems for Forward/Remote Operating Bases to find a solution. In August 2016, the task force released a report detailing their findings.

The report began by crossing out the solutions that don't work:

> *The study found alternative energy sources, such as wind, tidal, solar, and other sources, were unlikely to comprehensively meet current or future energy demands for forward operating bases, remote operating bases, and expeditionary forces."*

Let's pause for a moment to appreciate the irony here. While U.S. politicians squander trillions of taxpayer dollars trying to overhaul America's formerly robust electric grid with unreliable wind and solar power, the DoD is running in the opposite direction.

To address the needs of military commanders tasked with winning on the battlefield with a minimal loss of life, snowflake economics and feel-good fantasies like solar and wind power need not apply. That's how the task force settled on the most reliable, high-density energy known to man: nuclear power.

Coal, the original energy behemoth, played a central role in creating civilization as we know it, but it has its downsides: it's dirty and dangerous and, as our chimney sweeps could attest, could turn you into a soprano.

Nuclear power, however, packs a powerful punch with far fewer pitfalls. It is one of mankind's most remarkable achievements – offering a virtually limitless source of reliable, cheap, carbon-free baseload power. If "environmentalists" were actually moral scientists, using technology to build a better life for more people, they would be pounding the table on nuclear power. That they abhor nuclear power above all other solutions tells you all you should need to know about their real purposes.

They aren't saints. They are Nazis, determined to end human civilization as we know it.

Sure, it's a hobby horse for us – calling environmentalists Nazis. But what would cause the deaths of more people? The Nazis, who are largely responsible for World War II, and who are definitely responsible for murdering millions of Jews, caused the deaths of something like 30 million people. If the environmentalists could end coal-fired electricity tomorrow, upon which most humans on this planet depend? Billions would die.

Nuclear power starts with the uranium-235 isotope. Scientists learned to “split” this atom in the 1940s through nuclear fission. The fission reaction unleashes unimaginably larger (1.5-2.5 million times more) amounts of energy per unit of mass compared to coal, oil or natural gas. The fission of a 10-gram (a peanut weighs about a gram) uranium pellet releases as much energy as burning 4,350 gallons of oil… 22 tons of coal… or 590,000 cubic feet of natural gas!

For the DoD, a pebble or so of uranium-235 could replace thousands of fuel-hauling vehicle convoys, potentially saving the lives of countless American troops. It could also be used to power water purification and recycling, and other energy-intensive battlefield requirements. (And of course, the civilian applications of this kind of technology – though less imminent – are beyond mind boggling.)

So, why aren’t we using nuclear energy everywhere?

Here’s the problem – this powerful, efficient energy source is usually chained to unwieldy, giant nuclear power plants that take 10 - 15 years to build and billions of dollars of investment.

Building a full-sized 500 megawatt (MW) nuclear power plant in a battle zone isn’t an option. But what could make sense is harnessing nuclear energy at 1/100th of that scale, providing power to supply the roughly 5 MW required to run the forward operating bases (FOB).

FOBs are small, makeshift military bases used in areas where a physical presence is needed, but where a full-scale military base is impractical. For example, during the war in Afghanistan, the U.S. military built FOBs in areas staffed by a few dozen troops on an isolated mountainside. A reactor to support an FOB would need to be able to be deployed by rail, truck or cargo plane, and small enough to fit inside a 20 by 20-foot shipping container.

The 2016 task force concluded that such a reactor design was possible, and the Department of Defense's Strategic Capabilities Office moved to the next phase – building a prototype.

Project Pele

Project Pele brought together an alphabet soup of government agencies, including the Department of Energy, NASA, the Army Corps of Engineers, the Nuclear Regulatory Commission and the National Nuclear Security Administration. The project's aim: develop a nuclear microreactor for deployment "by road, rail, aircraft, or sea" that was also capable of "quickly being brought on land" and was "inherently safe." Success would be "a strategic game-changer for the United States, both for the DoD and for the commercial sector," according to Project Pele manager Jeff Waksman.

To make this ambitious plan a reality, the DoD enlisted help from the private sector. In March 2020, the DoD launched a two-year design competition for a prototype of the Project Pele microreactor, soliciting bids from a group of top nuclear engineering design firms.

In June 2022, the DoD selected a prototype developed by a public company that's poised to reap a windfall by developing the next phase of nuclear power... one that could revolutionize global electricity production around the world.

