

Investor Marketing White Paper – Combined Technologies

JMCC WING, LLC - World Energy Water Project



- 1) McCanney WING Generator (JMCC WING™) Patent Pending
 - a. Distributed Energy Solution – Replacement Power
 - b. Electric or Mechanical power
 - c. Scalable 2 kiloWatts to 250 MegaWatts
- 2) JMCC WING, LLC – Add-on Appliances Powered by the Wind
- 3) JMCC Water Filters, LLC

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Owner: James McCanney – direct line - 209-251-2920 or 423-714-9457

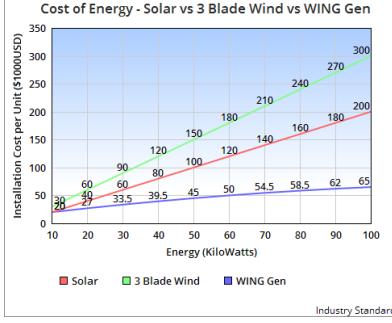
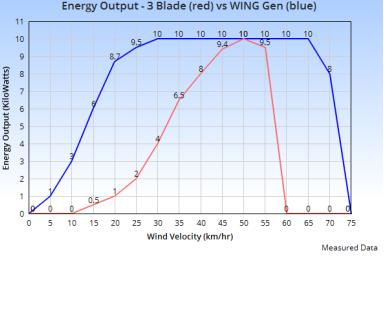
Email address: jmccanney@usinternet.com

Executive Summary – World Energy Water Project

Overview of Design and Technologies Employed

The **World Energy Water Project** will solve Energy and Water problems. The marriage of the Patent Pending-Trademark “JMCC WING™ Generator” with the 19 year old JMCC Water Filter business would not have been possible a few years ago. The energy source is the JMCC WING™ Generator, a high torque low cost wind energy system which can be configured with dozens of applications from “Small” (for Farm & Ranch & Eco-Villages), “Medium” (commercial power for islands and remote locations) to “Large” (for replacement of coal/nuclear plants). Add-on appliances include eV Car Charging Stations, Reverse Osmosis Desalination, Atmospheric Water Generators, Water Filtration & Pumping & Storage, Electric Furnaces, Electric Motors, Compressors, electrical power in all international standards, etc.. The WING Generator will provide energy for small to large applications for electric transportation, water treatment, Crypto Mining and Cooling, Token Energy Exchange, Direct Heating and ultimately the replacement of coal and nuclear power plants. Direct marketing **and sale of electricity & water.**

Energy System (cost per unit energy decreases exponentially with size)

	 Cost of Energy - Solar vs 3 Blade Wind vs WING Gen Installation Cost per Unit (\$1000USD) Industry Standards	 Energy Output - 3 Blade (red) vs WING Gen (blue) Measured Data
JMCC WING™ Generator “The Jet Age of Wind Energy”	Table 2 - Cost of Energy reduces with increasing size	Table 3 – Measured Output Energy at all wind speeds

JMCC WING, LLC – Add on Appliances Powered from the Wind

		
eV Charging Stations	Containerized Reverse Osmosis Water Purification Anywhere Also Available Full Scale RO Installations	Two Atmospheric Water Generators powered by a 50 kW WING Generator Water Anywhere from the Air

JMCC Water Filters, LLC

 IN TODAY'S TOXIC WORLD you need YOUR OWN water filtration systems.. REPLACEMENT FILTERS for ALL Commercial Gravity Water Filters Use everyday in your kitchen! * Industrial Strength Water Filters * * More effective than other filters * FREE Shipping on Water Filters (U.S.) Super Sale 10% OFF Replacement Filters FREE E-Book "Water" by Prof. McCanney	 Kitchen Standard Compact Traveler White Whopper	 DIN 100L	 JMCC MSS
House product line		Commercial	Industrial

Technology Must Meet the Requirements – World Energy Water Project

There are numerous limiting factors that make the **World Energy Water Project** a challenge. The world is desperate for a true energy solution. So called “alternative energy” are non-solutions and simply will never come close to replacing coal/nuclear power plants. Neither the 3 blade wind turbines nor solar will ever provide levels of dependable power sufficient to offset central power companies. None of these would exist without substantial government subsidies. The JMCC WING Generator does not require government subsidies to be profitable.

Some of the worst yet most expensive electrical service is in remote areas of not only the 3rd world and even first world countries. The larger problem is that sometime in the current century we will have consumed the bulk of readily available coal, nuclear fuel (now in short supply) and natural gas. Are we going to continue burning these until they are completely gone with none available for future generations? Electrical utilities are near financial demise.

The “WING” solution is the alternative to “alternative energy”. The JMCC WING™ Generator can power small, medium and large applications. It can scale to very large sizes to replace full scale electric power plants. The concept of Distributed Energy was first defined in the 2009 book “McCanney WING Generator – World Energy Project” which also outlined the failure of the 3 blade wind turbines and solar panels. The only criteria for true alternative energy is that it “must rival the central power companies in reliable production, cost per unit of energy and with minimal battery requirements”. Prior thinking only saw alternative energy as a band aid but never something that would truly replace the central power companies. China, the largest installer of solar panels, recently levied a moratorium on any new solar installations. They realized that they cannot start or stop major electrical generator stations based on the sun.

Before local, state or federal governments authorize large wind or solar farms or subsidies they must seriously study the JMCC WING™ Generator which can scale to large sizes up to 250 MW in a single unit. A single 100 MW WING Generator will replace 125 of the 3 blade wind turbines (1.5 MW Turbines operating at industry standard 20% efficiency) or over 600,000 solar panels, which only operate a few hours of the day and which require massive battery banks to store energy. Just five 100 MW WING Generators can replace an average coal or nuclear power plant at a fraction of the cost.

The concept of a true wind power source that will provide energy 24/7/365 has never been imagined because there has never been a design that could scale to the output level of a centralized power facility. With an estimated 1000 Large JMCC WING™ Generators distributed around the USA we could begin to shut down first the nuclear plants and then rely on Natural Gas or coal plants to even out the grid load. The idea of Distributed Energy is that the time average wind energy across a large area is a constant. If the wind is not blowing in one location, it is blowing in another. The Distributed network of JMCC WING™ Generators would supply a constant amount of energy nationwide. With the advent of electric cars, busses, motorcycles, bicycles, trains and now air planes, we could eventually convert to all electric

transportation within 10 years. There is a problem however. The current electric power plants and grid will not support even a fraction of future transportation vehicles. We need a radical new plan. A great benefit of the JMCC WING™ Generator is that it can be placed close to areas of need without building new infrastructure. For example, local transportation eV charging stations from wind would create localized energy distribution and eliminate loss due to long transmission lines.

The World Energy Water Project not only offers Electrical Energy and Water solutions, but offers these solutions at greatly reduced costs when compared to grid powered by coal, natural gas, nuclear, propane, 3 blade wind turbines and solar panels. The savings are large, giving investors a fast return on investment. The marketing plan not only includes direct sales of the WING and associated “appliances”, but offers investors the opportunity to invest in WING systems and sell the electrical energy and water directly to consumers through standard billing or via Block Chain technology. This is the future of Distributed Energy and Water ... the two biggest futures markets on planet earth. JMCC WING, LLC is positioned for this future.

JMCC WING, LLC recently was selected from 98 international companies to be one of five finalists in the [Water Abundance XPRIZE powered by Tata Group and Australian Aid](#) and in October, 2018 was awarded the XPRIZE “Technology Innovation Achievement Award” with \$150,000 stipend. The equipment used was the 50 kW JMCC WING™ Generator powering two JMCC WING Atmospheric Water Generators (see photo below). The requirement was to harvest water from the air in any remote location of the world for 2 cents per liter using only renewable energy. The market that will open as a result of the Water Abundance XPRIZE is estimated to be approximately \$20 billion annually within the next 10 years. Other applications include eV car charging stations, water treatment, heating, agriculture and more.



The TEAM – JMCC WING, LLC

The Team consists of talented financial, legal, engineering, insurance, product management and other professionals who are helping to shape the future of an emerging world wide company. The following is the main list of Team members although we are currently adding staff in the areas of Investor Relations, Marketing, Social Media Marketing, Public Relations, Engineering and other areas.

James McCanney, M.S. Nuclear and Solid State Physics, Tulane

University – CEO - Owner, Inventor. The company was founded by an Independent Tier 1 Scientist who has worked as an engineer and taught at university level in the United States and foreign countries. Physicist and inventor, James has directed his talents to solving mankind's two greatest issues; Energy and Water. McCanney stated, "I have worked for many years on the design and application of the JMCC WING™ Generator. The technology is ready for market." His patent pending and trademarked design is a real game changer. It will usher in a truly reliable and scalable source of replacement energy. (see last page for complete BIO)

Robert Lee, Chief Operating Officer, Financial Advisor and Mentor.

Robert has spent a lifetime building businesses for himself and others. He now resides in Austin Texas and operates a startup incubator and gives mentoring classes to new start up leaders. He is currently working in the financial sector on emerging secure transaction technologies. Robert has had a number of successful financial ventures in his long career and is now helping other achieve their goals.

James Lienemann, MBA Finance and Accounting University of Nebraska also BA Chemistry – Product Management & Investor. James brings 28 years of experience in product management and team organization. He has worked in various Fortune 50 Companies including Nestle, Disney and ConAgra and has been involved in Corporate Financial Planning. He is one of the early investors in the JMCC WING business. His goal is to help the JMCC WING brand move to the world wide market.

Kent Mabee - Consultant, Received a Degree in Electronics from the US Air Force (1992) with a BS in Electronics Management (1994) from

Illinois Southern University. Kent has worked in private industry in the Telecommunications industry for 20 years as a consultant and product developer with Sprint, Nextel, Cricket and Qualcomm. He has followed the development of the JMCC WING Generator for years and is currently working to advance the product line into the world market.

Fish and Richardson, Law Firm Minneapolis/Boston, F & R is the Legal Firm that has performed all legal work for JMCC WING, LLC from its inception. They are in charge of US and international patents, trademarks, logos, registrations, corporate filings, contracts, intellectual property security, legal research and all legal activities. They have an international presence needed for JMCC WING to move into international markets with confidence that our legal backs are covered in all international venues.

AIG Insurance Group & Berkley Group, AIG is our international insurance company for manufacturing and sales. Berkley Group is our domestic insurance company for manufacturing and sales both with A+ rating. We have other insurance companies and brokers to manage the corporate insurance policies.

Manufacturing Sub-Contractors, JMCC WING, LLC has many strategic alliances in the USA, China, India and other locations who produce the superior quality components for the JMCC WING™ Generator and related applications. These include components and sub-assemblies for the Carbon Fiber structure of the WING itself, bearings, control surfaces, connectors, magnetic components for the Generator Heads, gearing and drive systems, towers and base structures, equipment housings, batteries and related control systems, the JMCC WING line of Atmospheric Water Generators, Reverse Osmosis, eV car charging stations, electrical interface and control, Grid connect metering hardware, and more. We also manufacture sub-components to exacting standards.

Engineering Sub-Contractors, We subcontract certain engineering work to assure compliance with international standards and prepare major sub-components of the WING Systems with recognized engineering firms who prepare the designs to be built at ISO 9000 standards.

Gary Kaawa, Gary is a Native Born Hawaiian who began working with large machinery as a young man. He has been instrumental in staging and logistics of large equipment at the JMCC WING, LLC research center on the Island of Hawaii.

He is in charge of logistics regarding installations and large equipment and is involved in shipping and moving, as the JMCC WING products will be produced and packaged in shipping containers for world wide distribution. He is also responsible for machining steel, aluminum, as well as welding/parts production.

