

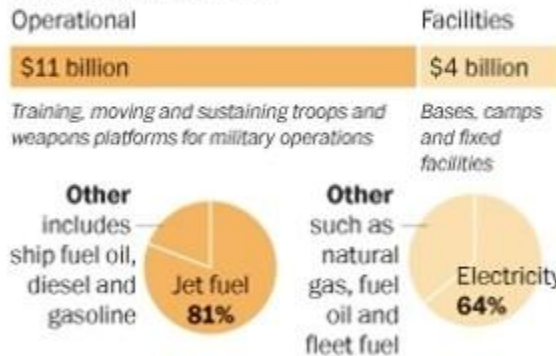
Save Lives, Cut Costs, Go Local for Energy & Jobs
Building the U.S. Energy Security Industrial Base (ESIB) to Save Lives & Reduce Costs
Coalition@ESIB.US

-Michael A. Peck – October, 2011-

Energy and the Pentagon

The Defense Department is the largest user of energy in the United States, and 80 percent of its energy comes from oil.

Total cost: \$15 billion



Source: Federal Energy Management Report (fiscal 2010)
The Washington Post

<http://www.pewclimatesecurity.org/news/debut-of-climate-patriots-video/>

- **The U.S. “Energy Security Industrial Base” (ESIB) - tomorrow’s Low-Carbon Energy-Manufacturing-Competitiveness-Economic Patriotism Paradigm:**
 - In recent years the Department of Defense has raised an increasingly urgent call for transitioning out of petroleum fuel products, as risks and expenses, and lost lives rise. DOD cannot serve and protect the citizens of the United States unless it has reliable access to energy.
 - Both the most appropriate tribute ten years after 09/11 and the most useful catalyst to reinvigorate our domestic economy would be to liberate the United States’ complete dependence on monopolistic overseas-sourced fuel.
 - The strategic importance of imported oil as a virtual monopoly transportation fuel, at a budgetary cost of \$900 billion per year, which provides the financing for a generational war against the U.S. and its geopolitical interests
 - Today, 97 percent of all air, sea and land transportation systems in the United States deploy petroleum-based products mostly from OPEC (79% of the world’s conventional oil supplies but only one-third of actual global sourcing) as the only option, with locked-in global supply, demand and price curves (anticipated to rise well above the \$147/barrel level) that conflict with U.S. competitive and national security interests.
 - Fuel source competition can break this geopolitical monopoly favoring command & control countries but only by expanded domestic manufacturing and production capacity for locally derived fuel sources (e.g. cellulosic ethanol from plant life, or for methanol from natural gas, renewable, and hybrid energy solutions that connect all possible local energy source production dots).
 - Currently, oil supplies 80% of the military’s energy so the impact of price fluctuations ripples quickly through the system. Each one-dollar increase in the price of a barrel of oil adds more than \$30 million a year to the Navy’s energy costs.