Before we talk about the massive new opportunity, let's review this company's highly profitable core business that offers the ultimate recession-proof play. After all, there's one trend we can count on through thick and thin... the growth in the U.S. military budget.

20,000 Leagues Under The Sea

The company tasked with building America's first commercial microreactor also built the world's first portable nuclear reactor... 70 years ago.

Just nine years after testing the first atomic bomb, America harnessed the awesome power of nuclear energy in a portable underwater reactor on board the U.S.S. Nautilus – the world's first nuclear submarine, launched on January 21, 1954 (and named after Captain Nemo's famous science-fiction submarine in 20,000 Leagues Under the Sea).

USS NAUTILUS Launching Ceremony
January 21, 1954

Before the revolution in naval war unleashed by the Nautilus, submarines ran on diesel-electric power trains. These vessels were powered by a large bank of lead-acid batteries, which were charged by diesel engines. The batteries lasted only about 2-3 days before needing a recharge. The diesel engines that charged the batteries required oxygen – which meant that when the batteries depleted, submarines would need to surface in order to draw atmospheric oxygen. Going up to the surface, and emitting hot exhaust fumes, is the last thing that submarines should do if they want to remain undetected.

The Nautilus's S2W Thermal Nuclear Reactor reactor solved these problems. It required no oxygen, generated no external waste, and could travel an almost unthinkable 62,000 miles (that's like circling the earth twice, with 10,000 miles to spare) before needing to replenish its nuclear fuel. Food supplies, rather than fuel, became the limiting factor for submarine voyages. What's more, the nuclear engine generated a monstrous 13,400 horsepower, making it significantly faster and more maneuverable than its diesel-electric peers.

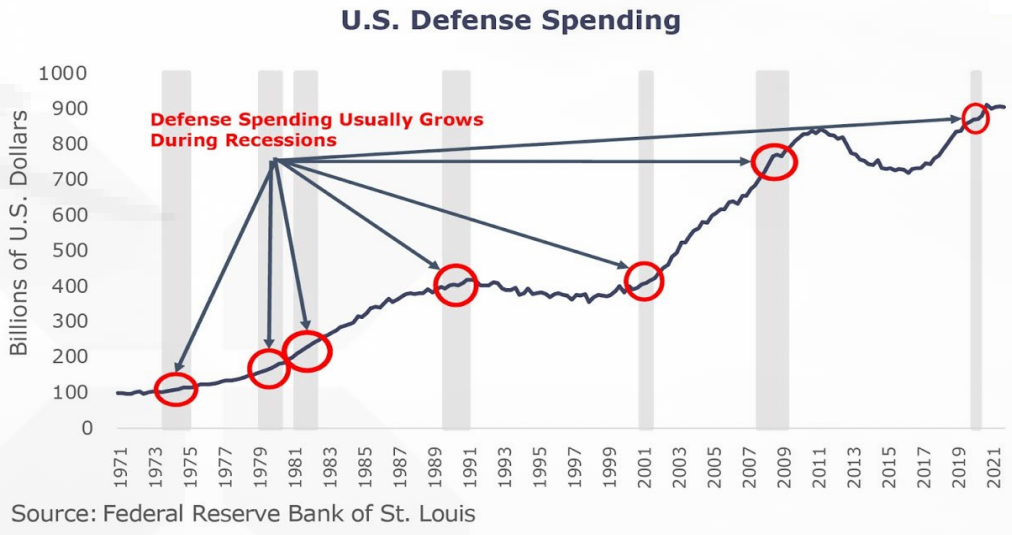
On May 10, 1954 the Nautilus made naval history when it traveled 1,400 miles from Connecticut to Puerto Rico, fully submerged, in less than ninety hours. This shattered records for the longest and fastest submarine cruise, and it rendered obsolete the entire playbook on anti-submarine warfare tactics developed throughout World War II. It also set the stage for America's undisputed naval supremacy for the next 70 years.

The importance of controlling the seas – the conduit for 80% of global trade – has been known since ancient Greek statesman Themistocles famously declared, "He who controls the sea controls everything."

The company that designed and built the components for Nautilus's nuclear reactor was BWX Technologies **(NYSE: BWXT)**. Since then, BWXT has cemented itself as the key supplier of reactor design, components and fuel for America's nuclear navy.

Mr. Monopoly

U.S. defense spending grows even – or especially – during recessions, which makes this defense supplier stalwart a great investment for our current **Minsky moment**.



