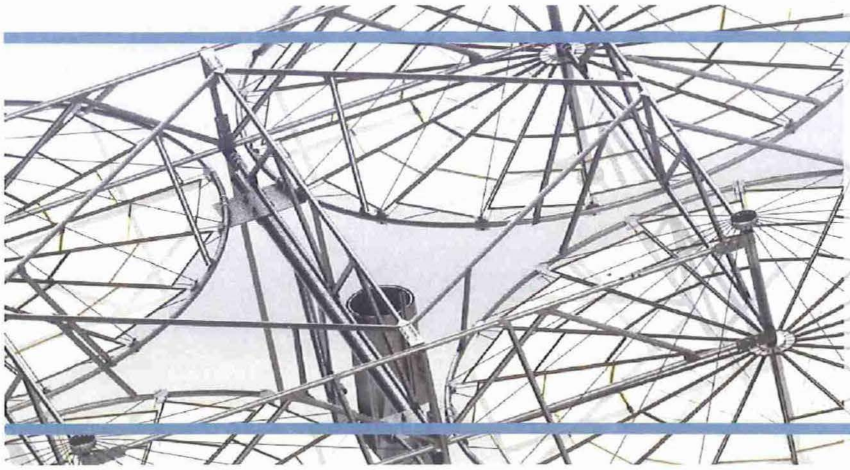

RaPower3
Disruptive Energy Technologies

HISTORY of RAPOWER3

By Greg Shepard

This treatise is not meant to be a complete history. It is based on my memory, as feeble as it may be. The opinions and reflections are mine and mine alone. It will cover a time span from 2003 through 2014 and then give a glimpse into the future.

1. EARLY YEARS

Proof of Concept: The Early Years Through 2007

Parameters: RaPower3 uses the technology developed by IAS (International Automated Systems). Thus, any historical writings of RaPower3 must include IAS. Founded in 1987, International Automated Systems, Inc. (IAUS:OB) develops and markets high-technology products. The company, which has been publicly traded since 1988, has patented and patent- pending technology for diverse markets such as renewable energy production, wireless communications, self-service consumer purchasing and secured financial transactions. The company, founded by a former AT&T communications engineer, is based in Utah. Its stock symbol is IAUS and its website is iaus.com.

IAUS Jet-Propulsion Turbine

RaPower3 was started in 2010. Therefore, in this historical section dealing with the early years through 2007, I will focus on two breakthrough technologies developed during this proof of concept time period that involve RaPower3.

THE IAS BLADELESS TURBINE

International Automated Systems, Inc. developed a new breakthrough bladeless turbine technology. It is a patented propulsion turbine, which some believe may revolutionize electrical power generation and low-cost hydrogen fuel production. (From iaus.com)

Most of the following is from the IAS website

Propulsion Turbine

IAUS's unique turbine has many advantages over traditional turbine designs. Rather than relying on turbine blades to spin the turbine cylinder, IAUS's Propulsion Turbine is designed to turn the cylinder without blades. IAUS's turbine efficiencies are very similar to expensive, high-end, multi-stage turbines; however, IAUS's turbine is low-cost and operates minus most of the expensive surrounding components and maintenance issues.

Traditional turbine performance relies upon the environment within its blade chambers. Super-heated, high-velocity steam particles are continuously striking the titanium turbine blades to turn the shaft. If steam condenses on the blades, a sharp drop in efficiency and damage to the turbine can result. Traditional multi-stage turbines require dry, high-quality steam.

IAUS's new turbine is structurally unaffected by low quality steam. It blows the energy away from its components instead of on them to turn the shaft. It is smaller than traditional turbines, less expensive, and requires very little maintenance. Unlike traditional turbines, IAUS's turbine can operate without corrosion or system failure on both high quality and low quality steam. It has bi-phase flow capability.

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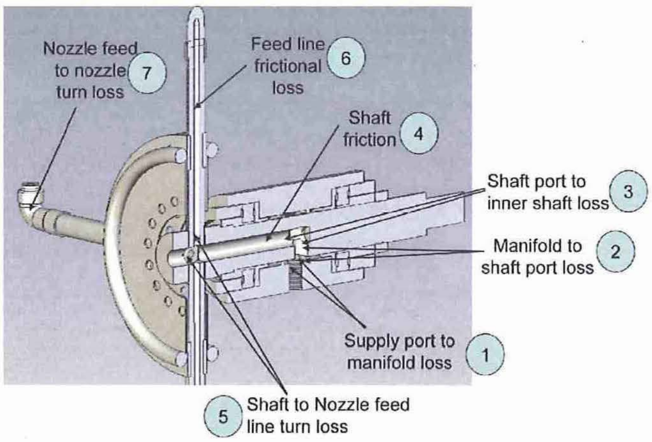
IAUS Turbine Eliminates Need for Boiler

IAUS's proprietary turbine steam cycle does not need an expensive, sophisticated, high-maintenance boiler. Instead IAUS's turbine operates on high-pressure, super-heated water (supercritical fluid) from a series of smaller, high-pressure tubing, which is much safer, less expensive and easier to manage. The expansion or phase change (flashing) from water to steam happens right in the working chamber of IAUS's turbine. It makes the Balance of Plant (BOP) steam production and monitoring equipment less complicated. These are significant advantages over traditional boiler systems required by conventional turbines.

Modular

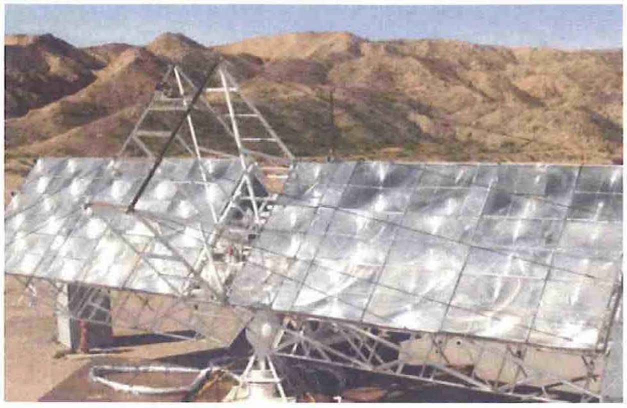
IAUS's turbine can be custom designed for smaller to medium size applications. This allows for staging power in and out and inexpensively segmenting a power plant into smaller sectors which improves issues of downtime while offering low-cost redundancy.(2003 News Release) Jack Dean, who has spent more than 35 years in the energy industry, is well known in connection with renewable energy production and an author and co-author of several publications covering subjects ranging from steam turbine principles and water induction, to power plant principles for plant operators and engineers.

"There are two unique features that give this turbine an unmatched versatility: its physical construction and its use of multiple-phase fluid," said Dean. "Use of this new Propulsion Turbine technology will offer many cost and energy saving opportunities for the people of Hawaii, and thus, move Hawaii closer to a goal of energy self-sufficiency based upon renewable energy and hydrogen."



SOLAR LENS DEVELOPMENT

Neldon Johnson, inventor of the IAS technologies, developed his patented bladeless turbine over a decade ago. He thought his turbine would match up well with concentrated solar power energy, but found that conventional polished glass mirror technology that reflected the sun's rays to a tiny focal point was expensive, inefficient and used too much water. He turned to a Fresnel lens where the sun's rays would refract while bending the sun's rays to a much larger focal point. He hooked up Fresnel lenses to his turbine and produced electricity. Thus, he had proof of concept. The problem was that the Fresnel lenses were extremely expensive.



The photo above shows the Fresnel Lenses used in 2004 in Mesquite, Nevada. The Fresnel Lenses captured the heat from the sun which, in turn, created steam as water was heated past its boiling point. The steam then propelled the IAS patented Bladeless Turbine. A special heat exchanger was designed by IAS along with a generator which was "bought off the shelf."