Thomas McFadden, Thomas is a self taught highly motivated individual who has learned about law and commerce by experience. Thomas was a highly successful salesman in the Life Safety Industry for colleges, hotels, hospitals, etc. in the highly competitive California market place. He interfaced for 18 years with architects and electrical engineers in Southern California working for four Fire Life Safety companies. He specified projects bidding jobs, coordinating with job controllers and saw jobs to completion under budget for county and state inspection agencies. He worked for 20 years in association with the Building Industry Association, The American Sub-Contractor Association and the Sheet Metal Air Conditioning Contractors Association all of Southern California. He is currently dedicated to marketing, promotion and raising brand awareness of the JMCC WING product line. He is currently working on bid specification quality control to assure bids include all expenses. His work has brought many new business opportunities to the table including potential large commercial customers.

International Consultants, As the business grows on a daily basis, we are adding strategic consultants in all countries who have connections to local and federal governments, institutions of higher education, established industry leaders and other groups who will advance our company mission.

Company Details

Company name	JMCC WING, LLC (Delaware)
Contact information	Email: jmccaney@usinternet.com Phone: 209 251 2920 or 423 714 9457 Owner: James McCanney Web page: www.jmccwing.com
Social media	Twitter Handle: @Prof_Jmccaney Twitter URL: https://twitter.com/Prof_JMcCanney LinkedIn: https://www.linkedin.com/in/james-mccaney-703b02100/ Facebook: https://www.facebook.com/JMCCWING/
Company Description	A company founded by an Independent Tier 1 Scientist who has worked as an engineer and taught at university level in the United States. Physicist and inventor James McCanney has directed his talents to solving mankind's two greatest issues; Energy and Water. McCanney stated, "I have worked for many years on the design and application of the JMCC WING™ Generator. The technology is ready for market." His patent pending and trademarked design is a real game changer. It will usher in a truly reliable and scalable source of replacement energy. "The Jet Age of Wind Energy". Video link https://youtu.be/7ozm1CoXzCg
What Problem Solving	Lack of reliable energy and water plagues 50% of earth's population. Existing "Alternative Energy" technologies such as solar and the conventional 3 Blade Wind Turbines have failed to produce the power we need on a grand scale, relying on tax credits, incentives and government subsidies. Not a single power plant has ever been replaced because of these technologies. Solar cannot replace power plants because the sun only shines a few hours per day. To replace centralized power companies would require vast battery storage which we could never afford nor implement, thus solar is mainly installed as a grid connect only service. Regarding the 3 blade turbines, it would take 77 million 3 blade wind turbines (industry standard) to replace our energy needs, an impossible number. Their energy curve falls sharply at lower than rated wind speeds and they have to be shut down at above rated wind speeds to prevent self-destruction. They even require an internal motor to begin spinning. The central power companies and big oil have no real competition. Additionally, water requires energy no matter what the source. Without inexpensive reliable energy, water is out of reach to most countries of the world. The World Energy Water Project is designed to position this company in front of these two major world problems that require solutions.
Industry	Energy (electrical and mechanical) – Water Small to Large Scale Distributed Energy Water Management from harvest to recycling after use

How the JMCC WING™ solution solves these problems	<p>The JMCC WING™ Generator can produce energy 24/7/365 from low to very high wind speeds and will not only solve small localized energy water scarcity problems, but will scale to extremely large sizes sufficient to replace coal and nuclear power plants. Using “Distributed Energy”, a network of JMCC WING™ Generators will eventually provide 100% of our power requirements and will allow complete conversion to electric transportation from the wind. We can now capture and convert the earth’s most available abundant energy source on a distributed network because the national quantity of wind energy is constant at all times ... day / night / winter / summer / at the equator as well as north or south poles / around the USA and other countries. This is the point of “Distributed Energy” as the wind is always blowing somewhere. The power curve of the JMCC WING™ Generator allows it to operate from low to high wind speeds enabling maximum energy production, plus it grows in 3 dimensions, not 2 dimensions as with prior “alternative energy” devices. The result is that the cost per unit of energy for the WING Generator is reduced exponentially with increasing size. On a small scale for farms and ranches, to large distributed network installations utilizing a truly scalable, decentralized and distributed energy source, the JMCC WING™ Generator is designed for maximum output with low maintenance and ease of operation while pleasing to the environment (birds fly around it and it makes no noise). The JMCC WING™ Generator can produce electricity, directly heat buildings, pump water and even make water from sea water or the air when coupled with the commercial product line of Atmospheric Water Generators. The existing myths of the so-called “Alternative Energy” devices are discussed in the 2009 e-book available at this link. eBook McCanney WING Generator World Energy Project (see pages 77 to 80)</p>
Market and Competitors	<p>The JMCC WING™ Generator has no competition. The wind industry abandoned the small wind market many years ago because of high product cost, low energy production causing lack of ROI for consumers. The JMCC WING™ Generator solves this problem with extremely low cost hardware and ROI of under a few years. There is literally no competition in this market. Many of the smaller installations such as ranches and farms or in 3rd world countries have little or no regulatory impediments. We already have many orders for JMCC WING™ Generators in the 2 to 250 kW range (see table below for investment opportunities). We just completed United Laboratories UL testing of the essential electronics for both USA and European standards so the regulatory and testing agencies requirements have been met for these markets. Future challenges will be the local planning and zoning agencies or federal agencies regulating power production and distribution who are in turn controlled by the large energy corporations, however, with power companies insolvent, the market for real alternative energy could not be more ripe.</p>

5 Year Market Forecast (also see market forecasts farther below in this report)	<p>The JMCC WING™ Generator ushers in “The Jet Age of Wind Energy” with its the ability to capture and utilize wind, the most universally available abundant energy source on the planet. As with any disruptive technology, there may be a slow adoption rate and acceptance due to the industry objection, collusion and obstacles that limit ideas and innovative design from ever coming to the people who need them the most. The Department of Energy claimed that the Native American lands alone could produce 32 % of the whole US Energy needs as stated by the National Congress of America Indians. Our question is “What was the technology used to make that prediction?” It could not be the 3 Blade Wind Turbines. The JMCC WING™ Generator, placed on the tribal and/or coastal lands, giving a truly distributed energy network, could produce 100% of the energy needs for the United States including conversion to electric transportation.</p>
Go To Market Strategy	<p>The intent of the company is to bring to the public and private sector the technology of the JMCC WING™ Generator and our commercial line of Atmospheric Water Generators, along with designs of many WING models for specific applications. Investor private offerings are already being negotiated and we are planning offerings with the block chain to take energy production and consumer payment options to the next level. The application and adoption of the JMCC WING™ for crypto mining operations can provide a savings to justify the investment. After an initial cost of design, shipping, installation and infrastructure tie in, the rate of return on investment could increase the bottom line of mining companies by as much as 80% or more. Given an opportunity with sufficient funding, JMCC WING, LLC would have a huge benefit even when compared to Hydropower or Geo-Thermal with far less infrastructure costs. Plus, the WING Generator systems can be placed on ocean going barges away from any regulatory agencies. Companies are facing energy challenges every day and the costs are rising which has an impact on the bottom line for mining operations from Canada to Iceland and recently announced in Russia.</p>
Marketing Profit Plan (these are coupled below with investment opportunities)	<ol style="list-style-type: none"> 1) Direct Sales - 30% - Farm/Ranch WING model ready for manufacturing - Other models to follow 2) License – 10% - manufacturing agreements 3) Direct to Consumer – 60% - Electric Power & Water Sales - Distributed decentralized electric power and water for Block Chain customers and end users – investors become the power and water company using Large JMCC WING Generators

	<p>4) Crypto Currency mining power sources (off shore remote locations not subject to governmental regulations or traditional energy sources – powered by the wind)</p> <p>5) Standard Mining</p> <p>6) Mobile water production using Atmospheric Water Generators and RO desalination completely off grid world wide market / military markets worldwide</p> <p>7) ICO prospectus global energy futures</p> <p>8) Indigenous tribal lands, islands, remote areas - self sufficiency energy & water</p> <p>9) Electric Car Charging Stations</p> <p>10) Eco Village self sustainable electric / power take off / water from atmosphere</p> <p>11) Carbon Credits</p> <p>12) Compressed Air factory and energy storage</p> <p>13) Direct heating of houses and buildings</p>
Visibility	<p>- 2009 eBook “McCanney WING Generator – World Energy Project”</p> <p>* many international venue radio show interviews</p> <p>* many international tech magazine articles (list below)</p> <p>\$13,500 Indiegogo Crowd Funding (2014)</p> <p>\$232,000 investment (angel)</p> <p>\$45,000 owner investment capital</p> <p>\$50,000 XPRIZE competition Milestone Award (one of 5 finalists in Water Abundance XPRIZE powered by Tata Group and Australian Aid)</p> <p>\$150,000 XPRIZE Technology Innovation Achievement Award - October 2019</p> <p>\$10,000,000 Pending angel investor</p> <p>Ongoing negotiations with investors</p>
International Magazine Recognition	<p>QUARTZ (date TBA)</p> <p>WIRED UK (date TBA)</p> <p>Mashable, “The race is on to create renewable powered-devices that extract water from thin air” https://mashable.com/2018/03/22/water-xprize-thin-air/?utm_cid=hp-n-1#jn.kOP07RmqB</p> <p>TechCrunch, “Water Abundance XPRIZE finalists compete in gathering water from thin air” https://techcrunch.com/2018/03/22/water-abundance-xprize-finalists-compete-in-gathering-water-from-thin-air/</p>

	<p><u>TechCrunch Japan</u></p> <p>The New Scientist, “The plan to suck huge amounts of drinkable water out of thin air” https://www.newscientist.com/article/2164480-the-plan-to-suck-huge-amounts-of-drinkable-water-out-of-thin-air/ (please see PDF attached as online piece is currently behind a paywall – for internal use only, do not republish; to run in print magazine on 3/31)</p> <p>New Atlas, “Xprize reduces its Water Abundance competition to five finalists” https://newatlas.com/xprize-water-abundance-five-finalists/53903/</p> <p>TechXplore, “Five water XPRIZE finalists named in search for solution breakthroughs https://techxplore.com/news/2018-03-xprize-finalists-solution-breakthroughs.html</p> <p>Engineering 360, “Five Innovations That Could Change How Affordable Water Is Produced https://insights.globalspec.com/article/8305/five-innovations-that-could-change-how-affordable-water-is-produced?from_rss=1</p> <p>UK Fundraising, “Finalists announced in Water Abundance XPRIZE competition” http://fundraising.co.uk/2018/03/22/finalists-announced-in-water-abundance-xprize-competition/#.WrQY4JPwa9Z</p> <p>Newcastle Herald, “University of Newcastle researchers reach final of Water Abundance XPRIZE competition” http://www.theherald.com.au/story/5300466/drawing-water-out-of-air/</p>
International Radio Shows (one and two hour interviews)	<p>POWER HOUR Nation (GCN Network) The Liberty Man – John Moore - Green Beret - Radio Show Republic Broadcasting Network Technology and Choice Pod Cast https://technologyandchoice.com/podcasts/2018/03/episode-30-decentralizing-energy-for-real-with-jim-mccanney/ The Crypto Show Feet to Fire with James Jancik</p>

Investment Opportunities

The Business model is to 1) manufacture with direct distribution with installations managed by our corporate structure or sold to independent vendors qualified to sell and install products (30% of revenue) and 2) develop prototypes for specific applications and license the technology to businesses already with manufacturing capabilities in which they would manufacture, market, distribute, install and maintain all aspects of the product with either a per item revenue OR buy out clause based on the application and market value. 3) Investor installed large WING Generators for direct sale of electrical energy and water to end users via standard billing or Block Chain. Five year financials are provided farther below for all investment opportunities.

NOTE: The JMCC WING product line is divided into 3 distinct classes – Small – Medium - Large. There are three LLC corporations formed to accept investments (all Delaware registered). The WING systems are divided based on electrical energy output and return on investment ROI and marketing plan. Additionally, there are opportunities for foreign assembly plant investments in which local licensing will be given for these plants to market and install in defined areas.