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- The Pentagon is pressing ahead with an ambitious program to change its energy use. DOD's spending on renewable energy increased 300 percent between 2006 and 2009, from \$400 million to \$1.2 billion, and it is projected to reach more than \$10 billion annually by 2030, according to a report issued by the [Pew Project on National Security, Energy and Climate](#).
 - The Defense Department has pledged to obtain 25 percent of its energy from renewable sources by 2025.
 - A U.S. military member deployed in harm's way is either wounded or killed for every 50 convoys of fuel brought into Afghanistan than on cutting greenhouse gas emissions. Even one casualty is too high a price to pay.
 - American manufacturers already possess the know-how and are deploying energy source-liberation technologies around the globe (e.g. Ford/GM providing flex-fuel vehicles in foreign markets such as Brazil and GE working on smart meters in China) but need policy incentives to bring these technology advancements back home.
 - The Defense Department move to alternative energy drives better war fighting capability independent of geopolitical energy independence and cost-cutting benefits.
- **ESIB Definition:** Combining forces (U.S. Defense Industrial Base with U.S. Energy Industrial Base) to build a world class national Energy Security Industrial Base (ESIB) highlighting competitive innovation, efficiency, quality, productivity and most important, high road job creation.
 - **Purpose:** Integrating Military-Energy Manufacturing & Innovation Best Practices & Capacity to Achieve:
 - **Energy Independence:** A Reduced Overseas Imported Petrochemical Tether
 - Cost Savings: Turn the Annual \$700 Billion in Imported Fuel Costs Inward.
 - More Domestic Energy Including Clean, Home-grown Energy Production and Services in the context of the currently legislated reduction of some \$400 billion over the next 10 years
 - Reduced Energy Usage through Efficiencies and Smart Grid Deployment
 - **Remain Competitive:** Products Based On Quality, Efficiency, and Innovation against Command & Control Economies Competing Through Scale & Global Wage Arbitraging.
 - **One America:** greater societal cohesion through good domestic job creation based on Energy Independence & Defense Infrastructure Reindustrialization.
 - **ESIB Next Four Steps:**
 - Convene a White House – Pentagon working group on how to launch ESIB through a modified BRAC process to optimize any defense drawdown.
 - Draft a DOD-DOE MOU to Build-Out and Incentivize ESIB (Center for Naval Analyses – CNA- conclusion from “**Powering America’s Economy, Energy Innovation at the Crossroads of National Security Challenges**” - July 20th, 2010)
 - Convene a bipartisan, ACORE-Defense-United States Energy Council led initiative to launch the first ESIB national conference on growing and connecting the Energy Security Industrial Base
 - ESIB community conveners would include: DOE, DOD, DOE, DHS prime and subcontractors & Utilities, DOD primes and sub-prime contractors, NASA prime and subcontractors, national laboratories, think tanks, advocacy groups, industrial clusters)
 - Identify key DOE/DOD/NASA interlocutors to build critical policy mass and public support for the ESIB initiative
 - Re-group existing economic development organizations, utilities, Labor, defense industrial base organizations, advocacy networks including clean tech NGOs, and community interest coalitions for roll-out – “no energy/industrial community left behind”
 - Extend the ARPA-E platform to frame and incentivize regional ESIB clusters (New England, Great Lakes, Mid-Atlantic, South-East, Mid-West, Southwest, Western, and Pacific Coast). Some states will be members of more than one region and this should be encouraged.
 - Use ARPA-E as the initial funding vehicle for ESIB initiatives (CNA conclusion)

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- Incentivize regional ESIB clusters to impact future BRAC decision process
 - Form ESIB clusters with individual states and regions
 - Develop a common metrics platform to measure sustaining ESIB job creation.
- **From “Empowering Defense through Energy Security” to “Empowering Energy & Economic Security through Defense”:**
 - The revolution in clean energy was supposed to help fix energy insecurity, the national trade deficit, and global warming while also creating green jobs that would power the economic recovery. It hasn’t yet but it still can.
 - Even absent compelling nationwide policy legislation, U.S. industry is tending towards low carbon energy from local sources because that is what global markets are demanding in the name of greater efficiencies (less waste) and higher productivity.
 - The U.S. Department of Defense is a first mover in this process as it has been for so many other “Made in America” innovations (Internet, Semiconductors, and Computing) through its “greening of the Pentagon” actions on a military service by military service basis in the name of cost reductions and energy independence.
 - We are now at the stage where we can highlight military bases that are winners in the climb towards low-carbon energy self-sufficiency.
 - This development carries significant economic development implications for local, military base-centric economies, especially rural ones that depend on co-location for economic survival.
 - Our goal is to integrate existing defense-centric industrial clusters with alternative and renewable energy manufacturing capabilities (e.g. Newport News Shipping & Gamesa for offshore wind turbines, Raytheon – wind/defense radar compatibility, General Dynamics blades, Lockheed Martin sensors, L3 transportation, United Technologies Corporation & Clipper Windpower) in combination and coordination with advanced, operating military base micro-grids (e.g. Warner Robbins AFB, Nellis AFB) to achieve new approaches to self sufficient “Hybrid Energy Solutions” (HES) in the emerging smart-Inter-grid environment...
 - For example, the Danish wind turbine manufacturer, Vestas, has developed and successfully tested a turbine incorporating stealth technology, which can allow wind parks to move physically closer to airports and military installations. Vestas recently presented a test of a V90 wind turbine with stealth-coated wings at an industry conference in Canada.
- **The BRAC process**, whether or not it occurs in 2014, could be a useful platform to jump-start this goal.
 - In rural areas, DOD is in the process of turning over more and more of its base grid responsibilities to local rural electric cooperatives who themselves have a 20/25 renewable energy mandate. Rural electric coops comprise 75% of the nation’s land mass in over 42 states with over 45 million customers.
 - Optimizing the BRAC process represents a huge opportunity for geographically dispersed military bases such as Ft. Owens in Kentucky, and in the U.S. southeast where rural electric coops together with small regional and municipal governments could benefit from a competitive DOD/DOE green defense-renewable energy manufacturing tsunami...to reverse employment declines and find common ground with alternative energy industrial development.
 - This entire green manufacturing highway can be developed between the White House and the Pentagon through the BRAC process using existing resources and without need for additional authorizing legislation.
- **ESIB Challenges:**
 - The U.S. is losing global energy manufacturing market share due to higher labor costs, supply chain capability deficiencies, and generational loss of manufacturing know-how and infrastructure. These set-backs can be regained by aggregating targeted sectors in “high technology manufacturing” where the nation is first in class and competitive, and by transferring and integrating this expertise to the developing alternative energy manufacturing community and business base.