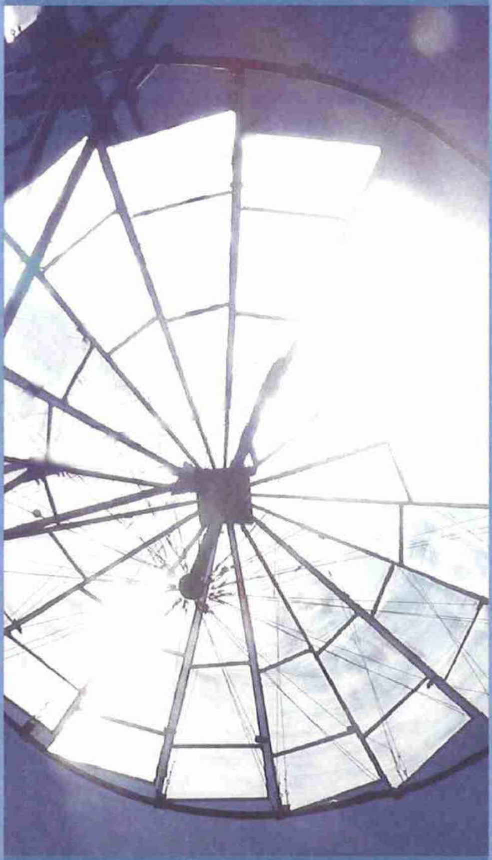
The Result: Electricity was produced! The proof was that a series of truck headlights were brightly illuminated. Twenty-four in all. Many people witnessed this historic event, including myself. (Greg Shepard)

The generous tax benefits that we have today did not exist when Mr. Johnson discovered his proof of concept. Therefore, he set out to produce solar power that would be as affordable as coal. How could this be done? The inspiration to solve this challenge came with an idea of replacing the polished glass mirrors with a plastic/acrylic material using the Fresnel lens.

8-foot Copper Roller Mold

He went to Canada to enlist the help of the scientists who developed the Hubble Space Telescope. After a year of delays and little progress, Neldon and his team took over and finished a roller/mold. They approached Lucite who agreed to let them try the roller on one of their lines. After several months of trial an error, the first plastic/acrylic lenses were successfully produced.

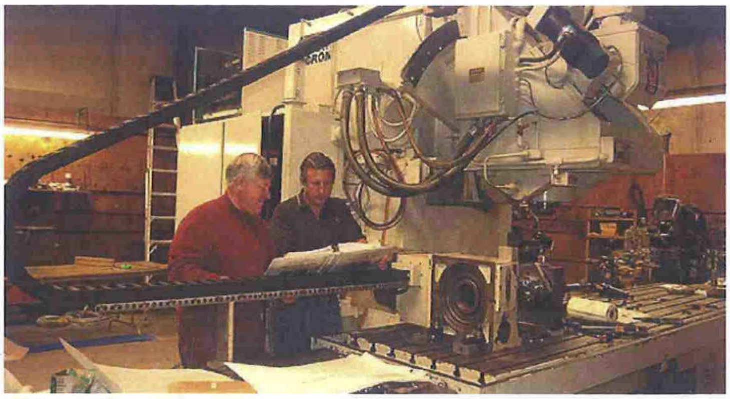
It all starts with the eight-foot copper cylinder and the 89,000 pound mold-making machine. Concrete, four feet in depth, had to be poured to support the heavy mold making



THIN-FILM SOLAR LENS

IAUS's unique thin-film solar panels have a solar insolence transmittance efficiency of nearly 92%- virtually the highest transmittance physically possible of any material. These breakthrough solar panels have shown a conversion of solar energy from the sun into temperatures of over 1,300 degrees F.

machine and to keep it absolutely stationary. The copper cylinder, 22-inches in diameter, is secured by tightly fitted mandrels to make sure it too, is absolutely stationary.



This machine etches grooves around the copper cylinder to make a highly complex roller-mold used to make our thin-film solar lenses.

Highly complex patented software programs the mold-making machine to etch grooves around the cylinder. Many hundreds of grooves are etched into the mold and each groove has six different measurements. The intricacy of making our solar lenses is done here. The intricacy of our competition is done out in the solar field.

It takes three months to etch all of the grooves around the cylinder which is then shipped to Lucite. Each mold/roller/cylinder produces about 700,000 lenses which equates to about 400 Megawatts. We have the capability of making many molds per year and Lucite has no limitations on the number of molds that can go on their production lines. Specifically, the Lucite panels are made up of a very durable, engineering grade-monomer material that has been known to last more than 60 years. These panels are also 100% recyclable.

With the success of the first Lucite run, it became apparent that we could mass produce solar lenses at a tiny fraction of the cost of our competition. Later, we would also prove that it was also far more efficient than the polished glass mirrors, would use very little water, would not disturb the land and considerably decrease the cost of operation.

2007: IAUS Believes New Breakthrough Solar Panel Can Change the World

Following a successful high-volume run of its new breakthrough solar panels, IAUS has been conducting tests to identify the parameters of its new product. The new panels have delivered an exciting performance that is in line with preliminary expectations.

IAUS's unique thin-film solar lenses have a solar insolence transmittance efficiency of nearly 92% - virtually the highest transmittance physically possible of any material. These breakthrough solar panels have shown a conversion of solar energy from the sun into temperatures of over 1,300 degrees F.

Initial IAUS data has demonstrated that IAUS's new solar panels focus as high as 30% more solar energy onto its receiver than traditional solar power trough systems typically achieve. Recent advancements will likely increase this number again to more than 50%. IAUS's solar panels have an estimated life-span of greater than fifty years when properly maintained, and are inexpensive to replace.

IAUS's unique thin-film solar panel can be produced at a fraction of the cost of today's traditional photovoltaic solar panels. IAUS believes its new product is the first solar power technology with legitimate potential to compete with gas and other fossil fuels. Low-cost energy produced by IAUS's new patented and patent-pending solar technology can be used to generate electricity or produce clean fuels such as hydrogen and green methanol (gasoline replacements) at a competitive price. Many experts had predicted that no solar power technology would likely accomplish this milestone before the year 2025.

Shown is a shipment of solar lenses from Lucite.

During its first high-volume run, nearly 1,000 Kilowatts of IAUS's solar panels were manufactured in a short 24-hour period. On a 24/7 operating schedule, an estimated 350 Megawatts of IAUS panels can be produced annually at a cost of less than $500,000. In comparison, a traditional photovoltaic (PV) solar module manufacturing plant with a yearly capacity equal to IAUS would cost an estimated $840 Million to construct. The world's energy market is a staggering $3 trillion per year. This is two times larger than the world's agricultural market. Less than 1% of this energy comes from solar power. Yet, every hour the sun radiates more free energy than the entire human population uses in a whole year.

IAUS Signs Supply Agreement with Lucite International for Production of IAUS's New Breakthrough Solar Power Panels SALEM, UTAH- (2007)

International Automated Systems, Inc. [IAUS.OB] has announced today that it has signed a supply agreement with Lucite International, a global leader in the design, development and manufacture of acrylic-based products. Lucite International generates over $1 billion in annual revenue. It is the world's leading supplier of Methyl Methacrylate (MMA), and the only organization with production, R&D, sales and marketing facilities in all three major geo-economic regions – the Americas, Europe and Asia.

"Solar energy runs consistent with Lucite's commitment to develop and advance "Green" products which promote environmental sustainability," said Wyndham Draper, Vice President – Sales and Marketing for Lucite International, Inc. "We are looking forward to working with IAUS in the production of this exciting new product."

Lucite is a solid company with a global presence and will facilitate high-volume production of IAUS's new solar panels. The personnel and management at Lucite have been exceptional and forward-thinking at every level," said Neldon Johnson, President and CEO of International Automated Systems, Inc. "We are very pleased with IAUS's new relationship with Lucite International.