JMCC WING, LLC – Parent holding company (IP held in parent company)

JMCC WING – Farm & Ranch, LLC (Small) – 2, 3, 5, 10, 25, 50, 100 and 250 kiloWatt WING Generators (direct sales for Farm, Ranch, Eco-Village, small islands, remote locations) - \$10 million USD investment to open manufacturing/assembly plant in USA, marketing, product improvement engineering. Products field tested ready to manufacture. ROI immediate based on direct products sales. Will include research center upgrade in Hawaii and mainland assembly plant.

JMCC WING – Medium Commercial, LLC – 10 and 25 MegaWatt WING Generators (commercial power for medium islands, remote areas, substations, applications, sale of WINGs and applications to customers OR direct sale of electrical energy, water and applications to end users – expected availability date mid 2020 with investment early 2019) - \$15 million USD investment for engineering to bring to manufacturing, certification, marketing.

JMCC WING – Large Commercial, LLC – 100 and 250 MegaWatt WING Generators (commercial power for large islands, remote areas, substations, major power source, applications, sale of WINGs and applications to customers OR direct sale of electrical energy, water and applications to end users – expected availability date late 2020 with investment early 2019) \$50 million USD investment for engineering to bring to manufacturing, certification, marketing.

We can structure larger investments over the above three categories (Small, Medium & Large).

The following is a table detailing for investors other individual opportunities available at this time (subject to change and additional product applications at any time). Each investment will be structured under a separate LLC. The financials for the above investments are found in Tables 1 through 5 below. There are other investment options farther below.

Financials Summary - 5 year business plans for investments

There are five business plan pages below with supporting tables and information.

Table 1 is for the Small WING systems direct retail sales.

Table 2 is for the Medium WING systems direct retail sales.

Table 3 is for the Medium WING systems sale of electricity.

Table 4 is for the Large WING systems direct retail sales.

Table 5 is for the Large WING systems sale of electricity.

NOTE: Tables 3 and 5 show an innovative investor program.

There is a second investor program in which investors pay wholesale price for WING installations and share 85% of profits on the direct sale of Electricity at market or lower than market rates. JMCC WING related LLCs perform installation and maintenance ... see Tables 3 and 5 for details on fast payback of investment and continuing income by direct sale of electricity (can be combined with applications).

(continue to next page)

Table 1 - Financial Summary - Direct Retail Sales

JMCC WING - FARM & RANCH, LLC

The following shows estimates for the first 4.5 years of the business estimated to begin selling products in 2020 because of existing name recognition due to existing marketing and the Water Abundance XPRIZE which will give worldwide recognition. Cash flow begins 2019 for sales covering growth and capitalization of manufacturing raw materials.

Numbers in table are in 1,000 of dollars. Beginning with initial Capital Investment of \$10 Million USD and using existing prototypes ready for manufacturing and marketing.

JMCC WING - FARM & RANCH, LLC	Est. start May 2020	In 1,000 of dollars			
costs	2020	2021	2022	2023	2024
Financing	10,000	0	0	0	0
Prior year carryover	0	10,926	31,744	61790	108,458
Investor Fee (3%)	300	0	0	0	0
Facility-Purch Maintenance	600	400	70	70	70
Real Estate Tx's	20	25	30	35	35
Salaries & Subcont (#employees)	455 (5)	650 (10)	3,000 (35)	3,800 (40)	4,510 (50)
Employee Ovrhead	15	25	65	100	130
Professional Mgmt Team	30	90	240	400	550
Legal - Patents	150	150	300	320	440
R & D	300	500	1,000	2,000	4,000
Marketing	50	75	335	435	535
Telecom	6	6	7	7	9
Internet	2	3	3	3	3
Liability Insurance	10	80	320	530	800
Transportation	15	18	18	18	18
Travel	50	60	90	100	120
SubTotal all above	7,997	8844	26,266	53,972	97,238
A=2,3,5 kW (# x Ret)	5,800	11,600	23,200	34,800	46,400
B=10 kW (# x Ret)	1,800	18,000	27,000	40,500	54,000
C=25 kW (# x Ret)	2,400	24,000	36,000	54,000	72,000
D=50 kW (# x Ret)	3,000	30,000	45,000	67,500	90,000
E=100kW (# x Ret)	480	9,600	14,400	24,000	32,000
F=250kW (# x Ret)	1,000	20,000	30,000	50,000	66,500
Total Retail (blue)	14,480	113,200	175,600	270,300	360,900
Mfg/Parts/raw mats (66% TotRet)	9,557	74,712	115,896	178,728	238,194
Subtotal all above	12,920	47,332	85,970	145,544	219,944
Annual Sales Profit	4,923	38,488	59,704	91,572	122,706
Taxes(15% of Prof)	738	5,773	8,956	13,736	18,406
Profit after Taxes	4,185	32,715	50,748	77,836	104,300
Pay Investor (30%)	1,256	9,815	15,224	23,350	31,290
Year End Balance	10,926	31,744	61,790	108,458	170,248

*Sales projection numbers match table next page

Summary of Projected Sales Data for Table 1

Costs are in \$1000 / name plate is kW of WING / use 50% efficiency for energy calculations (e.g. a 10 kW WING will produce $10\text{ kW} \times .5 \times 24 \text{ hours/day} = 120 \text{ kWh per day}$... or per year $120 \text{ kWh/Day} \times 365 \text{ days/year} = 43,800 \text{ kWh/year}$ or $438,000 \text{ kWh per 10 year period}$... averaged over 10 years = \$90,000 retail cost of a 10 kW WING divided by 438,000 kWh = 20.5 cents per kWh = 0.205 USD. Higher wind = lower cost per kWh. The WING offers 24 hour operation since the WING is designed to produce energy from low to very high wind velocities. The following table contains the cost per kWh for each WING Model in last column based on a 50% efficiency over 10 year period ... Note how the cost per unit of energy goes down dramatically with increasing WING size. This continues into the Medium and Large WING systems to produce energy at less than 1 cent per kWh and a customer or investor payback that is only a few years. Pricing reduced w volume orders.

kW WING Name Plate	Retail USD	Cost/Watt Name plate in USD *	# sold 2020	# sold 2021	# sold 2022	# sold 2023	# sold 2024	Est. kWh per year	Cost per kWh USD*
2	29,000	14.50 *	50	200	400	600	800	8,760	0.331
3	38,000	12.66 *	50	200	400	600	800	13,140	0.289
5	49,000	9.90 *	50	200	400	600	800	21,900	0.220
10	90,000	9.00 *	20	200	300	450	600	43,800	0.205
25	120,000	4.80 *	20	200	300	450	600	109,500	0.110
50	150,000	3.00 *	20	200	300	450	600	219,000	0.068
100	240,000	2.40 *	2	40	60	100	200	438,000	0.055
250	500,000	2.00 *	2	40	60	100	200	1,095,000	0.046

*It is not the retail Cost/Watt but the cost per kWh (right column above) that is important.

Whether your purpose is “Energy Independence” or ROI, a JMCC WING Generator is your solution.

WING model	OFF Grid	On Grid	Output * Voltage/ All 60 Hz	eV Car Charge Heads	Reverse Osmosis	Atmospheric Water Generator	Battery Pack (Gel)
2, 3 or 5 kW	Yes	No	120VAC Single Ph	0	N/A	N/A	120/240 VDC 10/20 200 aH
10 kW	Yes	No	120 VAC Single Ph 240/460 VAC 3 Ph	1	To 500 gal/hr	Up to 500 liters/day	120/240 VDC 10/20 - 200 aH 24/48 kWh Or N times
25 kW	Yes		120 VAC Single Ph 240/460 VAC 3 Ph	2	To 1000 gal/hr	Up to 1000 liters/day	240 VDC 20 – 200 aH 49.0 kWh Or N times
25 kW		Yes	460 VAC 3 Ph	2	To 1000 gal/hr	Up to 1000 liters/day	Optional Power Wall
50 kW	Yes		120 VAC Single Ph 240/460 VAC 3 Ph	5	To 3500 gal/hr	Up to 3000 liters/day	384 VDC 32 – 200 aH 75 kWh Or N times
50 kW		Yes	460 VAC 3 Ph	9	To 3500 gal/hr	Up to 4000 liters/day	Optional Power Wall
100 kW 250 kW	Yes No	Yes Yes	460VAC 3p 460VAC 3p	18 40	7000g/h 17000g/h	8000 l/d 20,000 l/d	420 VDC N/A

* The above is for USA electrical standards. Outputs available in ALL international standards.

Table 2 - Financial Summary - Direct Retail Sales

JMCC WING - Medium Commercial, LLC

The following shows estimates for the first 4.5 years of the business estimated to begin selling products in 2020 because of existing name recognition due to existing marketing and the Water Abundance XPRIZE which will give worldwide recognition. Cash flow begins 2020 for sales. Numbers in table are in 1,000 of dollars. Beginning with initial Capital Investment of \$15 Million US and using existing prototypes require final engineering work and certification. Marketing Sales and Direct sale of electricity. (10 and 25 MW WING)

JMCC WING - Med Commercial, LLC	Est. start May 2019	In 1,000 of dollars			
costs	2020	2021	2022	2023	2024
Financing	15,000	*next table	*next table	*next table	*next table
Prior year carryover	0	3,872	136,553	364,140	910,350
Investor Fee (3%)	450	0	0	0	0
Facility-Purch Maintenance	200	500	70	70	70
Real Estate Tx's	4	18	30	35	35
Salaries & Subcont (#employees)	255 (5)	1,000 (15)	1,525 (20)	1,800 (25)	2,510 (30)
Employee Ovrhead	15	25	35	50	70
Professional Mgmt Team	20	90	240	395	550
Legal - Patents	100	100	100	120	140
R & D	10,000	1,000	30,000	10,000	10,000
Marketing	20	95	335	435	535
Telecom	2	5	7	7	9
Internet	2	3	3	3	3
Liability Insurance	5	80	220	550	750
Transportation	15	18	18	18	18
Travel	40	40	80	100	120
SubTotal all above	3,872	898	103,890	350,557	895,540
A=10MW (# x Ret)	0	112,500	300,000	750,000	1,500,000
B=10MW Sale Elec	next table	*next table	*next table	*next table	*next table
C=25MW (# x Ret)	0	562,500	1,500,000	3,750,000	7,500,000
D=25MW Sale Elec	next table	*next table	*next table	*next table	*next table
Total Retail (blue)	0	675,000	1,800,000	4,500,000	5,940,000
Mfg/Parts/raw mats (66% TotRet)	0	445,500	1,188,000	2,970,000	3,920,400
Subtotal all above	3,872	230,398	308,385	1,880,557	5,975,140
Annual Sales Profit	0	229,500	612,000	1,530,000	2,019,600
Taxes(15% of Prof)	0	34,425	91,800	229,500	302,940
Profit After Taxes	0	195,075	520,200	1,300,500	1,716,660
Pay Investor (30%)	0	58,523	156,060	390,150	514,998
Year End Balance	3,872	136,553	364,140	910,350	1,201,662

* There is a second investor program in which investors pay wholesale price for WING installations and share profits sell Electricity at market or lower than market rates see details on following pages.