- Currently, the U.S. does not have any real national strategy to develop tomorrow's manufacturing industrial base for the global, soft-power but highly powered low-carbon energy economy.
- This is not about the ideological pros and cons of picking national winners and losers through some antiquated industrial policy prism. The pushback against governments 'picking winners and losers' is essentially a status quo argument and the highly competitive, global energy resource economy is anything but static.
- Innovation, design, and research invariably follow manufacturing which produces the profits needed to fund the former. This can either be a virtuous or vicious cycle – we have a national choice to make.
 - We need to “think smarter, not richer” through new policies and strategies to ensure we do not fall behind in the globally green economy race where critical mass at home allows national companies to design, build, export and dominate.
- **ESIB Principles:**
 - ESIB is Bipartisan:
 - Energy Independence fiscal benefits: \$700 billion spent at home on development and production and not abroad on petro-politics
 - Domestic Production cost benefits: no domestic energy community left behind - more emissions-free benefits from renewables at key peaking power surges allows other domestic fuel sources(coal, gas, nuclear) to increase production while lowering prices to consumers
 - Make it here: policy marries up with economic development; bipartisan consensus to address growing energy security threat – integrating and enhancing the emerging national Energy Security Industrial Base (ESIB) will reindustrialize “Made in America” with good manufacturing jobs in revitalized domestic factories.
 - ESIB is Made In America:
 - The first purpose of the Energy Security Industrial Base (ESIB) agenda is to create new job opportunities through additional manufacturing and technology capabilities by building on best practices
 - A strong military evolves from a strong economy. This will reindustrialize the country by developing local and regional “practice communities”, culling forth key vertical cross-industry application sectors beginning with existing defense (DOD) and energy (DOE) technology and product prime and subcontractors fomenting “best available partnerships” that integrate and produce energy security technology and infrastructure “invested in, conceived by, rolled-out, and manufactured in America”.
 - Energy Security economic patriotism means capturing and holding the global lead on technology, manufacturing, and innovation investments domestically to create emerging defense/energy industrial base breakthroughs and scaling those breakthroughs throughout the nation’s rapidly evolving smart power-grid framework.
 - ESIB Results are Transferred Back into Heartland Manufacturing America:
 - The Energy Security Industrial Base (ESIB) agenda optimizes and replicates “cross-over frameworks” through programs such as “ARPA-E” on the Federal level connected to academic-industry and public-private sector partnerships among local, municipal, state, and regional networks nationwide so that, once again, the U.S. knack for first mover, critical mass technology transfer from defense and energy to civilian applications rivals none.
 - By making sure that “no domestic energy community is left behind,” ESIB builds a new national critical technologies industrial base and infrastructure for the new energy security paradigm, and develops bipartisan consensus through shared risks and rewards that result in sustainable employment at home.
 - ESIB Means Employed in America:
 - ESIB helps the nation turn the corner on sustaining domestic job creation in the global energy marketplace. In the face of soft-power challenges fronted by command and control economies to dominate natural resource ownership, extraction, and production, achieving national energy independence through a national energy security paradigm rises to the top of the U.S. geostrategic priorities.
 - ESIB reindustrializes and rejuvenates an America that conceives, manufactures and exports commodities and services of clear international value to reduce trade deficits