About Lucite International

Lucite International, the world's largest producer of Methacrylates, is successor to the acrylic business of DuPont and ICI. It is the only vertically integrated acrylics producer with manufacturing facilities in every region of the globe, and employs 2,000 people in sales, marketing, R&D, manufacturing, engineering, technology and business support at 16 manufacturing sites and 35 sales offices worldwide. Lucite serves and supports customers in more than 100 different countries.

Solar Power Breakthrough: IAUS Hits Milestone Previously Thought to be Impossible SALEM, UTAH-

International Automated Systems, Inc. [IAUS.OB] [IAUS: OTCBB] announced today that it has successfully finished its first high-volume run of its new breakthrough solar panels. IAUS plans to quickly expand its annual solar panel production capacity this year to one Gigawatt which is enough to supply an estimated $2 Billion is sales per year.

"The discovery of economical solar energy is more valuable than oil," said Neldon Johnson, President and CEO of International Automated Systems, Inc. "The sun's energy is free, clean and virtually unlimited. IAUS's new solar technology is a discovery of historic proportions that we hope will revolutionize energy production throughout the world."

Witnesses

"I have witnessed the bladeless turbine running on geothermal water at Sulferdale a number of years ago. At that time I had an engineer with Utah Power and Light with me. At various times I have seen the turbine running with natural gas being used. This has been at Salem and in the Delta area. I have had engineers with me on some of these occasions. I have no doubt of the turbine working as I have personally witnessed it many times and with many others being present." Monty Hamilton

"I and the following friends have seen Neldon's turbine engine working at different times: Joseph Anderson (ex Sr. VP Bechtel), Jack Edwards (engineer. ex Saudi ARAMCO), Ron Hadley, Leon Davies (ex engineer Lockheed) and Gordon Larsen (ex United 747 pilot), etc." Sterling Rigby

A Significant 2004 Financial Occurrence

IAUS, through Neldon Johnson, invented the self-checkout system used today by grocery stores. This technology was stolen by

Optimal Robotics from Canada. Mr. Johnson sued but later decided to settle out of court for $1.7 million. He rationalized that more money could be made with solar energy and the settlement money could finance its development.

A press release by Optimal Robotics on January 24, 2004 states: "Optimal Robotics Corp. (NASDAQ: OPMR), today announced that it has entered into a settlement agreement with International Automated Systems, Inc. (IAS), which brings to a close the patent lawsuit between the parties. In accordance with the agreement, IAS will receive a sum that is not considered to be material to Optimal."

This experience would later prove to be valuable. Mr. Johnson became much more wary and steps were taken to always thoroughly protect his technologies. This wariness has now produced over 60 patents and patents-pending in the complex arena of renewable energy.

2. R & D

Research and Development: 2008-2010

TURBINE CHALLENGES

Salem, Utah was the scene for the R & D work on the bladeless turbine. Natural gas was used to heat the water to create steam which, in turn, propelled the bladeless turbine. Visiting engineers were always impressed at how little time it took to start the turbine. This was vastly different from conventional turbines.

A Major Problem

The Johnson Bladeless Turbine reached an incredible 17,000 revolutions Per Minute (RPM). This kind of velocity created intense vibrations within the turbine. It was theorized this extreme wobbling effect could be extremely dangerous. If a steel part were to come loose, nothing could stop it at that rate of speed. The R & D work centered on creating a smooth running turbine.

The Breakthrough Solution

Simple. Inexpensive. Totally effective. Neldon Johnson quickly started the process of getting a patent for his ingenious discovery. See the photo:

Can you see what it was? Look at the circular ring attached to the turbine. Inside the ring are small ceramic beads similar to ball bearings. They roll around inside the ring and will never wear out. This simple solution completely stabilized the turbine and totally eliminated the vibrations.

The Result

This discovery completed the turbine's research and development stage. So now we had the solar lenses and the turbine ready to go.

SOLAR CHALLENGES

Lucite and IAUS did make one tweak on the 2nd run. That was successful and it did increase the efficiency some. Therefore, this technology was completed. All we have to do now is place an order in quantities of at least 100,000 solar lenses. Inquiries were successfully made on where and how to acquire more mold-making machines. Each machine can increase our annual output by about 1,600 megawatts. However, the manufacturing of the solar lenses was just the beginning.

Tracking the Sun

Photovoltaic (PV) systems didn't track the sun because the parasitic load was too great. Some Concentrated Solar Power (CSP) systems used single-axis tracking. Mr. Johnson surmised that if a dual-axis tracking system could be designed with low parasitic loads that a 30% advantage could be attained over PV systems. Meaning that 2,000 annual PV production hours could be boosted to 2,600 annual production hours with a dual-axis tracking system.

Massive Use of Clean Water

Some CSP systems used massive amounts of water through the act of cleaning plus the cooling towers/heat exchanger systems. We also observed if a water-saving closed-loop system was used, costs would escalate. In addition, that clean water had to be used as opposed to brackish water for example.

Wind Damage to Solar Lenses

We observed replacement of expensive mirror lenses were a constant problem. Breakage would occur even a 35 MPH. Also, if a rock chipped a lens with even a small mark, the entire lens needed to be replaced. Could this big cost of operation expense be significantly reduced?

Expensive Batteries

We observed the great need to have power on cloudy days and at night. Photovoltaic projects would sometimes charge batteries by installing extra PV panels in order to achieve this objective.

The problem was in the huge expense. We also noticed lithium batteries being used in automobiles. The rarity of lithium and its volatility were noted. Could a complete paradigm shift in approach overcome the above issues? What about a zinc battery or combining biomass or natural gas with solar technologies?

The Lengthy Battery Recharge Time

Whether one is dealing with electric cars or energy storage, lengthy battery recharge time has severely limited the practical feasibility of wide-spread use.
Could this recharge time be significantly reduced along with its high costs?

Heat Exchangers and Cooling Towers

The installation costs of lengthy pipes connected to heat exchangers and their cooling towers were a significant expense. This expense was not just with Concentrated Solar Power projects but with coal and nuclear projects as well.
In addition, a major part of the cost of operation was connected to the cleaning and maintenance of pipes, cooling towers and heat exchangers. Could these costs be dramatically reduced?

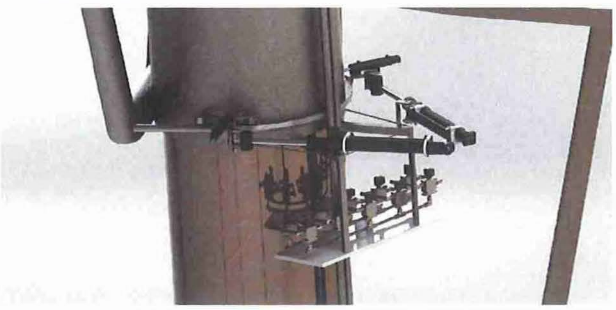
Costly Inverters:

A major expense of photovoltaic systems and wind energy is the inverters, which are electronic devices or circuitry that changes direct current (DC) to alternating current (AC). To bring the cost down to compete with coal power, costs associated with inverters had to be overcome.

SOLUTIONS

Identification of existing challenges and problems is the first step towards innovation. Neldon Johnson's creative mind worked non-stop on all these issues. Inspiration came frequently and in abundance. Patent after patent was applied for as the ideas multiplied.

The Dual-Axis Tracking System



The principle behind the dual-axis tracking system is that the solar lenses can follow the sun in two ways. Basically, up & down and side-to-side. The payoff is 30% more efficiency in production hours. There were about five different designs that were tested in this research and development phase. Each design improvement increased the probability of success.