Summary of Projected Sales Data for Table 2

Costs are in \$1,000,000 USD / name plate is MW of WING / use 50% efficiency for energy calculations (e.g. a 10 MW WING will produce $10\text{MW} \times .5 \times 24 \text{ hours/day} = 120 \text{ MWh per day}$... or per year $120 \text{ MWh/Day} \times 365 \text{ days/year} = 43,800 \text{ MWh/year}$ or $438,000 \text{ MWh per 10 year period}$... averaged over 10 years = \$7,500,000 retail cost of a 10 MW WING divided by 438,000 MWh = $\$7,500,000 / 438,000,000 \text{ kWh} = 1.8 \text{ cents per kWh} = .018 \text{ USD}$... Higher wind = lower cost per kWh. The WING offers 24 hour operation since the WING is designed to produce energy from low to very high wind velocities. The following table contains the cost per kWh for each WING Model in last column based on a 50% efficiency over 10 year period ... Note how the cost per unit of energy goes down dramatically with increasing WING size. This continues into the Medium and Large WING systems to produce energy at less than 2 cents per kWh and a customer or investor payback that is only a few years. Pricing reduced w volume orders.

MW WING Name Plate	Retail \$M	Cost/Watt Name plate in USD *	# sold 2020	# sold 2021	# sold 2022	# sold 2023	# sold 2024	Cost per kWh USD*
10	7.5	0.75 *	0	15	40	100	200	.017
25	15.0	0.60 *	0	38	100	250	500	.014

* It is not the cost per kW but the cost per kWh that is important.

WING model	OFF Grid	On Grid	Output Voltage/ @50/60Hz	eV Car Charge Heads	Reverse Osmosis Gal/hr	Atmospheric Water Gen Gal/hr	Battery Pack (Lithium)
10 MW	N/A	Yes	All int'l standards	1000	500,000	Up to 5,300	Mass Battery Or Customer Power Wall
25 MW	N/A	Yes	All int'l standards	2500	1,000,000	Up to 26,500	Mass Battery Or Customer Power Wall

NOTE: There is a second investor program in which investors pay wholesale price for WING installations and share profits on the direct sale of Electricity at market or lower than market rates see details on following pages. At 10 cents per kilowatt hour comparative electric rates the 10 MW WING at \$6.0 M USD wholesale investor price will pay back the investor's investment in less than 24 months and after that will generate a monthly income of \$253,000 USD. The 25 MW WING at \$12 M USD wholesale investor price will pay back the investment in less than 19 months and generate a monthly income of \$649,000. The WING systems require semi-regular maintenance; however, the stated goal of the structure is 100 years. JMCC WING – Medium Commercial, LLC maintains ownership of the equipment installation and performs all maintenance. See Table 3 next page for details.

Table 3 - Financial Summary - Sale of Electricity

JMCC WING - Medium Commercial, LLC

The following shows estimates for the first 4.5 years of the business estimated to begin selling products in 2020 because of existing name recognition due to existing marketing and the Water Abundance XPRIZE which will give worldwide recognition. Cash flow begins 2020 for sales. Numbers in table are in 1,000 of dollars. Investors pay wholesale price for WING installations and share profits sell Electricity at market or lower than market rates. Marketing sale of electricity. Assumptions are 50% efficiency, electric grid selling price 0.10 USD per kWh. (10 and 25 MW WING)

JMCC WING - Med Commercial, LLC	Est. start July 2020	In 1,000 of dollars			
costs	2020	2021	2022	2023	2024
Investment 10 MW	6,000	0	0	0	0
Investment 25 MW	12,000	0	0	0	0
Prior year carryover	0	3,872	136,553	364,140	910,350
Investor Fee (3%)	0	0	0	0	0
Facility-Rental	20	20	20	20	20
Maintenance	45	45	45	45	45
Installation	50	0	0	0	0
Shipping estimate	25	0	0	0	0
Employee Ovrhead	15	15	15	15	15
Professional Mgmt Team	20	20	20	20	20
Legal	10	10	10	10	10
Marketing	25	25	25	25	25
Telecom	2	2	2	2	2
Internet	2	2	2	2	2
Liability Insurance	25	25	25	25	25
Travel	5	5	5	5	5
Cost Total 10 MW	<244>	<169>	<169>	<169>	<169>
Cost Total 25 MW	<244>	<169>	<169>	<169>	<169>
B=10MW Sale Elec	4,380	4,380	4,380	4,380	4,380
D=25MW Sale Elec	10,950	10,950	10,950	10,950	10,950
10 MW Payout					
Annual Sales Profit	4,136	4,211	4,211	4,211	4,211
Taxes(15% of Prof)	620	632	632	632	632
Profit After Taxes	3,516	3,579	3,579	3,579	3,579
Pay Investor (85%)	2,989	3,042	3,042	3,042	3,042
Year End Balance	527	537	537	537	537
25 MW Payout					
Annual Sales Profit	10,706	10,781	10,781	10,781	10,781
Taxes(15% of Prof)	1,606	1,617	1,617	1,617	1,617
Profit After Taxes	9,100	9,164	9,164	9,164	9,164
Pay Investor (85%)	7,735	7,789	7,789	7,789	7,789
Year End Balance	1,365	1,375	1,375	1,375	1,375

Table 4 - Financial Summary - Direct Retail Sales

JMCC WING - Large Commercial, LLC

The following shows estimates for the first 4.5 years of the business estimated to begin selling products in 2020 because of existing name recognition due to existing marketing and the Water Abundance XPRIZE which will give worldwide recognition. Cash flow begins 2020 for sales. Numbers in table are in 1,000 of dollars. Beginning with initial Capital Investment of \$50 Million US and using existing prototypes require final engineering work and certification. Marketing Sales and Direct sale of electricity. (100 and 250 MW WING)

JMCC WING - Med Commercial, LLC	Est. start May 2020	In 1,000 of dollars			
costs	2020	2021	2022	2023	2024
Financing	50,000	*next table	*next table	*next table	*next table
Prior year carryover	0	17,331	136,553	364,140	910,350
Investor Fee (3%)	1,500	0	0	0	0
Facility-Purch Maintenance	500	500	70	70	70
Real Estate Tx's	10	18	30	35	35
Salaries & Subcont (#employees)	255 (5)	1,000 (15)	1,525 (20)	1,800 (25)	2,510 (30)
Employee Ovrhead	15	25	35	50	70
Professional Mgmt Team	20	90	240	395	550
Legal - Patents	100	100	100	120	140
R & D	30,000	10,000	10,000	10,000	10,000
Marketing	200	95	335	435	535
Telecom	2	5	7	7	9
Internet	2	3	3	3	3
Liability Insurance	10	80	220	550	750
Transportation	15	18	18	18	18
Travel	40	40	80	100	120
SubTotal all above	17,331	5,357	103,890	350,557	895,540
A=100MW (#xRet)	0	250,000	500,000	1,000,000	2,000,000
B=100MW SaleElec	next table	*next table	*next table	*next table	*next table
C=250MW (#xRet)	0	500,000	1,000,000	2,000,000	4,000,000
D=250MW SaleElec	next table	*next table	*next table	*next table	*next table
Total Retail (blue)	0	750,000	1,500,000	3,000,000	6,000,000
Mfg/Parts/raw mats (66% TotRet)	0	495,000	990,000	1,980,000	3,960,000
Subtotal all above	17,331	260,357	520,714	1,041,428	2,082,856
Annual Sales Profit	0	255,000	510,000	1,020,000	2,040,000
Taxes(15% of Prof)	0	38,250	76,500	153,000	306,000
Profit After Taxes	0	216,750	433,500	867,000	1,734,000
Pay Investor (30%)	0	65,025	130,050	260,100	520,200
Year End Balance	17,331	151,725	303,450	606,900	1,213,800

* There is a second investor program in which investors pay wholesale price for WING installations and share profits sell Electricity at market or lower than market rates see details on following pages.

Summary of Projected Sales Data for Table 4

Costs are in \$1,000,000 USD / name plate is MW of WING / use 50% efficiency for energy calculations (e.g. a 100 MW WING will produce $100\text{MW} \times .5 \times 24 \text{ hours/day} = 1,200 \text{ MWh}$ per day ... or per year $1,200 \text{ MWh/Day} \times 365 \text{ days/year} = 438,000 \text{ MWh/year}$ or $4,380,000 \text{ MWh}$ per 10 year period ... averaged over 10 years = \$50,000,000 retail cost of a 100 MW WING divided by $4,380,000 \text{ MWh} = \$50,000,000 / 4,380,000,000 \text{ kWh} = 1.1 \text{ cents per kWh} = .011 \text{ USD}$... Higher wind = lower cost per kWh. The WING offers 24 hour operation since the WING is designed to produce energy from low to very high wind velocities. The following table contains the cost per kWh for each WING Model in last column based on a 50% efficiency over 10 year period ... Note how the cost per unit of energy goes down dramatically with increasing WING size. This continues into the Medium and Large WING systems to produce energy at less than 1 cent per kWh and a customer or investor payback that is only a few years. Pricing reduced w volume orders.

MW WING Name Plate	Retail \$M	Cost/Watt Name plate in USD *	# sold 2020	# sold 2021	# sold 2022	# sold 2023	# sold 2024	Cost per kWh USD*
100	50	0.50 *	0	5	10	20	40	.011
250	100	0.40 *	0	5	10	20	40	.009

* It is not the cost per kW but the cost per kWh that is important.

WING model	OFF Grid	On Grid	Output Voltage/ @50/60Hz	eV Car Charge Heads	Reverse Osmosis Gal/hr	Atmospheric Water Gen Gal/hr	Battery Pack (Lithium)
100 MW	N/A	Yes	All int'l standards	10,000	5,000,000	Up to 53,000	Mass Battery Or Customer Power Wall
250 MW	N/A	Yes	All int'l standards		25,000	10,000,000	Up to 265,000

NOTE: There is a second investor program in which investors pay wholesale price for WING installations and share profits on the direct sale of Electricity at market or lower than market rates see details on following pages. At 10 cents per kilowatt hour comparative electric rates the 100 MW WING at \$40.0 M USD wholesale investor price will pay back the investor's investment in less than 15 months and after that will generate a monthly income of \$2,627,000 USD. The 250 MW WING at \$80 M USD wholesale investor price will pay back the investment in less than 12 months and generate a monthly income of \$6,582,000 USD. The WING systems require semi-regular maintenance; however, the stated goal of the structure is 100 years. JMCC WING – Large Commercial, LLC maintains ownership of the equipment installation and performs all maintenance. See Table 5 next page for details.