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- and provide good jobs and wages that enable competitively compensated workers in viable factories to support their communities and buy both domestic and imported goods.
- ESIB Means Integrated & Scaled in America:
 - The U.S. military was first to desegregate racial and sexual orientation backgrounds, first to integrate women, has been first among commonly-shared, pan-American institutions to offer equal opportunities for advancement through the ranks, and for some an opportunity to serve in exchange for citizenship.
 - Now, with little fanfare, the U.S. Military through a steady stream of new accomplishments stands first to leave behind the environmental and energy polemics of left and right political positioning by promoting and integrating “alternative energy best practices” for reasons starting first with national energy independence, and second with national energy security, and ending up, once again, as the national beacon for rational, pragmatic, and quintessentially American economic development on behalf of good jobs for all.
 - Similar to the nation’s network of rural electric cooperatives serving as the first environmental justice movement for heartland populations in terms of lowest cost access to reliable power, the U.S. military has become the leading pragmatic practitioner and showcase for the rapidly emerging energy security industrial base.
 - **ESIB in Motion – Save Lives/Cut Costs:**
 - Several of the Pentagon’s carbon fuel reduction goals don’t apply to theaters of military operations, but they do where DOD uses heavy and inefficient equipment such as tanks, some of which average less than a mile per gallon.
 - The U.S. Navy has outlined a series of [ambitious goals](#) for the Navy and Marine Corps, including ensuring that 50 percent of these services’ energy supply comes from alternative energy such as biofuels and solar power by 2020; cutting fossil fuel use by non-combat vehicles in half by 2015; and reducing fuel consumption on ships 15 percent by 2020.
 - Other branches have more modest energy goals. The Air Force aims to use alternative aviation fuels for half its domestic aviation needs by 2016, for example, and cut total aviation fuel use 10 percent by 2015.
 - Some U.S. companies are leaping at these Defense opportunities especially in the area of biofuels based on camelina oilseed also known as wild flax), algae and other sources. Last month, Navy Secretary Mabus and Agriculture Secretary Tom Vilsack announced the administration would spend as much as \$510 million during the next three years along with the private sector to produce advanced biofuels for military and commercial transport.
 - **The U.S. Army’s EITF – could be enhanced through ESIB:**
 - The U.S. Army is embarking on an ambitious mission to house billions of dollars worth of renewable energy projects on bases across the country -- in exchange for a share of that energy sometime in the future. The Army says this endeavor puts the bulk of the risk on the private sector and that military officials will make sure the companies they partner with have a "track record" that instills confidence.
 - Under the plan, the Army hopes to attract more than \$7 billion in private investment over 10 years. Those companies would be allowed to use the Army’s abundant real estate to build up alternative-energy operations ranging from solar to wind to geothermal. In exchange, the Army would be looking for some kind of "in-kind" payment down the road.
 - That means the companies would be expected to give the Army their energy for free or at a reduced price once the operations are up and running. The Army could have as much as 5 million acres of available land -- out of 15 million acres total. Much of the available land merely serves as a buffer between bases and local communities.
 - Since many base commanders do not have the resources to initiate or manage utility-scale energy construction projects (defined as about 10 megawatts or more), the Army has formed a new **Energy Initiatives Task Force (EITF)** composed of a small staff

of experts who will assess projects, vet renewable energy companies, develop new technologies and streamline the approval process.

- EITF was organized over the summer and officially announced that it was open for business on September 15, 2011. The Army intends to use its normal acquisition procedures to push the program through.
- EITF's mission dovetails with the Army's recently announced [Net Zero program](#), in which Army bases have the goal of consuming only as much energy and water as they can produce on site.
- The Army got more than 100 responses from companies when it put out feelers for potential projects earlier this year, with about 20 projects in the pipeline where Army bases in different regions of the country eventually host renewable energy firms that capitalize on the assets of those regions. The project is part of a broader Army goal to use 25 percent renewable energy by 2025. By trading real estate for energy, the project will also contribute to the military's energy security -- by ensuring military bases have their own supply of renewable energy no matter what's going on outside the fences.
- The new program involves building twenty utility-scale renewable energy installations that rely on a mix of solar, wind, geothermal, and biomass power. The installations will be constructed on land owned by the Department of Defense, at Army bases throughout the U.S.
- The Army's goal is to provide its bases with reliable energy sources that are insulated from price spikes, shortages and grid disruptions. Aside from these energy security issues, reducing pollution and greenhouse gas emissions are key goals.
 - Rather than paying up front for the installations, the Army plans to attract companies that would build the renewable energy installations in exchange for a commitment from the Army to purchase the energy.
 - This type of arrangement, called a Power Purchase Agreement, is common in the solar industry.
 - Fort Bliss, one of the Net Zero program's pilot bases, recently announced a \$1.5 billion investment program to install more than 140 MW of renewable energy facilities on the base, and reclaim more than 500 million gallons of water annually.
 - The first steps for EITF involve setting up new procedures and vetting 20 projects that are already in the pipeline. EITF's goal is to have the first round of projects ready to go out for bid early next year.
 - EITF will also be working with federal research resources including the National Renewable Energy Laboratory to identify promising new technologies.
 - EITF is looking at all forms of renewable energy and has already received numerous contacts from the renewable energy industry regarding advanced technologies.
- **ESIB Conclusions – Save Lives/Cut Costs:**
 - The scale of the military's energy consumption, along with its formidable purchasing power, gives its policies tremendous impact. In many ways, the military is better positioned than other branches of government to address such long-term challenges as energy use and greenhouse gas emissions due to in-depth risk management and long-term strategic planning experience and capabilities.
 - This is a bipartisan concern: the Pentagon began discussions about its dependence on fossil fuels and the potential risks associated with climate change with its allies during the G.W. Bush administration, and it has continued to talk strategy with top military officers in Britain and elsewhere.
 - The ESIB mission appeals to the bipartisan goal of improving national security by diversifying energy sources and reducing national dependence on fossil fuel imports, enhancing both local economies and the environment by transitioning to local green energy sources, and focusing on good job creation by enhancing domestic manufacturing competitiveness and building out the nationwide energy security supply chain