Reducing Water Consumption

Sometimes discoveries happen by accident. Such was the case with our solar lenses and the amount of heat produced without any cleaning. Since we were still in the R&D phase, there was no need to clean the lenses. To our delight, very little loss in heat was experienced, even after months of being installed on a tower. Our competition, like the big CSP plant in Ivanpah, California must clean their 350,000 mirrored lenses every day. We don't. This is a staggering difference in water consumption. We also found that we could easily implement a closed loop system. This means that we can keep reusing our water for steam. Our cost turned out to be negligible, while our competition's cost is significant.

Finally, we found out that we could heat any kind of water and run it through our turbine. Our competition must use clean water. We can smoothly and efficiently use brackish water, contaminated water with arsenic or even salt water to create steam for our turbine. A truly breakthrough discovery was that after these kinds of water were flashed into steam at the jet nozzle, any contaminants, particulates or salt fell to the bottom. We were left with pure distilled water. This meant we could either reuse the water in a closed system or release this pure water into the environment for other uses.

Reducing Wind Damage

Another delightful unplanned discovery was that as rocks and debris chipped away at our solar lenses, they still kept producing extreme temperatures. There was no need for replacement. Further study showed the rock chip only affected the small area of the chip and not the entire lens like our competition.

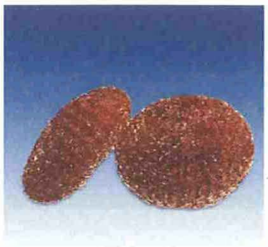
Solar Lenses with Wind-Resistant Bracing

The R&D phase for increasing our wind tolerance was frustrating. A number of designs were tried. Improvements came at a slow and steady pace. At the end of 2010, our wind tolerance was better than our competition, but still needed further R&D and refinement.

Our Concentrators and Batteries

Mr. Johnson came up with the idea of funneling the sun's rays down to a heat collector using parabolic reflection. This increased focal point temperatures to over 2,500 degrees F. It was aptly called a Concentrator. This inexpensive method of producing these extreme temperatures can make it possible to produce a zinc-air battery and/or zinc fuel cells. Zinc is 100 times more plentiful than lithium. It is well known that possible future applications of a zinc battery include its deployment as an electric vehicle battery and as a utility-scale energy storage system. This idea was so tantalizing to contemplate that Mr. Johnson decided to keep this innovation going for further refinement.

Reducing the Cost of Heat Exchangers and Cooling Towers



The following is absolutely true. Mr. Johnson was at a supermarket looking at copper mesh for cleaning. All of a sudden it hit him. Could copper mesh be used as a three-dimensional avenue for conducting heat through a heat exchanger? He was so excited that he raced home and made a makeshift heat exchanger with copper mesh out of things around the house. He was breathless as it appeared this would actually work.

R&D on this remarkable development immediately took place. Several patents were applied for with this technology. The results were ever so startling. The ramifications of the increased three-dimensional surface area were gigantic. Johnson's new heat exchanger eliminated the need for cooling towers. If that wasn't enough, it also reduced the size, weight and cost of conventional heat exchangers by a thousand times. This had breakthrough written all over it. Stunning even.

Eliminating Inverters with CSP

Concentrated Solar Power, such as the solar technology we use, does not use inverters. However, other renewable energy technologies such as photovoltaic solar panels and wind require inverters. There was this feeling that current inverter technology that had been around for years could be replaced by something better. Several years later this feeling would evolve into another truly breakthrough technology.

MARKETING AND SALES

There was a small pilot program launched in 2006 that sold solar lenses to a few individuals. It was a precursor to the RaPower3 program that began in 2010. Testing the market in those early years proved to be a successful marketing approach. Neldon Johnson created the program with some extremely bright attorneys. Neldon wanted to combine his low-cost technology and expected low-cost of operation with his modular capabilities so that everyday people could take advantage of all the generous tax benefits. This meant just not receiving solar tax credits, but also getting the depreciation benefit. He combined the tax benefits with a generous bonus and rental income.

The number three in RaPower3 would stand for the three different ways income could be generated. An optional network marketing component was also added as RaPower3 was launched in 2010. Commissions were generous and RaPower3 grew by leaps and bounds.

CONCLUSION

The research and development of these products and technologies from A to Z has been no small task. In fact, it has been nothing short of monumental. There have been inventions within inventions. The development of these devices, components and processes had never been done before. The results were revolutionary! Now it was time for the refinement of the R&D work which would also include manufacturing, marketability and putting all these remarkable components into one workable package.

3. REFINEMENT

Refinement: 2011-2012

MAKING IT A REALITY

The successful research and development period gave us confidence that we could take over the renewable energy business in a big way. Some of the breakthrough technologies needed refinement to make this bold assertion a reality. All research and development with its refinement centered around three driving forces.

First, manufacturing and installation costs had to be significantly lower than any energy provider including coal plants. Second, the cost of operation had to be significantly lower than any other energy provider. Third, we had to be able to mass produce every component; enough to produce over a thousand megawatts of energy per year.

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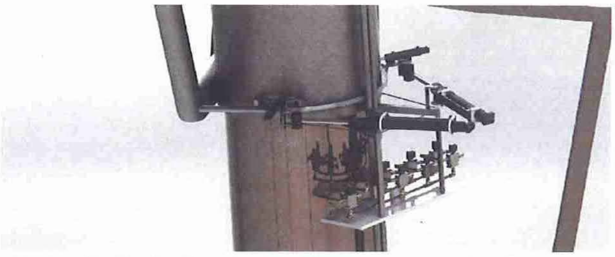
COMPLETED TECHNOLOGIES

Both the solar lenses and turbine were completed. Also, the batteries were just a matter of producing intense heat and we could do that.

TECHNOLOGIES NEEDING REFINEMENT . . . .

The Dual-Axis Tracking System

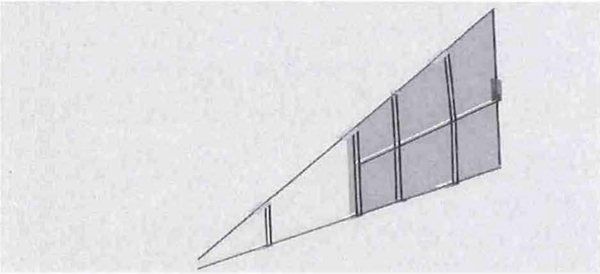
Several methods were tested. Some tests led to a better idea. Some methods failed while some were successful. The challenge was to get the parasitic load significantly under the energy cost that tracked the sun. The four solar discs with the steel pipes and trusses weigh hundreds of pounds. This factor coupled with wind loads exacerbated the challenge. Slowly headway was achieved. Our dual-axis hydraulic system operation became smoother running. As the year 2012 ran down, we were convinced that with even more refinement we could eventually create a tracking system with a remarkably low parasitic load.



Hydraulic dual-axis solar tracking system mounted to tower to add 30% more operating sun-hours.

The Solar Frames for Wind Resistance

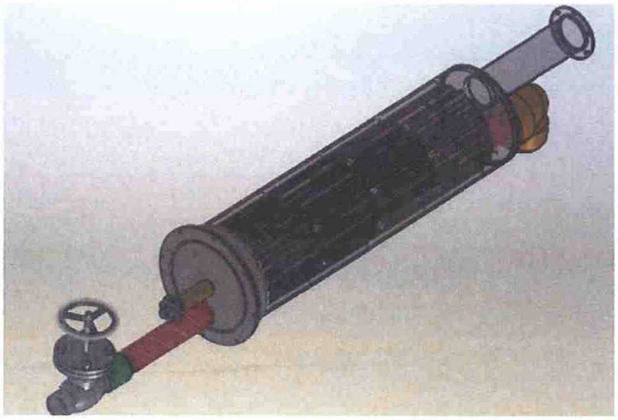
Balancing the need for mass production of the framing process and increasing the wind resistance of the solar lenses became the biggest refinement challenge. We tried screwing the frames and braces to the frames and sometimes the lenses would crack. We were told by a glue manufacturer that their glue would work perfectly under our conditional parameters. It didn't. We tried a variety of methods. By the end of 2012, our research was full of workable data, but we weren't fully satisfied. More refinement seemed to be necessary.