Table 5 - Financial Summary - Sale of Electricity

JMCC WING - Large Commercial, LLC

The following shows estimates for the first 4.5 years of the business estimated to begin selling products in 2020 because of existing name recognition due to existing marketing and the Water Abundance XPRIZE which will give worldwide recognition. Cash flow begins 2020 for sales. Numbers in table are in 1,000 of dollars. Investors pay wholesale price for WING installations and share profits sell Electricity at market or lower than market rates. Marketing sale of electricity. Assumptions are 50% efficiency, electric grid selling price 0.10 USD per kWh. (10 and 25 MW WING)

JMCC WING - Med Commercial, LLC	Est. start Dec 2020	In 1,000 of dollars			
costs	2020	2021	2022	2023	2024
Investment 100 MW	50,000	0	0	0	0
Investment 250 MW	100,000	0	0	0	0
Prior year carryover	0	3,872	136,553	364,140	910,350
Investor Fee (3%)	0	0	0	0	0
Facility-Rental	20	20	20	20	20
Maintenance	45	45	45	45	45
Installation	50	0	0	0	0
Shipping estimate	25	0	0	0	0
Employee Ovrhead	15	15	15	15	15
Professional Mgmt Team	20	20	20	20	20
Legal	10	10	10	10	10
Marketing	25	25	25	25	25
Telecom	2	2	2	2	2
Internet	2	2	2	2	2
Liability Insurance	25	25	25	25	25
Travel	5	5	5	5	5
Cost Total 100 MW	<244>	<169>	<169>	<169>	<169>
Cost Total 250 MW	<244>	<169>	<169>	<169>	<169>
B=100MW SaleElec	43,800	43,800	43,800	43,800	43,800
D=250MW SaleElec	109,500	109,500	109,500	109,500	109,500
100 MW Payout					
Annual Sales Profit	43,556	43,631	43,631	43,631	43,631
Taxes(15% of Prof)	6,533	6,545	6,545	6,545	6,545
Profit After Taxes	37,023	37,086	37,086	37,086	37,086
Pay Investor (85%)	31,470	31,523	31,523	31,523	31,523
Year End Balance	5,553	5,563	5,563	5,563	5,563
250 MW Payout					
Annual Sales Profit	109,256	109,331	10,781	10,781	10,781
Taxes(15% of Prof)	16,388	16,400	16,400	16,400	16,400
Profit After Taxes	92,868	92,931	92,931	92,931	92,931
Pay Investor (85%)	78,938	78,991	78,991	78,991	78,991
Year End Balance	13,930	13,940	13,940	13,940	13,940

Further individual investment opportunities listed in a table at the very end of white paper

TABLE OF COMPARISON BETWEEN 3-BLADE AND WING SYSTEMS

CRITERIA	3-BLADE SYSTEM	WING GENERATOR™
Installation	Requires large cranes – lift heavy equipment to top of tower	Installs from the ground level without the use of cranes – all heavy equipment is at ground level
Maintenance	Requires internal elevators or cranes for even the most minor repairs	All maintenance is performed from the staging platform or on the ground – light weight construction allows even medium sized installations to be assembled by hand
Eco-friendly	Are noisy and kill birds – low frequency vibration noise carries for miles across the countryside – are unsightly standing motionless against the horizon	Slow speed and white sails make this an eco friendly design which does not damage wildlife – large systems are quiet and vibration free – are pleasing to look at – the large scale systems produce enough energy to solve the world energy crisis and would be placed in remote regions and offshore
Can it solve the world energy crisis ?	NO – it would take 77 million 1.5 megawatt 3-blade towers (operating at the industry average of 15% with all operational 24/7/365) to come close to replacing world energy needs	YES – with just 300 of the 1000 foot towers we could shut down all coal – nuclear – and other heat conversion electric generators in the USA and would allow third world countries to develop without dependency on world politics of oil and nuclear power
Aesthetically pleasing	NO – the country side is littered with thousands of 3-blade wind generators which do not contribute significant energy	YES - A few major installations in out of sight locations will provide us with all our energy needs

Low wind conditions	Need an assist motor to start them even in moderate wind conditions – they require a good deal of energy and are horribly inefficient at low to mid wind speeds	Self start at near zero wind speeds and have a high efficiency even at low wind
Mid wind speeds	Even a few MPH less wind than their maximum rating can drop to 50% of peak rated power output – their efficiency curves make them essentially useless at mid wind speeds as most of the wind blows through the 3-blades without creating any useful work – the blades airfoil force is directed mainly perpendicular to the rotational direction of the hub and do not contribute any useful work – this also causes the blades to work against one another causing vibrational modes that require extensive engineering and is the cause the systems to shut down on gusty days or to fail prematurely	At mid wind speeds the WING systems are highly efficient which is a result of the fact that the sails or wings are driving the wheel in the direction of rotation – their ability to capture wind energy is augmented by the fact that they are 3 dimensional with large surface areas – the sails or wings are integrated into a single wheel so that no matter what the angle of attack or strength of the wind all WINGS contribute to the overall rotational torque to the ability – their airfoils which provide up to 10 times the force of a flat blade are directing that force in the direction of rotation – they never work against one another – the WINGS can be designed to self adjust to local wind speed and direction (with a simple trailing edge feathering trailing edge) each WING is optimized for maximum torque no matter how variable the wind
High wind speeds	Generally the 3 blade systems shut down in gusty or high wind speed conditions – only in steady mild conditions do they work without down time	Self furling self directing independent sails used as wings can work under the most stringent gusty conditions and still produce useful power

Overall weight	Heavy components are required because of the stress put on the system – heavy equipment is hundreds of feet in the air – each blade can weigh in excess of 65 tons	Components are super light weight strong made from carbon fiber & synthetics – cable “wheel” systems with ultra-light sail material – heavy equipment is at ground level
Offshore installation and maintenance comparison	Towers require massive cement footings underwater that support a single tower – they require helicopters and massive sea born crane systems for installations and maintenance - maximum practical size of these generators is currently 3 Megawatts – the only way these systems can be profitable is with government subsidies – due to inefficient design they generally only produce about 15% of peak power when operational	Off shore installations are placed on floating barges which can be assembled or repaired at a dock and moved to offshore locations – the only underwater equipment is a chain and anchor – they adjust to changing wind directions by swinging on anchor like a sail boat at anchor - the large 500 megawatt WING systems can replace a single large scale nuclear or coal power plant – they can convert our entire power grid to free wind energy
Scalability	The 3-blade system is a 2 dimensional design that requires high RPM in the blade system and therefore do not scale up to larger dimensions – the largest systems to date 1.5 megawatts and a few 3 megawatt units are wrought with engineering problems with the estimated largest possible size of only 6 megawatts (considered in the industry to be a major accomplishment)	The WING design is a low RPM design that uses high efficiency sails or WINGS to extract energy from the wind – it is a 3 dimensional design and therefore becomes more efficient with larger size as it grows as the cube of the dimensions rather than the square (2 dimensions) – larger sizes capture more wind energy for their overall size than the smaller models – they therefore scale to extremely large sizes capable of 500 megawatts or more

Voltage production at source	The industry standard is 640 volts at the power head which has to be converted again to transport on the high voltage transport system	The remote large scale WING GENERATORS will be capable of producing high voltage output directly to the cross country power transport system
Industry View	Although there is tremendous hype in the wind trade magazines the reality is that many companies and entire countries have been financially taken to the cleaners by investing in the 3-blade wind generation systems – power grid operators currently view wind and other sources of “alternative” energy as a thorn in their sides – the current generation of installed 3-blade wind generator base do not contribute significant amount of energy and when they come online the operators have to constantly adjust for their erratic output	TIME WILL TELL – but with DISTRIBUTED energy – direct power applications of WING systems that completely bypass conversion to electricity – large scale WING systems distributed around the country where we will always have electrical power generation AND power storage in the home – the new generation of designs can fully replace the coal nuclear and other sources of heat conversion power generation and lead to an eco-friendly world with electric ground transportation including direct drive WING generation power for boats and ships
Cost to manufacture, transport, install and maintain	Not only are 3 Blade turbines much more expensive to build but are extremely expensive to manufacture, install and most of all maintain. Additionally, they are extremely inefficient at capturing energy from the wind so the cost per unit of electricity generated is high.	The WING Generators are modular and can be shipped in standard 20' or 40' shipping containers. Their extreme light weight in the WING coupled with all the heavy equipment at or near ground level makes them easy to manufacture, install and most of all to maintain. The WING is highly efficient in converting wind to energy AT ALL WIND SPEEDS giving far lower cost per unit energy.

Use of materials to manufacture	90% of materials are in support structure	15% of materials are in support structure
Number of units to produce equivalent amount of energy output in kWh	125 - 3 blade wind turbines (1.5 MW at industry standard 21% efficiency)	1 (one) - 100MW JMCC WING Generator at 50% efficiency
Cost of equipment at installation	\$375 million USD	\$50 million USD
Payback on installation investment	69 years	2 years
Wind Speed where unit operates at >90% efficiency	28 to 33 km/hr wind speed Shut down above 33 km/hr	15 to 60 km/hr wind speed
Land coverage for equivalent installation	375 acres	2 acres or offshore on barge
Lifetime of installation	Within 5 years 14% inoperable	100 years
Self Starting	NO – requires internal electric motor to start spinning – industry hides data - energy to get 3 blade wind turbines spinning	Yes – Self starts at 3 km/hr wind – produces energy at all wind speeds due to innovative electronics
Weight of Blade vs WING system	65 tons per blade x 3 = 195 tons total blade wt. requires massive support structure just to hold blades	Extremely light weight entire WING structure weighs less than 3 tons
Alignment with the wind	Requires complex control electronics to position blades with wind direction and tether into wind ... as a result the various portions of blades are not positioned for optimal wind encounter	Self adjusting – WING aligns with the wind naturally and design has WING adjusting to wind along entire length of WING as part of design
% of wind captured to create energy	Less than 3% - wind blows right through stick blades	95% using airfoils in the direction of rotation
Diameter of blades vs WING structure	400 feet diameter	200 feet diameter

Comparison to solar	400 Watt Solar panels	JMCC WING Generator
Equivalent energy production units at installation	600,000 solar panels at 20% efficiency	1 – 100 MW WING Gen At 50% efficiency
Cost of equipment	\$700 million USD	\$50 million USD
Loss of efficiency	Loss 1% efficiency per year	0% loss efficiency
Lifetime of installation to 50% original efficiency	20% efficiency loss 1% per year – lifetime 10 years to replacement	100 year structure lifetime with maintenance
Land coverage for equivalent installation	600 acres	2 acres or offshore on barge
Heat Generated	80% of the solar energy is converted to heat at the solar panels	Less than 5% of the energy results in heat loss via air cooling
Kills Birds	YES – the tremendous heat generated kills birds flying over the complex	NO – in field testing shows that birds see the WING and fly around it
Cost to dispose of after lifetime	People are just beginning to understand the real dollars cost and environmental cost of disposing of solar panels that have only a 10 year lifespan to 50% loss of efficiency	Lifetime 100 years – the WINGs are designed for the structure to last 100 years or longer with proper care and maintenance



Comparison - 100 MW JMCC WING Generator vs Solar vs 3 Blade Turbines

We were asked recently to compare the 100 MegaWatt JMCC WING Generator (assuming a cost of \$50 million USD) to solar panels with a cost \$3 million per MegaWatt of installed base (2500 400 Watt solar panels). Since this solar price is not in the USA, I will also include the comparison for the current USA commercial utility price of about \$1.2 million for the same MegaWatt of installed solar panels.

The following is the reply which also includes a comparison of both to the 3 blade wind turbines.

The WING and solar are an apples to oranges comparison but here is the reality. The true cost of "energy" is what has to be compared. In other words, at the end of the day, month or year, you have to compare the amount of energy produced and calculate the cost = cost per unit energy. These costs should include equipment, installation, land procurement, interface electronics to connect to the grid, lifetime of service, maintenance, down time, removal after lifetime and many other factors. A simple "cost of energy produced per day" using the price tag of the equipment is a good starting point.

Solar only works for a certain number of hours per day (when the sun is shining) according to industry standards for what are known as solar hours. A "solar hour" is a solar panel or array working at 100% capacity for one hour. In a good location there is an industry standard of 4 solar hours per day on average. This includes variation of the sun's angle, seasonal variations, clouds, and other factors. First look at a daily production of energy using the solar cost numbers above of \$3 million USD per MegaWatt of solar "capacity". Multiply that times 4 hours (solar hours per day) and then average this over a 24 hour period. You are getting 4 MegaWatt hours of energy per day for \$3 million up front cost. Now look at the WING production given a well chosen windy location at 40% production also for 24 hours (the variation in wind is accounted for in the 40% factor). This single WING produces 40 MegaWatt hours times 24 hours in the day = 960 MegaWatt hours of energy per day. For a solar panel field to produce this much energy in a single day you would need $960/4 = 240$ fields of panels of the MegaWatt size. You will need 240 MegaWatts installed base of solar panels ($2500 \times 240 = 600,000$ solar panels) to produce the same amount of energy as a single 100 MegaWatt WING Generator. The 24 hour energy production for the solar panel array would cost $240 \times \$3 \text{ million} = \720 million . Compare the cost of energy produced (960 MegaWatts) for the two systems per day. The WING \$50 million vs the solar \$720 million (14.4 times the cost of the single WING system). This is a true comparison due to the fact that the solar only can produce about 4 solar hours per day. Also if you figure that a 400 watt solar panel rating is only giving about 70% of that (because of the way they test rate the solar panels) this makes the true comparison actually WING @ \$50 million vs solar over \$1 billion to produce the same amount of energy. The USA price for utility grade solar installations is currently about \$1.2 million per MegaWatt so this would give a final price of \$288 million with an adjustment for the 70% solar panel rating gives a final cost of \$411 million (which is still about 8 times the cost of the single WING system).