Source: Federal Reserve Bank of St. Louis

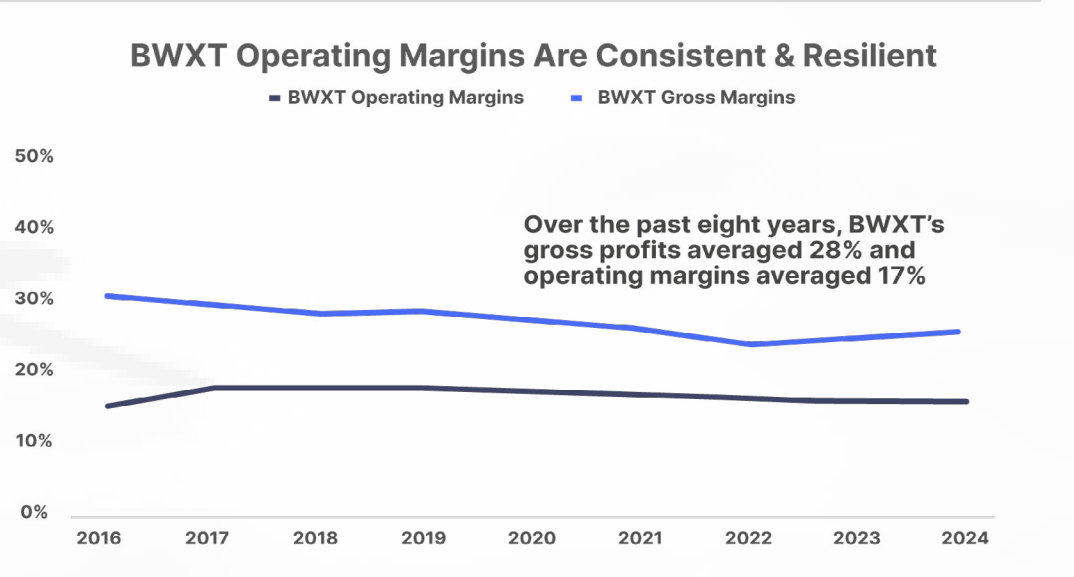
BWXT has been at the forefront of nuclear technology since the birth of the industry. Today it operates four main nuclear business units in the U.S. (BWXT Power, BWXT Nuclear Energy, BWXT Nuclear Operations Group, and BWXT Technical Services Group), as well as the only two commercial plants in the U.S. that process uranium.

Most importantly, BWXT is the sole manufacturer of nuclear reactors and fuel for U.S. military aircrafts and submarines. It's also one of only two providers licensed to store and process HEU (highly-enriched uranium) for these reactors.

The government sector accounts for 80% of BWXT's revenue. And nearly all of its deals with Uncle Sam are carried out via long-term contracts, resulting in a very stable and predictable business and revenue flow.

As a monopoly manufacturer, BWXT can set prices (within reason), and lock in steady profit margins. If a project incurs unexpected cost overruns, BWXT can charge the Navy back fees to make sure it hits its target profit margins. That's how BWXT posts stable profit margins, with very little exposure to swings in the economy from recessions, inflation, or other external factors.

Over the last five years, the economy suffered through a devastating pandemic and economic shutdown, followed by the hottest inflation in the last 40 years. During one of the most turbulent macroeconomic periods in U.S. history, BWXT's business has chugged along with remarkable stability with profit margins:



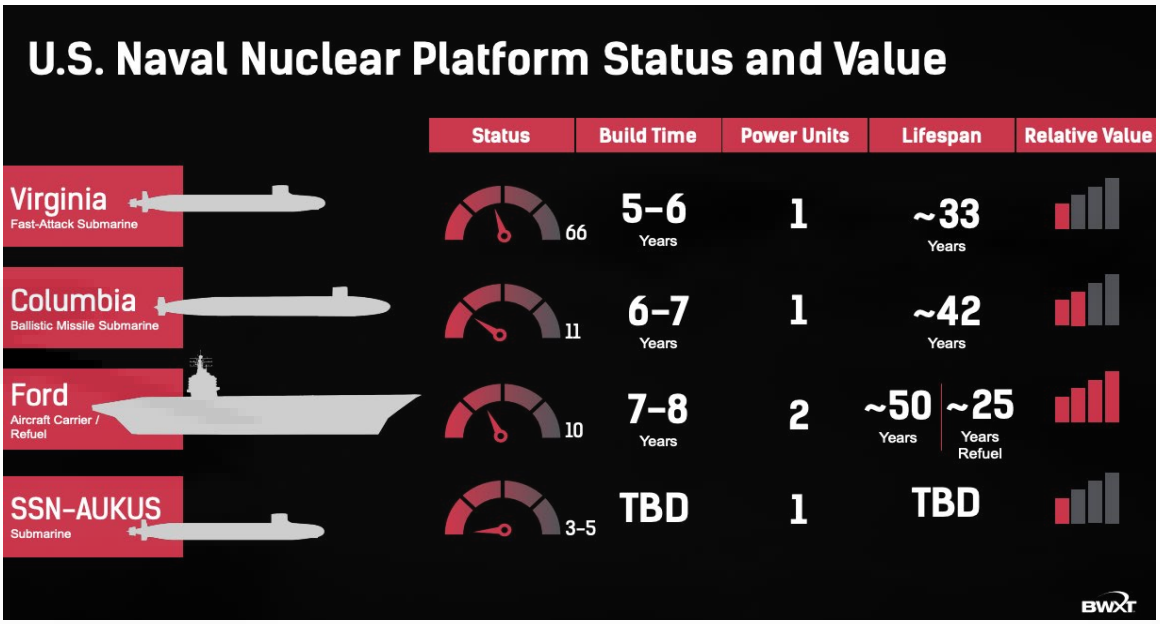
Source: Bloomberg

The business also provides a clear line of sight into the future, based on the full slate of projects BWXT has lined up...

BWXT Is The Navy's "Main Squeeze"

With around 300 active, deployed ships, the U.S. Navy is not the largest in the world by ship count. It is, however, the most powerful naval force thanks to its unmatched fleet of nuclear-powered vessels, including 53 attack submarines, 18 strategic submarines equipped with nuclear warheads, and 11 aircraft carriers.

BWXT is responsible for powering the Navy's submarines and its aircraft carriers. It delivers nearly all of the mechanical equipment in the engine room for the Navy for their nuclear platforms. Below is the fleet of Naval nuclear platforms, as well as the status (number of orders left to fulfill) and the contribution value of each ship when serviced or refueled.



Source: BWXT 2024 Investor Day Presentation

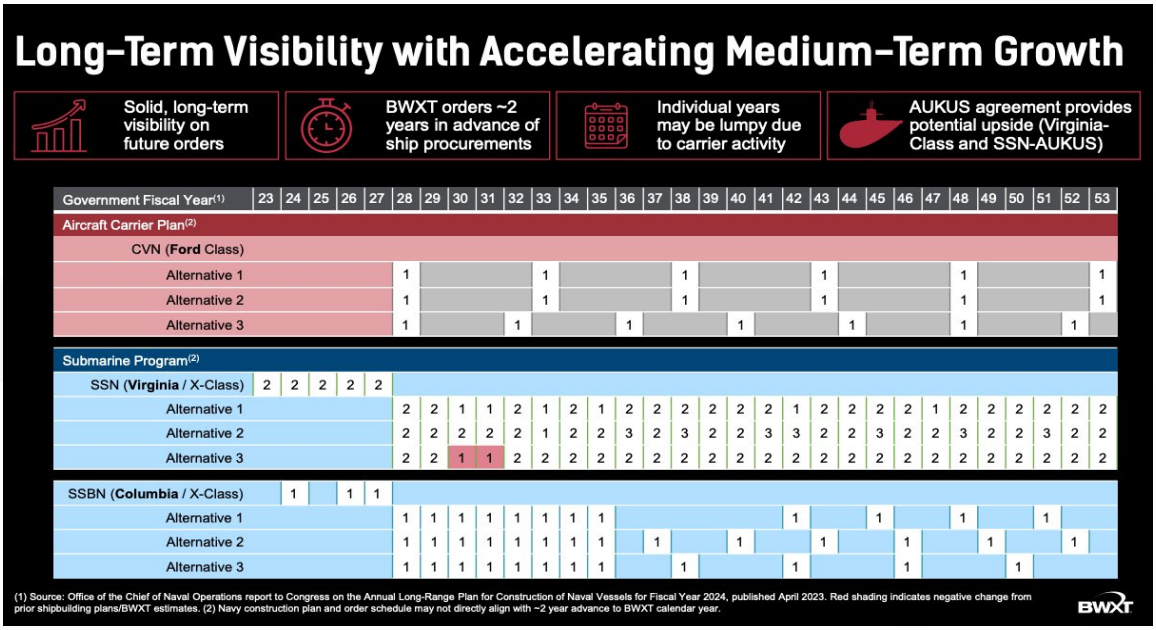
The Virginia, Columbia, and SSN-AUKUS submarines, as well as the Ford aircraft carrier, depend on BWXT, allowing for a long runway of growth for the company over the next five to eight years.