Harmonic bracing added to the solar lenses to reduce vibrations and wind-resistance.

The Heat Exchanger and the Molten Salt Container

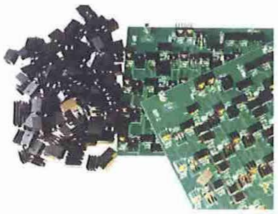
Continued to be refined along with manufacturing and installation development.



Rendering of the Heat Exchanger

The Circuit

This potentially disruptive technology showed so much promise that it was given a high R&D priority. At the completion of the prototype and white papers in 2014 it would be named the Dynamic Voltage Controller.



The Manufacturing Process

Manufacturing companies attempted to make various needed components. After delays and lack of real success, it was decided to get completely into the manufacturing business. This gave us two distinct advantages. First, we would have complete control over every component. Second, needed refinement could more easily be accomplished.

A large building in the Delta area was purchased in early 2012. Extra land was also purchased in order to meet future expansion manufacturing needs.

The 2012 Installation/Construction Process

It was also decided to form our own construction company for control and R&D purposes at the project site. Components were delivered from the manufacturing plant: some completed components were stacked in the field ready for construction, while other components needed to be tested over and over many times.

Marketing & Sales

The program provided by RaPower3 proved to quite effective in the years of 2011 & 2012. Hundreds of people across the nation purchased solar lenses. Many came to see the manufacturing and construction sites. Word spread through the RaPower3 network marketing component.

One of the many tours of the solar site and manufacturing plant in 2012.

People were attracted by the generous bonus program contracted through International Automated Systems and the long-term rental program offered by LTB, LLC, an Operations and Maintenance Company. In addition, the tax benefits offered to solar companies producing heat were also attractive.

The RaPower3 sales gave Neldon Johnson and his staff much needed revenue to achieve our three-fold objective: (1) To have the lowest manufacturing and installation cost of any energy company; (2) To have the lowest cost of operation of any energy company: (3) To have mass production capability.

4. PREPARATION

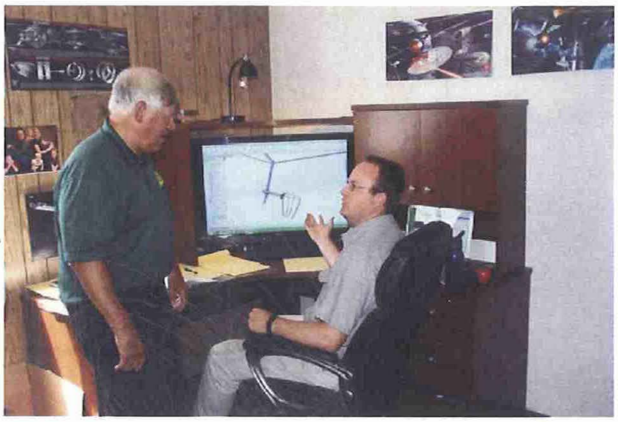
Preparation & Production: 2013

GETTING IT DONE

The year of 2013 mostly centered on the manufacturing plant with testing of the various components at the project site. A full-time engineer was hired to hasten the work. His office is conveniently located at the manufacturing plant.

The three-fold objective of having the lowest manufacturing and installation costs combined with the lowest cost of operation while creating mass production was always uppermost in everyone's mind.

Our engineer wore several hats. He was in charge of lining up vendors to supply all parts and components. Prices were negotiated while attaining volume discounts. At least three suppliers were found for each part and component. All parts and components were diligently put into our computer system complete with computer drawings and 3-D cad renderings. An extensive flow chart was also created.



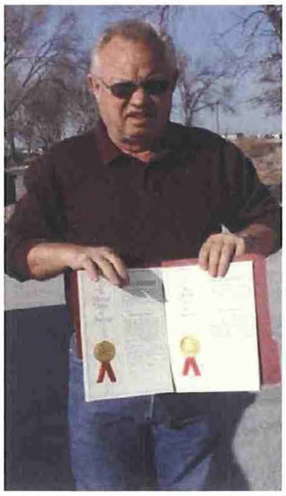
Greg Shepard (L) talking with head engineer Jeremy.

Jeremy, our engineer, calls his job with us his "dream job." Neldon Johnson would come to Jeremy with an idea and then Jeremy was able to put the idea into motion. First, on the computer and then Jeremy would actually build the component. Jeremy thrived on this kind of arrangement. He also supervised the work both at the manufacturing plant and project site.

HIGHLIGHTS

There were a number of highlights that made 2013 a special year. Here are some of the more important achievements:

- More patents and patents pending were filed.
- The elevated turbine/ heat exchanger system on the tower was moved to two ground-level containers: One for solar and the other for biomass.
- An insulation supplier from California was found that lowered our insulation costs by over 80 percent.
- The wind resistant solar frames were improved to withstand 100 mile per hour winds.



New patents issued.

- The dual-axis tracking system improved substantially through extensive testing at the manufacturing plant.
- Our two CNC lathes were programmed successfully and certified ready by an outside engineering expert.
- The 89,000 pound mold-making machine was moved into its proper place at the manufacturing plant
- Fully-insulated pipes were installed at the project site connecting all eleven towers.
- Great progress was made on the circuit board, which would later be called a Dynamic Voltage Controller on the patents and marketing in 2014.
- Many more RaPower3 team members added.
- The addition of the "Grid Home" and surrounding property connecting to the project site.
- Transformers purchased connecting the project site and the grid home through about 400 yards of electric cable.
- Many millions of dollars in inventory acquired and completed.
- Additional employees hired

5. IMPLEMENTATION

Implementation: From January 1, 2014 through June 21, 2014

COMING TOGETHER

Everything began to come together during the first half of 2014. We called it the period of implementation. All cylinders of our three-fold objective began accelerating in 2014.

The manufacturing plant kept adding and improving in ways to increase production while decreasing costs. Millard County granted a conditional use permit for the manufacturing plant. Automation procedures and even more equipment were put into place. Every manufacturing station was thoroughly analyzed to meet production levels of at least two megawatts per shift per day. Plans for robotic machines are also in the works to further increase future production levels as work will commence 24-hours per day.

Installation of components continued. The dual-axis tracking system was installed on two towers. The initial tests passed with flying colors. Crane operators were certified. Huge portable construction tents were erected with the purpose of protecting the workers from searing heat in the summer, frigid cold in the winter and frequent high velocity winds. Procedures were calculated to also meet demands of at least two megawatts per day per shift.

Installing the dual-axis tracking system.

Elaborate testing was completed by Jeremy, our engineer, and Neldon Johnson. The turbine, heat exchanger and molten salt container worked perfectly. This helped confirm our cost of operation calculations of a half a cent per kilowatt hour. Coal plants normally have a cost of operation nine times more than our half-a-cent mark. This more than met our goal to be disruptive in the energy business.

Extensive plans were formulated to mass produce all of our components coupled with the construction of projects worldwide that were, frankly, on an unprecedented scale. The basic game plan to shatter the competition was to combine the dual-axis solar tracking system with our biomass system. Both systems would use the same turbine.

The solar energy system would give us 30% more annual production hours than non-tracking systems and 15% more annual production hours than single-tracking systems. In addition, the biomass system would give 8,600 annual production hours. The combination of these two systems gives us operation capabilities of running 24-hours a day with over five times the annual production hours over other solar companies.