- ESIB will ensure the U.S. remains first in class globally in manufacturing for defense, NASA earth observation, and related energy security applications and products demanding innovative technology.
 - Multi-sector manufacturing know-how integrated into the overall U.S. energy security “offer” will ramp up national competitiveness and increase high quality domestic job creation.
- ESIB expands the “Competitive & Energy Independent America” Offer:
 - We need a platform mechanism to inspire DOD, DOE, DHS, and NASA to collaborate on a national reindustrializing scale and be even bigger demand-drivers of energy security technologies.
 - We need to organize multi-agency supply chains and integrate and deploy DOD’s, DOE’s, & NASA’s existing lists of suppliers to help identify, connect, and grow key energy security manufacturing businesses.
 - The BRAC platform coupled with DOD and DOE budgetary realities offer an existing mechanism to start this process.
- **ESIB recognizes commercial reality:**
 - U.S. companies increasingly are looking at environmental regulations and standards to determine where they choose to locate.
 - Insurance companies look at environmental risk as a major factor in drawing up company policies.
 - There are already 2.7 million jobs across the clean U.S. economy that didn’t exist four years ago. Clean energy is already proving to be at least as large a job creation engine than the heavily subsidized fossil-fuels sector, putting Americans back to work in a lackluster economy.
 - The Los Angeles Times reported that renewables are the world’s fastest growing energy supply.
 - Grist reported that over 100,000 Americans are working in the solar industry.
 - For every million dollars spent, 16.7 green jobs are created. That is over three times the 5.3 jobs per million dollars that are created from the same spending on fossil-fuel industries.
 - The clean energy sector is growing at a rate of 8.3 percent.
 - Median wages are 13 percent higher in green energy careers than the economy average.
 - Green jobs are made in America, spurring innovation with more U.S. content than other industries.
 - Most of the products used in energy efficiency retrofits have over 90 percent of the content made right here in the USA. Sheet metal for ductwork, for example is over 99 percent domestically sourced, vinyl windows are 98 percent American made, and rigid foam insulation is over 95 percent made in America. Even major mechanical equipment like furnaces (94 percent made in the U.S.A.) and air conditioning and heat pumps (82 percent American made) have a much larger share of U.S. content than other products, with the domestic share of production for all products in the United States hovering just above 76 percent. ###

Michael Peck founded MAPA Group (www.mapagroup.net) in 1994 as a “doing well by doing good” transaction-driven business development consulting practice mostly in the green economy sector. Michael’s current advocacy board affiliations include the Blue-Green Alliance, the Apollo Alliance, Penn State University’s Center for Sustainability, the American Sustainable Business Council, and the Wind Energy Foundation. For over a decade, Michael has served as the North American delegate for Mondragon, the world’s largest industrial worker cooperative. Michael was instrumental in bringing the leading Spanish wind turbine manufacturer, Gamesa, to Pennsylvania in 2004 which has invested over \$220 million in two factories, created 1000 in-state green jobs and been named a “model U.S. green economy company”. In October 2009, Michael participated in forming the Mondragon and United Steelworkers Union (USW) partnership to create union-coop hybrids with the goal of revamping U.S. manufacturing through worker empowerment and ownership. Michael is part of teams seeking to further develop progressive stakeholder economy models such as the Turning Point Solar project that will place the nation’s largest PV project on reclaimed mine lands in rural Appalachia and create a new local solar manufacturing factory. In July, 2011, Isofoton, Spain’s largest photovoltaic manufacturer named Michael as Chairman of Isofoton North America with a focus on factory operations in NW Ohio. Previously, Michael served as a naval officer on active duty from 1976 –83, winning the Commander, U.S. Naval Forces Europe Leadership award in 1981, and completing his service as a Commander in the Naval Reserves in 1996. Michael also served as a defense and economic development assistant to the U.S. Senate Majority Leader (1984-86), as executive assistant to the President of the BDM Corporation (1986-88), and as a senior vice president for corporate business development at SAIC (1988-94), the nation’s largest employee-owned R&D company at the time.

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