The Virginia and Columbia have life-of-ship power units (meaning they only need one reactor for the life of the vessel), while the Ford has half-life-of-ship power that need to be replaced once after 25 years. The Ford, as seen above in the chart, has the highest relative value followed by the Columbia.

In recent years, the U.S. and its allies have committed to bulking up their nuclear naval fleets in response to growing geopolitical tensions with China and Russia. This includes the trilateral agreement between the U.S., UK, and Australia – known as AUKUS. Starting in 2023, the U.S. and UK began training Australian sailors on the technology and operations of nuclear submarines. The training has set the stage for deliveries of U.S. Virginia-class submarines to Australia in the early 2030s. In the 2040s, the three countries will collaborate to build the next generation of nuclear submarines.

As part of this agreement, BWXT will supply reactor components for 3 – 5 Virginia class submarines to be delivered to Australia starting in the 2030s. BWXT will also play a key role in designing and supplying reactor components for the next-generation submarines developed by AUKUS in the 2040s. BWXT is currently negotiating the pricing for this work.

These contracts provide BWXT visibility into future orders, which BWXT receives two years prior to the shipbuilders' receiving their order. Below are the scheduled programs which BWXT released at its 2024 Investor Day.



Source: BWXT 2024 Investor Day Presentation

Orders from the Ford and the Columbia ramp up in 2028, which directly correlates with future revenue and earnings for BWXT. With the Ford having the greatest impact on BWXT's top and bottom lines, and the Colombia receiving one expected order per year between 2026 and 2035, BWXT's roadmap over the next decade is promising, and poised to translate to growth in earnings.

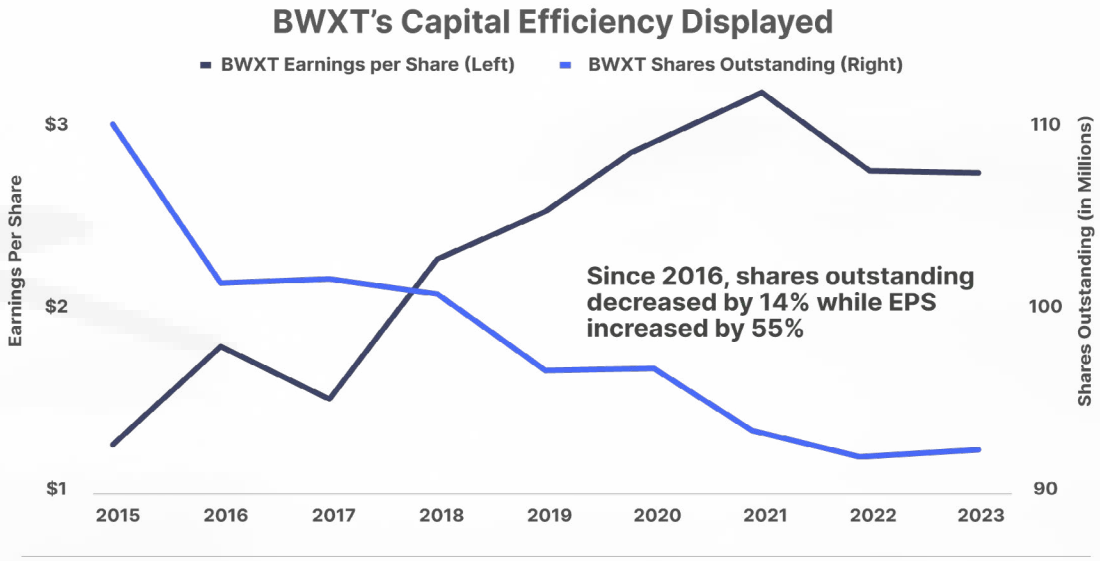
BWXT's margins increase over the time of a contract as it typically realizes cost underruns and optimizes the manufacturing costs over the lifespan of naval nuclear-reactor contracts.

Very Stable Genius

The predictability and stability of BWXT's business is unmatched. It has a near-lock on supplying the Navy with critical nuclear inputs. And demand for new carriers and submarines is based largely on the retirement of the existing fleet, so it's easy to map out what the business will do next. And it's growing apace...