Furthermore, our installation costs are far less as is our cost of operation and we can complete installation of any size project far quicker than our competition. Also, we are modular, meaning we can produce revenue as we are in the construction process.

Finally, our turbine can use any kind of water including salt water. This means we can produce prodigious amounts of pure distilled water from salt water, brackish water or most kinds of contaminated water as we are producing massive amounts of clean affordable renewable energy.

In conclusion, International Automated Systems (IAS), the owners of a number of our technologies, began issuing press releases and completely revamped their iaus.com website. The implications of the technologies presented for the first time were jaw dropping. The future of RaPower3 and IAS will be fantastic as they seem destined to emerge as the world energy leader with their disruptive technologies.

IAS TECHNOLOGIES
PRESS RELEASE IN JUNE OF 2014

Dynamic Voltage Controller- What if electric cars, cell phones, laptops, and power tools could recharge within seconds, or renewable energy suddenly became less expensive than coal? IAUS believes that with its new voltage controller, these possibilities will quickly become a reality.

The patented, Dynamic Voltage Controller (DVC) is the first technology capable of handling and converting a full range of variable input voltage on the fly to a constant DC or AC voltage and frequency output. It can also convert a constant input voltage to a variable output. This new device operates without transformers or coils, making it much lighter and significantly more compact than today's transformers and inverters. For many uses, it can be reduced to the size of a silicon chip.

Dynamic Voltage Controller

PHOTOS

Photography History

2004

Proof of Concept: To prove the jet-propulsion turbine could be driven by steam created from Fresnel lenses to produce electricity a prototype was built and installed in Mesquite, Neveda. This prototype continuously powered 24 truck lights. The following two years were spent on developing a new type of Fresnel lens that could be easily and inexpensively mass produced.

2005

Turbine Field Testing: Hundreds saw the jet-propulsion turbine working with natural-gas at the old Salem, Utah building. The turbine was also tested on geothermal and solar. Independent Engineering White Papers from industry experts were completed. These engineers rated the turbine at 43.5% efficient and good for an unprecedented 1,000,000 hours of continuous use.

2006

First Solar Tower Concept: R&D on IAUS Acrylic Fresnel Lenses. This was our first solar tower concept design.

First Solar Tower Concept: Independent Engineering White Papers done by NASA engineers show the lenses at 90% efficient in the field.

First Solar Tower Concept: Construction on the original single-disc tower design.

Solar Disc Design: Top view of the original solar disc design.

Solar Disc Design: Bottom view of the original solar disc design.

Solar Lens Field Testing: Original R&D solar field.

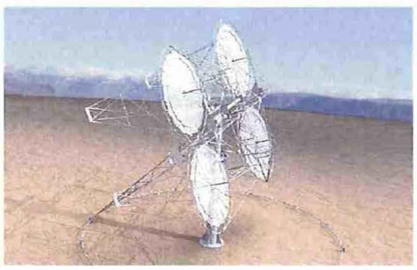
Biomass Testing: This R&D Biomass Burner was built to work in tandem with our solar towers for 24-hour operation with power generation and water distillation.

Biomass Testing: The Burner includes a cyclone in the upper chamber that burns off all toxins. The only emission is CO_2. It doesn't need a boiler and works with our pipe-less heat exchanger.

2007

Second Tower Design: A two-disc solar tower concept was constructed with idea of lowering construction costs over the single-disc concept.

Second Tower Design: The two-disc tower concept required a gantry crane. Today, the disc-assembly and hydraulic tracking systems are installed at ground level and raised as a complete unit saving time and money.



Four-Disc Concept: After successfully proving the tower concept many configuration designs were considered. The four-disc designed was adopted because it gave the greatest cost and assembly advantage.

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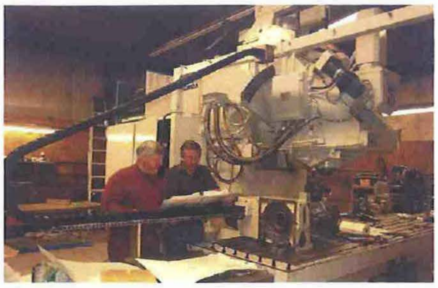
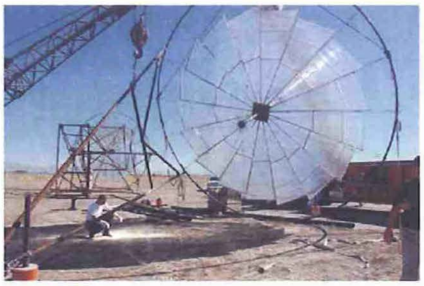
2008—2010

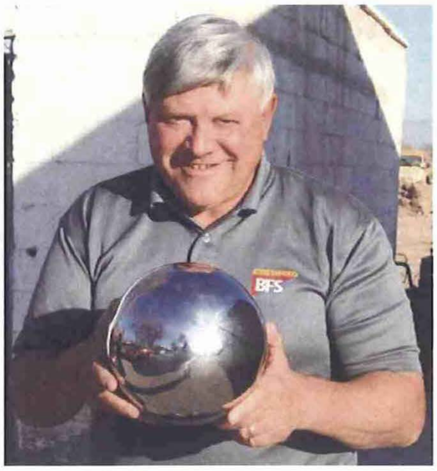


Solar Lens Manufacturing: Our mold-making machine was delivered in 2008. This machine takes 3 months to etch the thousands of intricate grooves into our lens molds.



Field Testing: On a visit to our site in 2008, Murray City Mayor, Dan Snarr, tests the heat coming off this unfocused lens. Even unfocused the lenses produce a substantial amount heat.

R&D Fabrication: Inventor Neldon Johnson at the first small fabrication shop in Delta, Utah.



R&D Fabrication: Greg Shepard holding the first solar heat collector nicknamed the "Magic Ball". Each solar disc focuses heat to a 2" focal point on this rotating ball. Heat-transfer fluid collects the heat and carries it to a central heat-storage system.

R&D Fabrication: Here are workers assembling the first solar-lens frame. Currently, we are on our 5th solar-frame design. The current design can withstand winds up to 100 mph.

R&D Fabrication: Here is a picture of our first solar heat concentrator. The parabolic design in this heat concentrator allows us to reach temperatures nearing 3,000 degrees F.

R&D Fabrication: Original cores for the solar lens disc assembly ready to be delivered to the R&D site.

Field Testing: Neldon at the computer at the project site in Delta, Utah.

R&D Fabrication: Worker at the first small fabrication shop in Delta, Utah.

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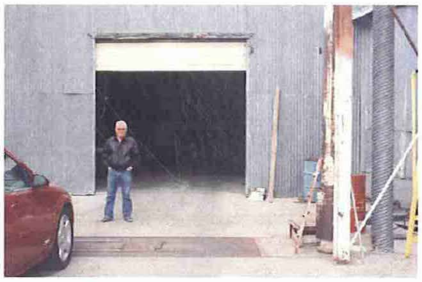
2011—2012

Field Testing: The original design had multiple solar towers in series connected driving a single turbine on the ground. In an effort to drive down construction costs a turbine was mounted directly to a single tower for use by only that tower.

Field Testing: The tower-mounted concept worked but did not end up saving any time or money on construction so we went back to the original in-series model.

Field Testing: By adding the parabolic heat concentrator, we were able to achieve focal point temperatures nearing 3,000 degrees F.

Early Manufacturing: In early 2012 an old warehouse was purchase in Delta, Utah near the solar site.



Early Manufacturing: The warehouse's electrical system was upgraded to accommodate all of the machinery that would be added to convert it into a manufacturing plant. Shown is Neldon Johnson at one of the truck doors.

