2022 ENCOUNTERING INNOVATION BLUF STATEMENTS		
POWER AND ENERGY		
FluxWorks LLC	Magnetic Gears for Ultra-Reliable Propulsion	This technology achieves the same benefits of mechanicalgearing – reducing the size, cost, and weight of a motor or generator – but operates without making any contact or requiring lubrication, eliminating the maintenance and reliability requirements associated with mechanical gears. FluxWorks' robust, high performance magnetic gears can be applied to military and civilian future electric delivery drones and air taxis to achieve longer range (higher efficiency), low noise flight, and reduced operational cost due to the reduced maintenance requirements.
Grow4Me	Aquaponics grow laboratory made from Magnesium Oxide (MgO) Structural Insulated Panels (SIPs)	This technology provides an aquaponics grow laboratory (grow pod) that is scalable, mobile, and self-sustainable. Our aquaponics pod can grow crop yields at much faster harvest cycles with ½ the human work hours and ½ the water supply all while producing zero waste. The aquaponics grow pod also produces, at the same time, a harvest of 100 tilapia fish 2 lbs each in 3 months. Thus, the aquaponics grow pod provides both a sustainable garden for fruits and vegetables every 2 weeks while also serving as a fish garden every 3 months. Our pod prototype 2 is fully solar powered for off grid growing in remote places or places without a convenient power supply. GPS and ubiquitous thermo monitoring can also be added to each pod. Camouflage and ballistics skinnings are also available for concealment and protective armoring. Wherever people are: Our aquaponics pod makes sure they have fresh food. In a matter of weeks, a fresh food grocery store to serve an entire community can be created by connecting our grow pods together.
HHELI, LLC dba Ten-Nine Technologies	TENIX Nanoadditive for Power-Boosted Batteries	New chemical materials are required for batteries to advance in both performance and sustainability. Ten-Nine Technologies has developed a proprietary nanomaterial – TENIX – that results in more powerful and longer-lasting device performance when utilized as part of single-use and rechargeable batteries. TENIX is domestically produced via an established, ethical supply chain that has just half the greenhouse gas emissions of current battery cathode materials. TENIX is designed as an additive for drop-in manufacturing, and can transform the power and sustainability performance of most batteries.
Homeland Technologies, LLC	HS-Drone Next Generation Drone Technology – eVTOL, Faster, Solar Powered	HS-Drone is both a startup company and a portfolio of next generation technologies for faster, lower-cost, solar-powered, and improved-capability aircraft. The portfolio includes two US patents and several additional US and international patent

		applications. The focal point is a new aerial platform the provides: 1) increased flight efficiency, 2) more surface area for solar panels, and 3) dynamics of decreasing drag with increaseing velocity; a very powerful combination setting new path of evolution for both transportation and industry. Starting at a benchmark of front tiltwing eVTOL drone (e.g. Airlogix hammerhead) the evolution includes: 1) increasing flat plate lifting body area to increase efficiency/range and speed, 2) further increasing the flat plate lifting body area for larger payload 24/7 solar aircraft, 3) larger and more capable 24/7 solar aircraft, 4) aerial platform based industry and power production, and 5) increased capabilities with lighter weight electric motors and hybrid electric-fuel jet engines (both of patent-pending status).