Regarding "footprint". How much land area does the facility take? This is both a cost and environmental issue. The WING takes up less than a single acre if installed on land, but typically the large WINGS would be offshore mounted on barges that can be towed to location and towed back for ease of maintenance at a port facility. The solar panels take up the following area. For solar panel area this is the industry standard ... "For a typical solar installation, the general rule of thumb is that for every 1kW of solar panels needed, the area required is approximately 100 square feet. This means, that, for a 1MW solar PV power plant, the area required is about 2.5 acres or 100,000 square feet." So you have

$240 \text{ MW} \times 2.5 \text{ acres} = 600 \text{ acres}$ for the 600,000 solar panel array to produce the same energy as the one acre for the land based single WING Generator.

Also look at the following factors. The solar installation of this size kills many birds whereas the WING does not because the birds can see the WING and fly around it. The environmental impact of manufacturing the solar panels is rarely noted, not to mention the issue of what to do with them after their estimated 10 year commercial life cycle. The WING produces high voltage A/C output ready for transport on the grid system whereas solar has to be converted from D/C to A/C for transmission.

The other issue with solar is that without batteries to store the energy you are limited to only a few hours of the day when the sun is shining. Producing excess energy does no good unless there is a way to store and recover the energy. This creates what is known in the industry as “unmanageable fluctuations” which creates brown outs (low power) and surges (over power) in the electric grid. The issue can be solved with batteries and inverters causing a huge increase in cost (over the costs already listed above). The issue of loss due to charging and discharging batteries and conversion from A/C to D/C must be considered in the cost analysis. China as a nation recently cancelled all future installations of solar panels sending the world wide supply of solar panels into a nose dive since China was the largest installer of solar in the world. They realized that the more solar they installed the worse the situation became because you cannot power up and down large commercial power plants based on the whims of the sun and clouds.

The JMCC WING Generator solves this issue with “Distributed Energy” in which the overall wind over a national area is a constant (discovered by atmospheric studies). By distributing the large WING systems, it will provide constant energy production 24/7/365. This was first outlined in my Book published in 2009 “McCanney WING Generator – World Energy Project” with addendum “The Myth of Alternative Energy”.

Relative to 3 blade wind turbines, the comparison found that a single 100 MegaWatt JMCC WING Generator can produce the same amount of energy as 125 3 blade wind turbines (industry standard 1.5 MegaWatt 3 blade turbines operating at industry standard 21%). At \$3 million each for the 3 blade wind turbines, the cost would be $\$3 \text{ million} \times 125 = \375 million compared to the \$50 million for the single WING system (the WING does not require government subsidies to be profitable).

Relative to land usage, the 3 blade turbines based on the industry standard “In the United States, the direct land use for wind turbines comes in at one acre per megawatt of rated capacity. That is, a 1.5 MegaWatt wind turbine would require 1.5 acres of land. So, 125 of the 3 blade turbines would require $1.5 \text{ acres} \times 125 \text{ units} = 375 \text{ acres}$ of land whereas the single 100 MegaWatt WING system would use a single acre of land to produce the same amount of power.

Regarding off shore congestion for WING vs the 3 blade wind turbines, using the larger 3 MegaWatt 3 blade turbines, a single 100 MegaWatt WING will replace about 62 of the 3 blade units. The WING does not use a cement base but floats on a barge. Compare the cost of 62 ocean cement bases with the cost of a single off shore barge that is staged and maintained at a shore port. The WING architecture will eventually grow to 500 MegaWatts which would give significant increase in all the numbers on this page. Another factor is that the 40% efficiency of the WING is a very conservative number and will be closer to 80% based on the fact that the WING is very efficient from very low to very high wind speeds.

JMCC WING Generator Design – Electricity and Water

When James McCanney designed the JMCC WING Generator, these are the factors that were taken into account. The JMCC WING™ Generator is the result of over a decade of research and the initial models are becoming commercially available. Physicist, inventor and owner James McCanney explains, “When I initially designed the JMCC WING System I wrote what is known in engineering processes as a “Functional Specification”. I defined all the properties that a system should have. My main requirements were, 1) low RPM with very high torque on the WING with coordinated electronics (no high RPM gear boxes) OR with the option of a purely mechanical power system (no conversion to electrical energy), 2) WING is very light weight but strong 3) all heavy equipment on the ground, 4) able to extract constant power from very low to very high wind speeds, 5) ecologically sound and environmentally friendly, 6) aesthetically pleasing (including no sound or vibration), and last and most important 7) scalable to very large sizes (the very large JMCC WING Generators are being designed to replace coal and nuclear power plants). Rotating at lower RPMs the WING has hundreds of times the surface area as traditional wind generators **with very large air foils pulling in the direction of rotation.**” With larger systems that dwarf current wind and solar installations, the percentage cost of base and support structure is greatly reduced, producing more electricity per investment dollar.

Test results show that the cost per unit of energy is drastically reduced from the standard 3 blade wind turbine systems (Table 1 below).

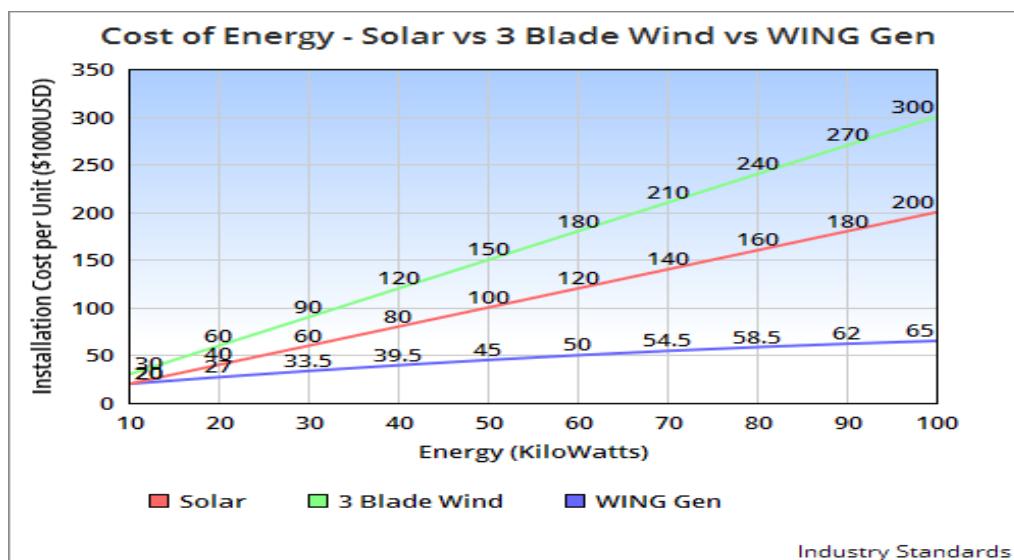


Table 1

The energy delivered at especially low through very high wind speeds far exceeds the 3 blade systems (Table 2 below). This creates a far more efficient system that produces in excess of 50% and as much as 80% of name plate energy versus just 21% for 3 blade wind turbines.

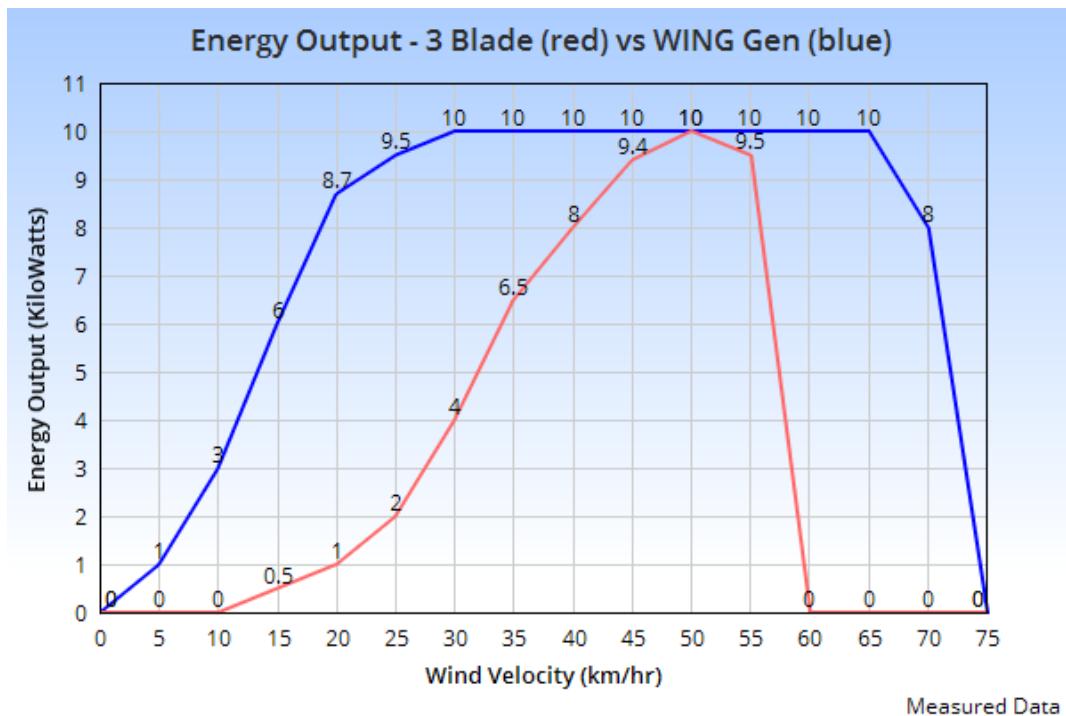


Table 2

The patent pending JMCC WING system is scalable to large sizes estimated to reach eventually 200 MW and possibly beyond. By comparison the average nuclear power plant is about 500 MW. One aspect of the WING Generator design, besides extremely high torque, is that they scale in 3 dimensions and thus the energy output grows exponentially with size, further reducing the cost per unit energy. Table 2 shows the measured energy output of the WING generator vs. a standard 3 blade wind generator for 10 kW unit currently built and tested.

When configured with an electric generator power head, the WING Generator is coordinated with the control electronics and custom power head to generate constant power at much lower and also higher wind speeds than the 3 Blade turbines. The result is that a single 100 MegaWatt JMCC WING Generator (cost \$50 million USD on 2 acres of land) can replace 125 of the 3 blade wind turbines

(cost \$375 million USD on 375 acres of land). This efficiency also translates into much smaller battery banks when used to supply complete power in an area.

The JMCC WING systems do not use the same principles of wind energy extraction as the 3 blade systems. The WINGS work on an entirely different set of aerodynamic principles. The principles of aerodynamic lift are incorporated in the patent pending design with the largest part of the air foil at the edge of the WING “drum”. The wind is contained by the shroud and this greatly increases the atmospheric pressure at this region of the wing which greatly increases the lift in the direction of rotation. The WING Generator works on the same principle as the jet engine compared to propellers of the 3 blade wind turbine. Thus our motto: “The Jet Age of Wind Energy”. These results have been verified in on site tests.

The current proposal is to manufacture and market the “Small” (10, 25, 50, 100 and 250 kiloWatt WING Generators), “Medium” (10 and 25 MegaWatt WING Generators) and “Large” (100 and 250 MegaWatt WING Generators). All are planned with a two pronged marketing approach. The first marketing strategy is direct sales to end customers with maintenance contracts. The second strategy is to enlist investors to invest in WING Generators that will be installed and maintained by JMCC WING and its subsidiaries with an 85% payout on profits from selling electricity to end consumers via standard billing or more modern methods such as Block Chain. We can offer these innovative marketing plans because of the rapid payback on investment of the WING Generators.