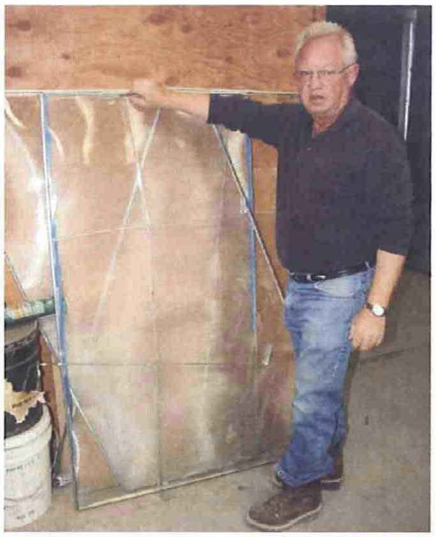
Early Manufacturing: The outside 3-walled building would later be converted into a pipe-cutting and pipe-bending operation.

Early Manufacturing: Light fabrication completed on one of several R&D phases on solar lens framing.

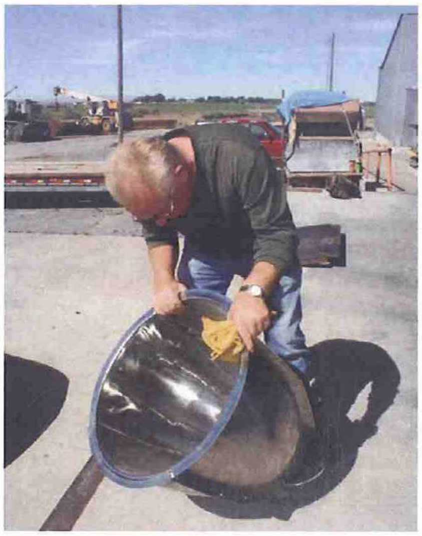
Early Manufacturing: The walls had to be outfitted with welding stations along with electrical and compressed air outlets.

Early Manufacturing: A worker cutting metal in the new manufacturing plant.

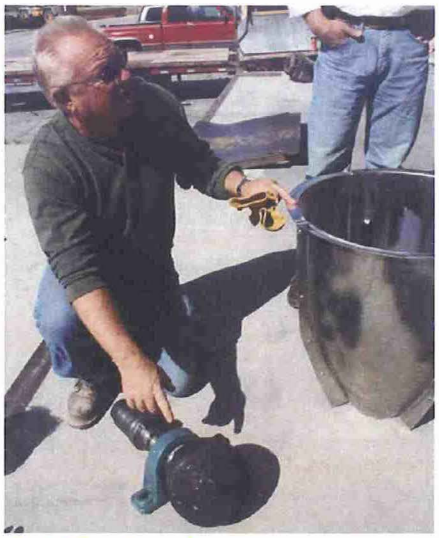
2011-2012



Early Manufacturing: Neldon with one of the earlier versions of a framed solar lens.



Early Manufacturing: Neldon demonstrating how the heat concentrator focuses the suns heat.



Early Manufacturing: Neldon Johnson with the parabolic heat concentrator and heat collector.

Early Manufacturing: Neldon with a workman on designing a framing procedure.

Early Manufacturing: Many pieces of automated heavy machinery was purchased and delivered to the manufacturing plant. Shown is a CNC Lathe for manufacturing heat exchangers.

Early Manufacturing: Neldon Johnson with the newly acquired CNC Lathe for manufacturing the jet-propulsion turbine.

Early Manufacturing: This is the November 2012 model of framed lenses during the R&D phase.

Early Manufacturing: The turbines are designed to run off of solar heat and any other heat source. Shown is a biomass burner.

Early Manufacturing: Pallets of solar lenses shipped by Lucite International to the Delta manufacturing plant.

2011-2012



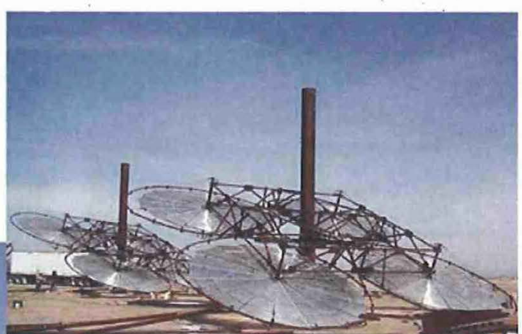
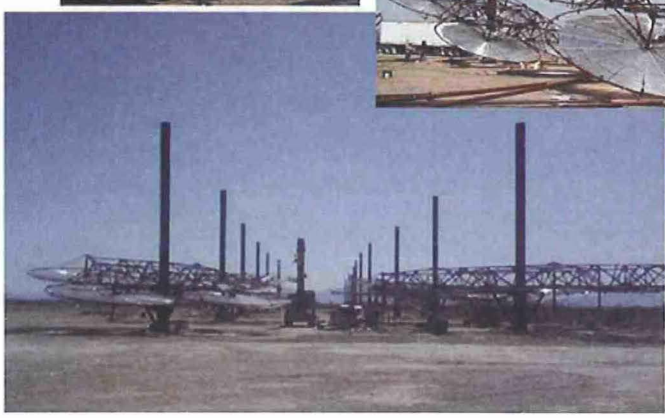


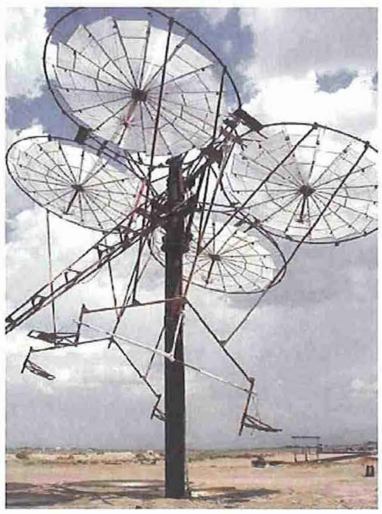

Construction Equipment was purchased.

Tours: Neldon Johnson showing a 2011 tour group the R&D development stage of the solar towers.

Field Testing: Neldon Johnson demonstrating the intense heat at the heat concentrator.

Field Construction: Manufactured components being delivered and stacked.



Constructing an IAUS Solar Field

2013

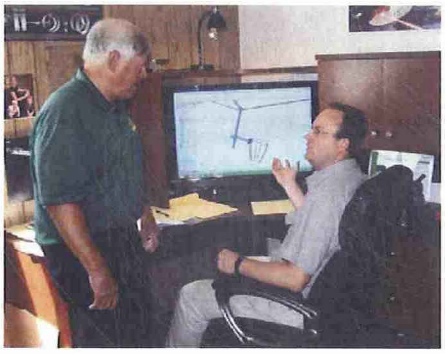
Installation: This the "grid home". It came with some the property that was purchased for our solar projects.

Installation: This shows the electrical cable that runs from the solar site to the grid home.

Manufacturing: This automated machine is specialized to bend pipes to make large rings that house our solar lenses.

Installation: The drill head used for making holes in the ground for the towers to be set.

Installation: Pointing out the 400 -yard cable running out to the towers.

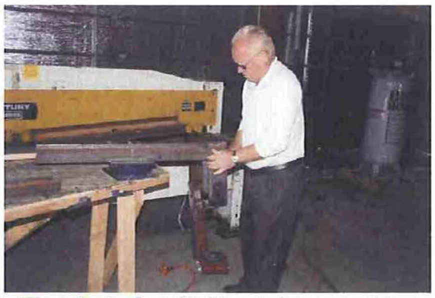


Manufacturing: Greg Shepard with Jeremy, our engineer. Jeremy is working on commercializing all of the components so that they can be mass produced.

Installation: Close up of the newly installed gear-driven heat collectors or "magic ball".

Installation: Starting to add the heat concentrators.