Revenue grew from $1.6 billion in 2016 to $2.5 billion over the last 12 months, while earnings rose from $184 million to $263 million. The company generates roughly $260 million in free cash flow ("FCF") and spends between $100 and $200 million in capital expenditures ("capex") each year. This FCF goes toward a steady buyback program, which has reduced the outstanding share count by 14%, from 105 million in 2016 to 91 million by the end of 2023. (Share buybacks are a tax-efficient way of returning value to shareholders.)

The combination of growing net income and a falling share count has boosted earnings per share ("EPS") from $1.79 in 2016 to $2.78 in 2023.



Source: Bloomberg

The company's balance sheet is conservatively managed, with $1.2 billion in long-term debt, supported by roughly $400 million in annual operating income. So BWXT offers investors a very stable, recession-proof business that's well-positioned to thrive in an uncertain economy.

But by far, the most exciting part of this story will come from BWXT's work on the Project Pele reactor, and its huge upside potential. In June 2023, BWXT won the design competition for the Project Pele reactor prototype, and received a $300 million contract to build a full-scale version.

BWXT's vertically integrated approach gives it a leg up over companies that depend on other countries – like TerraPower, Bill Gates' pet nuclear project, which also features more compact nuclear reactors but unfortunately relies on Russian-produced HALEU fuel. In 2021, TerraPower announced that it will halt operations for two years due to the Ukraine invasion. Now TerraPower isn't expected to generate power until 2030 while fuel supply remains a concern.

BWXT is pioneering "bring-your-own-nuclear" energy, which could rip up the playbook of energy as we know it today.

The Project Pele microreactor received an initial contract of $300 million to deliver up to 5 megawatts of electrical power. But the DoD uses 30 terawatts – that is, 30 million megawatts – of electricity per year, opening the door to enormous revenue growth.

The DoD Strategic Capabilities Office (SCO) partnered with BWXT to build the first advanced nuclear reactor of its kind and further engrains BWXT's role as a critical military supplier, while bolstering BWXT's position as a nuclear power pioneer.

Assuming the first full-sized prototype meets all required specifications (to be determined later in 2024), the initial use case for the DoD involves deployment of these reactors in forward operating bases. There's additional potential for these reactors to be deployed in disaster-relief zones, both domestically and abroad. The reactor could also serve as a "pathfinder" for commercial adoption of such technologies, DoD said.

Explained SCO director Jay Dryer:

> *"The DoD has a long history of driving American innovation, with nuclear power being one of many prominent examples. Project Pele is an exciting opportunity to advance energy resilience and reduce carbon emissions while also helping to shape safety and non-proliferation standards for advanced reactors around the world."*

And maybe beyond earth too. NASA is in the process of developing a human base on the moon, as a precursor to manned Mars exploration. NASA chose BWXT to develop the nuclear-based propulsion systems for that program, called Artemis.

Since the beginning of Europe's energy crisis, it's been obvious that the world will eventually vastly increase its use of nuclear power. Technology and humanityconsistently evolve toward more dense forms of energy. And with each evolution of power technology, human wealth grows exponentially.

The next 50 years will almost certainly be the age of nuclear power. There are virtually unlimited applications for the small, safe, and portable reactors that BWXT builds – and we believe the enormous energy demands of AI will be foregrounded.

For now though, BWXT offers a stable business model that's recession-resistant, a durable competitive advantage, and the upside kicker of advancing small modular nuclear reactors, first to the military, and potentially to the world.

Just how big of an upside kicker?

The first reactor will cost $300 million. But BWXT will benefit from economies of scale that cut costs over time. A rough estimate suggests BWXT could get costs down to anywhere between $100 and $200 million. If BWXT sells 150 reactors at $100 million to $200 million apiece, that translates into $15 billion to $25 billion in new revenue. For a company with a current market capitalization of $9 billion, that's a powerful upside catalyst.

BWXT plans to complete construction and deliver the first full-sized Pele reactor sometime in the next year. It will then undergo a series of tests at the Idaho National Laboratory to ensure it meets DoD specifications. Until these test results come in, we can't know exactly how much future demand will exist, if any. But if the reactor does meet the ambitious DoD requirements, then the sky's the limit.

In the meantime, BWXT's core business offers the ultimate safe haven against the economic storm clouds gathering on the horizon. With years of backlogged demand, and a dominant competitive position generating rock-solid profit margins, we feel comfortable recommending this stock based on its existing business today. Plus, we're getting plenty of potential upside from Project Pele.

Action to Take: For the latest updates on our open positions, please visit our live portfolio **here.**

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Stevenson, MD

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