We also combine with the JMCC WING Generators with “appliances” for specific applications needed by customers. Add-on appliances include eV Car Charging Stations, Reverse Osmosis Desalination, Atmospheric Water Generators, Water Filtration & Pumping & Storage, Electric Furnaces, Electric Motors, Compressors, electrical power in all international standards, etc.. The WING Generator will provide energy for small to large applications for electric transportation, water treatment, Crypto Mining and Cooling, Token Energy Exchange, Direct Heating and ultimately the replacement of coal and nuclear power plants.

We can place WING Generators where the energy is used to eliminate large infrastructure costs typical of other alternative energy “solutions”. The JMCC WING not only helps solve electricity issues but also offers complete water solutions on a world scale. This was the concept and imagination that gave birth to the “World Energy Water Project”.

Example WING Applications & Analysis

eV Electric Car Charging Stations

Electric cars, motorcycles, trucks, busses, trains and even airplanes are becoming common. Commercial electric airlines are already in service and there are companies marketing completely electric fan jet aircraft. The use will only increase. It is said that any youth less than 5 years old will never drive a petroleum powered auto. But there is one **major problem**. The current electrical generation equipment and transmission grid cannot add capacity to supply energy for the surge in electric vehicles. Even though electric car proponents claim to be “Green”, the reality is that burning coal, natural gas, nuclear or other high energy content fuels to charge cars uses more energy and creates more pollution than simply using gasoline or diesel. Clearly a true renewable energy source is needed.

The current “alternative energy” systems on the market are 3 blade wind turbines and solar panels. These will never meet the challenge of supplying extra electricity for the electric transportation industry. In over 15 years the wind industry has installed about 100,000 of the 3 blade wind turbines and the energy delivered is severely less than promised. About 14,000 are terminally out of commission and the remaining turbines mainly set idle. You can drive through fields of 3 blade wind turbines and rarely see even a few turning. They have an internal electric motor just to start the massive 65 ton blades in motion. The air simply blows right through them. The reality is that after all the 3 blade turbines and solar panels installed to date, not a single central power company has reduced energy production or polluting output.

The cost of the infrastructure of the towers and bases of 3 blade turbines dwarfs the equipment that actually generates electricity. With all factors included, the payback time is 69 years. Without government subsidies these industries would not exist. Regarding solar panels, the time when most people are charging their cars is at night, when there is no sun. Solar panels lose 1% efficiency per year of service. Starting at 20% efficiency in only 10 years they are producing just 50% of original capacity and have to be completely scrapped and replaced. They are not a solution for the long term and again are not going to power the surge of demand for electric transportation. Like 3 blade wind turbines, solar rely completely on government subsidies and would not exist without them.

The JMCC WING Generators were designed with applications in mind. We have strategic alliances with the largest manufacturer of eV car charging stations in North America. The 10kW WING Generator will support a single car charging station (at 7 kW output) whereas the 250 MW WING will support up to 10,000,000 car charging stations. We have all solutions in between

Reverse Osmosis - Atmospheric Water Generation – Water Filtration & Storage

One of the largest emerging markets for use with the WING generator is in procuring water. Water is an emergent market that to date has had only traditional prospectus usually in the form of regulations favoring large international corporations to have water “rights”. These eliminate the indigenous populations from having water rights and drives the cost of water to more than that of petroleum products. You pay more for a liter of water than for a liter of gasoline. We offer water solutions not just products. Every area is unique and requires unique analysis to balance natural sources of water whether from underground, the seas and oceans, brackish water, lakes and rivers, or water from the atmosphere. We offer solutions for all of these water sources and can apply them in the most cost effective way for each case. Atmospheric Water Generator is an old idea that has come of age however it requires large amounts of energy. Once again it is the JMCC WING™ Generator that will cure the energy part of the equation making the AWGs profitable to manufacture plus economical to purchase and place literally anywhere on planet earth for local water supply generation. In 2018 JMCC WING, LLC was awarded the XPRIZE “Technology Innovation Achievement Award” and \$150,000 stipend powering our line of Atmospheric Water Generators with a 50 kW JMCC WING Generator.

Reverse Osmosis can be either staged in a warehouse type facility or “containerized” being shipped and ready to operate in a standard 20’ or 40’ shipping container. The spec sheets given earlier in this white paper show the amounts of water that can be produced per day with Reverse Osmosis. In terms of energy, RO produces about 25 times the amount of water per unit of energy as Atmospheric Water Generation. If only water filtration is required, we can filter and pump 100 times more water than purification with Reverse Osmosis. We can provide small to extremely large Reverse Osmosis, Atmospheric Water Generation and filtration systems powered by the WING Generators of all sizes (from 10 kW to 250 MW). We are positioned to solve energy and water problems on a world scale. Reverse Osmosis and filtration require a water source whereas Atmospheric

Water Generation only requires air (even dry desert air conditions can produce water at night when the cool air condenses at the desert floor).

The least expensive water solution is in catchment of water from rain. Even the driest places on earth have enough rain to support large populations if properly harvested and stored. Our goal is to analyze each area for water resources and determine the least cost per unit of water along with longevity of the solution.

In brief, the JMCC WING Generators and Water solutions have the following properties. Scalability, Portability, Configuration Options, Ease of Installation, Durability, Reliability, Ease of Maintenance, Add on Energy and Water Solutions, Environmentally Safe (no electrical or physical noise or vibration, do not kill birds)

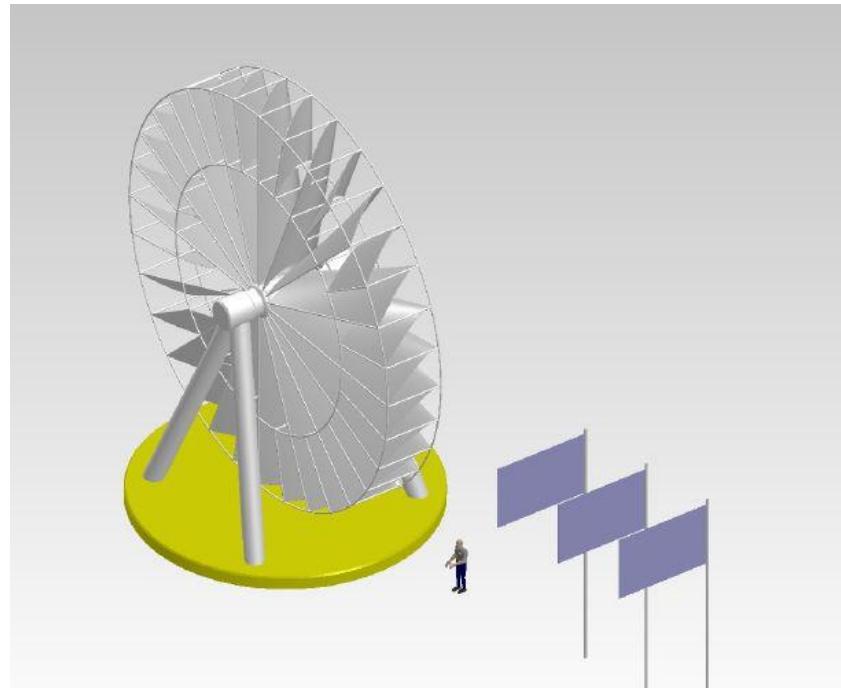
Appendix 1

Scaling Cost Analysis & Construction - WING Generator

This Appendix shows the engineering work by independent firms that has been done to verify the claims of scalability of size and cost of the WING Generator. This means that the cost per unit energy is verified to decrease exponentially with size. While the cost per liter of the water extraction process is linear with increasing size, the cost per unit of energy decreases. This is what allows the larger systems to reduce the cost eV car charging, cost per liter of water and other applications. Independent engineering firms have studied the WING Generator design and 1) verify that the WING structure can be built to large sizes up to 1000 feet in diameter (300 meter diameter) producing up to 500 MW of power in a single unit, and 2) that the energy output scales in 3 dimensions (as opposed to 1 dimension growth of the standard 3 blade wind turbine). That means that if you double the linear dimension of the WING (double the diameter), then the energy output will be 8 times the prior result ($2^3 = 8$).

If you triple the linear dimension of the WING Fan system it will produce 27 times ($3^3 = 27$) the energy output. Not only is the surface Wing area increasing as the cube of the dimensions, but the system works efficiently at low to very high wind speeds which is the bane of the 3 blade wind system. This is where the exponential cost reduction per unit of energy occurs with the WING Generator. Coupled with the cascading of the applications such as car charging stations, Reverse Osmosis, Water pumping, Atmospheric Water Generators, Heating

furnaces, and other applications which are already commercially available, the future large scale energy needs will be met. It is the low RPM high torque aspect of the WING Generator that extracts large portion of the wind energy without slowing down the wind which allows the WING to operate at low wind speeds. The WINGs by design automatically adjust to the varying wind conditions without complex electronics. The WING self start up speed is 3 km/hr and operate to wind speeds far in excess of normal limits of 3 blade wind turbines because of unique design of the control electronics and the WING itself can spin up to very high RPMs. These engineering features of the WING Generator cause the great reduction in cost per unit of energy with size. The “World Energy Water Project” is a solution based effort. The 3 blade wind turbine and solar cannot compete with the WING Generator looking at just the cost per unit of energy (and energy storage) alone.

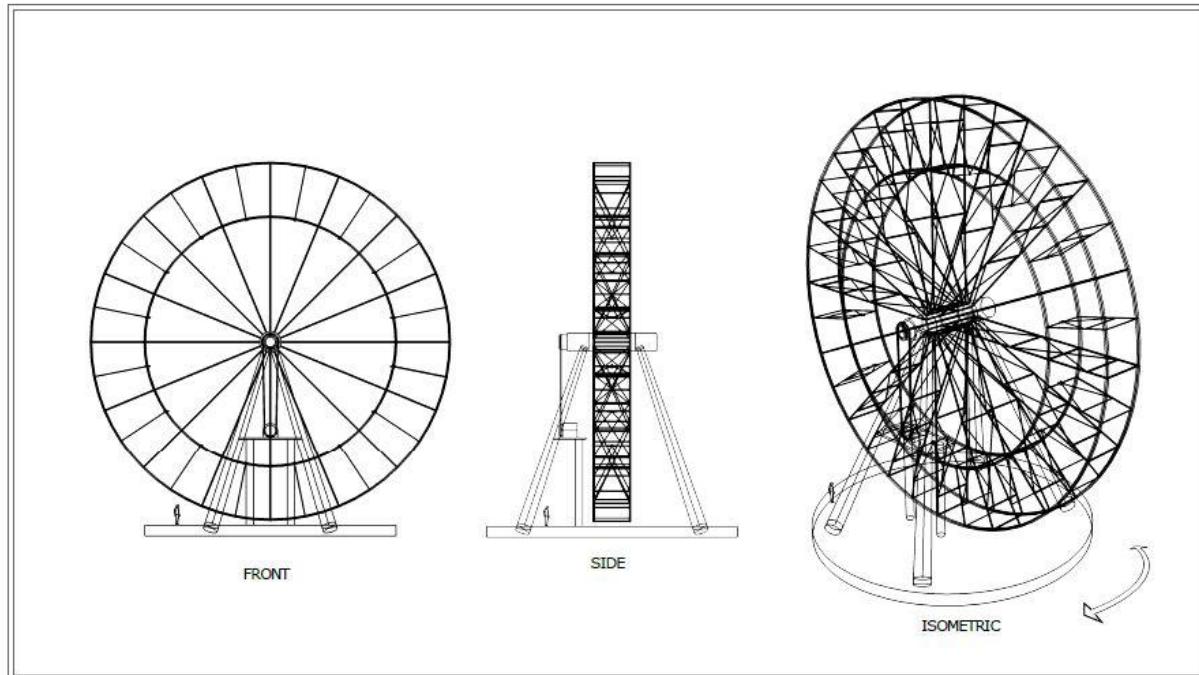


Phase 2 - 12 Meter WING system Cad Cam Engineering Prototype drawing

Appendix 2

Engineering Studies – Scaling up WING Generator

The same company that designed and built the Huston Astrodome moveable roof and many of the largest Farris heels in the world I contracted a number of years ago to design a prototype JMCC WING Generator system for a 100 foot diameter WING. At the same time, I requested that they do a scaling engineering study to see if would be possible to scale the WINGS to 1000 foot diameter. Below are 3 of the engineering drawings that resulted from that study. The first 2 diagrams deal with the 100 foot diameter prototype while the third demonstrates the scaling to 1000 foot diameter (flat panels are in place of the WINGS in these diagrams for simplicity).