Installation: Tower with the new heat collectors, heat concentrators and new insulated white pipes.



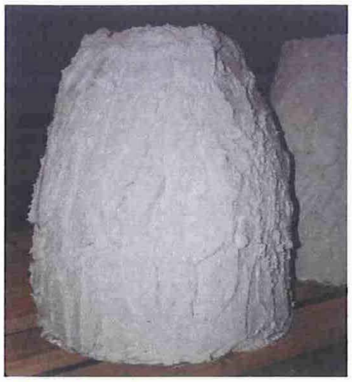
Manufacturing: Neldon Johnson testing the new dual-axis swivel.

Manufacturing: A truckload of insulation material was delivered.

Installation: More steel delivered to the solar site.

Installation: New ground-level system with turbine, heat exchanger, molten salt container and transformer.

2013



Manufacturing: Insulated heat concentrator.

Installation: Mounted insulated heat concentrator with protected heat collector.

Manufacturing: Outside engineer certifying one of our CNC lathes .

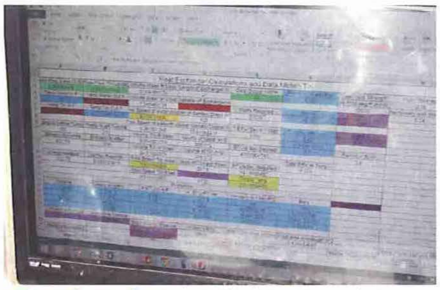
Prototyping: Early prototype of the hydraulic dual-axis tracking system.

Installation: Delivering insulated pipes from the manufacturing plant.

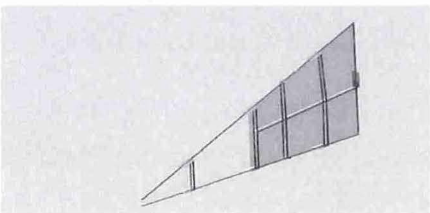
Installation: The biomass container is on the left and the solar energy container on the right.

Prototyping: Prototype of our breakthrough heat exchanger.

Manufacturing: Installed pipe-bender with insulated housing.



Manufacturing: Detailed engineering data of the heat-exchanger.



Manufacturing: 3D CAD design for our harmonics bracing for solar lenses.

Manufacturing: 3D CAD design for pipeless heat exchanger.

Manufacturing: Mass producing the heat concentrators.

2014

Manufacturing: New robust pipe cutter delivered and installed can cut through 5 pipes at a time.

Manufacturing: Truckloads of pipe were bought at auction and shipped to the manufacturing plant.

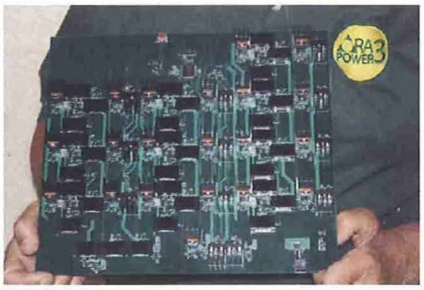
Manufacturing: The dual axis R&D station at the manufacturing plant.

Manufacturing: Many tours were conducted by Greg Shepard in 2014. Here Greg Shepard is explaining the insulation material imported from Turkey.

Manufacturing: Jeremy installing the new and final ram for the dual-axis solar tracking system.

Manufacturing: The automated system for feeding pipe to the cutting machine.

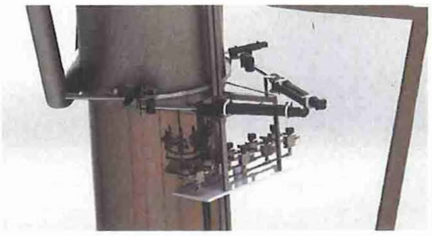
Manufacturing: The automated system for feeding cut pipe to the pipe bender. They red rams underneath lift the pipes up to the feed system.



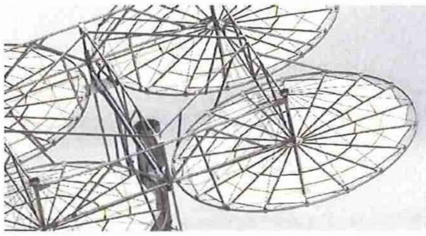
Supporting Technology: Our dynamic voltage controller was designed to eliminate the need for expensive coils and inverters. A chipset and circuits can receive a fluctuating voltage and output one, or multiple, designated set voltages.

Prototyping: Prototyping began on concentrated photovoltaic (CSP) designs using our solar lenses in conjunction with our dynamic voltage controller and gallium photovoltaic chips.

Manufacturing: Completed 3D CAD design for our heat collection assembly.



Manufacturing: Completed 3D CAD design for our hydraulic dual-axis solar tracking system.



Manufacturing: Completed 3D CAD designs for our solar towers.

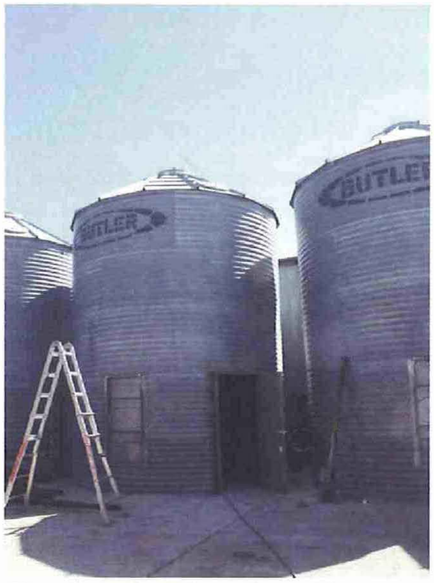
2014

Manufacturing: Our pipe bender has been programed and an automatic feeding system has been added to increase productivity.

Manufacturing: Bent pipe hoisted by a crane to be put into a container for delivery.

Manufacturing: Jet-Propulsion Turbines are now in inventory. Shown are the outer casings of the turbine.

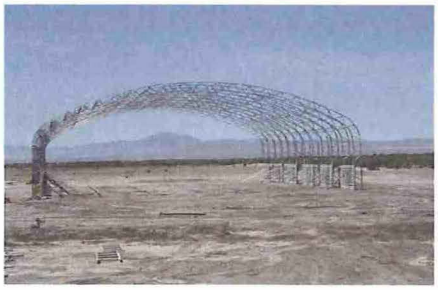
Manufacturing: Shown are inner casings of our Jet-Propulsion Turbines. There are now 25 turbines in inventory.

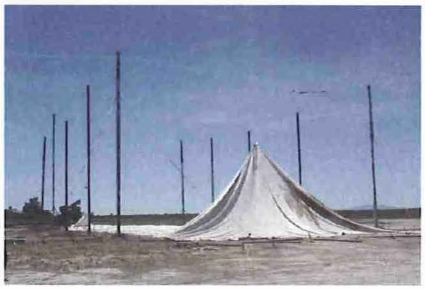


Manufacturing: Three silos at the manufacturing plant are now connected to become clean rooms that will produce the world's first commercially-viable concentrated photovoltaic (CPV) technology.

Manufacturing: The pipe cutter has been programed and an automatic feeding system has been added to increase productivity.

Installation: Our R&D towers being converted to commercial spec units.





Installation: These two canvas buildings will add 20,000 square feet of construction space at the Delta, Utah project site. Twenty-five construction workers will be employed to install twenty towers a day or close to two megawatts a day. To install that many towers/megawatts per day with only 25 workers is unprecedented in the history of energy construction. Target date to begin is before summer's end in 2014.

DYNAMIC VOLTAGE CONTROLLER

Other applications include:

- Instant Charge Batteries
- Wind Turbines
- Ocean Wave Energy Generation
- Electric Car Energy Capture
- Electric Motors and Generators
- Lithium Batteries