 **UNI-SYSTEMS**

James M. McCanney
Standard Views - 100' Prototype

Drawn by Joe Kane | April 27th, 2009

1

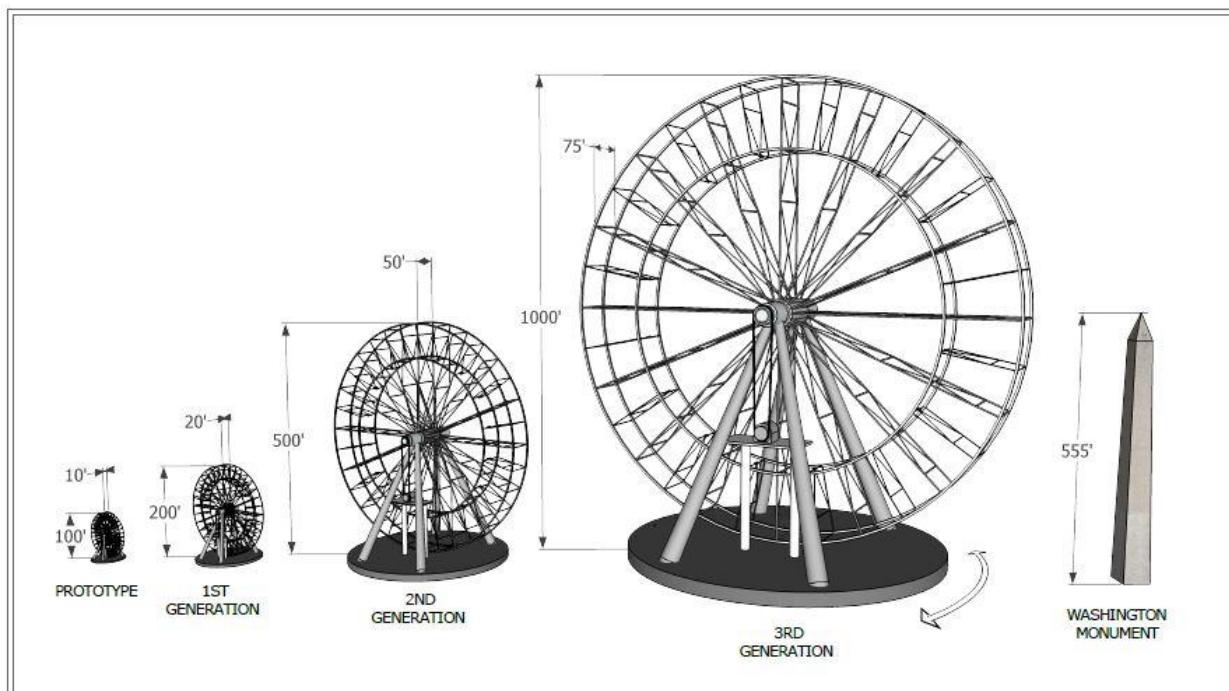



UNI-SYSTEMS

James M. McCanney
Beach Context

Drawn by Joe Kane | April 27th, 2009

2




UNI-SYSTEMS

James M. McCanney
Scaled Development

Drawn by Joe Kane | April 27th, 2009

3

Appendix 3

The following is the cover of the eBook (pub 2009)

McCanney Wing GeneratorTM Distributed Energy National Grid WORLD ENERGY PROJECT

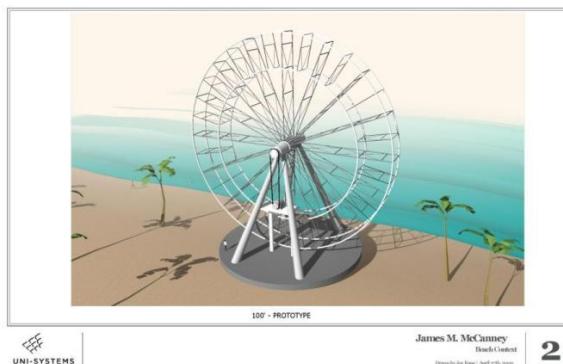
With supplement “The Myth of Alternative Energy”

By James M. McCanney, M.S.

THIS TEXT PRESENTS AN OVERALL DESIGN AND PLAN FOR A WORLD ENERGY SYSTEM
BASED ON A NEW HIGHLY EFFICIENT “WING” DESIGN

IT PRESENTS A NATIONAL DISTRIBUTED ENERGY SYSTEM WHICH USES OUR CURRENT
ELECTRICAL GRID (NO SMART GRID NEEDED)

PRIOR MISCONCEPTIONS ARE DISCUSSED SUCH AS THE NEED TO BURN FUEL FOR LARGE
SCALE ENERGY PRODUCTION AND THE FUNCTION OF HIGHLY EFFICIENT WING
GENERATORS FOR NATIONAL ENERGY



UNI-SYSTEMS

James M. McCanney
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ΑΒΧΔΕΦΓΗΙΩΚΛΜΝΟΠΘΡΣΤΥΩΞΨΖ

BIO - Owner Inventor Physicist James McCanney

Finalist - Water Abundance XPRIZE 2018



ABOUT US

My interest in water products started in 2000. I began marketing water filters for home, camping, emergency and commercial industrial filtration systems through my company JMCC Water Filters. Water was poised to be a global issue. In 2017 I included Atmospheric Water Generators (AWGs) to my product line. But they required large energy resources. I soon realized that the high electrical power requirement was a hindrance to moving this product to poverty-stricken areas of the world where there was no infrastructure.

In 2004 I was asked by an independent firm to perform an efficiency study of Xcel Energy's electrical power generation/grid which included "alternative energy" 3 blade wind generators and solar. With this I realized 1) the tremendous inefficiency of power generation from high energy content fuels (coal, nuclear and natural gas), 2) that the 3 blade wind generators did not work and lastly 3) that solar would never replace the central power companies. The only reason these industries existed was through government tax incentives and subsidies. I proceeded to define what became the McCanney WING Generator high efficiency wind energy device that would bring in a true age of renewable energy from the wind ... ushering in what we

call “The Jet Age of Wind Energy”. My engineering studies showed that we could build the JMCC WING Generators for many applications and that they scaled to large sizes sufficient to replace coal and nuclear power plants. I then worked on my system of “Distributed Energy”. In 2017 the Abundant Water X-Prize was created. I entered the XPRIZE with the intent of combining the WING and AWG technologies to fulfill my dream of providing inexpensive electric power and water to the 3.5 billion people who lack these, and to replace coal and nuclear power plants with the WING Generator (see photo below). This resulted in a final October 2018 recipient of the XPRIZE annual “Technology Innovation Achievement Award” and \$150,000 prize to continue this research.



BIO (see next page)

BIO

James McCanney - Owner JMCC Water Filters & JMCC WING, LLC

- B.A. Saint Mary's College, Winona, MN - Double Major Mathematics / Physics - Cum Laude 1970
- MS Physics Tulane University, New Orleans, LA - Nuclear & Solid State Physics 1975
- 10 years University Instructor Physics – Mathematics – Astronomy – Computer Science
 - InterAmerican University, Puerto Rico 1975- 79
 - Cornell University, Ithaca, NY 1979-81
 - Brown Institute of Electronics, Minneapolis, MN 1992-93
 - Minnesota State College 1993 – 1995
- 25 years Electrical Engineer
 - NCR Comten, Roseville, MN - Principle Systems Engineer - Hardware and Software 1982 - 1990
- Telecommunications Protocols & Encryption
 - US West / Century Link Communications 1996 – 2011 Network Engineer
-

2004 - efficiency study of Xcel Energy power and grid system - understanding need for new alternative energy device - predicted failure of 3-blade wind generators and solar as “alternative” energy sources

2009 book “McCanney WING Generator – World Energy Project” - convert energy from nuclear and fossil fuels to “Distributed WING Energy”

2011 - present - Promoting WING Generator, Atmospheric Water Generator and JMCC Water Filters; bring electricity and water to 3.5 billion poor people - replace nuclear & coal with the JMCC WING – “The Jet Age of Wind Energy”

2018 – Initial sales beginning for JMCC WING, LLC for 10, 25 and 50 kW systems. Strategic corporate alliances with major companies to include the following in the product line (besides the current water filtration and water from the air product lines) ... eV electric car charging stations, Reverse Osmosis water from brackish or sea water, Water Pumping and storage. Moving quickly to begin R&D and manufacturing for larger JMCC WING products.

2019 – Marketing to islands and remote areas to provide electrical energy and water solutions

Additional Individual Investment Opportunities

Product/ Application (power range in kW kilowatts)	State of Product Development	Investment to bring to Full Manufacturing	Estimated Time to begin ROI (in months)	Estimated Annual Market (USA/Foreign in millions of dollars)
Research Center Hawaii	Currently rent	\$1M USD	Immediate	Research Center
Farm & Ranch Power (10 to 250 kW)	Prototype finished /tested July 2018	\$10M USD	15 months	\$5M/\$15M growing to \$10Mto\$30M/yr
License WING	Same as above	Same as above	Same as above	\$3M/\$12M
Crypto Mining power and cooling (off shore autonomous) (to 50 MW)	Prototype finished/tested by November 2020	\$15M USD	12 months	\$75M/\$200M Growing to \$200Mto\$2000M/yr
EcoVillage Off Grid Decentralized Electrical Power 50kW	Prototype finished/tested by January 2019	\$5M USD	24 months	\$5M/\$30M Growing to \$30Mto\$200M/yr
Crypto Token Replacement Power Decentralized Electrical Power (50 to 250 MW)	Prototype finished/tested by August 2020	\$20M USD	60 months	\$500M/\$500M Growing to \$10,000M/\$10,000M
Electric Car Charging Station Power (10 to 50 MW)	Prototype finished/tested by March 2020	\$19M USD	60 months	\$20M/\$2M Growing to \$50Mto\$20M/yr
Compressed Air Factory or Other	Prototype finished/tested by March 2020	\$7M USD	24 months	\$30M/\$30M Growing to \$30Mto\$20M/yr
Direct heating of houses and buildings (50kW to 250kW)	Prototype finished/tested For 50 kW by December 2019	\$2.5M USD	24 months	\$50M/\$200M Growing to \$200M/\$1500M

Commercial Agriculture	Prototype finished/tested by March 2020	\$3.5M USD	24 months	\$15M/\$35M Growing to \$30M/\$75M
Desalination	Prototype finished/tested March 2020	\$5M USD	48 months	\$25M/\$35M Growing to \$30M/\$55
Water RO harvesting (direct drive)	Prototype finished/tested March 2020	\$5M USD	40 months	Impossible to estimate as there is no current market for comparison
Ocean Barge WING system 10 MW	Prototype Finished/tested December 2020	\$15 USD	40 months	Product offering to fill offshore energy needs
Carbon Credits	Another way of making capital			
ICO	Another way of making capital			